STAFF REPORT

Rezoning #20CZ12 Felton Grove High School

April 13, 2021 Town Council Meeting

The purpose of the public hearing is to review, hear, consider and approve, approve with conditions, or disapprove the application for a Major Site Plan.

BACKGROUND INFORMATION:	
Location:	8550 Stephenson Road
Applicant/Owner:	Renee Pfeifer, CLH Design, PA/Wake Co. Board of Education
PROJECT DESCRIPTION:	
Acreage:	+/- 68.06 acres
PIN:	0750545646
Zoning:	Medium Density Residential-Conditional Zoning (MD-CZ #20CZ12)
2045 Land Use Map:	School
Town Limits:	Inside Corporate Limits

ADJACENT ZONING & LAND USES:		
	Zoning	**Land Use**
North:	Rural Residential (#07ETJ24)	Single-family Residential
South:	Light Industrial (#07ETJ24) & Rural Residential (#07ETJ24)	Triangle Forest Products, Inc. Landfill (formerly Currin Brothers) & Indian Hills Subdivision
East:	Mobile Home Park (#07ETJ24)	Briarwood Farms Mobile Home Park
West:	Rural Residential (#07ETJ24) & Light Industrial (#07ETJ24)	Triangle Forest Products, Inc. Landfill (formerly Currin Brothers) & Single-family Residential

EXISTING CONDITIONS:

The site consists of one (1) parcel totaling approximately 68.06 acres. It is completely wooded with several perennial and intermittent streams throughout the site. It is located west of Stephenson Rd, at the end of Derry Down Lane and Thriftwood Drive. It is west of the Briarwood Farms Mobile Home Park and north of the Indian Hills Subdivision and Triangle Forest Products, Inc. Landfill (formerly Currin Brothers).

The adjacent landfill is a "Land Clearing and Inert Debris Landfill." Section 4.3.3 of the UDO defines this use as:

> A disposal facility that consists of solid waste that is generated solely from land clearing activities such as stumps and trees; and inert debris such as brick, concrete and clean soil.

It was approved by Wake County in 2003 and has a 50-foot undisturbed buffer along the eastern and northern boundaries. UDO Sec. 4.4.3.I.1.3 requires the following of new landfills:

> No part of a land clearing and inert debris landfill, its accessory ramps, on-site circulation system or storage areas shall be sited within 250 feet of a school, child care center, park, church, library or residential lot;

There is an intermittent stream on the southern portion of the Felton Grove High School property, which limits development in that area. The UDO requires a 50-foot riparian buffer along each side of the stream, making the total width of the buffer 100-feet wide. Based on the location of the stream and the buffers on the landfill property, the high school will be a minimum of 250 feet from the active portion of the landfill.

The UDO does not require new schools to meet these dimensional requirements when locating near an existing landfill. However, the concern was mentioned during Planning Board and staff evaluated both properties to confirm that the standard would be met.

Prepared by: Shelly Mayo, Planner II

NEIGHBORHOOD MEETING:

The applicant conducted a virtual neighborhood meeting on November 18, 2020. The meeting report is attached. The applicant held a separate neighborhood meeting with the residents of the adjacent rental properties. This courtesy meeting was held on April 7, 2021 and was not required by the UDO. The applicant will present the results of the meeting.

ZONING

Approved Uses:

The Rezoned Lands may be used for, and only for, the uses listed immediately below. The permitted uses are subject to the limitations and regulations stated in the UDO and any additional limitations or regulations stated below. For convenience, some relevant sections of the UDO may be referenced; such references do not imply that other sections of the UDO do not apply.

1. School, public or private
2. Communication tower, camouflage stealth (S)
3. Communication tower, public safety (S)
4. Wireless communication facility
5. Wireless support structure
6. Church or place of worship

Conditions:

1. This project shall preserve trees measuring 18-inches in diameter at breast height or greater to the maximum extent reasonably possible.
2. In compliance with the UDO and to optimize survival of landscaping, an extension of up to 6 months' time may be provided for installation of landscaping after a Certificate of Occupancy would otherwise be issued.
3. To support re-establishment of forest, a reforestation seed mix shall be used in disturbed areas with slopes of 3:1 or less, and not located within RCAs or SCMs. To expedite growth and avoid erosion, a slope stabilizing mix with conservation seed mix shall be used to slopes greater than 3:1 but less than 2:1 and not located within RCAs or SCMs.
4. This project shall dedicate a 20-foot on-site public greenway easement and within it provide a 10-foot greenway path and/or 10-foot sidewalk connection from the driveway connection at Thriftwood Drive to the western property line.
5. This project shall also provide off-site a combined greenway and sanitary sewer easement to accommodate future greenway construction by others. To comply with Section 900 of the Town's Standard Specifications, the combined public utility and greenway easement shall be recorded providing no less than 30 feet in width, or 10 feet beyond the minimum required for the sanitary sewer, whichever is greater. The public greenway easement shall extend from the western boundary of the site, across the landfill site (Wake Co. PIN 0750-44-1182) to the landfill's western boundary.
6. The Vehicular Use Area Shading described in UDO Section 8.2.5.C is not required in the area between the parking deck and parking lot near the site's eastern boundary. Instead, the same number of trees required to meet this standard will be planted elsewhere on the site. The remainder of the site shall meet the requirements of UDO Section 8.2.5.C. to the maximum extent reasonably possible.
7. The 2045 Transportation Plan shows a future north-south Minor Collector along the eastern property line starting at Derry Downs Lane extending to the northern site boundary. This project shall provide half of the required 60-foot right-of-way as shown on the plan.
8. Improvements to the existing streets known as Thriftwood Drive and Derry Down Lane (identified as public streets having a 60' right of way on the Briarwood Farms-COSD subdivision map recorded in Book of Maps

1986-2149, Wake County Registry, and as accepted by Wake County for use by the general public by instrument recorded in Book 7714 at Page 404, Wake County Registry) shall be provided to satisfy such NCDOT requirements made upon review of the traffic study for the project which are minimally necessary to provide adequate public access as state-maintained roadways to Stephenson Road. Consequently, the existing streets known as Thriftwood Drive and Derry Down Lane are not proposed for upgrades to meet Town of Apex standards nor are they proposed for dedication to the Town of Apex.

9. The northern perimeter buffer shall be a 20-foot Type B buffer, except where segmental retaining wall tie-backs would encroach. In those areas, it shall be no less than a 15-foot Type A buffer.
10. Cast-in-place retaining walls shall be permitted within the western 20-foot Type B buffer, as long as sufficient landscaping is planted around and on top of the walls to meet the requirements of the 20-foot Type B buffer.

PROJECT DATA:

The proposed high school will provide space for 2,350 students and approximately 200 employees. The site plan consists of several buildings, parking lots, a parking deck, and sports fields.

Building:

The proposed educational building ranges from one (1) to three (3) stories tall and contains approximately 392,760 square feet and 110 classrooms. This building is primarily brick with EIFS and architectural metal accents. The parking deck is primarily precast concrete with decorative metal panels that coordinate with the accents on the main building. There are also several smaller athletic buildings totaling 7,794 sf on the northern portion of the site.

Resource Conservation Area:

The UDO requires that developments in this area provide 20% of the site as Resource Conservation Area (RCA). This site meets the requirement with the RCA being primarily located within the riparian buffers around the streams on site.

UDO Requirement	Provided
20% = 13.612 acres	20% = 13.612 acres

Buffers:

Per UDO Sec. 8.2.6, School, public or private is considered a Class 4 use which require the following buffers:

Adjacent Property Use:	UDO Requirement:	Proposed:
North - Large Lot SF (>/= 12,000 sf)	20-foot Type B buffer	15-foot Type A or 20-foot Type B buffer*
South - Large Lot SF (>/= 12,000 sf)	20-foot Type B buffer	20-foot Type B Buffer + 50-foot stream buffer
West - Large Lot SF (>/= 12,000 sf)	20-foot Type B buffer	20-foot Type B buffer
South & West - Landfill:	15-foot Type B buffer	20-foot Type B buffer
East - Mobile Home Park:	0-foot	0-foot buffer

*Zoning Condition #9 allows the northern property buffer to vary from the required 20-foot Type B buffer to a 15-foot Type A buffer where segmental retaining wall tiebacks would otherwise encroach into the regular buffer. There are two (2) areas within the northern buffer where this is shown and the landscaping plan shows a Type A buffer plants in those areas.

Landscaping:
The proposed Major Site Plan meets the requirements in the UDO, with the changes that were approved in rezoning case #20CZ12. Specifically, the conditions are being met in the following ways:

- Zoning Conditions #1 & #3: The applicant and engineer have worked with staff to preserve as much of the existing forested area as possible and a reforestation seed mix is shown in the areas specified in the zoning condition.
- Zoning Condition #6: Shading trees have not been planted between the parking deck and the parking lot to the east, but the same number of trees have been planted elsewhere on site.
- Zoning Condition #10: The landscaping plan shows trees and shrubs planted both above and below the cast-in-place retaining wall within a portion of the western 20' Type B Buffer. This vegetation meets the requirements of the Type B buffer standard.

Parking:
The vehicle parking provided for the proposed Major Site Plan meets the requirements of the UDO. The table below describes the minimum requirement and proposed number of spaces. The provided number includes 21 handicap spaces and 2 electric vehicle charging stations within the parking deck.

Minimum Required:	110 classrooms	x	10 per classroom	=	1,100 spaces
Provided:			Parking Deck		631 spaces
			Surface Spaces		469 spaces
			Total	=	1,100 spaces

In addition, the project provides 56 bicycle parking spaces, while the UDO only requires 26. The bicycle racks provided are decorative and will act as site amenities.

Apex Transportation Plan/Access and Circulation:
The proposed Felton Grove High School will access Stephenson Road via Thriftwood Drive and Derry Down Lane. The applicant is proposing to reconstruct both roads to meet NCDOT access road standards. The plans show this work primarily taking place within the 60-foot right-of-way shown on the original plat for Briarwood Farms. Some disturbance outside the right-of-way is shown to tie the grading related to the road improvements back to the existing grade. This grading will not impact any homes. The applicant will need to show temporary construction easements on the Construction Drawings for all work outside of the right-of-way and subject property.

A Traffic Impact Analysis (TIA) was submitted with this application and was reviewed by Transportation staff. The TIA studied access to the proposed H-12 (Felton Grove) High School at the following four intersections:

- Stephenson Road at Derry Down Lane / Cockle Burr Drive
- Stephenson Road at Thriftwood Drive / Tear Drop Circle
- Thriftwood Drive at Staff / Bus Driveway (internal)
- Thriftwood Drive / Reunion Creek Parkway Extension at Connector Road

The following four intersections were also studied in the TIA:

- E. Williams Street / N. Main Street at Sunset Lake Road / Old Smithfield Road
- Sunset Lake Road at Stephenson Road
- E. Williams Street at Reunion Creek Parkway
- Stephenson Road at Smith Road

The TIA noted that the proposed Felton Grove High School is expected to consist of 2,350 students and 217 staff members. The school is projected to generate approximately 1,107 new trips entering and 253 new trips exiting

the site during the school weekday A.M. peak hour and 139 new trips entering and 776 new trips exiting the site during the school weekday P.M. peak hour.

Staff has formulated recommendations based on the UDO standards, but NC General Statutes §160A-307.1 only gives the Town authority to require improvements to municipal streets, as follows:

> A city may only require street improvements related to schools that are required for safe ingress and egress to the municipal street system and that are physically connected to a driveway on the school site.

Since Thriftwood Drive, Derry Down Lane, and Stephenson Road are not municipal roads, Apex does not have the authority to require improvements on those roads. That said, the following improvements are recommended by staff based upon review of the TIA and UDO standards, and in some instances may agree with TIA recommendations and in some instances may differ, to accommodate the increase in traffic generated by the school. The TIA studied options with and without the Reunion Creek Parkway extension, but since the Transportation Plan was updated to remove Reunion Creek Parkway connectivity to the school site that option no longer applies.

- Stephenson Road and Derry Down Lane/Cockle Burr Drive:
  - Construct an exclusive northbound left-turn lane with 100 feet of full-width storage and appropriate taper.
  - Widen the eastbound approach to accommodate an exclusive right turn lane and a shared left-through lane with 100 feet of full-width storage and appropriate taper.
  - In the event that NCDOT does not recommend geometric improvements and/or improvements are not being provided by WCPSS, consider officer control for peak hour traffic. Currently the intersection is operating as two-way stop control with no turn lanes.
  - Note: NCDOT has not recommended any improvements at this intersection.
- Stephenson Road and Thriftwood Drive/Tear Drop Circle:
  - Install a traffic signal if warranted and permitted by NCDOT.
  - Construct dual northbound left turn lanes with 425 feet of storage in each lane, and two (2) receiving westbound lanes with the outside receiving lane providing a minimum of 300 feet of full width merge lane and a 35:1 merge taper.
  - Construct an exclusive southbound right-turn lane with 100 feet of full-width storage and appropriate taper along Stephenson Road.
  - Widen the eastbound approach to provide an exclusive right turn lane and a shared left-through lane with 250 feet of full-width storage and appropriate taper and a shared left-through lane.
  - In the event that NCDOT does not recommend geometric improvements/signalization and/or improvements are not being provided by WCPSS, consider officer control for peak hour traffic. Currently the intersection is operating as two-way stop control with no turn lanes.
  - Note: NCDOT has not recommended any improvements at this intersection.
- Thriftwood Drive at the Staff/Bus Driveway:
  - Construct an on-site unsignalized intersection with stop-control on the southbound approach. There are no applicable public road recommendations at this location following removal of Reunion Creek Parkway extension.
  - Consider school staff control as needed for peak hour traffic based on observation.
- Thriftwood Drive at Connector Road:
  - There are no applicable recommendations following removal of Reunion Creek Parkway extension. This location operates as free flow parking lot access on site.
- E. Williams Street / N. Main Street at Sunset Lake Road / Old Smithfield Road:

- Widen the intersection to provide an additional through lane in the eastbound direction of travel (starting and ending 1,000 upstream and 1,200 downstream of the intersection with a lane drop at Commons Drive).
- Construct a second (dual) southbound left turn lane and provide 225 feet of storage on each lane with appropriate tapers.
- Construct a westbound right turn lane with 400 feet of full width and appropriate taper.
- Construct a northbound right turn lane with 200 feet of full width and appropriate taper.
- In the event that NCDOT does not recommend geometric improvements and/or improvements are not being provided by WCPSS, the intersection will operate over capacity with longer delays than if improvements were constructed.
- Note: NCDOT has not recommended any improvements at this intersection.

- Sunset Lake Road at Stephenson Road:
  - Construct a restricted conflict intersection (RCI) to handle the heavy eastbound left turn traffic volume (over 1,000 vehicles in the AM peak hour) while at the same time minimizing delays caused by school development traffic. Description follows.
  - Construct a signalized U-turn bulb 500 feet east of the Stephenson Road intersection (lined up with the proposed right-in, right-out of the future apartment complex) with dual eastbound U-turn lanes and a single eastbound through lane.
  - Construct two westbound receiving lanes, with one of those lanes continuing as a westbound through lane and the other an exclusive westbound right turn lane that begins 150 feet east of the signalized U-turn bulb and continues as an add lane to the Stephenson Road intersection where it terminates as a channelized free-flow westbound right turn.
  - Stagger the dual eastbound U-turn lanes to provide adequate capacity, with the inside lane having minimum 250 feet of storage and appropriate taper, and the outside U-turn lane beginning 150 feet west of the Stephenson Road intersection and extending east to the signalized U-turn bulb.
  - Construct a second westbound right turn lane with 150 feet of full width storage and a northbound receiving lane on Stephenson Road with 600 feet of full width merge length and appropriate merge taper.
  - In the event that NCDOT does not recommend geometric improvements and/or improvements are not being provided by WCPSS, the intersection will operate over capacity with longer delays than if improvements were constructed, even if placed under signalized control. Currently the intersection is operating as southbound stop control with no turn lanes.
  - Note: NCDOT has recommended a traffic signal at this intersection, but has not recommended any geometric improvements as part of the school site plan.
  - Note: The TIA also assumed background improvements by others as part of an apartment complex proposed on the northeast corner. Those included a southbound left turn lane, eastbound left turn lane, westbound right turn lane, and signalization.
- E. Williams Street at Reunion Creek Parkway:
  - Staff recommends no geometric improvements at this intersection.
- Smith Road at Stephenson Road:
  - Staff recommends no geometric improvements at this intersection.
  - Note: NCDOT has recommended a traffic signal at this intersection.

The TIA estimated a need for 2,350 feet of internal stacking distance for student pick-up and drop-off. NCDOT's Municipal School Transportation Assistance (MSTA) calculator requires 1,804 feet of internal stacking. The TIA

referenced a site plan that appears to provide 2,700 feet of stacking for carpool internal to the site and the proposed site plan actually provides 3,100 feet stacking, which will adequately accommodate carpool traffic.

To promote safer pedestrian access, sidewalk will be extended from the driveway at each road connection and will run throughout the site. Sidewalk is not proposed along Derry Down Lane or Thriftwood Drive from the site boundary to Stephenson Road and sidewalk currently does not exist along either side of Stephenson Road north of Sunset Lake Road in the vicinity of Thriftwood Drive or Derry Down Lane. The nearest sidewalk on Stephenson Road is more than 2,000 feet north of Derry Down Lane.

The proposed site plan meets the requirements of zoning condition #4 by building a 10' greenway from Thriftwood Drive to the school's western property line. It also complies with zoning condition #5 by showing a shared public greenway/sewer easement from the school's western property line, across the landfill, and stopping at its western property line.

Public Works and Transportation staff noted deficiencies in the TIA recommendations for intersection on State maintained roadways. The proposed site plan has not incorporated TIA recommendations or staff recommendations for geometric improvements to address traffic capacity on state-maintained roadways, with the exception of Smith Road at Stephenson Road where staff concur with no recommended improvements.

Public Utilities:
The proposed Major Site Plan complies with the standards in the UDO. Sanitary sewer will be extended from the Middle Creek pump station on Sunset Lake Road, under NC-540 and across the Triangle Forest Products landfill property to the school site. It will then be extended up each of two (2) the natural draws to the property to the east. Water will be extended from Colvin Park along Smith Road and across to the site. It will then be extended to the east at Thriftwood Drive and Derry Down Lane.

Storm Drainage:
The proposed Major Site Plan complies with the requirements of the UDO. The site proposes five (5) Stormwater Control Measures.

Grading:
The proposed Major Site Plan meets the grading requirements of the Unified Development Ordinance. Generally, the site sits lower than the eastern and northern properties, except where streams cross the property lines. The main buildings, parking, and closest sports fields are between 10 and 20 feet lower than the adjacent property to the east.

Lighting:
The proposed lighting plan complies with the requirements of the UDO.

Supplemental Standards:
There are no supplemental standards required for the use School, public or private.

UNIFIED DEVELOPMENT ORDINANCE:

The proposed Major Site Plan complies with the standards provided in the UDO, except the traffic conditions of the connecting roads.

Public Works and Transportation staff noted deficiencies in the TIA recommendations for intersection on State maintained roadways. The proposed Major Site Plan has not incorporated TIA recommendations or staff recommendations for geometric improvements to address traffic capacity on state-maintained roadways, with the exception of Smith Road at Stephenson Road where staff concur with no recommended improvements.

MAJOR SITE PLAN STANDARDS:

In order to approve an application for a Major Site Plan, the Town Council shall find the following standards are met by the proposed Major Site Plan:

a) Compatibility. The development proposed in the site plan and its general location is compatible with the character of surrounding land uses.

b) Zoning district supplemental standards. The development and uses in the site plan comply with Sec. 4.4 *Supplemental Standards*.

c) Site development standards. The development proposed in the site plan and its general layout and design comply with all appropriate standards in Article 8: *General Development Standards*.

d) Mitigation of development on steep slopes. If appropriate, the site plan complies with the requirements of Sec. 8.1.4 *Slope Protection Standards*.

e) Dedication of ROW for Thoroughfare Plan. The development proposed in the site plan conforms to the requirements of Sec. 7.4 *Dedication of ROW for Thoroughfare Streets and Highways*.

f) Required improvements. The development proposed in the site plan conforms to the requirements of Sec. 7.5 *Required Improvements*.

g) Other relevant standards of this Ordinance. The development proposed in the site plan and its general layout and design comply with all other relevant standards of this Ordinance, except that a site plan is not required to comply with a setback standard if there is a permanent improvement on the site that existed prior to August 1, 2000 that makes compliance impossible and the exception to the setback standard is the minimum necessary to accommodate the pre-existing permanent improvement.

h) Applicable Standards of Article 7: *Subdivision* and Article 14: *Parks, Recreation, Greenways, and Open Space*. The development proposed in the site plan shall comply with the applicable standards of Article 7: *Subdivision* and Article 14: *Parks, Recreation, Greenways, and Open Space*, including, but not limited to, street and utility improvements and park, recreation, and open space dedication or fee-in-lieu.

i) Impact on public facilities. The proposed development shall not have a significant adverse impact on public facilities and services, including roads, potable water and wastewater facilities, parks, police, fire, and EMS facilities.

January 15, 2021

Matthew D. Peach, P.E.
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606

Subject: **Staff summary and comments for the H-12 (Felton Grove) High School TIA, 11/30/2020**

Mr. Peach:

Please review the following summary of my comments and recommendations. You may schedule a meeting with me and your client to discuss at your convenience.

Study Area

The TIA studied access to the proposed H-12 (Felton Grove) High School at the following four intersections:

- Stephenson Road at Derry Down Lane / Cockle Burr Drive
- Stephenson Road at Thriftwood Drive / Tear Drop Circle
- Thriftwood Drive at Staff / Bus Driveway (internal)
- Thriftwood Drive / Reunion Creek Parkway Extension at Connector Road

The following four intersections were also studied in the TIA:

- E. Williams Street / N. Main Street at Sunset Lake Road / Old Smithfield Road
- Sunset Lake Road at Stephenson Road
- E. Williams Street at Reunion Creek Parkway
- Stephenson Road at Smith Road

Trip Generation

The proposed H-12 (Felton Grove) High School is expected to consist of 2,350 students and 217 staff members. It's projected to generate approximately 1107 new trips entering and 253 new trips exiting the site during the school weekday A.M. peak hour and 139 new trips entering and 776 new trips exiting the site during the school weekday P.M. peak hour. It should be noted

that the school A.M. peak hour is expected to overlap with the A.M. peak hours for the adjacent roadway network. The school P.M. peak hour is expected to occur between 2 P.M. and 4 P.M.

Background traffic

Background traffic consists of 1% annual background traffic growth compounded to build out year 2026, except for the through movements on Sunset Lake Road and Old Smithfield Road which were projected to have a 4% annual growth rate compounded to build out year 2026. Background traffic from the following approved developments was also included in the analysis:

- Horton Park
- Sunset Lake Apartments

Trip Distribution and Assignment

The trip distributions to and from the school site are as follows:

- 35 percent to/from the north on East Williams Street;
- 35 percent to/from the west on Old Smithfield Road;
- 15 percent to/from the south on East Williams Street;
- 10 percent to/from the east on Sunset Lake Road; and
- 5 percent to/from the north on Smith Road.

An alternate scenario was also analyzed that assumes an extension of Reunion Creek Parkway to Thriftwood Drive. That scenario reassigns 60% of the school trips onto the extension and the intersection of E. Williams Street at Reunion Creek Parkway. However the alternate scenario does not change the overall assumptions for the trip distribution. Trips from the north and south on East Williams Street, and from the west on Old Smithfield Road are reassigned to the intersection of E Williams Street and Reunion Creek Parkway. It should be noted that the extension of Reunion Creek Parkway is on the Town of Apex's transportation plan, however it is not a funded project.

Traffic Capacity Analysis and Recommendations

Level of Service (LOS) is a grade of A through F assigned to an intersection, approach, or movement to describe how well or how poorly it operates. LOS A through D is considered acceptable for peak hour operation. LOS E or F describes potentially unacceptable operation and developers may be required to mitigate their anticipated traffic impact to improve LOS based on the Apex Unified Development Ordinance (UDO).

Tables 1 through 8 describe the levels of service (LOS) for the scenarios analyzed in the TIA. "*NA"* is shown when the scenario does not apply. The scenarios are as follows:

- **Existing 2020** - Existing year 2020 traffic.
- **No Build 2026** – Projected year (2026) with background growth, approved development traffic from others, and committed transportation improvements by others where applicable.

- **Build 2026 –** Projected year (2026) with background traffic, background improvements, and site build-out including recommended improvements where applicable.
- **Build 2026 Alternate -** Projected year (2026) with Reunion Creek Parkway extended to E Williams Street, background traffic, background improvements, and site build-out including recommended improvements where applicable.

Stephenson Road at Derry Down Lane / Cockle Burr Drive (unsignalized)

Table 1. A.M. / P.M. Unsignalized Peak Hour Levels of Service Stephenson Road at Derry Down Lane / Cockle Burr Drive

	Existing 2020	No Build 2026	Build 2026	Build 2026 Alt
Overall	NA	NA	NA	NA
Eastbound (Derry Down Lane)	*B / B*[1]	*C / B*[1]	*E / C*[1]	*F / C*[1]
Westbound (Cockle Burr Drive)	*B / B*[1]	*C / B*[1]	*F / D*[1]	*F / D*[1]
Northbound (Stephenson Road)	*A / A*[2]	*A / A*[2]	*A / A*[2]	*A / A*[2]
Southbound (Stephenson Road)	*A / A*[2]	*A / A*[2]	*A / A*[2]	*A / A*[2]

1. Level of service for stop-controlled minor street approaches.
2. Level of service for left turn movements on free-flowing approaches.

TIA recommendations:

- The TIA recommends construction of an exclusive northbound left-turn lane with 100 feet of full-width storage and appropriate taper, and widening of the eastbound approach to accommodate an exclusive right turn lane and a shared left-through lane with 100 feet of full-width storage and appropriate taper. These recommendations are consistent for both the Build 2026 and the Build 2026 Alternate scenarios analyzed in the TIA.

Apex staff recommendations:

- Apex staff concur with both recommendations. In both scenarios the minor street approaches are projected to operate at LOS E or F in the AM peak hour. Average vehicle delays are projected to be over three minutes per vehicle for the eastbound shared left-through lane in both the Build and the Build Alternate scenarios, however 95th percentile queues are not projected to exceed 100 feet due to low through and turn movement volumes. A traffic signal would improve operations on the minor street approaches if warranted and permitted. However, based on the traffic volume projections, a traffic signal will most likely not be warranted.

Stephenson Road at Thriftwood Drive / Tear Drop Circle (unsignalized)

Table 2. A.M. / P.M. Unsignalized Peak Hour Levels of Service Stephenson Road at Thriftwood Drive / Tear Drop Circle				
	Existing 2020	**No Build 2026**	**Build 2026**	**Build 2026 Alt**
Overall	NA	NA	NA	NA
Eastbound (Thriftwood Drive)	*B / B*[1]	*C / C*[1]	*F / F*[1]	*F / E*[1]
Westbound (Tear Drop Circle)	*B / B*[1]	*C / B*[1]	*F / F*[1]	*F / F*[1]
Northbound (Stephenson Road)	*A / A*[2]	*A / A*[2]	*F / A*[2]	*C / A*[2]
Southbound (Stephenson Road)	*A / A*[2]	*A / A*[2]	*A / A*[2]	*A / A*[2]

1. Level of service for stop-controlled minor street approaches.
2. Level of service for left turn movements on free-flowing approaches.

TIA recommendations:

- The TIA recommends construction of an exclusive northbound left-turn lane with 500 feet of full-width storage and appropriate taper and an exclusive southbound right-turn lane with 100 feet of full-width storage and appropriate taper along Stephenson Road. On the eastbound approach the TIA recommends widening to provide an exclusive right turn lane and a shared left-through lane with 250 feet of full-width storage and appropriate taper. With these improvements the projected northbound 95th percentile queues were calculated to be 2,570 feet in the A.M. peak hour. When modeled in SimTraffic the AM maximum left turn queue was shown to exceed 600 feet, however the TIA did not report the spillover queue in the northbound through lane (which is in access of 1,500 feet). Based on both Synchro traffic analysis and SimTraffic micro-simulation the projected queue lengths are shown to exceed the recommended left lane storage capacity of 500 feet, which will cause queue spillback and blockage of the northbound through lane, leading to operational failure at the intersection.

- In the Build 2026 Alternate scenario (with the Reunion Creek Parkway Extension), the TIA recommends construction of an exclusive northbound left-turn lane with 425 feet of full-width storage and appropriate taper on Stephenson Road, and widening the eastbound approach to provide an exclusive right turn lane and a shared left-through lane with 125 feet of full-width storage and appropriate taper. With these improvements, the free flow northbound and southbound approaches are projected to operate without interruptions to traffic flow from the school generated traffic, and the northbound left turn storage bay is projected to provide enough capacity to store the left turn queue. However, both minor street approaches are projected to experience delays of over 2 minutes per vehicle in the AM peak hour when modeled in SimTraffic. In the PM peak hour, the eastbound approach that serves the heavy outbound school traffic is projected

to operate at LOS E with average vehicle delays of 37 seconds per vehicle, while the westbound approach is projected to operate at LOS F with delays of 113 seconds per vehicle.

Apex staff recommendations:

- Apex staff recommends the installation of a traffic signal if warranted and permitted by NCDOT. The intersection will most likely not meet traffic volume warrants outside of the AM peak hour, however, due to the projected high volume of vehicles entering and leaving the school site (over 800 vehicles in the AM Peak Hour and over 640 vehicles in the PM Peak Hour), a traffic signal would be justified based on the Peak Hour Warrant. In addition to the traffic signal Apex staff recommends dual northbound left turn lanes with 425 feet of storage on each lane, and two receiving westbound lanes with the outside receiving lane providing minimum of 300 feet of full width acceleration distance and a 35:1 merge taper. Staff agrees with the recommendation for the southbound right turn lane and the widening of the eastbound approach for an exclusive right turn lane and a shared left-through lane. The eastbound right turn should operate to allow right turns on red in order to accommodate the heavy right turn outbound traffic flow in the PM peak hour. The installation of a traffic signal along with the other stated improvements, would provide enough intersection capacity to serve the heavy inbound traffic flow in the AM peak hour, with overall intersection LOS D and average intersection delays of 39 seconds per vehicle (meeting requirements of the UDO). In the PM peak hour, with staff recommendations the signalized intersection is projected to operate at LOS D or better on all approaches except the eastbound approach. Due to the heavy right turn school traffic, the eastbound approach is projected to operate at LOS F with 95th percentile queues less than 500 feet.

- In the event that the Reunion Creek Parkway Extension is constructed per the Build 2026 Alternate scenario, Apex staff concurs with the recommendations of the TIA. With a significant portion of school traffic being diverted west on Reunion Creek Parkway, it is unlikely this intersection will meet traffic volume warrants for a traffic signal. The TIA recommendations provide for adequate queue storage internally on the minor street eastbound approach and on the northbound left turn.

Thriftwood Drive at Staff / Bus Driveway (unsignalized)

Table 3. A.M. / P.M. Unsignalized Peak Hour Levels of Service Thriftwood Drive at Staff/Bus Driveway		
	Build 2026	**Build 2026 Alt**
Overall	NA	NA
Eastbound (Thriftwood Drive)	*NA*	*F / A*[2]
Westbound (Thriftwood Drive)	*NA*	*NA*
Southbound (Staff/Bus Driveway)	*C / F*[1]	*A / B*[1]

1. Level of service for stop-controlled minor street approaches.
2. Level of service for left turn movements on free-flowing approaches.

TIA recommendations:

- The TIA recommends construction of an unsignalized intersection with stop-control on the southbound approach. The TIA recommends Thriftwood Drive to be constructed as a two-lane, two-way road in the east-west direction, and the southbound approach to be constructed as a two-lane, two-way road with no addition turn lanes. In the Build 2026 Alternate scenario with the Reunion Creek Parkway Extension, significant traffic volume is projected to leave and enter the site to and from the west. Therefore the TIA recommends additional construction of an exclusive eastbound left-turn lane with 500 feet of full-width storage and appropriate taper, an exclusive westbound right-turn lane with 275 feet of full-width storage and appropriate taper, and an exclusive southbound left-turn lane with maximum available full-width storage and appropriate taper.

  With these improvements the stop controlled southbound approach is projected to operate at LOS A and F in the AM and PM peak hours in the Build 2026 scenario with average vehicle delays of over 3 minutes per vehicle and 95th percentile queues of over 1,000 feet during the PM peak hour. In the Build 2026 Alternate scenario the southbound approach is projected to operate at LOS A and B, however the eastbound left turn movement is projected to operate at LOS F and A in the AM and PM peak hours. Average vehicle delays for the left turn movement are projected to be over 90 seconds per vehicle with 95th percentile queues of over 550 feet during the AM peak hour.

Apex staff recommendations:

- Apex staff recommends consideration of officer control in addition to the recommendations in the TIA. Alternative intersection design such as a roundabout may also improve operations.

Thriftwood Drive / Reunion Creek Parkway Extension at Connector Road (unsignalized)

Table 4. A.M. / P.M. Unsignalized Peak Hour Levels of Service Thriftwood Drive / Reunion Creek Parkway Extension at Connector Road	
	Build 2026 Alt
Overall	NA
Eastbound (Reunion Creek Parkway)	*A / A*[2]
Westbound (Thriftwood Drive)	*NA*
Southbound (Connector Road)	*A / C*[1]

1. Level of service for stop-controlled minor street approaches.
2. Level of service for left turn movements on free-flowing approaches.

TIA recommendations:

- The TIA recommends construction of an unsignalized intersection in the Build 2026 Alternate scenario with free flow movements in the eastbound and westbound directions of travel and stop control on the southbound approach. The TIA recommends Thrifwood Drive and Reunion Creek Parkway to be constructed as two-lane two-way roadways in the east-west directions of travel and the Connector Road be constructed as a two-lane two-way road in the north-south directions of travel.

Apex staff recommendations:

- Apex staff concurs with the recommendation. The stop-controlled southbound approach is projected to operate at LOS A and C in the AM and PM peak hours with minimal delays.

E. Williams Street / N. Main Street at Sunset Lake Road / Old Smithfield Road (signalized)

Table 5. A.M. / P.M. Signalized Peak Hour Levels of Service E. Williams Street / N. Main Street at Sunset Lake Road / Old Smithfield Road				
	Existing 2020	**No Build 2026**	**Build 2026**	**Build 2026 Alt**
Overall	D / C	F / D	F / E	F / E
Eastbound (Old Smithfield Road)	*C / D*	*C / E*	*F / F*	*F / F*
Westbound (Sunset Lake Road)	*E / C*	*F / C*	*D / C*	*D / D*
Northbound (E. Williams Street/ N. Main Street)	*D / C*	*E / D*	*F / E*	*F / E*
Southbound (E. Williams Street)	*D / C*	*F / C*	*F / E*	*F / E*

TIA recommendations:

- In the Build 2026 scenario, the TIA recommends considering construction of an exclusive northbound right-turn lane with 500 feet of full-width storage and appropriate taper, and an exclusive westbound right-turn lane with 450 feet of full-width storage and appropriate taper. Additionally, the TIA recommends traffic signal modifications to accommodate new phasing. Despite these improvements the intersection is still projected to operate over capacity resulting in multiple approaches with LOS F and queue spillback during both AM and PM hours of operation. Average intersection delays are projected to be 187 seconds per vehicle in the AM peak hour and 61 seconds per vehicle in the PM peak hour.

- In the Build 2026 Alternate scenario, with the Reunion Creek Parkway extension, the TIA recommends considering construction of an exclusive northbound right-turn lane with 225 feet of full-width storage and appropriate taper, an exclusive westbound right-turn lane with 350 feet of full-width storage and appropriate taper, as well as traffic signal modifications to accommodate new phasing. Despite these improvements the intersection is still projected to operate over capacity resulting in multiple approaches with LOS F and queue spillback during both AM and PM hours of operation. Average intersection delays are projected to be 123 seconds per vehicle in the AM peak hour and 66 seconds per vehicle in the PM peak hour.

Apex staff recommendations:

- Apex staff recommends for consideration intersection widening to provide an additional through lane in the eastbound direction of travel (starting and ending 1,000 upstream and 1,200 downstream of the intersection with a lane drop at Commons Drive), and a dual southbound left turn lane with minimum 225 feet of storage on each lane and appropriate taper. The westbound right turn storage lane can be reduced to provide 400 feet of full width and appropriate taper, and the northbound right turn storage lane can be reduced to provide 200 feet of full width and appropriate taper. With these capacity improvements the intersection is projected to operate at LOS E in the AM peak hour with intersection delays of 74 seconds per vehicle, and LOS D in the PM peak hour with intersection delays of 41 seconds per vehicle. The proposed school development is projected to increase traffic volumes by 36% in the AM peak hour and 28% in the PM peak hour at this intersection. The improvements recommended for consideration by Town staff will minimize delays associated with development traffic per the UDO.

- In the case of the Reunion Creek Parkway extension, Apex staff recommends for consideration intersection widening to provide an additional through lane in the eastbound direction of travel (starting and ending 1,000 upstream and 1,200 downstream of the intersection with a lane drop at Commons Drive), a dual southbound left turn lane with minimum 225 feet of storage on each lane and appropriate taper, as well as the westbound and northbound right turn lanes recommended for consideration in the TIA. With these capacity improvements the intersection is projected to operate at LOS E in the AM peak hour with intersection delays of 66 seconds per vehicle, and LOS D in the PM peak hour with intersection delays of 42 seconds per vehicle. The proposed school development is projected to increase traffic volumes by 29% in the AM peak hour and 20% in the PM peak hour at this intersection. The improvements recommended for consideration by Town staff will minimize delays associated with development traffic per the UDO.

Sunset Lake Road at Stephenson Road

Table 6. A.M. / P.M. Peak Hour Levels of Service Sunset Lake Road at Stephenson Road				
	Unsignalized	**Signalized**		
	Existing 2020	**No Build 2026**	**Build 2026**	**Build 2026 Alt**
Overall	NA	B / B	F / F	D / C
Eastbound (Sunset Lake Road)	*A / A*[2]	*A / A*	*F / A*	*D / C*
Westbound (Sunset Lake Road)	*NA*	*B / B*	*F / E*	*E / C*
Southbound (Stephenson Road)	*E / E*[1]	*D / D*	*E / F*	*E / D*

1. Level of service for stop-controlled approaches.
2. Level of service for left turn movement on free-flowing approaches.

TIA recommendations:

- The TIA assumes a traffic signal will be installed by background development, as well as an eastbound left turn lane with 150 feet of storage and taper, a westbound right turn lane with 100 feet of storage and taper, and a southbound left turn lane with 250 feet of storage and taper. In addition to these improvements done by others, the TIA recommends considering construction of a second eastbound left-turn with maximum available length of full-width storage and appropriate taper to store a left turn vehicle queue 1,150 feet, a second northbound receiving lane on Stephenson Road with minimum 600 feet of full with storage and appropriate merge taper, extension of the westbound right-turn lane to 625 feet of full-width storage and appropriate taper, extension of the southbound left-turn lane to 525 feet of full-width storage and appropriate taper, as well as modifications to the traffic signal. Despite these improvements the intersection is still projected to operate at LOS F in both peak hours in the Build 2026 scenario with average intersection delays of 115 and 87 seconds per vehicle in the AM and PM peak hours.

- In the Build 2026 Alternate scenario, with the Reunion Creek Parkway extension, the TIA recommends considering construction of dual eastbound left-turn lanes with 475 feet of full-width storage and appropriate taper, a second northbound receiving lane with a minimum of 600 feet of full with storage and appropriate merge taper, extension of the westbound right-turn lane to 525 feet of full-width storage and appropriate taper, as well as modifications to the traffic signal. With these improvements the intersection is projected to operate at LOS D and C in the AM and PM peak hours with average intersection delays of 48 and 32 seconds per vehicle in the AM and PM peak hours.

Apex staff recommendations:

- Apex staff recommends for consideration the construction of a restricted conflict intersection (RCI) to handle the heavy eastbound left turn traffic volume (over 1,000 vehicles in the AM peak hour) while at the same time minimizing delays caused by school development traffic per the UDO. Utilizing the widened pavement section committed by others in the No Build scenario, the RCI would require construction of a signalized U-turn bulb 500 feet east of the Stephenson Road intersection (lined up with the proposed right-in, right-out of the future apartment complex) with dual eastbound U-turn lanes and a single eastbound through lane, as well as two westbound receiving lanes, with one of those lanes being a westbound through lane and the other one an exclusive westbound right turn lane that begins 150 feet east of the signalized U-turn bulb and continues as an add lane to the Stephenson Road intersection where it terminates as a channelized free-flow westbound right turn. The dual eastbound U-turn lanes need to be staggered to provide adequate capacity, with the inside lane having minimum 250 feet of storage and appropriate taper, and the outside U-turn lane beginning 150 feet west of the Stephenson Road intersection and extending east to the signalized U-turn bulb. In addition a second westbound right turn lane with 150 feet of full with storage and a northbound receiving lane with 600 feet of full with storage and appropriate merge taper is recommended. With these improvements the signalized U-turn bulb is projected to operate at LOS B and A with average vehicle delays of 20 and 6 seconds per vehicle, and the intersection of Stephenson Road and Sunset Lake Road is projected to operate at LOS B with average vehicle delays of 19 and 14 seconds per vehicle. Both intersections are projected to provide enough capacity to meet all of the traffic demand. The proposed school development is projected to increase traffic volumes by 45% in the AM peak hour and 37% in the PM peak hour at this intersection. The improvements recommended for consideration by Town staff will minimize delays associated with development traffic per the UDO.

- In the Build 2026 Alternate scenario, with the Reunion Creek Parkway extension, Apex Staff concurs with the recommendations in the TIA, provided that widening of the eastbound approach is feasible given the existing corridor constraints due to adjacent development.

E. Williams Street at Reunion Creek Parkway

Table 7. A.M. / P.M. Peak Hour Levels of Service E. Williams Street at Reunion Creek Parkway				
	Unsignalized			**Signalized**
	Existing 2020	**No Build 2026**	**Build 2026**	**Build 2026 Alt**
Overall	NA	NA	NA	D / C
Eastbound (Hope Community Church Driveway)	*E / D*[1]	*F / E*[1]	*F / F*[1]	*F / D*
Westbound (Reunion Creek Parkway)	*E / D*[1]	*F / E*[1]	*F / F*[1]	*F / D*
Northbound (E. Williams Street)	*A / A*[2]	*A / A*[2]	*A / A*[2]	*C / C*
Southbound (E. Williams Street)	*A / A*[2]	*A / A*[2]	*A / A*[2]	*D / B*

1. Level of service for stop-controlled minor street approaches.
2. Level of service for left turn movements on free-flowing approaches.

TIA recommendations:

In the Build 2026 scenario, the TIA recommends no improvements at this intersection. In the Build 2026 Alternate scenario, with the Reunion Creek Parkway extension, traffic from the school site is projected to reroute to this intersection. The TIA recommends construction of an exclusive northbound right-turn lane with 225 feet of full-width storage and appropriate taper, and widening and marking of the westbound approach to accommodate a left-turn lane with 325 feet of full-width storage and appropriate taper, a right-turn lane with 450 feet of full-width storage and appropriate taper, and a through lane. Additionally the TIA recommends remarking of the southbound two-way left turn lane as far back as Straywhite Avenue to provide additional queue storage, and installation of a traffic signal. With these improvements the intersection is projected to operate at LOS D and C with overall intersection delays of 40 and 29 seconds per vehicle in the AM and PM peak hours.

Apex staff recommendations:

- Apex staff concur with the recommendations in the TIA for both Build 2026 and Build 2026 Alternate scenarios. In the Build 2026 scenario, school traffic will add more than 15% of overall traffic to the intersection in both peak hours on E. Williams Street, causing the minor street stop-controlled approaches to operate at LOS F in both peak hours, with delays on both eastbound and westbound approaches in excess of 300 seconds per vehicle in the AM peak hour. However, due to low traffic volumes on the minor street eastbound and westbound approaches, a traffic signal will most likely not be warranted.

- In the Build 2026 Alternate scenario, with Reunion Creek Parkway extension bringing school traffic to the westbound approach, a traffic signal will most likely be warranted, and is recommended for installation contingent on NCDOT approval. The southbound left turn queue is projected to stack beyond the intersection of Straywhite Avenue in the AM peak hour, however the two-way left turn lane on E. Williams Street provides enough storage capacity for the long left turn queue. It is anticipated that some of the Miramonte neighborhood traffic will reroute to the signalized intersection of Reunion Creek Parkway in the AM peak hour due to excessive left turn delays on Straywhite Avenue and potential intersection blockage from the left turn queue. The recommendation for the left turn and right turn storage lanes on Reunion Creek Parkway will provide adequate queue storage capacity even though both eastbound and westbound approaches are projected to operate at LOS F in the AM peak hour.

Smith Road at Stephenson Road

Table 8. A.M. / P.M. Unsignalized Peak Hour Levels of Service Smith Road at Stephenson Road				
	Existing 2020	**No Build 2026**	**Build 2026**	**Build 2026 Alt**
Overall	NA	NA	NA	NA
Eastbound (Stephenson Road)	*A / A[2]*	*A / A[2]*	*A / A[2]*	*A / A[2]*
Westbound (Stephenson Road)	*NA*	*NA*	*NA*	*NA*
Southbound (Smith Road)	*B / B[1]*	*C / C[1]*	*D / C[1]*	*D / C[1]*

1. Level of service for stop-controlled minor street approaches.
2. Level of service for left turn movements on free-flowing approaches.

TIA recommendations:

The TIA does not recommend improvements at this intersection for both the Build 2026 and the Build 2026 Alternate scenarios.

Apex staff recommendations:

- Apex staff concur with the recommendations in the TIA for both Build 2026 and Build 2026 Alternate scenarios. The stop controlled southbound approach is projected to operate at LOS D or better in both the AM and PM peak hours under both scenarios, with southbound 95th percentile queues not exceeding 150 feet.

Carpool Queue Accommodations

The TIA estimated a need for 2,350 feet of internal stacking distance for student pick-up and drop-off. The TIA references a site plan that appears to provide 2,700 feet of stacking for carpool internal to the site. Therefore it appears the site plan adequately accommodates carpool traffic.

Please coordinate with the NCDOT District Engineer's Office concerning recommended improvements. Town staff will be available for meetings with NCDOT staff to discuss improvements on state maintained roadways as needed. All recommendations are subject to review by Town Council prior to approval.

Sincerely,

Serge Grebenschikov
Traffic Engineer
919-372-7448

ATTACHMENTS:

Figure 32: Recommended Improvements without Reunion Creek Parkway Extension (Modified to include Town of Apex Staff recommendations)

Figure 33: Recommended Improvements with Reunion Creek Parkway Extension (Modified to include Town of Apex Staff recommendations)

Figure 32: Recommended Improvements without Reunion Creek Parkway Extension

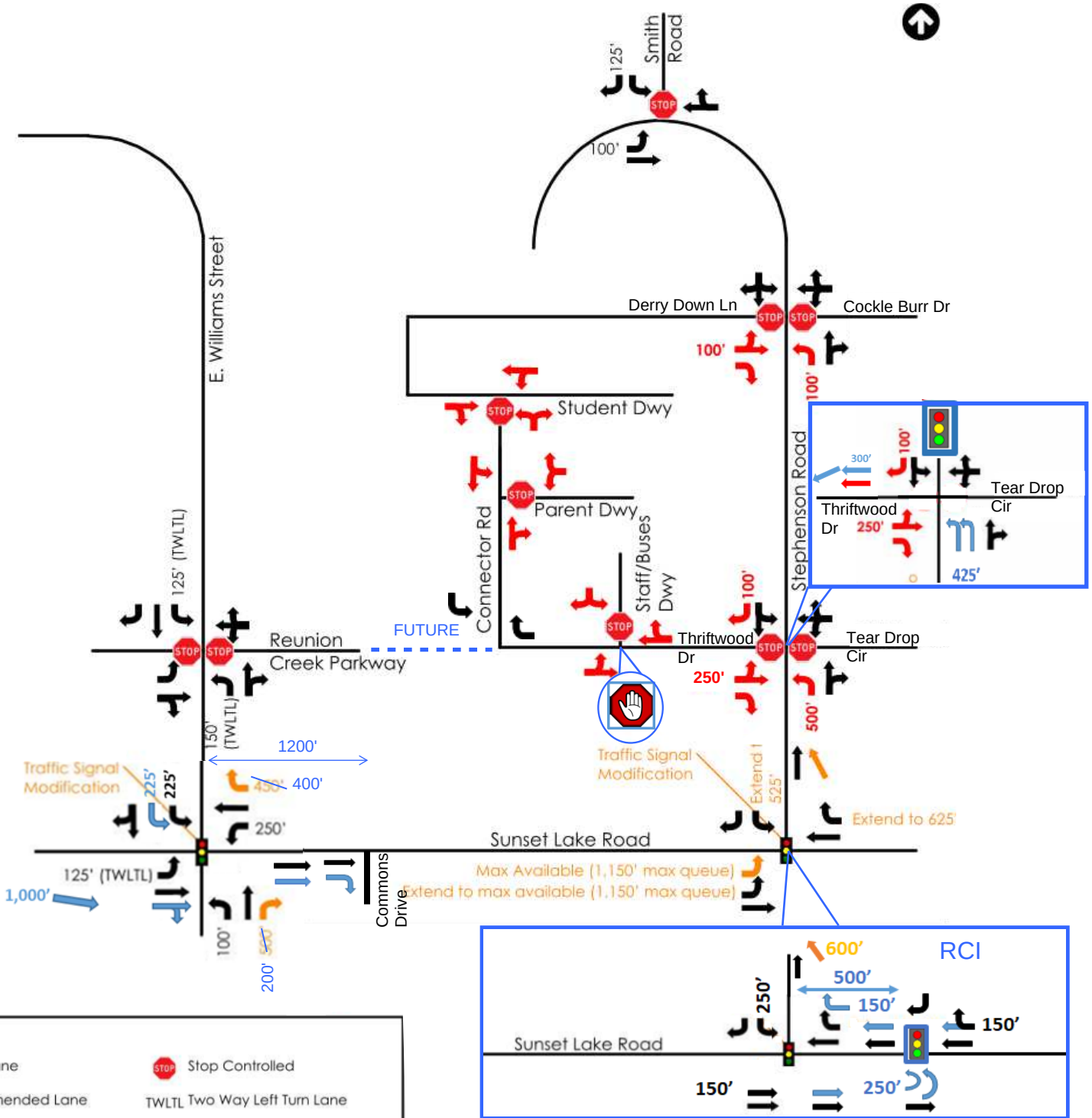


Figure 33: Recommended Improvements with Reunion Creek Parkway Extension

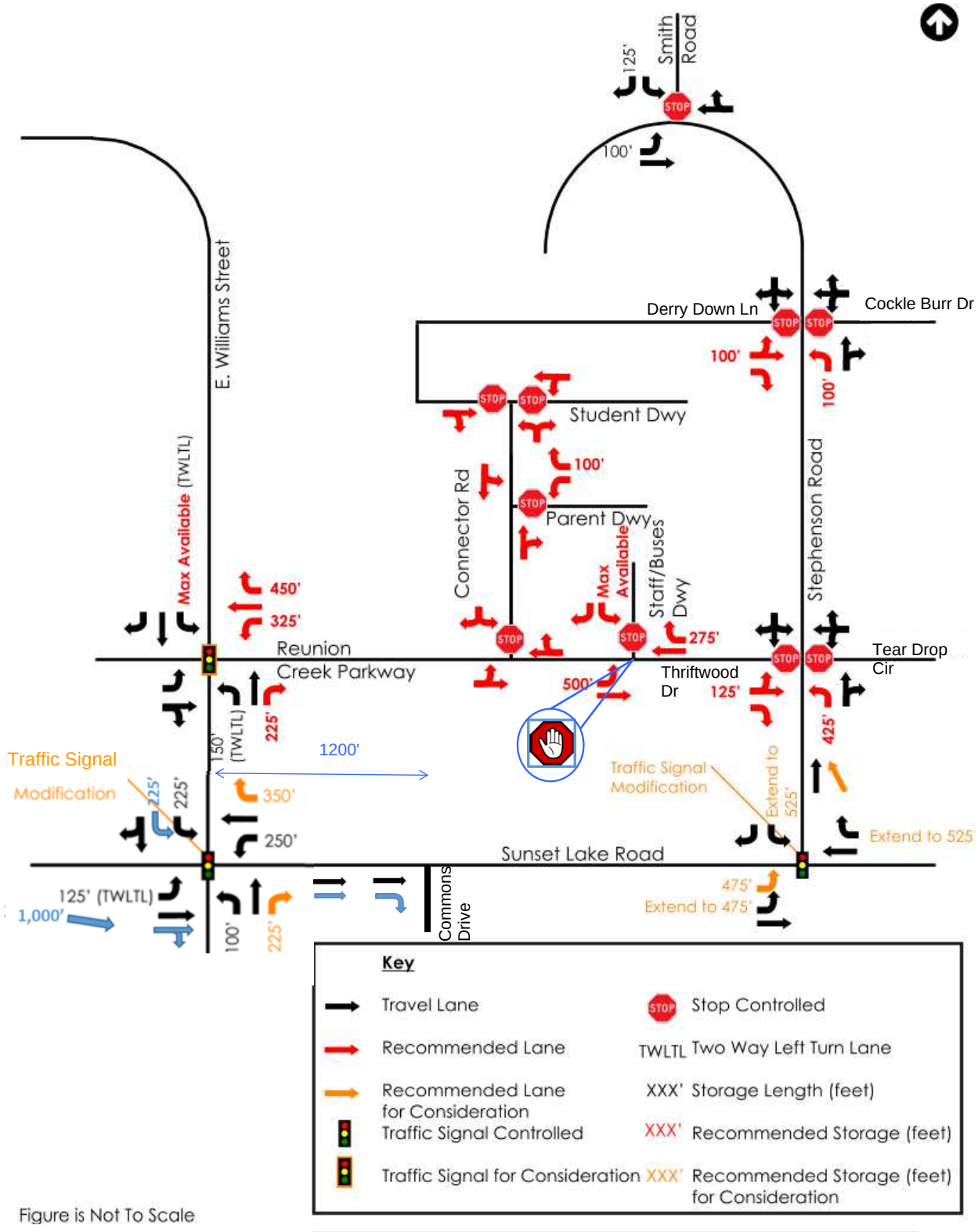


Figure is Not To Scale

Colby Crossing
Miramonte
Merion Station Dr
Lianfair Ln
Merion
Smith Rd
Harmony Glen
Summer Ridge Ct
Derry Down Ln
Briarwood Farms COSD
Westford Way
Stephenson Rd
Brook Cross Dr
Cherrystone Ln
Lynnford Dr
Briarwood Farms
Thriftwood Dr
Coralberry Cir
Holly Brook Dr
Felton Grove High School
Indian Hills
Saponi Hills
Arrowhead Dr
Banview Ln
Fair Oaks
0
500
1,000
Feet
March, 2021
January 2021 Aerial Photography
Prepared by: Town of Apex Planning Department

MAJOR SITE PLAN APPLICATION INFORMATION

This document is a public record under the North Carolina Public Records Act and may be published on the Town's website or disclosed to third parties.

Application #: | Submittal Date: 11/30/20

Fee Paid $ N/A | Check #

Project Information

Project Name: Felton Grove High School (H-12)

Address: 8550 Stephenson Road, Apex, NC 27539

Property PIN: 0750545646

Acreage: 68.06 | Zoning MD-CZ

Town Limits: ☐ Inside corporate limits ☑ In ETJ ☐ *Outside corporate limits and ETJ

For Non-residential Developments

Total number of buildings: 6 total buildings | Number of floors: HS- 3 floor, remaining buildings 1 floor

Total square footage of all buildings: 399,671 SF

For Residential Developments

Number of multi-family units: N/A | Number of floors: N/A

Applicant Information

Name: Renee Pfeifer

Address: 400 Regency Forest Drive, Suite 120

City: Cary | State: NC | Zip: 27518

Phone: 919-319-6716 | Email: rpfeifer@clhdesignpa.com

Owner Information

Name: Wake County board of Education (ATTN: AnnaMaria Taylor, Senior Facility Planner)

Address: 5625 Dillard Drive, Crossroad Building 1

City: Cary | State: NC | Zip: 27518

Phone: 919-588-3602 | Email: amtaylor@wcpss.net

Attorney Information

Name: Kenneth C. Haywood- Howard, Stalling, From, Atkins, Angell & Davis, P.A.

Address: 5410 Trinity Road, Suite 210

City: Raleigh | State: NC | Zip: 27605

Phone: 919-821-7700 | Email: khaywood@hsfh.com

Engineer Information

Name: CLH Design, P.A.

Address: 400 Regency Forest Drive, Suite 120

City: Cary | State: NC | Zip: 27518

Phone: 919-319-6716 | Email: rpfeifer@clhdesignpa.com

CERTIFIED LIST OF NEIGHBORING PROPERTY OWNERS

Application #: _____ Submittal Date: _____

Provide a certified list of property owners subject to this application and all property owners within 300' of the subject property and HOA Contacts.

	Owner's Name	PIN
1.	See attached list of property owners and HOA contacts	
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		

I, AnnaMaria Taylor, certify that this is an accurate listing of all property owners and property owners within 300' of the subject property.

Date: 11 · 20 · 2020 By: _____

COUNTY OF WAKE STATE OF NORTH CAROLINA

Sworn and subscribed before me, SCOTT D LOWDER, a Notary Public for the above State and County, on this the 20th day of November, 20 20

SCOTT D. LOWDER SEAL Notary Public Rowan County NORTH CAROLINA

_____
Notary Public

SCOTT D. LOWDER
Print Name

My Commission Expires: 4-24-21

# of Property Owners	PIN	Real Estate ID	Owner	Mail Address 1	Mail Address 2	Site Address
1	0750441182	069355	CURRIN BROS INC	PO BOX 547	FUQUAY VARINA NC 27526-0547	4237 SUNSET LAKE RD
2	0750456175	109150	REVOCABLE LIVING TRUST OF DENNIS MCCOY & RANDY GARREN	8537 SMITH RD	APEX NC 27539-8169	8549 SMITH RD
3	0750456507	109149	CHAMBLEE, DAVIS B. CHAMBLEE, LEANNE M.	8509 SMITH RD	APEX NC 27539-8169	8509 SMITH RD
4	0750466110	107588	SCOTT, RONALD D. SCOTT, MELODY S.	8429 SMITH RD	APEX NC 27539-8181	8429 SMITH RD
5	0750466564	109146	EMERY, JASON G. EMERY, JOANNA L.	8409 SMITH RD	APEX NC 27539-8181	8409 SMITH RD
6	0750538989	130746	DEW, JOHNNIE M. DEW, BESSIE W.	4712 JOSEPH MICHAEL CT	RALEIGH NC 27606-9646	4636 ARROWHEAD DR
8	0750549090	130747	DEW, BESSIE W.	4712 JOSEPH MICHAEL CT	RALEIGH NC 27606-9646	4632 ARROWHEAD DR
9	0750576147	107587	DEAN, JOSEPH W. DEAN, CHRISTINE W.	8317 SMITH RD	APEX NC 27539-8179	8317 SMITH RD
10	0750631918	130748	DEW, BESSIE W.	4712 JOSEPH MICHAEL CT	RALEIGH NC 27606-9646	4628 ARROWHEAD DR
11	0750632916	130749	DEW, BESSIE W.	4712 JOSEPH MICHAEL CT	RALEIGH NC 27606-9646	4624 ARROWHEAD DR
12	0750633913	130750	DEW, BESSIE W.	4712 JOSEPH MICHAEL CT	RALEIGH NC 27606-9646	4620 ARROWHEAD DR
13	0750634925	130751	DEW, BESSIE W.	4712 JOSEPH MICHAEL CT	RALEIGH NC 27606-9646	4616 ARROWHEAD DR
14	0750642452	175263	BRIARTAC FAMILY LLC Attn: TONYA C. CUMALANDER, TRUSTEE	PO BOX 1055	FUQUAY VARINA NC 27526-1055	3012 THRIFTWOOD DR
15	0750643379	159768	AQUA NORTH CAROLINA, INC.	202 MACKENAN DR	CARY NC 27511-6447	3008 THRIFTWOOD DR
16	0750644717	159766	AQUA NORTH CAROLINA, INC.	202 MACKENAN DR	CARY NC 27511-6447	3016 THRIFTWOOD DR
17	0750646366	159769	BRIARTAC FAMILY LLC Attn: TONYA C. CUMALANDER, TRUSTEE	PO BOX 1055	FUQUAY VARINA NC 27526-1055	3004 THRIFTWOOD DR
18	0750652582	159767	BRIARTAC FAMILY LLC Attn: TONYA C. CUMALANDER, TRUSTEE	PO BOX 1055	FUQUAY VARINA NC 27526-1055	0 THRIFTWOOD DR
19	0750657552	067494	BRIARTAC FAMILY LLC Attn: TONYA C. CUMALANDER, TRUSTEE	PO BOX 1055	FUQUAY VARINA NC 27526-1055	3468 CHERRYSTONE LN
20	0750663067	159765	AQUA NORTH CAROLINA, INC.	202 MACKENAN DR	CARY NC 27511-6447	5049 DERRY DOWN LN
21	0750664237	159756	BRIARTAC FAMILY LLC Attn: TONYA C. CUMALANDER, TRUSTEE	PO BOX 1055	FUQUAY VARINA NC 27526-1055	5052 DERRY DOWN LN
22	0750665132	159763	BRIARTAC FAMILY LLC Attn: TONYA C. CUMALANDER, TRUSTEE	PO BOX 1055	FUQUAY VARINA NC 27526-1055	5045 DERRY DOWN LN
23	0750665218	159755	BRIARTAC FAMILY LLC Attn: TONYA C. CUMALANDER, TRUSTEE	PO BOX 1055	FUQUAY VARINA NC 27526-1055	5048 DERRY DOWN LN
24	0750665398	159753	BRIARTAC FAMILY LLC Attn: TONYA C. CUMALANDER, TRUSTEE	PO BOX 1055	FUQUAY VARINA NC 27526-1055	5040 LORRY LN
25	0750665475	159752	BRIARTAC FAMILY LLC Attn: TONYA C. CUMALANDER, TRUSTEE	PO BOX 1055	FUQUAY VARINA NC 27526-1055	5036 LORRY LN
26	0750665745	284548	HARMONY GLEN HOMEOWNERS ASSOC INC	3921 SUNSET RIDGE RD., STE. 201	RALEIGH NC 27607-6679	0 RHYTHM DR
27	0750666104	159762	BRIARTAC FAMILY LLC Attn: TONYA C. CUMALANDER, TRUSTEE	PO BOX 1055	FUQUAY VARINA NC 27526-1055	5041 DERRY DOWN LN
28	0750666219	159754	BRIARTAC FAMILY LLC Attn: TONYA C. CUMALANDER, TRUSTEE	PO BOX 1055	FUQUAY VARINA NC 27526-1055	5044 DERRY DOWN LN

AGENT AUTHORIZATION FORM

Application #: _____ Submittal Date: _____

Wake County Board of Education is the owner* of the property for which the attached application is being submitted:

- ☐ Land Use Amendment
- ☐ Rezoning: For Conditional Zoning and Planned Development rezoning applications, this authorization includes express consent to zoning conditions that are agreed to by the Agent which will apply if the application is approved.
- ☑ Site Plan
- ☐ Subdivision
- ☐ Variance
- ☐ Other: _____

The property address is: 8550 Stephenson Road, Apex, NC 27539

The agent for this project is: CLH Design, P.A.

☐ I am the owner of the property and will be acting as my own agent

Agent Name: Renee Pfeifer, CLH Design, P.A.

Address: 400 Regency Forest Drive, Suite 120, Cary, NC 27518

Telephone Number: 919-319-6716

E-Mail Address: rpfeifer@clhdesignpa.com

Signature(s) of Owner(s)*

David Neter / Chief Business Officer 11/23/2020

Type or print name Date

_____

_____

Type or print name Date

Attach additional sheets if there are additional owners.

*Owner of record as shown on the latest equalized assessment rolls of Wake County. An option to purchase does not constitute ownership. If ownership has been recently transferred, a copy of the deed must accompany this authorization.

Pursuant to Article 40 of Chapter 66 of the North Carolina General Statutes (the Uniform Electronic Transactions Act) this application and all documents related hereto containing an electronic or digitized signature are legally binding in the same manner as are hard copy documents executed by hand signature. The parties hereby consent to use electronic or digitized signatures in accordance with the Town's Electronic Signature Policy and intend to be bound by the application and any related documents. If electronic signatures are used the application shall be delivered in an electronic record capable of retention by the recipient at the time of receipt.

AFFIDAVIT OF OWNERSHIP

Application #: _____ Submittal Date: _____

The undersigned, David Neter (the "Affiant") first being duly sworn, hereby swears or affirms as follows:

1. Affiant is over eighteen (18) years of age and authorized to make this Affidavit. The Affiant is the sole owner, or is the authorized agent of all owners, of the property located at 8550 Stephenson Road, Apex, NC 27539 and legally described in **Exhibit "A"** attached hereto and incorporated herein (the "Property").

2. This Affidavit of Ownership is made for the purpose of filing an application for development approval with the Town of Apex.

3. If Affiant is the owner of the Property, Affiant acquired ownership by deed, dated September 15, 2016, and recorded in the Wake County Register of Deeds Office on September 16, 2016, in Book 016534 Page 00550-0054.

4. If Affiant is the authorized agent of the owner(s) of the Property, Affiant possesses documentation indicating the agency relationship granting the Affiant the authority to apply for development approval on behalf of the owner(s).

5. If Affiant is the owner of the Property, from the time Affiant was deeded the Property on September 16, 2016, Affiant has claimed sole ownership of the Property. Affiant or Affiant's predecessors in interest have been in sole and undisturbed possession and use of the property during the period of ownership. Since taking possession of the Property on September 16, 20216, no one has questioned Affiant's ownership or right to possession nor demanded any rents or profits. To Affiant's knowledge, no claim or action has been brought against Affiant (if Affiant is the owner), or against owner(s) (if Affiant is acting as an authorized agent for owner(s)), which questions title or right to possession of the property, nor is any claim or action pending against Affiant or owner(s) in court regarding possession of the Property.

This the 23 day of November, 2020.

_____ (seal)
David Neter
Type or print name

STATE OF NORTH CAROLINA
COUNTY OF _____

I, the undersigned, a Notary Public in and for the County of Wake, hereby certify that David Neter, Affiant, personally known to me or known to me by said Affiant's presentation of said Affiant's _____, personally appeared before me this day and acknowledged the due and voluntary execution of the foregoing Affidavit.

SHARON M. FERGUSON
Notary Public, North Carolina
Wake County
My Commission Expires
7-31-24

[NOTARY SEAL]

Sharon M. Ferguson
Notary Public
State of North Carolina
My Commission Expires: July 31, 2024

Last Updated: August 30, 2019

AFFIDAVIT OF OWNERSHIP: EXHIBIT A – LEGAL DESCRIPTION

Application #: _____ Submittal Date: _____

Insert legal description below.

See attached documents.

WAKE COUNTY, NC 101
LAURA M RIDDICK
REGISTER OF DEEDS
PRESENTED & RECORDED ON
09/16/2016 13:00:28

BOOK:016534 PAGE:00550 - 00554

NORTH CAROLINA NON-WARRANTY DEED

Excise Tax: $0.00

Parcel Identifier No. 0018131

Mail/Box to: BBGH Box #27

This instrument was prepared by: Barringer Sasser, LLP (Grantee's legal counsel)

Brief description for the Index: 68.07 acres, White Oak Twp., Wake County, NC

THIS DEED made this 15th day of September, 2016, by and between

GRANTOR	GRANTEE
MERION INVESTMENT PROPERTIES, LLC, a North Carolina limited liability company	**WAKE COUNTY BOARD OF EDUCATION**
114 Birklands Drive Cary, North Carolina 27518	Facilities Building 1551 Rock Quarry Road Raleigh, North Carolina 27610 Attn: Betty L. Parker, Real Estate Services Senior Director

Enter in appropriate block for each Grantor and Grantee: name, mailing address, and, if appropriate, character of entity, e.g. corporation or partnership.

The designation Grantor and Grantee as used herein shall include said parties, their heirs, successors, and assigns, and shall include singular, plural, masculine, feminine or neuter as required by context.

WITNESSETH, that the Grantor, for a valuable consideration paid by the Grantee, the receipt of which is hereby acknowledged, has and by these presents does grant, bargain, sell and convey unto

the Grantee in fee simple, all that certain lot or parcel of land (the "Subject Property") situated in Wake County, North Carolina and more particularly described as follows:

See Exhibit A attached hereto and hereby incorporated by reference.

The Subject Property described herein was acquired by Grantor by instruments recorded in Book 11544, Page 1153, and Book 11544, Page 1156, both of the Wake County Registry.

Grantor states that no portion of the property herein conveyed includes the primary residence of any Grantor.

TO HAVE AND TO HOLD the aforesaid lot or parcel of land and all privileges and appurtenances thereto belonging to the Grantee in fee simple.

The Grantor makes no warranty, express or implied, as to title to the property hereinabove described.

IN WITNESS WHEREOF, the Grantor has caused this instrument to be executed by its duly authorized Manager as of the day and year first above written.

Grantor:

Merion Investment Properties, LLC, a North Carolina limited liability company

By: MFW Investments, LLC, a North Carolina limited liability company,
Duly Authorized Manager of Merion Investment Properties, LLC

By: _____
Michael F. Whitehead, duly authorized Manager of MFW Investments, LLC

Notary acknowledgements on following page.

STATE OF NORTH CAROLINA
COUNTY OF WAKE

I, Ann L. Harper, a Notary Public of the County of Wake, State of North Carolina, certify that Michael F. Whitehead, personally known to me, personally appeared before me this day and acknowledged that he is the duly authorized Manager of MFW Investments, LLC, a North Carolina limited liability company, which is a Manager and Member of Merion Investment Properties, LLC, a North Carolina limited liability company, and further acknowledged the due and voluntary execution of the foregoing instrument for and on behalf of Merion Investment Properties, LLC.

Witness my hand and official stamp or seal, this 15th day of September, 2016.

Ann L. Harper
Notary Public, Signature
My Commission Expires: 8/8/21

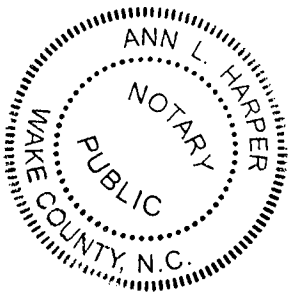


EXHIBIT A

BEING all of that certain tract or parcel of land containing 68.07 acres, lying and being in Wake County, North Carolina and being bounded on the North by the property of Dean (Book 2600, Page 666, Wake County Registry); on the East by the properties (now or formerly) of Briartac Family, LLC (Book 13812, Page 334, Wake County Registry), Derry Down Lane (Book of Maps 1986, Page 2149, Wake County Registry), Aqua North Carolina, Inc. (Book 13347, Page 76, Wake County Registry), and Thriftwood Drive (Book of Maps 1986, Page 2149, Wake County Registry); on the South by Lots 18-21, Indian Hills Subdivision (Book of Maps 1983, Page 1064, Wake County Registry), and the property of Currin Bros., Inc. (Book 6000, Page 178, Wake County Registry); and on the West by the properties of Currin Bros., Inc. (Book 6000, Page 178, Wake County Registry), Revocable Living Trust of Denis McCoy and Randy Garren (Book 13020, Page 135, Wake County Registry), Chamblee (Book 14545, Page 1437, Wake County Registry), Scott (Book 2689, Page 470, Wake County Registry), and Emery (Book 10299, Page 2534, Wake County Registry) and being more particularly described as follows:

BEGINNING in the northeasternmost corner of the Subject Property at an existing iron shank located at NC Grid Coordinates N 706,561.29, E 2,0562.69.25 and thence proceeding South 00 degrees 52 minutes 35 seconds West 2337.35 feet to an iron pipe found; thence proceeding South 86 degrees 51 minutes 55 seconds West 1224.69 feet to an iron pipe found; thence proceeding North 02 degrees 02 minutes 41 seconds West 632.90 feet to a stump found; thence proceeding North 01 degrees 20 minutes 47 seconds East1795.04 feet to an iron pipe found; thence proceeding South 88 degrees 56 minutes 13 seconds East 1239.22 feet to the POINT AND PLACE OF BEGINNING, All as shown on that certain Boundary and Wetlands Map prepared by WithersRavenel dated July 22, 2016.

WAKE COUNTY PUBLIC SCHOOL SYSTEM

Facilities Design and Construction Department

October 30, 2020

Dear Property Owner-

The Wake County Public School System is planning a new High School located at 8550 Stephenson Road near Sunset Lake Road in Apex as part of the Continuous Capital Improvement Program. The purpose of this letter is to invite you to a neighborhood meeting to discuss a major site plan being proposed for the New Felton Grove High School project. Included is a Vicinity Map, a Site Plan, a Project Contact Information document and a list of Common Construction Issues and Who to Call for your reference.

Please note, this is not a public hearing. Notice for the public hearing will be sent at a later date by the Town of Apex.

.

Meeting Scheduled

A public meeting has been scheduled in order for us to share our plans and for neighbors to offer comments and ask questions. This meeting has been scheduled for Wednesday, November 18th, 2020 from 5:00 – 7:00 PM. Due to Covid19 circumstances and recommended precautions, we will be holding a virtual meeting ONLY. The link to the meeting is as follows:

Microsoft Teams meeting

Join on your computer or mobile app
Click here to join the meeting
Or call in (audio only)
+1 773-917-5169,,760742360# United States, Chicago
Phone Conference ID: 760 742 360#
Find a local number | Reset PIN
Learn More | Meeting options

Please let me know if you have any questions or concerns. Thank you.

AnnaMaria Taylor AIA + NCARB
Senior Facility Planner
amtaylor@wcpss.net

NEIGHBORHOOD MEETING SIGN-IN SHEET

This document is a public record under the North Carolina Public Records Act and may be published on the Town's website or disclosed to third parties.

Meeting Address: Virtual- TEAMS Meeting

Date of meeting: Wednesday, November 18, 2020 Time of meeting: 5:00 pm to 7:00 pm

Property Owner(s) name(s): Wake County Board of Education

Applicant(s): Renee C. Pfeifer, PLA, CLH Design, P.A.

Please print your name below, state your address and/or affiliation with a neighborhood group, and provide your phone number and email address. Providing your name below does not represent support or opposition to the project; it is for documentation purposes only.

	NAME/ORGANIZATION	ADDRESS	PHONE #	EMAIL	SEND PLANS & UPDATES
1.	VIRTUAL ATTENDEES				
2.	Jason Emery	8409 Smith Road, Apex, nc	919-363-3080	[redacted]	
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					

Use additional sheets, if necessary.

SUMMARY OF DISCUSSION FROM THE NEIGHBORHOOD MEETING

This document is a public record under the North Carolina Public Records Act and may be published on the Town's website or disclosed to third parties.

Property Owner(s) name(s): Wake County Board of Education

Applicant(s): Renee C. Pfeifer, PLA, CLH Design.P.A.

Contact information (email/phone): rpfeifer@clhdesignpa.com / 919-319-6716

Meeting Address: Virtual TEAMS Meeting

Date of meeting: Wednesday, November 18. 2020 Time of meeting: 5:00 pm to 7:00 pm

Please summarize the questions/comments and your response from the Neighborhood Meeting in the spaces below (attach additional sheets, if necessary). Please state if/how the project has been modified in response to any concerns. The response should not be "Noted" or "No Response". There has to be documentation of what consideration the neighbor's concern was given and justification for why no change was deemed warranted.

Question/Concern #1:
See Attached.

Applicant's Response:

Question/Concern #2:
See Attached.

Applicant's Response:

Question/Concern #3:
See Attached.

Applicant's Response:

Question/Concern #4:
See Attached.

Applicant's Response:

SUMMARY DISCUSSION FROM THE FELTON GROVE HIGH SCHOOL NEIGHBORHOOD MEETING:

Question/Concern #1:

Will there be any sort of fencing around the property?

Applicant's Response:

- The entire property will not be fenced. There will be fencing around specific areas of the school. There will also be fencing on top of the retaining walls.
- The areas that will be fenced will be the stadium area and the baseball area. The entire perimeter of the site will not be fenced.
- There will be retaining walls on this site and all the retaining walls will have safety rail fencing on top of them.
- We also have a tree buffer on this site and those trees will remain or be planted back. They will provide a buffer between this site and the adjacent residential properties

Question/Concern #2:

Mr. Emery is worried about children using the woods in an inappropriate way between the athletic fields and his property.

Applicant's Response:

- We do have a retaining wall between the athletic fields and Mr. Emery's property. That wall will have a fence on top of it. The entire stadium area will be fenced, and there is a significant slope as well as a 100' buffer on both sides of the stream between the high school property and the Emery property.

Question/Concern #3:

Currently Mr. Emery's property is zoned within the county. Will this site and adjacent properties have their zoning affected?

Applicant's Response:

- The high school property is located within Apex's ETJ and this project site will be annexed into the Town and rezoned, but no adjacent properties will be rezoned.

Question/Concern #4:

Stephenson Road is already congested. What does the school system plan to do to alleviate this?

Applicant's Response:

- The apex/holly springs boundary is south of the site on Stephenson and there is a future project planned to install a stoplight at the intersection of Stephenson road and Sunset Lake road.
- We've collected data that was available and tried to collect as much data as possible prior to COVID to finalize our TIA.
- We are currently putting the final touches on our Traffic analysis and this will be submitted to NCDOT and the Town. Then the Town and NCDOT will look at that report and decide what

improvements are necessary. Our anticipation is to provide enough stacking so that traffic does not back up on to Stephenson road from our site.

Question/Concern #5:

The intersection of Smith Road and Ten Ten is very congested. Would suggest we look at this intersection as well.

Applicant's Response:

- This intersection has been included in the traffic analysis.

Question/Concern #6:

What is the project schedule?

Applicant's Response:

- Construction will begin spring of 2022 and completed in August of 2024.
- This school will not be used as swing space for another school.
- For the first year the high school will be at ½ capacity. There will be no student drivers and the school will not be at full capacity until the third year.

Question/Concern #7:

Mr. Emery's biggest concern is people coming onto his property from the athletic facility.

Applicant's Response:

- WCPSS will provide the principals name and contact information to the adjacent neighbors in case issues arise when school is in session.

Question/Concern #8:

Where will utilities be coming from?

Applicant's Response:

- The waterline will come down Smith road and Sanitary sewer will be routed through the stump dump and to the South along Middle Creek and tie into an existing pump station along Sunset Lake road.

Question/Concern #9:

Where will construction traffic access the site?

Applicant's Response:

- Most of the construction traffic will access via Thriftwood. But both Derry Downs and Thriftwood are available to the contractor to use.

Question/Concern #10:

Would Mr. Emery be able to get municipal water from the town if he chooses?

Applicant's Response:

- Yes, this would be available for the adjacent residents. He would need to contact the Town of Apex to coordinate this.

Question/Concern #11:

If there's no sewer available would Mr. Emery still be able to get municipal water?

Applicant's Response:

- We believe so, but he would need to coordinate with the Town to verify.

AFFIDAVIT OF CONDUCTING A NEIGHBORHOOD MEETING, SIGN-IN SHEET AND ISSUES/RESPONSES SUBMITTAL

This document is a public record under the North Carolina Public Records Act and may be published on the Town's website or disclosed to third parties.

I, AnnaMaria Taylor, do hereby declare as follows:
Print Name

1. I have conducted a Neighborhood Meeting for the proposed Rezoning, Major Site Plan, Master Subdivision Plan, or Special Use Permit in accordance with UDO Sec. 2.2.7 *Neighborhood Meeting*.

2. The meeting invitations were mailed to the Apex Planning Department, all property owners within 300 feet of the subject property and any neighborhood association that represents citizens in the area via first class mail a minimum of 10 days in advance of the Neighborhood Meeting.

3. The meeting was conducted at Virtual- TEAMS Meeting (location/address) on Wednesday, November 18, 2020 (date) from 5:00 pm (start time) to 7:00 pm (end time).

4. I have included the mailing list, meeting invitation, sign-in sheet, issue/response summary, and zoning map/reduced plans with the application.

5. I have prepared these materials in good faith and to the best of my ability.

11·20·2020
Date

By: AnnaMaria Taylor

STATE OF NORTH CAROLINA
COUNTY OF WAKE

Sworn and subscribed before me, SCOTT D LOWDER a Notary Public for the above State and County, on this the 20th day of NOVEMBER, 20 20.

SCOTT D LOWDER
Notary Public
Rowan County
NORTH CAROLINA

Notary Public
SCOTT D LOWDER
Print Name

My Commission Expires: 4-24-21

H-12- Felton Grove High School Property

N

0 320 640 1,280 ft

1 inch = 600 feet

Disclaimer

*iMaps makes every effort to produce and publish the most current and accurate information possible. However, the maps are produced for information purposes, and are **NOT** surveys. No warranties, expressed or implied ,are provided for the data therein, its use,or its interpretation.*

LEGEND

1. NEW MAJOR COLLECTOR ROAD
2. PARENT DROP-OFF
3. ADMIN. ENTRY
4. BUS DROP-OFF
5. BUS STAGING
6. SERVICE AREA
7. PARKING DECK (STUDENT PARKING)
8. STAFF PARKING
9. STUDENT PARKING
10. MULTI-PURPOSE FIELD
11. TENNIS COURTS
12. VOLLEYBALL
13. SOFTBALL FIELD
14. BASEBALL FIELD
15. STADIUM
16. ATHLETICS PLAZA
17. PEDESTRIAN BRIDGE
18. STREAM CROSSING
19. COURTYARD
20. STORMWATER CONTROL MEASURE

©2020 RATIO ARCHITECTS, INC.

SITE PLAN

RATIO

CLH DESIGN

PROJECT CONTACT INFORMATION

This document is a public record under the North Carolina Public Records Act and may be published on the Town's website or disclosed to third parties.

Development Contacts:

Project Name: H-12 Felton Grove High School Zoning: MD-CZ

Location: 8550 Stephenson Road

Property PIN(s): 0750-54-5646 Acreage/Square Feet: 66.48 acres

Property Owner: Wake County Board of Education

Address: 111 Corning Road, Suite 100

City: Cary State: NC Zip: 27518

Phone: 919-588-3602 Email: amtaylor@wcpss.net

Developer: Wake County Board of Education

Address: 111 Corning Road, Suite 190

City: Cary State: NC Zip: 27518

Phone: 919-588-3602 Fax: N/A Email: amtaylor@wcpss.net

Engineer: CLH Design, P.A.

Address: 400 Regency Forest Drive, Suite 120

City: Cary State: NC Zip: 27518

Phone: 919-319-6716 Fax: N/A Email: rpfeifer@clhdesignpa.com

Builder (if known): Clancy & Theys Construction Company

Address: 516 W Cabarrus St.

City: Raleigh State: NC Zip: 27603

Phone: 919-834-3601 Fax: N/A Email: robertanweiler@clancytheys.com

Please note that Town staff will not have complete information about a proposed development until the application is submitted for review. If you have a question about Town development standards and how they relate to the proposed development, please contact the appropriate staff person listed below.

Town of Apex Department Contacts

Planning Department Main Number (Provide development name or location to be routed to correct planner)	(919) 249-3426
Parks, Recreation & Cultural Resources Department Angela Reincke, Parks Planner	(919) 249-7468
Public Works - Transportation Russell Dalton, Senior Transportation Engineer	(919) 249-3358
Water Resources Department Jessica Bolin, Senior Engineer (Stormwater, Sedimentation & Erosion Control) Stan Fortier, Senior Engineer (Stormwater, Sedimentation & Erosion Control) James Gregg, Utility Engineer (Water & Sewer)	 (919) 249-3537 (919) 249-1166 (919) 249-3324
Electric Utilities Division Rodney Smith, Electric Technical Services Manager	(919) 249-3342

Providing Input to Town Council:

Each Town Council meeting agenda includes a Public Forum time when anyone is permitted to speak for three (3) minutes on any topic with the exception of items listed as Public Hearings for that meeting. The Town Council meets on the 1st and 3rd Tuesdays of each month at 6:00 p.m. (except for holidays, see schedule of meetings at http://www.apexnc.org/838/Agendas-Minutes). You may also contact Town Council by e-mail at AllCouncil@apexnc.org.

Private Agreements and Easement Negotiation:

The Town of Apex cannot enforce private agreements between developers and neighbors and is not a party to the easement and right-of-way negotiation that occurs between developers and neighboring property owners for easements or rights-of-way that are necessary to build the project.

It is recommended that all private agreements be made in writing and that if a property owner feels it necessary, they should obtain private legal counsel in order to protect their interests in both private agreements and during easement negotiations. The only conditions that the Town of Apex can enforce are those conditions that are made a part of the conditional zoning of the property by agreement of the developer and the Town.

As an example, if a developer offers to build a fence for a neighbor to mitigate some impact, the Town can only enforce the construction of the fence if the fence becomes a condition of the rezoning. This would occur by the developer offering the condition as part of their conditional zoning application package or at the Town Council public hearing on the conditional zoning and the Town accepting it as a condition. Private agreements regarding a fence being constructed will not be enforced by the Town.

To request that any agreement with a developer is made a part of the conditional zoning at the time of approval, you may ask at the Town Council public hearing if the agreement is included in the conditions. If it is not, you may request that the Town Council not approve the rezoning without the agreement being included in the conditions (note that it is up to Town Council whether to approve or deny the rezoning but they cannot impose conditions that the applicant does not agree to add). The developer's proposed conditions can be viewed any time after a rezoning is submitted on the Interactive Development Map at: http://apexnc.maps.arcgis.com/apps/OnePane/basicviewer/index.html?appid=fa9ba2017b784030b15ef4da27d9e795

Documentation:

Neighbors to a requested new development and/or rezoning are strongly encouraged to fully document (such as through dated photographs) the condition of their property before any work is initiated for the new development. Stormwater controls installed on developed property are not designed to and will likely not remove 100% of the soil particles transported by stormwater runoff. As a result, creeks and ponds could become cloudy for a period of time after rain events.

COMMON CONSTRUCTION ISSUES & WHO TO CALL

This document is a public record under the North Carolina Public Records Act and may be published on the Town's website or disclosed to third parties.

Noise & Hours of Construction:	**Non-Emergency Police**	**919-362-8661**

Noise from tree removal, grading, excavating, paving, and building structures is a routine part of the construction process. The Town generally limits construction hours from 7:00 a.m. to 8:30 p.m. so that there are quiet times even during the construction process. Note that construction outside of these hours is allowed with special permission from the Town when it makes more sense to have the construction occur at night, often to avoid traffic issues. In addition, the Town limits hours of blasting rock to Monday through Friday from 8:00 a.m. to 5:00 p.m. Report violations of construction hours and other noise complaints to the Non-Emergency Police phone number at 919-362-8661.

Construction Traffic:	**James Misciagno**	**919-372-7470**

Construction truck traffic will be heavy throughout the development process, including but not limited to removal of trees from site, loads of dirt coming in and/or out of the site, construction materials such as brick and wood brought to the site, asphalt and concrete trucks come in to pave, etc. The Town requires a construction entrance that is graveled to try to prevent as much dirt from leaving the site as possible. If dirt does get into the road, the Town can require they clean the street (see "Dirt in the Road" below).

Road Damage & Traffic Control:	**Water Resources – Infrastructure Inspections**	**919-362-8166**

There can be issues with roadway damage, roadway improvements, and traffic control. Potholes, rutting, inadequate lanes/signing/striping, poor traffic control, blocked sidewalks/paths are all common issues that should be reported to Water Resources – Infrastructure Inspections at 919-249-3427. The Town will get NCDOT involved if needed.

Parking Violations:	**Non-Emergency Police**	**919-362-8661**

Unless a neighbor gives permission, there should be no construction parking in neighbors' driveways or on their property. Note that parking in the right-of-way is allowed, but Town regulations prohibit parking within 15 feet of driveways so as not to block sight triangles. Trespassing and parking complaints should be reported to the Non-Emergency Police phone number at 919-362-8661.

Dirt in the Road:	**James Misciagno**	**919-372-7470**

Sediment (dirt) and mud gets into the existing roads due to rain events and/or vehicle traffic. These incidents should be reported to James Misciagno. He will coordinate the cleaning of the roadways with the developer.

Dirt on Properties or in Streams:	**James Misciagno**	**919-372-7470**
	Danny Smith	**Danny.Smith@ncdenr.gov**

Sediment (dirt) can leave the site and get onto adjacent properties or into streams and stream buffers; it is typically transported off-site by rain events. These incidents should be reported to James Misciagno at 919-372-7470 so that he can coordinate the appropriate repairs with the developer. Impacts to the streams and stream buffers should also be reported to Danny Smith (danny.smith@ncdenr.gov) with the State.

Dust:	**James Misciagno**	**919-372-7470**

During dry weather dust often becomes a problem blowing into existing neighborhoods or roadways. These incidents should be reported to James Misciagno at 919-372-7470 so that he can coordinate the use of water trucks onsite with the grading contractor to help control the dust.

Trash:	**James Misciagno**	**919-372-7470**

Excessive garbage and construction debris can blow around on a site or even off of the site. These incidents should be reported to James Misciagno at 919-372-7470. He will coordinate the cleanup and trash collection with the developer/home builder.

Temporary Sediment Basins:	**James Misciagno**	**919-372-7470**

Temporary sediment basins during construction (prior to the conversion to the final stormwater pond) are often quite unattractive. Concerns should be reported to James Misciagno at 919-372-7470 so that he can coordinate the cleaning and/or mowing of the slopes and bottom of the pond with the developer.

Stormwater Control Measures:	**Mike Deaton**	**919-249-3413**

Post-construction concerns related to Stormwater Control Measures (typically a stormwater pond) such as conversion and long-term maintenance should be reported to Mike Deaton at 919-249-3413.

Electric Utility Installation:	**Rodney Smith**	**919-249-3342**

Concerns with electric utility installation can be addressed by the Apex Electric Utilities Department. Contact Rodney Smith at 919-249-3342.

FELTON GROVE HIGH SCHOOL

8550 STEPHENSON ROAD
APEX, NORTH CAROLINA 27539

WAKE COUNTY PUBLIC SCHOOL SYSTEM

60% CONSTRUCTION DOCUMENTS

SITE DATA

PROJECT:	FELTON GROVE HIGH SCHOOL
OWNER:	WAKE COUNTY BOARD OF EDUCATION
OWNER CONTACT:	ANNAMARIA TAYLOR 111 CORNING RD, SUITE 190 CARY, NC 27518 919-588-3602

SITE INFORMATION:

PLANNING JURISDICTION:	TOWN OF APEX
PARCEL PIN #:	0750-54-5646
SITE ADDRESS:	8550 STEPHENSON ROAD APEX, NC
ZONING:	MD-CZ
EXISTING USE:	VACANT
SITE ACREAGE:	68.06 ACRES
PROPOSED USE:	HIGH SCHOOL
STUDENT ENROLLMENT:	2350 STUDENTS
EMPLOYEES:	200 EMPLOYEES
REQUIRED SETBACKS:	25' SIDE/REAR/FRONT
ALLOWED BUILT UPON AREA:	2,027108.16 SF (70%)
PROPOSED BUILT UPON AREA:	21.86 AC (32.9%)
TWO COMMUNITY AMENITIES:	BIKE RACKS, BENCHES (FRONT PLAZA AREA OF THE SCHOOL BUILDING)
FEMA FLOODPLAIN:	N/A (FLOOD MAP NO. 3720075000J, PANEL 0750)

BUILDING INFORMATION:

PROPOSED BUILDING HEIGHT:	60'-0"	
EXISTING BUILDING FLOOR AREA:	0 SF	
PROPOSED GROSS FLOOR AREA:	363,072 SF	
AREA PER FLOOR:	FIRST FLOOR	94,079 SF
	SECOND FLOOR	197,390 SF
	GROUND FLOOR	71, 603 SF
	MECHANICAL PENTHOUSE	10,294 SF
	MECHANICAL MEZZANINE	20,582 SF
	AUX. ATHLETICS BLDGS	5,723 SF
AUTOMATIC FIRE SPRINKLER SYSTEM:	YES	
SITE HISTORIC STRUCTURES:	NONE	
TYPE OF CONSTRUCTION:	1B	
NUMBER OF CLASSROOMS:	110 CLASSROOMS	
PROPOSED SQUARE FOOTAGE BY USE:		
	EDUCATION: 147,346 SF	
	BUSINESS: 17,064 SF	
	ASSEMBLY: 53,671 SF	

TOWN OF APEX PARKING REQUIREMENT

REQUIRED:	10 PER CLASSROOM = 110 X 10 = 1,100 SPACES
PROPOSED:	631 PARKING SPACES WITHIN PARKING DECK 469 SURFACE SPACES (21 HANDICAP SPACES ARE PROVIDED, 5 OF WHICH ARE VAN ACCESSIBLE SPACES) 2 ELECTRIC VEHICLE CHARGING STATIONS WITHIN PARKING DECK
REQUIRED BIKE PARKING:	1 PER 40 STUDENTS & EMPLOYEES AT PLANNED CAPACITY OR NO MORE THAN 26 BICYCLE SPACES.
PROPOSED BIKE PARKING:	56 BICYCLE SPACES AND 28 BICYCLE RACKS (2 BIKE SPACES PER RACK) ARE PROVIDED THROUGHOUT THE SITE.
BENCHES PROVIDED:	14 BENCHES

CARPOOL STACKING:

REQUIRED PER MSTA SCHOOL CALCULATOR:	1,804 LF
PROVIDED:	3,100 LF

RESOURCE CONSERVATION AREA (RCA):

TOTAL GROSS SITE AREA: 2,964,693.6 SF (68.06 ACRES)

REQUIRED RCA (20% GROSS SITE AREA):	592,939 SF = 13.612 ACRES
PROVIDED RCA:	592,939 SF = 13.612 ACRES

SITE DATA CONTINUED

STORMWATER DATA

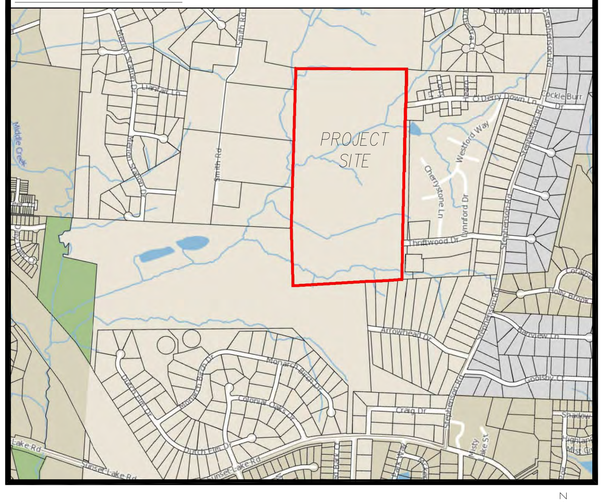
DISTURBED AREA:	2,613,600 SF (60 AC)
EXISTING IMPERVIOUS:	0 SF (0 AC)
PROPOSED IMPERVIOUS:	848,498 SF (19.48 AC)

*THIS SITE IS NOT LOCATED WITHIN THE DESIGNATED FEMA FLOODPLAIN AS SHOWN ON THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP NO. 3720075000J, PANEL 0750, EFFECTIVE DATE MAY 2, 2008.

PROJECT CONTACT:

OWNER:	WAKE COUNTY PUBLIC SCHOOL SYSTEM 111 CORNING ROAD, SUITE 190 CARY, NC 27518
OWNER CONTACT:	ANNAMARIA TAYLOR, SENIOR FACILITIES PLANNER PHONE 919-588-3602
DESIGNER:	CLH DESIGN, P.A. 400 REGENCY FOREST DRIVE, SUITE 120 CARY, NC 27518
DESIGNER CONTACT:	RENEE PFEIFER, PLA, ASLA PHONE 919-319-6716

VICINITY MAP



N

SCALE: 1"= 800'

DRAWING INDEX:

C-00.00	COVER
C-00.01	SITE OVERALL PLAN
C-01.00	STAKING OVERALL PLAN
C-01.01 - C-01.09	STAKING PLANS
C-01.10	PAVEMENT MARKING & SIGNAGE OVERALL PLAN
C-01.11 - C-01.19	PAVEMENT MARKING & SIGNAGE PLANS
C-02.00	DEMOLITION & EXISTING CONDITIONS OVERALL PLAN
C-02.01 - C-02.09	DEMOLITION & EXISTING CONDITIONS PLANS
C-03.00	GRADING OVERALL PLAN
C-03.00B	STORM CHART
C-03.01 - C-03.09	GRADING PLANS
C-03.10	OVERALL DRAINAGE MAP
C-03.11	PRE- DEVELOPMENT DRAINAGE MAP
C-03.12	POST-DEVELOPMENT DRAINAGE MAP
C-05.00	UTILITY OVERALL PLAN
C-05.01 - C-05.09	UTILITY PLANS
C-05.10	OVERALL OFF-SITE UTILITY PLAN
C-05.11	OVERALL SEWER DRAINAGE MAP
C-05.12	
C-05.13 - C-05.26	SEWER PLAN & PROFILES
C-05.27 - C-05.41	WATER PLAN & PROFILES
C-07.00 - C-07.05	EROSION CONTROL DETAILS
C-08.00 - C-08.03	UTILITY & STORMWATER DETAILS
C-09.00 - C-09.08	PAVING & HARDSCAPE DETAILS
L-01.01 - L-01.07	RESOURCE CONSERVATION AREAS
L-02.01	COURTYARD PLAN ENLARGEMENT BASE BID
L-02.03	SOUTH ENTRY PLAN ENLARGEMENT
L-02.04	NORTH ENTRY PLAN ENLARGEMENT
L-04.01 - L-04.07	PLANTING PLANS
L-05.01 - L-05.06	SITE DETAILS
L-06.01	IRRIGATION PLAN DIAGRAM
	DUKE ENERGY PROGRESS LIGHTING PLAN 1
	DUKE ENERGY PROGRESS LIGHTING PLAN 2
SL-01.01	STADIUM LIGHTING PLAN
A-01.00	GENERAL PROJECT INFORMATION
A-01.01	BUILDING FLOOR PLAN
A-01.02 - A-01.11	BUILDING EXTERIOR ELEVATIONS
A-01.12	ATHLETIC FLOOR PLANS
A-01.13 - A-01.15	EXTERIOR ELEVATIONS
A-01.16	GARAGE FLOOR PLANS
A-01.17 - A01.18	EXTERIOR ELEVATIONS
E-05.01	ELECT SITE PLAN NORTH
E-05.02	ELECT SITE PLAN SOUTH
S-02.10	SITE WALL OVERALL PLAN
S-02.11 - S-02.20	SITE WALL PLANS
S-02.21	SITE WALL DETAILS AND SECTIONS
S-02.23	SITE WALL DETAILS AND SECTIONS
SX-01.01	SEGMENTAL WALL SPECIFICATIONS
SX-01.02	SEGMENTAL WALL DETAILS
SX-01.03	SEGMENTAL WALL PLAN
SX-01.04	SEGMENTAL WALL ELEVATION

Felton Grove
High School
8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Ralelgh, North Carollna 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Ralelgh, North Carollna 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineerlng
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrlsville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

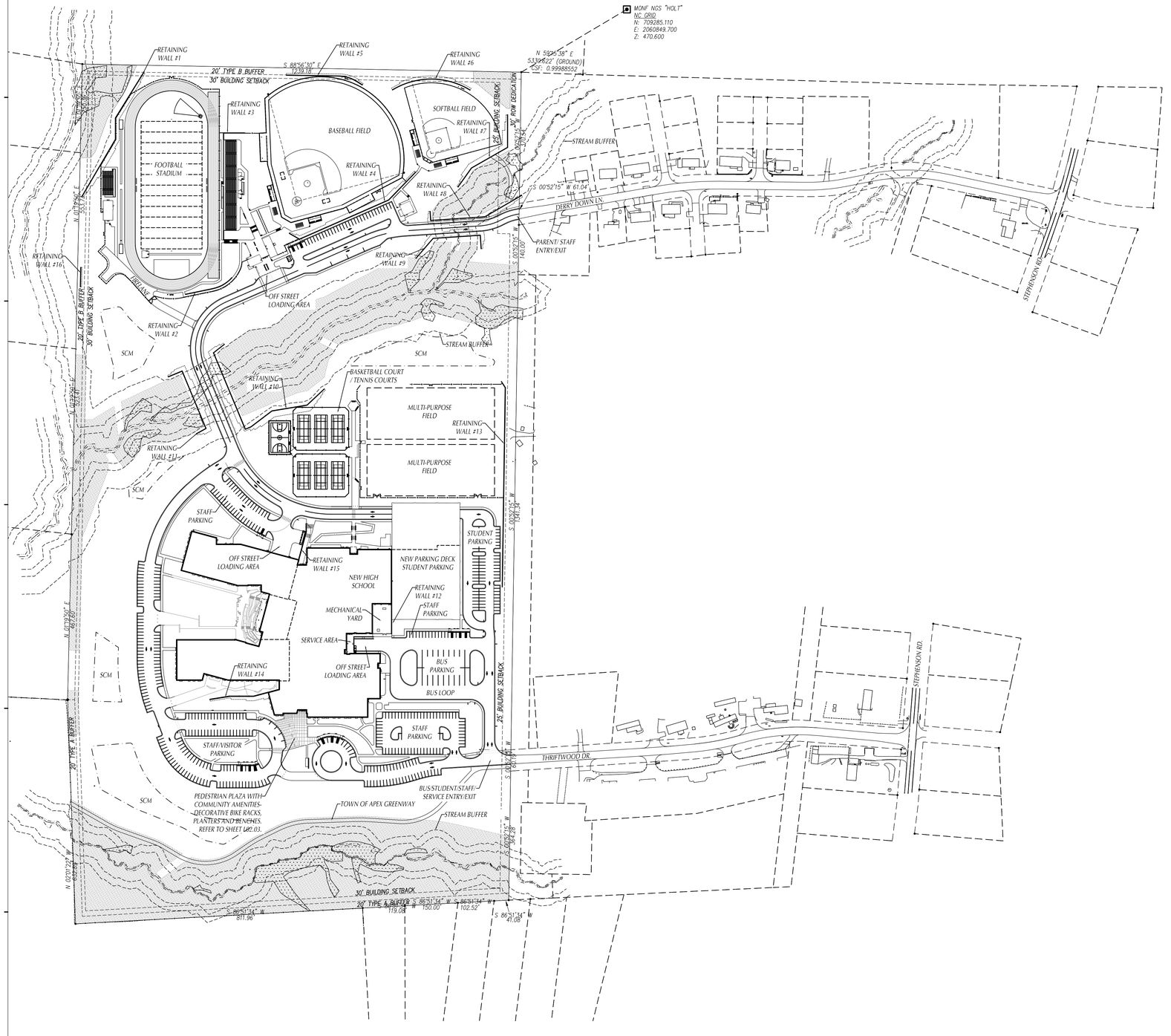
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

SHEET TITLE
COVER

SHEET NUMBER
C-00.00



TOWN OF APEX REQUIRED NOTES

1. IF BUILDINGS ARE TO BE DEMOLISHED, A COPY OF THE DEMOLITION NOTIFICATION FROM THE NC HEALTH HAZARD CONTROL UNIT AND AN ASBESTOS INSPECTION REPORT FROM A NC ACCREDITED ASBESTOS INSPECTOR MUST ACCOMPANY THE APPLICATION FOR THE DEMOLITION PERMIT WHICH MUST BE OBTAINED PRIOR TO START OF THE DEMOLITION.
2. ALL GRADING AND SUPPORT STRUCTURES ASSOCIATED WITH ANY RETAINING STRUCTURE SHALL NOT ENCROACH INTO ANY REQUIRED BUFFER OR PROTECTED AREA (E.G. RCA, THE CRITICAL ROOT ZONES OF TREES, PUBLIC UTILITY EASEMENTS AND RIGHT-OF-WAY), AND SHALL BE CONTAINED ENTIRELY ON SITE.
3. SITE ELEMENTS REQUIRED TO SATISFY RECREATIONAL REQUIREMENTS SUCH AS, BUT NOT LIMITED TO, PLAY FIELDS, GREENWAY TRAILS AND ITEMS TYPICALLY ASSOCIATED WITH THEM (BENCHES, TRASH CONTAINERS, SIGNS, ETC.) MUST MEET ANY APPLICABLE STANDARDS FOUND IN THE TOWN OF APEX STANDARD SPECIFICATIONS AND STANDARD DETAILS AND THE REQUIREMENTS OF THE TOWN OF APEX PARKS AND RECREATION DEPARTMENT.
4. THE SCREENING OF LOADING DOCKS, ROLL-OUT TRASH CONTAINERS, DUMPSTERS, OUTDOOR STORAGE, MECHANICAL AND HVAC EQUIPMENT, AND SIMILAR FACILITIES ON THE ROOF, GROUND, OR BUILDING SHALL MEET THE REQUIREMENTS OF UDO SEC. 8.2.8. SPECIFICALLY, SCREENING MUST BE DONE SO THAT:
   - 4.1. IT IS INCORPORATED INTO THE OVERALL DESIGN THEME OF THE BUILDING AND LANDSCAPE.
   - 4.2. SCREENING MATERIALS ARE NOT DIFFERENT FROM OR INFERIOR TO THE PRINCIPAL MATERIALS OF THE BUILDING OR LANDSCAPE, AND ARE SIMILAR IN MATERIAL AND COLOR.
   - 4.3. SCREENED ITEMS ARE OUT OF VIEW FROM ADJACENT PROPERTIES AND PUBLIC STREETS, AND A TOTALLY OPAQUE SCREEN IS ACHIEVED.
   - 4.4. ANY GROUND-MOUNTED HVAC OR OTHER MECHANICAL OR UTILITY EQUIPMENT SIX(6) FEET TALL OR HIGHER MUST BE FENCED AND LANDSCAPED.
   - 4.5. DUMPSTER ENCLOSURES MUST MEET THE ABOVE REQUIREMENTS PLUS BE EIGHT(8) FEET TALL OR THE HEIGHT OF THE DUMPSTER, WHICHEVER IS GREATER, AND BE BUILT OF MASONRY MATERIAL WITH OPAQUE GATES. WHERE PRACTICABLE, SHRUBS OR OTHER PLANTS MUST BE PLANTED OUTSIDE THE ENCLOSURE TO VISUALLY SOFTEN THE APPEARANCE.
5. ALL REQUIRED SITE ELEMENTS SHOWN WITHIN A PARTICULAR PHASE MUST BE INSTALLED BEFORE A FINAL CERTIFICATE OF OCCUPANCY MAY BE ISSUED FOR ANY BUILDING WITHIN THAT PHASE.
6. PRIOR TO SCHEDULING A FINAL SITE INSPECTION, ALL SITE ITEMS (E.G. LIGHTING, LANDSCAPING, MULCHING, SCREENING FOR DUMPSTERS, MECHANICAL EQUIPMENT, HVAC, ETC., SEEDING& SITE STABILIZATION, AND PARKING AND PAVEMENT MARKING) MUST BE COMPLETED.
7. INDIVIDUAL SIGNS ARE NOT APPROVED AS PART OF SITE PLAN APPROVAL PROCESS. A SEPARATE SIGN PERMIT MUST BE OBTAINED PRIOR TO INSTALLATION OF THE SIGN. MULTIPLE USE LOTS, NON-RESIDENTIAL SUBDIVISIONS, AND MULTIPLE TENANT LOTS MUST SUBMIT A MASTER SIGN PLAN FOR APPROVAL.
8. RETAINING SYSTEMS PROVIDING A CUMULATIVE VERTICAL RELIEF GREATER THAN FIVE FEET IN HEIGHT WITHIN A HORIZONTAL DISTANCE OF 50 FEET OR LESS, INCLUDING RETAINING WALLS OR MECHANICALLY STABILIZED EARTH WALLS, SHALL BE DESIGNED AND CONSTRUCTED UNDER THE RESPONSIBLE CHARGE OF A REGISTERED PROFESSIONAL ENGINEER AND COMPLY IN ALL ASPECTS WITH THE NC BUILDING CODE SEC. 1610. RETAINING SYSTEMS MEETING THESE CRITERIA WILL REQUIRE A SEPARATE BUILDING PERMIT PRIOR TO THE START OF WORK. ALL RETAINING WALLS AND OTHER RETENTION STRUCTURES MUST BE INTEGRALLY TINTED OR STAINED A MEDIUM OR DARK BROWN OR RUST COLOR OR BE COVERED WITH A MASONRY VENEER THAT IS A MEDIUM OR DARK BROWN OR RUST COLOR.
9. A GRADING PERMIT, WHEN APPLICABLE, MAY ONLY BE ISSUED BY THE BUILDING INSPECTIONS DIVISION AFTER THE INSTALLATION AND APPROVAL OF TREE PROTECTION FENCING AND S&E MEASURES AND A CERTIFICATE OF COMPLIANCE HAS BEEN ISSUED BY THE WATER RESOURCES DEPARTMENT.

LEGEND

RESOURCE CONSERVATION AREA

GRAPHIC SCALE

150 0 75 150 300 600

(IN FEET)
1 inch = 150 ft.

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

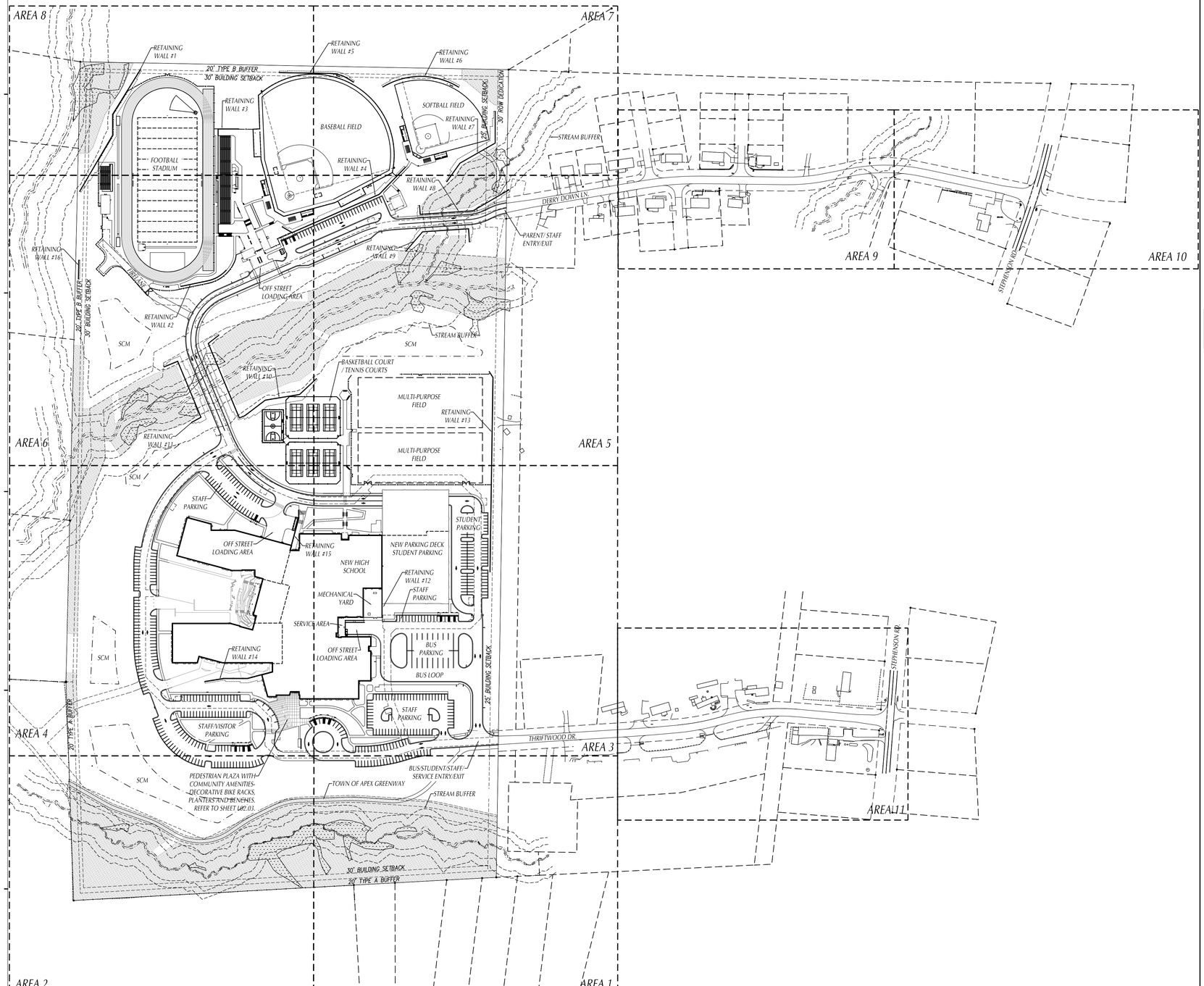
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

SHEET TITLE
SITE
OVERALL
PLAN

SHEET NUMBER
C-00.01



TOWN OF APEX REQUIRED NOTES

1. IF BUILDINGS ARE TO BE DEMOLISHED, A COPY OF THE DEMOLITION NOTIFICATION FROM THE NC HEALTH HAZARD CONTROL UNIT AND AN ASBESTOS INSPECTION REPORT FROM A NC ACCREDITED ASBESTOS INSPECTOR MUST ACCOMPANY THE APPLICATION FOR THE DEMOLITION PERMIT WHICH MUST BE OBTAINED PRIOR TO START OF THE DEMOLITION.
2. ALL GRADING AND SUPPORT STRUCTURES ASSOCIATED WITH ANY RETAINING STRUCTURE SHALL NOT ENCROACH INTO ANY REQUIRED BUFFER OR PROTECTED AREA (E.G. RCA, THE CRITICAL ROOT ZONES OF TREES, PUBLIC UTILITY EASEMENTS AND RIGHT-OF-WAY), AND SHALL BE CONTAINED ENTIRELY ON SITE.
3. SITE ELEMENTS REQUIRED TO SATISFY RECREATIONAL REQUIREMENTS SUCH AS, BUT NOT LIMITED TO, PLAY FIELDS, GREENWAY TRAILS AND ITEMS TYPICALLY ASSOCIATED WITH THEM (BENCHES, TRASH CONTAINERS, SIGNS, ETC.) MUST MEET ANY APPLICABLE STANDARDS FOUND IN THE TOWN OF APEX STANDARD SPECIFICATIONS AND STANDARD DETAILS AND THE REQUIREMENTS OF THE TOWN OF APEX PARKS AND RECREATION DEPARTMENT.
4. THE SCREENING OF LOADING DOCKS, ROLL-OUT TRASH CONTAINERS, DUMPSTERS, OUTDOOR STORAGE, MECHANICAL AND HVAC EQUIPMENT, AND SIMILAR FACILITIES ON THE ROOF, GROUND, OR BUILDING SHALL MEET THE REQUIREMENTS OF UDO SEC. 8.2.8. SPECIFICALLY, SCREENING MUST BE DONE SO THAT:
   - 4.1. IT IS INCORPORATED INTO THE OVERALL DESIGN THEME OF THE BUILDING AND LANDSCAPE.
   - 4.2. SCREENING MATERIALS ARE NOT DIFFERENT FROM OR INFERIOR TO THE PRINCIPAL MATERIALS OF THE BUILDING OR LANDSCAPE, AND ARE SIMILAR IN MATERIAL AND COLOR.
   - 4.3. SCREENED ITEMS ARE OUT OF VIEW FROM ADJACENT PROPERTIES AND PUBLIC STREETS, AND A TOTALLY OPAQUE SCREEN IS ACHIEVED.
   - 4.4. ANY GROUND-MOUNTED HVAC OR OTHER MECHANICAL OR UTILITY EQUIPMENT SIX(6) FEET TALL OR HIGHER MUST BE FENCED AND LANDSCAPED.
   - 4.5. DUMPSTER ENCLOSURES MUST MEET THE ABOVE REQUIREMENTS PLUS BE EIGHT(8) FEET TALL OR THE HEIGHT OF THE DUMPSTER, WHICHEVER IS GREATER, AND BE BUILT OF MASONRY MATERIAL WITH OPAQUE GATES. WHERE PRACTICABLE, SHRUBS OR OTHER PLANTS MUST BE PLANTED OUTSIDE THE ENCLOSURE TO VISUALLY SOFTEN THE APPEARANCE.
5. ALL REQUIRED SITE ELEMENTS SHOWN WITHIN A PARTICULAR PHASE MUST BE INSTALLED BEFORE A FINAL CERTIFICATE OF OCCUPANCY MAY BE ISSUED FOR ANY BUILDING WITHIN THAT PHASE.
6. PRIOR TO SCHEDULING A FINAL SITE INSPECTION, ALL SITE ITEMS (E.G. LIGHTING, LANDSCAPING, MULCHING, SCREENING FOR DUMPSTERS, MECHANICAL EQUIPMENT, HVAC, ETC., SEEDING& SITE STABILIZATION, AND PARKING AND PAVEMENT MARKING) MUST BE COMPLETED.
7. INDIVIDUAL SIGNS ARE NOT APPROVED AS PART OF SITE PLAN APPROVAL PROCESS. A SEPARATE SIGN PERMIT MUST BE OBTAINED PRIOR TO INSTALLATION OF THE SIGN. MULTIPLE USE LOTS, NON-RESIDENTIAL SUBDIVISIONS, AND MULTIPLE TENANT LOTS MUST SUBMIT A MASTER SIGN PLAN FOR APPROVAL.
8. RETAINING SYSTEMS PROVIDING A CUMULATIVE VERTICAL RELIEF GREATER THAN FIVE FEET IN HEIGHT WITHIN A HORIZONTAL DISTANCE OF 50 FEET OR LESS, INCLUDING RETAINING WALLS OR MECHANICALLY STABILIZED EARTH WALLS, SHALL BE DESIGNED AND CONSTRUCTED UNDER THE RESPONSIBLE CHARGE OF A REGISTERED PROFESSIONAL ENGINEER AND COMPLY IN ALL ASPECTS WITH THE NC BUILDING CODE SEC. 1610. RETAINING SYSTEMS MEETING THESE CRITERIA WILL REQUIRE A SEPARATE BUILDING PERMIT PRIOR TO THE START OF WORK. ALL RETAINING WALLS AND OTHER RETENTION STRUCTURES MUST BE INTEGRALLY TINTED OR STAINED A MEDIUM OR DARK BROWN OR RUST COLOR OR BE COVERED WITH A MASONRY VENEER THAT IS A MEDIUM OR DARK BROWN OR RUST COLOR.
9. A GRADING PERMIT, WHEN APPLICABLE, MAY ONLY BE ISSUED BY THE BUILDING INSPECTIONS DIVISION AFTER THE INSTALLATION AND APPROVAL OF TREE PROTECTION FENCING AND S&E MEASURES AND A CERTIFICATE OF COMPLIANCE HAS BEEN ISSUED BY THE WATER RESOURCES DEPARTMENT.

LEGEND

RESOURCE CONSERVATION AREA

GRAPHIC SCALE

150 0 75 150 300 600

(IN FEET)
1 inch = 150 ft.

MAGNETIC

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Ralegh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

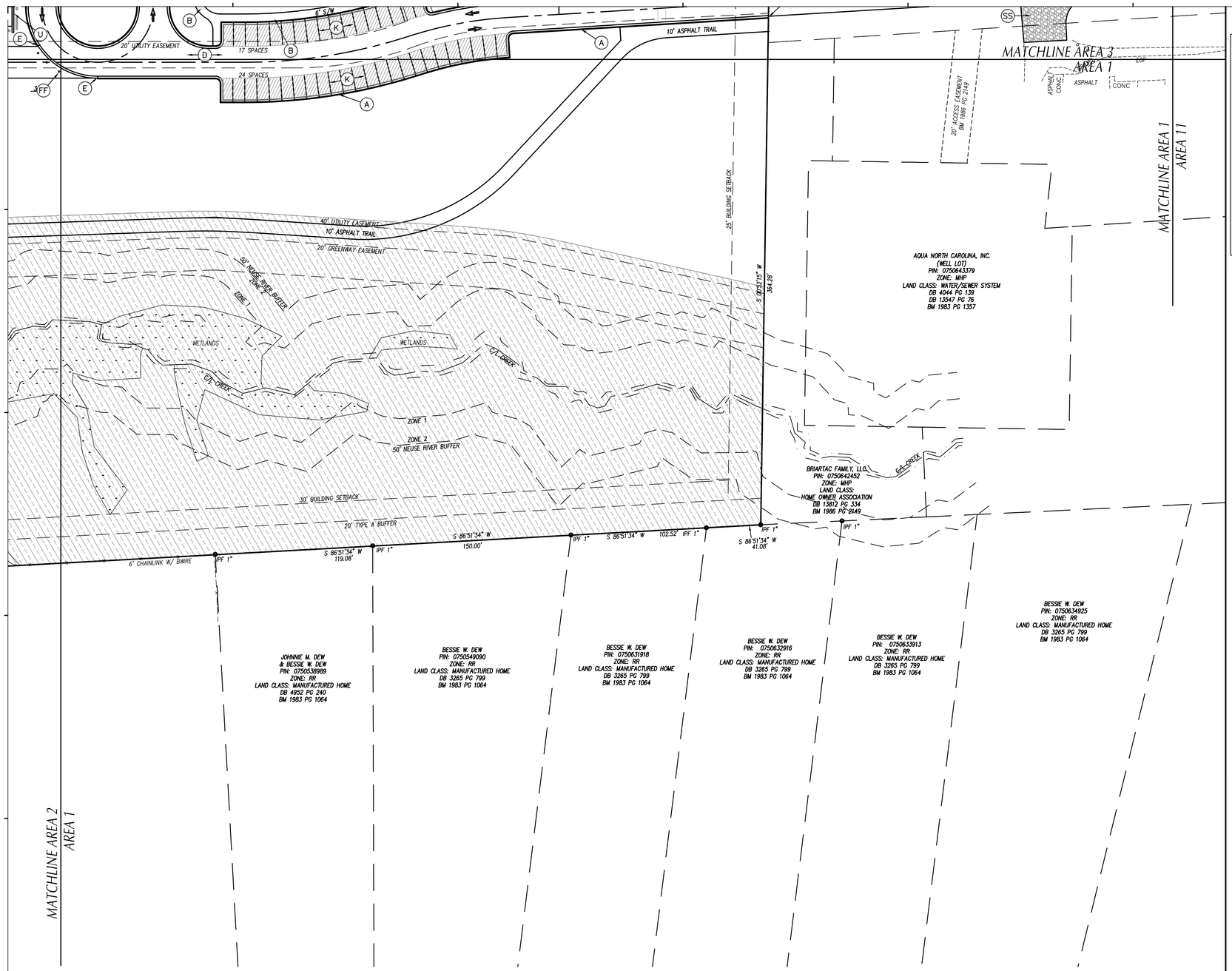
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE MADE OF IT WITHOUT PRIOR AUTHORIZATION SHALL BE MADE EXCEPT BY WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

SHEET TITLE
STAKING PLAN OVERALL

SHEET NUMBER
C-01.00



GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH ALL TOWN OF APEX AND NCDOT STANDARDS AND SPECIFICATIONS.
2. ALL DIMENSIONS SHOWN ARE TO FACE OF CURB AND FACE OF BUILDING WALL, UNLESS OTHERWISE SHOWN.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFICATION OF ALL DIMENSIONS SHOWN AND CONTACT THE ARCHITECT IF ANY DISCREPANCIES OCCUR.
4. CONSTRUCTION STAKE OUT IS THE RESPONSIBILITY OF THE CONTRACTOR.
5. SEE PAVEMENT MARKING AND SIGNAGE SHEETS C01.06 – C01.11 FOR SIGNAGE AND STRIPING PLANS.
6. ALL FACE OF RADIUS' ARE 4 FT UNLESS OTHERWISE SHOWN.
7. ALL PARKING SPACES SHALL BE 9' WIDE X 18' DEEP MIN.
8. (HC) DENOTES ACCESSIBLE PARKING SPACE.
9. (HC-VAN) DENOTES VAN ACCESSIBLE PARKING SPACE.
10. ANY AND ALL LANDSCAPING, EXISTING TREES OR SHRUBS TO REMAIN WHICH ARE DAMAGED DURING DEMOLITION OR CONSTRUCTION SHALL BE REPLACED BY THE CONTRACTOR UTILIZING A LICENSED LANDSCAPE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
11. CONTRACTOR SHALL SUBMIT SCALED PLANS OF ALL SCORING/JOINTS FOR APPROVAL BY ARCHITECT 30 DAYS MINIMUM PRIOR TO INSTALLATION.
12. THE CROSS-SLOPE ON ALL SIDEWALKS SHALL BE A MAXIMUM OF 2.0%
13. NO WORK SHALL BE PERFORMED ON RIGHT-OF-WAYS OR ADJACENT PROPERTIES UNTIL THE OWNER NOTIFIES CONTRACTOR IN WRITING OF PROCUREMENT OF APPROPRIATE PERMITS, EASEMENTS, AGREEMENTS, OR RIGHTS-OF-WAY.

KEY NOTES

- (A) 24" CONCRETE CURB & GUTTER, SEE DETAIL SHEET C-09.00.
- (B) CONCRETE SIDEWALK, SEE DETAIL SHEET C-09.00.
- (C) CONCRETE WHEELSTOP, SEE DETAIL SHEET C-09.01.
- (D) 'HEAVY' DUTY ASPHALT PAVEMENT, SEE DETAIL SHEET C-09.01.
- (E) STANDARD CURB & GUTTER TERMINUS, SEE DETAIL SHEET C-09.00.
- (F) CONCRETE FLUSH WITH PAVEMENT, SEE DETAIL SHEET C-09.00.
- (G) ACCESSIBLE CURB RAMP, SEE DETAIL SHEET C-09.02.
- (H) ACCESSIBLE PARKING, SEE SIGNAGE AND STRIPING PLAN SHEET C-01.10-C-01.19.
- (I) TOWN OF APEX 30" CONCRETE CURB & GUTTER, SEE DETAIL SHEET C-09.02.
- (J) CONCRETE SERVICE COURT WITH MECHANICAL EQUIPMENT, SEE MECHANICAL PLANS FOR EQUIPMENT LAYOUT & RELATED INFORMATION.
- (K) LIGHT DUTY ASPHALT PAVEMENT. SEE DETAIL C-09.01.
- (L) PASSENGER/BUS LOADING ZONE, SEE DETAIL SHEET C-09.02.
- (M) SEE ARCHITECTURAL PLANS FOR CANOPY, SCREEN AND STRUCTURAL WALLS, BUILDING COLUMNS, LOADING DOCK, RAMPS, STAIRS, HANDRAILS, GUARDRAILS, GATES, AND BOLLARDS.
- (N) BLACK VINYL COATED CHAIN LINK FENCE, SEE DETAIL SHEET C-09.00.
- (O) BLACK VINYL COATED CHAIN LINK GATE, SEE DETAIL SHEET C-09.00.
- (P) HEAVY DUTY CONCRETE PAVEMENT, SEE DETAIL SHEET C-09.00.
- (Q) CONCERTE DRIVEWAY APRON, SEE DETAIL C-09.01.
- (R) STAINLESS STEEL BOLLARD, SEE SPECIFICATIONS AND DETAIL SHEET L-05.01.
- (S) TRANSFORMER, SEE PLUMBING, MECHANICAL & ELECTRICAL PLANS.
- (T) DUMPSTERS (REFUSE & RECYCLING), PROVIDED BY OWNER.
- (U) MONUMENT SIGN AND EASEMENT, SEE ARCHITECTURAL PLANS.
- (V) BENCH, SEE SPECIFICATIONS AND DETAIL SHEET C-09.02.
- (W) BIKE RACK, SEE DETAIL SHEET C-09.02 AND SPECIFICATIONS.
- (X) TRASH RECEPTACLE, SEE SPECIFICATIONS.
- (Y) SITE SEAT WALL, SEE DETAIL SHEET C-09.02.
- (Z) SOFTBALL FIELD, SEE DETAIL SHEET C-09.05.
- (AA) BASKETBALL COURT, SEE DETAIL SHEET C-09.08.
- (BB) TENNIS COURTS, SEE DETAIL SHEET C-09.06.
- (CC) FOOTBALL FIELD AND TRACK, SEE DETAIL SHEET C-09.07.
- (DD) BASEBALL FIELD, SEE DETAIL SHEET C-09.03 AND C-09.04.
- (EE) TRAFFIC GUARDRAIL, SEE DETAIL SHEET C09.01.
- (FF) STAINLESS STEEL REMOVABLE BOLLARD, SEE SPECIFICATIONS AND DETAIL SHEET C-09.02.
- (GG) SITE STAIRS, SEE DETAIL SHEET C-00.00.
- (HH) PIPE GATE, SEE DETAIL SHEET C-09.01.
- (II) CAST-IN-PLACE RETAINING WALL, SEE STRUCTURAL PLANS.
- (JJ) SEGMENTAL RETAINING WALL, SEE SEGMENTAL RETAINING WALL PLANS.
- (KK) SITE RAMP, SEE DETAIL SHEET C-09.01.
- (LL) HIGH JUMP, SEE DETAIL SHEET C-09.08.
- (MM) POLE VAULT LANDING, SEE DETAIL SHEET C-09.08.
- (NN) LONG JUMP AND TRIPLE JUMP, SEE DETAIL SHEET C-09.08.
- (OO) SHOT PUT, SEE DETAIL SHEET C-09.08.
- (PP) WOOD RETAINING WALL, SEE DETAIL SHEET **C-0.00**.
- (QQ) TRAFFIC TABLE, SEE DETAIL SHEET **C-0.00**.
- (RR) SCOREBOARD AND FLAGPOLE, SEE SPECIFICATIONS.
- (SS) REPAIR EX GRAVEL DRIVEWAY, SEE DETAIL SHEET **C-0.00**.
- (TT) MEDIUM DUTY ASPHALT PAVEMENT. SEE DETAIL C-09.01.

LEGEND

RESOURCE CONSERVATION AREA

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

MAGNETIC

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Ralelgh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

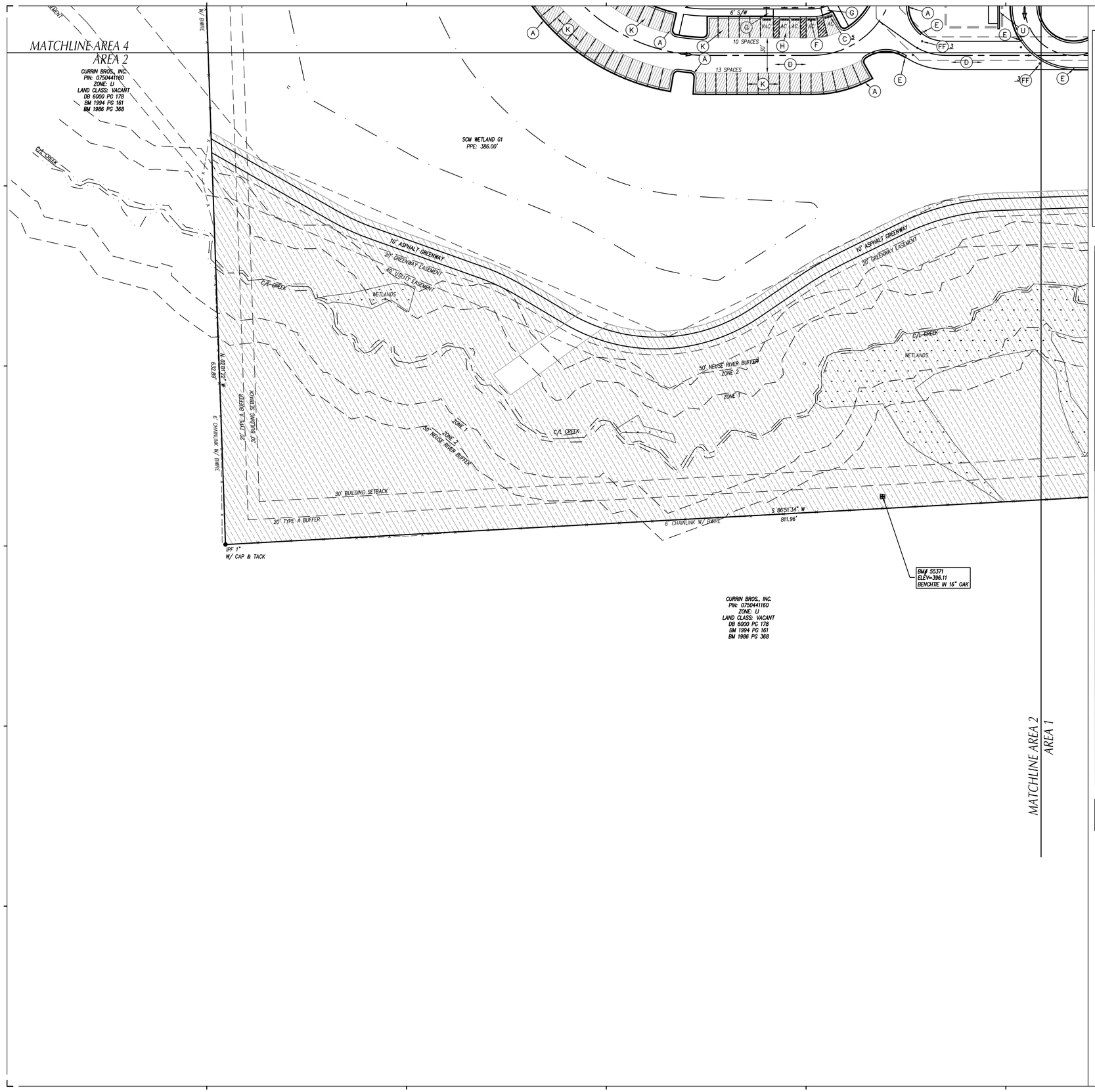
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

SHEET TITLE
STAKING
PLAN
AREA_1

SHEET NUMBER
C-01.01



GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH ALL TOWN OF APEX AND NCDOT STANDARDS AND SPECIFICATIONS.
2. ALL DIMENSIONS SHOWN ARE TO FACE OF CURB AND FACE OF BUILDING WALL, UNLESS OTHERWISE SHOWN.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFICATION OF ALL DIMENSIONS SHOWN AND CONTACT THE ARCHITECT IF ANY DISCREPANCIES OCCUR.
4. CONSTRUCTION STAKE OUT IS THE RESPONSIBILITY OF THE CONTRACTOR.
5. SEE PAVEMENT MARKING AND SIGNAGE SHEETS C01.06 – C01.11 FOR SIGNAGE AND STRIPING PLANS.
6. ALL FACE OF RADIUS' ARE 4 FT UNLESS OTHERWISE SHOWN.
7. ALL PARKING SPACES SHALL BE 9' WIDE X 18' DEEP MIN.
8. (HC) DENOTES ACCESSIBLE PARKING SPACE.
9. (HC-VAN) DENOTES VAN ACCESSIBLE PARKING SPACE.
10. ANY AND ALL LANDSCAPING, EXISTING TREES OR SHRUBS TO REMAIN WHICH ARE DAMAGED DURING DEMOLITION OR CONSTRUCTION SHALL BE REPLACED BY THE CONTRACTOR UTILIZING A LICENSED LANDSCAPE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
11. CONTRACTOR SHALL SUBMIT SCALED PLANS OF ALL SCORING/JOINTS FOR APPROVAL BY ARCHITECT 30 DAYS MINIMUM PRIOR TO INSTALLATION.
12. THE CROSS-SLOPE ON ALL SIDEWALKS SHALL BE A MAXIMUM OF 2.0%
13. NO WORK SHALL BE PERFORMED ON RIGHT-OF-WAYS OR ADJACENT PROPERTIES UNTIL THE OWNER NOTIFIES CONTRACTOR IN WRITING OF PROCUREMENT OF APPROPRIATE PERMITS, EASEMENTS, AGREEMENTS, OR RIGHTS-OF-WAY.

KEY NOTES

- (A) 24" CONCRETE CURB & GUTTER, SEE DETAIL SHEET C-09.00.
- (B) CONCRETE SIDEWALK, SEE DETAIL SHEET C-09.00.
- (C) CONCRETE WHEELSTOP, SEE DETAIL SHEET C-09.01.
- (D) "HEAVY" DUTY ASPHALT PAVEMENT, SEE DETAIL SHEET C-09.01.
- (E) STANDARD CURB & GUTTER TERMINUS, SEE DETAIL SHEET C-09.00.
- (F) CONCRETE FLUSH WITH PAVEMENT, SEE DETAIL SHEET C-09.00.
- (G) ACCESSIBLE CURB RAMP, SEE DETAIL SHEET C-09.02.
- (H) ACCESSIBLE PARKING, SEE SIGNAGE AND STRIPING PLAN SHEET C-01.10-C-01.19.
- (I) TOWN OF APEX 30" CONCRETE CURB & GUTTER, SEE DETAIL SHEET C-09.02.
- (J) CONCRETE SERVICE COURT WITH MECHANICAL EQUIPMENT, SEE MECHANICAL PLANS FOR EQUIPMENT LAYOUT & RELATED INFORMATION.
- (K) LIGHT DUTY ASPHALT PAVEMENT. SEE DETAIL C-09.01.
- (L) PASSENGER/BUS LOADING ZONE, SEE DETAIL SHEET C-09.02.
- (M) SEE ARCHITECTURAL PLANS FOR CANOPY, SCREEN AND STRUCTURAL WALLS, BUILDING COLUMNS, LOADING DOCK, RAMPS, STAIRS, HANDRAILS, GUARDRAILS, GATES, AND BOLLARDS.
- (N) BLACK VINYL COATED CHAIN LINK FENCE, SEE DETAIL SHEET C-09.00.
- (O) BLACK VINYL COATED CHAIN LINK GATE, SEE DETAIL SHEET C-09.00.
- (P) HEAVY DUTY CONCRETE PAVEMENT, SEE DETAIL SHEET C-09.00.
- (Q) CONCERTE DRIVEWAY APRON, SEE DETAIL C-09.01.
- (R) STAINLESS STEEL BOLLARD, SEE SPECIFICATIONS AND DETAIL SHEET L-05.01.
- (S) TRANSFORMER, SEE PLUMBING, MECHANICAL & ELECTRICAL PLANS.
- (T) DUMPSTERS (REFUSE & RECYCLING), PROVIDED BY OWNER.
- (U) MONUMENT SIGN AND EASEMENT, SEE ARCHITECTURAL PLANS.
- (V) BENCH, SEE SPECIFICATIONS AND DETAIL SHEET C-09.02.
- (W) BIKE RACK, SEE DETAIL SHEET C-09.02 AND SPECIFICATIONS.
- (X) TRASH RECEPTACLE, SEE SPECIFICATIONS.
- (Y) SITE SEAT WALL, SEE DETAIL SHEET C-09.02.
- (Z) SOFTBALL FIELD, SEE DETAIL SHEET C-09.05.
- (AA) BASKETBALL COURT, SEE DETAIL SHEET C-09.08.
- (BB) TENNIS COURTS, SEE DETAIL SHEET C-09.06.
- (CC) FOOTBALL FIELD AND TRACK, SEE DETAIL SHEET C-09.07.
- (DD) BASEBALL FIELD, SEE DETAIL SHEET C-09.03 AND C-09.04.
- (EE) TRAFFIC GUARDRAIL, SEE DETAIL SHEET C09.01.
- (FF) STAINLESS STEEL REMOVABLE BOLLARD, SEE SPECIFICATIONS AND DETAIL SHEET C-09.02.
- (GG) SITE STAIRS, SEE DETAIL SHEET C-00.00.
- (HH) PIPE GATE, SEE DETAIL SHEET C-09.01.
- (II) CAST-IN-PLACE RETAINING WALL, SEE STRUCTURAL PLANS.
- (JJ) SEGMENTAL RETAINING WALL, SEE SEGMENTAL RETAINING WALL PLANS.
- (KK) SITE RAMP, SEE DETAIL SHEET C-09.01.
- (LL) HIGH JUMP, SEE DETAIL SHEET C-09.08.
- (MM) POLE VAULT LANDING, SEE DETAIL SHEET C-09.08.
- (NN) LONG JUMP AND TRIPLE JUMP, SEE DETAIL SHEET C-09.08.
- (OO) SHOT PUT, SEE DETAIL SHEET C-09.08.
- (PP) WOOD RETAINING WALL, SEE DETAIL SHEET **C-0.00**.
- (QQ) TRAFFIC TABLE, SEE DETAIL SHEET **C-0.00**.
- (RR) SCOREBOARD AND FLAGPOLE, SEE SPECIFICATIONS.
- (SS) REPAIR EX GRAVEL DRIVEWAY, SEE DETAIL SHEET **C-0.00**.
- (TT) MEDIUM DUTY ASPHALT PAVEMENT. SEE DETAIL C-09.01.

LEGEND

RESOURCE CONSERVATION AREA

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Ralelgh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

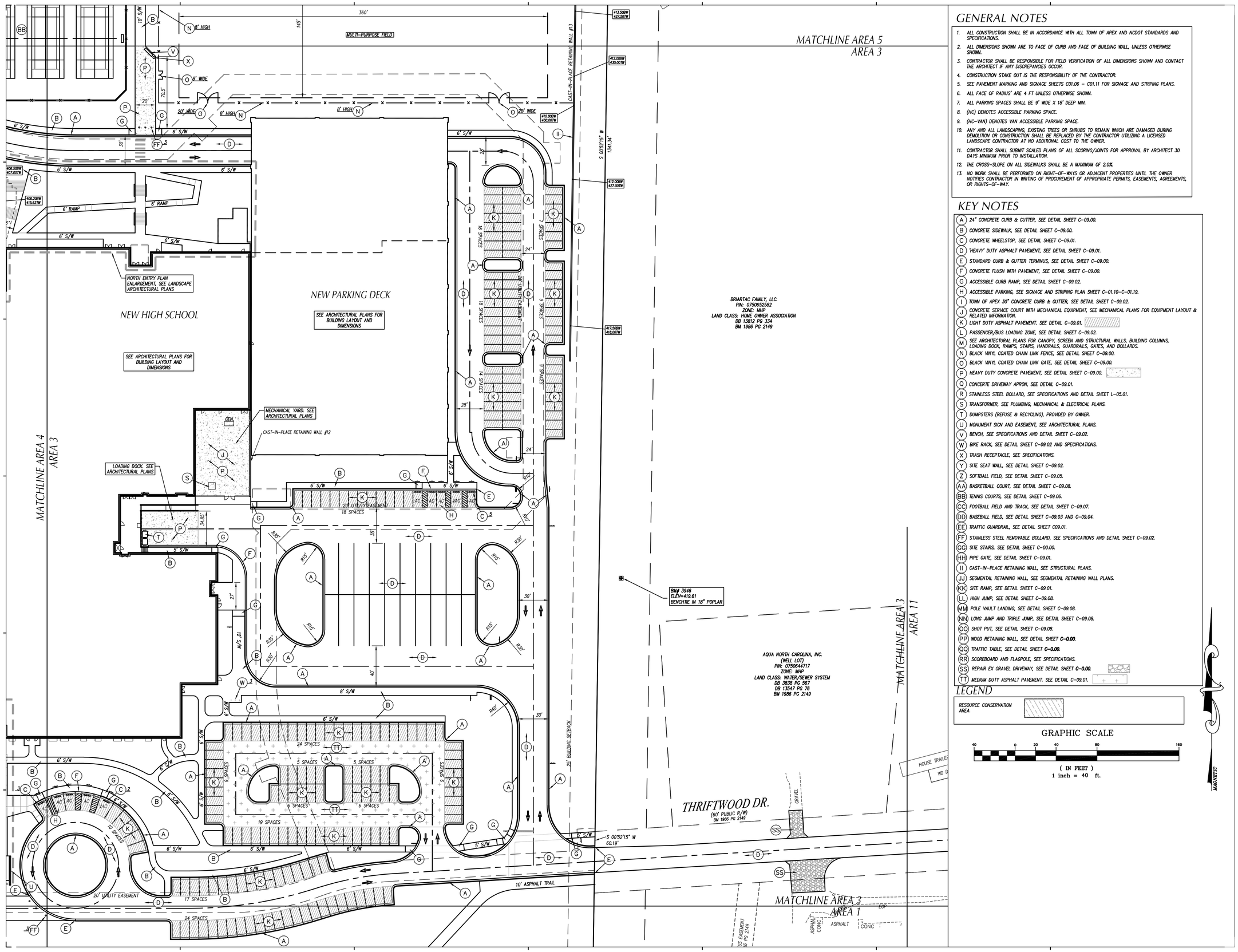
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

SHEET TITLE
STAKING
PLAN
AREA_2

SHEET NUMBER
C-01.02



GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH ALL TOWN OF APEX AND NCDOT STANDARDS AND SPECIFICATIONS.
2. ALL DIMENSIONS SHOWN ARE TO FACE OF CURB AND FACE OF BUILDING WALL, UNLESS OTHERWISE SHOWN.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFICATION OF ALL DIMENSIONS SHOWN AND CONTACT THE ARCHITECT IF ANY DISCREPANCIES OCCUR.
4. CONSTRUCTION STAKE OUT IS THE RESPONSIBILITY OF THE CONTRACTOR.
5. SEE PAVEMENT MARKING AND SIGNAGE SHEETS C01.06 – C01.11 FOR SIGNAGE AND STRIPING PLANS.
6. ALL FACE OF RADIUS' ARE 4 FT UNLESS OTHERWISE SHOWN.
7. ALL PARKING SPACES SHALL BE 9' WIDE X 18' DEEP MIN.
8. (HC) DENOTES ACCESSIBLE PARKING SPACE.
9. (HC-VAN) DENOTES VAN ACCESSIBLE PARKING SPACE.
10. ANY AND ALL LANDSCAPING, EXISTING TREES OR SHRUBS TO REMAIN WHICH ARE DAMAGED DURING DEMOLITION OR CONSTRUCTION SHALL BE REPLACED BY THE CONTRACTOR UTILIZING A LICENSED LANDSCAPE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
11. CONTRACTOR SHALL SUBMIT SCALED PLANS OF ALL SCORING/JOINTS FOR APPROVAL BY ARCHITECT 30 DAYS MINIMUM PRIOR TO INSTALLATION.
12. THE CROSS-SLOPE ON ALL SIDEWALKS SHALL BE A MAXIMUM OF 2.0%
13. NO WORK SHALL BE PERFORMED ON RIGHT-OF-WAYS OR ADJACENT PROPERTIES UNTIL THE OWNER NOTIFIES CONTRACTOR IN WRITING OF PROCUREMENT OF APPROPRIATE PERMITS, EASEMENTS, AGREEMENTS, OR RIGHTS-OF-WAY.

KEY NOTES

- (A) 24" CONCRETE CURB & GUTTER, SEE DETAIL SHEET C-09.00.
- (B) CONCRETE SIDEWALK, SEE DETAIL SHEET C-09.00.
- (C) CONCRETE WHEELSTOP, SEE DETAIL SHEET C-09.01.
- (D) "HEAVY" DUTY ASPHALT PAVEMENT, SEE DETAIL SHEET C-09.01.
- (E) STANDARD CURB & GUTTER TERMINUS, SEE DETAIL SHEET C-09.00.
- (F) CONCRETE FLUSH WITH PAVEMENT, SEE DETAIL SHEET C-09.00.
- (G) ACCESSIBLE CURB RAMP, SEE DETAIL SHEET C-09.02.
- (H) ACCESSIBLE PARKING, SEE SIGNAGE AND STRIPING PLAN SHEET C-01.10-C-01.19.
- (I) TOWN OF APEX 30" CONCRETE CURB & GUTTER, SEE DETAIL SHEET C-09.02.
- (J) CONCRETE SERVICE COURT WITH MECHANICAL EQUIPMENT, SEE MECHANICAL PLANS FOR EQUIPMENT LAYOUT & RELATED INFORMATION.
- (K) LIGHT DUTY ASPHALT PAVEMENT. SEE DETAIL C-09.01.
- (L) PASSENGER/BUS LOADING ZONE, SEE DETAIL SHEET C-09.02.
- (M) SEE ARCHITECTURAL PLANS FOR CANOPY, SCREEN AND STRUCTURAL WALLS, BUILDING COLUMNS, LOADING DOCK, RAMPS, STAIRS, HANDRAILS, GUARDRAILS, GATES, AND BOLLARDS.
- (N) BLACK VINYL COATED CHAIN LINK FENCE, SEE DETAIL SHEET C-09.00.
- (O) BLACK VINYL COATED CHAIN LINK GATE, SEE DETAIL SHEET C-09.00.
- (P) HEAVY DUTY CONCRETE PAVEMENT, SEE DETAIL SHEET C-09.00.
- (Q) CONCERTE DRIVEWAY APRON, SEE DETAIL C-09.01.
- (R) STAINLESS STEEL BOLLARD, SEE SPECIFICATIONS AND DETAIL SHEET L-05.01.
- (S) TRANSFORMER, SEE PLUMBING, MECHANICAL & ELECTRICAL PLANS.
- (T) DUMPSTERS (REFUSE & RECYCLING), PROVIDED BY OWNER.
- (U) MONUMENT SIGN AND EASEMENT, SEE ARCHITECTURAL PLANS.
- (V) BENCH, SEE SPECIFICATIONS AND DETAIL SHEET C-09.02.
- (W) BIKE RACK, SEE DETAIL SHEET C-09.02 AND SPECIFICATIONS.
- (X) TRASH RECEPTACLE, SEE SPECIFICATIONS.
- (Y) SITE SEAT WALL, SEE DETAIL SHEET C-09.02.
- (Z) SOFTBALL FIELD, SEE DETAIL SHEET C-09.05.
- (AA) BASKETBALL COURT, SEE DETAIL SHEET C-09.08.
- (BB) TENNIS COURTS, SEE DETAIL SHEET C-09.06.
- (CC) FOOTBALL FIELD AND TRACK, SEE DETAIL SHEET C-09.07.
- (DD) BASEBALL FIELD, SEE DETAIL SHEET C-09.03 AND C-09.04.
- (EE) TRAFFIC GUARDRAIL, SEE DETAIL SHEET C09.01.
- (FF) STAINLESS STEEL REMOVABLE BOLLARD, SEE SPECIFICATIONS AND DETAIL SHEET C-09.02.
- (GG) SITE STAIRS, SEE DETAIL SHEET C-00.00.
- (HH) PIPE GATE, SEE DETAIL SHEET C-09.01.
- (II) CAST-IN-PLACE RETAINING WALL, SEE STRUCTURAL PLANS.
- (JJ) SEGMENTAL RETAINING WALL, SEE SEGMENTAL RETAINING WALL PLANS.
- (KK) SITE RAMP, SEE DETAIL SHEET C-09.01.
- (LL) HIGH JUMP, SEE DETAIL SHEET C-09.08.
- (MM) POLE VAULT LANDING, SEE DETAIL SHEET C-09.08.
- (NN) LONG JUMP AND TRIPLE JUMP, SEE DETAIL SHEET C-09.08.
- (OO) SHOT PUT, SEE DETAIL SHEET C-09.08.
- (PP) WOOD RETAINING WALL, SEE DETAIL SHEET C-0.00.
- (QQ) TRAFFIC TABLE, SEE DETAIL SHEET C-0.00.
- (RR) SCOREBOARD AND FLAGPOLE, SEE SPECIFICATIONS.
- (SS) REPAIR EX GRAVEL DRIVEWAY, SEE DETAIL SHEET C-0.00.
- (TT) MEDIUM DUTY ASPHALT PAVEMENT. SEE DETAIL C-09.01.

LEGEND

RESOURCE CONSERVATION AREA

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Ralelgh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

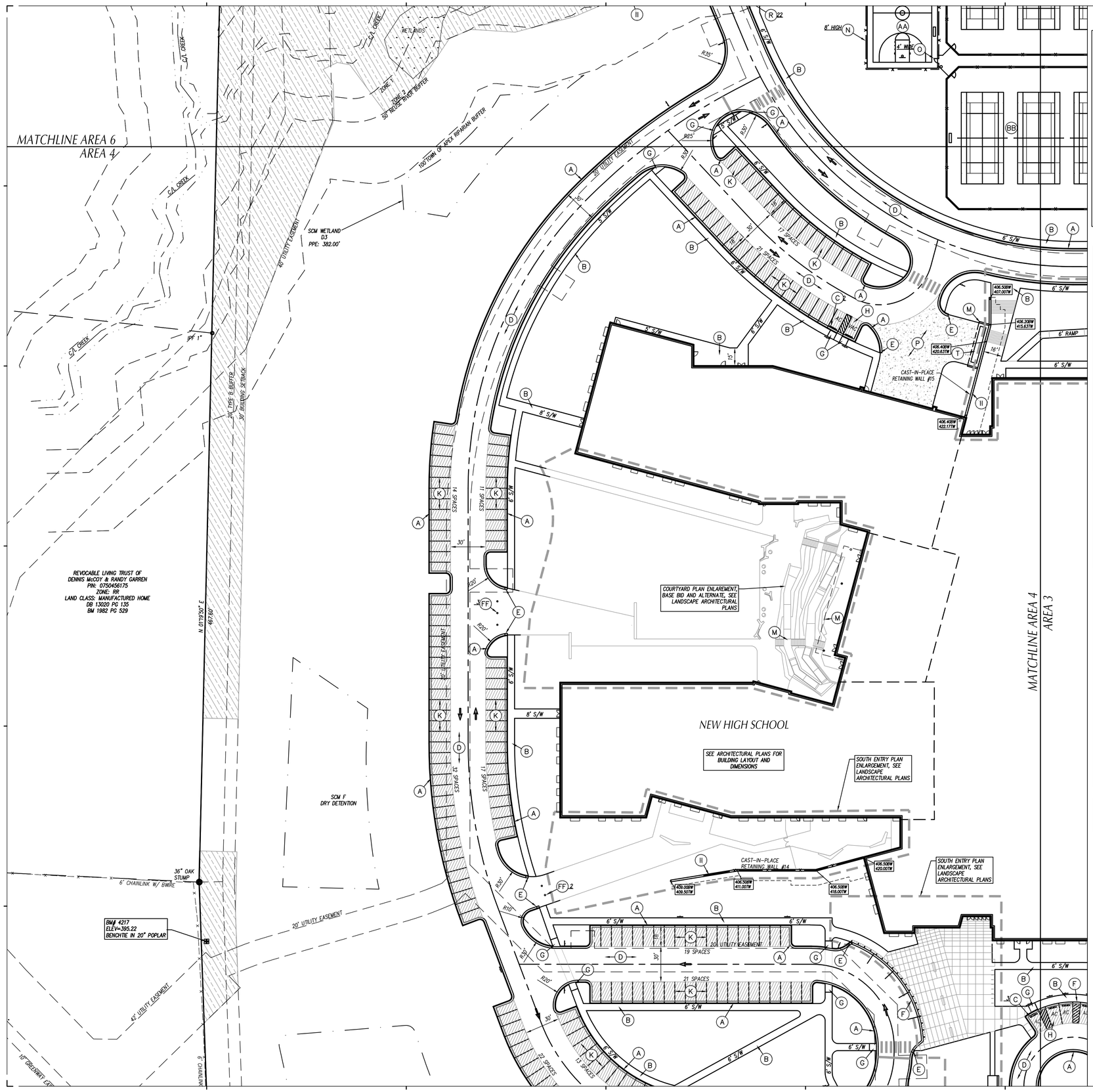
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

SHEET TITLE
STAKING
PLAN
AREA_3

SHEET NUMBER
C-01.03



GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH ALL TOWN OF APEX AND NCDOT STANDARDS AND SPECIFICATIONS.
2. ALL DIMENSIONS SHOWN ARE TO FACE OF CURB AND FACE OF BUILDING WALL, UNLESS OTHERWISE SHOWN.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFICATION OF ALL DIMENSIONS SHOWN AND CONTACT THE ARCHITECT IF ANY DISCREPANCIES OCCUR.
4. CONSTRUCTION STAKE OUT IS THE RESPONSIBILITY OF THE CONTRACTOR.
5. SEE PAVEMENT MARKING AND SIGNAGE SHEETS C01.06 – C01.11 FOR SIGNAGE AND STRIPING PLANS.
6. ALL FACE OF RADIUS' ARE 4 FT UNLESS OTHERWISE SHOWN.
7. ALL PARKING SPACES SHALL BE 9' WIDE X 18' DEEP MIN.
8. (HC) DENOTES ACCESSIBLE PARKING SPACE.
9. (HC-VAN) DENOTES VAN ACCESSIBLE PARKING SPACE.
10. ANY AND ALL LANDSCAPING, EXISTING TREES OR SHRUBS TO REMAIN WHICH ARE DAMAGED DURING DEMOLITION OR CONSTRUCTION SHALL BE REPLACED BY THE CONTRACTOR UTILIZING A LICENSED LANDSCAPE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
11. CONTRACTOR SHALL SUBMIT SCALED PLANS OF ALL SCORING/JOINTS FOR APPROVAL BY ARCHITECT 30 DAYS MINIMUM PRIOR TO INSTALLATION.
12. THE CROSS-SLOPE ON ALL SIDEWALKS SHALL BE A MAXIMUM OF 2.0%
13. NO WORK SHALL BE PERFORMED ON RIGHT-OF-WAYS OR ADJACENT PROPERTIES UNTIL THE OWNER NOTIFIES CONTRACTOR IN WRITING OF PROCUREMENT OF APPROPRIATE PERMITS, EASEMENTS, AGREEMENTS, OR RIGHTS-OF-WAY.

KEY NOTES

- (A) 24" CONCRETE CURB & GUTTER, SEE DETAIL SHEET C-09.00.
- (B) CONCRETE SIDEWALK, SEE DETAIL SHEET C-09.00.
- (C) CONCRETE WHEELSTOP, SEE DETAIL SHEET C-09.01.
- (D) "HEAVY" DUTY ASPHALT PAVEMENT, SEE DETAIL SHEET C-09.01.
- (E) STANDARD CURB & GUTTER TERMINUS, SEE DETAIL SHEET C-09.00.
- (F) CONCRETE FLUSH WITH PAVEMENT, SEE DETAIL SHEET C-09.00.
- (G) ACCESSIBLE CURB RAMP, SEE DETAIL SHEET C-09.02.
- (H) ACCESSIBLE PARKING, SEE SIGNAGE AND STRIPING PLAN SHEET C-01.10-C-01.19.
- (I) TOWN OF APEX 30" CONCRETE CURB & GUTTER, SEE DETAIL SHEET C-09.02.
- (J) CONCRETE SERVICE COURT WITH MECHANICAL EQUIPMENT, SEE MECHANICAL PLANS FOR EQUIPMENT LAYOUT & RELATED INFORMATION.
- (K) LIGHT DUTY ASPHALT PAVEMENT. SEE DETAIL C-09.01.
- (L) PASSENGER/BUS LOADING ZONE, SEE DETAIL SHEET C-09.02.
- (M) SEE ARCHITECTURAL PLANS FOR CANOPY, SCREEN AND STRUCTURAL WALLS, BUILDING COLUMNS, LOADING DOCK, RAMPS, STAIRS, HANDRAILS, GUARDRAILS, GATES, AND BOLLARDS.
- (N) BLACK VINYL COATED CHAIN LINK FENCE, SEE DETAIL SHEET C-09.00.
- (O) BLACK VINYL COATED CHAIN LINK GATE, SEE DETAIL SHEET C-09.00.
- (P) HEAVY DUTY CONCRETE PAVEMENT, SEE DETAIL SHEET C-09.00.
- (Q) CONCERTE DRIVEWAY APRON, SEE DETAIL C-09.01.
- (R) STAINLESS STEEL BOLLARD, SEE SPECIFICATIONS AND DETAIL SHEET L-05.01.
- (S) TRANSFORMER, SEE PLUMBING, MECHANICAL & ELECTRICAL PLANS.
- (T) DUMPSTERS (REFUSE & RECYCLING), PROVIDED BY OWNER.
- (U) MONUMENT SIGN AND EASEMENT, SEE ARCHITECTURAL PLANS.
- (V) BENCH, SEE SPECIFICATIONS AND DETAIL SHEET C-09.02.
- (W) BIKE RACK, SEE DETAIL SHEET C-09.02 AND SPECIFICATIONS.
- (X) TRASH RECEPTACLE, SEE SPECIFICATIONS.
- (Y) SITE SEAT WALL, SEE DETAIL SHEET C-09.02.
- (Z) SOFTBALL FIELD, SEE DETAIL SHEET C-09.05.
- (AA) BASKETBALL COURT, SEE DETAIL SHEET C-09.08.
- (BB) TENNIS COURTS, SEE DETAIL SHEET C-09.06.
- (CC) FOOTBALL FIELD AND TRACK, SEE DETAIL SHEET C-09.07.
- (DD) BASEBALL FIELD, SEE DETAIL SHEET C-09.03 AND C-09.04.
- (EE) TRAFFIC GUARDRAIL, SEE DETAIL SHEET C09.01.
- (FF) STAINLESS STEEL REMOVABLE BOLLARD, SEE SPECIFICATIONS AND DETAIL SHEET C-09.02.
- (GG) SITE STAIRS, SEE DETAIL SHEET C-00.00.
- (HH) PIPE GATE, SEE DETAIL SHEET C-09.01.
- (II) CAST-IN-PLACE RETAINING WALL, SEE STRUCTURAL PLANS.
- (JJ) SEGMENTAL RETAINING WALL, SEE SEGMENTAL RETAINING WALL PLANS.
- (KK) SITE RAMP, SEE DETAIL SHEET C-09.01.
- (LL) HIGH JUMP, SEE DETAIL SHEET C-09.08.
- (MM) POLE VAULT LANDING, SEE DETAIL SHEET C-09.08.
- (NN) LONG JUMP AND TRIPLE JUMP, SEE DETAIL SHEET C-09.08.
- (OO) SHOT PUT, SEE DETAIL SHEET C-09.08.
- (PP) WOOD RETAINING WALL, SEE DETAIL SHEET **C-0.00**.
- (QQ) TRAFFIC TABLE, SEE DETAIL SHEET **C-0.00**.
- (RR) SCOREBOARD AND FLAGPOLE, SEE SPECIFICATIONS.
- (SS) REPAIR EX GRAVEL DRIVEWAY, SEE DETAIL SHEET **C-0.00**.
- (TT) MEDIUM DUTY ASPHALT PAVEMENT. SEE DETAIL C-09.01.

LEGEND

RESOURCE CONSERVATION AREA

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Ralelgh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

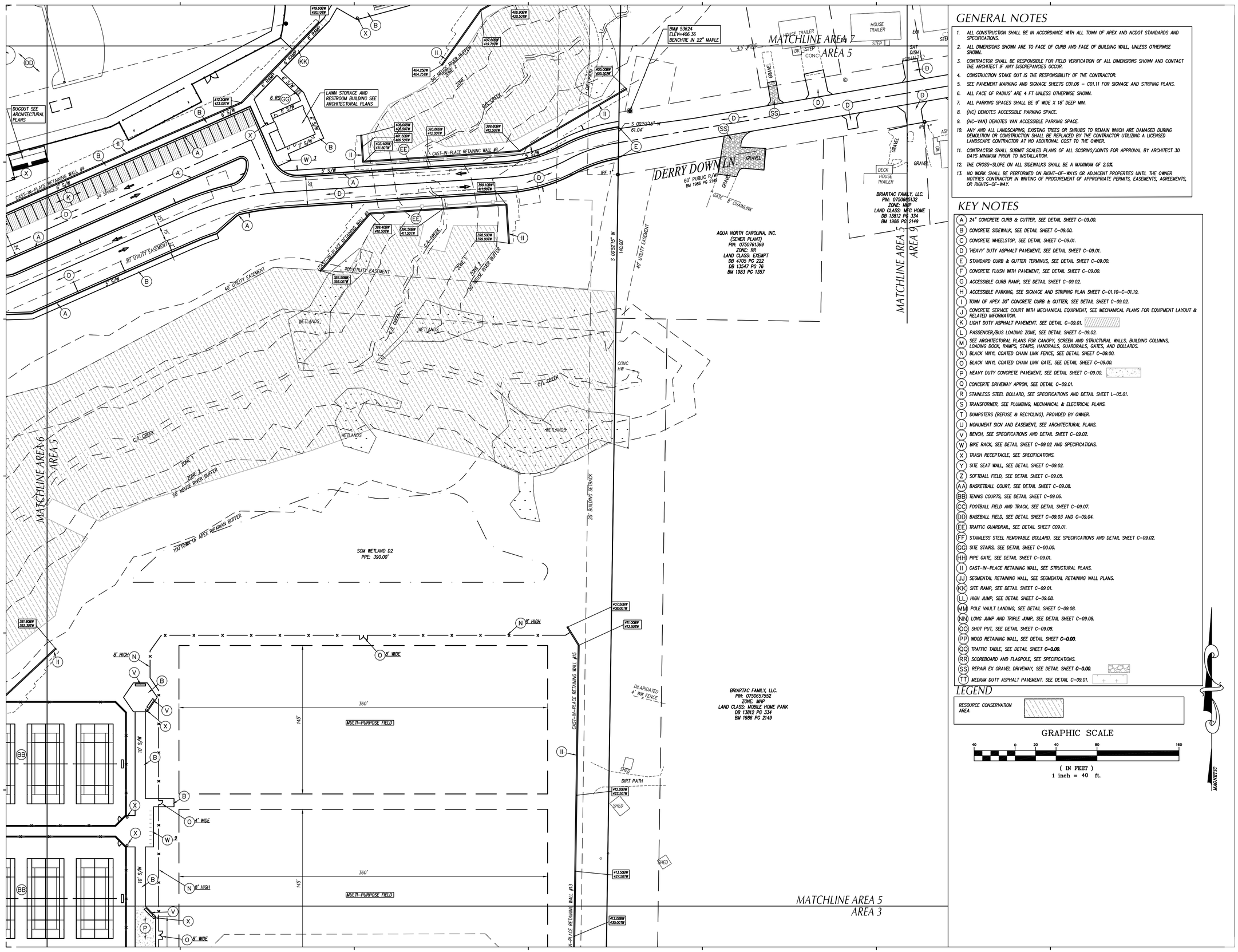
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

SHEET TITLE
STAKING
PLAN
AREA_4

SHEET NUMBER
C-01.04



GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH ALL TOWN OF APEX AND NCDOT STANDARDS AND SPECIFICATIONS.
2. ALL DIMENSIONS SHOWN ARE TO FACE OF CURB AND FACE OF BUILDING WALL, UNLESS OTHERWISE SHOWN.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFICATION OF ALL DIMENSIONS SHOWN AND CONTACT THE ARCHITECT IF ANY DISCREPANCIES OCCUR.
4. CONSTRUCTION STAKE OUT IS THE RESPONSIBILITY OF THE CONTRACTOR.
5. SEE PAVEMENT MARKING AND SIGNAGE SHEETS C01.06 – C01.11 FOR SIGNAGE AND STRIPING PLANS.
6. ALL FACE OF RADIUS' ARE 4 FT UNLESS OTHERWISE SHOWN.
7. ALL PARKING SPACES SHALL BE 9' WIDE X 18' DEEP MIN.
8. (HC) DENOTES ACCESSIBLE PARKING SPACE.
9. (HC-VAN) DENOTES VAN ACCESSIBLE PARKING SPACE.
10. ANY AND ALL LANDSCAPING, EXISTING TREES OR SHRUBS TO REMAIN WHICH ARE DAMAGED DURING DEMOLITION OR CONSTRUCTION SHALL BE REPLACED BY THE CONTRACTOR UTILIZING A LICENSED LANDSCAPE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
11. CONTRACTOR SHALL SUBMIT SCALED PLANS OF ALL SCORING/JOINTS FOR APPROVAL BY ARCHITECT 30 DAYS MINIMUM PRIOR TO INSTALLATION.
12. THE CROSS-SLOPE ON ALL SIDEWALKS SHALL BE A MAXIMUM OF 2.0%
13. NO WORK SHALL BE PERFORMED ON RIGHT-OF-WAYS OR ADJACENT PROPERTIES UNTIL THE OWNER NOTIFIES CONTRACTOR IN WRITING OF PROCUREMENT OF APPROPRIATE PERMITS, EASEMENTS, AGREEMENTS, OR RIGHTS-OF-WAY.

KEY NOTES

- (A) 24" CONCRETE CURB & GUTTER, SEE DETAIL SHEET C-09.00.
- (B) CONCRETE SIDEWALK, SEE DETAIL SHEET C-09.00.
- (C) CONCRETE WHEELSTOP, SEE DETAIL SHEET C-09.01.
- (D) "HEAVY" DUTY ASPHALT PAVEMENT, SEE DETAIL SHEET C-09.01.
- (E) STANDARD CURB & GUTTER TERMINUS, SEE DETAIL SHEET C-09.00.
- (F) CONCRETE FLUSH WITH PAVEMENT, SEE DETAIL SHEET C-09.00.
- (G) ACCESSIBLE CURB RAMP, SEE DETAIL SHEET C-09.02.
- (H) ACCESSIBLE PARKING, SEE SIGNAGE AND STRIPING PLAN SHEET C-01.10-C-01.19.
- (I) TOWN OF APEX 30" CONCRETE CURB & GUTTER, SEE DETAIL SHEET C-09.02.
- (J) CONCRETE SERVICE COURT WITH MECHANICAL EQUIPMENT, SEE MECHANICAL PLANS FOR EQUIPMENT LAYOUT & RELATED INFORMATION.
- (K) LIGHT DUTY ASPHALT PAVEMENT. SEE DETAIL C-09.01.
- (L) PASSENGER/BUS LOADING ZONE, SEE DETAIL SHEET C-09.02.
- (M) SEE ARCHITECTURAL PLANS FOR CANOPY, SCREEN AND STRUCTURAL WALLS, BUILDING COLUMNS, LOADING DOCK, RAMPS, STAIRS, HANDRAILS, GUARDRAILS, GATES, AND BOLLARDS.
- (N) BLACK VINYL COATED CHAIN LINK FENCE, SEE DETAIL SHEET C-09.00.
- (O) BLACK VINYL COATED CHAIN LINK GATE, SEE DETAIL SHEET C-09.00.
- (P) HEAVY DUTY CONCRETE PAVEMENT, SEE DETAIL SHEET C-09.00.
- (Q) CONCERTE DRIVEWAY APRON, SEE DETAIL C-09.01.
- (R) STAINLESS STEEL BOLLARD, SEE SPECIFICATIONS AND DETAIL SHEET L-05.01.
- (S) TRANSFORMER, SEE PLUMBING, MECHANICAL & ELECTRICAL PLANS.
- (T) DUMPSTERS (REFUSE & RECYCLING), PROVIDED BY OWNER.
- (U) MONUMENT SIGN AND EASEMENT, SEE ARCHITECTURAL PLANS.
- (V) BENCH, SEE SPECIFICATIONS AND DETAIL SHEET C-09.02.
- (W) BIKE RACK, SEE DETAIL SHEET C-09.02 AND SPECIFICATIONS.
- (X) TRASH RECEPTACLE, SEE SPECIFICATIONS.
- (Y) SITE SEAT WALL, SEE DETAIL SHEET C-09.02.
- (Z) SOFTBALL FIELD, SEE DETAIL SHEET C-09.05.
- (AA) BASKETBALL COURT, SEE DETAIL SHEET C-09.08.
- (BB) TENNIS COURTS, SEE DETAIL SHEET C-09.06.
- (CC) FOOTBALL FIELD AND TRACK, SEE DETAIL SHEET C-09.07.
- (DD) BASEBALL FIELD, SEE DETAIL SHEET C-09.03 AND C-09.04.
- (EE) TRAFFIC GUARDRAIL, SEE DETAIL SHEET C09.01.
- (FF) STAINLESS STEEL REMOVABLE BOLLARD, SEE SPECIFICATIONS AND DETAIL SHEET C-09.02.
- (GG) SITE STAIRS, SEE DETAIL SHEET C-00.00.
- (HH) PIPE GATE, SEE DETAIL SHEET C-09.01.
- (II) CAST-IN-PLACE RETAINING WALL, SEE STRUCTURAL PLANS.
- (JJ) SEGMENTAL RETAINING WALL, SEE SEGMENTAL RETAINING WALL PLANS.
- (KK) SITE RAMP, SEE DETAIL SHEET C-09.01.
- (LL) HIGH JUMP, SEE DETAIL SHEET C-09.08.
- (MM) POLE VAULT LANDING, SEE DETAIL SHEET C-09.08.
- (NN) LONG JUMP AND TRIPLE JUMP, SEE DETAIL SHEET C-09.08.
- (OO) SHOT PUT, SEE DETAIL SHEET C-09.08.
- (PP) WOOD RETAINING WALL, SEE DETAIL SHEET C-0.00.
- (QQ) TRAFFIC TABLE, SEE DETAIL SHEET C-0.00.
- (RR) SCOREBOARD AND FLAGPOLE, SEE SPECIFICATIONS.
- (SS) REPAIR EX GRAVEL DRIVEWAY, SEE DETAIL SHEET C-0.00.
- (TT) MEDIUM DUTY ASPHALT PAVEMENT. SEE DETAIL C-09.01.

LEGEND

RESOURCE CONSERVATION AREA

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Ralelgh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

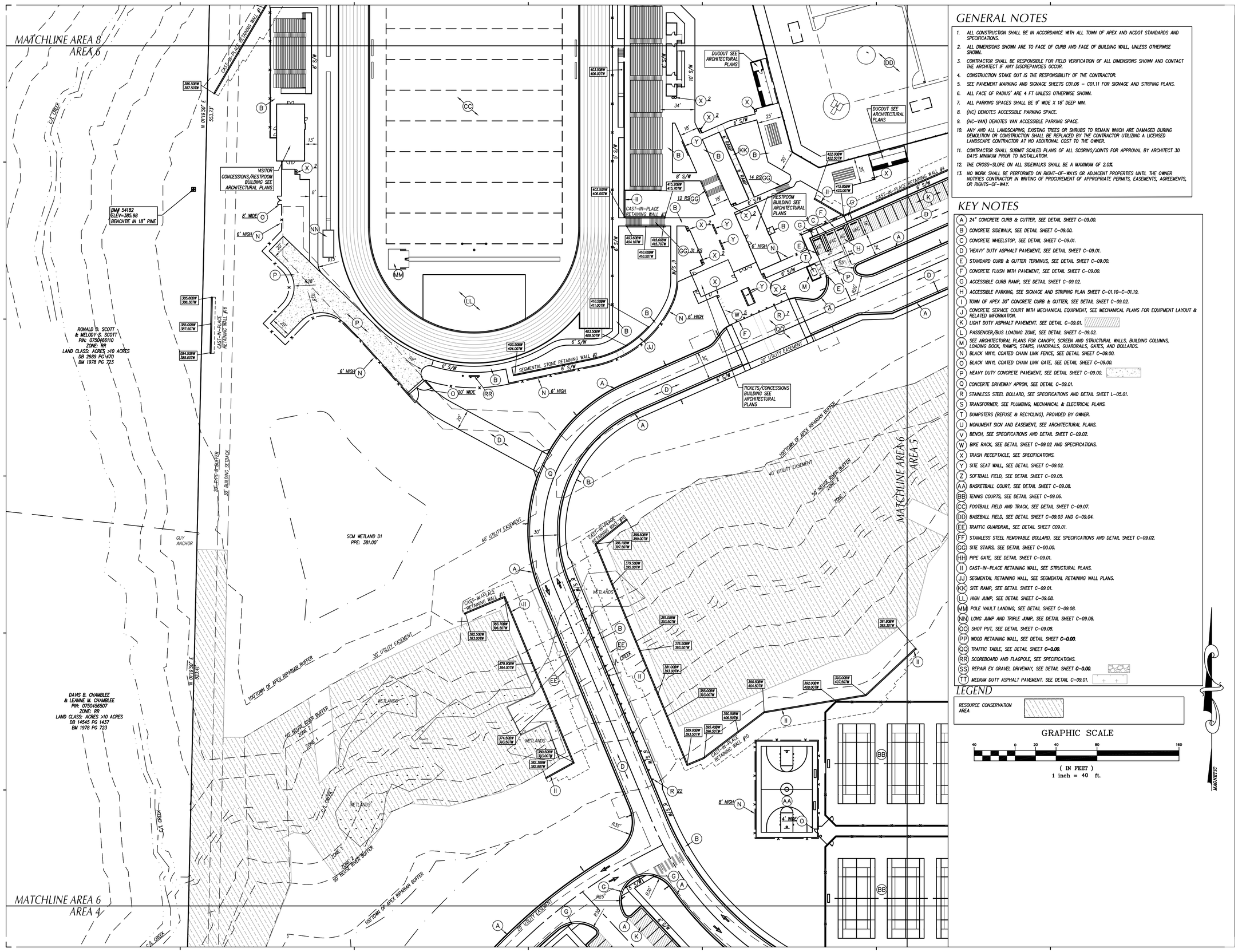
RATIO

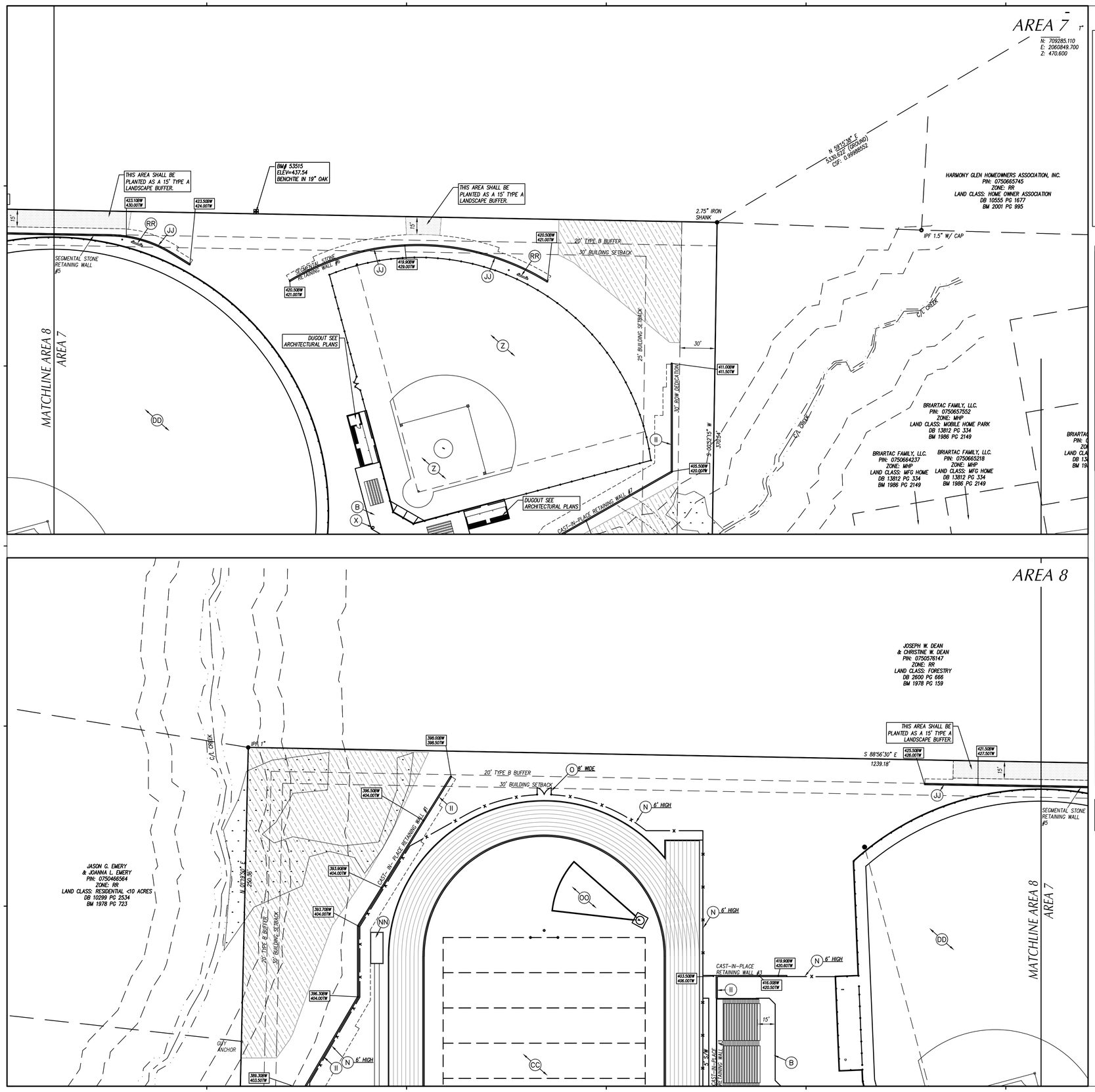
COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

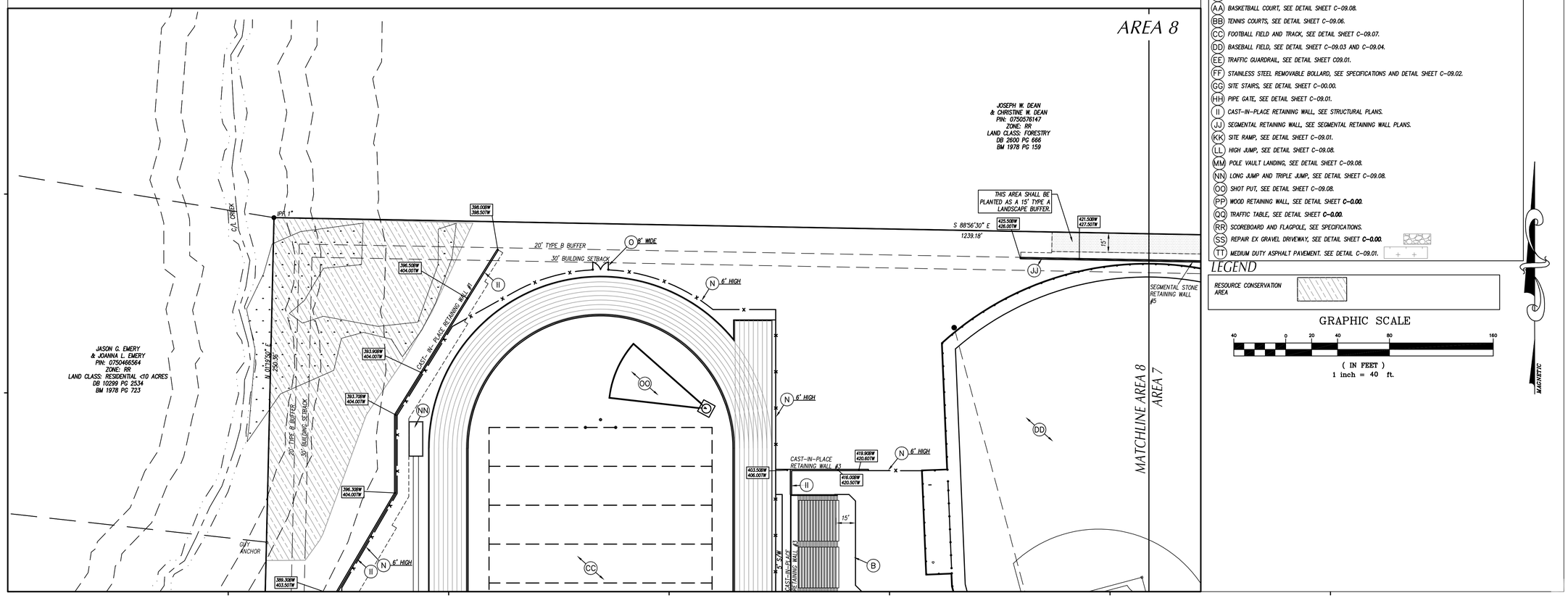
PROJECT NO. 02000.000

SHEET TITLE
STAKING
PLAN
AREA_5

SHEET NUMBER
C-01.05


MATCHLINE AREA 8
AREA 6
CAST-IN-PLACE RETAINING WALL #4
6' S/W
DUGOUT SEE ARCHITECTURAL PLANS
VISITOR CONCESSIONS/RESTROOM BUILDING SEE ARCHITECTURAL PLANS
BM# 54182
ELEV=385.98
BENCHTIE IN 18" PINE
RESTROOM BUILDING SEE ARCHITECTURAL PLANS
CAST-IN-PLACE RETAINING WALL #3
CAST-IN-PLACE RETAINING WALL #5
CAST-IN-PLACE RETAINING WALL #6
RONALD D. SCOTT
& MELODY S. SCOTT
PIN: 0750466110
ZONE: RR
LAND CLASS: ACRES >10 ACRES
DB 2689 PG 470
BM 1978 PG 723
SEGMENTAL STONE RETAINING WALL #2
TICKETS/CONCESSIONS BUILDING SEE ARCHITECTURAL PLANS
20' UTILITY EASEMENT
100' TOWN OF APEX RIPARIAN BUFFER
40' UTILITY EASEMENT
50' NEUSE RIVER BUFFER ZONE 2
ZONE 1
MATCHLINE AREA 6
AREA 5
SCM WETLAND D1
PPE: 381.00'
CAST-IN-PLACE RETAINING WALL #11
CAST-IN-PLACE RETAINING WALL #10
WETLANDS
CAST-IN-PLACE RETAINING WALL #9
DAVIS B. CHAMBLEE
& LEANNE M. CHAMBLEE
PIN: 0750456507
ZONE: RR
LAND CLASS: ACRES >10 ACRES
DB 14545 PG 1437
BM 1978 PG 723
GUY ANCHOR
CAST-IN-PLACE RETAINING WALL #4
MATCHLINE AREA 6
AREA 4
CAST-IN-PLACE RETAINING WALL #1
20' TYPE-B BUFFER
30' BUILDING SETBACK
CAST-IN-PLACE RETAINING WALL #8
CAST-IN-PLACE RETAINING WALL #7
CAST-IN-PLACE RETAINING WALL #12
CAST-IN-PLACE RETAINING WALL #13
CAST-IN-PLACE RETAINING WALL #14
CAST-IN-PLACE RETAINING WALL #15
CAST-IN-PLACE RETAINING WALL #16
CAST-IN-PLACE RETAINING WALL #17
CAST-IN-PLACE RETAINING WALL #18
CAST-IN-PLACE RETAINING WALL #19
CAST-IN-PLACE RETAINING WALL #20
CAST-IN-PLACE RETAINING WALL #21
CAST-IN-PLACE RETAINING WALL





GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH ALL TOWN OF APEX AND NCDOT STANDARDS AND SPECIFICATIONS.
2. ALL DIMENSIONS SHOWN ARE TO FACE OF CURB AND FACE OF BUILDING WALL, UNLESS OTHERWISE SHOWN.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFICATION OF ALL DIMENSIONS SHOWN AND CONTACT THE ARCHITECT IF ANY DISCREPANCIES OCCUR.
4. CONSTRUCTION STAKE OUT IS THE RESPONSIBILITY OF THE CONTRACTOR.
5. SEE PAVEMENT MARKING AND SIGNAGE SHEETS C01.06 – C01.11 FOR SIGNAGE AND STRIPING PLANS.
6. ALL FACE OF RADIUS' ARE 4 FT UNLESS OTHERWISE SHOWN.
7. ALL PARKING SPACES SHALL BE 9' WIDE X 18' DEEP MIN.
8. (HC) DENOTES ACCESSIBLE PARKING SPACE.
9. (HC-VAN) DENOTES VAN ACCESSIBLE PARKING SPACE.
10. ANY AND ALL LANDSCAPING, EXISTING TREES OR SHRUBS TO REMAIN WHICH ARE DAMAGED DURING DEMOLITION OR CONSTRUCTION SHALL BE REPLACED BY THE CONTRACTOR UTILIZING A LICENSED LANDSCAPE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
11. CONTRACTOR SHALL SUBMIT SCALED PLANS OF ALL SCORING/JOINTS FOR APPROVAL BY ARCHITECT 30 DAYS MINIMUM PRIOR TO INSTALLATION.
12. THE CROSS-SLOPE ON ALL SIDEWALKS SHALL BE A MAXIMUM OF 2.0%
13. NO WORK SHALL BE PERFORMED ON RIGHT-OF-WAYS OR ADJACENT PROPERTIES UNTIL THE OWNER NOTIFIES CONTRACTOR IN WRITING OF PROCUREMENT OF APPROPRIATE PERMITS, EASEMENTS, AGREEMENTS, OR RIGHTS-OF-WAY.

KEY NOTES

- (A) 24" CONCRETE CURB & GUTTER, SEE DETAIL SHEET C-09.00.
- (B) CONCRETE SIDEWALK, SEE DETAIL SHEET C-09.00.
- (C) CONCRETE WHEELSTOP, SEE DETAIL SHEET C-09.01.
- (D) 'HEAVY' DUTY ASPHALT PAVEMENT, SEE DETAIL SHEET C-09.01.
- (E) STANDARD CURB & GUTTER TERMINUS, SEE DETAIL SHEET C-09.00.
- (F) CONCRETE FLUSH WITH PAVEMENT, SEE DETAIL SHEET C-09.00.
- (G) ACCESSIBLE CURB RAMP, SEE DETAIL SHEET C-09.02.
- (H) ACCESSIBLE PARKING, SEE SIGNAGE AND STRIPING PLAN SHEET C-01.10-C-01.19.
- (I) TOWN OF APEX 30" CONCRETE CURB & GUTTER, SEE DETAIL SHEET C-09.02.
- (J) CONCRETE SERVICE COURT WITH MECHANICAL EQUIPMENT, SEE MECHANICAL PLANS FOR EQUIPMENT LAYOUT & RELATED INFORMATION.
- (K) LIGHT DUTY ASPHALT PAVEMENT. SEE DETAIL C-09.01.
- (L) PASSENGER/BUS LOADING ZONE, SEE DETAIL SHEET C-09.02.
- (M) SEE ARCHITECTURAL PLANS FOR CANOPY, SCREEN AND STRUCTURAL WALLS, BUILDING COLUMNS, LOADING DOCK, RAMPS, STAIRS, HANDRAILS, GUARDRAILS, GATES, AND BOLLARDS.
- (N) BLACK VINYL COATED CHAIN LINK FENCE, SEE DETAIL SHEET C-09.00.
- (O) BLACK VINYL COATED CHAIN LINK GATE, SEE DETAIL SHEET C-09.00.
- (P) HEAVY DUTY CONCRETE PAVEMENT, SEE DETAIL SHEET C-09.00.
- (Q) CONCERTE DRIVEWAY APRON, SEE DETAIL C-09.01.
- (R) STAINLESS STEEL BOLLARD, SEE SPECIFICATIONS AND DETAIL SHEET L-05.01.
- (S) TRANSFORMER, SEE PLUMBING, MECHANICAL & ELECTRICAL PLANS.
- (T) DUMPSTERS (REFUSE & RECYCLING), PROVIDED BY OWNER.
- (U) MONUMENT SIGN AND EASEMENT, SEE ARCHITECTURAL PLANS.
- (V) BENCH, SEE SPECIFICATIONS AND DETAIL SHEET C-09.02.
- (W) BIKE RACK, SEE DETAIL SHEET C-09.02 AND SPECIFICATIONS.
- (X) TRASH RECEPTACLE, SEE SPECIFICATIONS.
- (Y) SITE SEAT WALL, SEE DETAIL SHEET C-09.02.
- (Z) SOFTBALL FIELD, SEE DETAIL SHEET C-09.05.
- (AA) BASKETBALL COURT, SEE DETAIL SHEET C-09.08.
- (BB) TENNIS COURTS, SEE DETAIL SHEET C-09.06.
- (CC) FOOTBALL FIELD AND TRACK, SEE DETAIL SHEET C-09.07.
- (DD) BASEBALL FIELD, SEE DETAIL SHEET C-09.03 AND C-09.04.
- (EE) TRAFFIC GUARDRAIL, SEE DETAIL SHEET C09.01.
- (FF) STAINLESS STEEL REMOVABLE BOLLARD, SEE SPECIFICATIONS AND DETAIL SHEET C-09.02.
- (GG) SITE STAIRS, SEE DETAIL SHEET C-00.00.
- (HH) PIPE GATE, SEE DETAIL SHEET C-09.01.
- (II) CAST-IN-PLACE RETAINING WALL, SEE STRUCTURAL PLANS.
- (JJ) SEGMENTAL RETAINING WALL, SEE SEGMENTAL RETAINING WALL PLANS.
- (KK) SITE RAMP, SEE DETAIL SHEET C-09.01.
- (LL) HIGH JUMP, SEE DETAIL SHEET C-09.08.
- (MM) POLE VAULT LANDING, SEE DETAIL SHEET C-09.08.
- (NN) LONG JUMP AND TRIPLE JUMP, SEE DETAIL SHEET C-09.08.
- (OO) SHOT PUT, SEE DETAIL SHEET C-09.08.
- (PP) WOOD RETAINING WALL, SEE DETAIL SHEET **C-0.00**.
- (QQ) TRAFFIC TABLE, SEE DETAIL SHEET **C-0.00**.
- (RR) SCOREBOARD AND FLAGPOLE, SEE SPECIFICATIONS.
- (SS) REPAIR EX GRAVEL DRIVEWAY, SEE DETAIL SHEET **C-0.00**.
- (TT) MEDIUM DUTY ASPHALT PAVEMENT. SEE DETAIL C-09.01.

LEGEND

RESOURCE CONSERVATION AREA

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Ralelgh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

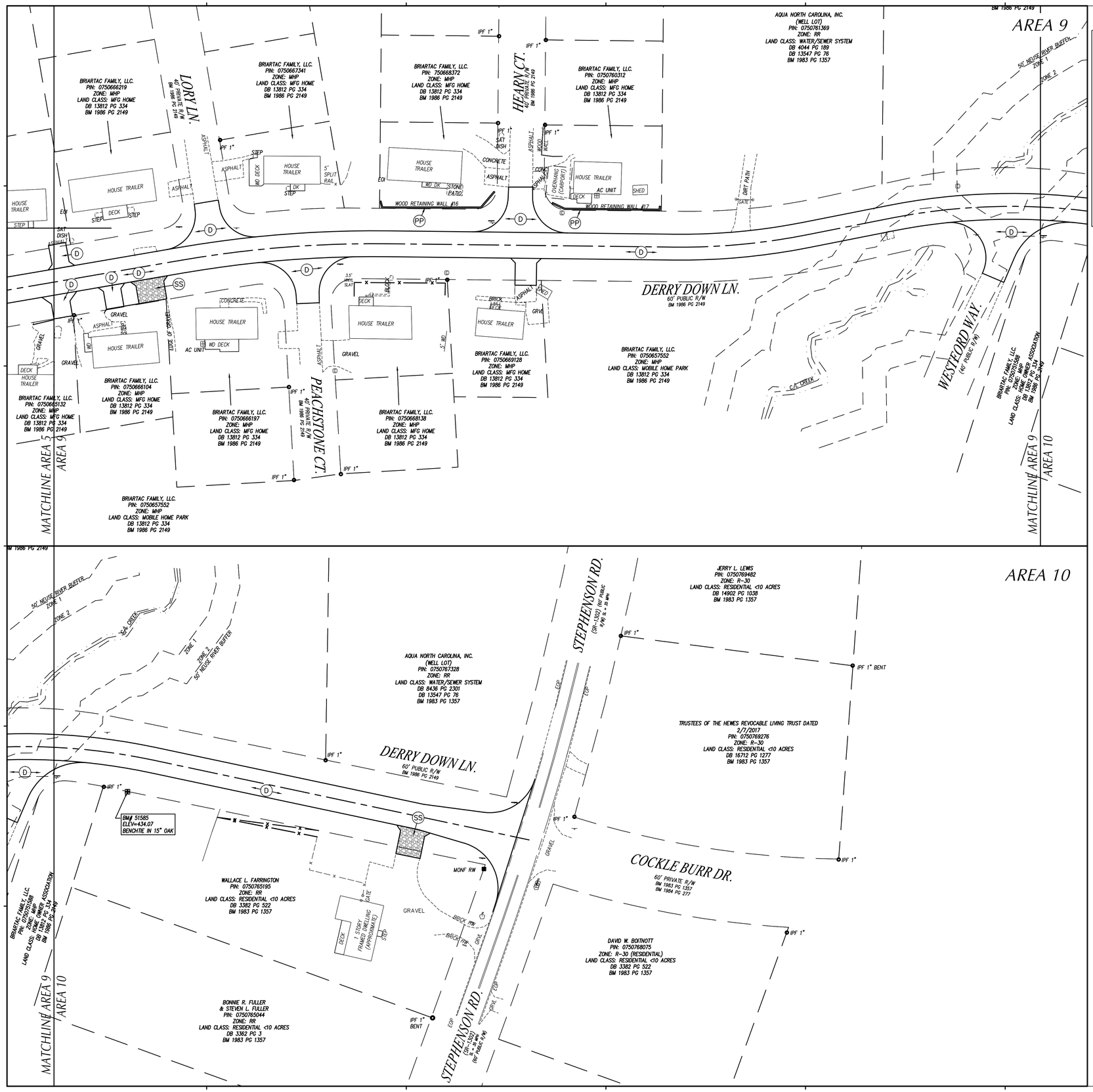
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

SHEET TITLE
STAKING
PLAN
AREA_7&8

SHEET NUMBER
C-01.07



GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH ALL TOWN OF APEX AND NCDOT STANDARDS AND SPECIFICATIONS.
2. ALL DIMENSIONS SHOWN ARE TO FACE OF CURB AND FACE OF BUILDING WALL, UNLESS OTHERWISE SHOWN.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFICATION OF ALL DIMENSIONS SHOWN AND CONTACT THE ARCHITECT IF ANY DISCREPANCIES OCCUR.
4. CONSTRUCTION STAKE OUT IS THE RESPONSIBILITY OF THE CONTRACTOR.
5. SEE PAVEMENT MARKING AND SIGNAGE SHEETS C01.06 – C01.11 FOR SIGNAGE AND STRIPING PLANS.
6. ALL FACE OF RADIUS' ARE 4 FT UNLESS OTHERWISE SHOWN.
7. ALL PARKING SPACES SHALL BE 9' WIDE X 18' DEEP MIN.
8. (HC) DENOTES ACCESSIBLE PARKING SPACE.
9. (HC-VAN) DENOTES VAN ACCESSIBLE PARKING SPACE.
10. ANY AND ALL LANDSCAPING, EXISTING TREES OR SHRUBS TO REMAIN WHICH ARE DAMAGED DURING DEMOLITION OR CONSTRUCTION SHALL BE REPLACED BY THE CONTRACTOR UTILIZING A LICENSED LANDSCAPE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
11. CONTRACTOR SHALL SUBMIT SCALED PLANS OF ALL SCORING/JOINTS FOR APPROVAL BY ARCHITECT 30 DAYS MINIMUM PRIOR TO INSTALLATION.
12. THE CROSS-SLOPE ON ALL SIDEWALKS SHALL BE A MAXIMUM OF 2.0%
13. NO WORK SHALL BE PERFORMED ON RIGHT-OF-WAYS OR ADJACENT PROPERTIES UNTIL THE OWNER NOTIFIES CONTRACTOR IN WRITING OF PROCUREMENT OF APPROPRIATE PERMITS, EASEMENTS, AGREEMENTS, OR RIGHTS-OF-WAY.

KEY NOTES

- (A) 24" CONCRETE CURB & GUTTER, SEE DETAIL SHEET C-09.00.
- (B) CONCRETE SIDEWALK, SEE DETAIL SHEET C-09.00.
- (C) CONCRETE WHEELSTOP, SEE DETAIL SHEET C-09.01.
- (D) 'HEAVY' DUTY ASPHALT PAVEMENT, SEE DETAIL SHEET C-09.01.
- (E) STANDARD CURB & GUTTER TERMINUS, SEE DETAIL SHEET C-09.00.
- (F) CONCRETE FLUSH WITH PAVEMENT, SEE DETAIL SHEET C-09.00.
- (G) ACCESSIBLE CURB RAMP, SEE DETAIL SHEET C-09.02.
- (H) ACCESSIBLE PARKING, SEE SIGNAGE AND STRIPING PLAN SHEET C-01.10-C-01.19.
- (I) TOWN OF APEX 30" CONCRETE CURB & GUTTER, SEE DETAIL SHEET C-09.02.
- (J) CONCRETE SERVICE COURT WITH MECHANICAL EQUIPMENT, SEE MECHANICAL PLANS FOR EQUIPMENT LAYOUT & RELATED INFORMATION.
- (K) LIGHT DUTY ASPHALT PAVEMENT. SEE DETAIL C-09.01.
- (L) PASSENGER/BUS LOADING ZONE, SEE DETAIL SHEET C-09.02.
- (M) SEE ARCHITECTURAL PLANS FOR CANOPY, SCREEN AND STRUCTURAL WALLS, BUILDING COLUMNS, LOADING DOCK, RAMPS, STAIRS, HANDRAILS, GUARDRAILS, GATES, AND BOLLARDS.
- (N) BLACK VINYL COATED CHAIN LINK FENCE, SEE DETAIL SHEET C-09.00.
- (O) BLACK VINYL COATED CHAIN LINK GATE, SEE DETAIL SHEET C-09.00.
- (P) HEAVY DUTY CONCRETE PAVEMENT, SEE DETAIL SHEET C-09.00.
- (Q) CONCERTE DRIVEWAY APRON, SEE DETAIL C-09.01.
- (R) STAINLESS STEEL BOLLARD, SEE SPECIFICATIONS AND DETAIL SHEET L-05.01.
- (S) TRANSFORMER, SEE PLUMBING, MECHANICAL & ELECTRICAL PLANS.
- (T) DUMPSTERS (REFUSE & RECYCLING), PROVIDED BY OWNER.
- (U) MONUMENT SIGN AND EASEMENT, SEE ARCHITECTURAL PLANS.
- (V) BENCH, SEE SPECIFICATIONS AND DETAIL SHEET C-09.02.
- (W) BIKE RACK, SEE DETAIL SHEET C-09.02 AND SPECIFICATIONS.
- (X) TRASH RECEPTACLE, SEE SPECIFICATIONS.
- (Y) SITE SEAT WALL, SEE DETAIL SHEET C-09.02.
- (Z) SOFTBALL FIELD, SEE DETAIL SHEET C-09.05.
- (AA) BASKETBALL COURT, SEE DETAIL SHEET C-09.08.
- (BB) TENNIS COURTS, SEE DETAIL SHEET C-09.06.
- (CC) FOOTBALL FIELD AND TRACK, SEE DETAIL SHEET C-09.07.
- (DD) BASEBALL FIELD, SEE DETAIL SHEET C-09.03 AND C-09.04.
- (EE) TRAFFIC GUARDRAIL, SEE DETAIL SHEET C09.01.
- (FF) STAINLESS STEEL REMOVABLE BOLLARD, SEE SPECIFICATIONS AND DETAIL SHEET C-09.02.
- (GG) SITE STAIRS, SEE DETAIL SHEET C-00.00.
- (HH) PIPE GATE, SEE DETAIL SHEET C-09.01.
- (II) CAST-IN-PLACE RETAINING WALL, SEE STRUCTURAL PLANS.
- (JJ) SEGMENTAL RETAINING WALL, SEE SEGMENTAL RETAINING WALL PLANS.
- (KK) SITE RAMP, SEE DETAIL SHEET C-09.01.
- (LL) HIGH JUMP, SEE DETAIL SHEET C-09.08.
- (MM) POLE VAULT LANDING, SEE DETAIL SHEET C-09.08.
- (NN) LONG JUMP AND TRIPLE JUMP, SEE DETAIL SHEET C-09.08.
- (OO) SHOT PUT, SEE DETAIL SHEET C-09.08.
- (PP) WOOD RETAINING WALL, SEE DETAIL SHEET **C-0.00**.
- (QQ) TRAFFIC TABLE, SEE DETAIL SHEET **C-0.00**.
- (RR) SCOREBOARD AND FLAGPOLE, SEE SPECIFICATIONS.
- (SS) REPAIR EX GRAVEL DRIVEWAY, SEE DETAIL SHEET **C-0.00**.
- (TT) MEDIUM DUTY ASPHALT PAVEMENT. SEE DETAIL C-09.01.

LEGEND

RESOURCE CONSERVATION AREA

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY NOT FOR CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

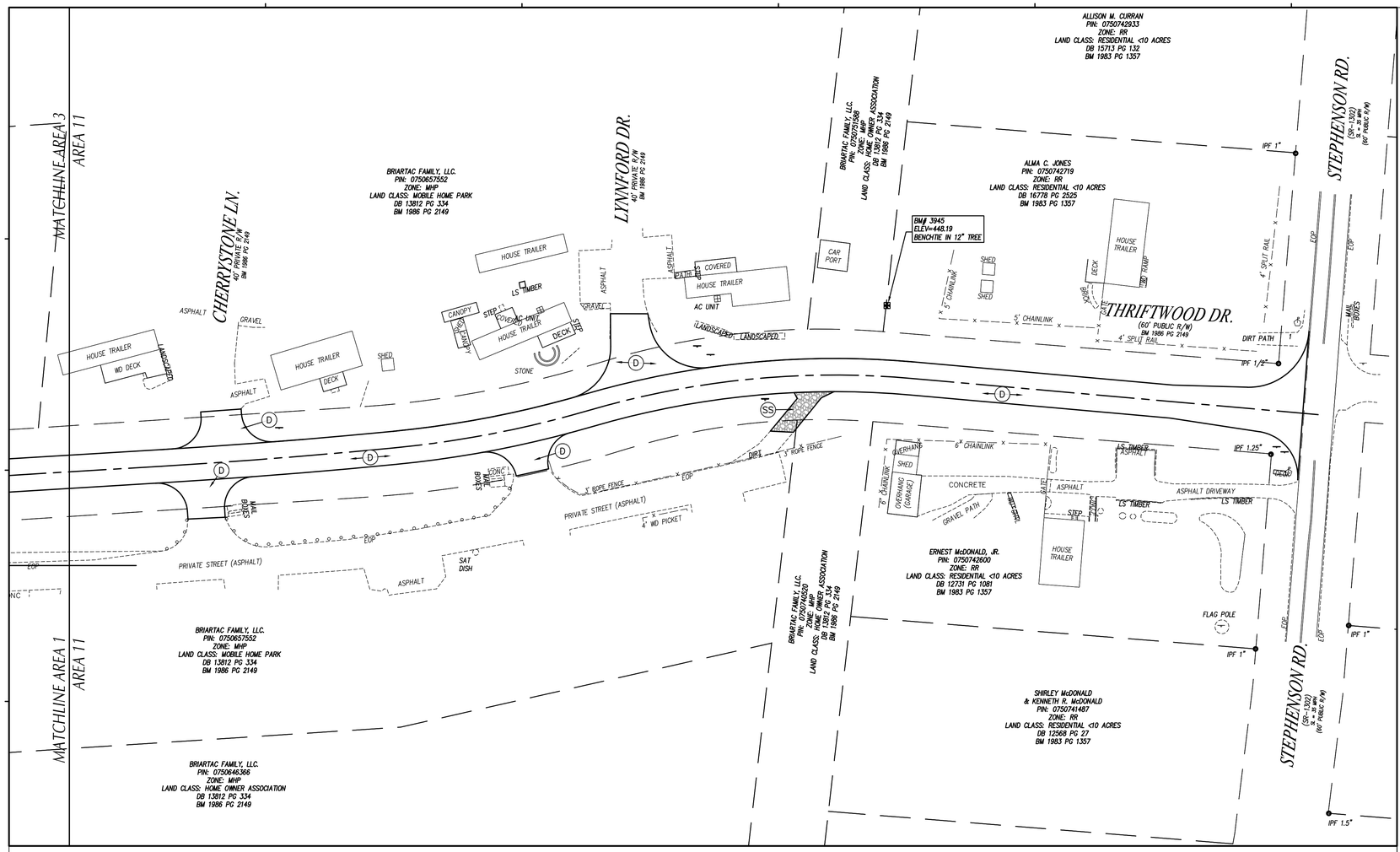
PROJECT NO. 02000.000

SHEET TITLE

STAKING PLAN AREA_9&10

SHEET NUMBER

C-01.08



GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH ALL TOWN OF APEX AND NCDOT STANDARDS AND SPECIFICATIONS.
2. ALL DIMENSIONS SHOWN ARE TO FACE OF CURB AND FACE OF BUILDING WALL, UNLESS OTHERWISE SHOWN.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFICATION OF ALL DIMENSIONS SHOWN AND CONTACT THE ARCHITECT IF ANY DISCREPANCIES OCCUR.
4. CONSTRUCTION STAKE OUT IS THE RESPONSIBILITY OF THE CONTRACTOR.
5. SEE PAVEMENT MARKING AND SIGNAGE SHEETS C01.06 – C01.11 FOR SIGNAGE AND STRIPING PLANS.
6. ALL FACE OF RADIUS' ARE 4 FT UNLESS OTHERWISE SHOWN.
7. ALL PARKING SPACES SHALL BE 9' WIDE X 18' DEEP MIN.
8. (HC) DENOTES ACCESSIBLE PARKING SPACE.
9. (HC-VAN) DENOTES VAN ACCESSIBLE PARKING SPACE.
10. ANY AND ALL LANDSCAPING, EXISTING TREES OR SHRUBS TO REMAIN WHICH ARE DAMAGED DURING DEMOLITION OR CONSTRUCTION SHALL BE REPLACED BY THE CONTRACTOR UTILIZING A LICENSED LANDSCAPE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
11. CONTRACTOR SHALL SUBMIT SCALED PLANS OF ALL SCORING/JOINTS FOR APPROVAL BY ARCHITECT 30 DAYS MINIMUM PRIOR TO INSTALLATION.
12. THE CROSS-SLOPE ON ALL SIDEWALKS SHALL BE A MAXIMUM OF 2.0%
13. NO WORK SHALL BE PERFORMED ON RIGHT-OF-WAYS OR ADJACENT PROPERTIES UNTIL THE OWNER NOTIFIES CONTRACTOR IN WRITING OF PROCUREMENT OF APPROPRIATE PERMITS, EASEMENTS, AGREEMENTS, OR RIGHTS-OF-WAY.

KEY NOTES

- (A) 24" CONCRETE CURB & GUTTER, SEE DETAIL SHEET C-09.00.
- (B) CONCRETE SIDEWALK, SEE DETAIL SHEET C-09.00.
- (C) CONCRETE WHEELSTOP, SEE DETAIL SHEET C-09.01.
- (D) 'HEAVY' DUTY ASPHALT PAVEMENT, SEE DETAIL SHEET C-09.01.
- (E) STANDARD CURB & GUTTER TERMINUS, SEE DETAIL SHEET C-09.00.
- (F) CONCRETE FLUSH WITH PAVEMENT, SEE DETAIL SHEET C-09.00.
- (G) ACCESSIBLE CURB RAMP, SEE DETAIL SHEET C-09.02.
- (H) ACCESSIBLE PARKING, SEE SIGNAGE AND STRIPING PLAN SHEET C-01.10-C-01.19.
- (I) TOWN OF APEX 30" CONCRETE CURB & GUTTER, SEE DETAIL SHEET C-09.02.
- (J) CONCRETE SERVICE COURT WITH MECHANICAL EQUIPMENT, SEE MECHANICAL PLANS FOR EQUIPMENT LAYOUT & RELATED INFORMATION.
- (K) LIGHT DUTY ASPHALT PAVEMENT. SEE DETAIL C-09.01.
- (L) PASSENGER/BUS LOADING ZONE, SEE DETAIL SHEET C-09.02.
- (M) SEE ARCHITECTURAL PLANS FOR CANOPY, SCREEN AND STRUCTURAL WALLS, BUILDING COLUMNS, LOADING DOCK, RAMPS, STAIRS, HANDRAILS, GUARDRAILS, GATES, AND BOLLARDS.
- (N) BLACK VINYL COATED CHAIN LINK FENCE, SEE DETAIL SHEET C-09.00.
- (O) BLACK VINYL COATED CHAIN LINK GATE, SEE DETAIL SHEET C-09.00.
- (P) HEAVY DUTY CONCRETE PAVEMENT, SEE DETAIL SHEET C-09.00.
- (Q) CONCERTE DRIVEWAY APRON, SEE DETAIL C-09.01.
- (R) STAINLESS STEEL BOLLARD, SEE SPECIFICATIONS AND DETAIL SHEET L-05.01.
- (S) TRANSFORMER, SEE PLUMBING, MECHANICAL & ELECTRICAL PLANS.
- (T) DUMPSTERS (REFUSE & RECYCLING), PROVIDED BY OWNER.
- (U) MONUMENT SIGN AND EASEMENT, SEE ARCHITECTURAL PLANS.
- (V) BENCH, SEE SPECIFICATIONS AND DETAIL SHEET C-09.02.
- (W) BIKE RACK, SEE DETAIL SHEET C-09.02 AND SPECIFICATIONS.
- (X) TRASH RECEPTACLE, SEE SPECIFICATIONS.
- (Y) SITE SEAT WALL, SEE DETAIL SHEET C-09.02.
- (Z) SOFTBALL FIELD, SEE DETAIL SHEET C-09.05.
- (AA) BASKETBALL COURT, SEE DETAIL SHEET C-09.08.
- (BB) TENNIS COURTS, SEE DETAIL SHEET C-09.06.
- (CC) FOOTBALL FIELD AND TRACK, SEE DETAIL SHEET C-09.07.
- (DD) BASEBALL FIELD, SEE DETAIL SHEET C-09.03 AND C-09.04.
- (EE) TRAFFIC GUARDRAIL, SEE DETAIL SHEET C09.01.
- (FF) STAINLESS STEEL REMOVABLE BOLLARD, SEE SPECIFICATIONS AND DETAIL SHEET C-09.02.
- (GG) SITE STAIRS, SEE DETAIL SHEET C-00.00.
- (HH) PIPE GATE, SEE DETAIL SHEET C-09.01.
- (II) CAST-IN-PLACE RETAINING WALL, SEE STRUCTURAL PLANS.
- (JJ) SEGMENTAL RETAINING WALL, SEE SEGMENTAL RETAINING WALL PLANS.
- (KK) SITE RAMP, SEE DETAIL SHEET C-09.01.
- (LL) HIGH JUMP, SEE DETAIL SHEET C-09.08.
- (MM) POLE VAULT LANDING, SEE DETAIL SHEET C-09.08.
- (NN) LONG JUMP AND TRIPLE JUMP, SEE DETAIL SHEET C-09.08.
- (OO) SHOT PUT, SEE DETAIL SHEET C-09.08.
- (PP) WOOD RETAINING WALL, SEE DETAIL SHEET **C-0.00**.
- (QQ) TRAFFIC TABLE, SEE DETAIL SHEET **C-0.00**.
- (RR) SCOREBOARD AND FLAGPOLE, SEE SPECIFICATIONS.
- (SS) REPAIR EX GRAVEL DRIVEWAY, SEE DETAIL SHEET **C-0.00**.
- (TT) MEDIUM DUTY ASPHALT PAVEMENT. SEE DETAIL C-09.01.

LEGEND

RESOURCE CONSERVATION AREA

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

MAGNETIC

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

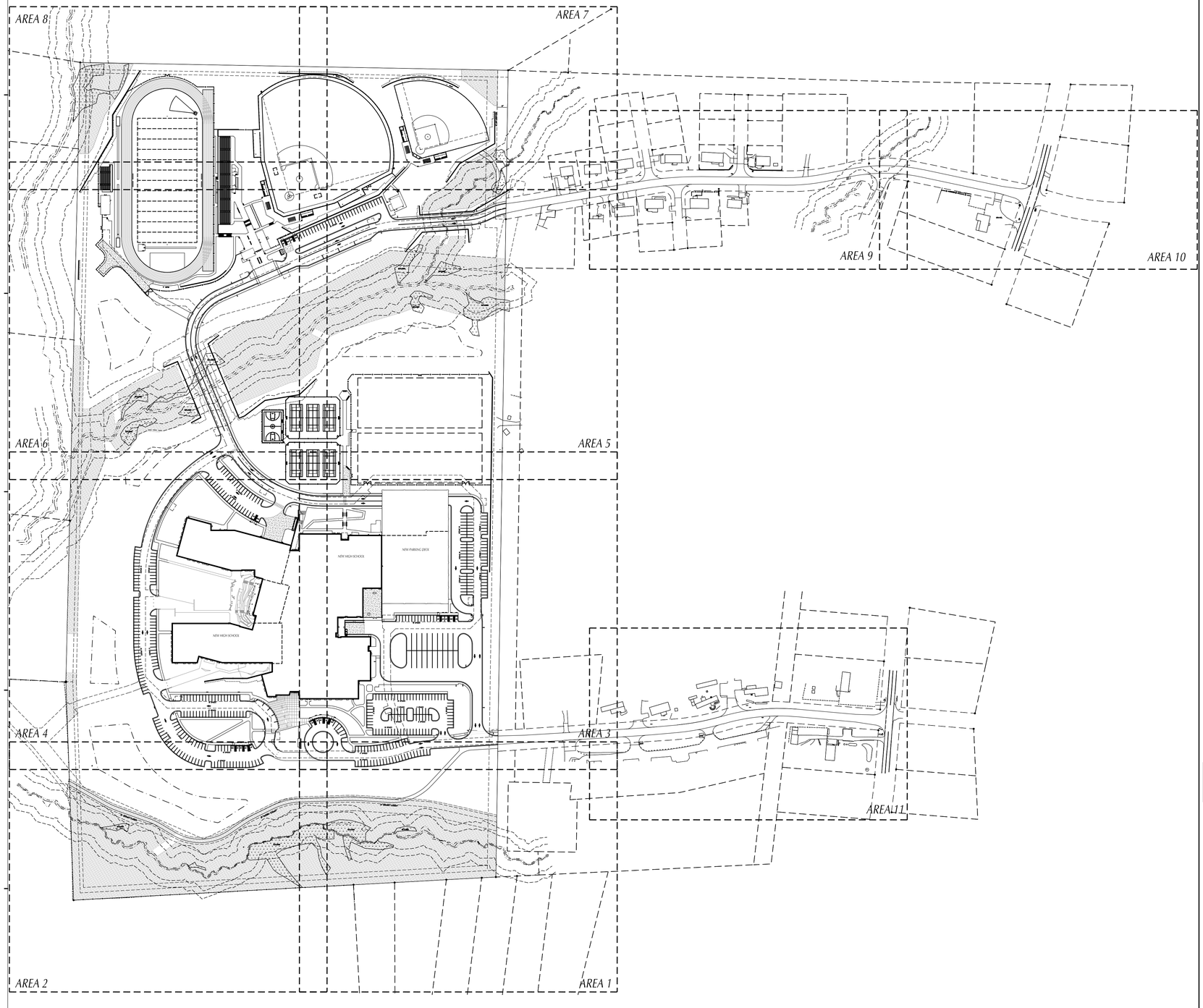
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

SHEET TITLE
STAKING PLAN AREA_11

SHEET NUMBER
C-01.09



LEGEND

RESOURCE CONSERVATION AREA

GRAPHIC SCALE

150 0 75 150 300 600

(IN FEET)
1 inch = 150 ft.

MAGNETIC

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

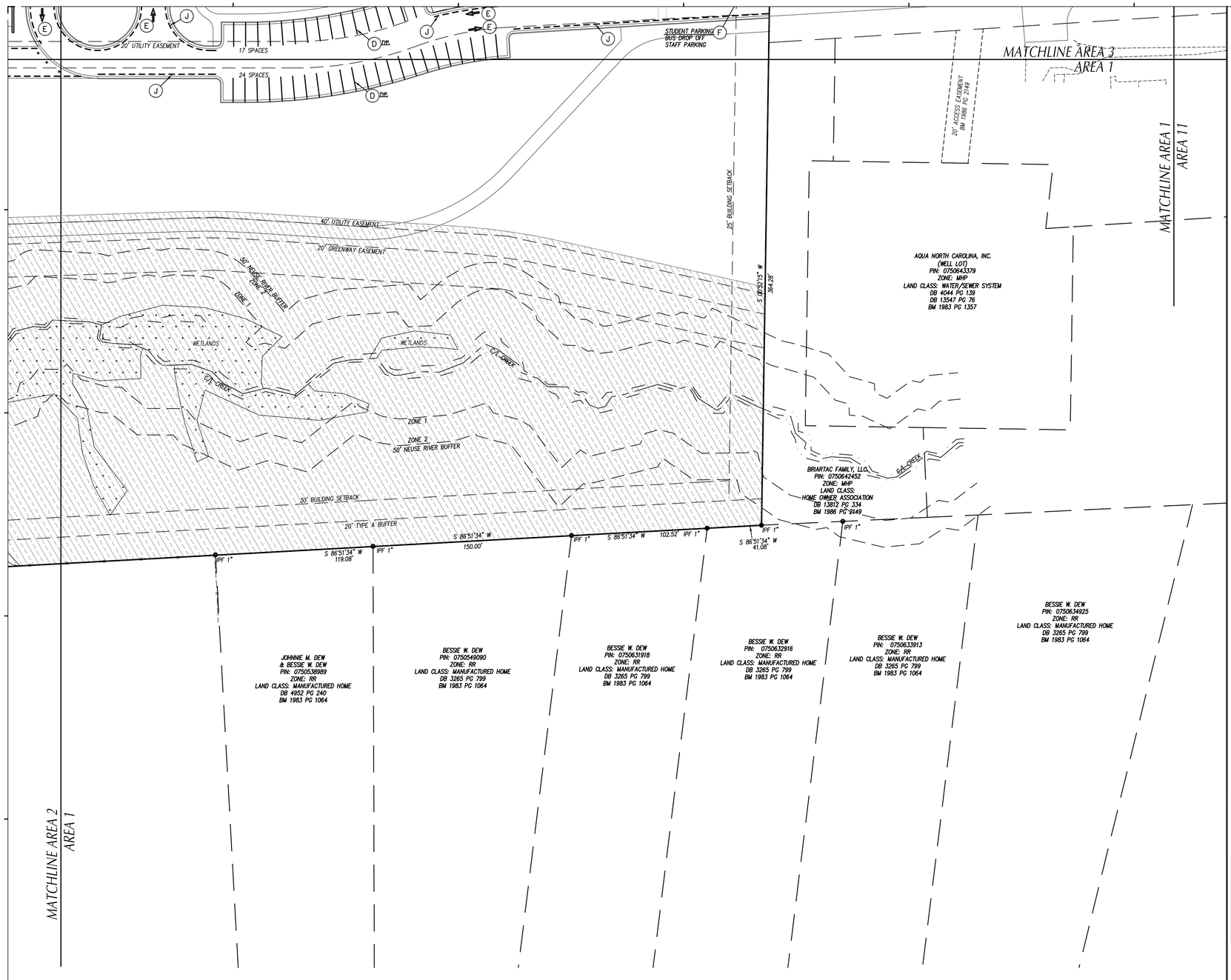
PROJECT NO. 02000.000

SHEET TITLE

PAVEMENT MARKING & SIGNAGE OVERALL PLAN

SHEET NUMBER

C-01.10



TRAFFIC CONTROL NOTES

1. ALL SITE SIGNAGE SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND NCDOT STANDARDS.

SIGN	MUTCD STD.	SIZE
STOP	R1-1	30"x30"
ONE WAY	R6-2	18"x24"
DO NOT ENTER (DNE)	R5-1	30"x30"
NO PARKING ANY TIME FIRE LANE (NPFL)	--	12"x18"
BEGIN ONE WAY (BOW)	R6-6	24"x30"
EMERGENCY PARKING ONLY (EPO)	R8-4	30"x24"

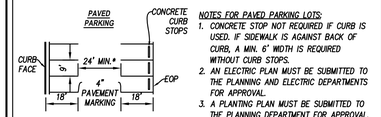
2. ALL SIGNS SHALL BE MOUNTED WITH 7-FT MIN. VERTICAL CLEARANCE TO THE BOTTOM OF THE SIGN ON 3-LB. GALV. STEEL U-CHANNEL POST SET IN 3-FT DEEP x 12-IN DIA. CONCRETE FOOTING.
3. ALL PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE MUTCD AND NCDOT STANDARDS AND THE PROJECT SPECIFICATIONS.

MARKING	NCDOT STD.	SIZE	COLOR
PARKING SPACES	--	4-IN	WHT.
CROSSWALK	1205.07(HI-VIS)	24-IN	WHT.
CROSSWALK	1205.07(STANDARD)	8-IN	WHT.
DIRECTIONAL ARROWS	1205.08	STD.	WHT.
NO PARKING - FIRE LANE *	--	4-IN	YEL.
SOLID	1205.01	4-IN	WHT./YEL.
DIAGONAL	1205.09	8-IN	YEL.
STOP BAR	--	24-IN	WHT.
MINI-SKIP (3'-9' TYPE)	1205.01	4-IN	WHT.

* NO PARKING - FIRE LANE MARKING SHALL BE THERMOPLASTIC AND CONSIST OF A 4" SOLID YELLOW STRIPE AND 8" HIGH YELLOW TEXT "NO PARKING - FIRE LANE" AT 40' INTERVALS.

4. ALL PAVEMENT MARKINGS SHALL BE THERMOPLASTIC TYPE EXCEPT FOR PARKING SPACE LINES WHICH SHALL BE ALKYD-RESIN TYPE PAINT.
5. ALL SIGNAGE SHALL BE FIELD STAKED AND THE LOCATIONS APPROVED BY CLH DESIGN PRIOR TO SIGN INSTALLATION.
6. CENTER ALL DIRECTIONAL ARROWS WITHIN TRAVEL LANE.
7. COORDINATE FIRE LANE MARKINGS WITH TOWN OF APEX FIRE MARSHAL.
8. ALL SIGNS SHALL USE PRISMATIC SHEETING THAT MEETS MINIMUM REFLECTIVITY STANDARDS FOUND IN THE LATEST EDITION OF THE MUTCD.

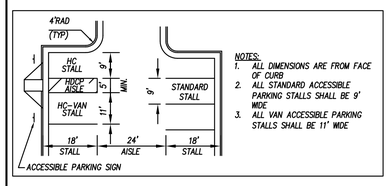
TYP. PARKING DIMENSIONS



PAVEMENT LOT STRUCTURE
2" ASPHALT SURFACE COARSE
6" AGGREGATE BASE COARSE
COMPACTED SUBGRADE

NOTES FOR PAVED PARKING LOTS:
1. CONCRETE STOP NOT REQUIRED IF CURB IS USED. IF SIDEWALK IS AGAINST BACK OF CURB, A MIN. 6' WIDTH IS REQUIRED WITHOUT CURB STOPS.
2. AN ELECTRIC PLAN MUST BE SUBMITTED TO THE PLANNING AND ELECTRIC DEPARTMENTS FOR APPROVAL.
3. A PLANTING PLAN MUST BE SUBMITTED TO THE PLANNING DEPARTMENT FOR APPROVAL.
4. NUMBER OF REQUIRED ADA SPACES FOR PAVED PARKING AREAS ARE LISTED IN THE CURRENT NC BUILDING CODE.
5. ALL ADA PARKING SPACES MUST DIRECTLY CONNECT TO PUBLIC ACCESS ROUTES THAT MEET ADA REQUIREMENTS.
6. ADA PARKING SPACES MUST MEET ADA DIMENSIONS.

TOWN OF APEX STANDARDS	PARKING	APEX NO. 200.04
EFFECTIVE OCTOBER 2018		SHEET 1 OF 1



NOTES:
1. ALL DIMENSIONS ARE FROM FACE OF CURB
2. ALL STANDARD ACCESSIBLE PARKING STALLS SHALL BE 9' WIDE
3. ALL VAN ACCESSIBLE PARKING STALLS SHALL BE 11' WIDE

ACCESSIBLE PARKING SIGN

KEY NOTES

(A) ACCESSIBLE PARKING & SIGNAGE, SEE DETAIL SHEET C-XX.XX.
(B) HI-VIS CROSS WALK, SEE TRAFFIC CONTROL NOTES THIS SHEET.
(C) NO PARKING - FIRE LANE SIGNAGE, SEE DETAIL SHEET C-XX.XX.
(D) SOLID WHITE MARKING, SEE TRAFFIC CONTROL NOTES THIS SHEET.
(E) DIRECTIONAL ARROW, SEE TRAFFIC CONTROL NOTES THIS SHEET.
(F) SCHOOL DIRECTIONAL SIGNAGE, SEE DETAIL SHEETS C-XX.XX.
(G) DIAGONAL STRIPING, SEE TRAFFIC CONTROL NOTES THIS SHEET.
(H) STOP BAR, SEE TRAFFIC CONTROL NOTES THIS SHEET.
(I) PASSENGER/BUS LOADING ZONE SIGNAGE, SEE DETAIL SHEET C-XX.XX.
(J) NO PARKING - FIRE LANE MARKINGS, SEE TRAFFIC CONTROL NOTES THIS SHEET.
(K) TRAFFIC CONTROL SIGNAGE, SEE TRAFFIC CONTROL NOTES THIS SHEET.
(L) VISITOR PARKING SIGNAGE, SEE DETAIL SHEET C-XX.XX.
(M) STANDARD CROSSWALK, SEE TRAFFIC CONTROL NOTES THIS SHEET.
(N) HIGH SCHOOL MONUMENT SIGNAGE, SEE DETAIL SHEET C-XX.XX.
(O) MINI-SKIP MARKING, SEE TRAFFIC CONTROL NOTES THIS SHEET.
(P) RAISED CROSSING TABLE SIGNAGE, SEE TRAFFIC CONTROL NOTES THIS SHEET & DETAIL SHEET C-XX.XX.
(Q) SPECIAL PARKING SIGNAGE, SEE DETAIL SHEET C-XX.XX.
(R) PARKING SPACE NUMBER, SEE TRAFFIC CONTROL NOTES THIS SHEET.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

MAGNETIC

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

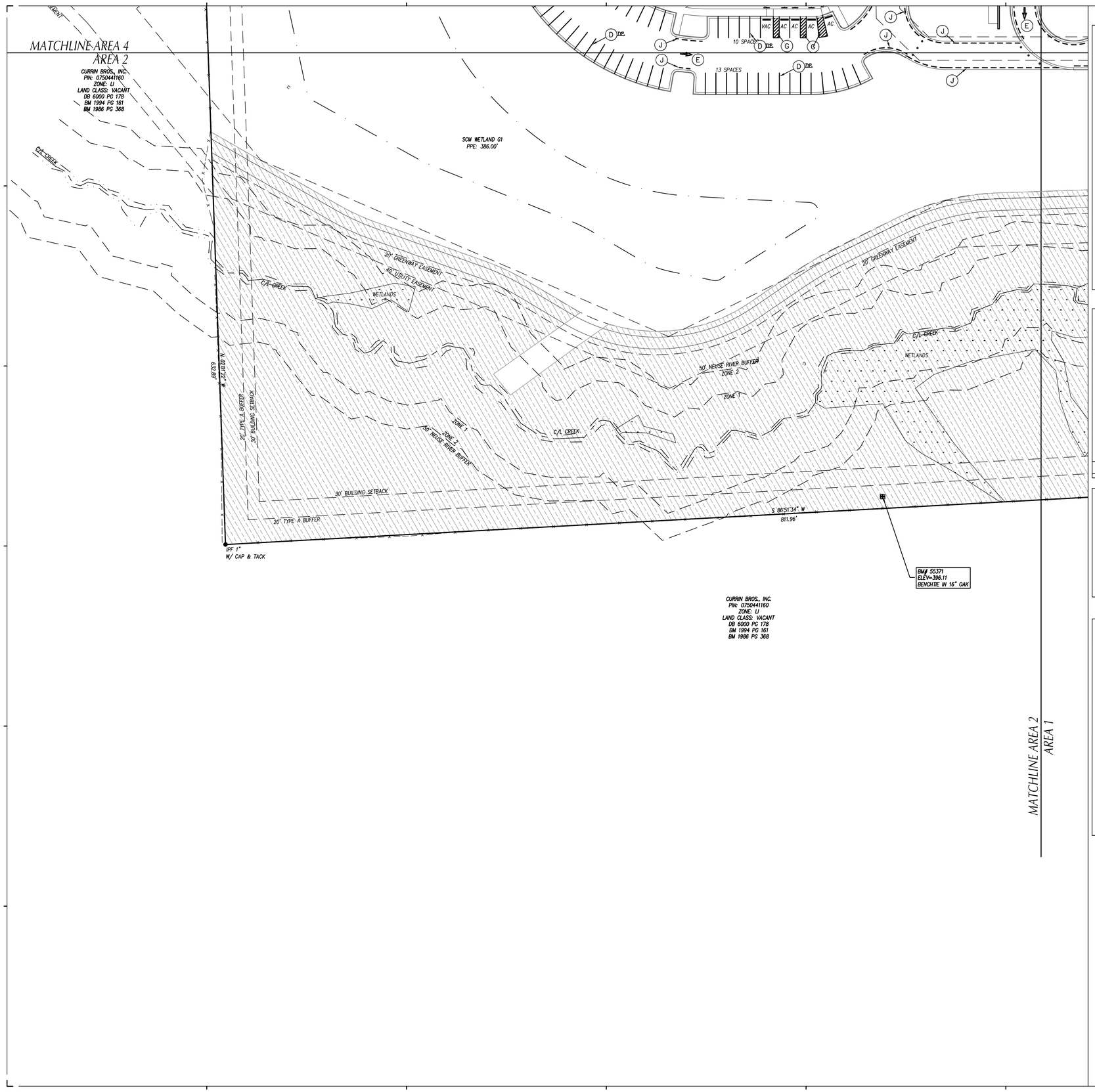
PROJECT NO. 02000.000

SHEET TITLE

PAVEMENT MARKING & SIGNAGE PLAN AREA_1

SHEET NUMBER

C-01.11



CURRIN BROS., INC.
PIN: 0750441160
ZONE: LI
LAND CLASS: VACANT
DB 6000 PG 178
BM 1994 PG 161
BM 1986 PG 368

TRAFFIC CONTROL NOTES

1. ALL SITE SIGNAGE SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND NCDOT STANDARDS.

SIGN	MUTCD STD.	SIZE
STOP	R1-1	30"x30"
ONE WAY	R6-2	18"x24"
DO NOT ENTER (DNE)	R5-1	30"x30"
NO PARKING ANY TIME FIRE LANE (NPFL)	--	12"x18"
BEGIN ONE WAY (BOW)	R6-6	24"x30"
EMERGENCY PARKING ONLY (EPO)	R8-4	30"x24"

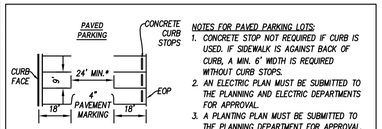
2. ALL SIGNS SHALL BE MOUNTED WITH 7-FT MIN. VERTICAL CLEARANCE TO THE BOTTOM OF THE SIGN ON 3-LB. GALV. STEEL U-CHANNEL POST SET IN 3-FT DEEP x 12-IN DIA. CONCRETE FOOTING.
3. ALL PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE MUTCD AND NCDOT STANDARDS AND THE PROJECT SPECIFICATIONS.

MARKING	NCDOT STD.	SIZE	COLOR
PARKING SPACES	--	4-IN	WHT.
CROSSWALK	1205.07(HI-VIS)	24-IN	WHT.
CROSSWALK	1205.07(STANDARD)	8-IN	WHT.
DIRECTIONAL ARROWS	1205.08	STD.	WHT.
NO PARKING - FIRE LANE *	--	4-IN	YEL.
SOLID	1205.01	4-IN	WHT./YEL.
DIAGONAL	1205.09	8-IN	YEL.
STOP BAR	--	24-IN	WHT.
MINI-SKIP (3'-9' TYPE)	1205.01	4-IN	WHT.

* NO PARKING - FIRE LANE MARKING SHALL BE THERMOPLASTIC AND CONSIST OF A 4" SOLID YELLOW STRIPE AND 8" HIGH YELLOW TEXT "NO PARKING - FIRE LANE" AT 40' INTERVALS.

4. ALL PAVEMENT MARKINGS SHALL BE THERMOPLASTIC TYPE EXCEPT FOR PARKING SPACE LINES WHICH SHALL BE ALKYD-RESIN TYPE PAINT.
5. ALL SIGNAGE SHALL BE FIELD STAKED AND THE LOCATIONS APPROVED BY CLH DESIGN PRIOR TO SIGN INSTALLATION.
6. CENTER ALL DIRECTIONAL ARROWS WITHIN TRAVEL LANE.
7. COORDINATE FIRE LANE MARKINGS WITH TOWN OF APEX FIRE MARSHAL.
8. ALL SIGNS SHALL USE PRISMATIC SHEETING THAT MEETS MINIMUM REFLECTIVITY STANDARDS FOUND IN THE LATEST EDITION OF THE MUTCD.

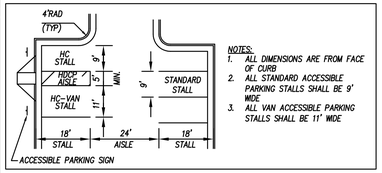
TYP. PARKING DIMENSIONS



PAVEMENT LOT STRUCTURE
2" ASPHALT SURFACE COARSE
6" AGGREGATE BASE COARSE
COMPACTED SUBGRADE

NOTES FOR PAVED PARKING LOTS:
1. CONCRETE STOP NOT REQUIRED IF CURB IS USED. IF SIDEWALK IS AGAINST BACK OF CURB, A MIN. 6' WIDTH IS REQUIRED WITHOUT CURB STOPS.
2. AN ELECTRIC PLAN MUST BE SUBMITTED TO THE PLANNING AND ELECTRIC DEPARTMENTS FOR APPROVAL.
3. A PLANTING PLAN MUST BE SUBMITTED TO THE PLANNING DEPARTMENT FOR APPROVAL.
4. NUMBER OF REQUIRED ADA SPACES FOR PAVED PARKING AREAS ARE LISTED IN THE CURRENT NC BUILDING CODE.
5. ALL ADA PARKING SPACES MUST DIRECTLY CONNECT TO PUBLIC ACCESS ROUTES THAT MEET ADA REQUIREMENTS.
6. ADA PARKING SPACES MUST MEET ADA DIMENSIONS.

TOWN OF APEX STANDARDS	PARKING	ADA 200.04
EFFECTIVE OCTOBER 2018		SHEET 1 OF 1



ACCESSIBLE PARKING SIGN

NOTES:
1. ALL DIMENSIONS ARE FROM FACE OF CURB
2. ALL STANDARD ACCESSIBLE PARKING STALLS SHALL BE 9' WIDE
3. ALL VAN ACCESSIBLE PARKING STALLS SHALL BE 11' WIDE

KEY NOTES

- (A) ACCESSIBLE PARKING & SIGNAGE, SEE DETAIL SHEET C-XX.XX.
- (B) HI-VIS CROSS WALK, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (C) NO PARKING - FIRE LANE SIGNAGE, SEE DETAIL SHEET C-XX.XX.
- (D) SOLID WHITE MARKING, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (E) DIRECTIONAL ARROW, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (F) SCHOOL DIRECTIONAL SIGNAGE, SEE DETAIL SHEETS C-XX.XX.
- (G) DIAGONAL STRIPING, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (H) STOP BAR, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (I) PASSENGER/BUS LOADING ZONE SIGNAGE, SEE DETAIL SHEET C-XX.XX.
- (J) NO PARKING - FIRE LANE MARKINGS, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (K) TRAFFIC CONTROL SIGNAGE, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (L) VISITOR PARKING SIGNAGE, SEE DETAIL SHEET C-XX.XX.
- (M) STANDARD CROSSWALK, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (N) HIGH SCHOOL MONUMENT SIGNAGE, SEE DETAIL SHEET C-XX.XX.
- (O) MINI-SKIP MARKING, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (P) RAISED CROSSING TABLE SIGNAGE, SEE TRAFFIC CONTROL NOTES THIS SHEET & DETAIL SHEET C-XX.XX.
- (Q) SPECIAL PARKING SIGNAGE, SEE DETAIL SHEET C-XX.XX.
- (R) PARKING SPACE NUMBER, SEE TRAFFIC CONTROL NOTES THIS SHEET.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

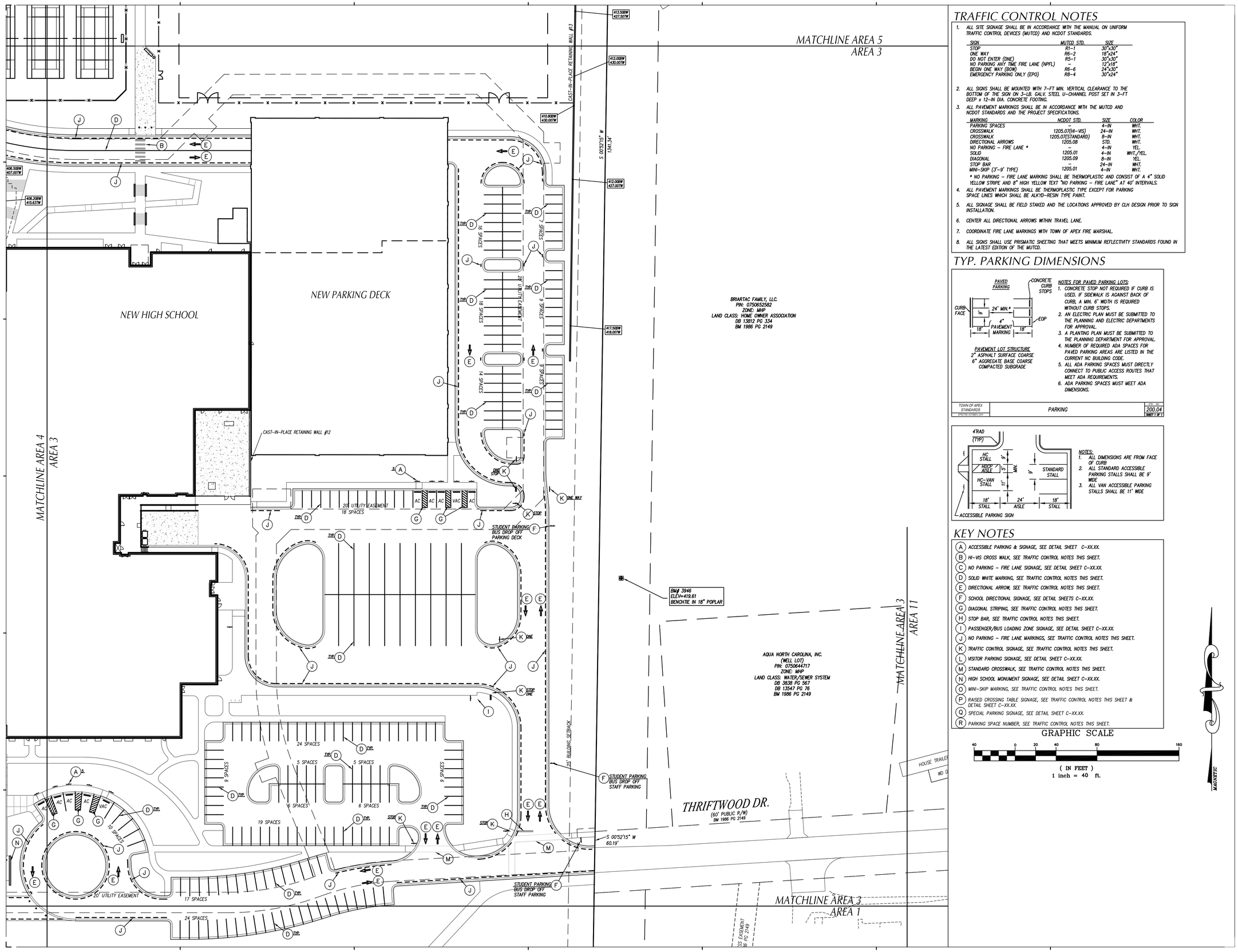
1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

SHEET TITLE
PAVEMENT MARKING & SIGNAGE PLAN AREA_2

SHEET NUMBER
C-01.12



TRAFFIC CONTROL NOTES

1. ALL SITE SIGNAGE SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND NCDOT STANDARDS.

SIGN	MUTCD STD.	SIZE
STOP	R1-1	30"x30"
ONE WAY	R6-2	18"x24"
DO NOT ENTER (DNE)	R5-1	30"x30"
NO PARKING ANY TIME FIRE LANE (NPFL)	--	12"x18"
BEGIN ONE WAY (BOW)	R6-6	24"x30"
EMERGENCY PARKING ONLY (EPO)	R8-4	30"x24"

2. ALL SIGNS SHALL BE MOUNTED WITH 7-FT MIN. VERTICAL CLEARANCE TO THE BOTTOM OF THE SIGN ON 3-LB. GALV. STEEL U-CHANNEL POST SET IN 3-FT DEEP x 12-IN DIA. CONCRETE FOOTING.
3. ALL PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE MUTCD AND NCDOT STANDARDS AND THE PROJECT SPECIFICATIONS.

MARKING	NCDOT STD.	SIZE	COLOR
PARKING SPACES	--	4-IN	WHT.
CROSSWALK	1205.07(HI-VIS)	24-IN	WHT.
CROSSWALK	1205.07(STANDARD)	8-IN	WHT.
DIRECTIONAL ARROWS	1205.08	STD.	WHT.
NO PARKING - FIRE LANE *	--	4-IN	YEL.
SOLID	1205.01	4-IN	WHT./YEL.
DIAGONAL	1205.09	8-IN	YEL.
STOP BAR	--	24-IN	WHT.
MINI-SKIP (3'-9' TYPE)	1205.01	4-IN	WHT.

* NO PARKING - FIRE LANE MARKING SHALL BE THERMOPLASTIC AND CONSIST OF A 4" SOLID YELLOW STRIPE AND 8" HIGH YELLOW TEXT "NO PARKING - FIRE LANE" AT 40' INTERVALS.

4. ALL PAVEMENT MARKINGS SHALL BE THERMOPLASTIC TYPE EXCEPT FOR PARKING SPACE LINES WHICH SHALL BE ALKYD-RESIN TYPE PAINT.
5. ALL SIGNAGE SHALL BE FIELD STAKED AND THE LOCATIONS APPROVED BY CLH DESIGN PRIOR TO SIGN INSTALLATION.
6. CENTER ALL DIRECTIONAL ARROWS WITHIN TRAVEL LANE.
7. COORDINATE FIRE LANE MARKINGS WITH TOWN OF APEX FIRE MARSHAL.
8. ALL SIGNS SHALL USE PRISMATIC SHEETING THAT MEETS MINIMUM REFLECTIVITY STANDARDS FOUND IN THE LATEST EDITION OF THE MUTCD.

TYP. PARKING DIMENSIONS

PAVEMENT LOT STRUCTURE
2" ASPHALT SURFACE COURSE
6" AGGREGATE BASE COURSE
COMPACTED SUBGRADE

NOTES FOR PAVED PARKING LOTS:
1. CONCRETE STOP NOT REQUIRED IF CURB IS USED. IF SIDEWALK IS AGAINST BACK OF CURB, A MIN. 6' WIDTH IS REQUIRED WITHOUT CURB STOPS.
2. AN ELECTRIC PLAN MUST BE SUBMITTED TO THE PLANNING AND ELECTRIC DEPARTMENTS FOR APPROVAL.
3. A PLANTING PLAN MUST BE SUBMITTED TO THE PLANNING DEPARTMENT FOR APPROVAL.
4. NUMBER OF REQUIRED ADA SPACES FOR PAVED PARKING AREAS ARE LISTED IN THE CURRENT NC BUILDING CODE.
5. ALL ADA PARKING SPACES MUST DIRECTLY CONNECT TO PUBLIC ACCESS ROUTES THAT MEET ADA REQUIREMENTS.
6. ADA PARKING SPACES MUST MEET ADA DIMENSIONS.

TOWN OF APEX STANDARDS (EFFECTIVE OCTOBER 2013)	PARKING	DWG. NO. 200.04 SHT 1 OF 1

NOTES:
1. ALL DIMENSIONS ARE FROM FACE OF CURB
2. ALL STANDARD ACCESSIBLE PARKING STALLS SHALL BE 9' WIDE
3. ALL VAN ACCESSIBLE PARKING STALLS SHALL BE 11' WIDE

ACCESSIBLE PARKING SIGN

KEY NOTES

- (A) ACCESSIBLE PARKING & SIGNAGE, SEE DETAIL SHEET C-XX.XX.
- (B) HI-VIS CROSS WALK, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (C) NO PARKING - FIRE LANE SIGNAGE, SEE DETAIL SHEET C-XX.XX.
- (D) SOLID WHITE MARKING, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (E) DIRECTIONAL ARROW, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (F) SCHOOL DIRECTIONAL SIGNAGE, SEE DETAIL SHEETS C-XX.XX.
- (G) DIAGONAL STRIPING, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (H) STOP BAR, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (I) PASSENGER/BUS LOADING ZONE SIGNAGE, SEE DETAIL SHEET C-XX.XX.
- (J) NO PARKING - FIRE LANE MARKINGS, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (K) TRAFFIC CONTROL SIGNAGE, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (L) VISITOR PARKING SIGNAGE, SEE DETAIL SHEET C-XX.XX.
- (M) STANDARD CROSSWALK, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (N) HIGH SCHOOL MONUMENT SIGNAGE, SEE DETAIL SHEET C-XX.XX.
- (O) MINI-SKIP MARKING, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (P) RAISED CROSSING TABLE SIGNAGE, SEE TRAFFIC CONTROL NOTES THIS SHEET & DETAIL SHEET C-XX.XX.
- (Q) SPECIAL PARKING SIGNAGE, SEE DETAIL SHEET C-XX.XX.
- (R) PARKING SPACE NUMBER, SEE TRAFFIC CONTROL NOTES THIS SHEET.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

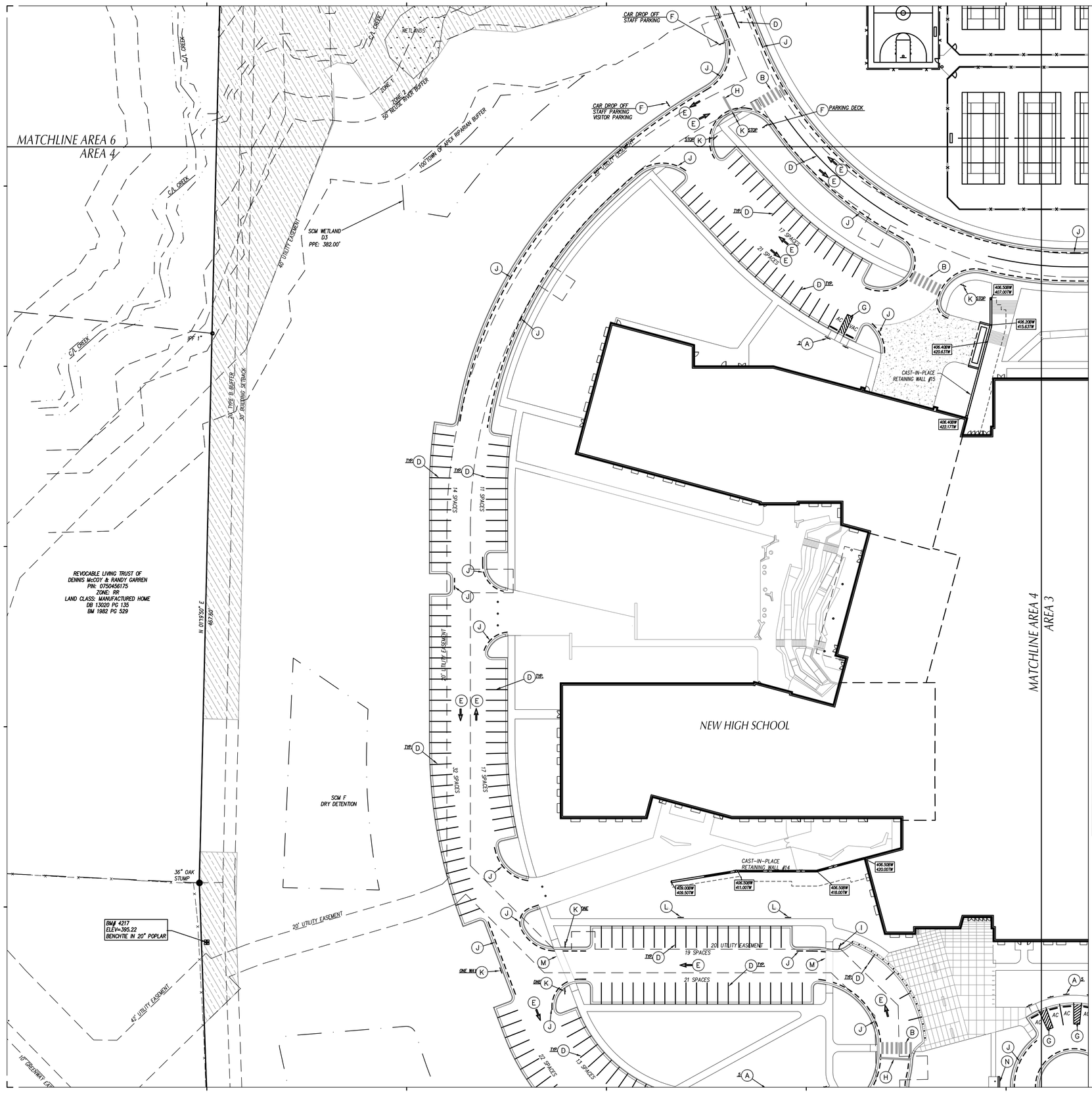
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

SHEET TITLE
PAVEMENT MARKING & SIGNAGE PLAN AREA_3

SHEET NUMBER
C-01.13



TRAFFIC CONTROL NOTES

1. ALL SITE SIGNAGE SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND NCDOT STANDARDS.

SIGN	MUTCD STD.	SIZE
STOP	R1-1	30"x30"
ONE WAY	R6-2	18"x24"
DO NOT ENTER (DNE)	R5-1	30"x30"
NO PARKING ANY TIME FIRE LANE (NPFL)	--	12"x18"
BEGIN ONE WAY (BOW)	R6-6	24"x30"
EMERGENCY PARKING ONLY (EPO)	R8-4	30"x24"

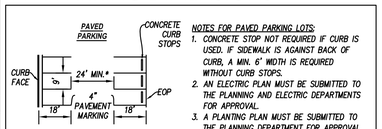
2. ALL SIGNS SHALL BE MOUNTED WITH 7-FT MIN. VERTICAL CLEARANCE TO THE BOTTOM OF THE SIGN ON 3-LB. GALV. STEEL U-CHANNEL POST SET IN 3-FT DEEP x 12-IN DIA. CONCRETE FOOTING.
3. ALL PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE MUTCD AND NCDOT STANDARDS AND THE PROJECT SPECIFICATIONS.

MARKING	NCDOT STD.	SIZE	COLOR
PARKING SPACES	--	4-IN	WHT.
CROSSWALK	1205.07(HI-VIS)	24-IN	WHT.
CROSSWALK	1205.07(STANDARD)	8-IN	WHT.
DIRECTIONAL ARROWS	1205.08	STD.	WHT.
NO PARKING - FIRE LANE *	--	4-IN	YEL.
SOLID	1205.01	4-IN	WHT./YEL.
DIAGONAL	1205.09	8-IN	YEL.
STOP BAR	--	24-IN	WHT.
MINI-SKIP (3'-9' TYPE)	1205.01	4-IN	WHT.

* NO PARKING - FIRE LANE MARKING SHALL BE THERMOPLASTIC AND CONSIST OF A 4" SOLID YELLOW STRIPE AND 8" HIGH YELLOW TEXT "NO PARKING - FIRE LANE" AT 40' INTERVALS.

4. ALL PAVEMENT MARKINGS SHALL BE THERMOPLASTIC TYPE EXCEPT FOR PARKING SPACE LINES WHICH SHALL BE ALKYD-RESIN TYPE PAINT.
5. ALL SIGNAGE SHALL BE FIELD STAKED AND THE LOCATIONS APPROVED BY CLH DESIGN PRIOR TO SIGN INSTALLATION.
6. CENTER ALL DIRECTIONAL ARROWS WITHIN TRAVEL LANE.
7. COORDINATE FIRE LANE MARKINGS WITH TOWN OF APEX FIRE MARSHAL.
8. ALL SIGNS SHALL USE PRISMATIC SHEETING THAT MEETS MINIMUM REFLECTIVITY STANDARDS FOUND IN THE LATEST EDITION OF THE MUTCD.

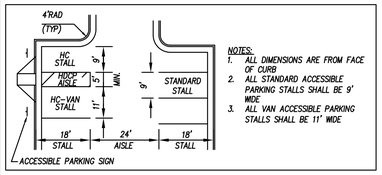
TYP. PARKING DIMENSIONS



PAVEMENT LOT STRUCTURE
2" ASPHALT SURFACE COARSE
6" AGGREGATE BASE COARSE
COMPACTED SUBGRADE

NOTES FOR PAVED PARKING LOTS:
1. CONCRETE STOP NOT REQUIRED IF CURB IS USED. IF SIDEWALK IS AGAINST BACK OF CURB, A MIN. 6' WIDTH IS REQUIRED WITHOUT CURB STOPS.
2. AN ELECTRIC PLAN MUST BE SUBMITTED TO THE PLANNING AND ELECTRIC DEPARTMENTS FOR APPROVAL.
3. A PLANTING PLAN MUST BE SUBMITTED TO THE PLANNING DEPARTMENT FOR APPROVAL.
4. NUMBER OF REQUIRED ADA SPACES FOR PAVED PARKING AREAS ARE LISTED IN THE CURRENT NC BUILDING CODE.
5. ALL ADA PARKING SPACES MUST DIRECTLY CONNECT TO PUBLIC ACCESS ROUTES THAT MEET ADA REQUIREMENTS.
6. ADA PARKING SPACES MUST MEET ADA DIMENSIONS.

TOWN OF APEX STANDARDS (EFFECTIVE OCTOBER 2013)	PARKING	DETAIL NO. 200.04 SHEET 1 OF 1



NOTES:
1. ALL DIMENSIONS ARE FROM FACE OF CURB
2. ALL STANDARD ACCESSIBLE PARKING STALLS SHALL BE 9' WIDE
3. ALL VAN ACCESSIBLE PARKING STALLS SHALL BE 11' WIDE

ACCESSIBLE PARKING SIGN

KEY NOTES

- (A) ACCESSIBLE PARKING & SIGNAGE, SEE DETAIL SHEET C-XX.XX.
- (B) HI-VIS CROSS WALK, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (C) NO PARKING - FIRE LANE SIGNAGE, SEE DETAIL SHEET C-XX.XX.
- (D) SOLID WHITE MARKING, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (E) DIRECTIONAL ARROW, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (F) SCHOOL DIRECTIONAL SIGNAGE, SEE DETAIL SHEETS C-XX.XX.
- (G) DIAGONAL STRIPING, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (H) STOP BAR, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (I) PASSENGER/BUS LOADING ZONE SIGNAGE, SEE DETAIL SHEET C-XX.XX.
- (J) NO PARKING - FIRE LANE MARKINGS, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (K) TRAFFIC CONTROL SIGNAGE, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (L) VISITOR PARKING SIGNAGE, SEE DETAIL SHEET C-XX.XX.
- (M) STANDARD CROSSWALK, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (N) HIGH SCHOOL MONUMENT SIGNAGE, SEE DETAIL SHEET C-XX.XX.
- (O) MINI-SKIP MARKING, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (P) RAISED CROSSING TABLE SIGNAGE, SEE TRAFFIC CONTROL NOTES THIS SHEET & DETAIL SHEET C-XX.XX.
- (Q) SPECIAL PARKING SIGNAGE, SEE DETAIL SHEET C-XX.XX.
- (R) PARKING SPACE NUMBER, SEE TRAFFIC CONTROL NOTES THIS SHEET.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

MAGNETIC

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

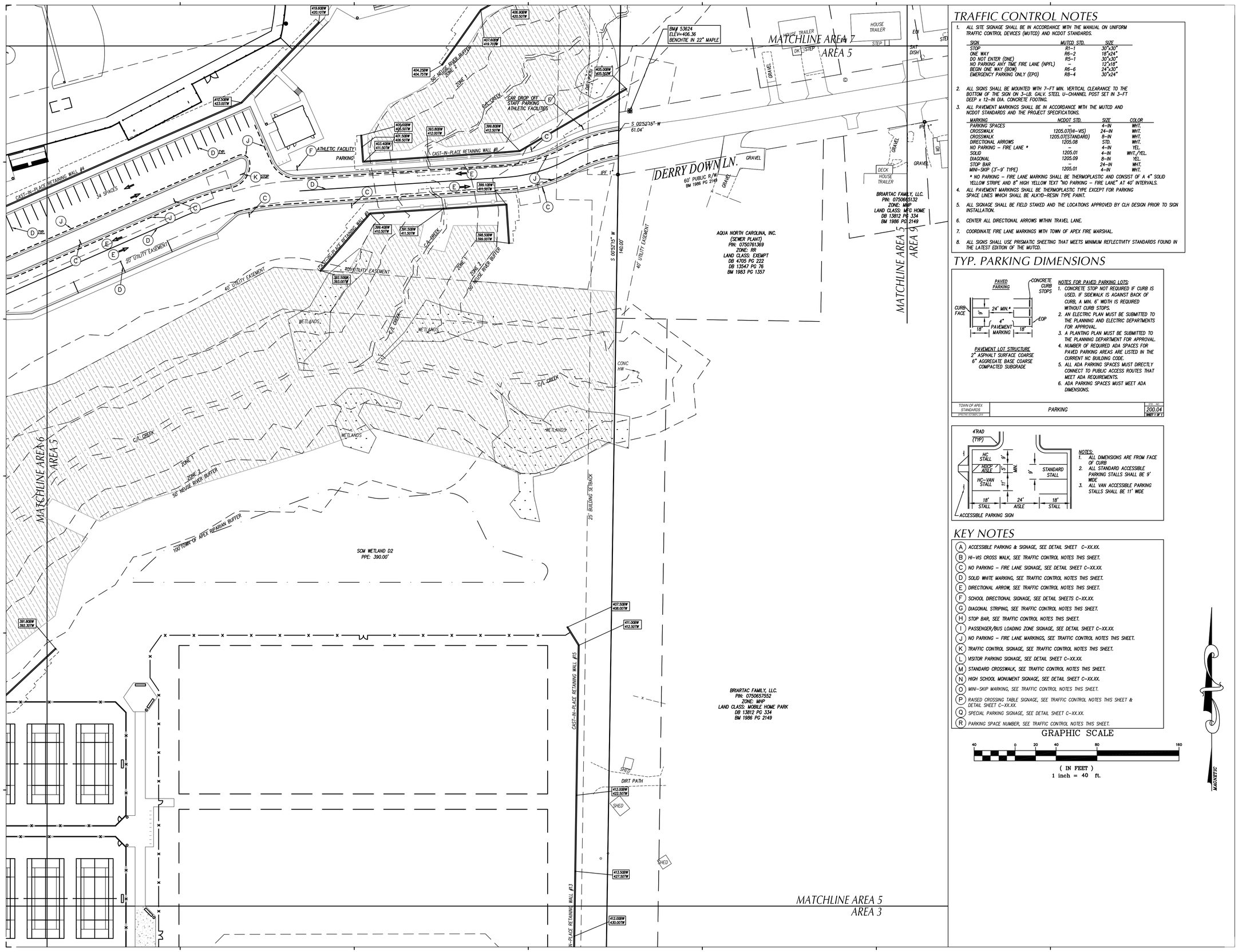
PROJECT NO. 02000.000

SHEET TITLE

PAVEMENT MARKING & SIGNAGE PLAN AREA_4

SHEET NUMBER

C-01.14



TRAFFIC CONTROL NOTES

1. ALL SITE SIGNAGE SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND NCDOT STANDARDS.

SIGN	MUTCD STD.	SIZE
STOP	R1-1	30"x30"
ONE WAY	R6-2	18"x24"
DO NOT ENTER (DNE)	R5-1	30"x30"
NO PARKING ANY TIME FIRE LANE (NPFL)	--	12"x18"
BEGIN ONE WAY (BOW)	R6-6	24"x30"
EMERGENCY PARKING ONLY (EPO)	R8-4	30"x24"

2. ALL SIGNS SHALL BE MOUNTED WITH 7-FT MIN. VERTICAL CLEARANCE TO THE BOTTOM OF THE SIGN ON 3-LB. GALV. STEEL U-CHANNEL POST SET IN 3-FT DEEP x 12-IN DIA. CONCRETE FOOTING.
3. ALL PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE MUTCD AND NCDOT STANDARDS AND THE PROJECT SPECIFICATIONS.

MARKING	NCDOT STD.	SIZE	COLOR
PARKING SPACES	--	4-IN	WHT.
CROSSWALK	1205.07(HI-VIS)	24-IN	WHT.
CROSSWALK	1205.07(STANDARD)	8-IN	WHT.
DIRECTIONAL ARROWS	1205.08	STD.	WHT.
NO PARKING - FIRE LANE *	--	4-IN	YEL.
SOLID	1205.01	4-IN	WHT./YEL.
DIAGONAL	1205.09	8-IN	YEL.
STOP BAR		24-IN	WHT.
MINI-SKIP (3'-9' TYPE)	1205.01	4-IN	WHT.

* NO PARKING - FIRE LANE MARKING SHALL BE THERMOPLASTIC AND CONSIST OF A 4" SOLID YELLOW STRIPE AND 8" HIGH YELLOW TEXT "NO PARKING - FIRE LANE" AT 40' INTERVALS.

4. ALL PAVEMENT MARKINGS SHALL BE THERMOPLASTIC TYPE EXCEPT FOR PARKING SPACE LINES WHICH SHALL BE ALKYD-RESIN TYPE PAINT.
5. ALL SIGNAGE SHALL BE FIELD STAKED AND THE LOCATIONS APPROVED BY CLH DESIGN PRIOR TO SIGN INSTALLATION.
6. CENTER ALL DIRECTIONAL ARROWS WITHIN TRAVEL LANE.
7. COORDINATE FIRE LANE MARKINGS WITH TOWN OF APEX FIRE MARSHAL.
8. ALL SIGNS SHALL USE PRISMATIC SHEETING THAT MEETS MINIMUM REFLECTIVITY STANDARDS FOUND IN THE LATEST EDITION OF THE MUTCD.

TYP. PARKING DIMENSIONS

PAVEMENT LOT STRUCTURE
2" ASPHALT SURFACE COARSE
6" AGGREGATE BASE COARSE
COMPACTED SUBGRADE

NOTES FOR PAVED PARKING LOTS:
1. CONCRETE STOP NOT REQUIRED IF CURB IS USED. IF SIDEWALK IS AGAINST BACK OF CURB, A MIN. 6' WIDTH IS REQUIRED WITHOUT CURB STOPS.
2. AN ELECTRIC PLAN MUST BE SUBMITTED TO THE PLANNING AND ELECTRIC DEPARTMENTS FOR APPROVAL.
3. A PLANTING PLAN MUST BE SUBMITTED TO THE PLANNING DEPARTMENT FOR APPROVAL.
4. NUMBER OF REQUIRED ADA SPACES FOR PAVED PARKING AREAS ARE LISTED IN THE CURRENT NC BUILDING CODE.
5. ALL ADA PARKING SPACES MUST DIRECTLY CONNECT TO PUBLIC ACCESS ROUTES THAT MEET ADA REQUIREMENTS.
6. ADA PARKING SPACES MUST MEET ADA DIMENSIONS.

TOWN OF APEX STANDARDS (EFFECTIVE OCTOBER 2013)	PARKING	DETAIL NO. 200.04 SHEET 1 OF 1

NOTES:
1. ALL DIMENSIONS ARE FROM FACE OF CURB
2. ALL STANDARD ACCESSIBLE PARKING STALLS SHALL BE 9' WIDE
3. ALL VAN ACCESSIBLE PARKING STALLS SHALL BE 11' WIDE

ACCESSIBLE PARKING SIGN

KEY NOTES

- (A) ACCESSIBLE PARKING & SIGNAGE, SEE DETAIL SHEET C-XX.XX.
- (B) HI-VIS CROSS WALK, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (C) NO PARKING - FIRE LANE SIGNAGE, SEE DETAIL SHEET C-XX.XX.
- (D) SOLID WHITE MARKING, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (E) DIRECTIONAL ARROW, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (F) SCHOOL DIRECTIONAL SIGNAGE, SEE DETAIL SHEETS C-XX.XX.
- (G) DIAGONAL STRIPING, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (H) STOP BAR, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (I) PASSENGER/BUS LOADING ZONE SIGNAGE, SEE DETAIL SHEET C-XX.XX.
- (J) NO PARKING - FIRE LANE MARKINGS, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (K) TRAFFIC CONTROL SIGNAGE, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (L) VISITOR PARKING SIGNAGE, SEE DETAIL SHEET C-XX.XX.
- (M) STANDARD CROSSWALK, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (N) HIGH SCHOOL MONUMENT SIGNAGE, SEE DETAIL SHEET C-XX.XX.
- (O) MINI-SKIP MARKING, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (P) RAISED CROSSING TABLE SIGNAGE, SEE TRAFFIC CONTROL NOTES THIS SHEET & DETAIL SHEET C-XX.XX.
- (Q) SPECIAL PARKING SIGNAGE, SEE DETAIL SHEET C-XX.XX.
- (R) PARKING SPACE NUMBER, SEE TRAFFIC CONTROL NOTES THIS SHEET.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

MAGNETIC

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

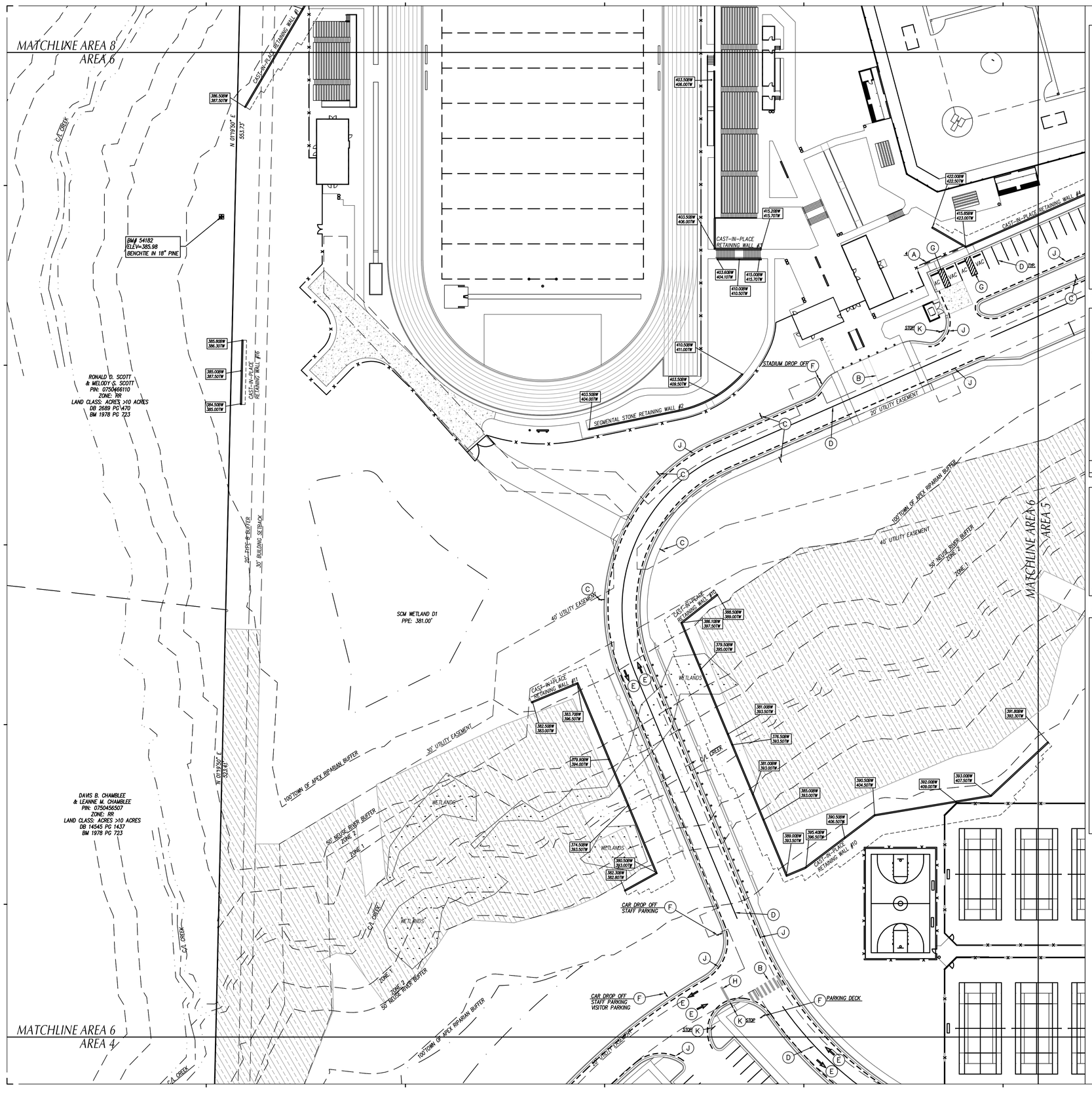
PROJECT NO. 02000.000

SHEET TITLE

PAVEMENT MARKING & SIGNAGE PLAN AREA_5

SHEET NUMBER

C-01.15



TRAFFIC CONTROL NOTES

1. ALL SITE SIGNAGE SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND NCDOT STANDARDS.

SIGN	MUTCD STD.	SIZE
STOP	R1-1	30"x30"
ONE WAY	R6-2	18"x24"
DO NOT ENTER (DNE)	R5-1	30"x30"
NO PARKING ANY TIME FIRE LANE (NPFL)	--	12"x18"
BEGIN ONE WAY (BOW)	R6-6	24"x30"
EMERGENCY PARKING ONLY (EPO)	R8-4	30"x24"

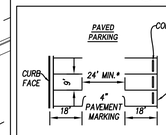
2. ALL SIGNS SHALL BE MOUNTED WITH 7-FT MIN. VERTICAL CLEARANCE TO THE BOTTOM OF THE SIGN ON 3-LB. GALV. STEEL U-CHANNEL POST SET IN 3-FT DEEP x 12-IN DIA. CONCRETE FOOTING.
3. ALL PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE MUTCD AND NCDOT STANDARDS AND THE PROJECT SPECIFICATIONS.

MARKING	NCDOT STD.	SIZE	COLOR
PARKING SPACES	--	4-IN	WHT.
CROSSWALK	1205.07(HI-VIS)	24-IN	WHT.
CROSSWALK	1205.07(STANDARD)	8-IN	WHT.
DIRECTIONAL ARROWS	1205.08	STD.	WHT.
NO PARKING - FIRE LANE *	--	4-IN	YEL.
SOLID	1205.01	4-IN	WHT./YEL.
DIAGONAL	1205.09	8-IN	YEL.
STOP BAR	--	24-IN	WHT.
MINI-SKIP (3'-9' TYPE)	1205.01	4-IN	WHT.

* NO PARKING - FIRE LANE MARKING SHALL BE THERMOPLASTIC AND CONSIST OF A 4" SOLID YELLOW STRIPE AND 8" HIGH YELLOW TEXT "NO PARKING - FIRE LANE" AT 40' INTERVALS.

4. ALL PAVEMENT MARKINGS SHALL BE THERMOPLASTIC TYPE EXCEPT FOR PARKING SPACE LINES WHICH SHALL BE ALKYD-RESIN TYPE PAINT.
5. ALL SIGNAGE SHALL BE FIELD STAKED AND THE LOCATIONS APPROVED BY CLH DESIGN PRIOR TO SIGN INSTALLATION.
6. CENTER ALL DIRECTIONAL ARROWS WITHIN TRAVEL LANE.
7. COORDINATE FIRE LANE MARKINGS WITH TOWN OF APEX FIRE MARSHAL.
8. ALL SIGNS SHALL USE PRISMATIC SHEETING THAT MEETS MINIMUM REFLECTIVITY STANDARDS FOUND IN THE LATEST EDITION OF THE MUTCD.

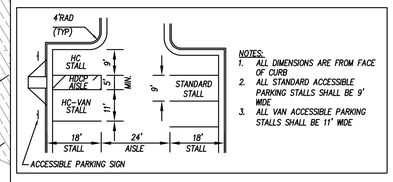
TYP. PARKING DIMENSIONS



PAVEMENT LOT STRUCTURE
2" ASPHALT SURFACE COARSE
6" AGGREGATE BASE COARSE
COMPACTED SUBGRADE

NOTES FOR PAVED PARKING LOTS:
1. CONCRETE STOP NOT REQUIRED IF CURB IS USED. IF SIDEWALK IS AGAINST BACK OF CURB, A MIN. 6' WIDTH IS REQUIRED WITHOUT CURB STOPS.
2. AN ELECTRIC PLAN MUST BE SUBMITTED TO THE PLANNING AND ELECTRIC DEPARTMENTS FOR APPROVAL.
3. A PLANTING PLAN MUST BE SUBMITTED TO THE PLANNING DEPARTMENT FOR APPROVAL.
4. NUMBER OF REQUIRED ADA SPACES FOR PAVED PARKING AREAS ARE LISTED IN THE CURRENT NC BUILDING CODE.
5. ALL ADA PARKING SPACES MUST DIRECTLY CONNECT TO PUBLIC ACCESS ROUTES THAT MEET ADA REQUIREMENTS.
6. ADA PARKING SPACES MUST MEET ADA DIMENSIONS.

TOWN OF APEX STANDARDS (EFFECTIVE OCTOBER 2013)	PARKING	DETAIL NO. 200.04 SHEET 1 OF 1



NOTES:
1. ALL DIMENSIONS ARE FROM FACE OF CURB
2. ALL STANDARD ACCESSIBLE PARKING STALLS SHALL BE 9' WIDE
3. ALL VAN ACCESSIBLE PARKING STALLS SHALL BE 11' WIDE

KEY NOTES

- (A) ACCESSIBLE PARKING & SIGNAGE, SEE DETAIL SHEET C-XX.XX.
- (B) HI-VIS CROSS WALK, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (C) NO PARKING - FIRE LANE SIGNAGE, SEE DETAIL SHEET C-XX.XX.
- (D) SOLID WHITE MARKING, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (E) DIRECTIONAL ARROW, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (F) SCHOOL DIRECTIONAL SIGNAGE, SEE DETAIL SHEETS C-XX.XX.
- (G) DIAGONAL STRIPING, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (H) STOP BAR, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (I) PASSENGER/BUS LOADING ZONE SIGNAGE, SEE DETAIL SHEET C-XX.XX.
- (J) NO PARKING - FIRE LANE MARKINGS, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (K) TRAFFIC CONTROL SIGNAGE, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (L) VISITOR PARKING SIGNAGE, SEE DETAIL SHEET C-XX.XX.
- (M) STANDARD CROSSWALK, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (N) HIGH SCHOOL MONUMENT SIGNAGE, SEE DETAIL SHEET C-XX.XX.
- (O) MINI-SKIP MARKING, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (P) RAISED CROSSING TABLE SIGNAGE, SEE TRAFFIC CONTROL NOTES THIS SHEET & DETAIL SHEET C-XX.XX.
- (Q) SPECIAL PARKING SIGNAGE, SEE DETAIL SHEET C-XX.XX.
- (R) PARKING SPACE NUMBER, SEE TRAFFIC CONTROL NOTES THIS SHEET.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

MAGNETIC

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

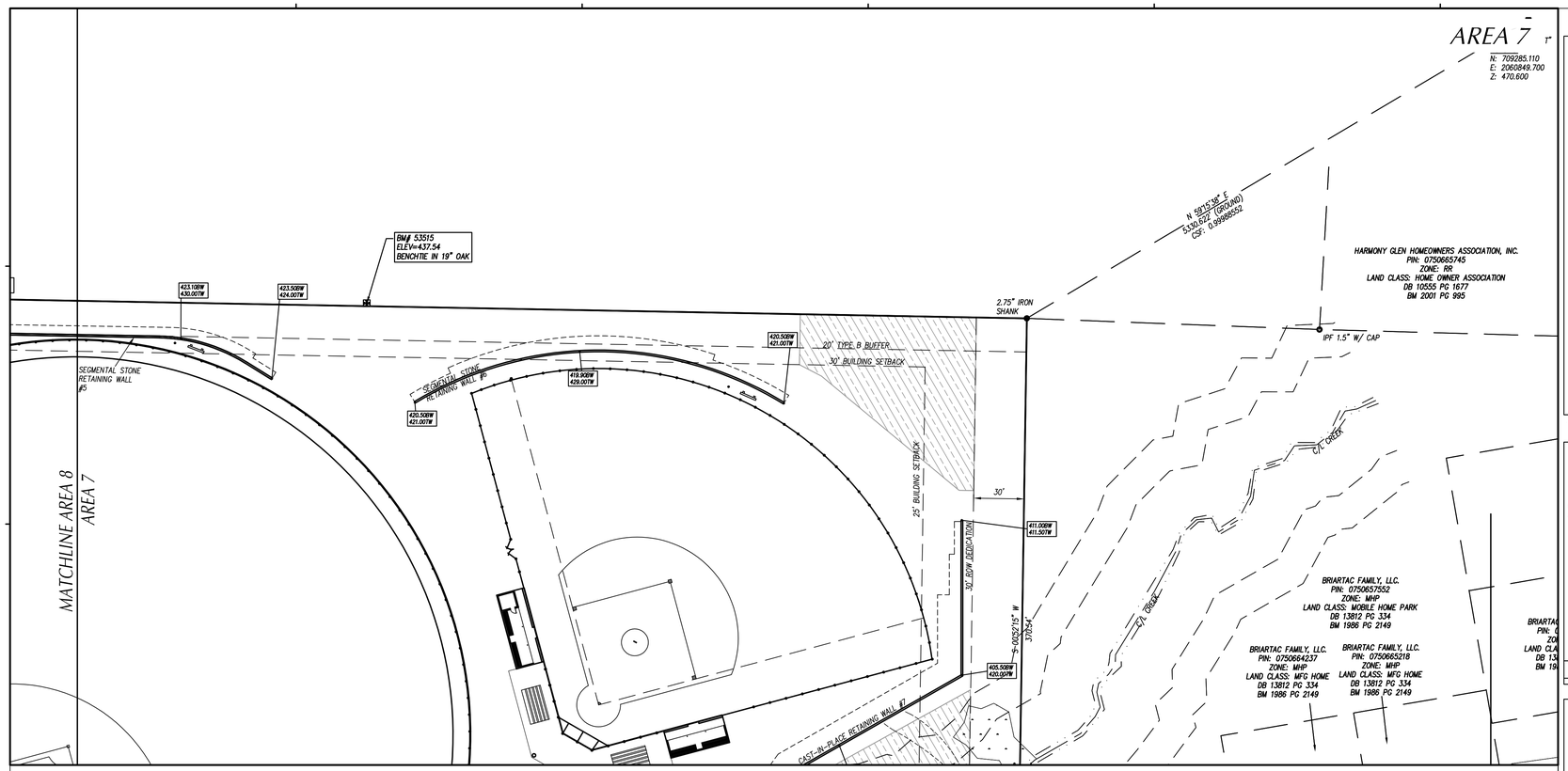
PROJECT NO. 02000.000

SHEET TITLE

PAVEMENT MARKING & SIGNAGE PLAN AREA_6

SHEET NUMBER

C-01.16



TRAFFIC CONTROL NOTES

1. ALL SITE SIGNAGE SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND NCDOT STANDARDS.

SIGN	MUTCD STD.	SIZE
STOP	R1-1	30"x30"
ONE WAY	R6-2	18"x24"
DO NOT ENTER (DNE)	R5-1	30"x30"
NO PARKING ANY TIME FIRE LANE (NPFL)	--	12"x18"
BEGIN ONE WAY (BOW)	R6-6	24"x30"
EMERGENCY PARKING ONLY (EPO)	R8-4	30"x24"

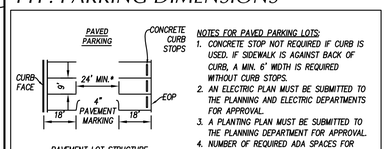
2. ALL SIGNS SHALL BE MOUNTED WITH 7-FT MIN. VERTICAL CLEARANCE TO THE BOTTOM OF THE SIGN ON 3-LB. GALV. STEEL U-CHANNEL POST SET IN 3-FT DEEP x 12-IN DIA. CONCRETE FOOTING.
3. ALL PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE MUTCD AND NCDOT STANDARDS AND THE PROJECT SPECIFICATIONS.

MARKING	NCDOT STD.	SIZE	COLOR
PARKING SPACES	--	4-IN	WHT.
CROSSWALK	1205.07(HI-VIS)	24-IN	WHT.
CROSSWALK	1205.07(STANDARD)	8-IN	WHT.
DIRECTIONAL ARROWS	1205.08	STD.	WHT.
NO PARKING - FIRE LANE *	--	4-IN	YEL.
SOLID	1205.01	4-IN	WHT./YEL.
DIAGONAL	1205.09	8-IN	YEL.
STOP BAR	--	24-IN	WHT.
MINI-SKIP (3'-9' TYPE)	1205.01	4-IN	WHT.

* NO PARKING - FIRE LANE MARKING SHALL BE THERMOPLASTIC AND CONSIST OF A 4" SOLID YELLOW STRIPE AND 8" HIGH YELLOW TEXT "NO PARKING - FIRE LANE" AT 40' INTERVALS.

4. ALL PAVEMENT MARKINGS SHALL BE THERMOPLASTIC TYPE EXCEPT FOR PARKING SPACE LINES WHICH SHALL BE ALKYD-RESIN TYPE PAINT.
5. ALL SIGNAGE SHALL BE FIELD STAKED AND THE LOCATIONS APPROVED BY CLH DESIGN PRIOR TO SIGN INSTALLATION.
6. CENTER ALL DIRECTIONAL ARROWS WITHIN TRAVEL LANE.
7. COORDINATE FIRE LANE MARKINGS WITH TOWN OF APEX FIRE MARSHAL.
8. ALL SIGNS SHALL USE PRISMATIC SHEETING THAT MEETS MINIMUM REFLECTIVITY STANDARDS FOUND IN THE LATEST EDITION OF THE MUTCD.

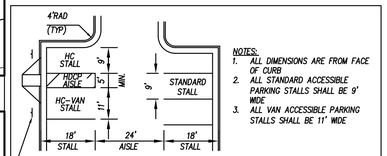
TYP. PARKING DIMENSIONS



PAVEMENT LOT STRUCTURE
2" ASPHALT SURFACE COARSE
6" AGGREGATE BASE COARSE
COMPACTED SUBGRADE

NOTES FOR PAVED PARKING LOTS:
1. CONCRETE STOP NOT REQUIRED IF CURB IS USED. IF SIDEWALK IS AGAINST BACK OF CURB, A MIN. 6' WIDTH IS REQUIRED WITHOUT CURB STOPS.
2. AN ELECTRIC PLAN MUST BE SUBMITTED TO THE PLANNING AND ELECTRIC DEPARTMENTS FOR APPROVAL.
3. A PLANTING PLAN MUST BE SUBMITTED TO THE PLANNING DEPARTMENT FOR APPROVAL.
4. NUMBER OF REQUIRED ADA SPACES FOR PAVED PARKING AREAS ARE LISTED IN THE CURRENT NC BUILDING CODE.
5. ALL ADA PARKING SPACES MUST DIRECTLY CONNECT TO PUBLIC ACCESS ROUTES THAT MEET ADA REQUIREMENTS.
6. ADA PARKING SPACES MUST MEET ADA DIMENSIONS.

TOWN OF APEX STANDARDS (EFFECTIVE OCTOBER 2013)	PARKING	STD. NO. 200.04 SHEET 1 OF 1



NOTES:
1. ALL DIMENSIONS ARE FROM FACE OF CURB
2. ALL STANDARD ACCESSIBLE PARKING STALLS SHALL BE 9' WIDE
3. ALL VAN ACCESSIBLE PARKING STALLS SHALL BE 11' WIDE

ACCESSIBLE PARKING SIGN

KEY NOTES

- (A) ACCESSIBLE PARKING & SIGNAGE, SEE DETAIL SHEET C-XX.XX.
- (B) HI-VIS CROSS WALK, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (C) NO PARKING - FIRE LANE SIGNAGE, SEE DETAIL SHEET C-XX.XX.
- (D) SOLID WHITE MARKING, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (E) DIRECTIONAL ARROW, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (F) SCHOOL DIRECTIONAL SIGNAGE, SEE DETAIL SHEETS C-XX.XX.
- (G) DIAGONAL STRIPING, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (H) STOP BAR, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (I) PASSENGER/BUS LOADING ZONE SIGNAGE, SEE DETAIL SHEET C-XX.XX.
- (J) NO PARKING - FIRE LANE MARKINGS, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (K) TRAFFIC CONTROL SIGNAGE, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (L) VISITOR PARKING SIGNAGE, SEE DETAIL SHEET C-XX.XX.
- (M) STANDARD CROSSWALK, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (N) HIGH SCHOOL MONUMENT SIGNAGE, SEE DETAIL SHEET C-XX.XX.
- (O) MINI-SKIP MARKING, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (P) RAISED CROSSING TABLE SIGNAGE, SEE TRAFFIC CONTROL NOTES THIS SHEET & DETAIL SHEET C-XX.XX.
- (Q) SPECIAL PARKING SIGNAGE, SEE DETAIL SHEET C-XX.XX.
- (R) PARKING SPACE NUMBER, SEE TRAFFIC CONTROL NOTES THIS SHEET.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

SHEET TITLE
PAVEMENT MARKING & SIGNAGE PLAN AREA_7&8

SHEET NUMBER
C-01.17

TRAFFIC CONTROL NOTES

1. ALL SITE SIGNAGE SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND NCDOT STANDARDS.

SIGN	MUTCD STD.	SIZE
STOP	R1-1	30"x30"
ONE WAY	R6-2	18"x24"
DO NOT ENTER (DNE)	R5-1	30"x30"
NO PARKING ANY TIME FIRE LANE (NPFL)	--	12"x18"
BEGIN ONE WAY (BOW)	R6-6	24"x30"
EMERGENCY PARKING ONLY (EPO)	R8-4	30"x24"

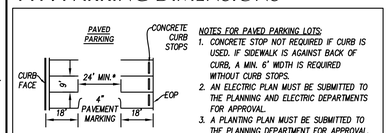
2. ALL SIGNS SHALL BE MOUNTED WITH 7-FT MIN. VERTICAL CLEARANCE TO THE BOTTOM OF THE SIGN ON 3-LB. GALV. STEEL U-CHANNEL POST SET IN 3-FT DEEP x 12-IN DIA. CONCRETE FOOTING.
3. ALL PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE MUTCD AND NCDOT STANDARDS AND THE PROJECT SPECIFICATIONS.

MARKING	NCDOT STD.	SIZE	COLOR
PARKING SPACES	--	4-IN	WHT.
CROSSWALK	1205.07(HI-VIS)	24-IN	WHT.
CROSSWALK	1205.07(STANDARD)	8-IN	WHT.
DIRECTIONAL ARROWS	1205.08	STD.	WHT.
NO PARKING - FIRE LANE *	--	4-IN	YEL.
SOLID	1205.01	4-IN	WHT./YEL.
DIAGONAL	1205.09	8-IN	YEL.
STOP BAR	--	24-IN	WHT.
MINI-SKIP (3'-9' TYPE)	1205.01	4-IN	WHT.

* NO PARKING - FIRE LANE MARKING SHALL BE THERMOPLASTIC AND CONSIST OF A 4" SOLID YELLOW STRIPE AND 8" HIGH YELLOW TEXT "NO PARKING - FIRE LANE" AT 40' INTERVALS.

4. ALL PAVEMENT MARKINGS SHALL BE THERMOPLASTIC TYPE EXCEPT FOR PARKING SPACE LINES WHICH SHALL BE ALKYD-RESIN TYPE PAINT.
5. ALL SIGNAGE SHALL BE FIELD STAKED AND THE LOCATIONS APPROVED BY CLH DESIGN PRIOR TO SIGN INSTALLATION.
6. CENTER ALL DIRECTIONAL ARROWS WITHIN TRAVEL LANE.
7. COORDINATE FIRE LANE MARKINGS WITH TOWN OF APEX FIRE MARSHAL.
8. ALL SIGNS SHALL USE PRISMATIC SHEETING THAT MEETS MINIMUM REFLECTIVITY STANDARDS FOUND IN THE LATEST EDITION OF THE MUTCD.

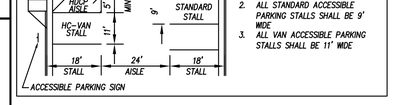
TYP. PARKING DIMENSIONS



PAVEMENT LOT STRUCTURE
2" ASPHALT SURFACE COARSE
6" AGGREGATE BASE COARSE
COMPACTED SUBGRADE

NOTES FOR PAVED PARKING LOTS:
1. CONCRETE STOP NOT REQUIRED IF CURB IS USED. IF SIDEWALK IS AGAINST BACK OF CURB, A MIN. 6' WIDTH IS REQUIRED WITHOUT CURB STOPS.
2. AN ELECTRIC PLAN MUST BE SUBMITTED TO THE PLANNING AND ELECTRIC DEPARTMENTS FOR APPROVAL.
3. A PLANTING PLAN MUST BE SUBMITTED TO THE PLANNING DEPARTMENT FOR APPROVAL.
4. NUMBER OF REQUIRED ADA SPACES FOR PAVED PARKING AREAS ARE LISTED IN THE CURRENT NC BUILDING CODE.
5. ALL ADA PARKING SPACES MUST DIRECTLY CONNECT TO PUBLIC ACCESS ROUTES THAT MEET ADA REQUIREMENTS.
6. ADA PARKING SPACES MUST MEET ADA DIMENSIONS.

TOWN OF APEX STANDARDS	PARKING	ADA 10.04
UPDATED OCTOBER 2019		SHEET 1 OF 1



NOTES:
1. ALL DIMENSIONS ARE FROM FACE OF CURB
2. ALL STANDARD ACCESSIBLE PARKING STALLS SHALL BE 9' WIDE
3. ALL VAN ACCESSIBLE PARKING STALLS SHALL BE 11' WIDE

ACCESSIBLE PARKING SIGN

KEY NOTES

- (A) ACCESSIBLE PARKING & SIGNAGE, SEE DETAIL SHEET C-XX.XX.
- (B) HI-VIS CROSS WALK, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (C) NO PARKING - FIRE LANE SIGNAGE, SEE DETAIL SHEET C-XX.XX.
- (D) SOLID WHITE MARKING, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (E) DIRECTIONAL ARROW, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (F) SCHOOL DIRECTIONAL SIGNAGE, SEE DETAIL SHEETS C-XX.XX.
- (G) DIAGONAL STRIPING, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (H) STOP BAR, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (I) PASSENGER/BUS LOADING ZONE SIGNAGE, SEE DETAIL SHEET C-XX.XX.
- (J) NO PARKING - FIRE LANE MARKINGS, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (K) TRAFFIC CONTROL SIGNAGE, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (L) VISITOR PARKING SIGNAGE, SEE DETAIL SHEET C-XX.XX.
- (M) STANDARD CROSSWALK, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (N) HIGH SCHOOL MONUMENT SIGNAGE, SEE DETAIL SHEET C-XX.XX.
- (O) MINI-SKIP MARKING, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (P) RAISED CROSSING TABLE SIGNAGE, SEE TRAFFIC CONTROL NOTES THIS SHEET & DETAIL SHEET C-XX.XX.
- (Q) SPECIAL PARKING SIGNAGE, SEE DETAIL SHEET C-XX.XX.
- (R) PARKING SPACE NUMBER, SEE TRAFFIC CONTROL NOTES THIS SHEET.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

MAGNETIC

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

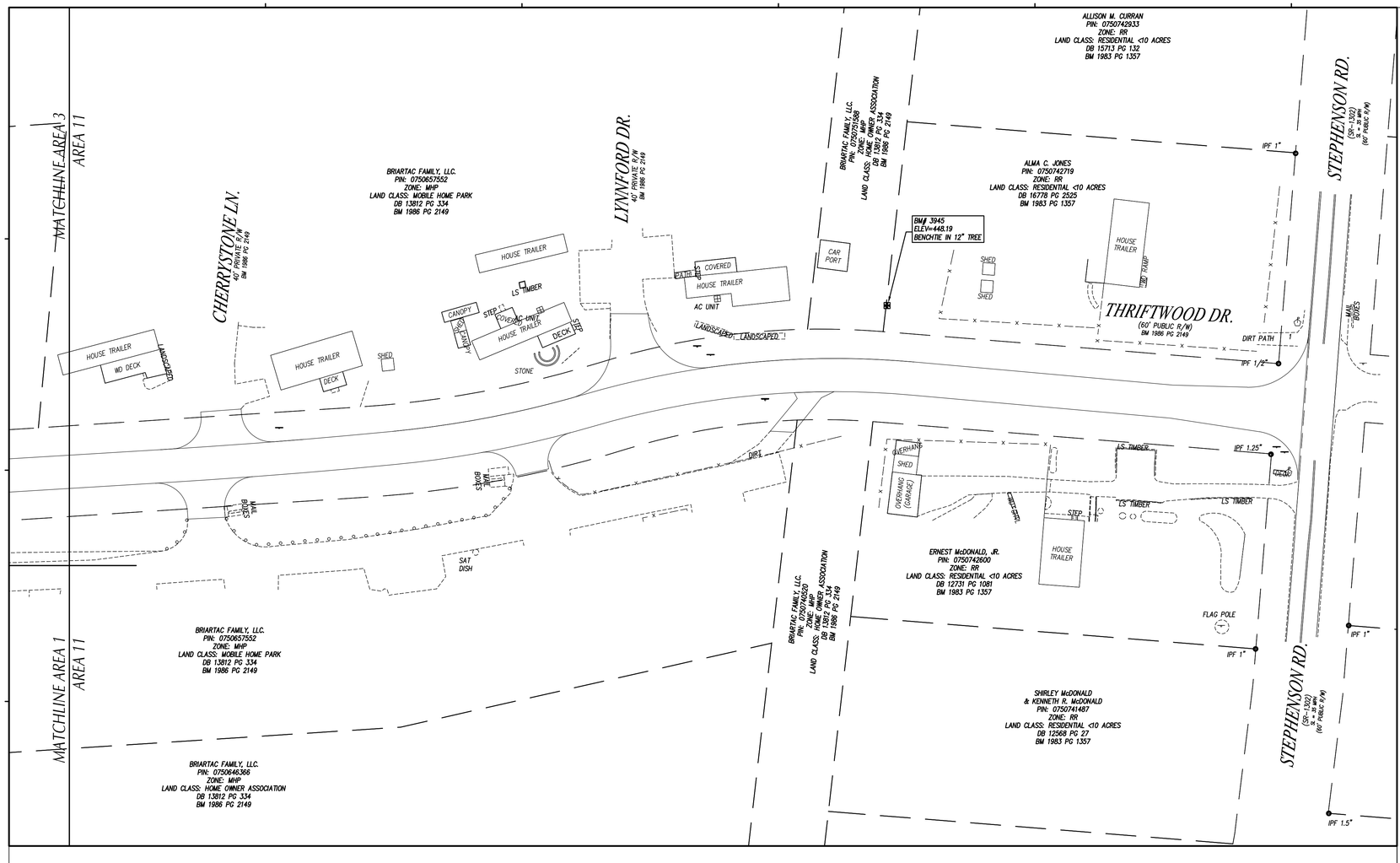
PROJECT NO. 02000.000

SHEET TITLE

PAVEMENT MARKING & SIGNAGE PLAN AREA_9&10

SHEET NUMBER

C-01.18



TRAFFIC CONTROL NOTES

1. ALL SITE SIGNAGE SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND NCDOT STANDARDS.

SIGN	MUTCD STD.	SIZE
STOP	R1-1	30"x30"
ONE WAY	R6-2	18"x24"
DO NOT ENTER (DNE)	R5-1	30"x30"
NO PARKING ANY TIME FIRE LANE (NPFL)	--	12"x18"
BEGIN ONE WAY (BOW)	R6-6	24"x30"
EMERGENCY PARKING ONLY (EPO)	R8-4	30"x24"

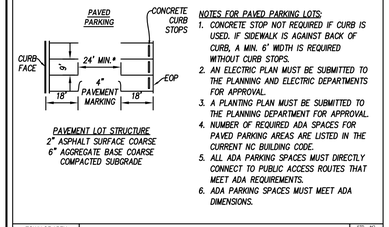
2. ALL SIGNS SHALL BE MOUNTED WITH 7-FT MIN. VERTICAL CLEARANCE TO THE BOTTOM OF THE SIGN ON 3-LB. GALV. STEEL U-CHANNEL POST SET IN 3-FT DEEP x 12-IN DIA. CONCRETE FOOTING.
3. ALL PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE MUTCD AND NCDOT STANDARDS AND THE PROJECT SPECIFICATIONS.

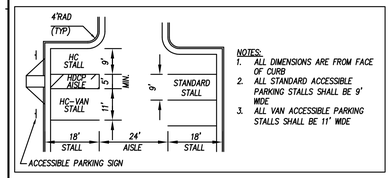
MARKING	NCDOT STD.	SIZE	COLOR
PARKING SPACES	--	4-IN	WHT.
CROSSWALK	1205.07(HI-VIS)	24-IN	WHT.
CROSSWALK	1205.07(STANDARD)	8-IN	WHT.
DIRECTIONAL ARROWS	1205.08	STD.	WHT.
NO PARKING - FIRE LANE *	--	4-IN	YEL.
SOLID	1205.01	4-IN	WHT./YEL.
DIAGONAL	1205.09	8-IN	YEL.
STOP BAR	--	24-IN	WHT.
MINI-SKIP (3'-9' TYPE)	1205.01	4-IN	WHT.

* NO PARKING - FIRE LANE MARKING SHALL BE THERMOPLASTIC AND CONSIST OF A 4" SOLID YELLOW STRIPE AND 8" HIGH YELLOW TEXT "NO PARKING - FIRE LANE" AT 40' INTERVALS.

4. ALL PAVEMENT MARKINGS SHALL BE THERMOPLASTIC TYPE EXCEPT FOR PARKING SPACE LINES WHICH SHALL BE ALKYD-RESIN TYPE PAINT.
5. ALL SIGNAGE SHALL BE FIELD STAKED AND THE LOCATIONS APPROVED BY CLH DESIGN PRIOR TO SIGN INSTALLATION.
6. CENTER ALL DIRECTIONAL ARROWS WITHIN TRAVEL LANE.
7. COORDINATE FIRE LANE MARKINGS WITH TOWN OF APEX FIRE MARSHAL.
8. ALL SIGNS SHALL USE PRISMATIC SHEETING THAT MEETS MINIMUM REFLECTIVITY STANDARDS FOUND IN THE LATEST EDITION OF THE MUTCD.

TYP. PARKING DIMENSIONS





KEY NOTES

- (A) ACCESSIBLE PARKING & SIGNAGE, SEE DETAIL SHEET C-XX.XX.
- (B) HI-VIS CROSS WALK, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (C) NO PARKING - FIRE LANE SIGNAGE, SEE DETAIL SHEET C-XX.XX.
- (D) SOLID WHITE MARKING, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (E) DIRECTIONAL ARROW, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (F) SCHOOL DIRECTIONAL SIGNAGE, SEE DETAIL SHEETS C-XX.XX.
- (G) DIAGONAL STRIPING, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (H) STOP BAR, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (I) PASSENGER/BUS LOADING ZONE SIGNAGE, SEE DETAIL SHEET C-XX.XX.
- (J) NO PARKING - FIRE LANE MARKINGS, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (K) TRAFFIC CONTROL SIGNAGE, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (L) VISITOR PARKING SIGNAGE, SEE DETAIL SHEET C-XX.XX.
- (M) STANDARD CROSSWALK, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (N) HIGH SCHOOL MONUMENT SIGNAGE, SEE DETAIL SHEET C-XX.XX.
- (O) MINI-SKIP MARKING, SEE TRAFFIC CONTROL NOTES THIS SHEET.
- (P) RAISED CROSSING TABLE SIGNAGE, SEE TRAFFIC CONTROL NOTES THIS SHEET & DETAIL SHEET C-XX.XX.
- (Q) SPECIAL PARKING SIGNAGE, SEE DETAIL SHEET C-XX.XX.
- (R) PARKING SPACE NUMBER, SEE TRAFFIC CONTROL NOTES THIS SHEET.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

MAGNETIC

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

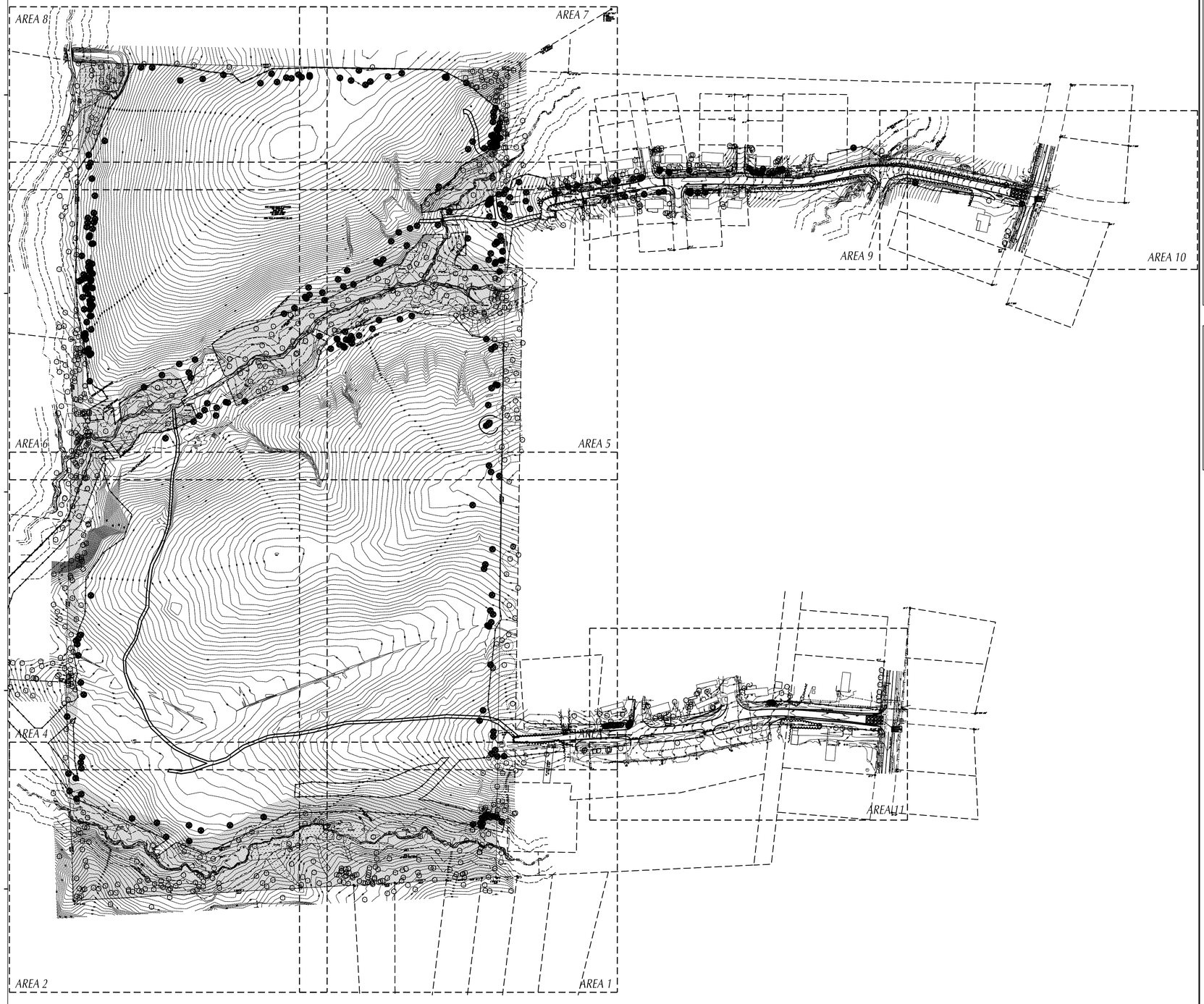
PROJECT NO. 02000.000

SHEET TITLE

PAVEMENT MARKING & SIGNAGE PLAN AREA_11

SHEET NUMBER

C-01.19



GENERAL NOTES

1. ALL EXISTING STRUCTURES AND UTILITIES SHALL BE REMOVED AS NEEDED TO ALLOW NEW CONSTRUCTION. IN GENERAL, FEATURES INDICATED IN BOLD ON THIS PLAN SHALL BE REMOVED.
2. ALL PAVEMENT OR CONCRETE TO BE REMOVED SHALL BE SAW CUT TO PROVIDE A STRAIGHT AND UNIFORM JOINT FOR NEW PAVEMENT, SIDEWALK, OR CURB AND GUTTER, ETC. ANY EXISTING PAVEMENT, SIDEWALK, CURB AND GUTTER, ETC. THAT MUST BE REMOVED TO ALLOW NEW CONSTRUCTION SHALL BE REMOVED AND REPAIRED PER THE SPECIFICATIONS AND DETAILS OR TO MATCH PRE-CONSTRUCTION CONDITIONS (WHETHER OR NOT SHOWN ON THE DRAWINGS TO BE REMOVED).
3. ALL UTILITIES OR STRUCTURES NOT INDICATED FOR REMOVAL OR MODIFICATION ARE TO REMAIN AND BE PROTECTED FROM DAMAGE.
4. ALL WASTE MATERIAL GENERATED FROM DEMOLITION ACTIVITIES SHALL BE DISPOSED OF OFF-SITE IN ACCORDANCE WITH ALL APPLICABLE RULES AND REGULATIONS.
5. EXISTING SITE BOUNDARY AND TOPOGRAPHIC SURVEY INFORMATION WAS TAKEN FROM SURVEY BY SEPI ENGINEERING & CONSTRUCTION, PERFORMED 07/03/2019. THESE PLANS DO NOT ASSUME ANY LIABILITY FOR ANY EXISTING INFORMATION BOTH SHOWN AND NOT SHOWN ON THE SURVEY AND ANY CHANGES TO THE EXISTING CONDITIONS THAT MAY HAVE OCCURRED AFTER THE SURVEY WAS ISSUED. CONTRACTOR SHALL VERIFY ALL EXISTING SITE CONDITIONS PRIOR TO CONSTRUCTION.
6. INSTALL TREE PROTECTION FENCING PRIOR TO BEGINNING CLEARING OPERATIONS. CLEAR AND GRUB ALL AREAS AS SHOWN AND REQUIRED TO PERMIT INSTALLATION OF NEW CONSTRUCTION PER SPECIFICATIONS AND DRAWINGS. EXISTING TREES, SHRUBS OR OTHER LANDSCAPE MATERIAL WHICH WILL CONFLICT WITH NEW CONSTRUCTION SHALL BE REMOVED (WHETHER OR NOT SHOWN ON THE DRAWINGS). ALL CONTRACTORS SHALL VISIT THE SITE AND OBSERVE EXISTING CONDITIONS PRIOR TO BIDDING.
7. TO MINIMIZE DAMAGE TO EXISTING TREES NEAR THE INTERIOR EDGE OF CLEARING LIMITS, THE CONTRACTOR SHALL CUT 2-FT DEEP TRENCHES ALONG THE LIMITS OF DISTURBANCE, SO AS TO CUT, RATHER THAN TEAR ROOTS.
8. PRIOR TO DEMOLISHING EXISTING STRUCTURES, MAKE AN INSPECTION FOR ANY HAZARDOUS MATERIALS. CONTACT ARCHITECT IMMEDIATELY IF ANY HAZARDOUS MATERIALS ARE DISCOVERED. CAP AND REMOVE UTILITY SERVICES, FUEL TANKS AND SEPTIC SYSTEMS. ALL WORK TO BE PERFORMED IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS.
9. VERIFY ALL ILLUSTRATED UNDERGROUND ELEMENTS/UTILITIES. EXERCISE REASONABLE EFFORTS TO PROTECT ANY UNKNOWN UNDERGROUND ELEMENTS/UTILITIES. NOTIFY THE ARCHITECT IMMEDIATELY IF UNKNOWN ELEMENTS/UTILITIES ARE DISCOVERED THAT WOULD NECESSITATE MODIFICATION TO THE PROPOSED DESIGN.
10. CONTACT UTILITY LOCATING SERVICE AT LEAST 48-HRS PRIOR TO EXCAVATION.
11. PROTECT ALL ADJACENT PROPERTIES, THE GENERAL PUBLIC AND ALL OF THE OWNER'S FACILITIES. SHOULD DAMAGES OCCUR, REPAIR IMMEDIATELY AS DIRECTED BY THE ARCHITECT.
12. ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL TOWN OF APEX AND/OR NCDOT STANDARDS AND SPECIFICATIONS.
13. ALL EXISTING VAULTS, MANHOLES, STORM DRAIN STRUCTURES, CLEANOUTS, ETC. SHALL BE ADJUSTED AS NEEDED TO MATCH FINISH GRADE.
14. DEMOLITION AND PATCHING OF PAVEMENT, SIDEWALK, CURB AND GUTTER AND OTHER EXISTING PAVED SURFACES IN ADDITION TO THAT INDICATED ON THIS PLAN SHALL BE PERFORMED AS REQUIRED TO CONSTRUCT AND INSTALL NEW UTILITIES. ALL SUCH DEMOLITION AND PATCHING SHALL BE INCLUDED IN THE BASE BID SCOPE OF WORK. SEE SHEET ___ FOR PAVEMENT REPAIR DETAILS.
15. THIS SITE IS NOT LOCATED WITHIN SPECIAL FLOOD HAZARD AREAS AS DETERMINED BY FEMA AND DEPICTED ON F.I.R.M. MAP 3720072100J DATED 05/02/2006 AND MAP 3720072000J DATED 05/02/2006 AS BEING WITHIN ZONE "X-OTHER AREA".
16. NO WORK SHALL BE PERFORMED ON RIGHT-OF-WAYS OR ADJACENT PROPERTIES UNTIL THE OWNER NOTIFIES CONTRACTOR IN WRITING OF PROCUREMENT OF APPROPRIATE PERMITS, EASEMENTS, AGREEMENTS, OR RIGHTS-OF-WAY.
17. THIS SITE IS LOCATED WITHIN THE PRIMARY WATERSHED PROTECTION OVERLAY DISTRICT.

TOWN OF APEX REQUIRED NOTES

1. NO SITE DEVELOPMENT ACTIVITY INCLUDING, BUT NOT LIMITED TO, TESTING, CLEARING, INSTALLATION OF S&E MEASURES, OR GRADING, SHALL OCCUR UNTIL REQUIRED TREE PROTECTION FENCING HAS BEEN INSTALLED AND INSPECTED. A PROTECTION FENCING INSTALLATION PERMIT MAY BE OBTAINED AT THE PLANNING DEPARTMENT OR ONLINE AT http://www.apexnc.org/215/Applications-Schedules.
2. TREE PROTECTION FENCING MUST BE PLACED:
   - 2.1. ONE FOOT AWAY FROM ANY SAVED TREE FOR EACH INCH OF DIAMETER AT BREAST HEIGHT,
   - 2.2. ALONG THE OUTSIDE LINE OF THE 100-YEAR FLOODPLAIN AND THE OUTSIDE EDGE OF ANY RIPARIAN BUFFER, AND,
   - 2.3. AT LEAST 10 FEET AWAY FROM ANY OTHER DESIGNATED RCA SUCH AS, BUT NOT LIMITED TO, HISTORIC BUILDINGS AND STRUCTURES, WETLANDS, AND PONDS.
3. ADDITIONAL TREE PROTECTION FENCING MAY BE REQUIRED IN OTHER LOCATIONS CLOSE TO CONSTRUCTION ACTIVITY WHERE IT IS DEEMED NECESSARY BY THE ZONING ENFORCEMENT OFFICER; SUCH AREAS MAY INCLUDE, BUT ARE NOT LIMITED TO, COMMON PROPERTY LINES OR NEAR PUBLIC AREAS (SIDEWALKS, ETC.).
4. IF BUILDINGS ARE TO BE DEMOLISHED, A COPY OF THE DEMOLITION NOTIFICATION FROM THE NC HEALTH HAZARD CONTROL UNIT AND AN ASBESTOS INSPECTION REPORT FROM A NC ACCREDITED ASBESTOS INSPECTOR MUST ACCOMPANY THE APPLICATION FOR THE DEMOLITION PERMIT WHICH MUST BE OBTAINED PRIOR TO START OF THE DEMOLITION.

GRAPHIC SCALE

150 0 75 150 300 600

(IN FEET)
1 inch = 150 ft.

MAGNETIC

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

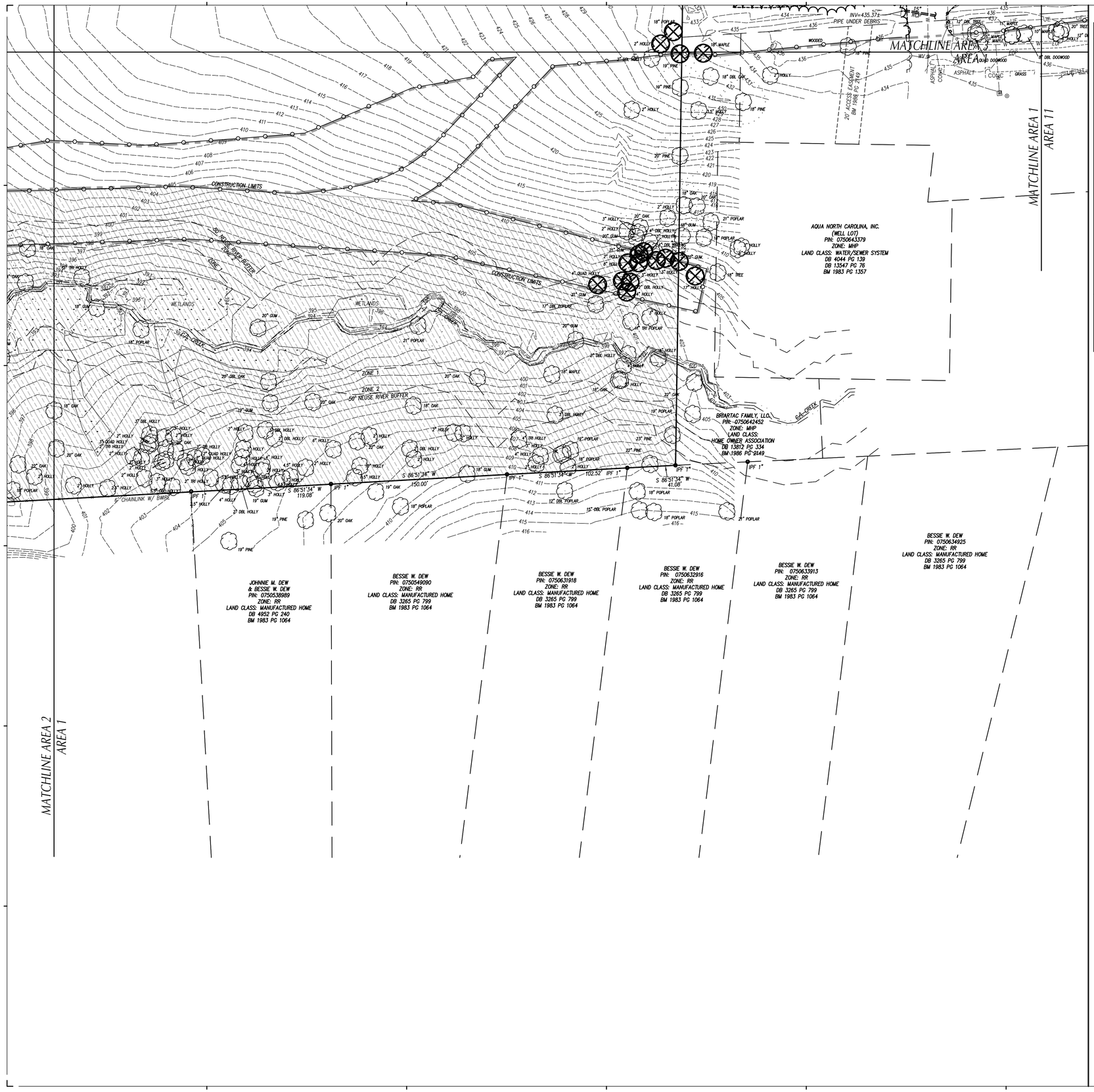
PROJECT NO. 02000.000

SHEET TITLE

DEMOLITION &
EXISTING CONDITIONS
OVERALL PLAN

SHEET NUMBER

C-02.00



LEGEND

STRUCTURES/UTILITIES TO BE REMOVED		STRUCTURES/UTILITIES TO REMAIN	
OVERHEAD ELECTRICAL	E	OVERHEAD ELECTRICAL	E
UNDERGROUND ELECTRICAL	UE	UNDERGROUND ELECTRICAL	UE
FIRE PROTECTION	FP	FIRE PROTECTION	FP
GAS	G	GAS	G
SANITARY SEWER	SS	SANITARY SEWER	SS
TELEPHONE	T	TELEPHONE	T
UNDERGROUND TELEPHONE	UT	UNDERGROUND TELEPHONE	UT
FIBER OPTIC	FO	FIBER OPTIC	FO
WATER	W	WATER	W
FORCE MAIN	FM	FORCE MAIN	FM
STORM DRAIN		STORM DRAIN	
INDIVIDUAL TREE TO BE REMOVED	>18" <18"	INDIVIDUAL TREE TO REMAIN.	
LIGHT POLE	LP	LIGHT POLE	LP
UTILITY POLE	PP	UTILITY POLE	PP
MANHOLE	MH	MANHOLE	MH
CLEAN OUT	CO	CLEAN OUT	CO
DROP INLET,CATCH BASIN	DI, CB	DROP INLET,CATCH BASIN	DI, CB
FIRE HYDRANT	FH	FIRE HYDRANT	FH
WATER VALVE	WV	WATER VALVE	WV
		CRITICAL ROOT ZONES	
CONSTR./CLEARING LIMITS		PAVEMENT, S/W, C&G TO BE REMOVED.	
TREE PROTECTION FENCE		BUILDING/STRUCTURE TO BE REMOVED. SEE ARCHITECTURAL PLANS.	
RESOURCE CONSERVATION AREA			

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Ralelgh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Ralelgh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineerlng
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

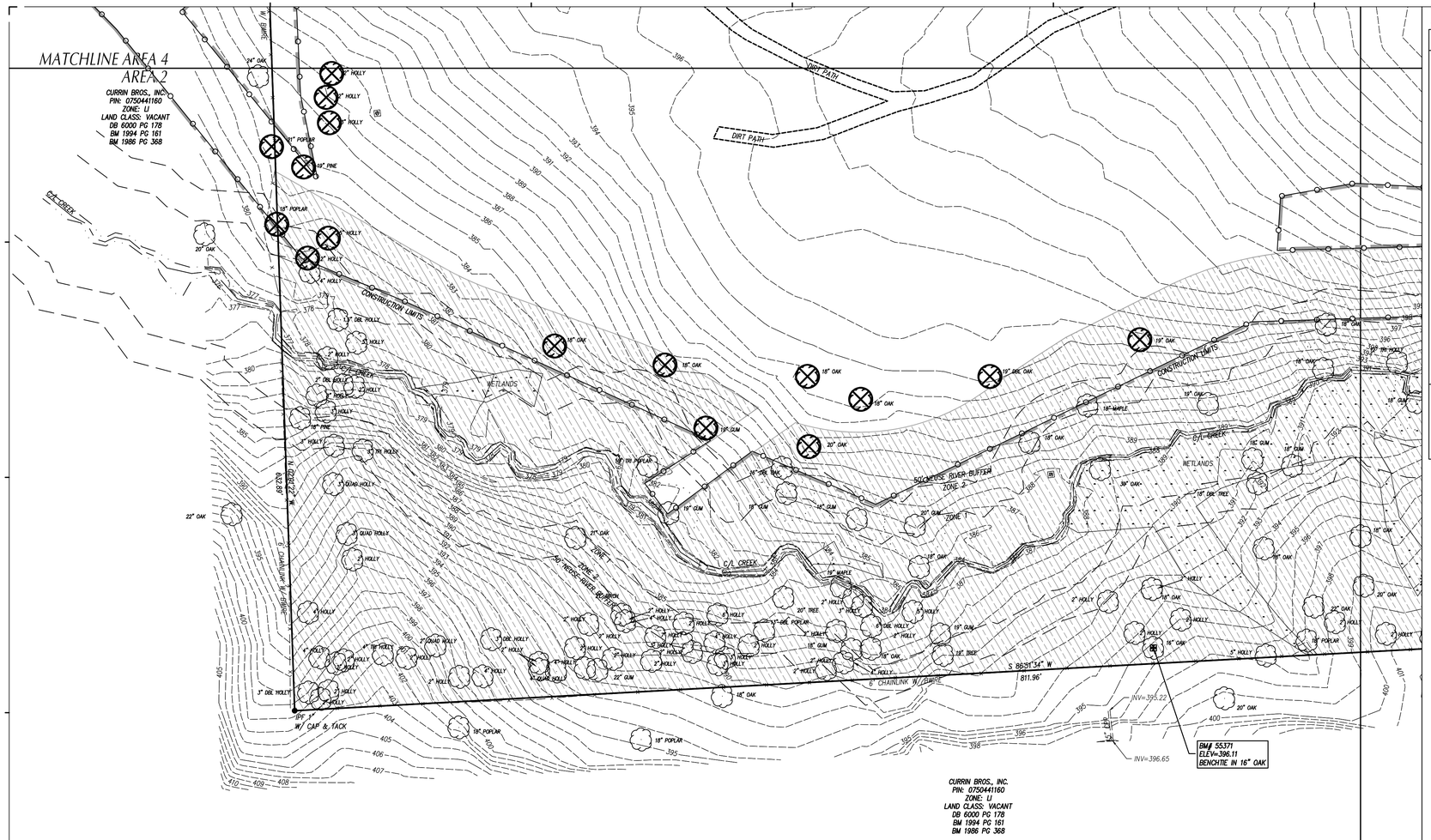
PROJECT NO. 02000.000

SHEET TITLE

DEMOLITION & EXISTING CONDITIONS PLAN AREA_1

SHEET NUMBER

C-02.01



LEGEND

STRUCTURES/UTILITIES TO BE REMOVED		STRUCTURES/UTILITIES TO REMAIN	
OVERHEAD ELECTRICAL	E	OVERHEAD ELECTRICAL	E
UNDERGROUND ELECTRICAL	UE	UNDERGROUND ELECTRICAL	UE
FIRE PROTECTION	FP	FIRE PROTECTION	FP
GAS	G	GAS	G
SANITARY SEWER	SS	SANITARY SEWER	SS
TELEPHONE	T	TELEPHONE	T
UNDERGROUND TELEPHONE	UT	UNDERGROUND TELEPHONE	UT
FIBER OPTIC	FO	FIBER OPTIC	FO
WATER	W	WATER	W
FORCE MAIN	FM	FORCE MAIN	FM
STORM DRAIN		STORM DRAIN	
INDIVIDUAL TREE TO BE REMOVED	>18" <18"	INDIVIDUAL TREE TO REMAIN.	
LIGHT POLE	LP	LIGHT POLE	LP
UTILITY POLE	PP	UTILITY POLE	PP
MANHOLE	MH	MANHOLE	MH
CLEAN OUT	CO	CLEAN OUT	CO
DROP INLET,CATCH BASIN	DI, CB	DROP INLET,CATCH BASIN	DI, CB
FIRE HYDRANT	FH	FIRE HYDRANT	FH
WATER VALVE	WV	WATER VALVE	WV
		CRITICAL ROOT ZONES	
CONSTR./CLEARING LIMITS		PAVEMENT, S/W, C&G TO BE REMOVED.	
TREE PROTECTION FENCE		BUILDING/STRUCTURE TO BE REMOVED. SEE ARCHITECTURAL PLANS.	
RESOURCE CONSERVATION AREA			

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

MAGNETIC

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Ralelgh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Ralelgh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineerlng
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

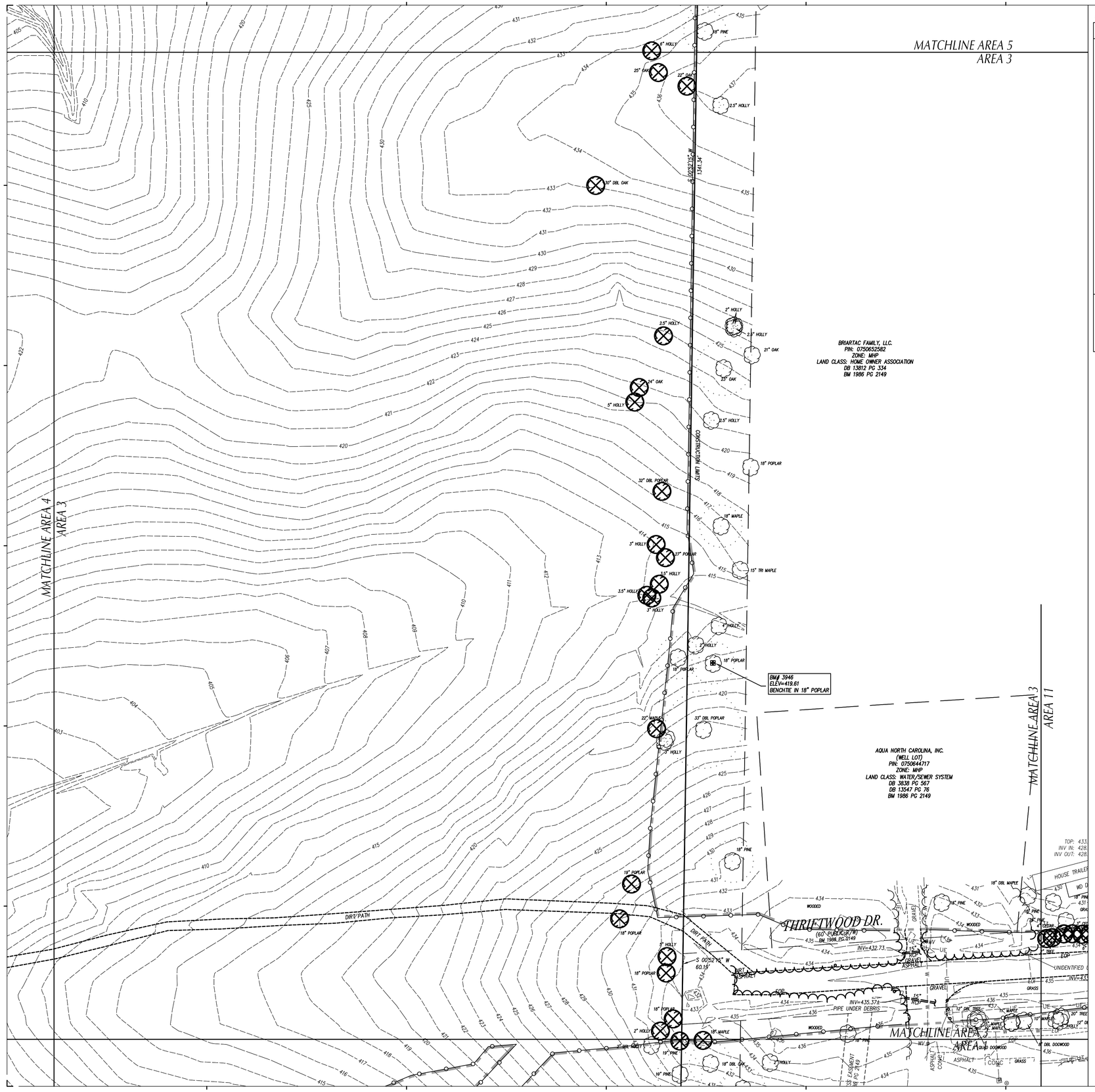
PROJECT NO. 02000.000

SHEET TITLE

DEMOLITION & EXISTING CONDITIONS PLAN AREA_2

SHEET NUMBER

C-02.02



LEGEND

STRUCTURES/UTILITIES TO BE REMOVED		STRUCTURES/UTILITIES TO REMAIN	
OVERHEAD ELECTRICAL	E	OVERHEAD ELECTRICAL	E
UNDERGROUND ELECTRICAL	UE	UNDERGROUND ELECTRICAL	UE
FIRE PROTECTION	FP	FIRE PROTECTION	FP
GAS	G	GAS	G
SANITARY SEWER	SS	SANITARY SEWER	SS
TELEPHONE	T	TELEPHONE	T
UNDERGROUND TELEPHONE	UT	UNDERGROUND TELEPHONE	UT
FIBER OPTIC	FO	FIBER OPTIC	FO
WATER	W	WATER	W
FORCE MAIN	FM	FORCE MAIN	FM
STORM DRAIN		STORM DRAIN	
INDIVIDUAL TREE TO BE REMOVED	>18" <18"	INDIVIDUAL TREE TO REMAIN.	
LIGHT POLE	LP	LIGHT POLE	LP
UTILITY POLE	PP	UTILITY POLE	PP
MANHOLE	MH	MANHOLE	MH
CLEAN OUT	CO	CLEAN OUT	CO
DROP INLET,CATCH BASIN	DI, CB	DROP INLET,CATCH BASIN	DI, CB
FIRE HYDRANT	FH	FIRE HYDRANT	FH
WATER VALVE	WV	WATER VALVE	WV
		CRITICAL ROOT ZONES	
CONSTR./CLEARING LIMITS		PAVEMENT, S/W, C&G TO BE REMOVED.	
TREE PROTECTION FENCE		BUILDING/STRUCTURE TO BE REMOVED. SEE ARCHITECTURAL PLANS.	
RESOURCE CONSERVATION AREA			

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Ralelgh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Ralelgh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineerlng
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DISCLOSURE SHALL BE MADE WITHOUT THE PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

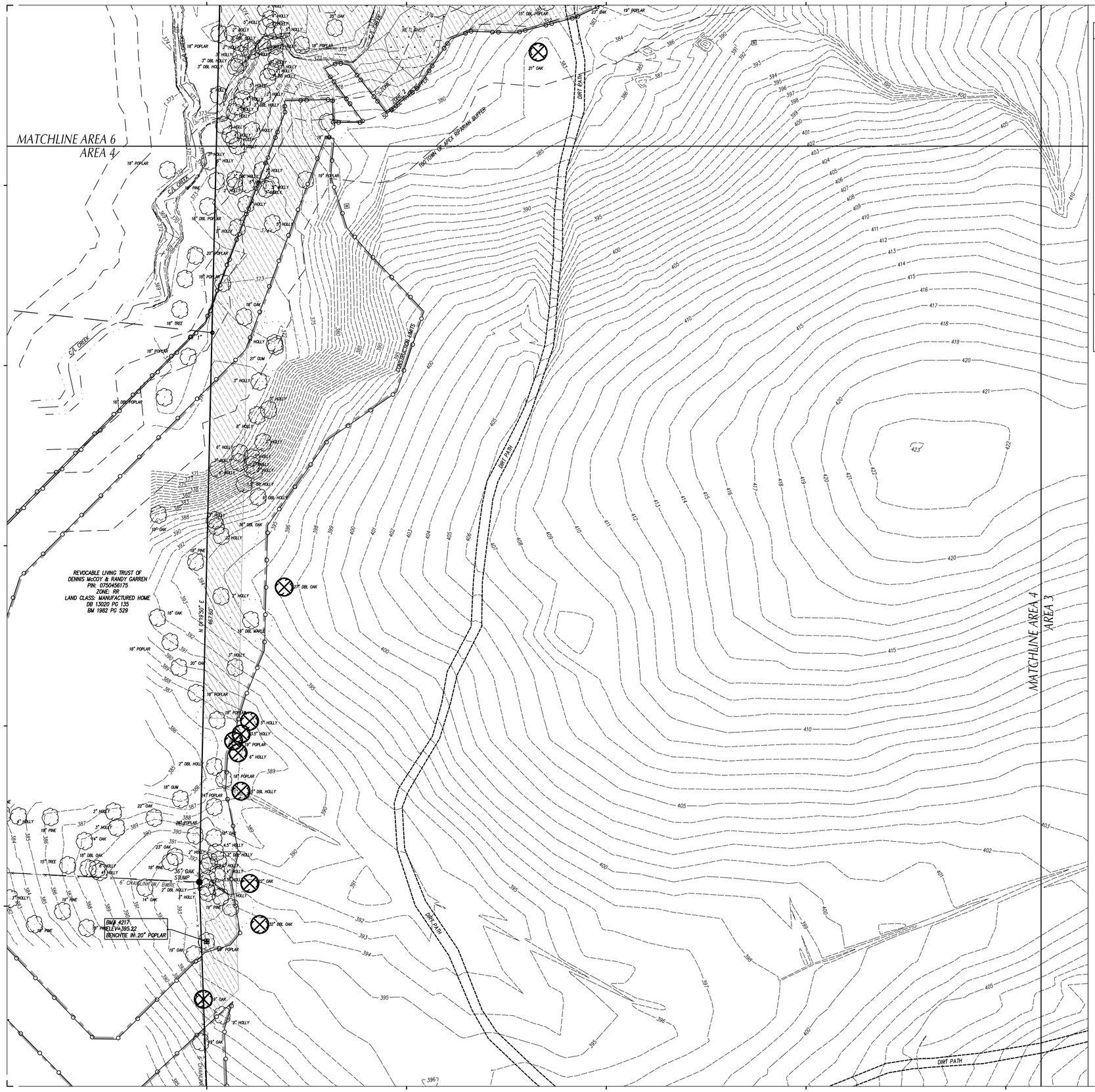
PROJECT NO. 02000.000

SHEET TITLE

DEMOLITION & EXISTING CONDITIONS PLAN AREA_3

SHEET NUMBER

C-02.03



LEGEND

STRUCTURES/UTILITIES TO BE REMOVED		STRUCTURES/UTILITIES TO REMAIN	
OVERHEAD ELECTRICAL	E	OVERHEAD ELECTRICAL	E
UNDERGROUND ELECTRICAL	UE	UNDERGROUND ELECTRICAL	UE
FIRE PROTECTION	FP	FIRE PROTECTION	FP
GAS	G	GAS	G
SANITARY SEWER	SS	SANITARY SEWER	SS
TELEPHONE	T	TELEPHONE	T
UNDERGROUND TELEPHONE	UT	UNDERGROUND TELEPHONE	UT
FIBER OPTIC	FO	FIBER OPTIC	FO
WATER	W	WATER	W
FORCE MAIN	FM	FORCE MAIN	FM
STORM DRAIN		STORM DRAIN	
INDIVIDUAL TREE TO BE REMOVED	>18" <18"	INDIVIDUAL TREE TO REMAIN.	
LIGHT POLE	LP	LIGHT POLE	LP
UTILITY POLE	PP	UTILITY POLE	PP
MANHOLE	MH	MANHOLE	MH
CLEAN OUT	CO	CLEAN OUT	CO
DROP INLET,CATCH BASIN	DI, CB	DROP INLET,CATCH BASIN	DI, CB
FIRE HYDRANT	FH	FIRE HYDRANT	FH
WATER VALVE	WV	WATER VALVE	WV
		CRITICAL ROOT ZONES	

CONSTR./CLEARING LIMITS	PAVEMENT, S/W, C&G TO BE REMOVED.
TREE PROTECTION FENCE	BUILDING/STRUCTURE TO BE REMOVED. SEE ARCHITECTURAL PLANS.
RESOURCE CONSERVATION AREA	

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

MAGNETIC

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Ralelgh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Ralelgh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineerlng
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

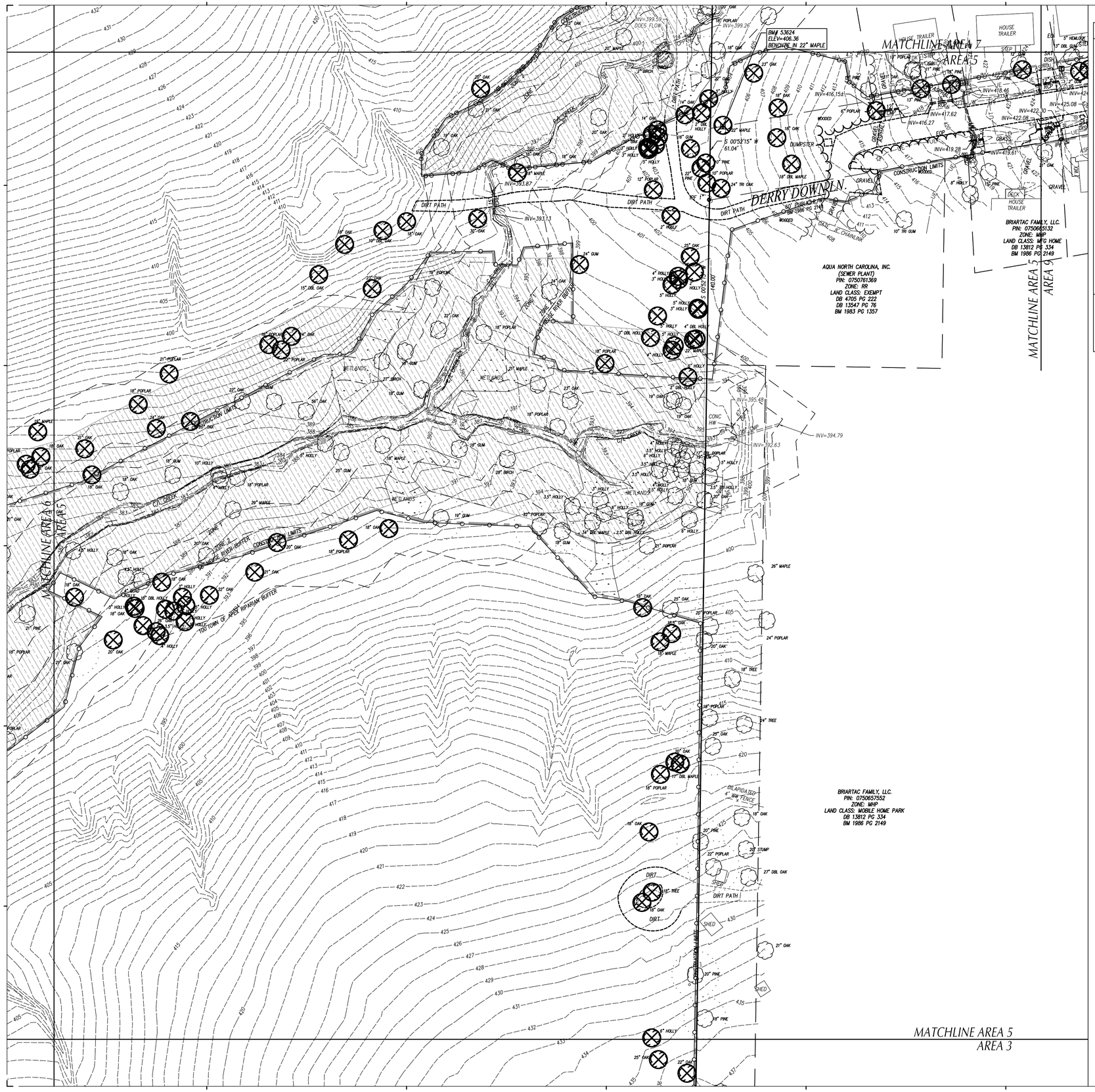
PROJECT NO. 02000.000

SHEET TITLE

DEMOLITION & EXISTING CONDITIONS PLAN AREA_4

SHEET NUMBER

C-02.04



LEGEND

STRUCTURES/UTILITIES TO BE REMOVED		STRUCTURES/UTILITIES TO REMAIN	
OVERHEAD ELECTRICAL	E	OVERHEAD ELECTRICAL	E
UNDERGROUND ELECTRICAL	UE	UNDERGROUND ELECTRICAL	UE
FIRE PROTECTION	FP	FIRE PROTECTION	FP
GAS	G	GAS	G
SANITARY SEWER	SS	SANITARY SEWER	SS
TELEPHONE	T	TELEPHONE	T
UNDERGROUND TELEPHONE	UT	UNDERGROUND TELEPHONE	UT
FIBER OPTIC	FO	FIBER OPTIC	FO
WATER	W	WATER	W
FORCE MAIN	FM	FORCE MAIN	FM
STORM DRAIN		STORM DRAIN	
INDIVIDUAL TREE TO BE REMOVED	>18" <18"	INDIVIDUAL TREE TO REMAIN.	
LIGHT POLE	LP	LIGHT POLE	LP
UTILITY POLE	PP	UTILITY POLE	PP
MANHOLE	MH	MANHOLE	MH
CLEAN OUT	CO	CLEAN OUT	CO
DROP INLET,CATCH BASIN	DI, CB	DROP INLET,CATCH BASIN	DI, CB
FIRE HYDRANT	FH	FIRE HYDRANT	FH
WATER VALVE	WV	WATER VALVE	WV
		CRITICAL ROOT ZONES	
CONSTR./CLEARING LIMITS		PAVEMENT, S/W, C&G TO BE REMOVED.	
TREE PROTECTION FENCE		BUILDING/STRUCTURE TO BE REMOVED. SEE ARCHITECTURAL PLANS.	
RESOURCE CONSERVATION AREA			

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

MAGNETIC

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Ralelgh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Ralelgh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineerlng
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT UNDER WHICH IT WAS PREPARED. NO OTHER USE, DISCLOSURE OR DUPLICATION OF ANY KIND SHALL BE MADE WITHOUT THE PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

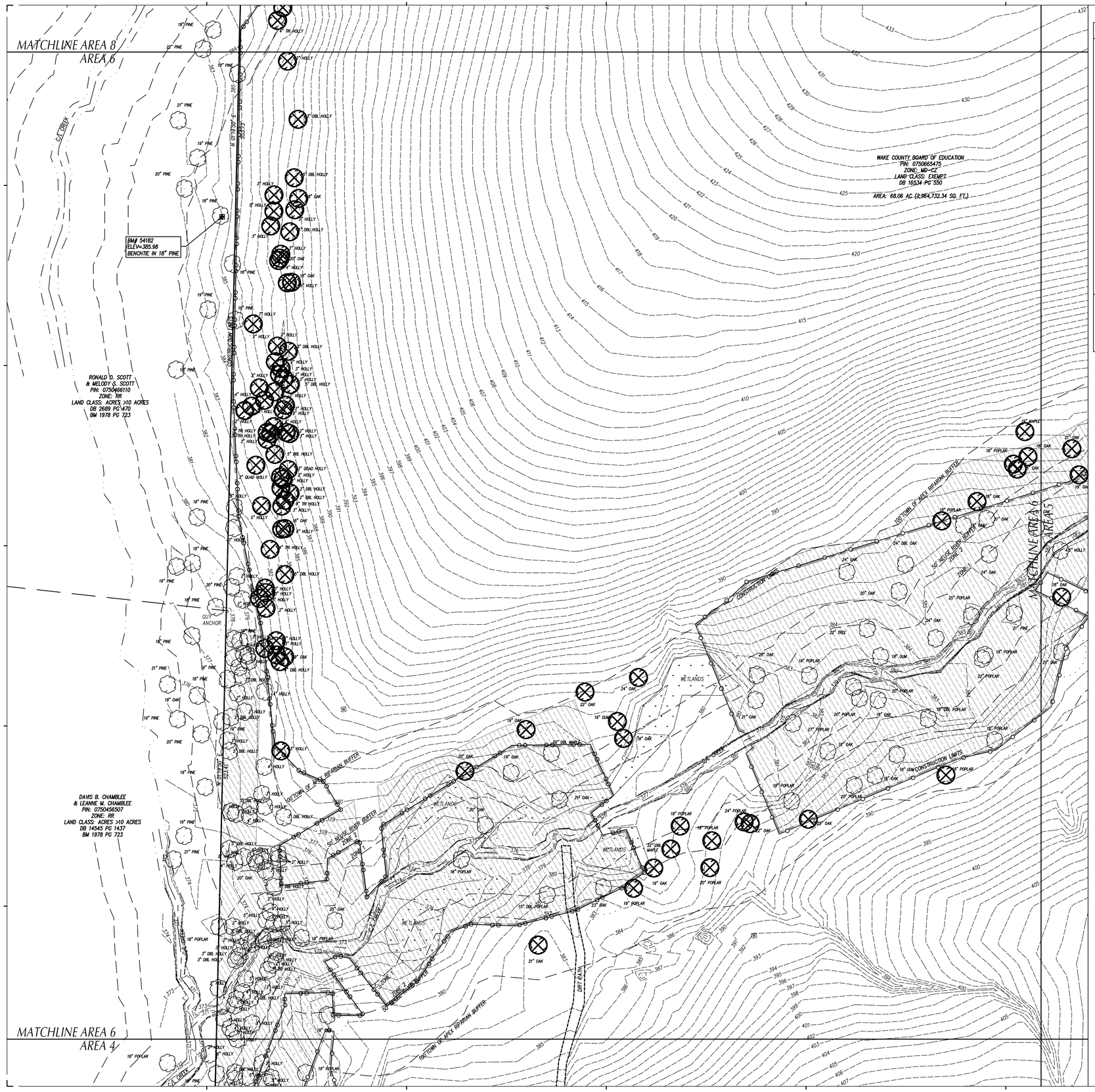
PROJECT NO. 02000.000

SHEET TITLE

DEMOLITION & EXISTING CONDITIONS PLAN AREA_5

SHEET NUMBER

C-02.05



LEGEND

STRUCTURES/UTILITIES TO BE REMOVED		STRUCTURES/UTILITIES TO REMAIN	
OVERHEAD ELECTRICAL	E	OVERHEAD ELECTRICAL	E
UNDERGROUND ELECTRICAL	UE	UNDERGROUND ELECTRICAL	UE
FIRE PROTECTION	FP	FIRE PROTECTION	FP
GAS	G	GAS	G
SANITARY SEWER	SS	SANITARY SEWER	SS
TELEPHONE	T	TELEPHONE	T
UNDERGROUND TELEPHONE	UT	UNDERGROUND TELEPHONE	UT
FIBER OPTIC	FO	FIBER OPTIC	FO
WATER	W	WATER	W
FORCE MAIN	FM	FORCE MAIN	FM
STORM DRAIN		STORM DRAIN	
INDIVIDUAL TREE TO BE REMOVED	>18" <18"	INDIVIDUAL TREE TO REMAIN.	
LIGHT POLE	LP	LIGHT POLE	LP
UTILITY POLE	PP	UTILITY POLE	PP
MANHOLE	MH	MANHOLE	MH
CLEAN OUT	CO	CLEAN OUT	CO
DROP INLET,CATCH BASIN	DI, CB	DROP INLET,CATCH BASIN	DI, CB
FIRE HYDRANT	FH	FIRE HYDRANT	FH
WATER VALVE	WV	WATER VALVE	WV
		CRITICAL ROOT ZONES	

CONSTR./CLEARING LIMITS	PAVEMENT, S/W, C&G TO BE REMOVED.
TREE PROTECTION FENCE	BUILDING/STRUCTURE TO BE REMOVED. SEE ARCHITECTURAL PLANS.
RESOURCE CONSERVATION AREA	

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

MAGNETIC

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Ralelgh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Ralelgh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineerlng
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

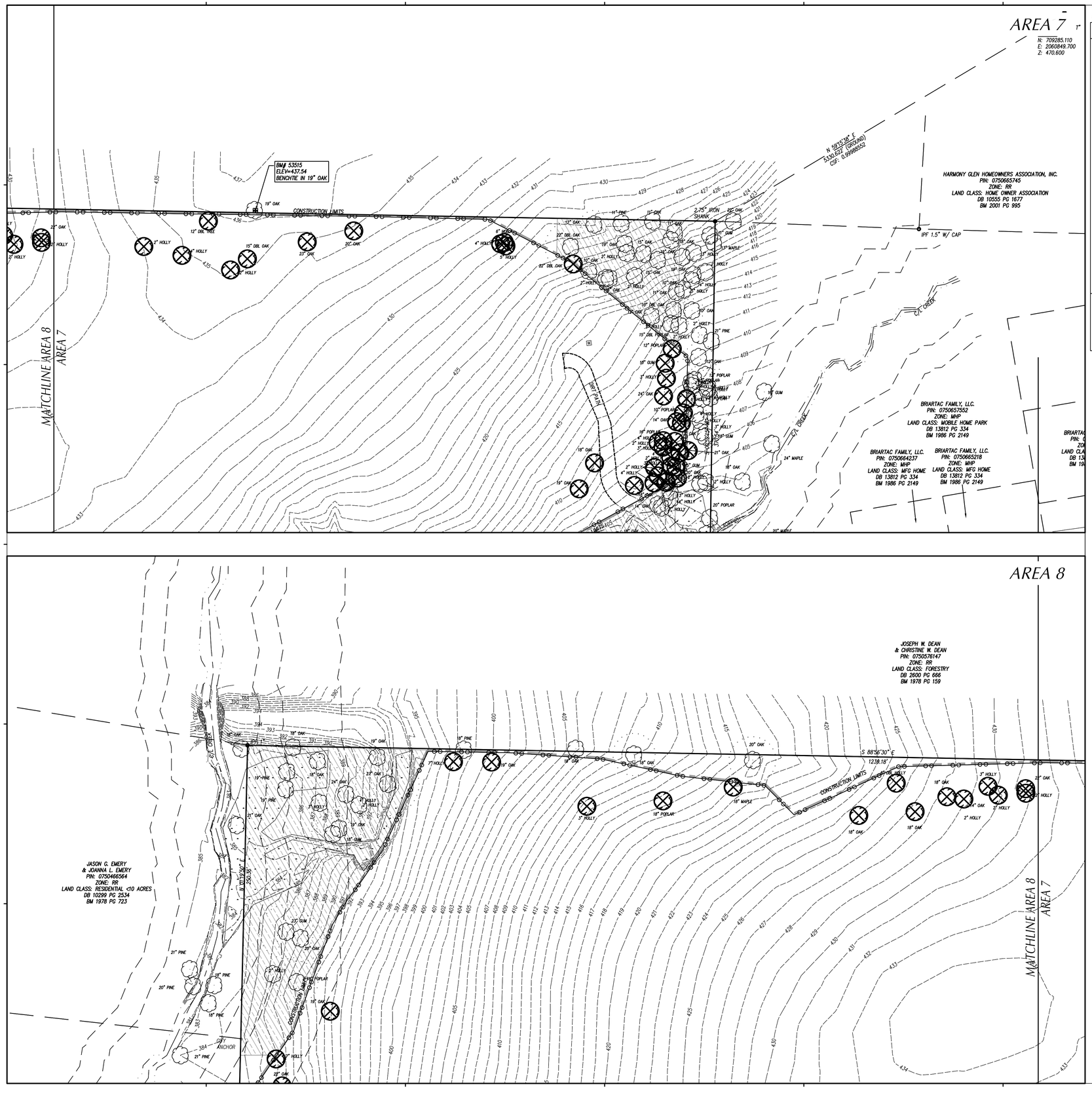
PROJECT NO. 02000.000

SHEET TITLE

DEMOLITION & EXISTING CONDITIONS PLAN AREA_6

SHEET NUMBER

C-02.06



LEGEND

STRUCTURES/UTILITIES TO BE REMOVED		STRUCTURES/UTILITIES TO REMAIN	
OVERHEAD ELECTRICAL	E	OVERHEAD ELECTRICAL	E
UNDERGROUND ELECTRICAL	UE	UNDERGROUND ELECTRICAL	UE
FIRE PROTECTION	FP	FIRE PROTECTION	FP
GAS	G	GAS	G
SANITARY SEWER	SS	SANITARY SEWER	SS
TELEPHONE	T	TELEPHONE	T
UNDERGROUND TELEPHONE	UT	UNDERGROUND TELEPHONE	UT
FIBER OPTIC	FO	FIBER OPTIC	FO
WATER	W	WATER	W
FORCE MAIN	FM	FORCE MAIN	FM
STORM DRAIN		STORM DRAIN	
INDIVIDUAL TREE TO BE REMOVED	>18" <18"	INDIVIDUAL TREE TO REMAIN.	
LIGHT POLE	LP	LIGHT POLE	LP
UTILITY POLE	PP	UTILITY POLE	PP
MANHOLE	MH	MANHOLE	MH
CLEAN OUT	CO	CLEAN OUT	CO
DROP INLET,CATCH BASIN	DI, CB	DROP INLET,CATCH BASIN	DI, CB
FIRE HYDRANT	FH	FIRE HYDRANT	FH
WATER VALVE	WV	WATER VALVE	WV
		CRITICAL ROOT ZONES	
CONSTR./CLEARING LIMITS		PAVEMENT, S/W, C&G TO BE REMOVED.	
TREE PROTECTION FENCE		BUILDING/STRUCTURE TO BE REMOVED. SEE ARCHITECTURAL PLANS.	
RESOURCE CONSERVATION AREA			

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Ralelgh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Ralelgh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineerlng
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

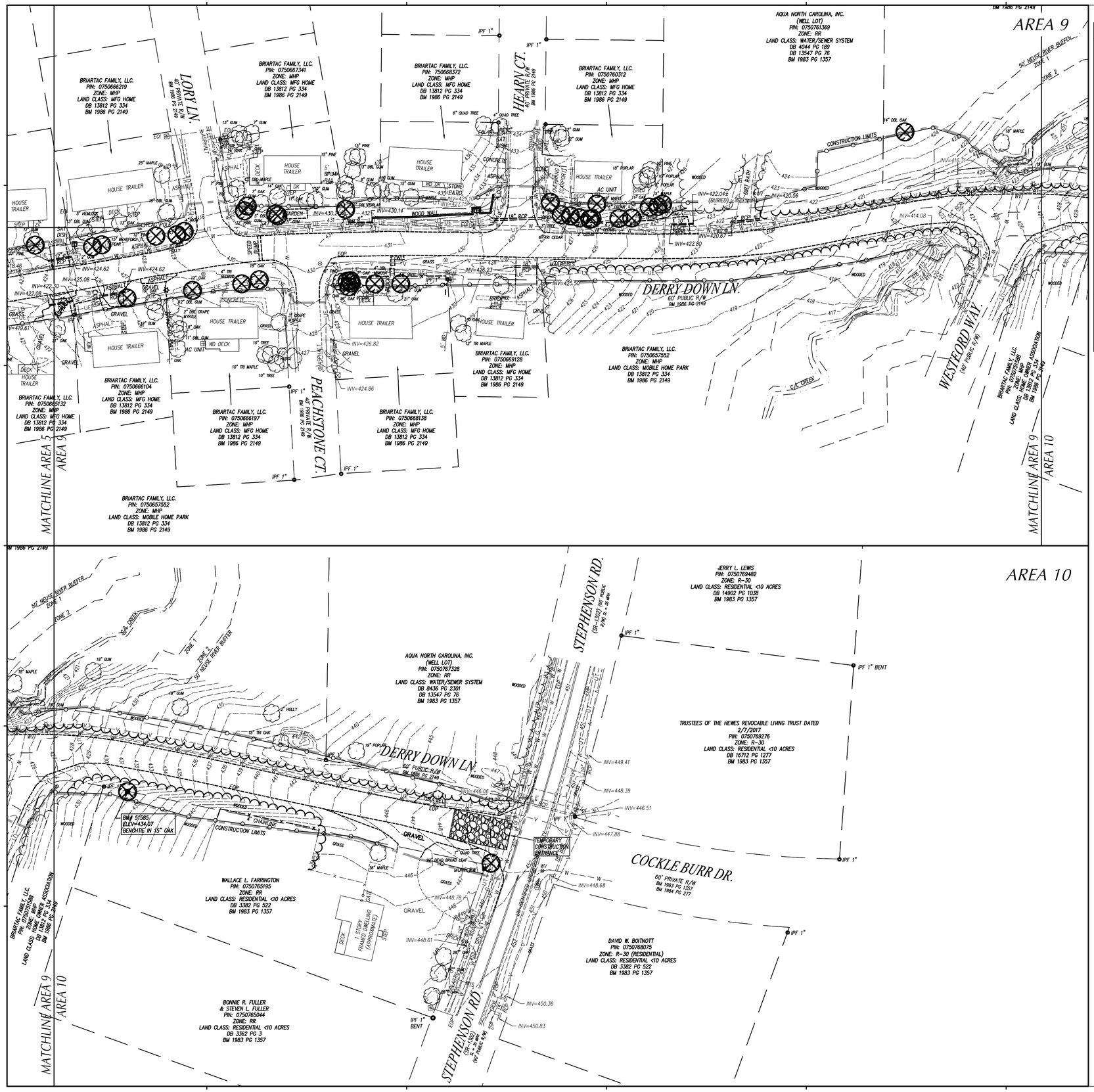
PROJECT NO. 02000.000

SHEET TITLE

DEMOLITION & EXISTING CONDITIONS PLAN AREA_7&8

SHEET NUMBER

C-02.07



LEGEND

STRUCTURES/UTILITIES TO BE REMOVED		STRUCTURES/UTILITIES TO REMAIN	
OVERHEAD ELECTRICAL	E	OVERHEAD ELECTRICAL	E
UNDERGROUND ELECTRICAL	UE	UNDERGROUND ELECTRICAL	UE
FIRE PROTECTION	FP	FIRE PROTECTION	FP
GAS	G	GAS	G
SANITARY SEWER	SS	SANITARY SEWER	SS
TELEPHONE	T	TELEPHONE	T
UNDERGROUND TELEPHONE	UT	UNDERGROUND TELEPHONE	UT
FIBER OPTIC	FO	FIBER OPTIC	FO
WATER	W	WATER	W
FORCE MAIN	FM	FORCE MAIN	FM
STORM DRAIN		STORM DRAIN	
INDIVIDUAL TREE TO BE REMOVED	>18" <18"	INDIVIDUAL TREE TO REMAIN.	
LIGHT POLE	LP	LIGHT POLE	LP
UTILITY POLE	PP	UTILITY POLE	PP
MANHOLE	MH	MANHOLE	MH
CLEAN OUT	CO	CLEAN OUT	CO
DROP INLET,CATCH BASIN	DI, CB	DROP INLET,CATCH BASIN	DI, CB
FIRE HYDRANT	FH	FIRE HYDRANT	FH
WATER VALVE	WV	WATER VALVE	WV
		CRITICAL ROOT ZONES	
CONSTR./CLEARING LIMITS		PAVEMENT, S/W, C&G TO BE REMOVED.	
TREE PROTECTION FENCE		BUILDING/STRUCTURE TO BE REMOVED. SEE ARCHITECTURAL PLANS.	
RESOURCE CONSERVATION AREA			

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineerlng
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY NOT FOR CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

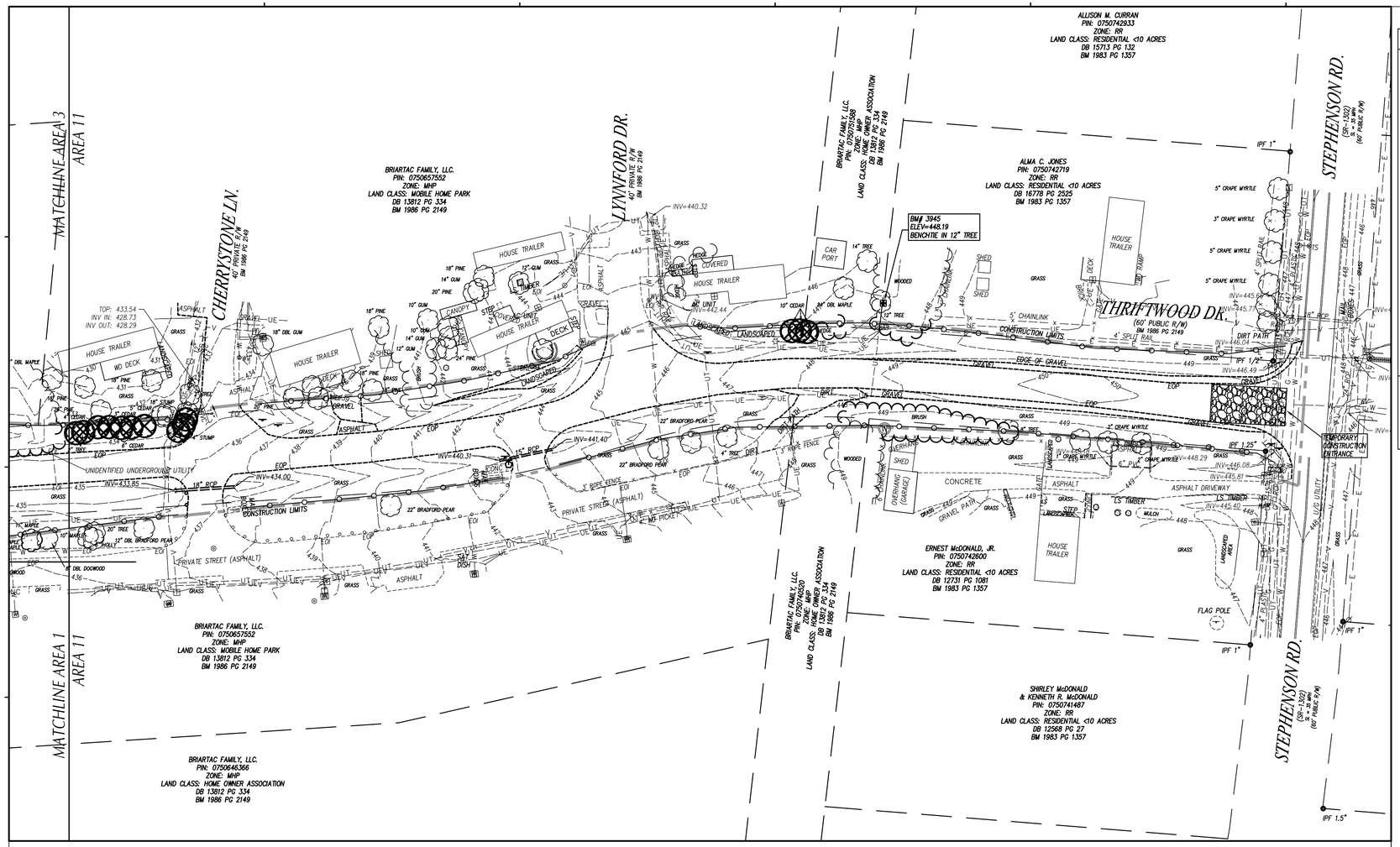
PROJECT NO. 02000.000

SHEET TITLE

DEMOLITION & EXISTING CONDITIONS PLAN AREA_9&10

SHEET NUMBER

C-02.08



LEGEND

STRUCTURES/UTILITIES TO BE REMOVED		STRUCTURES/UTILITIES TO REMAIN	
OVERHEAD ELECTRICAL	E	OVERHEAD ELECTRICAL	E
UNDERGROUND ELECTRICAL	UE	UNDERGROUND ELECTRICAL	UE
FIRE PROTECTION	FP	FIRE PROTECTION	FP
GAS	G	GAS	G
SANITARY SEWER	SS	SANITARY SEWER	SS
TELEPHONE	T	TELEPHONE	T
UNDERGROUND TELEPHONE	UT	UNDERGROUND TELEPHONE	UT
FIBER OPTIC	FO	FIBER OPTIC	FO
WATER	W	WATER	W
FORCE MAIN	FM	FORCE MAIN	FM
STORM DRAIN		STORM DRAIN	
INDIVIDUAL TREE TO BE REMOVED	>18" <18"	INDIVIDUAL TREE TO REMAIN.	
LIGHT POLE	LP	LIGHT POLE	LP
UTILITY POLE	PP	UTILITY POLE	PP
MANHOLE	MH	MANHOLE	MH
CLEAN OUT	CO	CLEAN OUT	CO
DROP INLET,CATCH BASIN	DI, CB	DROP INLET,CATCH BASIN	DI, CB
FIRE HYDRANT	FH	FIRE HYDRANT	FH
WATER VALVE	WV	WATER VALVE	WV
		CRITICAL ROOT ZONES	
CONSTR./CLEARING LIMITS		PAVEMENT, S/W, C&G TO BE REMOVED.	
TREE PROTECTION FENCE		BUILDING/STRUCTURE TO BE REMOVED. SEE ARCHITECTURAL PLANS.	
RESOURCE CONSERVATION AREA			

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineerng
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

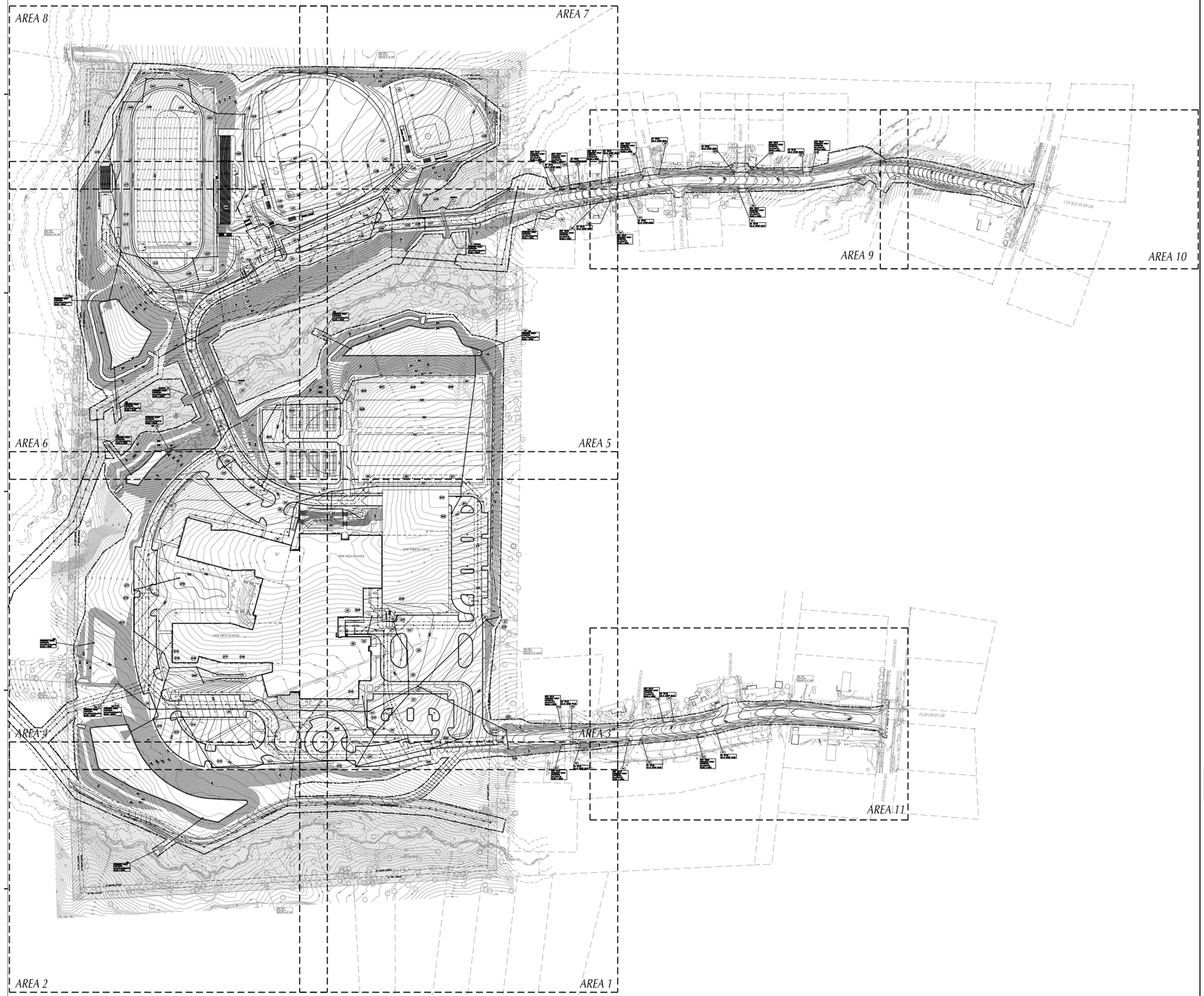
PROJECT NO. 02000.000

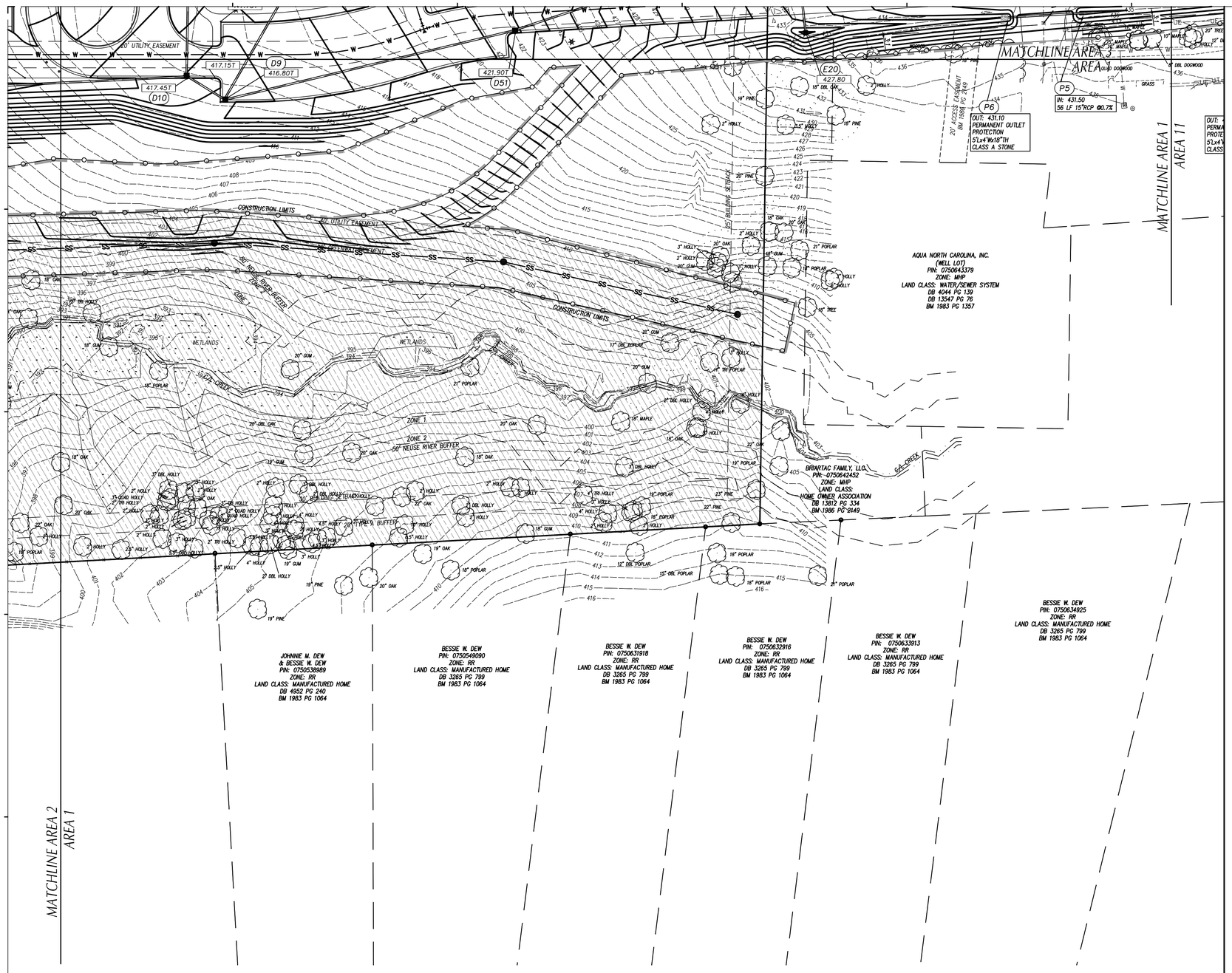
SHEET TITLE

DEMOLITION & EXISTING CONDITIONS PLAN AREA_11

SHEET NUMBER

C-02.09


AREA 8
AREA 7
AREA 9
AREA 10
AREA 6
AREA 5
AREA 4
AREA 3
AREA 11
AREA 2
AREA 1
NEW HIGH SCHOOL
NEW PARKING AREA
NEW ATHLETIC FIELDS
NEW TENNIS COURTS
NEW PRACTICE FIELD
NEW BASEBALL FIELD
NEW SOFTBALL FIELD
NEW TRACK
NEW BUS LOOP
NEW TEAR DROP CIR.
NEW ENTRANCE ROAD
EXISTING ENTRANCE ROAD
EXISTING ENTRANCE ROAD
EXISTING



GRADING LEGEND

- EXISTING CONTOURS
- FINAL CONTOURS
- 270.4+ — EXISTING SURVEY SPOT ELEVATION
- 270.50T — PROPOSED TOP OF CURB SPOT ELEVATION
- 270.50 — PROPOSED GROUND/PAVEMENT ELEVATION
- 270.50TW — PROPOSED FINISHED GRADE AT TOP OF WALL ELEVATION
- 270.50BW — PROPOSED FINISHED GRADE AT BOTTOM OF WALL ELEVATION
- A4 — STORM STRUCTURE NUMBER
- EXISTING STORM DRAIN PIPE
- PROPOSED STORM DRAIN PIPE
- FD — PROPOSED FOUNDATION DRAIN DISCHARGE LINE. SEE ARCH. PLANS FOR DRAIN PIPE LOCATIONS ALONG BUILDING WALLS.
- RD — PROPOSED ROOF DRAIN
- TREE PROTECTION FENCE
- CRITICAL ROOT ZONE
- RESOURCE CONSERVATION AREA

TYP. GRADE DESIGNATIONS AT SITE WALLS

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

MAGNETIC

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

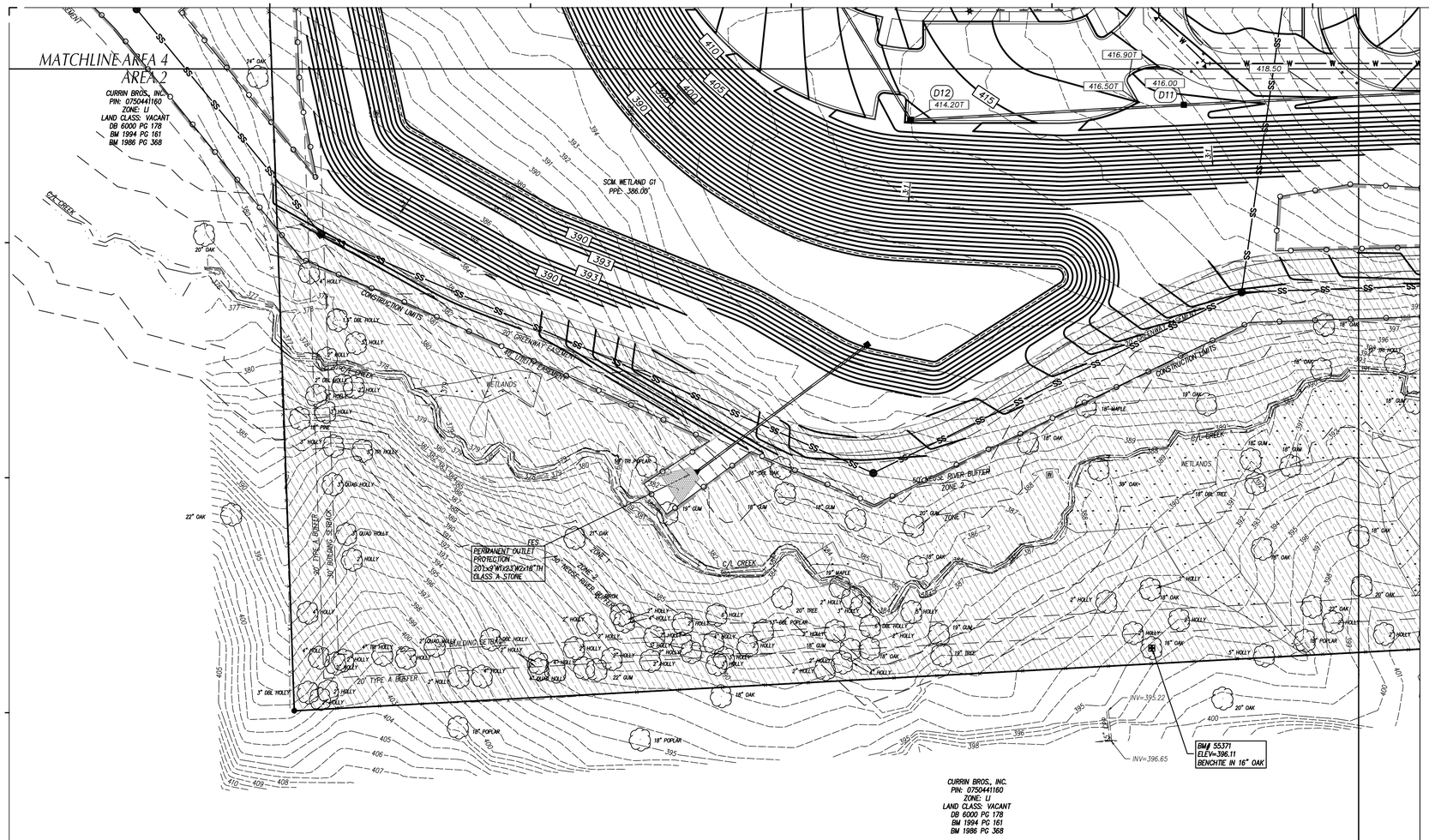
1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

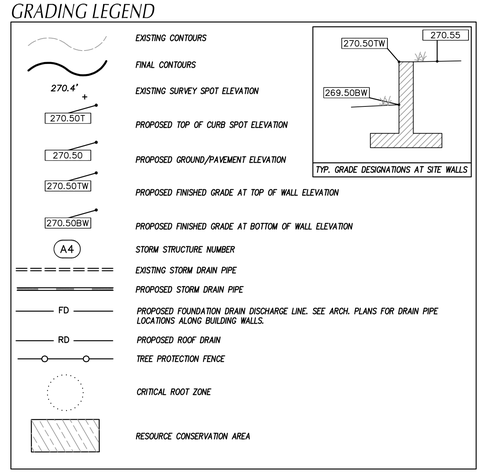
SHEET TITLE
GRADING
PLAN
AREA_1

SHEET NUMBER
C-03.01



MATCHLINE AREA 2
AREA 1

GRADING LEGEND



GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

MAGNETIC

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

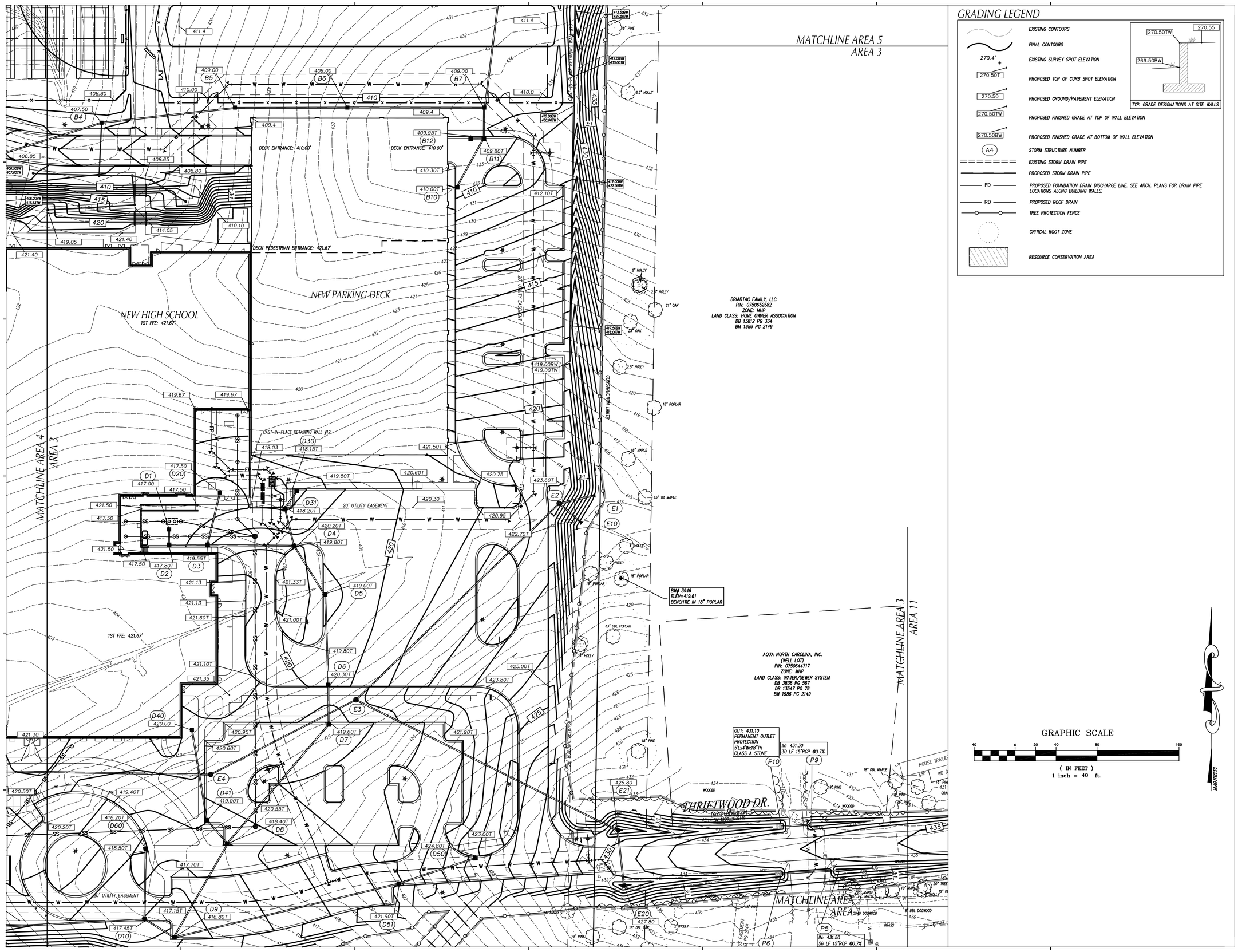
PROJECT NO. 02000.000

SHEET TITLE

GRADING PLAN AREA_2

SHEET NUMBER

C-03.02



GRADING LEGEND

- EXISTING CONTOURS
- FINAL CONTOURS
- 270.4+ EXISTING SURVEY SPOT ELEVATION
- 270.50T PROPOSED TOP OF CURB SPOT ELEVATION
- 270.50 PROPOSED GROUND/PAVEMENT ELEVATION
- 270.50TW PROPOSED FINISHED GRADE AT TOP OF WALL ELEVATION
- 270.50BW PROPOSED FINISHED GRADE AT BOTTOM OF WALL ELEVATION
- A4 STORM STRUCTURE NUMBER
- EXISTING STORM DRAIN PIPE
- PROPOSED STORM DRAIN PIPE
- FD PROPOSED FOUNDATION DRAIN DISCHARGE LINE. SEE ARCH. PLANS FOR DRAIN PIPE LOCATIONS ALONG BUILDING WALLS.
- RD PROPOSED ROOF DRAIN
- TREE PROTECTION FENCE
- CRITICAL ROOT ZONE
- RESOURCE CONSERVATION AREA

TYP. GRADE DESIGNATIONS AT SITE WALLS

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

MAGNETIC

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Ralelgh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

SHEET TITLE
GRADING
PLAN
AREA_3

SHEET NUMBER
C-03.03

GRADING LEGEND

- EXISTING CONTOURS
- FINAL CONTOURS
- 270.4+ EXISTING SURVEY SPOT ELEVATION
- 270.50T PROPOSED TOP OF CURB SPOT ELEVATION
- 270.50 PROPOSED GROUND/PAVEMENT ELEVATION
- 270.50TW PROPOSED FINISHED GRADE AT TOP OF WALL ELEVATION
- 270.50BW PROPOSED FINISHED GRADE AT BOTTOM OF WALL ELEVATION
- A4 STORM STRUCTURE NUMBER
- EXISTING STORM DRAIN PIPE
- PROPOSED STORM DRAIN PIPE
- FD PROPOSED FOUNDATION DRAIN DISCHARGE LINE. SEE ARCH. PLANS FOR DRAIN PIPE LOCATIONS ALONG BUILDING WALLS.
- RD PROPOSED ROOF DRAIN
- TREE PROTECTION FENCE
- CRITICAL ROOT ZONE
- RESOURCE CONSERVATION AREA

270.50TW / 270.55 / 269.50BW

TYP. GRADE DESIGNATIONS AT SITE WALLS

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

MAGNETIC

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Ralelgh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

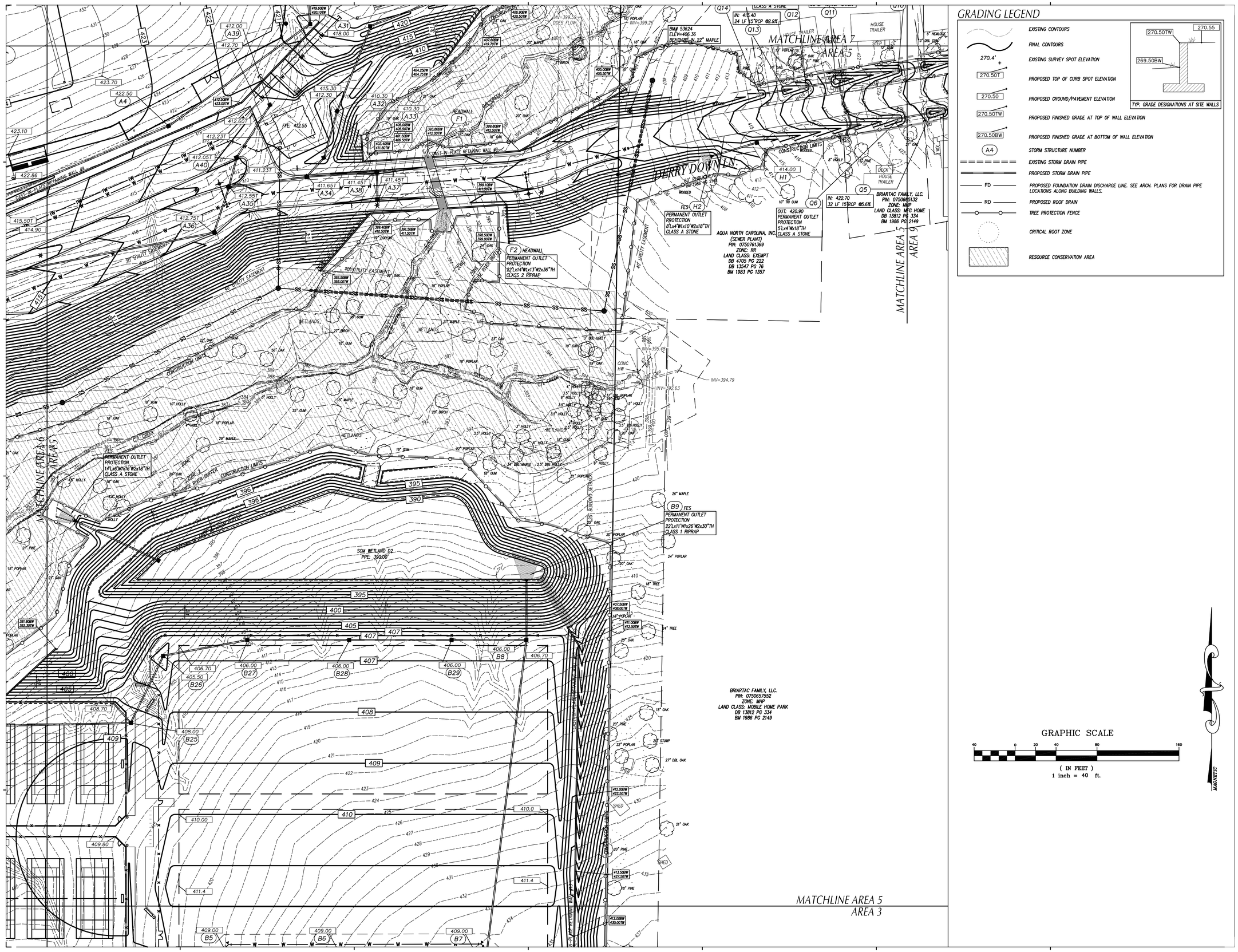
PROJECT NO. 02000.000

SHEET TITLE

GRADING PLAN AREA_4

SHEET NUMBER

C-03.04



Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

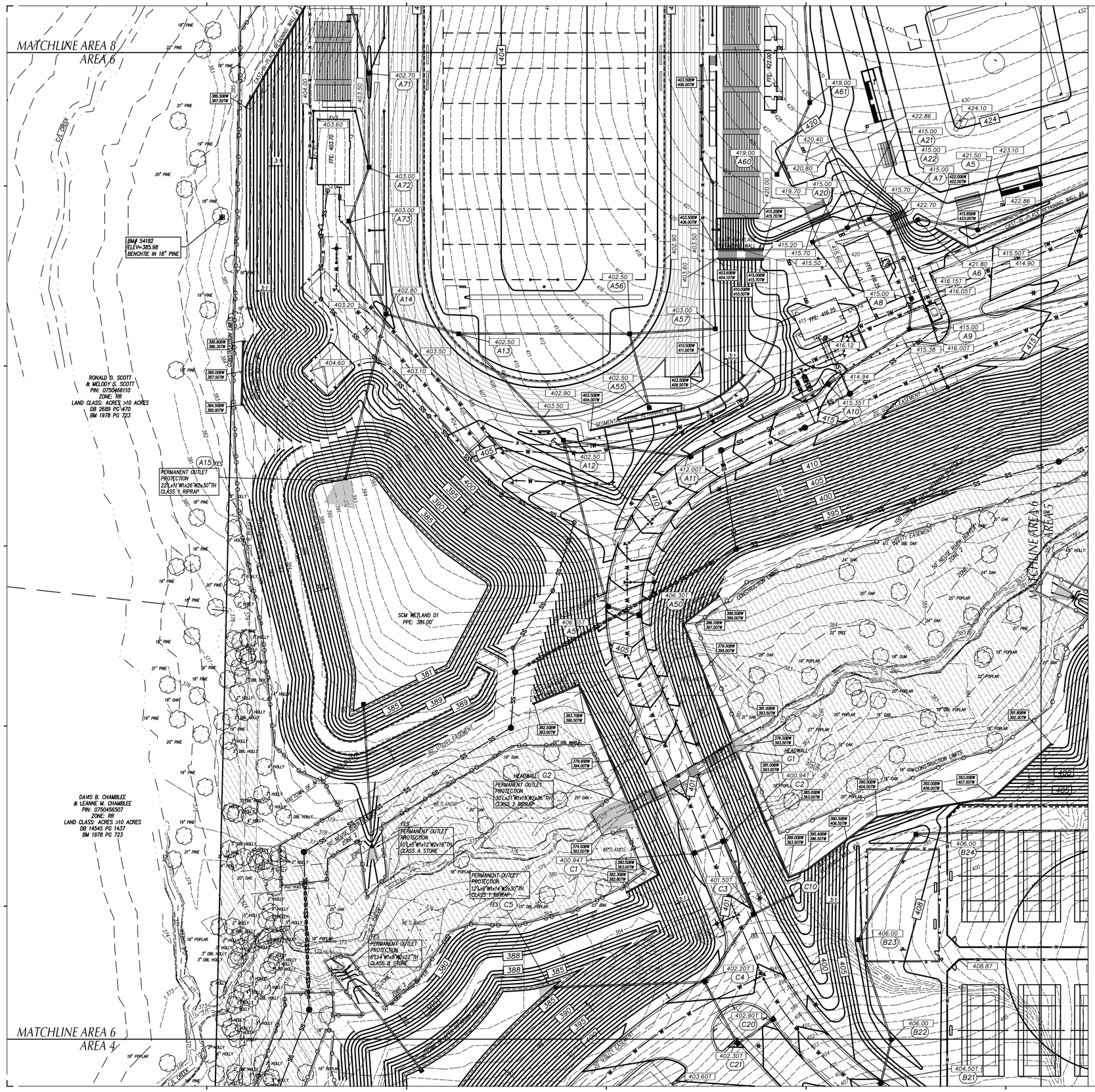
RATIO

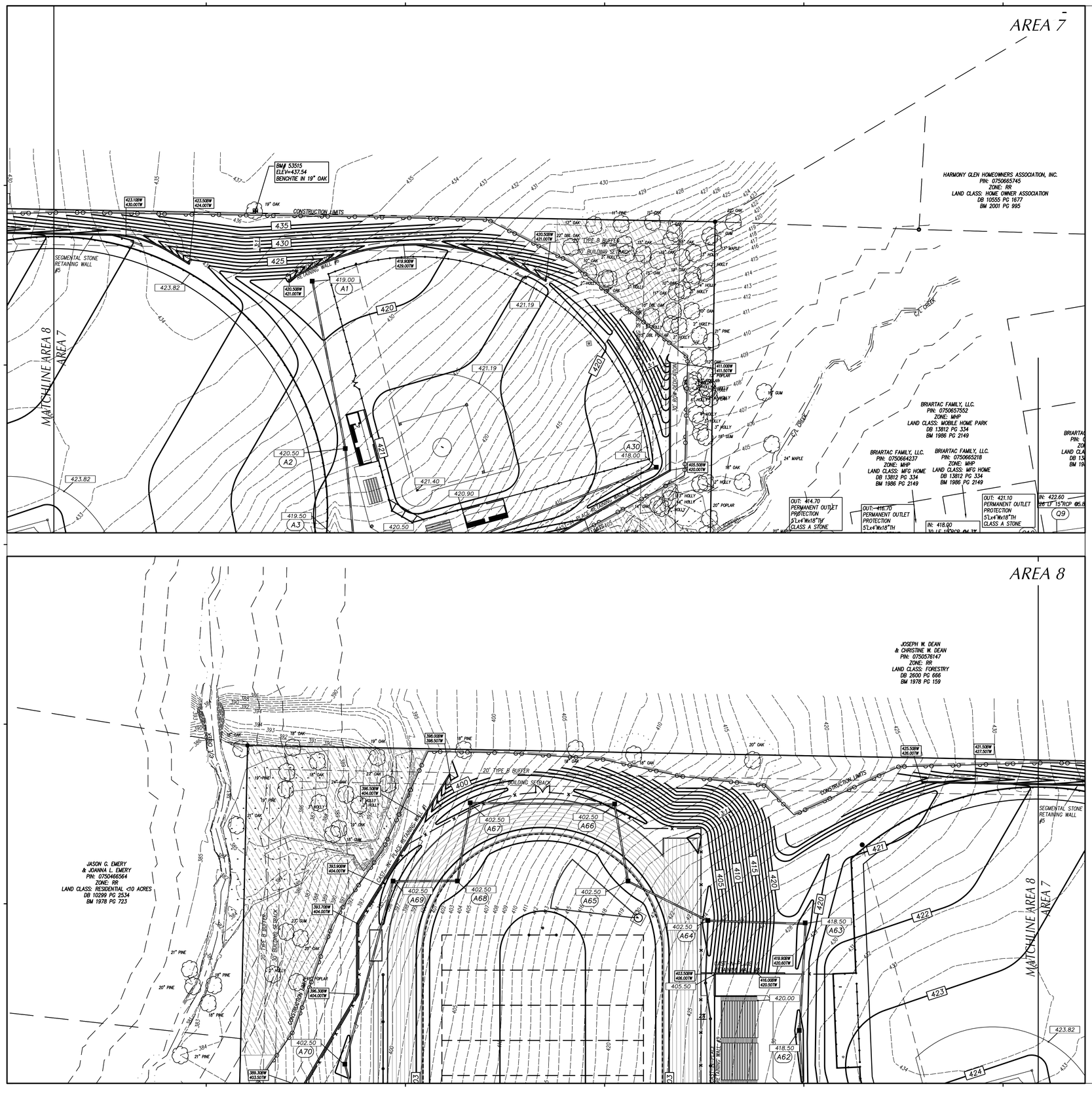
COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

SHEET TITLE
GRADING PLAN AREA_5

SHEET NUMBER
C-03.05


MATCHLINE AREA 8
AREA 6
MATCHLINE AREA 6
AREA 4
BM# 54182
ELEV=395.98
BENCHTIE IN 18" PINE
RONALD D. SCOTT
& MELODY S. SCOTT
PIN: 0750466110
ZONE: RR
LAND CLASS: ACRES >10 ACRES
DB 2689 PG 470
BM 1978 PG 723
DAVIS B. CHAMBLEE
& LEANNE M. CHAMBLEE
PIN: 0750456507
ZONE: RR
LAND CLASS: ACRES >10 ACRES
DB 14545 PG 1437
BM 1978 PG 723
PERMANENT OUTLET PROTECTION
22'Lx11'W1x26"W2x30"TH
CLASS 'I' RIPRAP
SCM WETLAND D1
PPE: 381.00'
PERMANENT OUTLET PROTECTION
30'Lx20'W1x18"W2x36"TH
CLASS 2 RIPRAP
PERMANENT OUTLET PROTECTION
101'x5'W1x12"W2x18"TH
CLASS A STONE
PERMANENT OUTLET PROTECTION
12'Lx6'W1x14"W2x30"TH
CLASS 'I' RIPRAP
PERMANENT OUTLET PROTECTION
6'Lx4'W1x8"W2x22"TH
CLASS B STONE
SEGMENTAL STONE RETAINING WALL A1
SEGMENTAL STONE RETAINING WALL A2
SEGMENTAL STONE RETAINING WALL A3
SEGMENTAL STONE RETAINING WALL A4
SEGMENTAL STONE RETAINING WALL A5
SEGMENTAL STONE RETAINING WALL A6
SEGMENTAL STONE RETAINING WALL A7
SEGMENTAL STONE RETAINING WALL A8
SEGMENTAL STONE RETAINING WALL A9
SEGMENTAL STONE RETAINING WALL A10
SEGMENTAL STONE RETAINING WALL A11
SEGMENTAL STONE RETAINING WALL A12
SEGMENTAL STONE RETAINING WALL A13
SEGMENTAL STONE RETAINING WALL A14
SEGMENTAL STONE RETAINING WALL A15
SEGMENTAL STONE RETAINING WALL A20
SEGMENTAL STONE RETAINING WALL A21
SEGMENTAL STONE RETAINING WALL A22
SEGMENTAL STONE RETAINING WALL A50
SEGMENTAL STONE RETAINING WALL A55
SEGMENTAL STONE RETAINING WALL A56
SEGMENTAL STONE RETAINING WALL A57
SEGMENTAL STONE RETAINING WALL A60
SEGMENTAL STONE RETAINING WALL A61
HEADWALL G1
HEADWALL G2
FFE: 403.70
FFE: 422.00
FFE: 416.25
FFE: 416.75
100' TOWN OF APEX BUFFER
50' WILDLIFE BUFFER ZONE 2
50' WILDLIFE BUFFER ZONE 1
100' WETLAND BUFFER
30' UTILITY EASEMENT
40' UTILITY EASEMENT
CONSTRUCTION LIMITS
WETLANDS
EAST MAIN PLACE
EAST MAIN PLACE
EAST MAIN PLACE



GRADING LEGEND

- EXISTING CONTOURS
- FINAL CONTOURS
- 270.4+ EXISTING SURVEY SPOT ELEVATION
- 270.50T PROPOSED TOP OF CURB SPOT ELEVATION
- 270.50 PROPOSED GROUND/PAVEMENT ELEVATION
- 270.50TW PROPOSED FINISHED GRADE AT TOP OF WALL ELEVATION
- 270.50BW PROPOSED FINISHED GRADE AT BOTTOM OF WALL ELEVATION
- A4 STORM STRUCTURE NUMBER
- EXISTING STORM DRAIN PIPE
- PROPOSED STORM DRAIN PIPE
- FD PROPOSED FOUNDATION DRAIN DISCHARGE LINE. SEE ARCH. PLANS FOR DRAIN PIPE LOCATIONS ALONG BUILDING WALLS.
- RD PROPOSED ROOF DRAIN
- TREE PROTECTION FENCE
- CRITICAL ROOT ZONE
- RESOURCE CONSERVATION AREA

270.50TW / 270.55 / 269.50BW

TYP. GRADE DESIGNATIONS AT SITE WALLS

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

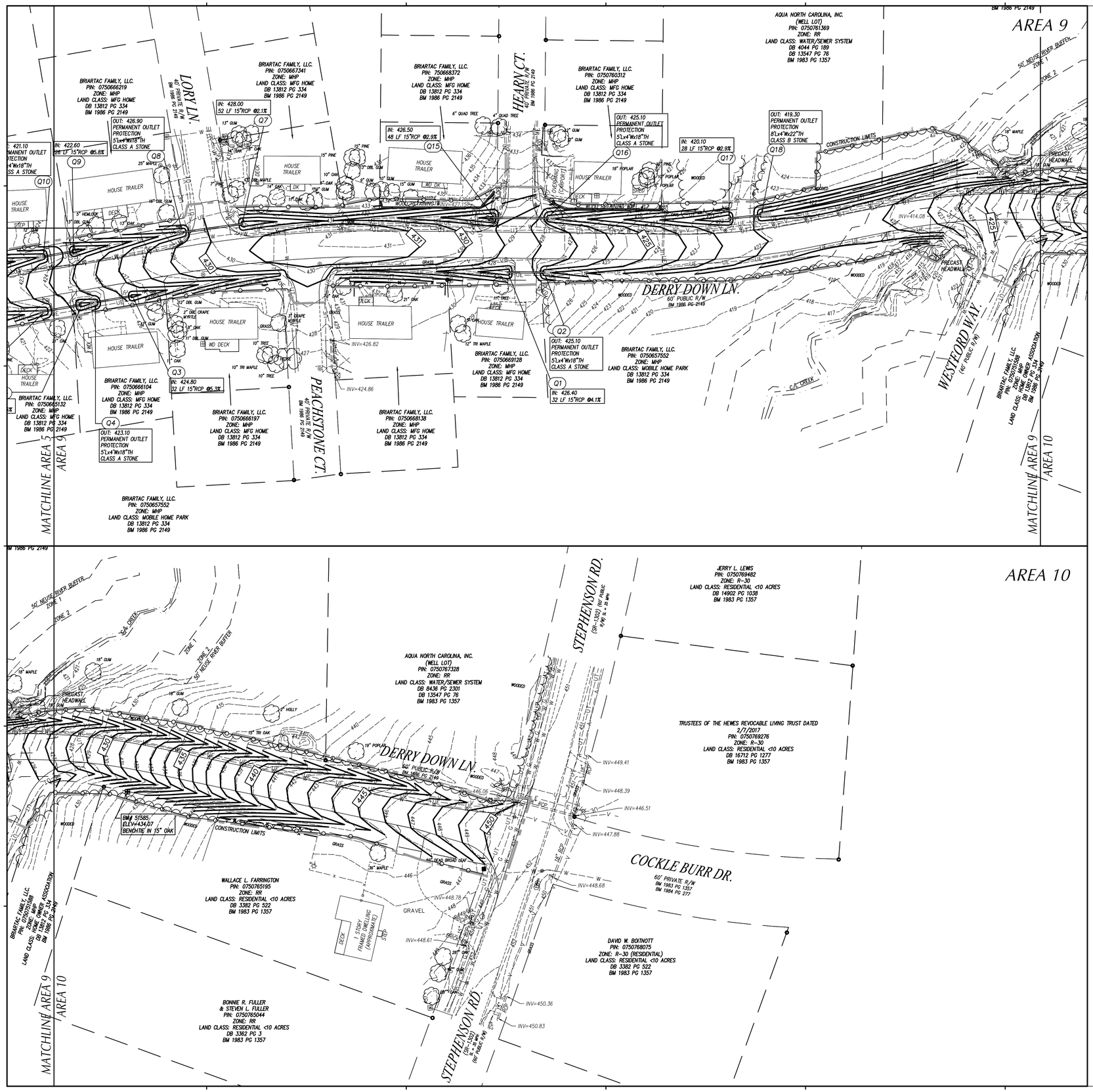
PROJECT NO. 02000.000

SHEET TITLE

GRADING PLAN AREA_7&8

SHEET NUMBER

C-03.07



GRADING LEGEND

- EXISTING CONTOURS
- FINAL CONTOURS
- 270.4+ — EXISTING SURVEY SPOT ELEVATION
- 270.50T — PROPOSED TOP OF CURB SPOT ELEVATION
- 270.50 — PROPOSED GROUND/PAVEMENT ELEVATION
- 270.50TW — PROPOSED FINISHED GRADE AT TOP OF WALL ELEVATION
- 270.50BW — PROPOSED FINISHED GRADE AT BOTTOM OF WALL ELEVATION
- A4 — STORM STRUCTURE NUMBER
- EXISTING STORM DRAIN PIPE
- PROPOSED STORM DRAIN PIPE
- FD — PROPOSED FOUNDATION DRAIN DISCHARGE LINE. SEE ARCH. PLANS FOR DRAIN PIPE LOCATIONS ALONG BUILDING WALLS.
- RD — PROPOSED ROOF DRAIN
- TREE PROTECTION FENCE
- CRITICAL ROOT ZONE
- RESOURCE CONSERVATION AREA

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

MAGNETIC

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

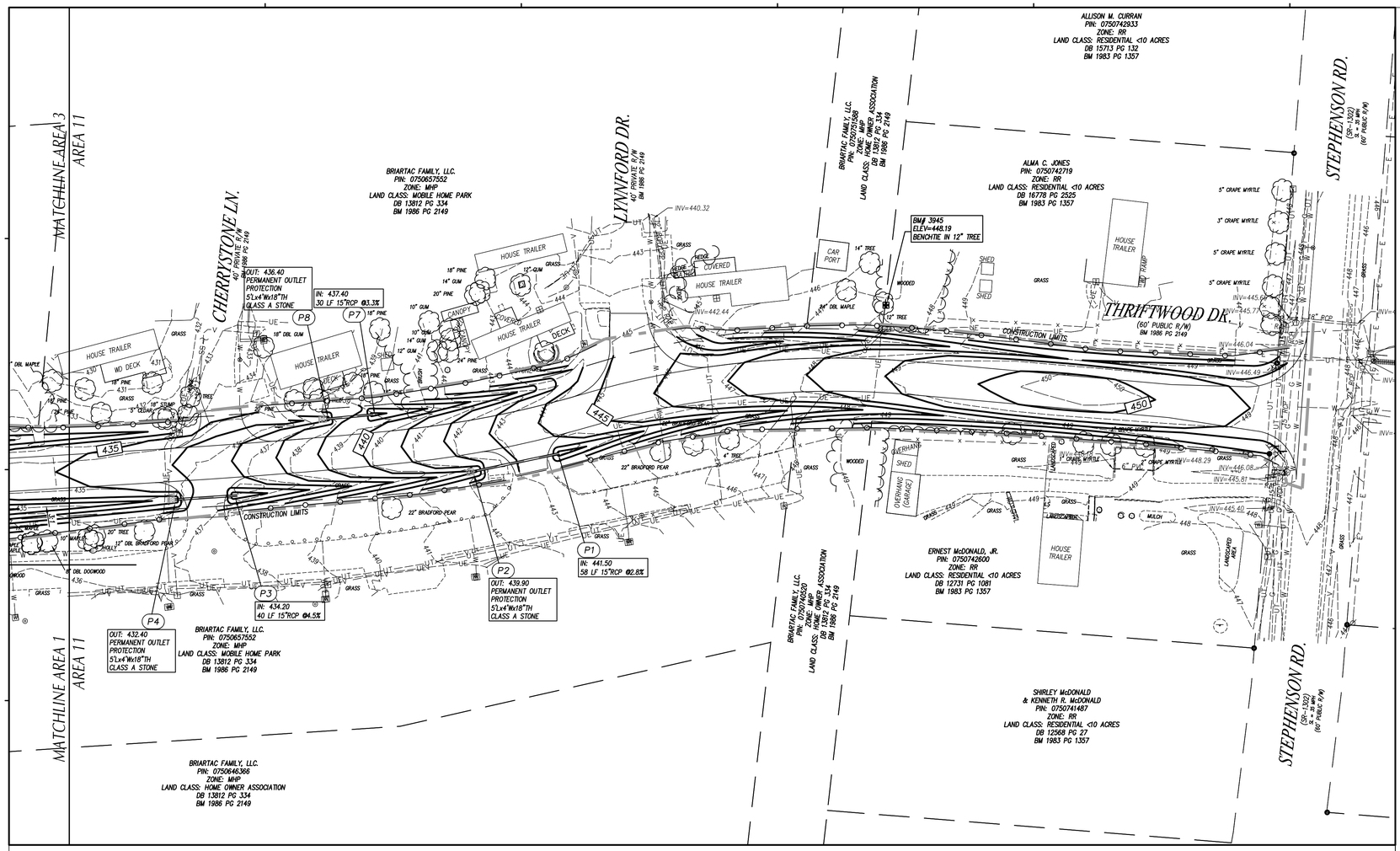
PROJECT NO. 02000.000

SHEET TITLE

GRADING
PLAN
AREA_9&10

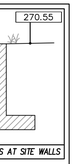
SHEET NUMBER

C-03.08



GRADING LEGEND

- EXISTING CONTOURS
- FINAL CONTOURS
- 270.4+ EXISTING SURVEY SPOT ELEVATION
- 270.50T PROPOSED TOP OF CURB SPOT ELEVATION
- 270.50 PROPOSED GROUND/PAVEMENT ELEVATION
- 270.50TW PROPOSED FINISHED GRADE AT TOP OF WALL ELEVATION
- 270.50BW PROPOSED FINISHED GRADE AT BOTTOM OF WALL ELEVATION
- A4 STORM STRUCTURE NUMBER
- EXISTING STORM DRAIN PIPE
- PROPOSED STORM DRAIN PIPE
- FD PROPOSED FOUNDATION DRAIN DISCHARGE LINE. SEE ARCH. PLANS FOR DRAIN PIPE LOCATIONS ALONG BUILDING WALLS.
- RD PROPOSED ROOF DRAIN
- TREE PROTECTION FENCE
- CRITICAL ROOT ZONE
- RESOURCE CONSERVATION AREA



TYP. GRADE DESIGNATIONS AT SITE WALLS

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

MAGNETIC

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

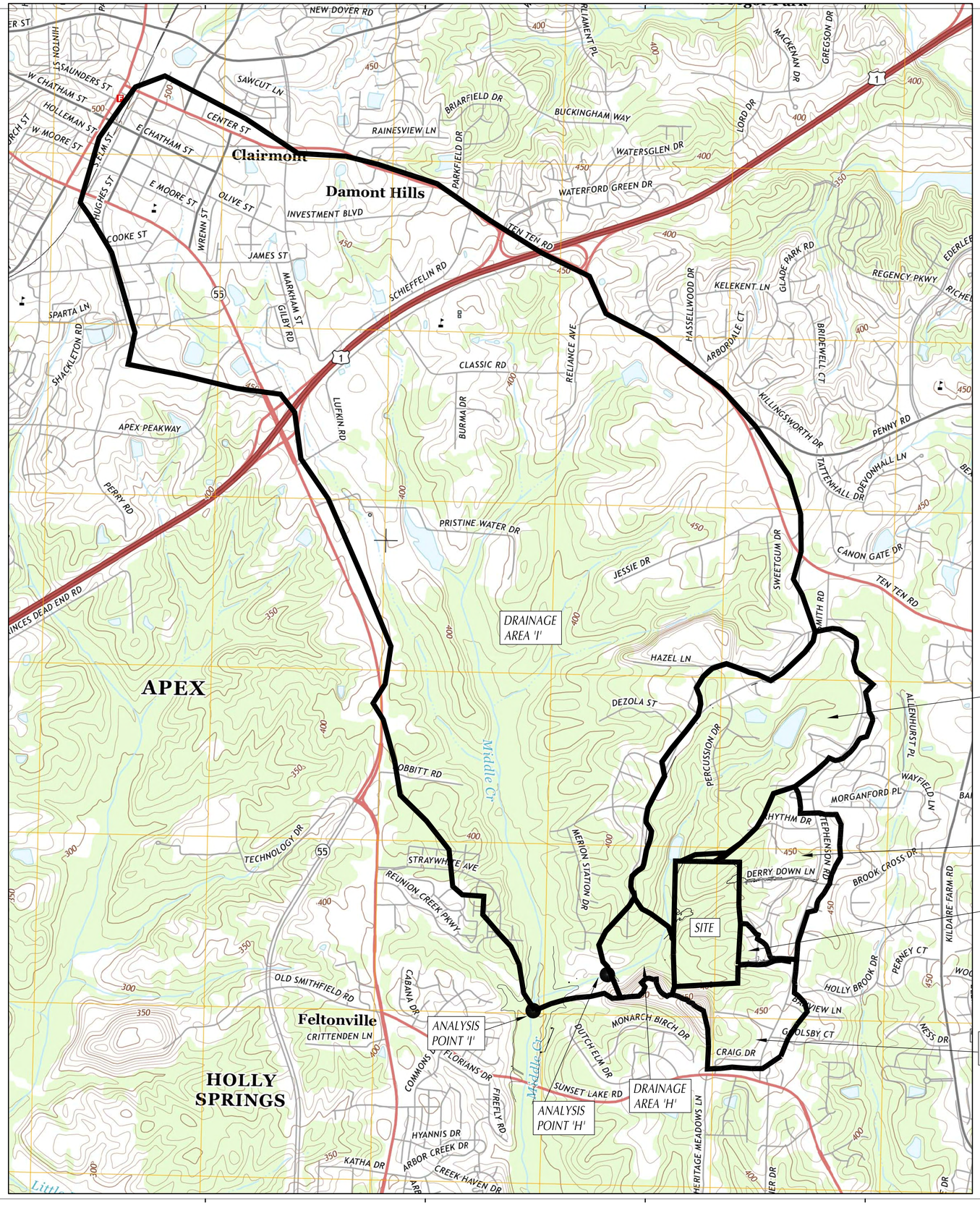
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

SHEET TITLE
GRADING
PLAN
AREA_11

SHEET NUMBER
C-03.09



Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Ralelgh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Ralelgh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineerlng
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

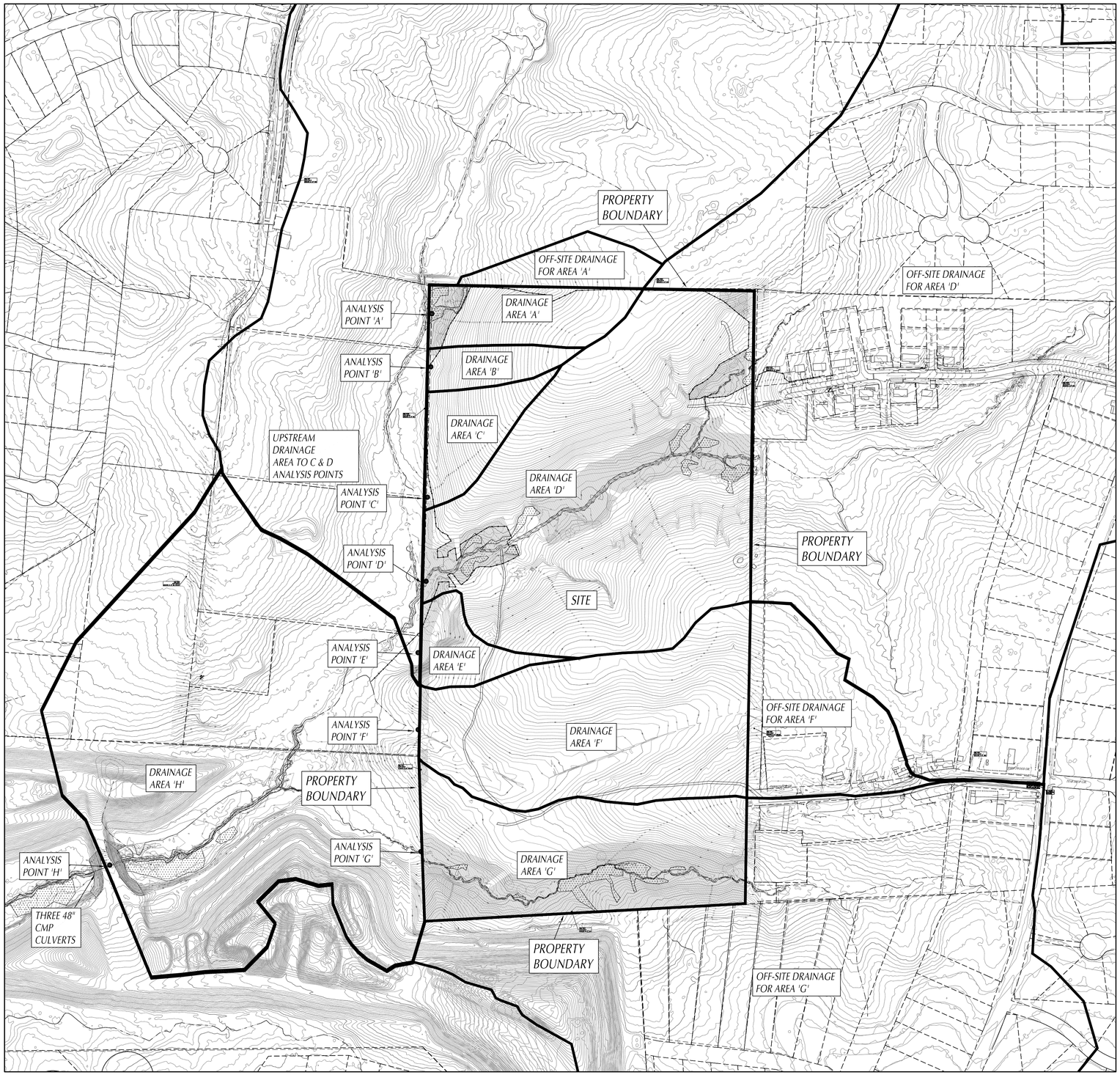
PROJECT NO. 02000.000

SHEET TITLE

OVERALL
DRAINAGE
AREA MAP

SHEET NUMBER

C-03.10



GRAPHIC SCALE

200 0 100 200 400 800

(IN FEET)
1 inch = 200 ft.

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

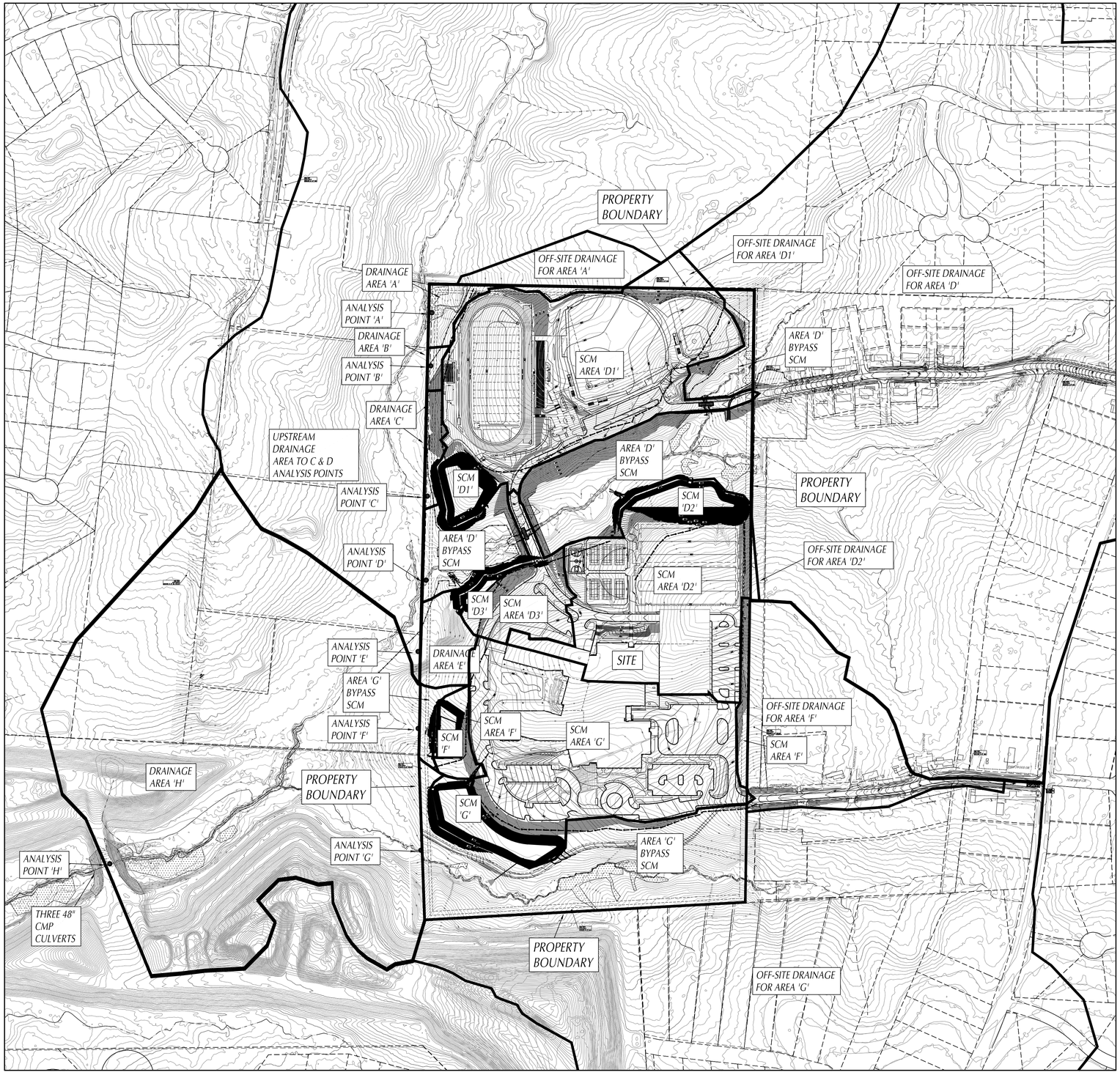
PROJECT NO. 02000.000

SHEET TITLE

PRE- DEVELOPMENT CONDITIONS DRAINAGE MAP

SHEET NUMBER

C-03.11



STORMWATER IMPACT STATEMENT

STORMWATER IMPACT STATEMENT:

A DOWNSTREAM IMPACT ANALYSIS WAS PERFORMED FOR THE H12/FELDON GROVE HIGH SCHOOL TO A LOCATION WHERE THE PROJECT PROPERTY AREA IS AT LEAST 10 PERCENT OF THE TOTAL DRAINAGE ARE. THE SITE IS 68 ACRES, WHICH REQUIRES THE STUDY TO INCLUDE A DRAINAGE AREA OF 680 ACRES. THE TRIBUTARY THAT EXTENDS FROM THE WESTERN EDGE OF THE PROPERTY DOWN TO MIDDLE CREEK IS ABOUT 580 ACRES WHERE THE SITE IS ABOUT 12 PERCENT OF THE DRAINAGE AREA. THE ANALYSIS POINT (DESIGNATED 'I', SEE SHEET C-03.10) DRAINAGE AREA IS APPROXIMATELY 3,195 ACRES WHICH BRINGS THE PROPERTY TO 2.1% OF THE DRAINAGE AREA.

THE ONLY PHYSICAL STRUCTURE DOWNSTREAM OF THE SITE TO THE ANALYSIS POINT 'I', IS A TRIPLE 48-IN CULVERT AT THE LANDFILL SITE THAT CROSSES THE TRIBUTARY. THIS LOCATION IS DESIGNATED AS ANALYSIS POINT 'H'.

POST DEVELOPMENT STORMWATER DISCHARGE RATE IS AT OR BELOW THE PRE-DEVELOPMENT RATE FOR THE 1-YEAR 24 HOUR DESIGN STORM, THE 10-YEAR 24 HOUR DESIGN STORM AND THE 100 YEAR 24 HOUR DESIGN STORM AT BOTH ANALYSIS POINT 'H' AND POINT 'I'.

ANALYSIS POINT	PHASE	Q1 (CFS)	Q10 (CFS)	Q100 (CFS)	NOTES
A*	PRE-DEV	0.35	8.01	22.12	
	POST-DEV	0.33	4.87	12.81	
	MANAGED				
B	PRE-DEV	0.09	1.92	5.35	
	POST-DEV	0.03	0.40	1.02	
	MANAGED				
C	PRE-DEV	0.17	3.86	10.65	
	POST-DEV	0.16	1.31	3.08	
	MANAGED				
D*	PRE-DEV	69.74	257.45	518.37	
	POST-DEV	106.04	330.05	624.41	
	MANAGED	68.22	237.42	509.98	3 STORMWATER WETLANDS
E	PRE-DEV	0.21	2.76	7.10	
	POST-DEV	0.18	2.41	6.09	
	MANAGED				
F*	PRE-DEV	6.35	34.93	81.66	
	POST-DEV	9.00	34.83	67.52	
	MANAGED	3.97	13.14	45.62	1 DRY DETENTION POND
G*	PRE-DEV	50.75	182.70	364.47	
	POST-DEV	76.26	240.56	455.56	
	MANAGED	49.00	175.02	357.45	1 STORMWATER WETLAND
H	PRE-DEV	265.14	1007.95	2033.27	EXISTING TRIPLE 48"CMP
	POST-DEV				CULVERTS AT LANDFILL SITE
	MANAGED	260.10	958.19	1981.70	
I	PRE-DEV	966.04	4127.88	8713.51	STORMWATER STUDY
	POST-DEV				ANALYSIS POINT AT MIDDLE
	MANAGED	966.04	4127.88	8713.51	CREEK.

* STORM DISCHARGE INCLUDES UPSTREAM DRAINAGE AREA.

GRAPHIC SCALE

200 0 100 200 400 800

(IN FEET)
1 inch = 200 ft.

NORTH

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Ralelgh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Ralelgh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineerlng
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

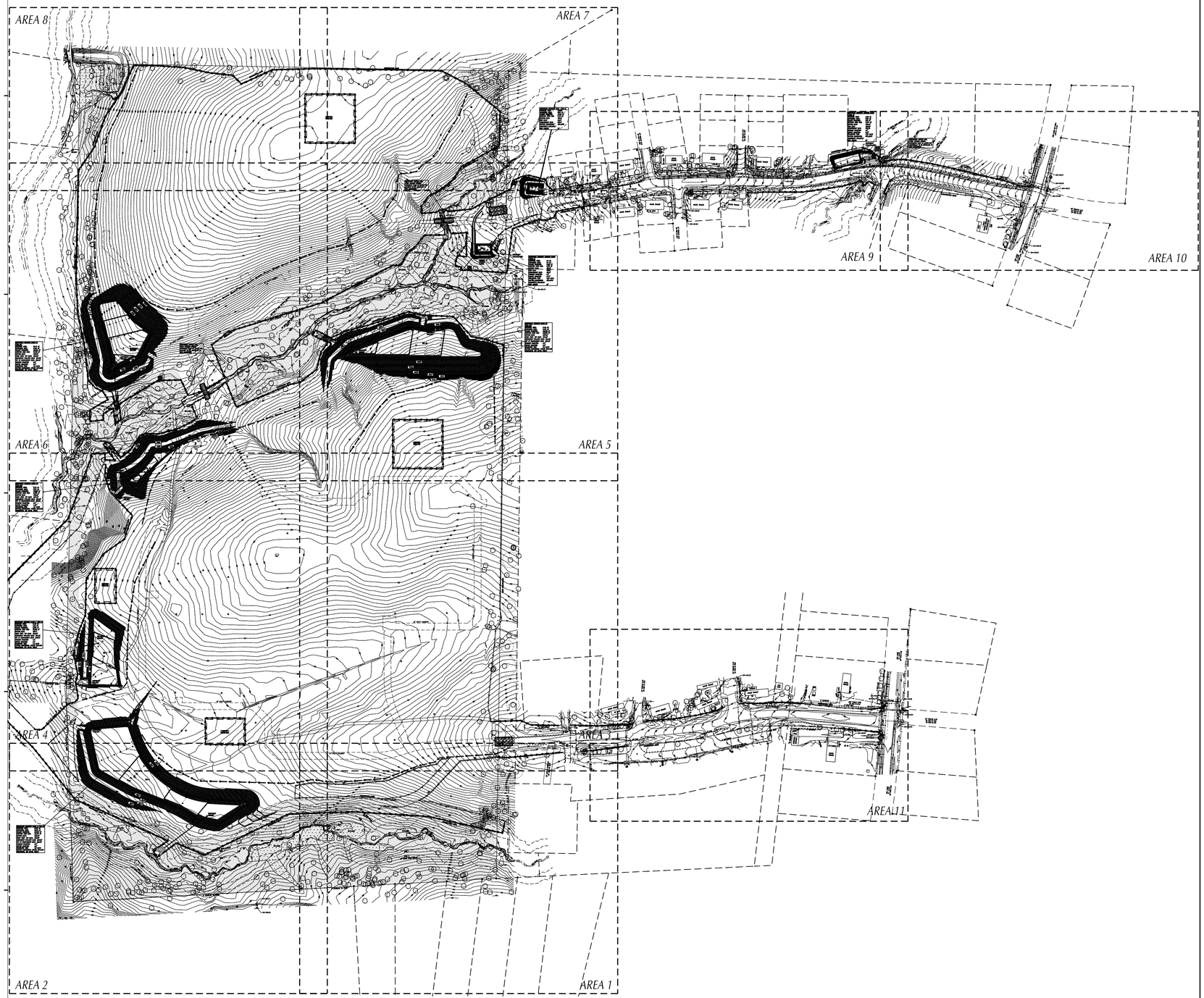
PROJECT NO. 02000.000

SHEET TITLE

POST DEVELOPMENT
CONDITIONS
DRAINAGE MAP

SHEET NUMBER

C-03.12



TOWN OF APEX CONSTRUCTION SEQUENCE

THE FOLLOWING BEGINS ONLY AFTER CONSTRUCTION PLANS ARE APPROVED, SIGNED BY TOWN STAFF AND COPIES ARE RECEIVED.

1. THROUGH THE INFRASTRUCTURE INSPECTIONS MANAGER AT 919-249-3386, SCHEDULE A PRE-CONSTRUCTION MEETING WITH INSPECTORS AND OTHER TOWN STAFF.
2. FILL OUT TREE/PROTECTION FENCING INSTALLATION PERMIT APPLICATION (OBTAIN FROM PLANNING DEPARTMENT).
3. HAVE A SURVEYOR FLAG PROPERTY LINES, EASEMENTS, BUFFERS, TREE PROTECTION AREAS, AND FLAG THE PROTECTION LIMITS.
4. CONTACT AN APEX PLANNING DEPARTMENT ZONING COMPLIANCE OFFICER AT 919-249-3426 TO REQUEST APPROVAL FOR TREE PROTECTION FENCING LOCATIONS.
5. INSTALL APPROVED TREE PROTECTION FENCING, SIGNS, AND/OR ANY OTHER PROTECTION MEASURES THAT MAY BE REQUIRED. CALL PLANNING AT 249-3426 FRO A FINAL INSPECTION OF PROTECTION MEASURES. PLANNING WILL FORWARD APPROVAL TO WATER RESOURCES, EROSION CONTROL FIELD STAFF.
6. PROVIDE STATE ISSUED EROSION CONTROL APPROVAL LETTER AND CERTIFICATE OF COMPLIANCE.
7. INSTALL GRAVEL CONSTRUCTION ENTRANCE, TEMPORARY DIVERSIONS, SILT FENCING, SEDIMENT BASINS, BYPASS CHANNELS, AND/OR OTHER MEASURES AS SHOWN ON THE APPROVED PLANS. CLEAR ONLY AS NECESSARY TO INSTALL THESE DEVICES.
8. WHEN COMPLETED, CALL WATER RESOURCES STAFF AT 919-362-8166 FOR AN ON-SITE INSPECTION AND TO REQUEST A CERTIFICATE OF COMPLIANCE.
9. COMPLETE A GRADING PERMIT APPLICATION, IF REQUIRED, FROM THE BUILDING INSPECTIONS & PERMITTING DEPARTMENT.
10. ONCE A GRADING PERMIT IS REVIEWED AND ISSUED BY THE BUILDING INSPECTIONS & PERMITTING DEPARTMENT, ARRANGE A PRE-CONSTRUCTION MEETING WITH TIM SAWYER AT 919-904-8744 OR BRANDON BECK AT 919-208-0362 PRIOR TO ANY GRADING ACTIVITIES. THIS MEETING IS SEPARATE FROM ANY OTHER PRE-CONSTRUCTION MEETINGS REQUIRED IN THE CONSTRUCTION SEQUENCE.
11. POST GRADING PERMIT PROMINENTLY ON SITE AT ALL TIMES.
12. BEGIN CLEARING, GRUBBING, AND ROUGH GRADE OF THE SITE IN ACCORDANCE WITH THE APPROVED GRADING PLAN.
13. STOCKPILE A SUFFICIENT AMOUNT OF TOPSOIL TO COVER 3 INCHES OVER LANDSCAPED AREAS AT THE END OF THE PROJECT.
14. INSTALL STORM SEWER, IF APPLICABLE, AND PROTECT INLETS WITH INLET PROTECTION DEVICES, SEDIMENT DEVICES, AND/OR OTHER APPROVED MEASURES AS SHOWN ON PLANS. MAINTAIN S&E MEASURES AS NEEDED.
15. AFTER COMPLETION OF ANY PHASE OF GRADING OR WHEN LAND-DISTURBING ACTIVITIES HAVE TEMPORARILY CEASED, ESTABLISH GROUND COVER ON SWALES AND DITCHES AND GRADED SLOPES STEEPER THAN 3:1 WITHIN 7 CALENDAR DAYS.
16. STABILIZE SITE AS AREAS ARE BROUGHT UP TO FINISHED GRADE WITH VEGETATION OR PAVING.
17. PRIOR TO PLAT APPROVAL, ALL DISTURBED AREAS BOTH PUBLIC AND PRIVATE, MUST BE PROPERLY STABILIZED. ALL TEMPORARY EROSION CONTROL MEASURES MUST BE INSTALLED, BE FUNCTIONING PROPERLY AND BE MAINTAINED FOR THE ENTIRE AREA CONTAINED WITHIN THE PLAT.
18. FLUSH AND CLEAN ALL STORMWATER SYSTEM PIPES. CLEAN AND REMOVE SEDIMENT FROM TEMPORARY SEDIMENT HOLDING DEVICES. FOLLOW THE SCM CONSTRUCTION SEQUENCE FOUND ON THE GRADING AND/OR SCM DETAIL SHEET ON THE CONSTRUCTION PLAN SET.
19. REMOVE ALL TEMPORARY DIVERSIONS, SILT FENCING, SEDIMENT BASINS, ETC. AND PROVIDE ADEQUATE COVER OR PAVE ANY RESULTING BARE AREAS. ALL PERMANENT EROSION CONTROL DEVICES SHOULD BE INSTALLED AT THIS POINT.
20. WHEN VEGETATION HAS BEEN ESTABLISHED, CALL WATER RESOURCES STAFF AT 919-362-8166 FOR A FINAL SITE INSPECTION AND TO REQUEST A CERTIFICATE OF COMPLETION. THE S&E PERFORMANCE GUARANTEE WILL BE RELEASED WITH THE ISSUANCE OF THE CERTIFICATE OF COMPLETION. VISIT THE STATE WEBSITE LISTED ABOVE AND SUBMIT ELECTRONIC NOTICE OF TERMINATION (e-NOT) TO END COVERAGE UNDER THE NCG01 PERMIT.
21. THE PROPERTY OWNER/HOME OWNERS ASSOCIATION WILL BE RESPONSIBLE FOR PERMANENT EROSION CONTROL MAINTENANCE OF THE SITE.

STRUCTURAL BMP CONSTRUCTION SEQUENCE

THE FOLLOWING MUST OCCUR PRIOR TO FINAL PLAT AND/OR CERTIFICATE OF OCCUPANCY (CO):

1. ALL STORMWATER CONTROL MEASURES (SCMS) MUST BE INSTALLED IN ACCORDANCE WITH THE APPROVED CONSTRUCTION DRAWINGS.
2. DURING THE SCM CONVERSION PROCESS, ALL EFFORTS SHALL BE MADE TO PROTECT DOWNSTREAM WATER RESOURCES. THE DRAIN VALVE SHALL NOT BE LEFT OPEN AT ANY TIME DURING SCM CONVERSION. A SKIMMER DRAWDOWN SYSTEM SHALL BE INSTALLED AND UTILIZED UNTIL THE SCM IS FULLY CONVERTED.
3. THE DESIGN ENGINEER MUST SUBMIT AN AS-BUILT PACKAGE WHICH MEETS ALL REQUIREMENTS PRESENTED IN THE TOWN SPEC BOOK INCLUDING A SIGNED AND SEALED CERTIFICATION STATEMENT.
4. FOR SUBDIVISIONS ONLY, A 25% MAINTENANCE GUARANTEE IS REQUIRED TO BE SUBMITTED TO JEAN WEATHERMAN IN DEVELOPMENT SERVICES AT 919-249-3394.
5. THE APPROPRIATE EXECUTED SCM O&M AGREEMENT MUST BE eRECORDED THROUGH JEAN WEATHERMAN IN DEVELOPMENT SERVICES.
6. A FINAL INSPECTION BY THE STORMWATER & UTILITY ENGINEERING STAFF SHALL BE CONDUCTED ONCE THE AS-BUILT SUBMITTAL HAS BEEN RECEIVED. ONCE APPROVED, STAFF WILL SEND AN OFFICIAL SCM APPROVAL LETTER TO THE OWNER.
7. IN LIEU OF SCM COMPLETION AND FINAL APPROVAL BY STAFF, THE TOWN MAY ACCEPT A 125% PERFORMANCE GUARANTEE IN ACCORDANCE WITH UDO SECTION 6.1.12(G). THIS GUARANTEE WILL BE COLLECTED BY JEAN WEATHERMAN IN DEVELOPMENT SERVICES AT 919-249-3394.
8. ALL SCMS ARE REQUIRED TO BE COMPLETED PRIOR TO A FINAL CO FOR A SITE PLAN AND ISSUANCE OF 90% OF COS WITHIN A SUBDIVISION. IF THE SUBDIVISION IS TO BE PHASED, ALL SCMS SHALL BE COMPLETED PRIOR TO ISSUANCE OF 90% OF COS WITHIN THAT PHASE.
9. IF AN SCM COUNTS TOWARDS RCA, THE REQUIRED LANDSCAPING SHALL BE INSTALLED DURING THE APPROPRIATE GROWING SEASON AND COORDINATED WITH THE TOWN ZONING COMPLIANCE OFFICER AT (919) 249-3426.

NOTE:
EROSION & SEDIMENT CONTROL SHALL BE PERMITTED THROUGH NCDEQ.

GRAPHIC SCALE

150 0 75 150 300 600

(IN FEET)
1 inch = 150 ft.

MAGNETIC

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Ralelgh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Ralelgh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineerlng
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

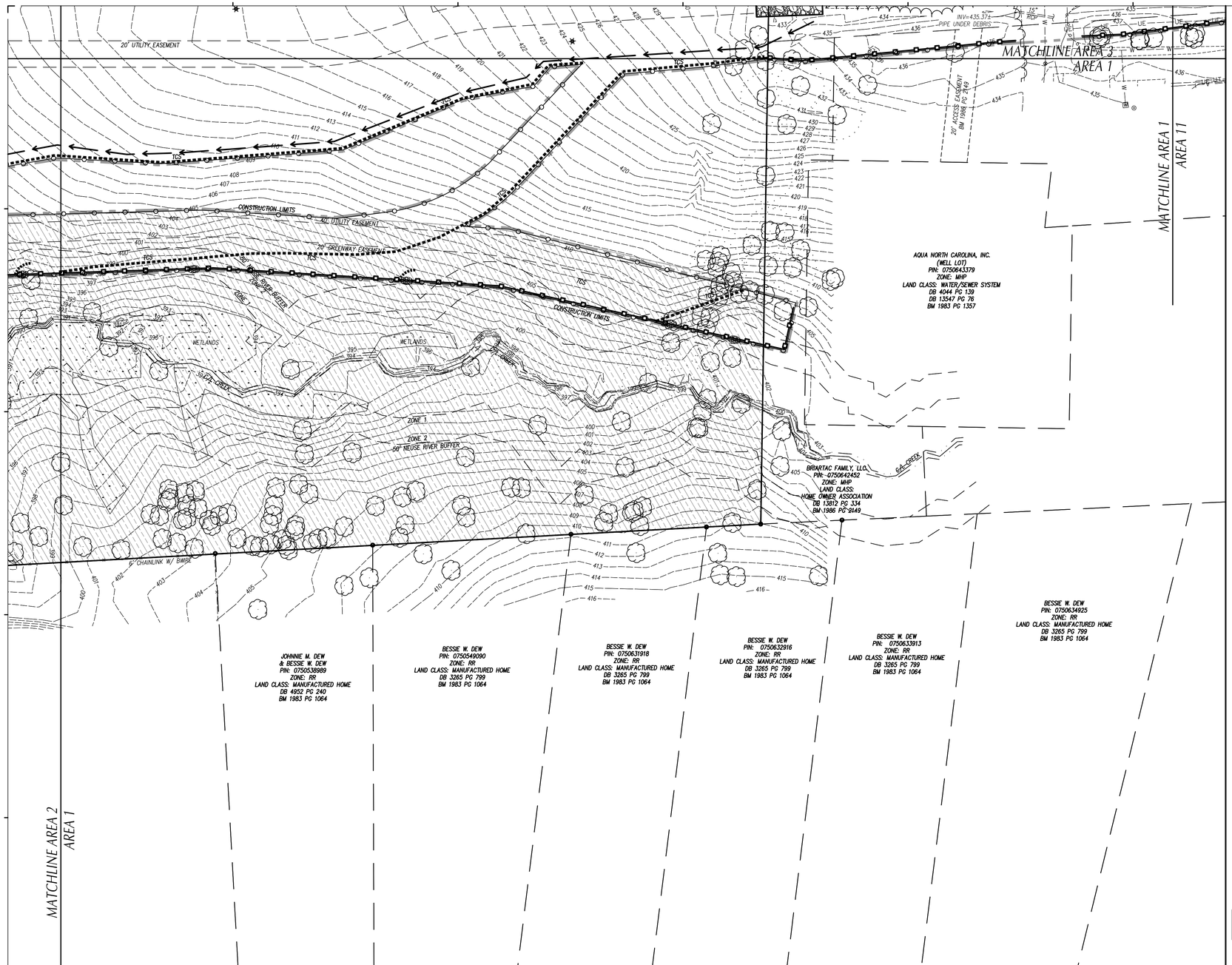
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

SHEET TITLE
INITIAL EROSION CONTROL OVERALL PLAN

SHEET NUMBER
C-04.00



LEGEND

- TEMP. GRAVEL CONSTR. ENTRANCE SEE DETAIL SHEET ___
- TEMP. INLET PROTECTION DEVICE SEE DETAIL SHEET ___
- TEMP. INLET PROTECTION SILT BAG DEVICE SEE DETAIL SHEET ___
- TEMP. DIVERSION DITCH / BERM SEE DETAIL SHEET ___
- TEMP. SILT FENCE SEE DETAIL SHEET ___
- TEMP. REINFORCED SILT FENCE OUTLET, SEE DETAIL SHEET ___
- PERMANENT OUTLET PROTECTION SEE DETAIL SHEET ___
- TEMP. CONCRETE WASHOUT AREA SEE DETAIL SHEET ___
- TEMP. PLASTIC LINING, SEE TEMP. BASIN BAFFLES ON DETAIL SHEET ___
- TEMP. J-HOOK PROTECTION SEE DETAIL SHEET ___
- TEMP. TIMBER/BRIDGE MAT SEE DETAIL SHEET ___
- TEMP. ROCK PIPE INLET PROTECTION SEE DETAIL SHEET ___
- CHANNEL LINING SEE DETAIL SHEET ___
- TEMP. SKIMMER SEDIMENT BASIN SEE DETAIL SHEET ___
- EXISTING CONTOUR
- FINISHED CONTOUR
- TEMP. CONTOUR (TEMP. GRADES DURING CONSTR.)
- TEMPORARY BASIN BAFFLE SEE DETAIL SHEET ___
- TREE PROTECTION FENCE SEE DETAIL SHEET ___
- TEMP. COMPOST SOCK SEE DETAIL SHEET ___
- TEMP. COMPOST SOCK IN CHANNEL SEE DETAIL SHEET ___
- TEMP. SLOPE DRAIN SEE DETAIL SHEET ___
- PROPOSED STORM SEWER PIPES
- EXISTING STORM SEWER PIPES
- CONSTRUCTION LIMITS UNLESS OTHERWISE NOTED.
- TEMP. COMPOST SOCK INLET PROTECTION, SEE DETAIL SHEET ___
- TEMP. DEWATERING SILT BAG SEE DETAIL SHEET ___
- RESOURCE CONSERVATION AREA
- TEMP. COFFER DAM, SEE STREAM CROSSING/CULVERT INSTALLATION DETAIL SHEET ___

GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH ALL TOWN OF APEX AND NCDOT STANDARDS, SPECIFICATIONS AND DETAILS.
2. THE CONTRACTOR SHALL COMPLY WITH ALL STATE AND LOCAL CODES IN OBSERVING EROSION CONTROL MEASURES BOTH ON AND OFF SITE. ALL OFF-SITE SOIL BORROW AND WASTE SITES SHALL BE PROPERLY PERMITTED FOR SUCH ACTIVITIES. CONTRACTOR SHALL PROVIDE WRITTEN DOCUMENTATION OF SEDIMENT & EROSION CONTROL PERMIT FOR ANY OFF-SITE SITES TO OWNER PRIOR TO RELOCATING ANY STOCKPILE MATERIALS.
3. THE CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL DEVICES AFTER EACH RAINFALL EVENT OR AS DIRECTED BY LOCAL AUTHORITIES OR ARCHITECT.
4. TOTAL DISTURBED AREA: 58 AC.
5. ALL OPEN STORM PIPES SHALL BE PROTECTED WITH STONE FILTER PROTECTION AFTER WORK STOPPAGE EACH DAY. SEE DETAIL **SHEET** ___
6. ALL STORM DRAINAGE PIPES SHALL BE THOROUGHLY FLUSHED OF ALL SEDIMENT FOLLOWING SITE STABILIZATION. INTERIOR FLUSHING OF SYSTEM SHALL BE PERFORMED AS NEEDED TO MAINTAIN PROPER FUNCTIONING OF THE DRAINAGE SYSTEM. CLEANING SHALL BE PERFORMED IN A MANNER WHICH PREVENTS SEDIMENT FROM BEING FLUSHED THROUGH PIPES TO THE EXISTING DRAINAGE SYSTEM.
7. THE INDICATED STAGING AREA IS INTENDED FOR VEHICLES AND NON-ERODIBLE MATERIALS ONLY. NO SOIL, SAND OR OTHER ERODIBLE, FINE GRAINED MATERIAL SHALL BE STORED OUTSIDE OF THE LIMITS OF THE SITE PROTECTED BY SEDIMENT AND EROSION CONTROL DEVICES AND MEASURES.
8. SOIL AND OTHER MATERIALS SHALL ONLY BE TEMPORARILY STOCKPILED WITHIN THE CONSTRUCTION LIMITS PROTECTED BY SEDIMENT AND EROSION CONTROL DEVICES AND MEASURES. STOCKPILES SHALL BE STABILIZED AS REQUIRED AS INDICATED IN THE SLOPE & SURFACE STABILIZATION NOTES ON THIS PLAN.
9. THE TREE PROTECTION FENCE SHALL BE MAINTAINED ON THE SITE UNTIL ALL SITE WORK IS COMPLETED AND THE FINAL SITE INSPECTION IS SCHEDULED PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY (CO). THE FENCING SHALL BE REMOVED IMMEDIATELY PRIOR TO THE FINAL SITE INSPECTION FOR THE SITE.
10. TREE PROTECTION FENCING SHALL NOT BE MOVED AND THERE SHALL BE NO ENCROACHMENT INTO SUCH PROTECTED AREA(S) WITHOUT WRITTEN AUTHORIZATION OF THE COUNTY ZONING COMPLIANCE STAFF. ANY ACTIVITY (LANDSCAPING, FENCING, OR UTILITY INSTALLATION) SHOWN ON THE APPROVED PLANS IN A TREE PROTECTION AREA, SHALL ALSO NOT OCCUR WITHOUT WRITTEN AUTHORIZATION FROM THE COUNTY ZONING COMPLIANCE STAFF. ANY UNAUTHORIZED ENCROACHMENT OR DISTURBANCE WITHIN THE BOUNDARIES OF A TREE PROTECTION AREA SHALL AUTOMATICALLY RESULT IN FINES AND THE REPLACEMENT OF ANY DAMAGED VEGETATION IN ACCORDANCE WITH THE LAND DEVELOPMENT ORDINANCE.
11. ROADSIDE DITCHES AND CHANNELS SHALL BE STABILIZED DAILY UNTIL PERMANENT GROUND COVER IS ESTABLISHED.
12. INSTALL TEMPORARY MATTING TO TOP OF ALL SIDE SLOPES ON CHANNELS, DIVERSION DITCHES AND TEMPORARY SEDIMENT BASINS. SEE DETAIL SHEET C702 (PERMANENT CHANNEL) AND C702 (TEMPORARY DIVERSION DITCH) FOR TYPE OF MATTING TO USE.
13. ANY DEWATERING OF SEDIMENT CONTAINMENT DEVICES FOR MAINTENANCE, REMOVAL OR CONVERSION PURPOSES IS TO BE DONE THROUGH A SILT BAG.
14. ANY DEWATERING OF STORM/UTILITY TRENCHES IS TO BE DONE THROUGH A SILT BAG.
15. GROUND COVER IS TO BE APPLIED PER CONDITIONS OF THE NPDES PERMIT OR AT THE END OF THE DAY IN CRITICAL AREAS.
16. CONTRACTOR SHALL USE TIRE WASH STATION TO PREVENT SEDIMENT FROM TRACKING ONTO THE ROAD IF CONSTRUCTION ENTRANCE IS FOUND INSUFFICIENT AT NO ADDITIONAL COST TO OWNER.
17. CONTRACTOR SHALL UTILIZE PAM FLOCCULANTS TO REDUCE RUN-OFF TURBIDITY. SEE SPECS.

MAINTENANCE PLAN

1. DURING ALL PHASES OF CONSTRUCTION, GROUNDCOVER ON EXPOSED SLOPES SHALL BE PROVIDED ACCORDING TO GROUND STABILIZATION TABLE **(SHEET C706)** FOLLOWING COMPLETION OF ANY PHASE OF GRADING.
2. FINAL PERMANENT GROUNDCOVER FOR ALL DISTURBED AREAS SHALL BE PROVIDED ON ALL DISTURBED AREAS ACCORDING TO GROUND STABILIZATION TABLE (BELOW) FOLLOWING COMPLETION OF CONSTRUCTION OR DEVELOPMENT.
3. THE ABOVE REQUIREMENTS ARE THE MINIMUM NECESSARY TO MEET EROSION AND SEDIMENT CONTROL REGULATIONS. THE CONTRACT DOCUMENTS INCLUDE ADDITIONAL SEEDING AND STABILIZATION REQUIREMENTS AND SCHEDULES WHICH MAY EXCEED THOSE ABOVE.
4. SLOPE EROSION CONTROL MATTING SHALL BE INSTALLED FOR TEMPORARY STABILIZATION DURING THE ESTABLISHMENT OF VEGETATIVE COVER ON ALL STEEP SLOPES (6:1 OR STEEPER). REFER TO MATERIAL SPECIFICATIONS. INSTALL MATTING PER MANUFACTURER'S INSTRUCTIONS.
5. ALL OTHER SEEDED AREAS SHALL BE MULCHED WITH STRAW AND TACKED WITH ASPHALT.

SELF-INSPECTION RULES

SEE **SHEET C706** FOR SELF-INSPECTION REQUIREMENTS.

THE FINANCIALLY RESPONSIBLE PERSON AND/OR HIS AGENT WILL BE PERFORM SELF INSPECTIONS OF THE EROSION AND SEDIMENTATION CONTROL MEASURES USING NCDEMLR'S SELF INSPECTION REPORT (WORKSHEET) AND THIS WILL BE KEPT ONSITE.

SLOPE & SURFACE STABILIZATION

GROUND STABILIZATION SHALL BE PROVIDED ON ALL DISTURBED AREAS ACCORDING TO GROUND STABILIZATION NOTES. SEE SHEET C705.

EXTENSIONS OF TIME MAY BE APPROVED BY THE PERMITTING AUTHORITY BASED ON WEATHER OR OTHER SITE-SPECIFIC CONDITIONS THAT MAKE COMPLIANCE IMPRACTICABLE (SECTION II.B(2) (b))

THE REQUIREMENTS ON SHEET C705 ARE THE MINIMUM NECESSARY TO MEET EROSION AND SEDIMENT CONTROL REGULATIONS. THE CONTRACT DOCUMENTS INCLUDE ADDITIONAL SEEDING AND STABILIZATION REQUIREMENTS AND SCHEDULES WHICH MAY EXCEED MINIMUM REQUIREMENTS.

INSTALL TEMPORARY EXCELSIOR MATTING FOR STABILIZATION DURING THE ESTABLISHMENT OF VEGETATIVE COVER ON ALL STEEP SLOPES (6:1 OR STEEPER) AND AREAS OF CONCENTRATED FLOW (CHANNELS, DITCHES, SWALES, ETC.). UTILIZE TEMPORARY COCONUT MAT IN AREAS IDENTIFIED ON PLAN. REFER TO SPECIFICATION SECTION 312500 FOR MATERIAL SPECIFICATIONS. INSTALL MATTING PER MANUFACTURER'S INSTRUCTIONS.

NOTE:
EROSION & SEDIMENT CONTROL SHALL BE PERMITTED THROUGH NCDEQ.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

MAGNETIC

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineerlng
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

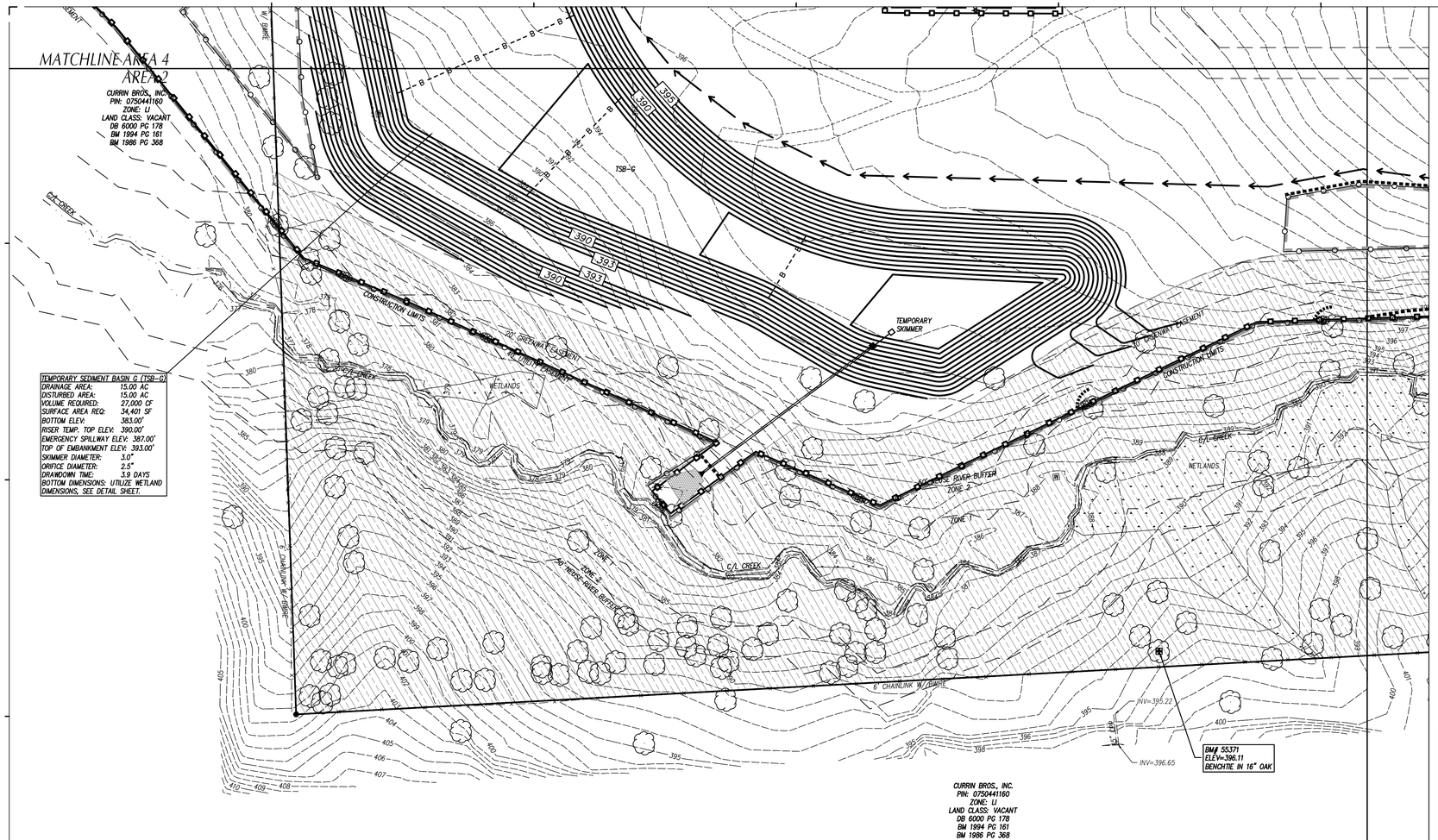
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

SHEET TITLE
INITIAL EROSION CONTROL PLAN AREA_1

SHEET NUMBER
C-04.01



LEGEND

- TEMP. GRAVEL CONSTR. ENTRANCE SEE DETAIL SHEET __
- TEMP. INLET PROTECTION DEVICE SEE DETAIL SHEET __
- TEMP. INLET PROTECTION SILT BAG DEVICE SEE DETAIL SHEET __
- TEMP. DIVERSION DITCH / BERM SEE DETAIL SHEET __
- TEMP. SILT FENCE SEE DETAIL SHEET __
- TEMP. REINFORCED SILT FENCE OUTLET, SEE DETAIL SHEET __
- PERMANENT OUTLET PROTECTION SEE DETAIL SHEET __
- TEMP. CONCRETE WASHOUT AREA SEE DETAIL SHEET __
- TEMP. PLASTIC LINING, SEE TEMP. BASIN BAFFLES ON DETAIL SHEET __
- TEMP. J-HOOK PROTECTION SEE DETAIL SHEET __
- TEMP. TIMBER/BRIDGE MAT SEE DETAIL SHEET __
- TEMP. ROCK PIPE INLET PROTECTION SEE DETAIL SHEET __
- CHANNEL LINING SEE DETAIL SHEET __
- TEMP. SKIMMER SEDIMENT BASIN SEE DETAIL SHEET __
- EXISTING CONTOUR
- FINISHED CONTOUR
- TEMP. CONTOUR (TEMP. GRADES DURING CONSTR.)
- TEMPORARY BASIN BAFFLE SEE DETAIL SHEET __
- TREE PROTECTION FENCE SEE DETAIL SHEET __
- TEMP. COMPOST SOCK SEE DETAIL SHEET __
- TEMP. COMPOST SOCK IN CHANNEL SEE DETAIL SHEET __
- TEMP. SLOPE DRAIN SEE DETAIL SHEET __
- PROPOSED STORM SEWER PIPES
- EXISTING STORM SEWER PIPES
- CONSTRUCTION LIMITS UNLESS OTHERWISE NOTED.
- TEMP. COMPOST SOCK INLET PROTECTION, SEE DETAIL SHEET __
- TEMP. DEWATERING SILT BAG SEE DETAIL SHEET __
- RESOURCE CONSERVATION AREA
- TEMP. COFFER DAM, SEE STREAM CROSSING/CULVERT INSTALLATION DETAIL SHEET __

GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH ALL TOWN OF APEX AND NCDOT STANDARDS, SPECIFICATIONS AND DETAILS.
2. THE CONTRACTOR SHALL COMPLY WITH ALL STATE AND LOCAL CODES IN OBSERVING EROSION CONTROL MEASURES BOTH ON AND OFF SITE. ALL OFF-SITE SOIL BORROW AND WASTE SITES SHALL BE PROPERLY PERMITTED FOR SUCH ACTIVITIES. CONTRACTOR SHALL PROVIDE WRITTEN DOCUMENTATION OF SEDIMENT & EROSION CONTROL PERMIT FOR ANY OFF-SITE SITES TO OWNER PRIOR TO RELOCATING ANY STOCKPILE MATERIALS.
3. THE CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL DEVICES AFTER EACH RAINFALL EVENT OR AS DIRECTED BY LOCAL AUTHORITIES OR ARCHITECT.
4. TOTAL DISTURBED AREA: 58 AC.
5. ALL OPEN STORM PIPES SHALL BE PROTECTED WITH STONE FILTER PROTECTION AFTER WORK STOPPAGE EACH DAY. SEE DETAIL **SHEET** __
6. ALL STORM DRAINAGE PIPES SHALL BE THOROUGHLY FLUSHED OF ALL SEDIMENT FOLLOWING SITE STABILIZATION. INTERIOR FLUSHING OF SYSTEM SHALL BE PERFORMED AS NEEDED TO MAINTAIN PROPER FUNCTIONING OF THE DRAINAGE SYSTEM. CLEANING SHALL BE PERFORMED IN A MANNER TO PREVENT SEDIMENT FROM BEING FLUSHED THROUGH PIPES TO THE EXISTING DRAINAGE SYSTEM.
7. THE INDICATED STAGING AREA IS INTENDED FOR VEHICLES AND NON-ERODIBLE MATERIALS ONLY. NO SOIL, SAND OR OTHER ERODIBLE, FINE GRAINED MATERIAL SHALL BE STORED OUTSIDE OF THE LIMITS OF THE SITE PROTECTED BY SEDIMENT AND EROSION CONTROL DEVICES AND MEASURES.
8. SOIL AND OTHER MATERIALS SHALL ONLY BE TEMPORARILY STOCKPILED WITHIN THE CONSTRUCTION LIMITS PROTECTED BY SEDIMENT AND EROSION CONTROL DEVICES AND MEASURES. STOCKPILES SHALL BE STABILIZED AS REQUIRED AS INDICATED IN THE SLOPE & SURFACE STABILIZATION NOTES ON THIS PLAN.
9. THE TREE PROTECTION FENCE SHALL BE MAINTAINED ON THE SITE UNTIL ALL SITE WORK IS COMPLETED AND THE FINAL SITE INSPECTION IS SCHEDULED PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY (CO). THE FENCING SHALL BE REMOVED IMMEDIATELY PRIOR TO THE FINAL SITE INSPECTION FOR THE SITE.
10. TREE PROTECTION FENCING SHALL NOT BE MOVED AND THERE SHALL BE NO ENCROACHMENT INTO SUCH PROTECTED AREA(S) WITHOUT WRITTEN AUTHORIZATION OF THE COUNTY ZONING COMPLIANCE STAFF. ANY ACTIVITY (LANDSCAPING, FENCING, OR UTILITY INSTALLATION) SHOWN ON THE APPROVED PLANS IN A TREE PROTECTION AREA SHALL ALSO NOT OCCUR WITHOUT WRITTEN AUTHORIZATION FROM THE COUNTY ZONING COMPLIANCE STAFF. ANY UNAUTHORIZED ENCROACHMENT OR DISTURBANCE WITHIN THE BOUNDARIES OF A TREE PROTECTION AREA SHALL AUTOMATICALLY RESULT IN FINES AND THE REPLACEMENT OF ANY DAMAGED VEGETATION IN ACCORDANCE WITH THE LAND DEVELOPMENT ORDINANCE.
11. ROADSIDE DITCHES AND CHANNELS SHALL BE STABILIZED DAILY UNTIL PERMANENT GROUND COVER IS ESTABLISHED.
12. INSTALL TEMPORARY MATTING TO TOP OF ALL SIDE SLOPES ON CHANNELS, DIVERSION DITCHES AND TEMPORARY SEDIMENT BASINS. SEE DETAIL SHEET C702 (PERMANENT CHANNEL) AND C702 (TEMPORARY DIVERSION DITCH) FOR TYPE OF MATTING TO USE.
13. ANY DEWATERING OF SEDIMENT CONTAINMENT DEVICES FOR MAINTENANCE, REMOVAL OR CONVERSION PURPOSES IS TO BE DONE THROUGH A SILT BAG.
14. ANY DEWATERING OF STORM/UTILITY TRENCHES IS TO BE DONE THROUGH A SILT BAG.
15. GROUND COVER IS TO BE APPLIED PER CONDITIONS OF THE NPDES PERMIT OR AT THE END OF THE DAY IN CRITICAL AREAS.
16. CONTRACTOR SHALL USE TIRE WASH STATION TO PREVENT SEDIMENT FROM TRACKING ONTO THE ROAD IF CONSTRUCTION ENTRANCE IS FOUND INSUFFICIENT AT NO ADDITIONAL COST TO OWNER.
17. CONTRACTOR SHALL UTILIZE PAM FLOCCULANTS TO REDUCE RUN-OFF TURBIDITY. SEE SPECS.

MAINTENANCE PLAN

1. DURING ALL PHASES OF CONSTRUCTION, GROUNDCOVER ON EXPOSED SLOPES SHALL BE PROVIDED ACCORDING TO GROUND STABILIZATION TABLE (**SHEET C706**) FOLLOWING COMPLETION OF ANY PHASE OF GRADING.
2. FINAL PERMANENT GROUNDCOVER FOR ALL DISTURBED AREAS SHALL BE PROVIDED ON ALL DISTURBED AREAS ACCORDING TO GROUND STABILIZATION TABLE (BELOW) FOLLOWING COMPLETION OF CONSTRUCTION OR DEVELOPMENT.
3. THE ABOVE REQUIREMENTS ARE THE MINIMUM NECESSARY TO MEET EROSION AND SEDIMENT CONTROL REGULATIONS. THE CONTRACT DOCUMENTS INCLUDE ADDITIONAL SEEDING AND STABILIZATION REQUIREMENTS AND SCHEDULES WHICH MAY EXCEED THOSE ABOVE.
4. SLOPE EROSION CONTROL MATTING SHALL BE INSTALLED FOR TEMPORARY STABILIZATION DURING THE ESTABLISHMENT OF VEGETATIVE COVER ON ALL STEEP SLOPES (6:1 OR STEEPER). REFER TO MATERIAL SPECIFICATIONS. INSTALL MATTING PER MANUFACTURER'S INSTRUCTIONS.
5. ALL OTHER SEEDED AREAS SHALL BE MULCHED WITH STRAW AND TACKED WITH ASPHALT.

SELF-INSPECTION RULES

SEE **SHEET C706** FOR SELF-INSPECTION REQUIREMENTS.

THE FINANCIALLY RESPONSIBLE PERSON AND/OR HIS AGENT WILL BE PERFORM SELF INSPECTIONS OF THE EROSION AND SEDIMENTATION CONTROL MEASURES USING NCDEMLR'S SELF INSPECTION REPORT (WORKSHEET) AND THIS WILL BE KEPT ONSITE.

SLOPE & SURFACE STABILIZATION

GROUND STABILIZATION SHALL BE PROVIDED ON ALL DISTURBED AREAS ACCORDING TO GROUND STABILIZATION NOTES. SEE SHEET C705.

EXTENSIONS OF TIME MAY BE APPROVED BY THE PERMITTING AUTHORITY BASED ON WEATHER OR OTHER SITE-SPECIFIC CONDITIONS THAT MAKE COMPLIANCE IMPRACTICABLE (SECTION II.B(2) (b))

THE REQUIREMENTS ON SHEET C705 ARE THE MINIMUM NECESSARY TO MEET EROSION AND SEDIMENT CONTROL REGULATIONS. THE CONTRACT DOCUMENTS INCLUDE ADDITIONAL SEEDING AND STABILIZATION REQUIREMENTS AND SCHEDULES WHICH MAY EXCEED MINIMUM REQUIREMENTS.

INSTALL TEMPORARY EXCELSIOR MATTING FOR STABILIZATION DURING THE ESTABLISHMENT OF VEGETATIVE COVER ON ALL STEEP SLOPES (6:1 OR STEEPER) AND AREAS OF CONCENTRATED FLOW (CHANNELS, DITCHES, SWALES, ETC.). UTILIZE TEMPORARY COCONUT MAT IN AREAS IDENTIFIED ON PLAN. REFER TO SPECIFICATION SECTION 312500 FOR MATERIAL SPECIFICATIONS. INSTALL MATTING PER MANUFACTURER'S INSTRUCTIONS.

NOTE:
EROSION & SEDIMENT CONTROL SHALL BE PERMITTED THROUGH NCDEQ.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

MAGNETIC

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineerlng
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

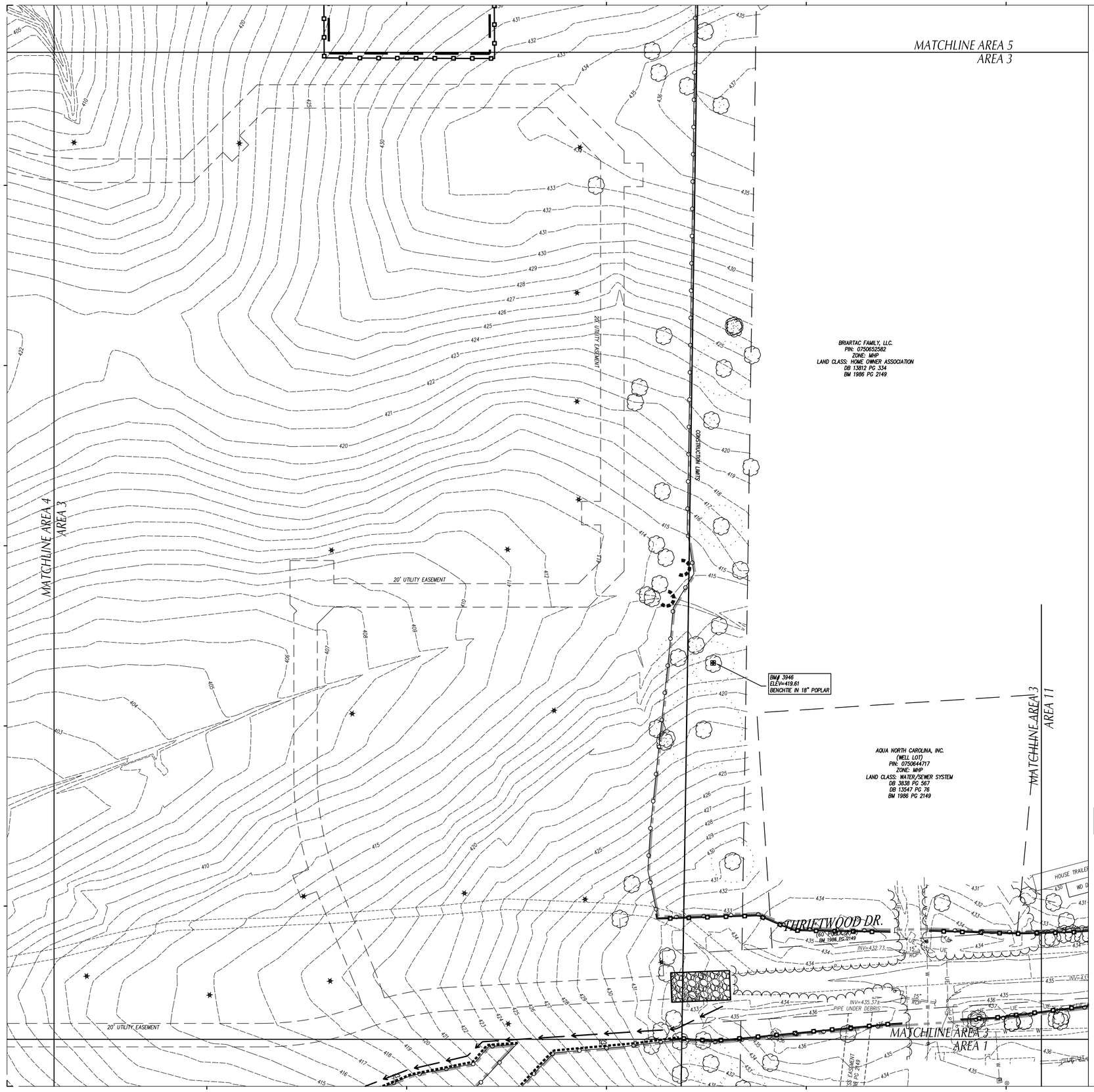
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

SHEET TITLE
INITIAL EROSION CONTROL PLAN AREA_2

SHEET NUMBER
C-04.02



LEGEND

- TEMP. GRAVEL CONSTR. ENTRANCE SEE DETAIL SHEET __
- TEMP. INLET PROTECTION DEVICE SEE DETAIL SHEET __
- TEMP. INLET PROTECTION SILT BAG DEVICE SEE DETAIL SHEET __
- TEMP. DIVERSION DITCH / BERM SEE DETAIL SHEET __
- TEMP. SILT FENCE SEE DETAIL SHEET __
- TEMP. REINFORCED SILT FENCE OUTLET, SEE DETAIL SHEET __
- PERMANENT OUTLET PROTECTION SEE DETAIL SHEET __
- TEMP. CONCRETE WASHOUT AREA SEE DETAIL SHEET __
- TEMP. PLASTIC LINING, SEE TEMP. BASIN BAFFLES ON DETAIL SHEET __
- TEMP. J-HOOK PROTECTION SEE DETAIL SHEET __
- TEMP. TIMBER/BRIDGE MAT SEE DETAIL SHEET __
- TEMP. ROCK PIPE INLET PROTECTION SEE DETAIL SHEET __
- CHANNEL LINING SEE DETAIL SHEET __
- TEMP. SKIMMER SEDIMENT BASIN SEE DETAIL SHEET __
- EXISTING CONTOUR
- FINISHED CONTOUR
- TEMP. CONTOUR (TEMP. GRADES DURING CONSTR.)
- TEMPORARY BASIN BAFFLE SEE DETAIL SHEET __
- TREE PROTECTION FENCE SEE DETAIL SHEET __
- TEMP. COMPOST SOCK SEE DETAIL SHEET __
- TEMP. COMPOST SOCK IN CHANNEL SEE DETAIL SHEET __
- TEMP. SLOPE DRAIN SEE DETAIL SHEET __
- PROPOSED STORM SEWER PIPES
- EXISTING STORM SEWER PIPES
- CONSTRUCTION LIMITS UNLESS OTHERWISE NOTED.
- TEMP. COMPOST SOCK INLET PROTECTION, SEE DETAIL SHEET __
- TEMP. DEWATERING SILT BAG SEE DETAIL SHEET __
- RESOURCE CONSERVATION AREA
- TEMP. COFFER DAM, SEE STREAM CROSSING/CULVERT INSTALLATION DETAIL SHEET __

GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH ALL TOWN OF APEX AND NCDOT STANDARDS, SPECIFICATIONS AND DETAILS.
2. THE CONTRACTOR SHALL COMPLY WITH ALL STATE AND LOCAL CODES IN OBSERVING EROSION CONTROL MEASURES BOTH ON AND OFF SITE. ALL OFF-SITE SOIL BORROW AND WASTE SITES SHALL BE PROPERLY PERMITTED FOR SUCH ACTIVITIES. CONTRACTOR SHALL PROVIDE WRITTEN DOCUMENTATION OF SEDIMENT & EROSION CONTROL PERMIT FOR ANY OFF-SITE SITES TO OWNER PRIOR TO RELOCATING ANY STOCKPILE MATERIALS.
3. THE CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL DEVICES AFTER EACH RAINFALL EVENT OR AS DIRECTED BY LOCAL AUTHORITIES OR ARCHITECT.
4. TOTAL DISTURBED AREA: 58 AC.
5. ALL OPEN STORM PIPES SHALL BE PROTECTED WITH STONE FILTER PROTECTION AFTER WORK STOPPAGE EACH DAY. SEE DETAIL **SHEET __**
6. ALL STORM DRAINAGE PIPES SHALL BE THOROUGHLY FLUSHED OF ALL SEDIMENT FOLLOWING SITE STABILIZATION. INTERIOR FLUSHING OF SYSTEM SHALL BE PERFORMED AS NEEDED TO MAINTAIN PROPER FUNCTIONING OF THE DRAINAGE SYSTEM. CLEANING SHALL BE PERFORMED IN A MANNER WHICH PREVENTS SEDIMENT FROM BEING FLUSHED THROUGH PIPES TO THE EXISTING DRAINAGE SYSTEM.
7. THE INDICATED STAGING AREA IS INTENDED FOR VEHICLES AND NON-ERODIBLE MATERIALS ONLY. NO SOIL, SAND OR OTHER ERODIBLE, FINE GRAINED MATERIAL SHALL BE STORED OUTSIDE OF THE LIMITS OF THE SITE PROTECTED BY SEDIMENT AND EROSION CONTROL DEVICES AND MEASURES.
8. SOIL AND OTHER MATERIALS SHALL ONLY BE TEMPORARILY STOCKPILED WITHIN THE CONSTRUCTION LIMITS PROTECTED BY SEDIMENT AND EROSION CONTROL DEVICES AND MEASURES. STOCKPILES SHALL BE STABILIZED AS REQUIRED AS INDICATED IN THE SLOPE & SURFACE STABILIZATION NOTES ON THIS PLAN.
9. THE TREE PROTECTION FENCE SHALL BE MAINTAINED ON THE SITE UNTIL ALL SITE WORK IS COMPLETED AND THE FINAL SITE INSPECTION IS SCHEDULED PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY (CO). THE FENCING SHALL BE REMOVED IMMEDIATELY PRIOR TO THE FINAL SITE INSPECTION FOR THE SITE.
10. TREE PROTECTION FENCING SHALL NOT BE MOVED AND THERE SHALL BE NO ENCROACHMENT INTO SUCH PROTECTED AREA(S) WITHOUT WRITTEN AUTHORIZATION OF THE COUNTY ZONING COMPLIANCE STAFF. ANY ACTIVITY (LANDSCAPING, FENCING, OR UTILITY INSTALLATION) SHOWN ON THE APPROVED PLANS IN A TREE PROTECTION AREA, SHALL ALSO NOT OCCUR WITHOUT WRITTEN AUTHORIZATION FROM THE COUNTY ZONING COMPLIANCE STAFF. ANY UNAUTHORIZED ENCROACHMENT OR DISTURBANCE WITHIN THE BOUNDARIES OF A TREE PROTECTION AREA SHALL AUTOMATICALLY RESULT IN FINES AND THE REPLACEMENT OF ANY DAMAGED VEGETATION IN ACCORDANCE WITH THE LAND DEVELOPMENT ORDINANCE.
11. ROADSIDE DITCHES AND CHANNELS SHALL BE STABILIZED DAILY UNTIL PERMANENT GROUND COVER IS ESTABLISHED.
12. INSTALL TEMPORARY MATTING TO TOP OF ALL SIDE SLOPES ON CHANNELS, DIVERSION DITCHES AND TEMPORARY SEDIMENT BASINS. SEE DETAIL SHEET C702 (PERMANENT CHANNEL) AND C702 (TEMPORARY DIVERSION DITCH) FOR TYPE OF MATTING TO USE.
13. ANY DEWATERING OF SEDIMENT CONTAINMENT DEVICES FOR MAINTENANCE, REMOVAL OR CONVERSION PURPOSES IS TO BE DONE THROUGH A SILT BAG.
14. ANY DEWATERING OF STORM/UTILITY TRENCHES IS TO BE DONE THROUGH A SILT BAG.
15. GROUND COVER IS TO BE APPLIED PER CONDITIONS OF THE NPDES PERMIT OR AT THE END OF THE DAY IN CRITICAL AREAS.
16. CONTRACTOR SHALL USE TIRE WASH STATION TO PREVENT SEDIMENT FROM TRACKING ONTO THE ROAD IF CONSTRUCTION ENTRANCE IS FOUND INSUFFICIENT AT NO ADDITIONAL COST TO OWNER.
17. CONTRACTOR SHALL UTILIZE PAM FLOCCULANTS TO REDUCE RUN-OFF TURBIDITY. SEE SPECS.

MAINTENANCE PLAN

1. DURING ALL PHASES OF CONSTRUCTION, GROUNDCOVER ON EXPOSED SLOPES SHALL BE PROVIDED ACCORDING TO GROUND STABILIZATION TABLE **(SHEET C706)** FOLLOWING COMPLETION OF ANY PHASE OF GRADING.
2. FINAL PERMANENT GROUNDCOVER FOR ALL DISTURBED AREAS SHALL BE PROVIDED ON ALL DISTURBED AREAS ACCORDING TO GROUND STABILIZATION TABLE (BELOW) FOLLOWING COMPLETION OF CONSTRUCTION OR DEVELOPMENT.
3. THE ABOVE REQUIREMENTS ARE THE MINIMUM NECESSARY TO MEET EROSION AND SEDIMENT CONTROL REGULATIONS. THE CONTRACT DOCUMENTS INCLUDE ADDITIONAL SEEDING AND STABILIZATION REQUIREMENTS AND SCHEDULES WHICH MAY EXCEED THOSE ABOVE.
4. SLOPE EROSION CONTROL MATTING SHALL BE INSTALLED FOR TEMPORARY STABILIZATION DURING THE ESTABLISHMENT OF VEGETATIVE COVER ON ALL STEEP SLOPES (6:1 OR STEEPER). REFER TO MATERIAL SPECIFICATIONS. INSTALL MATTING PER MANUFACTURER'S INSTRUCTIONS.
5. ALL OTHER SEEDED AREAS SHALL BE MULCHED WITH STRAW AND TACKED WITH ASPHALT.

SELF-INSPECTION RULES

SEE **SHEET C706** FOR SELF-INSPECTION REQUIREMENTS.

THE FINANCIALLY RESPONSIBLE PERSON AND/OR HIS AGENT WILL BE PERFORM SELF INSPECTIONS OF THE EROSION AND SEDIMENTATION CONTROL MEASURES USING NCDEMLR'S SELF INSPECTION REPORT (WORKSHEET) AND THIS WILL BE KEPT ONSITE.

SLOPE & SURFACE STABILIZATION

GROUND STABILIZATION SHALL BE PROVIDED ON ALL DISTURBED AREAS ACCORDING TO GROUND STABILIZATION NOTES. SEE SHEET C705.

EXTENSIONS OF TIME MAY BE APPROVED BY THE PERMITTING AUTHORITY BASED ON WEATHER OR OTHER SITE-SPECIFIC CONDITIONS THAT MAKE COMPLIANCE IMPRACTICABLE (SECTION II.B(2) (b))

THE REQUIREMENTS ON SHEET C705 ARE THE MINIMUM NECESSARY TO MEET EROSION AND SEDIMENT CONTROL REGULATIONS. THE CONTRACT DOCUMENTS INCLUDE ADDITIONAL SEEDING AND STABILIZATION REQUIREMENTS AND SCHEDULES WHICH MAY EXCEED MINIMUM REQUIREMENTS.

INSTALL TEMPORARY EXCELSIOR MATTING FOR STABILIZATION DURING THE ESTABLISHMENT OF VEGETATIVE COVER ON ALL STEEP SLOPES (6:1 OR STEEPER) AND AREAS OF CONCENTRATED FLOW (CHANNELS, DITCHES, SWALES, ETC.). UTILIZE TEMPORARY COCONUT MAT IN AREAS IDENTIFIED ON PLAN. REFER TO SPECIFICATION SECTION 312500 FOR MATERIAL SPECIFICATIONS. INSTALL MATTING PER MANUFACTURER'S INSTRUCTIONS.

NOTE:
EROSION & SEDIMENT CONTROL SHALL BE PERMITTED THROUGH NCDEQ.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

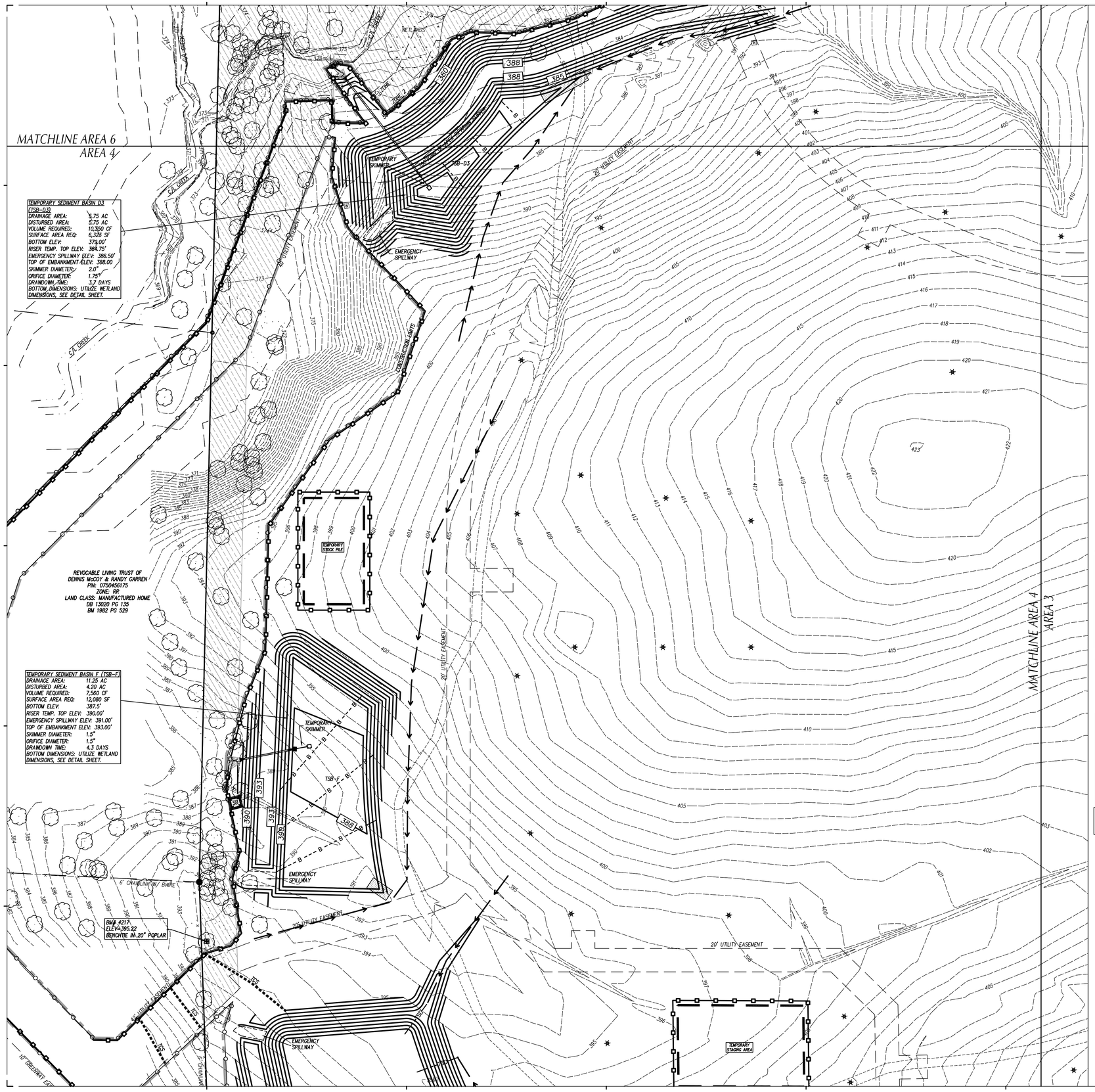
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

SHEET TITLE
INITIAL EROSION CONTROL PLAN AREA_3

SHEET NUMBER
C-04.03



LEGEND

- TEMP. GRAVEL CONSTR. ENTRANCE SEE DETAIL SHEET __
- TEMP. INLET PROTECTION DEVICE SEE DETAIL SHEET __
- TEMP. INLET PROTECTION SILT BAG DEVICE SEE DETAIL SHEET __
- TEMP. DIVERSION DITCH / BERM SEE DETAIL SHEET __
- TEMP. SILT FENCE SEE DETAIL SHEET __
- TEMP. REINFORCED SILT FENCE OUTLET, SEE DETAIL SHEET __
- PERMANENT OUTLET PROTECTION SEE DETAIL SHEET __
- TEMP. CONCRETE WASHOUT AREA SEE DETAIL SHEET __
- TEMP. PLASTIC LINING, SEE TEMP. BASIN BAFFLES ON DETAIL SHEET __
- TEMP. J-HOOK PROTECTION SEE DETAIL SHEET __
- TEMP. TIMBER/BRIDGE MAT SEE DETAIL SHEET __
- TEMP. ROCK PIPE INLET PROTECTION SEE DETAIL SHEET __
- CHANNEL LINING SEE DETAIL SHEET __
- TEMP. SKIMMER SEDIMENT BASIN SEE DETAIL SHEET __
- EXISTING CONTOUR
- FINISHED CONTOUR
- TEMP. CONTOUR (TEMP. GRADES DURING CONSTR.)
- TEMPORARY BASIN BAFFLE SEE DETAIL SHEET __
- TREE PROTECTION FENCE SEE DETAIL SHEET __
- TEMP. COMPOST SOCK SEE DETAIL SHEET __
- TEMP. COMPOST SOCK IN CHANNEL SEE DETAIL SHEET __
- TEMP. SLOPE DRAIN SEE DETAIL SHEET __
- PROPOSED STORM SEWER PIPES
- EXISTING STORM SEWER PIPES
- CONSTRUCTION LIMITS UNLESS OTHERWISE NOTED.
- TEMP. COMPOST SOCK INLET PROTECTION, SEE DETAIL SHEET __
- TEMP. DEWATERING SILT BAG SEE DETAIL SHEET __
- RESOURCE CONSERVATION AREA
- TEMP. COFFER DAM, SEE STREAM CROSSING/CULVERT INSTALLATION DETAIL SHEET __

GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH ALL TOWN OF APEX AND NCDOT STANDARDS, SPECIFICATIONS AND DETAILS.
2. THE CONTRACTOR SHALL COMPLY WITH ALL STATE AND LOCAL CODES IN OBSERVING EROSION CONTROL MEASURES BOTH ON AND OFF SITE. ALL OFF-SITE SOIL BORROW AND WASTE SITES SHALL BE PROPERLY PERMITTED FOR SUCH ACTIVITIES. CONTRACTOR SHALL PROVIDE WRITTEN DOCUMENTATION OF SEDIMENT & EROSION CONTROL PERMIT FOR ANY OFF-SITE SITES TO OWNER PRIOR TO RELOCATING ANY STOCKPILE MATERIALS.
3. THE CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL DEVICES AFTER EACH RAINFALL EVENT OR AS DIRECTED BY LOCAL AUTHORITIES OR ARCHITECT.
4. TOTAL DISTURBED AREA: 58 AC.
5. ALL OPEN STORM PIPES SHALL BE PROTECTED WITH STONE FILTER PROTECTION AFTER WORK STOPPAGE EACH DAY. SEE DETAIL **SHEET __**
6. ALL STORM DRAINAGE PIPES SHALL BE THOROUGHLY FLUSHED OF ALL SEDIMENT FOLLOWING SITE STABILIZATION. INTERIOR FLUSHING OF SYSTEM SHALL BE PERFORMED AS NEEDED TO MAINTAIN PROPER FUNCTIONING OF THE DRAINAGE SYSTEM. CLEANING SHALL BE PERFORMED IN A MANNER WHICH PREVENTS SEDIMENT FROM BEING FLUSHED THROUGH PIPES TO THE EXISTING DRAINAGE SYSTEM.
7. THE INDICATED STAGING AREA IS INTENDED FOR VEHICLES AND NON-ERODIBLE MATERIALS ONLY. NO SOIL, SAND OR OTHER ERODIBLE, FINE GRAINED MATERIAL SHALL BE STORED OUTSIDE OF THE LIMITS OF THE SITE PROTECTED BY SEDIMENT AND EROSION CONTROL DEVICES AND MEASURES.
8. SOIL AND OTHER MATERIALS SHALL ONLY BE TEMPORARILY STOCKPILED WITHIN THE CONSTRUCTION LIMITS PROTECTED BY SEDIMENT AND EROSION CONTROL DEVICES AND MEASURES. STOCKPILES SHALL BE STABILIZED AS REQUIRED AS INDICATED IN THE SLOPE & SURFACE STABILIZATION NOTES ON THIS PLAN.
9. THE TREE PROTECTION FENCE SHALL BE MAINTAINED ON THE SITE UNTIL ALL SITE WORK IS COMPLETED AND THE FINAL SITE INSPECTION IS SCHEDULED PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY (CO). THE FENCING SHALL BE REMOVED IMMEDIATELY PRIOR TO THE FINAL SITE INSPECTION FOR THE SITE.
10. TREE PROTECTION FENCING SHALL NOT BE MOVED AND THERE SHALL BE NO ENCROACHMENT INTO SUCH PROTECTED AREA(S) WITHOUT WRITTEN AUTHORIZATION OF THE COUNTY ZONING COMPLIANCE STAFF. ANY ACTIVITY (LANDSCAPING, FENCING, OR UTILITY INSTALLATION) SHOWN ON THE APPROVED PLANS IN A TREE PROTECTION AREA, SHALL ALSO NOT OCCUR WITHOUT WRITTEN AUTHORIZATION FROM THE COUNTY ZONING COMPLIANCE STAFF. ANY UNAUTHORIZED ENCROACHMENT OR DISTURBANCE WITHIN THE BOUNDARIES OF A TREE PROTECTION AREA SHALL AUTOMATICALLY RESULT IN FINES AND THE REPLACEMENT OF ANY DAMAGED VEGETATION IN ACCORDANCE WITH THE LAND DEVELOPMENT ORDINANCE.
11. ROADSIDE DITCHES AND CHANNELS SHALL BE STABILIZED DAILY UNTIL PERMANENT GROUND COVER IS ESTABLISHED.
12. INSTALL TEMPORARY MATTING TO TOP OF ALL SIDE SLOPES ON CHANNELS, DIVERSION DITCHES AND TEMPORARY SEDIMENT BASINS. SEE DETAIL SHEET C702 (PERMANENT CHANNEL) AND C702 (TEMPORARY DIVERSION DITCH) FOR TYPE OF MATTING TO USE.
13. ANY DEWATERING OF SEDIMENT CONTAINMENT DEVICES FOR MAINTENANCE, REMOVAL OR CONVERSION PURPOSES IS TO BE DONE THROUGH A SILT BAG.
14. ANY DEWATERING OF STORM/UTILITY TRENCHES IS TO BE DONE THROUGH A SILT BAG.
15. GROUND COVER IS TO BE APPLIED PER CONDITIONS OF THE NPDES PERMIT OR AT THE END OF THE DAY IN CRITICAL AREAS.
16. CONTRACTOR SHALL USE TIRE WASH STATION TO PREVENT SEDIMENT FROM TRACKING ONTO THE ROAD IF CONSTRUCTION ENTRANCE IS FOUND INSUFFICIENT AT NO ADDITIONAL COST TO OWNER.
17. CONTRACTOR SHALL UTILIZE PAM FLOCCULANTS TO REDUCE RUN-OFF TURBIDITY. SEE SPECS.

MAINTENANCE PLAN

1. DURING ALL PHASES OF CONSTRUCTION, GROUNDCOVER ON EXPOSED SLOPES SHALL BE PROVIDED ACCORDING TO GROUND STABILIZATION TABLE (**SHEET C706**) FOLLOWING COMPLETION OF ANY PHASE OF GRADING.
2. FINAL PERMANENT GROUNDCOVER FOR ALL DISTURBED AREAS SHALL BE PROVIDED ON ALL DISTURBED AREAS ACCORDING TO GROUND STABILIZATION TABLE (BELOW) FOLLOWING COMPLETION OF CONSTRUCTION OR DEVELOPMENT.
3. THE ABOVE REQUIREMENTS ARE THE MINIMUM NECESSARY TO MEET EROSION AND SEDIMENT CONTROL REGULATIONS. THE CONTRACT DOCUMENTS INCLUDE ADDITIONAL SEEDING AND STABILIZATION REQUIREMENTS AND SCHEDULES WHICH MAY EXCEED THOSE ABOVE.
4. SLOPE EROSION CONTROL MATTING SHALL BE INSTALLED FOR TEMPORARY STABILIZATION DURING THE ESTABLISHMENT OF VEGETATIVE COVER ON ALL STEEP SLOPES (6:1 OR STEEPER). REFER TO MATERIAL SPECIFICATIONS. INSTALL MATTING PER MANUFACTURER'S INSTRUCTIONS.
5. ALL OTHER SEEDED AREAS SHALL BE MULCHED WITH STRAW AND TACKED WITH ASPHALT.

SELF-INSPECTION RULES

SEE **SHEET C706** FOR SELF-INSPECTION REQUIREMENTS.

THE FINANCIALLY RESPONSIBLE PERSON AND/OR HIS AGENT WILL BE PERFORM SELF INSPECTIONS OF THE EROSION AND SEDIMENTATION CONTROL MEASURES USING NCDEMLR'S SELF INSPECTION REPORT (WORKSHEET) AND THIS WILL BE KEPT ONSITE.

SLOPE & SURFACE STABILIZATION

GROUND STABILIZATION SHALL BE PROVIDED ON ALL DISTURBED AREAS ACCORDING TO GROUND STABILIZATION NOTES. SEE SHEET C705.

EXTENSIONS OF TIME MAY BE APPROVED BY THE PERMITTING AUTHORITY BASED ON WEATHER OR OTHER SITE-SPECIFIC CONDITIONS THAT MAKE COMPLIANCE IMPRACTICABLE (SECTION II.B(2) (b))

THE REQUIREMENTS ON SHEET C705 ARE THE MINIMUM NECESSARY TO MEET EROSION AND SEDIMENT CONTROL REGULATIONS. THE CONTRACT DOCUMENTS INCLUDE ADDITIONAL SEEDING AND STABILIZATION REQUIREMENTS AND SCHEDULES WHICH MAY EXCEED MINIMUM REQUIREMENTS.

INSTALL TEMPORARY EXCELSIOR MATTING FOR STABILIZATION DURING THE ESTABLISHMENT OF VEGETATIVE COVER ON ALL STEEP SLOPES (6:1 OR STEEPER) AND AREAS OF CONCENTRATED FLOW (CHANNELS, DITCHES, SWALES, ETC.). UTILIZE TEMPORARY COCONUT MAT IN AREAS IDENTIFIED ON PLAN. REFER TO SPECIFICATION SECTION 312500 FOR MATERIAL SPECIFICATIONS. INSTALL MATTING PER MANUFACTURER'S INSTRUCTIONS.

NOTE:
EROSION & SEDIMENT CONTROL SHALL BE PERMITTED THROUGH NCDEQ.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

MAGNETIC

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT UNDER WHICH IT IS DELIVERED. NO OTHER USE, REPRODUCTION OR DISCLOSURE OF ITS CONTENTS MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

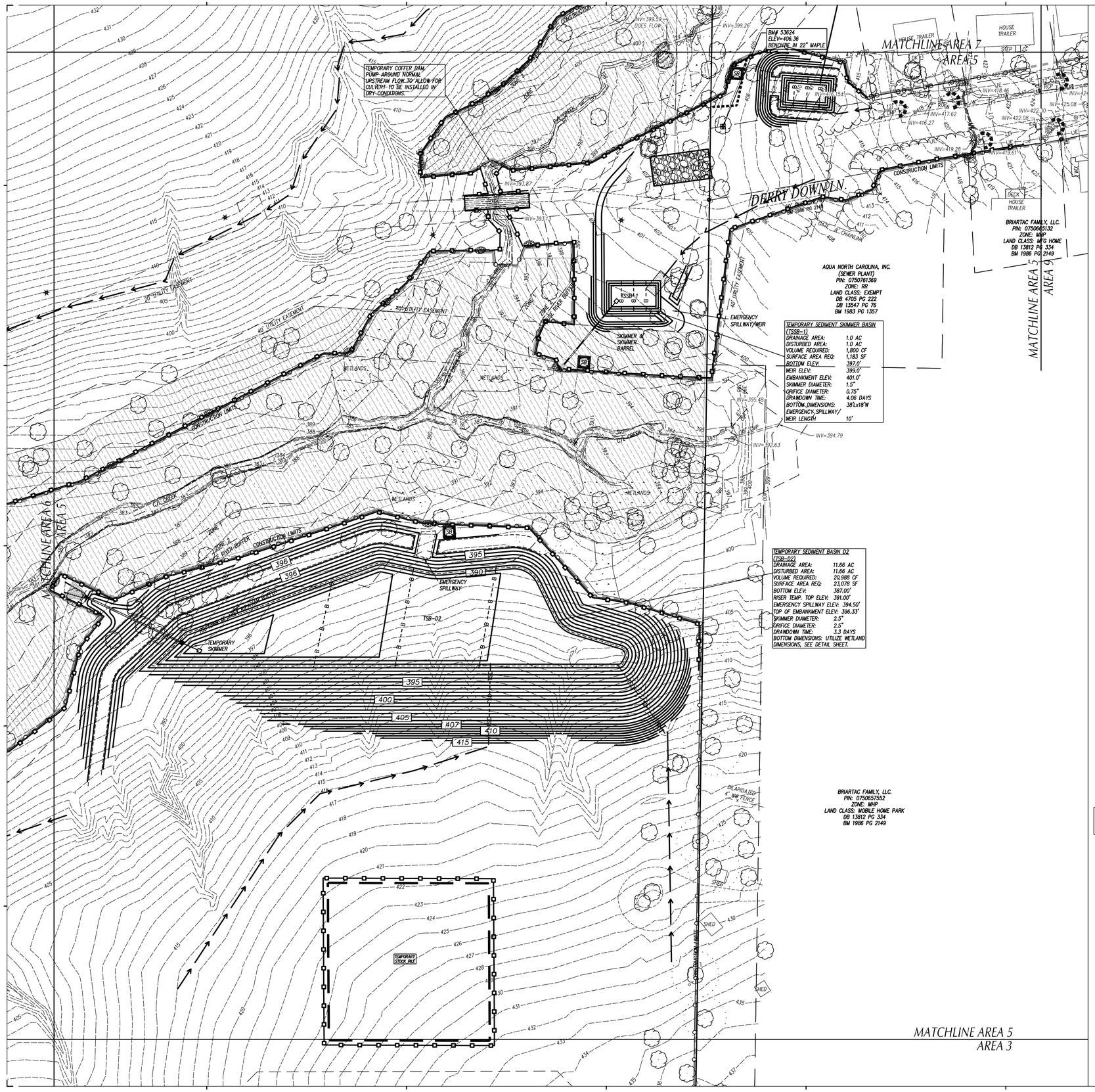
PROJECT NO. 02000.000

SHEET TITLE

INITIAL EROSION CONTROL PLAN AREA_4

SHEET NUMBER

C-04.04



LEGEND

- TEMP. GRAVEL CONSTR. ENTRANCE SEE DETAIL SHEET ___
- TEMP. INLET PROTECTION DEVICE SEE DETAIL SHEET ___
- TEMP. INLET PROTECTION SILT BAG DEVICE SEE DETAIL SHEET ___
- TEMP. DIVERSION DITCH / BERM SEE DETAIL SHEET ___
- TEMP. SILT FENCE SEE DETAIL SHEET ___
- TEMP. REINFORCED SILT FENCE OUTLET, SEE DETAIL SHEET ___
- PERMANENT OUTLET PROTECTION SEE DETAIL SHEET ___
- TEMP. CONCRETE WASHOUT AREA SEE DETAIL SHEET ___
- TEMP. PLASTIC LINING, SEE TEMP. BASIN BAFFLES ON DETAIL SHEET ___
- TEMP. J-HOOK PROTECTION SEE DETAIL SHEET ___
- TEMP. TIMBER/BRIDGE MAT SEE DETAIL SHEET ___
- TEMP. ROCK PIPE INLET PROTECTION SEE DETAIL SHEET ___
- CHANNEL LINING SEE DETAIL SHEET ___
- TEMP. SKIMMER SEDIMENT BASIN SEE DETAIL SHEET ___
- EXISTING CONTOUR
- FINISHED CONTOUR
- TEMP. CONTOUR (TEMP. GRADES DURING CONSTR.)
- TEMPORARY BASIN BAFFLE SEE DETAIL SHEET ___
- TREE PROTECTION FENCE SEE DETAIL SHEET ___
- TEMP. COMPOST SOCK SEE DETAIL SHEET ___
- TEMP. COMPOST SOCK IN CHANNEL SEE DETAIL SHEET ___
- TEMP. SLOPE DRAIN SEE DETAIL SHEET ___
- PROPOSED STORM SEWER PIPES
- EXISTING STORM SEWER PIPES
- CONSTRUCTION LIMITS UNLESS OTHERWISE NOTED.
- TEMP. COMPOST SOCK INLET PROTECTION, SEE DETAIL SHEET ___
- TEMP. DEWATERING SILT BAG SEE DETAIL SHEET ___
- RESOURCE CONSERVATION AREA
- TEMP. COFFER DAM, SEE STREAM CROSSING/CULVERT INSTALLATION DETAIL SHEET ___

GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH ALL TOWN OF APEX AND NCDOT STANDARDS, SPECIFICATIONS AND DETAILS.
2. THE CONTRACTOR SHALL COMPLY WITH ALL STATE AND LOCAL CODES IN OBSERVING EROSION CONTROL MEASURES BOTH ON AND OFF SITE. ALL OFF-SITE SOIL BORROW AND WASTE SITES SHALL BE PROPERLY PERMITTED FOR SUCH ACTIVITIES. CONTRACTOR SHALL PROVIDE WRITTEN DOCUMENTATION OF SEDIMENT & EROSION CONTROL PERMIT FOR ANY OFF-SITE SITES TO OWNER PRIOR TO RELOCATING ANY STOCKPILE MATERIALS.
3. THE CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL DEVICES AFTER EACH RAINFALL EVENT OR AS DIRECTED BY LOCAL AUTHORITIES OR ARCHITECT.
4. TOTAL DISTURBED AREA: 58 AC.
5. ALL OPEN STORM PIPES SHALL BE PROTECTED WITH STONE FILTER PROTECTION AFTER WORK STOPPAGE EACH DAY. SEE DETAIL **SHEET** ___
6. ALL STORM DRAINAGE PIPES SHALL BE THOROUGHLY FLUSHED OF ALL SEDIMENT FOLLOWING SITE STABILIZATION. INTERIOR FLUSHING OF SYSTEM SHALL BE PERFORMED AS NEEDED TO MAINTAIN PROPER FUNCTIONING OF THE DRAINAGE SYSTEM. CLEANING SHALL BE PERFORMED IN A MANNER WHICH PREVENTS SEDIMENT FROM BEING FLUSHED THROUGH PIPES TO THE EXISTING DRAINAGE SYSTEM.
7. THE INDICATED STAGING AREA IS INTENDED FOR VEHICLES AND NON-ERODIBLE MATERIALS ONLY. NO SOIL, SAND OR OTHER ERODIBLE, FINE GRAINED MATERIAL SHALL BE STORED OUTSIDE OF THE LIMITS OF THE SITE PROTECTED BY SEDIMENT AND EROSION CONTROL DEVICES AND MEASURES.
8. SOIL AND OTHER MATERIALS SHALL ONLY BE TEMPORARILY STOCKPILED WITHIN THE CONSTRUCTION LIMITS PROTECTED BY SEDIMENT AND EROSION CONTROL DEVICES AND MEASURES. STOCKPILES SHALL BE STABILIZED AS REQUIRED AS INDICATED IN THE SLOPE & SURFACE STABILIZATION NOTES ON THIS PLAN.
9. THE TREE PROTECTION FENCE SHALL BE MAINTAINED ON THE SITE UNTIL ALL SITE WORK IS COMPLETED AND THE FINAL SITE INSPECTION IS SCHEDULED PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY (CO). THE FENCING SHALL BE REMOVED IMMEDIATELY PRIOR TO THE FINAL SITE INSPECTION FOR THE SITE.
10. TREE PROTECTION FENCING SHALL NOT BE MOVED AND THERE SHALL BE NO ENCROACHMENT INTO SUCH PROTECTED AREA(S) WITHOUT WRITTEN AUTHORIZATION OF THE COUNTY ZONING COMPLIANCE STAFF. ANY ACTIVITY (LANDSCAPING, FENCING, OR UTILITY INSTALLATION) SHOWN ON THE APPROVED PLANS IN A TREE PROTECTION AREA, SHALL ALSO NOT OCCUR WITHOUT WRITTEN AUTHORIZATION FROM THE COUNTY ZONING COMPLIANCE STAFF. ANY UNAUTHORIZED ENCROACHMENT OR DISTURBANCE WITHIN THE BOUNDARIES OF A TREE PROTECTION AREA SHALL AUTOMATICALLY RESULT IN FINES AND THE REPLACEMENT OF ANY DAMAGED VEGETATION IN ACCORDANCE WITH THE LAND DEVELOPMENT ORDINANCE.
11. ROADSIDE DITCHES AND CHANNELS SHALL BE STABILIZED DAILY UNTIL PERMANENT GROUND COVER IS ESTABLISHED.
12. INSTALL TEMPORARY MATTING TO TOP OF ALL SIDE SLOPES ON CHANNELS, DIVERSION DITCHES AND TEMPORARY SEDIMENT BASINS. SEE DETAIL SHEET C702 (PERMANENT CHANNEL) AND C702 (TEMPORARY DIVERSION DITCH) FOR TYPE OF MATTING TO USE.
13. ANY DEWATERING OF SEDIMENT CONTAINMENT DEVICES FOR MAINTENANCE, REMOVAL OR CONVERSION PURPOSES IS TO BE DONE THROUGH A SILT BAG.
14. ANY DEWATERING OF STORM/UTILITY TRENCHES IS TO BE DONE THROUGH A SILT BAG.
15. GROUND COVER IS TO BE APPLIED PER CONDITIONS OF THE NPDES PERMIT OR AT THE END OF THE DAY IN CRITICAL AREAS.
16. CONTRACTOR SHALL USE TIRE WASH STATION TO PREVENT SEDIMENT FROM TRACKING ONTO THE ROAD IF CONSTRUCTION ENTRANCE IS FOUND INSUFFICIENT AT NO ADDITIONAL COST TO OWNER.
17. CONTRACTOR SHALL UTILIZE PAM FLOCCULANTS TO REDUCE RUN-OFF TURBIDITY. SEE SPECS.

MAINTENANCE PLAN

1. DURING ALL PHASES OF CONSTRUCTION, GROUNDCOVER ON EXPOSED SLOPES SHALL BE PROVIDED ACCORDING TO GROUND STABILIZATION TABLE **(SHEET C706)** FOLLOWING COMPLETION OF ANY PHASE OF GRADING.
2. FINAL PERMANENT GROUNDCOVER FOR ALL DISTURBED AREAS SHALL BE PROVIDED ON ALL DISTURBED AREAS ACCORDING TO GROUND STABILIZATION TABLE (BELOW) FOLLOWING COMPLETION OF CONSTRUCTION OR DEVELOPMENT.
3. THE ABOVE REQUIREMENTS ARE THE MINIMUM NECESSARY TO MEET EROSION AND SEDIMENT CONTROL REGULATIONS. THE CONTRACT DOCUMENTS INCLUDE ADDITIONAL SEEDING AND STABILIZATION REQUIREMENTS AND SCHEDULES WHICH MAY EXCEED THOSE ABOVE.
4. SLOPE EROSION CONTROL MATTING SHALL BE INSTALLED FOR TEMPORARY STABILIZATION DURING THE ESTABLISHMENT OF VEGETATIVE COVER ON ALL STEEP SLOPES (6:1 OR STEEPER). REFER TO MATERIAL SPECIFICATIONS. INSTALL MATTING PER MANUFACTURER'S INSTRUCTIONS.
5. ALL OTHER SEEDED AREAS SHALL BE MULCHED WITH STRAW AND TACKED WITH ASPHALT.

SELF-INSPECTION RULES

SEE **SHEET C706** FOR SELF-INSPECTION REQUIREMENTS.

THE FINANCIALLY RESPONSIBLE PERSON AND/OR HIS AGENT WILL BE PERFORM SELF INSPECTIONS OF THE EROSION AND SEDIMENTATION CONTROL MEASURES USING NCDEMLR'S SELF INSPECTION REPORT (WORKSHEET) AND THIS WILL BE KEPT ONSITE.

SLOPE & SURFACE STABILIZATION

GROUND STABILIZATION SHALL BE PROVIDED ON ALL DISTURBED AREAS ACCORDING TO GROUND STABILIZATION NOTES. SEE SHEET C705.

EXTENSIONS OF TIME MAY BE APPROVED BY THE PERMITTING AUTHORITY BASED ON WEATHER OR OTHER SITE-SPECIFIC CONDITIONS THAT MAKE COMPLIANCE IMPRACTICABLE (SECTION II.B(2) (b))

THE REQUIREMENTS ON SHEET C705 ARE THE MINIMUM NECESSARY TO MEET EROSION AND SEDIMENT CONTROL REGULATIONS. THE CONTRACT DOCUMENTS INCLUDE ADDITIONAL SEEDING AND STABILIZATION REQUIREMENTS AND SCHEDULES WHICH MAY EXCEED MINIMUM REQUIREMENTS.

INSTALL TEMPORARY EXCELSIOR MATTING FOR STABILIZATION DURING THE ESTABLISHMENT OF VEGETATIVE COVER ON ALL STEEP SLOPES (6:1 OR STEEPER) AND AREAS OF CONCENTRATED FLOW (CHANNELS, DITCHES, SWALES, ETC.). UTILIZE TEMPORARY COCONUT MAT IN AREAS IDENTIFIED ON PLAN. REFER TO SPECIFICATION SECTION 312500 FOR MATERIAL SPECIFICATIONS. INSTALL MATTING PER MANUFACTURER'S INSTRUCTIONS.

NOTE:
EROSION & SEDIMENT CONTROL SHALL BE PERMITTED THROUGH NCDEQ.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

MAGNETIC

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

SHEET TITLE
INITIAL EROSION CONTROL PLAN AREA_5

SHEET NUMBER
C-04.05

LEGEND

- TEMP. GRAVEL CONSTR. ENTRANCE SEE DETAIL SHEET __
- TEMP. INLET PROTECTION DEVICE SEE DETAIL SHEET __
- TEMP. INLET PROTECTION SILT BAG DEVICE SEE DETAIL SHEET __
- TEMP. DIVERSION DITCH / BERM SEE DETAIL SHEET __
- TEMP. SILT FENCE SEE DETAIL SHEET __
- TEMP. REINFORCED SILT FENCE OUTLET, SEE DETAIL SHEET __
- PERMANENT OUTLET PROTECTION SEE DETAIL SHEET __
- TEMP. CONCRETE WASHOUT AREA SEE DETAIL SHEET __ (TEMP)
- TEMP. PLASTIC LINING, SEE TEMP. BASIN BAFFLES ON DETAIL SHEET __
- TEMP. J-HOOK PROTECTION SEE DETAIL SHEET __ (JHP)
- TEMP. TIMBER/BRIDGE MAT SEE DETAIL SHEET __
- TEMP. ROCK PIPE INLET PROTECTION SEE DETAIL SHEET __
- CHANNEL LINING SEE DETAIL SHEET __
- TEMP. SKIMMER SEDIMENT BASIN SEE DETAIL SHEET __ (TSSB)
- EXISTING CONTOUR
- FINISHED CONTOUR
- TEMP. CONTOUR (TEMP. GRADES DURING CONSTR.)
- TEMPORARY BASIN BAFFLE SEE DETAIL SHEET __
- TREE PROTECTION FENCE SEE DETAIL SHEET __
- TEMP. COMPOST SOCK SEE DETAIL SHEET __ (TCS)
- TEMP. COMPOST SOCK IN CHANNEL SEE DETAIL SHEET __
- TEMP. SLOPE DRAIN SEE DETAIL SHEET __ (TSD)
- PROPOSED STORM SEWER PIPES
- EXISTING STORM SEWER PIPES
- CONSTRUCTION LIMITS UNLESS OTHERWISE NOTED.
- TEMP. COMPOST SOCK INLET PROTECTION, SEE DETAIL SHEET __
- TEMP. DEWATERING SILT BAG SEE DETAIL SHEET __
- RESOURCE CONSERVATION AREA
- TEMP. COFFER DAM, SEE STREAM CROSSING/CULVERT INSTALLATION DETAIL SHEET __ (TEMP)

GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH ALL TOWN OF APEX AND NCDOT STANDARDS, SPECIFICATIONS AND DETAILS.
2. THE CONTRACTOR SHALL COMPLY WITH ALL STATE AND LOCAL CODES IN OBSERVING EROSION CONTROL MEASURES BOTH ON AND OFF SITE. ALL OFF-SITE SOIL BORROW AND WASTE SITES SHALL BE PROPERLY PERMITTED FOR SUCH ACTIVITIES. CONTRACTOR SHALL PROVIDE WRITTEN DOCUMENTATION OF SEDIMENT & EROSION CONTROL PERMIT FOR ANY OFF-SITE SITES TO OWNER PRIOR TO RELOCATING ANY STOCKPILE MATERIALS.
3. THE CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL DEVICES AFTER EACH RAINFALL EVENT OR AS DIRECTED BY LOCAL AUTHORITIES OR ARCHITECT.
4. TOTAL DISTURBED AREA: 58 AC.
5. ALL OPEN STORM PIPES SHALL BE PROTECTED WITH STONE FILTER PROTECTION AFTER WORK STOPPAGE EACH DAY. SEE DETAIL **SHEET __**
6. ALL STORM DRAINAGE PIPES SHALL BE THOROUGHLY FLUSHED OF ALL SEDIMENT FOLLOWING SITE STABILIZATION. INTERIOR FLUSHING OF SYSTEM SHALL BE PERFORMED AS NEEDED TO MAINTAIN PROPER FUNCTIONING OF THE DRAINAGE SYSTEM. CLEANING SHALL BE PERFORMED IN A MANNER WHICH PREVENTS SEDIMENT FROM BEING FLUSHED THROUGH PIPES TO THE EXISTING DRAINAGE SYSTEM.
7. THE INDICATED STAGING AREA IS INTENDED FOR VEHICLES AND NON-ERODIBLE MATERIALS ONLY. NO SOIL, SAND OR OTHER ERODIBLE, FINE GRAINED MATERIAL SHALL BE STORED OUTSIDE OF THE LIMITS OF THE SITE PROTECTED BY SEDIMENT AND EROSION CONTROL DEVICES AND MEASURES.
8. SOIL AND OTHER MATERIALS SHALL ONLY BE TEMPORARILY STOCKPILED WITHIN THE CONSTRUCTION LIMITS PROTECTED BY SEDIMENT AND EROSION CONTROL DEVICES AND MEASURES. STOCKPILES SHALL BE STABILIZED AS REQUIRED AS INDICATED IN THE SLOPE & SURFACE STABILIZATION NOTES ON THIS PLAN.
9. THE TREE PROTECTION FENCE SHALL BE MAINTAINED ON THE SITE UNTIL ALL SITE WORK IS COMPLETED AND THE FINAL SITE INSPECTION IS SCHEDULED PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY (CO). THE FENCING SHALL BE REMOVED IMMEDIATELY PRIOR TO THE FINAL SITE INSPECTION FOR THE SITE.
10. TREE PROTECTION FENCING SHALL NOT BE MOVED AND THERE SHALL BE NO ENCROACHMENT INTO SUCH PROTECTED AREA(S) WITHOUT WRITTEN AUTHORIZATION OF THE COUNTY ZONING COMPLIANCE STAFF. ANY ACTIVITY (LANDSCAPING, FENCING, OR UTILITY INSTALLATION) SHOWN ON THE APPROVED PLANS IN A TREE PROTECTION AREA, SHALL ALSO NOT OCCUR WITHOUT WRITTEN AUTHORIZATION FROM THE COUNTY ZONING COMPLIANCE STAFF. ANY UNAUTHORIZED ENCROACHMENT OR DISTURBANCE WITHIN THE BOUNDARIES OF A TREE PROTECTION AREA SHALL AUTOMATICALLY RESULT IN FINES AND THE REPLACEMENT OF ANY DAMAGED VEGETATION IN ACCORDANCE WITH THE LAND DEVELOPMENT ORDINANCE.
11. ROADSIDE DITCHES AND CHANNELS SHALL BE STABILIZED DAILY UNTIL PERMANENT GROUND COVER IS ESTABLISHED.
12. INSTALL TEMPORARY MATTING TO TOP OF ALL SIDE SLOPES ON CHANNELS, DIVERSION DITCHES AND TEMPORARY SEDIMENT BASINS. SEE DETAIL SHEET C702 (PERMANENT CHANNEL) AND C702 (TEMPORARY DIVERSION DITCH) FOR TYPE OF MATTING TO USE.
13. ANY DEWATERING OF SEDIMENT CONTAINMENT DEVICES FOR MAINTENANCE, REMOVAL OR CONVERSION PURPOSES IS TO BE DONE THROUGH A SILT BAG.
14. ANY DEWATERING OF STORM/UTILITY TRENCHES IS TO BE DONE THROUGH A SILT BAG.
15. GROUND COVER IS TO BE APPLIED PER CONDITIONS OF THE NPDES PERMIT OR AT THE END OF THE DAY IN CRITICAL AREAS.
16. CONTRACTOR SHALL USE TIRE WASH STATION TO PREVENT SEDIMENT FROM TRACKING ONTO THE ROAD IF CONSTRUCTION ENTRANCE IS FOUND INSUFFICIENT AT NO ADDITIONAL COST TO OWNER.
17. CONTRACTOR SHALL UTILIZE PAM FLOCCULANTS TO REDUCE RUN-OFF TURBIDITY. SEE SPECS.

MAINTENANCE PLAN

1. DURING ALL PHASES OF CONSTRUCTION, GROUNDCOVER ON EXPOSED SLOPES SHALL BE PROVIDED ACCORDING TO GROUND STABILIZATION TABLE **(SHEET C706)** FOLLOWING COMPLETION OF ANY PHASE OF GRADING.
2. FINAL PERMANENT GROUNDCOVER FOR ALL DISTURBED AREAS SHALL BE PROVIDED ON ALL DISTURBED AREAS ACCORDING TO GROUND STABILIZATION TABLE (BELOW) FOLLOWING COMPLETION OF CONSTRUCTION OR DEVELOPMENT.
3. THE ABOVE REQUIREMENTS ARE THE MINIMUM NECESSARY TO MEET EROSION AND SEDIMENT CONTROL REGULATIONS. THE CONTRACT DOCUMENTS INCLUDE ADDITIONAL SEEDING AND STABILIZATION REQUIREMENTS AND SCHEDULES WHICH MAY EXCEED THOSE ABOVE.
4. SLOPE EROSION CONTROL MATTING SHALL BE INSTALLED FOR TEMPORARY STABILIZATION DURING THE ESTABLISHMENT OF VEGETATIVE COVER ON ALL STEEP SLOPES (6:1 OR STEEPER). REFER TO MATERIAL SPECIFICATIONS. INSTALL MATTING PER MANUFACTURER'S INSTRUCTIONS.
5. ALL OTHER SEEDED AREAS SHALL BE MULCHED WITH STRAW AND TACKED WITH ASPHALT.

SELF-INSPECTION RULES

SEE **SHEET C706** FOR SELF-INSPECTION REQUIREMENTS.

THE FINANCIALLY RESPONSIBLE PERSON AND/OR HIS AGENT WILL BE PERFORM SELF INSPECTIONS OF THE EROSION AND SEDIMENTATION CONTROL MEASURES USING NCDEMLR'S SELF INSPECTION REPORT (WORKSHEET) AND THIS WILL BE KEPT ONSITE.

SLOPE & SURFACE STABILIZATION

GROUND STABILIZATION SHALL BE PROVIDED ON ALL DISTURBED AREAS ACCORDING TO GROUND STABILIZATION NOTES. SEE SHEET C705.

EXTENSIONS OF TIME MAY BE APPROVED BY THE PERMITTING AUTHORITY BASED ON WEATHER OR OTHER SITE-SPECIFIC CONDITIONS THAT MAKE COMPLIANCE IMPRACTICABLE (SECTION II.B(2) (b))

THE REQUIREMENTS ON SHEET C705 ARE THE MINIMUM NECESSARY TO MEET EROSION AND SEDIMENT CONTROL REGULATIONS. THE CONTRACT DOCUMENTS INCLUDE ADDITIONAL SEEDING AND STABILIZATION REQUIREMENTS AND SCHEDULES WHICH MAY EXCEED MINIMUM REQUIREMENTS.

INSTALL TEMPORARY EXCELSIOR MATTING FOR STABILIZATION DURING THE ESTABLISHMENT OF VEGETATIVE COVER ON ALL STEEP SLOPES (6:1 OR STEEPER) AND AREAS OF CONCENTRATED FLOW (CHANNELS, DITCHES, SWALES, ETC.). UTILIZE TEMPORARY COCONUT MAT IN AREAS IDENTIFIED ON PLAN. REFER TO SPECIFICATION SECTION 312500 FOR MATERIAL SPECIFICATIONS. INSTALL MATTING PER MANUFACTURER'S INSTRUCTIONS.

NOTE:
EROSION & SEDIMENT CONTROL SHALL BE PERMITTED THROUGH NCDEQ.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

MAGNETIC

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineerlng
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO, NO OTHER USE, REPRODUCTION OR DISCLOSURE SHALL BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

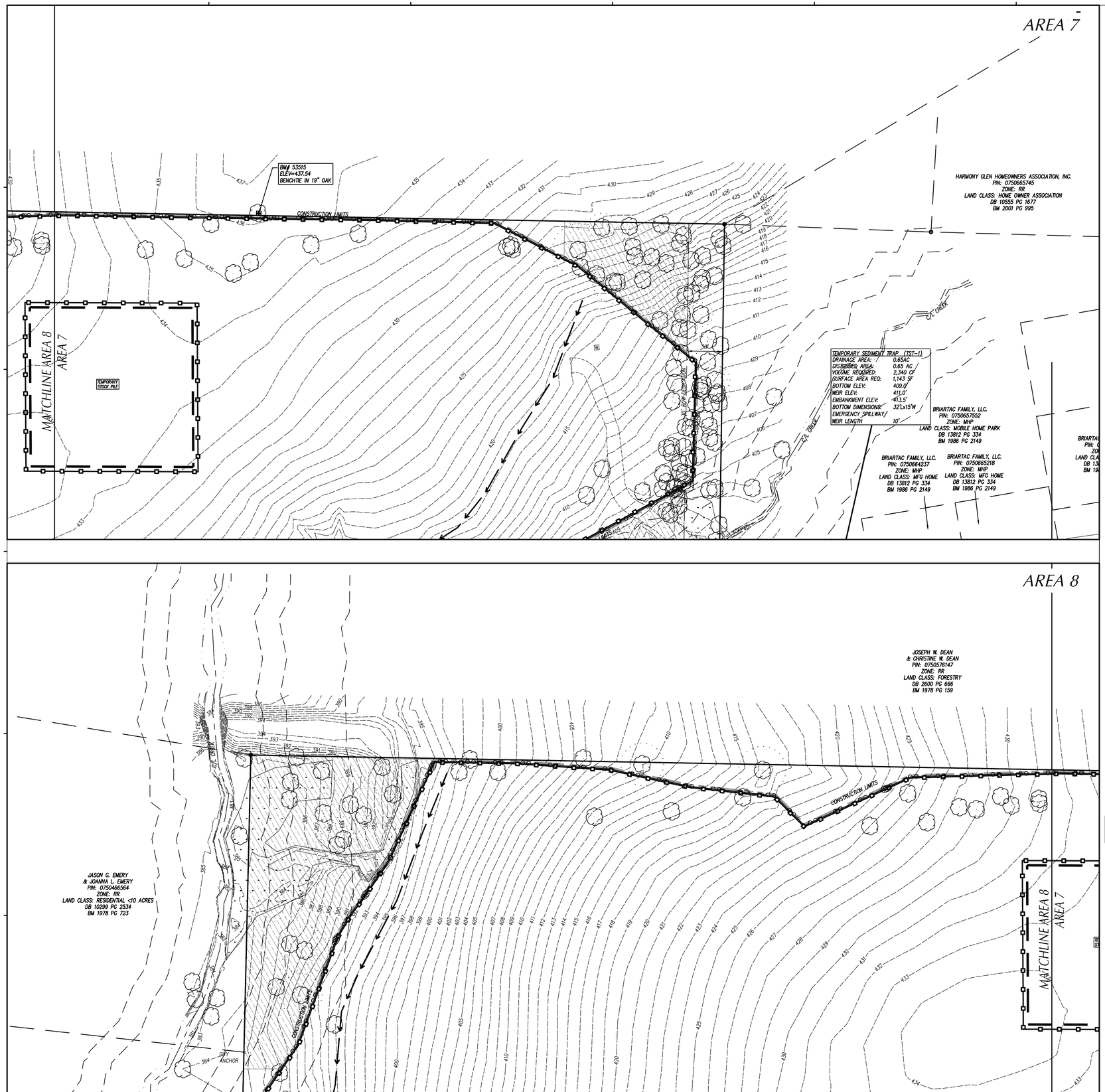
PROJECT NO. 02000.000

SHEET TITLE

INITIAL EROSION CONTROL PLAN AREA_6

SHEET NUMBER

C-04.06



LEGEND

- TEMP. GRAVEL CONSTR. ENTRANCE SEE DETAIL SHEET __
- TEMP. INLET PROTECTION DEVICE SEE DETAIL SHEET __
- TEMP. INLET PROTECTION SILT BAG DEVICE SEE DETAIL SHEET __
- TEMP. DIVERSION DITCH / BERM SEE DETAIL SHEET __
- TEMP. SILT FENCE SEE DETAIL SHEET __
- TEMP. REINFORCED SILT FENCE OUTLET, SEE DETAIL SHEET __
- PERMANENT OUTLET PROTECTION SEE DETAIL SHEET __
- TEMP. CONCRETE WASHOUT AREA SEE DETAIL SHEET __
- TEMP. PLASTIC LINING, SEE TEMP. BASIN BAFFLES ON DETAIL SHEET __
- TEMP. J-HOOK PROTECTION SEE DETAIL SHEET __
- TEMP. TIMBER/BRIDGE MAT SEE DETAIL SHEET __
- TEMP. ROCK PIPE INLET PROTECTION SEE DETAIL SHEET __
- CHANNEL LINING SEE DETAIL SHEET __
- TEMP. SKIMMER SEDIMENT BASIN SEE DETAIL SHEET __
- EXISTING CONTOUR
- FINISHED CONTOUR
- TEMP. CONTOUR (TEMP. GRADES DURING CONSTR.)
- TEMPORARY BASIN BAFFLE SEE DETAIL SHEET __
- TREE PROTECTION FENCE SEE DETAIL SHEET __
- TEMP. COMPOST SOCK SEE DETAIL SHEET __
- TEMP. COMPOST SOCK IN CHANNEL SEE DETAIL SHEET __
- TEMP. SLOPE DRAIN SEE DETAIL SHEET __
- PROPOSED STORM SEWER PIPES
- EXISTING STORM SEWER PIPES
- CONSTRUCTION LIMITS UNLESS OTHERWISE NOTED.
- TEMP. COMPOST SOCK INLET PROTECTION, SEE DETAIL SHEET __
- TEMP. DEWATERING SILT BAG SEE DETAIL SHEET __
- RESOURCE CONSERVATION AREA
- TEMP. COFFER DAM, SEE STREAM CROSSING/CULVERT INSTALLATION DETAIL SHEET __

GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH ALL TOWN OF APEX AND NCDOT STANDARDS, SPECIFICATIONS AND DETAILS.
2. THE CONTRACTOR SHALL COMPLY WITH ALL STATE AND LOCAL CODES IN OBSERVING EROSION CONTROL MEASURES BOTH ON AND OFF SITE. ALL OFF-SITE SOIL BORROW AND WASTE SITES SHALL BE PROPERLY PERMITTED FOR SUCH ACTIVITIES. CONTRACTOR SHALL PROVIDE WRITTEN DOCUMENTATION OF SEDIMENT & EROSION CONTROL PERMIT FOR ANY OFF-SITE SITES TO OWNER PRIOR TO RELOCATING ANY STOCKPILE MATERIALS.
3. THE CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL DEVICES AFTER EACH RAINFALL EVENT OR AS DIRECTED BY LOCAL AUTHORITIES OR ARCHITECT.
4. TOTAL DISTURBED AREA: 58 AC.
5. ALL OPEN STORM PIPES SHALL BE PROTECTED WITH STONE FILTER PROTECTION AFTER WORK STOPPAGE EACH DAY. SEE DETAIL **SHEET** __
6. ALL STORM DRAINAGE PIPES SHALL BE THOROUGHLY FLUSHED OF ALL SEDIMENT FOLLOWING SITE STABILIZATION. INTERIOR FLUSHING OF SYSTEM SHALL BE PERFORMED AS NEEDED TO MAINTAIN PROPER FUNCTIONING OF THE DRAINAGE SYSTEM. CLEANING SHALL BE PERFORMED IN A MANNER WHICH PREVENTS SEDIMENT FROM BEING FLUSHED THROUGH PIPES TO THE EXISTING DRAINAGE SYSTEM.
7. THE INDICATED STAGING AREA IS INTENDED FOR VEHICLES AND NON-ERODIBLE MATERIALS ONLY. NO SOIL, SAND OR OTHER ERODIBLE, FINE GRAINED MATERIAL SHALL BE STORED OUTSIDE OF THE LIMITS OF THE SITE PROTECTED BY SEDIMENT AND EROSION CONTROL DEVICES AND MEASURES.
8. SOIL AND OTHER MATERIALS SHALL ONLY BE TEMPORARILY STOCKPILED WITHIN THE CONSTRUCTION LIMITS PROTECTED BY SEDIMENT AND EROSION CONTROL DEVICES AND MEASURES. STOCKPILES SHALL BE STABILIZED AS REQUIRED AS INDICATED IN THE SLOPE & SURFACE STABILIZATION NOTES ON THIS PLAN.
9. THE TREE PROTECTION FENCE SHALL BE MAINTAINED ON THE SITE UNTIL ALL SITE WORK IS COMPLETED AND THE FINAL SITE INSPECTION IS SCHEDULED PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY (CO). THE FENCING SHALL BE REMOVED IMMEDIATELY PRIOR TO THE FINAL SITE INSPECTION FOR THE SITE.
10. TREE PROTECTION FENCING SHALL NOT BE MOVED AND THERE SHALL BE NO ENCROACHMENT INTO SUCH PROTECTED AREA(S) WITHOUT WRITTEN AUTHORIZATION OF THE COUNTY ZONING COMPLIANCE STAFF. ANY ACTIVITY (LANDSCAPING, FENCING, OR UTILITY INSTALLATION) SHOWN ON THE APPROVED PLANS IN A TREE PROTECTION AREA SHALL ALSO NOT OCCUR WITHOUT WRITTEN AUTHORIZATION FROM THE COUNTY ZONING COMPLIANCE STAFF. ANY UNAUTHORIZED ENCROACHMENT OR DISTURBANCE WITHIN THE BOUNDARIES OF A TREE PROTECTION AREA SHALL AUTOMATICALLY RESULT IN FINES AND THE REPLACEMENT OF ANY DAMAGED VEGETATION IN ACCORDANCE WITH THE LAND DEVELOPMENT ORDINANCE.
11. ROADSIDE DITCHES AND CHANNELS SHALL BE STABILIZED DAILY UNTIL PERMANENT GROUND COVER IS ESTABLISHED.
12. INSTALL TEMPORARY MATTING TO TOP OF ALL SIDE SLOPES ON CHANNELS, DIVERSION DITCHES AND TEMPORARY SEDIMENT BASINS. SEE DETAIL SHEET C702 (PERMANENT CHANNEL) AND C702 (TEMPORARY DIVERSION DITCH) FOR TYPE OF MATTING TO USE.
13. ANY DEWATERING OF SEDIMENT CONTAINMENT DEVICES FOR MAINTENANCE, REMOVAL OR CONVERSION PURPOSES IS TO BE DONE THROUGH A SILT BAG.
14. ANY DEWATERING OF STORM/UTILITY TRENCHES IS TO BE DONE THROUGH A SILT BAG.
15. GROUND COVER IS TO BE APPLIED PER CONDITIONS OF THE NPDES PERMIT OR AT THE END OF THE DAY IN CRITICAL AREAS.
16. CONTRACTOR SHALL USE TIRE WASH STATION TO PREVENT SEDIMENT FROM TRACKING ONTO THE ROAD IF CONSTRUCTION ENTRANCE IS FOUND INSUFFICIENT AT NO ADDITIONAL COST TO OWNER.
17. CONTRACTOR SHALL UTILIZE PAM FLOCCULANTS TO REDUCE RUN-OFF TURBIDITY. SEE SPECS.

MAINTENANCE PLAN

1. DURING ALL PHASES OF CONSTRUCTION, GROUNDCOVER ON EXPOSED SLOPES SHALL BE PROVIDED ACCORDING TO GROUND STABILIZATION TABLE **(SHEET C706)** FOLLOWING COMPLETION OF ANY PHASE OF GRADING.
2. FINAL PERMANENT GROUNDCOVER FOR ALL DISTURBED AREAS SHALL BE PROVIDED ON ALL DISTURBED AREAS ACCORDING TO GROUND STABILIZATION TABLE (BELOW) FOLLOWING COMPLETION OF CONSTRUCTION OR DEVELOPMENT.
3. THE ABOVE REQUIREMENTS ARE THE MINIMUM NECESSARY TO MEET EROSION AND SEDIMENT CONTROL REGULATIONS. THE CONTRACT DOCUMENTS INCLUDE ADDITIONAL SEEDING AND STABILIZATION REQUIREMENTS AND SCHEDULES WHICH MAY EXCEED THOSE ABOVE.
4. SLOPE EROSION CONTROL MATTING SHALL BE INSTALLED FOR TEMPORARY STABILIZATION DURING THE ESTABLISHMENT OF VEGETATIVE COVER ON ALL STEEP SLOPES (6:1 OR STEEPER). REFER TO MATERIAL SPECIFICATIONS. INSTALL MATTING PER MANUFACTURER'S INSTRUCTIONS.
5. ALL OTHER SEEDED AREAS SHALL BE MULCHED WITH STRAW AND TACKED WITH ASPHALT.

SELF-INSPECTION RULES

SEE **SHEET C706** FOR SELF-INSPECTION REQUIREMENTS.

THE FINANCIALLY RESPONSIBLE PERSON AND/OR HIS AGENT WILL BE PERFORM SELF INSPECTIONS OF THE EROSION AND SEDIMENTATION CONTROL MEASURES USING NCDEMLR'S SELF INSPECTION REPORT (WORKSHEET) AND THIS WILL BE KEPT ONSITE.

SLOPE & SURFACE STABILIZATION

GROUND STABILIZATION SHALL BE PROVIDED ON ALL DISTURBED AREAS ACCORDING TO GROUND STABILIZATION NOTES. SEE SHEET C705.

EXTENSIONS OF TIME MAY BE APPROVED BY THE PERMITTING AUTHORITY BASED ON WEATHER OR OTHER SITE-SPECIFIC CONDITIONS THAT MAKE COMPLIANCE IMPRACTICABLE (SECTION II.B(2) (b))

THE REQUIREMENTS ON SHEET C705 ARE THE MINIMUM NECESSARY TO MEET EROSION AND SEDIMENT CONTROL REGULATIONS. THE CONTRACT DOCUMENTS INCLUDE ADDITIONAL SEEDING AND STABILIZATION REQUIREMENTS AND SCHEDULES WHICH MAY EXCEED MINIMUM REQUIREMENTS.

INSTALL TEMPORARY EXCELSIOR MATTING FOR STABILIZATION DURING THE ESTABLISHMENT OF VEGETATIVE COVER ON ALL STEEP SLOPES (6:1 OR STEEPER) AND AREAS OF CONCENTRATED FLOW (CHANNELS, DITCHES, SWALES, ETC.). UTILIZE TEMPORARY COCONUT MAT IN AREAS IDENTIFIED ON PLAN. REFER TO SPECIFICATION SECTION 312500 FOR MATERIAL SPECIFICATIONS. INSTALL MATTING PER MANUFACTURER'S INSTRUCTIONS.

NOTE:
EROSION & SEDIMENT CONTROL SHALL BE PERMITTED THROUGH NCDEQ.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineerng
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, REPRODUCTION OR ALTERATION SHALL BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

SHEET TITLE

INITIAL EROSION CONTROL PLAN AREA_7&8

SHEET NUMBER

C-04.07

LEGEND

- TEMP. GRAVEL CONSTR. ENTRANCE SEE DETAIL SHEET ___
- TEMP. INLET PROTECTION DEVICE SEE DETAIL SHEET ___
- TEMP. INLET PROTECTION SILT BAG DEVICE SEE DETAIL SHEET ___
- TEMP. DIVERSION DITCH / BERM SEE DETAIL SHEET ___
- TEMP. SILT FENCE SEE DETAIL SHEET ___
- TEMP. REINFORCED SILT FENCE OUTLET, SEE DETAIL SHEET ___
- PERMANENT OUTLET PROTECTION SEE DETAIL SHEET ___
- TEMP. CONCRETE WASHOUT AREA SEE DETAIL SHEET ___
- TEMP. PLASTIC LINING, SEE TEMP. BASIN BAFFLES ON DETAIL SHEET ___
- TEMP. J-HOOK PROTECTION SEE DETAIL SHEET ___
- TEMP. TIMBER/BRIDGE MAT SEE DETAIL SHEET ___
- TEMP. ROCK PIPE INLET PROTECTION SEE DETAIL SHEET ___
- CHANNEL LINING SEE DETAIL SHEET ___
- TEMP. SKIMMER SEDIMENT BASIN SEE DETAIL SHEET ___
- EXISTING CONTOUR
- FINISHED CONTOUR
- TEMP. CONTOUR (TEMP. GRADES DURING CONSTR.)
- TEMPORARY BASIN BAFFLE SEE DETAIL SHEET ___
- TREE PROTECTION FENCE SEE DETAIL SHEET ___
- TEMP. COMPOST SOCK SEE DETAIL SHEET ___
- TEMP. COMPOST SOCK IN CHANNEL SEE DETAIL SHEET ___
- TEMP. SLOPE DRAIN SEE DETAIL SHEET ___
- PROPOSED STORM SEWER PIPES
- EXISTING STORM SEWER PIPES
- CONSTRUCTION LIMITS UNLESS OTHERWISE NOTED.
- TEMP. COMPOST SOCK INLET PROTECTION, SEE DETAIL SHEET ___
- TEMP. DEWATERING SILT BAG SEE DETAIL SHEET ___
- RESOURCE CONSERVATION AREA
- TEMP. COFFER DAM, SEE STREAM CROSSING/CULVERT INSTALLATION DETAIL SHEET ___

GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH ALL TOWN OF APEX AND NCDOT STANDARDS, SPECIFICATIONS AND DETAILS.
2. THE CONTRACTOR SHALL COMPLY WITH ALL STATE AND LOCAL CODES IN OBSERVING EROSION CONTROL MEASURES BOTH ON AND OFF SITE. ALL OFF-SITE SOIL BORROW AND WASTE SITES SHALL BE PROPERLY PERMITTED FOR SUCH ACTIVITIES. CONTRACTOR SHALL PROVIDE WRITTEN DOCUMENTATION OF SEDIMENT & EROSION CONTROL PERMIT FOR ANY OFF-SITE SITES TO OWNER PRIOR TO RELOCATING ANY STOCKPILE MATERIALS.
3. THE CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL DEVICES AFTER EACH RAINFALL EVENT OR AS DIRECTED BY LOCAL AUTHORITIES OR ARCHITECT.
4. TOTAL DISTURBED AREA: 58 AC.
5. ALL OPEN STORM PIPES SHALL BE PROTECTED WITH STONE FILTER PROTECTION AFTER WORK STOPPAGE EACH DAY. SEE DETAIL **SHEET** ___
6. ALL STORM DRAINAGE PIPES SHALL BE THOROUGHLY FLUSHED OF ALL SEDIMENT FOLLOWING SITE STABILIZATION. INTERIOR FLUSHING OF SYSTEM SHALL BE PERFORMED AS NEEDED TO MAINTAIN PROPER FUNCTIONING OF THE DRAINAGE SYSTEM. CLEANING SHALL BE PERFORMED IN A MANNER WHICH PREVENTS SEDIMENT FROM BEING FLUSHED THROUGH PIPES TO THE EXISTING DRAINAGE SYSTEM.
7. THE INDICATED STAGING AREA IS INTENDED FOR VEHICLES AND NON-ERODIBLE MATERIALS ONLY. NO SOIL, SAND OR OTHER ERODIBLE, FINE GRAINED MATERIAL SHALL BE STORED OUTSIDE OF THE LIMITS OF THE SITE PROTECTED BY SEDIMENT AND EROSION CONTROL DEVICES AND MEASURES.
8. SOIL AND OTHER MATERIALS SHALL ONLY BE TEMPORARILY STOCKPILED WITHIN THE CONSTRUCTION LIMITS PROTECTED BY SEDIMENT AND EROSION CONTROL DEVICES AND MEASURES. STOCKPILES SHALL BE STABILIZED AS REQUIRED AS INDICATED IN THE SLOPE & SURFACE STABILIZATION NOTES ON THIS PLAN.
9. THE TREE PROTECTION FENCE SHALL BE MAINTAINED ON THE SITE UNTIL ALL SITE WORK IS COMPLETED AND THE FINAL SITE INSPECTION IS SCHEDULED PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY (CO). THE FENCING SHALL BE REMOVED IMMEDIATELY PRIOR TO THE FINAL SITE INSPECTION FOR THE SITE.
10. TREE PROTECTION FENCING SHALL NOT BE MOVED AND THERE SHALL BE NO ENCROACHMENT INTO SUCH PROTECTED AREA(S) WITHOUT WRITTEN AUTHORIZATION OF THE COUNTY ZONING COMPLIANCE STAFF. ANY ACTIVITY (LANDSCAPING, FENCING, OR UTILITY INSTALLATION) SHOWN ON THE APPROVED PLANS IN A TREE PROTECTION AREA, SHALL ALSO NOT OCCUR WITHOUT WRITTEN AUTHORIZATION FROM THE COUNTY ZONING COMPLIANCE STAFF. ANY UNAUTHORIZED ENCROACHMENT OR DISTURBANCE WITHIN THE BOUNDARIES OF A TREE PROTECTION AREA SHALL AUTOMATICALLY RESULT IN FINES AND THE REPLACEMENT OF ANY DAMAGED VEGETATION IN ACCORDANCE WITH THE LAND DEVELOPMENT ORDINANCE.
11. ROADSIDE DITCHES AND CHANNELS SHALL BE STABILIZED DAILY UNTIL PERMANENT GROUND COVER IS ESTABLISHED.
12. INSTALL TEMPORARY MATTING TO TOP OF ALL SIDE SLOPES ON CHANNELS, DIVERSION DITCHES AND TEMPORARY SEDIMENT BASINS. SEE DETAIL SHEET C702 (PERMANENT CHANNEL) AND C702 (TEMPORARY DIVERSION DITCH) FOR TYPE OF MATTING TO USE.
13. ANY DEWATERING OF SEDIMENT CONTAINMENT DEVICES FOR MAINTENANCE, REMOVAL OR CONVERSION PURPOSES IS TO BE DONE THROUGH A SILT BAG.
14. ANY DEWATERING OF STORM/UTILITY TRENCHES IS TO BE DONE THROUGH A SILT BAG.
15. GROUND COVER IS TO BE APPLIED PER CONDITIONS OF THE NPDES PERMIT OR AT THE END OF THE DAY IN CRITICAL AREAS.
16. CONTRACTOR SHALL USE TIRE WASH STATION TO PREVENT SEDIMENT FROM TRACKING ONTO THE ROAD IF CONSTRUCTION ENTRANCE IS FOUND INSUFFICIENT AT NO ADDITIONAL COST TO OWNER.
17. CONTRACTOR SHALL UTILIZE PAM FLOCCULANTS TO REDUCE RUN-OFF TURBIDITY. SEE SPECS.

MAINTENANCE PLAN

1. DURING ALL PHASES OF CONSTRUCTION, GROUNDCOVER ON EXPOSED SLOPES SHALL BE PROVIDED ACCORDING TO GROUND STABILIZATION TABLE (**SHEET C706**) FOLLOWING COMPLETION OF ANY PHASE OF GRADING.
2. FINAL PERMANENT GROUNDCOVER FOR ALL DISTURBED AREAS SHALL BE PROVIDED ON ALL DISTURBED AREAS ACCORDING TO GROUND STABILIZATION TABLE (BELOW) FOLLOWING COMPLETION OF CONSTRUCTION OR DEVELOPMENT.
3. THE ABOVE REQUIREMENTS ARE THE MINIMUM NECESSARY TO MEET EROSION AND SEDIMENT CONTROL REGULATIONS. THE CONTRACT DOCUMENTS INCLUDE ADDITIONAL SEEDING AND STABILIZATION REQUIREMENTS AND SCHEDULES WHICH MAY EXCEED THOSE ABOVE.
4. SLOPE EROSION CONTROL MATTING SHALL BE INSTALLED FOR TEMPORARY STABILIZATION DURING THE ESTABLISHMENT OF VEGETATIVE COVER ON ALL STEEP SLOPES (6:1 OR STEEPER). REFER TO MATERIAL SPECIFICATIONS. INSTALL MATTING PER MANUFACTURER'S INSTRUCTIONS.
5. ALL OTHER SEEDED AREAS SHALL BE MULCHED WITH STRAW AND TACKED WITH ASPHALT.

SELF-INSPECTION RULES

SEE **SHEET C706** FOR SELF-INSPECTION REQUIREMENTS.

THE FINANCIALLY RESPONSIBLE PERSON AND/OR HIS AGENT WILL BE PERFORM SELF INSPECTIONS OF THE EROSION AND SEDIMENTATION CONTROL MEASURES USING NCDEMLR'S SELF INSPECTION REPORT (WORKSHEET) AND THIS WILL BE KEPT ONSITE.

SLOPE & SURFACE STABILIZATION

GROUND STABILIZATION SHALL BE PROVIDED ON ALL DISTURBED AREAS ACCORDING TO GROUND STABILIZATION NOTES. SEE SHEET C705.

EXTENSIONS OF TIME MAY BE APPROVED BY THE PERMITTING AUTHORITY BASED ON WEATHER OR OTHER SITE-SPECIFIC CONDITIONS THAT MAKE COMPLIANCE IMPRACTICABLE (SECTION II.B(2) (b))

THE REQUIREMENTS ON SHEET C705 ARE THE MINIMUM NECESSARY TO MEET EROSION AND SEDIMENT CONTROL REGULATIONS. THE CONTRACT DOCUMENTS INCLUDE ADDITIONAL SEEDING AND STABILIZATION REQUIREMENTS AND SCHEDULES WHICH MAY EXCEED MINIMUM REQUIREMENTS.

INSTALL TEMPORARY EXCELSIOR MATTING FOR STABILIZATION DURING THE ESTABLISHMENT OF VEGETATIVE COVER ON ALL STEEP SLOPES (6:1 OR STEEPER) AND AREAS OF CONCENTRATED FLOW (CHANNELS, DITCHES, SWALES, ETC.). UTILIZE TEMPORARY COCONUT MAT IN AREAS IDENTIFIED ON PLAN. REFER TO SPECIFICATION SECTION 312500 FOR MATERIAL SPECIFICATIONS. INSTALL MATTING PER MANUFACTURER'S INSTRUCTIONS.

NOTE:
EROSION & SEDIMENT CONTROL SHALL BE PERMITTED THROUGH NCDEQ.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

MAGNETIC

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineerng
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

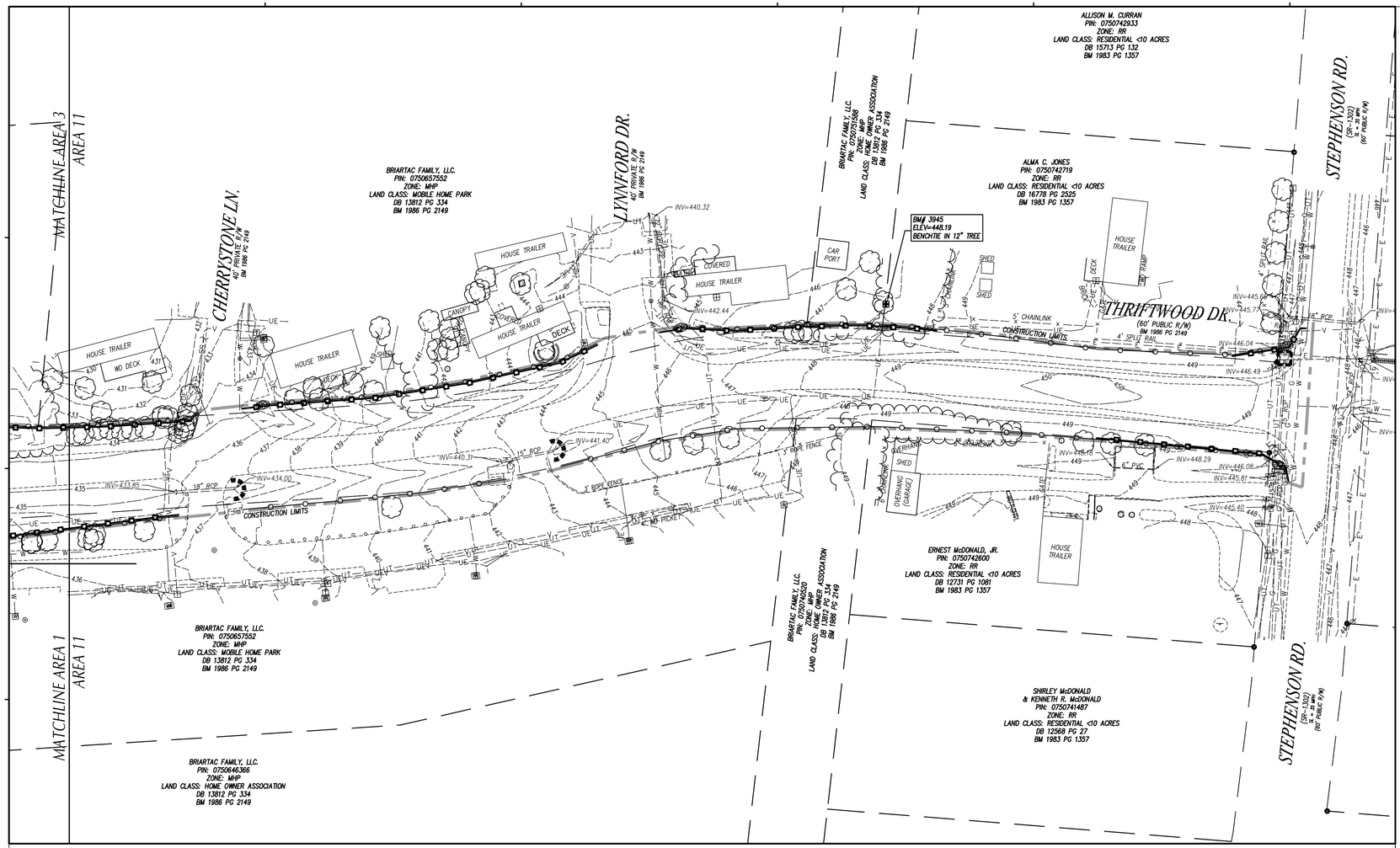
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT UNDER WHICH IT WAS PREPARED. NO OTHER USE, DISCLOSURE OR DUPLICATION OF IT SHALL BE MADE WITHOUT THE PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

SHEET TITLE
INITIAL EROSION CONTROL PLAN AREA_9&10

SHEET NUMBER
C-04.08



LEGEND

- TEMP. GRAVEL CONSTR. ENTRANCE SEE DETAIL SHEET __
- TEMP. INLET PROTECTION DEVICE SEE DETAIL SHEET __
- TEMP. INLET PROTECTION SILT BAG DEVICE SEE DETAIL SHEET __
- TEMP. DIVERSION DITCH / BERM SEE DETAIL SHEET __
- TEMP. SILT FENCE SEE DETAIL SHEET __
- TEMP. REINFORCED SILT FENCE OUTLET, SEE DETAIL SHEET __
- PERMANENT OUTLET PROTECTION SEE DETAIL SHEET __
- TEMP. CONCRETE WASHOUT AREA SEE DETAIL SHEET __
- TEMP. PLASTIC LINING, SEE TEMP. BASIN BAFFLES ON DETAIL SHEET __
- TEMP. J-HOOK PROTECTION SEE DETAIL SHEET __
- TEMP. TIMBER/BRIDGE MAT SEE DETAIL SHEET __
- TEMP. ROCK PIPE INLET PROTECTION SEE DETAIL SHEET __
- CHANNEL LINING SEE DETAIL SHEET __
- TEMP. SKIMMER SEDIMENT BASIN SEE DETAIL SHEET __
- EXISTING CONTOUR
- FINISHED CONTOUR
- TEMP. CONTOUR (TEMP. GRADES DURING CONSTR.)
- TEMPORARY BASIN BAFFLE SEE DETAIL SHEET __
- TREE PROTECTION FENCE SEE DETAIL SHEET __
- TEMP. COMPOST SOCK SEE DETAIL SHEET __
- TEMP. COMPOST SOCK IN CHANNEL SEE DETAIL SHEET __
- TEMP. SLOPE DRAIN SEE DETAIL SHEET __
- PROPOSED STORM SEWER PIPES
- EXISTING STORM SEWER PIPES
- CONSTRUCTION LIMITS UNLESS OTHERWISE NOTED.
- TEMP. COMPOST SOCK INLET PROTECTION, SEE DETAIL SHEET __
- TEMP. DEWATERING SILT BAG SEE DETAIL SHEET __
- RESOURCE CONSERVATION AREA
- TEMP. COFFER DAM, SEE STREAM CROSSING PLAN FOR INSTALLATION DETAIL SHEET __

GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH ALL TOWN OF APEX AND NCDOT STANDARDS, SPECIFICATIONS AND DETAILS.
2. THE CONTRACTOR SHALL COMPLY WITH ALL STATE AND LOCAL CODES IN OBSERVING EROSION CONTROL MEASURES BOTH ON AND OFF SITE. ALL OFF-SITE SOIL BORROW AND WASTE SITES SHALL BE PROPERLY PERMITTED FOR SUCH ACTIVITIES. CONTRACTOR SHALL PROVIDE WRITTEN DOCUMENTATION OF SEDIMENT & EROSION CONTROL PERMIT FOR ANY OFF-SITE SITES TO OWNER PRIOR TO RELOCATING ANY STOCKPILE MATERIALS.
3. THE CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL DEVICES AFTER EACH RAINFALL EVENT OR AS DIRECTED BY LOCAL AUTHORITIES OR ARCHITECT.
4. TOTAL DISTURBED AREA: 58 AC.
5. ALL OPEN STORM PIPES SHALL BE PROTECTED WITH STONE FILTER PROTECTION AFTER WORK STOPPAGE EACH DAY. SEE DETAIL **SHEET __**
6. ALL STORM DRAINAGE PIPES SHALL BE THOROUGHLY FLUSHED OF ALL SEDIMENT FOLLOWING SITE STABILIZATION. INTERIOR FLUSHING OF SYSTEM SHALL BE PERFORMED AS NEEDED TO MAINTAIN PROPER FUNCTIONING OF THE DRAINAGE SYSTEM. CLEANING SHALL BE PERFORMED IN A MANNER WHICH PREVENTS SEDIMENT FROM BEING FLUSHED THROUGH PIPES TO THE EXISTING DRAINAGE SYSTEM.
7. THE INDICATED STAGING AREA IS INTENDED FOR VEHICLES AND NON-ERODIBLE MATERIALS ONLY. NO SOIL, SAND OR OTHER ERODIBLE, FINE GRAINED MATERIAL SHALL BE STORED OUTSIDE OF THE LIMITS OF THE SITE PROTECTED BY SEDIMENT AND EROSION CONTROL DEVICES AND MEASURES.
8. SOIL AND OTHER MATERIALS SHALL ONLY BE TEMPORARILY STOCKPILED WITHIN THE CONSTRUCTION LIMITS PROTECTED BY SEDIMENT AND EROSION CONTROL DEVICES AND MEASURES. STOCKPILES SHALL BE STABILIZED AS REQUIRED AS INDICATED IN THE SLOPE & SURFACE STABILIZATION NOTES ON THIS PLAN.
9. THE TREE PROTECTION FENCE SHALL BE MAINTAINED ON THE SITE UNTIL ALL SITE WORK IS COMPLETED AND THE FINAL SITE INSPECTION IS SCHEDULED PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY (CO). THE FENCING SHALL BE REMOVED IMMEDIATELY PRIOR TO THE FINAL SITE INSPECTION FOR THE SITE.
10. TREE PROTECTION FENCING SHALL NOT BE MOVED AND THERE SHALL BE NO ENCROACHMENT INTO SUCH PROTECTED AREA(S) WITHOUT WRITTEN AUTHORIZATION OF THE COUNTY ZONING COMPLIANCE STAFF. ANY ACTIVITY (LANDSCAPING, FENCING, OR UTILITY INSTALLATION) SHOWN ON THE APPROVED PLANS IN A TREE PROTECTION AREA SHALL ALSO NOT OCCUR WITHOUT WRITTEN AUTHORIZATION FROM THE COUNTY ZONING COMPLIANCE STAFF. ANY UNAUTHORIZED ENCROACHMENT OR DISTURBANCE WITHIN THE BOUNDARIES OF A TREE PROTECTION AREA SHALL AUTOMATICALLY RESULT IN FINES AND THE REPLACEMENT OF ANY DAMAGED VEGETATION IN ACCORDANCE WITH THE LAND DEVELOPMENT ORDINANCE.
11. ROADSIDE DITCHES AND CHANNELS SHALL BE STABILIZED DAILY UNTIL PERMANENT GROUND COVER IS ESTABLISHED.
12. INSTALL TEMPORARY MATTING TO TOP OF ALL SIDE SLOPES ON CHANNELS, DIVERSION DITCHES AND TEMPORARY SEDIMENT BASINS. SEE DETAIL SHEET C702 (PERMANENT CHANNEL) AND C702 (TEMPORARY DIVERSION DITCH) FOR TYPE OF MATTING TO USE.
13. ANY DEWATERING OF SEDIMENT CONTAINMENT DEVICES FOR MAINTENANCE, REMOVAL OR CONVERSION PURPOSES IS TO BE DONE THROUGH A SILT BAG.
14. ANY DEWATERING OF STORM/UTILITY TRENCHES IS TO BE DONE THROUGH A SILT BAG.
15. GROUND COVER IS TO BE APPLIED PER CONDITIONS OF THE NPDES PERMIT OR AT THE END OF THE DAY IN CRITICAL AREAS.
16. CONTRACTOR SHALL USE TIRE WASH STATION TO PREVENT SEDIMENT FROM TRACKING ONTO THE ROAD IF CONSTRUCTION ENTRANCE IS FOUND INSUFFICIENT AT NO ADDITIONAL COST TO OWNER.
17. CONTRACTOR SHALL UTILIZE PAM FLOCCULANTS TO REDUCE RUN-OFF TURBIDITY. SEE SPECS.

MAINTENANCE PLAN

1. DURING ALL PHASES OF CONSTRUCTION, GROUNDCOVER ON EXPOSED SLOPES SHALL BE PROVIDED ACCORDING TO GROUND STABILIZATION TABLE (**SHEET C706**) FOLLOWING COMPLETION OF ANY PHASE OF GRADING.
2. FINAL PERMANENT GROUNDCOVER FOR ALL DISTURBED AREAS SHALL BE PROVIDED ON ALL DISTURBED AREAS ACCORDING TO GROUND STABILIZATION TABLE (BELOW) FOLLOWING COMPLETION OF CONSTRUCTION OR DEVELOPMENT.
3. THE ABOVE REQUIREMENTS ARE THE MINIMUM NECESSARY TO MEET EROSION AND SEDIMENT CONTROL REGULATIONS. THE CONTRACT DOCUMENTS INCLUDE ADDITIONAL SEEDING AND STABILIZATION REQUIREMENTS AND SCHEDULES WHICH MAY EXCEED THOSE ABOVE.
4. SLOPE EROSION CONTROL MATTING SHALL BE INSTALLED FOR TEMPORARY STABILIZATION DURING THE ESTABLISHMENT OF VEGETATIVE COVER ON ALL STEEP SLOPES (6:1 OR STEEPER). REFER TO MATERIAL SPECIFICATIONS. INSTALL MATTING PER MANUFACTURER'S INSTRUCTIONS.
5. ALL OTHER SEEDED AREAS SHALL BE MULCHED WITH STRAW AND TACKED WITH ASPHALT.

SELF-INSPECTION RULES

SEE **SHEET C706** FOR SELF-INSPECTION REQUIREMENTS.

THE FINANCIALLY RESPONSIBLE PERSON AND/OR HIS AGENT WILL BE PERFORM SELF INSPECTIONS OF THE EROSION AND SEDIMENTATION CONTROL MEASURES USING NCDEMLR'S SELF INSPECTION REPORT (WORKSHEET) AND THIS WILL BE KEPT ONSITE.

SLOPE & SURFACE STABILIZATION

GROUND STABILIZATION SHALL BE PROVIDED ON ALL DISTURBED AREAS ACCORDING TO GROUND STABILIZATION NOTES. SEE SHEET C705.

EXTENSIONS OF TIME MAY BE APPROVED BY THE PERMITTING AUTHORITY BASED ON WEATHER OR OTHER SITE-SPECIFIC CONDITIONS THAT MAKE COMPLIANCE IMPRACTICABLE (SECTION II.B(2) (b))

THE REQUIREMENTS ON SHEET C705 ARE THE MINIMUM NECESSARY TO MEET EROSION AND SEDIMENT CONTROL REGULATIONS. THE CONTRACT DOCUMENTS INCLUDE ADDITIONAL SEEDING AND STABILIZATION REQUIREMENTS AND SCHEDULES WHICH MAY EXCEED MINIMUM REQUIREMENTS.

INSTALL TEMPORARY EXCELSIOR MATTING FOR STABILIZATION DURING THE ESTABLISHMENT OF VEGETATIVE COVER ON ALL STEEP SLOPES (6:1 OR STEEPER) AND AREAS OF CONCENTRATED FLOW (CHANNELS, DITCHES, SWALES, ETC.). UTILIZE TEMPORARY COCONUT MAT IN AREAS IDENTIFIED ON PLAN. REFER TO SPECIFICATION SECTION 312500 FOR MATERIAL SPECIFICATIONS. INSTALL MATTING PER MANUFACTURER'S INSTRUCTIONS.

NOTE:
EROSION & SEDIMENT CONTROL SHALL BE PERMITTED THROUGH NCDEQ.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

MAGNETIC

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

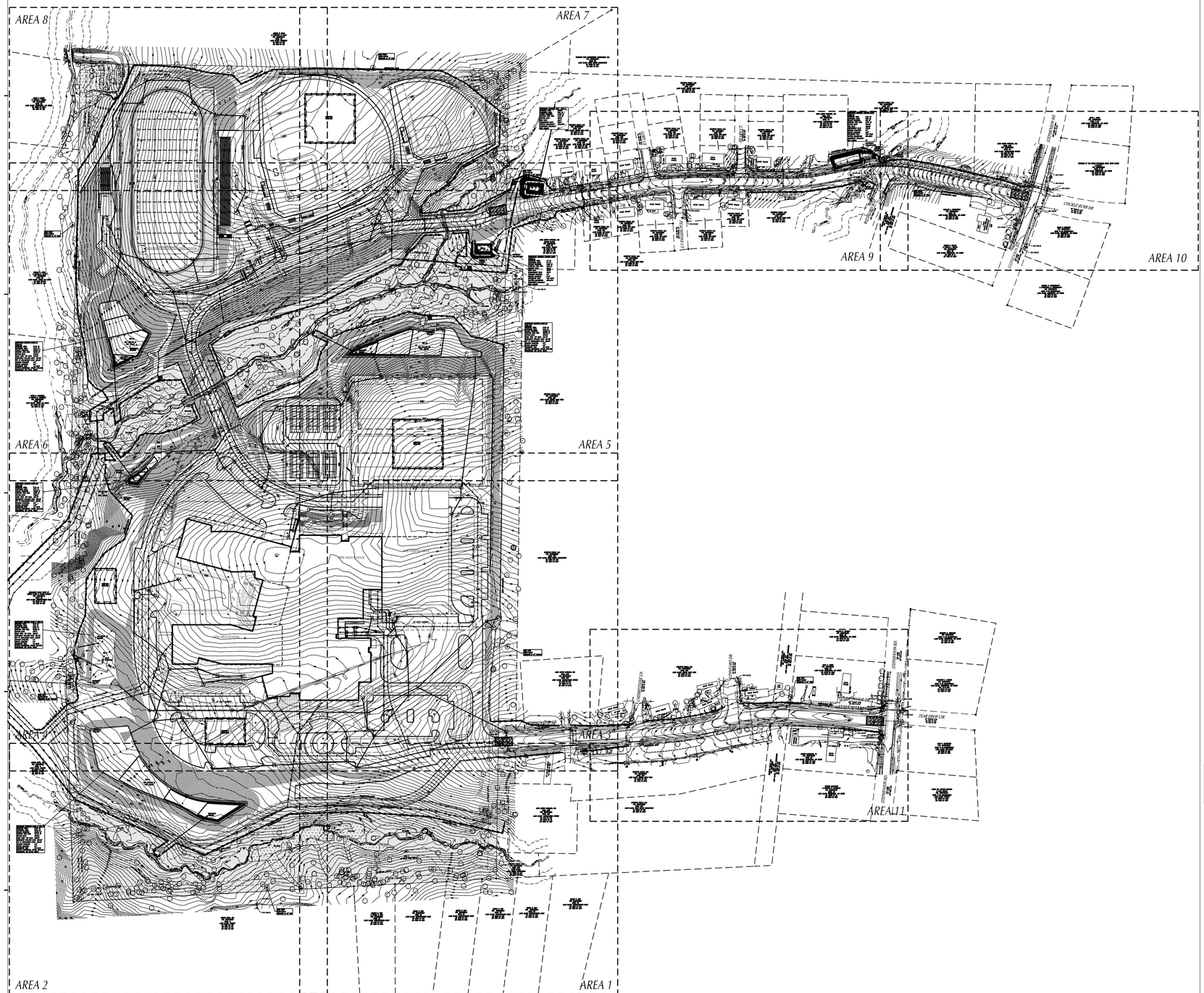
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

SHEET TITLE
INITIAL EROSION CONTROL PLAN AREA_11

SHEET NUMBER
C-04.09



TOWN OF APEX CONSTRUCTION SEQUENCE

THE FOLLOWING BEGINS ONLY AFTER CONSTRUCTION PLANS ARE APPROVED, SIGNED BY TOWN STAFF AND COPIES ARE RECEIVED.

1. THROUGH THE INFRASTRUCTURE INSPECTIONS MANAGER AT 919-249-3386, SCHEDULE A PRE-CONSTRUCTION MEETING WITH INSPECTORS AND OTHER TOWN STAFF.
2. FILL OUT TREE/PROTECTION FENCING INSTALLATION PERMIT APPLICATION (OBTAIN FROM PLANNING DEPARTMENT).
3. HAVE A SURVEYOR FLAG PROPERTY LINES, EASEMENTS, BUFFERS, TREE PROTECTION AREAS, AND FLAG THE PROTECTION LIMITS.
4. CONTACT AN APEX PLANNING DEPARTMENT ZONING COMPLIANCE OFFICER AT 919-249-3426 TO REQUEST APPROVAL FOR TREE PROTECTION FENCING LOCATIONS.
5. INSTALL APPROVED TREE PROTECTION FENCING, SIGNS, AND/OR ANY OTHER PROTECTION MEASURES THAT MAY BE REQUIRED. CALL PLANNING AT 249-3426 FRO A FINAL INSPECTION OF PROTECTION MEASURES. PLANNING WILL FORWARD APPROVAL TO WATER RESOURCES, EROSION CONTROL FIELD STAFF.
6. PROVIDE STATE ISSUED EROSION CONTROL APPROVAL LETTER AND CERTIFICATE OF COMPLIANCE.
7. INSTALL GRAVEL CONSTRUCTION ENTRANCE, TEMPORARY DIVERSIONS, SILT FENCING, SEDIMENT BASINS, BYPASS CHANNELS, AND/OR OTHER MEASURES AS SHOWN ON THE APPROVED PLANS. CLEAR ONLY AS NECESSARY TO INSTALL THESE DEVICES.
8. WHEN COMPLETED, CALL WATER RESOURCES STAFF AT 919-362-8166 FOR AN ON-SITE INSPECTION AND TO REQUEST A CERTIFICATE OF COMPLIANCE.
9. COMPLETE A GRADING PERMIT APPLICATION, IF REQUIRED, FROM THE BUILDING INSPECTIONS & PERMITTING DEPARTMENT.
10. ONCE A GRADING PERMIT IS REVIEWED AND ISSUED BY THE BUILDING INSPECTIONS & PERMITTING DEPARTMENT, ARRANGE A PRE-CONSTRUCTION MEETING WITH TIM SAWYER AT 919-904-8744 OR BRANDON BECK AT 919-208-0362 PRIOR TO ANY GRADING ACTIVITIES. THIS MEETING IS SEPARATE FROM ANY OTHER PRE-CONSTRUCTION MEETINGS REQUIRED IN THE CONSTRUCTION SEQUENCE.
11. POST GRADING PERMIT PROMINENTLY ON SITE AT ALL TIMES.
12. BEGIN CLEARING, GRUBBING, AND ROUGH GRADE OF THE SITE IN ACCORDANCE WITH THE APPROVED GRADING PLAN.
13. STOCKPILE A SUFFICIENT AMOUNT OF TOPSOIL TO COVER 3 INCHES OVER LANDSCAPED AREAS AT THE END OF THE PROJECT.
14. INSTALL STORM SEWER, IF APPLICABLE, AND PROTECT INLETS WITH INLET PROTECTION DEVICES, SEDIMENT DEVICES, AND/OR OTHER APPROVED MEASURES AS SHOWN ON PLANS. MAINTAIN S&E MEASURES AS NEEDED.
15. AFTER COMPLETION OF ANY PHASE OF GRADING OR WHEN LAND-DISTURBING ACTIVITIES HAVE TEMPORARILY CEASED, ESTABLISH GROUND COVER ON SWALES AND DITCHES AND GRADED SLOPES STEEPER THAN 3:1 WITHIN 7 CALENDAR DAYS.
16. STABILIZE SITE AS AREAS ARE BROUGHT UP TO FINISHED GRADE WITH VEGETATION OR PAVING.
17. PRIOR TO PLAT APPROVAL, ALL DISTURBED AREAS BOTH PUBLIC AND PRIVATE, MUST BE PROPERLY STABILIZED. ALL TEMPORARY EROSION CONTROL MEASURES MUST BE INSTALLED, BE FUNCTIONING PROPERLY AND BE MAINTAINED FOR THE ENTIRE AREA CONTAINED WITHIN THE PLAT.
18. FLUSH AND CLEAN ALL STORMWATER SYSTEM PIPES. CLEAN AND REMOVE SEDIMENT FROM TEMPORARY SEDIMENT HOLDING DEVICES. FOLLOW THE SCM CONSTRUCTION SEQUENCE FOUND ON THE GRADING AND/OR SCM DETAIL SHEET ON THE CONSTRUCTION PLAN SET.
19. REMOVE ALL TEMPORARY DIVERSIONS, SILT FENCING, SEDIMENT BASINS, ETC. AND PROVIDE ADEQUATE COVER OR PAVE ANY RESULTING BARE AREAS. ALL PERMANENT EROSION CONTROL DEVICES SHOULD BE INSTALLED AT THIS POINT.
20. WHEN VEGETATION HAS BEEN ESTABLISHED, CALL WATER RESOURCES STAFF AT 919-362-8166 FOR A FINAL SITE INSPECTION AND TO REQUEST A CERTIFICATE OF COMPLETION. THE S&E PERFORMANCE GUARANTEE WILL BE RELEASED WITH THE ISSUANCE OF THE CERTIFICATE OF COMPLETION. VISIT THE STATE WEBSITE LISTED ABOVE AND SUBMIT ELECTRONIC NOTICE OF TERMINATION (e-NOT) TO END COVERAGE UNDER THE NCG01 PERMIT.
21. THE PROPERTY OWNER/HOME OWNERS ASSOCIATION WILL BE RESPONSIBLE FOR PERMANENT EROSION CONTROL MAINTENANCE OF THE SITE.

STRUCTURAL BMP CONSTRUCTION SEQUENCE

THE FOLLOWING MUST OCCUR PRIOR TO FINAL PLAT AND/OR CERTIFICATE OF OCCUPANCY (CO):

1. ALL STORMWATER CONTROL MEASURES (SCMS) MUST BE INSTALLED IN ACCORDANCE WITH THE APPROVED CONSTRUCTION DRAWINGS.
2. DURING THE SCM CONVERSION PROCESS, ALL EFFORTS SHALL BE MADE TO PROTECT DOWNSTREAM WATER RESOURCES. THE DRAIN VALVE SHALL NOT BE LEFT OPEN AT ANY TIME DURING SCM CONVERSION. A SKIMMER DRAWDOWN SYSTEM SHALL BE INSTALLED AND UTILIZED UNTIL THE SCM IS FULLY CONVERTED.
3. THE DESIGN ENGINEER MUST SUBMIT AN AS-BUILT PACKAGE WHICH MEETS ALL REQUIREMENTS PRESENTED IN THE TOWN SPEC BOOK INCLUDING A SIGNED AND SEALED CERTIFICATION STATEMENT.
4. FOR SUBDIVISIONS ONLY, A 25% MAINTENANCE GUARANTEE IS REQUIRED TO BE SUBMITTED TO JEAN WEATHERMAN IN DEVELOPMENT SERVICES AT 919-249-3394.
5. THE APPROPRIATE EXECUTED SCM O&M AGREEMENT MUST BE eRECORDED THROUGH JEAN WEATHERMAN IN DEVELOPMENT SERVICES.
6. A FINAL INSPECTION BY THE STORMWATER & UTILITY ENGINEERING STAFF SHALL BE CONDUCTED ONCE THE AS-BUILT SUBMITTAL HAS BEEN RECEIVED. ONCE APPROVED, STAFF WILL SEND AN OFFICIAL SCM APPROVAL LETTER TO THE OWNER.
7. IN LIEU OF SCM COMPLETION AND FINAL APPROVAL BY STAFF, THE TOWN MAY ACCEPT A 125% PERFORMANCE GUARANTEE IN ACCORDANCE WITH UDO SECTION 6.1.12(G). THIS GUARANTEE WILL BE COLLECTED BY JEAN WEATHERMAN IN DEVELOPMENT SERVICES AT 919-249-3394.
8. ALL SCMS ARE REQUIRED TO BE COMPLETED PRIOR TO A FINAL CO FOR A SITE PLAN AND ISSUANCE OF 90% OF COS WITHIN A SUBDIVISION. IF THE SUBDIVISION IS TO BE PHASED, ALL SCMS SHALL BE COMPLETED PRIOR TO ISSUANCE OF 90% OF COS WITHIN THAT PHASE.
9. IF AN SCM COUNTS TOWARDS RCA, THE REQUIRED LANDSCAPING SHALL BE INSTALLED DURING THE APPROPRIATE GROWING SEASON AND COORDINATED WITH THE TOWN ZONING COMPLIANCE OFFICER AT (919) 249-3426.

NOTE:
EROSION & SEDIMENT CONTROL SHALL BE PERMITTED THROUGH NCDEQ.

LEGEND

RESOURCE CONSERVATION AREA

GRAPHIC SCALE

150 0 75 150 300 600

(IN FEET)
1 inch = 150 ft.

MAGNETIC

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Ralelgh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

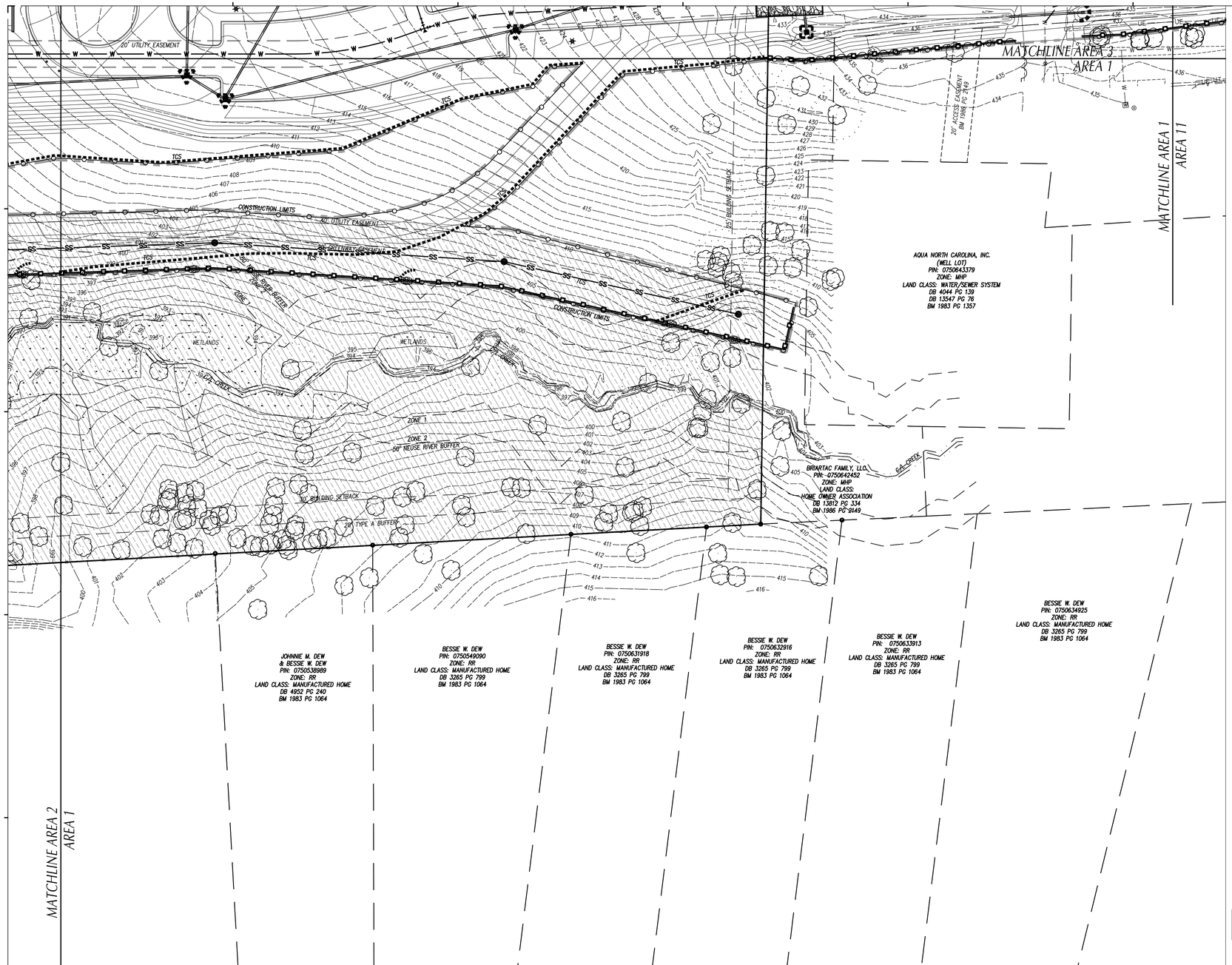
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

SHEET TITLE
FINAL EROSION CONTROL OVERALL PLAN

SHEET NUMBER
C-04.10



LEGEND

- TEMP. GRAVEL CONSTR. ENTRANCE SEE DETAIL SHEET ___
- TEMP. INLET PROTECTION DEVICE SEE DETAIL SHEET ___
- TEMP. INLET PROTECTION SILT BAG DEVICE SEE DETAIL SHEET ___
- TEMP. DIVERSION DITCH / BERM SEE DETAIL SHEET ___
- TEMP. SILT FENCE SEE DETAIL SHEET ___
- TEMP. REINFORCED SILT FENCE OUTLET, SEE DETAIL SHEET ___
- PERMANENT OUTLET PROTECTION SEE DETAIL SHEET ___
- TEMP. CONCRETE WASHOUT AREA SEE DETAIL SHEET ___
- TEMP. PLASTIC LINING, SEE TEMP. BASIN BAFFLES ON DETAIL SHEET ___
- TEMP. J-HOOK PROTECTION SEE DETAIL SHEET ___
- TEMP. TIMBER/BRIDGE MAT SEE DETAIL SHEET ___
- TEMP. ROCK PIPE INLET PROTECTION SEE DETAIL SHEET ___
- CHANNEL LINING SEE DETAIL SHEET ___
- TEMP. SKIMMER SEDIMENT BASIN SEE DETAIL SHEET ___
- EXISTING CONTOUR
- FINISHED CONTOUR
- TEMP. CONTOUR (TEMP. GRADES DURING CONSTR.)
- TEMPORARY BASIN BAFFLE SEE DETAIL SHEET ___
- TREE PROTECTION FENCE SEE DETAIL SHEET ___
- TEMP. COMPOST SOCK SEE DETAIL SHEET ___
- TEMP. COMPOST SOCK IN CHANNEL SEE DETAIL SHEET ___
- TEMP. SLOPE DRAIN SEE DETAIL SHEET ___
- PROPOSED STORM SEWER PIPES
- EXISTING STORM SEWER PIPES
- CONSTRUCTION LIMITS UNLESS OTHERWISE NOTED.
- TEMP. COMPOST SOCK INLET PROTECTION, SEE DETAIL SHEET ___
- TEMP. DEWATERING SILT BAG SEE DETAIL SHEET ___
- RESOURCE CONSERVATION AREA
- TEMP. COFFER DAM, SEE STREAM CROSSING/CULVERT INSTALLATION DETAIL SHEET ___

GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH ALL TOWN OF APEX AND NCDOT STANDARDS, SPECIFICATIONS AND DETAILS.
2. THE CONTRACTOR SHALL COMPLY WITH ALL STATE AND LOCAL CODES IN OBSERVING EROSION CONTROL MEASURES BOTH ON AND OFF SITE. ALL OFF-SITE SOIL BORROW AND WASTE SITES SHALL BE PROPERLY PERMITTED FOR SUCH ACTIVITIES. CONTRACTOR SHALL PROVIDE WRITTEN DOCUMENTATION OF SEDIMENT & EROSION CONTROL PERMIT FOR ANY OFF-SITE SITES TO OWNER PRIOR TO RELOCATING ANY STOCKPILE MATERIALS.
3. THE CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL DEVICES AFTER EACH RAINFALL EVENT OR AS DIRECTED BY LOCAL AUTHORITIES OR ARCHITECT.
4. TOTAL DISTURBED AREA: 58 AC.
5. ALL OPEN STORM PIPES SHALL BE PROTECTED WITH STONE FILTER PROTECTION AFTER WORK STOPPAGE EACH DAY. SEE DETAIL **SHEET** ___
6. ALL STORM DRAINAGE PIPES SHALL BE THOROUGHLY FLUSHED OF ALL SEDIMENT FOLLOWING SITE STABILIZATION. INTERIOR FLUSHING OF SYSTEM SHALL BE PERFORMED AS NEEDED TO MAINTAIN PROPER FUNCTIONING OF THE DRAINAGE SYSTEM. CLEANING SHALL BE PERFORMED IN A MANNER WHICH PREVENTS SEDIMENT FROM BEING FLUSHED THROUGH PIPES TO THE EXISTING DRAINAGE SYSTEM.
7. THE INDICATED STAGING AREA IS INTENDED FOR VEHICLES AND NON-ERODIBLE MATERIALS ONLY. NO SOIL, SAND OR OTHER ERODIBLE, FINE GRAINED MATERIAL SHALL BE STORED OUTSIDE OF THE LIMITS OF THE SITE PROTECTED BY SEDIMENT AND EROSION CONTROL DEVICES AND MEASURES.
8. SOIL AND OTHER MATERIALS SHALL ONLY BE TEMPORARILY STOCKPILED WITHIN THE CONSTRUCTION LIMITS PROTECTED BY SEDIMENT AND EROSION CONTROL DEVICES AND MEASURES. STOCKPILES SHALL BE STABILIZED AS REQUIRED AS INDICATED IN THE SLOPE & SURFACE STABILIZATION NOTES ON THIS PLAN.
9. THE TREE PROTECTION FENCE SHALL BE MAINTAINED ON THE SITE UNTIL ALL SITE WORK IS COMPLETED AND THE FINAL SITE INSPECTION IS SCHEDULED PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY (CO). THE FENCING SHALL BE REMOVED IMMEDIATELY PRIOR TO THE FINAL SITE INSPECTION FOR THE SITE.
10. TREE PROTECTION FENCING SHALL NOT BE MOVED AND THERE SHALL BE NO ENCROACHMENT INTO SUCH PROTECTED AREA(S) WITHOUT WRITTEN AUTHORIZATION OF THE COUNTY ZONING COMPLIANCE STAFF. ANY ACTIVITY (LANDSCAPING, FENCING, OR UTILITY INSTALLATION) SHOWN ON THE APPROVED PLANS IN A TREE PROTECTION AREA, SHALL ALSO NOT OCCUR WITHOUT WRITTEN AUTHORIZATION FROM THE COUNTY ZONING COMPLIANCE STAFF. ANY UNAUTHORIZED ENCROACHMENT OR DISTURBANCE WITHIN THE BOUNDARIES OF A TREE PROTECTION AREA SHALL AUTOMATICALLY RESULT IN FINES AND THE REPLACEMENT OF ANY DAMAGED VEGETATION IN ACCORDANCE WITH THE LAND DEVELOPMENT ORDINANCE.
11. ROADSIDE DITCHES AND CHANNELS SHALL BE STABILIZED DAILY UNTIL PERMANENT GROUND COVER IS ESTABLISHED.
12. INSTALL TEMPORARY MATTING TO TOP OF ALL SIDE SLOPES ON CHANNELS, DIVERSION DITCHES AND TEMPORARY SEDIMENT BASINS. SEE DETAIL SHEET C702 (PERMANENT CHANNEL) AND C702 (TEMPORARY DIVERSION DITCH) FOR TYPE OF MATTING TO USE.
13. ANY DEWATERING OF SEDIMENT CONTAINMENT DEVICES FOR MAINTENANCE, REMOVAL OR CONVERSION PURPOSES IS TO BE DONE THROUGH A SILT BAG.
14. ANY DEWATERING OF STORM/UTILITY TRENCHES IS TO BE DONE THROUGH A SILT BAG.
15. GROUND COVER IS TO BE APPLIED PER CONDITIONS OF THE NPDES PERMIT OR AT THE END OF THE DAY IN CRITICAL AREAS.
16. CONTRACTOR SHALL USE TIRE WASH STATION TO PREVENT SEDIMENT FROM TRACKING ONTO THE ROAD IF CONSTRUCTION ENTRANCE IS FOUND INSUFFICIENT AT NO ADDITIONAL COST TO OWNER.
17. CONTRACTOR SHALL UTILIZE PAM FLOCCULANTS TO REDUCE RUN-OFF TURBIDITY. SEE SPECS.

MAINTENANCE PLAN

1. DURING ALL PHASES OF CONSTRUCTION, GROUNDCOVER ON EXPOSED SLOPES SHALL BE PROVIDED ACCORDING TO GROUND STABILIZATION TABLE **(SHEET C706)** FOLLOWING COMPLETION OF ANY PHASE OF GRADING.
2. FINAL PERMANENT GROUNDCOVER FOR ALL DISTURBED AREAS SHALL BE PROVIDED ON ALL DISTURBED AREAS ACCORDING TO GROUND STABILIZATION TABLE (BELOW) FOLLOWING COMPLETION OF CONSTRUCTION OR DEVELOPMENT.
3. THE ABOVE REQUIREMENTS ARE THE MINIMUM NECESSARY TO MEET EROSION AND SEDIMENT CONTROL REGULATIONS. THE CONTRACT DOCUMENTS INCLUDE ADDITIONAL SEEDING AND STABILIZATION REQUIREMENTS AND SCHEDULES WHICH MAY EXCEED THOSE ABOVE.
4. SLOPE EROSION CONTROL MATTING SHALL BE INSTALLED FOR TEMPORARY STABILIZATION DURING THE ESTABLISHMENT OF VEGETATIVE COVER ON ALL STEEP SLOPES (6:1 OR STEEPER). REFER TO MATERIAL SPECIFICATIONS. INSTALL MATTING PER MANUFACTURER'S INSTRUCTIONS.
5. ALL OTHER SEEDED AREAS SHALL BE MULCHED WITH STRAW AND TACKED WITH ASPHALT.

SELF-INSPECTION RULES

SEE **SHEET C706** FOR SELF-INSPECTION REQUIREMENTS.

THE FINANCIALLY RESPONSIBLE PERSON AND/OR HIS AGENT WILL BE PERFORM SELF INSPECTIONS OF THE EROSION AND SEDIMENTATION CONTROL MEASURES USING NCDEMLR'S SELF INSPECTION REPORT (WORKSHEET) AND THIS WILL BE KEPT ONSITE.

SLOPE & SURFACE STABILIZATION

GROUND STABILIZATION SHALL BE PROVIDED ON ALL DISTURBED AREAS ACCORDING TO GROUND STABILIZATION NOTES. SEE SHEET C705.

EXTENSIONS OF TIME MAY BE APPROVED BY THE PERMITTING AUTHORITY BASED ON WEATHER OR OTHER SITE-SPECIFIC CONDITIONS THAT MAKE COMPLIANCE IMPRACTICABLE (SECTION II.B(2) (b))

THE REQUIREMENTS ON SHEET C705 ARE THE MINIMUM NECESSARY TO MEET EROSION AND SEDIMENT CONTROL REGULATIONS. THE CONTRACT DOCUMENTS INCLUDE ADDITIONAL SEEDING AND STABILIZATION REQUIREMENTS AND SCHEDULES WHICH MAY EXCEED MINIMUM REQUIREMENTS.

INSTALL TEMPORARY EXCELSIOR MATTING FOR STABILIZATION DURING THE ESTABLISHMENT OF VEGETATIVE COVER ON ALL STEEP SLOPES (6:1 OR STEEPER) AND AREAS OF CONCENTRATED FLOW (CHANNELS, DITCHES, SWALES, ETC.). UTILIZE TEMPORARY COCONUT MAT IN AREAS IDENTIFIED ON PLAN. REFER TO SPECIFICATION SECTION 312500 FOR MATERIAL SPECIFICATIONS. INSTALL MATTING PER MANUFACTURER'S INSTRUCTIONS.

NOTE:
EROSION & SEDIMENT CONTROL SHALL BE PERMITTED THROUGH NCDEQ.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

MAGNETIC

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineerlng
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

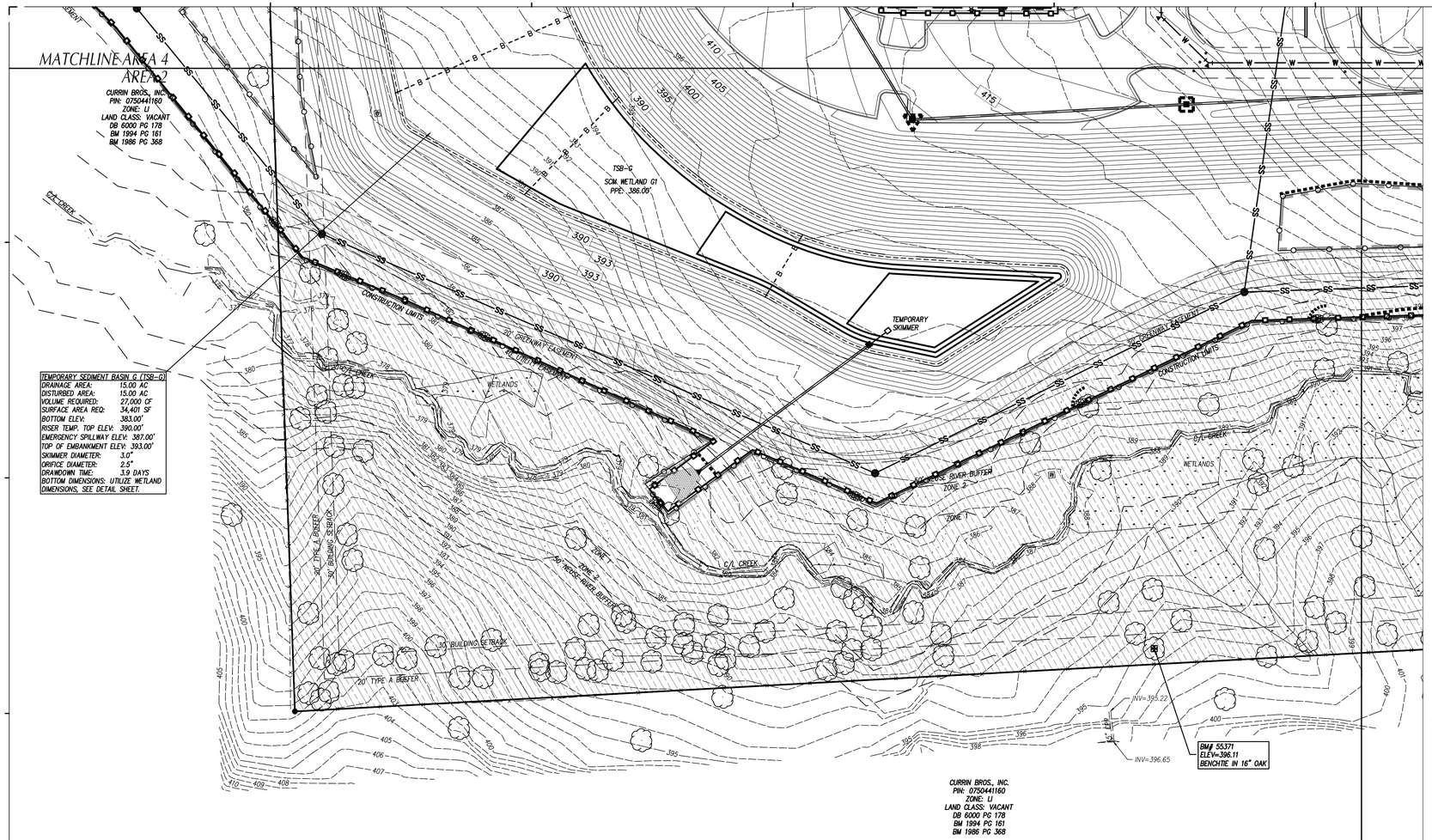
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

SHEET TITLE
FINAL EROSION CONTROL PLAN AREA_1

SHEET NUMBER
C-04.11



LEGEND

- TEMP. GRAVEL CONSTR. ENTRANCE SEE DETAIL SHEET ___
- TEMP. INLET PROTECTION DEVICE SEE DETAIL SHEET ___
- TEMP. INLET PROTECTION SILT BAG DEVICE SEE DETAIL SHEET ___
- TEMP. DIVERSION DITCH / BERM SEE DETAIL SHEET ___
- TEMP. SILT FENCE SEE DETAIL SHEET ___
- TEMP. REINFORCED SILT FENCE OUTLET, SEE DETAIL SHEET ___
- PERMANENT OUTLET PROTECTION SEE DETAIL SHEET ___
- TEMP. CONCRETE WASHOUT AREA SEE DETAIL SHEET ___
- TEMP. PLASTIC LINING, SEE TEMP. BASIN BAFFLES ON DETAIL SHEET ___
- TEMP. J-HOOK PROTECTION SEE DETAIL SHEET ___
- TEMP. TIMBER/BRIDGE MAT SEE DETAIL SHEET ___
- TEMP. ROCK PIPE INLET PROTECTION SEE DETAIL SHEET ___
- CHANNEL LINING SEE DETAIL SHEET ___
- TEMP. SKIMMER SEDIMENT BASIN SEE DETAIL SHEET ___
- EXISTING CONTOUR
- FINISHED CONTOUR
- TEMP. CONTOUR (TEMP. GRADES DURING CONSTR.)
- TEMPORARY BASIN BAFFLE SEE DETAIL SHEET ___
- TREE PROTECTION FENCE SEE DETAIL SHEET ___
- TEMP. COMPOST SOCK SEE DETAIL SHEET ___
- TEMP. COMPOST SOCK IN CHANNEL SEE DETAIL SHEET ___
- TEMP. SLOPE DRAIN SEE DETAIL SHEET ___
- PROPOSED STORM SEWER PIPES
- EXISTING STORM SEWER PIPES
- CONSTRUCTION LIMITS UNLESS OTHERWISE NOTED.
- TEMP. COMPOST SOCK INLET PROTECTION, SEE DETAIL SHEET ___
- TEMP. DEWATERING SILT BAG SEE DETAIL SHEET ___
- RESOURCE CONSERVATION AREA
- TEMP. COFFER DAM, SEE STREAM CROSSING/CULVERT INSTALLATION DETAIL SHEET ___

GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH ALL TOWN OF APEX AND NCDOT STANDARDS, SPECIFICATIONS AND DETAILS.
2. THE CONTRACTOR SHALL COMPLY WITH ALL STATE AND LOCAL CODES IN OBSERVING EROSION CONTROL MEASURES BOTH ON AND OFF SITE. ALL OFF-SITE SOIL BORROW AND WASTE SITES SHALL BE PROPERLY PERMITTED FOR SUCH ACTIVITIES. CONTRACTOR SHALL PROVIDE WRITTEN DOCUMENTATION OF SEDIMENT & EROSION CONTROL PERMIT FOR ANY OFF-SITE SITES TO OWNER PRIOR TO RELOCATING ANY STOCKPILE MATERIALS.
3. THE CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL DEVICES AFTER EACH RAINFALL EVENT OR AS DIRECTED BY LOCAL AUTHORITIES OR ARCHITECT.
4. TOTAL DISTURBED AREA: 58 AC.
5. ALL OPEN STORM PIPES SHALL BE PROTECTED WITH STONE FILTER PROTECTION AFTER WORK STOPPAGE EACH DAY. SEE DETAIL **SHEET** ___
6. ALL STORM DRAINAGE PIPES SHALL BE THOROUGHLY FLUSHED OF ALL SEDIMENT FOLLOWING SITE STABILIZATION. INTERIOR FLUSHING OF SYSTEM SHALL BE PERFORMED AS NEEDED TO MAINTAIN PROPER FUNCTIONING OF THE DRAINAGE SYSTEM. CLEANING SHALL BE PERFORMED IN A MANNER WHICH PREVENTS SEDIMENT FROM BEING FLUSHED THROUGH PIPES TO THE EXISTING DRAINAGE SYSTEM.
7. THE INDICATED STAGING AREA IS INTENDED FOR VEHICLES AND NON-ERODIBLE MATERIALS ONLY. NO SOIL, SAND OR OTHER ERODIBLE, FINE GRAINED MATERIAL SHALL BE STORED OUTSIDE OF THE LIMITS OF THE SITE PROTECTED BY SEDIMENT AND EROSION CONTROL DEVICES AND MEASURES.
8. SOIL AND OTHER MATERIALS SHALL ONLY BE TEMPORARILY STOCKPILED WITHIN THE CONSTRUCTION LIMITS PROTECTED BY SEDIMENT AND EROSION CONTROL DEVICES AND MEASURES. STOCKPILES SHALL BE STABILIZED AS REQUIRED AS INDICATED IN THE SLOPE & SURFACE STABILIZATION NOTES ON THIS PLAN.
9. THE TREE PROTECTION FENCE SHALL BE MAINTAINED ON THE SITE UNTIL ALL SITE WORK IS COMPLETED AND THE FINAL SITE INSPECTION IS SCHEDULED PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY (CO). THE FENCING SHALL BE REMOVED IMMEDIATELY PRIOR TO THE FINAL SITE INSPECTION FOR THE SITE.
10. TREE PROTECTION FENCING SHALL NOT BE MOVED AND THERE SHALL BE NO ENCROACHMENT INTO SUCH PROTECTED AREA(S) WITHOUT WRITTEN AUTHORIZATION OF THE COUNTY ZONING COMPLIANCE STAFF. ANY ACTIVITY (LANDSCAPING, FENCING, OR UTILITY INSTALLATION) SHOWN ON THE APPROVED PLANS IN A TREE PROTECTION AREA SHALL ALSO NOT OCCUR WITHOUT WRITTEN AUTHORIZATION FROM THE COUNTY ZONING COMPLIANCE STAFF. ANY UNAUTHORIZED ENCROACHMENT OR DISTURBANCE WITHIN THE BOUNDARIES OF A TREE PROTECTION AREA SHALL AUTOMATICALLY RESULT IN FINES AND THE REPLACEMENT OF ANY DAMAGED VEGETATION IN ACCORDANCE WITH THE LAND DEVELOPMENT ORDINANCE.
11. ROADSIDE DITCHES AND CHANNELS SHALL BE STABILIZED DAILY UNTIL PERMANENT GROUND COVER IS ESTABLISHED.
12. INSTALL TEMPORARY MATTING TO TOP OF ALL SIDE SLOPES ON CHANNELS, DIVERSION DITCHES AND TEMPORARY SEDIMENT BASINS. SEE DETAIL SHEET C702 (PERMANENT CHANNEL) AND C702 (TEMPORARY DIVERSION DITCH) FOR TYPE OF MATTING TO USE.
13. ANY DEWATERING OF SEDIMENT CONTAINMENT DEVICES FOR MAINTENANCE, REMOVAL OR CONVERSION PURPOSES IS TO BE DONE THROUGH A SILT BAG.
14. ANY DEWATERING OF STORM/UTILITY TRENCHES IS TO BE DONE THROUGH A SILT BAG.
15. GROUND COVER IS TO BE APPLIED PER CONDITIONS OF THE NPDES PERMIT OR AT THE END OF THE DAY IN CRITICAL AREAS.
16. CONTRACTOR SHALL USE TIRE WASH STATION TO PREVENT SEDIMENT FROM TRACKING ONTO THE ROAD IF CONSTRUCTION ENTRANCE IS FOUND INSUFFICIENT AT NO ADDITIONAL COST TO OWNER.
17. CONTRACTOR SHALL UTILIZE PAM FLOCCULANTS TO REDUCE RUN-OFF TURBIDITY. SEE SPECS.

MAINTENANCE PLAN

1. DURING ALL PHASES OF CONSTRUCTION, GROUNDCOVER ON EXPOSED SLOPES SHALL BE PROVIDED ACCORDING TO GROUND STABILIZATION TABLE (**SHEET C706**) FOLLOWING COMPLETION OF ANY PHASE OF GRADING.
2. FINAL PERMANENT GROUNDCOVER FOR ALL DISTURBED AREAS SHALL BE PROVIDED ON ALL DISTURBED AREAS ACCORDING TO GROUND STABILIZATION TABLE (BELOW) FOLLOWING COMPLETION OF CONSTRUCTION OR DEVELOPMENT.
3. THE ABOVE REQUIREMENTS ARE THE MINIMUM NECESSARY TO MEET EROSION AND SEDIMENT CONTROL REGULATIONS. THE CONTRACT DOCUMENTS INCLUDE ADDITIONAL SEEDING AND STABILIZATION REQUIREMENTS AND SCHEDULES WHICH MAY EXCEED THOSE ABOVE.
4. SLOPE EROSION CONTROL MATTING SHALL BE INSTALLED FOR TEMPORARY STABILIZATION DURING THE ESTABLISHMENT OF VEGETATIVE COVER ON ALL STEEP SLOPES (6:1 OR STEEPER). REFER TO MATERIAL SPECIFICATIONS. INSTALL MATTING PER MANUFACTURER'S INSTRUCTIONS.
5. ALL OTHER SEEDED AREAS SHALL BE MULCHED WITH STRAW AND TACKED WITH ASPHALT.

SELF-INSPECTION RULES

SEE **SHEET C706** FOR SELF-INSPECTION REQUIREMENTS.

THE FINANCIALLY RESPONSIBLE PERSON AND/OR HIS AGENT WILL BE PERFORM SELF INSPECTIONS OF THE EROSION AND SEDIMENTATION CONTROL MEASURES USING NCDEMLR'S SELF INSPECTION REPORT (WORKSHEET) AND THIS WILL BE KEPT ONSITE.

SLOPE & SURFACE STABILIZATION

GROUND STABILIZATION SHALL BE PROVIDED ON ALL DISTURBED AREAS ACCORDING TO GROUND STABILIZATION NOTES. SEE SHEET C705.

EXTENSIONS OF TIME MAY BE APPROVED BY THE PERMITTING AUTHORITY BASED ON WEATHER OR OTHER SITE-SPECIFIC CONDITIONS THAT MAKE COMPLIANCE IMPRACTICABLE (SECTION II.B(2) (b))

THE REQUIREMENTS ON SHEET C705 ARE THE MINIMUM NECESSARY TO MEET EROSION AND SEDIMENT CONTROL REGULATIONS. THE CONTRACT DOCUMENTS INCLUDE ADDITIONAL SEEDING AND STABILIZATION REQUIREMENTS AND SCHEDULES WHICH MAY EXCEED MINIMUM REQUIREMENTS.

INSTALL TEMPORARY EXCELSIOR MATTING FOR STABILIZATION DURING THE ESTABLISHMENT OF VEGETATIVE COVER ON ALL STEEP SLOPES (6:1 OR STEEPER) AND AREAS OF CONCENTRATED FLOW (CHANNELS, DITCHES, SWALES, ETC.). UTILIZE TEMPORARY COCONUT MAT IN AREAS IDENTIFIED ON PLAN. REFER TO SPECIFICATION SECTION 312500 FOR MATERIAL SPECIFICATIONS. INSTALL MATTING PER MANUFACTURER'S INSTRUCTIONS.

NOTE:
EROSION & SEDIMENT CONTROL SHALL BE PERMITTED THROUGH NCDEQ.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

MAGNETIC

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineerlng
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

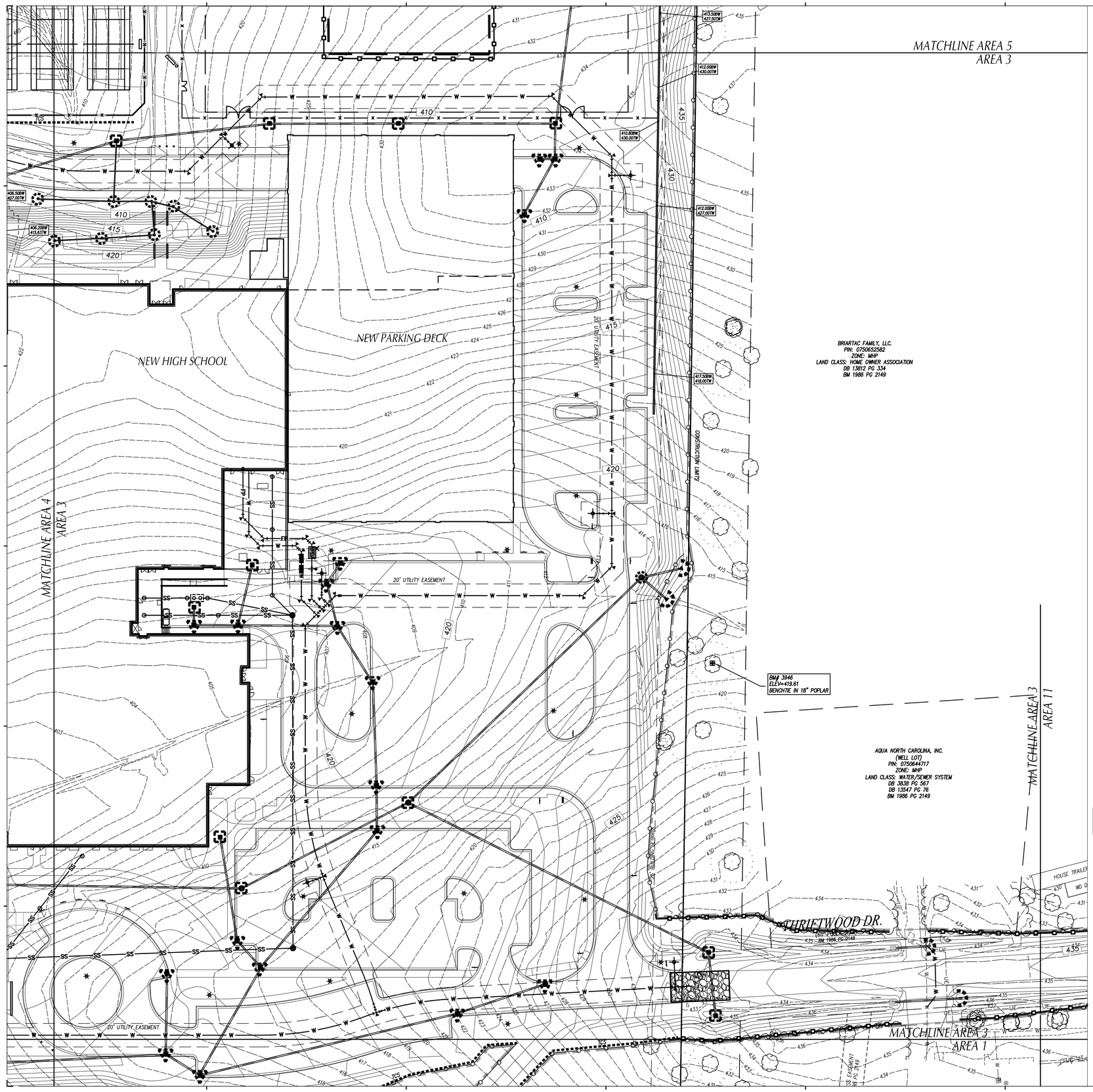
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

SHEET TITLE
FINAL EROSION CONTROL PLAN AREA_2

SHEET NUMBER
C-04.12



LEGEND

- TEMP. GRAVEL CONSTR. ENTRANCE SEE DETAIL SHEET ___
- TEMP. INLET PROTECTION DEVICE SEE DETAIL SHEET ___
- TEMP. INLET PROTECTION SILT BAG DEVICE SEE DETAIL SHEET ___
- TEMP. DIVERSION DITCH / BERM SEE DETAIL SHEET ___
- TEMP. SILT FENCE SEE DETAIL SHEET ___
- TEMP. REINFORCED SILT FENCE OUTLET, SEE DETAIL SHEET ___
- PERMANENT OUTLET PROTECTION SEE DETAIL SHEET ___
- TEMP. CONCRETE WASHOUT AREA SEE DETAIL SHEET ___
- TEMP. PLASTIC LINING, SEE TEMP. BASIN BAFFLES ON DETAIL SHEET ___
- TEMP. J-HOOK PROTECTION SEE DETAIL SHEET ___
- TEMP. TIMBER/BRIDGE MAT SEE DETAIL SHEET ___
- TEMP. ROCK PIPE INLET PROTECTION SEE DETAIL SHEET ___
- CHANNEL LINING SEE DETAIL SHEET ___
- TEMP. SKIMMER SEDIMENT BASIN SEE DETAIL SHEET ___
- EXISTING CONTOUR
- FINISHED CONTOUR
- TEMP. CONTOUR (TEMP. GRADES DURING CONSTR.)
- TEMPORARY BASIN BAFFLE SEE DETAIL SHEET ___
- TREE PROTECTION FENCE SEE DETAIL SHEET ___
- TEMP. COMPOST SOCK SEE DETAIL SHEET ___
- TEMP. COMPOST SOCK IN CHANNEL SEE DETAIL SHEET ___
- TEMP. SLOPE DRAIN SEE DETAIL SHEET ___
- PROPOSED STORM SEWER PIPES
- EXISTING STORM SEWER PIPES
- CONSTRUCTION LIMITS UNLESS OTHERWISE NOTED.
- TEMP. COMPOST SOCK INLET PROTECTION, SEE DETAIL SHEET ___
- TEMP. DEWATERING SILT BAG SEE DETAIL SHEET ___
- RESOURCE CONSERVATION AREA
- TEMP. COFFER DAM, SEE STREAM CROSSING/CULVERT INSTALLATION DETAIL SHEET ___

GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH ALL TOWN OF APEX AND NCDOT STANDARDS, SPECIFICATIONS AND DETAILS.
2. THE CONTRACTOR SHALL COMPLY WITH ALL STATE AND LOCAL CODES IN OBSERVING EROSION CONTROL MEASURES BOTH ON AND OFF SITE. ALL OFF-SITE SOIL BORROW AND WASTE SITES SHALL BE PROPERLY PERMITTED FOR SUCH ACTIVITIES. CONTRACTOR SHALL PROVIDE WRITTEN DOCUMENTATION OF SEDIMENT & EROSION CONTROL PERMIT FOR ANY OFF-SITE SITES TO OWNER PRIOR TO RELOCATING ANY STOCKPILE MATERIALS.
3. THE CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL DEVICES AFTER EACH RAINFALL EVENT OR AS DIRECTED BY LOCAL AUTHORITIES OR ARCHITECT.
4. TOTAL DISTURBED AREA: 58 AC.
5. ALL OPEN STORM PIPES SHALL BE PROTECTED WITH STONE FILTER PROTECTION AFTER WORK STOPPAGE EACH DAY. SEE DETAIL **SHEET ___**
6. ALL STORM DRAINAGE PIPES SHALL BE THOROUGHLY FLUSHED OF ALL SEDIMENT FOLLOWING SITE STABILIZATION. INTERIOR FLUSHING OF SYSTEM SHALL BE PERFORMED AS NEEDED TO MAINTAIN PROPER FUNCTIONING OF THE DRAINAGE SYSTEM. CLEANING SHALL BE PERFORMED IN A MANNER WHICH PREVENTS SEDIMENT FROM BEING FLUSHED THROUGH PIPES TO THE EXISTING DRAINAGE SYSTEM.
7. THE INDICATED STAGING AREA IS INTENDED FOR VEHICLES AND NON-ERODIBLE MATERIALS ONLY. NO SOIL, SAND OR OTHER ERODIBLE, FINE GRAINED MATERIAL SHALL BE STORED OUTSIDE OF THE LIMITS OF THE SITE PROTECTED BY SEDIMENT AND EROSION CONTROL DEVICES AND MEASURES.
8. SOIL AND OTHER MATERIALS SHALL ONLY BE TEMPORARILY STOCKPILED WITHIN THE CONSTRUCTION LIMITS PROTECTED BY SEDIMENT AND EROSION CONTROL DEVICES AND MEASURES. STOCKPILES SHALL BE STABILIZED AS REQUIRED AS INDICATED IN THE SLOPE & SURFACE STABILIZATION NOTES ON THIS PLAN.
9. THE TREE PROTECTION FENCE SHALL BE MAINTAINED ON THE SITE UNTIL ALL SITE WORK IS COMPLETED AND THE FINAL SITE INSPECTION IS SCHEDULED PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY (CO). THE FENCING SHALL BE REMOVED IMMEDIATELY PRIOR TO THE FINAL SITE INSPECTION FOR THE SITE.
10. TREE PROTECTION FENCING SHALL NOT BE MOVED AND THERE SHALL BE NO ENCROACHMENT INTO SUCH PROTECTED AREA(S) WITHOUT WRITTEN AUTHORIZATION OF THE COUNTY ZONING COMPLIANCE STAFF. ANY ACTIVITY (LANDSCAPING, FENCING, OR UTILITY INSTALLATION) SHOWN ON THE APPROVED PLANS IN A TREE PROTECTION AREA, SHALL ALSO NOT OCCUR WITHOUT WRITTEN AUTHORIZATION FROM THE COUNTY ZONING COMPLIANCE STAFF. ANY UNAUTHORIZED ENCROACHMENT OR DISTURBANCE WITHIN THE BOUNDARIES OF A TREE PROTECTION AREA SHALL AUTOMATICALLY RESULT IN FINES AND THE REPLACEMENT OF ANY DAMAGED VEGETATION IN ACCORDANCE WITH THE LAND DEVELOPMENT ORDINANCE.
11. ROADSIDE DITCHES AND CHANNELS SHALL BE STABILIZED DAILY UNTIL PERMANENT GROUND COVER IS ESTABLISHED.
12. INSTALL TEMPORARY MATTING TO TOP OF ALL SIDE SLOPES ON CHANNELS, DIVERSION DITCHES AND TEMPORARY SEDIMENT BASINS. SEE DETAIL SHEET C702 (PERMANENT CHANNEL) AND C702 (TEMPORARY DIVERSION DITCH) FOR TYPE OF MATTING TO USE.
13. ANY DEWATERING OF SEDIMENT CONTAINMENT DEVICES FOR MAINTENANCE, REMOVAL OR CONVERSION PURPOSES IS TO BE DONE THROUGH A SILT BAG.
14. ANY DEWATERING OF STORM/UTILITY TRENCHES IS TO BE DONE THROUGH A SILT BAG.
15. GROUND COVER IS TO BE APPLIED PER CONDITIONS OF THE NPDES PERMIT OR AT THE END OF THE DAY IN CRITICAL AREAS.
16. CONTRACTOR SHALL USE TIRE WASH STATION TO PREVENT SEDIMENT FROM TRACKING ONTO THE ROAD IF CONSTRUCTION ENTRANCE IS FOUND INSUFFICIENT AT NO ADDITIONAL COST TO OWNER.
17. CONTRACTOR SHALL UTILIZE PAM FLOCCULANTS TO REDUCE RUN-OFF TURBIDITY. SEE SPECS.

MAINTENANCE PLAN

1. DURING ALL PHASES OF CONSTRUCTION, GROUNDCOVER ON EXPOSED SLOPES SHALL BE PROVIDED ACCORDING TO GROUND STABILIZATION TABLE (**SHEET C706**) FOLLOWING COMPLETION OF ANY PHASE OF GRADING.
2. FINAL PERMANENT GROUNDCOVER FOR ALL DISTURBED AREAS SHALL BE PROVIDED ON ALL DISTURBED AREAS ACCORDING TO GROUND STABILIZATION TABLE (BELOW) FOLLOWING COMPLETION OF CONSTRUCTION OR DEVELOPMENT.
3. THE ABOVE REQUIREMENTS ARE THE MINIMUM NECESSARY TO MEET EROSION AND SEDIMENT CONTROL REGULATIONS. THE CONTRACT DOCUMENTS INCLUDE ADDITIONAL SEEDING AND STABILIZATION REQUIREMENTS AND SCHEDULES WHICH MAY EXCEED THOSE ABOVE.
4. SLOPE EROSION CONTROL MATTING SHALL BE INSTALLED FOR TEMPORARY STABILIZATION DURING THE ESTABLISHMENT OF VEGETATIVE COVER ON ALL STEEP SLOPES (6:1 OR STEEPER). REFER TO MATERIAL SPECIFICATIONS. INSTALL MATTING PER MANUFACTURER'S INSTRUCTIONS.
5. ALL OTHER SEEDED AREAS SHALL BE MULCHED WITH STRAW AND TACKED WITH ASPHALT.

SELF-INSPECTION RULES

SEE **SHEET C706** FOR SELF-INSPECTION REQUIREMENTS.

THE FINANCIALLY RESPONSIBLE PERSON AND/OR HIS AGENT WILL BE PERFORM SELF INSPECTIONS OF THE EROSION AND SEDIMENTATION CONTROL MEASURES USING NCDEMLR'S SELF INSPECTION REPORT (WORKSHEET) AND THIS WILL BE KEPT ONSITE.

SLOPE & SURFACE STABILIZATION

GROUND STABILIZATION SHALL BE PROVIDED ON ALL DISTURBED AREAS ACCORDING TO GROUND STABILIZATION NOTES. SEE SHEET C705.

EXTENSIONS OF TIME MAY BE APPROVED BY THE PERMITTING AUTHORITY BASED ON WEATHER OR OTHER SITE-SPECIFIC CONDITIONS THAT MAKE COMPLIANCE IMPRACTICABLE (SECTION II.B(2) (b))

THE REQUIREMENTS ON SHEET C705 ARE THE MINIMUM NECESSARY TO MEET EROSION AND SEDIMENT CONTROL REGULATIONS. THE CONTRACT DOCUMENTS INCLUDE ADDITIONAL SEEDING AND STABILIZATION REQUIREMENTS AND SCHEDULES WHICH MAY EXCEED MINIMUM REQUIREMENTS.

INSTALL TEMPORARY EXCELSIOR MATTING FOR STABILIZATION DURING THE ESTABLISHMENT OF VEGETATIVE COVER ON ALL STEEP SLOPES (6:1 OR STEEPER) AND AREAS OF CONCENTRATED FLOW (CHANNELS, DITCHES, SWALES, ETC.). UTILIZE TEMPORARY COCONUT MAT IN AREAS IDENTIFIED ON PLAN. REFER TO SPECIFICATION SECTION 312500 FOR MATERIAL SPECIFICATIONS. INSTALL MATTING PER MANUFACTURER'S INSTRUCTIONS.

NOTE:
EROSION & SEDIMENT CONTROL SHALL BE PERMITTED THROUGH NCDEQ.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-5230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT UNDER WHICH IT IS DELIVERED. NO OTHER USE MADE OF IT SHALL BE PERMITTED WITHOUT THE EXPRESS WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

SHEET TITLE
FINAL EROSION CONTROL PLAN AREA_3

SHEET NUMBER
C-04.13

LEGEND

- TEMP. GRAVEL CONSTR. ENTRANCE SEE DETAIL SHEET ___
- TEMP. INLET PROTECTION DEVICE SEE DETAIL SHEET ___
- TEMP. INLET PROTECTION SILT BAG DEVICE SEE DETAIL SHEET ___
- TEMP. DIVERSION DITCH / BERM SEE DETAIL SHEET ___
- TEMP. SILT FENCE SEE DETAIL SHEET ___
- TEMP. REINFORCED SILT FENCE OUTLET, SEE DETAIL SHEET ___
- PERMANENT OUTLET PROTECTION SEE DETAIL SHEET ___
- TEMP. CONCRETE WASHOUT AREA SEE DETAIL SHEET ___
- TEMP. PLASTIC LINING, SEE TEMP. BASIN BAFFLES ON DETAIL SHEET ___
- TEMP. J-HOOK PROTECTION SEE DETAIL SHEET ___
- TEMP. TIMBER/BRIDGE MAT SEE DETAIL SHEET ___
- TEMP. ROCK PIPE INLET PROTECTION SEE DETAIL SHEET ___
- CHANNEL LINING SEE DETAIL SHEET ___
- TEMP. SKIMMER SEDIMENT BASIN SEE DETAIL SHEET ___
- EXISTING CONTOUR
- FINISHED CONTOUR
- TEMP. CONTOUR (TEMP. GRADES DURING CONSTR.)
- TEMPORARY BASIN BAFFLE SEE DETAIL SHEET ___
- TREE PROTECTION FENCE SEE DETAIL SHEET ___
- TEMP. COMPOST SOCK SEE DETAIL SHEET ___
- TEMP. COMPOST SOCK IN CHANNEL SEE DETAIL SHEET ___
- TEMP. SLOPE DRAIN SEE DETAIL SHEET ___
- PROPOSED STORM SEWER PIPES
- EXISTING STORM SEWER PIPES
- CONSTRUCTION LIMITS UNLESS OTHERWISE NOTED.
- TEMP. COMPOST SOCK INLET PROTECTION, SEE DETAIL SHEET ___
- TEMP. DEWATERING SILT BAG SEE DETAIL SHEET ___
- RESOURCE CONSERVATION AREA
- TEMP. COFFER DAM, SEE STREAM CROSSING/CULVERT INSTALLATION DETAIL SHEET ___

GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH ALL TOWN OF APEX AND NCDOT STANDARDS, SPECIFICATIONS AND DETAILS.
2. THE CONTRACTOR SHALL COMPLY WITH ALL STATE AND LOCAL CODES IN OBSERVING EROSION CONTROL MEASURES BOTH ON AND OFF SITE. ALL OFF-SITE SOIL BORROW AND WASTE SITES SHALL BE PROPERLY PERMITTED FOR SUCH ACTIVITIES. CONTRACTOR SHALL PROVIDE WRITTEN DOCUMENTATION OF SEDIMENT & EROSION CONTROL PERMIT FOR ANY OFF-SITE SITES TO OWNER PRIOR TO RELOCATING ANY STOCKPILE MATERIALS.
3. THE CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL DEVICES AFTER EACH RAINFALL EVENT OR AS DIRECTED BY LOCAL AUTHORITIES OR ARCHITECT.
4. TOTAL DISTURBED AREA: 58 AC.
5. ALL OPEN STORM PIPES SHALL BE PROTECTED WITH STONE FILTER PROTECTION AFTER WORK STOPPAGE EACH DAY. SEE DETAIL **SHEET** ___
6. ALL STORM DRAINAGE PIPES SHALL BE THOROUGHLY FLUSHED OF ALL SEDIMENT FOLLOWING SITE STABILIZATION. INTERIOR FLUSHING OF SYSTEM SHALL BE PERFORMED AS NEEDED TO MAINTAIN PROPER FUNCTIONING OF THE DRAINAGE SYSTEM. CLEANING SHALL BE PERFORMED IN A MANNER WHICH PREVENTS SEDIMENT FROM BEING FLUSHED THROUGH PIPES TO THE EXISTING DRAINAGE SYSTEM.
7. THE INDICATED STAGING AREA IS INTENDED FOR VEHICLES AND NON-ERODIBLE MATERIALS ONLY. NO SOIL, SAND OR OTHER ERODIBLE, FINE GRAINED MATERIAL SHALL BE STORED OUTSIDE OF THE LIMITS OF THE SITE PROTECTED BY SEDIMENT AND EROSION CONTROL DEVICES AND MEASURES.
8. SOIL AND OTHER MATERIALS SHALL ONLY BE TEMPORARILY STOCKPILED WITHIN THE CONSTRUCTION LIMITS PROTECTED BY SEDIMENT AND EROSION CONTROL DEVICES AND MEASURES. STOCKPILES SHALL BE STABILIZED AS REQUIRED AS INDICATED IN THE SLOPE & SURFACE STABILIZATION NOTES ON THIS PLAN.
9. THE TREE PROTECTION FENCE SHALL BE MAINTAINED ON THE SITE UNTIL ALL SITE WORK IS COMPLETED AND THE FINAL SITE INSPECTION IS SCHEDULED PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY (CO). THE FENCING SHALL BE REMOVED IMMEDIATELY PRIOR TO THE FINAL SITE INSPECTION FOR THE SITE.
10. TREE PROTECTION FENCING SHALL NOT BE MOVED AND THERE SHALL BE NO ENCROACHMENT INTO SUCH PROTECTED AREA(S) WITHOUT WRITTEN AUTHORIZATION OF THE COUNTY ZONING COMPLIANCE STAFF. ANY ACTIVITY (LANDSCAPING, FENCING, OR UTILITY INSTALLATION) SHOWN ON THE APPROVED PLANS IN A TREE PROTECTION AREA SHALL ALSO NOT OCCUR WITHOUT WRITTEN AUTHORIZATION FROM THE COUNTY ZONING COMPLIANCE STAFF. ANY UNAUTHORIZED ENCROACHMENT OR DISTURBANCE WITHIN THE BOUNDARIES OF A TREE PROTECTION AREA SHALL AUTOMATICALLY RESULT IN FINES AND THE REPLACEMENT OF ANY DAMAGED VEGETATION IN ACCORDANCE WITH THE LAND DEVELOPMENT ORDINANCE.
11. ROADSIDE DITCHES AND CHANNELS SHALL BE STABILIZED DAILY UNTIL PERMANENT GROUND COVER IS ESTABLISHED.
12. INSTALL TEMPORARY MATTING TO TOP OF ALL SIDE SLOPES ON CHANNELS, DIVERSION DITCHES AND TEMPORARY SEDIMENT BASINS. SEE DETAIL SHEET C702 (PERMANENT CHANNEL) AND C702 (TEMPORARY DIVERSION DITCH) FOR TYPE OF MATTING TO USE.
13. ANY DEWATERING OF SEDIMENT CONTAINMENT DEVICES FOR MAINTENANCE, REMOVAL OR CONVERSION PURPOSES IS TO BE DONE THROUGH A SILT BAG.
14. ANY DEWATERING OF STORM/UTILITY TRENCHES IS TO BE DONE THROUGH A SILT BAG.
15. GROUND COVER IS TO BE APPLIED PER CONDITIONS OF THE NPDES PERMIT OR AT THE END OF THE DAY IN CRITICAL AREAS.
16. CONTRACTOR SHALL USE TIRE WASH STATION TO PREVENT SEDIMENT FROM TRACKING ONTO THE ROAD IF CONSTRUCTION ENTRANCE IS FOUND INSUFFICIENT AT NO ADDITIONAL COST TO OWNER.
17. CONTRACTOR SHALL UTILIZE PAM FLOCCULANTS TO REDUCE RUN-OFF TURBIDITY. SEE SPECS.

MAINTENANCE PLAN

1. DURING ALL PHASES OF CONSTRUCTION, GROUNDCOVER ON EXPOSED SLOPES SHALL BE PROVIDED ACCORDING TO GROUND STABILIZATION TABLE **(SHEET C706)** FOLLOWING COMPLETION OF ANY PHASE OF GRADING.
2. FINAL PERMANENT GROUNDCOVER FOR ALL DISTURBED AREAS SHALL BE PROVIDED ON ALL DISTURBED AREAS ACCORDING TO GROUND STABILIZATION TABLE (BELOW) FOLLOWING COMPLETION OF CONSTRUCTION OR DEVELOPMENT.
3. THE ABOVE REQUIREMENTS ARE THE MINIMUM NECESSARY TO MEET EROSION AND SEDIMENT CONTROL REGULATIONS. THE CONTRACT DOCUMENTS INCLUDE ADDITIONAL SEEDING AND STABILIZATION REQUIREMENTS AND SCHEDULES WHICH MAY EXCEED THOSE ABOVE.
4. SLOPE EROSION CONTROL MATTING SHALL BE INSTALLED FOR TEMPORARY STABILIZATION DURING THE ESTABLISHMENT OF VEGETATIVE COVER ON ALL STEEP SLOPES (6:1 OR STEEPER). REFER TO MATERIAL SPECIFICATIONS. INSTALL MATTING PER MANUFACTURER'S INSTRUCTIONS.
5. ALL OTHER SEEDED AREAS SHALL BE MULCHED WITH STRAW AND TACKED WITH ASPHALT.

SELF-INSPECTION RULES

SEE **SHEET C706** FOR SELF-INSPECTION REQUIREMENTS.

THE FINANCIALLY RESPONSIBLE PERSON AND/OR HIS AGENT WILL BE PERFORM SELF INSPECTIONS OF THE EROSION AND SEDIMENTATION CONTROL MEASURES USING NCDEMLR'S SELF INSPECTION REPORT (WORKSHEET) AND THIS WILL BE KEPT ONSITE.

SLOPE & SURFACE STABILIZATION

GROUND STABILIZATION SHALL BE PROVIDED ON ALL DISTURBED AREAS ACCORDING TO GROUND STABILIZATION NOTES. SEE SHEET C705.

EXTENSIONS OF TIME MAY BE APPROVED BY THE PERMITTING AUTHORITY BASED ON WEATHER OR OTHER SITE-SPECIFIC CONDITIONS THAT MAKE COMPLIANCE IMPRACTICABLE (SECTION II.B(2) (b))

THE REQUIREMENTS ON SHEET C705 ARE THE MINIMUM NECESSARY TO MEET EROSION AND SEDIMENT CONTROL REGULATIONS. THE CONTRACT DOCUMENTS INCLUDE ADDITIONAL SEEDING AND STABILIZATION REQUIREMENTS AND SCHEDULES WHICH MAY EXCEED MINIMUM REQUIREMENTS.

INSTALL TEMPORARY EXCELSIOR MATTING FOR STABILIZATION DURING THE ESTABLISHMENT OF VEGETATIVE COVER ON ALL STEEP SLOPES (6:1 OR STEEPER) AND AREAS OF CONCENTRATED FLOW (CHANNELS, DITCHES, SWALES, ETC.). UTILIZE TEMPORARY COCONUT MAT IN AREAS IDENTIFIED ON PLAN. REFER TO SPECIFICATION SECTION 312500 FOR MATERIAL SPECIFICATIONS. INSTALL MATTING PER MANUFACTURER'S INSTRUCTIONS.

NOTE:
EROSION & SEDIMENT CONTROL SHALL BE PERMITTED THROUGH NCDEQ.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

MAGNETIC

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

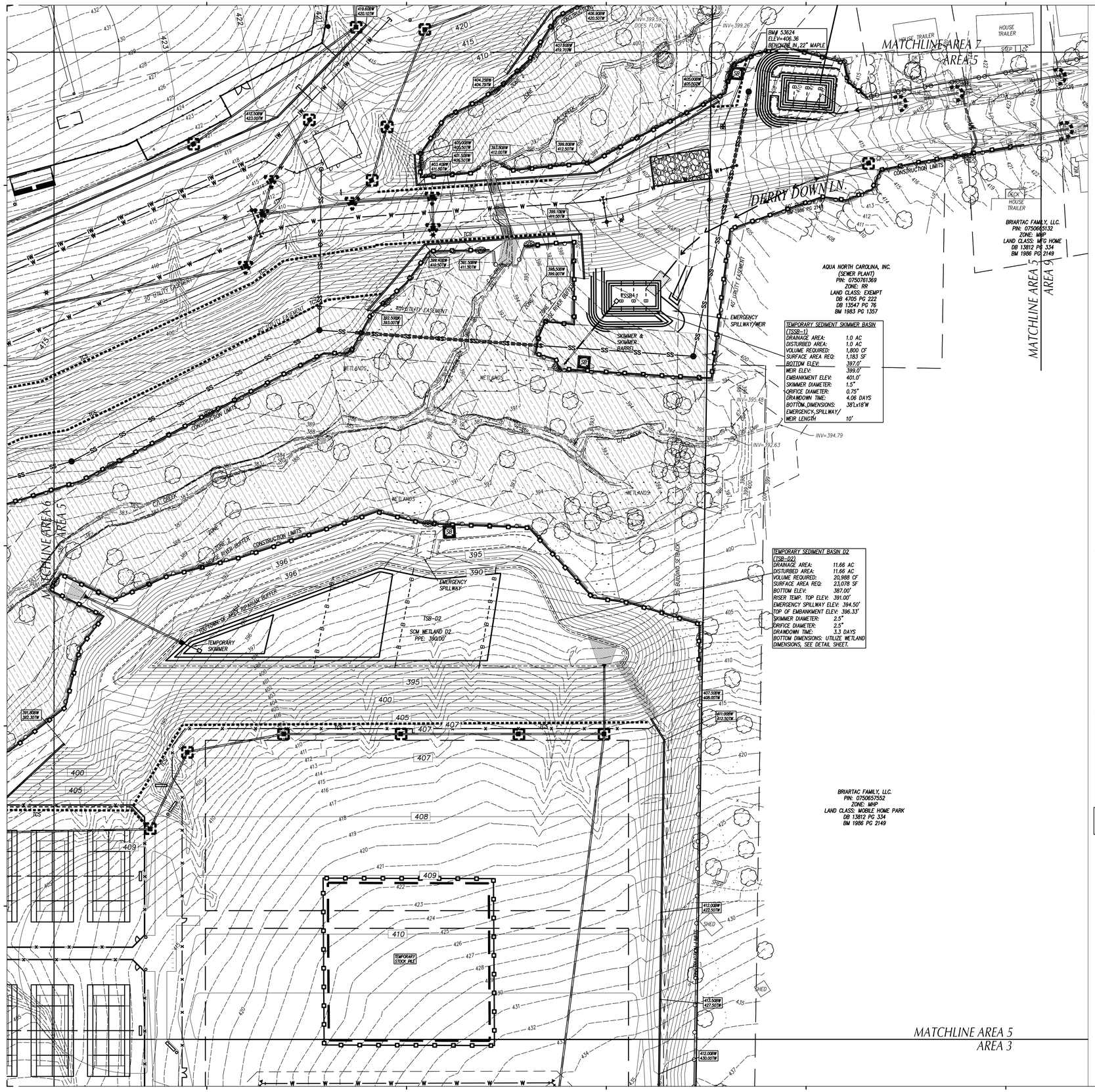
PROJECT NO. 02000.000

SHEET TITLE

FINAL EROSION CONTROL PLAN AREA_4

SHEET NUMBER

C-04.14



LEGEND

- TEMP. GRAVEL CONSTR. ENTRANCE SEE DETAIL SHEET ___
- TEMP. INLET PROTECTION DEVICE SEE DETAIL SHEET ___
- TEMP. INLET PROTECTION SILT BAG DEVICE SEE DETAIL SHEET ___
- TEMP. DIVERSION DITCH / BERM SEE DETAIL SHEET ___
- TEMP. SILT FENCE SEE DETAIL SHEET ___
- TEMP. REINFORCED SILT FENCE OUTLET, SEE DETAIL SHEET ___
- PERMANENT OUTLET PROTECTION SEE DETAIL SHEET ___
- TEMP. CONCRETE WASHOUT AREA SEE DETAIL SHEET ___
- TEMP. PLASTIC LINING, SEE TEMP. BASIN BAFFLES ON DETAIL SHEET ___
- TEMP. J-HOOK PROTECTION SEE DETAIL SHEET ___
- TEMP. TIMBER/BRIDGE MAT SEE DETAIL SHEET ___
- TEMP. ROCK PIPE INLET PROTECTION SEE DETAIL SHEET ___
- CHANNEL LINING SEE DETAIL SHEET ___
- TEMP. SKIMMER SEDIMENT BASIN SEE DETAIL SHEET ___
- EXISTING CONTOUR
- FINISHED CONTOUR
- TEMP. CONTOUR (TEMP. GRADES DURING CONSTR.)
- TEMPORARY BASIN BAFFLE SEE DETAIL SHEET ___
- TREE PROTECTION FENCE SEE DETAIL SHEET ___
- TEMP. COMPOST SOCK SEE DETAIL SHEET ___
- TEMP. COMPOST SOCK IN CHANNEL SEE DETAIL SHEET ___
- TEMP. SLOPE DRAIN SEE DETAIL SHEET ___
- PROPOSED STORM SEWER PIPES
- EXISTING STORM SEWER PIPES
- CONSTRUCTION LIMITS UNLESS OTHERWISE NOTED.
- TEMP. COMPOST SOCK INLET PROTECTION, SEE DETAIL SHEET ___
- TEMP. DEWATERING SILT BAG SEE DETAIL SHEET ___
- RESOURCE CONSERVATION AREA
- TEMP. COFFER DAM, SEE STREAM CROSSING/CULVERT INSTALLATION DETAIL SHEET ___

GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH ALL TOWN OF APEX AND NCDOT STANDARDS, SPECIFICATIONS AND DETAILS.
2. THE CONTRACTOR SHALL COMPLY WITH ALL STATE AND LOCAL CODES IN OBSERVING EROSION CONTROL MEASURES BOTH ON AND OFF SITE. ALL OFF-SITE SOIL BORROW AND WASTE SITES SHALL BE PROPERLY PERMITTED FOR SUCH ACTIVITIES. CONTRACTOR SHALL PROVIDE WRITTEN DOCUMENTATION OF SEDIMENT & EROSION CONTROL PERMIT FOR ANY OFF-SITE SITES TO OWNER PRIOR TO RELOCATING ANY STOCKPILE MATERIALS.
3. THE CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL DEVICES AFTER EACH RAINFALL EVENT OR AS DIRECTED BY LOCAL AUTHORITIES OR ARCHITECT.
4. TOTAL DISTURBED AREA: 58 AC
5. ALL OPEN STORM PIPES SHALL BE PROTECTED WITH STONE FILTER PROTECTION AFTER WORK STOPPAGE EACH DAY. SEE DETAIL **SHEET** ___
6. ALL STORM DRAINAGE PIPES SHALL BE THOROUGHLY FLUSHED OF ALL SEDIMENT FOLLOWING SITE STABILIZATION. INTERIOR FLUSHING OF SYSTEM SHALL BE PERFORMED AS NEEDED TO MAINTAIN PROPER FUNCTIONING OF THE DRAINAGE SYSTEM. CLEANING SHALL BE PERFORMED IN A MANNER WHICH PREVENTS SEDIMENT FROM BEING FLUSHED THROUGH PIPES TO THE EXISTING DRAINAGE SYSTEM.
7. THE INDICATED STAGING AREA IS INTENDED FOR VEHICLES AND NON-ERODIBLE MATERIALS ONLY. NO SOIL, SAND OR OTHER ERODIBLE, FINE GRAINED MATERIAL SHALL BE STORED OUTSIDE OF THE LIMITS OF THE SITE PROTECTED BY SEDIMENT AND EROSION CONTROL DEVICES AND MEASURES.
8. SOIL AND OTHER MATERIALS SHALL ONLY BE TEMPORARILY STOCKPILED WITHIN THE CONSTRUCTION LIMITS PROTECTED BY SEDIMENT AND EROSION CONTROL DEVICES AND MEASURES. STOCKPILES SHALL BE STABILIZED AS REQUIRED AS INDICATED IN THE SLOPE & SURFACE STABILIZATION NOTES ON THIS PLAN.
9. THE TREE PROTECTION FENCE SHALL BE MAINTAINED ON THE SITE UNTIL ALL SITE WORK IS COMPLETED AND THE FINAL SITE INSPECTION IS SCHEDULED PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY (CO). THE FENCING SHALL BE REMOVED IMMEDIATELY PRIOR TO THE FINAL SITE INSPECTION FOR THE SITE.
10. TREE PROTECTION FENCING SHALL NOT BE MOVED AND THERE SHALL BE NO ENCROACHMENT INTO SUCH PROTECTED AREA(S) WITHOUT WRITTEN AUTHORIZATION OF THE COUNTY ZONING COMPLIANCE STAFF. ANY ACTIVITY (LANDSCAPING, FENCING, OR UTILITY INSTALLATION) SHOWN ON THE APPROVED PLANS IN A TREE PROTECTION AREA, SHALL ALSO NOT OCCUR WITHOUT WRITTEN AUTHORIZATION FROM THE COUNTY ZONING COMPLIANCE STAFF. ANY UNAUTHORIZED ENCROACHMENT OR DISTURBANCE WITHIN THE BOUNDARIES OF A TREE PROTECTION AREA SHALL AUTOMATICALLY RESULT IN FINES AND THE REPLACEMENT OF ANY DAMAGED VEGETATION IN ACCORDANCE WITH THE LAND DEVELOPMENT ORDINANCE.
11. ROADSIDE DITCHES AND CHANNELS SHALL BE STABILIZED DAILY UNTIL PERMANENT GROUND COVER IS ESTABLISHED.
12. INSTALL TEMPORARY MATTING TO TOP OF ALL SIDE SLOPES ON CHANNELS, DIVERSION DITCHES AND TEMPORARY SEDIMENT BASINS. SEE DETAIL SHEET C702 (PERMANENT CHANNEL) AND C702 (TEMPORARY DIVERSION DITCH) FOR TYPE OF MATTING TO USE.
13. ANY DEWATERING OF SEDIMENT CONTAINMENT DEVICES FOR MAINTENANCE, REMOVAL OR CONVERSION PURPOSES IS TO BE DONE THROUGH A SILT BAG.
14. ANY DEWATERING OF STORM/UTILITY TRENCHES IS TO BE DONE THROUGH A SILT BAG.
15. GROUND COVER IS TO BE APPLIED PER CONDITIONS OF THE NPDES PERMIT OR AT THE END OF THE DAY IN CRITICAL AREAS.
16. CONTRACTOR SHALL USE TIRE WASH STATION TO PREVENT SEDIMENT FROM TRACKING ONTO THE ROAD IF CONSTRUCTION ENTRANCE IS FOUND INSUFFICIENT AT NO ADDITIONAL COST TO OWNER.
17. CONTRACTOR SHALL UTILIZE PAM FLOCCULANTS TO REDUCE RUN-OFF TURBIDITY. SEE SPECS.

MAINTENANCE PLAN

1. DURING ALL PHASES OF CONSTRUCTION, GROUNDCOVER ON EXPOSED SLOPES SHALL BE PROVIDED ACCORDING TO GROUND STABILIZATION TABLE **(SHEET C706)** FOLLOWING COMPLETION OF ANY PHASE OF GRADING.
2. FINAL PERMANENT GROUNDCOVER FOR ALL DISTURBED AREAS SHALL BE PROVIDED ON ALL DISTURBED AREAS ACCORDING TO GROUND STABILIZATION TABLE (BELOW) FOLLOWING COMPLETION OF CONSTRUCTION OR DEVELOPMENT.
3. THE ABOVE REQUIREMENTS ARE THE MINIMUM NECESSARY TO MEET EROSION AND SEDIMENT CONTROL REGULATIONS. THE CONTRACT DOCUMENTS INCLUDE ADDITIONAL SEEDING AND STABILIZATION REQUIREMENTS AND SCHEDULES WHICH MAY EXCEED THOSE ABOVE.
4. SLOPE EROSION CONTROL MATTING SHALL BE INSTALLED FOR TEMPORARY STABILIZATION DURING THE ESTABLISHMENT OF VEGETATIVE COVER ON ALL STEEP SLOPES (6:1 OR STEEPER). REFER TO MATERIAL SPECIFICATIONS. INSTALL MATTING PER MANUFACTURER'S INSTRUCTIONS.
5. ALL OTHER SEEDED AREAS SHALL BE MULCHED WITH STRAW AND TACKED WITH ASPHALT.

SELF-INSPECTION RULES

SEE **SHEET C706** FOR SELF-INSPECTION REQUIREMENTS.

THE FINANCIALLY RESPONSIBLE PERSON AND/OR HIS AGENT WILL BE PERFORM SELF INSPECTIONS OF THE EROSION AND SEDIMENTATION CONTROL MEASURES USING NCDEMLR'S SELF INSPECTION REPORT (WORKSHEET) AND THIS WILL BE KEPT ONSITE.

SLOPE & SURFACE STABILIZATION

GROUND STABILIZATION SHALL BE PROVIDED ON ALL DISTURBED AREAS ACCORDING TO GROUND STABILIZATION NOTES. SEE SHEET C705.

EXTENSIONS OF TIME MAY BE APPROVED BY THE PERMITTING AUTHORITY BASED ON WEATHER OR OTHER SITE-SPECIFIC CONDITIONS THAT MAKE COMPLIANCE IMPRACTICABLE (SECTION II.B(2) (b))

THE REQUIREMENTS ON SHEET C705 ARE THE MINIMUM NECESSARY TO MEET EROSION AND SEDIMENT CONTROL REGULATIONS. THE CONTRACT DOCUMENTS INCLUDE ADDITIONAL SEEDING AND STABILIZATION REQUIREMENTS AND SCHEDULES WHICH MAY EXCEED MINIMUM REQUIREMENTS.

INSTALL TEMPORARY EXCELSIOR MATTING FOR STABILIZATION DURING THE ESTABLISHMENT OF VEGETATIVE COVER ON ALL STEEP SLOPES (6:1 OR STEEPER) AND AREAS OF CONCENTRATED FLOW (CHANNELS, DITCHES, SWALES, ETC.). UTILIZE TEMPORARY COCONUT MAT IN AREAS IDENTIFIED ON PLAN. REFER TO SPECIFICATION SECTION 312500 FOR MATERIAL SPECIFICATIONS. INSTALL MATTING PER MANUFACTURER'S INSTRUCTIONS.

NOTE:
EROSION & SEDIMENT CONTROL SHALL BE PERMITTED THROUGH NCDEQ.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

MAGNETIC

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineerng
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

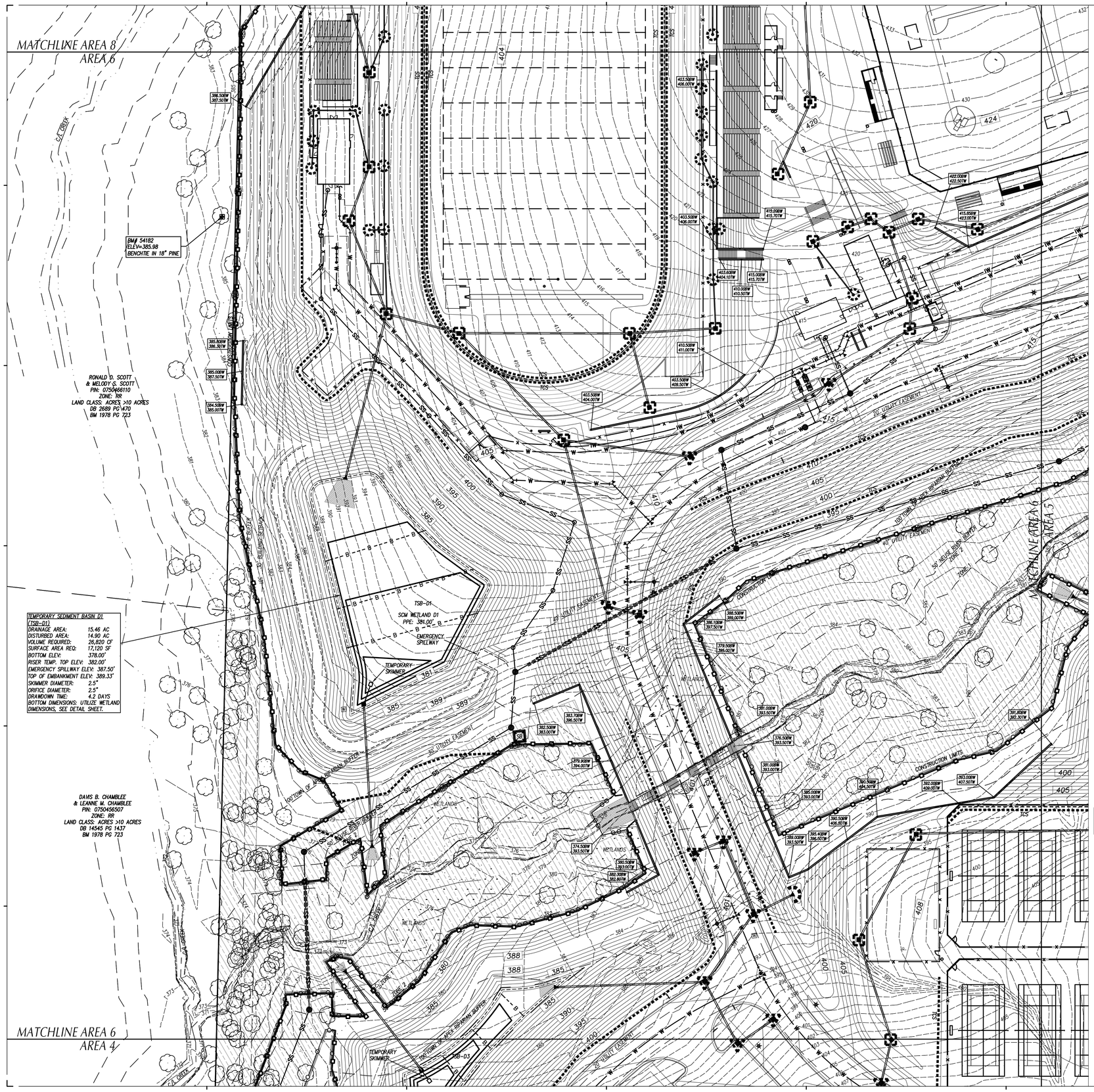
PROJECT NO. 02000.000

SHEET TITLE

FINAL EROSION CONTROL PLAN AREA_5

SHEET NUMBER

C-04.15



LEGEND

- TEMP. GRAVEL CONSTR. ENTRANCE SEE DETAIL SHEET __
- TEMP. INLET PROTECTION DEVICE SEE DETAIL SHEET __
- TEMP. INLET PROTECTION SILT BAG DEVICE SEE DETAIL SHEET __
- TEMP. DIVERSION DITCH / BERM SEE DETAIL SHEET __
- TEMP. SILT FENCE SEE DETAIL SHEET __
- TEMP. REINFORCED SILT FENCE OUTLET, SEE DETAIL SHEET __
- PERMANENT OUTLET PROTECTION SEE DETAIL SHEET __
- TEMP. CONCRETE WASHOUT AREA SEE DETAIL SHEET __
- TEMP. PLASTIC LINING, SEE TEMP. BASIN BAFFLES ON DETAIL SHEET __
- TEMP. J-HOOK PROTECTION SEE DETAIL SHEET __
- TEMP. TIMBER/BRIDGE MAT SEE DETAIL SHEET __
- TEMP. ROCK PIPE INLET PROTECTION SEE DETAIL SHEET __
- CHANNEL LINING SEE DETAIL SHEET __
- TEMP. SKIMMER SEDIMENT BASIN SEE DETAIL SHEET __
- EXISTING CONTOUR
- FINISHED CONTOUR
- TEMP. CONTOUR (TEMP. GRADES DURING CONSTR.)
- TEMPORARY BASIN BAFFLE SEE DETAIL SHEET __
- TREE PROTECTION FENCE SEE DETAIL SHEET __
- TEMP. COMPOST SOCK SEE DETAIL SHEET __
- TEMP. COMPOST SOCK IN CHANNEL SEE DETAIL SHEET __
- TEMP. SLOPE DRAIN SEE DETAIL SHEET __
- PROPOSED STORM SEWER PIPES
- EXISTING STORM SEWER PIPES
- CONSTRUCTION LIMITS UNLESS OTHERWISE NOTED.
- TEMP. COMPOST SOCK INLET PROTECTION, SEE DETAIL SHEET __
- TEMP. DEWATERING SILT BAG SEE DETAIL SHEET __
- RESOURCE CONSERVATION AREA
- TEMP. COFFER DAM, SEE STREAM CROSSING/CULVERT INSTALLATION DETAIL SHEET __

GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH ALL TOWN OF APEX AND NCDOT STANDARDS, SPECIFICATIONS AND DETAILS.
2. THE CONTRACTOR SHALL COMPLY WITH ALL STATE AND LOCAL CODES IN OBSERVING EROSION CONTROL MEASURES BOTH ON AND OFF SITE. ALL OFF-SITE SOIL BORROW AND WASTE SITES SHALL BE PROPERLY PERMITTED FOR SUCH ACTIVITIES. CONTRACTOR SHALL PROVIDE WRITTEN DOCUMENTATION OF SEDIMENT & EROSION CONTROL PERMIT FOR ANY OFF-SITE SITES TO OWNER PRIOR TO RELOCATING ANY STOCKPILE MATERIALS.
3. THE CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL DEVICES AFTER EACH RAINFALL EVENT OR AS DIRECTED BY LOCAL AUTHORITIES OR ARCHITECT.
4. TOTAL DISTURBED AREA: 58 AC.
5. ALL OPEN STORM PIPES SHALL BE PROTECTED WITH STONE FILTER PROTECTION AFTER WORK STOPPAGE EACH DAY. SEE DETAIL **SHEET** __
6. ALL STORM DRAINAGE PIPES SHALL BE THOROUGHLY FLUSHED OF ALL SEDIMENT FOLLOWING SITE STABILIZATION. INTERIOR FLUSHING OF SYSTEM SHALL BE PERFORMED AS NEEDED TO MAINTAIN PROPER FUNCTIONING OF THE DRAINAGE SYSTEM. FLUSHING SHALL BE PERFORMED IN A MANNER WHICH PREVENTS SEDIMENT FROM BEING FLUSHED THROUGH PIPES TO THE EXISTING DRAINAGE SYSTEM.
7. THE INDICATED STAGING AREA IS INTENDED FOR VEHICLES AND NON-ERODIBLE MATERIALS ONLY. NO SOIL, SAND OR OTHER ERODIBLE, FINE GRAINED MATERIAL SHALL BE STORED OUTSIDE OF THE LIMITS OF THE SITE PROTECTED BY SEDIMENT AND EROSION CONTROL DEVICES AND MEASURES.
8. SOIL AND OTHER MATERIALS SHALL ONLY BE TEMPORARILY STOCKPILED WITHIN THE CONSTRUCTION LIMITS PROTECTED BY SEDIMENT AND EROSION CONTROL DEVICES AND MEASURES. STOCKPILES SHALL BE STABILIZED AS REQUIRED AS INDICATED IN THE SLOPE & SURFACE STABILIZATION NOTES ON THIS PLAN.
9. THE TREE PROTECTION FENCE SHALL BE MAINTAINED ON THE SITE UNTIL ALL SITE WORK IS COMPLETED AND THE FINAL SITE INSPECTION IS SCHEDULED PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY (CO). THE FENCING SHALL BE REMOVED IMMEDIATELY PRIOR TO THE FINAL SITE INSPECTION FOR THE SITE.
10. TREE PROTECTION FENCING SHALL NOT BE MOVED AND THERE SHALL BE NO ENCROACHMENT INTO SUCH PROTECTED AREA(S) WITHOUT WRITTEN AUTHORIZATION OF THE COUNTY ZONING COMPLIANCE STAFF. ANY ACTIVITY (LANDSCAPING, FENCING, OR UTILITY INSTALLATION) SHOWN ON THE APPROVED PLANS IN A TREE PROTECTION AREA SHALL ALSO NOT OCCUR WITHOUT WRITTEN AUTHORIZATION FROM THE COUNTY ZONING COMPLIANCE STAFF. ANY UNAUTHORIZED ENCROACHMENT OR DISTURBANCE WITHIN THE BOUNDARIES OF A TREE PROTECTION AREA SHALL AUTOMATICALLY RESULT IN FINES AND THE REPLACEMENT OF ANY DAMAGED VEGETATION IN ACCORDANCE WITH THE LAND DEVELOPMENT ORDINANCE.
11. ROADSIDE DITCHES AND CHANNELS SHALL BE STABILIZED DAILY UNTIL PERMANENT GROUND COVER IS ESTABLISHED.
12. INSTALL TEMPORARY MATTING TO TOP OF ALL SIDE SLOPES ON CHANNELS, DIVERSION DITCHES AND TEMPORARY SEDIMENT BASINS. SEE DETAIL SHEET C702 (PERMANENT CHANNEL) AND C702 (TEMPORARY DIVERSION DITCH) FOR TYPE OF MATTING TO USE.
13. ANY DEWATERING OF SEDIMENT CONTAINMENT DEVICES FOR MAINTENANCE, REMOVAL OR CONVERSION PURPOSES IS TO BE DONE THROUGH A SILT BAG.
14. ANY DEWATERING OF STORM/UTILITY TRENCHES IS TO BE DONE THROUGH A SILT BAG.
15. GROUND COVER IS TO BE APPLIED PER CONDITIONS OF THE NPDES PERMIT OR AT THE END OF THE DAY IN CRITICAL AREAS.
16. CONTRACTOR SHALL USE TIRE WASH STATION TO PREVENT SEDIMENT FROM TRACKING ONTO THE ROAD IF CONSTRUCTION ENTRANCE IS FOUND INSUFFICIENT AT NO ADDITIONAL COST TO OWNER.
17. CONTRACTOR SHALL UTILIZE PAM FLOCCULANTS TO REDUCE RUN-OFF TURBIDITY. SEE SPECS.

MAINTENANCE PLAN

1. DURING ALL PHASES OF CONSTRUCTION, GROUNDCOVER ON EXPOSED SLOPES SHALL BE PROVIDED ACCORDING TO GROUND STABILIZATION TABLE **(SHEET C706)** FOLLOWING COMPLETION OF ANY PHASE OF GRADING.
2. FINAL PERMANENT GROUNDCOVER FOR ALL DISTURBED AREAS SHALL BE PROVIDED ON ALL DISTURBED AREAS ACCORDING TO GROUND STABILIZATION TABLE (BELOW) FOLLOWING COMPLETION OF CONSTRUCTION OR DEVELOPMENT.
3. THE ABOVE REQUIREMENTS ARE THE MINIMUM NECESSARY TO MEET EROSION AND SEDIMENT CONTROL REGULATIONS. THE CONTRACT DOCUMENTS INCLUDE ADDITIONAL SEEDING AND STABILIZATION REQUIREMENTS AND SCHEDULES WHICH MAY EXCEED THOSE ABOVE.
4. SLOPE EROSION CONTROL MATTING SHALL BE INSTALLED FOR TEMPORARY STABILIZATION DURING THE ESTABLISHMENT OF VEGETATIVE COVER ON ALL STEEP SLOPES (6:1 OR STEEPER). REFER TO MATERIAL SPECIFICATIONS. INSTALL MATTING PER MANUFACTURER'S INSTRUCTIONS.
5. ALL OTHER SEEDED AREAS SHALL BE MULCHED WITH STRAW AND TACKED WITH ASPHALT.

SELF-INSPECTION RULES

SEE **SHEET C706** FOR SELF-INSPECTION REQUIREMENTS.

THE FINANCIALLY RESPONSIBLE PERSON AND/OR HIS AGENT WILL BE PERFORM SELF INSPECTIONS OF THE EROSION AND SEDIMENTATION CONTROL MEASURES USING NCDEMLR'S SELF INSPECTION REPORT (WORKSHEET) AND THIS WILL BE KEPT ONSITE.

SLOPE & SURFACE STABILIZATION

GROUND STABILIZATION SHALL BE PROVIDED ON ALL DISTURBED AREAS ACCORDING TO GROUND STABILIZATION NOTES. SEE SHEET C705.

EXTENSIONS OF TIME MAY BE APPROVED BY THE PERMITTING AUTHORITY BASED ON WEATHER OR OTHER SITE-SPECIFIC CONDITIONS THAT MAKE COMPLIANCE IMPRACTICABLE (SECTION II.B(2) (b))

THE REQUIREMENTS ON SHEET C705 ARE THE MINIMUM NECESSARY TO MEET EROSION AND SEDIMENT CONTROL REGULATIONS. THE CONTRACT DOCUMENTS INCLUDE ADDITIONAL SEEDING AND STABILIZATION REQUIREMENTS AND SCHEDULES WHICH MAY EXCEED MINIMUM REQUIREMENTS.

INSTALL TEMPORARY EXCELSIOR MATTING FOR STABILIZATION DURING THE ESTABLISHMENT OF VEGETATIVE COVER ON ALL STEEP SLOPES (6:1 OR STEEPER) AND AREAS OF CONCENTRATED FLOW (CHANNELS, DITCHES, SWALES, ETC.). UTILIZE TEMPORARY COCONUT MAT IN AREAS IDENTIFIED ON PLAN. REFER TO SPECIFICATION SECTION 312500 FOR MATERIAL SPECIFICATIONS. INSTALL MATTING PER MANUFACTURER'S INSTRUCTIONS.

NOTE:
EROSION & SEDIMENT CONTROL SHALL BE PERMITTED THROUGH NCDEQ.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

MAGNETIC

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

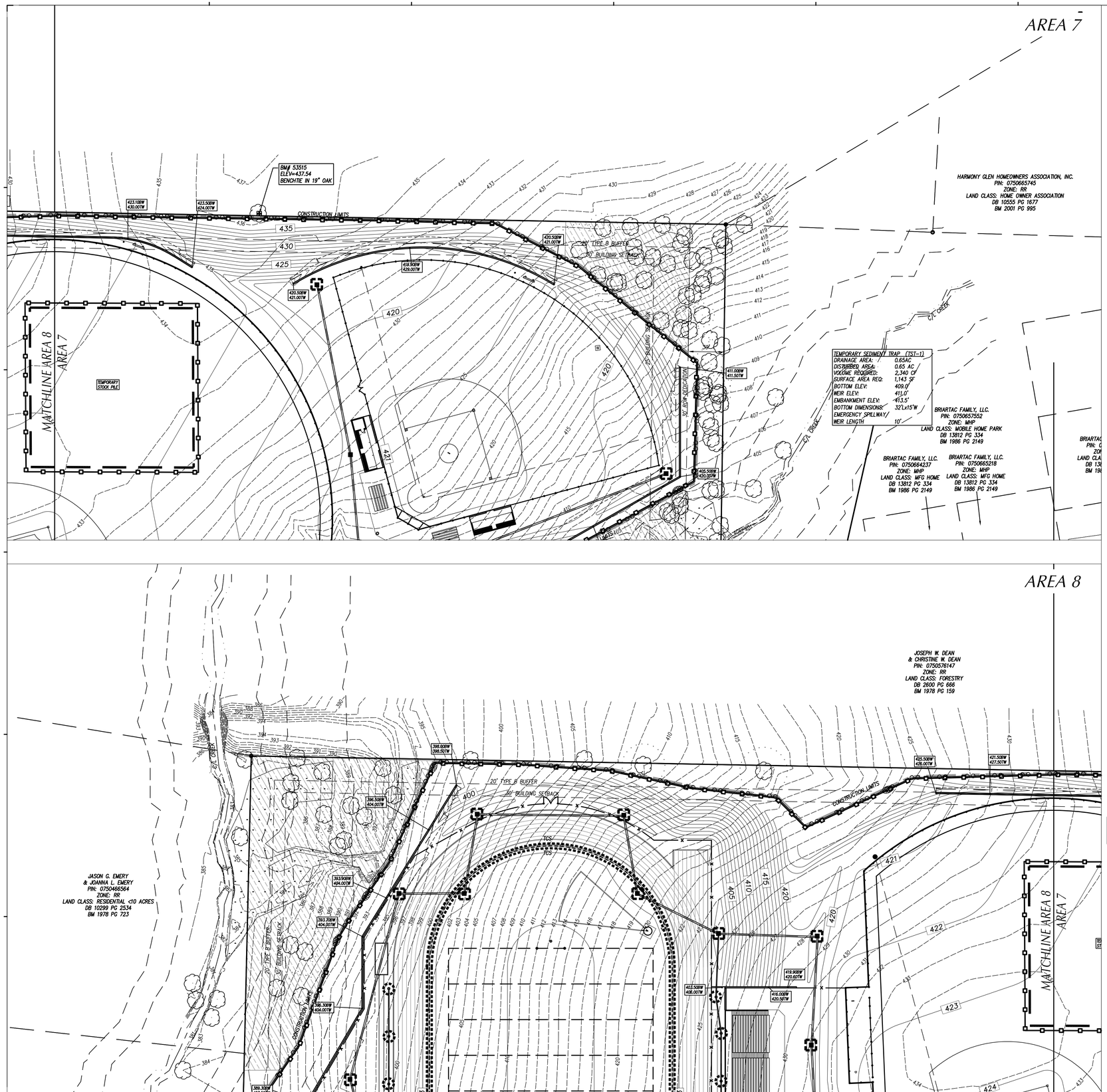
PROJECT NO. 02000.000

SHEET TITLE

FINAL EROSION CONTROL PLAN AREA_6

SHEET NUMBER

C-04.16



LEGEND

- TEMP. GRAVEL CONSTR. ENTRANCE SEE DETAIL SHEET ___
- TEMP. INLET PROTECTION DEVICE SEE DETAIL SHEET ___
- TEMP. INLET PROTECTION SILT BAG DEVICE SEE DETAIL SHEET ___
- TEMP. DIVERSION DITCH / BERM SEE DETAIL SHEET ___
- TEMP. SILT FENCE SEE DETAIL SHEET ___
- TEMP. REINFORCED SILT FENCE OUTLET, SEE DETAIL SHEET ___
- PERMANENT OUTLET PROTECTION SEE DETAIL SHEET ___
- TEMP. CONCRETE WASHOUT AREA SEE DETAIL SHEET ___
- TEMP. PLASTIC LINING, SEE TEMP. BASIN BAFFLES ON DETAIL SHEET ___
- TEMP. J-HOOK PROTECTION SEE DETAIL SHEET ___
- TEMP. TIMBER/BRIDGE MAT SEE DETAIL SHEET ___
- TEMP. ROCK PIPE INLET PROTECTION SEE DETAIL SHEET ___
- CHANNEL LINING SEE DETAIL SHEET ___
- TEMP. SKIMMER SEDIMENT BASIN SEE DETAIL SHEET ___
- EXISTING CONTOUR
- FINISHED CONTOUR
- TEMP. CONTOUR (TEMP. GRADES DURING CONSTR.)
- TEMPORARY BASIN BAFFLE SEE DETAIL SHEET ___
- TREE PROTECTION FENCE SEE DETAIL SHEET ___
- TEMP. COMPOST SOCK SEE DETAIL SHEET ___
- TEMP. COMPOST SOCK IN CHANNEL SEE DETAIL SHEET ___
- TEMP. SLOPE DRAIN SEE DETAIL SHEET ___
- PROPOSED STORM SEWER PIPES
- EXISTING STORM SEWER PIPES
- CONSTRUCTION LIMITS UNLESS OTHERWISE NOTED.
- TEMP. COMPOST SOCK INLET PROTECTION, SEE DETAIL SHEET ___
- TEMP. DEWATERING SILT BAG SEE DETAIL SHEET ___
- RESOURCE CONSERVATION AREA
- TEMP. COFFER DAM, SEE STREAM CROSSING/CULVERT INSTALLATION DETAIL SHEET ___

GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH ALL TOWN OF APEX AND NCDOT STANDARDS, SPECIFICATIONS AND DETAILS.
2. THE CONTRACTOR SHALL COMPLY WITH ALL STATE AND LOCAL CODES IN OBSERVING EROSION CONTROL MEASURES BOTH ON AND OFF SITE. ALL OFF-SITE SOIL BORROW AND WASTE SITES SHALL BE PROPERLY PERMITTED FOR SUCH ACTIVITIES. CONTRACTOR SHALL PROVIDE WRITTEN DOCUMENTATION OF SEDIMENT & EROSION CONTROL PERMIT FOR ANY OFF-SITE SITES TO OWNER PRIOR TO RELOCATING ANY STOCKPILE MATERIALS.
3. THE CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL DEVICES AFTER EACH RAINFALL EVENT OR AS DIRECTED BY LOCAL AUTHORITIES OR ARCHITECT.
4. TOTAL DISTURBED AREA: 58 AC.
5. ALL OPEN STORM PIPES SHALL BE PROTECTED WITH STONE FILTER PROTECTION AFTER WORK STOPPAGE EACH DAY. SEE DETAIL **SHEET ___**
6. ALL STORM DRAINAGE PIPES SHALL BE THOROUGHLY FLUSHED OF ALL SEDIMENT FOLLOWING SITE STABILIZATION. INTERIOR FLUSHING OF SYSTEM SHALL BE PERFORMED AS NEEDED TO MAINTAIN PROPER FUNCTIONING OF THE DRAINAGE SYSTEM. CLEANING SHALL BE PERFORMED IN A MANNER WHICH PREVENTS SEDIMENT FROM BEING FLUSHED THROUGH PIPES TO THE EXISTING DRAINAGE SYSTEM.
7. THE INDICATED STAGING AREA IS INTENDED FOR VEHICLES AND NON-ERODIBLE MATERIALS ONLY. NO SOIL, SAND OR OTHER ERODIBLE, FINE GRAINED MATERIAL SHALL BE STORED OUTSIDE OF THE LIMITS OF THE SITE PROTECTED BY SEDIMENT AND EROSION CONTROL DEVICES AND MEASURES.
8. SOIL AND OTHER MATERIALS SHALL ONLY BE TEMPORARILY STOCKPILED WITHIN THE CONSTRUCTION LIMITS PROTECTED BY SEDIMENT AND EROSION CONTROL DEVICES AND MEASURES. STOCKPILES SHALL BE STABILIZED AS REQUIRED AS INDICATED IN THE SLOPE & SURFACE STABILIZATION NOTES ON THIS PLAN.
9. THE TREE PROTECTION FENCE SHALL BE MAINTAINED ON THE SITE UNTIL ALL SITE WORK IS COMPLETED AND THE FINAL SITE INSPECTION IS SCHEDULED PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY (CO). THE FENCING SHALL BE REMOVED IMMEDIATELY PRIOR TO THE FINAL SITE INSPECTION FOR THE SITE.
10. TREE PROTECTION FENCING SHALL NOT BE MOVED AND THERE SHALL BE NO ENCROACHMENT INTO SUCH PROTECTED AREA(S) WITHOUT WRITTEN AUTHORIZATION OF THE COUNTY ZONING COMPLIANCE STAFF. ANY ACTIVITY (LANDSCAPING, FENCING, OR UTILITY INSTALLATION) SHOWN ON THE APPROVED PLANS IN A TREE PROTECTION AREA, SHALL ALSO NOT OCCUR WITHOUT WRITTEN AUTHORIZATION FROM THE COUNTY ZONING COMPLIANCE STAFF. ANY UNAUTHORIZED ENCROACHMENT OR DISTURBANCE WITHIN THE BOUNDARIES OF A TREE PROTECTION AREA SHALL AUTOMATICALLY RESULT IN FINES AND THE REPLACEMENT OF ANY DAMAGED VEGETATION IN ACCORDANCE WITH THE LAND DEVELOPMENT ORDINANCE.
11. ROADSIDE DITCHES AND CHANNELS SHALL BE STABILIZED DAILY UNTIL PERMANENT GROUND COVER IS ESTABLISHED.
12. INSTALL TEMPORARY MATTING TO TOP OF ALL SIDE SLOPES ON CHANNELS, DIVERSION DITCHES AND TEMPORARY SEDIMENT BASINS. SEE DETAIL SHEET C702 (PERMANENT CHANNEL) AND C702 (TEMPORARY DIVERSION DITCH) FOR TYPE OF MATTING TO USE.
13. ANY DEWATERING OF SEDIMENT CONTAINMENT DEVICES FOR MAINTENANCE, REMOVAL OR CONVERSION PURPOSES IS TO BE DONE THROUGH A SILT BAG.
14. ANY DEWATERING OF STORM/UTILITY TRENCHES IS TO BE DONE THROUGH A SILT BAG.
15. GROUND COVER IS TO BE APPLIED PER CONDITIONS OF THE NPDES PERMIT OR AT THE END OF THE DAY IN CRITICAL AREAS.
16. CONTRACTOR SHALL USE TIRE WASH STATION TO PREVENT SEDIMENT FROM TRACKING ONTO THE ROAD IF CONSTRUCTION ENTRANCE IS FOUND INSUFFICIENT AT NO ADDITIONAL COST TO OWNER.
17. CONTRACTOR SHALL UTILIZE PAM FLOCCULANTS TO REDUCE RUN-OFF TURBIDITY. SEE SPECS.

MAINTENANCE PLAN

1. DURING ALL PHASES OF CONSTRUCTION, GROUNDCOVER ON EXPOSED SLOPES SHALL BE PROVIDED ACCORDING TO GROUND STABILIZATION TABLE **(SHEET C706)** FOLLOWING COMPLETION OF ANY PHASE OF GRADING.
2. FINAL PERMANENT GROUNDCOVER FOR ALL DISTURBED AREAS SHALL BE PROVIDED ON ALL DISTURBED AREAS ACCORDING TO GROUND STABILIZATION TABLE (BELOW) FOLLOWING COMPLETION OF CONSTRUCTION OR DEVELOPMENT.
3. THE ABOVE REQUIREMENTS ARE THE MINIMUM NECESSARY TO MEET EROSION AND SEDIMENT CONTROL REGULATIONS. THE CONTRACT DOCUMENTS INCLUDE ADDITIONAL SEEDING AND STABILIZATION REQUIREMENTS AND SCHEDULES WHICH MAY EXCEED THOSE ABOVE.
4. SLOPE EROSION CONTROL MATTING SHALL BE INSTALLED FOR TEMPORARY STABILIZATION DURING THE ESTABLISHMENT OF VEGETATIVE COVER ON ALL STEEP SLOPES (6:1 OR STEEPER). REFER TO MATERIAL SPECIFICATIONS. INSTALL MATTING PER MANUFACTURER'S INSTRUCTIONS.
5. ALL OTHER SEEDED AREAS SHALL BE MULCHED WITH STRAW AND TACKED WITH ASPHALT.

SELF-INSPECTION RULES

SEE **SHEET C706** FOR SELF-INSPECTION REQUIREMENTS.

THE FINANCIALLY RESPONSIBLE PERSON AND/OR HIS AGENT WILL BE PERFORM SELF INSPECTIONS OF THE EROSION AND SEDIMENTATION CONTROL MEASURES USING NCDEMLR'S SELF INSPECTION REPORT (WORKSHEET) AND THIS WILL BE KEPT ONSITE.

SLOPE & SURFACE STABILIZATION

GROUND STABILIZATION SHALL BE PROVIDED ON ALL DISTURBED AREAS ACCORDING TO GROUND STABILIZATION NOTES. SEE SHEET C705.

EXTENSIONS OF TIME MAY BE APPROVED BY THE PERMITTING AUTHORITY BASED ON WEATHER OR OTHER SITE-SPECIFIC CONDITIONS THAT MAKE COMPLIANCE IMPRACTICABLE (SECTION II.B(2) (b))

THE REQUIREMENTS ON SHEET C705 ARE THE MINIMUM NECESSARY TO MEET EROSION AND SEDIMENT CONTROL REGULATIONS. THE CONTRACT DOCUMENTS INCLUDE ADDITIONAL SEEDING AND STABILIZATION REQUIREMENTS AND SCHEDULES WHICH MAY EXCEED MINIMUM REQUIREMENTS.

INSTALL TEMPORARY EXCELSIOR MATTING FOR STABILIZATION DURING THE ESTABLISHMENT OF VEGETATIVE COVER ON ALL STEEP SLOPES (6:1 OR STEEPER) AND AREAS OF CONCENTRATED FLOW (CHANNELS, DITCHES, SWALES, ETC.). UTILIZE TEMPORARY COCONUT MAT IN AREAS IDENTIFIED ON PLAN. REFER TO SPECIFICATION SECTION 312500 FOR MATERIAL SPECIFICATIONS. INSTALL MATTING PER MANUFACTURER'S INSTRUCTIONS.

NOTE:
EROSION & SEDIMENT CONTROL SHALL BE PERMITTED THROUGH NCDEQ.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

MAGNETIC

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineerng
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT UNDER WHICH IT IS DELIVERED. NO OTHER USE, REPRODUCTION OR DISCLOSURE THEREOF MAY BE MADE WITHOUT THE PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

SHEET TITLE
FINAL EROSION CONTROL PLAN AREA_7&8

SHEET NUMBER
C-04.17

LEGEND

- TEMP. GRAVEL CONSTR. ENTRANCE SEE DETAIL SHEET ___
- TEMP. INLET PROTECTION DEVICE SEE DETAIL SHEET ___
- TEMP. INLET PROTECTION SILT BAG DEVICE SEE DETAIL SHEET ___
- TEMP. DIVERSION DITCH / BERM SEE DETAIL SHEET ___
- TEMP. SILT FENCE SEE DETAIL SHEET ___
- TEMP. REINFORCED SILT FENCE OUTLET, SEE DETAIL SHEET ___
- PERMANENT OUTLET PROTECTION SEE DETAIL SHEET ___
- TEMP. CONCRETE WASHOUT AREA SEE DETAIL SHEET ___
- TEMP. PLASTIC LINING, SEE TEMP. BASIN BAFFLES ON DETAIL SHEET ___
- TEMP. J-HOOK PROTECTION SEE DETAIL SHEET ___
- TEMP. TIMBER/BRIDGE MAT SEE DETAIL SHEET ___
- TEMP. ROCK PIPE INLET PROTECTION SEE DETAIL SHEET ___
- CHANNEL LINING SEE DETAIL SHEET ___
- TEMP. SKIMMER SEDIMENT BASIN SEE DETAIL SHEET ___
- EXISTING CONTOUR
- FINISHED CONTOUR
- TEMP. CONTOUR (TEMP. GRADES DURING CONSTR.)
- TEMPORARY BASIN BAFFLE SEE DETAIL SHEET ___
- TREE PROTECTION FENCE SEE DETAIL SHEET ___
- TEMP. COMPOST SOCK SEE DETAIL SHEET ___
- TEMP. COMPOST SOCK IN CHANNEL SEE DETAIL SHEET ___
- TEMP. SLOPE DRAIN SEE DETAIL SHEET ___
- PROPOSED STORM SEWER PIPES
- EXISTING STORM SEWER PIPES
- CONSTRUCTION LIMITS UNLESS OTHERWISE NOTED.
- TEMP. COMPOST SOCK INLET PROTECTION, SEE DETAIL SHEET ___
- TEMP. DEWATERING SILT BAG SEE DETAIL SHEET ___
- RESOURCE CONSERVATION AREA
- TEMP. COFFER DAM, SEE STREAM CROSSING/CULVERT INSTALLATION DETAIL SHEET ___

GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH ALL TOWN OF APEX AND NCDOT STANDARDS, SPECIFICATIONS AND DETAILS.
2. THE CONTRACTOR SHALL COMPLY WITH ALL STATE AND LOCAL CODES IN OBSERVING EROSION CONTROL MEASURES BOTH ON AND OFF SITE. ALL OFF-SITE SOIL BORROW AND WASTE SITES SHALL BE PROPERLY PERMITTED FOR SUCH ACTIVITIES. CONTRACTOR SHALL PROVIDE WRITTEN DOCUMENTATION OF SEDIMENT & EROSION CONTROL PERMIT FOR ANY OFF-SITE SITES TO OWNER PRIOR TO RELOCATING ANY STOCKPILE MATERIALS.
3. THE CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL DEVICES AFTER EACH RAINFALL EVENT OR AS DIRECTED BY LOCAL AUTHORITIES OR ARCHITECT.
4. TOTAL DISTURBED AREA: 58 AC.
5. ALL OPEN STORM PIPES SHALL BE PROTECTED WITH STONE FILTER PROTECTION AFTER WORK STOPPAGE EACH DAY. SEE DETAIL **SHEET** ___
6. ALL STORM DRAINAGE PIPES SHALL BE THOROUGHLY FLUSHED OF ALL SEDIMENT FOLLOWING SITE STABILIZATION. INTERIOR FLUSHING OF SYSTEM SHALL BE PERFORMED AS NEEDED TO MAINTAIN PROPER FUNCTIONING OF THE DRAINAGE SYSTEM. CLEANING SHALL BE PERFORMED IN A MANNER WHICH PREVENTS SEDIMENT FROM BEING FLUSHED THROUGH PIPES TO THE EXISTING DRAINAGE SYSTEM.
7. THE INDICATED STAGING AREA IS INTENDED FOR VEHICLES AND NON-ERODIBLE MATERIALS ONLY. NO SOIL, SAND OR OTHER ERODIBLE, FINE GRAINED MATERIAL SHALL BE STORED OUTSIDE OF THE LIMITS OF THE SITE PROTECTED BY SEDIMENT AND EROSION CONTROL DEVICES AND MEASURES.
8. SOIL AND OTHER MATERIALS SHALL ONLY BE TEMPORARILY STOCKPILED WITHIN THE CONSTRUCTION LIMITS PROTECTED BY SEDIMENT AND EROSION CONTROL DEVICES AND MEASURES. STOCKPILES SHALL BE STABILIZED AS REQUIRED AS INDICATED IN THE SLOPE & SURFACE STABILIZATION NOTES ON THIS PLAN.
9. THE TREE PROTECTION FENCE SHALL BE MAINTAINED ON THE SITE UNTIL ALL SITE WORK IS COMPLETED AND THE FINAL SITE INSPECTION IS SCHEDULED PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY (CO). THE FENCING SHALL BE REMOVED IMMEDIATELY PRIOR TO THE FINAL SITE INSPECTION FOR THE SITE.
10. TREE PROTECTION FENCING SHALL NOT BE MOVED AND THERE SHALL BE NO ENCROACHMENT INTO SUCH PROTECTED AREA(S) WITHOUT WRITTEN AUTHORIZATION OF THE COUNTY ZONING COMPLIANCE STAFF. ANY ACTIVITY (LANDSCAPING, FENCING, OR UTILITY INSTALLATION) SHOWN ON THE APPROVED PLANS IN A TREE PROTECTION AREA, SHALL ALSO NOT OCCUR WITHOUT WRITTEN AUTHORIZATION FROM THE COUNTY ZONING COMPLIANCE STAFF. ANY UNAUTHORIZED ENCROACHMENT OR DISTURBANCE WITHIN THE BOUNDARIES OF A TREE PROTECTION AREA SHALL AUTOMATICALLY RESULT IN FINES AND THE REPLACEMENT OF ANY DAMAGED VEGETATION IN ACCORDANCE WITH THE LAND DEVELOPMENT ORDINANCE.
11. ROADSIDE DITCHES AND CHANNELS SHALL BE STABILIZED DAILY UNTIL PERMANENT GROUND COVER IS ESTABLISHED.
12. INSTALL TEMPORARY MATTING TO TOP OF ALL SIDE SLOPES ON CHANNELS, DIVERSION DITCHES AND TEMPORARY SEDIMENT BASINS. SEE DETAIL SHEET C702 (PERMANENT CHANNEL) AND C702 (TEMPORARY DIVERSION DITCH) FOR TYPE OF MATTING TO USE.
13. ANY DEWATERING OF SEDIMENT CONTAINMENT DEVICES FOR MAINTENANCE, REMOVAL OR CONVERSION PURPOSES IS TO BE DONE THROUGH A SILT BAG.
14. ANY DEWATERING OF STORM/UTILITY TRENCHES IS TO BE DONE THROUGH A SILT BAG.
15. GROUND COVER IS TO BE APPLIED PER CONDITIONS OF THE NPDES PERMIT OR AT THE END OF THE DAY IN CRITICAL AREAS.
16. CONTRACTOR SHALL USE TIRE WASH STATION TO PREVENT SEDIMENT FROM TRACKING ONTO THE ROAD IF CONSTRUCTION ENTRANCE IS FOUND INSUFFICIENT AT NO ADDITIONAL COST TO OWNER.
17. CONTRACTOR SHALL UTILIZE PAM FLOCCULANTS TO REDUCE RUN-OFF TURBIDITY. SEE SPECS.

MAINTENANCE PLAN

1. DURING ALL PHASES OF CONSTRUCTION, GROUNDCOVER ON EXPOSED SLOPES SHALL BE PROVIDED ACCORDING TO GROUND STABILIZATION TABLE (**SHEET C706**) FOLLOWING COMPLETION OF ANY PHASE OF GRADING.
2. FINAL PERMANENT GROUNDCOVER FOR ALL DISTURBED AREAS SHALL BE PROVIDED ON ALL DISTURBED AREAS ACCORDING TO GROUND STABILIZATION TABLE (BELOW) FOLLOWING COMPLETION OF CONSTRUCTION OR DEVELOPMENT.
3. THE ABOVE REQUIREMENTS ARE THE MINIMUM NECESSARY TO MEET EROSION AND SEDIMENT CONTROL REGULATIONS. THE CONTRACT DOCUMENTS INCLUDE ADDITIONAL SEEDING AND STABILIZATION REQUIREMENTS AND SCHEDULES WHICH MAY EXCEED THOSE ABOVE.
4. SLOPE EROSION CONTROL MATTING SHALL BE INSTALLED FOR TEMPORARY STABILIZATION DURING THE ESTABLISHMENT OF VEGETATIVE COVER ON ALL STEEP SLOPES (6:1 OR STEEPER). REFER TO MATERIAL SPECIFICATIONS. INSTALL MATTING PER MANUFACTURER'S INSTRUCTIONS.
5. ALL OTHER SEEDED AREAS SHALL BE MULCHED WITH STRAW AND TACKED WITH ASPHALT.

SELF-INSPECTION RULES

SEE **SHEET C706** FOR SELF-INSPECTION REQUIREMENTS.

THE FINANCIALLY RESPONSIBLE PERSON AND/OR HIS AGENT WILL BE PERFORM SELF INSPECTIONS OF THE EROSION AND SEDIMENTATION CONTROL MEASURES USING NCDEMLR'S SELF INSPECTION REPORT (WORKSHEET) AND THIS WILL BE KEPT ONSITE.

SLOPE & SURFACE STABILIZATION

GROUND STABILIZATION SHALL BE PROVIDED ON ALL DISTURBED AREAS ACCORDING TO GROUND STABILIZATION NOTES. SEE SHEET C705.

EXTENSIONS OF TIME MAY BE APPROVED BY THE PERMITTING AUTHORITY BASED ON WEATHER OR OTHER SITE-SPECIFIC CONDITIONS THAT MAKE COMPLIANCE IMPRACTICABLE (SECTION II.B(2) (b))

THE REQUIREMENTS ON SHEET C705 ARE THE MINIMUM NECESSARY TO MEET EROSION AND SEDIMENT CONTROL REGULATIONS. THE CONTRACT DOCUMENTS INCLUDE ADDITIONAL SEEDING AND STABILIZATION REQUIREMENTS AND SCHEDULES WHICH MAY EXCEED MINIMUM REQUIREMENTS.

INSTALL TEMPORARY EXCELSIOR MATTING FOR STABILIZATION DURING THE ESTABLISHMENT OF VEGETATIVE COVER ON ALL STEEP SLOPES (6:1 OR STEEPER) AND AREAS OF CONCENTRATED FLOW (CHANNELS, DITCHES, SWALES, ETC.). UTILIZE TEMPORARY COCONUT MAT IN AREAS IDENTIFIED ON PLAN. REFER TO SPECIFICATION SECTION 312500 FOR MATERIAL SPECIFICATIONS. INSTALL MATTING PER MANUFACTURER'S INSTRUCTIONS.

NOTE:
EROSION & SEDIMENT CONTROL SHALL BE PERMITTED THROUGH NCDEQ.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

MAGNETIC

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT UNDER WHICH IT WAS PREPARED. NO OTHER USE, DISCLOSURE OR DUPLICATION SHALL BE MADE WITHOUT THE PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

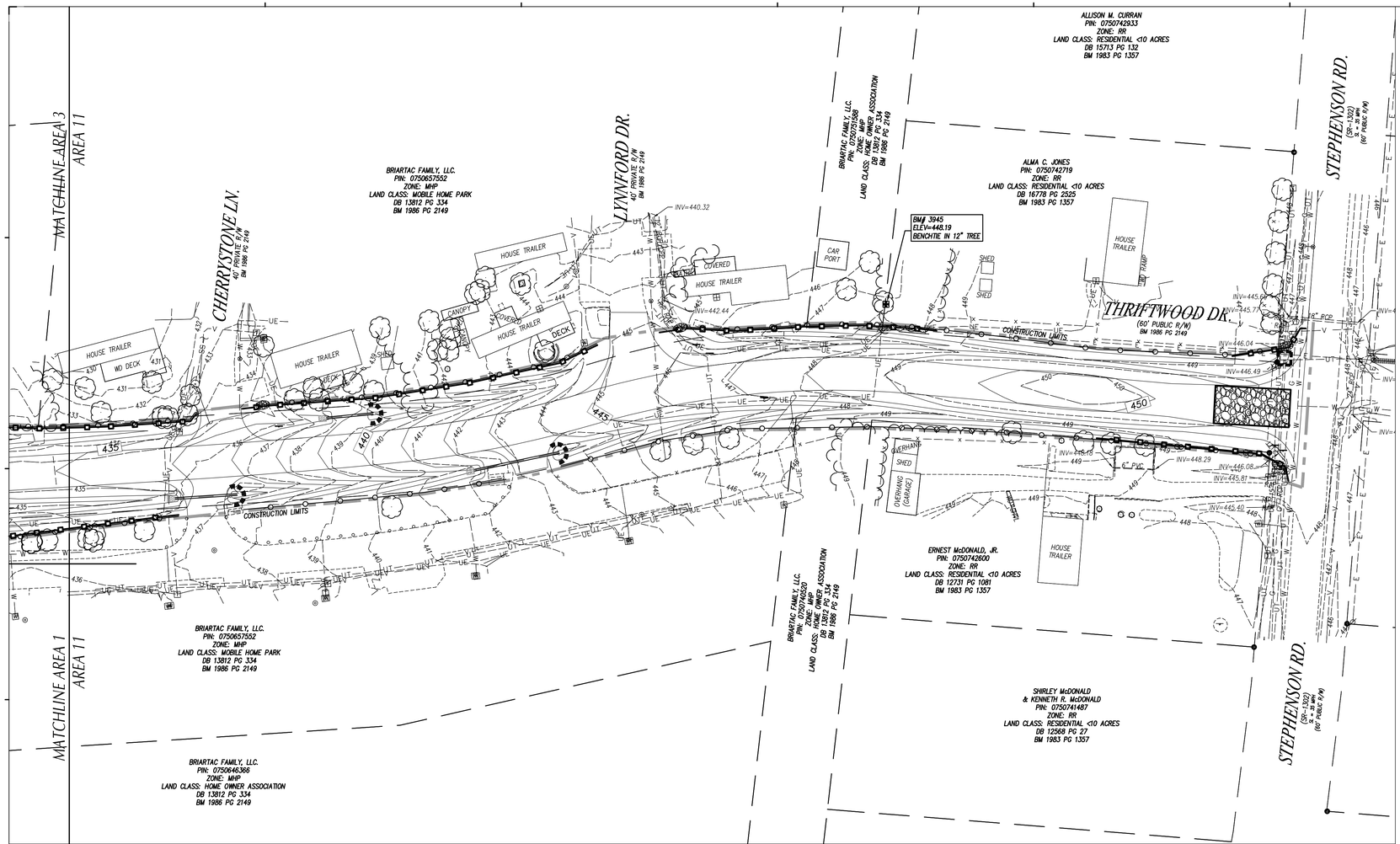
PROJECT NO. 02000.000

SHEET TITLE

FINAL EROSION CONTROL PLAN AREA_9&10

SHEET NUMBER

C-04.18



LEGEND

- TEMP. GRAVEL CONSTR. ENTRANCE SEE DETAIL SHEET ___
- TEMP. INLET PROTECTION DEVICE SEE DETAIL SHEET ___
- TEMP. INLET PROTECTION SILT BAG DEVICE SEE DETAIL SHEET ___
- TEMP. DIVERSION DITCH / BERM SEE DETAIL SHEET ___
- TEMP. SILT FENCE SEE DETAIL SHEET ___
- TEMP. REINFORCED SILT FENCE OUTLET, SEE DETAIL SHEET ___
- PERMANENT OUTLET PROTECTION SEE DETAIL SHEET ___
- TEMP. CONCRETE WASHOUT AREA SEE DETAIL SHEET ___
- TEMP. PLASTIC LINING, SEE TEMP. BASIN BAFFLES ON DETAIL SHEET ___
- TEMP. J-HOOK PROTECTION SEE DETAIL SHEET ___
- TEMP. TIMBER/BRIDGE MAT SEE DETAIL SHEET ___
- TEMP. ROCK PIPE INLET PROTECTION SEE DETAIL SHEET ___
- CHANNEL LINING SEE DETAIL SHEET ___
- TEMP. SKIMMER SEDIMENT BASIN SEE DETAIL SHEET ___
- EXISTING CONTOUR
- FINISHED CONTOUR
- TEMP. CONTOUR (TEMP. GRADES DURING CONSTR.)
- TEMPORARY BASIN BAFFLE SEE DETAIL SHEET ___
- TREE PROTECTION FENCE SEE DETAIL SHEET ___
- TEMP. COMPOST SOCK SEE DETAIL SHEET ___
- TEMP. COMPOST SOCK IN CHANNEL SEE DETAIL SHEET ___
- TEMP. SLOPE DRAIN SEE DETAIL SHEET ___
- PROPOSED STORM SEWER PIPES
- EXISTING STORM SEWER PIPES
- CONSTRUCTION LIMITS UNLESS OTHERWISE NOTED.
- TEMP. COMPOST SOCK INLET PROTECTION, SEE DETAIL SHEET ___
- TEMP. DEWATERING SILT BAG SEE DETAIL SHEET ___
- RESOURCE CONSERVATION AREA
- TEMP. COFFER DAM, SEE STREAM CROSSING CULVERT INSTALLATION DETAIL SHEET ___

GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH ALL TOWN OF APEX AND NCDOT STANDARDS, SPECIFICATIONS AND DETAILS.
2. THE CONTRACTOR SHALL COMPLY WITH ALL STATE AND LOCAL CODES IN OBSERVING EROSION CONTROL MEASURES BOTH ON AND OFF SITE. ALL OFF-SITE SOIL BORROW AND WASTE SITES SHALL BE PROPERLY PERMITTED FOR SUCH ACTIVITIES. CONTRACTOR SHALL PROVIDE WRITTEN DOCUMENTATION OF SEDIMENT & EROSION CONTROL PERMIT FOR ANY OFF-SITE SITES TO OWNER PRIOR TO RELOCATING ANY STOCKPILE MATERIALS.
3. THE CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL DEVICES AFTER EACH RAINFALL EVENT OR AS DIRECTED BY LOCAL AUTHORITIES OR ARCHITECT.
4. TOTAL DISTURBED AREA: 58 AC.
5. ALL OPEN STORM PIPES SHALL BE PROTECTED WITH STONE FILTER PROTECTION AFTER WORK STOPPAGE EACH DAY. SEE DETAIL **SHEET** ___
6. ALL STORM DRAINAGE PIPES SHALL BE THOROUGHLY FLUSHED OF ALL SEDIMENT FOLLOWING SITE STABILIZATION. INTERIOR FLUSHING OF SYSTEM SHALL BE PERFORMED AS NEEDED TO MAINTAIN PROPER FUNCTIONING OF THE DRAINAGE SYSTEM. CLEANING SHALL BE PERFORMED IN A MANNER WHICH PREVENTS SEDIMENT FROM BEING FLUSHED THROUGH PIPES TO THE EXISTING DRAINAGE SYSTEM.
7. THE INDICATED STAGING AREA IS INTENDED FOR VEHICLES AND NON-ERODIBLE MATERIALS ONLY. NO SOIL, SAND OR OTHER ERODIBLE, FINE GRAINED MATERIAL SHALL BE STORED OUTSIDE OF THE LIMITS OF THE SITE PROTECTED BY SEDIMENT AND EROSION CONTROL DEVICES AND MEASURES.
8. SOIL AND OTHER MATERIALS SHALL ONLY BE TEMPORARILY STOCKPILED WITHIN THE CONSTRUCTION LIMITS PROTECTED BY SEDIMENT AND EROSION CONTROL DEVICES AND MEASURES. STOCKPILES SHALL BE STABILIZED AS REQUIRED AS INDICATED IN THE SLOPE & SURFACE STABILIZATION NOTES ON THIS PLAN.
9. THE TREE PROTECTION FENCE SHALL BE MAINTAINED ON THE SITE UNTIL ALL SITE WORK IS COMPLETED AND THE FINAL SITE INSPECTION IS SCHEDULED PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY (CO). THE FENCING SHALL BE REMOVED IMMEDIATELY PRIOR TO THE FINAL SITE INSPECTION FOR THE SITE.
10. TREE PROTECTION FENCING SHALL NOT BE MOVED AND THERE SHALL BE NO ENCROACHMENT INTO SUCH PROTECTED AREA(S) WITHOUT WRITTEN AUTHORIZATION OF THE COUNTY ZONING COMPLIANCE STAFF. ANY ACTIVITY (LANDSCAPING, FENCING, OR UTILITY INSTALLATION) SHOWN ON THE APPROVED PLANS IN A TREE PROTECTION AREA SHALL ALSO NOT OCCUR WITHOUT WRITTEN AUTHORIZATION FROM THE COUNTY ZONING COMPLIANCE STAFF. ANY UNAUTHORIZED ENCROACHMENT OR DISTURBANCE WITHIN THE BOUNDARIES OF A TREE PROTECTION AREA SHALL AUTOMATICALLY RESULT IN FINES AND THE REPLACEMENT OF ANY DAMAGED VEGETATION IN ACCORDANCE WITH THE LAND DEVELOPMENT ORDINANCE.
11. ROADSIDE DITCHES AND CHANNELS SHALL BE STABILIZED DAILY UNTIL PERMANENT GROUND COVER IS ESTABLISHED.
12. INSTALL TEMPORARY MATTING TO TOP OF ALL SIDE SLOPES ON CHANNELS, DIVERSION DITCHES AND TEMPORARY SEDIMENT BASINS. SEE DETAIL SHEET C702 (PERMANENT CHANNEL) AND C702 (TEMPORARY DIVERSION DITCH) FOR TYPE OF MATTING TO USE.
13. ANY DEWATERING OF SEDIMENT CONTAINMENT DEVICES FOR MAINTENANCE, REMOVAL OR CONVERSION PURPOSES IS TO BE DONE THROUGH A SILT BAG.
14. ANY DEWATERING OF STORM/UTILITY TRENCHES IS TO BE DONE THROUGH A SILT BAG.
15. GROUND COVER IS TO BE APPLIED PER CONDITIONS OF THE NPDES PERMIT OR AT THE END OF THE DAY IN CRITICAL AREAS.
16. CONTRACTOR SHALL USE TIRE WASH STATION TO PREVENT SEDIMENT FROM TRACKING ONTO THE ROAD IF CONSTRUCTION ENTRANCE IS FOUND INSUFFICIENT AT NO ADDITIONAL COST TO OWNER.
17. CONTRACTOR SHALL UTILIZE PAM FLOCCULANTS TO REDUCE RUN-OFF TURBIDITY. SEE SPECS.

MAINTENANCE PLAN

1. DURING ALL PHASES OF CONSTRUCTION, GROUNDCOVER ON EXPOSED SLOPES SHALL BE PROVIDED ACCORDING TO GROUND STABILIZATION TABLE (**SHEET C706**) FOLLOWING COMPLETION OF ANY PHASE OF GRADING.
2. FINAL PERMANENT GROUNDCOVER FOR ALL DISTURBED AREAS SHALL BE PROVIDED ON ALL DISTURBED AREAS ACCORDING TO GROUND STABILIZATION TABLE (BELOW) FOLLOWING COMPLETION OF CONSTRUCTION OR DEVELOPMENT.
3. THE ABOVE REQUIREMENTS ARE THE MINIMUM NECESSARY TO MEET EROSION AND SEDIMENT CONTROL REGULATIONS. THE CONTRACT DOCUMENTS INCLUDE ADDITIONAL SEEDING AND STABILIZATION REQUIREMENTS AND SCHEDULES WHICH MAY EXCEED THOSE ABOVE.
4. SLOPE EROSION CONTROL MATTING SHALL BE INSTALLED FOR TEMPORARY STABILIZATION DURING THE ESTABLISHMENT OF VEGETATIVE COVER ON ALL STEEP SLOPES (6:1 OR STEEPER). REFER TO MATERIAL SPECIFICATIONS. INSTALL MATTING PER MANUFACTURER'S INSTRUCTIONS.
5. ALL OTHER SEEDED AREAS SHALL BE MULCHED WITH STRAW AND TACKED WITH ASPHALT.

SELF-INSPECTION RULES

SEE **SHEET C706** FOR SELF-INSPECTION REQUIREMENTS.

THE FINANCIALLY RESPONSIBLE PERSON AND/OR HIS AGENT WILL BE PERFORM SELF INSPECTIONS OF THE EROSION AND SEDIMENTATION CONTROL MEASURES USING NCDEMLR'S SELF INSPECTION REPORT (WORKSHEET) AND THIS WILL BE KEPT ONSITE.

SLOPE & SURFACE STABILIZATION

GROUND STABILIZATION SHALL BE PROVIDED ON ALL DISTURBED AREAS ACCORDING TO GROUND STABILIZATION NOTES. SEE SHEET C705.

EXTENSIONS OF TIME MAY BE APPROVED BY THE PERMITTING AUTHORITY BASED ON WEATHER OR OTHER SITE-SPECIFIC CONDITIONS THAT MAKE COMPLIANCE IMPRACTICABLE (SECTION II.B(2) (b))

THE REQUIREMENTS ON SHEET C705 ARE THE MINIMUM NECESSARY TO MEET EROSION AND SEDIMENT CONTROL REGULATIONS. THE CONTRACT DOCUMENTS INCLUDE ADDITIONAL SEEDING AND STABILIZATION REQUIREMENTS AND SCHEDULES WHICH MAY EXCEED MINIMUM REQUIREMENTS.

INSTALL TEMPORARY EXCELSIOR MATTING FOR STABILIZATION DURING THE ESTABLISHMENT OF VEGETATIVE COVER ON ALL STEEP SLOPES (6:1 OR STEEPER) AND AREAS OF CONCENTRATED FLOW (CHANNELS, DITCHES, SWALES, ETC.). UTILIZE TEMPORARY COCONUT MAT IN AREAS IDENTIFIED ON PLAN. REFER TO SPECIFICATION SECTION 312500 FOR MATERIAL SPECIFICATIONS. INSTALL MATTING PER MANUFACTURER'S INSTRUCTIONS.

NOTE:
EROSION & SEDIMENT CONTROL SHALL BE PERMITTED THROUGH NCDEQ.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

MAGNETIC

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

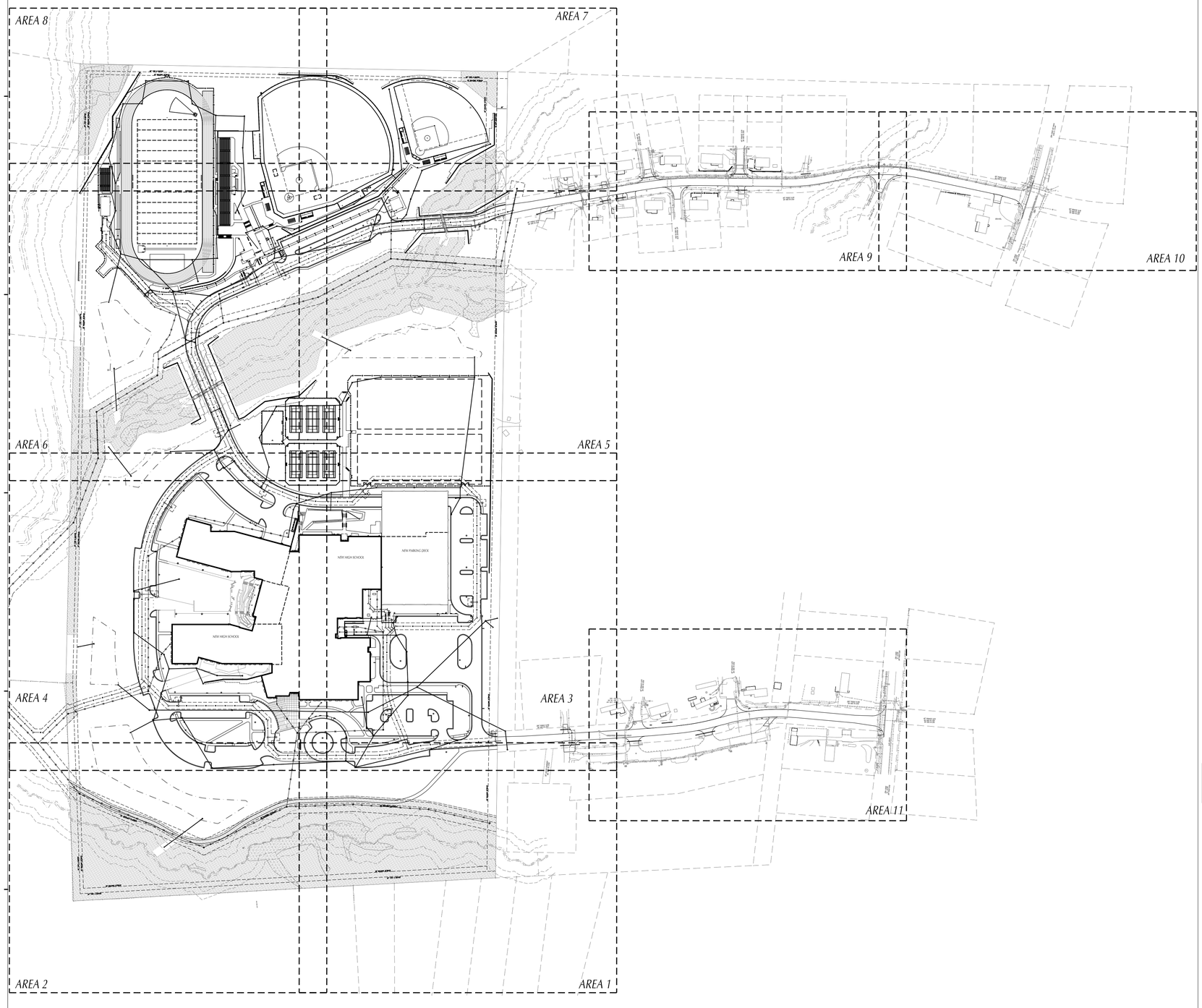
PROJECT NO. 02000.000

SHEET TITLE

FINAL EROSION CONTROL PLAN AREA_11

SHEET NUMBER

C-04.19



LEGEND

RESOURCE CONSERVATION AREA

GRAPHIC SCALE

150 0 75 150 300 600

(IN FEET)
1 inch = 150 ft.

MAGNETIC

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

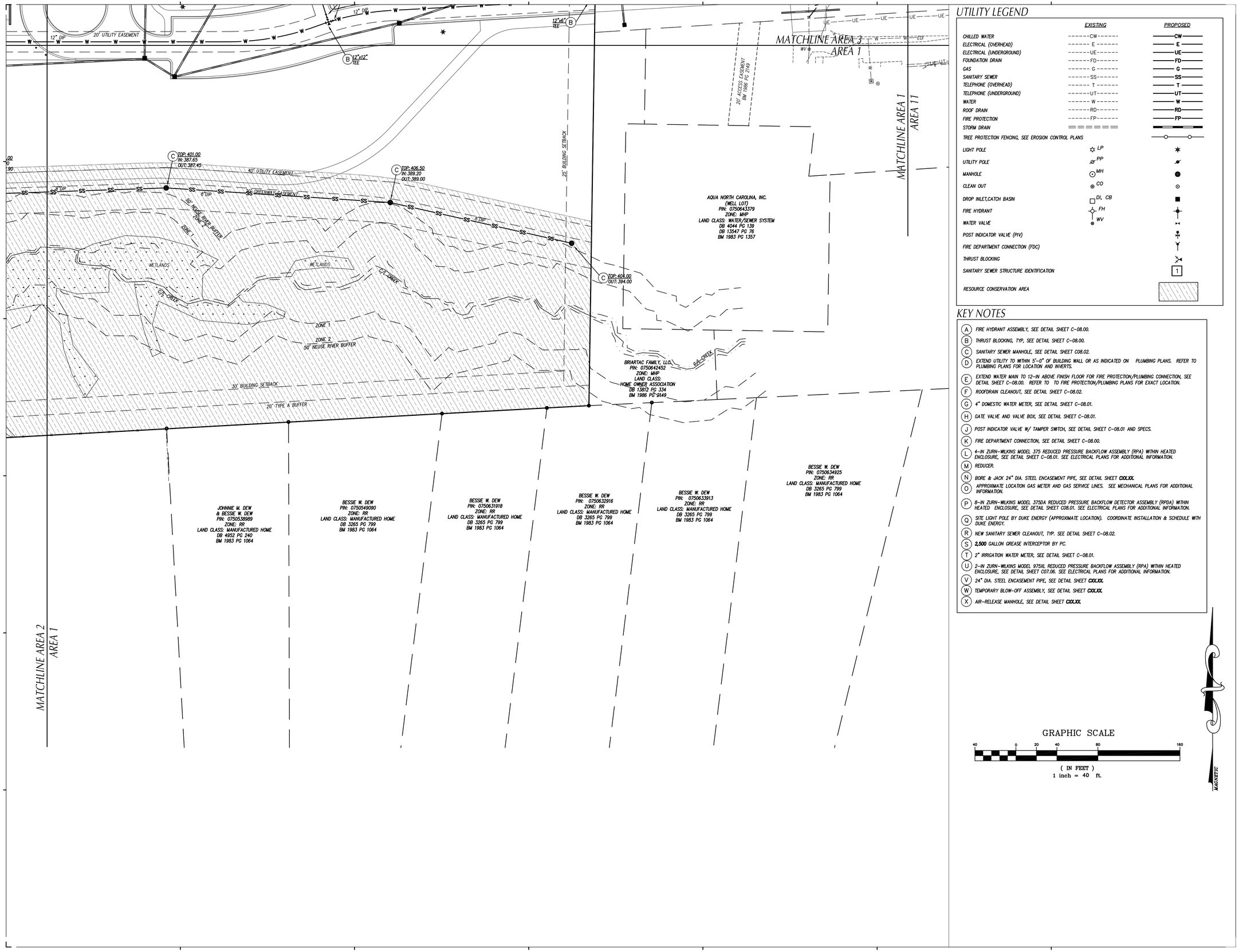
PROJECT NO. 02000.000

SHEET TITLE

UTILITY OVERALL PLAN

SHEET NUMBER

C-05.00



UTILITY LEGEND

	EXISTING	PROPOSED
CHILLED WATER	------CW------	CW
ELECTRICAL (OVERHEAD)	------ E ------	E
ELECTRICAL (UNDERGROUND)	------UE------	UE
FOUNDATION DRAIN	------FD------	FD
GAS	------ G ------	G
SANITARY SEWER	------SS------	SS
TELEPHONE (OVERHEAD)	------ T ------	T
TELEPHONE (UNDERGROUND)	------UT------	UT
WATER	------ W ------	W
ROOF DRAIN	------RD------	RD
FIRE PROTECTION	------FP------	FP
STORM DRAIN		
TREE PROTECTION FENCING, SEE EROSION CONTROL PLANS		
LIGHT POLE	LP	
UTILITY POLE	PP	
MANHOLE	MH	
CLEAN OUT	CO	
DROP INLET,CATCH BASIN	DI, CB	
FIRE HYDRANT	FH	
WATER VALVE	WV	
POST INDICATOR VALVE (PIV)		
FIRE DEPARTMENT CONNECTION (FDC)		
THRUST BLOCKING		
SANITARY SEWER STRUCTURE IDENTIFICATION		1
RESOURCE CONSERVATION AREA		

KEY NOTES

(A) FIRE HYDRANT ASSEMBLY, SEE DETAIL SHEET C-08.00.

(B) THRUST BLOCKING, TYP, SEE DETAIL SHEET C-08.00.

(C) SANITARY SEWER MANHOLE, SEE DETAIL SHEET C08.02.

(D) EXTEND UTILITY TO WITHIN 5'-0" OF BUILDING WALL OR AS INDICATED ON PLUMBING PLANS. REFER TO PLUMBING PLANS FOR LOCATION AND INVERTS.

(E) EXTEND WATER MAIN TO 12-IN ABOVE FINISH FLOOR FOR FIRE PROTECTION/PLUMBING CONNECTION, SEE DETAIL SHEET C-08.00. REFER TO TO FIRE PROTECTION/PLUMBING PLANS FOR EXACT LOCATION.

(F) ROOFDRAIN CLEANOUT, SEE DETAIL SHEET C-08.02.

(G) 4" DOMESTIC WATER METER, SEE DETAIL SHEET C-08.01.

(H) GATE VALVE AND VALVE BOX, SEE DETAIL SHEET C-08.01.

(J) POST INDICATOR VALVE W/ TAMPER SWITCH, SEE DETAIL SHEET C-08.01 AND SPECS.

(K) FIRE DEPARTMENT CONNECTION, SEE DETAIL SHEET C-08.00.

(L) 4-IN ZURN-WILKINS MODEL 375 REDUCED PRESSURE BACKFLOW ASSEMBLY (RPA) WITHIN HEATED ENCLOSURE, SEE DETAIL SHEET C-08.01. SEE ELECTRICAL PLANS FOR ADDITIONAL INFORMATION.

(M) REDUCER.

(N) BORE & JACK 24" DIA. STEEL ENCASEMENT PIPE, SEE DETAIL SHEET **C0X.XX.**

(O) APPROXIMATE LOCATION GAS METER AND GAS SERVICE LINES. SEE MECHANICAL PLANS FOR ADDITIONAL INFORMATION.

(P) 8-IN ZURN-WILKINS MODEL 375DA REDUCED PRESSURE BACKFLOW DETECTOR ASSEMBLY (RPDA) WITHIN HEATED ENCLOSURE, SEE DETAIL SHEET C08.01. SEE ELECTRICAL PLANS FOR ADDITIONAL INFORMATION.

(Q) SITE LIGHT POLE BY DUKE ENERGY (APPROXIMATE LOCATION). COORDINATE INSTALLATION & SCHEDULE WITH DUKE ENERGY.

(R) NEW SANITARY SEWER CLEANOUT, TYP. SEE DETAIL SHEET C-08.02.

(S) 2,500 GALLON GREASE INTERCEPTOR BY PC.

(T) 2" IRRIGATION WATER METER, SEE DETAIL SHEET C-08.01.

(U) 2-IN ZURN-WILKINS MODEL 975XL REDUCED PRESSURE BACKFLOW ASSEMBLY (RPA) WITHIN HEATED ENCLOSURE, SEE DETAIL SHEET C07.06. SEE ELECTRICAL PLANS FOR ADDITIONAL INFORMATION.

(V) 24" DIA. STEEL ENCASEMENT PIPE, SEE DETAIL SHEET **C0X.XX.**

(W) TEMPORARY BLOW-OFF ASSEMBLY, SEE DETAIL SHEET **C0X.XX.**

(X) AIR-RELEASE MANHOLE, SEE DETAIL SHEET **C0X.XX.**

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

MAGNETIC

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Ralelgh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Ralelgh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineerlng
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

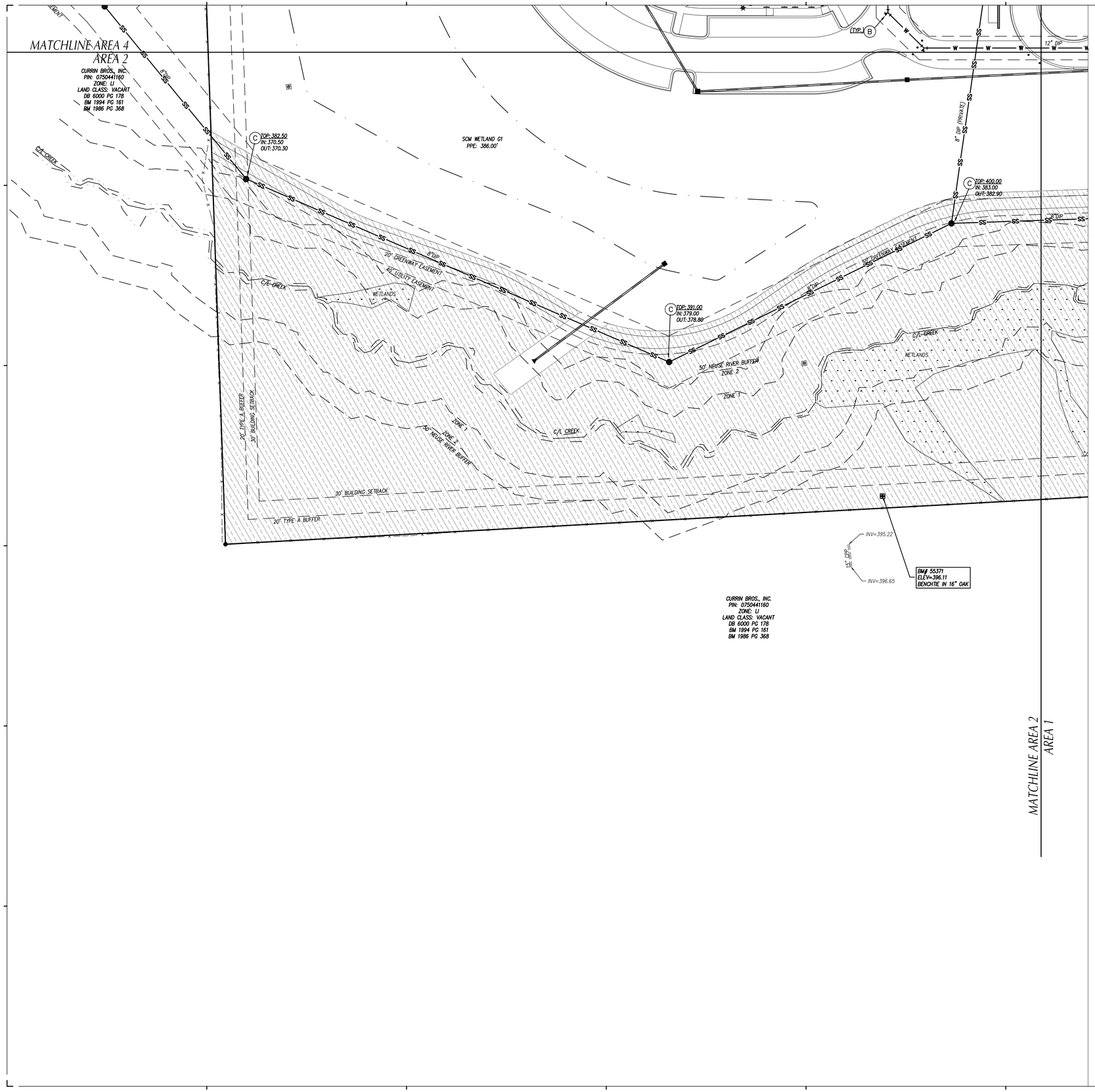
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

SHEET TITLE
UTILITY
PLAN
AREA_1

SHEET NUMBER
C-05.01



UTILITY LEGEND

	EXISTING	PROPOSED
CHILLED WATER	------CW------	CW
ELECTRICAL (OVERHEAD)	------ E ------	E
ELECTRICAL (UNDERGROUND)	------UE------	UE
FOUNDATION DRAIN	------FD------	FD
GAS	------ G ------	G
SANITARY SEWER	------SS------	SS
TELEPHONE (OVERHEAD)	------ T ------	T
TELEPHONE (UNDERGROUND)	------UT------	UT
WATER	------ W ------	W
ROOF DRAIN	------RD------	RD
FIRE PROTECTION	------FP------	FP
STORM DRAIN		
TREE PROTECTION FENCING, SEE EROSION CONTROL PLANS		
LIGHT POLE	LP	
UTILITY POLE	PP	
MANHOLE	MH	
CLEAN OUT	CO	
DROP INLET,CATCH BASIN	DI, CB	
FIRE HYDRANT	FH	
WATER VALVE	WV	
POST INDICATOR VALVE (PIV)		
FIRE DEPARTMENT CONNECTION (FDC)		
THRUST BLOCKING		
SANITARY SEWER STRUCTURE IDENTIFICATION		1
RESOURCE CONSERVATION AREA		

KEY NOTES

(A) FIRE HYDRANT ASSEMBLY, SEE DETAIL SHEET C-08.00.

(B) THRUST BLOCKING, TYP, SEE DETAIL SHEET C-08.00.

(C) SANITARY SEWER MANHOLE, SEE DETAIL SHEET C08.02.

(D) EXTEND UTILITY TO WITHIN 5'-0" OF BUILDING WALL OR AS INDICATED ON PLUMBING PLANS. REFER TO PLUMBING PLANS FOR LOCATION AND INVERTS.

(E) EXTEND WATER MAIN TO 12-IN ABOVE FINISH FLOOR FOR FIRE PROTECTION/PLUMBING CONNECTION, SEE DETAIL SHEET C-08.00. REFER TO TO FIRE PROTECTION/PLUMBING PLANS FOR EXACT LOCATION.

(F) ROOFDRAIN CLEANOUT, SEE DETAIL SHEET C-08.02.

(G) 4" DOMESTIC WATER METER, SEE DETAIL SHEET C-08.01.

(H) GATE VALVE AND VALVE BOX, SEE DETAIL SHEET C-08.01.

(J) POST INDICATOR VALVE W/ TAMPER SWITCH, SEE DETAIL SHEET C-08.01 AND SPECS.

(K) FIRE DEPARTMENT CONNECTION, SEE DETAIL SHEET C-08.00.

(L) 4-IN ZURN-WILKINS MODEL 375 REDUCED PRESSURE BACKFLOW ASSEMBLY (RPA) WITHIN HEATED ENCLOSURE, SEE DETAIL SHEET C-08.01. SEE ELECTRICAL PLANS FOR ADDITIONAL INFORMATION.

(M) REDUCER.

(N) BORE & JACK 24" DIA. STEEL ENCASEMENT PIPE, SEE DETAIL SHEET **C00.XX.**

(O) APPROXIMATE LOCATION GAS METER AND GAS SERVICE LINES. SEE MECHANICAL PLANS FOR ADDITIONAL INFORMATION.

(P) 8-IN ZURN-WILKINS MODEL 375DA REDUCED PRESSURE BACKFLOW DETECTOR ASSEMBLY (RPDA) WITHIN HEATED ENCLOSURE, SEE DETAIL SHEET C08.01. SEE ELECTRICAL PLANS FOR ADDITIONAL INFORMATION.

(Q) SITE LIGHT POLE BY DUKE ENERGY (APPROXIMATE LOCATION). COORDINATE INSTALLATION & SCHEDULE WITH DUKE ENERGY.

(R) NEW SANITARY SEWER CLEANOUT, TYP. SEE DETAIL SHEET C-08.02.

(S) 2,500 GALLON GREASE INTERCEPTOR BY PC.

(T) 2" IRRIGATION WATER METER, SEE DETAIL SHEET C-08.01.

(U) 2-IN ZURN-WILKINS MODEL 975XL REDUCED PRESSURE BACKFLOW ASSEMBLY (RPA) WITHIN HEATED ENCLOSURE, SEE DETAIL SHEET C07.06. SEE ELECTRICAL PLANS FOR ADDITIONAL INFORMATION.

(V) 24" DIA. STEEL ENCASEMENT PIPE, SEE DETAIL SHEET **C00.XX.**

(W) TEMPORARY BLOW-OFF ASSEMBLY, SEE DETAIL SHEET **C00.XX.**

(X) AIR-RELEASE MANHOLE, SEE DETAIL SHEET **C00.XX.**

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Ralelgh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Ralelgh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineerlng
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

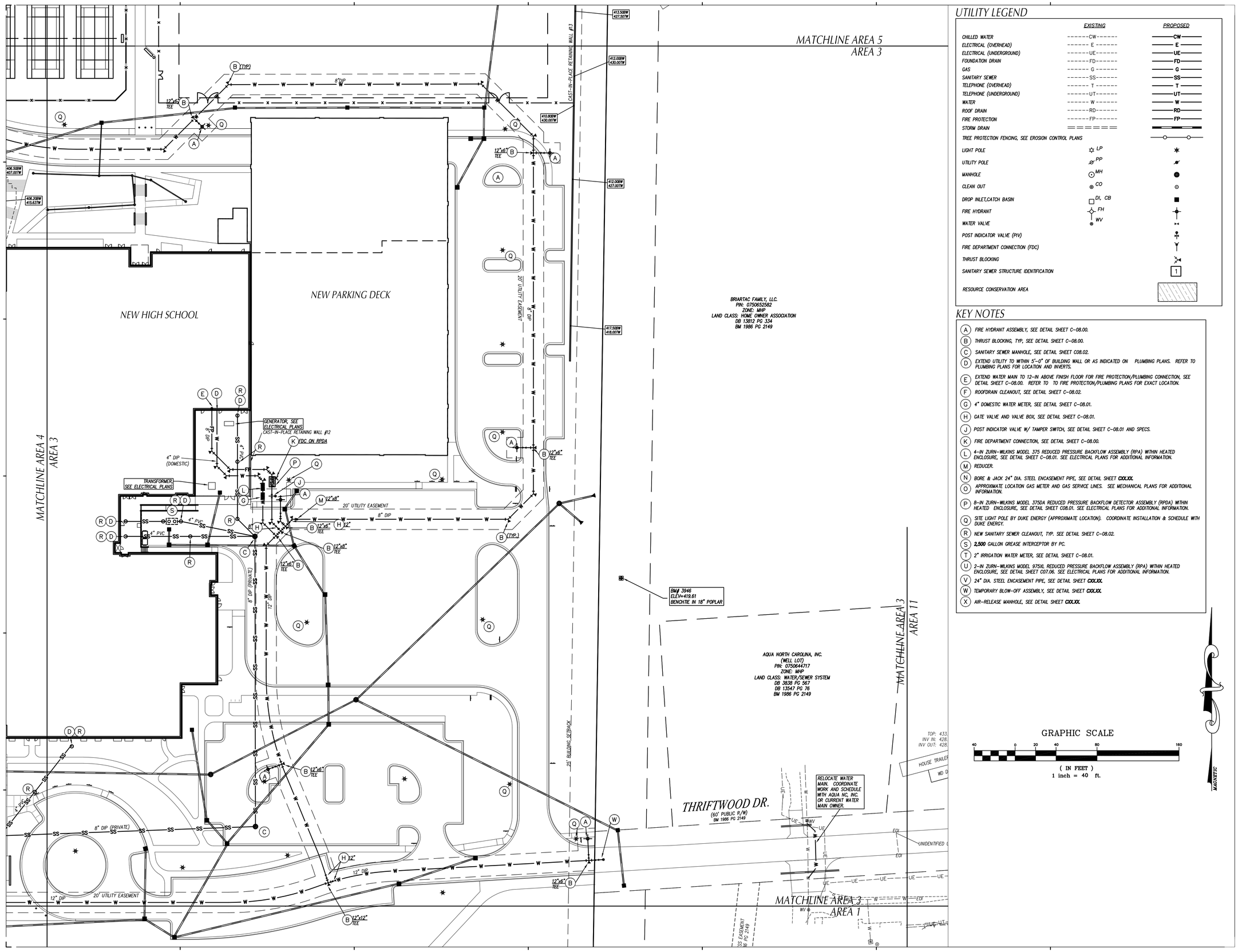
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

SHEET TITLE
UTILITY
PLAN
AREA_2

SHEET NUMBER
C-05.02



UTILITY LEGEND

	EXISTING	PROPOSED
CHILLED WATER	------CW------	CW
ELECTRICAL (OVERHEAD)	------ E ------	E
ELECTRICAL (UNDERGROUND)	------UE------	UE
FOUNDATION DRAIN	------FD------	FD
GAS	------ G ------	G
SANITARY SEWER	------SS------	SS
TELEPHONE (OVERHEAD)	------ T ------	T
TELEPHONE (UNDERGROUND)	------UT------	UT
WATER	------ W ------	W
ROOF DRAIN	------RD------	RD
FIRE PROTECTION	------FP------	FP
STORM DRAIN		
TREE PROTECTION FENCING, SEE EROSION CONTROL PLANS		
LIGHT POLE	LP	
UTILITY POLE	PP	
MANHOLE	MH	
CLEAN OUT	CO	
DROP INLET,CATCH BASIN	DI, CB	
FIRE HYDRANT	FH	
WATER VALVE	WV	
POST INDICATOR VALVE (PIV)		
FIRE DEPARTMENT CONNECTION (FDC)		
THRUST BLOCKING		
SANITARY SEWER STRUCTURE IDENTIFICATION		1
RESOURCE CONSERVATION AREA		

KEY NOTES

(A) FIRE HYDRANT ASSEMBLY, SEE DETAIL SHEET C-08.00.

(B) THRUST BLOCKING, TYP, SEE DETAIL SHEET C-08.00.

(C) SANITARY SEWER MANHOLE, SEE DETAIL SHEET C08.02.

(D) EXTEND UTILITY TO WITHIN 5'-0" OF BUILDING WALL OR AS INDICATED ON PLUMBING PLANS. REFER TO PLUMBING PLANS FOR LOCATION AND INVERTS.

(E) EXTEND WATER MAIN TO 12-IN ABOVE FINISH FLOOR FOR FIRE PROTECTION/PLUMBING CONNECTION, SEE DETAIL SHEET C-08.00. REFER TO TO FIRE PROTECTION/PLUMBING PLANS FOR EXACT LOCATION.

(F) ROOFDRAIN CLEANOUT, SEE DETAIL SHEET C-08.02.

(G) 4" DOMESTIC WATER METER, SEE DETAIL SHEET C-08.01.

(H) GATE VALVE AND VALVE BOX, SEE DETAIL SHEET C-08.01.

(J) POST INDICATOR VALVE W/ TAMPER SWITCH, SEE DETAIL SHEET C-08.01 AND SPECS.

(K) FIRE DEPARTMENT CONNECTION, SEE DETAIL SHEET C-08.00.

(L) 4-IN ZURN-WILKINS MODEL 375 REDUCED PRESSURE BACKFLOW ASSEMBLY (RPA) WITHIN HEATED ENCLOSURE, SEE DETAIL SHEET C-08.01. SEE ELECTRICAL PLANS FOR ADDITIONAL INFORMATION.

(M) REDUCER.

(N) BORE & JACK 24" DIA. STEEL ENCASEMENT PIPE, SEE DETAIL SHEET **C00.XX.**

(O) APPROXIMATE LOCATION GAS METER AND GAS SERVICE LINES. SEE MECHANICAL PLANS FOR ADDITIONAL INFORMATION.

(P) 8-IN ZURN-WILKINS MODEL 375DA REDUCED PRESSURE BACKFLOW DETECTOR ASSEMBLY (RPDA) WITHIN HEATED ENCLOSURE, SEE DETAIL SHEET C08.01. SEE ELECTRICAL PLANS FOR ADDITIONAL INFORMATION.

(Q) SITE LIGHT POLE BY DUKE ENERGY (APPROXIMATE LOCATION). COORDINATE INSTALLATION & SCHEDULE WITH DUKE ENERGY.

(R) NEW SANITARY SEWER CLEANOUT, TYP. SEE DETAIL SHEET C-08.02.

(S) 2,500 GALLON GREASE INTERCEPTOR BY PC.

(T) 2" IRRIGATION WATER METER, SEE DETAIL SHEET C-08.01.

(U) 2-IN ZURN-WILKINS MODEL 975U, REDUCED PRESSURE BACKFLOW ASSEMBLY (RPA) WITHIN HEATED ENCLOSURE, SEE DETAIL SHEET C07.06. SEE ELECTRICAL PLANS FOR ADDITIONAL INFORMATION.

(V) 24" DIA. STEEL ENCASEMENT PIPE, SEE DETAIL SHEET **C00.XX.**

(W) TEMPORARY BLOW-OFF ASSEMBLY, SEE DETAIL SHEET **C00.XX.**

(X) AIR-RELEASE MANHOLE, SEE DETAIL SHEET **C00.XX.**

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

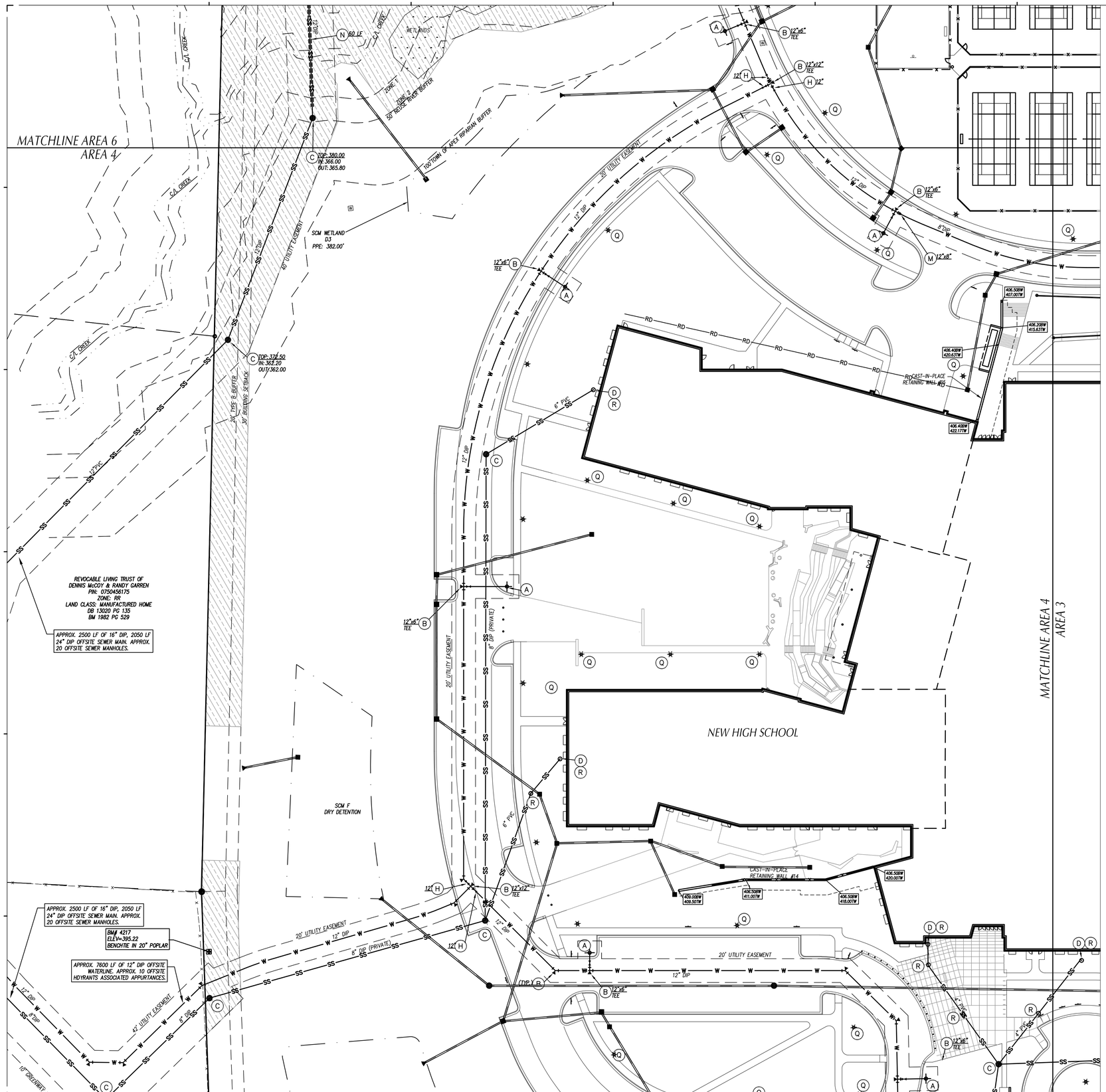
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

SHEET TITLE
UTILITY
PLAN
AREA_3

SHEET NUMBER
C-05.03



UTILITY LEGEND

	EXISTING	PROPOSED
CHILLED WATER	------CW------	CW
ELECTRICAL (OVERHEAD)	------ E ------	E
ELECTRICAL (UNDERGROUND)	------UE------	UE
FOUNDATION DRAIN	------FD------	FD
GAS	------ G ------	G
SANITARY SEWER	------SS------	SS
TELEPHONE (OVERHEAD)	------ T ------	T
TELEPHONE (UNDERGROUND)	------UT------	UT
WATER	------ W ------	W
ROOF DRAIN	------RD------	RD
FIRE PROTECTION	------FP------	FP
STORM DRAIN		
TREE PROTECTION FENCING, SEE EROSION CONTROL PLANS		
LIGHT POLE	LP	
UTILITY POLE	PP	
MANHOLE	MH	
CLEAN OUT	CO	
DROP INLET,CATCH BASIN	DI, CB	
FIRE HYDRANT	FH	
WATER VALVE	WV	
POST INDICATOR VALVE (PIV)		
FIRE DEPARTMENT CONNECTION (FDC)		
THRUST BLOCKING		
SANITARY SEWER STRUCTURE IDENTIFICATION		1
RESOURCE CONSERVATION AREA		

KEY NOTES

- (A) FIRE HYDRANT ASSEMBLY, SEE DETAIL SHEET C-08.00.
- (B) THRUST BLOCKING, TYP, SEE DETAIL SHEET C-08.00.
- (C) SANITARY SEWER MANHOLE, SEE DETAIL SHEET C08.02.
- (D) EXTEND UTILITY TO WITHIN 5'-0" OF BUILDING WALL OR AS INDICATED ON PLUMBING PLANS. REFER TO PLUMBING PLANS FOR LOCATION AND INVERTS.
- (E) EXTEND WATER MAIN TO 12-IN ABOVE FINISH FLOOR FOR FIRE PROTECTION/PLUMBING CONNECTION, SEE DETAIL SHEET C-08.00. REFER TO TO FIRE PROTECTION/PLUMBING PLANS FOR EXACT LOCATION.
- (F) ROOFDRAIN CLEANOUT, SEE DETAIL SHEET C-08.02.
- (G) 4" DOMESTIC WATER METER, SEE DETAIL SHEET C-08.01.
- (H) GATE VALVE AND VALVE BOX, SEE DETAIL SHEET C-08.01.
- (J) POST INDICATOR VALVE W/ TAMPER SWITCH, SEE DETAIL SHEET C-08.01 AND SPECS.
- (K) FIRE DEPARTMENT CONNECTION, SEE DETAIL SHEET C-08.00.
- (L) 4-IN ZURN-WILKINS MODEL 375 REDUCED PRESSURE BACKFLOW ASSEMBLY (RPA) WITHIN HEATED ENCLOSURE, SEE DETAIL SHEET C-08.01. SEE ELECTRICAL PLANS FOR ADDITIONAL INFORMATION.
- (M) REDUCER.
- (N) BORE & JACK 24" DIA. STEEL ENCASEMENT PIPE, SEE DETAIL SHEET **C0X.XX.**
- (O) APPROXIMATE LOCATION GAS METER AND GAS SERVICE LINES. SEE MECHANICAL PLANS FOR ADDITIONAL INFORMATION.
- (P) 8-IN ZURN-WILKINS MODEL 375DA REDUCED PRESSURE BACKFLOW DETECTOR ASSEMBLY (RPDA) WITHIN HEATED ENCLOSURE, SEE DETAIL SHEET C08.01. SEE ELECTRICAL PLANS FOR ADDITIONAL INFORMATION.
- (Q) SITE LIGHT POLE BY DUKE ENERGY (APPROXIMATE LOCATION). COORDINATE INSTALLATION & SCHEDULE WITH DUKE ENERGY.
- (R) NEW SANITARY SEWER CLEANOUT, TYP. SEE DETAIL SHEET C-08.02.
- (S) 2,500 GALLON GREASE INTERCEPTOR BY PC.
- (T) 2" IRRIGATION WATER METER, SEE DETAIL SHEET C-08.01.
- (U) 2-IN ZURN-WILKINS MODEL 975XL REDUCED PRESSURE BACKFLOW ASSEMBLY (RPA) WITHIN HEATED ENCLOSURE, SEE DETAIL SHEET C07.06. SEE ELECTRICAL PLANS FOR ADDITIONAL INFORMATION.
- (V) 24" DIA. STEEL ENCASEMENT PIPE, SEE DETAIL SHEET **C0X.XX.**
- (W) TEMPORARY BLOW-OFF ASSEMBLY, SEE DETAIL SHEET **C0X.XX.**
- (X) AIR-RELEASE MANHOLE, SEE DETAIL SHEET **C0X.XX.**

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

MAGNETIC

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Ralelgh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Ralelgh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineerlng
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

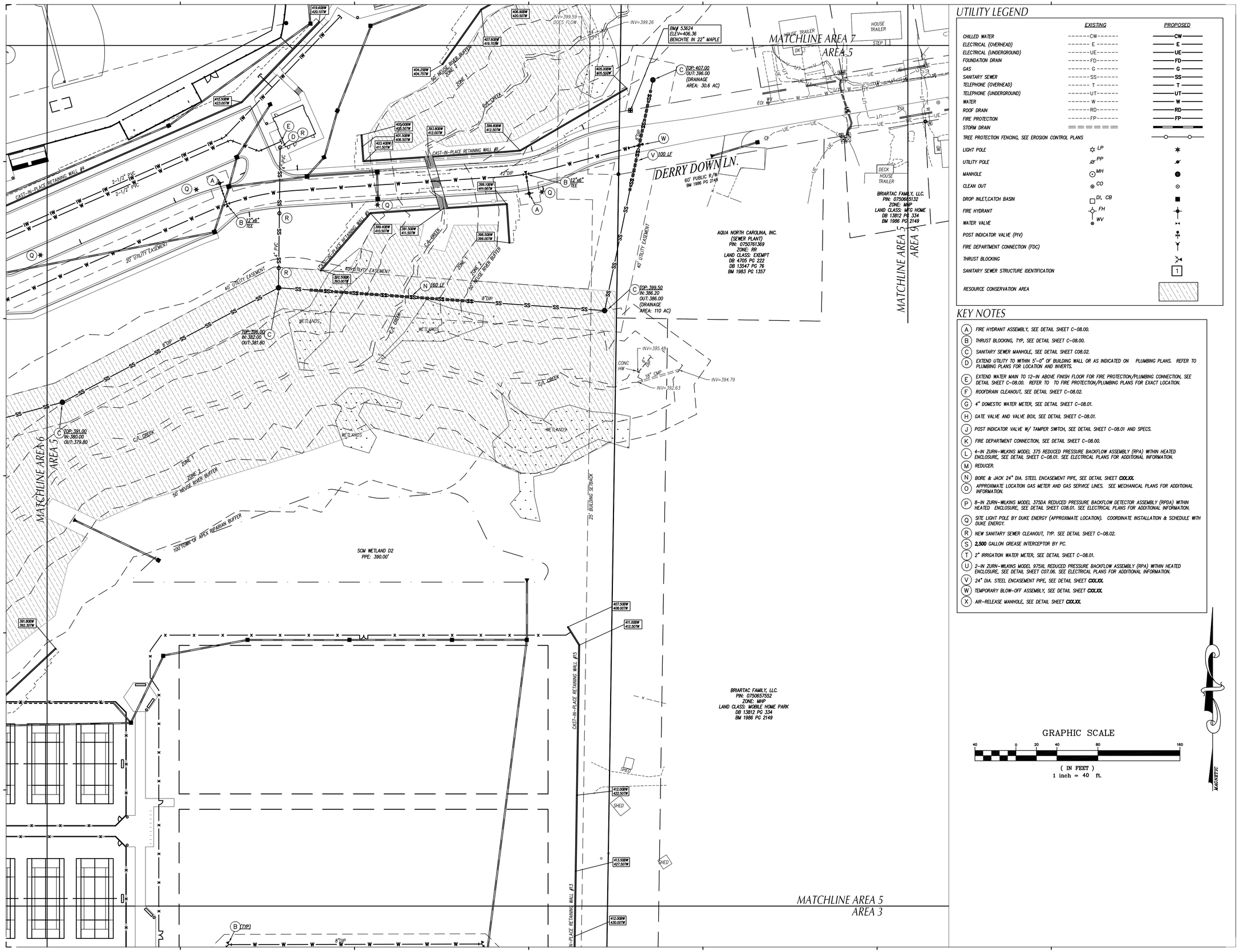
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISCLOSURE OR OTHER DISTRIBUTION MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

SHEET TITLE
UTILITY PLAN AREA_4

SHEET NUMBER
C-05.04



UTILITY LEGEND

	EXISTING	PROPOSED
CHILLED WATER	------CW------	CW
ELECTRICAL (OVERHEAD)	------ E ------	E
ELECTRICAL (UNDERGROUND)	------UE------	UE
FOUNDATION DRAIN	------FD------	FD
GAS	------ G ------	G
SANITARY SEWER	------SS------	SS
TELEPHONE (OVERHEAD)	------ T ------	T
TELEPHONE (UNDERGROUND)	------UT------	UT
WATER	------ W ------	W
ROOF DRAIN	------RD------	RD
FIRE PROTECTION	------FP------	FP
STORM DRAIN		
TREE PROTECTION FENCING, SEE EROSION CONTROL PLANS		
LIGHT POLE	LP	
UTILITY POLE	PP	
MANHOLE	MH	
CLEAN OUT	CO	
DROP INLET,CATCH BASIN	DI, CB	
FIRE HYDRANT	FH	
WATER VALVE	WV	
POST INDICATOR VALVE (PIV)		
FIRE DEPARTMENT CONNECTION (FDC)		
THRUST BLOCKING		
SANITARY SEWER STRUCTURE IDENTIFICATION		1
RESOURCE CONSERVATION AREA		

KEY NOTES

(A) FIRE HYDRANT ASSEMBLY, SEE DETAIL SHEET C-08.00.

(B) THRUST BLOCKING, TYP, SEE DETAIL SHEET C-08.00.

(C) SANITARY SEWER MANHOLE, SEE DETAIL SHEET C08.02.

(D) EXTEND UTILITY TO WITHIN 5'-0" OF BUILDING WALL OR AS INDICATED ON PLUMBING PLANS. REFER TO PLUMBING PLANS FOR LOCATION AND INVERTS.

(E) EXTEND WATER MAIN TO 12-IN ABOVE FINISH FLOOR FOR FIRE PROTECTION/PLUMBING CONNECTION, SEE DETAIL SHEET C-08.00. REFER TO TO FIRE PROTECTION/PLUMBING PLANS FOR EXACT LOCATION.

(F) ROOFDRAIN CLEANOUT, SEE DETAIL SHEET C-08.02.

(G) 4" DOMESTIC WATER METER, SEE DETAIL SHEET C-08.01.

(H) GATE VALVE AND VALVE BOX, SEE DETAIL SHEET C-08.01.

(J) POST INDICATOR VALVE W/ TAMPER SWITCH, SEE DETAIL SHEET C-08.01 AND SPECS.

(K) FIRE DEPARTMENT CONNECTION, SEE DETAIL SHEET C-08.00.

(L) 4-IN ZURN-WILKINS MODEL 375 REDUCED PRESSURE BACKFLOW ASSEMBLY (RPA) WITHIN HEATED ENCLOSURE, SEE DETAIL SHEET C-08.01. SEE ELECTRICAL PLANS FOR ADDITIONAL INFORMATION.

(M) REDUCER.

(N) BORE & JACK 24" DIA. STEEL ENCASEMENT PIPE, SEE DETAIL SHEET **C00.XX.**

(O) APPROXIMATE LOCATION GAS METER AND GAS SERVICE LINES. SEE MECHANICAL PLANS FOR ADDITIONAL INFORMATION.

(P) 8-IN ZURN-WILKINS MODEL 375DA REDUCED PRESSURE BACKFLOW DETECTOR ASSEMBLY (RPDA) WITHIN HEATED ENCLOSURE, SEE DETAIL SHEET C08.01. SEE ELECTRICAL PLANS FOR ADDITIONAL INFORMATION.

(Q) SITE LIGHT POLE BY DUKE ENERGY (APPROXIMATE LOCATION). COORDINATE INSTALLATION & SCHEDULE WITH DUKE ENERGY.

(R) NEW SANITARY SEWER CLEANOUT, TYP. SEE DETAIL SHEET C-08.02.

(S) 2,500 GALLON GREASE INTERCEPTOR BY PC.

(T) 2" IRRIGATION WATER METER, SEE DETAIL SHEET C-08.01.

(U) 2-IN ZURN-WILKINS MODEL 975XL REDUCED PRESSURE BACKFLOW ASSEMBLY (RPA) WITHIN HEATED ENCLOSURE, SEE DETAIL SHEET C07.06. SEE ELECTRICAL PLANS FOR ADDITIONAL INFORMATION.

(V) 24" DIA. STEEL ENCASEMENT PIPE, SEE DETAIL SHEET **C00.XX.**

(W) TEMPORARY BLOW-OFF ASSEMBLY, SEE DETAIL SHEET **C00.XX.**

(X) AIR-RELEASE MANHOLE, SEE DETAIL SHEET **C00.XX.**

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Ralegh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Ralegh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineerlng
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

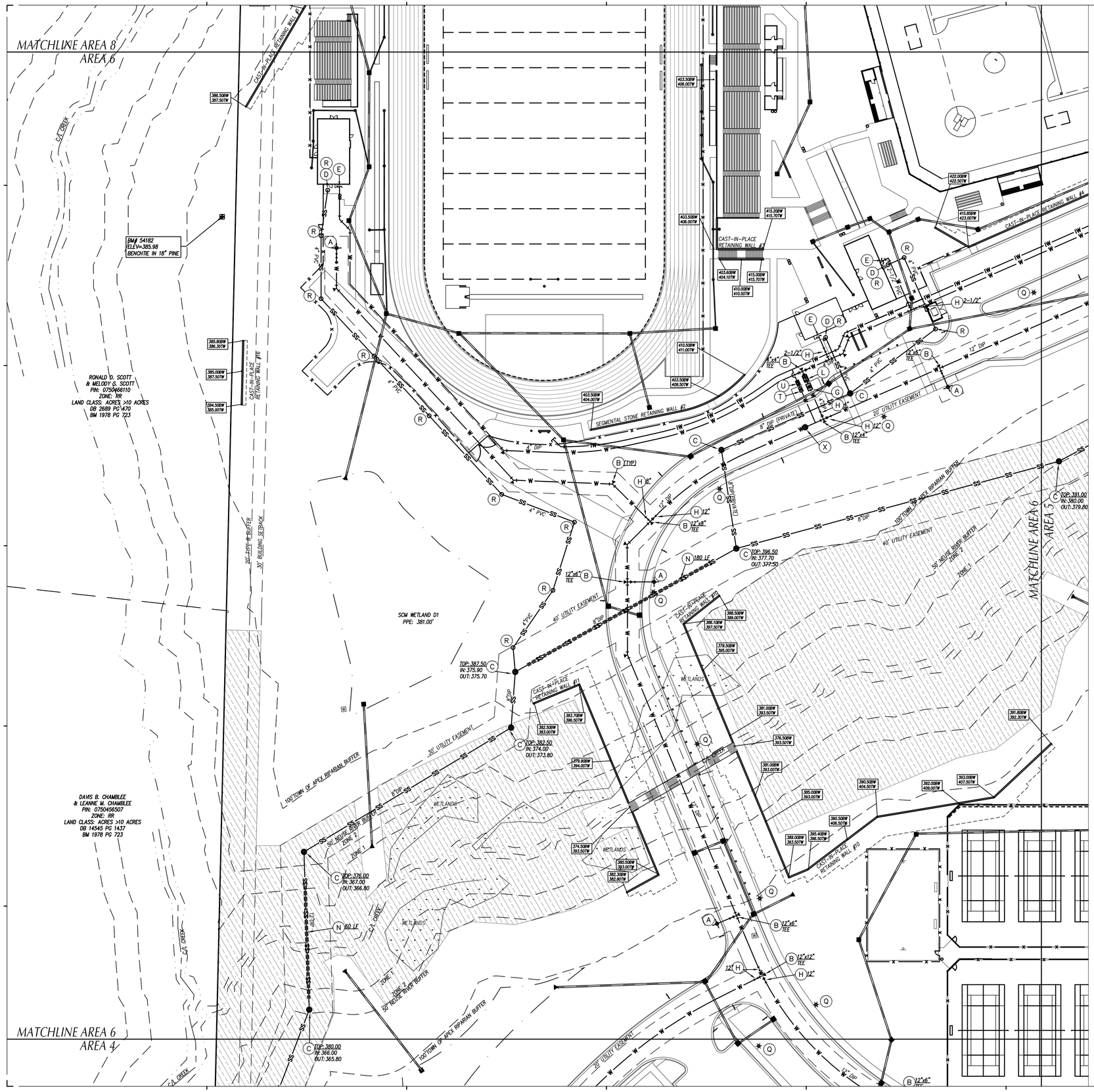
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

SHEET TITLE
UTILITY
PLAN
AREA_5

SHEET NUMBER
C-05.05



UTILITY LEGEND

	EXISTING	PROPOSED
CHILLED WATER	------CW------	CW
ELECTRICAL (OVERHEAD)	------ E ------	E
ELECTRICAL (UNDERGROUND)	------UE------	UE
FOUNDATION DRAIN	------FD------	FD
GAS	------ G ------	G
SANITARY SEWER	------SS------	SS
TELEPHONE (OVERHEAD)	------ T ------	T
TELEPHONE (UNDERGROUND)	------UT------	UT
WATER	------ W ------	W
ROOF DRAIN	------RD------	RD
FIRE PROTECTION	------FP------	FP
STORM DRAIN		
TREE PROTECTION FENCING, SEE EROSION CONTROL PLANS		
LIGHT POLE	LP	
UTILITY POLE	PP	
MANHOLE	MH	
CLEAN OUT	CO	
DROP INLET,CATCH BASIN	DI, CB	
FIRE HYDRANT	FH	
WATER VALVE	WV	
POST INDICATOR VALVE (PIV)		
FIRE DEPARTMENT CONNECTION (FDC)		
THRUST BLOCKING		
SANITARY SEWER STRUCTURE IDENTIFICATION		1
RESOURCE CONSERVATION AREA		

KEY NOTES

(A) FIRE HYDRANT ASSEMBLY, SEE DETAIL SHEET C-08.00.

(B) THRUST BLOCKING, TYP, SEE DETAIL SHEET C-08.00.

(C) SANITARY SEWER MANHOLE, SEE DETAIL SHEET C08.02.

(D) EXTEND UTILITY TO WITHIN 5'-0" OF BUILDING WALL OR AS INDICATED ON PLUMBING PLANS. REFER TO PLUMBING PLANS FOR LOCATION AND INVERTS.

(E) EXTEND WATER MAIN TO 12-IN ABOVE FINISH FLOOR FOR FIRE PROTECTION/PLUMBING CONNECTION, SEE DETAIL SHEET C-08.00. REFER TO TO FIRE PROTECTION/PLUMBING PLANS FOR EXACT LOCATION.

(F) ROOFDRAIN CLEANOUT, SEE DETAIL SHEET C-08.02.

(G) 4" DOMESTIC WATER METER, SEE DETAIL SHEET C-08.01.

(H) GATE VALVE AND VALVE BOX, SEE DETAIL SHEET C-08.01.

(J) POST INDICATOR VALVE W/ TAMPER SWITCH, SEE DETAIL SHEET C-08.01 AND SPECS.

(K) FIRE DEPARTMENT CONNECTION, SEE DETAIL SHEET C-08.00.

(L) 4-IN ZURN-WILKINS MODEL 375 REDUCED PRESSURE BACKFLOW ASSEMBLY (RPA) WITHIN HEATED ENCLOSURE, SEE DETAIL SHEET C-08.01. SEE ELECTRICAL PLANS FOR ADDITIONAL INFORMATION.

(M) REDUCER.

(N) BORE & JACK 24" DIA. STEEL ENCASEMENT PIPE, SEE DETAIL SHEET **C00.XX.**

(O) APPROXIMATE LOCATION GAS METER AND GAS SERVICE LINES. SEE MECHANICAL PLANS FOR ADDITIONAL INFORMATION.

(P) 8-IN ZURN-WILKINS MODEL 375DA REDUCED PRESSURE BACKFLOW DETECTOR ASSEMBLY (RPDA) WITHIN HEATED ENCLOSURE, SEE DETAIL SHEET C08.01. SEE ELECTRICAL PLANS FOR ADDITIONAL INFORMATION.

(Q) SITE LIGHT POLE BY DUKE ENERGY (APPROXIMATE LOCATION). COORDINATE INSTALLATION & SCHEDULE WITH DUKE ENERGY.

(R) NEW SANITARY SEWER CLEANOUT, TYP. SEE DETAIL SHEET C-08.02.

(S) 2,500 GALLON GREASE INTERCEPTOR BY PC.

(T) 2" IRRIGATION WATER METER, SEE DETAIL SHEET C-08.01.

(U) 2-IN ZURN-WILKINS MODEL 975XL REDUCED PRESSURE BACKFLOW ASSEMBLY (RPA) WITHIN HEATED ENCLOSURE, SEE DETAIL SHEET C07.06. SEE ELECTRICAL PLANS FOR ADDITIONAL INFORMATION.

(V) 24" DIA. STEEL ENCASEMENT PIPE, SEE DETAIL SHEET **C00.XX.**

(W) TEMPORARY BLOW-OFF ASSEMBLY, SEE DETAIL SHEET **C00.XX.**

(X) AIR-RELEASE MANHOLE, SEE DETAIL SHEET **C00.XX.**

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

MAGNETIC

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineerlng
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

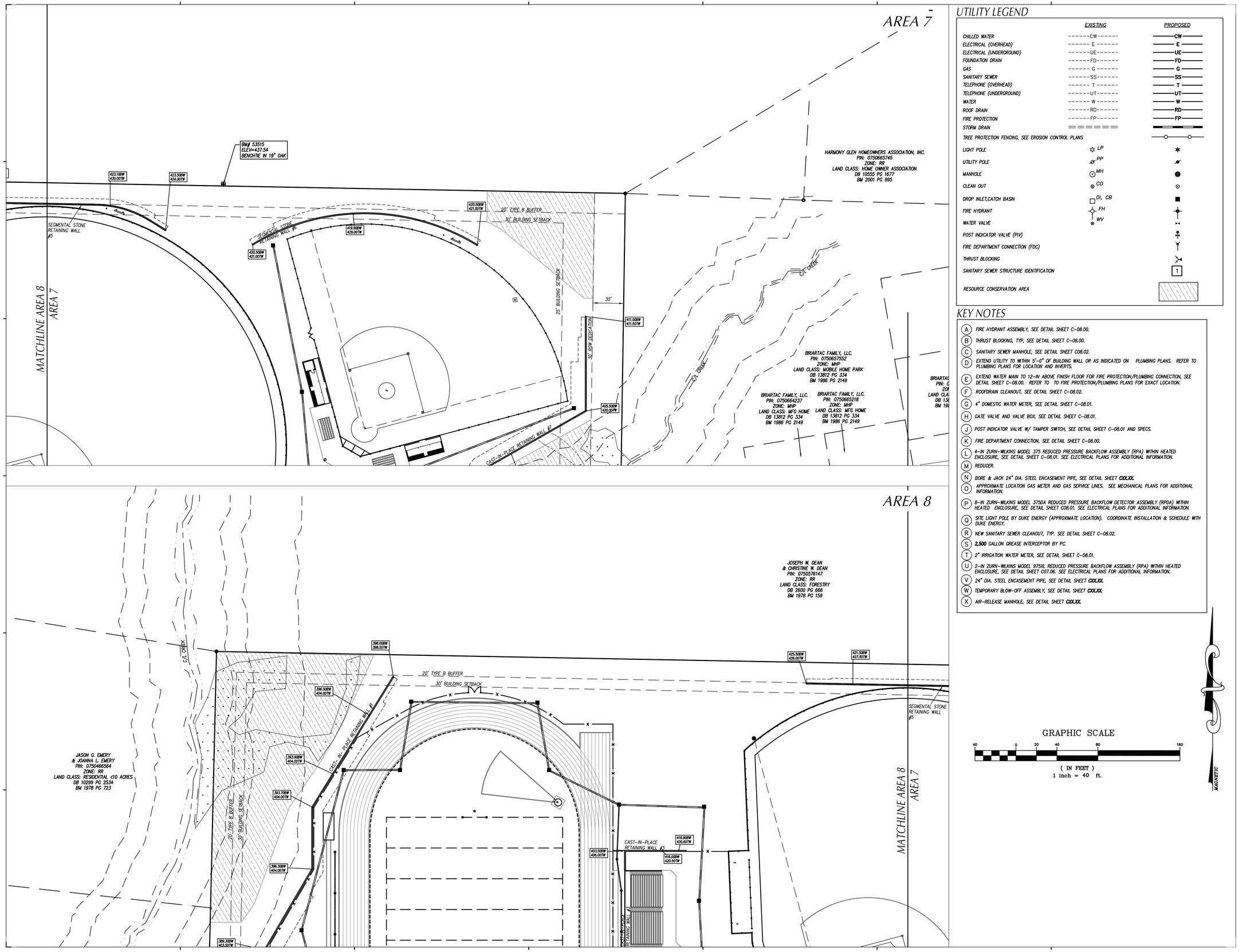
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

SHEET TITLE
UTILITY
PLAN
AREA_6

SHEET NUMBER
C-05.06



UTILITY LEGEND

	EXISTING	PROPOSED
CHILLED WATER	------CW------	CW
ELECTRICAL (OVERHEAD)	------ E ------	E
ELECTRICAL (UNDERGROUND)	------UE------	UE
FOUNDATION DRAIN	------FD------	FD
GAS	------ G ------	G
SANITARY SEWER	------SS------	SS
TELEPHONE (OVERHEAD)	------ T ------	T
TELEPHONE (UNDERGROUND)	------UT------	UT
WATER	------ W ------	W
ROOF DRAIN	------RD------	RD
FIRE PROTECTION	------FP------	FP
STORM DRAIN	═══════	
TREE PROTECTION FENCING, SEE EROSION CONTROL PLANS		
LIGHT POLE	LP	
UTILITY POLE	PP	
MANHOLE	MH	
CLEAN OUT	CO	
DROP INLET,CATCH BASIN	DI, CB	
FIRE HYDRANT	FH	
WATER VALVE	WV	
POST INDICATOR VALVE (PIV)		
FIRE DEPARTMENT CONNECTION (FDC)		
THRUST BLOCKING		
SANITARY SEWER STRUCTURE IDENTIFICATION		1
RESOURCE CONSERVATION AREA		

KEY NOTES

(A) FIRE HYDRANT ASSEMBLY, SEE DETAIL SHEET C-08.00.

(B) THRUST BLOCKING, TYP, SEE DETAIL SHEET C-08.00.

(C) SANITARY SEWER MANHOLE, SEE DETAIL SHEET C08.02.

(D) EXTEND UTILITY TO WITHIN 5'-0" OF BUILDING WALL OR AS INDICATED ON PLUMBING PLANS. REFER TO PLUMBING PLANS FOR LOCATION AND INVERTS.

(E) EXTEND WATER MAIN TO 12-IN ABOVE FINISH FLOOR FOR FIRE PROTECTION/PLUMBING CONNECTION, SEE DETAIL SHEET C-08.00. REFER TO TO FIRE PROTECTION/PLUMBING PLANS FOR EXACT LOCATION.

(F) ROOFDRAIN CLEANOUT, SEE DETAIL SHEET C-08.02.

(G) 4" DOMESTIC WATER METER, SEE DETAIL SHEET C-08.01.

(H) GATE VALVE AND VALVE BOX, SEE DETAIL SHEET C-08.01.

(J) POST INDICATOR VALVE W/ TAMPER SWITCH, SEE DETAIL SHEET C-08.01 AND SPECS.

(K) FIRE DEPARTMENT CONNECTION, SEE DETAIL SHEET C-08.00.

(L) 4-IN ZURN-WILKINS MODEL 375 REDUCED PRESSURE BACKFLOW ASSEMBLY (RPA) WITHIN HEATED ENCLOSURE, SEE DETAIL SHEET C-08.01. SEE ELECTRICAL PLANS FOR ADDITIONAL INFORMATION.

(M) REDUCER.

(N) BORE & JACK 24" DIA. STEEL ENCASEMENT PIPE, SEE DETAIL SHEET **COX.XX.**

(O) APPROXIMATE LOCATION GAS METER AND GAS SERVICE LINES. SEE MECHANICAL PLANS FOR ADDITIONAL INFORMATION.

(P) 8-IN ZURN-WILKINS MODEL 375DA REDUCED PRESSURE BACKFLOW DETECTOR ASSEMBLY (RPDA) WITHIN HEATED ENCLOSURE, SEE DETAIL SHEET C08.01. SEE ELECTRICAL PLANS FOR ADDITIONAL INFORMATION.

(Q) SITE LIGHT POLE BY DUKE ENERGY (APPROXIMATE LOCATION). COORDINATE INSTALLATION & SCHEDULE WITH DUKE ENERGY.

(R) NEW SANITARY SEWER CLEANOUT, TYP. SEE DETAIL SHEET C-08.02.

(S) 2,500 GALLON GREASE INTERCEPTOR BY PC.

(T) 2" IRRIGATION WATER METER, SEE DETAIL SHEET C-08.01.

(U) 2-IN ZURN-WILKINS MODEL 975XL REDUCED PRESSURE BACKFLOW ASSEMBLY (RPA) WITHIN HEATED ENCLOSURE, SEE DETAIL SHEET C07.06. SEE ELECTRICAL PLANS FOR ADDITIONAL INFORMATION.

(V) 24" DIA. STEEL ENCASEMENT PIPE, SEE DETAIL SHEET **COX.XX.**

(W) TEMPORARY BLOW-OFF ASSEMBLY, SEE DETAIL SHEET **COX.XX.**

(X) AIR-RELEASE MANHOLE, SEE DETAIL SHEET **COX.XX.**

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Ralelgh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Ralelgh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineerlng
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

SHEET TITLE
UTILITY PLAN AREA_7&8

SHEET NUMBER
C-05.07

UTILITY LEGEND

	EXISTING	PROPOSED
CHILLED WATER	------CW------	CW
ELECTRICAL (OVERHEAD)	------ E ------	E
ELECTRICAL (UNDERGROUND)	------UE------	UE
FOUNDATION DRAIN	------FD------	FD
GAS	------ G ------	G
SANITARY SEWER	------SS------	SS
TELEPHONE (OVERHEAD)	------ T ------	T
TELEPHONE (UNDERGROUND)	------UT------	UT
WATER	------ W ------	W
ROOF DRAIN	------RD------	RD
FIRE PROTECTION	------FP------	FP
STORM DRAIN		
TREE PROTECTION FENCING, SEE EROSION CONTROL PLANS		
LIGHT POLE	LP	
UTILITY POLE	PP	
MANHOLE	MH	
CLEAN OUT	CO	
DROP INLET,CATCH BASIN	DI, CB	
FIRE HYDRANT	FH	
WATER VALVE	WV	
POST INDICATOR VALVE (PIV)		
FIRE DEPARTMENT CONNECTION (FDC)		
THRUST BLOCKING		
SANITARY SEWER STRUCTURE IDENTIFICATION		1
RESOURCE CONSERVATION AREA		

KEY NOTES

(A) FIRE HYDRANT ASSEMBLY, SEE DETAIL SHEET C-08.00.

(B) THRUST BLOCKING, TYP, SEE DETAIL SHEET C-08.00.

(C) SANITARY SEWER MANHOLE, SEE DETAIL SHEET C08.02.

(D) EXTEND UTILITY TO WITHIN 5'-0" OF BUILDING WALL OR AS INDICATED ON PLUMBING PLANS. REFER TO PLUMBING PLANS FOR LOCATION AND INVERTS.

(E) EXTEND WATER MAIN TO 12-IN ABOVE FINISH FLOOR FOR FIRE PROTECTION/PLUMBING CONNECTION, SEE DETAIL SHEET C-08.00. REFER TO TO FIRE PROTECTION/PLUMBING PLANS FOR EXACT LOCATION.

(F) ROOFDRAIN CLEANOUT, SEE DETAIL SHEET C-08.02.

(G) 4" DOMESTIC WATER METER, SEE DETAIL SHEET C-08.01.

(H) GATE VALVE AND VALVE BOX, SEE DETAIL SHEET C-08.01.

(J) POST INDICATOR VALVE W/ TAMPER SWITCH, SEE DETAIL SHEET C-08.01 AND SPECS.

(K) FIRE DEPARTMENT CONNECTION, SEE DETAIL SHEET C-08.00.

(L) 4-IN ZURN-WILKINS MODEL 375 REDUCED PRESSURE BACKFLOW ASSEMBLY (RPA) WITHIN HEATED ENCLOSURE, SEE DETAIL SHEET C-08.01. SEE ELECTRICAL PLANS FOR ADDITIONAL INFORMATION.

(M) REDUCER.

(N) BORE & JACK 24" DIA. STEEL ENCASEMENT PIPE, SEE DETAIL SHEET **C0X.XX.**

(O) APPROXIMATE LOCATION GAS METER AND GAS SERVICE LINES. SEE MECHANICAL PLANS FOR ADDITIONAL INFORMATION.

(P) 8-IN ZURN-WILKINS MODEL 375DA REDUCED PRESSURE BACKFLOW DETECTOR ASSEMBLY (RPDA) WITHIN HEATED ENCLOSURE, SEE DETAIL SHEET C08.01. SEE ELECTRICAL PLANS FOR ADDITIONAL INFORMATION.

(Q) SITE LIGHT POLE BY DUKE ENERGY (APPROXIMATE LOCATION). COORDINATE INSTALLATION & SCHEDULE WITH DUKE ENERGY.

(R) NEW SANITARY SEWER CLEANOUT, TYP. SEE DETAIL SHEET C-08.02.

(S) **2,500** GALLON GREASE INTERCEPTOR BY PC.

(T) 2" IRRIGATION WATER METER, SEE DETAIL SHEET C-08.01.

(U) 2-IN ZURN-WILKINS MODEL 975XL REDUCED PRESSURE BACKFLOW ASSEMBLY (RPA) WITHIN HEATED ENCLOSURE, SEE DETAIL SHEET C07.06. SEE ELECTRICAL PLANS FOR ADDITIONAL INFORMATION.

(V) 24" DIA. STEEL ENCASEMENT PIPE, SEE DETAIL SHEET **C0X.XX.**

(W) TEMPORARY BLOW-OFF ASSEMBLY, SEE DETAIL SHEET **C0X.XX.**

(X) AIR-RELEASE MANHOLE, SEE DETAIL SHEET **C0X.XX.**

NOTE:
NO PUBLIC TOWN OF APEX UTILITY EXTENSIONS ARE PROPOSED ON THIS SHEET. PRIVATE UTILITY RELOCATIONS ARE PROPOSED ON THIS SHEET DUE TO THE ROAD WIDENING.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineerlng
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

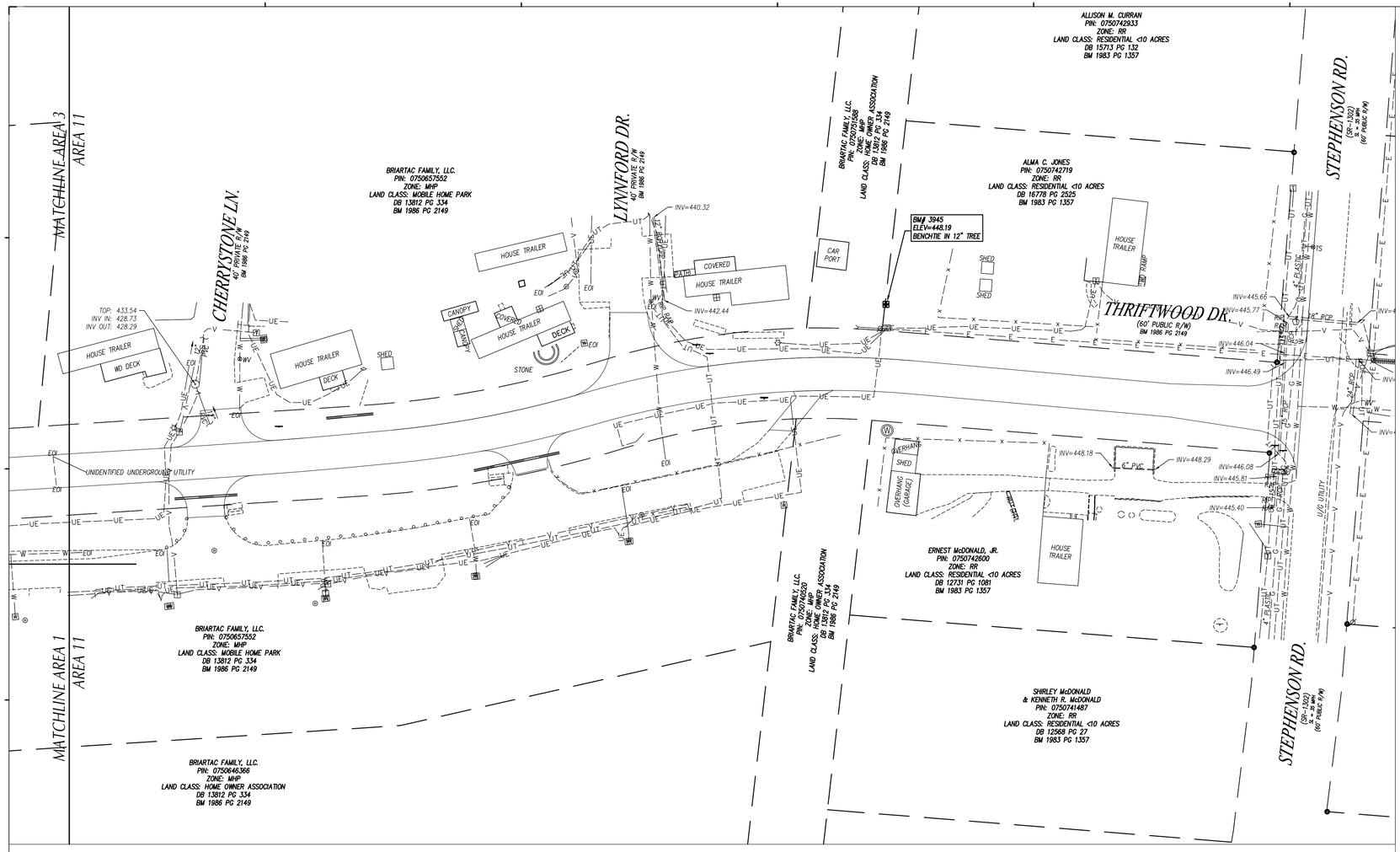
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

SHEET TITLE
UTILITY
PLAN
AREA_9&10

SHEET NUMBER
C-05.08



UTILITY LEGEND

	EXISTING	PROPOSED
CHILLED WATER	------CW------	CW
ELECTRICAL (OVERHEAD)	------ E ------	E
ELECTRICAL (UNDERGROUND)	------UE------	UE
FOUNDATION DRAIN	------FD------	FD
GAS	------ G ------	G
SANITARY SEWER	------SS------	SS
TELEPHONE (OVERHEAD)	------ T ------	T
TELEPHONE (UNDERGROUND)	------UT------	UT
WATER	------ W ------	W
ROOF DRAIN	------RD------	RD
FIRE PROTECTION	------FP------	FP
STORM DRAIN	==========	
TREE PROTECTION FENCING, SEE EROSION CONTROL PLANS		
LIGHT POLE	LP	
UTILITY POLE	PP	
MANHOLE	MH	
CLEAN OUT	CO	
DROP INLET,CATCH BASIN	DI, CB	
FIRE HYDRANT	FH	
WATER VALVE	WV	
POST INDICATOR VALVE (PIV)		
FIRE DEPARTMENT CONNECTION (FDC)		
THRUST BLOCKING		
SANITARY SEWER STRUCTURE IDENTIFICATION		1
RESOURCE CONSERVATION AREA		

KEY NOTES

(A) FIRE HYDRANT ASSEMBLY, SEE DETAIL SHEET C-08.00.

(B) THRUST BLOCKING, TYP, SEE DETAIL SHEET C-08.00.

(C) SANITARY SEWER MANHOLE, SEE DETAIL SHEET C08.02.

(D) EXTEND UTILITY TO WITHIN 5'-0" OF BUILDING WALL OR AS INDICATED ON PLUMBING PLANS. REFER TO PLUMBING PLANS FOR LOCATION AND INVERTS.

(E) EXTEND WATER MAIN TO 12-IN ABOVE FINISH FLOOR FOR FIRE PROTECTION/PLUMBING CONNECTION, SEE DETAIL SHEET C-08.00. REFER TO TO FIRE PROTECTION/PLUMBING PLANS FOR EXACT LOCATION.

(F) ROOFDRAIN CLEANOUT, SEE DETAIL SHEET C-08.02.

(G) 4" DOMESTIC WATER METER, SEE DETAIL SHEET C-08.01.

(H) GATE VALVE AND VALVE BOX, SEE DETAIL SHEET C-08.01.

(J) POST INDICATOR VALVE W/ TAMPER SWITCH, SEE DETAIL SHEET C-08.01 AND SPECS.

(K) FIRE DEPARTMENT CONNECTION, SEE DETAIL SHEET C-08.00.

(L) 4-IN ZURN-WILKINS MODEL 375 REDUCED PRESSURE BACKFLOW ASSEMBLY (RPA) WITHIN HEATED ENCLOSURE, SEE DETAIL SHEET C-08.01. SEE ELECTRICAL PLANS FOR ADDITIONAL INFORMATION.

(M) REDUCER.

(N) BORE & JACK 24" DIA. STEEL ENCASEMENT PIPE, SEE DETAIL SHEET **C00.XX.**

(O) APPROXIMATE LOCATION GAS METER AND GAS SERVICE LINES. SEE MECHANICAL PLANS FOR ADDITIONAL INFORMATION.

(P) 8-IN ZURN-WILKINS MODEL 375DA REDUCED PRESSURE BACKFLOW DETECTOR ASSEMBLY (RPDA) WITHIN HEATED ENCLOSURE, SEE DETAIL SHEET C08.01. SEE ELECTRICAL PLANS FOR ADDITIONAL INFORMATION.

(Q) SITE LIGHT POLE BY DUKE ENERGY (APPROXIMATE LOCATION). COORDINATE INSTALLATION & SCHEDULE WITH DUKE ENERGY.

(R) NEW SANITARY SEWER CLEANOUT, TYP. SEE DETAIL SHEET C-08.02.

(S) 2,500 GALLON GREASE INTERCEPTOR BY PC.

(T) 2" IRRIGATION WATER METER, SEE DETAIL SHEET C-08.01.

(U) 2-IN ZURN-WILKINS MODEL 975XL REDUCED PRESSURE BACKFLOW ASSEMBLY (RPA) WITHIN HEATED ENCLOSURE. SEE DETAIL SHEET C07.06. SEE ELECTRICAL PLANS FOR ADDITIONAL INFORMATION.

(V) 24" DIA. STEEL ENCASEMENT PIPE, SEE DETAIL SHEET **C00.XX.**

(W) TEMPORARY BLOW-OFF ASSEMBLY, SEE DETAIL SHEET **C00.XX.**

(X) AIR-RELEASE MANHOLE, SEE DETAIL SHEET **C00.XX.**

NOTE:
NO PUBLIC TOWN OF APEX UTILITY EXTENSIONS ARE PROPOSED ON THIS SHEET. PRIVATE UTILITY RELOCATIONS ARE PROPOSED ON THIS SHEET DUE TO THE ROAD WIDENING.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

MAGNETIC

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineerng
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

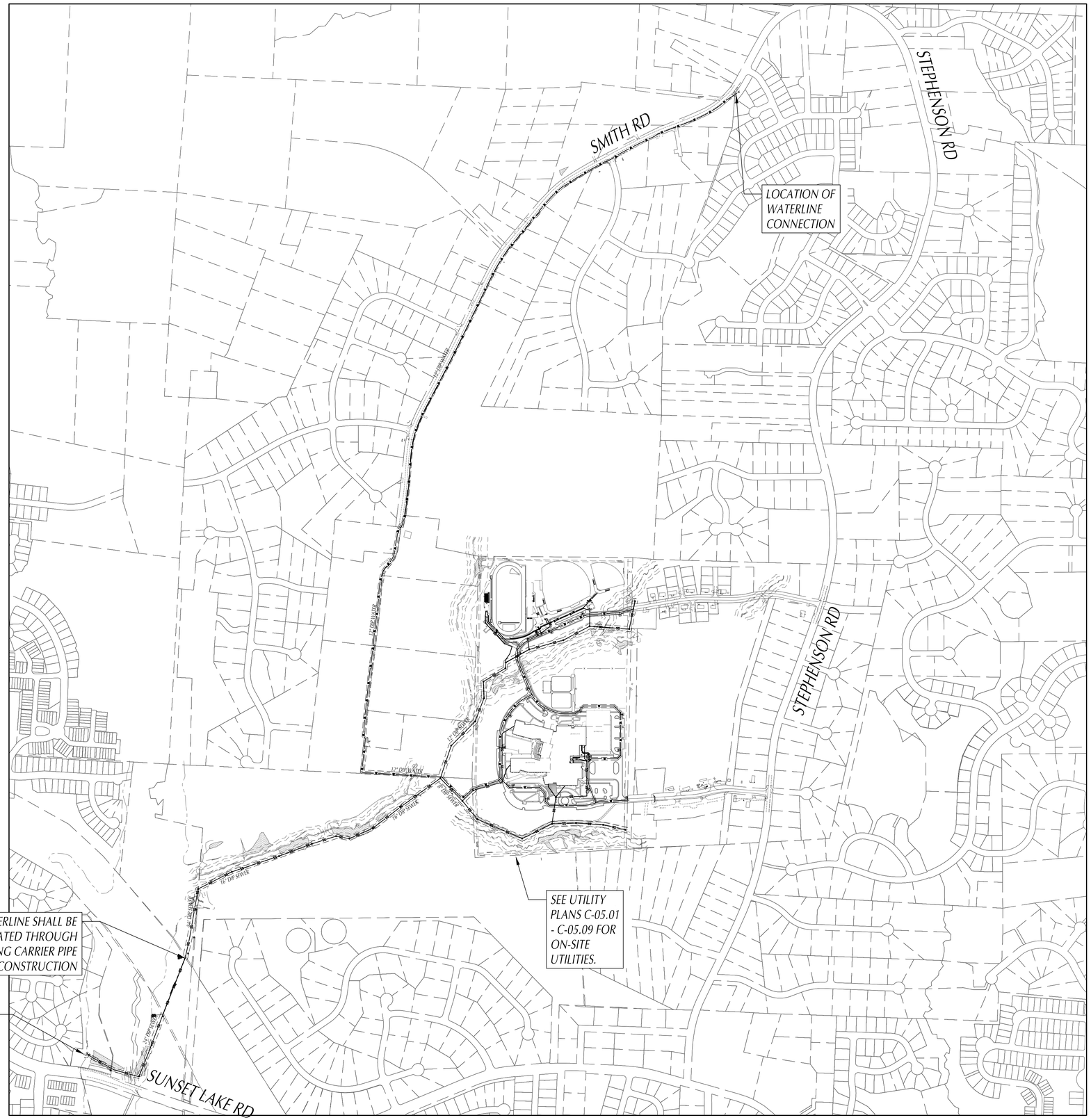
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

SHEET TITLE
UTILITY
PLAN
AREA_11

SHEET NUMBER
C-05.09



GRAPHIC SCALE

400 0 200 400 800 1600

(IN FEET)
1 inch = 400 ft.

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Ralelgh, North Carollna 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Ralelgh, North Carollna 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carollna 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineerlng
1913 Thayer Circle
Greensboro, North Carollna 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carollna 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrlsville, North Carollna 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carollna 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

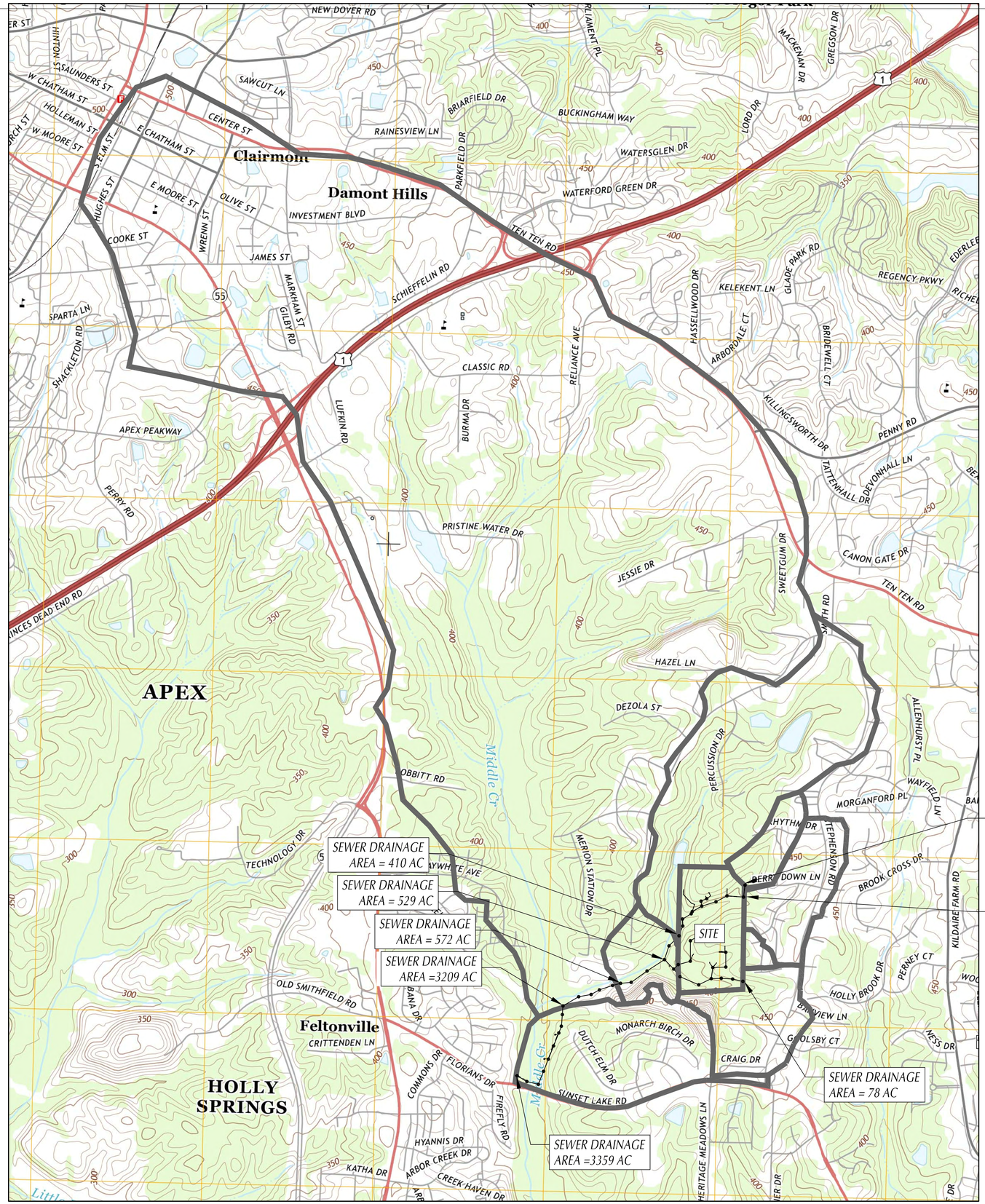
PROJECT NO. 02000.000

SHEET TITLE

OVERALL OFFSITE UTILITY PLAN

SHEET NUMBER

C-05.10



Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Ralelgh, North Carollna 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Ralelgh, North Carollna 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carollna 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineerlng
1913 Thayer Circle
Greensboro, North Carollna 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carollna 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carollna 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carollna 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO, NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

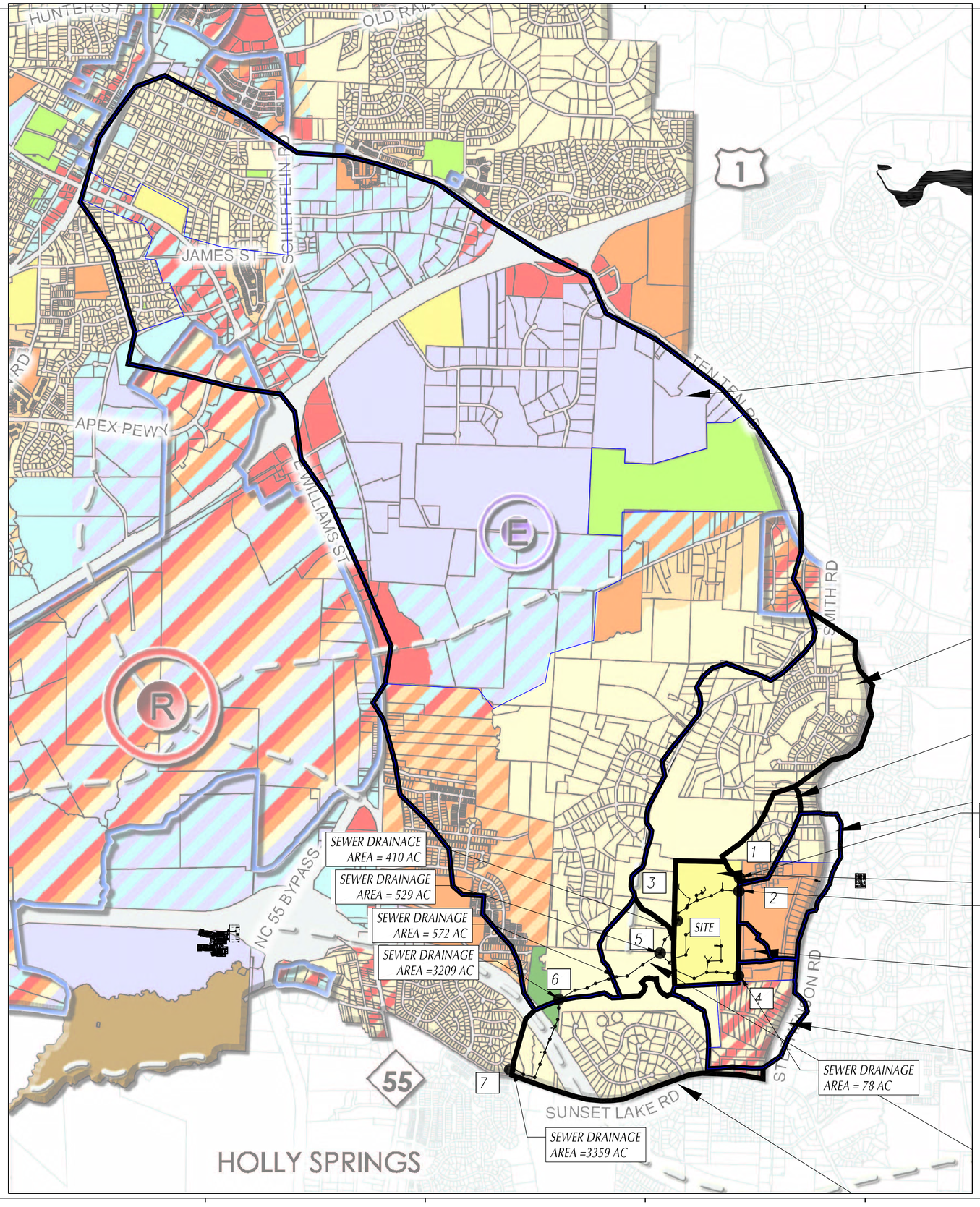
PROJECT NO. 02000.000

SHEET TITLE

OVERALL SEWER DRAINAGE AREA MAP

SHEET NUMBER

C-05.11



SEE SHEET C-5.10 FOR OFFSITE UTILITIES.

GRAPHIC SCALE

1000 0 500 1000 2000 4000

(IN FEET)
1 inch = 1000 ft.

NORTH

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Ralelgh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Ralelgh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineerlng
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrlsvllle, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

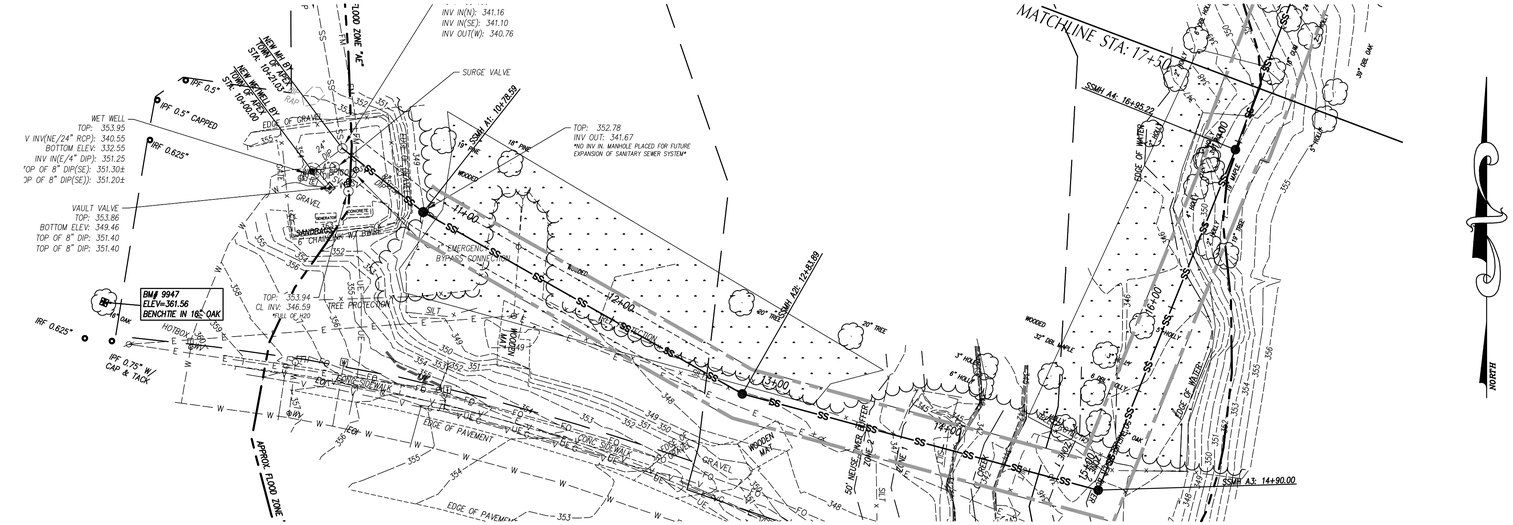
PROJECT NO. 02000.000

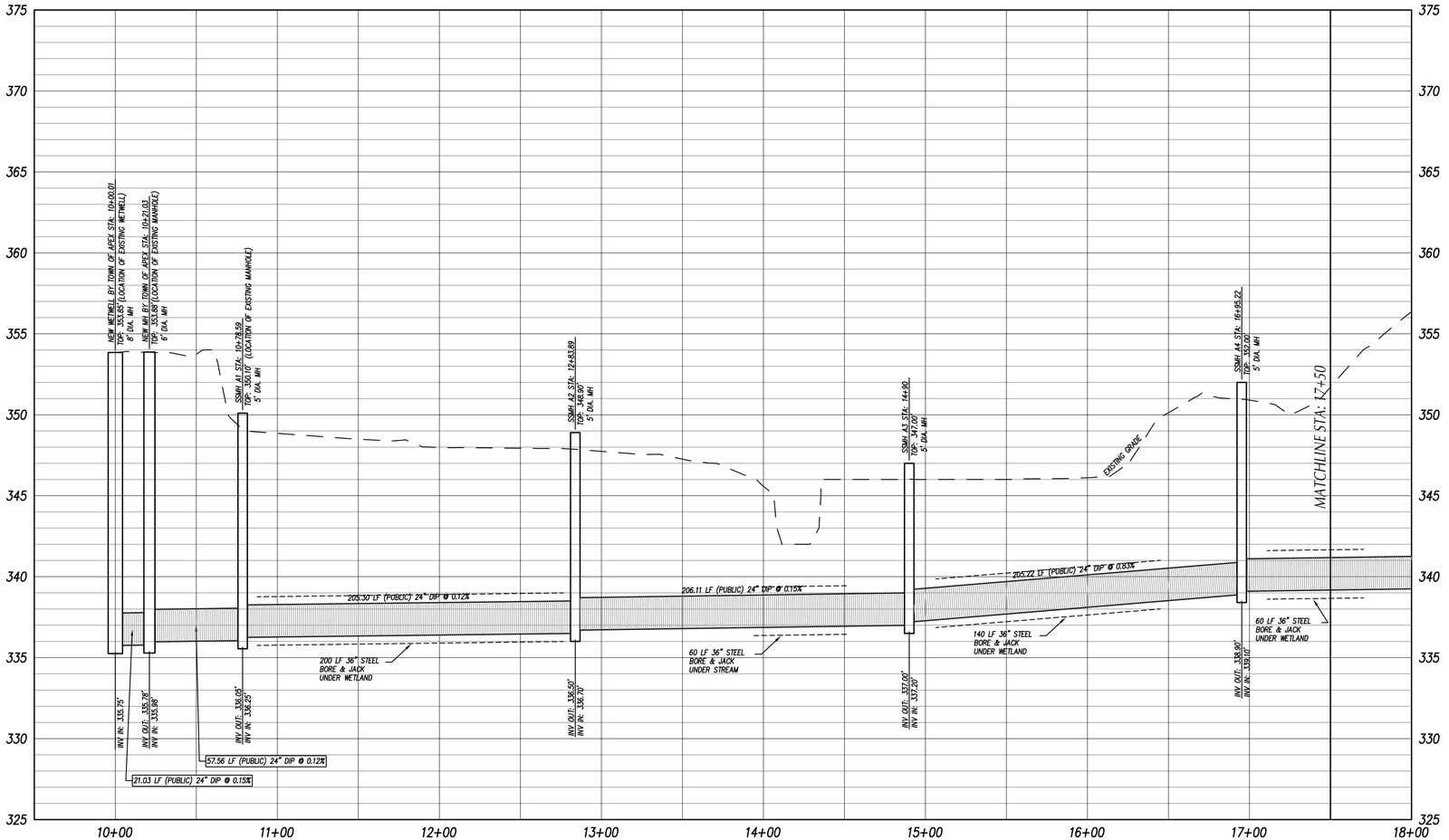
SHEET TITLE

OVERALL SEWER DRAINAGE AREA MAP

SHEET NUMBER

C-05.12





GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.
HORIZONTAL SCALE: 1"=40' VERTICAL SCALE 1"=4'

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

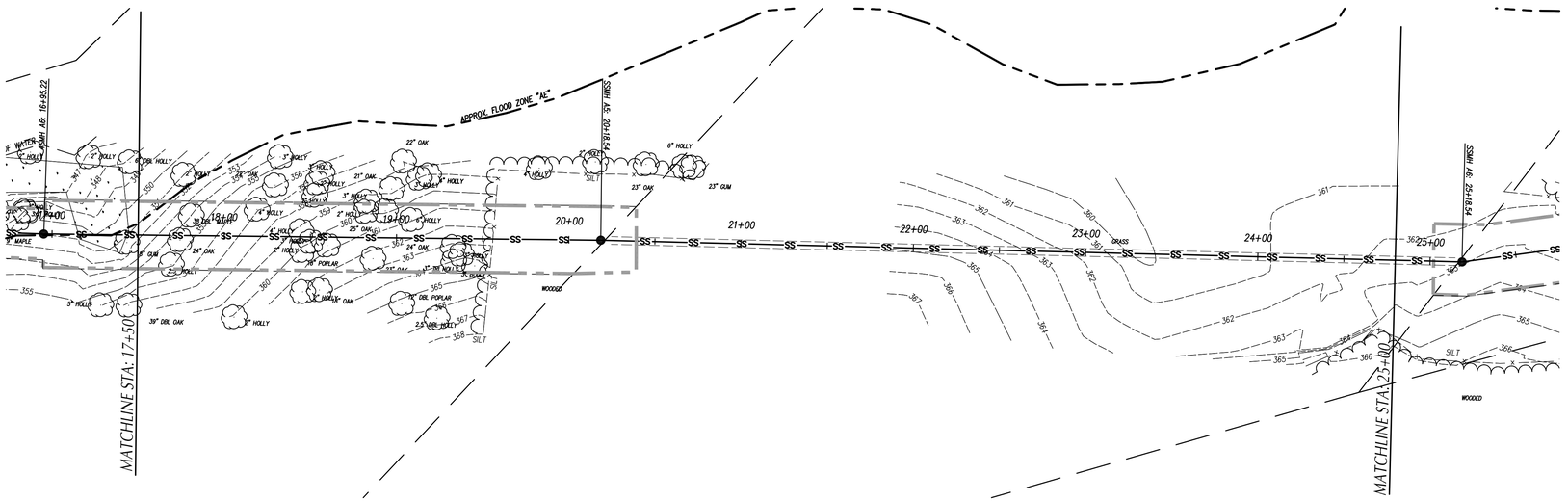
RATIO

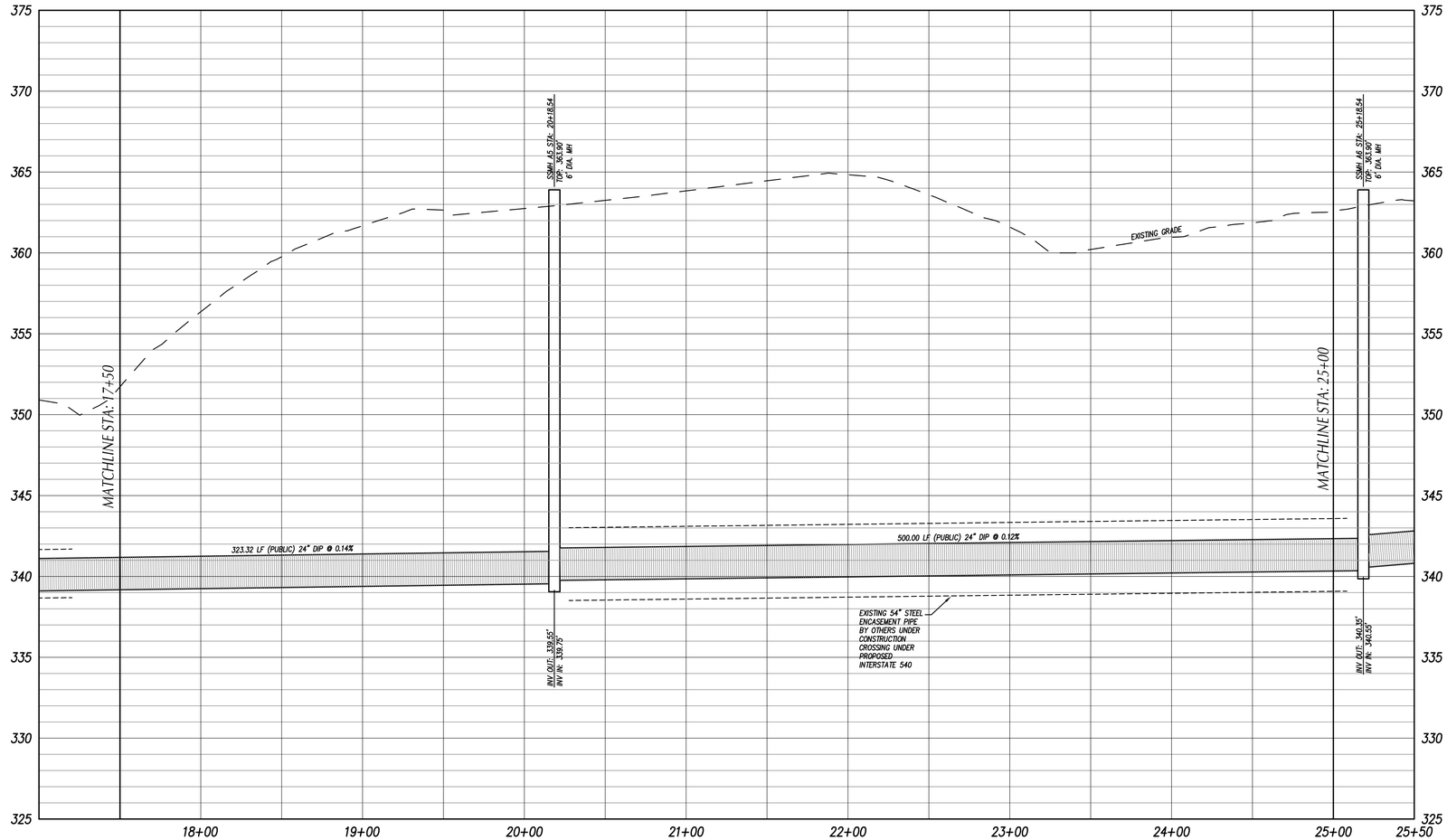
COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

SHEET TITLE
SANITARY SEWER PLAN & PROFILE LINE 'A'

SHEET NUMBER
C-05.13





GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)

1 inch = 40 ft.

HORIZONTAL SCALE: 1"=40' VERTICAL SCALE 1"=4'

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

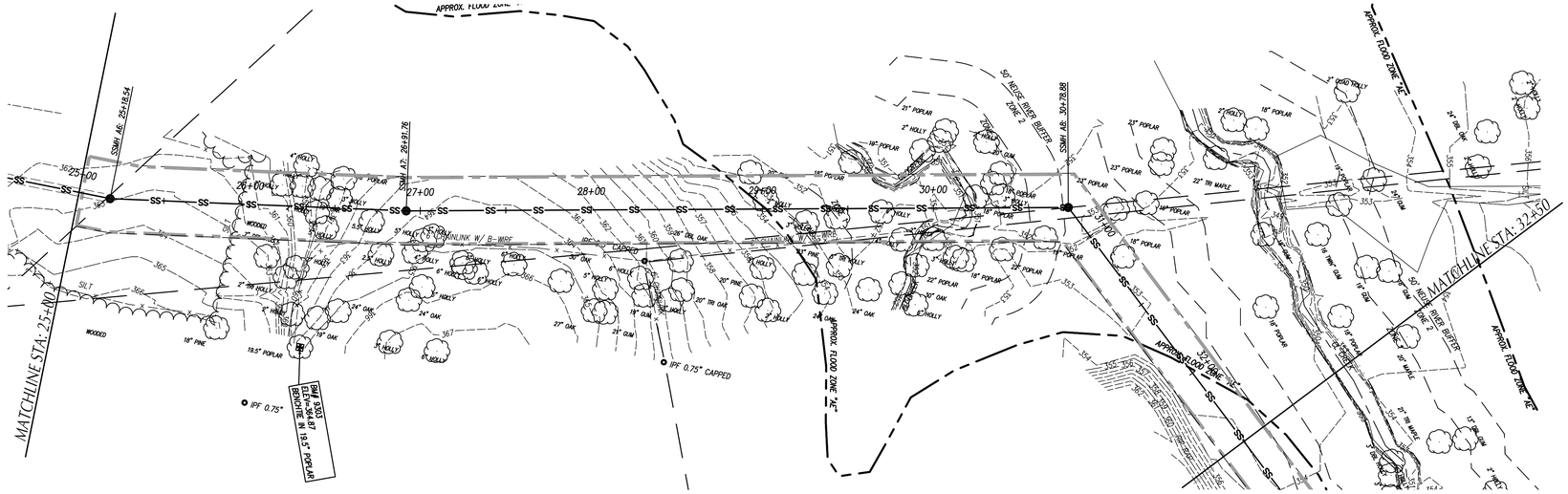
PROJECT NO. 02000.000

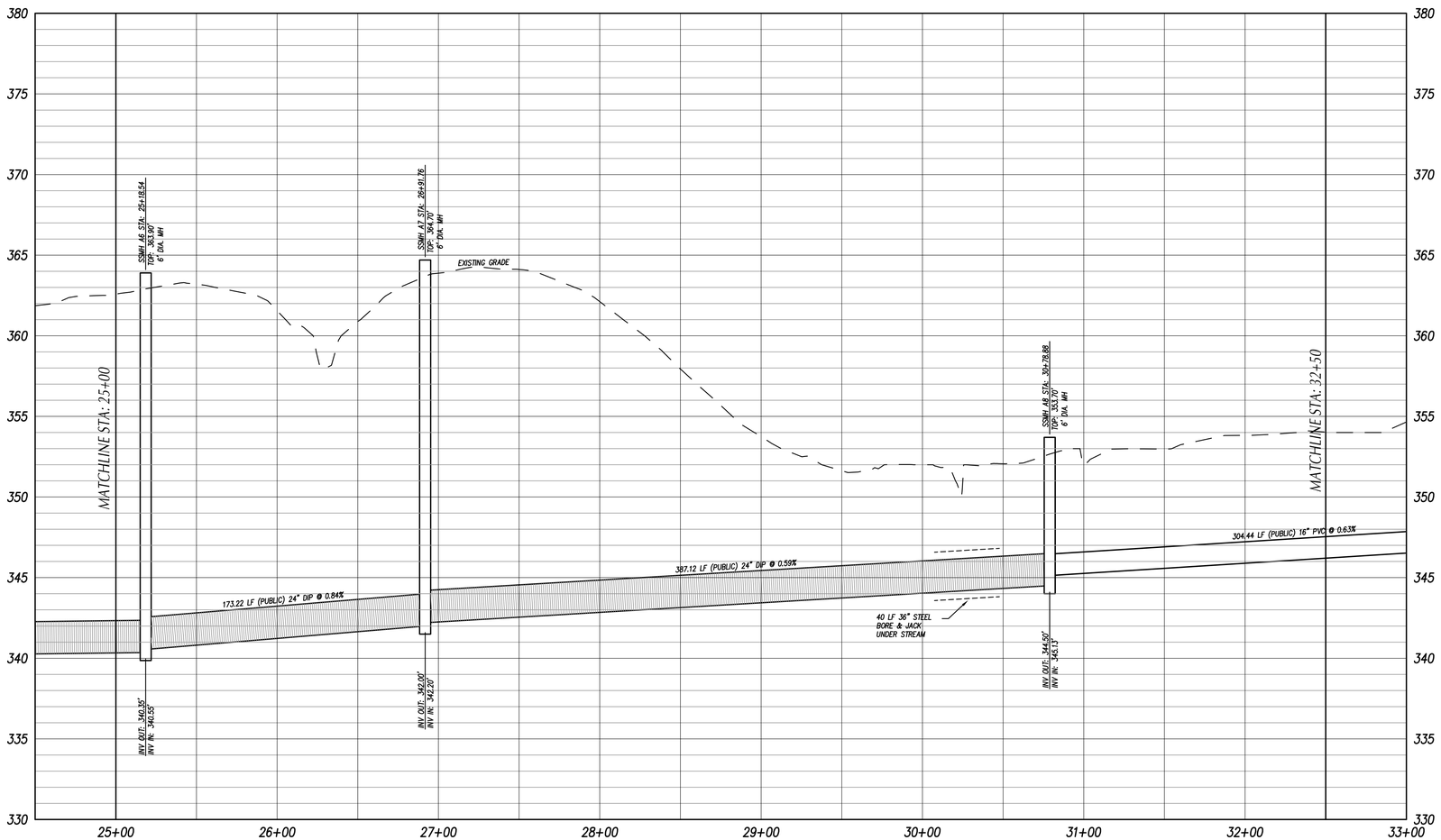
SHEET TITLE

SANITARY SEWER PLAN & PROFILE LINE 'A'

SHEET NUMBER

C-05.14





GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.
HORIZONTAL SCALE: 1"=40' VERTICAL SCALE 1"=4'

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

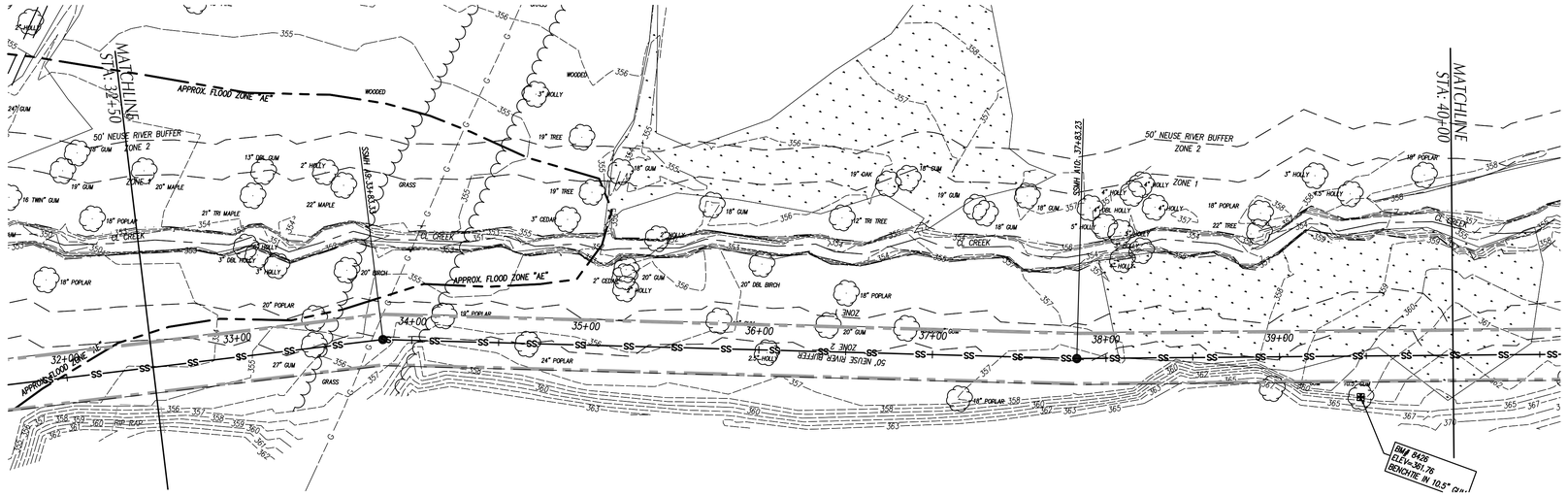
PROJECT NO. 02000.000

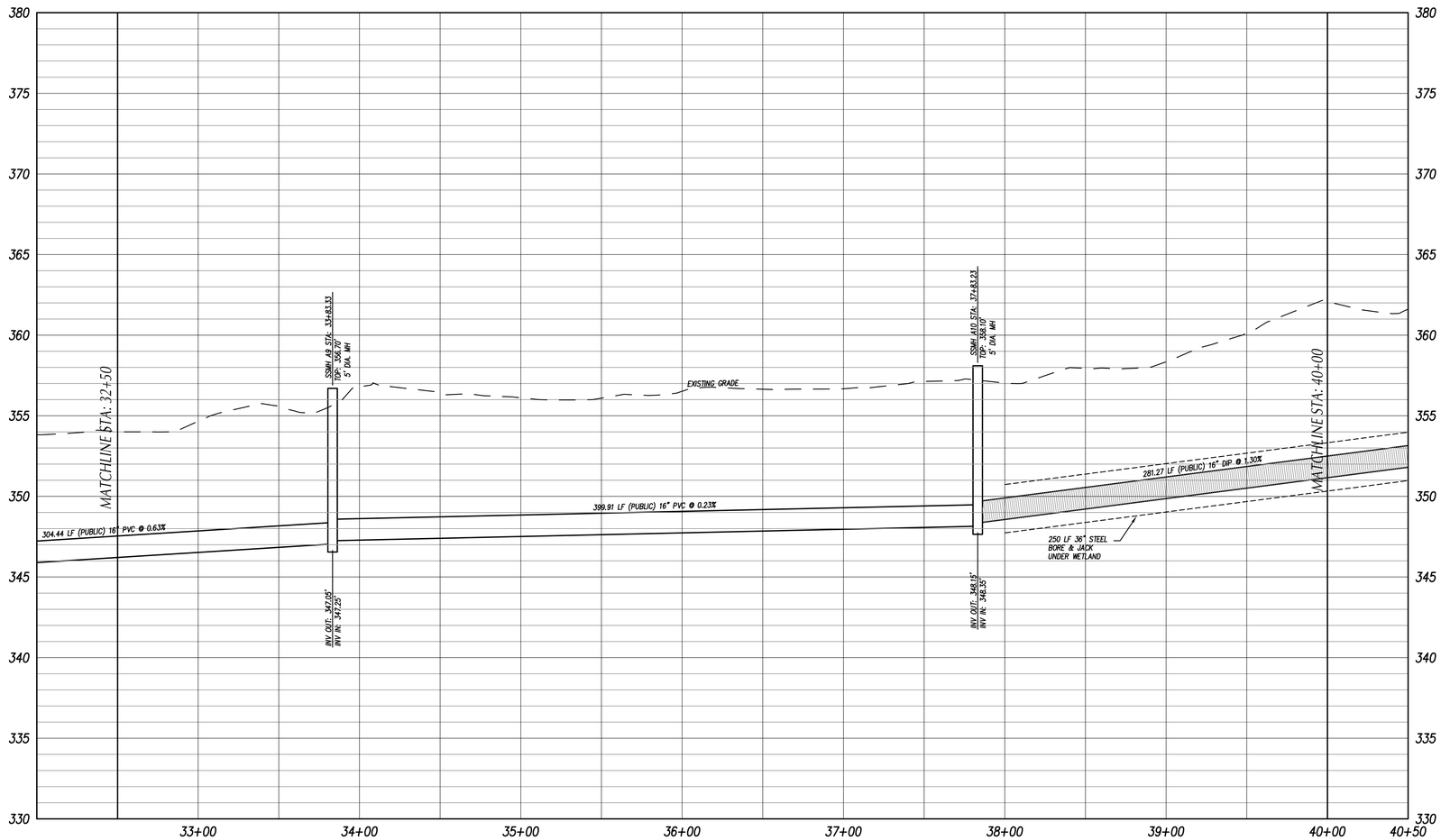
SHEET TITLE

SANITARY SEWER PLAN & PROFILE LINE 'A'

SHEET NUMBER

C-05.15





GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.
HORIZONTAL SCALE: 1"=40' VERTICAL SCALE 1"=4'

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

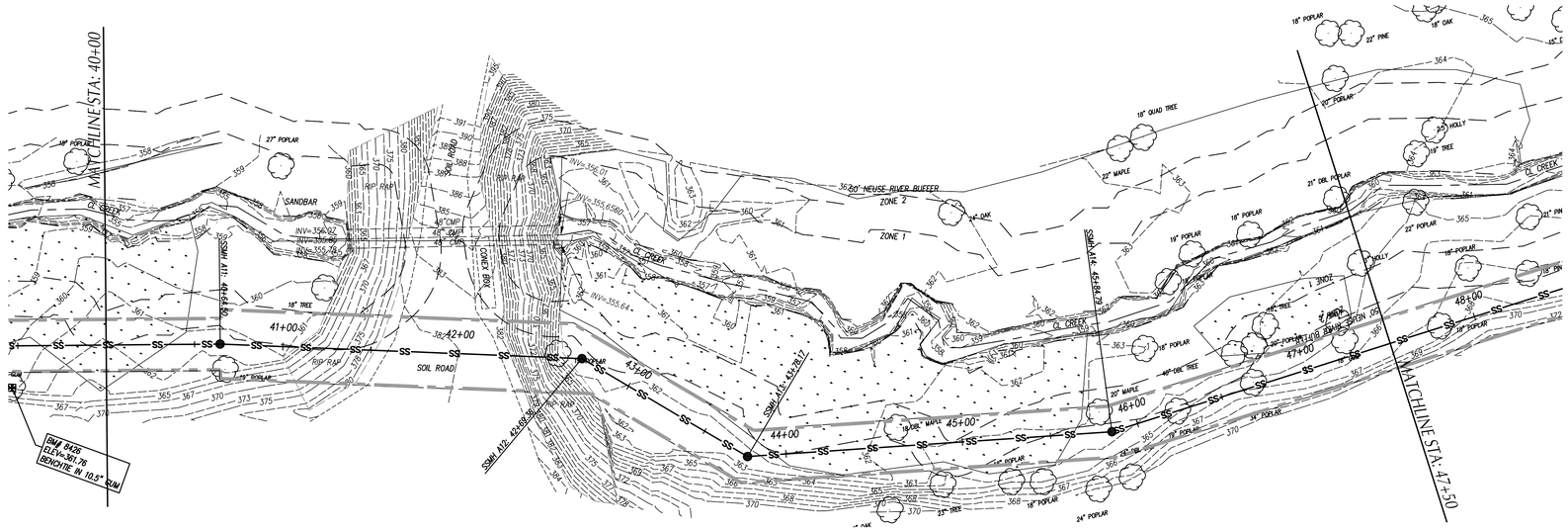
PROJECT NO. 02000.000

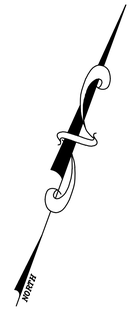
SHEET TITLE

SANITARY SEWER PLAN & PROFILE LINE 'A'

SHEET NUMBER

C-05.16





GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.
HORIZONTAL SCALE: 1"=40' VERTICAL SCALE 1"=4'

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO, NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

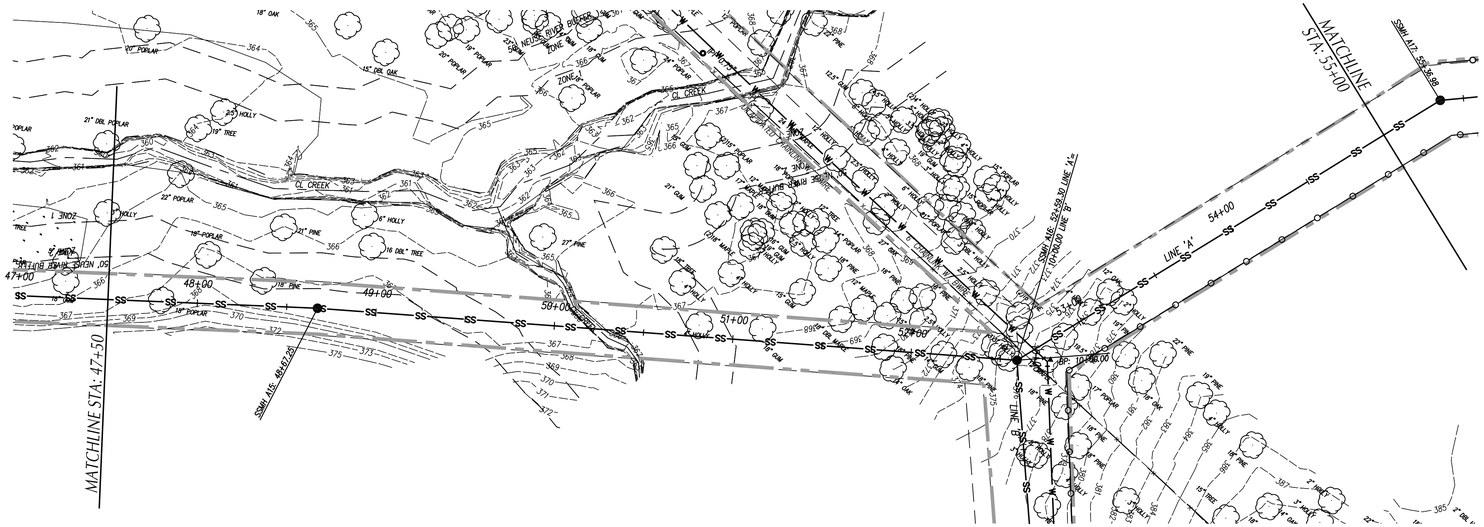
PROJECT NO. 02000.000

SHEET TITLE

SANITARY SEWER PLAN & PROFILE LINE 'A'

SHEET NUMBER

C-05.17



Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

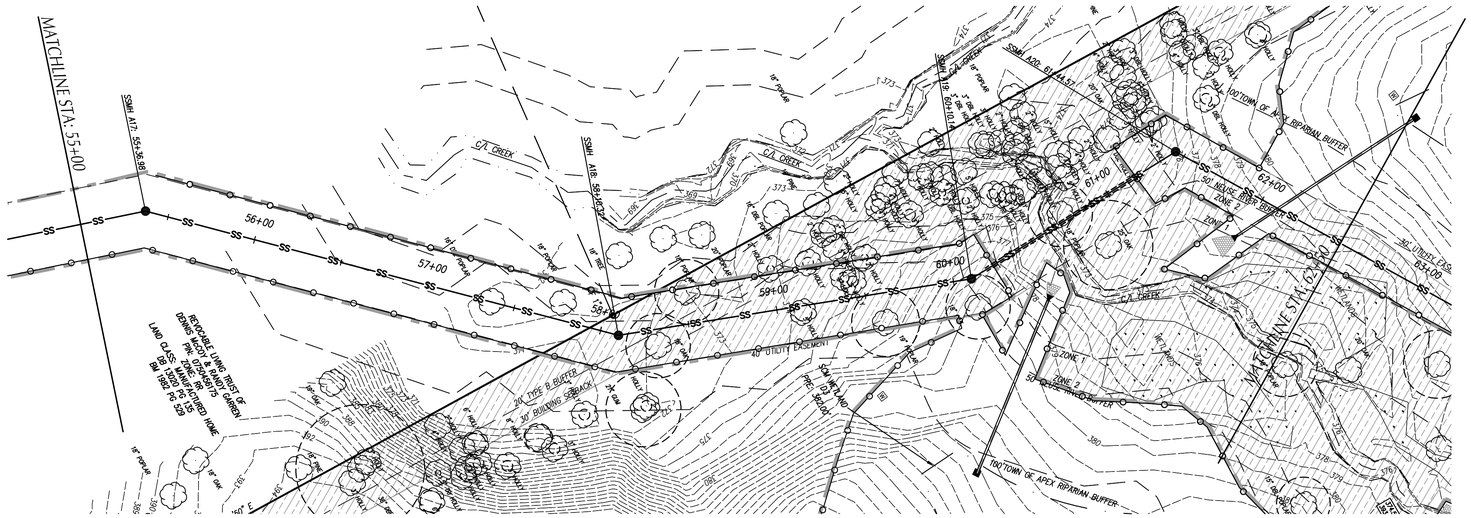
PROJECT NO. 02000.000

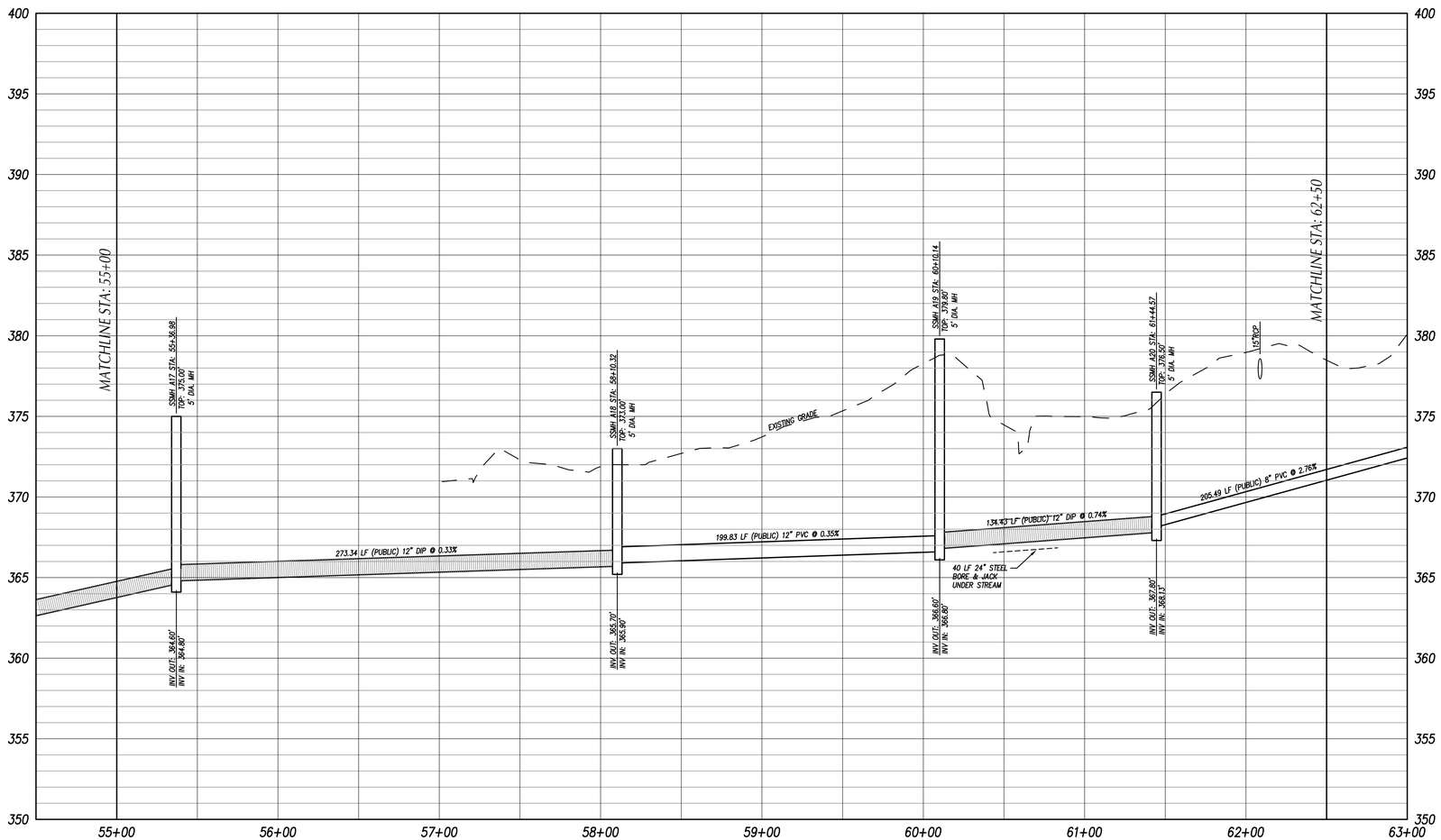
SHEET TITLE

SANITARY SEWER PLAN & PROFILE LINE 'A'

SHEET NUMBER

C-05.18





GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)

1 inch = 40 ft.

HORIZONTAL SCALE: 1"=40' VERTICAL SCALE 1"=4'

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Sulte 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Sulte 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

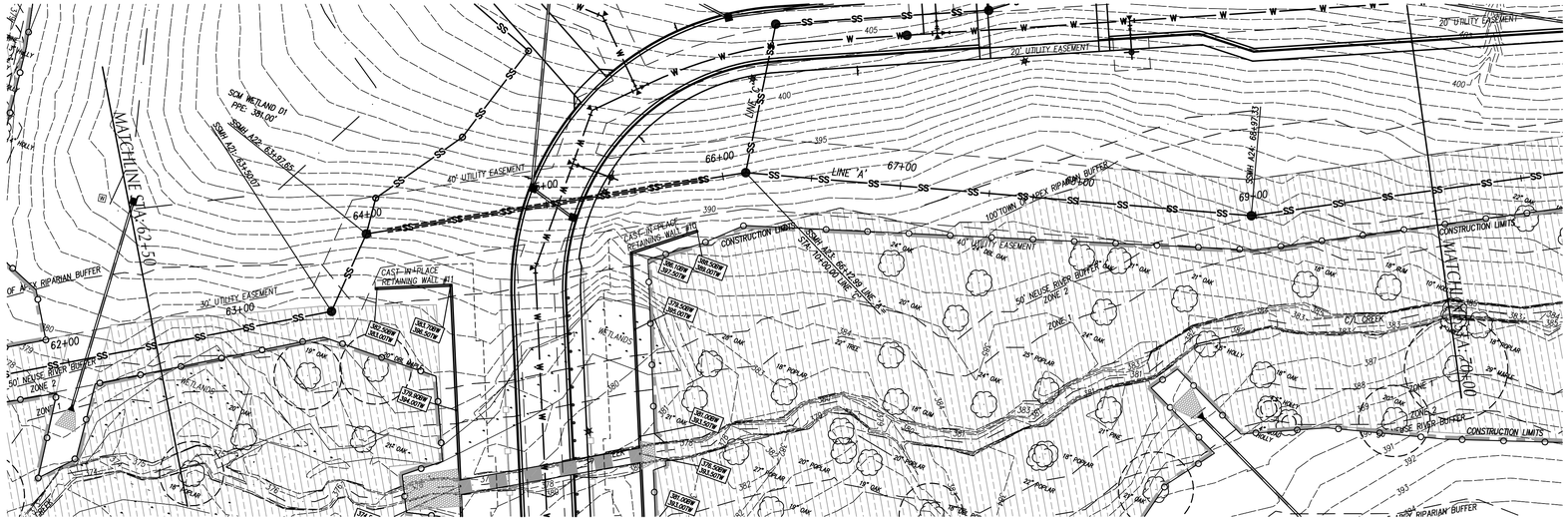
PROJECT NO. 02000.000

SHEET TITLE

SANITARY SEWER PLAN & PROFILE LINE 'A'

SHEET NUMBER

C-05.19



GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.
HORIZONTAL SCALE: 1"=40' VERTICAL SCALE 1"=4'

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

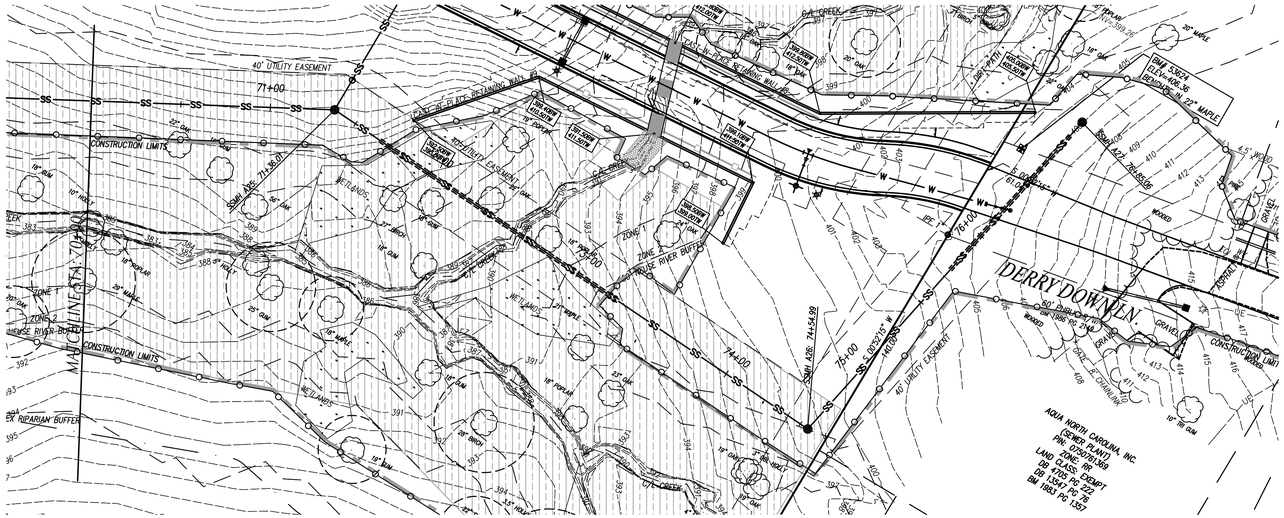
RATIO

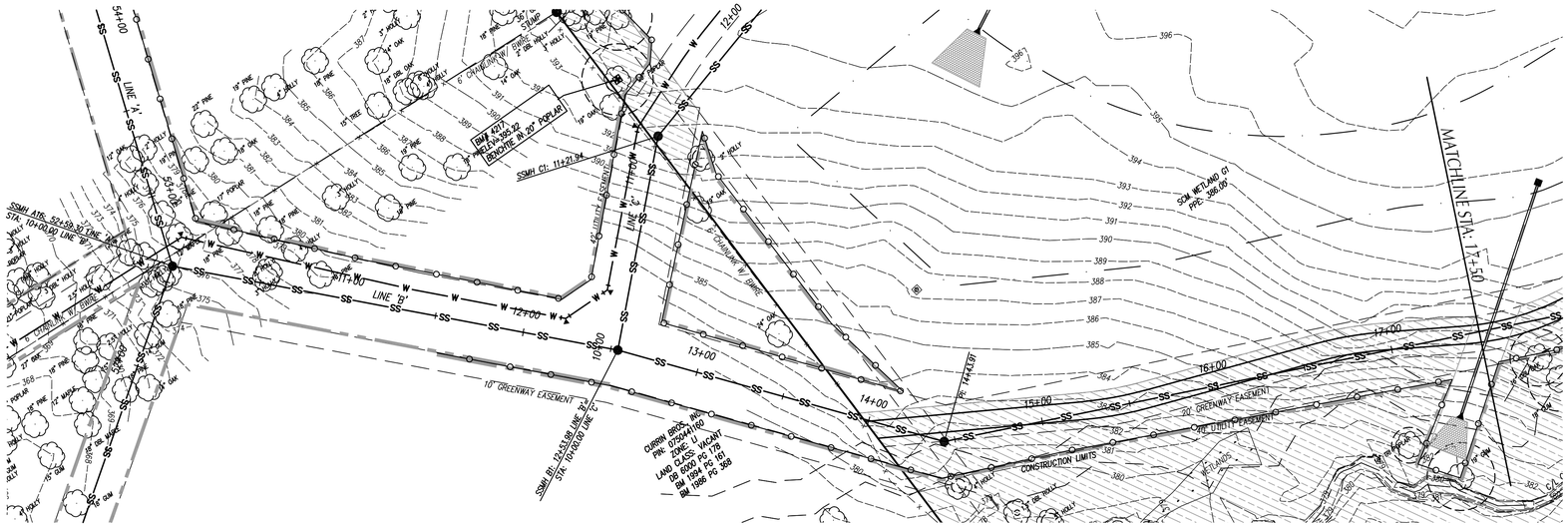
COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

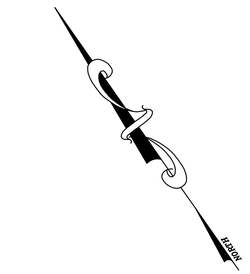
PROJECT NO. 02000.000

SHEET TITLE
SANITARY SEWER PLAN & PROFILE LINE 'A'

SHEET NUMBER
C-05.20


40' UTILITY EASEMENT
71+00
CONSTRUCTION LIMITS
MATCHLINE STA: 71+00
ZONE 1
ZONE 2
NEUSE RIVER BUFFER
EX RIPARIAN BUFFER
WETLANDS
SSMH 'A26' STA: 74+54.99
74+00
75+00
40' UTILITY EASEMENT
DERRY DOWN LN
AQUA NORTH CAROLINA, INC.
(SEWER PLANT)
PIN: 0750713459
DB 6750, PG 222
LAND CLASS: 99
EXEMPT
DB 12512, PG 222
BM 1983, PG 1357
BM# 23624
ELEV=406.36
PROPERTY CORNER
22" MAPLE
CONSTRUCTION LIMITS
76+00
TYP. 5' GRADE
TYP. 10' GRADE
TYP. 15' GRADE
TYP. 20' GRADE
TYP. 25' GRADE
TYP. 30' GRADE
TYP. 35' GRADE
TYP. 40' GRADE
TYP. 45' GRADE
TYP. 50' GRADE
TYP. 55' GRADE
TYP. 60' GRADE
TYP. 65' GRADE
TYP.





GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.
HORIZONTAL SCALE: 1"=40' VERTICAL SCALE 1"=4'

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

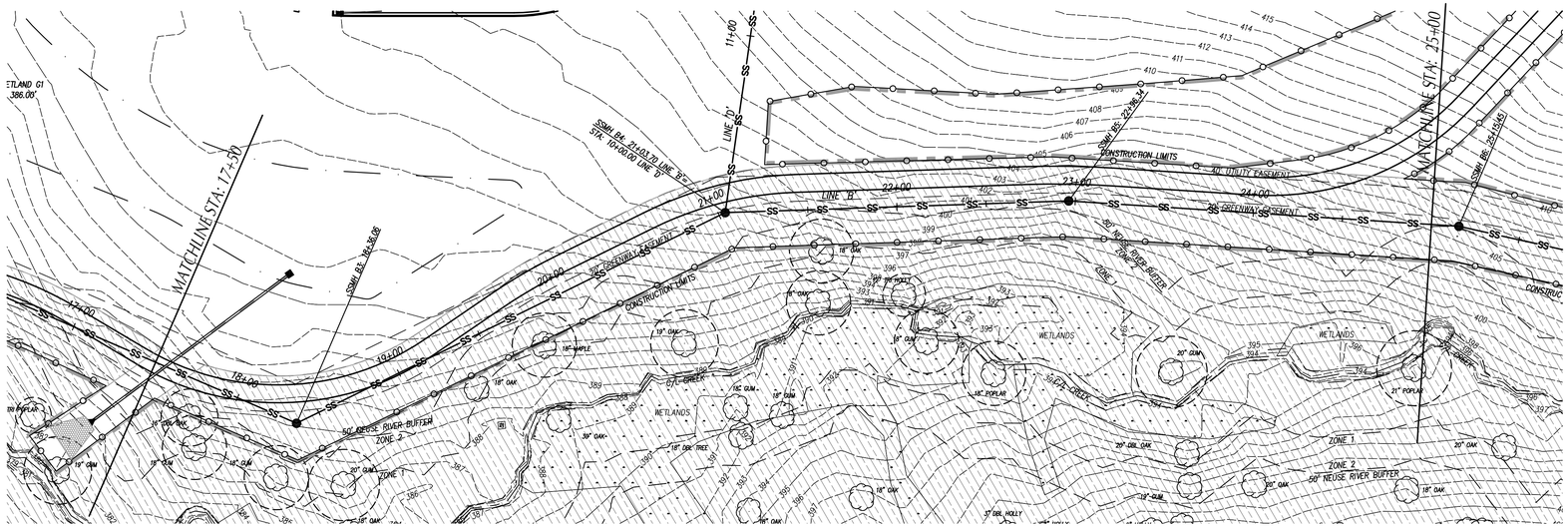
PROJECT NO. 02000.000

SHEET TITLE

SANITARY SEWER
PLAN & PROFILE
LINE 'B'

SHEET NUMBER

C-05.22



GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.
HORIZONTAL SCALE: 1"=40' VERTICAL SCALE 1"=4'

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Sulte 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Sulte 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

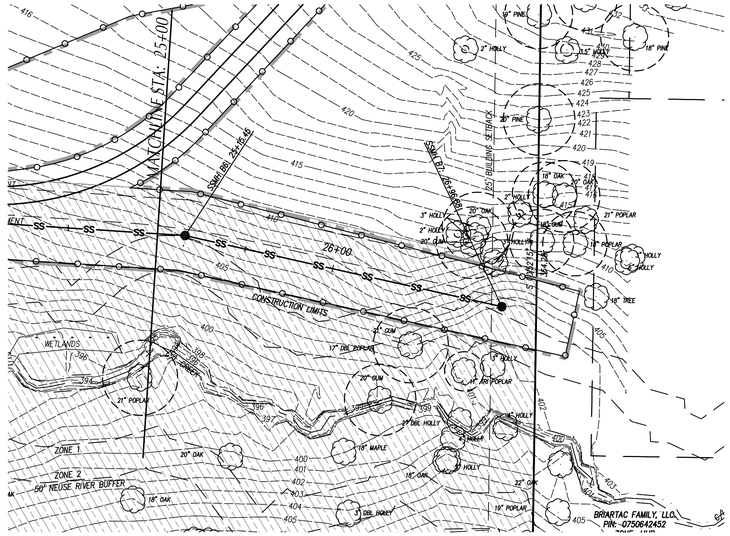
RATIO

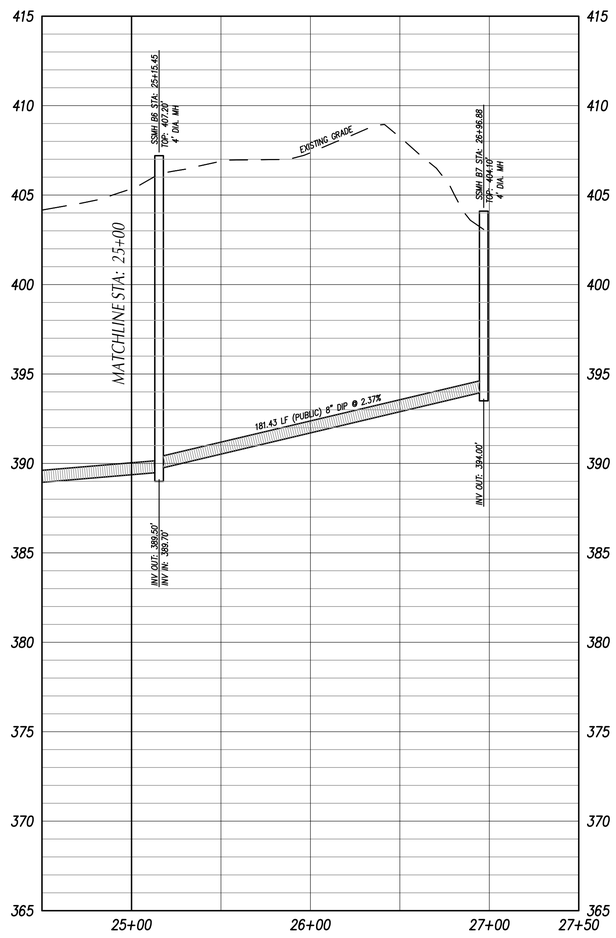
COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

SHEET TITLE
SANITARY SEWER PLAN & PROFILE LINE 'B'

SHEET NUMBER
C-05.23





GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.
HORIZONTAL SCALE: 1"=40' VERTICAL SCALE 1"=4'

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

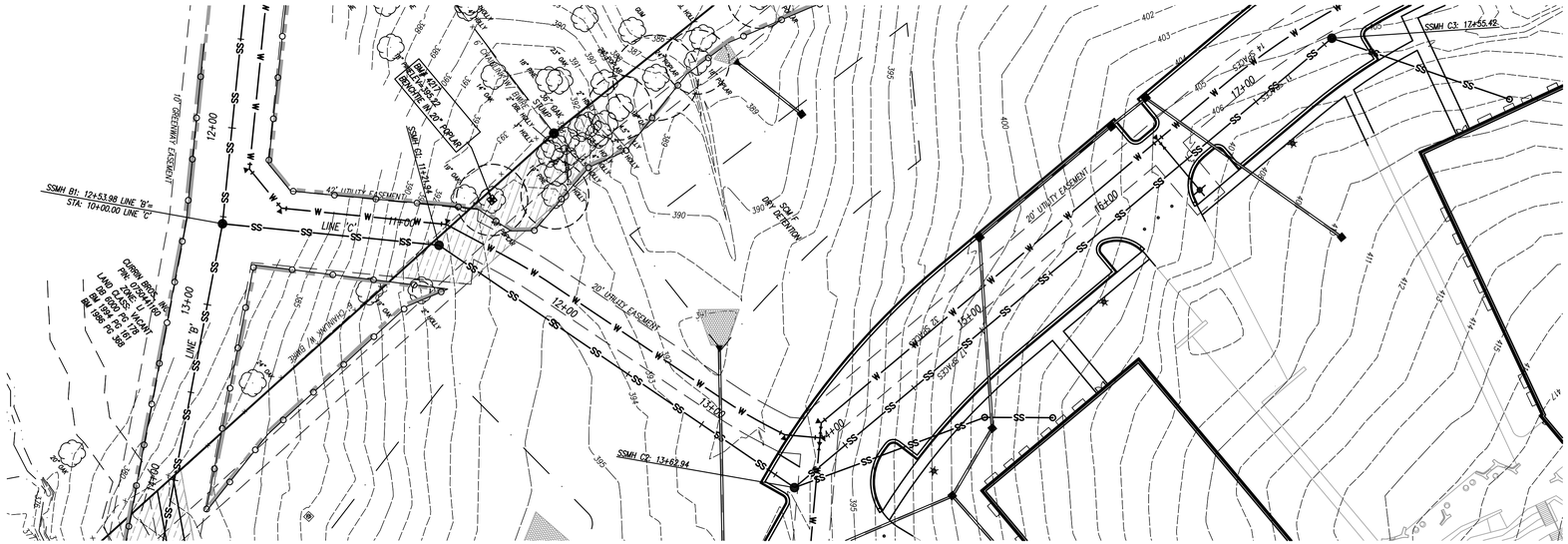
RATIO

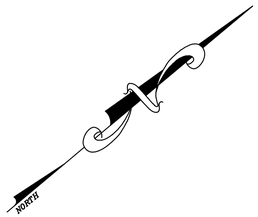
COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

SHEET TITLE
SANITARY SEWER PLAN & PROFILE LINE 'B'

SHEET NUMBER
C-05.24





GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.
HORIZONTAL SCALE: 1"=40' VERTICAL SCALE 1"=4'

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

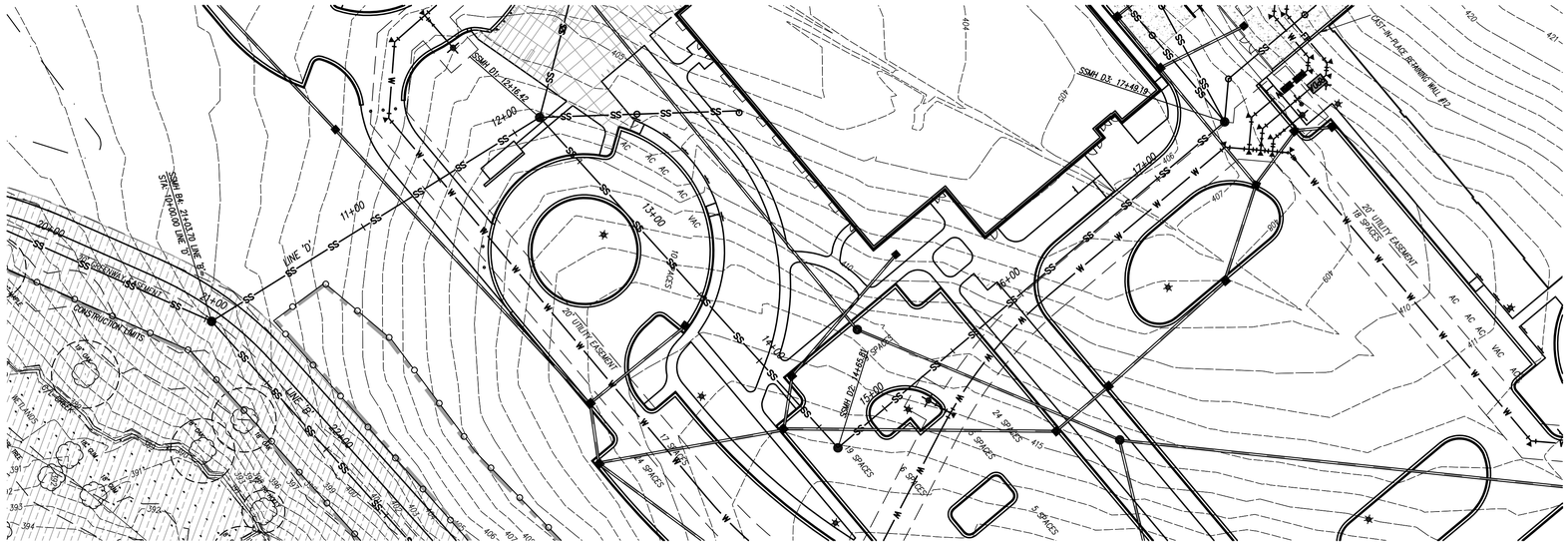
RATIO

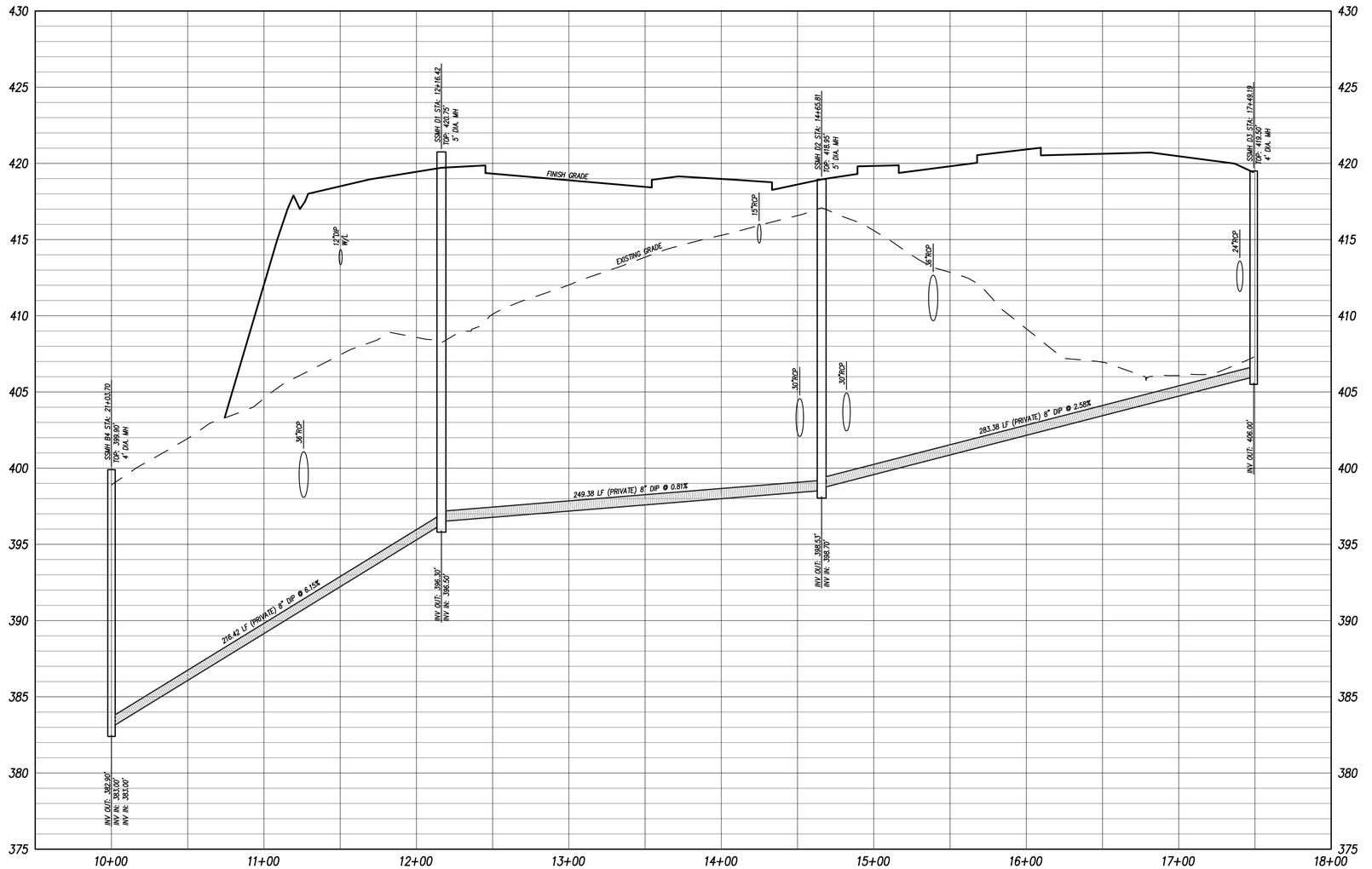
COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

SHEET TITLE
SANITARY SEWER PLAN & PROFILE LINE 'C'

SHEET NUMBER
C-05.25





GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.
HORIZONTAL SCALE: 1"=40' VERTICAL SCALE 1"=4'

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

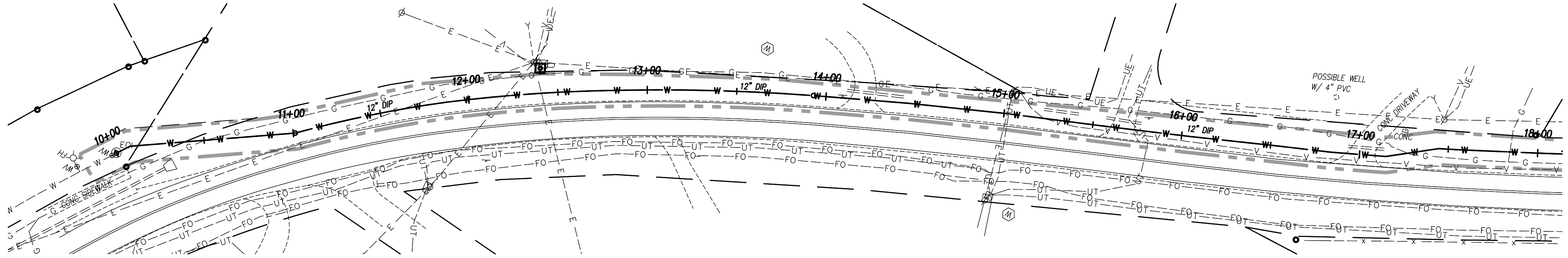
PROJECT NO. 02000.000

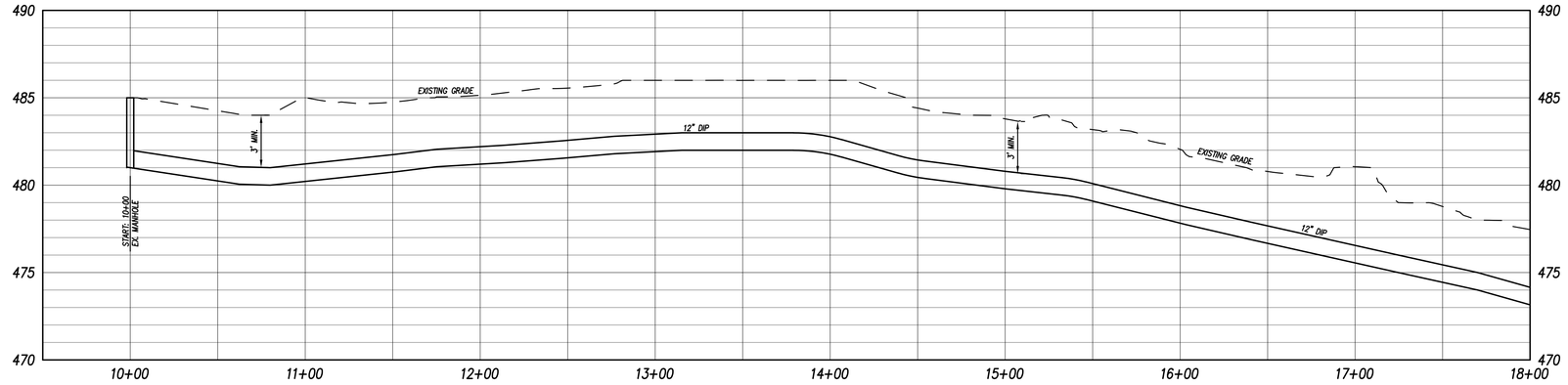
SHEET TITLE

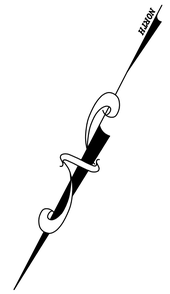
SANITARY SEWER PLAN & PROFILE LINE 'D'

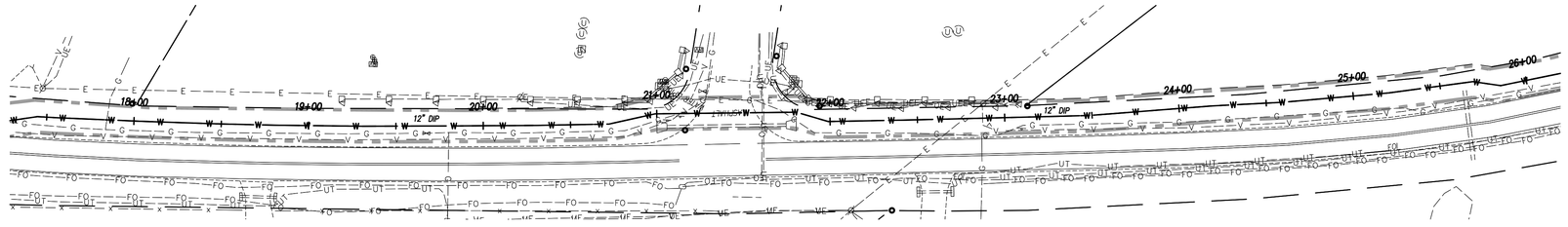
SHEET NUMBER

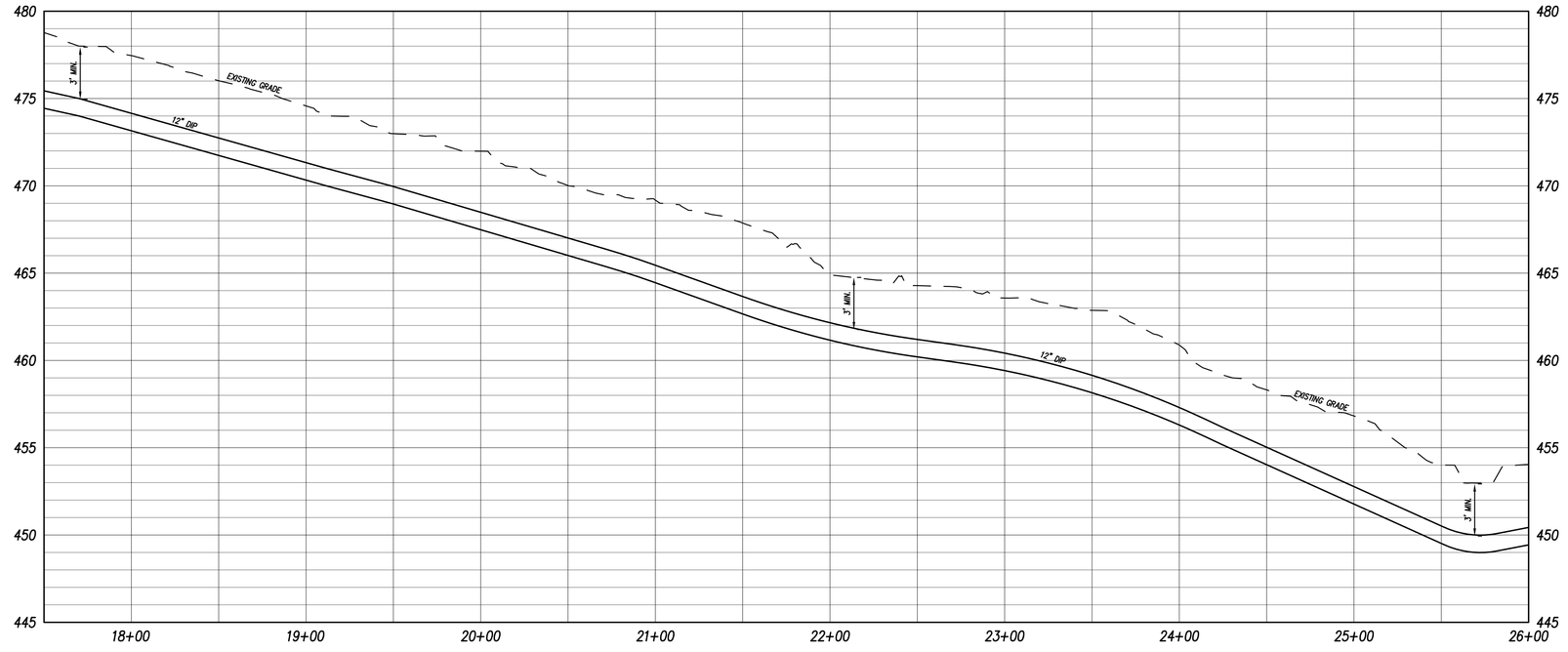
C-05.26

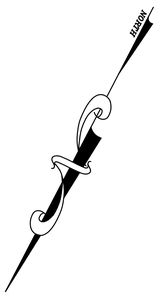












GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.
HORIZONTAL SCALE: 1"=40' VERTICAL SCALE 1"=4'

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

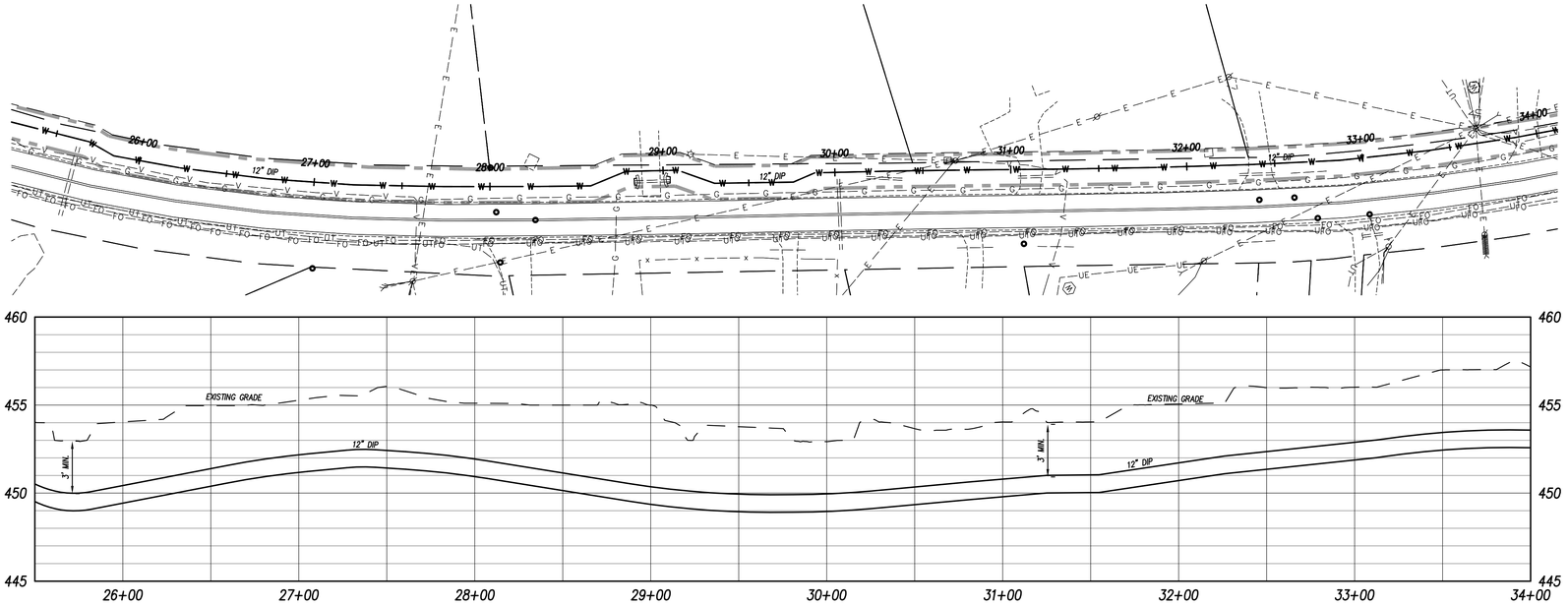
RATIO

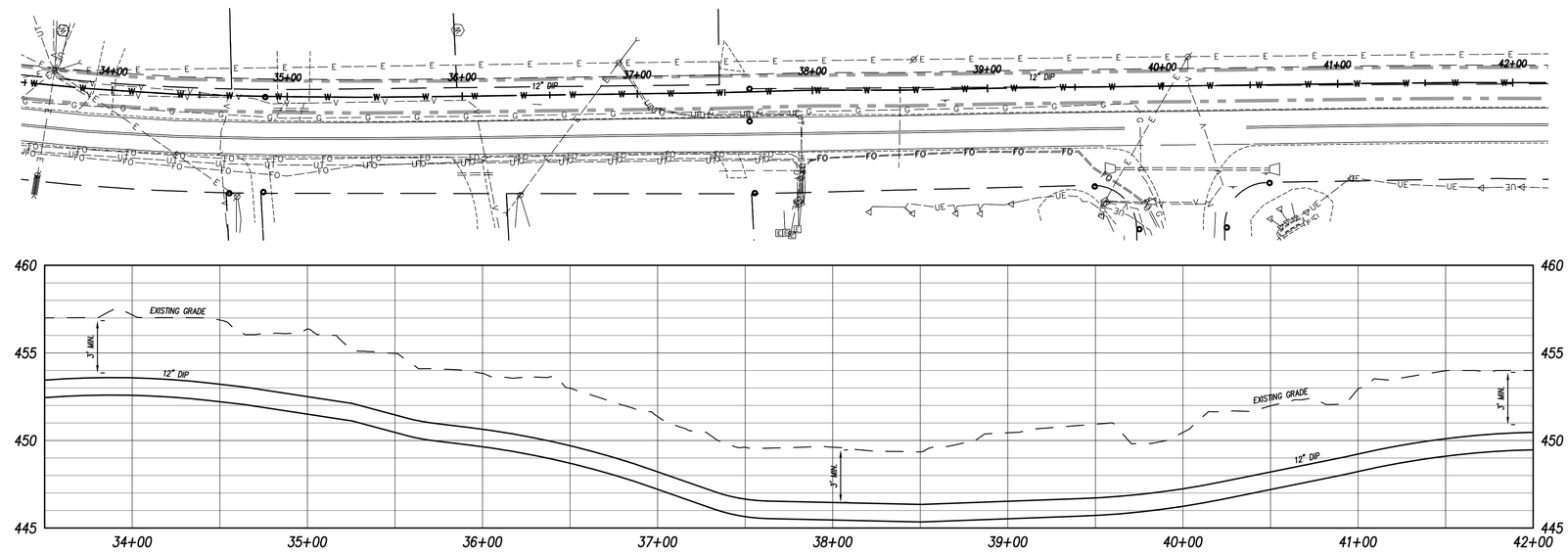
COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

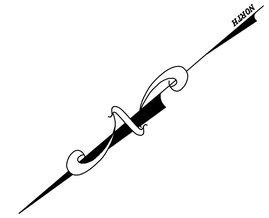
PROJECT NO. 02000.000

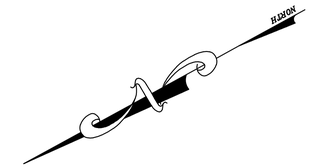
SHEET TITLE
WATER
PLAN & PROFILE
LINE 'A'

SHEET NUMBER
C-05.27









GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.
HORIZONTAL SCALE: 1"=40' VERTICAL SCALE 1"=4'

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

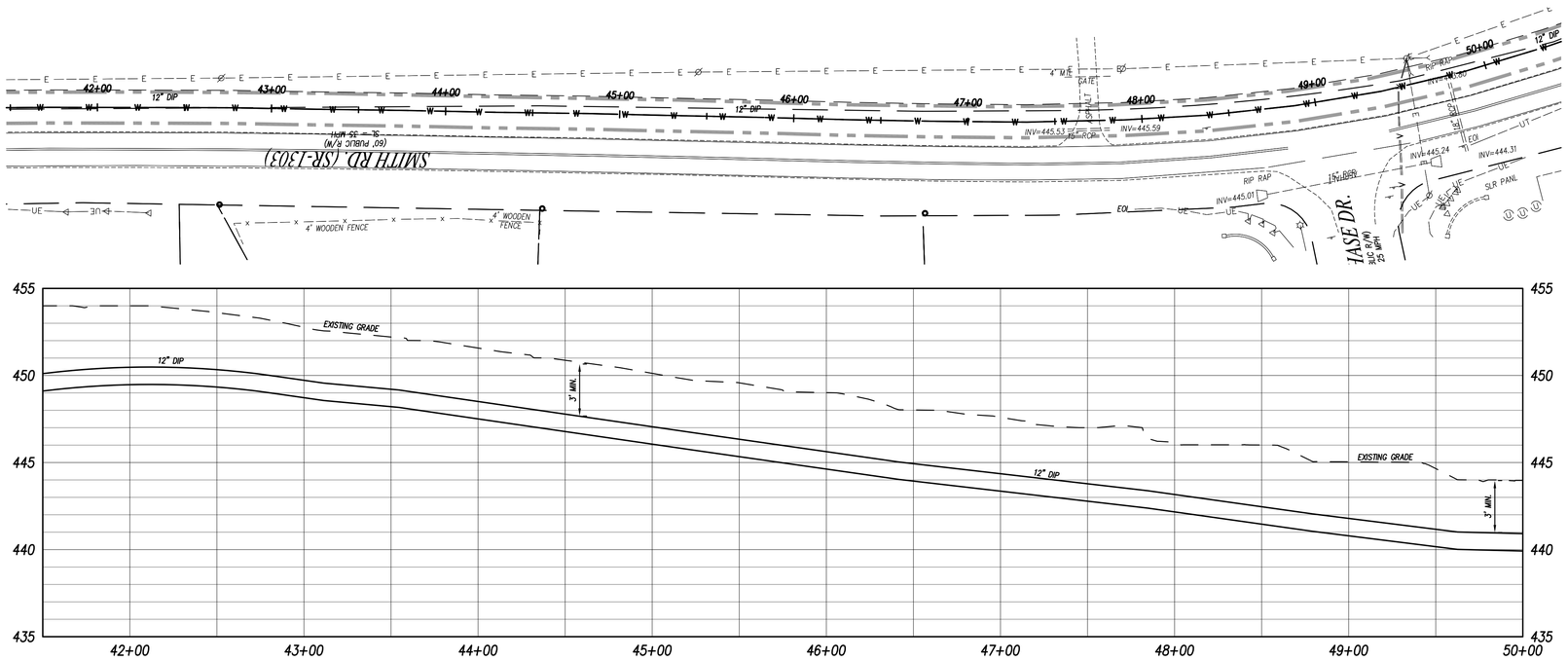
RATIO

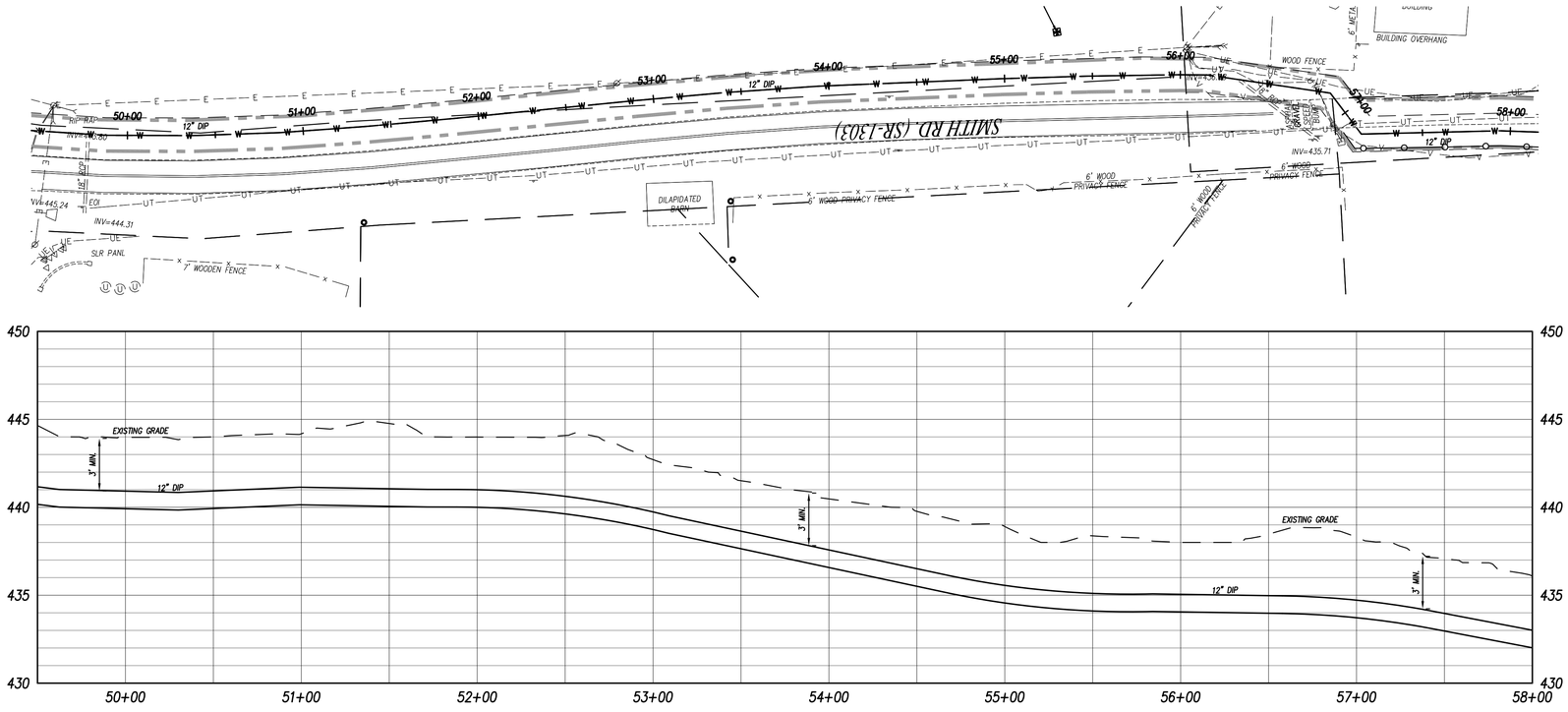
COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

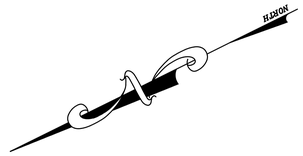
PROJECT NO. 02000.000

SHEET TITLE
WATER
PLAN & PROFILE
LINE 'A'

SHEET NUMBER
C-05.28







GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.
HORIZONTAL SCALE: 1"=40' VERTICAL SCALE 1"=4'

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

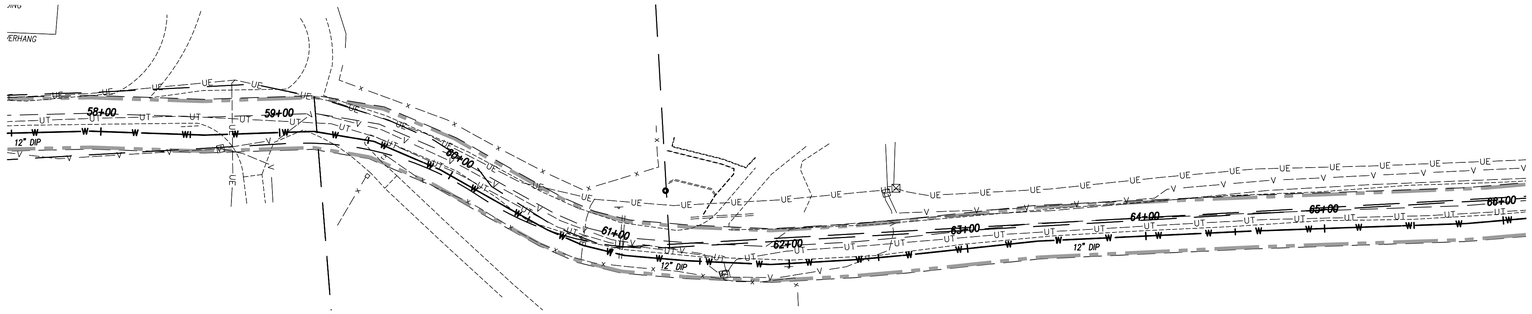
RATIO

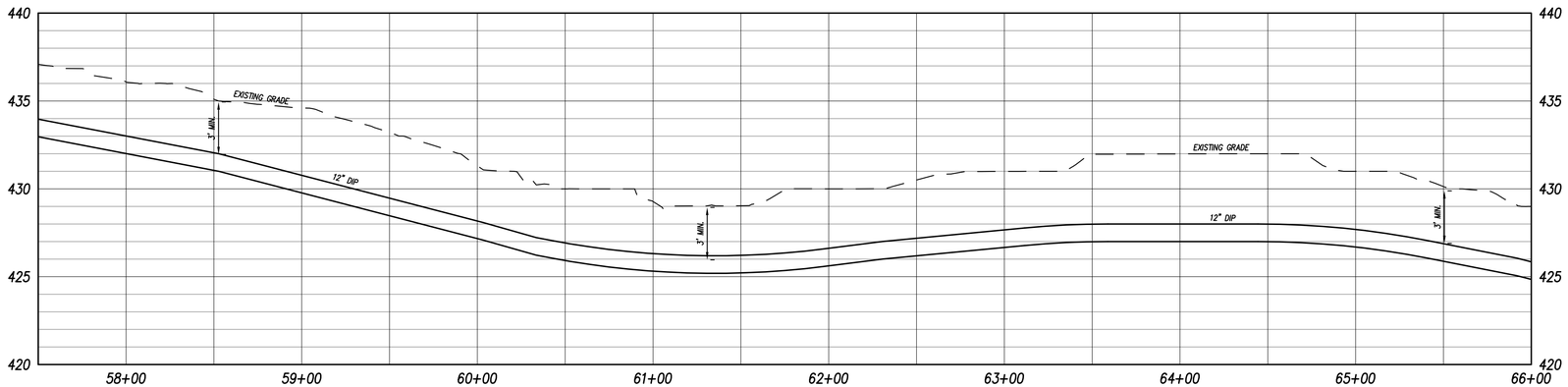
COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

SHEET TITLE
WATER
PLAN & PROFILE
LINE 'A'

SHEET NUMBER
C-05.29





GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.
HORIZONTAL SCALE: 1"=40' VERTICAL SCALE 1"=4'

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Sulte 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

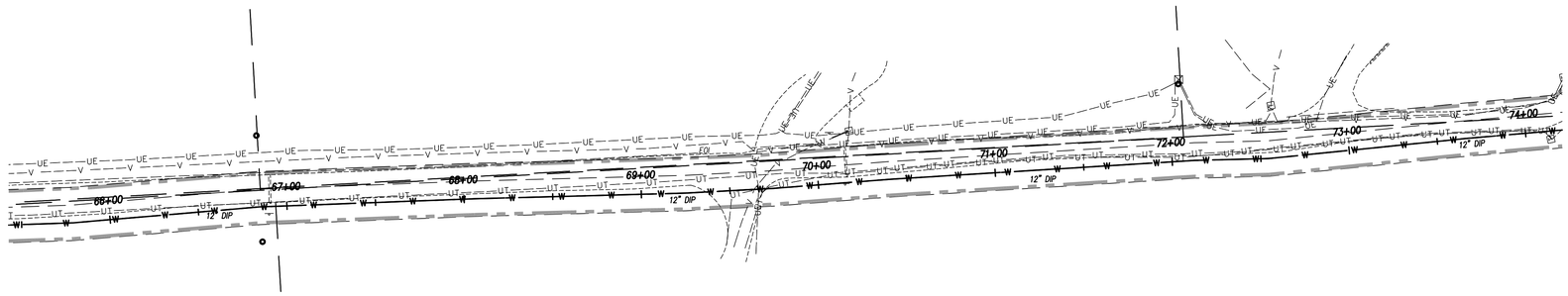
PROJECT NO. 02000.000

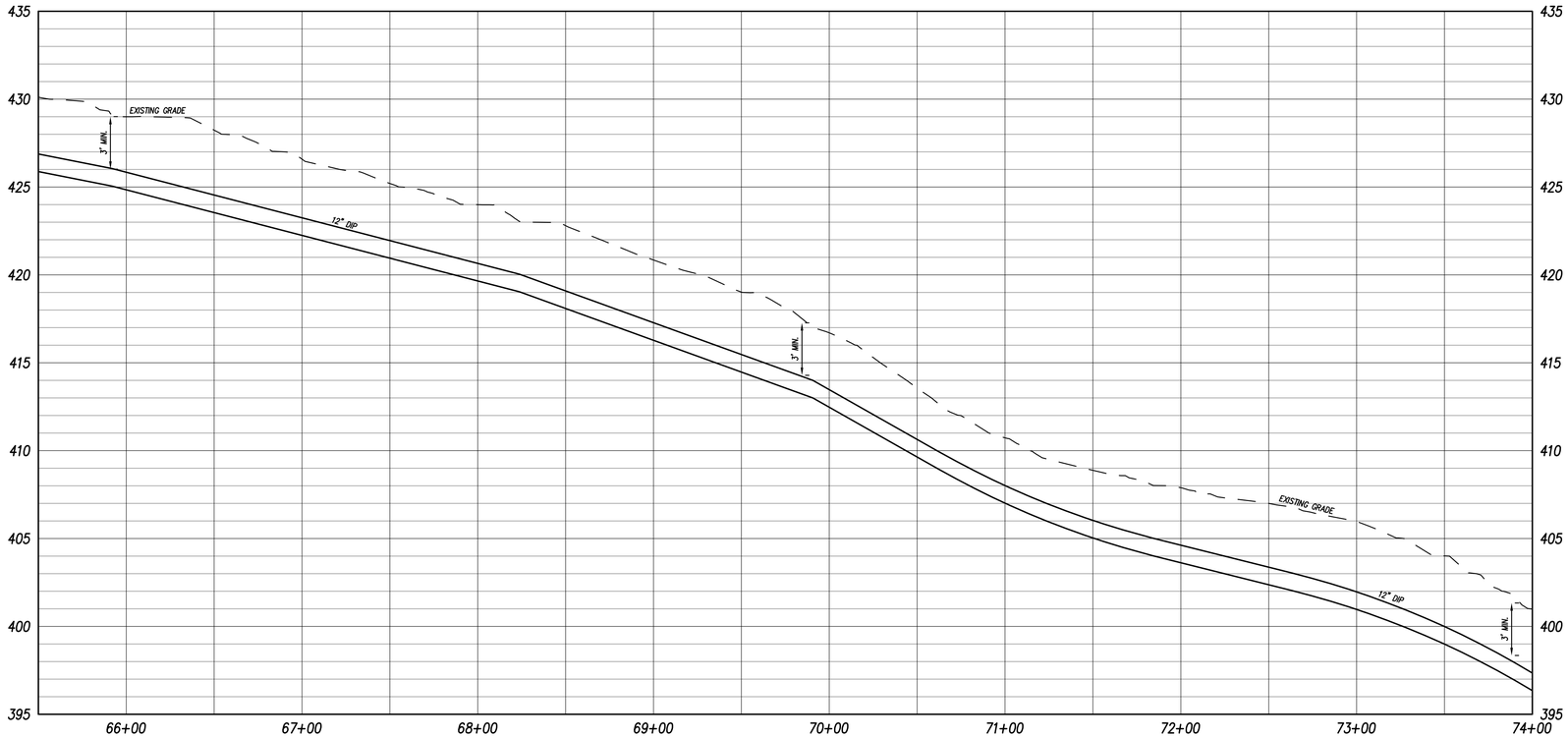
SHEET TITLE

WATER PLAN & PROFILE LINE 'A'

SHEET NUMBER

C-05.30





GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)

1 inch = 40 ft.

HORIZONTAL SCALE: 1"=40' VERTICAL SCALE 1"=4'

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Sulte 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Sulte 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

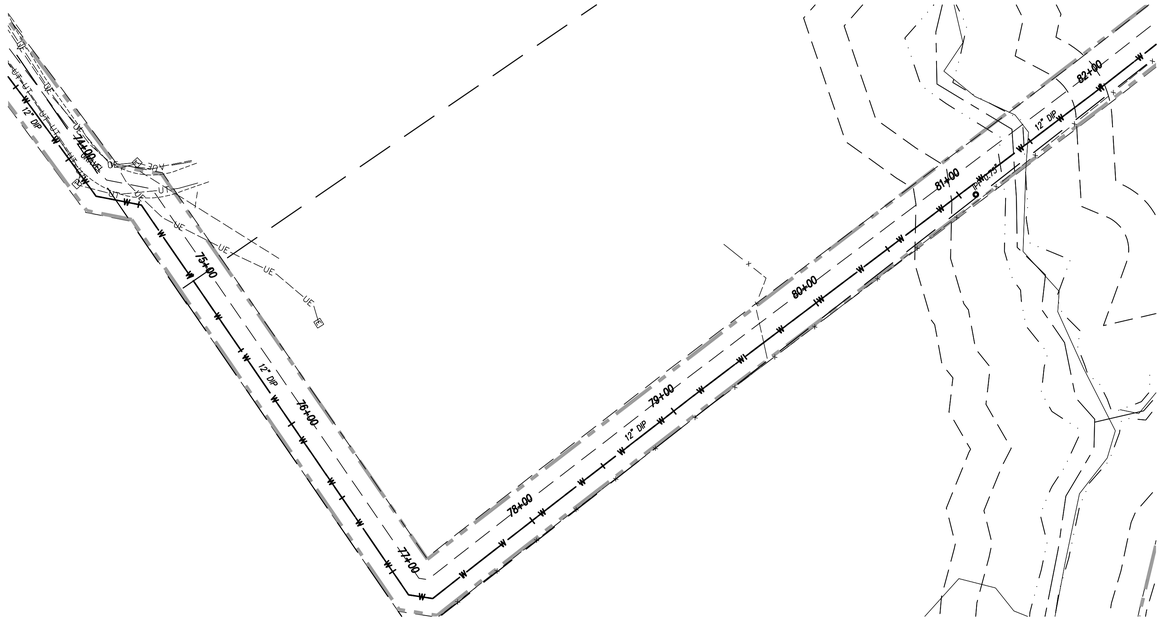
PROJECT NO. 02000.000

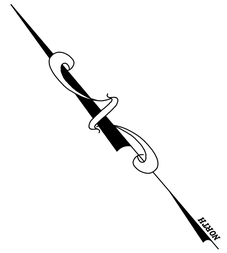
SHEET TITLE

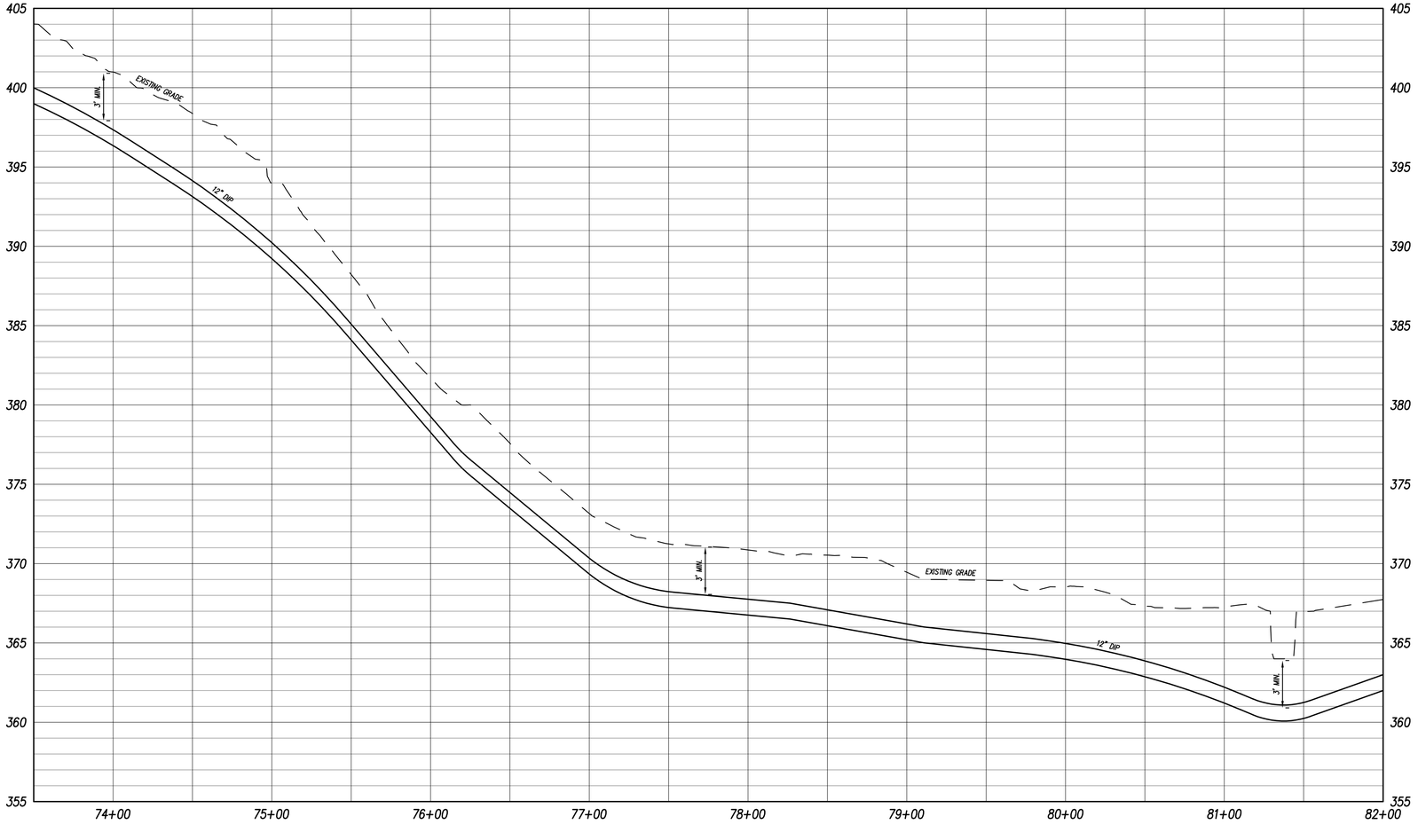
WATER
PLAN & PROFILE
LINE 'A'

SHEET NUMBER

C-05.31







GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.
HORIZONTAL SCALE: 1"=40' VERTICAL SCALE 1"=4'

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

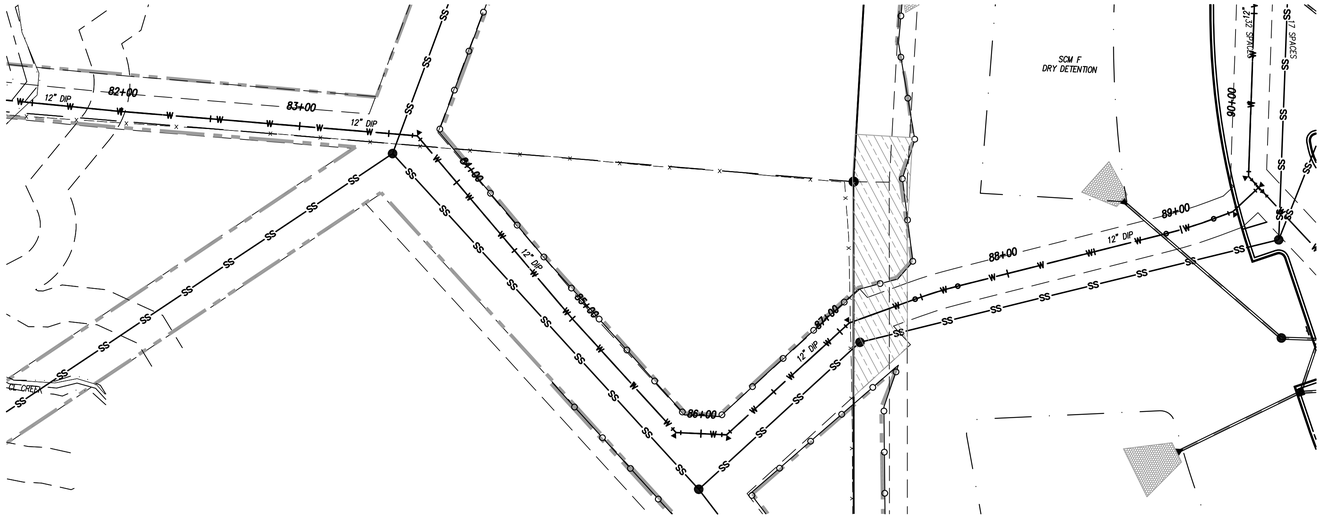
1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

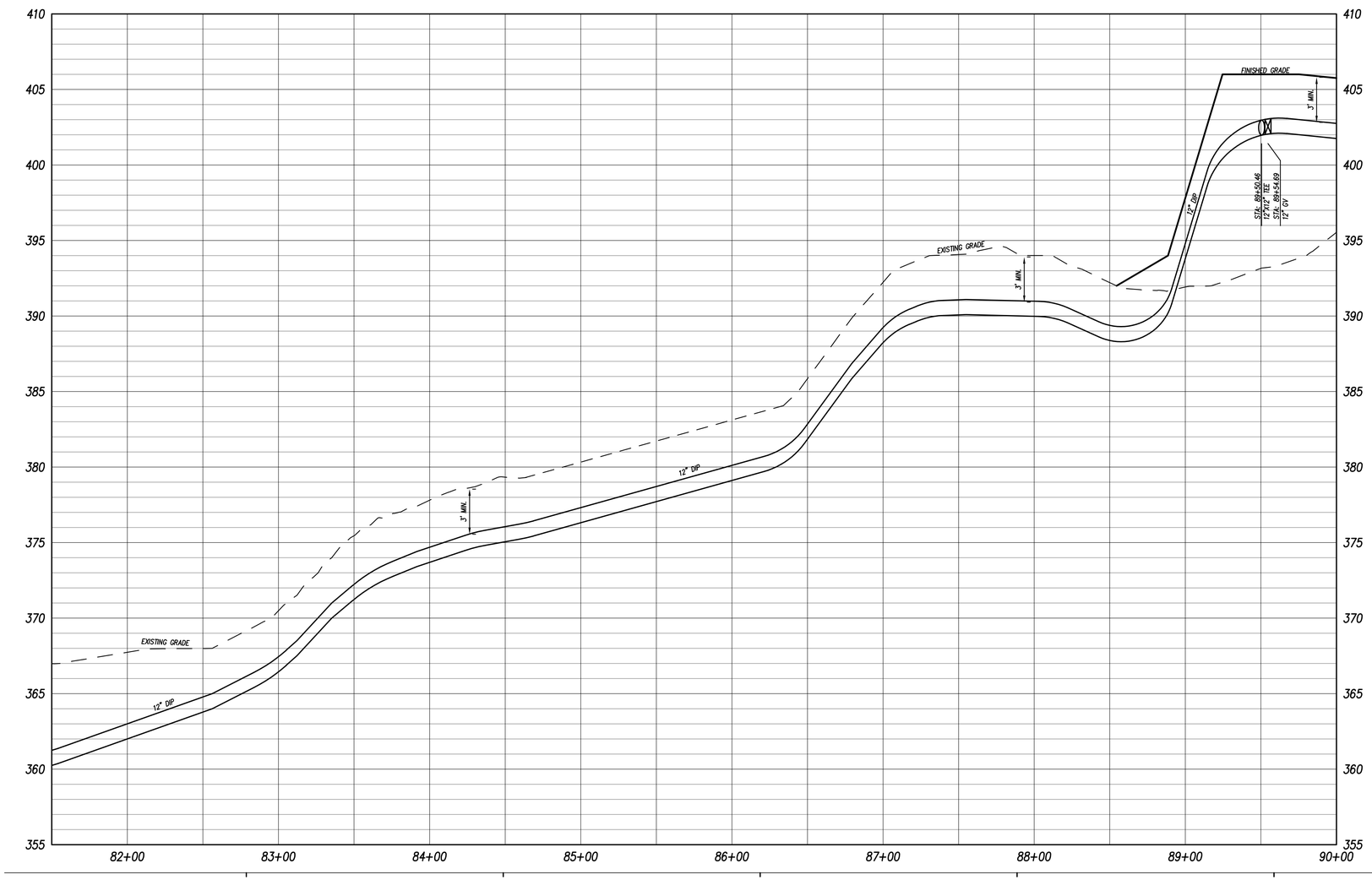
COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

SHEET TITLE
WATER
PLAN & PROFILE
LINE 'A'

SHEET NUMBER
C-05.32





GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.
HORIZONTAL SCALE: 1"=40' VERTICAL SCALE 1"=4'

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO, NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

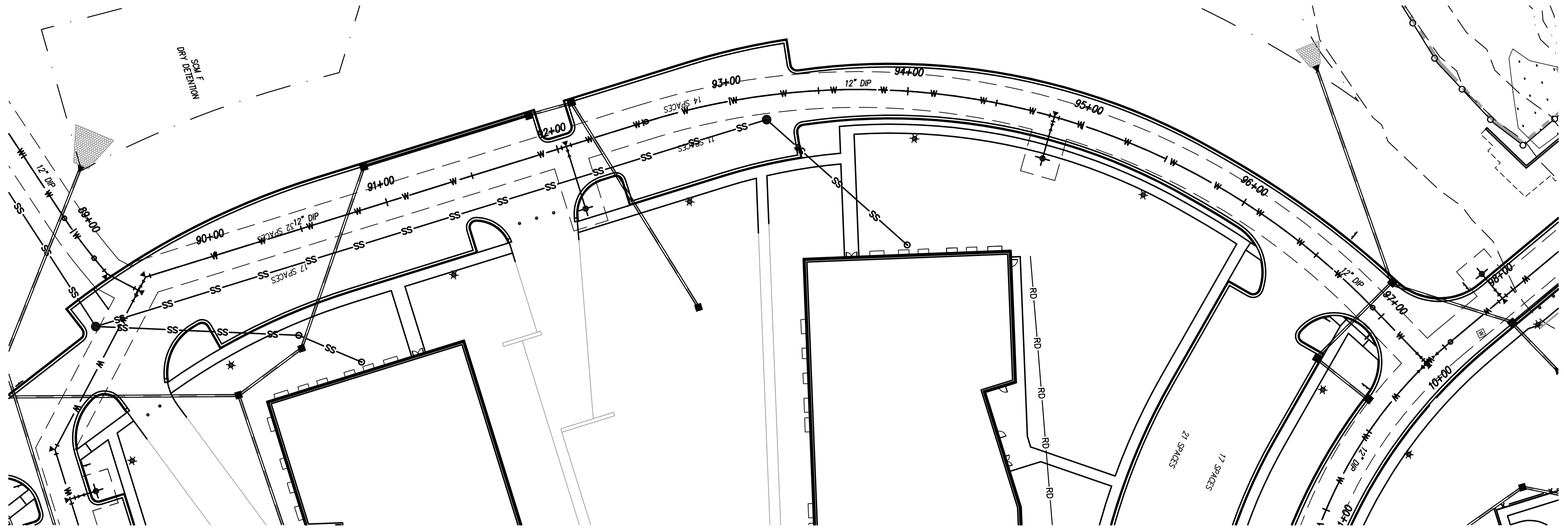
PROJECT NO. 02000.000

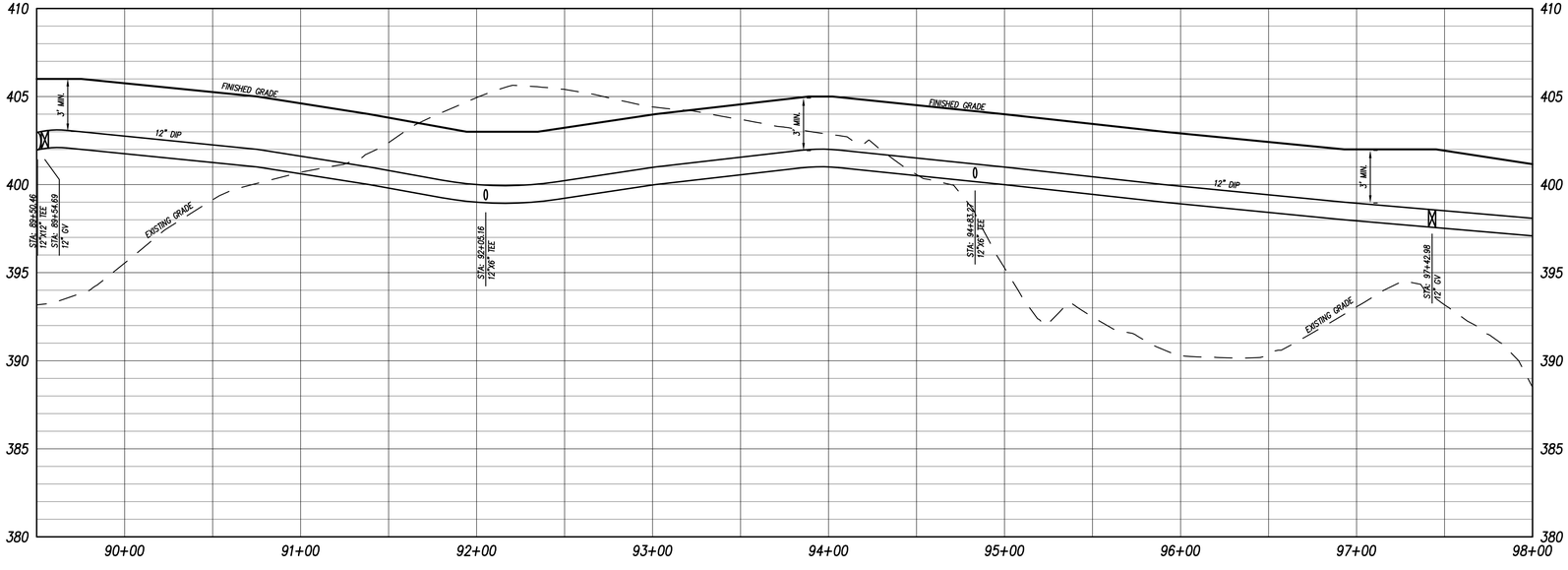
SHEET TITLE

WATER
PLAN & PROFILE
LINE 'A'

SHEET NUMBER

C-05.33





GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.
HORIZONTAL SCALE: 1"=40' VERTICAL SCALE 1"=4'

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

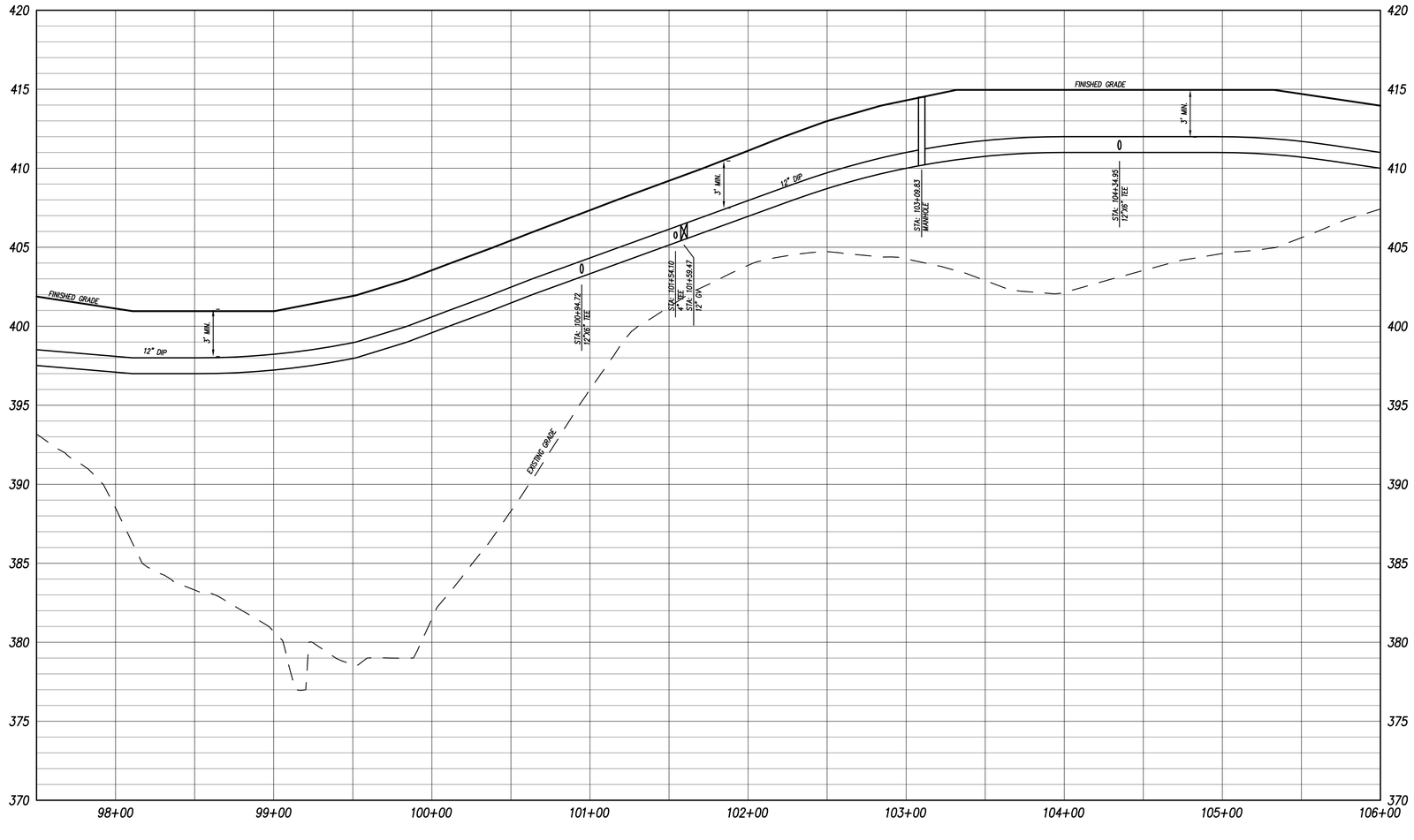
PROJECT NO. 02000.000

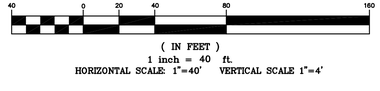
SHEET TITLE

WATER
PLAN & PROFILE
LINE 'A'

SHEET NUMBER

C-05.34





Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

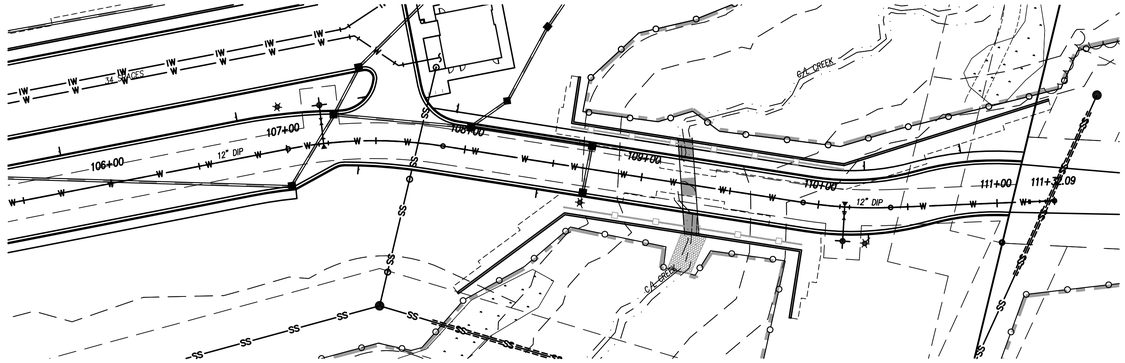
PROJECT NO. 02000.000

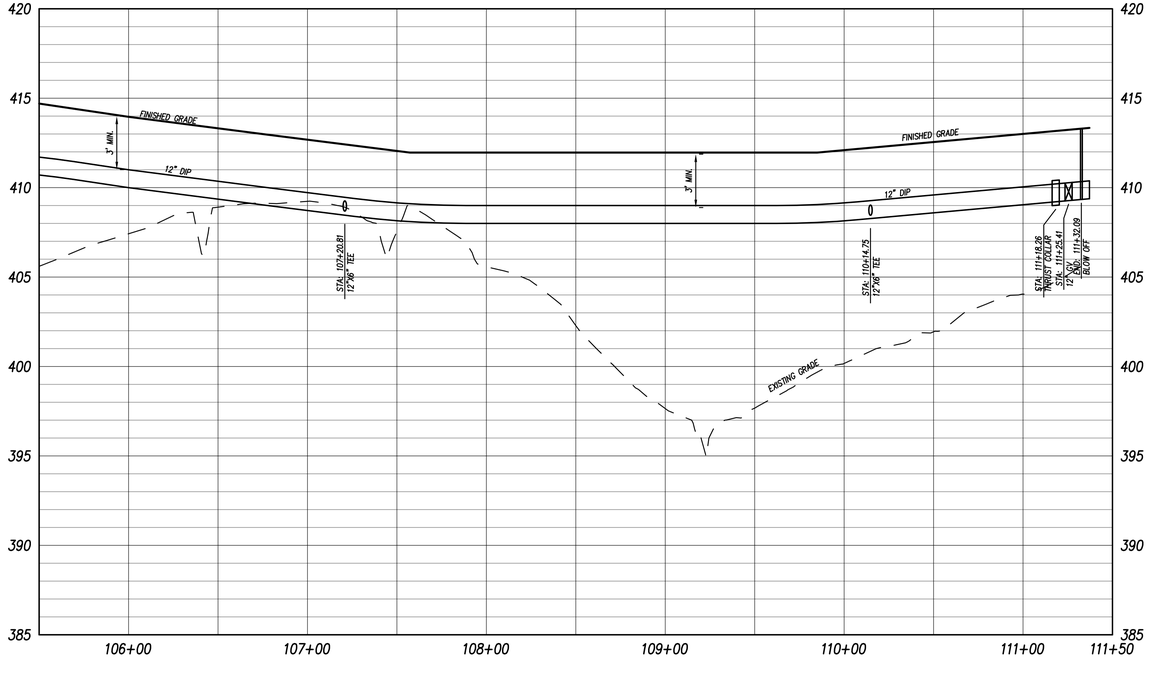
SHEET TITLE

WATER PLAN & PROFILE LINE 'A'

SHEET NUMBER

C-05.35





GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)

1 inch = 40 ft.

HORIZONTAL SCALE: 1"=40' VERTICAL SCALE 1"=4'

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner

Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect

RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer

LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer

The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect

CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant

Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service

KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant

Thorburn Associates
2500 Gateway Centre Blvd, Sulte 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant

Walker Consultants
13860 Ballantyne Corporate Pl, Sulte 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

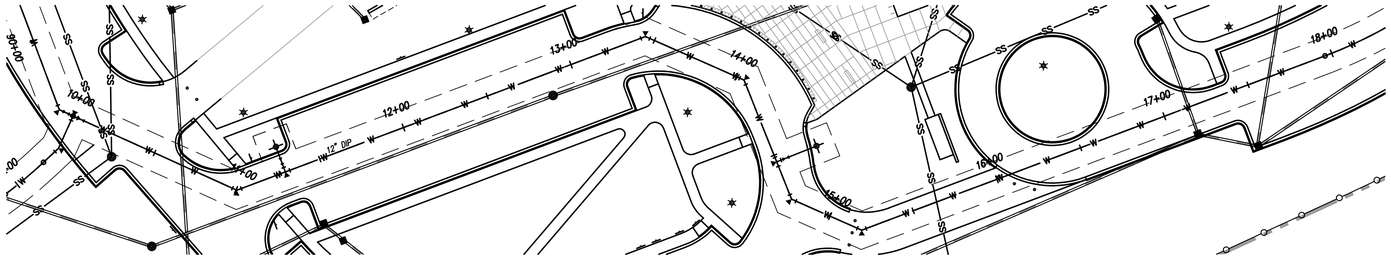
PROJECT NO. 02000.000

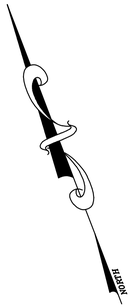
SHEET TITLE

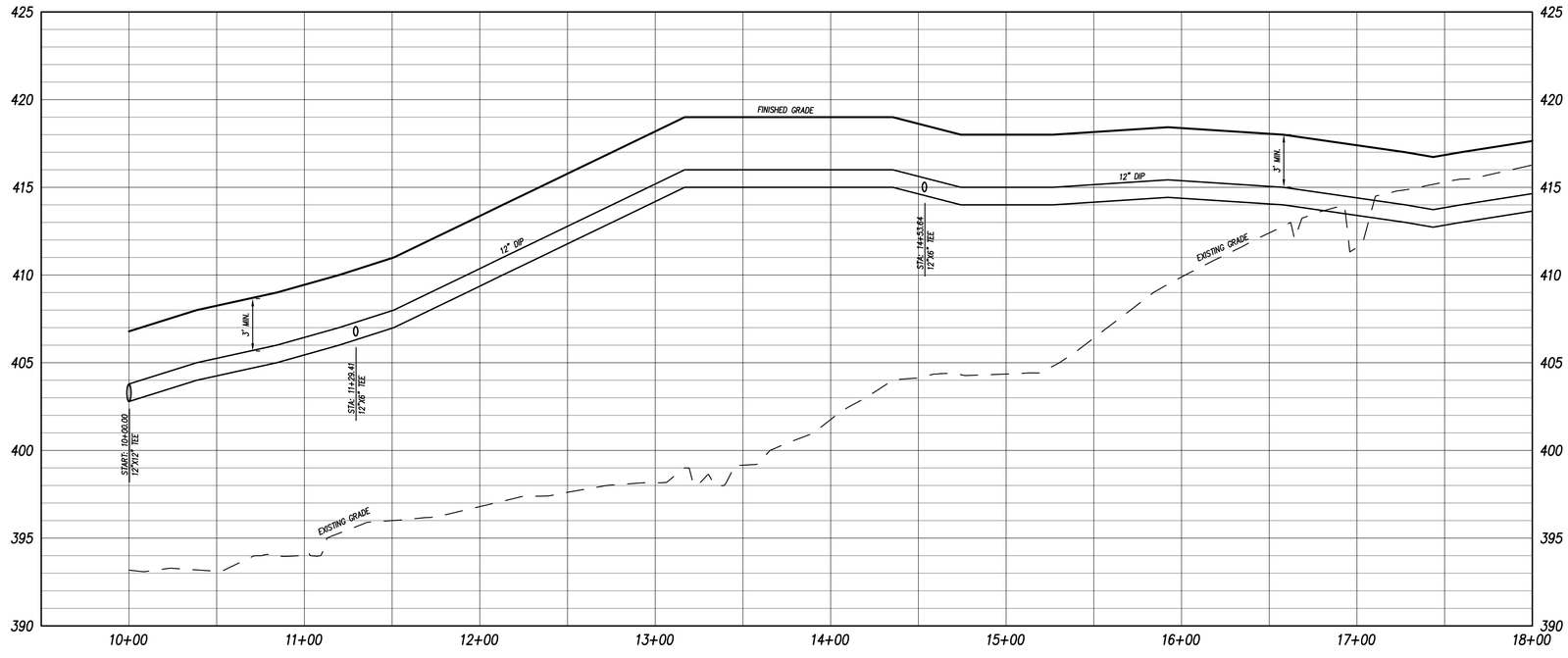
WATER
PLAN & PROFILE
LINE 'A'

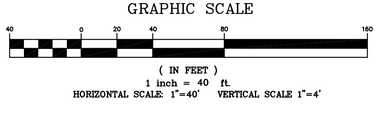
SHEET NUMBER

C-05.36









Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

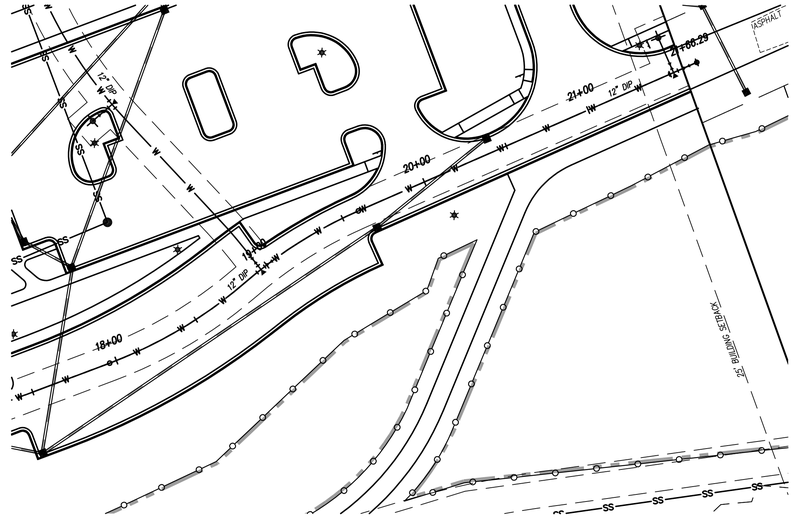
PROJECT NO. 02000.000

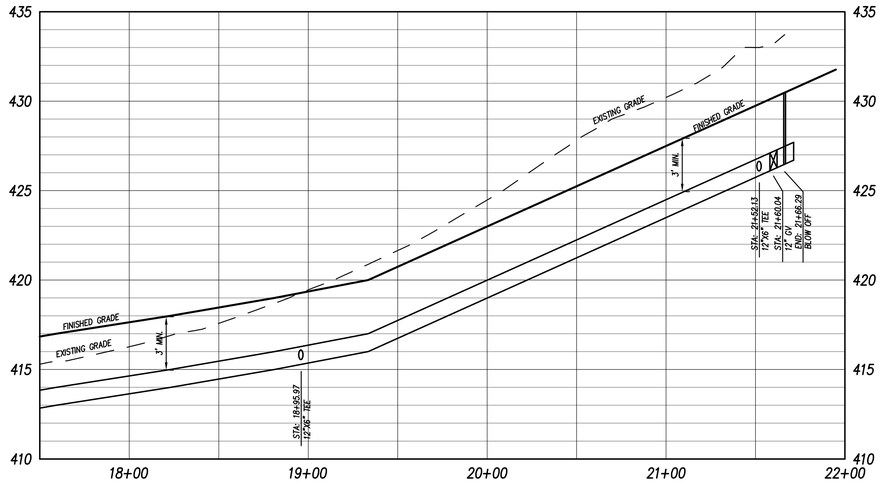
SHEET TITLE

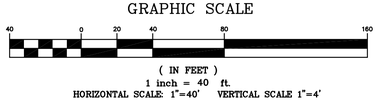
WATER PLAN & PROFILE LINE 'B'

SHEET NUMBER

C-05.37







Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

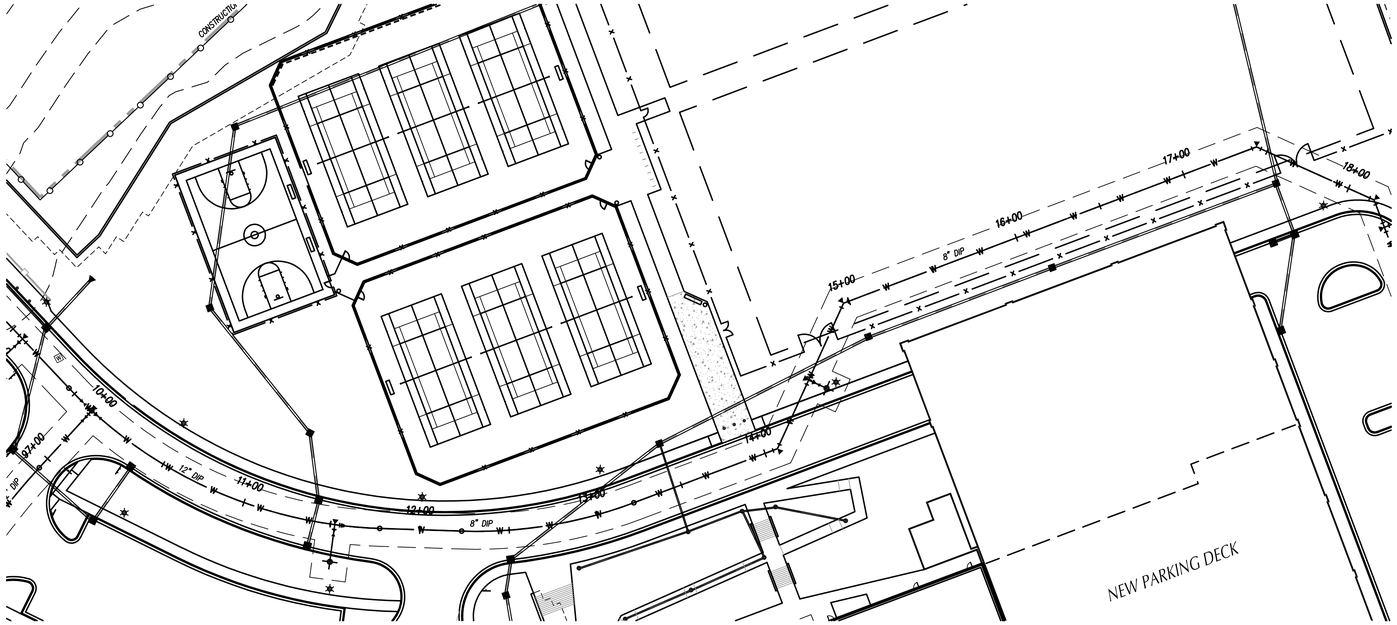
PROJECT NO. 02000.000

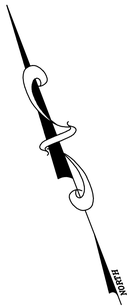
SHEET TITLE

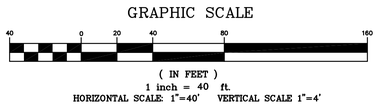
WATER
PLAN & PROFILE
LINE 'B'

SHEET NUMBER

C-05.38







Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

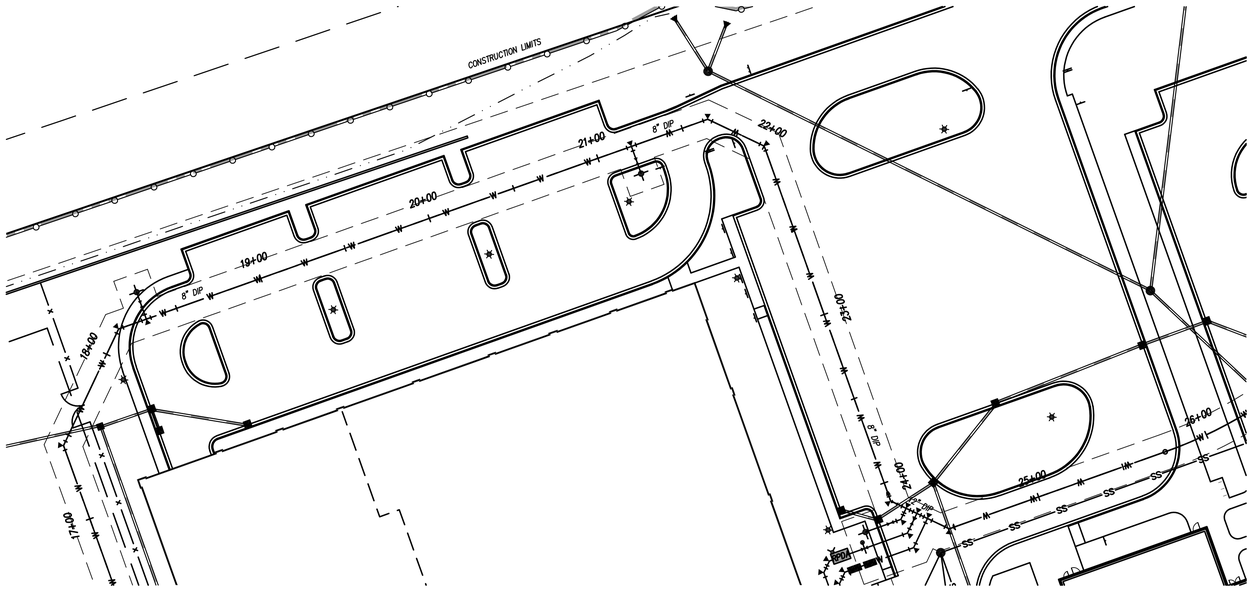
PROJECT NO. 02000.000

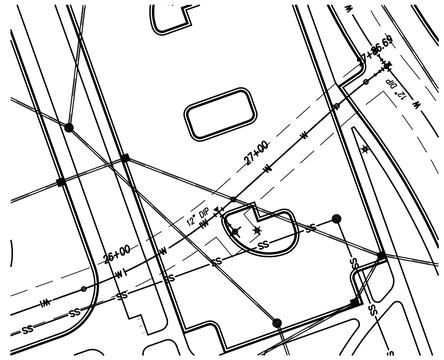
SHEET TITLE

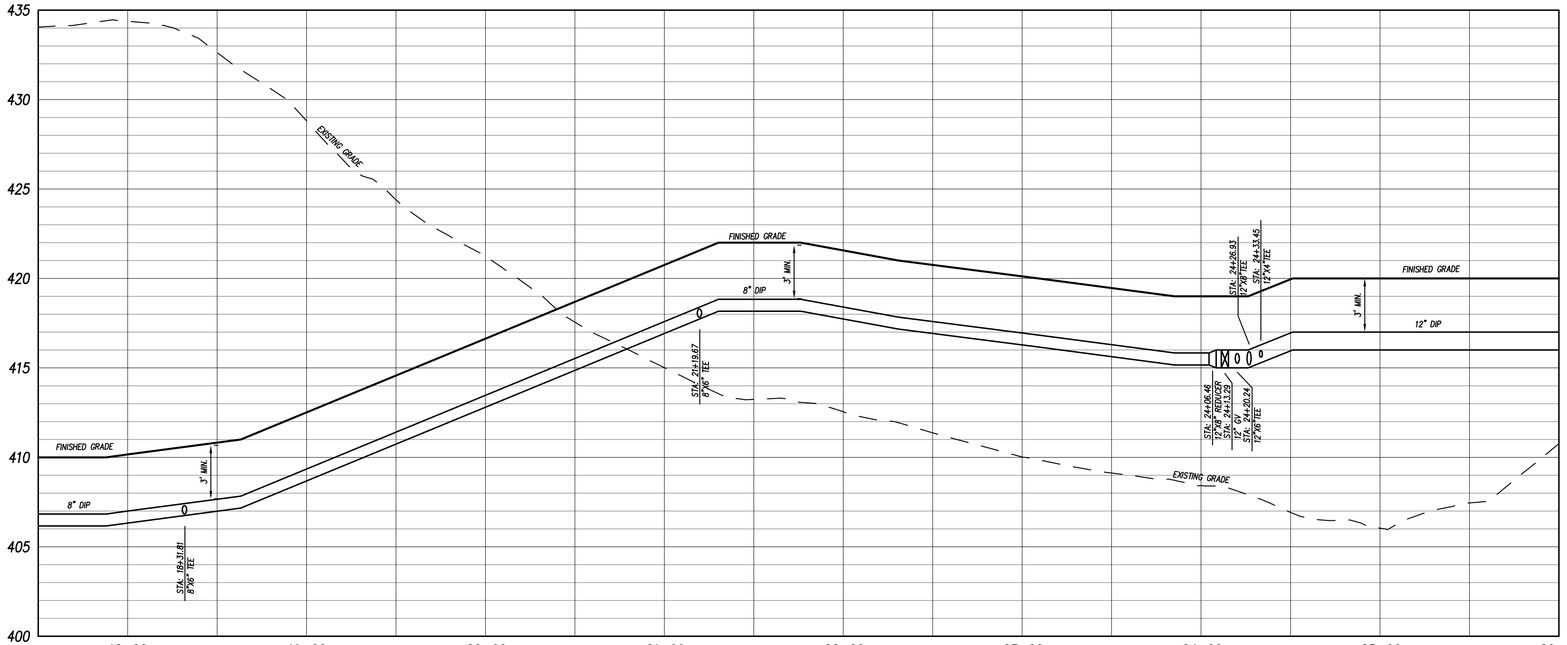
WATER
PLAN & PROFILE
LINE 'C'

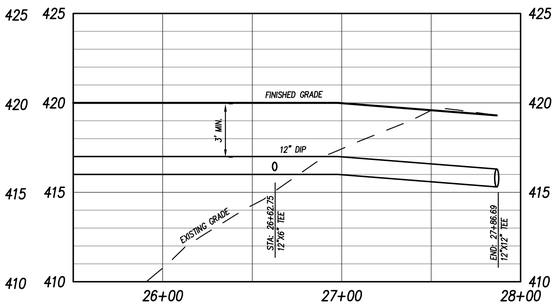
SHEET NUMBER

C-05.39









GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.
HORIZONTAL SCALE: 1"=40' VERTICAL SCALE 1"=4'

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

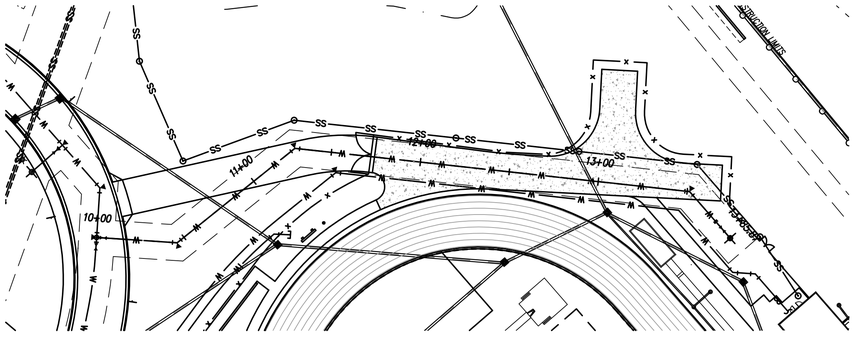
PROJECT NO. 02000.000

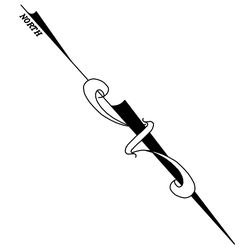
SHEET TITLE

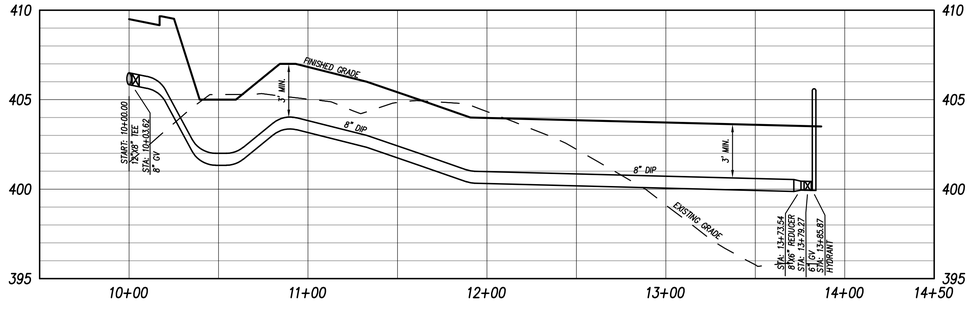
WATER PLAN & PROFILE LINE 'C'

SHEET NUMBER

C-05.40







GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.
HORIZONTAL SCALE: 1"=40' VERTICAL SCALE 1"=4'

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

SHEET TITLE

WATER
PLAN & PROFILE
LINE 'D'

SHEET NUMBER

C-05.41

GROUND STABILIZATION AND MATERIALS HANDLING PRACTICES FOR COMPLIANCE WITH THE NCG01 CONSTRUCTION GENERAL PERMIT

Implementing the details and specifications on this plan sheet will result in the construction activity being considered compliant with the Ground Stabilization and Materials Handling sections of the NCG01 Construction General Permit (Sections E and F, respectively). The permittee shall comply with the Erosion and Sediment Control plan approved by the delegated authority having jurisdiction. All details and specifications shown on this sheet may not apply depending on site conditions and the delegated authority having jurisdiction.

SECTION E: GROUND STABILIZATION

Required Ground Stabilization Timeframes

Site Area Description	Stabilize within this many calendar days after ceasing land disturbance	Timeframe variations
(a) Perimeter dikes, swales, ditches, and perimeter slopes	7	None
(b) High Quality Water (HQW) Zones	7	None
(c) Slopes steeper than 3:1	7	If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed
(d) Slopes 3:1 to 4:1	14	-7 days for slopes greater than 50' in length and with slopes steeper than 4:1 -7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed
(e) Areas with slopes flatter than 4:1	14	-7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed unless there is zero slope

Note: After the permanent cessation of construction activities, any areas with temporary ground stabilization shall be converted to permanent ground stabilization as soon as practicable but in no case longer than 90 calendar days after the last land disturbing activity. Temporary ground stabilization shall be maintained in a manner to render the surface stable against accelerated erosion until permanent ground stabilization is achieved.

GROUND STABILIZATION SPECIFICATION

Stabilize the ground sufficiently so that rain will not dislodge the soil. Use one of the techniques in the table below:

Temporary Stabilization	Permanent Stabilization
• Temporary grass seed covered with straw or other mulches and tackifiers • Hydroseeding • Rolled erosion control products with or without temporary grass seed • Appropriately applied straw or other mulch • Plastic sheeting	• Permanent grass seed covered with straw or other mulches and tackifiers • Geotextile fabrics such as permanent soil reinforcement matting • Hydroseeding • Shrubs or other permanent plantings covered with mulch • Uniform and evenly distributed ground cover sufficient to restrain erosion • Structural methods such as concrete, asphalt or retaining walls • Rolled erosion control products with grass seed

POLYACRYLAMIDES (PAMS) AND FLOCCULANTS

1. Select flocculants that are appropriate for the soils being exposed during construction, selecting from the *NC DWR List of Approved PAMS/Flocculants*.
2. Apply flocculants at or before the inlets to Erosion and Sediment Control Measures.
3. Apply flocculants at the concentrations specified in the *NC DWR List of Approved PAMS/Flocculants* and in accordance with the manufacturer's instructions.
4. Provide ponding area for containment of treated Stormwater before discharging offsite.
5. Store flocculants in leak-proof containers that are kept under storm-resistant cover or surrounded by secondary containment structures.

EQUIPMENT AND VEHICLE MAINTENANCE

1. Maintain vehicles and equipment to prevent discharge of fluids.
2. Provide drip pans under any stored equipment.
3. Identify leaks and repair as soon as feasible, or remove leaking equipment from the project.
4. Collect all spent fluids, store in separate containers and properly dispose as hazardous waste (recycle when possible).
5. Remove leaking vehicles and construction equipment from service until the problem has been corrected.
6. Bring used fuels, lubricants, coolants, hydraulic fluids and other petroleum products to a recycling or disposal center that handles these materials.

LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE

1. Never bury or burn waste. Place litter and debris in approved waste containers.
2. Provide a sufficient number and size of waste containers (e.g dumpster, trash receptacle) on site to contain construction and domestic wastes.
3. Locate waste containers at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
4. Locate waste containers on areas that do not receive substantial amounts of runoff from upland areas and does not drain directly to a storm drain, stream or wetland.
5. Cover waste containers at the end of each workday and before storm events or provide secondary containment. Repair or replace damaged waste containers.
6. Anchor all lightweight items in waste containers during times of high winds.
7. Empty waste containers as needed to prevent overflow. Clean up immediately if containers overflow.
8. Dispose waste off-site at an approved disposal facility.
9. On business days, clean up and dispose of waste in designated waste containers.

PAINT AND OTHER LIQUID WASTE

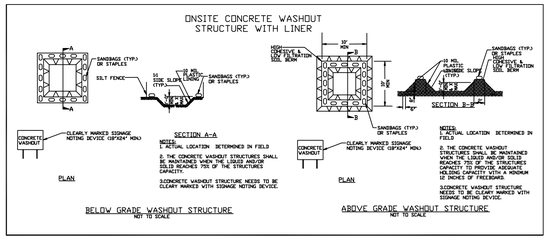
1. Do not dump paint and other liquid waste into storm drains, streams or wetlands.
2. Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
3. Contain liquid wastes in a controlled area.
4. Containment must be labeled, sized and placed appropriately for the needs of site.
5. Prevent the discharge of soaps, solvents, detergents and other liquid wastes from construction sites.

PORTABLE TOILETS

1. Install portable toilets on level ground, at least 50 feet away from storm drains, streams or wetlands unless there is no alternative reasonably available. If 50 foot offset is not attainable, provide relocation of portable toilet behind silt fence or place on a gravel pad and surround with sand bags.
2. Provide staking or anchoring of portable toilets during periods of high winds or in high foot traffic areas.
3. Monitor portable toilets for leaking and properly dispose of any leaked material. Utilize a licensed sanitary waste hauler to remove leaking portable toilets and replace with properly operating unit.

EARTHEN STOCKPILE MANAGEMENT

1. Show stockpile locations on plans. Locate earthen-material stockpile areas at least 50 feet away from storm drain inlets, sediment basins, perimeter sediment controls and surface waters unless it can be shown no other alternatives are reasonably available.
2. Protect stockpile with silt fence installed along toe of slope with a minimum offset of five feet from the toe of stockpile.
3. Provide stable stone access point when feasible.
4. Stabilize stockpile within the timeframes provided on this sheet and in accordance with the approved plan and any additional requirements. Soil stabilization is defined as vegetative, physical or chemical coverage techniques that will restrain accelerated erosion on disturbed soils for temporary or permanent control needs.



CONCRETE WASHOUTS

1. Do not discharge concrete or cement slurry from the site.
2. Dispose of, or recycle settled, hardened concrete residue in accordance with local and state solid waste regulations and at an approved facility.
3. Manage washout from mortar mixers in accordance with the above item and in addition place the mixer and associated materials on impervious barrier and within lot perimeter silt fence.
4. Install temporary concrete washouts per local requirements, where applicable. If an alternate method or product is to be used, contact your approval authority for review and approval. If local standard details are not available, use one of the two types of temporary concrete washouts provided on this detail.
5. Do not use concrete washouts for dewatering or storing defective curb or sidewalk sections. Stormwater accumulated within the washout may not be pumped into or discharged to the storm drain system or receiving surface waters. Liquid waste must be pumped out and removed from project.
6. Locate washouts at least 50 feet from storm drain inlets and surface waters unless it can be shown that no other alternatives are reasonably available. At a minimum, install protection of storm drain inlet(s) closest to the washout which could receive spills or overflow.
7. Locate washouts in an easily accessible area, on level ground and install a stone entrance pad in front of the washout. Additional controls may be required by the approving authority.
8. Install at least one sign directing concrete trucks to the washout within the project limits. Post signage on the washout itself to identify this location.
9. Remove leavings from the washout when at approximately 75% capacity to limit overflow events. Replace the tarp, sand bags or other temporary structural components when no longer functional. When utilizing alternative or proprietary products, follow manufacturer's instructions.
10. At the completion of the concrete work, remove remaining leavings and dispose of in an approved disposal facility. Fill pit, if applicable, and stabilize any disturbance caused by removal of washout.

HERBICIDES, PESTICIDES AND RODENTICIDES

1. Store and apply herbicides, pesticides and rodenticides in accordance with label restrictions.
2. Store herbicides, pesticides and rodenticides in their original containers with the label, which lists directions for use, ingredients and first aid steps in case of accidental poisoning.
3. Do not store herbicides, pesticides and rodenticides in areas where flooding is possible or where they may spill or leak into wells, stormwater drains, ground water or surface water. If a spill occurs, clean area immediately.
4. Do not stockpile these materials onsite.

HAZARDOUS AND TOXIC WASTE

1. Create designated hazardous waste collection areas on-site.
2. Place hazardous waste containers under cover or in secondary containment.
3. Do not store hazardous chemicals, drums or bagged materials directly on the ground.

NCG01 GROUND STABILIZATION AND MATERIALS HANDLING

EFFECTIVE: 04/01/19

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

SHEET TITLE

EROSION CONTROL DETAILS

SHEET NUMBER

C-07.00

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION A: SELF-INSPECTION

Self-inspections are required during normal business hours in accordance with the table below. When adverse weather or site conditions would cause the safety of the inspection personnel to be in jeopardy, the inspection may be delayed until the next business day on which it is safe to perform the inspection. In addition, when a storm event of equal to or greater than 1.0 inch occurs outside of normal business hours, the self-inspection shall be performed upon the commencement of the next business day. Any time when inspections were delayed shall be noted in the Inspection Record.

Inspect	Frequency (during normal business hours)	Inspection records must include:
(1) Rain gauge maintained in good working order	Daily	Daily rainfall amounts. If no daily rain gauge observations are made during weekend or holiday periods, and no individual-day rainfall information is available, record the cumulative rain measurement for those un-attended days (and this will determine if a site inspection is needed). Days on which no rainfall occurred shall be recorded as "zero." The permittee may use another rain-monitoring device approved by the Division.
(2) E&SC Measures	At least once per 7 calerdar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the measures inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Indication of whether the measures were ope·ating properly, 5. Description of maintenance needs for the measure, 6. Description, evidence, and date of corrective actions taken.
(3) Stormwater discharge outfalls (SDOs)	At least once per 7 calerdar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the discharge outfalls inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Evidence of indicators of stormwater pollution such as oil sheen, floating or suspended solids or discoloration, 5. Indication of visible sediment leaving the site, 6. Description, evidence, and date of corrective actions taken.
(4) Perimeter of site	At least once per 7 calerdar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If visible sedimentation is found outside site limits, then a record of the following shall be made: 1. Actions taken to clean up or stabilize the sediment that has left the site limits, 2. Description, evidence, and date of corrective actions taken, and 3. An explanation as to the actions taken to control future releases.
(5) Streams or wetlands onsite or offsite (where accessible)	At least once per 7 calerdar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If the stream or wetland has increased visible sedimentation or a stream has visible increased turbidity from the construction activity, then a record of the following shall be made: 1. Description, evidence and date of corrective actions taken, and 2. Records of the required reports to the appropriate Division Regional Office per Part III, Section C, Item (2)[a) of this permit.
(6) Ground stabilization measures	After each phase of gracing	1. The phase of grading (installation of perimeter E&SC measures, clearing and grubbing, installation of storm drainage facilities, completion of all land-disturbing activity, construction or redevelopment, permanent ground cover). 2. Documentation that the required ground stabilization measures have been provided within the required timeframe or an assurance that they will be provided as soon as possible.

NOTE: The rain inspection resets the required 7 calendar day inspection requirement.

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION B: RECORDKEEPING

1. E&SC Plan Documentation

The approved E&SC plan as well as any approved deviation shall be kept on the site. The approved E&SC plan must be kept up-to-date throughout the coverage under this permit. The following items pertaining to the E&SC plan shall be kept on site and available for inspection at all times during normal business hours.

Item to Document	Documentation Requirements
(a) Each E&SC measure has been installed and does not significantly deviate from the locations, dimensions and relative elevations shown on the approved E&SC plan.	Initial and date each E&SC measure on a copy of the approved E&SC plan or complete, date and sign an inspection report that lists each E&SC measure shown on the approved E&SC plan. This documentation is required upon the initial installation of the E&SC measures or if the E&SC measures are modified after initial installation.
(b) A phase of grading has been completed.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate completion of the construction phase.
(c) Ground cover is located and installed in accordance with the approved E&SC plan.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate compliance with approved ground cover specifications.
(d) The maintenance and repair requirements for all E&SC measures have been performed.	Complete, date and sign an inspection report.
(e) Corrective actions have been taken to E&SC measures.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate the completion of the corrective action.

2. Additional Documentation to be Kept on Site

In addition to the E&SC plan documents above, the following items shall be kept on the site and available for inspectors at all times during normal business hours, unless the Division provides a site-specific exemption based on unique site conditions that make this requirement not practical:

(a) This General Permit as well as the Certificate of Coverage, after it is received.

(b) Records of inspections made during the previous twelve months. The permittee shall record the required observations on the Inspection Record Form provided by the Division or a similar inspection form that includes all the required elements. Use of electronically-available records in lieu of the required paper copies will be allowed if shown to provide equal access and utility as the hard-copy records.

3. Documentation to be Retained for Three Years

All data used to complete the e-NOI and all inspection records shall be maintained for a period of three years after project completion and made available upon request. [40 CFR 122.41]

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION C: REPORTING

1. Occurrences that Must be Reported

Permittees shall report the following occurrences:

(a) Visible sediment deposition in a stream or wetland.

(b) Oil spills if:
- They are 25 gallons or more,
- They are less than 25 gallons but cannot be cleaned up within 24 hours,
- They cause sheen on surface waters (regardless of volume), or
- They are within 100 feet of surface waters (regardless of volume).

(c) Releases of hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act (Ref: 40 CFR 110.3 and 40 CFR 117.3) or Section 102 of CERCLA (Ref: 40 CFR 302.4) or G.S. 143-215.85.

(d) Anticipated bypasses and unanticipated bypasses.

(e) Noncompliance with the conditions of this permit that may endanger health or the environment.

2. Reporting Timeframes and Other Requirements

After a permittee becomes aware of an occurrence that must be reported, he shall contact the appropriate Division regional office within the timeframes and in accordance with the other requirements listed below. Occurrences outside normal business hours may also be reported to the Department's Environmental Emergency Center personnel at (800) 858-0368.

Occurrence	Reporting Timeframes (After Discovery) and Other Requirements
(a) Visible sediment deposition in a stream or wetland	• ***Within 24 hours***, an oral or electronic notification. • ***Within 7 calendar days***, a report that contains a description of the sediment and actions taken to address the cause of the deposition. Division staff may waive the requirement for a written report on a case-by-case basis. • If the stream is named on the NC 303(d) list as impaired for sediment-related causes, the permittee may be required to perform additional monitoring, inspections or apply more stringent practices if staff determine that additional requirements are needed to assure compliance with the federal or state impaired-waters conditions.
(b) Oil spills and release of hazardous substances per Item 1(b)-(c) above	• ***Within 24 hours***, an oral or electronic notification. The notification shall include information about the date, time, nature, volume and location of the spill or release.
(c) Anticipated bypasses [40 CFR 122.41(m)(3)]	• ***A report at least ten days before the date of the bypass, if possible***. The report shall include an evaluation of the anticipated quality and effect of the bypass.
(d) Unanticipated bypasses [40 CFR 122.41(m)(3)]	• ***Within 24 hours***, an oral or electronic notification. • ***Within 7 calendar days,*** a report that includes an evaluation of the quality and effect of the bypass.
(e) Noncompliance with the conditions of this permit that may endanger health or the environment[40 CFR 122.41(l)(7)]	• ***Within 24 hours***, an oral or electronic notification. • ***Within 7 calendar days***, a report that contains a description of the noncompliance, and its causes; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time noncompliance is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. [40 CFR 122.41(l)(6). • Division staff may waive the requirement for a written report on a case-by-case basis.

PART II, SECTION G, ITEM (4)
DRAW DOWN OF SEDIMENT BASINS FOR MAINTENANCE OR CLOSE OUT

Sediment basins and traps that receive runoff from drainage areas of one acre or more shall use outlet structures that withdraw water from the surface when these devices need to be drawn down for maintenance or close out unless this is infeasible. The circumstances in which it is not feasible to withdraw water from the surface shall be rare (for example, times with extended cold weather). Non-surface withdrawals from sediment basins shall be allowed only when all of the following criteria have been met:

(a) The E&SC plan authority has been provided with documentation of the non-surface withdrawal and the specific time periods or conditions in which it will occur. The non-surface withdrawal shall not commence until the E&SC plan authority has approved these items,
(b) The non-surface withdrawal has been reported as an anticipated bypass in accordance with Part III, Section C, Item (2)(c) and (d) of this permit,
(c) Dewatering discharges are treated with controls to minimize discharges of pollutants from stormwater that is removed from the sediment basin. Examples of appropriate controls include properly sited, designed and maintained dewatering tanks, weir tanks, and filtration systems,
(d) Vegetated, upland areas of the sites or a properly designed stone pad is used to the extent feasible at the outlet of the dewatering treatment devices described in Item (c) above,
(e) Velocity dissipation devices such as check dams, sediment traps, and riprap are provided at the discharge points of all dewatering devices, and
(f) Sediment removed from the dewatering treatment devices described in Item (c) above is disposed of in a manner that does not cause deposition of sediment into waters of the United States.

NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING

EFFECTIVE: 04/01/19

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

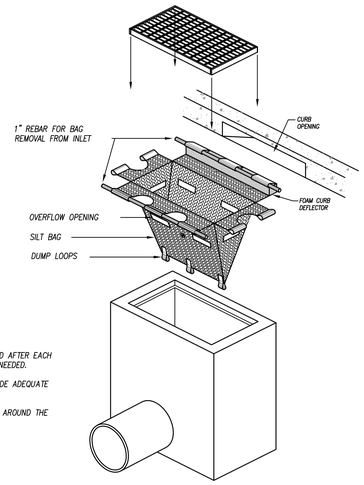
1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

SHEET TITLE
EROSION CONTROL DETAILS

SHEET NUMBER
C-07.01



MAINTENANCE NOTES:

1. INSPECT THE BARRIER AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT RAINFALL AND MAKE REPAIRS AS NEEDED.
2. REMOVE SEDIMENT AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR SUBSEQUENT RAINS.
3. APPROPRIATELY STABILIZE ALL BARE AREAS AROUND THE INLET.

NOTES:

1. CONTRACTOR TO INSPECT SILT BAG EVERY TWO WEEKS OR AFTER EVERY SUBSTANTIAL RAIN EVENT.
2. CONTRACTOR TO REMOVE AND DISPOSE OF COLLECTED SILT AT AN ACCEPTABLE OFF SITE LOCATION.
3. COLLECTED SEDIMENT TO BE REMOVED ROUTINELY TO ENSURE FUNCTIONALITY OF SILT BAG.
4. DEVICE SHALL BE MANUFACTURED FROM WOVEN POLYPROPYLENE GEOTEXTILE TO FIT THE OPENING OF A CATCH BASIN OR DROP INLET TO FILTER SEDIMENT FROM RUNOFF ENTERING THE INLET. DEVICE SHALL BE PROVIDED WITH AN INTEGRAL CURB DEFLECTOR IF INSTALLED AT A CATCH BASIN WITH A VERTICAL OPENING ADJACENT TO A HORIZONTAL GRATE.
5. THE DEVICE SHALL BE A HIGH FLOW "SILTSACK" AS MANUFACTURED BY ACF ENVIRONMENTAL, INC. OR APPROVED EQUAL.
6. INSTALL DEVICE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND INSTALL A CURB DEFLECTOR IF APPROPRIATE.
7. INSPECT DEVICE AFTER EACH RAIN EVENT AND AT INTERVALS NOT EXCEEDING TWO WEEKS DURING CONSTRUCTION. REMOVE, EMPTY, CLEAN, AND REPLACE THE DEVICE AS NEEDED DURING CONSTRUCTION. EMPTY COLLECTED SEDIMENT IN APPROVED, PROTECTED LOCATION. REMOVE AND DISPOSE OF DEVICE FOLLOWING FULL AND PERMANENT STABILIZATION OF THE CONTRIBUTING DRAINAGE AREA.

SILT BAG INLET PROTECTION

N.T.S.

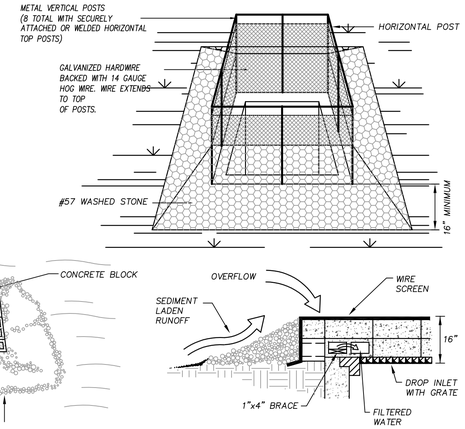
MAINTENANCE NOTES:

1. INSPECT THE BARRIER AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT RAINFALL AND MAKE REPAIRS AS NEEDED.
2. REMOVE SEDIMENT AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR SUBSEQUENT RAINS.
3. APPROPRIATELY STABILIZE ALL BARE AREAS AROUND THE INLET.

NOTES:

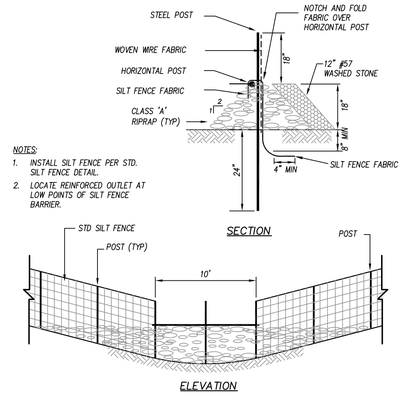
1. PLACE CONCRETE BLOCKS LENGTHWISE ON THEIR SIDES IN A SINGLE ROW AROUND THE PERIMETER OF THE INLET WITH THE ENDS OF ADJACENT BLOCKS ABUTTING. THE HEIGHT OF THE BLOCKS SHALL BE 12".
2. WIRE MESH OR HARDWARE CLOTH SHALL BE PLACED OVER THE OUTSIDE VERTICAL FACE (WEBBING) OF THE BLOCKS, TO PREVENT STONE FROM BEING WASHED THROUGH THE HOLES IN THE BLOCKS.
3. #57 WASHED STONE SHALL BE PILED AGAINST THE WIRE TO THE TOP OF THE BLOCK.
4. MAINTAIN DEVICE AFTER EACH RAIN. REPLACE #57 WASHED STONE IF IT CLOGS W/ SEDIMENT.
5. PLACE 1"x4" BOARDS THROUGH THE HOLES OF CORNER BLOCKS.

NOTE:
TEMPORARY INLET PROTECTION MAY BE SUBSTITUTED WITH A PROPERLY SIZED FILTREXX COMPOST SOCK OR APPROVED EQUAL IN ACCORDANCE WITH STATE AND LOCAL REQUIREMENTS.



CATCH BASIN AND YARD INLET PROTECTION

N.T.S.



NOTES:

1. INSTALL SILT FENCE PER STD. SILT FENCE DETAIL.
2. LOCATE REINFORCED OUTLET AT LOW POINTS OF SILT FENCE BARRIER.

SECTION

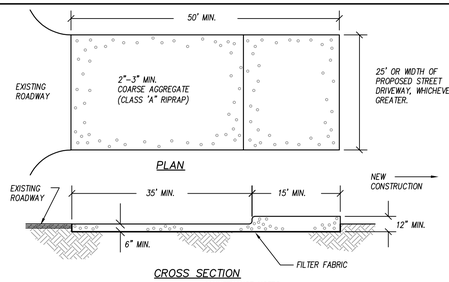
ELEVATION

MAINTENANCE NOTES:

1. REMOVE SEDIMENT DEPOSITS AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE FENCE/OUTLET. TAKE CARE TO AVOID UNDERMINING THE FENCE DURING CLEANOUT. REMOVE & REPLACE STONE AS NECESSARY AS IT BECOMES CLOGGED WITH SEDIMENT.
2. REMOVE ALL FENCING MATERIALS AND UNSTABLE SEDIMENT DEPOSITS AND BRING THE AREA TO GRADE AND STABILIZE IT AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

REINFORCED SILT FENCE OUTLET

N.T.S.



PLAN

CROSS SECTION

NOTES:

1. ENTRANCE(S) SHALL BE LOCATED TO PROVIDE MAXIMUM UTILITY BY ALL CONSTRUCTION VEHICLES.
2. TURNING RADIUS SUFFICIENT TO ACCOMMODATE LARGE TRUCKS SHALL TO BE PROVIDED.
3. ENTRANCES MUST BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR DIRECT FLOW OF MUD ONTO STREETS. PERIODIC TOPDRESSING WITH STONE WILL BE NECESSARY. CONTRACTOR SHALL MAINTAIN AS NECESSARY.
4. ANY MATERIAL WHICH STILL MAKES IT ONTO THE ROAD MUST BE CLEANED UP IMMEDIATELY.
5. FREQUENT CHECKS OF THE ENTRANCE(S) AND TIMELY MAINTENANCE SHALL BE PROVIDED.
6. NOTES ARE APPLICABLE AT ALL POINTS OF INGRESS AND EGRESS UNTIL SITE IS STABILIZED.

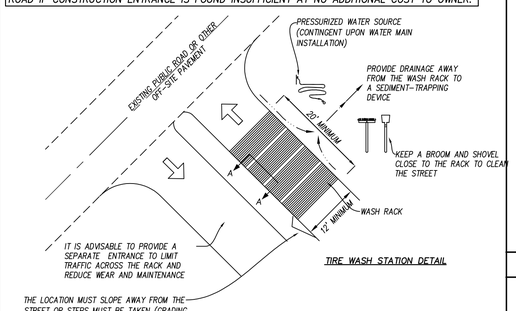
MAINTENANCE NOTES:

1. MAINTAIN THE GRAVEL PAD IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING THE SITE. MAY REQUIRE PERIODIC TOPDRESSING WITH 2-INCH STONE.
2. AFTER EACH RAINFALL, INSPECT ANY STRUCTURE USED TO TRAP SEDIMENT AND CLEAN IT OUT AS NECESSARY.
3. IMMEDIATELY REMOVE ALL OBJECTIONABLE MATERIALS SPILLED, WASHED OR TRACKED ONTO PUBLIC ROADWAYS.

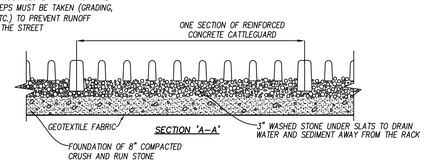
CONSTRUCTION SPECIFICATIONS:

1. CLEAR THE ENTRANCE AND EXIT AREA OF ALL VEGETATION, ROOTS, AND OTHER OBJECTIONABLE MATERIAL AND PROPERLY GRADE IT.
2. PLACE THE GRAVEL TO THE SPECIFIC GRADE AND DIMENSIONS SHOWN ON THE PLANS, AND SMOOTH IT.
3. PROVIDE DRAINAGE TO CARRY WATER TO A SEDIMENT TRAP OR SUITABLE OTHER OUTLET.
4. USE GEOTEXTILE FABRIC TO IMPROVE STABILITY OF THE FOUNDATION IN LOCATIONS SUBJECT TO SEEPAGE OR HIGH WATER TABLE.

CONTRACTOR SHALL USE TIRE WASH STATION TO PREVENT SEDIMENT FROM TRACKING ONTO THE ROAD IF CONSTRUCTION ENTRANCE IS FOUND INSUFFICIENT AT NO ADDITIONAL COST TO OWNER.



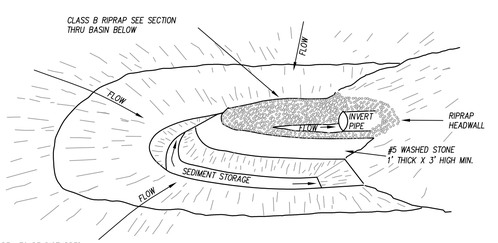
TIRE WASH STATION DETAIL



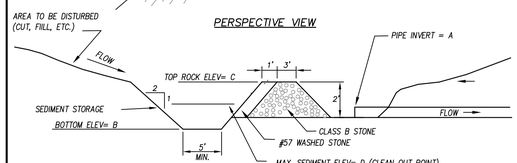
SECTION 'A-A'

GRAVEL CONSTRUCTION ENTRANCE

N.T.S.



PERSPECTIVE VIEW



SECTION

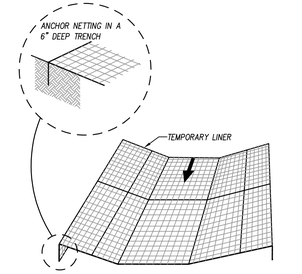
MAINTENANCE NOTES:

1. INSPECT THE BARRIER AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT RAINFALL AND REPAIR IMMEDIATELY.
2. REMOVE SEDIMENT AND RESTORE SEDIMENT STORAGE AREA TO ITS ORIGINAL DIMENSIONS WHEN SEDIMENT HAS ACCUMULATED TO ONE-HALF THE DESIGN DEPTH OF THE TRAP.
3. CHECK THE STRUCTURE FOR DAMAGE AND REPLACE ANY DISPLACED RIPRAP IMMEDIATELY.
4. APPROPRIATELY STABILIZE ALL BARE AREAS AROUND THE INLET.

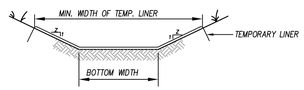
BASIN NUMBER	INLET NUMBER	A (FT)	B (FT)	C (FT)	D (FT)
1	EXIST. CULVERT	376.79	375.29	378.79	377.04
2	Q7	382.47	380.97	384.47	382.72
3	EXIST. CULVERT	360.64	359.14	362.64	360.89
4	M1	357.28	355.78	359.28	357.53
5	M5	356.30	354.80	358.30	356.55
6	P1	316.50	315.00	318.50	316.75

TEMPORARY ROCK PIPE INLET PROTECTION

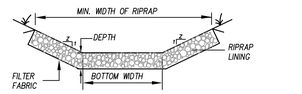
N.T.S.



CHANNEL LINER



GRASS-LINED CHANNEL
NTS



RIPRAP - LINED CHANNEL
NTS

CONSTRUCTION NOTES:

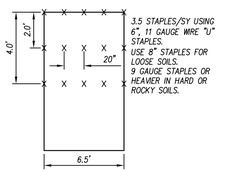
1. SEE SPECIFICATIONS FOR TEMP. LINING, RIPRAP AND FILTER FABRIC REQUIREMENTS.
2. RIPRAP CHANNELS SHALL BE OVER-EXCAVATED RIPRAP TO BE PLACED FLUSH WITH PROPOSED CHANNEL GRADE.
3. PREPARE SOIL BEFORE INSTALLING MATS OR NETS, INCLUDING APPLICATION OF LIME, FERTILIZER AND SEED.
4. BEGIN AT THE TOP OF THE CHANNEL BY ANCHORING THE NET OR MAT IN A 6" DEEP TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
5. ROLL CENTER MAT OR NET IN DIRECTION OF WATER FLOW ON BOTTOM OF CHANNEL.
6. PLACE MAT OR NET END OVER END (SHINGLE STYLE) WITH A 6" OVERLAP. USE DOUBLE ROW OF STAGGERED STAPLES 4" APART TO SECURE.
7. FULL LENGTH EDGE OF MAT OR NET AT TOP SIDE SLOPES SHALL BE ANCHORED IN 6" DEEP TRENCH AFTER STAPLING.
8. MATS OR NETS SHALL BE OVERLAPPED 4" OVER THE CENTER BLANKET AND STAPLED.
9. THE TERMINAL END OF THE MAT OR NET MUST BE ANCHORED IN A 6" DEEP TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.

MAINTENANCE NOTES:

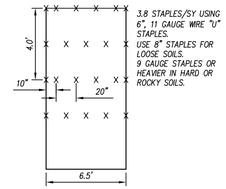
1. GRASSED-LINED CHANNELS TO BE INSPECTED WEEKLY AND AFTER EVERY RAINFALL EVENT, DURING THE ESTABLISHMENT AND AFTER THE ESTABLISHMENT PERIOD.
2. REPAIRS ARE TO BE MADE IMMEDIATELY.
3. REMOVE SEDIMENT ACCUMULATIONS TO MAINTAIN DESIGNED CARRYING CAPACITY.
4. GRASS IS TO BE HEALTHY AND IN VIGOROUS CONDITIONS AT ALL TIMES.

CHANNEL SECTIONS

N.T.S.



EXCELSIOR MAT STAPLE PATTERN
NTS



SYNTHETIC MAT STAPLE PATTERN
NTS

CHANNEL SCHEDULE

CHANNEL	BOTTOM WIDTH (FT)	SIDE SLOPE (H:V)	CHANNEL GRADE	CHANNEL LENGTH	PERM. LINING	TEMP. LINING	MIN. TOP WIDTH OF LINING (FT)	RIPRAP DEPTH (IN)
1	2	3:1	5.2%	200 LF	GRASS	SYNTHETIC MAT	8	N/A
2	2	3:1	7.1%	85 LF	GRASS	SYNTHETIC MAT	8	N/A
3	2	3:1	5.6%	60 LF	GRASS	EXCELSIOR	8	N/A
4	2	3:1	1.6%	65 LF	GRASS	EXCELSIOR	8	N/A
5	0	3:1	1.9%	130 LF	GRASS	EXCELSIOR	8	N/A
6	0	3:1	6.0%	35 LF	GRASS	EXCELSIOR	6	N/A
7	0	3:1	1.5%	415 LF	GRASS	EXCELSIOR	6	N/A
8	2	3:1	7.2%	330 LF	GRASS	EXCELSIOR	8	N/A
9	2	3:1	1.4%	105 LF	GRASS	EXCELSIOR	8	N/A
10	0	3:1	1.4%	505 LF	GRASS	EXCELSIOR	6	N/A
11	0	3:1	0.8%	380 LF	GRASS	EXCELSIOR	6	N/A
12	0	3:1	1.2%	380 LF	GRASS	EXCELSIOR	6	N/A
13	0	3:1	2.2%	295 LF	GRASS	EXCELSIOR	6	N/A
14	2	3:1	8.4%	55 LF	GRASS	EXCELSIOR	8	N/A
15	0	3:1	2.0%	160 LF	GRASS	EXCELSIOR	6	N/A
16	0	3:1	5.2%	305 LF	GRASS	EXCELSIOR	6	N/A
17	2	3:1	10.8%	235 LF	GRASS	EXCELSIOR	8	N/A
18	2	3:1	5.3%	520 LF	GRASS	SYNTHETIC MAT	8	N/A
19	0	3:1	4.0%	80 LF	GRASS	EXCELSIOR	6	N/A
20	0	3:1	1.3%	175 LF	GRASS	EXCELSIOR	6	N/A
21	0	3:1	1.9%	600 LF	GRASS	EXCELSIOR	6	N/A
22	0	3:1	2.5%	105 LF	GRASS	EXCELSIOR	6	N/A
23	4	3:1	9.8%	70 LF	CLASS 1	RIP RAP	10	27
24	4	3:1	3.0%	140 LF	CLASS 1	RIP RAP	16	27
25	4	3:1	1.0%	10 LF	CLASS 1	RIP RAP	16	27
** 26	2	3:1	5.0%	175 LF	GRASS	EXCELSIOR	8	N/A
27	0	3:1	5.6%	805 LF	GRASS	SYNTHETIC MAT	6	N/A
28	0	3:1	10.0%	125 LF	CLASS 2	RIP RAP	6	32
29	0	3:1	1.4%	210 LF	GRASS	EXCELSIOR	6	N/A
30	0	3:1	1.0%	135 LF	GRASS	EXCELSIOR	6	N/A
31	0	3:1	1.8%	375 LF	GRASS	EXCELSIOR	6	N/A
32	0	3:1	2.8%	80 LF	GRASS	EXCELSIOR	6	N/A
33	0	3:1	0.8%	610 LF	GRASS	EXCELSIOR	6	N/A
34	0	3:1	0.8%	115 LF	GRASS	EXCELSIOR	6	N/A
35	0	3:1	1.7%	790 LF	GRASS	EXCELSIOR	6	N/A
36	0	3:1	1.3%	410 LF	GRASS	EXCELSIOR	6	N/A
37	0	3:1	0.7%	315 LF	GRASS	EXCELSIOR	6	N/A
38	0	3:1	2.2%	370 LF	GRASS	EXCELSIOR	6	N/A
39	0	3:1	1.7%	275 LF	GRASS	EXCELSIOR	6	N/A
40	0	3:1	1.3%	160 LF	GRASS	EXCELSIOR	6	N/A
41	0	3:1	2.2%	200 LF	GRASS	EXCELSIOR	6	N/A
42	0	3:1	1.5%	50 LF	GRASS	EXCELSIOR	6	N/A
43	0	3:1	0.7%	145 LF	GRASS	EXCELSIOR	6	N/A
44	0	3:1	0.4%	255 LF	GRASS	EXCELSIOR	6	N/A
45	0	3:1	0.8%	205 LF	GRASS	EXCELSIOR	6	N/A
46	0	3:1	1.7%	45 LF	GRASS	EXCELSIOR	6	N/A
47	0	3:1	0.5%	100 LF	GRASS	EXCELSIOR	6	N/A
48	0	3:1	0.2%	325 LF	GRASS	EXCELSIOR	12	N/A
49	0	3:1	1.6%	110 LF	GRASS	EXCELSIOR	6	N/A
50	0	3:1	1.0%	145 LF	GRASS	EXCELSIOR	6	N/A
51	0	3:1	0.9%	300 LF	GRASS	EXCELSIOR	6	N/A
52	0	3:1	1.7%	145 LF	GRASS	EXCELSIOR	6	N/A
53	4	4:1	25%	30 LF	GRASS	EXCELSIOR	12	N/A
54	4	4:1	25%	45 LF	GRASS	EXCELSIOR	12	N/A
55	4	4:1	25%	45 LF	GRASS	EXCELSIOR	12	N/A
** 56	4	3:1	1.7%	105 lf	GRASS	EXCELSIOR	10	N/A
* TC-1	2	3:1	4.2%	40 LF	CLASS B	STONE	8	22

* TEMPORARY CHANNEL 1

** CHANNEL #26 IS REMOVED AND CHANNEL #56 IS ADDED IF GYMNASIUM ALTERNATE IS NOT ACCEPTED.

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

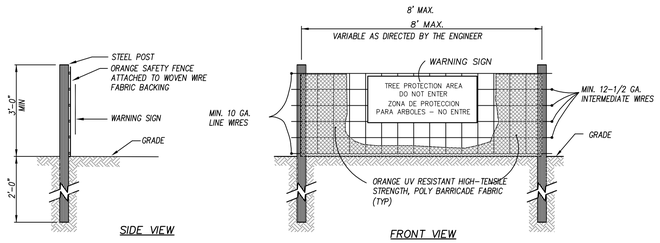
PROJECT NO. 02000.000

SHEET TITLE
EROSION CONTROL DETAILS

SHEET NUMBER
C-07.02

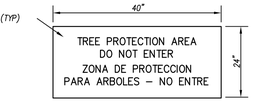
TEMPORARY TREE PROTECTION FENCE

N.T.S.



NOTES:

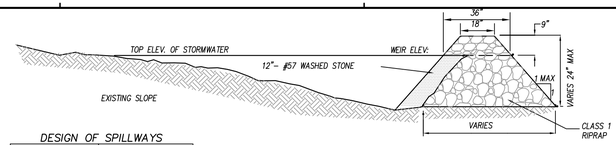
1. INSTALL TREE PROTECTION FENCING PRIOR TO PERFORMING ANY CLEARING OF THE SITE.
2. WARNING SIGNS TO BE MADE OF DURABLE, WEATHERPROOF MATERIAL.
3. LETTERS TO BE 3" HIGH MINIMUM, CLEARLY LEGIBLE AND SPACED AS DETAILED.
4. SIGNS SHALL BE PLACED AT 100' MAXIMUM INTERVALS. PLACE A SIGN AT EACH END OF LINEAR TREE PROTECTION AND 100' ON CENTER THEREAFTER.
5. FOR TREE PROTECTION AREAS LESS THAN 200' IN PERIMETER, PROVIDE NO LESS THAN ONE SIGN PER PROTECTION AREA.
6. ATTACH SIGNS SECURELY TO FENCE POSTS AND FABRIC.
7. MAINTAIN TREE PROTECTION FENCE THROUGHOUT DURATION OF PROJECT.



WARNING SIGN DETAIL

CHECK DAM

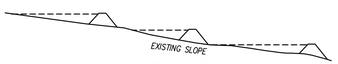
N.T.S.



DESIGN OF SPILLWAYS

DRAINAGE AREA (ACRES)	MIN. WEIR LENGTH (FT)
1	4.0
2	6.0
3	8.0
4	10.0
5	12.0

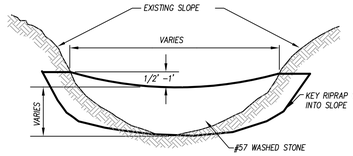
SIDE VIEW



STEP SEQUENCE

NOTES:

1. HEIGHT AND WIDTH DETERMINED BY EXISTING TOPOGRAPHY AND SEDIMENT STORAGE REQUIRED.
2. KEY RIP RAP INTO SLOPES FOR STABILITY.



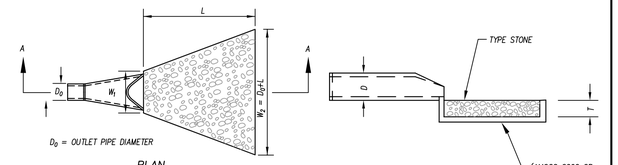
FRONT VIEW

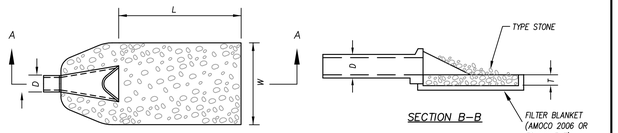
MAINTENANCE NOTES:

1. INSPECT CHECK PROTECTION WEEKLY AND AFTER ½" OR GREATER RAINFALL EVENT AND REPAIR IMMEDIATELY. REMOVE SEDIMENT STRAW, LIMBS, OR OTHER DEBRIS THAT COULD CLOG THE CHANNEL WHEN NEEDED.
2. IMMEDIATELY CORRECT ANY DAMAGE CAUSED BY SUBMERGENCE AND DEPOSITION ABOVE THE CHECK DAM AND FROM HIGH FLOWS AROUND THE EDGES.
3. REMOVE SEDIMENT ACCUMULATED BEHIND THE DAMS AS NEEDED TO PREVENT DAMAGE TO CHANNEL VEGETATION, ALLOW THE CHANNEL TO DRAIN THROUGH THE STONE CHECK DAM, AND PREVENT LARGE FLOWS FROM CARRYING SEDIMENT OVER THE DAM. ADD STONES TO DAMS AS NEEDED TO MAINTAIN DESIGN HEIGHT AND CROSS SECTION.

OUTLET PROTECTION

N.T.S.





MAINTENANCE NOTES:

1. RIP RAP OUTLET STRUCTURES TO BE INSPECTED WEEKLY AND AFTER EVERY RAINFALL EVENT.
2. REPAIR DISLODGED STONES TO DESIGN DIMENSIONS IMMEDIATELY.
3. IF MORE SUBSTANTIAL DAMAGE OCCURS, NOTIFY ENGINEER TO DETERMINE A REPAIR SOLUTION.

NOTES:

1. TOP OF RIP RAP AT DOWNSTREAM END OF APRON SHALL BE FLUSH WITH NATURAL GRADE OF THE RECEIVING CHANNEL.
2. VEGETATE ALL DISTURBED AREAS WITH VEGETATION IMMEDIATELY AFTER INSTALLATION.
3. SEE EROSION CONTROL PLAN FOR APRON DIMENSIONS.

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Ralegh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

SHEET TITLE

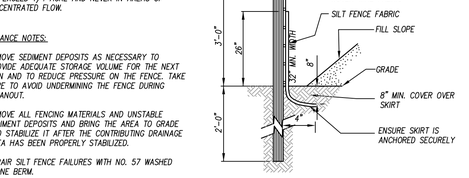
EROSION CONTROL DETAILS

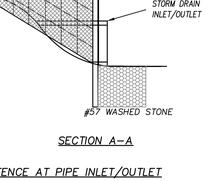
SHEET NUMBER

C-07.03

STANDARD TEMPORARY SILT FENCE

N.T.S.





INSTALLATION NOTE:
USE SILT FENCE ONLY WHEN DRAINAGE AREA DOES NOT EXCEED 1/4 ACRE AND NEVER IN AREAS OF CONCENTRATED FLOW.

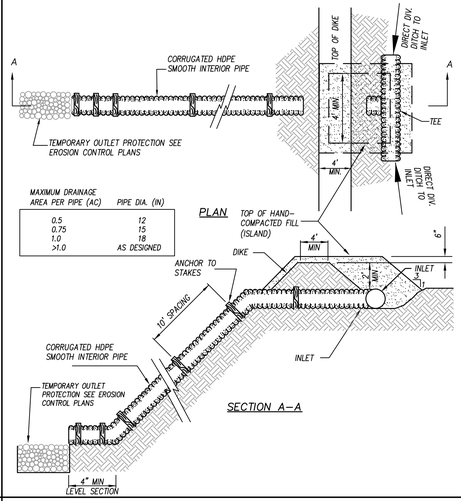
SILT FENCE AT PIPE INLET/OUTLET

MAINTENANCE NOTES:

1. REMOVE SEDIMENT DEPOSITS AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE FENCE. TAKE CARE TO AVOID UNDERMINING THE FENCE DURING CLEANOUT.
2. REMOVE ALL FENCING MATERIALS AND UNSTABLE SEDIMENT DEPOSITS AND BRING THE AREA TO GRADE AND STABILIZE IT AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.
3. REPAIR SILT FENCE FAILURES WITH NO. 57 WASHED STONE BERM.

TEMPORARY SLOPE DRAIN

N.T.S.



MAXIMUM DRAINAGE AREA PER PIPE (AC) / PIPE DIA. (IN)

0.5	12
0.75	15
1.0	18
>1.0	AS DESIGNED

CONSTRUCTION NOTES:

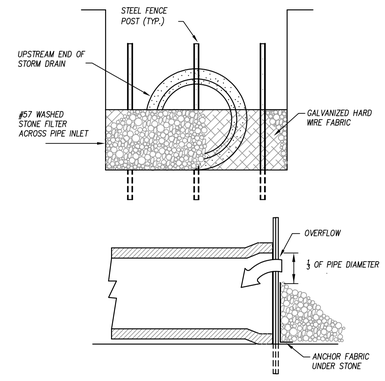
1. PLACE SLOPE DRAINS ON UNDISTURBED SOIL OR WELL COMPACTED FILL AT LOCATIONS SHOWN ON THE PLANS.
2. SLIGHTLY SLOPE THE SECTION OF PIPE UNDER THE DIKE TOWARDS ITS OUTLET.
3. HAND TAMP THE SOIL UNDER AND AROUND THE ENTRANCE SECTION IN LIFTS NOT TO EXCEED 6–IN.
4. ENSURE THAT FILL OVER THE DRAIN AT THE TOP OF THE SLOPE HAS MINIMUM DIMENSIONS OF 1.5 FT DEPTH, 4 FT TOP WIDTH AND 3:1 SIDE SLOPES.
5. ENSURE THE SETTLED, COMPACTED DIKE RIDGE IS NO LESS THAN 1–FT ABOVE THE PIPE AT ALL LOCATIONS.
6. ENSURE ALL PIPE CONNECTIONS ARE WATER–TIGHT.
7. ENSURE THAT ALL FILL MATERIAL IS WELL COMPACTED. SECURELY FASTEN THE EXPOSED SECTION OF THE DRAIN WITH GROMMETS OR STAKES SPACED NO MORE THAN 10–FT APART.
8. EXTEND THE DRAIN BEYOND THE TOE OF THE SLOPE AND ADEQUATELY PROTECT THE OUTLET FROM EROSION.
9. IMMEDIATELY STABILIZE ALL DISTURBED AREAS FOLLOWING CONSTRUCTION.

MAINTENANCE NOTES:

1. INSPECT THE SLOPE DRAIN AND SUPPORTING DIVERSIONS AFTER EVERY RAINFALL AND MAKE NECESSARY REPAIRS PROMPTLY.
2. CLEAR ACCUMULATED SEDIMENT FROM THE PIPE ENTRANCES AND OUTLET.

PROTECTION OF STORM DRAIN UNDER CONSTRUCTION

N.T.S.

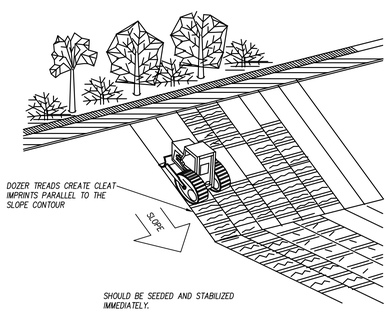


MAINTENANCE NOTES:

1. ALL OPEN STORM DRAIN PIPES SHALL BE PROTECTED AFTER STOPPAGE OF WORK EACH DAY AS ILLUSTRATED.
2. ACCUMULATED SEDIMENT SHALL BE REMOVED AND PROPERLY DISPOSED OF AND THE TRENCH BOTTOM REGRADED AND COMPACTED IN ACCORDANCE w/ SPECIFICATIONS PRIOR TO CONTINUANCE OF LAYING PIPE.

SLOPE TRACKING

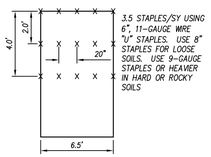
N.T.S.



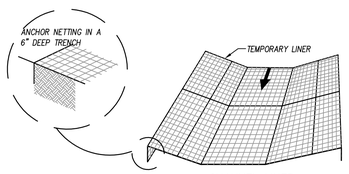
MAINTENANCE NOTE:
PERIODICALLY CHECK THE SEEDED SLOPES FOR RILLS AND WASHES. FILL THESE AREAS SLIGHTLY ABOVE THE ORIGINAL GRADE, THEN RESEED AND MULCH AS SOON AS POSSIBLE.

TEMPORARY DIVERSION DITCH / BERM

N.T.S.



TEMPORARY MAT STAPLE PATTERN
NTS



CHANNEL LINER

MATTING INSTALLATION NOTES:

1. INSTALL TEMPORARY CHANNEL MATTING IN ALL DIVERSION SWALES OR OTHER GRASSED AREAS OF CONCENTRATED STORMWATER FLOW DURING BOTH TEMPORARY AND PERMANENT GRASS ESTABLISHMENT. ALL TEMPORARY MATTING SHALL BE EXCELSIOR MATTING UNLESS NOTED OTHERWISE ON THE EROSION CONTROL PLAN.
2. SEE SPECIFICATIONS FOR TEMP. LINING REQUIREMENTS.
3. PREPARE SOIL BEFORE INSTALLING MATS OR NETS, INCLUDING APPLICATION OF LIME, FERTILIZER AND SEED.
4. BEGIN AT THE TOP OF THE CHANNEL BY ANCHORING THE NET OR MAT IN A 6" DEEP TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
5. ROLL CENTER MAT OR NET IN DIRECTION OF WATER FLOW ON BOTTOM OF CHANNEL.
6. PLACE MAT OR NET END OVER END (SHINGLE STYLE) WITH A 6" OVERLAP. USE DOUBLE ROW OF STAGGERED STAPLES 4" APART TO SECURE.
7. FULL LENGTH EDGE OF MAT OR NET AT TOP SIDE SLOPES SHALL BE ANCHORED IN 6" DEEP TRENCH AFTER STAPLING.
8. MATS OR NETS SHALL BE OVERLAPPED 4" OVER THE CENTER BLANKET AND STAPLED.
9. THE TERMINAL END OF THE MAT OR NET MUST BE ANCHORED IN A 6" DEEP TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.

DIVISION DITCH SCHEDULE

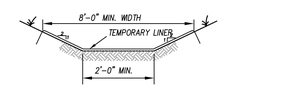
CHANNEL	BOTTOM WIDTH (FT)	SIDE SLOPE (h:v)	CHANNEL GRADE	CHANNEL LENGTH	PERM. LINING	TEMP. LINING	MIN. TOP WIDTH OF LINING (FT)	RIPRAP DEPTH (IN)
1	2	2:1	5.5%	390 LF	GRASS	EXCELSIOR	6	N/A
2	2	2:1	2.0%	325 LF	GRASS	EXCELSIOR	6	N/A
3	4	2:1	1.0%	270 LF	GRASS	EXCELSIOR	12	N/A
4	2	2:1	2.7%	265 LF	GRASS	EXCELSIOR	6	N/A
5	2	2:1	12%	75 LF	GRASS	SYNTHETIC MAT	6	N/A
6	2	2:1	2.0%	100 LF	GRASS	EXCELSIOR	6	N/A
7	2	2:1	1.3%	175 LF	GRASS	EXCELSIOR	6	N/A
8	2	2:1	1.0%	155 LF	GRASS	EXCELSIOR	6	N/A
9	2	2:1	1.0%	90 LF	GRASS	EXCELSIOR	6	N/A
10	2	2:1	1.0%	145 LF	GRASS	EXCELSIOR	6	N/A
11	2	2:1	1.0%	110 LF	GRASS	EXCELSIOR	6	N/A
12	2	2:1	9.1%	120 LF	GRASS	EXCELSIOR	6	N/A
13	2	2:1	6.0%	105 LF	GRASS	EXCELSIOR	6	N/A
14	2	2:1	13%	610 LF	GRASS	EXCELSIOR	6	N/A
15	3	2:1	13%	840 LF	GRASS	SYNTHETIC MAT	7	N/A

CONSTRUCTION SPECIFICATIONS:

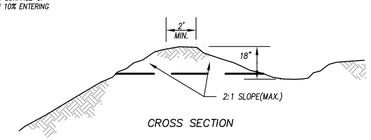
1. REMOVE AND PROPERLY DISPOSE OF ALL TREES, BRUSH, STUMPS, AND OTHER OBJECTIONABLE MATERIALS.
2. ENSURE THAT THE MINIMUM CONSTRUCTED CROSS SECTION MEETS ALL DESIGN REQUIREMENTS.
3. ENSURE THAT THE TOP OF THE DIKE IS NOT LOWER AT ANY POINT THAN THE DESIGN ELEVATION PLUS THE SPECIFIED SETTLEMENT.
4. PROVIDE SUFFICIENT ROOM AROUND DIVERSIONS TO PERMIT MACHINE REGRADING AND CLEANOUT.
5. VEGETATE THE RIDGE IMMEDIATELY AFTER CONSTRUCTION, UNLESS IT WILL REMAIN IN PLACE LESS THAN 30 WORKING DAYS.
6. APPLY SOLID PLASTIC (BLACK, 20 MIL) LINING ON SURFACE OF DIVERSION DITCH ON ANY SLOPES GREATER THAN 10% ENTERING BASINS/PONDS.

MAINTENANCE NOTES:

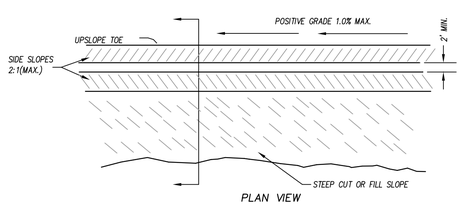
1. INSPECT TEMPORARY DIVERSIONS ONCE A WEEK AND AFTER EVERY RAINFALL.
2. IMMEDIATELY REMOVE SEDIMENT FROM THE FLOW AREA AND REPAIR DIVERSION DITCH.
3. INSPECT AND MAKE TIMELY REPAIRS AS NEEDED.



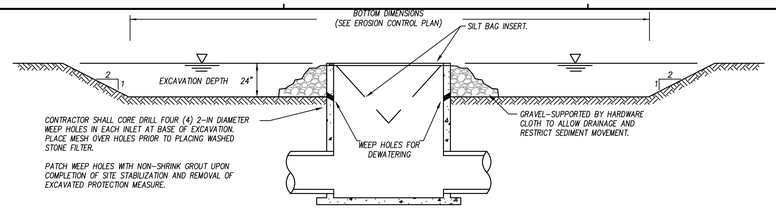
TEMP. PLASTIC LINING
NTS



CROSS SECTION



PLAN VIEW



SECTION

CONSTRUCTION NOTES:

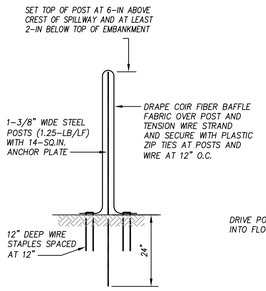
1. PROVIDE WEEP HOLES IN SIDE OF INLET AT BOTTOM OF EXCAVATION FOR DEWATERING.
2. WIRE MESH OR HARDWARE CLOTH SHALL BE PLACED OVER THE OUTSIDE VERTICAL FACE OF THE INLET, TO PREVENT STONE FROM BEING WASHED THROUGH THE WEEP HOLES.
3. #57 WASHED STONE SHALL BE PILED AGAINST THE WIRE.
4. MAINTAIN DEVICE AFTER EACH RAIN. REPLACE #57 WASHED STONE IF IT CLOGS WITH SEDIMENT.
5. CONTRACTOR TO PAINT CLEANOUT MARK ON STRUCTURE AT HALF CAPACITY ELEVATION. SILT IS TO BE REMOVED AND TRAP REPAIRED EACH TIME IT REACHES THIS MARK.
6. CLEAR THE AREA OF ALL DEBRIS THAT MIGHT HINDER EXCAVATION AND DISPOSAL OF SPOIL.
7. GRADE TEH APPROACH TO THE INLET UNIFORMLY.
8. WHEN CONTRIBUTING DRAINAGE AREA HAS BEEN PERMANENTLY STABILIZED, SEAL WEEP HOLES, FILL THE BASIN WITH COMPACTED, DRY, SUITABLE SOIL TO FINAL GRADES AND APPLY FINAL SURFACING.

MAINTENANCE NOTES:

1. INSPECT, CLEAN, AND PROPERLY MAINTAIN THE EXCAVATED BASIN AFTER EVERY STORM UNTIL THE CONTRIBUTING DRAINAGE AREA HAS BEEN PERMANENTLY STABILIZED.
2. REMOVE SEDIMENT WHEN THE VOLUME OF THE BASIN HAS BEEN REDUCED BY ONE-HALF. DISPOSE OF REMOVED SEDIMENT PROPERLY AT AN OFFSITE LOCATION.
3. SPREAD ALL EXCAVATED MATERIAL EVENLY OVER THE SURROUNDING LAND AREA OR STOCKPILE AND STABILIZE IT APPROPRIATELY.
4. SHOULD MANUAL DEWATERING BECOME NECESSARY FOR MAINTENANCE OR FINAL REMOVAL, UTILIZE A MUD PUMP WITH FLOATING SUCTION INLET AND DISCHARGE FLOW ONLY THROUGH A PROPERLY INSTALLED SILT BAG. MONITOR PUMPING TO ENSURE FLOW CAPACITY OF SILT BAG IS NOT EXCEEDED.

EXCAVATED INLET PROTECTION

N.T.S.

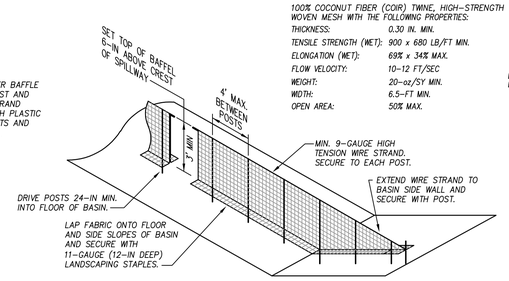


BAFFLE SECTION

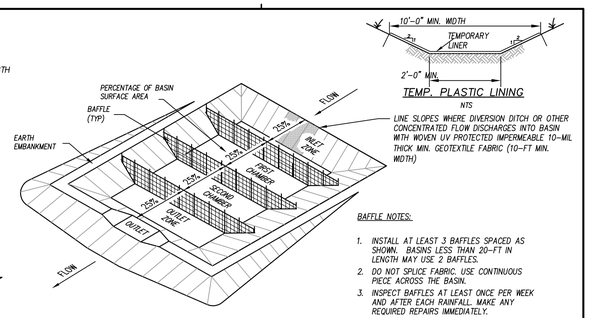
BAFFLE FABRIC:

100% COCONUT FIBER (COIR) TWINE, HIGH-STRENGTH WOVEN MESH WITH THE FOLLOWING PROPERTIES:

THICKNESS:	0.30 IN. MIN.
TENSILE STRENGTH (WET):	900 x 680 LB/FT MIN.
ELONGATION (WET):	69% x 34% MAX.
FLOW VELOCITY:	10-12 FT/SEC
WEIGHT:	20-oz/SY MIN.
WIDTH:	6.5-FT MIN.
OPEN AREA:	50% MAX.



BAFFLE INSTALLATION



BAFFLE PLACEMENT

TEMP. PLASTIC LINING

NTS

LINE SLOPES WHERE DIVERSION DITCH OR OTHER CONCENTRATED FLOW DISCHARGES INTO BASIN WITH WOVEN UV PROTECTED IMPERMEABLE 10-MIL THICK MIN. GEOTEXTILE FABRIC (10-FT MIN. WIDTH)

BAFLE NOTES:

1. INSTALL AT LEAST 3 BAFFLES SPACED AS SHOWN. BASINS LESS THAN 20-FT IN LENGTH MAY USE 2 BAFFLES.
2. DO NOT SPLICE FABRIC. USE CONTINUOUS PIECE ACROSS THE BASIN.
3. INSPECT BAFFLES AT LEAST ONCE PER WEEK AND AFTER EACH RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY.
4. SHOULD BAFFLE FABRIC COLLAPSE, TEAR, DECOMPOSE, OR BECOME INEFFECTIVE, REPLACE PROMPTLY.
5. TAKE CARE TO AVOID DAMAGE TO BAFFLES DURING PERIODIC SEDIMENT REMOVAL. REPAIR ANY DAMAGE AS NEEDED.

TEMPORARY BASIN BAFFLES

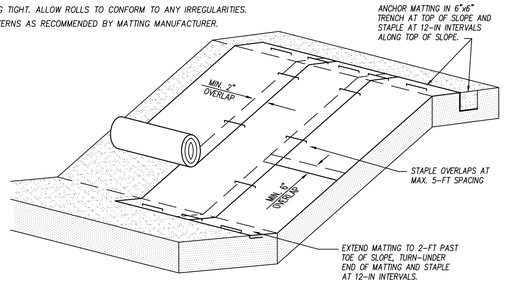
N.T.S.

MAINTENANCE NOTES:

1. INSPECT MATTING AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/2-IN OR GREATER) RAINFALL AND REPAIR IMMEDIATELY AS NEEDED.
2. ENSURE GOOD CONTACT WITH SOIL SURFACE IS MAINTAINED AND EROSION DOES NOT OCCUR BENEATH MATTING.
3. AREAS OF MATTING THAT ARE DAMAGED OR WHERE NOT IN CLOSE CONTACT WITH THE SOIL SHALL BE REPAIRED AND STAPLED.
4. IF EROSION OCCURS DUE TO POORLY CONTROLLED DAMAGE, THE PROBLEM SHALL BE FIXED AND THE ERODED AREAS PROTECTED.
5. MONITOR AND REPAIR MATTING AS NECESSARY UNTIL GROUND COVER IS ESTABLISHED.

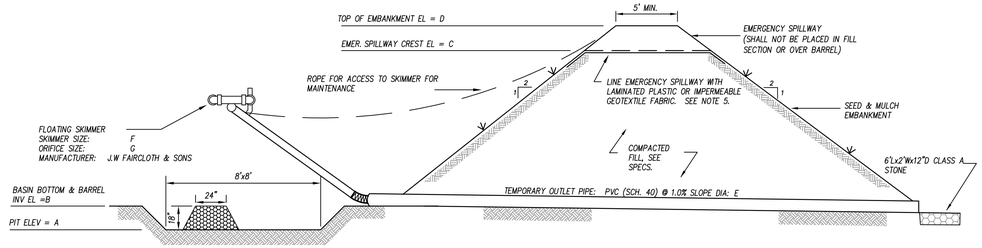
NOTES:

1. SLOPE SURFACE SHALL BE SMOOTH PRIOR TO PLACEMENT OF MATTING TO ENSURE PROPER SOIL CONTACT.
2. LIME, FERTILIZE, AND SEED PRIOR TO PLACING MATTING. PLANT SHRUBS, TREES, ETC. FOLLOWING PLACEMENT OF MATTING.
3. ON SLOPES FLATTER THAN 4:1, ROLLS MAY BE PLACED IN HORIZONTAL STRIPS.
4. DO NOT STRETCH MATTING TIGHT. ALLOW ROLLS TO CONFORM TO ANY IRREGULARITIES.
5. INSTALL STAPLES IN PATTERNS AS RECOMMENDED BY MATTING MANUFACTURER.



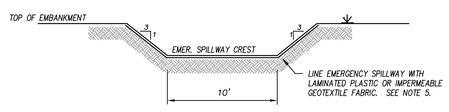
SLOPE PROTECTION MATTING

N.T.S.



BASIN SECTION

NTS



EMERGENCY SPILLWAY SECTION

NTS

BASIN NUMBER	A (FT) PIT ELEV	B (FT) BASIN BOTTOM	C (FT) EMERG. SPILLWAY	D (FT) EMBANK. TOP	E (IN) OUTLET PIPE DIA.	F (IN) SKIMMER SIZE	G (IN) ORIFICE DIA
1	374.0	372.5	376.0	378.0	4	2	1.5

CONSTRUCTION NOTES:

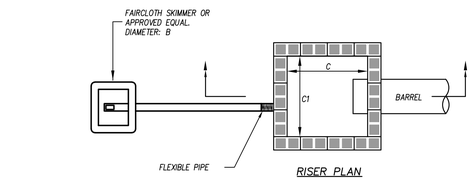
1. PLACE TEMPORARY SEDIMENT CONTROL MEASURES BELOW BASIN AS INDICATED. CLEAR, GRUB AND STRIP THE AREA UNDER THE EMBANKMENT OF ALL VEGETATION AND ROOT MAT. REMOVE ALL SURFACE SOILS CONTAINING HIGH AMOUTS OF ORGANIC MATTER.
2. PLACE OUTLET BARREL ON A FIRM, SMOOTH FOUNDATION OF IMERVIOUS SOIL. DO NOT USE PERVIOUS MATERIAL SUCH AS SAND, GRAVEL OR CRUSHED STONE AS BACKFILL AROUND PIPE. PLACE FILL MAERIAL AROUND PIPE IN 4-IN LAYERS AND COMPACT IT UNDER AND AROUND THE PIPE TO AT LEAST 90% OF THE STANDARD PROCTOR DENSITY. CARE SHALL BE TAKEN TO NOT RAISE THE PIPE FROM FIRM CONTACT WITH ITS FOUNDATION.
3. ASSEMBLE THE SKIMMER IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. ATTACH SKIMMER TO BARREL PIPE WITH FLEXIBLE JOINT AND POSITION THE SKIMMER OVER THE EXCAVATED PIT. ATTACH A ROPE TO THE SKIMMER AND ANCHOR IT TO THE SIDE OF THE BASIN.
4. EMBANKMENT SHALL BE CONSTRUCTED OF CLEAN STRUCTURAL SOIL, FREE OF ROOTS, VEGETATION, ROCKS & OTHER OBJECTIONABLE MATERIAL. SCARIFY SURFACES BEFORE PLACING FILL. PLACE FILL IN 6-8 INCH LOOSE LIFTS. COMPACT TO AT LEAST 90% OF THE STANDARD PROCTOR DENSITY.
5. LINE THE ENTIRE EMERGENCY SPILLWAY WITH LAMINATED PLASTIC OR IMPERMEABLE GEOTEXTILE FABRIC. FABRIC SHALL BE WIDE ENOUGH TO COVER THE BOTTOM AND SIDES OF THE SPILLWAY AND EXTEND ONTO THE TOP OF THE DAM FOR ANCHORING IN A TRENCH. THE EDGES SHALL BE SECURED WITH 8-IN STAPLES OR PINS. THE FABRIC SHALL BE LONG ENOUGH TO EXTEND DOWN THE SLOPE AND EXIT ONTO STABLE GROUND. THE WIDTH OF THE FABRIC SHALL BE ONE PIECE, NOT JOINED OR SPLICED. IF THE LENGTH OF THE FABRIC IS INSUFFICIENT FOR THE ENTIRE LENGTH OF THE SPILLWAY, MULTIPLE SECTIONS, SPANNING THE COMPLETE WIDTH, MAY BE USED. THE UPPER SECTIONS SHALL OVERLAP THE LOWER SECTIONS SO WATER CANNOT FLOW UNDER THE FABRIC. SECURE THE UPPER EDGE AND SIDES OF THE FABRIC IN A TRENCH WITH STAPLES OR PINS.
6. INSTALL BAFFLES ACROSS BOTTOM OF BASIN.

MAINTENANCE NOTES:

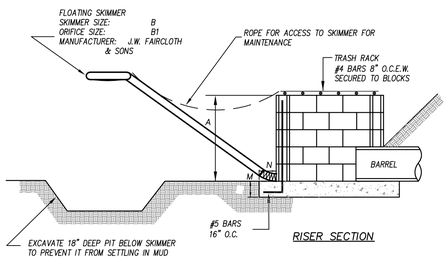
1. INSPECT DEVICE AFTER EACH RAINFALL. REMOVE SEDIMENT WHEN SEDIMENT REACHES A DEPTH OF NO MORE THAN ONE-HALF THE HEIGHT OF THE RISER. REPAIR BAFFELS IF THEY ARE DAMAGED.
2. PULL SKIMMER TO SIDE OF BASIN WITH ROPE AND INSPECT REGULARLY. KEEP SKIMMER HEAD, ORIFICE AND PIPE FREE OF DEBRIS. REMOVE SEDIMENT FROM BENEATH SKIMMER AND ENUSRE VEGETATION DOES NOT INTERFERE WITH SKIMMER OPERATION.
3. CHECK FABRIC LINED SPILLWAY FOR DAMAGE AND MAKE ANY REPAIRS WITH FABRIC THAT SPANS THE FULL WIDTH OF THE SPILLWAY.

TEMPORARY SKIMMER SEDIMENT BASIN

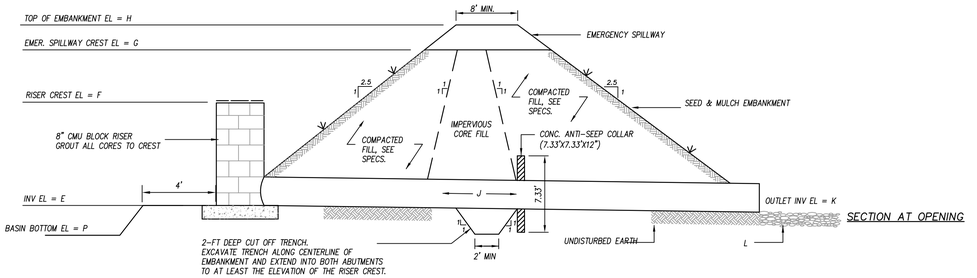
N.T.S.



RISER PLAN



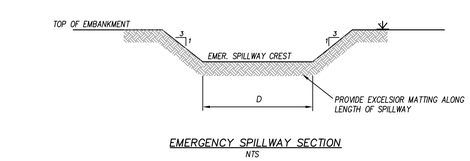
RISER SECTION



BASIN SECTION

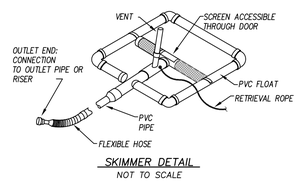
NTS

SECTION AT OPENING



EMERGENCY SPILLWAY SECTION

NTS



SKIMMER DETAIL

NOT TO SCALE

CONSTRUCTION NOTES:

1. PLACE TEMPORARY SEDIMENT CONTROL MEASURES BELOW BASIN AS INDICATED. CLEAR, GRUB AND STRIP THE AREA UNDER THE EMBANKMENT OF ALL VEGETATION AND ROOT MAT. REMOVE ALL SURFACE SOILS CONTAINING ORGANIC MATTER.
2. PLACE OUTLET BARREL ON A FIRM, SMOOTH FOUNDATION OF IMPERVIOUS SOIL. DO NOT USE PERVIOUS MATERIAL SUCH AS SAND, GRAVEL OR CRUSHED STONE AS BACKFILL AROUND PIPE. PLACE FILL MATERIAL AROUND PIPE IN 4-IN LAYERS AND COMPACT IT UNDER AND AROUND THE PIPE TO AT LEAST 95% OF THE STANDARD PROCTOR DENSITY. CARE SHALL BE TAKEN TO NOT RAISE THE PIPE FROM FIRM CONTACT WITH ITS FOUNDATION.
3. INSTALL OUTLET PROTECTION AND CONCRETE ANTI-SEEP COLLAR.
4. CONSTRUCT OUTLET RISER STRUCTURE.
5. ASSEMBLE THE SKIMMER IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. ATTACH SKIMMER TO RISER WITH FLEXIBLE JOINT AND POSITION THE SKIMMER OVER THE EXCAVATED PIT. ATTACH A ROPE TO THE SKIMMER AND ANCHOR IT TO THE SIDE OF THE BASIN.
6. EMBANKMENT SHALL BE CONSTRUCTED OF CLEAN STRUCTURAL SOIL, FREE OF ROOTS, VEGETATION, ROCKS & OTHER OBJECTIONABLE MATERIAL. CONSTRUCT EMBANKMENT CORE AND CUT-OFF TRENCH OF IMPERVIOUS SOILS. SCARIFY SURFACES BEFORE PLACING FILL. PLACE FILL IN 6-8 INCH LOOSE LIFTS. COMPACT TO AT LEAST 95% OF THE STANDARD PROCTOR DENSITY.
7. APPLY SEED AND LINE THE ENTIRE EMERGENCY SPILLWAY WITH EXCELSIOR MATTING.
8. INSTALL BAFFLES ACROSS BOTTOM OF BASIN.

MAINTENANCE NOTES:

1. INSPECT DEVICE AFTER EACH RAINFALL. REMOVE SEDIMENT WHEN SEDIMENT REACHES A DEPTH OF NO MORE THAN ONE-HALF THE HEIGHT OF THE RISER. REPAIR BAFFELS IF THEY ARE DAMAGED.
2. PULL SKIMMER TO SIDE OF BASIN WITH ROPE AND INSPECT REGULARLY. KEEP SKIMMER HEAD, ORIFICE AND PIPE FREE OF DEBRIS. REMOVE SEDIMENT FROM BENEATH SKIMMER AND ENUSRE VEGETATION DOES NOT INTERFERE WITH SKIMMER OPERATION.
3. CHECK FABRIC LINED SPILLWAY FOR DAMAGE AND MAKE ANY REPAIRS WITH FABRIC THAT SPANS THE FULL WIDTH OF THE SPILLWAY.

SEDIMENT BASIN SCHEDULE

SED. BASIN NO.	RISER A (FT)	RISER B (IN)	RISER B1 (IN)	RISER C (FT)	RISER C1 (FT)	EMERG. D (FT)	ELEVATIONS E (FT)	ELEVATIONS F (FT)	ELEVATIONS G (FT)	ELEVATIONS H (FT)	ELEVATIONS P (FT)	OUTLET BARREL J	OUTLET BARREL K (FT)	OUTLET PROTECTION L	FOOTING M (IN)	FOOTING N (IN)	DEWATERING TIME (HRS)
1	2.5	3	3	3	3	12	411.50	414.00	415.00	417.00	410.50	42 LF 15" CMP	411.00	8'Lx4'Wx22"TH CLASS B STONE	6	6	35.6
2	2.5	3	3	3	3	20	399.50	402.00	403.00	405.00	398.50	46 LF 18" CMP	398.95	9'Lx5'Wx22"TH CLASS B STONE	6	6	84.4

TEMPORARY SEDIMENT BASIN

N.T.S.

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

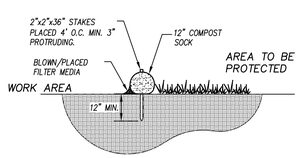
PROJECT NO. 02000.000

SHEET TITLE

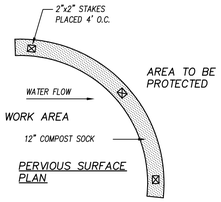
EROSION CONTROL DETAILS

SHEET NUMBER

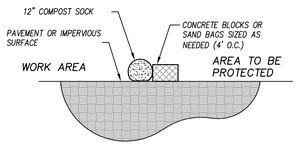
C-07.04



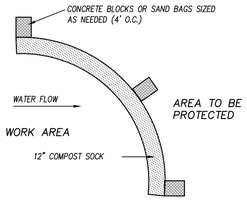
PERVIOUS SURFACE SECTION



PERVIOUS SURFACE PLAN



IMPERVIOUS SURFACE SECTION



IMPERVIOUS SURFACE PLAN

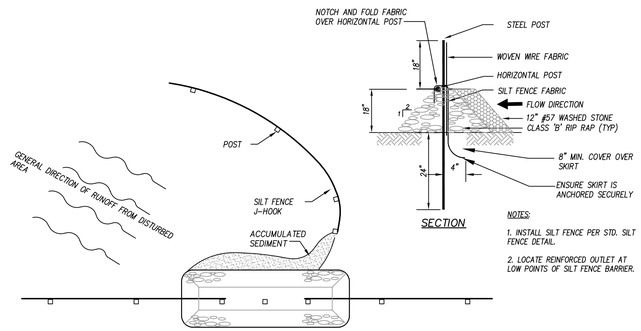
NOTES:

1. MATERIALS TO BE FILTREXX OR APPROVED EQUAL.
2. ALL MATERIAL AND INSTALLATION TO MEET STATE AND LOCAL SPECIFICATIONS.
3. COMPOST SOCKS SHALL BE INSTALLED PARALLEL TO THE BASE OF THE SLOPE OR OTHER AFFECTED AREAS, PERPENDICULAR TO SHEET FLOW. COMPOST SOCKS ARE EFFECTIVE IN AREAS WHERE SEDIMENT ACCUMULATION OF LESS THAN SIX INCHES IS EXPECTED.
4. COMPOST SOCKS CAN BE APPLIED ON SLOPES UP TO A 2:1 GRADE WITH A MAXIMUM HEIGHT OF 10 FEET. COMPOST SOCK SHOULD NOT BE USED ALONE BELOW GRADED SLOPES GREATER THAN 10 FEET IN HEIGHT.
5. 2"X2" OAK OR OTHER DURABLE HARDWOOD STAKES SHALL BE USED. STAKES SHALL BE PLACES AT A MAXIMUM INTERVAL OF 4 FEET, OR A MAXIMUM INTERVAL OF 8 FEET IF THE SOCK IS PLACER IN A 4 INCH TRENCH. STAKES SHALL BE DRIVEN TO A MINIMUM DEPTH OF 12 INCHES, WITH A MINIMUM OF 3 INCHES PROTRUDING ABOVE THE COMPOST SOCKS.
6. COMPOST SOCKS SHALL BE SLEEVED WHEN SECTIONS LONGER THAN 200-LF ARE REQUIRED. STAKES SHALL BE PLACED ON SLEEVED AREAS TO KEEP SECTIONS TOGETHER.
7. IN THE EVENT STAKING IS NOT POSSIBLE (I.E., WHEN SOCKS ARE USED ON PAVEMENT) HEAVY CONCRETE BLOCKS OR SAND BAGS SHALL BE USED BEHIND THE SOCK TO HOLD IT IN PLACE DURING RUNOFF EVENTS.
8. COMPOST SOCK SHOULD BE PLACED AT A 10 FOOT MINIMUM DISTANCE FROM THE TOE OF THE SLOPE TO ALLOW FOR A PROPER RUNOFF ACCUMULATION AND MAXIMUM SEDIMENT STORAGE. ON FLAT AREAS, COMPOST SOCK SHALL BE PLACED AT THE EDGE OF DISTURBED AREAS.
9. THE ENDS OF THE SOCKS SHOULD BE TURNED SLIGHTLY UP SLOPE TO PREVENT RUNOFF FROM GOING AROUND THE END OF THE SOCKS.

MAINTENANCE NOTES:

1. INSPECT COMPOST SOCKS WEEKLY AND AFTER EACH SIGNIFICANT RAINFALL EVENT (1/2 INCH OR GREATER).
2. SEDIMENT SHOULD BE REMOVED FROM BEHIND CHECK DAM ONCE THE ACCUMULATED HEIGHT HAS REACHED ½ THE HEIGHT OF THE CHECK DAM.
3. THE COMPOST SOCK MUST BE REPLACED IF CLOGGED OR TORN.
4. IF PONDING BECOMES EXCESSIVE, THE SOCK MAY NEED TO BE REPLACED WITH A LARGER DIAMETER OR A DIFFERENT MEASURE.
5. THE SOCK NEEDS TO BE REINSTALLED IF UNDERMINED OR DISLODGED.
6. THE COMPOST SOCK SHALL BE INSPECTED UNTIL LAND DISTURBANCE IS COMPLETE AND THE AREA ABOVE THE MEASURE HAS BEEN PERMANENTLY STABILIZED.

TEMPORARY COMPOST SOCK PERIMETER FENCE N.T.S.

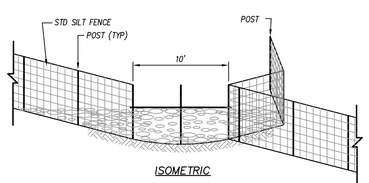


SECTION

NOTES:

1. INSTALL SILT FENCE PER STD. SILT FENCE DETAIL.
2. LOCATE REINFORCED OUTLET AT LOW POINTS OF SILT FENCE BARRIER.

PLAN VIEW REINFORCED SILT FENCE WITH J-HOOK OUTLET



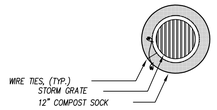
ISOMETRIC

MAINTENANCE NOTES:

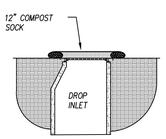
1. REMOVE SEDIMENT DEPOSITS AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE FENCE/OUTLET. TAKE CARE TO AVOID UNDERMINING THE FENCE DURING CLEANOUT. REMOVE & REPLACE STONE AS NECESSARY AS IT BECOMES CLOGGED WITH SEDIMENT.

   REMOVE ALL FENCING MATERIALS AND UNSTABLE SEDIMENT DEPOSITS AND BRING THE AREA TO GRADE AND
2. STABILIZE IT AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

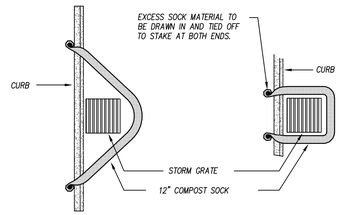
TEMPORARY REINFORCED SILT FENCE J-HOOK INSTALLATION N.T.S.



DROP INLET PLAN

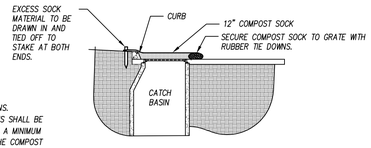


DROP INLET SECTION



CURBSIDE OPTION "A" PLAN

CURBSIDE OPTION "B" PLAN



CURBSIDE SECTION

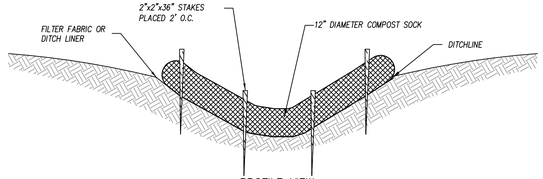
NOTES:

1. MATERIALS TO BE FILTREXX OR APPROVED EQUAL.
2. ALL MATERIAL AND INSTALLATION TO MEET STATE AND LOCAL SPECIFICATIONS.
3. 2"X2" OAK OR OTHER DURABLE HARDWOOD STAKES SHALL BE USED. STAKES SHALL BE PLACES AT A MAXIMUM INTERVAL OF 4 FEET. STAKES SHALL BE DRIVEN TO A MINIMUM DEPTH OF 12 INCHES, WITH A MINIMUM OF 3 INCHES PROTRUDING ABOVE THE COMPOST SOCKS.
4. IN THE EVENT STAKING IS NOT POSSIBLE (I.E., WHEN SOCKS ARE USED ON PAVEMENT) HEAVY CONCRETE BLOCKS OR SAND BAGS SHALL BE USED BEHIND THE SOCK TO HOLD IT IN PLACE DURING RUNOFF EVENTS.
5. THE ENDS OF THE SOCKS SHOULD BE TURNED SLIGHTLY UP SLOPE TO PREVENT RUNOFF FROM GOING AROUND THE END OF THE SOCKS.

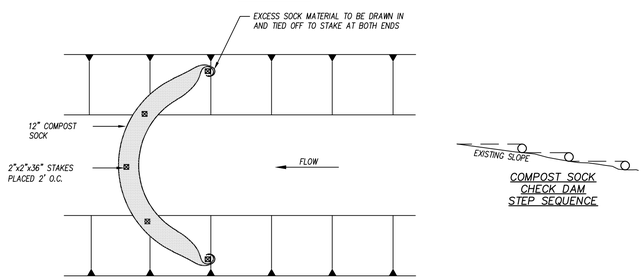
MAINTENANCE NOTES:

1. INSPECT COMPOST SOCKS WEEKLY AND AFTER EACH SIGNIFICANT RAINFALL EVENT (1/2 INCH OR GREATER).
2. SEDIMENT SHOULD BE REMOVED FROM BEHIND CHECK DAM ONCE THE ACCUMULATED HEIGHT HAS REACHED ½ THE HEIGHT OF THE CHECK DAM.
3. THE COMPOST SOCK MUST BE REPLACED IF CLOGGED OR TORN.
4. IF PONDING BECOMES EXCESSIVE, THE SOCK MAY NEED TO BE REPLACED WITH A LARGER DIAMETER OR A DIFFERENT MEASURE.
5. THE SOCK NEEDS TO BE REINSTALLED IF UNDERMINED OR DISLODGED.
6. THE COMPOST SOCK SHALL BE INSPECTED UNTIL LAND DISTURBANCE IS COMPLETE AND THE AREA ABOVE THE MEASURE HAS BEEN PERMANENTLY STABILIZED.

TEMPORARY COMPOST SOCK INLET PROTECTION N.T.S.



PROFILE VIEW



COMPOST SOCK CHECK DAM STEP SEQUENCE

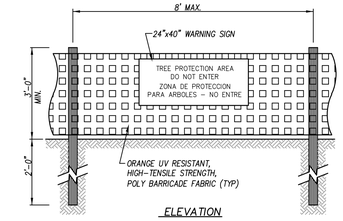
NOTES:

1. MATERIALS TO BE FILTREXX OR APPROVED EQUAL.
2. ALL MATERIAL AND INSTALLATION TO MEET STATE AND LOCAL SPECIFICATIONS.
3. COMPOST SOCK MAY BE USED AS CHECK DAMS IN DITCHES NOT EXCEEDING 3 FEET IN DEPTH.
4. PRIOR TO SOCK INSTALLATION, CLEAR ALL OBSTRUCTIONS INCLUDING ROCKS, CLODS, AND OTHER DEBRIS GREATER THAN ONE INCH THAT MAY INTERFERE WITH PROPER FUNCTION.
5. 2"X2" OAK OR OTHER DURABLE HARDWOOD STAKES SHALL BE USED. STAKES SHALL BE PLACED AT A MAXIMUM INTERVAL OF 2 FEET. STAKES SHALL BE DRIVEN TO A MINIMUM DEPTH OF 12 INCHES, WITH A MINIMUM OF 3 INCHES PROTRUDING ABOVE THE COMPOST SOCKS.
6. THE ENDS OF THE SOCKS SHOULD BE TURNED SLIGHTLY UP SLOPE TO PREVENT RUNOFF FROM GOING AROUND THE END OF THE SOCKS.
7. CHECK DAM SHOULD BE USED IN AREAS THAT DRAIN 10 ACRES OR LESS.
8. CHECK DAM CAN BE DIRECT SEEDED AT THE TIME OF INSTALLATION.

MAINTENANCE NOTES:

1. INSPECT COMPOST SOCKS WEEKLY AND AFTER EACH SIGNIFICANT RAINFALL EVENT (1/2 INCH OR GREATER).
2. SEDIMENT SHOULD BE REMOVED FROM BEHIND CHECK DAM ONCE THE ACCUMULATED HEIGHT HAS REACHED ½ THE HEIGHT OF THE CHECK DAM.
3. THE COMPOST SOCK MUST BE REPLACED IF CLOGGED OR TORN.
4. IF PONDING BECOMES EXCESSIVE, THE SOCK MAY NEED TO BE REPLACED WITH A LARGER DIAMETER OR A DIFFERENT MEASURE.
5. THE SOCK NEEDS TO BE REINSTALLED IF UNDERMINED OR DISLODGED.
6. THE COMPOST SOCK SHALL BE INSPECTED UNTIL LAND DISTURBANCE IS COMPLETE AND THE AREA ABOVE THE MEASURE HAS BEEN PERMANENTLY STABILIZED.

TEMPORARY COMPOST SOCK CHECK DAM N.T.S.

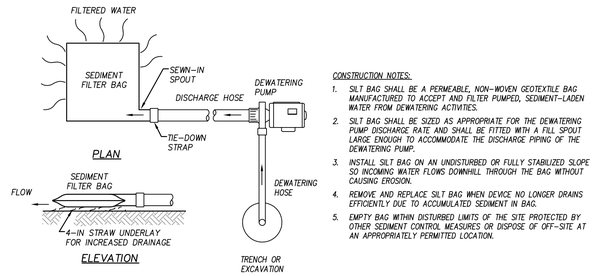


ELEVATION

NOTES:

1. INSTALL TREE PROTECTION FENCING PRIOR TO PERFORMING ANY CLEARING OF THE SITE.
2. WARNING SIGNS TO BE MADE OF DURABLE, WEATHERPROOF MATERIAL.
3. LETTERS TO BE 3" TALL AND CLEARLY LEGIBLE.
4. SIGNS SHALL BE PLACED AT 100' MAXIMUM INTERVALS. PLACE A SIGN AT EACH END OF LINEAR TREE PROTECTION AND 100' ON CENTER THEREAFTER.
5. FOR TREE PROTECTION AREAS LESS THAN 200' IN PERIMETER, PROVIDE NO LESS THAN ONE SIGN PER PROTECTION AREA.
6. ATTACH SIGNS SECURELY TO FENCE POSTS AND FABRIC.
7. MAINTAIN TREE PROTECTION FENCE THROUGHOUT DURATION OF PROJECT.

TREE PROTECTION FENCE N.T.S.



PLAN

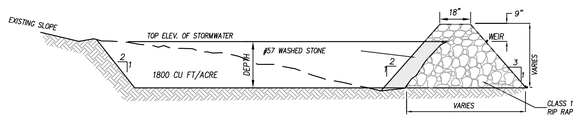
ELEVATION

CONSTRUCTION NOTES:

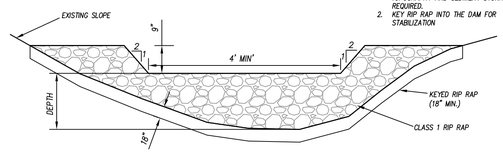
1. SILT BAG SHALL BE A PERMEABLE, NON-WOVEN GEOTEXTILE BAG MANUFACTURED TO ACCEPT AND FILTER PUMPED, SEDIMENT-LADEN WATER FROM DEWATERING ACTIVITIES.
2. SILT BAG SHALL BE SIZED AS APPROPRIATE FOR THE DEWATERING PUMP DISCHARGE RATE AND SHALL BE FITTED WITH A FILL SPOUT LARGE ENOUGH TO ACCOMMODATE THE DISCHARGE PIPING OF THE DEWATERING PUMP.
3. INSTALL SILT BAG ON AN UNDISTURBED OR FULLY STABILIZED SLOPE SO INCOMING WATER FLOWS DOWNHILL THROUGH THE BAG WITHOUT CAUSING EROSION.
4. REMOVE AND REPLACE SILT BAG WHEN DEVICE NO LONGER DRAINS EFFICIENTLY DUE TO ACCUMULATED SEDIMENT IN BAG.
5. EMPTY BAG WITHIN DISTURBED LIMITS OF THE SITE PROTECTED BY OTHER SEDIMENT CONTROL MEASURES OR DISPOSE OF OFF-SITE AT AN APPROPRIATELY PERMITTED LOCATION.

DEWATERING SEDIMENT FILTER BAG N.T.S.

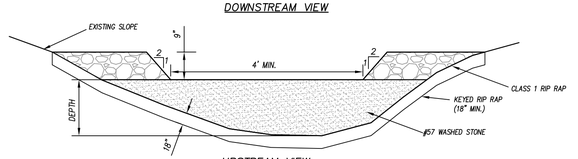
CHECK DAM NUMBER	DISTURBED AREA (AC)	DESIGN VOLUME (CF)	WEIR LENGTH (FT)	BOTTOM LENGTH (FT)	BOTTOM WIDTH (FT)	DEPTH (FT)
1	0.63	240	4	20	10	1.5



SIDE VIEW



DOWNSTREAM VIEW



UPSTREAM VIEW

NOTES:

1. HEIGHT AND WIDTH DETERMINED BY EXISTING TOPOGRAPHY AND SEDIMENT STORAGE REQUIRED.
2. KEY RIP RAP INTO SLOPES FOR STABILITY.

MAINTENANCE NOTES:

1. INSPECT CHECK PROTECTION WEEKLY AND AFTER ½" RAINFALL EVENT AND REPAIR IMMEDIATELY. REMOVE SEDIMENT STRAW, LIMBS, OR OTHER DEBRIS THAT COULD CLOG THE CHANNEL WHEN NEEDED.
2. IMMEDIATELY CORRECT ANY DAMAGE CAUSED BY SUBMERGED AND DEPOSITION ABOVE THE CHECK DAM AND FROM HIGH FLOWS AROUND THE EDGES.
3. REMOVE SEDIMENT ACCUMULATED BEHIND THE DAMS AS NEEDED TO PREVENT DAMAGE TO CHANNEL VEGETATION. ALLOW THE CHANNEL TO DRAIN THROUGH THE STONE CHECK DAM, AND PREVENT LARGE FLOWS FROM CARRYING SEDIMENT OVER THE DAM. ADD STONES TO DAMS AS NEEDED TO MAINTAIN DESIGN HEIGHT AND CROSS SECTION.

CHECK DAM WITH WEIR N.T.S.

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

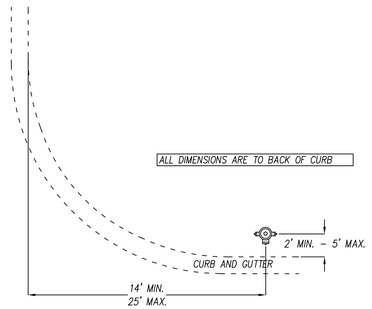
PROJECT NO. 02000.000

SHEET TITLE

EROSION CONTROL DETAILS

SHEET NUMBER

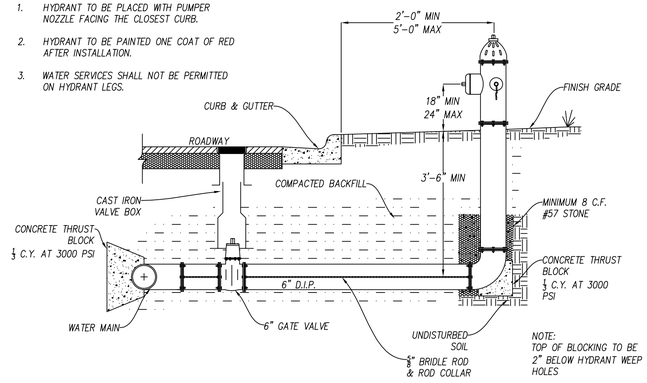
C-07.05



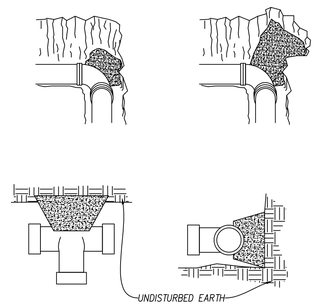
TOWN OF APEX STANDARDS | HYDRANT LOCATION | STD. NO. 600.06 | SHEET 1 OF 1
EFFECTIVE: DECEMBER 3, 2002

NOTES:

1. HYDRANT TO BE PLACED WITH PUMPER NOZZLE FACING THE CLOSEST CURB.
2. HYDRANT TO BE PAINTED ONE COAT OF RED AFTER INSTALLATION.
3. WATER SERVICES SHALL NOT BE PERMITTED ON HYDRANT LEGS.



TOWN OF APEX STANDARDS | HYDRANT INSTALLATION | STD. NO. 600.05 | SHEET 1 OF 1
EFFECTIVE: NOVEMBER 20, 2007

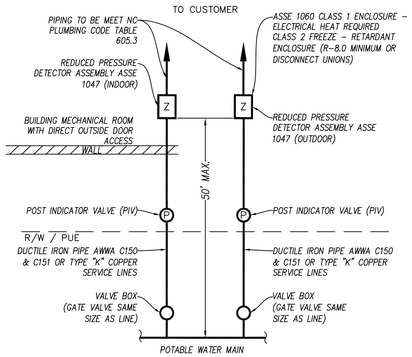


MINIMUM CONCRETE BLOCKING (C.Y.)*					
NOM. PIPE DIA. (INCHES)	TEES & DEAD ENDS	90° BEND	45° BEND	22-1/2° BEND	11-1/4° BEND
4	0.1	0.1	0.1	0.1	0.1
6	0.2	0.2	0.1	0.1	0.1
8	0.2	0.3	0.2	0.1	0.1
10	0.3	0.5	0.3	0.2	0.2
12	0.4	0.6	0.5	0.3	0.3
14	0.7	0.9	0.6	0.5	0.5
16	0.7	0.9	0.6	0.5	0.5
18	0.9	1.2	0.7	0.6	0.6
20	1.1	1.6	1.1	0.7	0.7
24	1.7	2.3	1.6	0.9	0.9

* CONCRETE SHALL BE 3000 PSI

NOTE: WRAP FITTINGS IN 6 MIL PLASTIC BEFORE POURING CONCRETE

TOWN OF APEX STANDARDS | REACTION BLOCKING | STD. NO. 600.13 | SHEET 1 OF 1
EFFECTIVE: DECEMBER 3, 2002

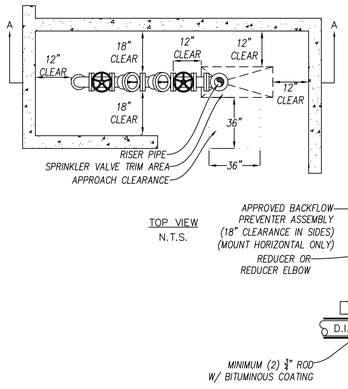


FIRE

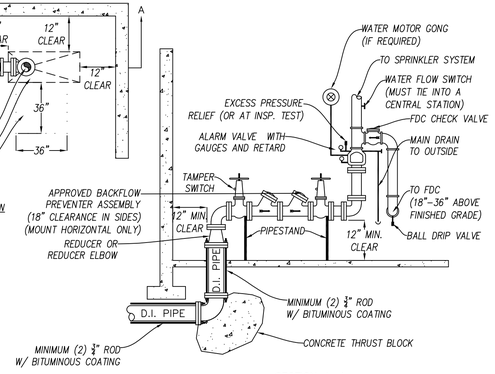
NOT TO SCALE

NOTE:
1. REDUCED PRESSURE DETECTOR ASSEMBLY ASSE 1047 SHALL MEET CURRENT TOWN OF APEX CROSS CONNECTION ORDINANCE AND USC CODE.
2. INLET PIPE TO WATER METER SHALL BE SAME SIZE AS OUTLET PIPE BEHIND BACKFLOW PREVENTER.
3. THERE SHALL BE NO TAPS, BYPASS PIPING, HYDRANTS, FIRE DEPT. CONNECTION POINTS OR OTHER WATER-USING APPURTENANCES CONNECTED TO THE SUPPLY LINE BETWEEN ANY WATER METER AND ITS REQUIRED BACKFLOW PREVENTER.
4. EACH BACKFLOW PREVENTER CONNECTED TO TOWN OF APEX WATER SUPPLY (CONTAINMENT) SHALL BE TESTED BY AN APPROVED TESTER BEFORE PLACING THE WATER SYSTEM IN SERVICE AND SHALL BE TESTED ANNUALLY OR AS REQUESTED BY THE TOWN OF APEX.
5. ENCLOSURE SHALL HAVE THE FOLLOWING INFORMATION MARKED:
   A. NAME OF MANUFACTURER OR TRADE MARK
   B. MODEL NUMBER
   C. DATE CODE OR SERIAL NUMBER
   D. CLASS DESIGNATION AND LOWEST TEMPERATURE RANGE
   E. ASSE STANDARD #1060
   F. PHYSICAL ADDRESS
   G. MARKINGS SHALL BE 6 MM (¼") SIZE LETTER HEIGHT AND CAST, ETCHED, STAMPED OR ENGRAVED ON THE ENCLOSURE, OR ON A CORROSION RESISTANT PLATE SECURELY ATTACHED TO THE ENCLOSURE.
   H. 2" SIZE NUMBERS TO BE PLACED ON THE BACK OF THE COVER FOR EACH BACKFLOW LOCATION (COMMERCIAL ONLY).
6. ALL BACKFLOW PREVENTERS SHALL BE "LEAD FREE".

TOWN OF APEX STANDARDS | TYPICAL FIRE CONNECTIONS – COMMERCIAL | STD. NO. 620.02 | SHEET 1 OF 2
EFFECTIVE: MARCH 6, 2018



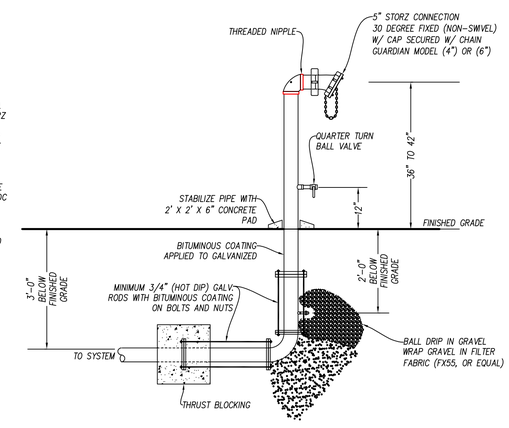
TOP VIEW
N.T.S.



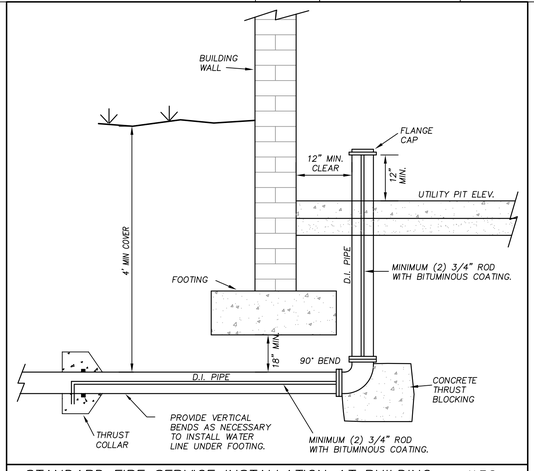
SECTION A–A
N.T.S.

TOWN OF APEX STANDARDS | SPRINKLER RISER & FIRE DEPARTMENT CONNECTION | STD. NO. 600.19 | SHEET 1 OF 1
EFFECTIVE: NOVEMBER 20, 2007

NOTES:
1. ALL EXPOSED PIPING AND FITTINGS SHALL BE GALVANIZED WITH EXCEPTION OF STORZ CONNECTION
2. PIPE MATERIAL SHALL BE CLASS 350 DIP AWWA C150 AND C151 APPROVED BY THE TOWN. PIPE MATERIAL BEHIND THE BACKFLOW PREVENTER SHALL MEET NC PLUMBING CODE TABLE 605.4
3. PROPERTY OWNER SHALL BE RESPONSIBLE FOR MAINTENANCE AND OPERATION OF FDC AND ACCESSORIES
4. 50' MAX DISTANCE FROM FDC TO APPARATUS – FIRE HYDRANT
5. FOR NFPA 13R SYSTEMS (2 ½" RISER AND SMALLER) SINGLE FDC WITH NATIONAL STANDARD THREADS SHALL BE USED
6. AN APPROVED CONNECTION (TAPPING IS NOT APPROVED)



TOWN OF APEX STANDARDS | YARD FDC | STD. NO. 620.08 | SHEET 1 OF 1
EFFECTIVE: MARCH 6, 2018



STANDARD FIRE SERVICE INSTALLATION AT BUILDING N.T.S.

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY NOT FOR CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

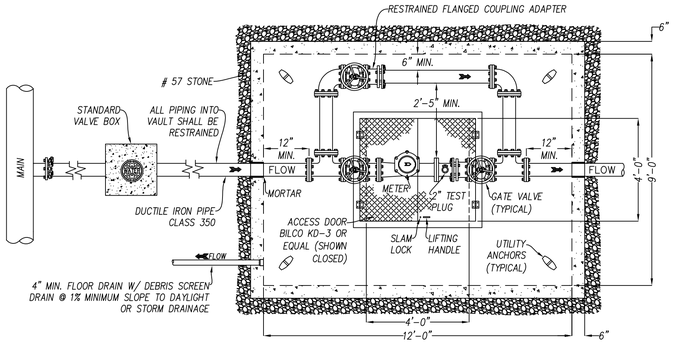
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

SHEET TITLE
UTILITY & STORM DETAILS

SHEET NUMBER
C-08.00

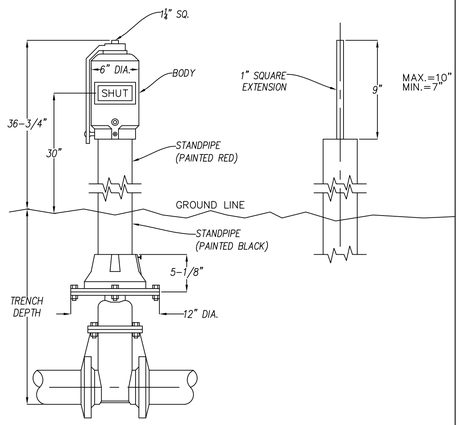


PLAN VIEW

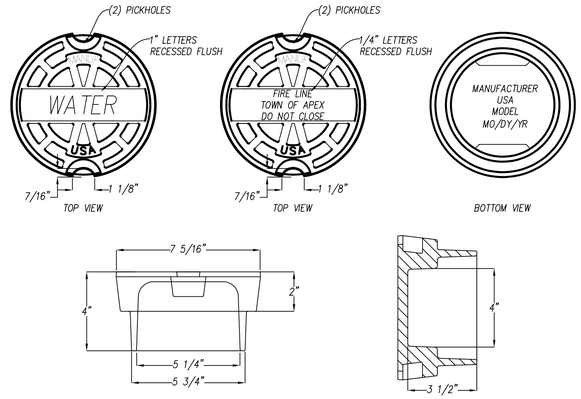
TOWN OF APEX STANDARDS	3" & LARGER METER INSTALLATION & VAULT	STD. NO. 600.03
EFFECTIVE: JANUARY 22, 2014		SHEET 2 OF 2

FIELD ADJUSTMENT INSTRUCTIONS:

1. REMOVE THE BODY FROM THE TOP OF THE INDICATOR POST ASSEMBLY.
2. CUT THE REQUIRED LENGTH OF THE BOTTOM OF THE STANDPIPE FOR THE GROUND LINE TO MATCH UP WITH THE STANDPIPE GROUND LINE MARK.
3. CUT THE 1" SQ. EXTENSION AT A DISTANCE OF 9" ABOVE THE TOP OF THE STANDPIPE.
4. SET THE "OPEN" AND "SHUT" TARGETS FOR THE APPROPRIATE VALVE SIZE.
5. REATTACH THE BODY TO THE TOP OF THE INDICATOR POST ASSEMBLY.
6. LOCATION OF VALVE PER NFPA.

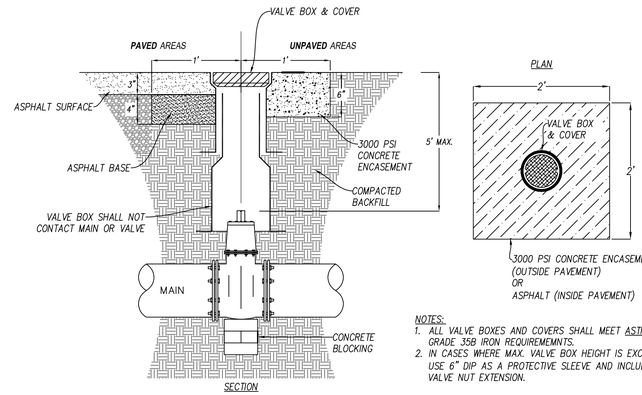


TOWN OF APEX STANDARDS	TAPPING SLEEVE & POST INDICATOR VALVE	STD. NO. 600.16
EFFECTIVE: DECEMBER 21, 2010		SHEET 1 OF 1



COVER WEIGHT: 16 LBS

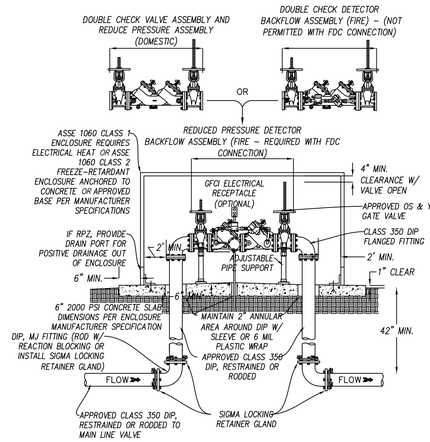
TOWN OF APEX STANDARDS	VALVE COVER	STD. NO. 600.09
EFFECTIVE: NOVEMBER 20, 2007		



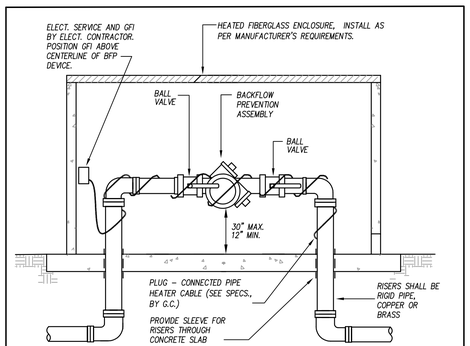
NOTES:
1. ALL VALVE BOXES AND COVERS SHALL MEET ASTM A48, GRADE 35B IRON REQUIREMENTS.
2. IN CASES WHERE MAX. VALVE BOX HEIGHT IS EXCEEDED, USE 6" DIP AS A PROTECTIVE SLEEVE AND INCLUDE A VALVE NUT EXTENSION.

TOWN OF APEX STANDARDS	VALVE BOX INSTALLATION	STD. NO. 600.08
EFFECTIVE: JUNE 18, 2019		SHEET 1 OF 1

NOTES:
1. REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY SHALL COMPLY WITH ASSE 1013 & AWWA C511.
2. REDUCED PRESSURE DETECTOR BACKFLOW PREVENTION ASSEMBLY SHALL COMPLY WITH ASSE 1047. UNIT SHALL BE USED FOR ALL FIRE PREVENTION SYSTEMS WITH FDC, CHEMICAL, PROCESSED OR BOOSTERED.
3. DOUBLE CHECK VALVE BACKFLOW PREVENTION ASSEMBLY SHALL COMPLY WITH ASSE 1015 & AWWA C510.
4. DOUBLE CHECK DETECTOR BACKFLOW PREVENTION ASSEMBLY SHALL COMPLY WITH ASSE 1048.
5. BACKFLOW ASSEMBLY SHALL BE CENTERED ON CONCRETE PAD AND CENTERED WITHIN ENCLOSURE OR BASED ON MANUFACTURER SPECIFICATION.
6. ASSE 1060 CLASS 2 FREEZE-RETARDANT ENCLOSURE REQUIRED.
7. STANDARD 120V GFCI ELECTRICAL RECEPTACLE TO BE INSTALLED IN ACCORDANCE WITH THE NC ELECTRICAL CODE FOR OUTDOOR OPERATION.
8. PIPE MATERIAL SHALL BE CLASS 350 DIP AWWA C150 AND C151 APPROVED BY THE TOWN.
9. INSTALLATION SHALL BE IN COMPLIANCE WITH ALL APPLICABLE TOWN ORDINANCES, SPECIFICATIONS, UNIVERSITY OF SOUTHERN CALIFORNIA FOUNDATION FOR CROSS – CONNECTION CONTROL AND HYDRAULIC RESEARCH AND THE NC PLUMBING CODE.
10. PROPERTY OWNER SHALL BE RESPONSIBLE FOR MAINTENANCE AND OPERATION OF BACKFLOW PREVENTION ASSEMBLY AND COMPLIANCE WITH REPORTING AND TESTING REQUIREMENTS.
11. ALL BACKLOW PREVENTERS SHALL BE "LEAD FREE".



TOWN OF APEX STANDARDS	COMMERCIAL OUTDOOR DOMESTIC/FIRE BACKFLOW ASSEMBLY (3" DIAMETER & LARGER)	STD. NO. 620.06
EFFECTIVE: MARCH 6, 2018		SHEET 1 OF 1



NOTES:
1. REDUCED PRESSURE ASSEMBLY SHALL BE ZURN-WILKINS MODEL. SEE UTILITY PLAN FOR MODEL INFORMATION.
2. ALL BACKFLOW PREVENTERS SHALL BE AS APPROVED BY TOWN OF RUTHERFORDTON.
3. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS OF BACKFLOW PREVENTER, VALVES, ENCLOSURE, ETC.
4. HEATER AND POWER CORD BY G.C., SEE SPECIFICATIONS INSTALL PER MANUFACTURES INSTRUCTIONS.

REDUCED PRESSURE ASSEMBLY NTS

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY NOT FOR CONSTRUCTION

SHEET ISSUE

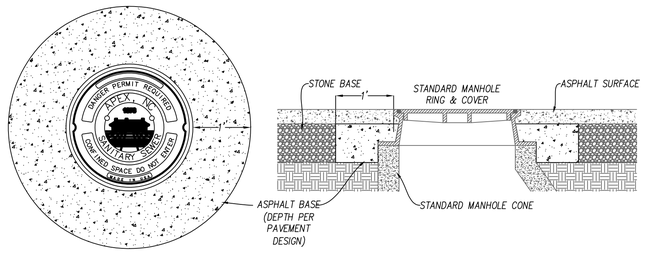
1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

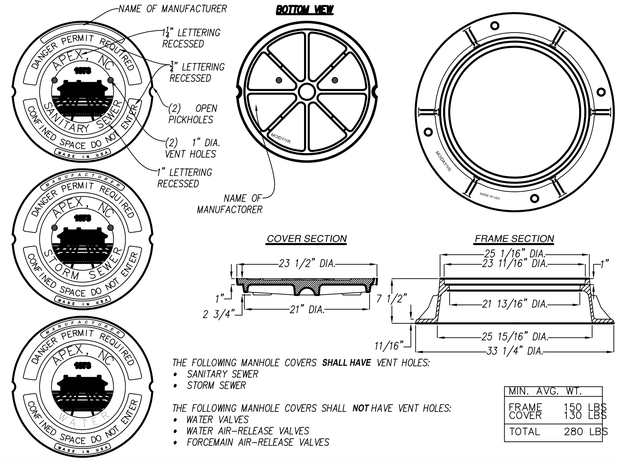
SHEET TITLE
UTILITY & STORM DETAILS

SHEET NUMBER
C-08.01



FOR MANHOLES LOCATED WITHIN PAVED AREAS ONLY

TOWN OF APEX STANDARDS	MANHOLE RING & COVER ENCASEMENT	STD. NO. 700.06
EFFECTIVE: JANUARY 22, 2014		SHEET 1 OF 2

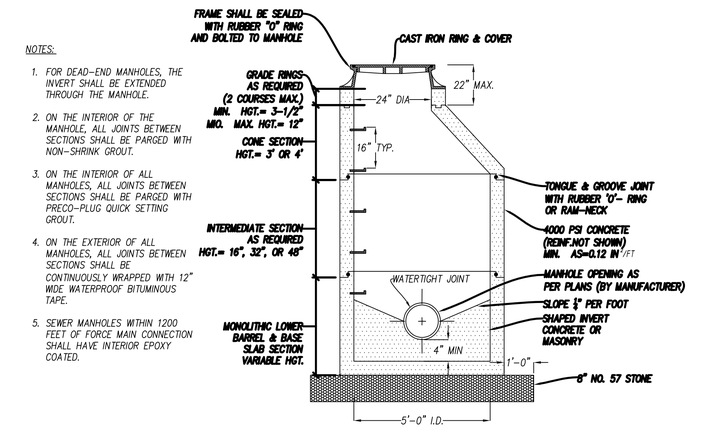


THE FOLLOWING MANHOLE COVERS **SHALL HAVE** VENT HOLES:
- SANITARY SEWER
- STORM SEWER

THE FOLLOWING MANHOLE COVERS SHALL **NOT** HAVE VENT HOLES:
- WATER VALVES
- WATER AIR-RELEASE VALVES
- FORCEMAIN AIR-RELEASE VALVES

MIN. AVG. WT.	
FRAME	150 LBS
COVER	130 LBS
TOTAL	280 LBS

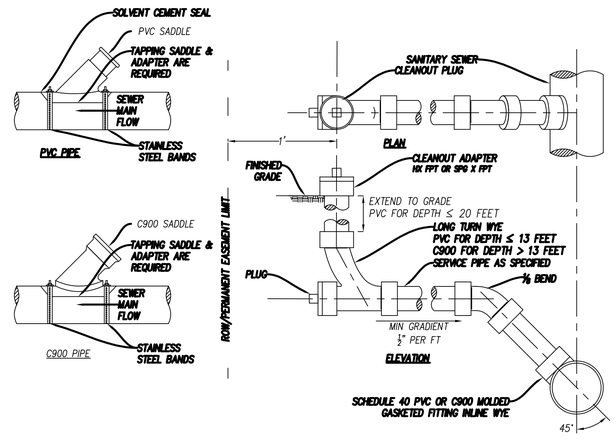
TOWN OF APEX STANDARDS	MANHOLE RING & COVER (PAVED AREAS)	STD. NO. 700.05
EFFECTIVE: DECEMBER 18, 2012		SHEET 1 OF 2



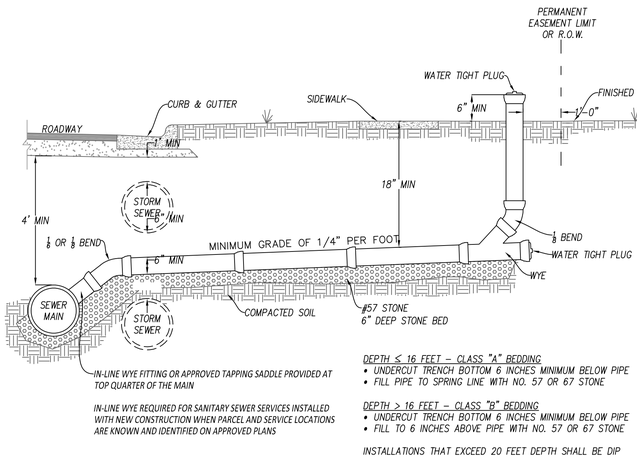
NOTES:

1. FOR DEAD-END MANHOLES, THE INVERT SHALL BE EXTENDED THROUGH THE MANHOLE.
2. ON THE INTERIOR OF THE MANHOLE, ALL JOINTS BETWEEN SECTIONS SHALL BE PARGED WITH NON-SHRINK GROUT.
3. ON THE INTERIOR OF ALL MANHOLES, ALL JOINTS BETWEEN SECTIONS SHALL BE PARGED WITH PRECO-PLUG QUICK SETTING GROUT.
4. ON THE EXTERIOR OF ALL MANHOLES, ALL JOINTS BETWEEN SECTIONS SHALL BE CONTINUOUSLY WRAPPED WITH 12" WIDE WATERPROOF BITUMINOUS TAPE.
5. SEWER MANHOLES WITHIN 1200 FEET OF FORCE MAIN CONNECTION SHALL HAVE INTERIOR EPOXY COATED.

TOWN OF APEX STANDARDS	PRECAST MANHOLE	STD. NO. 700.04
EFFECTIVE: JULY 21, 2015		SHEET 1 OF 3



TOWN OF APEX STANDARDS	SANITARY SEWER SERVICE CONNECTIONS	STD. NO. 700.03
EFFECTIVE: JULY 21, 2015		SHEET 1 OF 1



IN-LINE WYE FITTING OR APPROVED TAPPING SADDLE PROVIDED AT TOP QUARTER OF THE MAIN

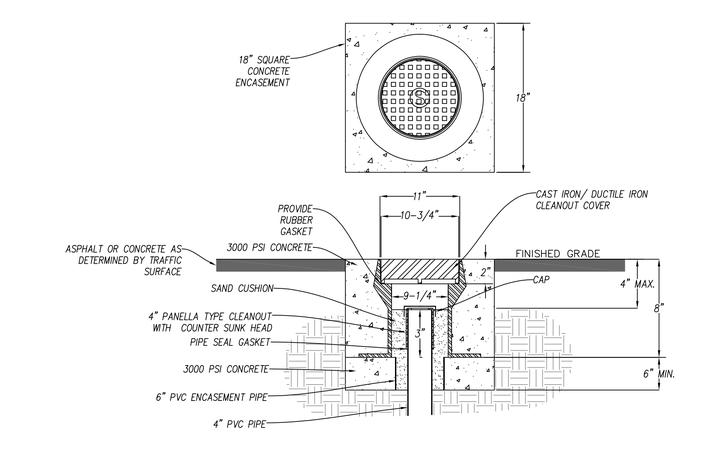
IN-LINE WYE REQUIRED FOR SANITARY SEWER SERVICES INSTALLED WITH NEW CONSTRUCTION WHEN PARCEL AND SERVICE LOCATIONS ARE KNOWN AND IDENTIFIED ON APPROVED PLANS

DEPTH ≤ 16 FEET – CLASS "A" BEDDING
- UNDERCUT TRENCH BOTTOM 6 INCHES MINIMUM BELOW PIPE
- FILL PIPE TO SPRING LINE WITH NO. 57 OR 67 STONE

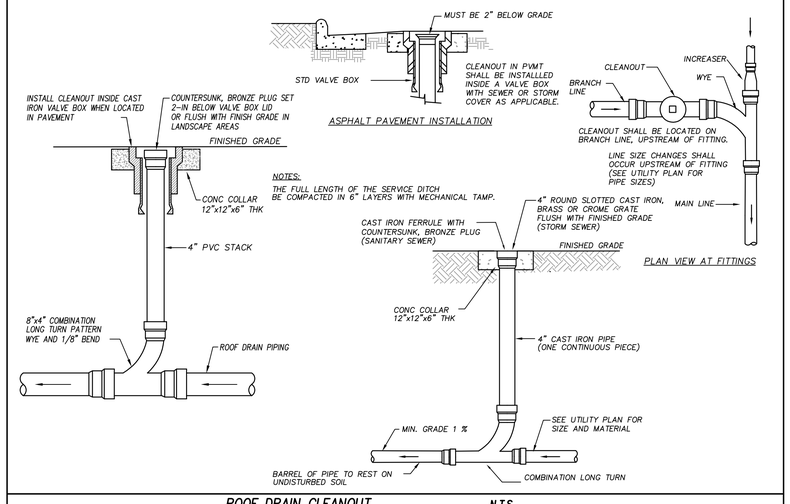
DEPTH > 16 FEET – CLASS "B" BEDDING
- UNDERCUT TRENCH BOTTOM 6 INCHES MINIMUM BELOW PIPE
- FILL TO 6 INCHES ABOVE PIPE WITH NO. 57 OR 67 STONE

INSTALLATIONS THAT EXCEED 20 FEET DEPTH SHALL BE DIP

TOWN OF APEX STANDARDS	SANITARY SEWER TAP & SERVICE	STD. NO. 700.02
EFFECTIVE: JULY 17, 2018		SHEET 1 OF 1



TOWN OF APEX STANDARDS	CLEANOUT COVER FOR VEHICLE TRAFFIC AREAS	STD. NO. 700.14
EFFECTIVE: DECEMBER 3, 2002		SHEET 1 OF 1



ROOF DRAIN CLEANOUT N.T.S.

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY NOT FOR CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

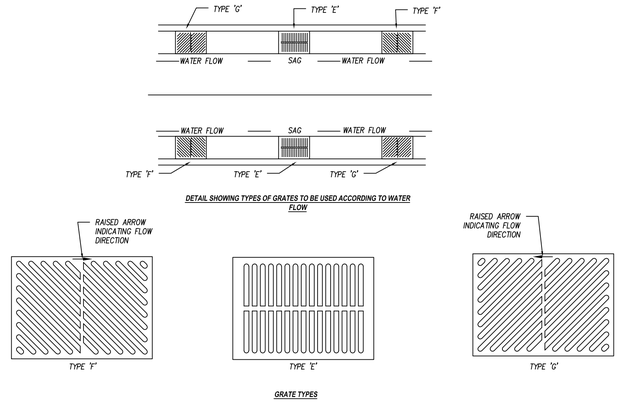
PROJECT NO. 02000.000

SHEET TITLE

UTILITY &_STORM DETAILS

SHEET NUMBER

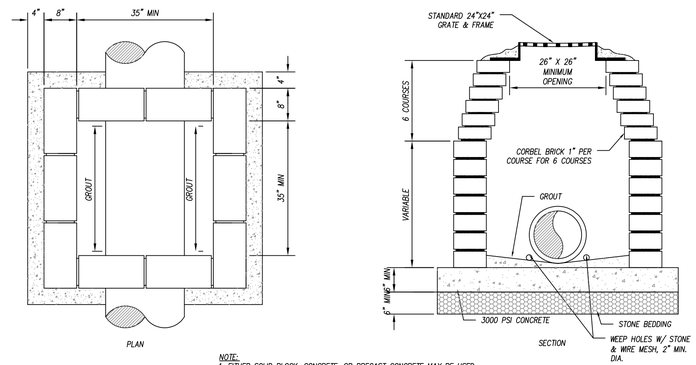
C-08.02



DETAIL SHOWING TYPES OF GRATES TO BE USED ACCORDING TO WATER FLOW

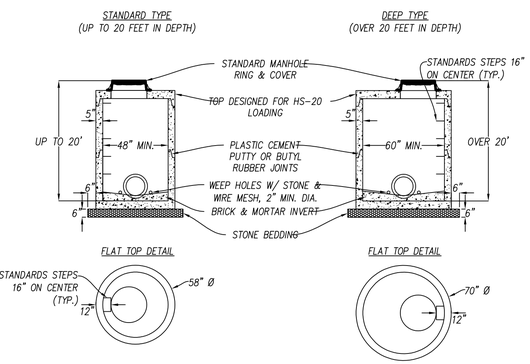
GRATE TYPES

TOWN OF APEX STANDARDS	GRATE PLACEMENT DETAIL FOR CATCH BASIN	STD. NO. 500.03
EFFECTIVE: DECEMBER 3, 2002		SHEET 1 OF 1



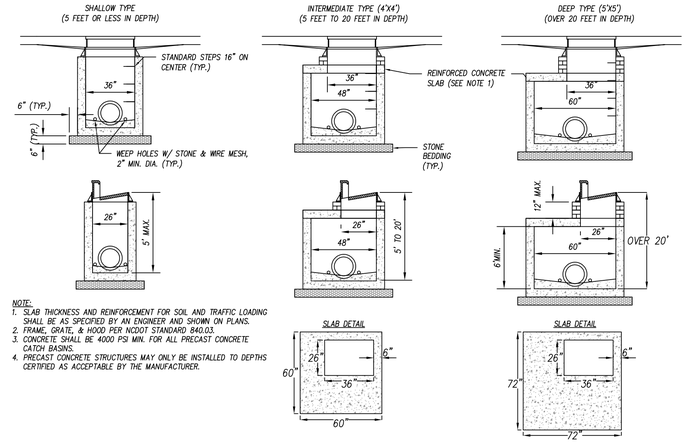
NOTE:
1. EITHER SOLID BLOCK, CONCRETE, OR PRECAST CONCRETE MAY BE USED.
2. FOR 24" R.C.P. AND LARGER--USE PIPE DIA PLUS 12" FOR MINIMUM INSIDE DIMENSION.
3. CAST IN PLACE DESIGNS TO BE SUBMITTED.

TOWN OF APEX STANDARDS	YARD INLET W/ GRATE & FRAME	STD. NO. 500.02
EFFECTIVE: DECEMBER 18, 2012		SHEET 1 OF 1



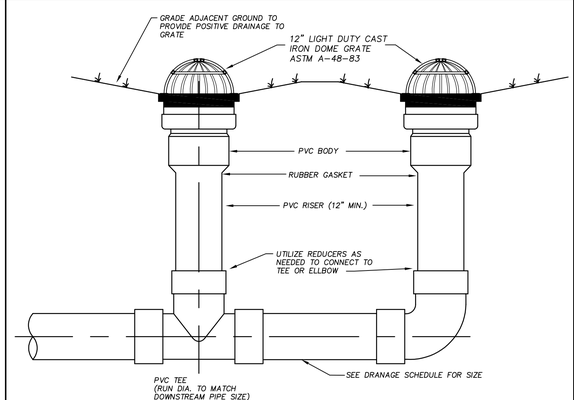
TRAFFIC AREAS: ECCENTRIC CONE ONLY
NON-TRAFFIC AREAS: FLAT TOP ONLY

TOWN OF APEX STANDARDS	PRECAST MANHOLE JUNCTION BOX	STD. NO. 500.06
		SHEET 1 OF 1



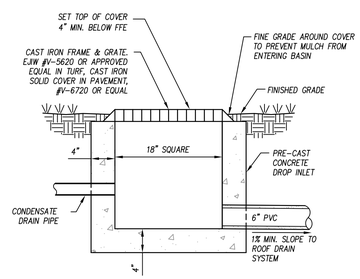
NOTE:
1. SLAB THICKNESS AND REINFORCEMENT FOR SOIL AND TRAFFIC LOADING SHALL BE AS SPECIFIED BY AN ENGINEER AND SHOWN ON PLANS.
2. FRAME, GRATE, & HOOD PER NCDOT STANDARD 840.03.
3. CONCRETE SHALL BE 4000 PSI MIN. FOR ALL PRECAST CONCRETE CATCH BASINS.
4. PRECAST CONCRETE STRUCTURES MAY ONLY BE INSTALLED TO DEPTHS CERTIFIED AS ACCEPTABLE BY THE MANUFACTURER.

TOWN OF APEX STANDARDS	PRECAST CATCH BASIN DETAIL	STD. NO. 500.05
EFFECTIVE: MARCH 6, 2018		SHEET 1 OF 1



NOTES:
1. GRATES SHALL BE 12" DIAMETER, SLOTTED, CAST IRON, HINGED AT BASE.
2. PIPE AND FITTINGS SHALL BE PVC, SMOOTH INTERIOR AND EXTERIOR.
3. INLINE DRAINS SHALL BE AS MANUFACTURED BY ADS, INC. OR APPROVED EQUAL.

INLINE DRAIN N.T.S.



CONDENSATE RELIEF BASIN N.T.S.

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Ralelgh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY NOT FOR CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

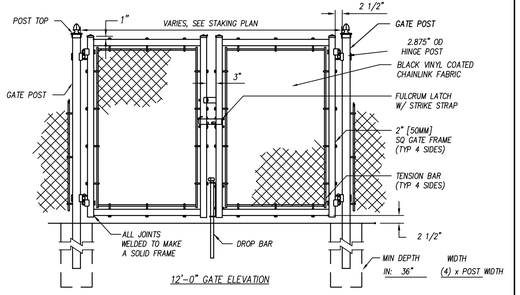
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

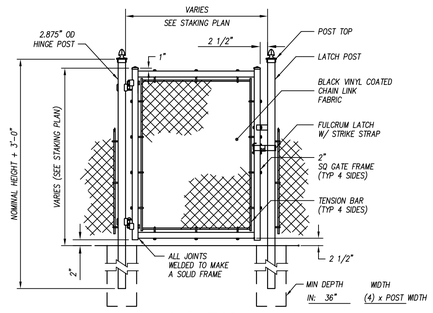
PROJECT NO. 02000.000

SHEET TITLE
UTILITY & STORM DETAILS

SHEET NUMBER
C-08.03

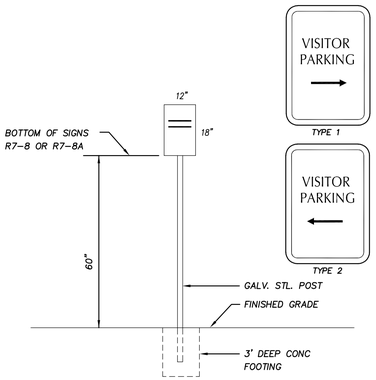


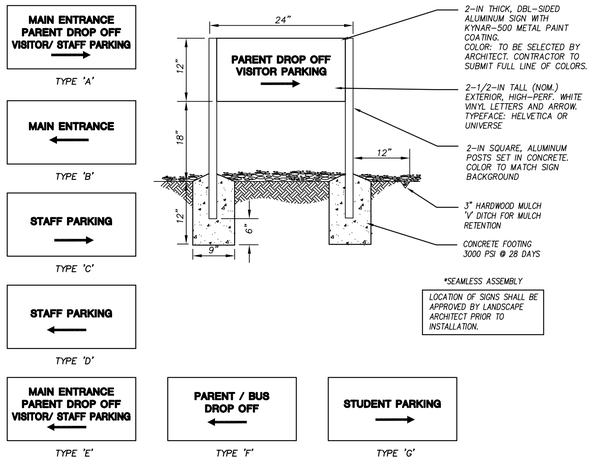
12'-0" GATE ELEVATION



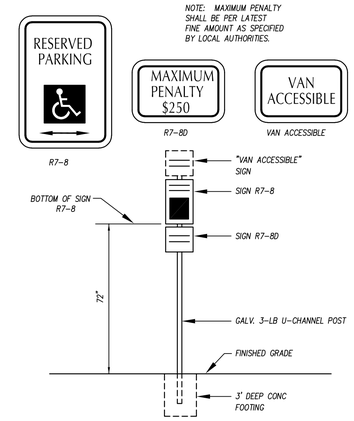
4'-0" & 5'-0" GATE ELEVATION

VISITOR PARKING SIGNAGE N.T.S.

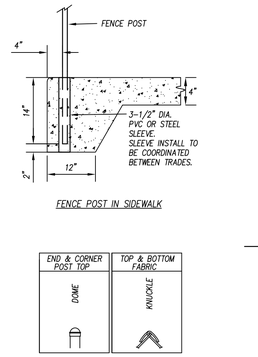




SCHOOL DIRECTIONAL SIGNAGE N.T.S.

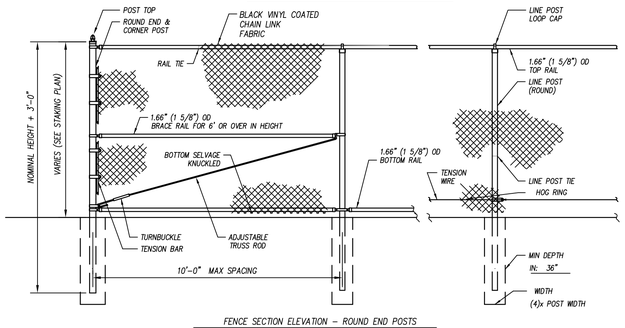


ACCESSIBLE PARKING SIGNAGE N.T.S.



FENCE POST IN SIDEWALK

END & CORNER POST TOP	TOP & BOTTOM FABRIC
DOME	KNUCKLE



FENCE SECTION ELEVATION – ROUND END POSTS

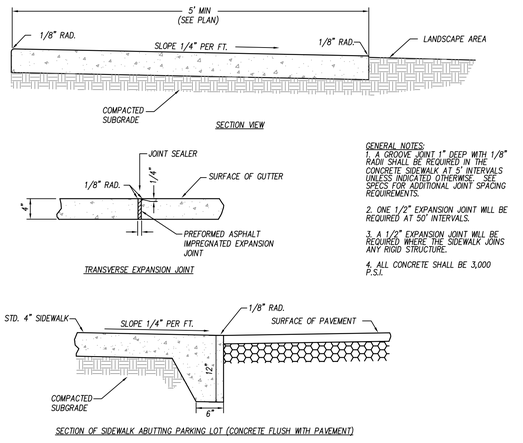
BOLTS ON ALL FENCE SHALL BE CUT FLUSH WITH NUT. NO SHARP PROTRUDING EDGES BE ALLOWED IN DIRECTION OF CHILD PLAY AREA.

SEE SPECS FOR ADDITIONAL INFORMATION.

PROVIDE BOTTOM TENSION WIRE FOR ALL PERIMETER AND BMP FENCING.

SLEEVE TO BE FILLED WITH NON-SHRINK GROUT AND BE FLUSH TO FINISH GRADE

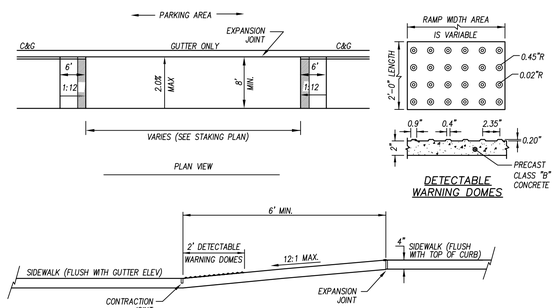
BLACK VINYL COATED CHAIN LINK FENCE N.T.S.



GENERAL NOTES:
1. A GROOVE JOINT 1" DEEP, WITH 1/8" RADII SHALL BE REQUIRED IN THE CONCRETE SIDEWALK AT 5' INTERVALS UNLESS INDICATED OTHERWISE. SEE SPECS FOR ADDITIONAL JOINT SPACING REQUIREMENTS.
2. ONE 1/2" EXPANSION JOINT WILL BE REQUIRED AT 50' INTERVALS.
3. A 1/2" EXPANSION JOINT WILL BE REQUIRED WHERE THE SIDEWALK JOINS ANY RIGID STRUCTURE.
4. ALL CONCRETE SHALL BE 3,000 P.S.I.

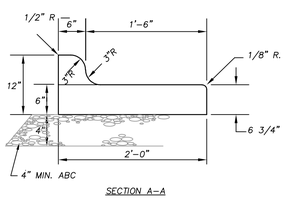
SECTION OF SIDEWALK ABUTTING PARKING LOT (CONCRETE FLUSH WITH PAVEMENT)

CONCRETE SIDEWALK N.T.S.



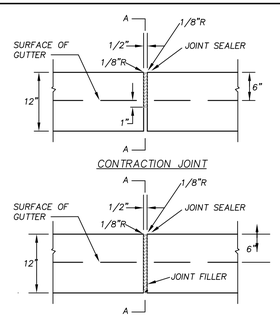
NOTES:
1. DETECTABLE WARNING DOMES SHALL COVER 2'-0" LENGTH AND FULL WIDTH OF THE RAMP FLOOR AS SHOWN ON THE DETAILS.
2. REFER TO NCDOT STANDARD DETAIL 848D05 FOR ADDITIONAL INFORMATION.
3. ALL CONCRETE SHALL BE 3,000 P.S.I. WITH WELDED WIRE MESH REINFORCING.
4. ONE 1/2" EXPANSION JOINT WILL BE REQUIRED AT 50' INTERVALS.

ACCESSIBLE PARKING CURB RAMPS N.T.S.

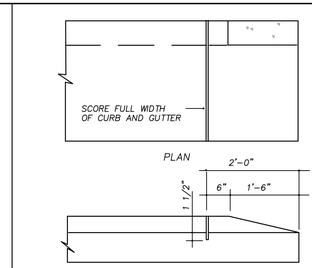


SECTION A-A

24" CURB & GUTTER

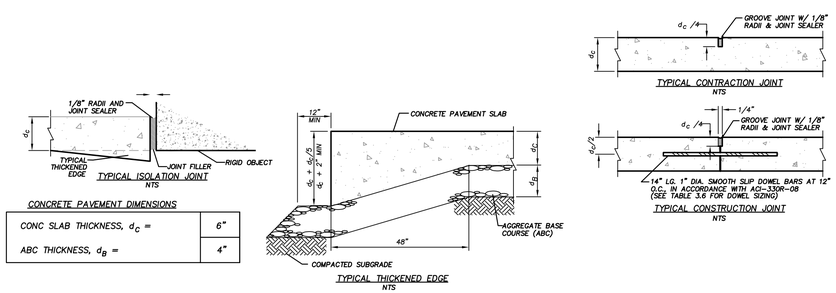


NOTES:
1. ALL CONCRETE SHALL BE 3,000 P.S.I.
2. CONTRACTION JOINTS SHALL BE SPACED AT 10' INTERVALS, SPACING MAY BE INCREASED TO 15' IF MACHINE IS USED.
3. CONTRACTION JOINTS SHALL BE INSTALLED BY THE USE OF TEMPLATES OR FORMED BY OTHER APPROVED METHODS. WHERE SUCH JOINTS ARE NOT FORMED BY TEMPLATES, A MINIMUM DEPTH OF 1-1/2" SHALL BE OBTAINED.
4. EXPANSION JOINTS SHALL BE SPACED AT 90' MAX INTERVALS, AND ADJACENT TO ALL RIGID OBJECTS.
5. ALL JOINTS SHALL BE FILLED WITH JOINT FILLER AND SEALER.



STANDARD METHOD OF ENDING CURB AND GUTTER

STANDARD 24" CONCRETE CURB AND GUTTER N.T.S.



CONCRETE PAVEMENT DIMENSIONS

CONC SLAB THICKNESS, d_c =	6"
ABC THICKNESS, d_B =	4"

NOTES:
1. ALL CONCRETE SHALL BE OF NCDOT TYPE AA PORTLAND CEMENT CONCRETE WITH A 28-DAY COMPRESSIVE STRENGTH OF 4,000 PSI (ASTM C39).
2. CONTRACTION JOINTS SHALL BE SPACED AT 12 FT O.C.E.W. MAX.
3. ISOLATION JOINTS SHALL BE PLACED WHERE CONCRETE PAVEMENT ABUTS ANY RIGID OBJECT.
4. JOINTING PLAN IN ACCORDANCE WITH ACI-330R-08 SHALL BE APPROVED BY SITE' DESIGN ENGINEER PRIOR TO POURING SLAB.
5. THICKENED EDGE SHALL ALSO OCCUR AT INTERFACE BETWEEN PAVEMENTS OF DIFFERENT THICKNESS. NO DOWELING REQUIRED AT INTERFACE BETWEEN PAVEMENTS OF DIFFERENT THICKNESS.

CONCRETE PAVEMENT N.T.S.

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY NOT FOR CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

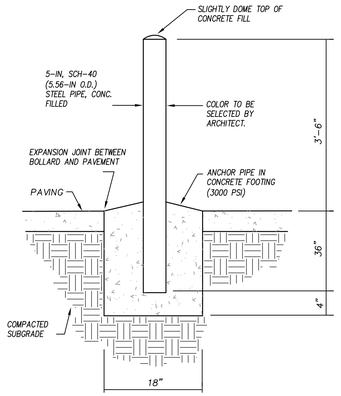
PROJECT NO. 02000.000

SHEET TITLE

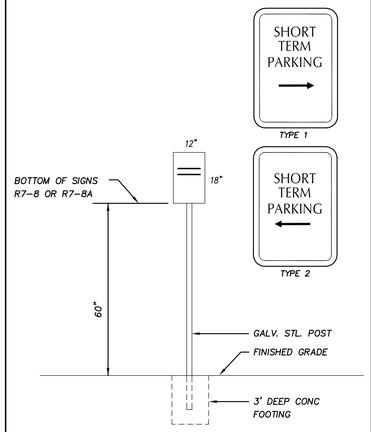
PAVING & HARDSCAPE DETAILS

SHEET NUMBER

C-09.00



STEEL BOLLARD N.T.S.



SHORT TERM PARKING SIGNAGE N.T.S.

NOTES

CONCRETE SHALL BE 3,000-PSI @ 28 DAYS.

PROVIDE NO-SLIP BROOM FINISH PERPENDICULAR TO DIRECTION OF TRAVEL.

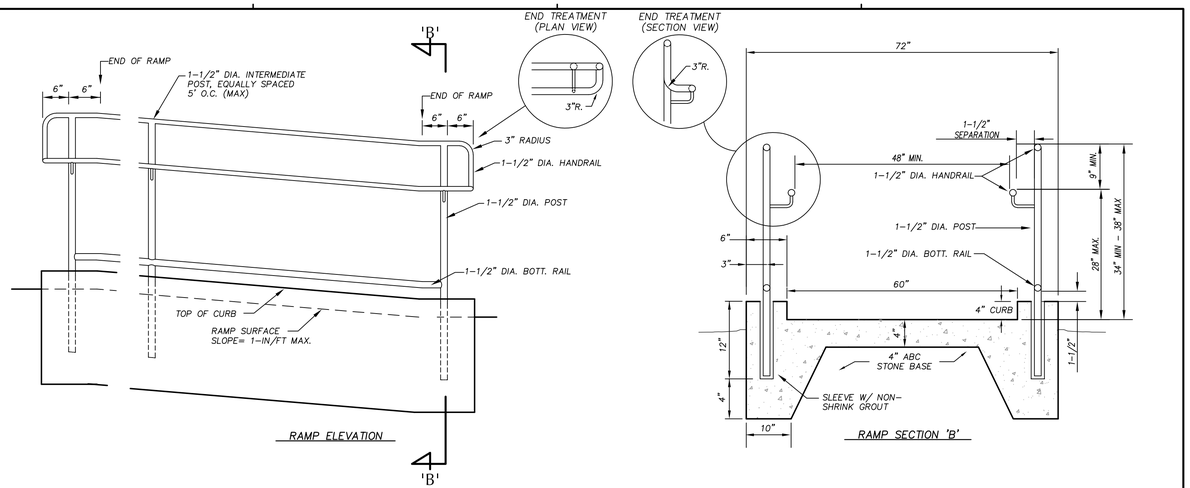
RAMP AND HANDRAIL SHALL BE CONSTRUCTED IN ACCORDANCE WITH 2012 NCSBC SECTION 1010 AND 1012 AND ICC/ANSI A117.1- 2009 SECTION 405.

PROVIDE 1-1/2" MINIMUM CLEAR SPACE BETWEEN WALL AND AND HANDRAIL.

12 IN. SLEEVES SHALL BE HOT-DIP GALVANIZED STEEL PIPE (ASTM A53) NOT LESS THAN 1/2 IN. MORE THAN OUTSIDE DIMENSION OF POST AND FLAT STEEL PLATE FORMING BOTTOM CLOSURE. FILL VOIDS BETWEEN POST AND SLEEVE WITH NONSHRINK ANCHORING CEMENT MIXED AND PLACED TO COMPLY WITH ANCHORING MATERIAL MANUFACTURER'S RECOMMENDATIONS. FINISHED SLOPE TO DRAIN AWAY FROM POST.

PLAN VIEW LEGEND:

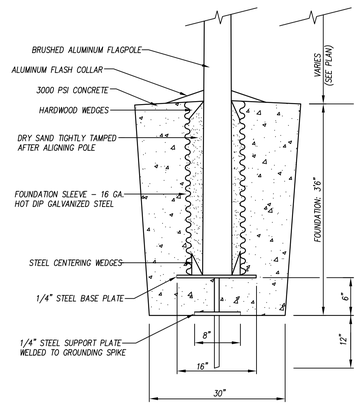
HR	HANDRAIL ONLY
GR	GUARDRAIL ONLY
HR/GR	HANDRAIL AND GUARDRAIL



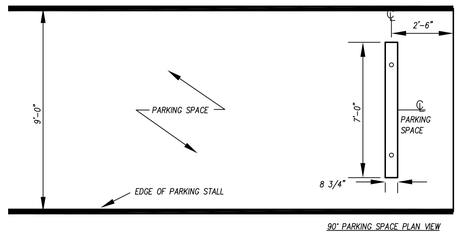
ON-GRADE RAMP WITH HANDRAIL N.T.S.

NOTES:

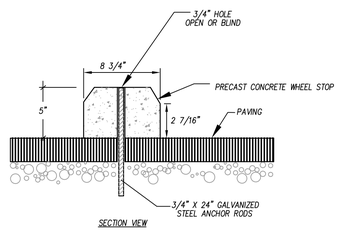
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.



FLAG POLE N.T.S.

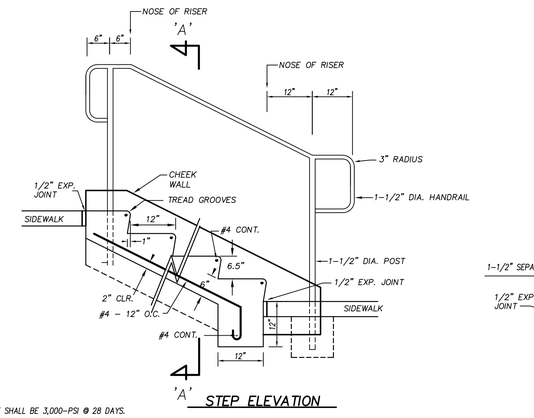


90° PARKING SPACE PLAN VIEW

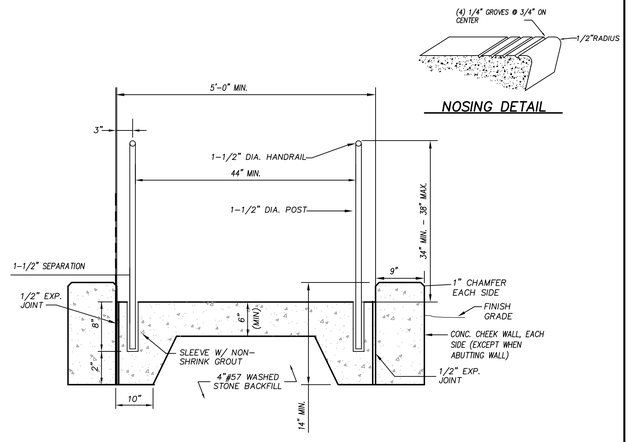


SECTION VIEW

WHEEL STOP N.T.S.



STEP ELEVATION

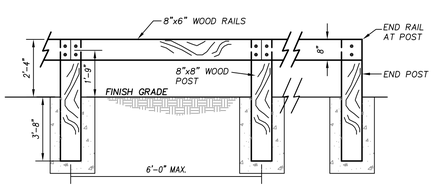


STEP SECTION A-A

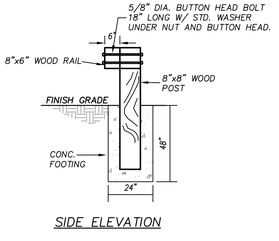
NOTES:

1. CONCRETE SHALL BE 3,000-PSI @ 28 DAYS.
2. PROVIDE NO-SLIP BROOM FINISH PERPENDICULAR TO DIRECTION OF TRAVEL.
3. HANDRAILS SHALL BE CONSTRUCTED IN ACCORDANCE WITH NC BUILDING CODE VOLUME 1-C, CHAPTER 5.4.2. HANDRAILS SHALL BE PAINTED GALVANIZED STEEL. REFER TO ARCHITECTURAL DRAWINGS FOR HANDRAIL DETAILS.
4. 12 IN. SLEEVES SHALL BE HOT-DIP GALVANIZED STEEL PIPE (ASTM A53) NOT LESS THAN 1/2 IN. MORE THAN OUTSIDE DIMENSION OF POST AND FLAT STEEL PLATE FORMING BOTTOM CLOSURE. FILL VOIDS BETWEEN POST AND SLEEVE WITH NONSHRINK ANCHORING CEMENT MIXED AND PLACED TO COMPLY WITH ANCHORING MATERIAL MANUFACTURER'S RECOMMENDATIONS. FINISHED SLOPE TO DRAIN AWAY FROM POST.
5. HANDRAILS TO BE PAINTED, SEE SPECS. COLOR TO BE SELECTED BY ARCHITECT.

CONCRETE STEPS WITH HANDRAILS N.T.S.



FRONT ELEVATION

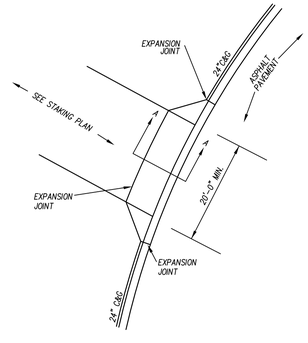


NOTES:

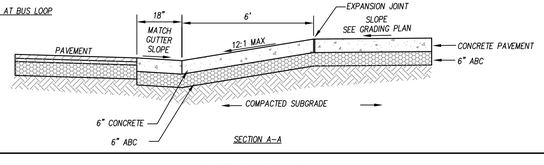
1. ALL WOOD SHALL BE NO.2 CCA PRESSURE TREATED YELLOW PINE.
2. ALL HARDWARE SHALL BE GALVANIZED, PER ASTM A153.

SIDE ELEVATION

TRAFFIC GUARDRAIL N.T.S.



PLAN - FIRELANE ACCESS AT BUS LOOP



SECTION A-A

NOTES:

1. ALL CONCRETE SHALL BE 3,000 P.S.I.
2. CONTRACTION JOINTS SHALL BE SPACED AT 10' INTERVALS, SPACING MAY BE INCREASED TO 15' IF MACHINE IS USED.
3. CONTRACTION JOINTS SHALL BE INSTALLED BY THE USE OF TEMPLATES OR FORMED BY OTHER APPROVED METHODS. WHERE SUCH JOINTS ARE NOT FORMED BY TEMPLATES, A MINIMUM DEPTH OF 1-1/2" SHALL BE OBTAINED.
4. EXPANSION JOINTS SHALL BE SPACED AT 90' MAX INTERVALS, AND ADJACENT TO ALL RIGID OBJECTS.
5. ALL JOINTS SHALL BE FILLED WITH JOINT FILLER AND SEALER.

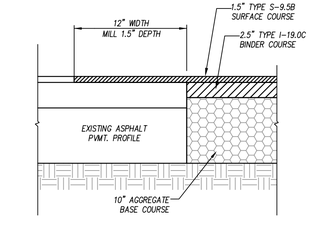
CONCRETE DRIVE APRON N.T.S.

	LIGHT DUTY	MEDIUM DUTY	HEAVY DUTY
TYPE S-9.5B SURFACE COURSE	3.0 IN (TWO 1.5 IN LIFTS)	1.0 IN	1.0 IN
TYPE I-19.0C BINDER COURSE	–	2.5 IN	3.0 IN
AGGREGATE BASE COURSE	6.0 IN	6.0 IN	6.0 IN

COMPACTED SUBGRADE TO 98%

NOTES:

1. SEE SPECIFICATIONS FOR PROOFROLLING, COMPACTION & TESTING REQUIREMENTS. DETAIL IS FOR ON-SITE PAVING OPERATIONS ONLY.
2. SEE GEOTECHNICAL REPORT AND PAVEMENT THICKNESS RECOMMENDATIONS LETTER.
3. NO HIGH PLASTICITY SOILS WITHIN 12 INCHES OF SUBGRADE
4. THE CONTRACTOR MAY CHOOSE TO INSTALL INTERMEDIATE COURSES OF PAVEMENT TO STABILIZE THE SITE DURING CONSTRUCTION AT NO ADDITIONAL COST.
5. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE ADEQUATE THICKNESS REQUIRED FOR INTERMEDIATE PAVING. INCREASES IN THE DESIGN PAVEMENT SECTION TO FACILITATE INTERMEDIATE PAVING SHALL BE PROVIDED AT NO ADDITIONAL COST.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY DAMAGES TO SUBGRADE, INSTALLED BASE COURSE AND/OR INTERMEDIATE PAVING PRIOR TO PLACING SUBSEQUENT PAVEMENT LIFTS AT NO ADDITIONAL COST.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING PAVEMENT DURING ALL PHASES OF WORK. THE FINAL SURFACE OF PAVEMENT SHALL BE FREE OF ALL DEFECTS OR DAMAGE.



HEAVY DUTY ASPHALT TIE TO EXISTING ASPHALT

ASPHALT PAVEMENT N.T.S.

Felton Grove High School

8550 Stephenson Road Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY NOT FOR CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

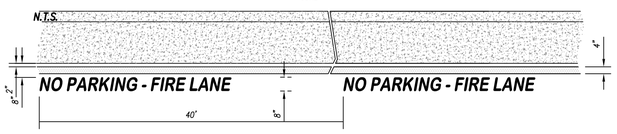
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

SHEET TITLE
PAVING_& HARDSCAPE DETAILS

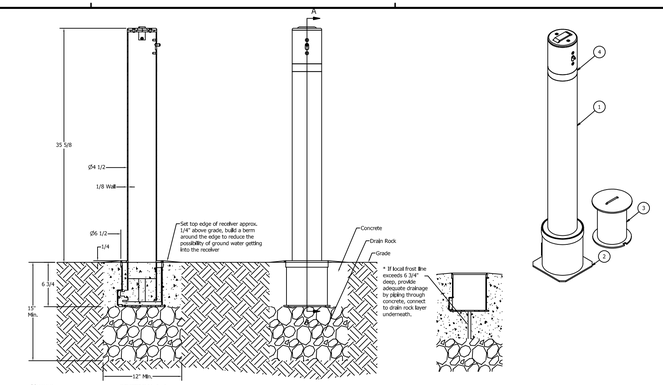
SHEET NUMBER
C-09.01



NOTES:

1. "NO PARKING–FIRE LANE" LETTER MARKINGS SHALL BE YELLOW.
2. LETTERS SHALL BE A MINIMUM OF 8" HIGH AND SPACED 8" FROM THE EDGE OF PAVEMENT.
3. LETTER MARKING SHALL BE PLACED EVERY 40' AND AT EVERY FIRE HYDRANT.
4. SOLID 4" WIDE YELLOW LINE SHALL BE PLACED 2" FROM THE EDGE OF PAVEMENT.

TOWN OF APEX STANDARDS	FIRE LANE PAVEMENT MARKING	STD. NO. 300.24
EFFECTIVE: DECEMBER 21, 2010		SHEET 1 OF 1



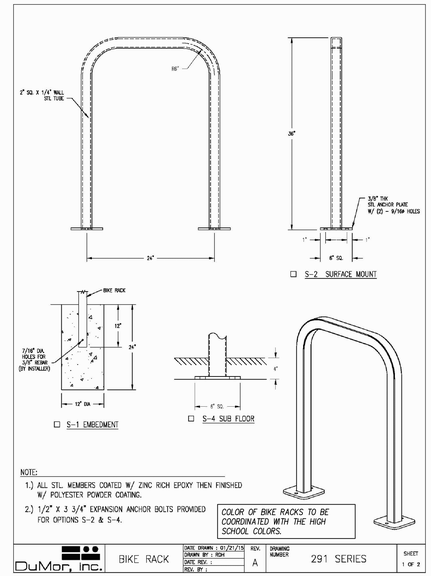
Notes:

- Embedment details are for reference illustration only. Minimum foundation sizes depend on local soil conditions, weather conditions, and engineering requirements.
- Bollard is provided as shown, with parts listed below. Concrete foundation and/or installation not provided by Reliance Foundry.
- This drawing is not drawn to scale. Dimensions provided herein is for reference only. Please consult Reliance Foundry sales professionals if any dimension is critical to your particular installation.
- Reliance Foundry reserves the right to amend design and specifications without prior notice for product improvement.

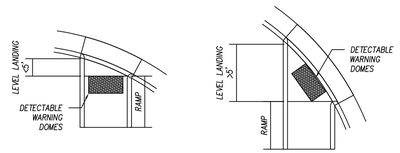
PARTS LIST

ITEM	QTY	PART NUMBER	DESCRIPTION	MATERIAL	WEIGHT
1	1	R8464	R8464 Removable Bollard Assembly	Stainless Steel 316	25 lbs
2	1	R8464R	R8464R Removable Bollard Receiver	Steel Hot Dip Galvanized	2 3/4 lbs
3	1	R8464RC	R8464RC Removable Bollard Receiver Cover	Steel Hot Dip Galvanized	5 3/8 lbs
4	1	Reflective Tape (Optional)	Optional Reflective Tape, Max. 1-1/8" Width	Plastic	

STAINLESS STEEL REMOVABLE BOLLARD N.T.S.



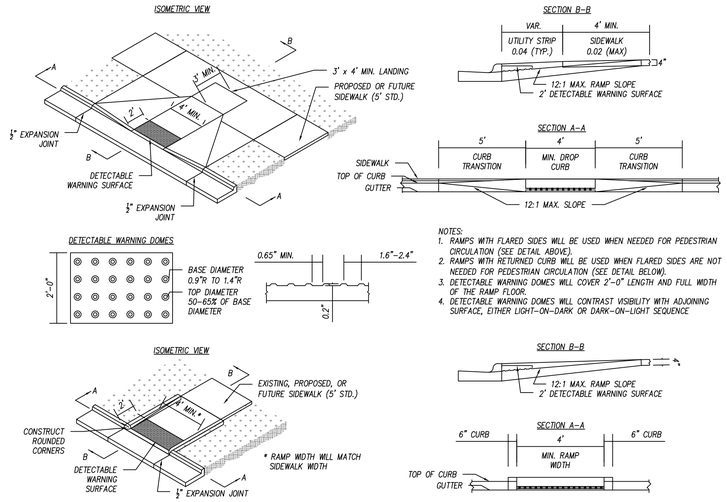
BIKE RACK N.T.S.



NOTES:

1. FOR RAMPS WITH RETURNED CURB, PLACE DETECTABLE WARNING DOMES ON RAMP IF LEVEL LANDING IS LESS THAN 5 FEET DEEP. PLACE DETECTABLE WARNING DOMES ON LEVEL LANDING IF LANDING IS MORE THAN 5 FEET DEEP.
2. CROSSWALK WIDTHS AND CONFIGURATION VARY BUT MUST CONFORM TO TRAFFIC DESIGN STANDARDS.
3. USE CLASS "B" CONCRETE WITH A SIDEWALK FINISH IN ORDER TO OBTAIN A ROUGH NON–SKID TYPE SURFACE.
4. ALLOWABLE CROSS SLOPE ON SIDEWALKS AND CURB RAMPS WILL BE 2% MAXIMUM.
5. THE CURB CUT AND THE PEDESTRIAN CROSSWALK LINES SHALL BE COORDINATED SO THAT A 4'X4' CLEAR SPACE AT THE BASE OF THE CURB RAMP WILL FALL WITHIN THE PEDESTRIAN CROSSWALK LINES.
6. STOP LINES, NORMALLY PERPENDICULAR TO THE LANE LINES, SHALL BE USED WHERE IT IS IMPORTANT TO INDICATE THE POINT BEHIND WHICH VEHICLES ARE REQUIRED TO STOP IN COMPLIANCE WITH A TRAFFIC SIGNAL, STOP SIGN, OR OTHER LEGAL REQUIREMENT. AN UNUSUAL APPROACH SKEW MAY REQUIRE THE PLACEMENT OF THE STOP LINE TO BE PARALLEL TO THE INTERSECTING ROADWAY. REFER TO THE PAVEMENT MARKING PLANS FOR STOP BAR LOCATIONS AT SIGNALIZED INTERSECTIONS. IF A PAVEMENT MARKING PLAN IS NOT PROVIDED, LOCATE AS DIRECTED BY THE ENGINEER.
7. TERMINATE PARKING A MINIMUM OF 20' BACK OF A PEDESTRIAN CROSSWALK.
8. ALL PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION AND THE NORTH CAROLINA SUPPLEMENT TO THE MUTCD.

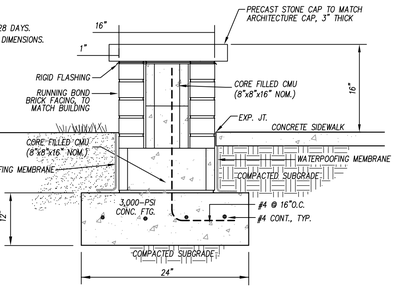
TOWN OF APEX STANDARDS	CURB RAMP	STD. NO. 300.09
EFFECTIVE: DECEMBER 18, 2012		SHEET 3 OF 3



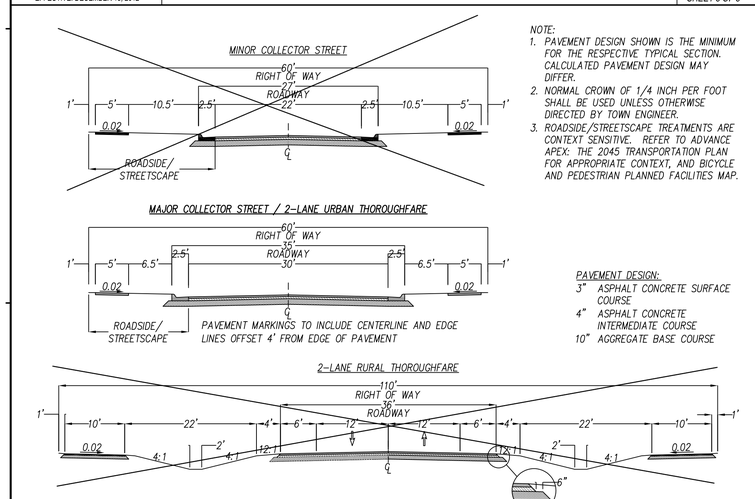
NOTES:

1. RAMPS WITH FLARED SIDES WILL BE USED WHEN NEEDED FOR PEDESTRIAN CIRCULATION (SEE DETAIL ABOVE).
2. RAMPS WITH RETURNED CURB WILL BE USED WHEN FLARED SIDES ARE NOT NEEDED FOR PEDESTRIAN CIRCULATION (SEE DETAIL BELOW).
3. DETECTABLE WARNING DOMES WILL COVER 2'–0" LENGTH AND FULL WIDTH OF THE RAMP FLOOR.
4. DETECTABLE WARNING DOMES WILL CONTRAST VISIBILITY WITH ADJOINING SURFACE, EITHER LIGHT–ON–DARK OR DARK–ON–LIGHT SEQUENCE

TOWN OF APEX STANDARDS	CURB RAMP	STD. NO. 300.09
EFFECTIVE: DECEMBER 18, 2012		SHEET 1 OF 3



SEAT WALL N.T.S.



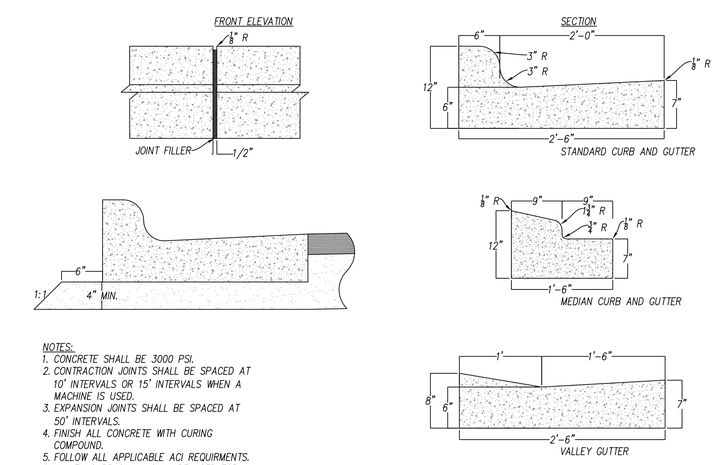
NOTE:

1. PAVEMENT DESIGN SHOWN IS THE MINIMUM FOR THE RESPECTIVE TYPICAL SECTION. CALCULATED PAVEMENT DESIGN MAY DIFFER.
2. NORMAL CROWN OF 1/4 INCH PER FOOT SHALL BE USED UNLESS OTHERWISE DIRECTED BY TOWN ENGINEER.
3. ROADSIDE/STREETSCAPE TREATMENTS ARE CONTEXT SENSITIVE. REFER TO ADVANCE APEX: THE 2045 TRANSPORTATION PLAN FOR APPROPRIATE CONTEXT, AND BICYCLE AND PEDESTRIAN PLANNED FACILITIES MAP.

PAVEMENT DESIGN:

3" ASPHALT CONCRETE SURFACE COURSE
4" ASPHALT CONCRETE INTERMEDIATE COURSE
10" AGGREGATE BASE COURSE

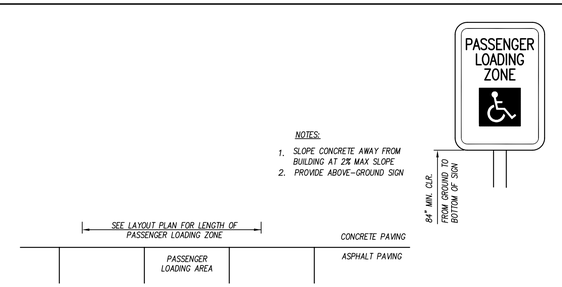
TOWN OF APEX STANDARDS	STREET TYPICAL SECTIONS COLLECTOR/2-LANE THOROUGHFARE	STD. NO. 300.01
EFFECTIVE: NOVEMBER 19, 2019		SHEET 2 OF 4



NOTES:

1. CONCRETE SHALL BE 3000 PSI.
2. CONTRACTION JOINTS SHALL BE SPACED AT 10' INTERVALS OR 15' INTERVALS WHEN A MACHINE IS USED.
3. EXPANSION JOINTS SHALL BE SPACED AT 50' INTERVALS.
4. FINISH ALL CONCRETE WITH CURING COMPOUND.
5. FOLLOW ALL APPLICABLE ACI REQUIRMENTS.
6. VALLEY CURB SHALL ONLY BE USED FOR APPROVED APPLICATIONS.

TOWN OF APEX STANDARDS	CONCRETE CURB AND GUTTER	STD. NO. 300.03
EFFECTIVE: NOVEMBER 19, 2019		SHEET 1 OF 1



PASSENGER LOADING ZONE N.T.S.

Felton Grove High School

8550 Stephenson Road Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY NOT FOR CONSTRUCTION

SHEET ISSUE

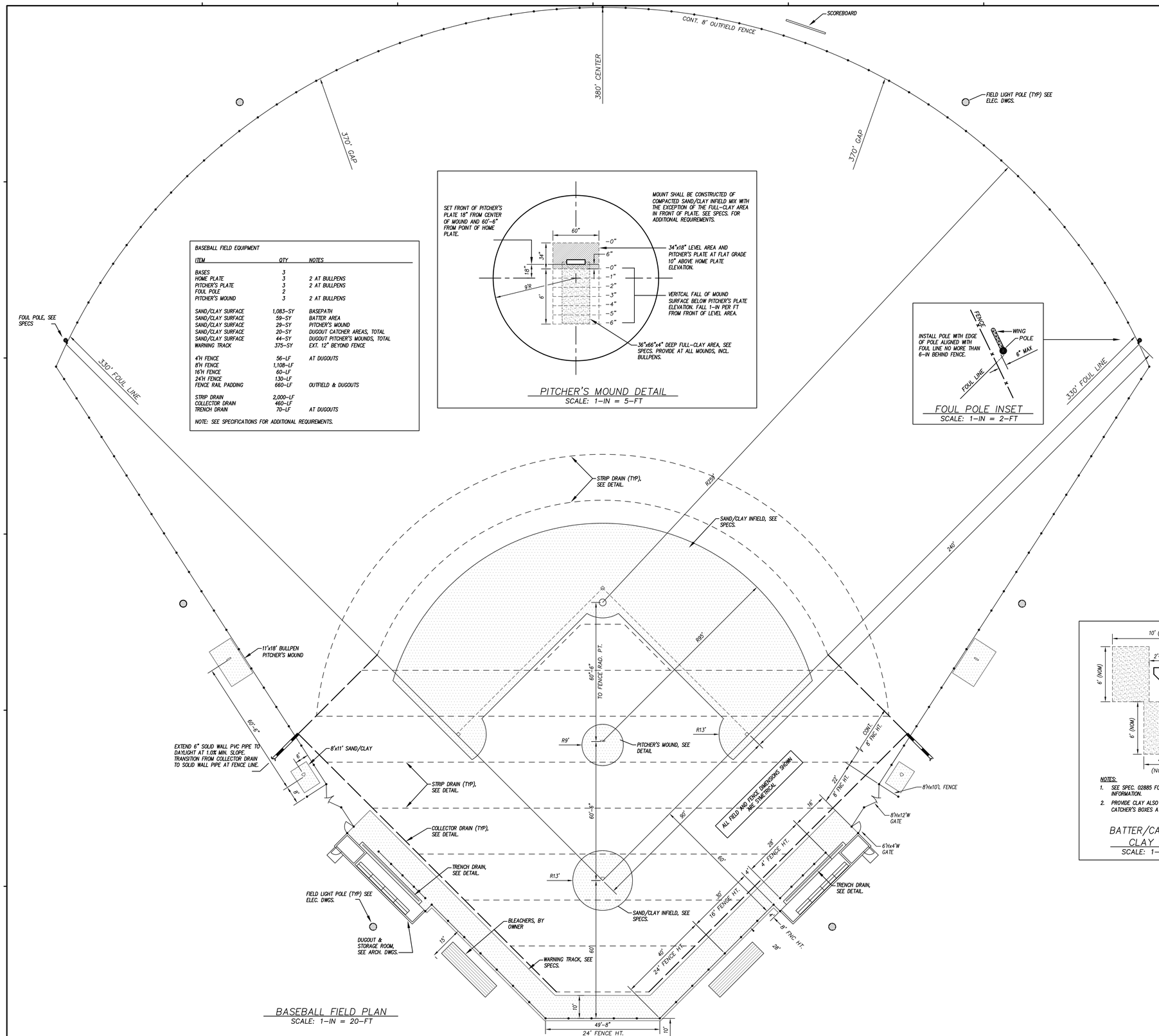
1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO
COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

SHEET TITLE
PAVING & HARDSCAPE DETAILS

SHEET NUMBER
C-09.02



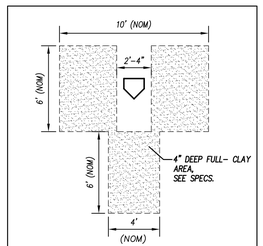
BASEBALL FIELD EQUIPMENT

ITEM	QTY	NOTES
BASES	3	
HOME PLATE	3	2 AT BULLPENS
PITCHER'S PLATE	3	2 AT BULLPENS
FOUL POLE	2	
PITCHER'S MOUND	3	2 AT BULLPENS
SAND/CLAY SURFACE	1,083-SY	BASEPATH
SAND/CLAY SURFACE	59-SY	BATTER AREA
SAND/CLAY SURFACE	29-SY	PITCHER'S MOUND
SAND/CLAY SURFACE	20-SY	DUGOUT CATCHER AREAS, TOTAL
SAND/CLAY SURFACE	44-SY	DUGOUT PITCHER'S MOUNDS, TOTAL
WARNING TRACK	375-SY	EXT. 12" BEYOND FENCE
4'H FENCE	56-LF	AT DUGOUTS
8'H FENCE	1,108-LF	
16'H FENCE	60-LF	
24'H FENCE	130-LF	
FENCE RAIL PADDING	660-LF	OUTFIELD & DUGOUTS
STRIP DRAIN	2,000-LF	
COLLECTOR DRAIN	460-LF	
TRENCH DRAIN	70-LF	AT DUGOUTS

NOTE: SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

PITCHER'S MOUND DETAIL
SCALE: 1-IN = 5-FT

FOUL POLE INSET
SCALE: 1-IN = 2-FT



NOTES:
1. SEE SPEC. 02885 FOR ADDITIONAL INFORMATION.
2. PROVIDE CLAY ALSO AT PITCHER'S PLATES AND CATCHER'S BOXES AT BULLPENS.

BATTER/CATCHER BOX CLAY DETAIL
SCALE: 1-IN = 5-FT

BASEBALL FIELD PLAN
SCALE: 1-IN = 20-FT

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

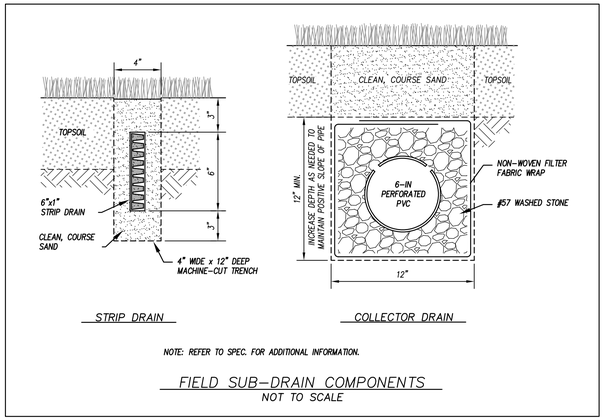
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

SHEET TITLE
PAVING_& HARDSCAPE DETAILS

SHEET NUMBER
C-09.03

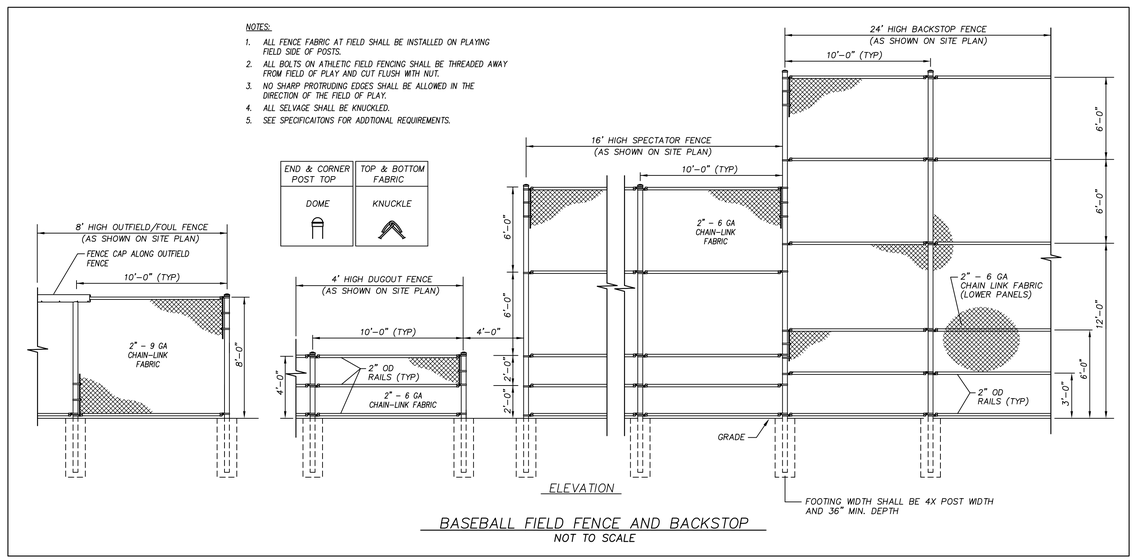


STRIP DRAIN

COLLECTOR DRAIN

NOTE: REFER TO SPEC. FOR ADDITIONAL INFORMATION.

FIELD SUB-DRAIN COMPONENTS
NOT TO SCALE



ELEVATION

BASEBALL FIELD FENCE AND BACKSTOP
NOT TO SCALE

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carollna 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Ralelgh, North Carollna 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

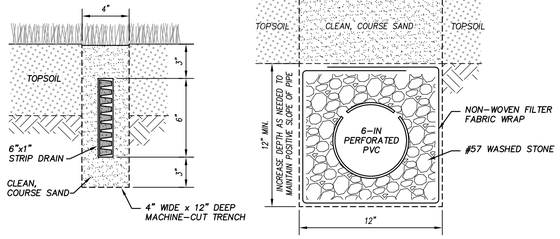
PROJECT NO. 02000.000

SHEET TITLE

PAVING_& HARDSCAPE DETAILS

SHEET NUMBER

C-09.04



STRIP DRAIN COLLECTOR DRAIN

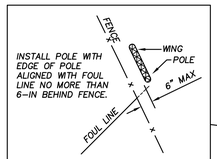
NOTE: REFER TO SPEC. 02720 FOR ADDITIONAL INFORMATION.

FIELD SUB-DRAIN COMPONENTS
NOT TO SCALE

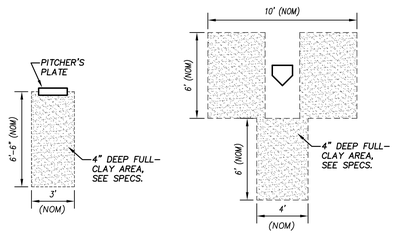
SOFTBALL FIELD EQUIPMENT

ITEM	QTY	NOTES
BASES	3	
HOME PLATE	3	2 AT BULLPENS
PITCHER'S PLATE	3	2 AT BULLPENS
FOUL POLE	2	
SAND/CLAY SURFACE	934-SY	INFILED
SAND/CLAY SURFACE	20-SY	DUGOUT CATCHER AREAS, TOTAL
SAND/CLAY SURFACE	20-SY	DUGOUT PITCHER'S MOUNDS, TOTAL
8'H FENCE	674-LF	
12'H FENCE	80-LF	
18'H BACKSTOP	40-LF	
FENCE RAIL PADDING	400-LF	OUTFIELD
STRIP DRAIN	680-LF	
COLLECTOR DRAIN	240-LF	
TRENCH DRAIN	70-LF	AT DUGOUTS

NOTE: SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.



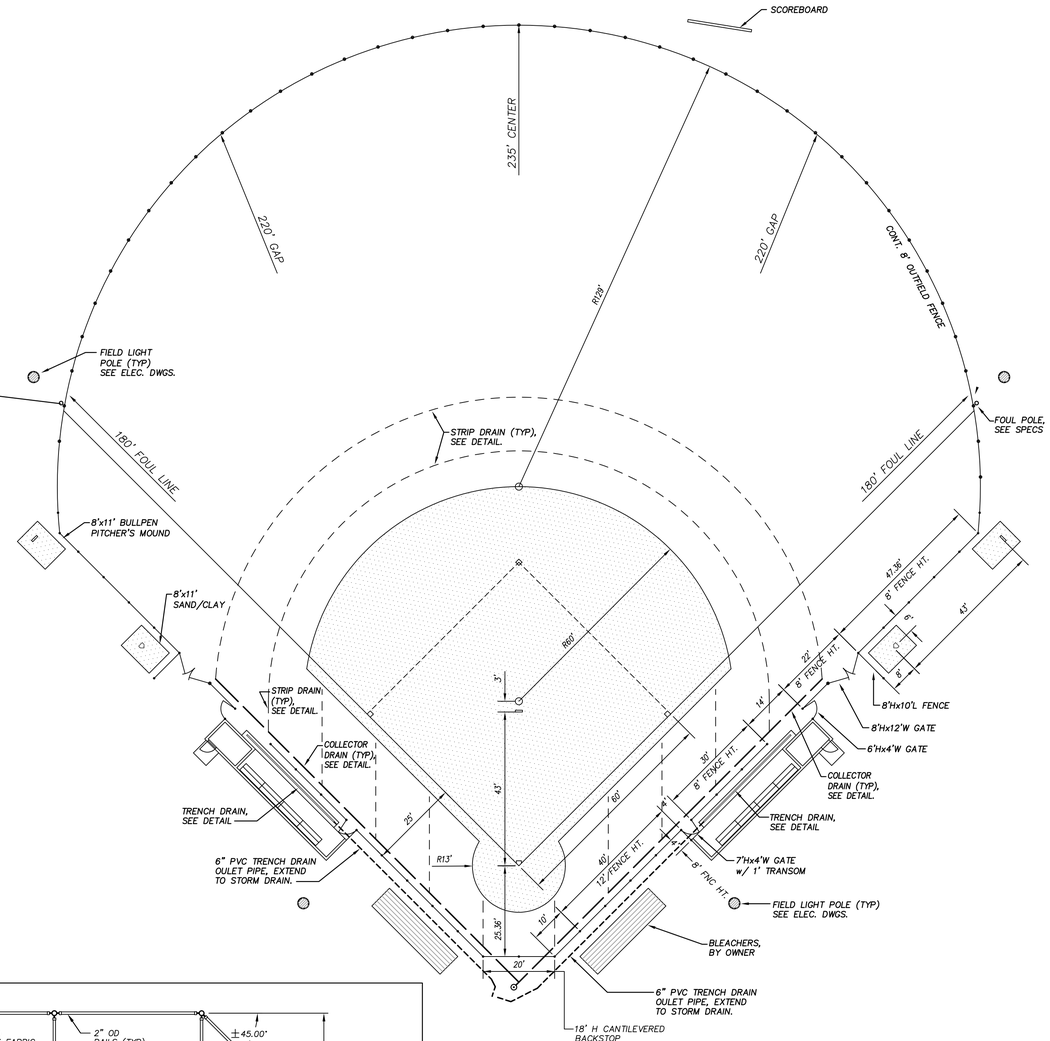
FOUL POLE INSET
SCALE: 1-IN = 2-FT



PITCHER'S CLAY BATTER'S/CATCHER'S BOX CLAY

NOTES:
1. SEE SPEC. 02885 FOR ADDITIONAL INFORMATION.
2. PROVIDE CLAY ALSO AT EACH PITCHER'S PLATE AND CATCHER'S BOX AT BULLPENS.

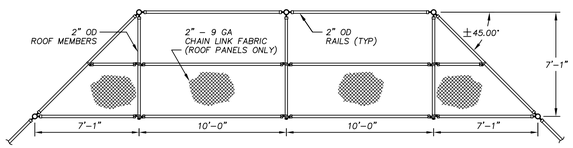
PITCHER'S AND BATTER'S BOX CLAY DETAILS
SCALE: 1-IN = 5-FT



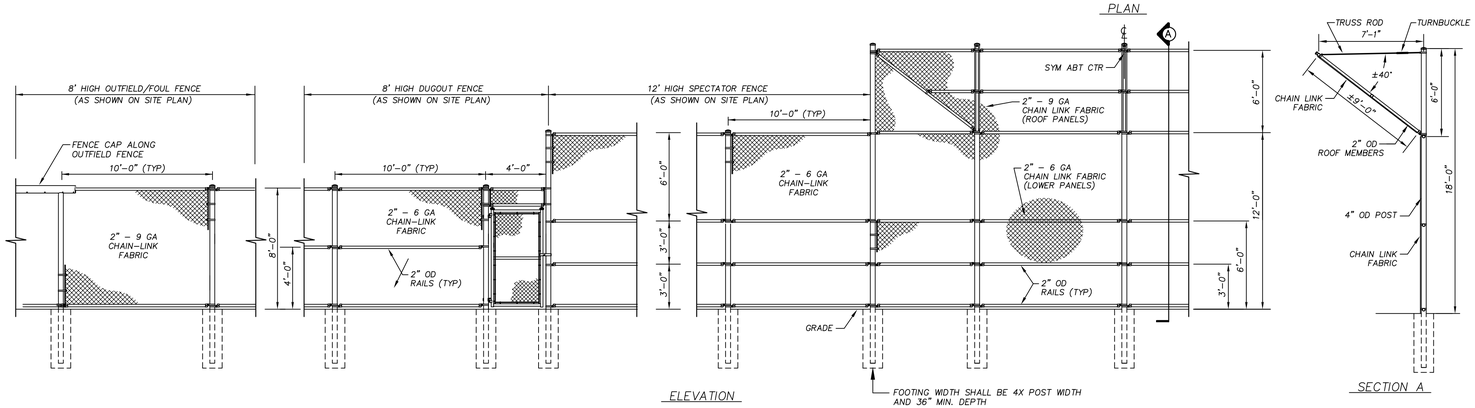
SOFTBALL FIELD PLAN
SCALE: 1-IN = 20-FT

NOTES:
1. ALL FENCE FABRIC AT FIELD SHALL BE INSTALLED ON THE PLAYING SURFACE SIDE OF POSTS.
2. ALL BOLTS ON ATHLETIC FIELD FENCING SHALL BE THREADED AWAY FROM FIELD OF PLAY AND CUT FLUSH WITH NUT.
3. NO SHARP PROTRUDING EDGES SHALL BE ALLOWED IN THE DIRECTION OF THE FIELD OF PLAY.
4. ALL SELVAGE SHALL BE KNUCKLED.
5. SEE SPECIFICAITONS FOR ADDTIONAL REQUIREMENTS.

END & CORNER POST TOP	TOP & BOTTOM FABRIC
DOME	KNUCKLE



PLAN



ELEVATION SECTION A

SOFTBALL FIELD FENCE AND BACKSTOP
NOT TO SCALE

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Ralelgh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

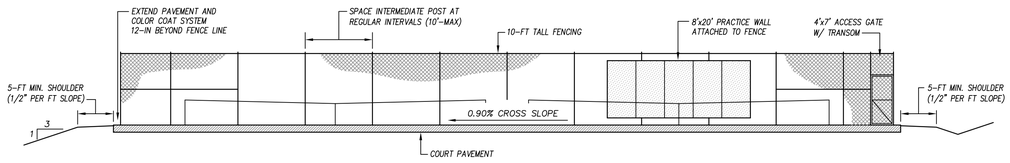
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

SHEET TITLE
PAVING_& HARDSCAPE DETAILS

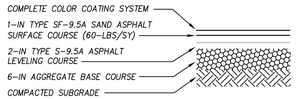
SHEET NUMBER
C-09.05



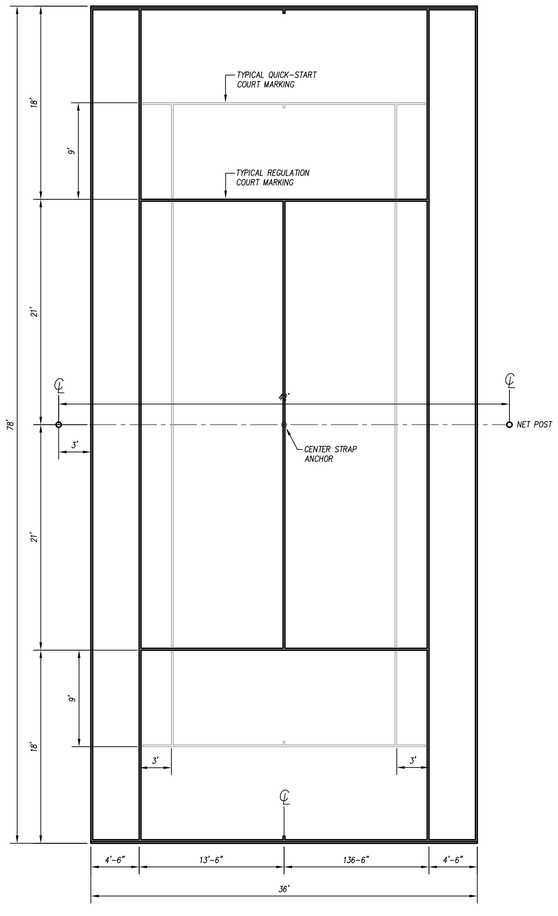
COURT ELEVATION
NTS

NOTES:

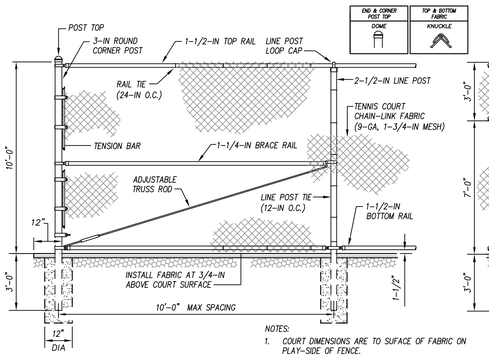
1. ALL DIMENSIONS ARE TO THE OUTSIDE EDGE OF LINES.
2. ALL REGULATION PLAYING LINES SHALL BE "WHITE" AND 2-IN IN WIDTH EXCEPT FOR REGULATION BASE LINES, WHICH SHALL BE 4-IN IN WIDTH.
3. ALL 60-FT "QUICK START" COURT LINES WHICH SHALL BE A DARKER SHADE OF THE INNER-COURT COLOR.
4. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.



COURT PAVEMENT SECTION
NTS



COURT LAYOUT PLAN
NTS

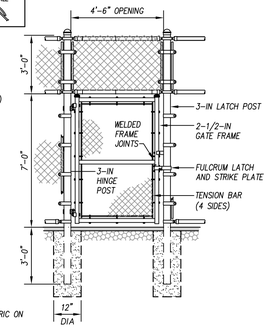


TYPICAL ELEVATION
NTS

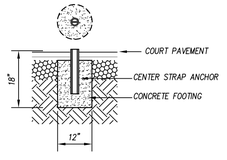
NOTES:

1. COURT DIMENSIONS ARE TO SUFACE OF FABRIC ON PLAY-SIDE OF FENCE.
2. FABRIC SHALL BE INSTALLED ON PLAY-SIDE OF FENCE.
3. PIPE DIMENSIONS SHOWN ARE NOMINAL PIPE SIZE.
4. BOLTS ON ALL FENCE SHALL BE CUT FLUSH WITH NUT. NO SHARP PROTRUDING EDGES ALLOWED ON PLAY-SIDE OF FENCE.
5. CAUTION: CONSULT MANUFACTURER'S RECOMENDATIONS BEFORE INSTALLING A WIND SCREEN ON THIS FENCE AS STRONG WINDS CAN CAUSE DAMAGE TO THE FENCE.
6. SEE SPECS FOR ADDITIONAL INFORMATION.

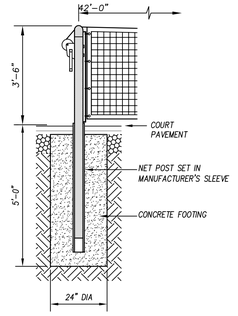
TENNIS COURT FENCING
NTS



ACCESS GATE
NTS



CENTER STRAP ANCHOR
NTS



NET POST ANCHOR
NTS

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

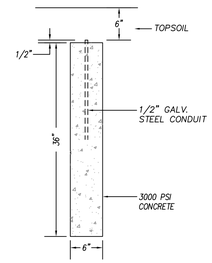
PROJECT NO. 02000.000

SHEET TITLE

PAVING_& HARDSCAPE DETAILS

SHEET NUMBER

C-09.06



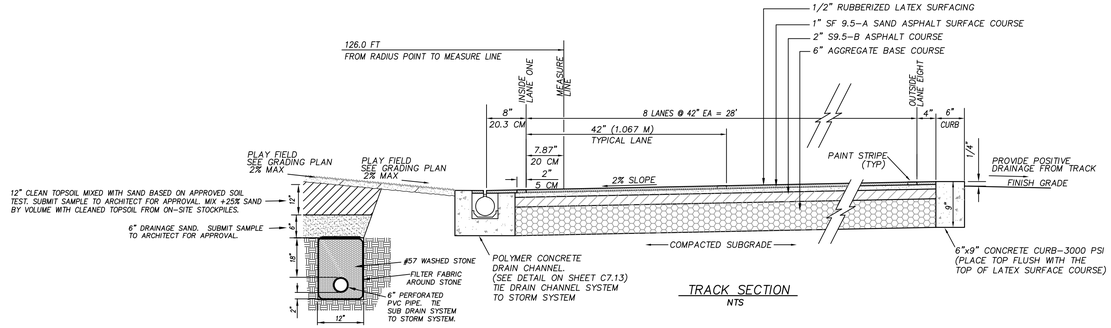
PERMANENT RADIUS MONUMENT

GENERAL NOTES:

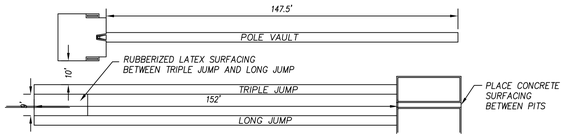
1. ALL CONSTRUCTION SHALL MEET CURRENT NATIONAL FEDERATION OF STATE HIGH SCHOOL ASSOCIATIONS (NFSHSA) AND U.S. TENNIS COURT AND TRACK BUILDERS ASSOCIATION STANDARDS.
2. ALL TRACK LANE LINES TO BE 2" WIDE, WHITE LINES.
3. SLOPE REQUIREMENTS: LATERAL – 2:100 (SLOPED TO THE INSIDE OF TRACK) RUNNING DIRECTION – 1:1000
4. REFER TO SPECIFICATION SECTIONS 321800 AND 325000 FOR ADDITIONAL REQUIREMENTS.

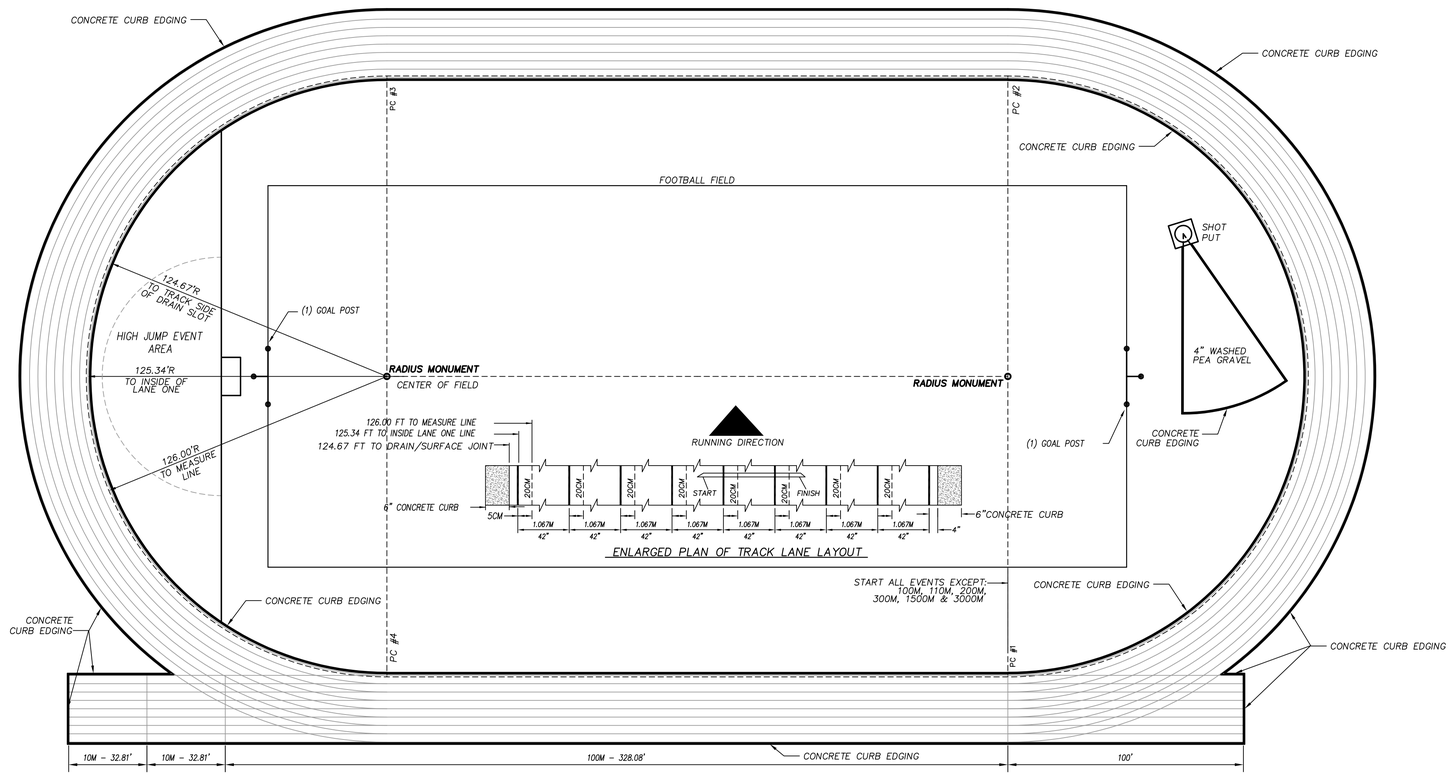
TRACK MARKING REQUIREMENTS:

1. APPLICATION OF MARKINGS SHALL BE PERFORMED BY AN EXPERIENCED TRACK PAINTER WITH SUITABLE EQUIPMENT AND KNOWLEDGE OF THE RELATIVE POSITIONS OF THE DESIGNATED POINTS TO THE PAINTED MARKINGS.
2. ALL 400 METER LANE LINES, START AND FINISH LINES, AND EVENT MARKINGS SHALL BE ACCURATELY POSITIONED AND MARKED IN ACCORDANCE WITH THE CURRENT SPECIFICATIONS OF THE NATIONAL FEDERATION OF STATE HIGH SCHOOL ASSOCIATIONS (NFSHSA), 816-464-5400.
3. A DRAWING SHOWING THE PROPOSED MARKING LAYOUT SHALL BE SUBMITTED BY THE CONTRACTOR FOR APPROVAL PRIOR TO APPLICATION OF ANY LINES ON THE TRACK SURFACE.
4. MARKING PAINT SHALL BE AS APPROVED BY THE MANUFACTURER FOR APPLICATION ON THE SURFACE COURSE FINISH MATERIAL. PAINTING SHALL BE PERFORMED BY SKILLED PERSONS IN A WORKMANLIKE MANNER IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
5. UPON COMPLETION OF THE MARKINGS THE CONTRACTOR SHALL FURNISH THE OWNER WITH FIVE COPIES OF A DRAWING SHOWING ALL LINES AND MARKINGS THAT HAVE BEEN APPLIED. THE DRAWING SHALL CONTAIN A STATEMENT SIGNED AND SEALED BY A PROFESSIONAL LAND SURVEYOR, CERTIFYING THAT MONUMENTATION AND THE LINES AS THUS MARKED ARE IN ACCORDANCE WITH THE RULES OF THE NFSHSA. NO MINUS TOLERANCE IS ALLOWED FOR THE LENGTH OF ANY EVENT.
6. REFER TO SPECIFICATION SECTION 325000 FOR ADDITIONAL SURFACING AND MARKING REQUIREMENTS.



TRACK SECTION
NTS





400 METER EVENT MARKING LAYOUT
1"=30'

TRACK AND FIELD EVENTS DETAILS

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY
NOT FOR
CONSTRUCTION

SHEET ISSUE

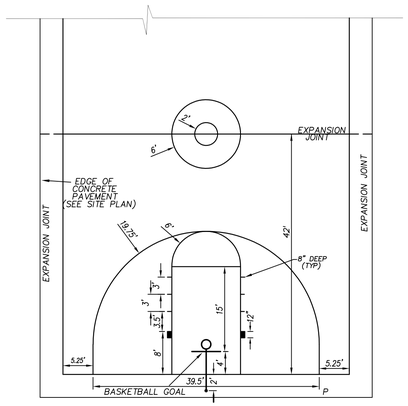
1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

SHEET TITLE
PAVING_& HARDSCAPE DETAILS

SHEET NUMBER
C-09.07

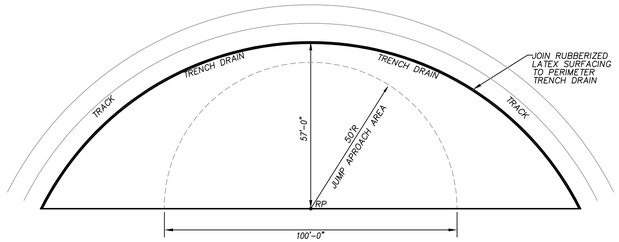


PAVEMENT SECTION

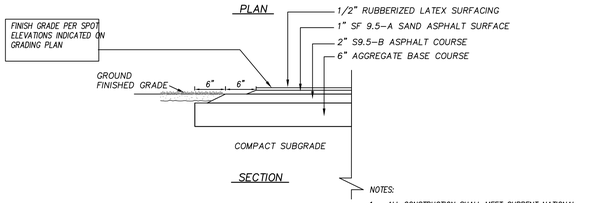
CONCRETE BASE:
4–IN THICK
3,000–PSI ABC
6x6–W1.4xW1.4 WWF
FINISH PER SPECIFICATIONS

NOTES:
1. REFER TO SPECIFICATION SECTION 321800 FOR SURFACING AND MARKING REQUIREMENTS.
2. REFER TO SPECIFICATION SECTION 325000 FOR GOAL REQUIREMENTS.
3. MARK COURT PER NFSHSA STANDARDS.
4. INSTALL EXPANSION JOINTS AT MID COURT LINE AND BETWEEN ADJACENT COURTS.

BASKETBALL COURT LAYOUT N.T.S.



PLAN

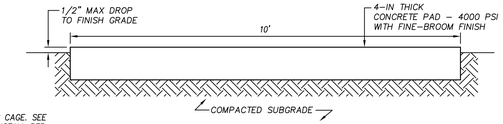


SECTION

NOTES:
1. ALL CONSTRUCTION SHALL MEET CURRENT NATIONAL FEDERATION OF STATE HIGH SCHOOL ASSOCIATIONS (NFSHSA) AND U.S. TENNIS COURT AND TRACK BUILDERS ASSOCIATION STANDARDS.
2. REFER TO SPECIFICATION SECTIONS 321800 AND 325000.

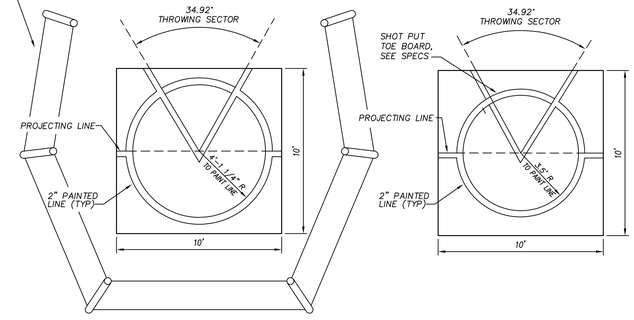
HIGH JUMP DETAIL N.T.S.

NOTES:
1. ALL CONSTRUCTION SHALL MEET CURRENT NATIONAL FEDERATION OF STATE HIGH SCHOOL ASSOCIATIONS (NFSHSA) AND U.S. TENNIS COURT AND TRACK BUILDERS ASSOCIATION STANDARDS.
2. REFER TO SPECIFICATION SECTIONS 321800 AND 325000.



REMOVABLE DISCUS CAGE. SEE SPECIFICATIONS. INSTALL PER MANUFACTURER'S INSTRUCTIONS.

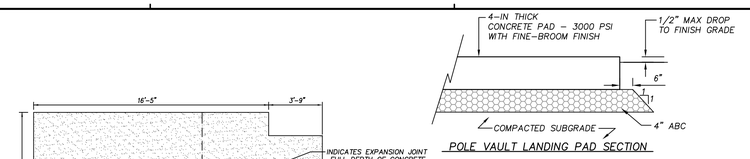
DISCUS & SHOT PUT CIRCLE PAD SECTIONS



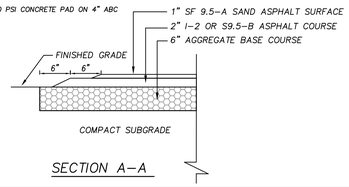
DISCUS CIRCLE PLAN

SHOT PUT CIRCLE PLAN

DISCUS AND SHOTPUT DETAILS N.T.S.



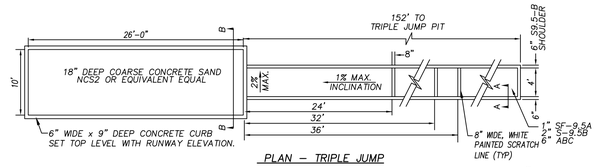
POLE VAULT LANDING PAD SECTION



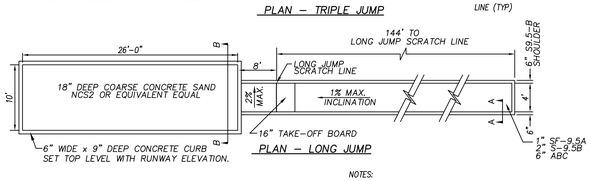
SECTION A–A

NOTES:
1. ALL CONSTRUCTION SHALL MEET CURRENT NATIONAL FEDERATION OF STATE HIGH SCHOOL ASSOCIATIONS (NFSHSA) AND U.S. TENNIS COURT AND TRACK BUILDERS ASSOCIATION STANDARDS.
2. REFER TO SPECIFICATION SECTIONS 321800 AND 325000.

POLE VAULT LANDING N.T.S.

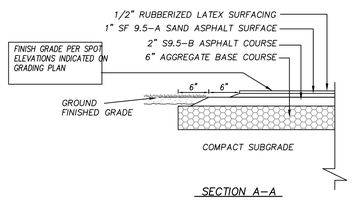


PLAN – TRIPLE JUMP

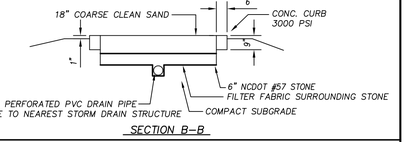


PLAN – LONG JUMP

NOTES:
1. ALL CONSTRUCTION SHALL MEET CURRENT NATIONAL FEDERATION OF STATE HIGH SCHOOL ASSOCIATIONS (NFSHSA) AND U.S. TENNIS COURT AND TRACK BUILDERS ASSOCIATION STANDARDS.
2. REFER TO SPECIFICATION SECTIONS 321800 AND 325000.
3. COORDINATE WITH SCHOOL ATHLETIC DIRECTOR PRIOR TO STRIPING.



SECTION A–A



SECTION B–B

LONG/TRIPLE JUMP DETAIL N.T.S.

Felton Grove High School
8550 Stephenson Road Apex, NC 27539

Owner
Wake County Public Schools
11 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
A Division of Bennett & Pless
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design, PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

Envelope Consultant
Rick Nuhn Engineering
1913 Thayer Circle
Greensboro, North Carolina 27407
(336) 855-1182

Food Service
KRM
4230 Folkston Drive
Charlotte, North Carolina 28205
(704) 724-1045

Theatrical & Acoustic Consultant
Thorburn Associates
2500 Gateway Centre Blvd, Suite 800
Morrisville, North Carolina 27560
(919) 463-9995

Parking Consultant
Walker Consultants
13860 Ballantyne Corporate Pl, Suite 140
Charlotte, North Carolina 28277
(704) 247-6230

SEAL | 03/26/2021

PRELIMINARY NOT FOR CONSTRUCTION

SHEET ISSUE

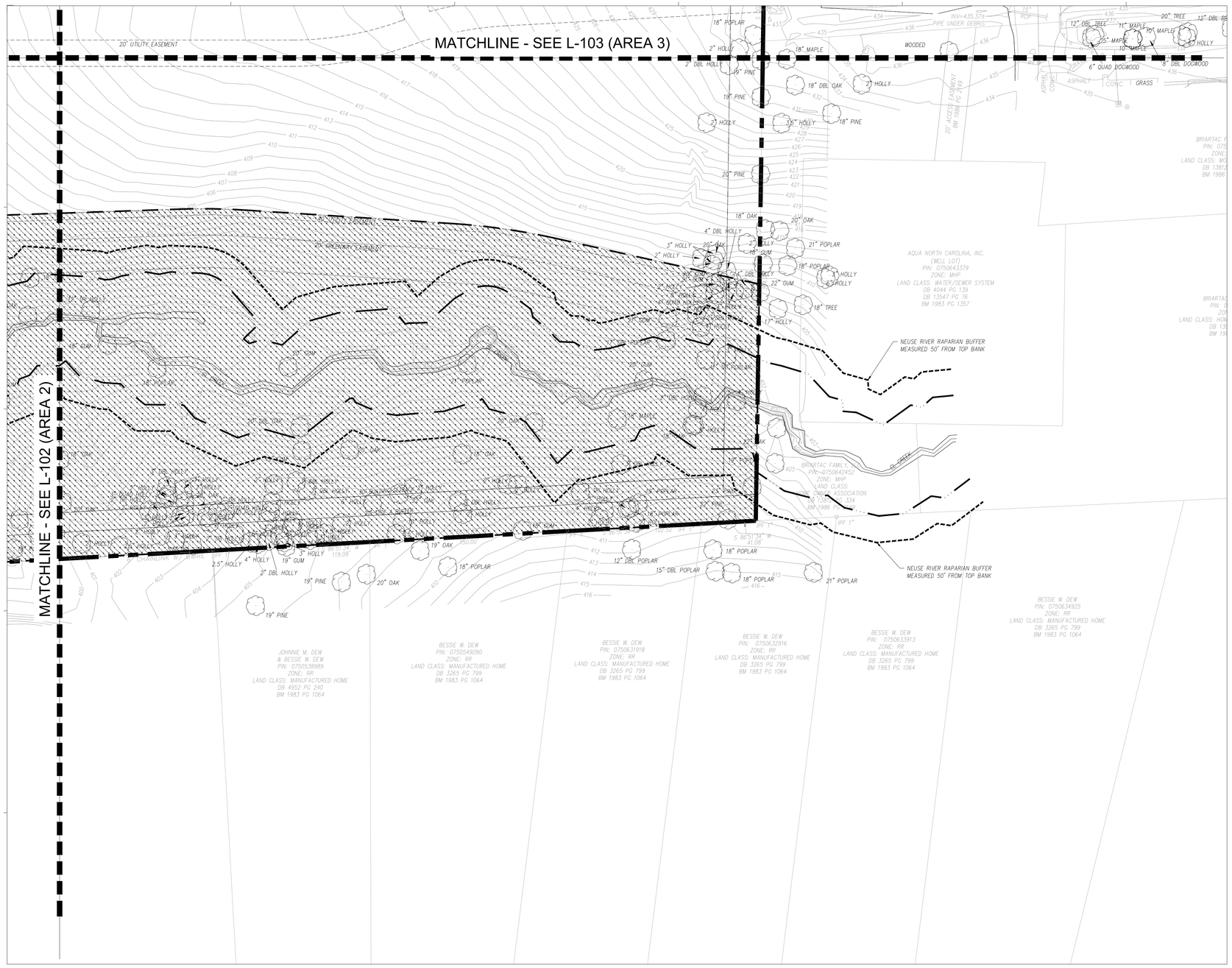
1	Design Development	11/20/20
2	TOA Major Site Plan Submittal #1	12/1/20
3	TOA Major Site Plan Submittal #2	2/12/21
4	TOA Major Site Plan Submittal #3	3/05/21
5	60% Construction Documents	3/26/21

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

SHEET TITLE
PAVING_& HARDSCAPE DETAILS

SHEET NUMBER
C-09.08



1 L-01.01

RESOURCE CONSERVATION AREA 1

1"=40'-0"

0 20' 40' 80'

RESOURCE CONSERVATION AREA 581,337 sf
Preserve undisturbed forested areas, floodplains, riparian streams and riparian buffers.
-

RESOURCE CONSERVATION AREAS	
DESCRIPTION	AREA
GROSS SITE AREA	2,895,867 SF (66.48 acres)
REQUIRED RESOURCE CONSERVATION AREA (20% GROSS SITE AREA)	579,173 SF (13.30 acres)
RESOURCE CONSERVATION AREA PROVIDED	581,337 SF (13.35 acres)

The signatures affixed below certify that this sheet has been reviewed and approved solely per the certifications signed to the cover sheet of these construction plans.

PW - Transportation	Date	WR - Stormwater	Date
Building Inspections	Date	Planning	Date
WR - Utility Engineering	Date	Planning - Transportation	Date
Electric	Date	Fire	Date
WR - S&E	Date	Parks, Recreation & Cultural Res.	Date

NOT FOR CONSTRUCTION

H12/Felton Grove High School

8550 Stephenson Road Apex, NC 27539

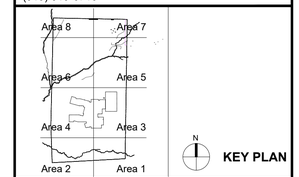
Owner
Wake County Public Schools
111 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716



KEY PLAN

SEAL | DATE 03/26/21

SHEET ISSUE

01	DESIGN DEVELOPMENT	11/20/20
02	TOA MAJOR SITE PLAN SUBMITTAL	12/01/20
03	TOA MAJOR SITE PLAN RESUBMITTAL	02/12/21
04	TOA MAJOR SITE PLAN SUBMITTAL #3	03/05/21
05	60% CONSTRUCTION DOCUMENTS	03/26/21
06	TOA MAJOR SITE PLAN SUBMITTAL #4	03/26/21

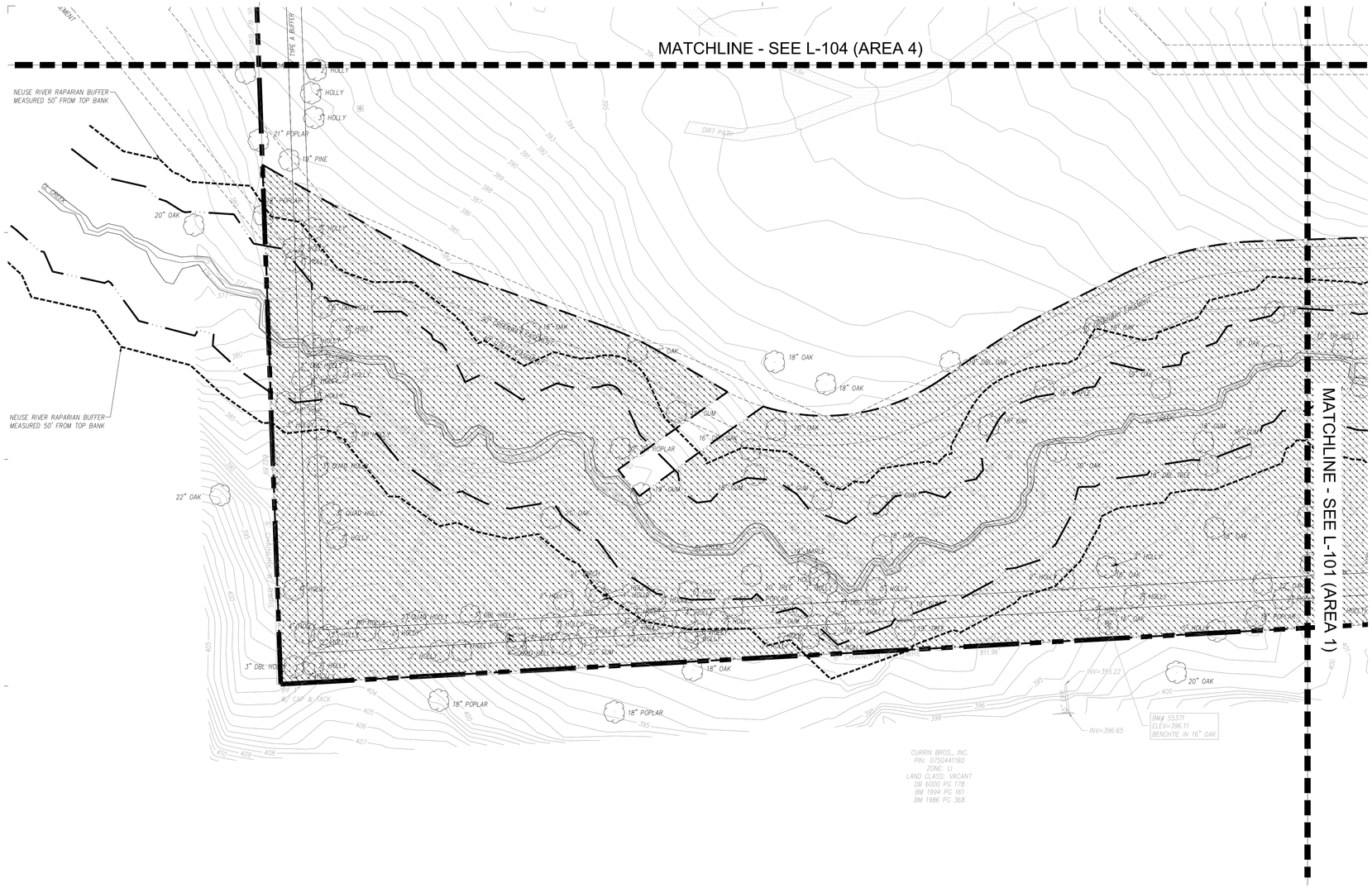
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 19150.000

SHEET TITLE
RESOURCE CONSERVATION AREA 1

SHEET NUMBER
L-01.01



1 L-01.02

RESOURCE CONSERVATION AREA 2

1"=40'-0"

0 20' 40' 80'

RESOURCE CONSERVATION AREA 581,337 sf
Preserve undisturbed forested areas, floodplains, riparian streams and riparian buffers.
-

RESOURCE CONSERVATION AREAS	
DESCRIPTION	AREA
GROSS SITE AREA	2,895,867 SF (66.48 acres)
REQUIRED RESOURCE CONSERVATION AREA (20% GROSS SITE AREA)	579,173 SF (13.30 acres)
RESOURCE CONSERVATION AREA PROVIDED	581,337 SF (13.35 acres)

The signatures affixed below certify that this sheet has been reviewed and approved solely per the certifications signed to the cover sheet of these construction plans.

PW - Transportation	Date	WR - Stormwater	Date
Building Inspections	Date	Planning	Date
WR - Utility Engineering	Date	Planning - Transportation	Date
Electric	Date	Fire	Date
WR - S&E	Date	Parks, Recreation & Cultural Res.	Date

NOT FOR CONSTRUCTION

H12/Felton Grove High School

8550 Stephenson Road Apex, NC 27539

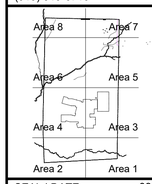
Owner
Wake County Public Schools
111 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716



KEY PLAN

SEAL | DATE 03/26/21

SHEET ISSUE

01	DESIGN DEVELOPMENT	11/20/20
02	TOA MAJOR SITE PLAN SUBMITTAL	12/01/20
03	TOA MAJOR SITE PLAN RESUBMITTAL	02/12/21
04	TOA MAJOR SITE PLAN SUBMITTAL #3	03/05/21
05	60% CONSTRUCTION DOCUMENTS	03/26/21
06	TOA MAJOR SITE PLAN SUBMITTAL #4	03/26/21

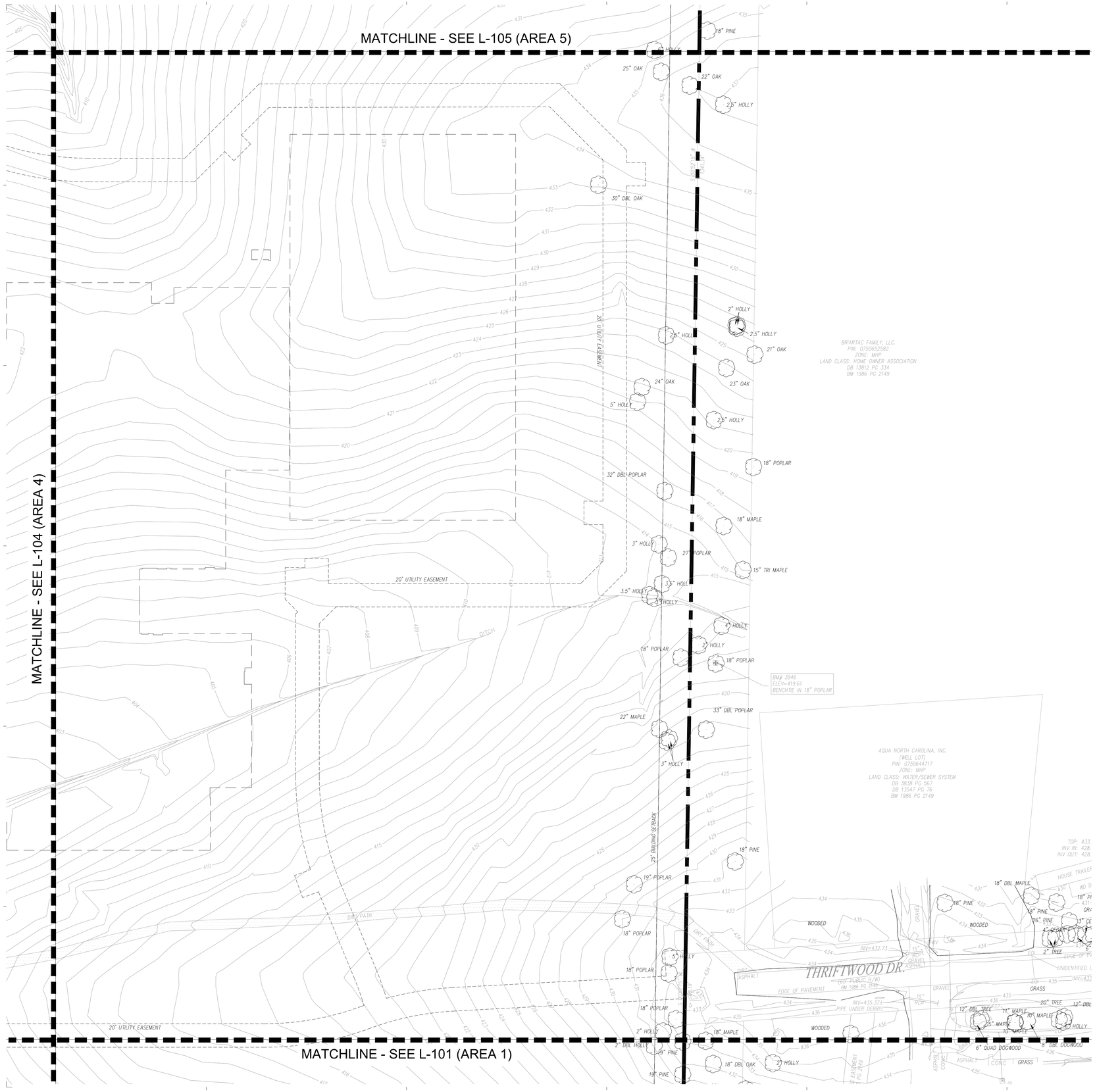
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 19150.000

SHEET TITLE
RESOURCE CONSERVATION AREA 2

SHEET NUMBER
L-01.02



RESOURCE CONSERVATION AREA 581,337 sf
Preserve undisturbed forested areas, floodplains, riparian streams and riparian buffers.
-

RESOURCE CONSERVATION AREAS	
DESCRIPTION	AREA
GROSS SITE AREA	2,895,867 SF (66.48 acres)
REQUIRED RESOURCE CONSERVATION AREA (20% GROSS SITE AREA)	579,173 SF (13.30 acres)
RESOURCE CONSERVATION AREA PROVIDED	581,337 SF (13.35 acres)

The signatures affixed below certify that this sheet has been reviewed and approved solely per the certifications signed to the cover sheet of these construction plans.

PW - Transportation	Date	WR - Stormwater	Date
Building Inspections	Date	Planning	Date
WR - Utility Engineering	Date	Planning - Transportation	Date
Electric	Date	Fire	Date
WR - S&E	Date	Parks, Recreation & Cultural Res.	Date

1 L-01.03

RESOURCE CONSERVATION AREA 3

1"=40'-0" 0 20' 40' 80'

NOT FOR CONSTRUCTION

H12/Felton Grove High School

8550 Stephenson Road Apex, NC 27539

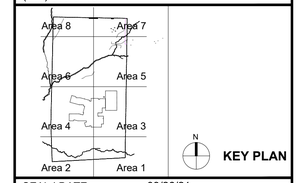
Owner
Wake County Public Schools
111 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716



KEY PLAN

SEAL | DATE 03/26/21

SHEET ISSUE

01	DESIGN DEVELOPMENT	11/20/20
02	TOA MAJOR SITE PLAN SUBMITTAL	12/01/20
03	TOA MAJOR SITE PLAN RESUBMITTAL	02/12/21
04	TOA MAJOR SITE PLAN SUBMITTAL #3	03/05/21
05	60% CONSTRUCTION DOCUMENTS	03/26/21
06	TOA MAJOR SITE PLAN SUBMITTAL #4	03/26/21

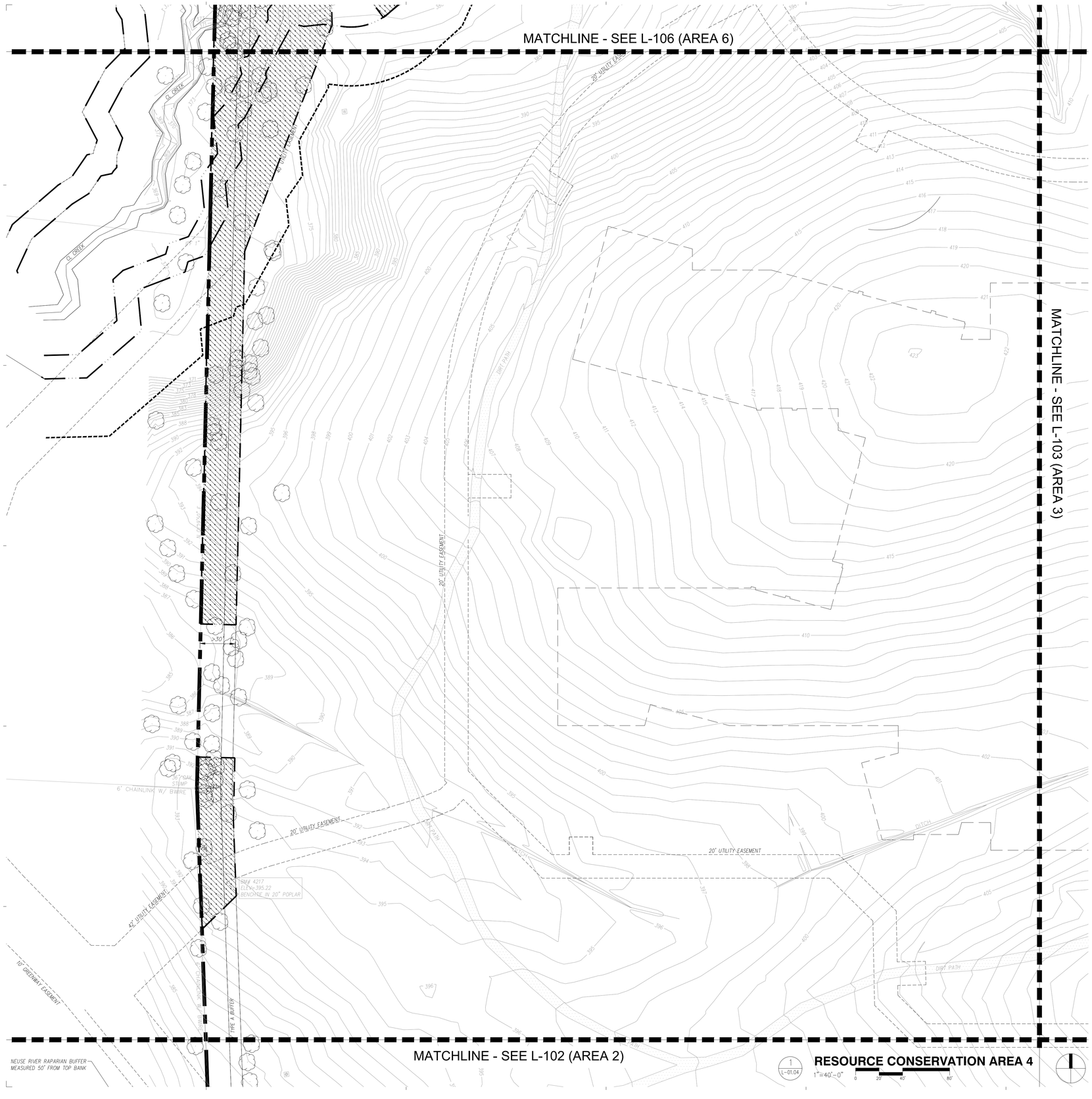
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 19150.000

SHEET TITLE
RESOURCE CONSERVATION AREA 3

SHEET NUMBER
L-01.03



1 L-01.04 **RESOURCE CONSERVATION AREA 4**

1"=40'-0" 0 20' 40' 80'

RESOURCE CONSERVATION AREA — 581,337 sf
Preserve undisturbed forested areas, floodplains, riparian streams and riparian buffers.

RESOURCE CONSERVATION AREAS	
DESCRIPTION	AREA
GROSS SITE AREA	2,895,867 SF (66.48 acres)
REQUIRED RESOURCE CONSERVATION AREA (20% GROSS SITE AREA)	579,173 SF (13.30 acres)
RESOURCE CONSERVATION AREA PROVIDED	581,337 SF (13.35 acres)

The signatures affixed below certify that this sheet has been reviewed and approved solely per the certifications signed to the cover sheet of these construction plans.

PW - Transportation	Date	WR - Stormwater	Date
Building Inspections	Date	Planning	Date
WR - Utility Engineering	Date	Planning - Transportation	Date
Electric	Date	Fire	Date
WR - S&E	Date	Parks, Recreation & Cultural Res.	Date

NOT FOR CONSTRUCTION

H12/Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

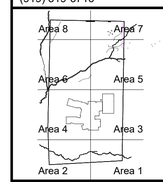
Owner
Wake County Public Schools
111 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716



KEY PLAN

SEAL | DATE 03/26/21

SHEET ISSUE

01	DESIGN DEVELOPMENT	11/20/20
02	TOA MAJOR SITE PLAN SUBMITTAL	12/01/20
03	TOA MAJOR SITE PLAN RESUBMITTAL	02/12/21
04	TOA MAJOR SITE PLAN SUBMITTAL #3	03/05/21
05	60% CONSTRUCTION DOCUMENTS	03/26/21
06	TOA MAJOR SITE PLAN SUBMITTAL #4	03/26/21

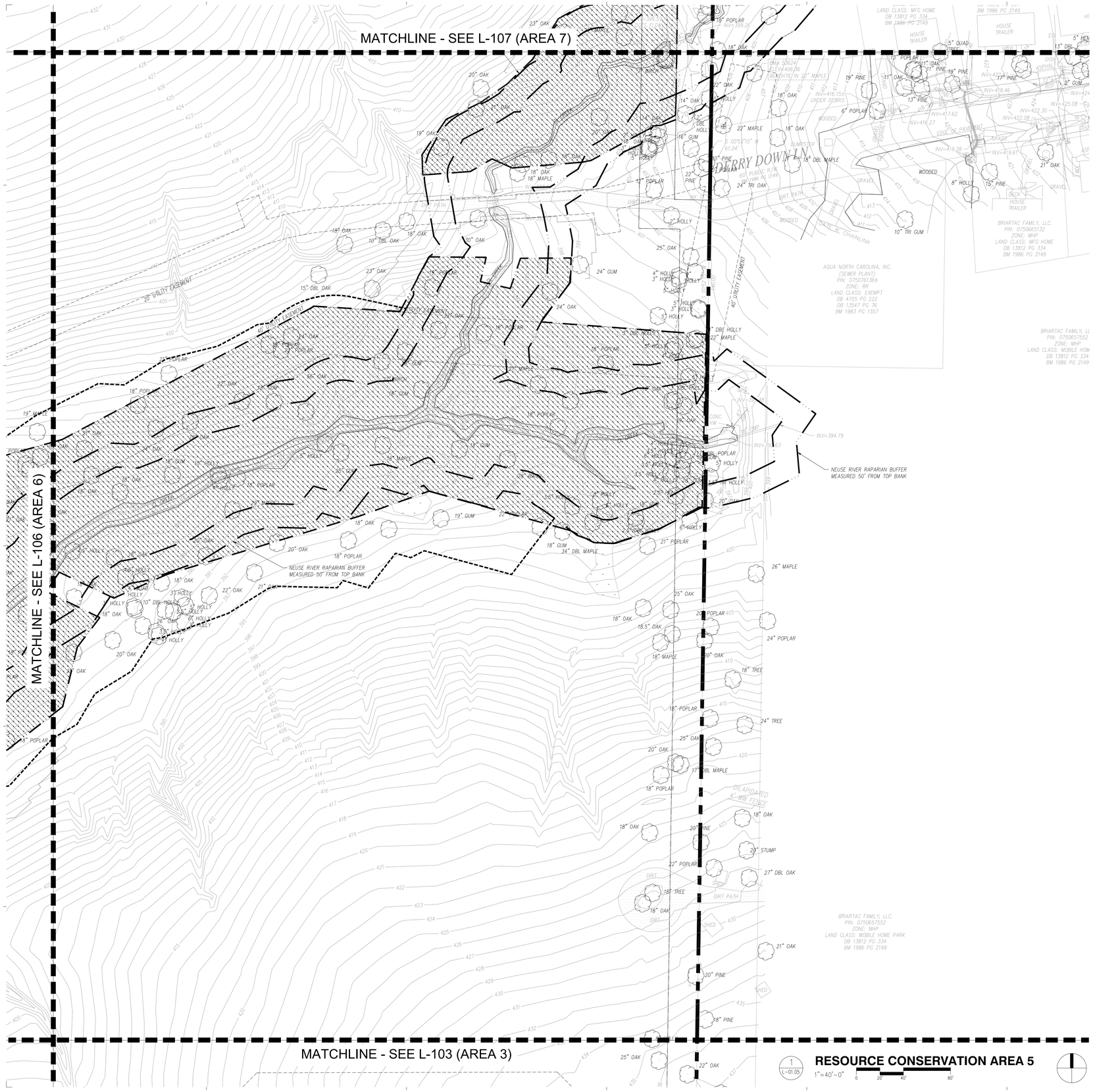
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 19150.000

SHEET TITLE
RESOURCE CONSERVATION AREA 4

SHEET NUMBER
L-01.04



1 L-01.05 **RESOURCE CONSERVATION AREA 5**

1"=40'-0" 0 20' 40' 80'

RESOURCE CONSERVATION AREA 581,337 sf
Preserve undisturbed forested areas, floodplains, riparian streams and riparian buffers.
-

RESOURCE CONSERVATION AREAS	
DESCRIPTION	AREA
GROSS SITE AREA	2,895,867 SF (66.48 acres)
REQUIRED RESOURCE CONSERVATION AREA (20% GROSS SITE AREA)	579,173 SF (13.30 acres)
RESOURCE CONSERVATION AREA PROVIDED	581,337 SF (13.35 acres)

The signatures affixed below certify that this sheet has been reviewed and approved solely per the certifications signed to the cover sheet of these construction plans.

PW - Transportation	Date	WR - Stormwater	Date
Building Inspections	Date	Planning	Date
WR - Utility Engineering	Date	Planning - Transportation	Date
Electric	Date	Fire	Date
WR - S&E	Date	Parks, Recreation & Cultural Res.	Date

NOT FOR CONSTRUCTION

H12/Felton Grove High School

8550 Stephenson Road Apex, NC 27539

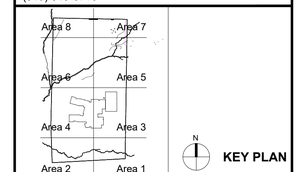
Owner
Wake County Public Schools
111 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716



KEY PLAN

SEAL | DATE 03/26/21

SHEET ISSUE

01	DESIGN DEVELOPMENT	11/20/20
02	TOA MAJOR SITE PLAN SUBMITTAL	12/01/20
03	TOA MAJOR SITE PLAN RESUBMITTAL	02/12/21
04	TOA MAJOR SITE PLAN SUBMITTAL #3	03/05/21
05	60% CONSTRUCTION DOCUMENTS	03/26/21
06	TOA MAJOR SITE PLAN SUBMITTAL #4	03/26/21

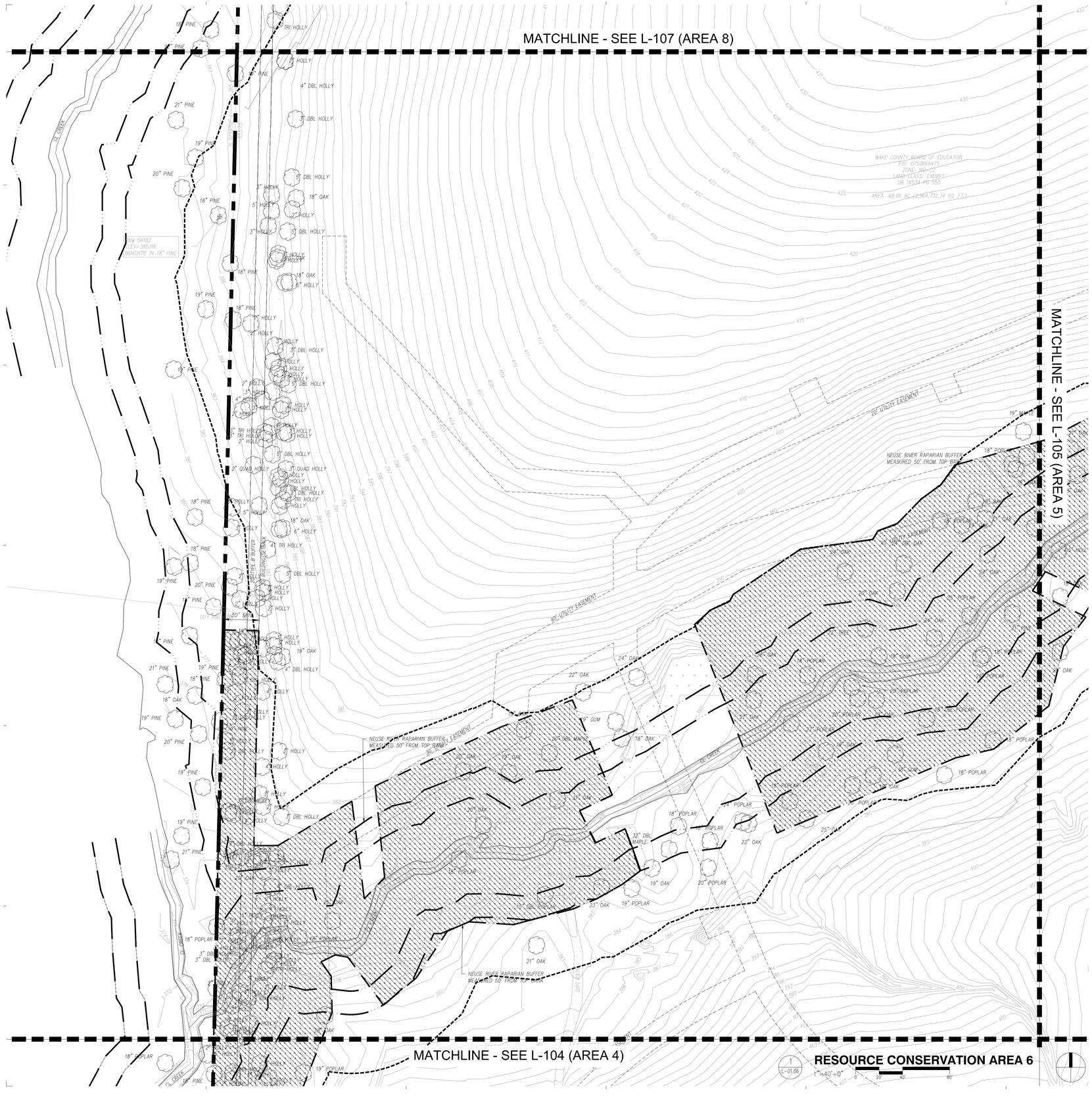
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HERBY SPECIFICALLY RESERVED.

PROJECT NO. 19150.000

SHEET TITLE
RESOURCE CONSERVATION AREA 5

SHEET NUMBER
L-01.05



RESOURCE CONSERVATION AREA 581,337 sf
Preserve undisturbed forested areas, floodplains, riparian streams and riparian buffers.
-

RESOURCE CONSERVATION AREAS	
DESCRIPTION	AREA
GROSS SITE AREA	2,895,867 SF (66.48 acres)
REQUIRED RESOURCE CONSERVATION AREA (20% GROSS SITE AREA)	579,173 SF (13.30 acres)
RESOURCE CONSERVATION AREA PROVIDED	581,337 SF (13.35 acres)

The signatures affixed below certify that this sheet has been reviewed and approved solely per the certifications signed to the cover sheet of these construction plans.

PW - Transportation	Date	WR - Stormwater	Date
Building Inspections	Date	Planning	Date
WR - Utility Engineering	Date	Planning - Transportation	Date
Electric	Date	Fire	Date
WR - S&E	Date	Parks, Recreation & Cultural Res.	Date

NOT FOR CONSTRUCTION

H12/Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

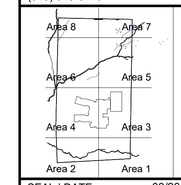
Owner
Wake County Public Schools
111 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716



SEAL | DATE 03/26/21

SHEET ISSUE

01	DESIGN DEVELOPMENT	11/20/20
02	TOA MAJOR SITE PLAN SUBMITTAL	12/01/20
03	TOA MAJOR SITE PLAN RESUBMITTAL	02/12/21
04	TOA MAJOR SITE PLAN SUBMITTAL #3	03/05/21
05	60% CONSTRUCTION DOCUMENTS	03/26/21
06	TOA MAJOR SITE PLAN SUBMITTAL #4	03/26/21

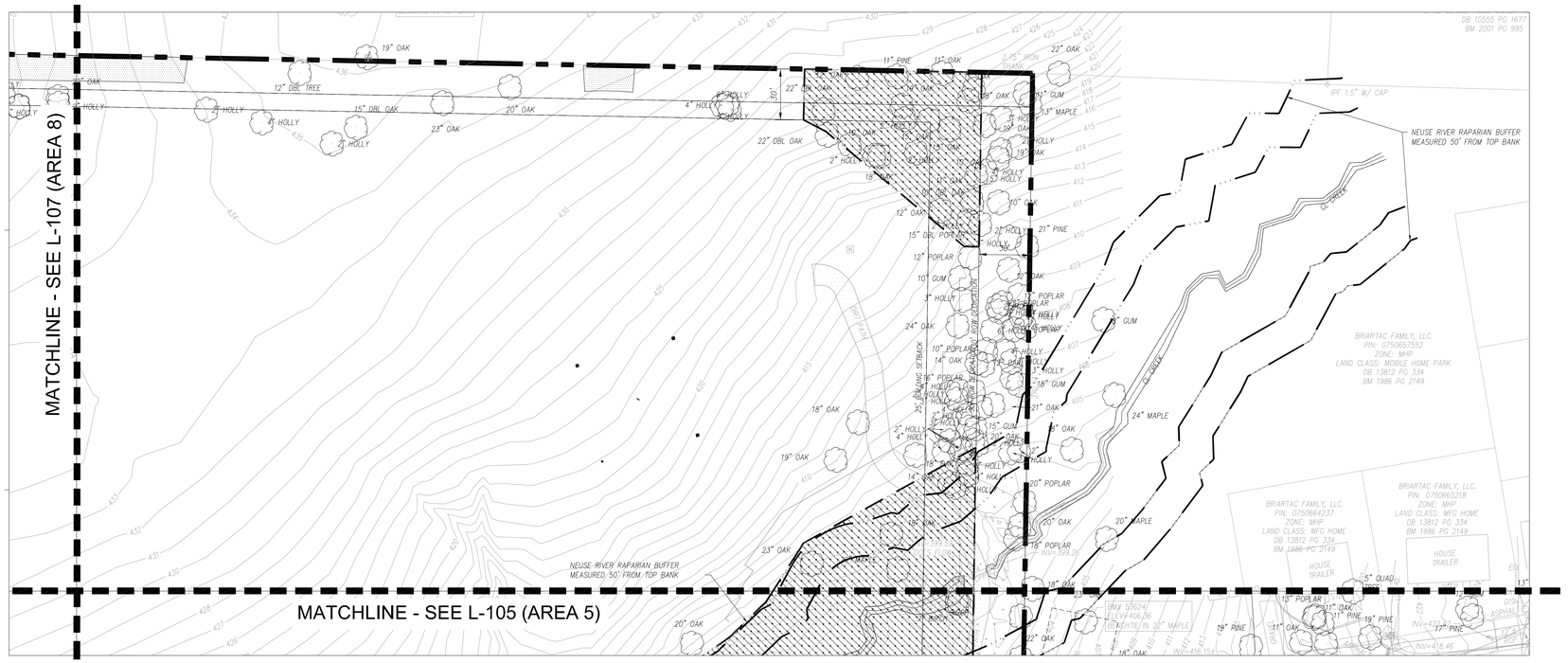
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 19150.000

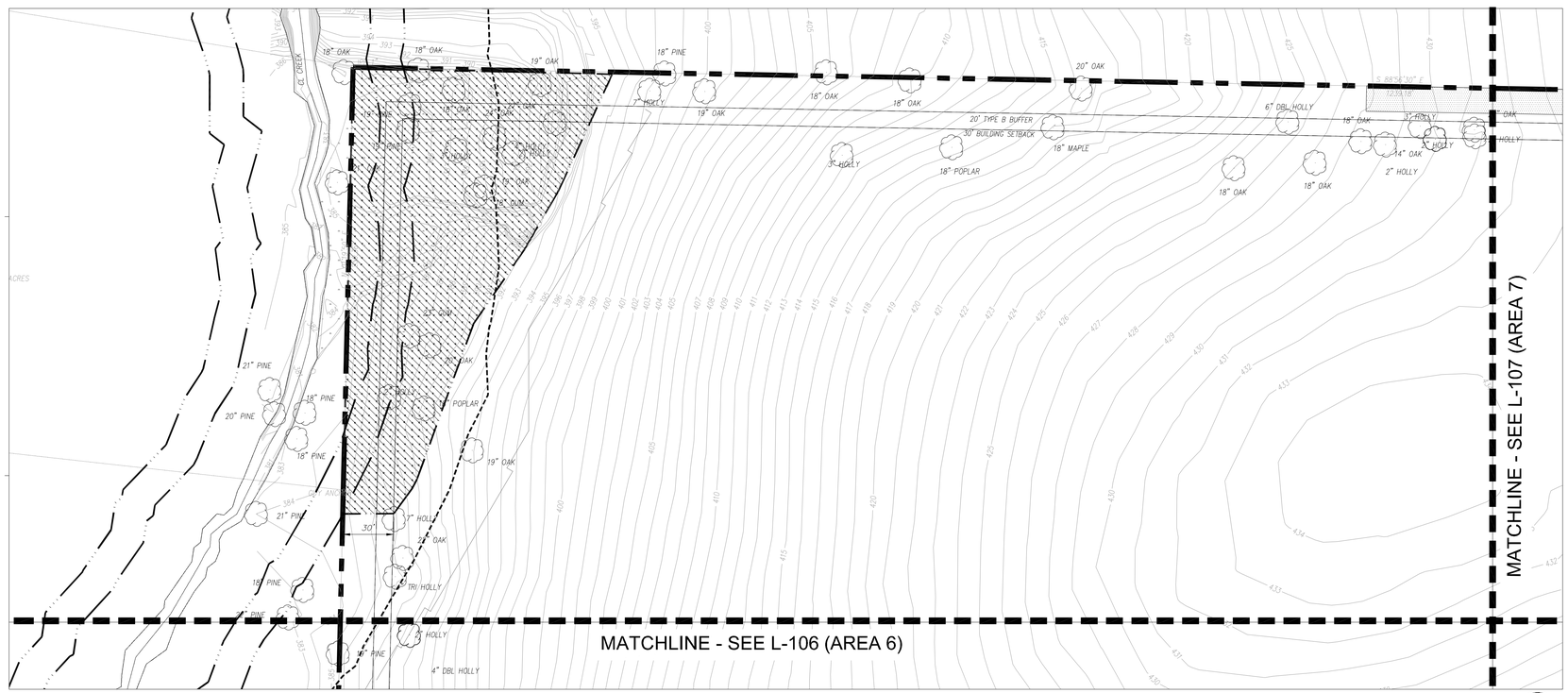
SHEET TITLE
RESOURCE CONSERVATION AREA 6

SHEET NUMBER
L-01.06



1 L-01.07 **RESOURCE CONSERVATION AREA 7**

1"=40'-0" (0, 20, 40, 80)



1 L-01.07 **RESOURCE CONSERVATION AREA 8**

1"=40'-0" (0, 20, 40, 80)

RESOURCE CONSERVATION AREA — 581,337 sf

Preserve undisturbed forested areas, floodplains, riparian streams and riparian buffers.

-

RESOURCE CONSERVATION AREAS	
DESCRIPTION	AREA
GROSS SITE AREA	2,895,867 SF (66.48 acres)
REQUIRED RESOURCE CONSERVATION AREA (20% GROSS SITE AREA)	579,173 SF (13.30 acres)
RESOURCE CONSERVATION AREA PROVIDED	581,337 SF (13.35 acres)

The signatures affixed below certify that this sheet has been reviewed and approved solely per the certifications signed to the cover sheet of these construction plans.

PW - Transportation	Date	WR - Stormwater	Date
Building Inspections	Date	Planning	Date
WR - Utility Engineering	Date	Planning - Transportation	Date
Electric	Date	Fire	Date
WR - S&E	Date	Parks, Recreation & Cultural Res.	Date

NOT FOR CONSTRUCTION

H12/Felton Grove High School

8550 Stephenson Road Apex, NC 27539

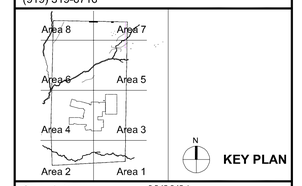
Owner
Wake County Public Schools
111 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716



KEY PLAN

SEAL | DATE 03/26/21

SHEET ISSUE

01	DESIGN DEVELOPMENT	11/20/20
02	TOA MAJOR SITE PLAN SUBMITTAL	12/01/20
03	TOA MAJOR SITE PLAN RESUBMITTAL	02/12/21
04	TOA MAJOR SITE PLAN SUBMITTAL #3	03/05/21
05	60% CONSTRUCTION DOCUMENTS	03/26/21
06	TOA MAJOR SITE PLAN SUBMITTAL #4	03/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

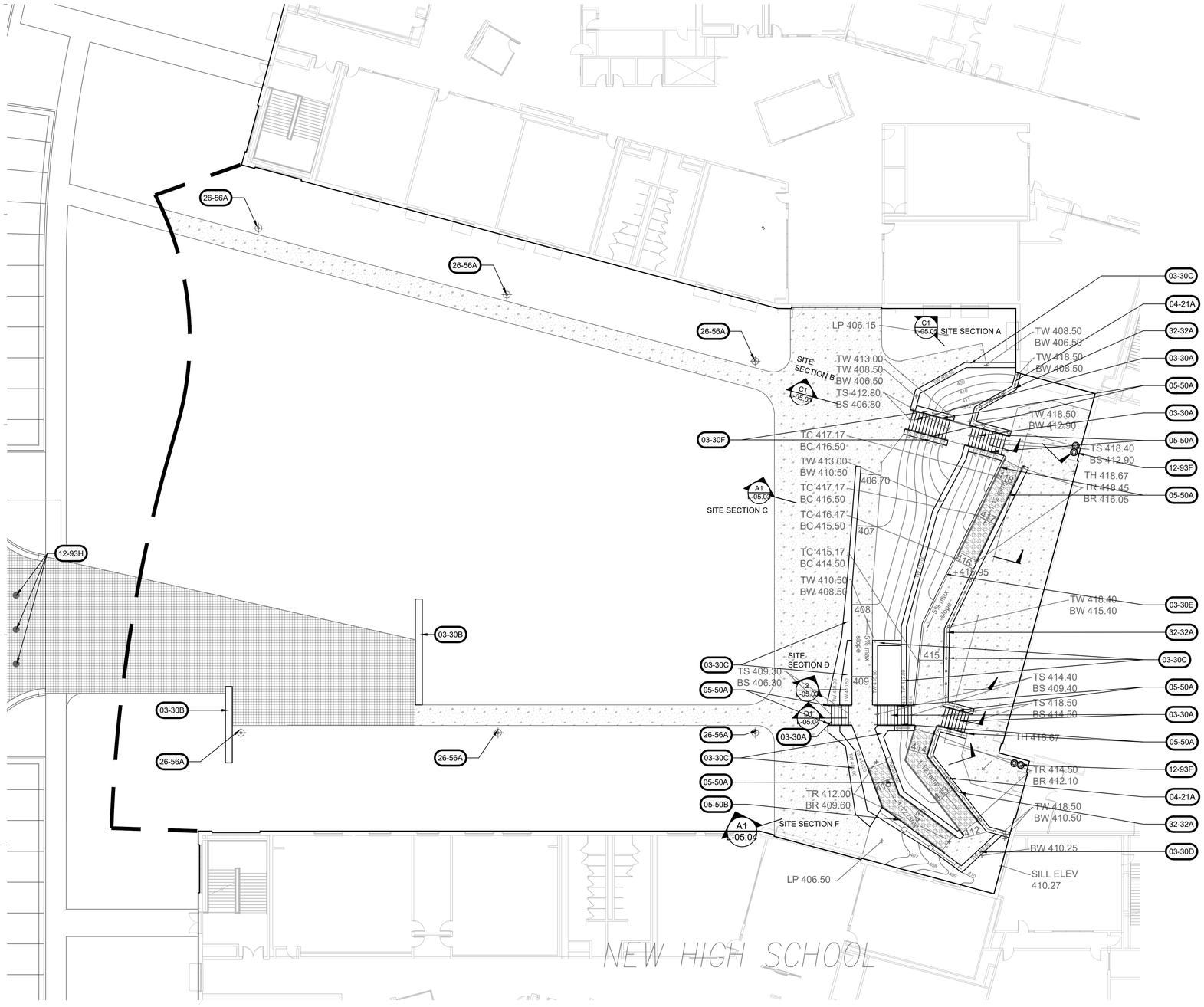
PROJECT NO. 19150.000

SHEET TITLE

RESOURCE CONSERVATION AREAS 7 & 8

SHEET NUMBER

L-01.07



1 L-02.01 **PLAN ENLARGEMENT - COURTYARD BASE BID**

1"=16'-0" 0 8' 16' 32'

SITE FEATURES NOTES

1. SITE UTILITIES SHOWN FOR REFERENCE ONLY. SEE OTHER DISCIPLINE SHEETS FOR PLANS AND DETAILS.
2. AUTOCAD .DWG FILES WILL BE PROVIDED FOR CONSTRUCTION LAYOUT.
3. DO NOT SCALE DRAWINGS FOR FIELD LAYOUT. REFER TO SITE LAYOUT PLAN(S) FOR DIMENSIONS.
4. ALL PAVEMENT MARKINGS INTERRUPTED BY DEMOLITION AND PROPOSED IMPROVEMENTS SHALL BE REPLACED WITH MATCHING COLOR AND WIDTH.
5. REFER TO / FOR CONCRETE PAVING JOINT DETAILS.
   5.1. ALL CONCRETE PAVING JOINTS SHALL BE CONTRACTION JOINT 'A' UNLESS INDICATED OTHERWISE.
6. CURB RAMPS SHALL COMPLY WITH CURB RAMP DRAWING INDEX & GENERAL NOTES, REFER TO /
7. DAMAGE TO EXISTING PAVMENT SHALL BE REPLACED WITH MATCHING COLOR AND FINISH BY CONTRACTOR.

SITE FEATURES LEGEND

- CONSTRUCTION FENCE
- TEMPORARY WORK LIMIT
- TREE PROTECTION FENCING
- IJ / B — ISOLATION JOINT, JOINT TYPE B PER
- ALIGN

REFERENCE NOTES SCHEDULE		
	Cast-In-Place Concrete	
CODE	DESCRIPTION	DETAIL
03-30A	CIP CONC STAIRS	E1/L-05.01
03-30B	CIP CONCRETE. SEATWALL	A5/L-05.01
03-30C	CIP CONCRETE TERRACED WALLS W/ DECORATIVE FORMLINER FINISH	
03-30D	CIP CONCRETE RETAINING WALL	A3/L-05.01
03-30E	CIP CONCRETE PLANTER CURB	
03-30F	CIP CHEEKWALL	
	Unit Masonry	
CODE	DESCRIPTION	DETAIL
04-21A	STRUCTURAL CIP RETAINING WALL W/ DECORATIVE FORMLINER FINISH	
04-21B	MONUMENT SIGN, To be permitted separately	A1/L-05.06
CODE	DESCRIPTION	DETAIL
05-50A	GALVANIZED STEEL HANDRAILS	B1/L-05.01
05-50B	42" PEDESTRIAN GUARDRAIL W/ ADA HANDRAIL GRAB BAR	
	Site Furnishings	
CODE	DESCRIPTION	DETAIL
12-93D	DECORATIVE BOLLARD	D5/L-05.01
12-93E	PLAZA BENCH	C1/L-05.02
12-93F	DUAL TRASH/RECYCLE RECEPTACLE	F5/L-05.01
12-93G	PLAZA BIKE RACK	E1/L-05.02
12-93H	KNOCKDOWN BOLLARD, SEE CIVIL DWGS	
12-93I	FLAGPOLE	
	LIGHTING	
CODE	DESCRIPTION	DETAIL
26-56A	12' HT. PEDESTRIAN LIGHT	A1/L-05.02
	CURBS AND GUTTERS	
CODE	DESCRIPTION	DETAIL
32-17A	CAST IRON DETECTABLE WARNING PLATES	
	FENCES AND GATES	
CODE	DESCRIPTION	DETAIL
32-31A	6' HT. ECS TERRACE FENCE	
32-31B	6' HT. ECS TERRACE DOUBLE GATE	
32-32A	42" PEDESTRIAN GUARDRAIL	C4/L-05.05
	CONCRETE PAVING	
SYMBOL	DESCRIPTION	DETAIL
	CONCRETE PAVEMENT *LIGHT DUTY*	
	CONCRETE PAVEMENT *ADA RAMP*	A1/L-05.01
	CONCRETE PAVEMENT *HEAVY DUTY*	

The signatures affixed below certify that this sheet has been reviewed and approved solely per the certifications signed to the cover sheet of these construction plans.

PW - Transportation	Date	WR - Stormwater	Date
Building Inspections	Date	Planning	Date
WR - Utility Engineering	Date	Planning - Transportation	Date
Electric	Date	Fire	Date
WR - S&E	Date	Parks, Recreation & Cultural Res.	Date

NOT FOR CONSTRUCTION

H12/Felton Grove High School

8550 Stephenson Road Apex, NC 27539

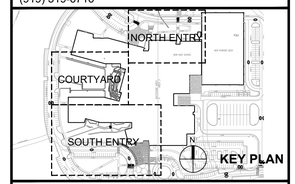
Owner
Wake County Public Schools
111 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716



SEAL | DATE 03/26/21

SHEET ISSUE

01	DESIGN DEVELOPMENT	11/20/20
02	TOA MAJOR SITE PLAN SUBMITTAL	12/01/20
03	TOA MAJOR SITE PLAN RESUBMITTAL	02/12/21
04	TOA MAJOR SITE PLAN SUBMITTAL #3	03/05/21
05	60% CONSTRUCTION DOCUMENTS	03/26/21
06	TOA MAJOR SITE PLAN SUBMITTAL #4	03/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 19150.000

SHEET TITLE
COURTYARD PLAN ENLARGEMENT BASE BID

SHEET NUMBER
L-02.01

SITE FEATURES NOTES

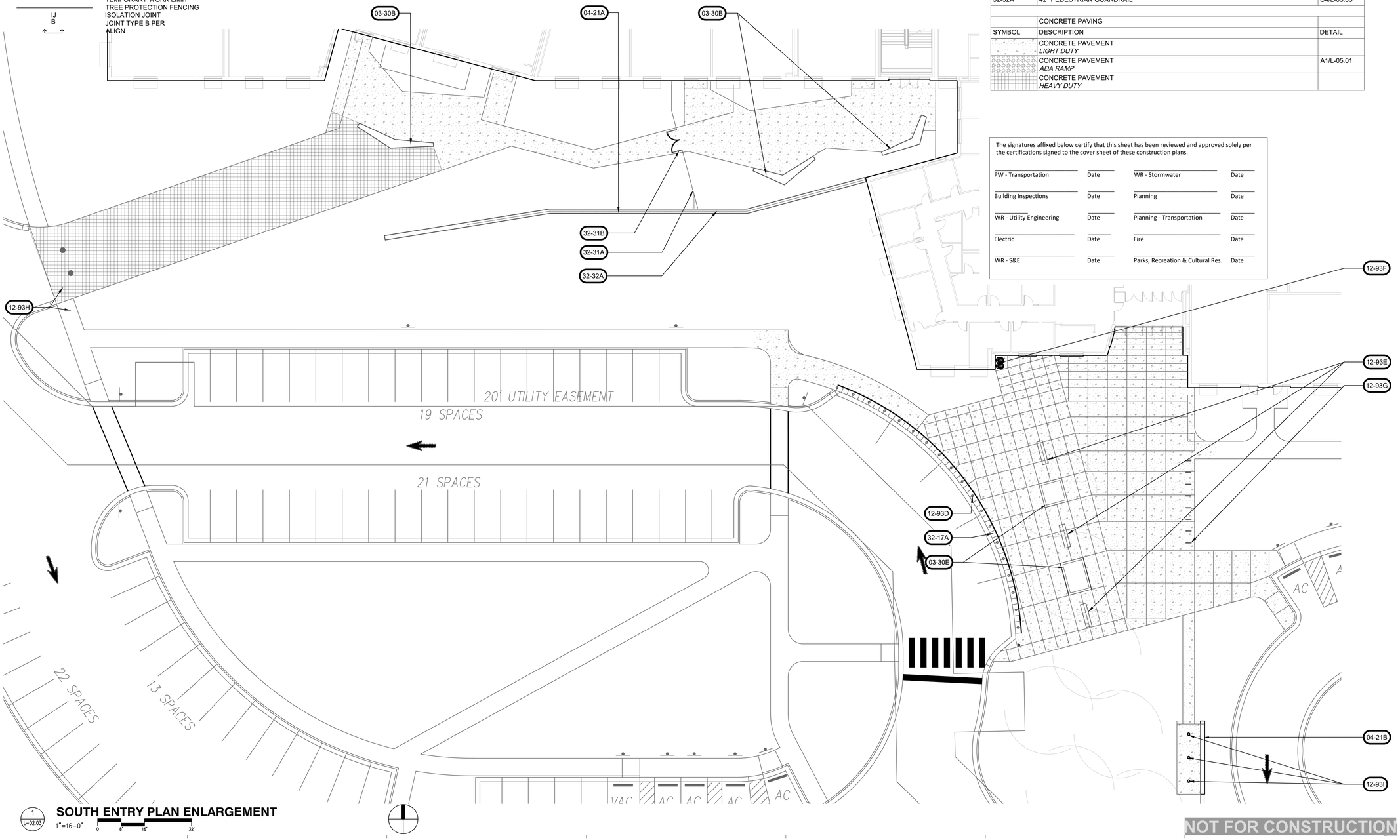
1. SITE UTILITIES SHOWN FOR REFERENCE ONLY. SEE OTHER DISCIPLINE SHEETS FOR PLANS AND DETAILS.
2. AUTOCAD .DWG FILES WILL BE PROVIDED FOR CONSTRUCTION LAYOUT.
3. DO NOT SCALE DRAWINGS FOR FIELD LAYOUT. REFER TO SITE LAYOUT PLAN(S) FOR DIMENSIONS.
4. ALL PAVEMENT MARKINGS INTERRUPTED BY DEMOLITION AND PROPOSED IMPROVEMENTS SHALL BE REPLACED WITH MATCHING COLOR AND WIDTH.
5. REFER TO / FOR CONCRETE PAVING JOINT DETAILS.
   5.1. ALL CONCRETE PAVING JOINTS SHALL BE CONTRACTION JOINT 'A' UNLESS INDICATED OTHERWISE.
6. CURB RAMPS SHALL COMPLY WITH CURB RAMP DRAWING INDEX & GENERAL NOTES, REFER TO /
7. DAMAGE TO EXISTING PAVMENT SHALL BE REPLACED WITH MATCHING COLOR AND FINISH BY CONTRACTOR.

SITE FEATURES LEGEND

CONSTRUCTION FENCE
TEMPORARY WORK LIMIT
TREE PROTECTION FENCING
IJ B — ISOLATION JOINT JOINT TYPE B PER ALIGN

REFERENCE NOTES SCHEDULE		
	Cast-In-Place Concrete	
CODE	DESCRIPTION	DETAIL
03-30A	CIP CONC STAIRS	E1/L-05.01
03-30B	CIP CONCRETE. SEATWALL	A5/L-05.01
03-30C	CIP CONCRETE TERRACED WALLS W/ DECORATIVE FORMLINER FINISH	
03-30D	CIP CONCRETE RETAINING WALL	A3/L-05.01
03-30E	CIP CONCRETE PLANTER CURB	
03-30F	CIP CHEEKWALL	
	Unit Masonry	
CODE	DESCRIPTION	DETAIL
04-21A	STRUCTURAL CIP RETAINING WALL W/ DECORATIVE FORMLINER FINISH	
04-21B	MONUMENT SIGN, To be permitted separately	A1/L-05.06
CODE	DESCRIPTION	DETAIL
05-50A	GALVANIZED STEEL HANDRAILS	B1/L-05.01
05-50B	42" PEDESTRIAN GUARDRAIL W/ ADA HANDRAIL GRAB BAR	

	Site Furnishings	
CODE	DESCRIPTION	DETAIL
12-93D	DECORATIVE BOLLARD	D5/L-05.01
12-93E	PLAZA BENCH	C1/L-05.02
12-93F	DUAL TRASH/RECYCLE RECEPTACLE	F5/L-05.01
12-93G	PLAZA BIKE RACK	E1/L-05.02
12-93H	KNOCKDOWN BOLLARD, SEE CIVIL DWGS	
12-93I	FLAGPOLE	
	LIGHTING	
CODE	DESCRIPTION	DETAIL
26-56A	12` HT. PEDESTRIAN LIGHT	A1/L-05.02
	CURBS AND GUTTERS	
CODE	DESCRIPTION	DETAIL
32-17A	CAST IRON DETECTABLE WARNING PLATES	
	FENCES AND GATES	
CODE	DESCRIPTION	DETAIL
32-31A	6` HT. ECS TERRACE FENCE	
32-31B	6` HT. ECS TERRACE DOUBLE GATE	
32-32A	42" PEDESTRIAN GUARDRAIL	C4/L-05.05
	CONCRETE PAVING	
SYMBOL	DESCRIPTION	DETAIL
	CONCRETE PAVEMENT *LIGHT DUTY*	
	CONCRETE PAVEMENT *ADA RAMP*	A1/L-05.01
	CONCRETE PAVEMENT *HEAVY DUTY*	



1 / L-02.03 **SOUTH ENTRY PLAN ENLARGEMENT**
1"=16'-0" (0, 8', 16', 32')

The signatures affixed below certify that this sheet has been reviewed and approved solely per the certifications signed to the cover sheet of these construction plans.

PW - Transportation	Date	WR - Stormwater	Date
Building Inspections	Date	Planning	Date
WR - Utility Engineering	Date	Planning - Transportation	Date
Electric	Date	Fire	Date
WR - S&E	Date	Parks, Recreation & Cultural Res.	Date

NOT FOR CONSTRUCTION

H12/Felton Grove High School

8550 Stephenson Road Apex, NC 27539

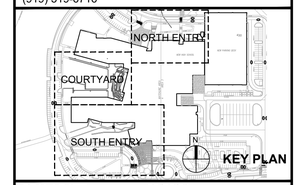
Owner
Wake County Public Schools
111 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716



SEAL | DATE 03/26/21

SHEET ISSUE

01	DESIGN DEVELOPMENT	11/20/20
02	TOA MAJOR SITE PLAN SUBMITTAL	12/01/20
03	TOA MAJOR SITE PLAN RESUBMITTAL	02/12/21
04	TOA MAJOR SITE PLAN SUBMITTAL #3	03/05/21
05	60% CONSTRUCTION DOCUMENTS	03/26/21
06	TOA MAJOR SITE PLAN SUBMITTAL #4	03/26/21

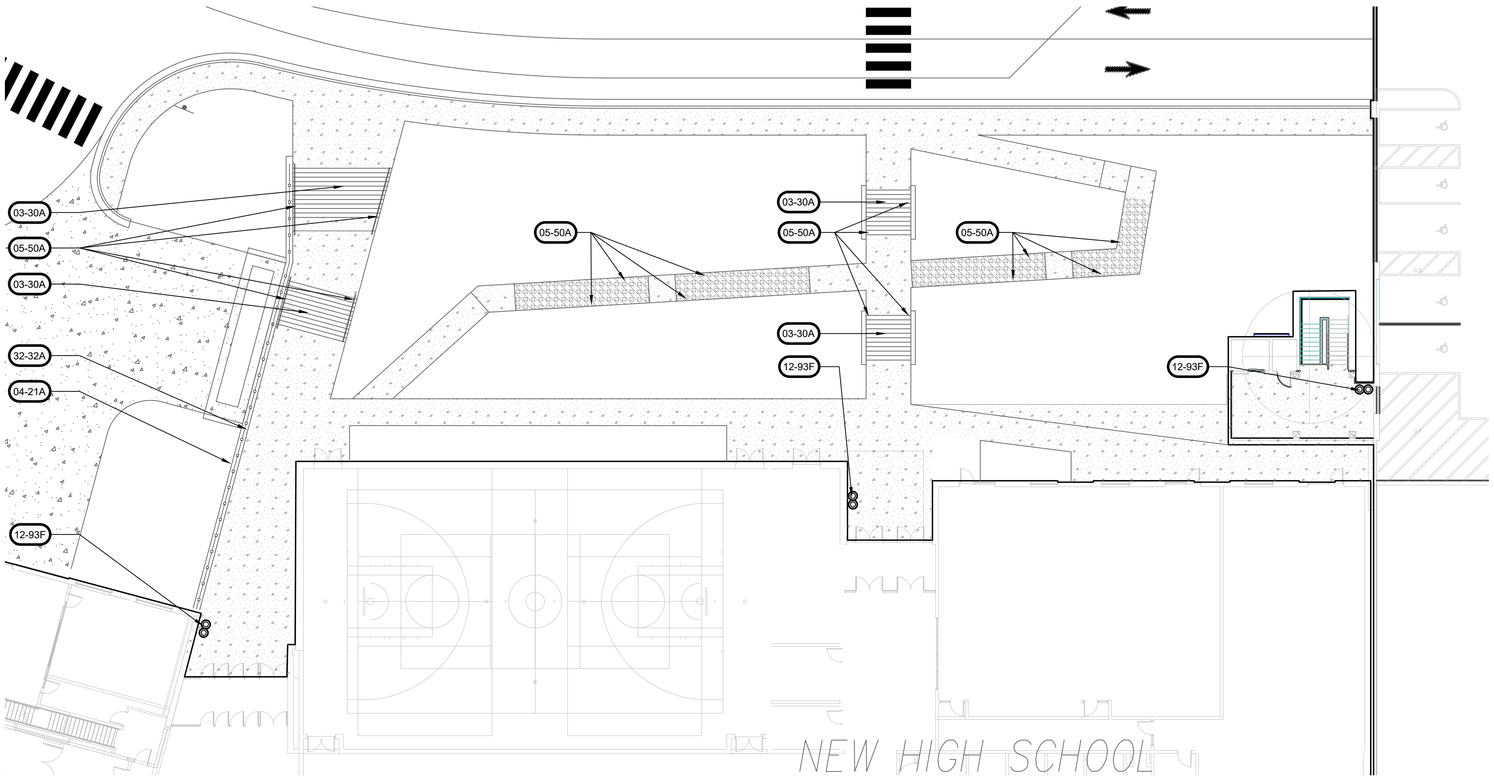
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 19150.000

SHEET TITLE
SOUTH ENTRY PLAN ENLARGEMENT

SHEET NUMBER
L-02.03



1 L-02.04 **NORTH ENTRY PLAN ENLARGEMENT**
1"=16'-0" 0 8' 16' 32'

SITE FEATURES NOTES

1. SITE UTILITIES SHOWN FOR REFERENCE ONLY. SEE OTHER DISCIPLINE SHEETS FOR PLANS AND DETAILS.
2. AUTOCAD .DWG FILES WILL BE PROVIDED FOR CONSTRUCTION LAYOUT.
3. DO NOT SCALE DRAWINGS FOR FIELD LAYOUT. REFER TO SITE LAYOUT PLAN(S) FOR DIMENSIONS.
4. ALL PAVEMENT MARKINGS INTERRUPTED BY DEMOLITION AND PROPOSED IMPROVEMENTS SHALL BE REPLACED WITH MATCHING COLOR AND WIDTH.
5. REFER TO / FOR CONCRETE PAVING JOINT DETAILS.
   5.1. ALL CONCRETE PAVING JOINTS SHALL BE CONTRACTION JOINT 'A' UNLESS INDICATED OTHERWISE.
6. CURB RAMPS SHALL COMPLY WITH CURB RAMP DRAWING INDEX & GENERAL NOTES, REFER TO /
7. DAMAGE TO EXISTING PAVMENT SHALL BE REPLACED WITH MATCHING COLOR AND FINISH BY CONTRACTOR.

SITE FEATURES LEGEND

CONSTRUCTION FENCE
TEMPORARY WORK LIMIT
TREE PROTECTION FENCING
IJ — ISOLATION JOINT
B — JOINT TYPE B PER
ALIGN

REFERENCE NOTES SCHEDULE		
	Cast-In-Place Concrete	
CODE	DESCRIPTION	DETAIL
03-30A	CIP CONC STAIRS	E1/L-05.01
03-30B	CIP CONCRETE. SEATWALL	A5/L-05.01
03-30C	CIP CONCRETE TERRACED WALLS W/ DECORATIVE FORMLINER FINISH	
03-30D	CIP CONCRETE RETAINING WALL	A3/L-05.01
03-30E	CIP CONCRETE PLANTER CURB	
03-30F	CIP CHEEKWALL	
	Unit Masonry	
CODE	DESCRIPTION	DETAIL
04-21A	STRUCTURAL CIP RETAINING WALL W/ DECORATIVE FORMLINER FINISH	
04-21B	MONUMENT SIGN, To be permitted separately	A1/L-05.06
CODE	DESCRIPTION	DETAIL
05-50A	GALVANIZED STEEL HANDRAILS	B1/L-05.01
05-50B	42" PEDESTRIAN GUARDRAIL W/ ADA HANDRAIL GRAB BAR	
	Site Furnishings	
CODE	DESCRIPTION	DETAIL
12-93D	DECORATIVE BOLLARD	D5/L-05.01
12-93E	PLAZA BENCH	C1/L-05.02
12-93F	DUAL TRASH/RECYCLE RECEPTACLE	F5/L-05.01
12-93G	PLAZA BIKE RACK	E1/L-05.02
12-93H	KNOCKDOWN BOLLARD, SEE CIVIL DWGS	
12-93I	FLAGPOLE	
	LIGHTING	
CODE	DESCRIPTION	DETAIL
26-56A	12` HT. PEDESTRIAN LIGHT	A1/L-05.02
	CURBS AND GUTTERS	
CODE	DESCRIPTION	DETAIL
32-17A	CAST IRON DETECTABLE WARNING PLATES	
	FENCES AND GATES	
CODE	DESCRIPTION	DETAIL
32-31A	6` HT. ECS TERRACE FENCE	
32-31B	6` HT. ECS TERRACE DOUBLE GATE	
32-32A	42" PEDESTRIAN GUARDRAIL	C4/L-05.05
	CONCRETE PAVING	
SYMBOL	DESCRIPTION	DETAIL
	CONCRETE PAVEMENT *LIGHT DUTY*	
	CONCRETE PAVEMENT *ADA RAMP*	A1/L-05.01
	CONCRETE PAVEMENT *HEAVY DUTY*	

The signatures affixed below certify that this sheet has been reviewed and approved solely per the certifications signed to the cover sheet of these construction plans.

PW - Transportation	Date	WR - Stormwater	Date
Building Inspections	Date	Planning	Date
WR - Utility Engineering	Date	Planning - Transportation	Date
Electric	Date	Fire	Date
WR - S&E	Date	Parks, Recreation & Cultural Res.	Date

NOT FOR CONSTRUCTION

H12/Felton Grove High School

8550 Stephenson Road Apex, NC 27539

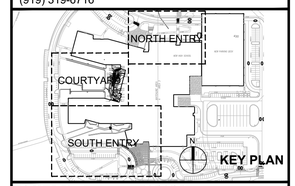
Owner
Wake County Public Schools
111 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716



SEAL | DATE 03/26/21

SHEET ISSUE

01	DESIGN DEVELOPMENT	11/20/20
02	TOA MAJOR SITE PLAN SUBMITTAL	12/01/20
03	TOA MAJOR SITE PLAN RESUBMITTAL	02/12/21
04	TOA MAJOR SITE PLAN SUBMITTAL #3	03/05/21
05	60% CONSTRUCTION DOCUMENTS	03/26/21

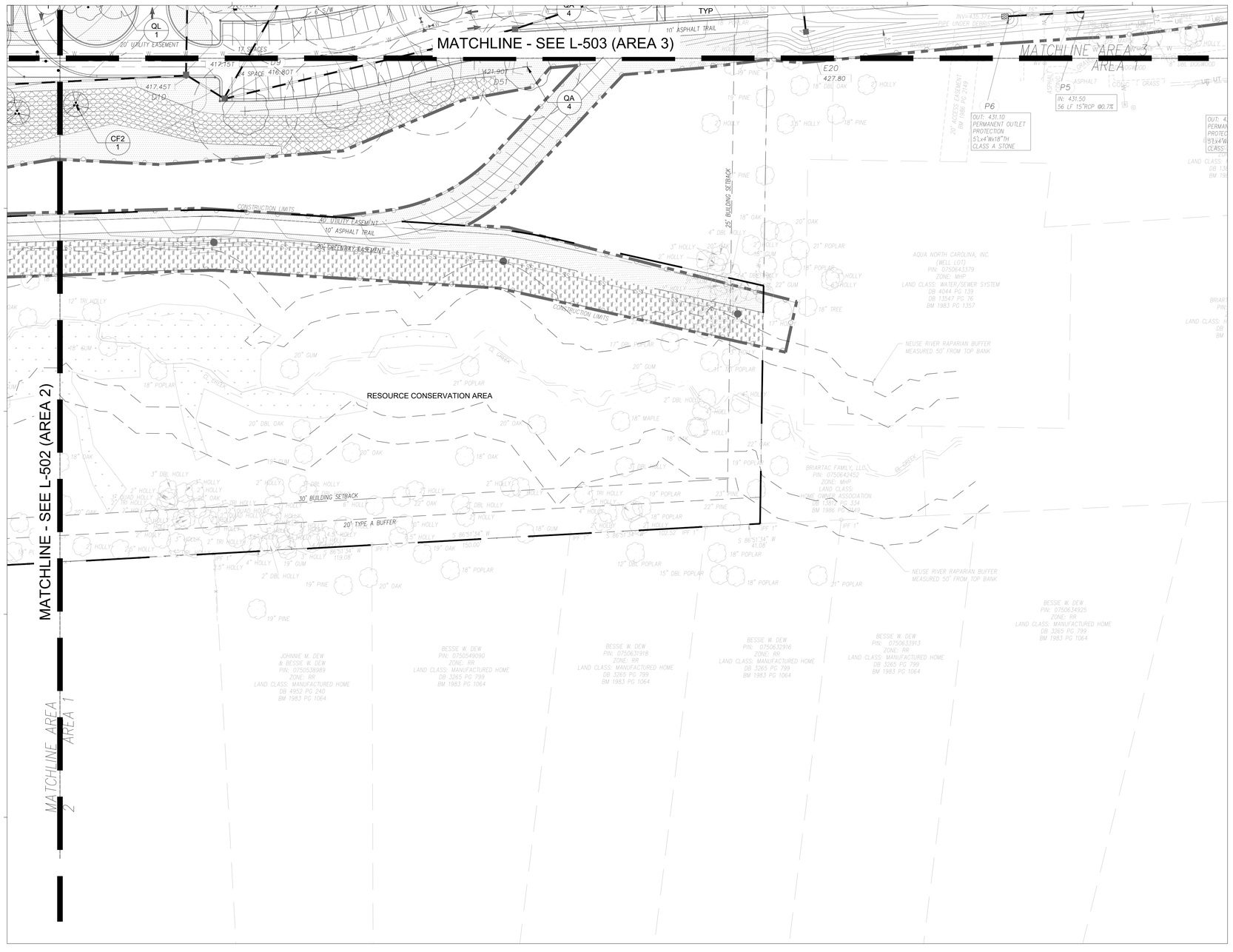
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 19150.000

SHEET TITLE
NORTH ENTRY PLAN ENLARGEMENT

SHEET NUMBER
L-02.04



PLANTING NOTES

1. REFER TO GENERAL LANDSCAPE ARCHITECTURAL NOTES PRIOR TO COMMENCING THE PLANTING SCOPE OF WORK.
2. PARTICIPATE IN THE PRE-INSTALLATION CONFERENCE FOR THE PLANTING SCOPE OF WORK, ACCORDING TO THE PROJECT SPECIFICATIONS, PRIOR TO COMMENCEMENT.
3. EXISTING AND PROPOSED UTILITIES THAT ARE SHOWN ARE FOR REFERENCE ONLY. REFER TO THE SITE SURVEY FOR EXISTING UTILITIES AND VERIFY IN THE FIELD. REFER TO THE MEP AND CIVIL PLANS FOR PROPOSED UTILITIES.
4. MATCH GRAPHIC REPRESENTATION SHOWN UNLESS NOTED / DIMENSIONED OTHERWISE. REFER TO PROJECT DETAILS FOR PLACEMENT OF HATCHED AREAS.
5. OBTAIN APPROVAL OF PLANTING LAYOUT BY LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
6. COMMENCEMENT OF PLANTING SCOPE CONSTITUTES ACCEPTANCE OF SITE CONDITIONS, SUBGRADE, AND SUBSOIL CONDITONS. ENSURE THAT NECESSARY AND SPECIFIED PLANTING CONDITIONS HAVE BEEN ACHIEVED PRIOR TO LANDSCAPE INSTALLATION.
6. INSTALL SPECIFIED TURFGRASS SOD AT DISTURBED AREAS NOT OTHERWISE IDENTIFIED FOR PLANT MATERIAL.
7. PROVIDE 2" BROWN DYED MULCH AT ALL PLANTING AREAS.
8. REFER TO SPECIFICATIONS FOR PLANT STAGING, HANDLING, PLANTING, AND STAKING REQUIREMENTS.
9. FAILURE TO FOLLOW PLANTING PLAN DESIGN WILL RESULT IN REMOVAL OF NON-CONFORMING PLANTS AND PURCHASE OF NEW PLANTS AT COST OF CONTRACTOR.
10. FINISH GRADE AND PLANTING TO BE COORDINATED WITH LANDSCAPE ARCHITECT WITHIN TREE PROTECTION ZONE PRIOR TO COMMENCEMENT OF PLANTING INSTALLATION.
11. REFER TO SPECIFICATIONS FOR IRRIGATION DESIGN AND INSTALLATION REQUIREMENTS.
12. SOIL DEPTHS:
    - 1.1. SODDED GRASS - FOUR INCHES
    - 1.2. GROUND COVER AND ANNUAL BEDS - EIGHT INCHES
    - 1.3. NATIVE PLUG AREAS - EIGHT INCHES
    - 1.4. SHRUB AND PERENNIAL BEDS - FOURTEEN INCHES
13. ALL BUFFERS MUST BE PLANTED IN ORDER TO RECEIVE A CERTIFICATE OF OCCUPANCY.

1 / L-04.01 PLANTING PLAN - AREA 1

1"=40'-0"

0 20' 40' 80'

PLANT SCHEDULE				
EVERGREEN TREES	BOTANICAL / COMMON NAME	SIZE		QTY
IS	Ilex opaca `Satyr Hill` / Satyr Hill American Holly	8' ht, 1.5" cal. min.		33
INS	Ilex x `Nellie R. Stevens` / Nellie R. Stevens Holly	8' ht, 1.5" cal. min.		17
MG	Magnolia grandiflora / Southern Magnolia	12' ht, 2.5" cal. min.		9
MLG	Magnolia grandiflora `Little Gem` / Dwarf Southern Magnolia	8' ht, 1.5" cal. min.		6
PT	Pinus taeda / Loblolly Pine	8' ht, 1.5" cal. min.		5
COLUMINAR TREES	BOTANICAL / COMMON NAME	SIZE		QTY
QI	Quercus palustris `Green Pillar` / Columnar Pin Oak	12' ht, 2.5" cal. min.		11
DECIDUOUS SHADE TREE	BOTANICAL / COMMON NAME	SIZE		QTY
AF	Acer floridanum / Southern Sugar Maple	12' ht, 2.5" cal. min.		11
CK	Cladrastis kentukea / American Yellowwood	12' ht, 2.5" cal. min.		5
MM	Magnolia virginiana `Moon Glow` / Sweet Bay	12' ht, 2.5" cal. min.		7
NW	Nyssa sylvatica `Wildfire` / Black Gum	12' ht, 2.5" cal. min.		12
PC	Pistacia chinensis / Chinese Pistache	12' ht, 2.5" cal. min.		16
QA	Quercus alba / White Oak	12' ht, 2.5" cal. min.		28
QB	Quercus bicolor / Swamp White Oak	12' ht, 2.5" cal. min.		45
QL	Quercus lyrata / Overcup Oak	12' ht, 2.5" cal. min.		21
QS	Quercus shumardii / Shumard Red Oak	12' ht, 2.5" cal. min.		24
QT	Quercus texana / Nuttall Oak	12' ht, 2.5" cal. min.		32
UJ	Ulmus americana `Jefferson` / American Elm	12' ht, 2.5" cal. min.		30
UNDERSTORY TREES	BOTANICAL / COMMON NAME	SIZE		QTY
AC	Amelanchier canadensis `Autumn Brilliance` / Autumn Brilliance Serviceberry	10' ht, multi-stem		7
CF2	Cercis canadensis `Forest Pansy` / Forest Pansy Eastern Redbud	1.5" Cal.		5
CD	Chionanthus virginicus `Dirr` / Dirr White Fringetree	10' ht, multi-stem		6
CF	Cornus florida `Cherokee Chief` / Cherokee Chief Dogwood	1.5" Cal.		4
HC	Halesia carolina / Silverbell	8' ht.		5
PA	Prunus subhirtella `Autumnalis` / Autumn Flowering Cherry	1.5" Cal.		6
SJ	Styrax japonicus / Japanese Snowbell	8' ht.		6
SHRUBS	BOTANICAL / COMMON NAME	SIZE		QTY
AGG	Abelia x grandiflora `Edward Goucher` / Glossy Abelia	18" ht, 3 gal. min.		21
AP	Aesculus parviflora / Bottlebrush Buckeye	30" ht, 4 gal. min.		52
AEP	Aesculus pavia / Red Buckeye	30" ht, 4 gal. min.		1
CAA	Callicarpa americana / American Beautyberry	30" ht, 4 gal. min.		6
CB	Camellia sasanqua `Apple Blossom` / Apple Blossom Camellia	30" ht, 4 gal. min.		103
CCL	Caryopteris x clandonensis / Bluebeard	18" ht, 3 gal. min.		57
DBC	Distylium x `Blue Cascade` / Blue Cascade Distylium	18" ht, 3 gal. min.		72
FAJ	Fatsia japonica / Japanese Fatsia	18" ht, 3 gal. min.		16
FS	Forsythia suspensa `Sieboldii` / Weeping Forsythia	30" ht, 4 gal. min.		19
FMA	Fothergilla major `Mount Airy` / Mount Airy Fothergilla	30" ht, 4 gal. min.		57
HVH	Hamamelis virginiana `Harvest Moon` / Harvest Moon Witch Hazel	30" ht, 4 gal. min.		10
HAA	Hydrangea arborescens `Abetwo` / Incrediball Hydrangea	30" ht, 4 gal. min.		77
HPW	Hydrangea quercifolia `Pee Wee` / Oakleaf Hydrangea	18" ht, 3 gal. min.		47
HF	Hypericum frondosum `Sunburst` / Sunburst Hypericum	18" ht, 3 gal. min.		96
ICR	Ilex cornuta `Rotunda` / Dwarf Chinese Holly	18" ht, 3 gal. min.		17
IVJ	Ilex verticillata `Jim Dandy` / Jim Dandy Winterberry	30" ht, 4 gal. min.		3
IVR	Ilex verticillata `Red Sprite` / Red Sprite Winterberry	30" ht, 4 gal. min.		77
IVT	Ilex vomitoria / Yaupon Holly	30" ht, 4 gal. min.		85
IVN	Ilex vomitoria `Nana` / Dwarf Yaupon	18" ht, 3 gal. min.		29
IU	Illicium floridanum `Miss Scarlet` / Miss Scarlet Anise	30" ht, 4 gal. min.		61
ILH	Itea virginica `Little Henry` TM / Virginia Sweetspire	18" ht, 3 gal. min.		42
OHG	Osmanthus heterophyllus `Goshiki` / Goshiki Holly Olive	30" ht, 4 gal. min.		10
PTW	Pittosporum tobira `Wheeler's Dwarf` / Wheeler's Dwarf Pittosporum	18" ht, 3 gal. min.		88
PLO	Prunus laurocerasus `Otto Luyken` / Otto Luyken Laurel	30" ht, 4 gal. min.		72
VAL	Vitex agnus-castus `Lecompte` / Chaste Tree	30" ht, 4 gal. min.		17
GROUND COVERS	BOTANICAL / COMMON NAME	SIZE	SPACING	QTY
AHU	Amsonia hubrichtii / Arkansas Blue-star	Quart	18" o.c.	1,236
CKF	Calamagrostis x acutiflora `Karl Foerster` / Feather Reed Grass	1 Gal.	24" o.c.	138
COE	Carex oshimensis `Everillo` TM / EverColor Everillo Japanese Sedge	1 Gal.	12" o.c.	808
DC	Deschampsia cespitosa `Northern Lights` / Northern Lights Hair Grass	Quart	24" o.c.	539
EPU	Echinacea purpurea / Purple Coneflower	Quart	18" o.c.	50
JHZ	Juniperus horizontalis / Creeping Juniper	1 Gal.	44" o.c.	377
MCA	Muhlenbergia capillaris / Pink Muhly Grass	1 Gal.	30" o.c.	128
OJG	Ophiopogon japonicus `Gyoku Ryu` / Mondo Grass	Quart	12" o.c.	335
RAG	Rhus aromatica `Gro-Low` / Gro-Low Fragrant Sumac	1 Gal.	36" o.c.	697
SSP	Sedum spectabile `Purple Emporer` / Stonecrop	1 Gal.	16" o.c.	342
SAL	Sisyrinchium angustifolium `Lucerne` / Lucerne Blue Eyed Grass	Pint	12" o.c.	2,863
TURF	BOTANICAL / COMMON NAME	SIZE	SPACING	QTY
T1	Cynodon dactylon `Tif 419` / Bermuda Grass	Sod		327,965 sf
T2	Cynodon dactylon `TifTuf` / TifTuf BermudaGrass	Sod		347,718 sf

GENERAL SOD LAWN TifTuf Bermuda -		58,663 sf
LOWLAND SCM PLANTINGS Native grass and perennial plantings within stormwater control zone expected to periodically hold water. Plugs and 1 gal. size. -		86,020 sf
UPLAND SCM PLANTINGS Variety of wetland species shrubs, 18" min. ht, 48"-60" spacing typical, within stormwater control zone expected to receive periodic inundation. -		76,688 sf
SLOPE STABILIZATION MIX Seed mix & geotextile to be installed on slopes 3:1 or less, to support re-establishment of forest. SEE L-05.02 FOR SEED MIXES		320,567 sf
REFORESTATION SEED MIX To be installed on disturbed areas with slopes 3:1 or less adjacent to existing woodland to support re-establishment of forest. SEE L-05.02 FOR SEED MIXES		92,905 sf
NO-MOW SEED MIX BLEND OF NATIVE GRASSES AND FORBS SUITABLE FOR MOST SOIL TYPES AND FULL SUN. SEE L-05.02 FOR SEED MIXES		88,552 sf

NOT FOR CONSTRUCTION

H12/Felton Grove High School

8550 Stephenson Road Apex, NC 27539

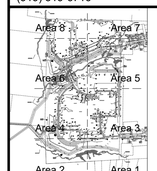
Owner
Wake County Public Schools
111 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716



KEY PLAN

SEAL | DATE 03/26/21

SHEET ISSUE

01	DESIGN DEVELOPMENT	11/20/20
02	TOA TOA MAJOR SITE PLAN SUBMITTAL	12/01/20
03	TOA MAJOR SITE PLAN RESUBMITTAL	02/12/21
04	TOA MAJOR SITE PLAN SUBMITTAL #3	03/05/21
05	60% CONSTRUCTION DOCUMENTS	03/26/21
06	TOA MAJOR SITE PLAN SUBMITTAL #4	03/26/21

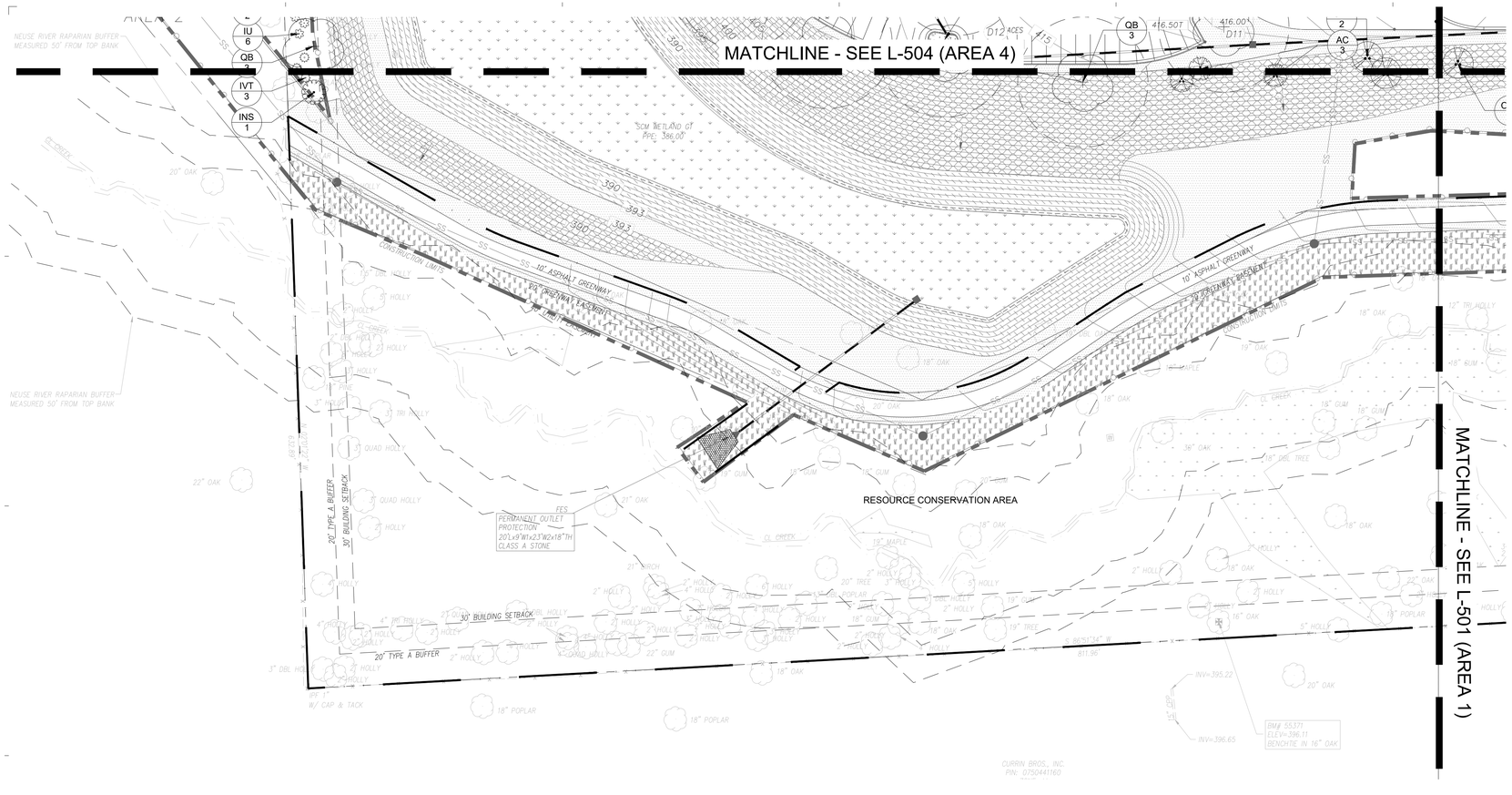
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 19150.000

SHEET TITLE
PLANTING PLAN - AREA 1

SHEET NUMBER
L-04.01



1 L-04.02 PLANTING PLAN - AREA 2

1"=40'-0" (0, 20', 40', 80')

PLANT SCHEDULE				
EVERGREEN TREES	BOTANICAL / COMMON NAME	SIZE		QTY
IS	Ilex opaca `Satyr Hill` / Satyr Hill American Holly	8' Ht, 1.5" cal. min.		33
INS	Ilex x `Nellie R. Stevens` / Nellie R. Stevens Holly	8' Ht, 1.5" cal. min.		17
MG	Magnolia grandiflora / Southern Magnolia	12' Ht, 2.5" cal. min.		9
MLG	Magnolia grandiflora `Little Gem` / Dwarf Southern Magnolia	8' Ht, 1.5" cal. min.		6
PT	Pinus taeda / Loblolly Pine	8' Ht, 1.5" cal. min.		5
COLUMNAR TREES	BOTANICAL / COMMON NAME	SIZE		QTY
QI	Quercus palustris `Green Pillar` / Columnar Pin Oak	12' Ht, 2.5" cal. min.		11
DECIDUOUS SHADE TREE	BOTANICAL / COMMON NAME	SIZE		QTY
AF	Acer floridanum / Southern Sugar Maple	12' Ht, 2.5" cal. min.		11
CK	Cladrastis kentukea / American Yellowwood	12' Ht, 2.5" cal. min.		5
MM	Magnolia virginiana `Moon Glow` / Sweet Bay	12' Ht, 2.5" cal. min.		7
NW	Nyssa sylvatica `Wildfire` / Black Gum	12' Ht, 2.5" cal. min.		12
PC	Pistacia chinensis / Chinese Pistache	12' Ht, 2.5" cal. min.		16
QA	Quercus alba / White Oak	12' Ht, 2.5" cal. min.		28
QB	Quercus bicolor / Swamp White Oak	12' Ht, 2.5" cal. min.		45
QL	Quercus lyrata / Overcup Oak	12' Ht, 2.5" cal. min.		21
QS	Quercus shumardii / Shumard Red Oak	12' Ht, 2.5" cal. min.		24
QT	Quercus texana / Nuttall Oak	12' Ht, 2.5" cal. min.		32
UJ	Ulmus americana `Jefferson` / American Elm	12' Ht, 2.5" cal. min.		30
UNDERSTORY TREES	BOTANICAL / COMMON NAME	SIZE		QTY
AC	Amelanchier canadensis `Autumn Brilliance` / Autumn Brilliance Serviceberry	10' Ht, multi-stem		7
CF2	Cercis canadensis `Forest Pansy` / Forest Pansy Eastern Redbud	1.5" Cal.		5
CD	Chionanthus virginicus `Dirr` / Dirr White Fringetree	10' Ht, multi-stem		6
CF	Cornus florida `Cherokee Chief` / Cherokee Chief Dogwood	1.5" Cal.		4
HC	Halesia carolina / Silverbell	8' Ht.		5
PA	Prunus subhirtella `Autumnalis` / Autumn Flowering Cherry	1.5" Cal.		6
SJ	Styrax japonicus / Japanese Snowbell	8' Ht.		6
SHRUBS	BOTANICAL / COMMON NAME	SIZE		QTY
AGG	Abelia x grandiflora `Edward Goucher` / Glossy Abelia	18" Ht, 3 gal. min.		21
AP	Aesculus parviflora / Bottlebrush Buckeye	30" Ht, 4 gal. min.		52
AEP	Aesculus pavia / Red Buckeye	30" Ht, 4 gal. min.		1
CAA	Callicarpa americana / American Beautyberry	30" Ht, 4 gal. min.		6
CB	Camellia sasanqua `Apple Blossom` / Apple Blossom Camellia	30" Ht, 4 gal. min.		103
CCL	Caryopteris x clandonensis / Bluebeard	18" Ht, 3 gal. min.		57
DBC	Distylium x `Blue Cascade` / Blue Cascade Distylium	18" Ht, 3 gal. min.		72
FAJ	Fatsia japonica / Japanese Fatsia	18" Ht, 3 gal. min.		16
FS	Forsythia suspensa `Sieboldii` / Weeping Forsythia	30" Ht, 4 gal. min.		19
FMA	Fothergilla major `Mount Airy` / Mount Airy Fothergilla	30" Ht, 4 gal. min.		57
HVH	Hamamelis virginiana `Harvest Moon` / Harvest Moon Witch Hazel	30" Ht, 4 gal. min.		10
HAA	Hydrangea arborescens `Abetwo` / Incrediball Hydrangea	30" Ht, 4 gal. min.		77
HPW	Hydrangea quercifolia `Pee Wee` / Oakleaf Hydrangea	18" Ht, 3 gal. min.		47
HF	Hypericum frondosum `Sunburst` / Sunburst Hypericum	18" Ht, 3 gal. min.		96
ICR	Ilex cornuta `Rotunda` / Dwarf Chinese Holly	18" Ht, 3 gal. min.		17
IVJ	Ilex verticillata `Jim Dandy` / Jim Dandy Winterberry	30" Ht, 4 gal. min.		3
IVR	Ilex verticillata `Red Sprite` / Red Sprite Winterberry	30" Ht, 4 gal. min.		77
IVT	Ilex vomitoria / Yaupon Holly	30" Ht, 4 gal. min.		85
IVN	Ilex vomitoria `Nana` / Dwarf Yaupon	18" Ht, 3 gal. min.		29
IU	Illicum floridanum `Mss Scarlet` / Miss Scarlet Anise	30" Ht, 4 gal. min.		61
ILH	Itea virginica `Little Henry` TM / Virginia Sweetspire	18" Ht, 3 gal. min.		42
OHG	Osmanthus heterophyllus `Goshiki` / Goshiki Holly Olive	30" Ht, 4 gal. min.		10
PTW	Pittosporum tobira `Wheeler`s Dwarf` / Wheeler`s Dwarf Pittosporum	18" Ht, 3 gal. min.		88
PLO	Prunus laurocerasus `Otto Luyken` / Otto Luyken Laurel	30" Ht, 4 gal. min.		72
VAL	Vitex agnus-castus `Lecompte` / Chaste Tree	30" Ht, 4 gal. min.		17
GROUND COVERS	BOTANICAL / COMMON NAME	SIZE	SPACING	QTY
AHU	Amsonia hubrichtii / Arkansas Blue-star	Quart	18" o.c.	1,236
CKF	Calamagrostis x acutiflora `Karl Foerster` / Feather Reed Grass	1 Gal.	24" o.c.	138
COE	Carex oshimensis `Everillo` TM / EverColor Everillo Japanese Sedge	1 Gal.	12" o.c.	808
DC	Deschampsia cespitosa `Northern Lights` / Northern Lights Hair Grass	Quart	24" o.c.	539
EPU	Echinacea purpurea / Purple Coneflower	Quart	18" o.c.	50
JHZ	Juniperus horizontalis / Creeping Juniper	1 Gal.	44" o.c.	377
MCA	Muhlenbergia capillaris / Pink Muhly Grass	1 Gal.	30" o.c.	128
OJG	Ophiopogon japonicus `Gyoku Ryu` / Mondo Grass	Quart	12" o.c.	335
RAG	Rhus aromatica `Gro-Low` / Gro-Low Fragrant Sumac	1 Gal.	36" o.c.	697
SSP	Sedum spectabile `Purple Emporer` / Stonecrop	1 Gal.	16" o.c.	342
SAL	Sisyrinchium angustifolium `Lucerne` / Lucerne Blue Eyed Grass	Pint	12" o.c.	2,863
TURF	BOTANICAL / COMMON NAME	SIZE	SPACING	QTY
T1	Cynodon dactylon `TiFit 419` / Bermuda Grass	Sod		327,965 sf
T2	Cynodon dactylon `TiFtuf` / TiFtuf BermudaGrass	Sod		347,718 sf

GENERAL SOD LAWN TiFtuf Bermuda -	58,663 sf
LOWLAND SCM PLANTINGS Native grass and perennial plantings within stormwater control zone expected to periodically hold water. Plugs and 1 gal. size. -	86,020 sf
UPLAND SCM PLANTINGS Variety of wetland species shrubs, 18" min. ht, 48"-60" spacing typical, within stormwater control zone expected to receive periodic inundation. -	76,688 sf
SLOPE STABILIZATION MIX Seed mix & geotextile to be installed on slopes 3:1 or less, to support re-establishment of forest. SEE L-05.02 FOR SEED MIXES	320,567 sf
REFORESTATION SEED MIX To be installed on disturbed areas with slopes 3:1 or less adjacent to existing woodland to support re-establishment of forest. SEE L-05.02 FOR SEED MIXES	92,905 sf
NO-MOW SEED MIX BLEND OF NATIVE GRASSES AND FORBS SUITABLE FOR MOST SOIL TYPES AND FULL SUN. SEE L-05.02 FOR SEED MIXES	88,552 sf

PLANTING NOTES

1. REFER TO GENERAL LANDSCAPE ARCHITECTURAL NOTES PRIOR TO COMMENCING THE PLANTING SCOPE OF WORK.
2. PARTICIPATE IN THE PRE-INSTALLATION CONFERENCE FOR THE PLANTING SCOPE OF WORK, ACCORDING TO THE PROJECT SPECIFICATIONS, PRIOR TO COMMENCEMENT.
3. EXISTING AND PROPOSED UTILITIES THAT ARE SHOWN ARE FOR REFERENCE ONLY. REFER TO THE SITE SURVEY FOR EXISTING UTILITIES AND VERIFY IN THE FIELD. REFER TO THE MEP AND CIVIL PLANS FOR PROPOSED UTILITIES.
4. MATCH GRAPHIC REPRESENTATION SHOWN UNLESS NOTED / DIMENSIONED OTHERWISE. REFER TO PROJECT DETAILS FOR PLACEMENT OF HATCHED AREAS.
5. OBTAIN APPROVAL OF PLANTING LAYOUT BY LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
6. COMMENCEMENT OF PLANTING SCOPE CONSTITUTES ACCEPTANCE OF SITE CONDITIONS, SUBGRADE, AND SUBSOIL CONDITONS. ENSURE THAT NECESSARY AND SPECIFIED PLANTING CONDITIONS HAVE BEEN ACHIEVED PRIOR TO LANDSCAPE INSTALLATION.
6. INSTALL SPECIFIED TURFGRASS SOD AT DISTURBED AREAS NOT OTHERWISE IDENTIFIED FOR PLANT MATERIAL.
7. PROVIDE 2" BROWN DYED MULCH AT ALL PLANTING AREAS.
8. REFER TO SPECIFICATIONS FOR PLANT STAGING, HANDLING, PLANTING, AND STAKING REQUIREMENTS.
9. FAILURE TO FOLLOW PLANTING PLAN DESIGN WILL RESULT IN REMOVAL OF NON-CONFORMING PLANTS AND PURCHASE OF NEW PLANTS AT COST OF CONTRACTOR.
10. FINISH GRADE AND PLANTING TO BE COORDINATED WITH LANDSCAPE ARCHITECT WITHIN TREE PROTECTION ZONE PRIOR TO COMMENCEMENT OF PLANTING INSTALLATION.
11. REFER TO SPECIFICATIONS FOR IRRIGATION DESIGN AND INSTALLATION REQUIREMENTS.
12. SOIL DEPTHS:
    - 1.1. SODDED GRASS - FOUR INCHES
    - 1.2. GROUND COVER AND ANNUAL BEDS - EIGHT INCHES
    - 1.3. NATIVE PLUG AREAS - EIGHT INCHES
    - 1.4. SHRUB AND PERENNIAL BEDS - FOURTEEN INCHES
13. ALL BUFFERS MUST BE PLANTED IN ORDER TO RECEIVE A CERTIFICATE OF OCCUPANCY.

The signatures affixed below certify that this sheet has been reviewed and approved solely per the certifications signed to the cover sheet of these construction plans.

PW - Transportation	Date	WR - Stormwater	Date
Building Inspections	Date	Planning	Date
WR - Utility Engineering	Date	Planning - Transportation	Date
Electric	Date	Fire	Date
WR - S&E	Date	Parks, Recreation & Cultural Res.	Date

NOT FOR CONSTRUCTION

H12/Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

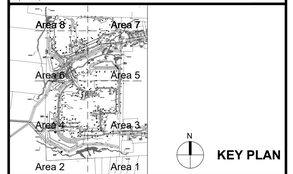
Owner
Wake County Public Schools
111 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716



KEY PLAN

SEAL | DATE 03/26/21

SHEET ISSUE

01	DESIGN DEVELOPMENT	11/20/20
02	TOA MAJOR SITE PLAN SUBMITTAL	12/01/20
03	TOA MAJOR SITE PLAN RESUBMITTAL	02/12/21
04	TOA MAJOR SITE PLAN SUBMITTAL #3	03/05/21
05	60% CONSTRUCTION DOCUMENTS	03/26/21
06	TOA MAJOR SITE PLAN SUBMITTAL #4	03/26/21

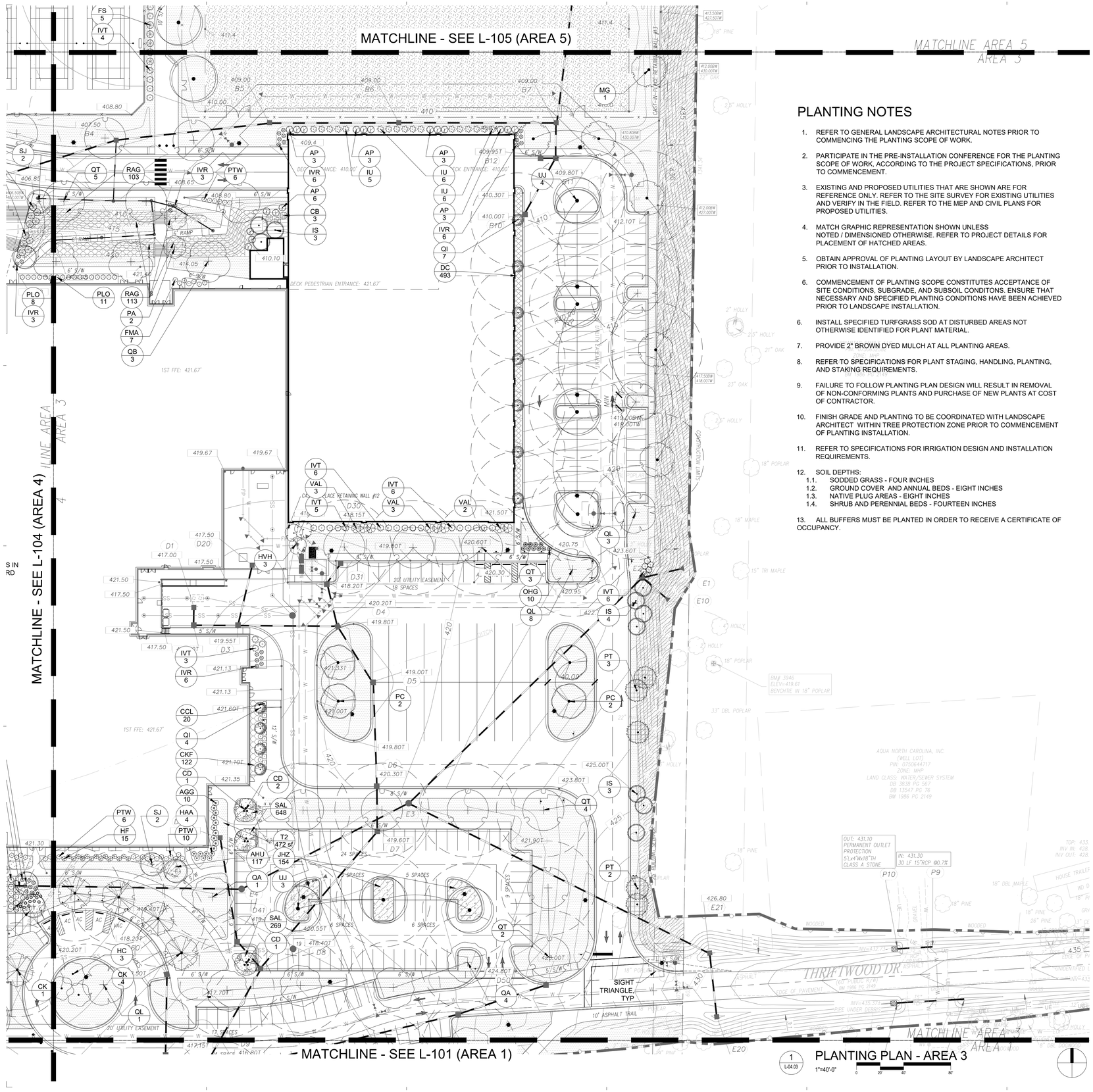
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 19150.000

SHEET TITLE
PLANTING PLAN - AREA 2

SHEET NUMBER
L-04.02



PLANTING NOTES

1. REFER TO GENERAL LANDSCAPE ARCHITECTURAL NOTES PRIOR TO COMMENCING THE PLANTING SCOPE OF WORK.
2. PARTICIPATE IN THE PRE-INSTALLATION CONFERENCE FOR THE PLANTING SCOPE OF WORK, ACCORDING TO THE PROJECT SPECIFICATIONS, PRIOR TO COMMENCEMENT.
3. EXISTING AND PROPOSED UTILITIES THAT ARE SHOWN ARE FOR REFERENCE ONLY. REFER TO THE SITE SURVEY FOR EXISTING UTILITIES AND VERIFY IN THE FIELD. REFER TO THE MEP AND CIVIL PLANS FOR PROPOSED UTILITIES.
4. MATCH GRAPHIC REPRESENTATION SHOWN UNLESS NOTED / DIMENSIONED OTHERWISE. REFER TO PROJECT DETAILS FOR PLACEMENT OF HATCHED AREAS.
5. OBTAIN APPROVAL OF PLANTING LAYOUT BY LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
6. COMMENCEMENT OF PLANTING SCOPE CONSTITUTES ACCEPTANCE OF SITE CONDITIONS, SUBGRADE, AND SUBSOIL CONDITONS. ENSURE THAT NECESSARY AND SPECIFIED PLANTING CONDITIONS HAVE BEEN ACHIEVED PRIOR TO LANDSCAPE INSTALLATION.
6. INSTALL SPECIFIED TURFGRASS SOD AT DISTURBED AREAS NOT OTHERWISE IDENTIFIED FOR PLANT MATERIAL.
7. PROVIDE 2" BROWN DYED MULCH AT ALL PLANTING AREAS.
8. REFER TO SPECIFICATIONS FOR PLANT STAGING, HANDLING, PLANTING, AND STAKING REQUIREMENTS.
9. FAILURE TO FOLLOW PLANTING PLAN DESIGN WILL RESULT IN REMOVAL OF NON-CONFORMING PLANTS AND PURCHASE OF NEW PLANTS AT COST OF CONTRACTOR.
10. FINISH GRADE AND PLANTING TO BE COORDINATED WITH LANDSCAPE ARCHITECT WITHIN TREE PROTECTION ZONE PRIOR TO COMMENCEMENT OF PLANTING INSTALLATION.
11. REFER TO SPECIFICATIONS FOR IRRIGATION DESIGN AND INSTALLATION REQUIREMENTS.
12. SOIL DEPTHS:
    - 1.1. SODDED GRASS - FOUR INCHES
    - 1.2. GROUND COVER AND ANNUAL BEDS - EIGHT INCHES
    - 1.3. NATIVE PLUG AREAS - EIGHT INCHES
    - 1.4. SHRUB AND PERENNIAL BEDS - FOURTEEN INCHES
13. ALL BUFFERS MUST BE PLANTED IN ORDER TO RECEIVE A CERTIFICATE OF OCCUPANCY.

PLANT SCHEDULE				
EVERGREEN TREES	BOTANICAL / COMMON NAME	SIZE		QTY
IS	Ilex opaca `Satyr Hill` / Satyr Hill American Holly	8' Ht, 1.5" cal. min.		33
INS	Ilex x `Nellie R. Stevens` / Nellie R. Stevens Holly	8' Ht, 1.5" cal. min.		17
MG	Magnolia grandiflora / Southern Magnolia	12' Ht, 2.5" cal. min.		9
MLG	Magnolia grandiflora `Little Gem` / Dwarf Southern Magnolia	8' Ht, 1.5" cal. min.		6
PT	Pinus taeda / Loblolly Pine	8' Ht, 1.5" cal. min.		5
COLUMNAR TREES	BOTANICAL / COMMON NAME	SIZE		QTY
QI	Quercus palustris `Green Pillar` / Columnar Pin Oak	12' Ht, 2.5" cal. min.		11
DECIDUOUS SHADE TREE	BOTANICAL / COMMON NAME	SIZE		QTY
AF	Acer floridanum / Southern Sugar Maple	12' Ht, 2.5" cal. min.		11
CK	Cladrastis kentukea / American Yellowwood	12' Ht, 2.5" cal. min.		5
MM	Magnolia virginiana `Moon Glow` / Sweet Bay	12' Ht, 2.5" cal. min.		7
NW	Nyssa sylvatica `Wildfire` / Black Gum	12' Ht, 2.5" cal. min.		12
PC	Pistacia chinensis / Chinese Pistache	12' Ht, 2.5" cal. min.		16
QA	Quercus alba / White Oak	12' Ht, 2.5" cal. min.		28
QB	Quercus bicolor / Swamp White Oak	12' Ht, 2.5" cal. min.		45
QL	Quercus lyrata / Overcup Oak	12' Ht, 2.5" cal. min.		21
QS	Quercus shumardii / Shumard Red Oak	12' Ht, 2.5" cal. min.		24
QT	Quercus texana / Nuttall Oak	12' Ht, 2.5" cal. min.		32
UJ	Ulmus americana `Jefferson` / American Elm	12' Ht, 2.5" cal. min.		30
UNDERSTORY TREES	BOTANICAL / COMMON NAME	SIZE		QTY
AC	Amelanchier canadensis `Autumn Brilliance` / Autumn Brilliance Serviceberry	10` ht, multi-stem		7
CF2	Cercis canadensis `Forest Pansy` / Forest Pansy Eastern Redbud	1.5" Cal.		5
CD	Chionanthus virginicus `Dirr` / Dirr White Fringetree	10` ht, multi-stem		6
CF	Cornus florida `Cherokee Chief` / Cherokee Chief Dogwood	1.5" Cal.		4
HC	Halesia carolina / Silverbell	8' Ht.		5
PA	Prunus subhirtella `Autumnalis` / Autumn Flowering Cherry	1.5" Cal.		6
SJ	Styrax japonicus / Japanese Snowbell	8` ht.		6
SHRUBS	BOTANICAL / COMMON NAME	SIZE		QTY
AGG	Abelia x grandiflora `Edward Goucher` / Glossy Abelia	18" Ht, 3 gal. min.		21
AP	Aesculus parviflora / Bottlebrush Buckeye	30" Ht, 4 gal. min.		52
AEP	Aesculus pavia / Red Buckeye	30" Ht, 4 gal. min.		1
CAA	Callicarpa americana / American Beautyberry	30" Ht, 4 gal. min.		6
CB	Camellia sasanqua `Apple Blossom` / Apple Blossom Camellia	30" Ht, 4 gal. min.		103
CCL	Caryopteris x clandonensis / Bluebeard	18" Ht, 3 gal. min.		57
DBC	Distylium x `Blue Cascade` / Blue Cascade Distylium	18" Ht, 3 gal. min.		72
FAJ	Fatsia japonica / Japanese Fatsia	18" Ht, 3 gal. min.		16
FS	Forsythia suspensa `Siebolidi` / Weeping Forsythia	30" Ht, 4 gal. min.		19
FMA	Fothergilla major `Mount Airy` / Mount Airy Fothergilla	30" Ht, 4 gal. min.		57
HVH	Hamamelis virginiana `Harvest Moon` / Harvest Moon Witch Hazel	30" Ht, 4 gal. min.		10
HAA	Hydrangea arborescens `Abetwo` / Incrediball Hydrangea	30" Ht, 4 gal. min.		77
HPW	Hydrangea quercifolia `Pee Wee` / Oakleaf Hydrangea	18" Ht, 3 gal. min.		47
HF	Hypericum frondosum `Sunburst` / Sunburst Hypericum	18" Ht, 3 gal. min.		96
ICR	Ilex cornuta `Rotunda` / Dwarf Chinese Holly	18" Ht, 3 gal. min.		17
IVJ	Ilex verticillata `Jim Dandy` / Jim Dandy Winterberry	30" Ht, 4 gal. min.		3
IVR	Ilex verticillata `Red Sprite` / Red Sprite Winterberry	30" Ht, 4 gal. min.		77
IVT	Ilex vomitoria / Yaupon Holly	30" Ht, 4 gal. min.		85
IVN	Ilex vomitoria `Nana` / Dwarf Yaupon	18" Ht, 3 gal. min.		29
IU	Illicum floridanum `Miss Scarlet` / Miss Scarlet Anise	30" Ht, 4 gal. min.		61
ILH	Itea virginica `Little Henry` TM / Virginia Sweetspire	18" Ht, 3 gal. min.		42
OHG	Osmanthus heterophyllus `Goshiki` / Goshiki Holly Olive	30" Ht, 4 gal. min.		10
PTW	Pittosporum tobira `Wheeler`s Dwarf` / Wheeler`s Dwarf Pittosporum	18" Ht, 3 gal. min.		88
PLO	Prunus laurocerasus `Otto Luyken` / Otto Luyken Laurel	30" Ht, 4 gal. min.		72
VAL	Vitex agnus-castus `Lecompte` / Chaste Tree	30" Ht, 4 gal. min.		17
GROUND COVERS	BOTANICAL / COMMON NAME	SIZE	SPACING	QTY
AHU	Amsonia hubrichtii / Arkansas Blue-star	Quart	18" o.c.	1,236
CKF	Calamagrostis x acutiflora `Karl Foerster` / Feather Reed Grass	1 Gal.	24" o.c.	138
COE	Carex oshimensis `Everillo` TM / EverColor Everillo Japanese Sedge	1 Gal.	12" o.c.	808
DC	Deschampsia cespitosa `Northern Lights` / Northern Lights Hair Grass	Quart	24" o.c.	539
EPU	Echinacea purpurea / Purple Coneflower	Quart	18" o.c.	50
JHZ	Juniperus horizontalis / Creeping Juniper	1 Gal.	44" o.c.	377
MCA	Muhlenbergia capillaris / Pink Muhly Grass	1 Gal.	30" o.c.	128
OJG	Ophiopogon japonicus `Gyoko Ryu` / Mondo Grass	Quart	12" o.c.	335
RAG	Rhus aromatica `Gro-Low` / Gro-Low Fragrant Sumac	1 Gal.	36" o.c.	697
SSP	Sedum spectabile `Purple Emporer` / Stonecrop	1 Gal.	16" o.c.	342
SAL	Sisyrinchium angustifolium `Lucerne` / Lucerne Blue Eyed Grass	Pint	12" o.c.	2,863
TURF	BOTANICAL / COMMON NAME	SIZE	SPACING	QTY
T1	Cynodon dactylon `TiF419` / Bermuda Grass	Sod		327,965 sf
T2	Cynodon dactylon `TifTuf` / TifTuf BermudaGrass	Sod		347,716 sf

GENERAL SOD LAWN — 58,663 sf
TifTuf Bermuda

LOWLAND SCM PLANTINGS — 86,020 sf
Native grass and perennial plantings within stormwater control zone expected to periodically hold water. Plugs and 1 gal. size.

UPLAND SCM PLANTINGS — 76,688 sf
Variety of wetland species shrubs, 18" min. ht. 48"-60" spacing typical, within stormwater control zone expected to receive periodic inundation.

SLOPE STABILZATION MIX — 320,567 sf
Seed mix & geotextile to be installed on slopes 3:1 or less, to support re-establishment of forest.
SEE L-05.02 FOR SEED MIXES

REFORESTATION SEED MIX — 92,905 sf
To be installed on disturbed areas with slopes 3:1 or less adjacent to existing woodland to support re-establishment of forest.
SEE L-05.02 FOR SEED MIXES

NO-MOW SEED MIX — 88,552 sf
BLEND OF NATIVE GRASSES AND FORBS SUITABLE FOR MOST SOIL TYPES AND FULL SUN
SEE L-05.02 FOR SEED MIXES

The signatures affixed below certify that this sheet has been reviewed and approved solely per the certifications signed to the cover sheet of these construction plans.

PW - Transportation	Date	WR - Stormwater	Date
Building Inspections	Date	Planning	Date
WR - Utility Engineering	Date	Planning - Transportation	Date
Electric	Date	Fire	Date
WR - S&E	Date	Parks, Recreation & Cultural Res.	Date

NOT FOR CONSTRUCTION

H12/Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
111 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

KEY PLAN

SEAL | DATE 03/26/21

SHEET ISSUE

01	DESIGN DEVELOPMENT	11/20/20
02	TOA MAJOR SITE PLAN SUBMITTAL	12/01/20
03	TOA MAJOR SITE PLAN RESUBMITTAL	02/12/21
04	TOA MAJOR SITE PLAN SUBMITTAL #3	03/05/21
05	60% CONSTRUCTION DOCUMENTS	03/26/21
06	TOA MAJOR SITE PLAN SUBMITTAL #4	03/26/21

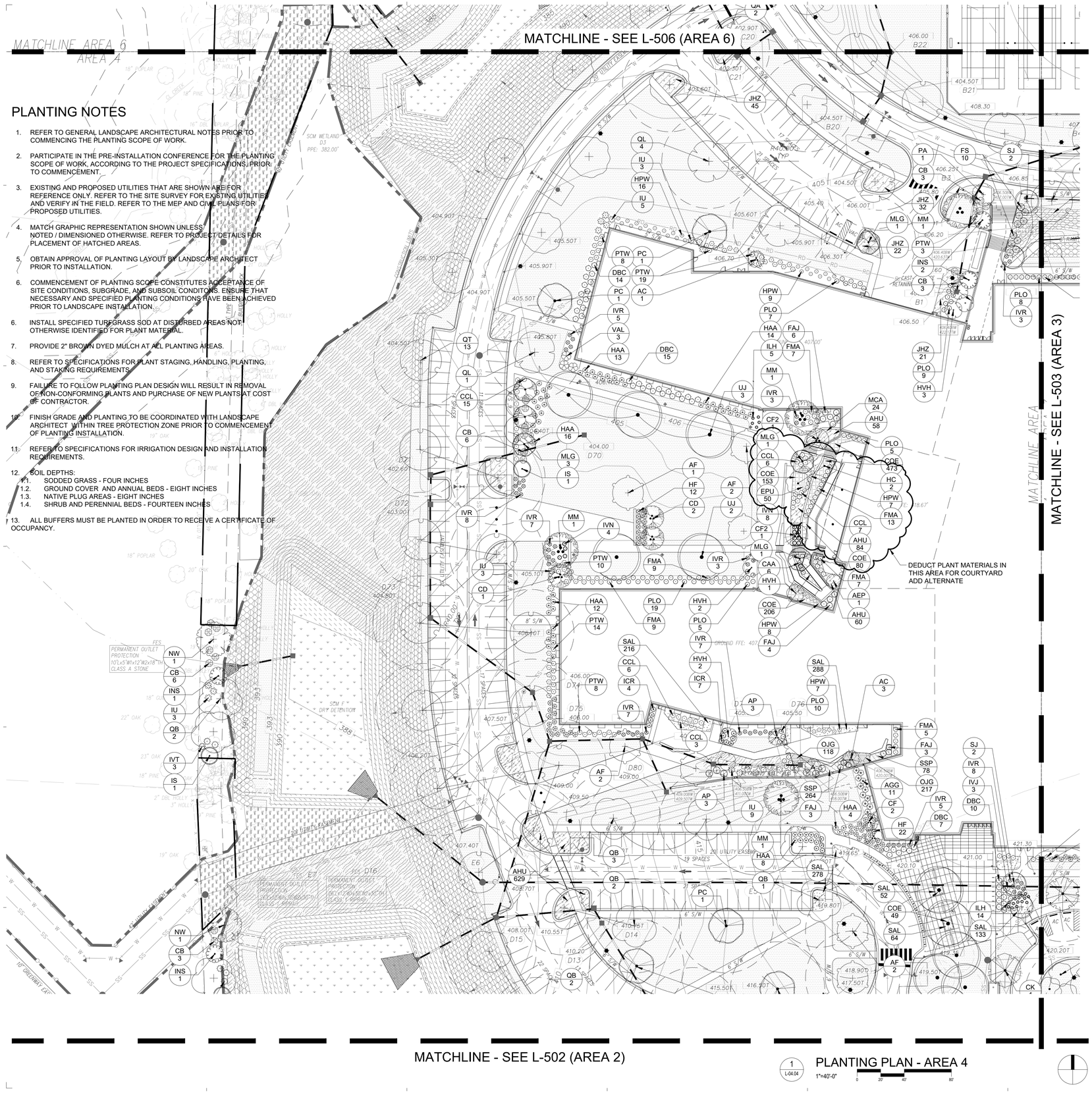
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 19150.000

SHEET TITLE
PLANTING PLAN - AREA 3

SHEET NUMBER
L-04.03



PLANTING NOTES

1. REFER TO GENERAL LANDSCAPE ARCHITECTURAL NOTES PRIOR TO COMMENCING THE PLANTING SCOPE OF WORK.
2. PARTICIPATE IN THE PRE-INSTALLATION CONFERENCE FOR THE PLANTING SCOPE OF WORK, ACCORDING TO THE PROJECT SPECIFICATIONS, PRIOR TO COMMENCEMENT.
3. EXISTING AND PROPOSED UTILITIES THAT ARE SHOWN ARE FOR REFERENCE ONLY. REFER TO THE SITE SURVEY FOR EXISTING UTILITIES AND VERIFY IN THE FIELD. REFER TO THE MEP AND CIVIL PLANS FOR PROPOSED UTILITIES.
4. MATCH GRAPHIC REPRESENTATION SHOWN UNLESS NOTED / DIMENSIONED OTHERWISE. REFER TO PROJECT DETAILS FOR PLACEMENT OF HATCHED AREAS.
5. OBTAIN APPROVAL OF PLANTING LAYOUT BY LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
6. COMMENCEMENT OF PLANTING SCOPE CONSTITUTES ACCEPTANCE OF SITE CONDITIONS, SUBGRADE, AND SUBSOIL CONDITONS. ENSURE THAT NECESSARY AND SPECIFIED PLANTING CONDITIONS HAVE BEEN ACHIEVED PRIOR TO LANDSCAPE INSTALLATION.
6. INSTALL SPECIFIED TURFGRASS SOD AT DISTURBED AREAS NOT OTHERWISE IDENTIFIED FOR PLANT MATERIAL.
7. PROVIDE 2" BROWN DYED MULCH AT ALL PLANTING AREAS.
8. REFER TO SPECIFICATIONS FOR PLANT STAGING, HANDLING, PLANTING, AND STAKING REQUIREMENTS.
9. FAILURE TO FOLLOW PLANTING PLAN DESIGN WILL RESULT IN REMOVAL OF NON-CONFORMING PLANTS AND PURCHASE OF NEW PLANTS AT COST OF CONTRACTOR.
10. FINISH GRADE AND PLANTING TO BE COORDINATED WITH LANDSCAPE ARCHITECT WITHIN TREE PROTECTION ZONE PRIOR TO COMMENCEMENT OF PLANTING INSTALLATION.
11. REFER TO SPECIFICATIONS FOR IRRIGATION DESIGN AND INSTALLATION REQUIREMENTS.
12. SOIL DEPTHS:
    - 1.1. SODDED GRASS - FOUR INCHES
    - 1.2. GROUND COVER AND ANNUAL BEDS - EIGHT INCHES
    - 1.3. NATIVE PLUG AREAS - EIGHT INCHES
    - 1.4. SHRUB AND PERENNIAL BEDS - FOURTEEN INCHES
13. ALL BUFFERS MUST BE PLANTED IN ORDER TO RECEIVE A CERTIFICATE OF OCCUPANCY.

1 L-04.04 PLANTING PLAN - AREA 4
1"=40'-0"
0 20' 40' 80'

PLANT SCHEDULE				
EVERGREEN TREES	BOTANICAL / COMMON NAME	SIZE		QTY
IS	Ilex opaca `Satyr Hill` / Satyr Hill American Holly	8' ht, 1.5" cal. min.		33
INS	Ilex x `Nellie R. Stevens` / Nellie R. Stevens Holly	6' ht, 1.5" cal. min.		17
MG	Magnolia grandiflora / Southern Magnolia	12' ht, 2.5" cal. min.		9
MLG	Magnolia grandiflora `Little Gem` / Dwarf Southern Magnolia	8' ht, 1.5" cal. min.		6
PT	Pinus taeda / Loblolly Pine	8' ht, 1.5" cal. min.		5
COLUMNAR TREES	BOTANICAL / COMMON NAME	SIZE		QTY
QI	Quercus palustris `Green Pillar` / Columnar Pin Oak	12' ht, 2.5" cal. min.		11
DECIDUOUS SHADE TREE	BOTANICAL / COMMON NAME	SIZE		QTY
AF	Acer floridanum / Southern Sugar Maple	12' ht, 2.5" cal. min.		11
CK	Cladrastis kentukea / American Yellowwood	12' ht, 2.5" cal. min.		5
MM	Magnolia virginiana `Moon Glow` / Sweet Bay	12' ht, 2.5" cal. min.		7
NW	Nyssa sylvatica `Wildfire` / Black Gum	12' ht, 2.5" cal. min.		12
PC	Pistacia chinensis / Chinese Pistache	12' ht, 2.5" cal. min.		16
QA	Quercus alba / White Oak	12' ht, 2.5" cal. min.		28
QB	Quercus bicolor / Swamp White Oak	12' ht, 2.5" cal. min.		45
QL	Quercus lyrata / Overcup Oak	12' ht, 2.5" cal. min.		21
QS	Quercus shumardii / Shumard Red Oak	12' ht, 2.5" cal. min.		24
QT	Quercus texana / Nuttall Oak	12' ht, 2.5" cal. min.		32
UJ	Ulmus americana `Jefferson` / American Elm	12' ht, 2.5" cal. min.		30
UNDERSTORY TREES	BOTANICAL / COMMON NAME	SIZE		QTY
AC	Amelanchier canadensis `Autumn Brilliance` / Autumn Brilliance Serviceberry	10' ht, multi-stem		7
CF2	Cercis canadensis `Forest Pansy` / Forest Pansy Eastern Redbud	1.5" Cal.		5
CD	Chionanthus virginicus `Dirr` / Dirr White Fringetree	10' ht, multi-stem		6
CF	Cornus florida `Cherokee Chief` / Cherokee Chief Dogwood	1.5" Cal.		4
HC	Halesia carolina / Silverbell	8' ht.		5
PA	Prunus subhirtella `Autumnalis` / Autumn Flowering Cherry	1.5" Cal.		6
SJ	Styrax japonicus / Japanese Snowbell	8' ht.		6
SHRUBS	BOTANICAL / COMMON NAME	SIZE		QTY
AGG	Abelia x grandiflora `Edward Goucher` / Glossy Abelia	18" ht, 3 gal. min.		21
AP	Aesculus parviflora / Bottlebrush Buckeye	30" ht, 4 gal. min.		52
AEP	Aesculus pavia / Red Buckeye	30" ht, 4 gal. min.		1
CAA	Callicarpa americana / American Beautyberry	30" ht, 4 gal. min.		6
CB	Camellia sasanqua `Apple Blossom` / Apple Blossom Camellia	30" ht, 4 gal. min.		103
CCL	Caryopteris x clandonensis / Bluebeard	18" ht, 3 gal. min.		57
DBC	Distylium x `Blue Cascade` / Blue Cascade Distylium	18" ht, 3 gal. min.		72
FAJ	Fatsia japonica / Japanese Fatsia	18" ht, 3 gal. min.		16
FS	Forsythia suspensa `Siebboldii` / Weeping Forsythia	30" ht, 4 gal. min.		19
FMA	Fothergilla major `Mount Airy` / Mount Airy Fothergilla	30" ht, 4 gal. min.		57
HVH	Hamamelis virginiana `Harvest Moon` / Harvest Moon Witch Hazel	30" ht, 4 gal. min.		10
HAA	Hydrangea arborescens `Abetwo` / Incrediball Hydrangea	30" ht, 4 gal. min.		77
HPW	Hydrangea quercifolia `Pee Wee` / Oakleaf Hydrangea	18" ht, 3 gal. min.		47
HF	Hypericum frondosum `Sunburst` / Sunburst Hypericum	18" ht, 3 gal. min.		96
ICR	Ilex cornuta `Rotunda` / Dwarf Chinese Holly	18" ht, 3 gal. min.		17
IVJ	Ilex verticillata `Jim Dandy` / Jim Dandy Winterberry	30" ht, 4 gal. min.		3
IVR	Ilex verticillata `Red Sprite` / Red Sprite Winterberry	30" ht, 4 gal. min.		77
IVT	Ilex vomitoria / Yaupon Holly	30" ht, 4 gal. min.		85
IVN	Ilex vomitoria `Nana` / Dwarf Yaupon	18" ht, 3 gal. min.		29
IJ	Illicum floridanum `Mss Scarlet` / Mss Scarlet Anise	30" ht, 4 gal. min.		61
ILH	Itea virginica `Little Henry` TM / Virginia Sweetspire	18" ht, 3 gal. min.		42
OHG	Osmanthus heterophyllus `Goshiki` / Goshiki Holly Olive	30" ht, 4 gal. min.		10
PTW	Pittosporum tobira `Wheeler's Dwarf` / Wheeler's Dwarf Pittosporum	18" ht, 3 gal. min.		88
PLO	Prunus laurocerasus `Otto Luyken` / Otto Luyken Laurel	30" ht, 4 gal. min.		72
VAL	Vitex agnus-castus `Lecompte` / Chaste Tree	30" ht, 4 gal. min.		17
GROUND COVERS	BOTANICAL / COMMON NAME	SIZE	SPACING	QTY
AHU	Amsonia hubrichtii / Arkansas Blue-star	Quart	18" o.c.	1,236
CKF	Calamagrostis x acutiflora `Karl Foerster` / Feather Reed Grass	1 Gal.	24" o.c.	138
COE	Carex oshimensis `Everillo` TM / EverColor Everillo Japanese Sedge	1 Gal.	12" o.c.	808
DC	Deschampsia cespitosa `Northern Lights` / Northern Lights Hair Grass	Quart	24" o.c.	539
EPU	Echinacea purpurea / Purple Coneflower	Quart	18" o.c.	50
JHZ	Juniperus horizontalis / Creeping Juniper	1 Gal.	44" o.c.	377
MCA	Muhlenbergia capillaris / Pink Muhly Grass	1 Gal.	30" o.c.	128
OJG	Ophiopogon japonicus `Gyoku-Ryu` / Mondo Grass	Quart	12" o.c.	335
RAG	Rhus aromatica `Gro-Low` / Gro-Low Fragrant Sumac	1 Gal.	36" o.c.	697
SSP	Sedum spectabile `Purple Emporer` / Stonecrop	1 Gal.	16" o.c.	342
SAL	Sisyrinchium angustifolium `Lucerne` / Lucerne Blue Eyed Grass	Pint	12" o.c.	2,863
TURF	BOTANICAL / COMMON NAME	SIZE	SPACING	QTY
T1	Cynodon dactylon `TiF419` / Bermuda Grass	Sod		327,965 sf
T2	Cynodon dactylon `TifTuf` / TifTuf BermudaGrass	Sod		347,718 sf

GENERAL SOD LAWN — TifTuf Bermuda — 58,663 sf

LOWLAND SCM PLANTINGS — Native grass and perennial plantings within stormwater control zone expected to periodically hold water. Plugs and 1 gal. size. — 86,020 sf

UPLAND SCM PLANTINGS — Variety of wetland species shrubs, 18" min. ht, 48"-60" spacing, typical. within stormwater control zone expected to receive periodic inundation. — 76,688 sf

SLOPE STABILIZATION MIX — Seed mix & geotextile to be installed on slopes 3:1 or less, to support re-establishment of forest. SEE L-05.02 FOR SEED MIXES — 320,567 sf

REFORESTATION SEED MIX — To be installed on disturbed areas with slopes 3:1 or less adjacent to existing woodland to support re-establishment of forest. SEE L-05.02 FOR SEED MIXES — 92,905 sf

NO-MOW SEED MIX — BLEND OF NATIVE GRASSES AND FORBS SUITABLE FOR MOST SOIL TYPES AND FULL SUN. SEE L-05.02 FOR SEED MIXES — 88,552 sf

The signatures affixed below certify that this sheet has been reviewed and approved solely per the certifications signed to the cover sheet of these construction plans.

PW - Transportation	Date	WR - Stormwater	Date
Building Inspections	Date	Planning	Date
WR - Utility Engineering	Date	Planning - Transportation	Date
Electric	Date	Fire	Date
WR - S&E	Date	Parks, Recreation & Cultural Res.	Date

NOT FOR CONSTRUCTION

H12/Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

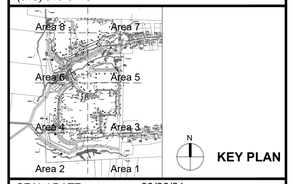
Owner
Wake County Public Schools
111 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716



KEY PLAN

SEAL | DATE 03/26/21

SHEET ISSUE

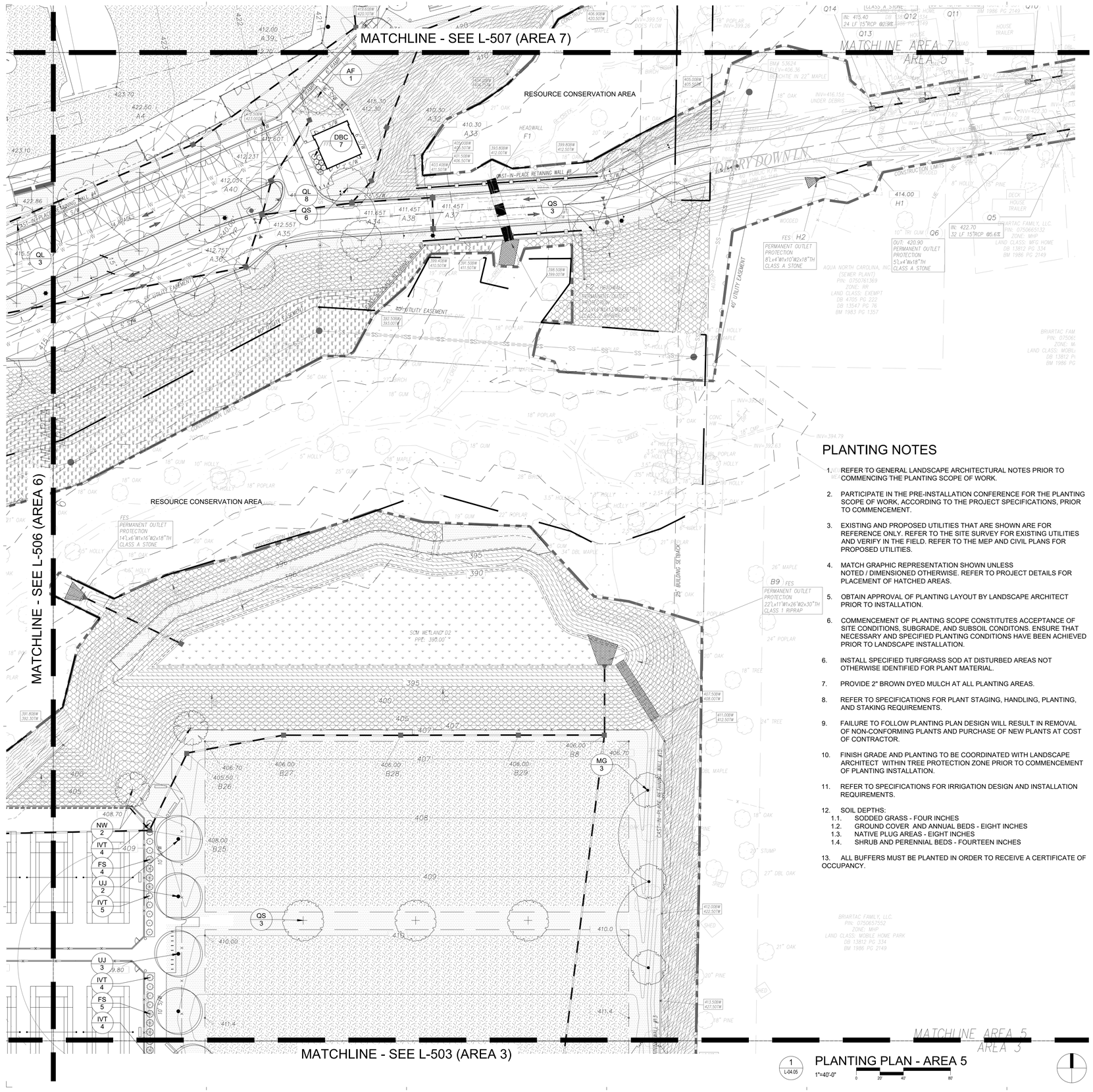
01	DESIGN DEVELOPMENT	11/20/20
02	TOA MAJOR SITE PLAN SUBMITTAL	12/01/20
03	TOA MAJOR SITE PLAN RESUBMITTAL	02/12/21
04	TOA MAJOR SITE PLAN SUBMITTAL #3	03/05/21
05	60% CONSTRUCTION DOCUMENTS	03/26/21
06	TOA MAJOR SITE PLAN SUBMITTAL #4	03/26/21

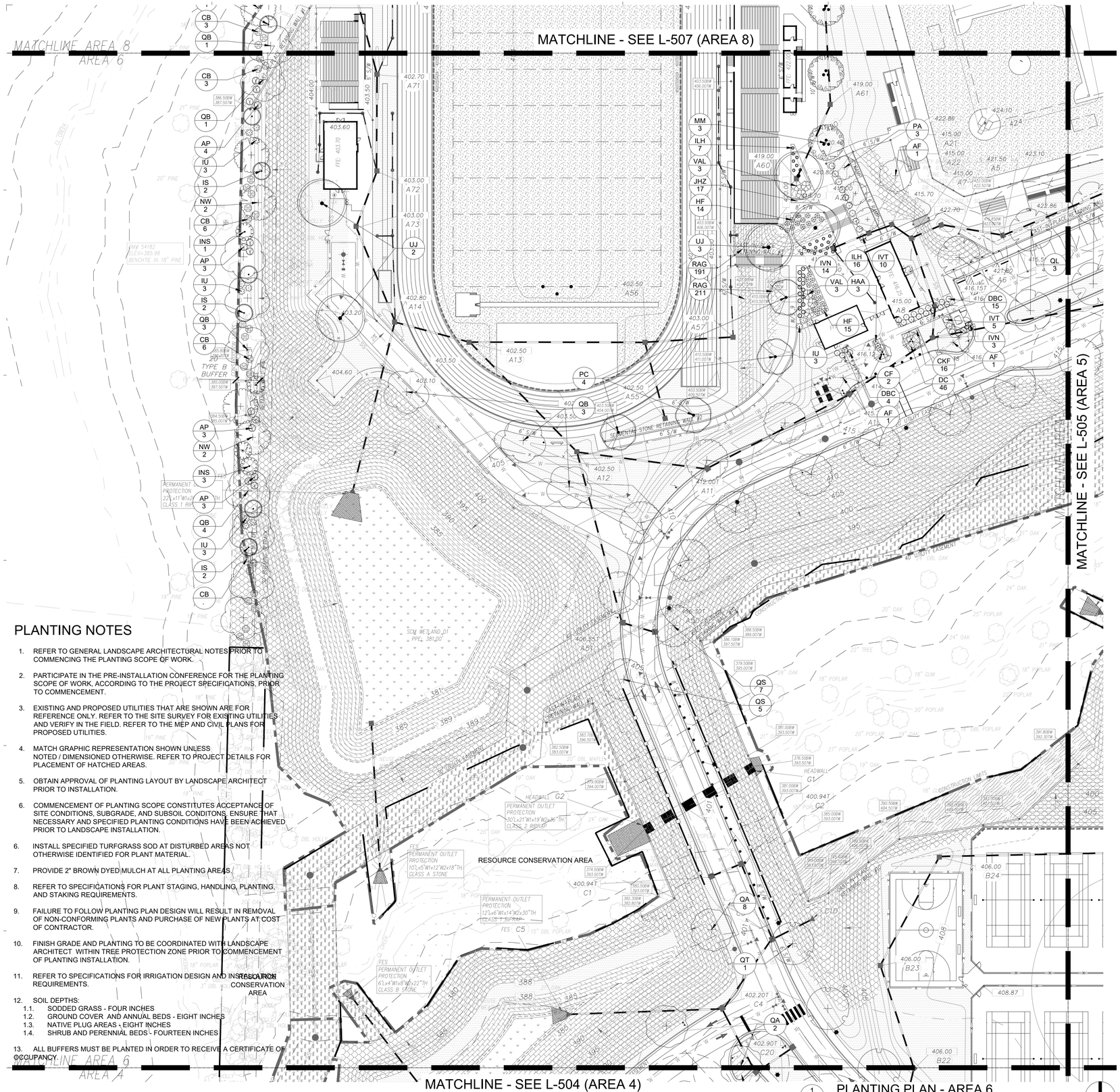
RATIO
COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 19150.000

SHEET TITLE
PLANTING PLAN - AREA 4

SHEET NUMBER
L-04.04


MATCHLINE - SEE L-507 (AREA 7)
MATCHLINE - SEE L-506 (AREA 6)
MATCHLINE - SEE L-503 (AREA 3)
MATCHLINE AREA 5 AREA 3
RESOURCE CONSERVATION AREA
RESOURCE CONSERVATION AREA
EAST-WEST PLACE
EAST-WEST PLACE
EAST-WEST PLACE



PLANTING NOTES

1. REFER TO GENERAL LANDSCAPE ARCHITECTURAL NOTES PRIOR TO COMMENCING THE PLANTING SCOPE OF WORK.
2. PARTICIPATE IN THE PRE-INSTALLATION CONFERENCE FOR THE PLANTING SCOPE OF WORK, ACCORDING TO THE PROJECT SPECIFICATIONS, PRIOR TO COMMENCEMENT.
3. EXISTING AND PROPOSED UTILITIES THAT ARE SHOWN ARE FOR REFERENCE ONLY. REFER TO THE SITE SURVEY FOR EXISTING UTILITIES AND VERIFY IN THE FIELD. REFER TO THE MEP AND CIVIL PLANS FOR PROPOSED UTILITIES.
4. MATCH GRAPHIC REPRESENTATION SHOWN UNLESS NOTED / DIMENSIONED OTHERWISE. REFER TO PROJECT DETAILS FOR PLACEMENT OF HATCHED AREAS.
5. OBTAIN APPROVAL OF PLANTING LAYOUT BY LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
6. COMMENCEMENT OF PLANTING SCOPE CONSTITUTES ACCEPTANCE OF SITE CONDITIONS, SUBGRADE, AND SUBSOIL CONDITONS. ENSURE THAT NECESSARY AND SPECIFIED PLANTING CONDITIONS HAVE BEEN ACHIEVED PRIOR TO LANDSCAPE INSTALLATION.
6. INSTALL SPECIFIED TURFGRASS SOD AT DISTURBED AREAS NOT OTHERWISE IDENTIFIED FOR PLANT MATERIAL.
7. PROVIDE 2" BROWN DYED MULCH AT ALL PLANTING AREAS.
8. REFER TO SPECIFICATIONS FOR PLANT STAGING, HANDLING, PLANTING, AND STAKING REQUIREMENTS.
9. FAILURE TO FOLLOW PLANTING PLAN DESIGN WILL RESULT IN REMOVAL OF NON-CONFORMING PLANTS AND PURCHASE OF NEW PLANTS AT COST OF CONTRACTOR.
10. FINISH GRADE AND PLANTING TO BE COORDINATED WITH LANDSCAPE ARCHITECT WITHIN TREE PROTECTION ZONE PRIOR TO COMMENCEMENT OF PLANTING INSTALLATION.
11. REFER TO SPECIFICATIONS FOR IRRIGATION DESIGN AND INSTALLATION REQUIREMENTS.
12. SOIL DEPTHS:
    - 1.1. SODDED GRASS - FOUR INCHES
    - 1.2. GROUND COVER AND ANNUAL BEDS - EIGHT INCHES
    - 1.3. NATIVE PLUG AREAS - EIGHT INCHES
    - 1.4. SHRUB AND PERENNIAL BEDS - FOURTEEN INCHES
13. ALL BUFFERS MUST BE PLANTED IN ORDER TO RECEIVE A CERTIFICATE OF OCCUPANCY.

1 L-04.06 PLANTING PLAN - AREA 6
1"=40'-0"
0 20' 40' 80'

PLANT SCHEDULE				
EVERGREEN TREES	BOTANICAL / COMMON NAME	SIZE		QTY
IS	Ilex opaca `Satyr Hill` / Satyr Hill American Holly	8' Ht, 1.5" cal. min.		33
INS	Ilex x `Nellie R. Stevens` / Nellie R. Stevens Holly	8' Ht, 1.5" cal. min.		17
MG	Magnolia grandiflora / Southern Magnolia	12' Ht, 2.5" cal. min.		9
MLG	Magnolia grandiflora `Little Gem` / Dwarf Southern Magnolia	8' Ht, 1.5" cal. min.		6
PT	Pinus taeda / Loblolly Pine	8' Ht, 1.5" cal. min.		5
COLUMNAR TREES	BOTANICAL / COMMON NAME	SIZE		QTY
QI	Quercus palustris `Green Pillar` / Columnar Pin Oak	12' Ht, 2.5" cal. min.		11
DECIDUOUS SHADE TREE	BOTANICAL / COMMON NAME	SIZE		QTY
AF	Acer floridanum / Southern Sugar Maple	12' Ht, 2.5" cal. min.		11
CK	Cladrastis kentukea / American Yellowwood	12' Ht, 2.5" cal. min.		5
MM	Magnolia virginiana `Moon Glow` / Sweet Bay	12' Ht, 2.5" cal. min.		7
NW	Nyssa sylvatica `Wildfire` / Black Gum	12' Ht, 2.5" cal. min.		12
PC	Pistacia chinensis / Chinese Pistache	12' Ht, 2.5" cal. min.		16
QA	Quercus alba / White Oak	12' Ht, 2.5" cal. min.		28
QB	Quercus bicolor / Swamp White Oak	12' Ht, 2.5" cal. min.		45
QL	Quercus lyrata / Overcup Oak	12' Ht, 2.5" cal. min.		21
QS	Quercus shumardii / Shumard Red Oak	12' Ht, 2.5" cal. min.		24
QT	Quercus texana / Nuttall Oak	12' Ht, 2.5" cal. min.		32
UJ	Ulmus americana `Jefferson` / American Elm	12' Ht, 2.5" cal. min.		30
UNDERSTORY TREES	BOTANICAL / COMMON NAME	SIZE		QTY
AC	Amelanchier canadensis `Autumn Brilliance` / Autumn Brilliance Serviceberry	10' Ht, multi-stem		7
CF2	Cercis canadensis `Forest Pansy` / Forest Pansy Eastern Redbud	1.5" Cal.		5
CD	Chionanthus virginicus `Dirr` / Dirr White Fringetree	10' Ht, multi-stem		6
CF	Cornus florida `Cherokee Chief` / Cherokee Chief Dogwood	1.5" Cal.		4
HC	Halesia carolina / Silverbell	8' Ht.		5
PA	Prunus subhirtella `Autumnalis` / Autumn Flowering Cherry	1.5" Cal.		6
SJ	Styrax japonicus / Japanese Snowbell	8' Ht.		6
SHRUBS	BOTANICAL / COMMON NAME	SIZE		QTY
AGG	Abelia x grandiflora `Edward Goucher` / Glossy Abelia	18" Ht, 3 gal. min.		21
AP	Aesculus parviflora / Bottlebrush Buckeye	30" Ht, 4 gal. min.		52
AEP	Aesculus pavia / Red Buckeye	30" Ht, 4 gal. min.		1
CAA	Callicarpa americana / American Beautyberry	30" Ht, 4 gal. min.		6
CB	Camellia sasanqua `Apple Blossom` / Apple Blossom Camellia	30" Ht, 4 gal. min.		103
CCL	Caryopteris x clandonensis / Bluebeard	18" Ht, 3 gal. min.		57
DBC	Distylium x `Blue Cascade` / Blue Cascade Distylium	18" Ht, 3 gal. min.		72
FAJ	Fatsia japonica / Japanese Fatsia	18" Ht, 3 gal. min.		16
FS	Forsythia suspensa `Sieboldii` / Weeping Forsythia	30" Ht, 4 gal. min.		19
FMA	Fothergilla major `Mount Airy` / Mount Airy Fothergilla	30" Ht, 4 gal. min.		57
HVH	Hamamelis virginiana `Harvest Moon` / Harvest Moon Witch Hazel	30" Ht, 4 gal. min.		10
HAA	Hydrangea arborescens `Abetwo` / IncrediBall Hydrangea	30" Ht, 4 gal. min.		77
HPW	Hydrangea quercifolia `Pee Wee` / Oakleaf Hydrangea	18" Ht, 3 gal. min.		47
HF	Hypericum frondosum `Sunburst` / Sunburst Hypericum	18" Ht, 3 gal. min.		96
IOR	Ilex cornuta `Rotunda` / Dwarf Chinese Holly	18" Ht, 3 gal. min.		17
IVJ	Ilex verticillata `Jim Dandy` / Jim Dandy Winterberry	30" Ht, 4 gal. min.		3
IVR	Ilex verticillata `Red Sprite` / Red Sprite Winterberry	30" Ht, 4 gal. min.		77
IVT	Ilex vomitoria / Yaupon Holly	30" Ht, 4 gal. min.		85
IVN	Ilex vomitoria `Nana` / Dwarf Yaupon	18" Ht, 3 gal. min.		29
IJ	Illicum floridanum `Miss Scarlet` / Miss Scarlet Anise	30" Ht, 4 gal. min.		61
ILH	Itea virginica `Little Henry` TM / Virginia Sweetspire	18" Ht, 3 gal. min.		42
OHG	Osmanthus heterophyllus `Goshiki` / Goshiki Holly Olive	30" Ht, 4 gal. min.		10
PTW	Pittosporum tobira `Wheeler`s Dwarf` / Wheeler`s Dwarf Pittosporum	18" Ht, 3 gal. min.		88
PLO	Prunus laurocerasus `Otto Luyken` / Otto Luyken Laurel	30" Ht, 4 gal. min.		72
VAL	Vitex agnus-castus `Lecompte` / Chaste Tree	30" Ht, 4 gal. min.		17
GROUND COVERS	BOTANICAL / COMMON NAME	SIZE	SPACING	QTY
AHU	Amsonia hubrichtii / Arkansas Blue-star	Quart	18" o.c.	1,236
CKF	Calamagrostis x acutiflora `Karl Foerster` / Feather Reed Grass	1 Gal.	24" o.c.	138
COE	Carex oshimensis `Evergold` TM / EverColor Everlto Japanese Sedge	1 Gal.	12" o.c.	808
DC	Deschampsia cespitosa `Northern Lights` / Northern Lights Hair Grass	Quart	24" o.c.	539
EPU	Echinacea purpurea / Purple Coneflower	Quart	18" o.c.	50
JHZ	Juniperus horizontalis / Creeping Juniper	1 Gal.	44" o.c.	377
MCA	Muhlenbergia capillaris / Pink Muhly Grass	1 Gal.	30" o.c.	128
OJG	Ophiopogon japonicus `Gyoku Ryu` / Mondo Grass	Quart	12" o.c.	335
RAG	Rhus aromatica `Gro-Low` / Gro-Low Fragrant Sumac	1 Gal.	36" o.c.	697
SSP	Sedum spectabile `Purple Emporer` / Stonecrop	1 Gal.	16" o.c.	342
SAL	Sisyrinchium angustifolium `Lucerne` / Lucerne Blue Eyed Grass	Pint	12" o.c.	2,863
TURF	BOTANICAL / COMMON NAME	SIZE	SPACING	QTY
T1	Cynodon dactylon `TiF419` / Bermuda Grass	Sod		327,965 sf
T2	Cynodon dactylon `TiFTuf` / TiTuf BermudaGrass	Sod		347,718 sf

GENERAL SOD LAWN TiFTuf Bermuda -	58,663 sf
LOWLAND SCM PLANTINGS Native grass and perennial plantings within stormwater control zone expected to periodically hold water. Plugs and gal. size. -	86,020 sf
UPLAND SCM PLANTINGS Variety of wetland species shrubs, 18" min. ht, 48"-60" spacing typical, within stormwater control zone expected to receive periodic inundation. -	76,688 sf
SLOPE STABILIZATION MIX Seed mix & geotextile to be installed on slopes 3:1 or less, to support re-establishment of forest. SEE L-05.02 FOR SEED MIXES	320,567 sf
REFORESTATION SEED MIX To be installed on disturbed areas with slopes 3:1 or less adjacent to existing woodland to support re-establishment of forest. SEE L-05.02 FOR SEED MIXES	92,905 sf
NO-MOW SEED MIX BLEND OF NATIVE GRASSES AND FORBS SUITABLE FOR MOST SOIL TYPES AND FULL SUN. SEE L-05.02 FOR SEED MIXES	88,552 sf

The signatures affixed below certify that this sheet has been reviewed and approved solely per the certifications signed to the cover sheet of these construction plans.

PW - Transportation	Date	WR - Stormwater	Date
Building Inspections	Date	Planning	Date
WR - Utility Engineering	Date	Planning - Transportation	Date
Electric	Date	Fire	Date
WR - S&E	Date	Parks, Recreation & Cultural Res.	Date

NOT FOR CONSTRUCTION

H12/Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

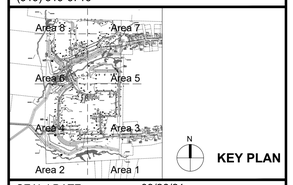
Owner
Wake County Public Schools
111 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716



KEY PLAN

SEAL | DATE 03/26/21

SHEET ISSUE

01	DESIGN DEVELOPMENT	11/20/20
02	TOA MAJOR SITE PLAN SUBMITTAL	12/01/20
03	TOA MAJOR SITE PLAN RESUBMITTAL	02/12/21
04	TOA MAJOR SITE PLAN SUBMITTAL #3	03/05/21
05	60% CONSTRUCTION DOCUMENTS	03/26/21
06	TOA MAJOR SITE PLAN SUBMITTAL #4	03/26/21

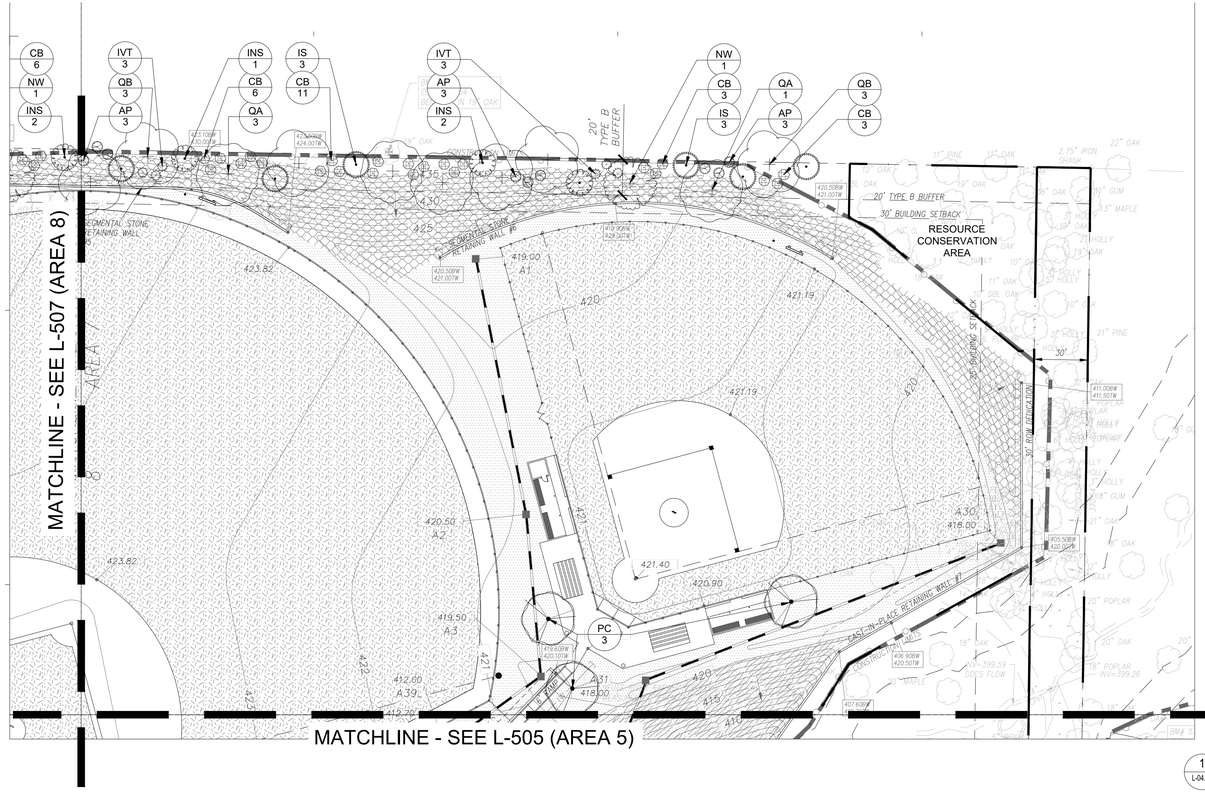
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 19150.000

SHEET TITLE
PLANTING PLAN - AREA 6

SHEET NUMBER
L-04.06



1 L-04.07

PLANTING PLAN AREA 7

1"=40'-0"

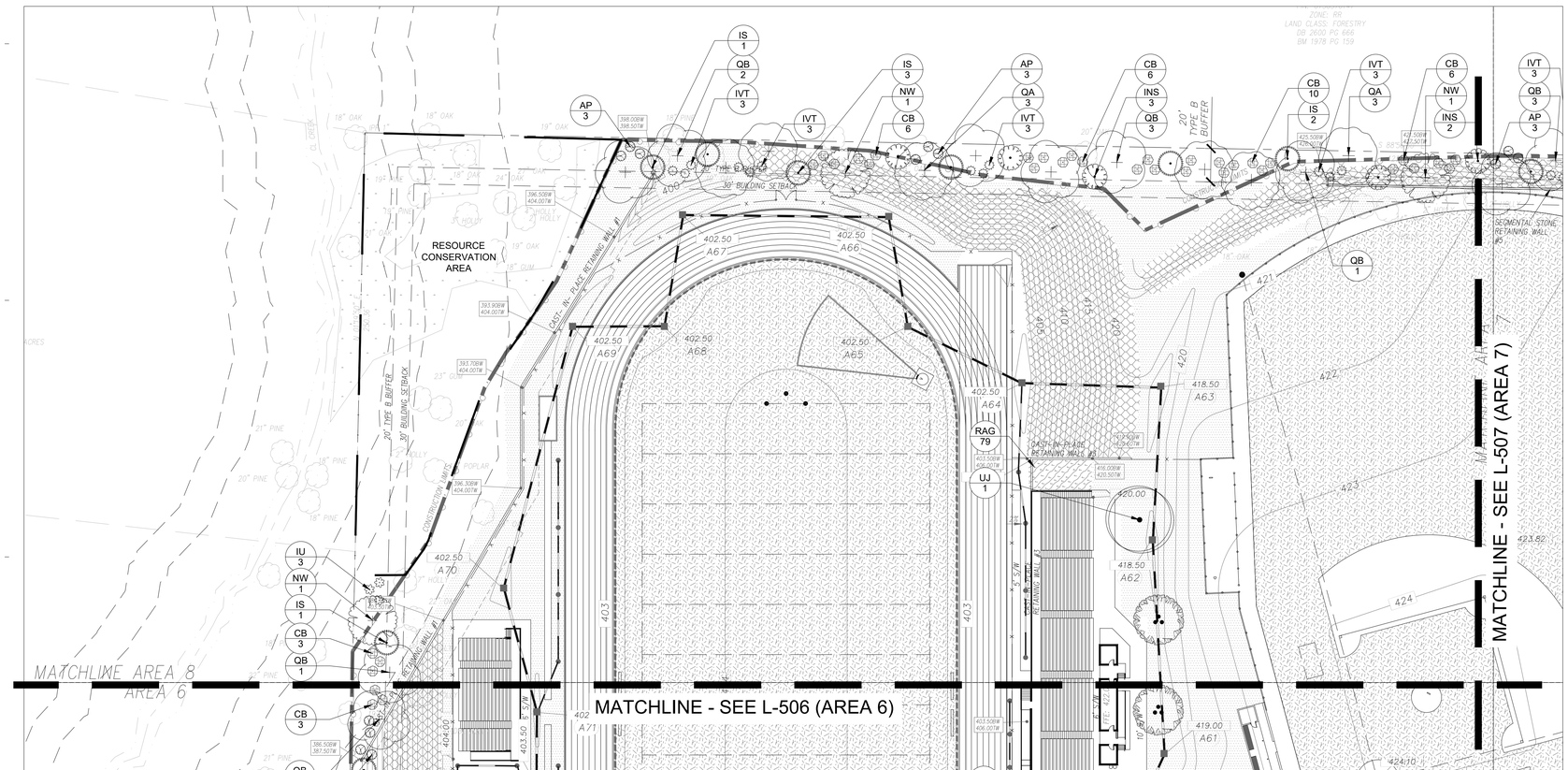
0 20' 40' 80'

PLANTING NOTES

1. REFER TO GENERAL LANDSCAPE ARCHITECTURAL NOTES PRIOR TO COMMENCING THE PLANTING SCOPE OF WORK.
2. PARTICIPATE IN THE PRE-INSTALLATION CONFERENCE FOR THE PLANTING SCOPE OF WORK, ACCORDING TO THE PROJECT SPECIFICATIONS, PRIOR TO COMMENCEMENT.
3. EXISTING AND PROPOSED UTILITIES THAT ARE SHOWN ARE FOR REFERENCE ONLY. REFER TO THE SITE SURVEY FOR EXISTING UTILITIES AND VERIFY IN THE FIELD. REFER TO THE MEP AND CIVIL PLANS FOR PROPOSED UTILITIES.
4. MATCH GRAPHIC REPRESENTATION SHOWN UNLESS NOTED / DIMENSIONED OTHERWISE. REFER TO PROJECT DETAILS FOR PLACEMENT OF HATCHED AREAS.
5. OBTAIN APPROVAL OF PLANTING LAYOUT BY LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
6. COMMENCEMENT OF PLANTING SCOPE CONSTITUTES ACCEPTANCE OF SITE CONDITIONS, SUBGRADE, AND SUBSOIL CONDITONS. ENSURE THAT NECESSARY AND SPECIFIED PLANTING CONDITIONS HAVE BEEN ACHIEVED PRIOR TO LANDSCAPE INSTALLATION.
6. INSTALL SPECIFIED TURFGRASS SOD AT DISTURBED AREAS NOT OTHERWISE IDENTIFIED FOR PLANT MATERIAL.
7. PROVIDE 2" BROWN DYED MULCH AT ALL PLANTING AREAS.
8. REFER TO SPECIFICATIONS FOR PLANT STAGING, HANDLING, PLANTING, AND STAKING REQUIREMENTS.
9. FAILURE TO FOLLOW PLANTING PLAN DESIGN WILL RESULT IN REMOVAL OF NON-CONFORMING PLANTS AND PURCHASE OF NEW PLANTS AT COST OF CONTRACTOR.
10. FINISH GRADE AND PLANTING TO BE COORDINATED WITH LANDSCAPE ARCHITECT WITHIN TREE PROTECTION ZONE PRIOR TO COMMENCEMENT OF PLANTING INSTALLATION.
11. REFER TO SPECIFICATIONS FOR IRRIGATION DESIGN AND INSTALLATION REQUIREMENTS.
12. SOIL DEPTHS:
    - 1.1. SODDED GRASS - FOUR INCHES
    - 1.2. GROUND COVER AND ANNUAL BEDS - EIGHT INCHES
    - 1.3. NATIVE PLUG AREAS - EIGHT INCHES
    - 1.4. SHRUB AND PERENNIAL BEDS - FOURTEEN INCHES
13. ALL BUFFERS MUST BE PLANTED IN ORDER TO RECEIVE A CERTIFICATE OF OCCUPANCY.

PLANT SCHEDULE				
EVERGREEN TREES	BOTANICAL / COMMON NAME	SIZE		QTY
IS	Ilex opaca `Satyr Hill` / Satyr Hill American Holly	8` ht, 1.5" cal. min.		33
INS	Ilex x `Nellie R. Stevens` / Nellie R. Stevens Holly	8` ht, 1.5" cal. min.		17
MG	Magnolia grandiflora / Southern Magnolia	12` ht, 2.5" cal. min.		9
MLG	Magnolia grandiflora `Little Gem` / Dwarf Southern Magnolia	8` ht, 1.5" cal. min.		6
PT	Pinus taeda / Loblolly Pine	8` ht, 1.5" cal. min.		5
COLUMNAR TREES	BOTANICAL / COMMON NAME	SIZE		QTY
QI	Quercus palustris `Green Pillar` / Columnar Pin Oak	12` ht, 2.5" cal. min.		11
DECIDUOUS SHADE TREE	BOTANICAL / COMMON NAME	SIZE		QTY
AF	Acer floridanum / Southern Sugar Maple	12` ht, 2.5" cal. min.		11
CK	Cladrastis kentukea / American Yellowwood	12` ht, 2.5" cal. min.		5
MM	Magnolia virginiana `Moon Glow` / Sweet Bay	12` ht, 2.5" cal. min.		7
NW	Nyssa sylvatica `Wildfire` / Black Gum	12` ht, 2.5" cal. min.		12
PC	Pistacia chinensis / Chinese Pistache	12` ht, 2.5" cal. min.		16
QA	Quercus alba / White Oak	12` ht, 2.5" cal. min.		28
QB	Quercus bicolor / Swamp White Oak	12` ht, 2.5" cal. min.		45
QL	Quercus lyrata / Overcup Oak	12` ht, 2.5" cal. min.		21
QS	Quercus shumardii / Shumard Red Oak	12` ht, 2.5" cal. min.		24
QT	Quercus texana / Nuttall Oak	12` ht, 2.5" cal. min.		32
UJ	Ulmus americana `Jefferson` / American Elm	12` ht, 2.5" cal. min.		30
UNDERSTORY TREES	BOTANICAL / COMMON NAME	SIZE		QTY
AC	Amelanchier canadensis `Autumn Brilliance` / Autumn Brilliance Serviceberry	10` ht, multi-stem		7
CF2	Cercis canadensis `Forest Pansy` / Forest Pansy Eastern Redbud	1.5" Cal.		5
CD	Chionanthus virginicus `Dirr` / Dirr White Fringetree	10` ht, multi-stem		6
CF	Cornus florida `Cherokee Chief` / Cherokee Chief Dogwood	1.5" Cal.		4
HC	Halesia carolina / Silverbell	8` ht.		5
PA	Prunus subhirtella `Autumnalis` / Autumn Flowering Cherry	1.5" Cal.		6
SJ	Styrax japonicus / Japanese Snowbell	8` ht.		6
SHRUBS	BOTANICAL / COMMON NAME	SIZE		QTY
AGG	Abelia x grandiflora `Edward Goucher` / Glossy Abelia	18" ht, 3 gal. min.		21
AP	Aesculus parviflora / Bottlebrush Buckeye	30" ht, 4 gal. min.		52
AEP	Aesculus pavia / Red Buckeye	30" ht, 4 gal. min.		1
CAA	Callicarpa americana / American Beautyberry	30" ht, 4 gal. min.		6
CB	Camellia sasanqua `Apple Blossom` / Apple Blossom Camellia	30" ht, 4 gal. min.		103
CCL	Caryopteris x clandonensis / Bluebeard	18" ht, 3 gal. min.		57
DBC	Distylium x `Blue Cascade` / Blue Cascade Distylium	18" ht, 3 gal. min.		72
FAJ	Fatsia japonica / Japanese Fatsia	18" ht, 3 gal. min.		16
FS	Forsythia suspensa `Sieboldii` / Weeping Forsythia	30" ht, 4 gal. min.		19
FMA	Fothergilla major `Mount Airy` / Mount Airy Fothergilla	30" ht, 4 gal. min.		57
HVH	Hamamelis virginiana `Harvest Moon` / Harvest Moon Witch Hazel	30" ht, 4 gal. min.		10
HAA	Hydrangea arborescens `Abetwo` / Incredibal® Hydrangea	30" ht, 4 gal. min.		77
HPW	Hydrangea quercifolia `Pee Wee` / Oakleaf Hydrangea	18" ht, 3 gal. min.		47
HF	Hypericum frondosum `Sunburst` / Sunburst Hypericum	18" ht, 3 gal. min.		96
ICR	Ilex cornuta `Rotunda` / Dwarf Chinese Holly	18" ht, 3 gal. min.		17
IVJ	Ilex verticillata `Jim Dandy` / Jim Dandy Winterberry	30" ht, 4 gal. min.		3
IVR	Ilex verticillata `Red Sprite` / Red Sprite Winterberry	30" ht, 4 gal. min.		77
IVT	Ilex vomitoria / Yaupon Holly	30" ht, 4 gal. min.		85
IVN	Ilex vomitoria `Nana` / Dwarf Yaupon	18" ht, 3 gal. min.		29
IU	Illicium floridanum `Miss Scarlet` / Miss Scarlet Anise	30" ht, 4 gal. min.		61
ILH	Itea virginica `Little Henry` TM / Virginia Sweetspire	18" ht, 3 gal. min.		42
OHG	Osmanthus heterophyllus `Goshiki` / Goshiki Holly Olive	30" ht, 4 gal. min.		10
PTW	Pittosporum tobira `Wheeler's Dwarf` / Wheeler`s Dwarf Pittosporum	18" ht, 3 gal. min.		88
PLO	Prunus laurocerasus `Otto Luyken` / Otto Luyken Laurel	30" ht, 4 gal. min.		72
VAL	Vitex agnus-castus `Lecompte` / Chaste Tree	30" ht, 4 gal. min.		17
GROUND COVERS	BOTANICAL / COMMON NAME	SIZE	SPACING	QTY
AHU	Amsonia hubrichtii / Arkansas Blue-star	Quart	18" o.c.	1,236
CKF	Calamagrostis x acutiflora `Karl Foerster` / Feather Reed Grass	1 Gal.	24" o.c.	138
COE	Carex oshimensis `Everillo` TM / EverColor Everillo Japanese Sedge	1 Gal.	12" o.c.	808
DC	Deschampsia cespitosa `Northern Lights` / Northern Lights Hair Grass	Quart	24" o.c.	539
EPU	Echinacea purpurea / Purple Coneflower	Quart	18" o.c.	50
JHZ	Juniperus horizontalis / Creeping Juniper	1 Gal.	44" o.c.	377
MCA	Muhlenbergia capillaris / Pink Muhly Grass	1 Gal.	30" o.c.	128
OJG	Ophiopogon japonicus `Gyoko Ryu` / Mondo Grass	Quart	12" o.c.	335
RAG	Rhus aromatica `Gro-Low` / Gro-Low Fragrant Sumac	1 Gal.	36" o.c.	697
SSP	Sedum spectabile `Purple Emperor` / Stonecrop	1 Gal.	18" o.c.	342
SAL	Sisyrinchium angustifolium `Lucerne` / Lucerne Blue Eyed Grass	Pint	12" o.c.	2,863
TURF	BOTANICAL / COMMON NAME	SIZE	SPACING	QTY
T1	Cynodon dactylon `TF-419` / Bermuda Grass	Sod		327,965 sf
T2	Cynodon dactylon `TifTuf` / TifTuf BermudaGrass	Sod		347,718 sf

GENERAL SOD LAWN TifTuf Bermuda -	58,663 sf
LOWLAND SCM PLANTINGS Native grass and perennial plantings within stormwater control zone expected to periodically hold water. Plugs and 1 gal. size. -	86,020 sf
UPLAND SCM PLANTINGS Variety of wetland species shrubs, 18" min. ht, 48"-60" spacing typical, within stormwater control zone expected to receive periodic inundation. -	76,688 sf
SLOPE STABILIZATION MIX Seed mix & geotextile to be installed on slopes 3:1 or less, to support re-establishment of forest. SEE L-05.02 FOR SEED MIXES	320,567 sf
REFORESTATION SEED MIX To be installed on disturbed areas with slopes 3:1 or less adjacent to existing woodland to support re-establishment of forest. SEE L-05.02 FOR SEED MIXES	92,905 sf
NO-MOW SEED MIX BLEND OF NATIVE GRASSES AND FORBS SUITABLE FOR MOST SOIL TYPES AND FULL SUN SEE L-05.02 FOR SEED MIXES	88,552 sf



1 L-04.07

PLANTING PLAN AREA 8

1"=40'-0"

0 20' 40' 80'

The signatures affixed below certify that this sheet has been reviewed and approved solely per the certifications signed to the cover sheet of these construction plans.

PW - Transportation	Date	WR - Stormwater	Date
Building Inspections	Date	Planning	Date
WR - Utility Engineering	Date	Planning - Transportation	Date
Electric	Date	Fire	Date
WR - S&E	Date	Parks, Recreation & Cultural Res.	Date

NOT FOR CONSTRUCTION

H12/Felton Grove High School

8550 Stephenson Road Apex, NC 27539

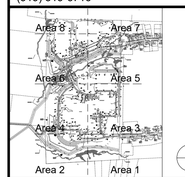
Owner
Wake County Public Schools
111 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716



KEY PLAN

SEAL | DATE 03/26/21

SHEET ISSUE

01	DESIGN DEVELOPMENT	11/20/20
02	TOA MAJOR SITE PLAN SUBMITTAL	12/01/20
03	TOA MAJOR SITE PLAN RESUBMITTAL	02/12/21
04	TOA MAJOR SITE PLAN SUBMITTAL #3	03/05/21
05	60% CONSTRUCTION DOCUMENTS	03/26/21
06	TOA MAJOR SITE PLAN SUBMITTAL #4	03/26/21

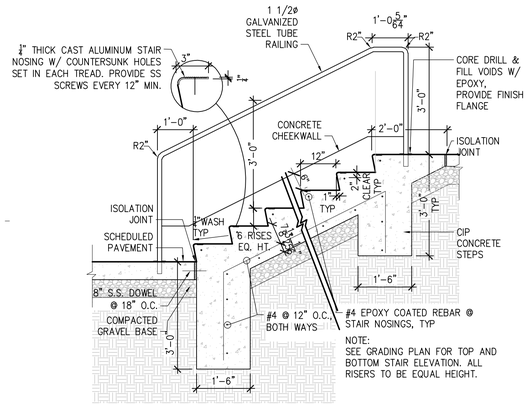
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

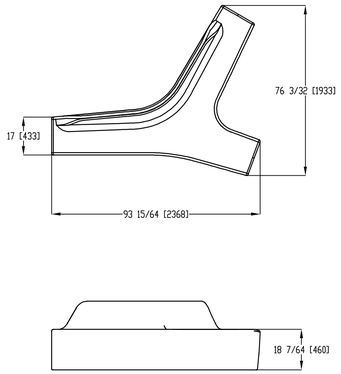
PROJECT NO. 19150.000

SHEET TITLE
PLANTING PLAN - AREAS 7 & 8

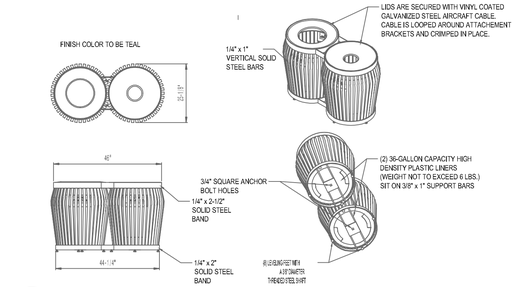
SHEET NUMBER
L-04.07



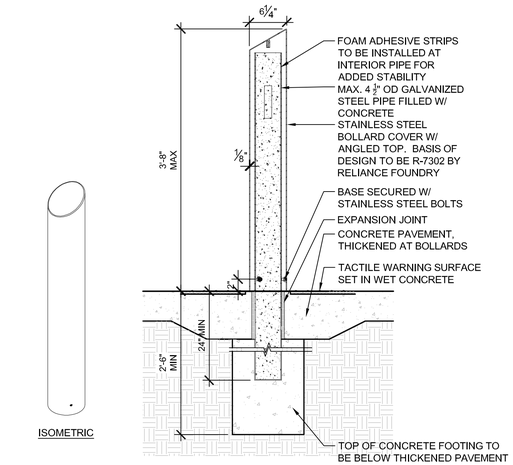
E1 L-05.01 **CIP CONCRETE STAIRS**
1/2" = 1'-0" P-H12-05



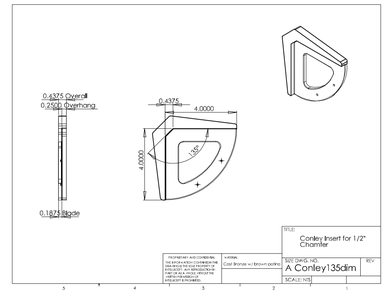
D2 L-05.01 **'TWIG' BENCH W/ BACK**
3/8" = 1'-0" P-H12-11

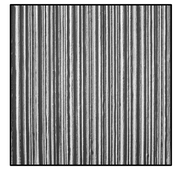


F5 L-05.01 **TRASH/RECYCLE RECEPTACLE**
3/8" = 1'-0" P-H12-21



D5 L-05.01 **DECORATIVE BOLLARD**
1" = 1'-0" P-H12-08





2/42 NAAB

An abstract pattern with a linear texture. Varyingly wide grooves in an even arrangement only unobtrusively break the concrete.

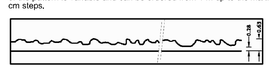
BASIS OF DESIGN FORMLINER FOR CAST-IN-PLACE CONCRETE TO BE:
2/42 NAAB BY US FORMLINER POWERED BY RECKLI
380 COMMERCE BLVD
ATHENS, GA 30606
P. (706) 549-6787

DIMENSIONS

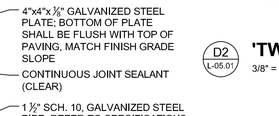
Uses	Dimensions (in)	Order Number
100	L 291.34 × L 149.61	C 2042
10	L 291.34 × L 49.21	E 2042

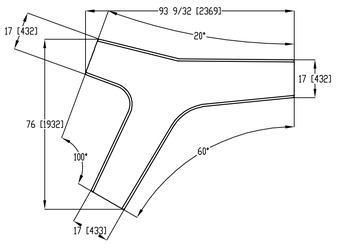
100-timer formliners are supplied in an individual dimension within the maximum indicated dimensions.

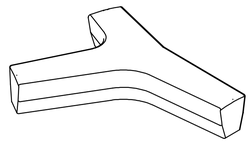
The specified widths of the 10-timer and 50-timer formliners are a fixed dimension and ensure the continuity of the structure in the case of linear patterns. The longitudinal direction of the pattern is variable and can be ordered from 1 m up to the maximum dimension in 50 cm steps.

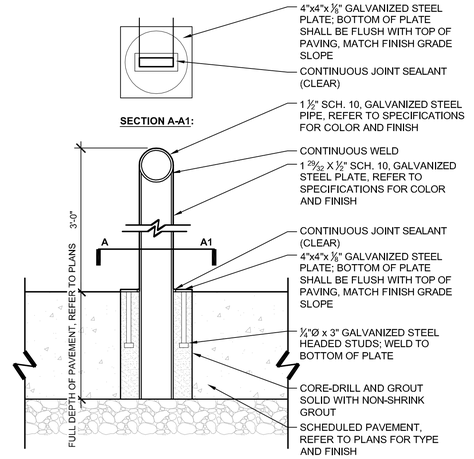


B7 L-05.01 **CIP FORMLINER FINISH**
3/4" = 1'-0"





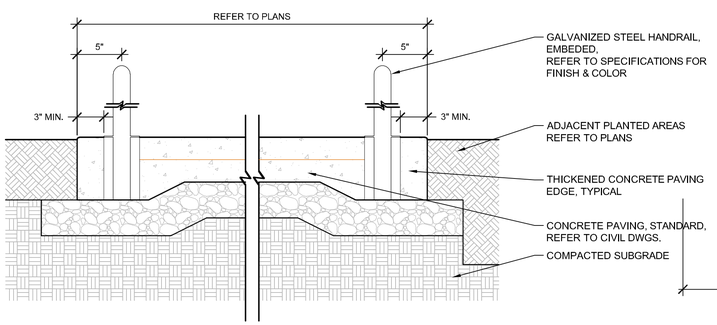




NOTES:
1. SEE DIVISIONS 05 & 09 OF THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
2. ENSURE HOLE DRILLED FOR POST EMBEDMENT IS NOT LARGER THAN ESCUTCHEON PLATE.
3. ALL HANDRAILS ARE TO FOLLOW ACCESSIBILITY REQUIREMENTS AS FOUND IN CURRENT LOCAL, STATE, OR FEDERAL LAW. WHERE CONFLICT OCCURS, THE MORE RESTRICTIVE REQUIREMENTS ARE TO BE FOLLOWED.

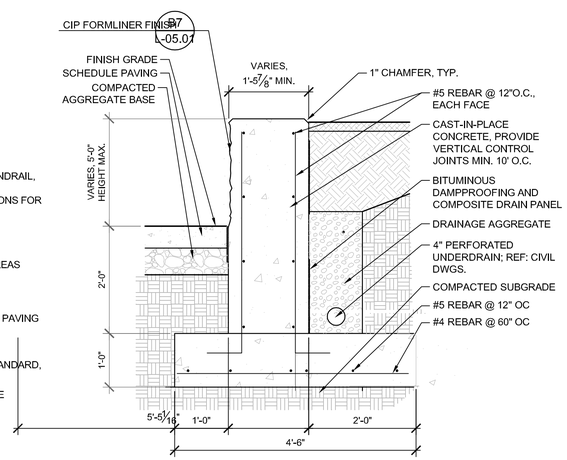
B1 L-05.01 **GALVANIZED STEEL HANDRAIL**
3" = 1'-0" P-H12-04

B2 L-05.01 **BACKLESS 'TWIG' BENCH**
3/8" = 1'-0" P-H12-10

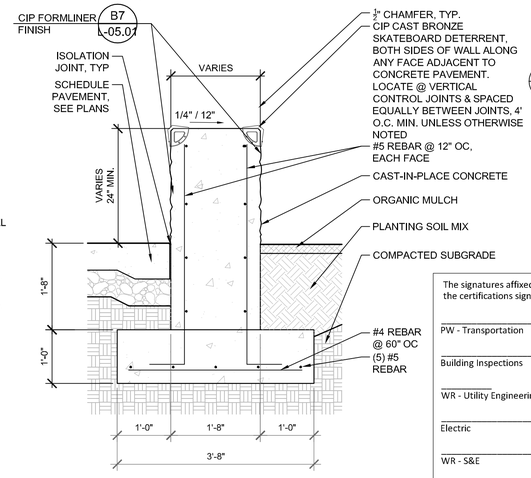


NOTES:

A1 L-05.01 **CONCRETE PAVEMENT| ADA RAMP**
1 1/2" = 1'-0" P-H12-03



A3 L-05.01 **CIP CONCRETE RETAINING WALL**
3/4" = 1'-0" P-H12-06



A5 L-05.01 **CIP CONCRETE SEATWALL**
3/4" = 1'-0" P-H12-07

The signatures affixed below certify that this sheet has been reviewed and approved solely per the certifications signed to the cover sheet of these construction plans.

PW - Transportation	Date	WR - Stormwater	Date
Building Inspections	Date	Planning	Date
WR - Utility Engineering	Date	Planning - Transportation	Date
Electric	Date	Fire	Date
WR - S&E	Date	Parks, Recreation & Cultural Res.	Date

NOT FOR CONSTRUCTION

H12/Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
111 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

N
KEY PLAN

SEAL | DATE 03/26/21

SHEET ISSUE

01	DESIGN DEVELOPMENT	11/20/20
02	TOA MAJOR SITE PLAN SUBMITTAL	12/01/20
03	TOA MAJOR SITE PLAN RESUBMITTAL	02/12/21
04	TOA MAJOR SITE PLAN SUBMITTAL #3	03/05/21
05	60% CONSTRUCTION DOCUMENTS	03/26/21
06	TOA MAJOR SITE PLAN SUBMITTAL #4	03/26/21

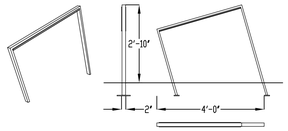
P-H12-24

RATIO
COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 19150.000

SHEET TITLE
SITE DETAILS

SHEET NUMBER
L-05.01



Color: To be coordinated with the High School colors
Material: Galvanized steel structure w/ Powdercoat finish

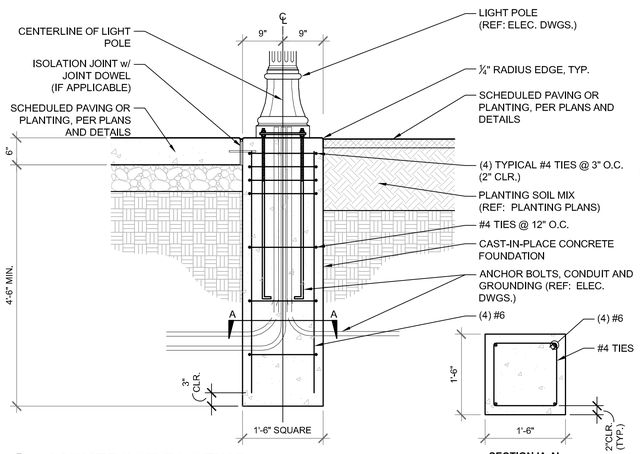
E1 PLAZA BIKE RACK
L-05.02 — 3/8" = 1'-0"

P-H12-19

Color: Textured Fern (Spring Green)
Finish: Fade-resistant, powder coated steel and aluminum components
Material: 10-gauge steel contour seat with unique perforated Stix tree line pattern and cast aluminum legs.

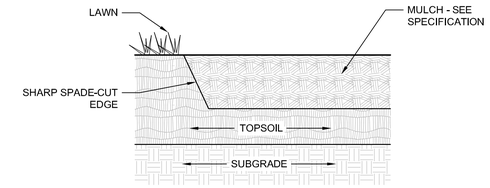
C1 PLAZA BENCH
L-05.02 — 3/8" = 1'-0"

P-H12-18



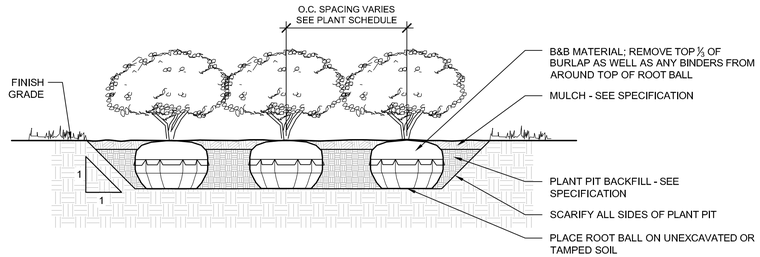
A1 LIGHTPOST FOOTING
L-05.02 — 3/4" = 1'-0"

P-H12-17



D3 SPADE EDGE
L-05.02 — 3" = 1'-0"

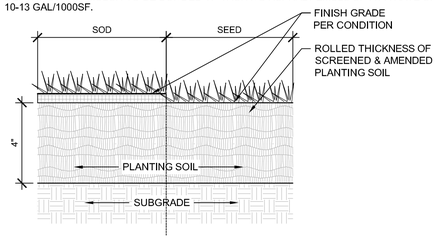
P-H12-16



D4 SHRUB PLANTING
L-05.02 — 1/2" = 1'-0"

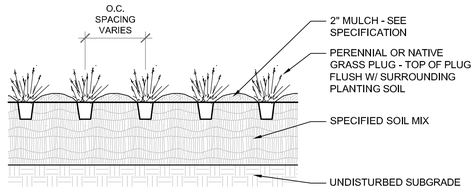
P-H12-13

NOTES:
1. SEE SEEDING SCHEDULE FOR CALENDAR YEAR REQUIREMENTS FOR TEMPORARY & PERMANENT SEED MIX TYPES, FERTILIZER AND APPLICATION RATES.
2. IN ALL LAWN AREAS, TILL SUBGRADE TO MIN. 4" DEPTH, REMOVE & DISPOSE OF STONES LARGER THAN 2 INCHES AND ANY STICKS, ROOTS, RUBBISH AND OTHER EXTRANEOUS MATTER.
3. pH TO BE BETWEEN 6.0 AND 7.5. CONTRACTOR TO AMEND SOILS PER RECOMMENDED RATES AS RESULT OF REQUIRED SOIL TESTING. LIME TO MEET ASTMC602, CLASS T FOR RAISING pH OR SULFUR FOR LOWERING pH, ACCORDING TO THE ACIDITY OR ALKALINITY IN WEIGHT PER 1000 SF FOR 6-INCH DEPTH OF SOIL.
4. APPLY ANY SOIL AMENDMENTS, THOROUGHLY MIX, AND APPLY BACK TO SUBGRADE IN LIFTS (8 INCHES MAX. BY COMPACTION EQUIPMENT, 4 INCHES MAX BY HAND -TAMPING) WHICH ARE EACH COMPACTED TO 75-82 % OF MAXIMUM STANDARD PROCTOR DENSITY.
5. DO NOT APPLY MATERIALS OR TILL IF SOIL IS FROZEN, MUDDY OR EXCESSIVELY WET.
6. SOW SEED AT A TOTAL RATE OF 3-4 LBS/1000 SF IF NOT OTHERWISE SPECIFIED ON PLANS.
7. PROTECT SEEDED AREA W/ EROSION-CONTROL MULCH OR MATS AS FOLLOWS:
- SLOPES EXCEEDING 1:4: EROSION CONTROL BLANKETS (Biodegradable wood excelsior, straw or coconut-fiber mat enclosed in a photodegradable plastic mesh)
- SLOPES EXCEEDING 1:6: EROSION CONTROL FIBER MESH W/ STAPLES (Biodegradable burlap or spun-coir mesh, w/ 50-65 percent open area, w/ steel wire staples)
- SLOPES NOT EXCEEDING 1:6: STRAW MULCH SPREAD AT RATE OF 2 TONS/ACRE, 1 ½" DEPTH. STRAW MULCH TO BE BONDED W/ TACKING ASPHALT EMULSION AT A RATE OF 10-13 GAL/1000SF.



B4 SEED/SOD LAWN
L-05.02 — 3" = 1'-0"

P-H12-15



A4 PLUG PLANTING
L-05.02 — 3/4" = 1'-0"

P-H12-14

Slope Stabilization Seed Mix

Botanical Name	Common Name
Permanent Grasses:	
Andropogon gerardii	Big Bluestem
Bouteloua curtipendula	Side-Oats Grama
Carex spp.	Prairie Sedge Species
Elymus canadensis	Canada Wild Rye
Elymus virginicus	Virginia Wild Rye
Panicum virgatum	Switch Grass
Schizachyrium scoparium	Little Bluestem
Sorghastrum nutans	Indian Grass
Temporary Cover:	
Avena sativa	Common Oat
Lolium multiflorum	Annual Rye

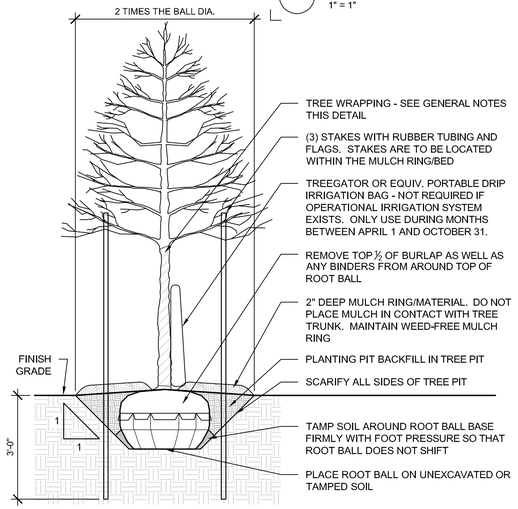
No-Mow Seed Mix

Botanical Name	Common Name
Permanent Grasses:	
Andropogon gerardii	Big Bluestem
Bouteloua curtipendula	Side-Oats Grama
Carex spp.	Prairie Sedge Species
Elymus canadensis	Canada Wild Rye
Panicum virgatum	Switch Grass
Schizachyrium scoparium	Little Bluestem
Sorghastrum nutans	Indian Grass
Temporary Cover:	
Avena sativa	Common Oat
Lolium multiflorum	Annual Rye
Forbs:	
Asclepias syriaca	Common Milkweed
Asclepias tuberosa	Butterfly Weed
Chamaecrista fasciculata	Partridge Pea
Coreopsis lanceolata	Sand Coreopsis
Echinacea purpurea	Broad-Leaved Purple Coneflower
Heliopsis helianthoides	False Sunflower
Monarda fistulosa	Wild Bergamot
Penstemon digitalis	Foxglove Beard Tongue
Ratibida pinnata	Yellow Coneflower
Rudbeckia hirta	Black-Eyed Susan
Solidago speciosa	Showy Goldenrod
Symphyotrichum laeve	Smooth Blue Aster
Symphyotrichum novae-angliae	New England Aster

Reforestation Mix
Mesic-to-Dry TallGrass Prairie Seed Mix

Botanical Name	Common Name
Bareroot Sapling plugs, planted 25' O.C.	
Amelanchier laevis	Smooth Serviceberry
Cercis Canadensis	Redbud
Liquidambar styraciflua	Sweet Gum
Quercus alba	White Oak
Quercus rubra	Red Oak
Quercus shumardii	Shumard Oak
Permanent Grasses:	
Andropogon gerardii	Big Bluestem
Bouteloua curtipendula	Side-Oats Grama
Carex spp.	Prairie Sedge Species
Elymus canadensis	Canada Wild Rye
Panicum virgatum	Switch Grass
Schizachyrium scoparium	Little Bluestem
Sorghastrum nutans	Indian Grass
Temporary Cover:	
Avena sativa	Common Oat
Lolium multiflorum	Annual Rye
Forbs:	
Asclepias syriaca	Common Milkweed
Asclepias tuberosa	Butterfly Weed
Baptisia alba	White Wild Indigo
Baptisia bracteata	Cream Wild Indigo
Chamaecrista fasciculata	Partridge Pea
Coreopsis lanceolata	Sand Coreopsis
Coreopsis palmata	Prairie Coreopsis
Desmanthus illinoensis	Illinois Sensitive Plant
Desmodium illinoense	Illinois Tick Trefoil
Echinacea purpurea	Broad-Leaved Purple Coneflower
Eryngium yuccifolium	Rattlesnake Master
Lespedeza capitata	Round-Headed Bush Clover
Liatris aspera	Rough Blazing Star
Liatris pycnostachya	Prairie Blazing Star
Lupinus perennis v. occidentalis	Wild Lupine
Monarda fistulosa	Wild Bergamot
Oligoneuron rigidum	Stiff Goldenrod
Parthenium integrifolium	Wild Quinine
Drymocallis arguta	Prairie Cinquefoil
Pycnanthemum virginianum	Common Mountain Mint
Ratibida pinnata	Yellow Coneflower
Rudbeckia hirta	Black-Eyed Susan
Silphium integrifolium	Rosin Weed
Silphium laciniatum	Compass Plant
Silphium terebinthinaceum	Prairie Dock
Solidago nemoralis	Old-Field Goldenrod
Solidago speciosa	Showy Goldenrod
Symphyotrichum laeve	Smooth Blue Aster
Symphyotrichum novae-angliae	New England Aster
Symphyotrichum oolentangiense	Sky-Blue Aster
Tradescantia ohiensis	Common Spiderwort
Veronicastrum virginicum	Culver's Root

SEED MIXES
1" = 1"



A3 TREE PLANTING
L-05.02 — 1/2" = 1'-0"

P-H12-12

GENERAL NOTES:

1. TREE WRAPPING SHALL BE IN PLACE ONLY IN MONTHS BETWEEN OCTOBER 31 AND APRIL 1.
2. TREE WRAPPING TO BE PLACED ONLY ON TREES WITH THIN BARK.
3. DO NOT HEAVILY PRUNE THE TREE AT PLANTING. PRUNE ONLY CROSSOVER LIMBS, CO-DOMINANT LEADERS, AND BROKEN OR DEAD BRANCHES. SOME INTERIOR TWIGS AND LATERAL BRANCHES MAY BE PRUNED; HOWEVER, DO NOT REMOVE THE TERMINAL BUDS OF BRANCHES THAT EXTEND TO THE EDGE OF THE CROWN.
4. EACH TREE MUST BE PLANTED SUCH THAT THE TRUNK FLARE IS VISIBLE AT THE TOP OF THE ROOT BALL. DO NOT COVER THE TOP OF THE ROOT BALL WITH SOIL.

The signatures affixed below certify that this sheet has been reviewed and approved solely per the certifications signed to the cover sheet of these construction plans.

PW - Transportation	Date	WR - Stormwater	Date
Building Inspections	Date	Planning	Date
WR - Utility Engineering	Date	Planning - Transportation	Date
Electric	Date	Fire	Date
WR - S&E	Date	Parks, Recreation & Cultural Res.	Date

NOT FOR CONSTRUCTION

H12/Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
111 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

N
KEY PLAN

SEAL | DATE 03/26/21

SHEET ISSUE

01	DESIGN DEVELOPMENT	11/20/20
02	TOA MAJOR SITE PLAN SUBMITTAL	12/01/20
03	TOA MAJOR SITE PLAN RESUBMITTAL	02/12/21
04	TOA MAJOR SITE PLAN SUBMITTAL #3	03/05/21
05	60% CONSTRUCTION DOCUMENTS	03/26/21
06	TOA MAJOR SITE PLAN SUBMITTAL #4	03/26/21

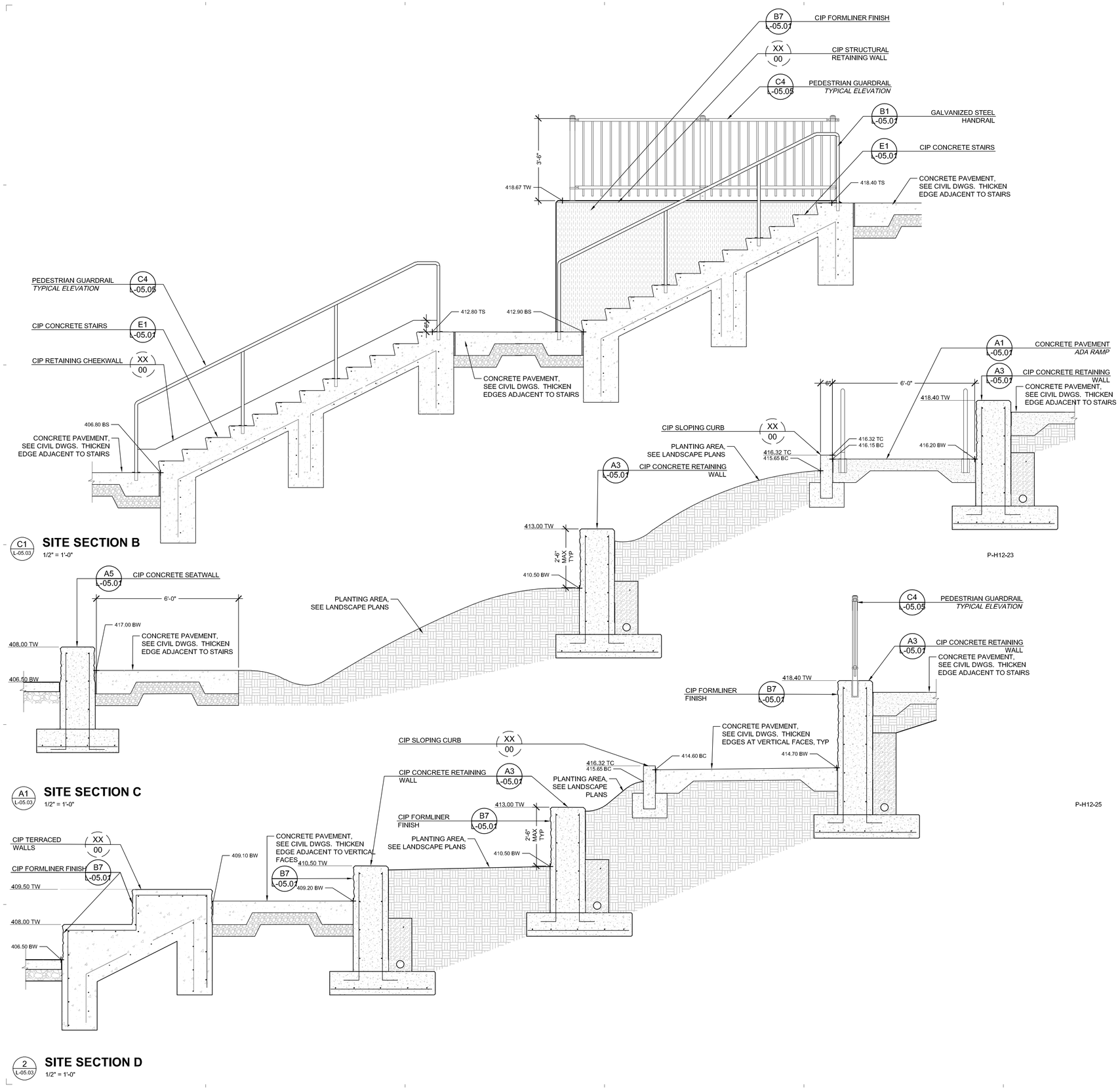
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 19150.000

SHEET TITLE
SITE DETAILS

SHEET NUMBER
L-05.02



C1 L-05.03 **SITE SECTION B**
1/2" = 1'-0"

A1 L-05.03 **SITE SECTION C**
1/2" = 1'-0"

2 L-05.03 **SITE SECTION D**
1/2" = 1'-0"

H12/Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
111 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

N **KEY PLAN**

SEAL | DATE 03/26/21

SHEET ISSUE

01	60% CONSTRUCTION DOCUMENTS	03/26/21
02	TOA MAJOR SITE PLAN SUBMITTAL #4	03/26/21

The signatures affixed below certify that this sheet has been reviewed and approved solely per the certifications signed to the cover sheet of these construction plans.

PW - Transportation	Date	WR - Stormwater	Date
Building Inspections	Date	Planning	Date
WR - Utility Engineering	Date	Planning - Transportation	Date
Electric	Date	Fire	Date
WR - S&E	Date	Parks, Recreation & Cultural Res.	Date

NOT FOR CONSTRUCTION

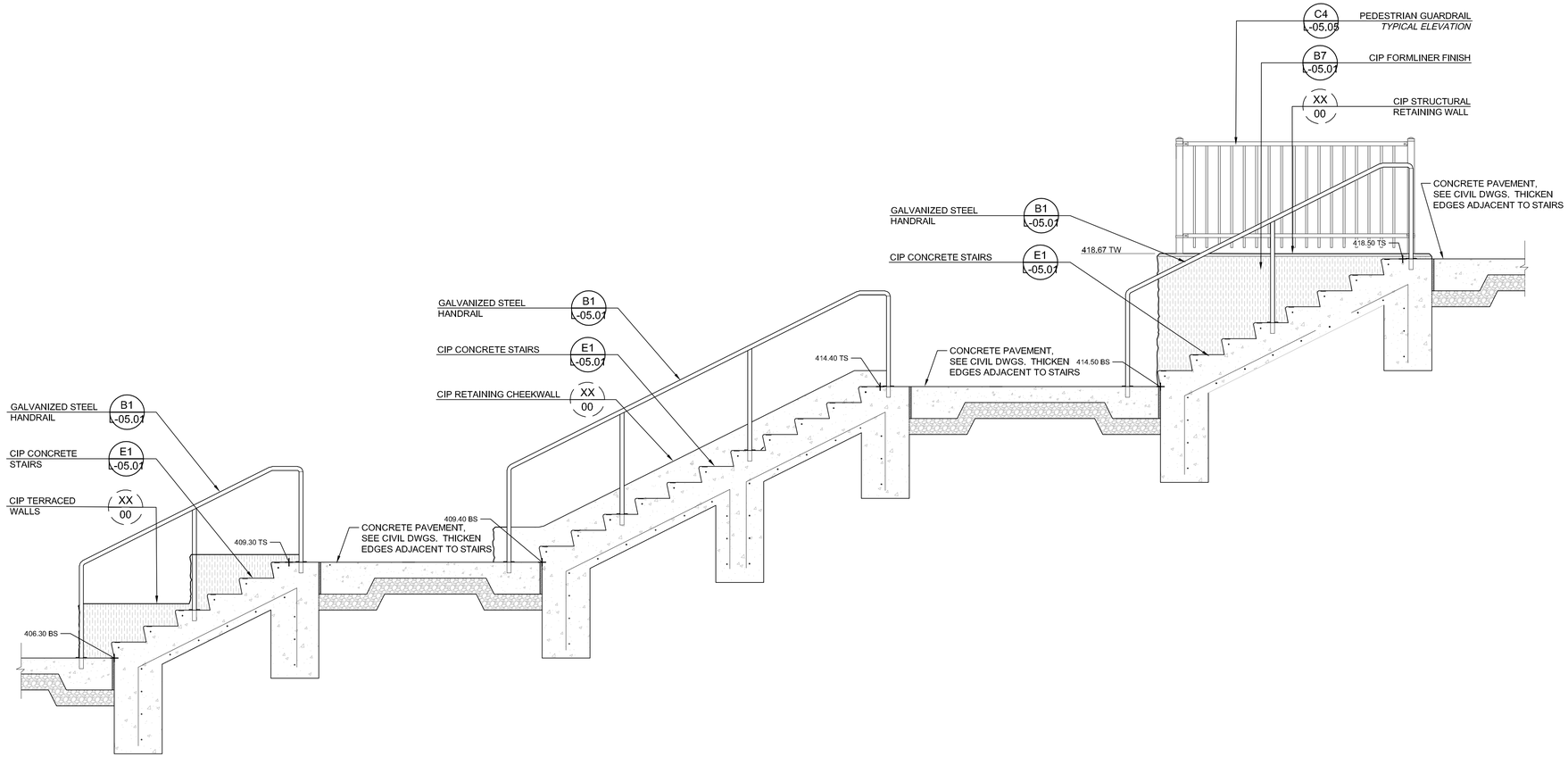
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

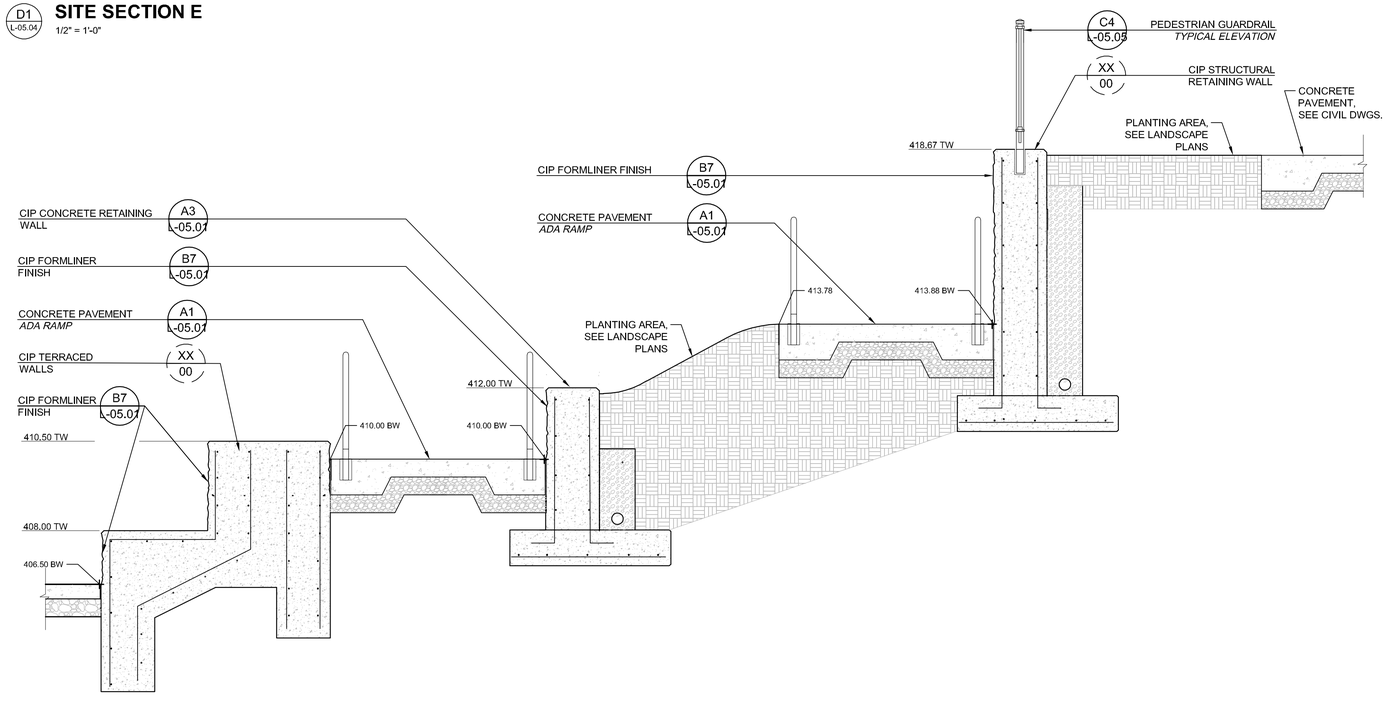
PROJECT NO. 19150.000

SHEET TITLE
SITE DETAILS

SHEET NUMBER
L-05.03



D1 L-05.04 **SITE SECTION E**
1/2" = 1'-0"



A1 L-05.04 **SITE SECTION F**
1/2" = 1'-0"

The signatures affixed below certify that this sheet has been reviewed and approved solely per the certifications signed to the cover sheet of these construction plans.

PW - Transportation	Date	WR - Stormwater	Date
Building Inspections	Date	Planning	Date
WR - Utility Engineering	Date	Planning - Transportation	Date
Electric	Date	Fire	Date
WR - S&E	Date	Parks, Recreation & Cultural Res.	Date

NOT FOR CONSTRUCTION

H12/Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
111 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

N **KEY PLAN**

SEAL | DATE 03/26/21

SHEET ISSUE

01	60% CONSTRUCTION DOCUMENTS	03/26/21
02	TOA MAJOR SITE PLAN SUBMITTAL #4	03/26/21

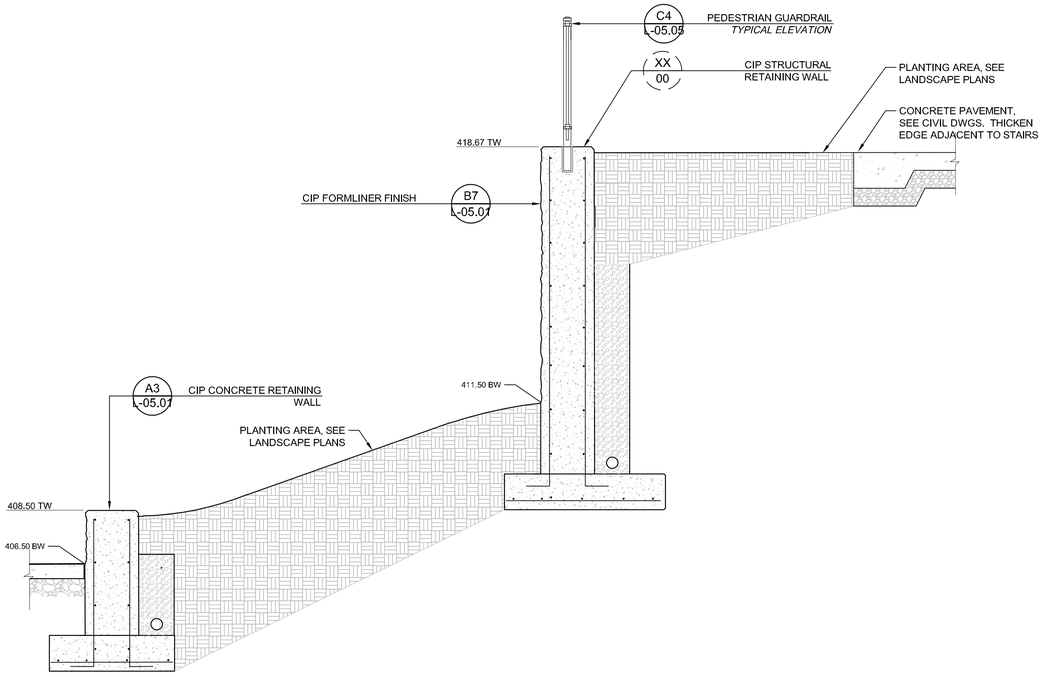
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 19150.000

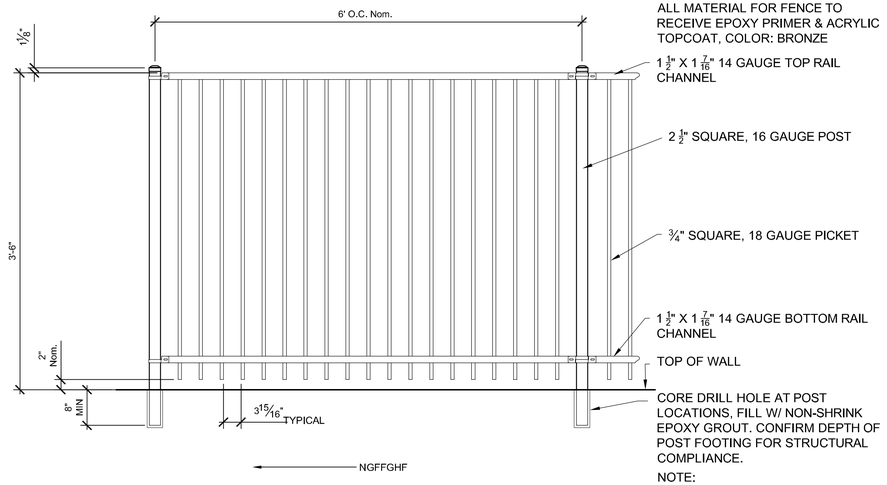
SHEET TITLE
SITE
DETAILS

SHEET NUMBER
L-05.04



C1 L-05.05 **SITE SECTION A**

1/2" = 1'-0"



NOTE:
ALL MATERIAL FOR FENCE TO RECEIVE EPOXY PRIMER & ACRYLIC TOPCOAT, COLOR: BRONZE

1 ½" X 1 7/16" 14 GAUGE TOP RAIL CHANNEL

2 ½" SQUARE, 16 GAUGE POST

¾" SQUARE, 18 GAUGE PICKET

1 ½" X 1 7/16" 14 GAUGE BOTTOM RAIL CHANNEL

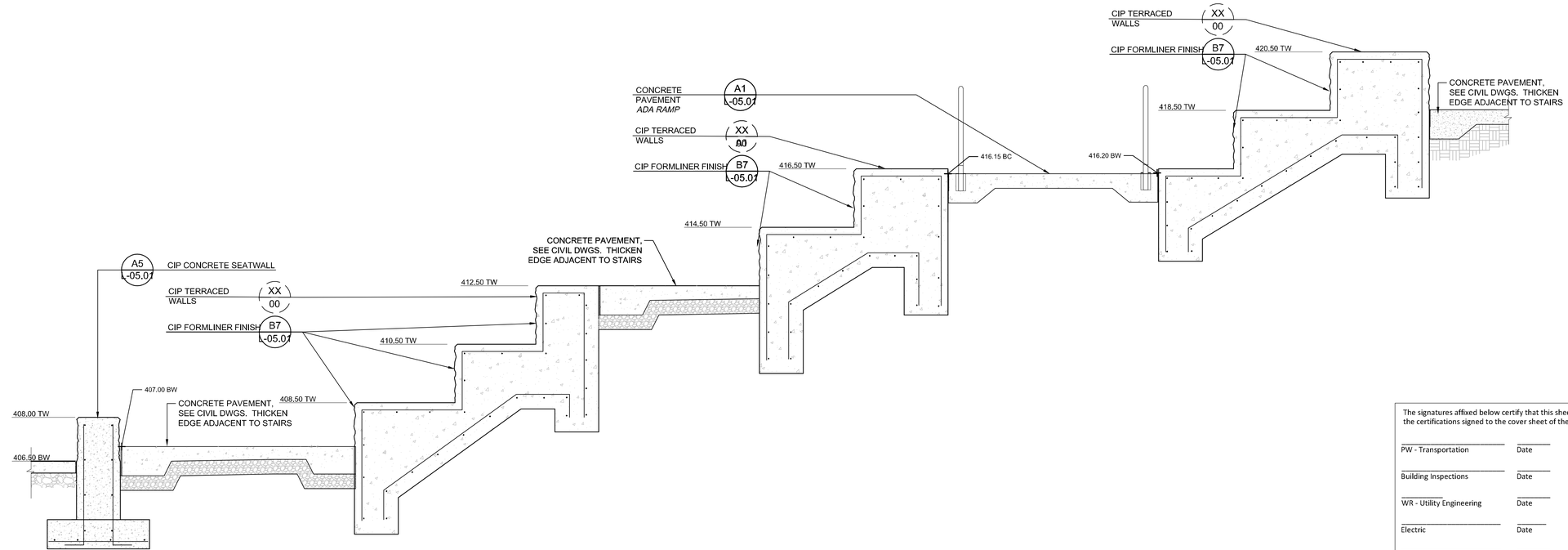
TOP OF WALL

CORE DRILL HOLE AT POST LOCATIONS, FILL W/ NON-SHRINK EPOXY GROUT. CONFIRM DEPTH OF POST FOOTING FOR STRUCTURAL COMPLIANCE.

NOTE:
BASIS OF DESIGN TO BE 6' HEIGHT 'ECHELON PLUS' STEEL PICKET FENCE - "MAJESTIC" MODEL AS MANUFACTURED BY AMERISTAR FENCE PRODUCTS, 872 INDUSTRIAL DR. ELMHURST, IL 60126, 888.333.3422. CONTRACTOR HAS OPTION OF PROVIDING COMPARABLE PRODUCT.

C4 L-05.05 **PEDESTRIAN GUARDRAIL | TYPICAL ELEVATION**

3/4" = 1'-0"



A1 L-05.05 **SITE SECTION C - ADD ALTERNATE**

1/2" = 1'-0"

The signatures affixed below certify that this sheet has been reviewed and approved solely per the certifications signed to the cover sheet of these construction plans.

PW - Transportation	Date	WR - Stormwater	Date
Building Inspections	Date	Planning	Date
WR - Utility Engineering	Date	Planning - Transportation	Date
Electric	Date	Fire	Date
WR - S&E	Date	Parks, Recreation & Cultural Res.	Date

NOT FOR CONSTRUCTION

H12/Felton Grove High School

8550 Stephenson Road Apex, NC 27539

Owner
Wake County Public Schools
111 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

N **KEY PLAN**

SEAL | DATE 03/26/21

SHEET ISSUE

01	60% CONSTRUCTION DOCUMENTS	03/26/21
02	TOA MAJOR SITE PLAN SUBMITTAL #4	03/26/21

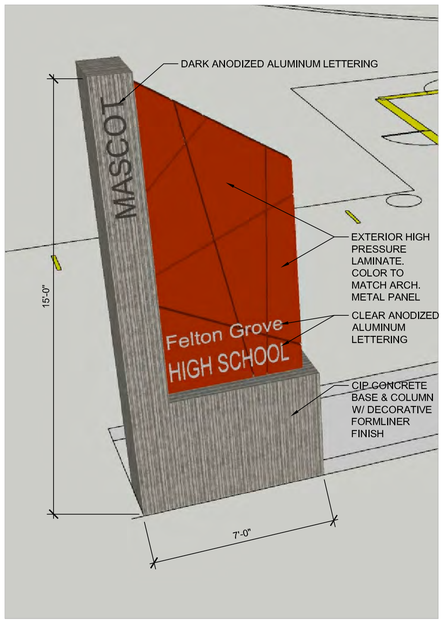
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

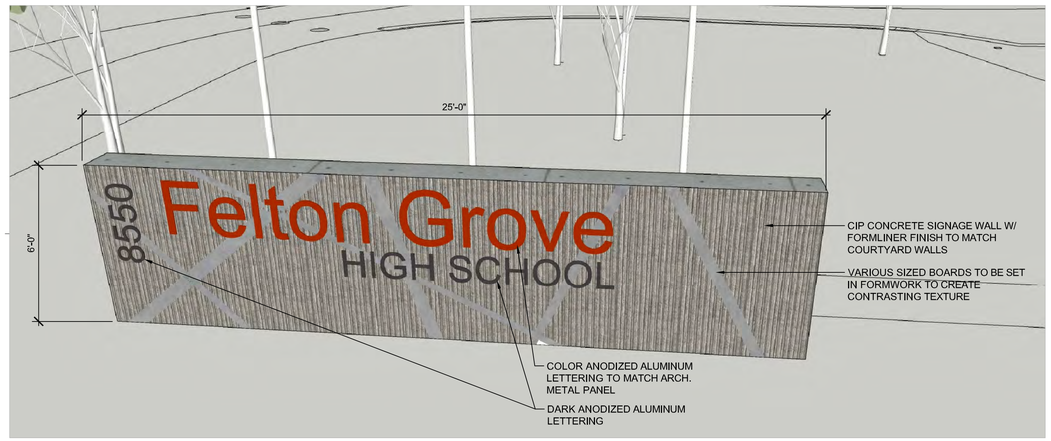
PROJECT NO. 19150.000

SHEET TITLE
SITE DETAILS

SHEET NUMBER
L-05.05



C1 L-05.06 **STADIUM SIGNAGE COLUMN | ADD ALTERNATE**
3/8" = 1'-0" * TO BE PERMITTED SEPARATELY P-H12-33



A1 L-05.06 **MONUMENT SIGN** * TO BE PERMITTED SEPARATELY
3/8" = 1'-0"

P-H12-31

H12/Felton Grove High School

8550 Stephenson Road Apex, NC 27539

Owner
Wake County Public Schools
111 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

N **KEY PLAN**

SEAL | DATE 03/26/21

SHEET ISSUE

01	60% CONSTRUCTION DOCUMENTS	03/26/21
02	TOA MAJOR SITE PLAN SUBMITTAL #4	03/26/21

The signatures affixed below certify that this sheet has been reviewed and approved solely per the certifications signed to the cover sheet of these construction plans.

PW - Transportation	Date	WR - Stormwater	Date
Building Inspections	Date	Planning	Date
WR - Utility Engineering	Date	Planning - Transportation	Date
Electric	Date	Fire	Date
WR - S&E	Date	Parks, Recreation & Cultural Res.	Date

NOT FOR CONSTRUCTION

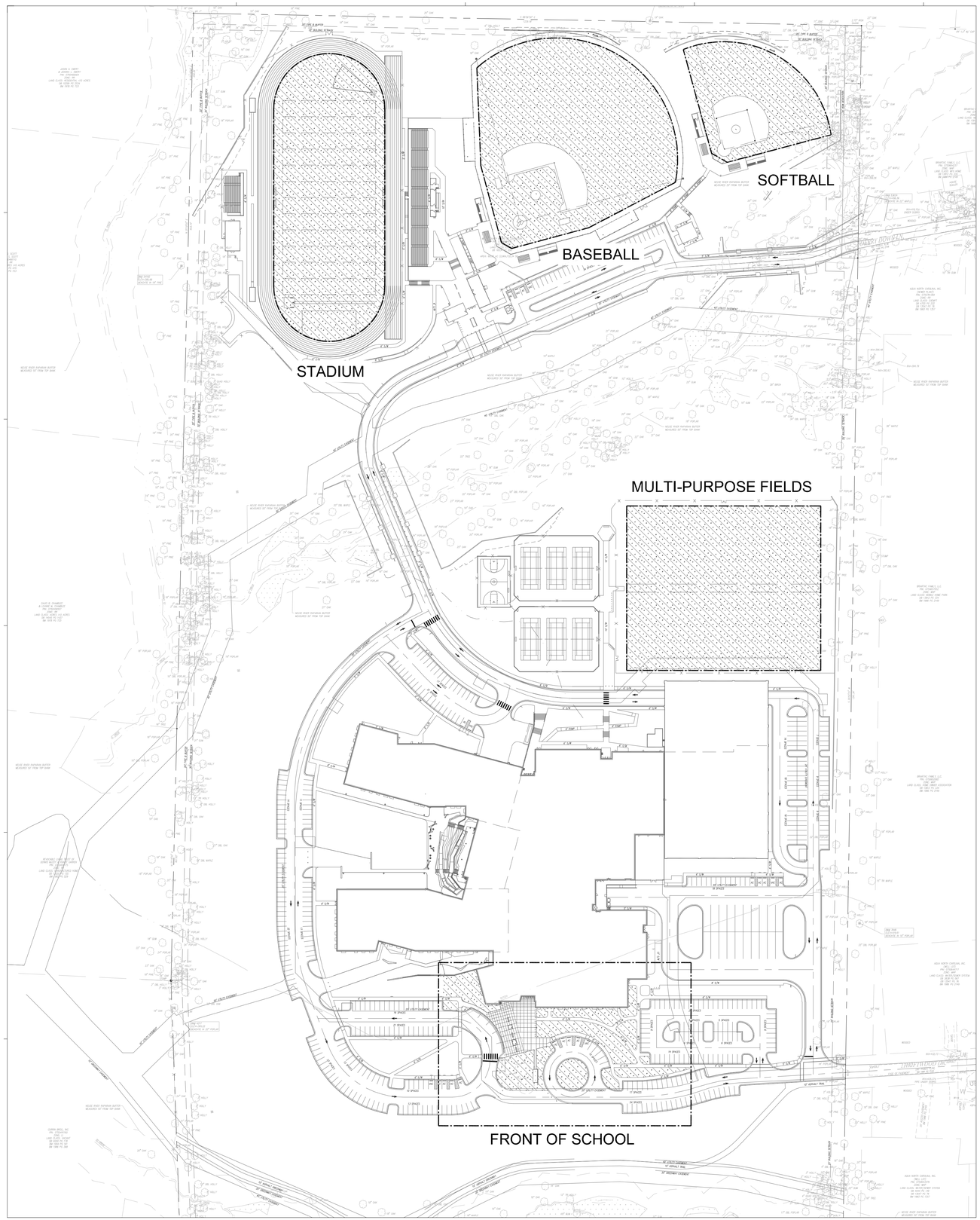
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 19150.000

SHEET TITLE
SITE DETAILS

SHEET NUMBER
L-05.06



IRRIGATION LEGEND

CONCEPT PLANT SCHEDULE

IRRIGATION AREAS
AREAS TO RECEIVE FULLY AUTOMATED IRRIGATION SYSTEM. SEE SECTION 328400 - PLANTING IRRIGATION FOR DELEGATED DESIGN AND SYSTEM REQUIREMENTS

-

1 L-06.01 IRRIGATION PLAN DIAGRAM

1"=100'-0" 0 50' 100' 200'

The signatures affixed below certify that this sheet has been reviewed and approved solely per the certifications signed to the cover sheet of these construction plans.

PW - Transportation	Date	WR - Stormwater	Date
Building Inspections	Date	Planning	Date
WR - Utility Engineering	Date	Planning - Transportation	Date
Electric	Date	Fire	Date
WR - S&E	Date	Parks, Recreation & Cultural Res.	Date

NOT FOR CONSTRUCTION

H12/Felton Grove High School

8550 Stephenson Road Apex, NC 27539

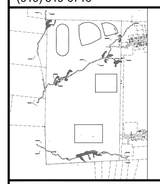
Owner
Wake County Public Schools
111 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716



N

KEY PLAN

SEAL | DATE 03/26/21

SHEET ISSUE

01	60% CONSTRUCTION DOCUMENTS	03/26/21
02	TOA MAJOR SITE PLAN SUBMITTAL #4	03/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 19150.000

SHEET TITLE
IRRIGATION PLAN DIAGRAM

SHEET NUMBER
L-06.01

DUKE ENERGY. PROGRESS

Outdoor Lighting

Roadway LED

light distribution pattern

Light source: LED *(white)*
Lumens: 4,807 – 25,050 *(fixture dependent)*

Wattage	Light Pattern	IESNA Backlight-Uplight – Glare (BUG) Rating
LED 50	IESNA Type III *(medium oval)*	B1-U0-G1
LED 75	IESNA Type II *(long oval)*	B1-U0-G2
LED 105	IESNA Type II *(long oval)*	B2-U0-G3
LED 150	IESNA Type III *(medium oval)*	B2-U0-G2
LED 215	IESNA Type III *(medium oval)*	B3-U0-G3
LED 280	IESNA Type III *(medium oval)*	B3-U0-G4

Color temperature: 4,000K
Warm-up and restrike time: Instant on *(no warm-up or restrike time)*

Poles available:

Name	*Mounting height*	*Color*
Fiberglass	25', 30', 35'	Gray
Fiberglass	25', 30', 35'	Black *(additional cost)*
Wood	25', 30', 35'	Standard
Metal *(special conditions)**	25', 30', 35'	Gray

Features	Benefits
Little or no installation cost	Frees up capital for other projects
Design services by lighting professionals included	Meets industry standards and lighting ordinances
Maintenance included	Eliminates high and unexpected repair bills
Electricity included	Less expensive than metered service
Warranty included	Worry-free
One low monthly cost on your electric bill	Convenience and savings for you
Turnkey operation	Provides hassle-free installation and service
Backed by over 40 years of experience	A name you can trust today ... and tomorrow

**2' raised foundation available when required.*

©2015 Duke Energy Corporation 151307 7/15

DUKE ENERGY. PROGRESS

Outdoor Lighting

Roadway LED

The Roadway LED is a green solution and great fit for streets, roads, long, narrow areas and parking lots. This energy-efficient luminaire delivers the light where it is needed while increasing visibility and reducing spill light to adjoining properties. Choose low to medium light output on wood or fiberglass poles (or mount on an existing pole). Available with one to four fixtures per pole, depending on the fixture/pole combination selected.

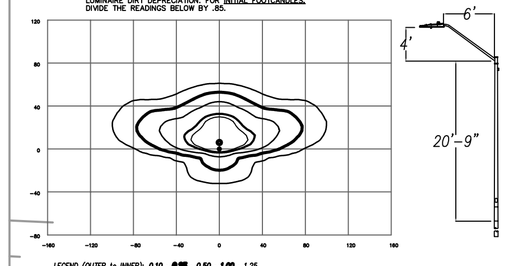
LED *(Light Emitting Diode)*	50 | 75 | 105 | 150 | 215 | 280 watts
Mounting heights	25', 30', 35'
Color	Gray, Black
Poles	Fiberglass Metal *(special conditions)* Wood

For additional information, visit us at duke-energy.com/OutdoorLighting or call us toll free at 866.769.6417.

ISOFOOTCANDLE CURVES

FIXTURE: LED 70w Roadway
MOUNTING HEIGHT: 25 FT
LIGHT SOURCE: 20 LED'S, 4000K, 70 CRI
LUMENS = 8506
PATTERN: TYPE II, B2-U0-G2(zero light clt or above 90 degrees)
NOTE: THE FOOTCANDLE READINGS BELOW ARE MAINTAINED AND HAVE BEEN DEPRECIATED FOR LED LUMEN DEPRECIATION AND LUMINAIRE DIRT DEPRECIATION FOR INITIAL FOOTCANDLES.
DIVIDE THE READINGS BELOW BY .85.

ASSY# LFIX-RW-LED-70-BLK-II-MULTIV-____-P
POLE ASSY# LPOLE-DB-FG-25FT-BLK-____-P (BLACK)

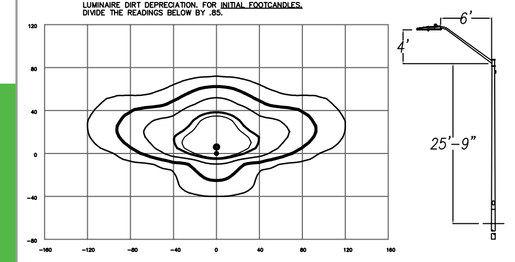


LEGEND (OUTER to INNER): 0.10 , 0.50 , 1.00 , 1.25

ISOFOOTCANDLE CURVES

FIXTURE: LED 110w Roadway
MOUNTING HEIGHT: 30 FT
LIGHT SOURCE: 30 LED'S, 4000K, 70 CRI
LUMENS = 12414
PATTERN: TYPE II, B2-U0-G3(zero light clt or above 90 degrees)
NOTE: THE FOOTCANDLE READINGS BELOW ARE MAINTAINED AND HAVE BEEN DEPRECIATED FOR LED LUMEN DEPRECIATION AND LUMINAIRE DIRT DEPRECIATION FOR INITIAL FOOTCANDLES.
DIVIDE THE READINGS BELOW BY .85.

ASSY# LFIX-RW-LED-105-BLK-II-MULTIV-____-P
POLE ASSY# LPOLE-DB-FG-30FT-BLK-____-P (BLACK)

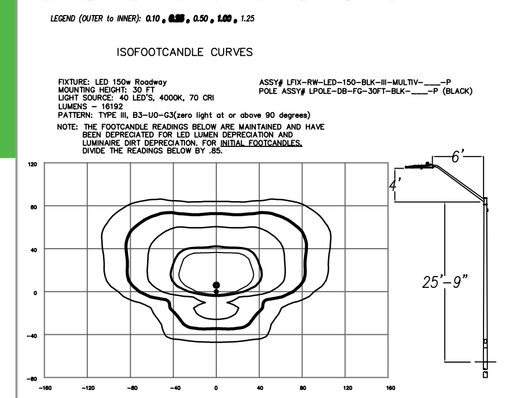


LEGEND (OUTER to INNER): 0.10 , 0.50 , 1.00 , 1.25

ISOFOOTCANDLE CURVES

FIXTURE: LED 150w Roadway
MOUNTING HEIGHT: 30 FT
LIGHT SOURCE: 40 LED'S, 4000K, 70 CRI
LUMENS = 16192
PATTERN: TYPE III, B3-U0-G3(zero light clt or above 90 degrees)
NOTE: THE FOOTCANDLE READINGS BELOW ARE MAINTAINED AND HAVE BEEN DEPRECIATED FOR LED LUMEN DEPRECIATION AND LUMINAIRE DIRT DEPRECIATION FOR INITIAL FOOTCANDLES.
DIVIDE THE READINGS BELOW BY .85.

ASSY# LFIX-RW-LED-150-BLK-III-MULTIV-____-P
POLE ASSY# LPOLE-DB-FG-30FT-BLK-____-P (BLACK)

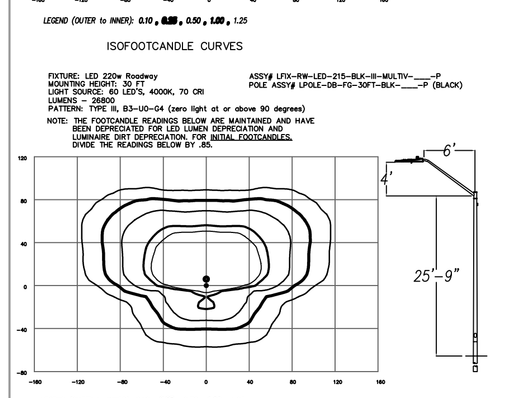


LEGEND (OUTER to INNER): 0.10 , 0.50 , 1.00 , 1.25

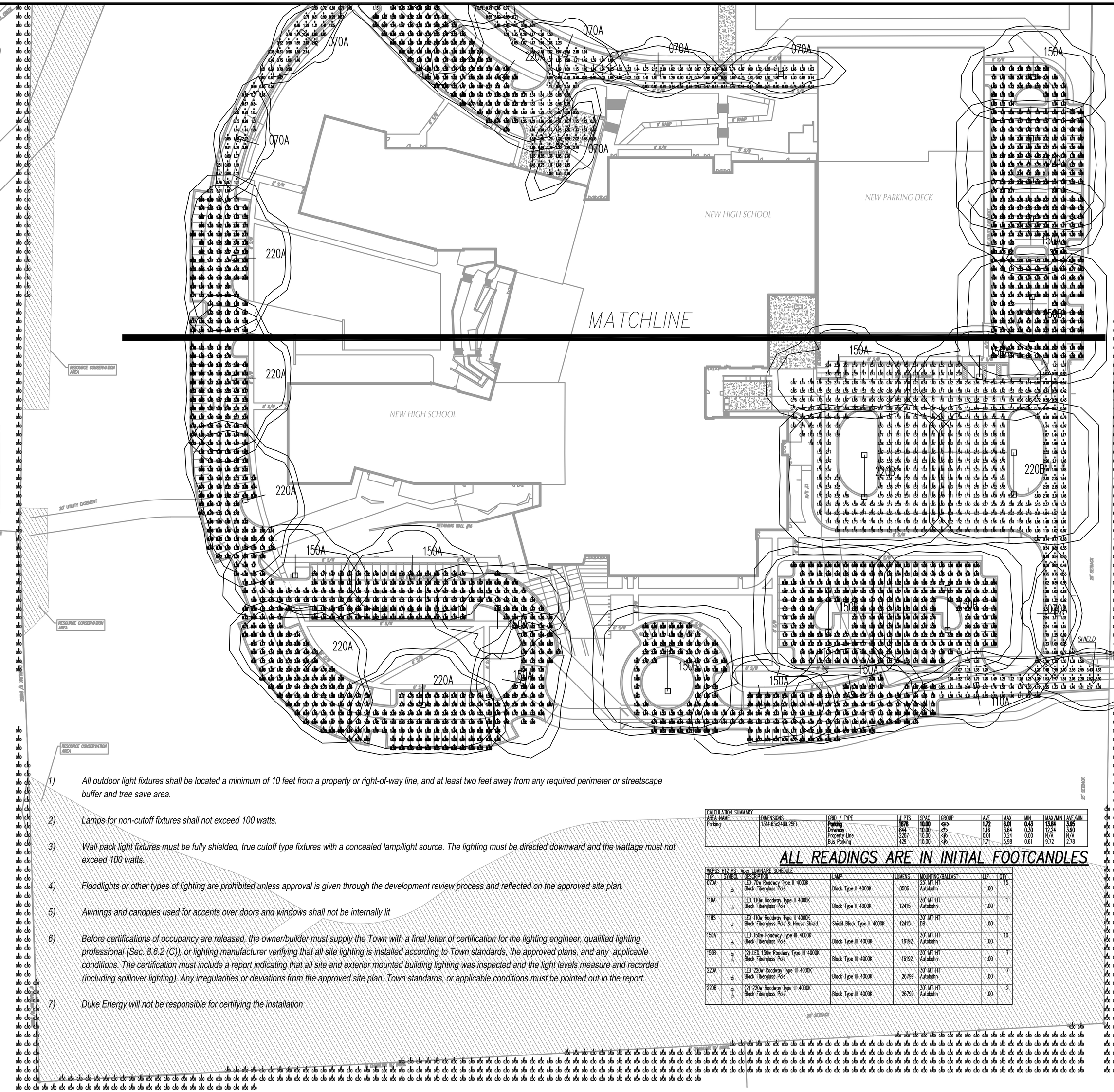
ISOFOOTCANDLE CURVES

FIXTURE: LED 220w Roadway
MOUNTING HEIGHT: 30 FT
LIGHT SOURCE: 60 LED'S, 4000K, 70 CRI
LUMENS = 26800
PATTERN: TYPE III, B3-U0-G4 (zero light clt or above 90 degrees)
NOTE: THE FOOTCANDLE READINGS BELOW ARE MAINTAINED AND HAVE BEEN DEPRECIATED FOR LED LUMEN DEPRECIATION AND LUMINAIRE DIRT DEPRECIATION FOR INITIAL FOOTCANDLES.
DIVIDE THE READINGS BELOW BY .85.

ASSY# LFIX-RW-LED-215-BLK-III-MULTIV-____-P
POLE ASSY# LPOLE-DB-FG-30FT-BLK-____-P (BLACK)



LEGEND (OUTER to INNER): 0.10 , 0.50 , 1.00 , 1.25



1) *All outdoor light fixtures shall be located a minimum of 10 feet from a property or right-of-way line, and at least two feet away from any required perimeter or streetscape buffer and tree save area.*

2) *Lamps for non-cutoff fixtures shall not exceed 100 watts.*

3) *Wall pack light fixtures must be fully shielded, true cutoff type fixtures with a concealed lamp/light source. The lighting must be directed downward and the wattage must not exceed 100 watts.*

4) *Floodlights or other types of lighting are prohibited unless approval is given through the development review process and reflected on the approved site plan.*

5) *Awnings and canopies used for accents over doors and windows shall not be internally lit*

6) *Before certifications of occupancy are released, the owner/builder must supply the Town with a final letter of certification for the lighting engineer, qualified lighting professional (Sec. 8.6.2 (C)), or lighting manufacturer verifying that all site lighting is installed according to Town standards, the approved plans, and any applicable conditions. The certification must include a report indicating that all site and exterior mounted building lighting was inspected and the light levels measure and recorded (including spillover lighting). Any irregularities or deviations from the approved site plan, Town standards, or applicable conditions must be pointed out in the report.*

7) *Duke Energy will not be responsible for certifying the installation*

CALCULATION SUMMARY

AREA NAME	DIMENSIONS	PRIV / TYPE	# PTS	SPACE	GROUP	AVE	MAX	MIN	MAX/MIN	AVE/MIN
Parking	1314.6X2499.2X1	Parking	8016	10.00	<>	1.72	6.09	0.45	13.54	3.82
		Driveway	944	10.00	<>	1.16	3.64	0.30	12.24	3.90
		Property Line	2207	10.00	<>	0.01	0.24	0.00	N/A	N/A
		Bus Parking	429	10.00	<>	1.71	5.98	0.61	9.72	2.78

ALL READINGS ARE IN INITIAL FOOTCANDLES

MCPSS H12 HS Apex LUMINAIRE SCHEDULE

TYP	SYMBOL	DESCRIPTION	LAMP	LUMENS	MOUNTING/BALLAST	LLF	QTY.
070A	a	LED 70w Roadway Type II 4000K Black Fiberglass Pole	Black Type II 4000K	8506	25' MT HT Autobahn	1.00	15
110A	a	LED 110w Roadway Type II 4000K Black Fiberglass Pole	Black Type II 4000K	12415	30' MT HT Autobahn	1.00	1
110S	a	LED 110w Roadway Type II 4000K Black Fiberglass Pole & House Shield	Shield Black Type II 4000K	12415	30' MT HT DB	1.00	1
150A	a	LED 150w Roadway Type III 4000K Black Fiberglass Pole	Black Type III 4000K	16192	30' MT HT Autobahn	1.00	10
150B	a a	(2) LED 150w Roadway Type III 4000K Black Fiberglass Pole	Black Type III 4000K	16192	30' MT HT Autobahn	1.00	7
220A	a	LED 220w Roadway Type III 4000K Black Fiberglass Pole	Black Type III 4000K	26799	30' MT HT Autobahn	1.00	7
220B	a a	(2) 220w Roadway Type III 4000K Black Fiberglass Pole	Black Type III 4000K	26799	30' MT HT Autobahn	1.00	2

LIGHTING DESIGN TOLERANCE

The calculated footcandle light levels in this lighting design are predicted values and are based on specific information that has been supplied to Duke Energy Progress. Any inaccuracies in the supplied information, differences in luminaire installation, lighted area geometry including elevation differences, reflective properties of surrounding surfaces, obstructions (foliage or otherwise) in the lighted area, or lighting from sources other than listed in this design may produce different results from the predicted values. Normal tolerances of voltage, lamp output, and ballast and luminaire manufacture will also affect results.

Customer approval_____ Date_____

DISTANCE CALIBRATION (INCHES)

0 0.5 1.0 2.0 3.0 4.0

DUKE ENERGY® PROGRESS

PROPRIETARY & CONFIDENTIAL

This document together with the concepts and designs presented herein, presented as an instrument of service, is the sole property of Duke Energy Progress, and is intended only for the specific purpose and prospective client as stated in the title block of this drawing. Any use, copying, reproduction or disclosure of the drawing, design or any information contained herein by the prospective customer or other entities, including without limitation, architects, engineers, or equipment manufacturers is hereby expressly prohibited and shall not be permitted absent prior written consent from, and payment of compensation to Duke Energy Progress. Duke Energy Progress disclaims any liability or responsibility for any unauthorized use of or reliance on this document.

H12 High School
Apex, NC
SITE LIGHTING PLAN

Designed by DEP LIGHTING SOLUTIONS
Reviewed by G. Sterken Scale 1" = 60'
Date 03/04/2021 Size "Arch D"
Description LED 70w, 110w, 150w & 220w Roadway
Drawing No. 20-0390C Sht. 2 OF 2

DUKE ENERGY. PROGRESS

Outdoor Lighting

Roadway LED

light distribution pattern

Light source: LED *(white)*
Lumens: 4,807 – 25,050 *(fixture dependent)*

Wattage	Light Pattern	IESNA Backlight-Uplight – Glare (BUG) Rating
LED 50	IESNA Type III *(medium oval)*	B1-U0-G1
LED 75	IESNA Type II *(long oval)*	B1-U0-G2
LED 105	IESNA Type II *(long oval)*	B2-U0-G3
LED 150	IESNA Type III *(medium oval)*	B2-U0-G2
LED 215	IESNA Type III *(medium oval)*	B3-U0-G3
LED 280	IESNA Type III *(medium oval)*	B3-U0-G4

Color temperature: 4,000K
Warm-up and restrike time: Instant on *(no warm-up or restrike time)*

Poles available:

Name	*Mounting height*	*Color*
Fiberglass	25', 30', 35'	Gray
Fiberglass	25', 30', 35'	Black *(additional cost)*
Wood	25', 30', 35'	Standard
Metal *(special conditions)**	25', 30', 35'	Gray

Features	Benefits
Little or no installation cost	Frees up capital for other projects
Design services by lighting professionals included	Meets industry standards and lighting ordinances
Maintenance included	Eliminates high and unexpected repair bills
Electricity included	Less expensive than metered service
Warranty included	Worry-free
One low monthly cost on your electric bill	Convenience and savings for you
Turnkey operation	Provides hassle-free installation and service
Backed by over 40 years of experience	A name you can trust today ... and tomorrow

**2' raised foundation available when required.*

©2015 Duke Energy Corporation 151307 7/15

DUKE ENERGY. PROGRESS

Outdoor Lighting

Roadway LED

The Roadway LED is a green solution and great fit for streets, roads, long, narrow areas and parking lots. This energy-efficient luminaire delivers the light where it is needed while increasing visibility and reducing spill light to adjoining properties. Choose low to medium light output on wood or fiberglass poles (or mount on an existing pole). Available with one to four fixtures per pole, depending on the fixture/pole combination selected.

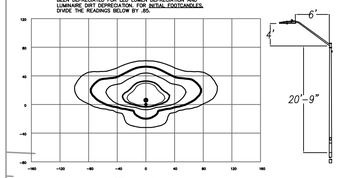
LED *(Light Emitting Diode)*	50 | 75 | 105 | 150 | 215 | 280 watts
Mounting heights	25', 30', 35'
Color	Gray, Black
Poles	Fiberglass Metal *(special conditions)* Wood

For additional information, visit us at duke-energy.com/OutdoorLighting or call us toll free at 866.769.6417.

ISOFOOTCANDLE CURVES

FIXTURE: LED 70w Roadway
MOUNTING HEIGHT: 25 FT
LIGHT SOURCE: 20 LED'S, 4000K, 70 CRI
LUMENS = 8506
PATTERN: TYPE II, B2-U0-G2(zero light clt or above 90 degrees)
NOTE: THE FOOTCANDLE READINGS BELOW ARE MAINTAINED AND HAVE BEEN DEPRECIATED FOR LED LUMEN DEPRECIATION AND LUMINAIRE DIRT DEPRECIATION. FOR INITIAL FOOTCANDLES, DIVIDE THE READINGS BELOW BY .85.

ASSY# LFIX-RW-LED-70-BLK-II-MULTIV-____-P
POLE ASSY# LPOLE-DB-FG-25FT-BLK-____-P (BLACK)

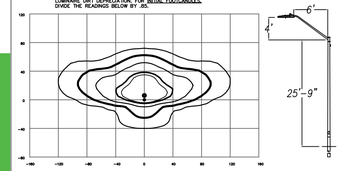


LEGEND (OUTER to INNER): 0.10 , 0.25 , 0.50 , 1.00 , 1.25

ISOFOOTCANDLE CURVES

FIXTURE: LED 110w Roadway
MOUNTING HEIGHT: 30 FT
LIGHT SOURCE: 30 LED'S, 4000K, 70 CRI
LUMENS = 12414
PATTERN: TYPE II, B2-U0-G3(zero light clt or above 90 degrees)
NOTE: THE FOOTCANDLE READINGS BELOW ARE MAINTAINED AND HAVE BEEN DEPRECIATED FOR LED LUMEN DEPRECIATION AND LUMINAIRE DIRT DEPRECIATION. FOR INITIAL FOOTCANDLES, DIVIDE THE READINGS BELOW BY .85.

ASSY# LFIX-RW-LED-105-BLK-II-MULTIV-____-P
POLE ASSY# LPOLE-DB-FG-30FT-BLK-____-P (BLACK)

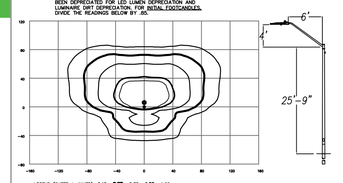


LEGEND (OUTER to INNER): 0.10 , 0.25 , 0.50 , 1.00 , 1.25

ISOFOOTCANDLE CURVES

FIXTURE: LED 150w Roadway
MOUNTING HEIGHT: 30 FT
LIGHT SOURCE: 40 LED'S, 4000K, 70 CRI
LUMENS = 16192
PATTERN: TYPE III, B2-U0-G3(zero light clt or above 90 degrees)
NOTE: THE FOOTCANDLE READINGS BELOW ARE MAINTAINED AND HAVE BEEN DEPRECIATED FOR LED LUMEN DEPRECIATION AND LUMINAIRE DIRT DEPRECIATION. FOR INITIAL FOOTCANDLES, DIVIDE THE READINGS BELOW BY .85.

ASSY# LFIX-RW-LED-150-BLK-III-MULTIV-____-P
POLE ASSY# LPOLE-DB-FG-30FT-BLK-____-P (BLACK)

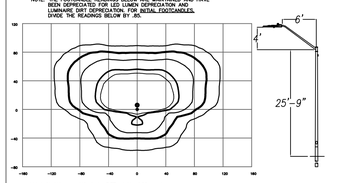


LEGEND (OUTER to INNER): 0.10 , 0.25 , 0.50 , 1.00 , 1.25

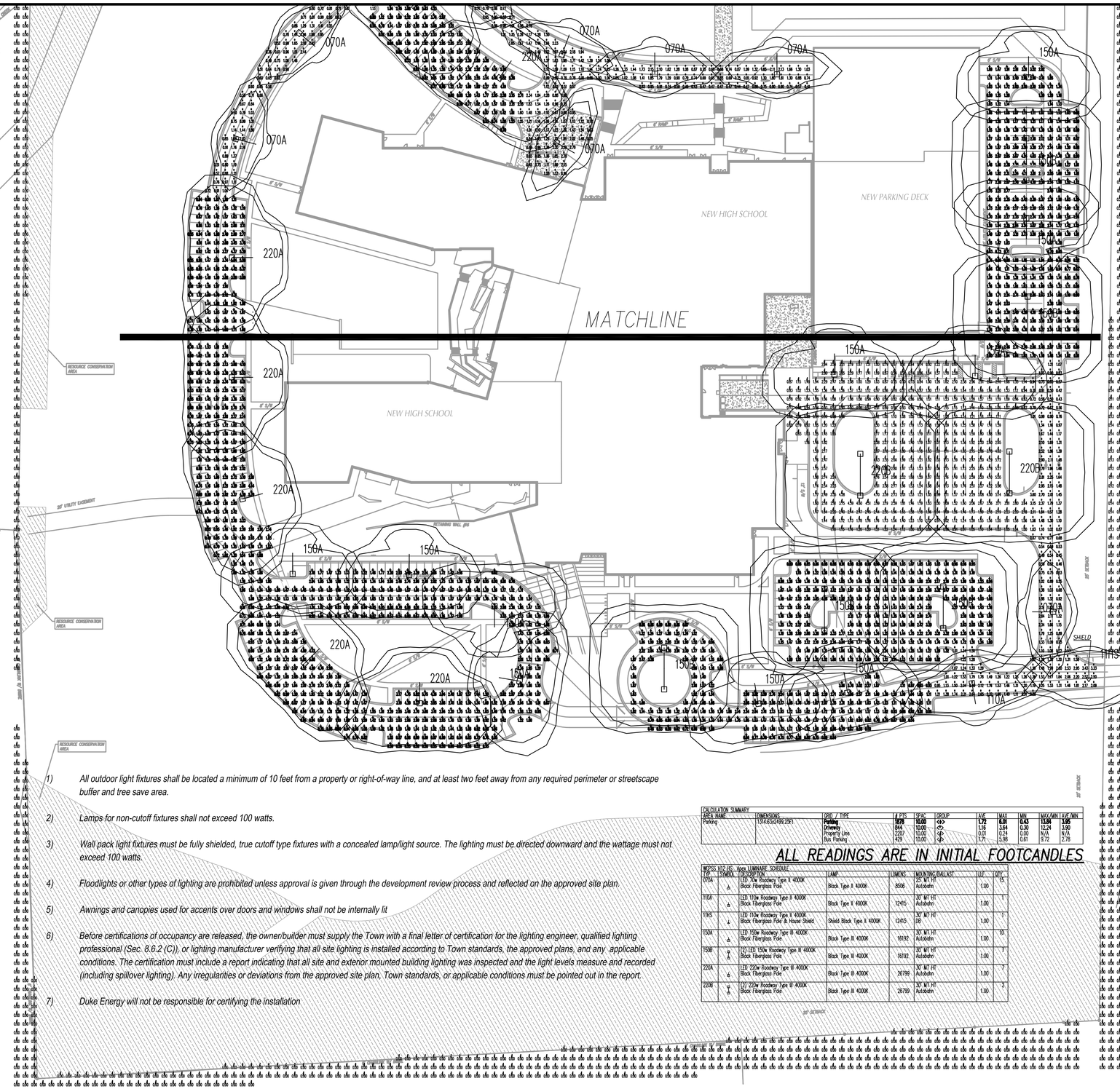
ISOFOOTCANDLE CURVES

FIXTURE: LED 220w Roadway
MOUNTING HEIGHT: 30 FT
LIGHT SOURCE: 60 LED'S, 4000K, 70 CRI
LUMENS = 26800
PATTERN: TYPE III, B3-U0-G4 (zero light clt or above 90 degrees)
NOTE: THE FOOTCANDLE READINGS BELOW ARE MAINTAINED AND HAVE BEEN DEPRECIATED FOR LED LUMEN DEPRECIATION AND LUMINAIRE DIRT DEPRECIATION. FOR INITIAL FOOTCANDLES, DIVIDE THE READINGS BELOW BY .85.

ASSY# LFIX-RW-LED-215-BLK-III-MULTIV-____-P
POLE ASSY# LPOLE-DB-FG-30FT-BLK-____-P (BLACK)



LEGEND (OUTER to INNER): 0.10 , 0.25 , 0.50 , 1.00 , 1.25



CALCULATION SUMMARY									
AREA NAME	DIMENSIONS	PSRF / TYPE	# PTS	SPACE	GROUP	AVE	MAX	MIN	MAX/MIN	AVE/MIN
Parking	1314.6SQ.FEET	Parking	1078	10.00	<>	1.72	6.01	0.45	13.04	3.86
		Driveway	944	10.00	<>	1.16	3.64	0.30	12.24	3.90
		Property Line	2207	10.00	<>	0.01	0.24	0.00	N/A	N/A
		Bus Parking	429	10.00	<>	1.71	5.98	0.61	9.72	2.78

ALL READINGS ARE IN INITIAL FOOTCANDLES

MCPSS H12 HS Apex LUMINAIRE SCHEDULE

TYP	SYMBOL	DESCRIPTION	LAMP	LUMENS	MOUNTING/BALLAST	LLF	QTY.
070A	a	LED 70w Roadway Type II 4000K Black Fiberglass Pole	Black Type II 4000K	8506	25' MT HT Autobahn	1.00	15
110A	a	LED 110w Roadway Type II 4000K Black Fiberglass Pole	Black Type II 4000K	12415	30' MT HT Autobahn	1.00	1
110HS	a	LED 110w Roadway Type II 4000K Black Fiberglass Pole & House Shield	Shield Black Type II 4000K	12415	30' MT HT DB	1.00	1
150A	a	LED 150w Roadway Type III 4000K Black Fiberglass Pole	Black Type III 4000K	16192	30' MT HT Autobahn	1.00	10
150B	a a	(2) LED 150w Roadway Type III 4000K Black Fiberglass Pole	Black Type III 4000K	16192	30' MT HT Autobahn	1.00	7
220A	a	LED 220w Roadway Type III 4000K Black Fiberglass Pole	Black Type III 4000K	26799	30' MT HT Autobahn	1.00	7
220B	a a	(2) 220w Roadway Type III 4000K Black Fiberglass Pole	Black Type III 4000K	26799	30' MT HT Autobahn	1.00	2

1) *All outdoor light fixtures shall be located a minimum of 10 feet from a property or right-of-way line, and at least two feet away from any required perimeter or streetscape buffer and tree save area.*

2) *Lamps for non-cutoff fixtures shall not exceed 100 watts.*

3) *Wall pack light fixtures must be fully shielded, true cutoff type fixtures with a concealed lamp/light source. The lighting must be directed downward and the wattage must not exceed 100 watts.*

4) *Floodlights or other types of lighting are prohibited unless approval is given through the development review process and reflected on the approved site plan.*

5) *Awnings and canopies used for accents over doors and windows shall not be internally lit*

6) *Before certifications of occupancy are released, the owner/builder must supply the Town with a final letter of certification for the lighting engineer, qualified lighting professional (Sec. 8.6.2 (C)), or lighting manufacturer verifying that all site lighting is installed according to Town standards, the approved plans, and any applicable conditions. The certification must include a report indicating that all site and exterior mounted building lighting was inspected and the light levels measure and recorded (including spillover lighting). Any irregularities or deviations from the approved site plan, Town standards, or applicable conditions must be pointed out in the report.*

7) *Duke Energy will not be responsible for certifying the installation*

LIGHTING DESIGN TOLERANCE

The calculated footcandle light levels in this lighting design are predicted values and are based on specific information that has been supplied to Duke Energy Progress. Any inaccuracies in the supplied information, differences in luminaire installation, lighted area geometry including elevation differences, reflective properties of surrounding surfaces, obstructions (foliage or otherwise) in the lighted area, or lighting from sources other than listed in this design may produce different results from the predicted values. Normal tolerances of voltage, lamp output, and ballast and luminaire manufacture will also affect results.

Customer approval_____ Date_____

DISTANCE CALIBRATION (INCHES)

0 0.5 1.0 2.0 3.0 4.0

DUKE ENERGY® PROGRESS

PROPRIETARY & CONFIDENTIAL

This document together with the concepts and designs presented herein, presented as an instrument of service, is the sole property of Duke Energy Progress, and is intended only for the specific purpose and prospective client as stated in the title block of this drawing. Any use, copying, reproduction or disclosure of the drawing, design or any information contained herein by the prospective customer or other entities, including without limitation, architects, engineers, or equipment manufacturers is hereby expressly prohibited and shall not be permitted absent prior written consent from, and payment of compensation to Duke Energy Progress. Duke Energy Progress disclaims any liability or responsibility for any unauthorized use of or reliance on this document.

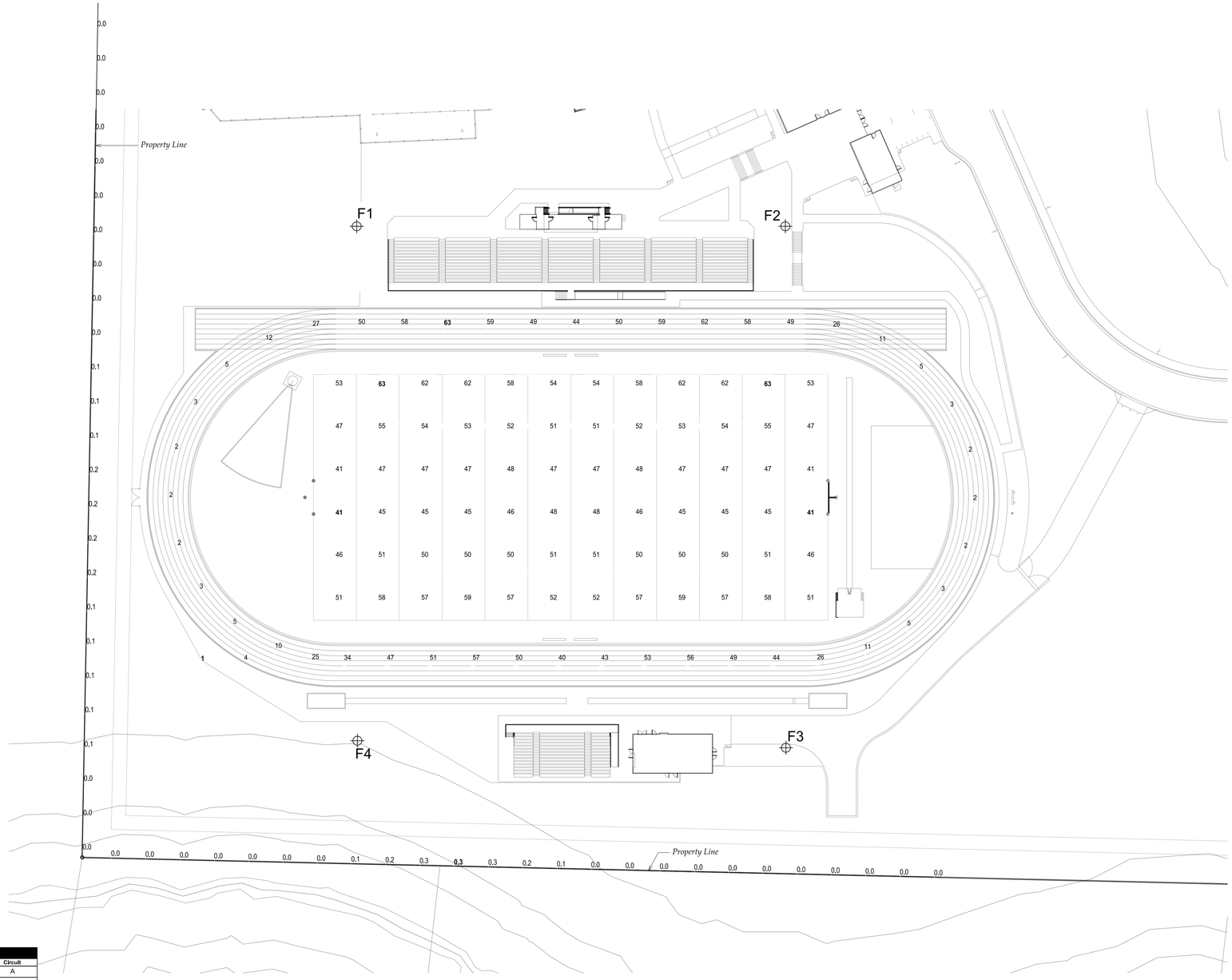
H12 High School	
Apex, NC	
SITE LIGHTING PLAN	
Designed by	DEP LIGHTING SOLUTIONS
Reviewed by	G. Sterken Scale 1" = 60'
Date	03/04/2021 Size "Arch D"
Description	LED 70w, 110w, 150w & 220w Roadway
Drawing No.	20-0390C Sht. 2 OF 2

NOTE:
CODE REQUIRED EXTERIOR EGRESS LIGHTING WILL BE PROVIDED USING FULL CUTOFF WALL PACK MOUNTED AT 9'-0" AFF AT EACH EXIT. FIXTURES SHALL BE DARK BRONZE, WITH 3000K COLOR TEMPERATURE.

DUE TO SCALE. WALL PACKS ARE NOT INCLUDED IN SITE PHOTOMETRIC PLANS. LIGHTING CONTRIBUTION:
18 FC MAX,
1.0 FC @ 17'
0.1 FC @ 30'

3 SL-01.01 BUILDING MOUNTED WALL PACK
NO SCALE

2 SL-01.01 SPORTS FIELD LIGHTS
NO SCALE



1 SL-01.01 STADIUM LIGHTING PLAN
SCALE: 1"= 40'

Lighting System

Pole ID	Pole Height	Mtg Height	Fixture Qty	Luminaire Type	Load	Circuit
F1-F2	70'	70'	11	TLC-LED-1500	15.73 kW	A
		16'	2	TLC-BT-575	1.15 kW	A
F3-F4	80'	80'	10	TLC-LED-1500	14.30 kW	A
		16'	2	TLC-BT-575	1.15 kW	A
4			***50***		***64.66 kW***	

Circuit	Description	Load	Fixture Qty
A	Football	64.66 kW	50

Type	Source	Wattage	Lumens	L90	L80	L70	Quantity
TLC-LED-1500	LED 5700K - 75 CRI	1430W	160,000	>120,000	>120,000	>120,000	42
TLC-BT-575	LED 5700K - 75 CRI	575W	52,000	>120,000	>120,000	>120,000	8

Light Level Summary

Grid Name	Calculation Metric	Illumination					Circuits	Fixture Qty
		Ave	Min	Max	Max/Min	Ave/Min		
Football	Horizontal Illuminance	51,2	41	63	1,54	1,25	A	50
Track	Horizontal Illuminance	32,23	2,0	62	28,6	14,8	A	50
Property Line	Horizontal Illuminance	0,0635	0,000	0,28	-	-	A	50

FOR REFERENCE ONLY
NOT FOR CONSTRUCTION

H12/Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
111 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531
License # F-0115

Civil Engineer and Landscape Architect
CLH Design PA
400 Regendcy Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

KEY PLAN

SEAL | DATE

SHEET ISSUE

1	Town of Apex Major Site Plan Submittal	12/01/20
2	Town of Apex Major Site Plan Submittal #2	2/12/21
3	Town of Apex Major Site Plan Submittal #3	3/05/21
4	Town of Apex Major Site Plan Submittal #4	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 3153-W

SHEET TITLE

STADIUM LIGHTING PLAN

SHEET NUMBER

SL-01.01

GROSS BUILDING AREA

SECOND FLOOR	94,079 SF
FIRST FLOOR	197,390 SF
GROUND FLOOR	71,603 SF
SUB TOTAL	**363,072 SF**
MECHANICAL PENTHOUSE	10,294 SF
SECOND FLOOR MECHANICAL MEZZANINE	20,582 SF
SUB TOTAL	**30,876 SF**
AUXILIARY ATHLETICS BUILDINGS	5,723 SF
GRAND TOTAL	**399,671 SF**

GENERAL PROJECT NOTES

1. THE SCREENING OF LOADING DOCKS, ROLL-OUT TRASH CONTAINERS, DUMPSTERS, OUTDOOR STORAGE, MECHANICAL AND HVAC EQUIPMENT, AND SIMILAR FACILITIES ON THE ROOF, GROUND, OR BUILDING SHALL MEET THE REQUIREMENTS OF UDO SEC. 8.2.8. SPECIFICALLY, SCREENING MUST BE DONE SO THATI
   A. IT IS INCORPORATED INTO THE OVERALL DESIGN THEME OF THE BUILDING AND LANDSCAPE.
   B, SCREENING MATERIALS ARE NOT DIFFERENT FROM OR INFERIOR TO THE PRINCIPAL MATERIALS OF THE BUILDING OR LANDSCAPE, AND ARE SIMILAR IN MATERIALS AND COLOR,
   C. SCREENED ITEMS ARE OUT OF VIEW FROM ADJACENT PROPERTIES AND PUBLIC STREETS, AND A TOTALLY OPAQUE SCREEN IS ACHIEVED.
   D. ANY GROUND-MOUNTED HVAC OR OTHER MECHANICAL OR UTILITY EQUIPMENT SIX (6) FEET TALL OR HIGHER MUST BE FENCED AND LANDSCAPED.
   E. DUMPSTER ENCLOSURES MUST MEET THE ABOVE REQUIREMENTS PLUS BE EIGHT (8) FEET TALL OR THE HEIGHT OF THE DUMPSTER, WHICHEVER IS GREATER, AND BE BUILT OF MASONRY MATERIAL WITH OPAQUE GATES. WHERE PRACTICABLE, SHRUBS OR OTHER PLANTS MUST BE PLANTED OUTSIDE THE ENCLOSURE TO VISUALLY SOFTEN THE APPEARANCE.

2. ALL OUTDOOR LIGHT FIXTURES SHALL BE LOCATED A MINIMUM OF 10 FEET FROM A PROPERTY OR RIGHT-OF-WAY LINE, AND AT LEAST TWO FEET AWAY FROM ANY REQUIRED PERIMETER OR STREETSCAPE BUFFER AND TREE SAVE AREA.

3. LAMPS FOR NON-CUTOFF LIGHT FIXTURES SHALL NOT EXCEED 100 WATTS.

4. WALL PACK LIGHT FIXTURES MUST BE FULLY SHIELDED, TRUE CUTOFF TYPE FIXTURES WITH A CONCEALED LAMP/LIGHT SOURCE. THE LIGHTING MUST BE DIRECTED DOWNWARD AND THE WATTAGE MUST NOT EXCEED 100 WATTS.

5. FLOODLIGHTS OR OTHER TYPES OF LIGHTING ARE PROHIBITED UNLESS APPROVAL IS GIVEN THROUGH THE DEVELOPMENT REVIEW PROCESS AND REFLECTED ON THE APPROVED SITE PLAN.

6. AWNINGS AND CANOPIES USED FOR ACCENTS OVER DOORS AND WINDOWS SHALL NOT BE INTERNALLY LIT.

7. BEFORE CERTIFICATES OF OCCUPANCY ARE RELEASED, THE OWNER/BUILDER MUST SUPPLY THE TOWN WITH A FINAL LETTER OF CERTIFICATION FROM THE LIGHTING ENGINEER AND/OR LIGHTING MANUFACTURER VERIFYING THAT ALL SITE LIGHTING IS INSTALLED ACCORDING TO TOWN STANDARDS, THE APPROVED PLANS, AND ANY APPLICABLE CONDITIONS.

8. ARCHITECTURAL CONSTRUCTION PLANS MUST ADHERE TO THE APPROVED SITE PLANS. ANY PROPOSED CHANGES MUST BE SUBMITED TO THE PLANNING DEPARTMENT FOR APPROVAL.

NOT FOR CONSTRUCTION

Felton Grove High School (H12)

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
111 Corning Road, Ste 190
Cary, NC 27518
919-588-3602

Architect & Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer & Landscape Architect
CLH Design PA
400 Regency Forest Drive, Suite 120
Cary, NC 27518
(919) 319-6716

SEAL | DATE 3/5/21

SHEET ISSUE

1	Town of Apex Major Site Plan Submittal #1	12/1/20
2	Town of Apex Major Site Plan Submittal #2	2/12/21
3	Town of Apex Major Site Plan Submittal #3	3/5/21

RATIO

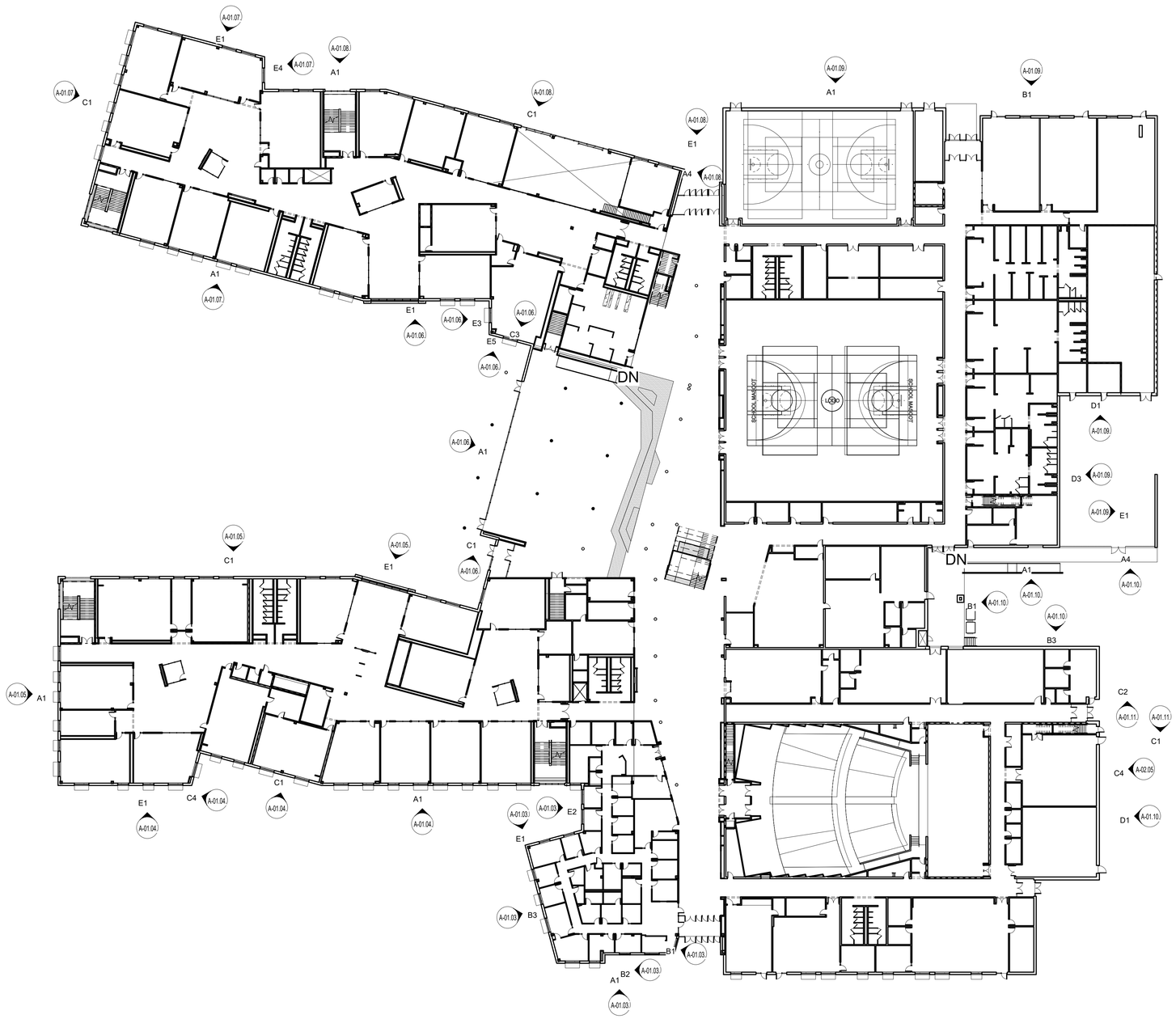
COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 19150.000

SHEET TITLE
GENERAL PROJECT INFORMATION

SHEET NUMBER
A-01.00.

3/3/2021 3:51:23 PM



A1 / A-01.01 **OVERALL FIRST FLOOR PLAN**
1/32" = 1'-0"

0' 16' 32' 64' 128'

NOT FOR CONSTRUCTION

Felton Grove High School (H12)

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
111 Corning Road, Ste 190
Cary, NC 27518
919-588-3602

Architect & Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer & Landscape Architect
CLH Design PA
400 Regency Forest Drive, Suite 120
Cary, NC 27518
(919) 319-6716

SEAL | DATE 3/5/21

SHEET ISSUE

1	Town of Apex Major Site Plan Submittal #1	12/1/20
2	Town of Apex Major Site Plan Submittal #2	2/12/21
3	Town of Apex Major Site Plan Submittal #3	3/5/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

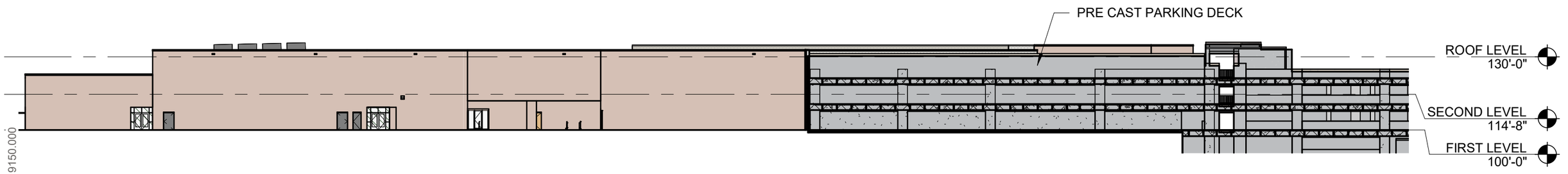
PROJECT NO. 19150.000

SHEET TITLE
FLOOR PLAN

SHEET NUMBER
A-01.01.

3/3/2021 3:51:24 PM

NORTH



EAST

19150.000

4/1/2021 2:52:47 PM

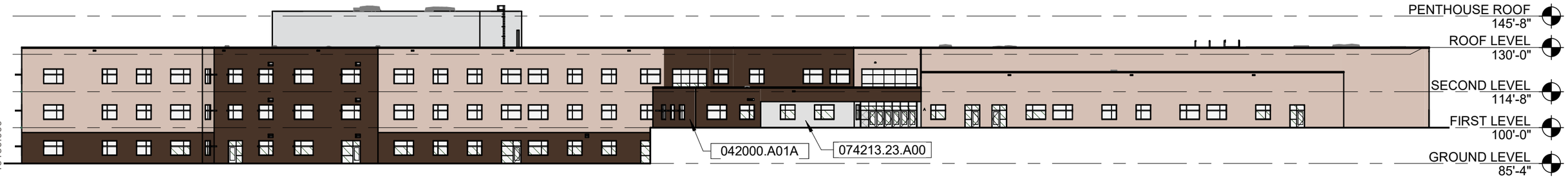
RATIO

2021-04-01

1" = 40'-0"

EXTERIOR ELEVATIONS **Felton Grove High School**

WEST



SOUTH

19150.000

4/1/2021 2:52:50 PM

RATIO

1" = 40'-0"

2021-04-01

EXTERIOR ELEVATIONS **Felton Grove High School**

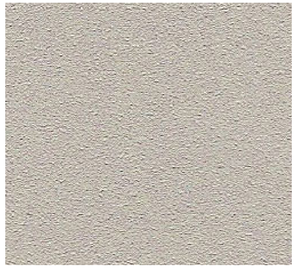
H12 - FELTON GROVE HIGH SCHOOL - MAIN BUILDING

FACE BRICK

FACE BRICK A
TAYLOR CLAY PRODUCTS #323 GRAY MODULAR WIRECUT

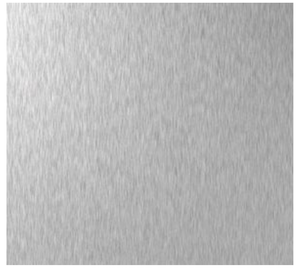
FACE BRICK B
BLEND- TAYLOR CLAY PRODUCTS #369 & #371 AUTUMN BLEND WIRECUT

MECHANICAL PENTHOUSE ENCLOSURE



DRIVIT LIMESTONE FINISH 131 GULL GRAY

ALUMINUM CURTAIN WALL & STOREFRONT



KAWNEER CLEAR ANODIZED ALUMINUM
CURTAIN WALL & STOREFRONT FINISH

METAL COPING

TO MATCH FACE BRICK A

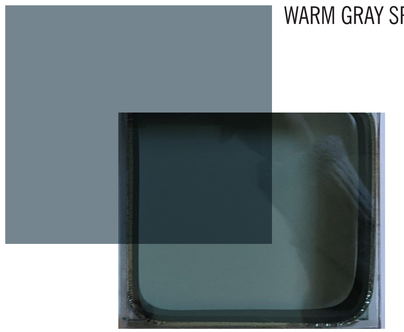
METAL PANEL

LIGHT GRAY

ORANGE

**COLOR TO BE DETERIMINED BY MANUFACTURER CHOSEN AVAILABILITY.
COLOR TO BE LIGHT GRAY OR ORANGE.

EXTERIOR GLAZING

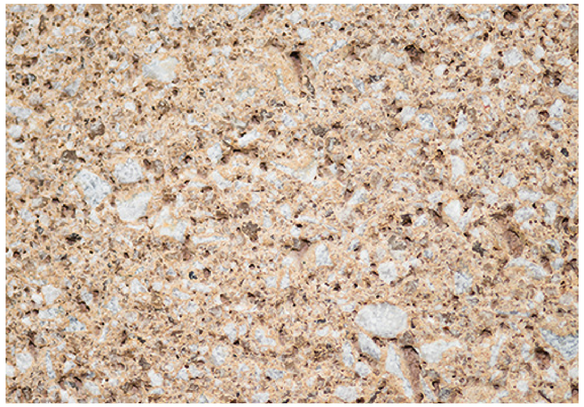


WARM GRAY SPANDREL

EXTERIOR GLAZING: GUARDIAN GLASS
SNX 62/27(#2) ON CLEAR 6MM

H12 - FELTON GROVE HIGH SCHOOL - AUXILIARY ATHLETICS

GROUND FACE BLOCK

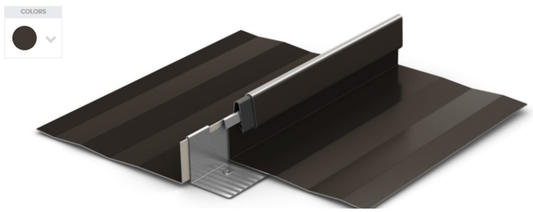


GROUND FACE BLOCK
JOHNSON CONCRETE PRODUCTS JCL-3063 SHORELINE SAND

CEMENTITIOUS SIDING

HARDIEPANEL HZ10 TEXTURE AND
VERTICAL SEAMS: SMOOTH, BOARD AND
BATTEN, RICH EXPRESSO

STANDING SEAM METAL ROOF

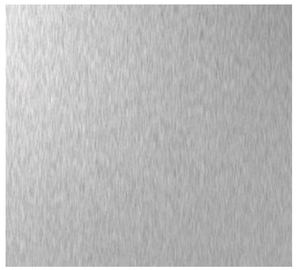


BERRIDGE HIGH SEAM TEE PANEL
DARK BRONZE

DOWNSPOUT & GUTTER

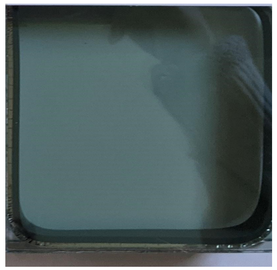
TO MATCH STANDING SEAM METAL ROOF

ALUMINUM CANOPIES & STOREFRONT



KAWNEER CLEAR ANODIZED ALUMINUM

EXTERIOR GLAZING



EXTERIOR GLAZING: GUARDIAN GLASS
SNX 62/27(#2) ON CLEAR 6MM

NOTE: ALL MATERIALS ARE BASIS OF DESIGN

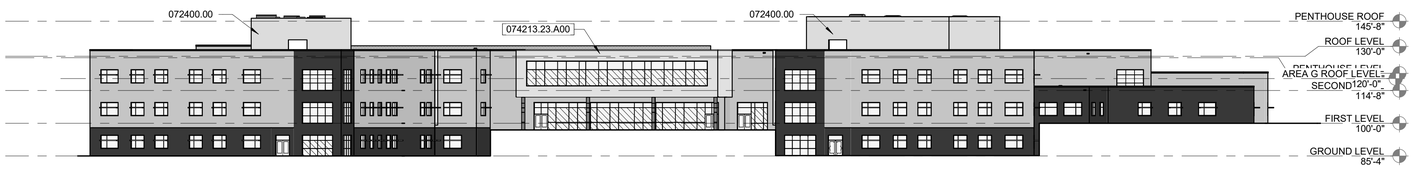
© 2018 RATIO ARCHITECTS, INC.

[4/1/2021 2:52:50 PM 19150.000

RATIO

2021-04-01

EXTERIOR RENDERING **Felton Grove High School**



D1 A-01.02

EXTERIOR ELEVATION - WEST OVERALL

1/32" = 1'-0"

C1 A-01.02

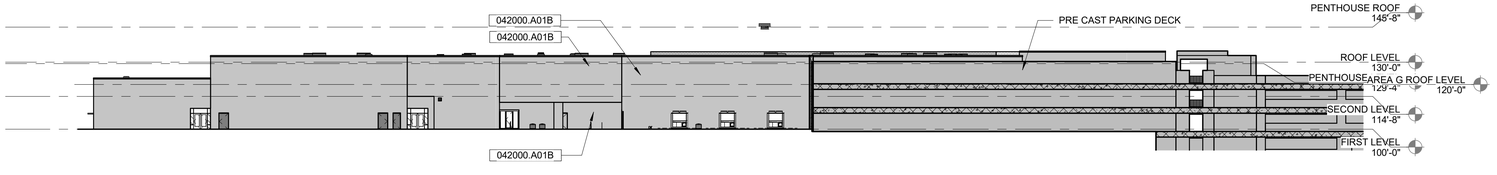
EXTERIOR ELEVATION - SOUTH OVERALL

1/32" = 1'-0"

B1 A-01.02

EXTERIOR ELEVATION - NORTH OVERALL

1/32" = 1'-0"



A1 A-01.02

EXTERIOR ELEVATION - EAST OVERALL

1/32" = 1'-0"

SUBMITTAL INFORMATION

1. PRIMARY OCCUPANCIES = E, A1, A2, A4
2. ACCESSORY OCCUPANCIES = S-1, B
3. TYPE 1B CONSTRUCTION
4. GROUND FLOOR SF = 71,603 SF
5. FIRST FLOOR SF = 197,390 SF
6. SECOND FLOOR SF = 94,079 SF
7. MECHANICAL PENTHOUSES AND MEZZANINES = 30,876 SF
8. SURROUNDING PROPOERTIES INCLUDE SINGLE FAMILY HOMES AND RESIDENTIAL COMMUNITIES, A LANDFILL, FUTURE 540 EXTENSION; SITE IS WITHIN CLOSE PROXIMITY TO STEPHENSON ROAD AND SUNSET LAKE BOULEVARD AND WILL CONSTRUCT A SECTION OF A FUTURE MAJOR COLLETOR STREET ON ITS PROPERTY. MATERIALS OFTHE SCHOOL PRIMARILY INCLUDE BRICK AND GLAZING WITH AREAS OF METAL PANEL ACCENT.
9. REFER TO CIVIL DRAWINGS FOR FINISH FLOOR ELEVATIONS 421.67 100'-0" = 421.67'

GENERAL PROJECT NOTES

1. THE SCREENING OF LOADING DOCKS, ROLL-OUT TRASH CONTAINERS, DUMPSTERS, OUTDOOR STORAGE, MECHANICAL AND HVAC EQUIPMENT, AND SIMILAR FACILITIES ON THE ROOF, GROUND, OR BUILDING SHALL MEET THE REQUIREMENTS OF UDO SEC. 8.2.8. SPECIFICALLY, SCREENING MUST BE DONE SO THATI
   A. IT IS INCORPORATED INTO THE OVERALL DESIGN THEME OF THE BUILDING AND LANDSCAPE.
   B, SCREENING MATERIALS ARE NOT DIFFERENT FROM OR INFERIOR TO THE PRINCIPAL MATERIALS OF THE BUILDING OR LANDSCAPE, AND ARE SIMILAR IN MATERIALS AND COLOR,
   C. SCREENED ITEMS ARE OUT OF VIEW FROM ADJACENT PROPERTIES AND PUBLIC STREETS, AND A TOTALLY OPAQUE SCREEN IS ACHIEVED.
   D. ANY GROUND-MOUNTED HVAC OR OTHER MECHANICAL OR UTILITY EQUIPMENT SIX (6) FEET TALL OR HIGHER MUST BE FENCED AND LANDSCAPED.
   E. DUMPSTER ENCLOSURES MUST MEET THE ABOVE REQUIREMENTS PLUS BE EIGHT (8) FEET TALL OR THE HEIGHT OF THE DUMPSTER, WHICHEVER IS GREATER, AND BE BUILT OF MASONRY MATERIAL WITH OPAQUE GATES. WHERE PRACTICABLE, SHRUBS OR OTHER PLANTS MUST BE PLANTED OUTSIDE THE ENCLOSURE TO VISUALLY SOFTEN THE APPEARANCE.

2. ALL OUTDOOR LIGHT FIXTURES SHALL BE LOCATED A MINIMUM OF 10 FEET FROM A PROPERTY OR RIGHT-OF-WAY LINE, AND AT LEAST TWO FEET AWAY FROM ANY REQUIRED PERIMETER OR STREETSCAPE BUFFER AND TREE SAVE AREA.

3. LAMPS FOR NON-CUTOFF LIGHT FIXTURES SHALL NOT EXCEED 100 WATTS.

4. WALL PACK LIGHT FIXTURES MUST BE FULLY SHIELDED, TRUE CUTOFF TYPE FIXTURES WITH A CONCEALED LAMP/LIGHT SOURCE. THE LIGHTING MUST BE DIRECTED DOWNWARD AND THE WATTAGE MUST NOT EXCEED 100 WATTS.

5. FLOODLIGHTS OR OTHER TYPES OF LIGHTING ARE PROHIBITED UNLESS APPROVAL IS GIVEN THROUGH THE DEVELOPMENT REVIEW PROCESS AND REFLECTED ON THE APPROVED SITE PLAN.

6. AWNINGS AND CANOPIES USED FOR ACCENTS OVER DOORS AND WINDOWS SHALL NOT BE INTERNALLY LIT.

7. BEFORE CERTIFICATES OF OCCUPANCY ARE RELEASED, THE OWNER/BUILDER MUST SUPPLY THE TOWN WITH A FINAL LETTER OF CERTIFICATION FROM THE LIGHTING ENGINEER AND/OR LIGHTING MANUFACTURER VERIFYING THAT ALL SITE LIGHTING IS INSTALLED ACCORDING TO TOWN STANDARDS, THE APPROVED PLANS, AND ANY APPLICABLE CONDITIONS.

8. ARCHITECTURAL CONSTRUCTION PLANS MUST ADHERE TO THE APPROVED SITE PLANS. ANY PROPOSED CHANGES MUST BE SUBMITED TO THE PLANNING DEPARTMENT FOR APPROVAL.

EXTERIOR MATERIALS SCHEDULE

SPECIFICATION REF.	MATERIAL	MANUFACTURER (BASIS OF DESIGN)
034100	PRE-CAST CONCRETE	
042000.A01A	FACE BRICK A	Taylor Clay Products #323 Gray Modular Wirecut
042000.A01B	FACE BRICK B	Taylor Clay Products #369 and #371 Autumn Blend Wirecut
072400.00	EIFS	DRYVIT SYSTEMS
074213.23.A00	METAL PANEL A	DRI-DESIGN METAL PANELS - ORANGE
074213.23.C01	METAL PANEL B	DRI-DESIGN PERFORATED PANELS - GRAY AND COLOR TO MATCH MAIN BUILDING PANEL ACCENT - ALTERNATE
077100.A01	COPING METAL, MANUFACTURED	COLOR TO BE EARTH TONE TO MATCH FACE BRICK B
084113.A01	ALUMINUM STOREFRONT	KAWNEER - ANODIZED ALUMINUM FINISH
084413	ALUMINUM CURTAIN WALL	KAWNEER - ANODIZED ALUMINUM FINISH
088000	GLAZING	GUARDIAN GLASS; SUNGUARD; CLEAR, INSULATING, LOW-E COATED
088113.C01	SPANDREL GLASS	GUARDIAN GLASS - CERAMIC COATED GLASS
107316.B01	ALUMINUM CANOPIES	MAPES INDUSTRIES, INC. - ANODIZED ALUMINUM FINISH
323119.A00	DECORATIVE METAL FENCES & GATES	

0' 16' 32' 64' 128'

NOT FOR CONSTRUCTION

Felton Grove High School (H12)

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
111 Corning Road, Ste 190
Cary, NC 27518
919-588-3602

Architect & Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer & Landscape Architect
CLH Design PA
400 Regency Forest Drive, Suite 120
Cary, NC 27518
(919) 319-6716

SEAL | DATE 3/5/21

SHEET ISSUE

1	Town of Apex Major Site Plan Submittal #1	12/1/20
2	Town of Apex Major Site Plan Submittal #2	2/12/21
3	Town of Apex Major Site Plan Submittal #3	3/5/21

RATIO

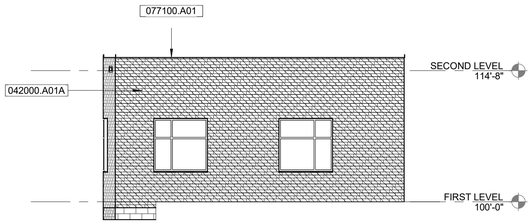
COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 19150.000

SHEET TITLE
EXTERIOR ELEVATIONS

SHEET NUMBER
A-01.02.

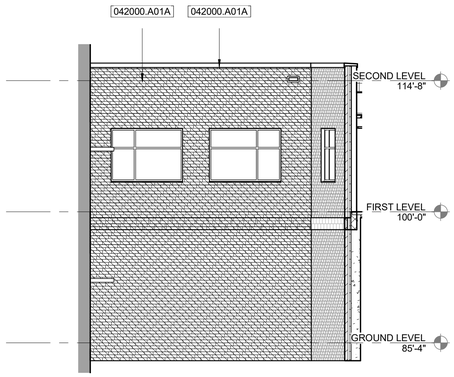
3/3/2021 3:51:42 PM



E1 A-01.03

EXTERIOR ELEVATION

1/8" = 1'-0"

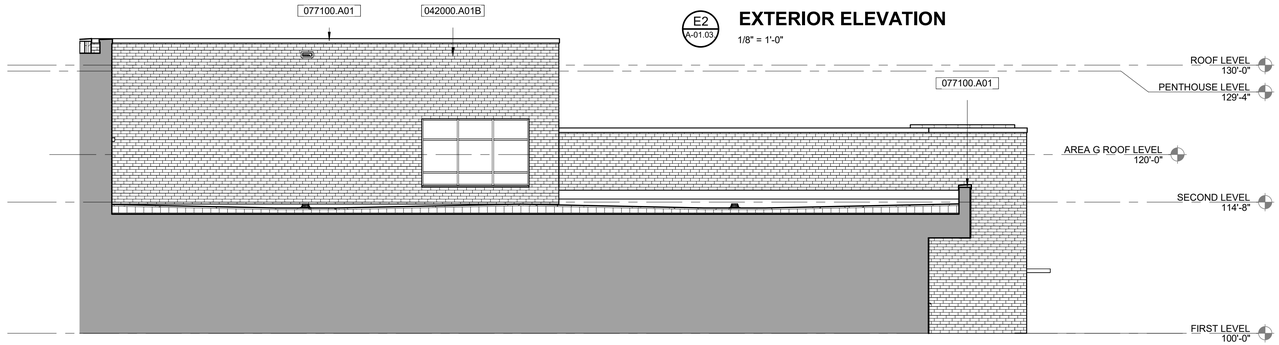


E2 A-01.03

EXTERIOR ELEVATION

1/8" = 1'-0"

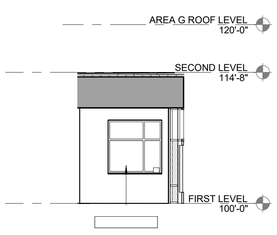
EXTERIOR MATERIALS SCHEDULE		
SPECIFICATION REF.	**MATERIAL**	**MANUFACTURER (BASIS OF DESIGN)**
034100	PRE-CAST CONCRETE	
042000.A01A	FACE BRICK A	Taylor Clay Products #323 Gray Modular Wirecut
042000.A01B	FACE BRICK B	Taylor Clay Products #369 and #371 Autumn Blend Wirecut
072400.00	EIFS	DRYVIT SYSTEMS
074213.23.A00	METAL PANEL A	DRI-DESIGN METAL PANELS - ORANGE
074213.23.C01	METAL PANEL B	DRI-DESIGN PERFORATED PANELS - GRAY AND COLOR TO MATCH MAIN BUILDING PANEL ACCENT - ALTERNATE
077100.A01	COPING METAL, MANUFACTURED	COLOR TO BE EARTH TONE TO MATCH FACE BRICK B
084113.A01	ALUMINUM STOREFRONT	KAWNEER - ANODIZED ALUMINUM FINISH
084413	ALUMINUM CURTAIN WALL	KAWNEER - ANODIZED ALUMINUM FINISH
088000	GLAZING	GUARDIAN GLASS; SUNGUARD; CLEAR, INSULATING, LOW-E COATED
088113.C01	SPANDREL GLASS	GUARDIAN GLASS - CERAMIC COATED GLASS
107316.B01	ALUMINUM CANOPIES	MAPES INDUSTRIES, INC. - ANODIZED ALUMINUM FINISH
323119.A00	DECORATIVE METAL FENCES & GATES	



D1 A-01.03

EXTERIOR ELEVATION

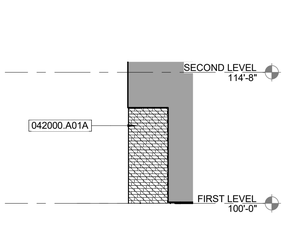
1/8" = 1'-0"



B1 A-01.03

EXTERIOR ELEVATION

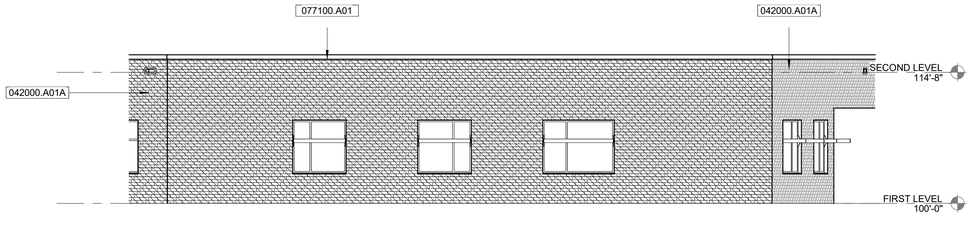
1/8" = 1'-0"



B2 A-01.03

EXTERIOR ELEVATION

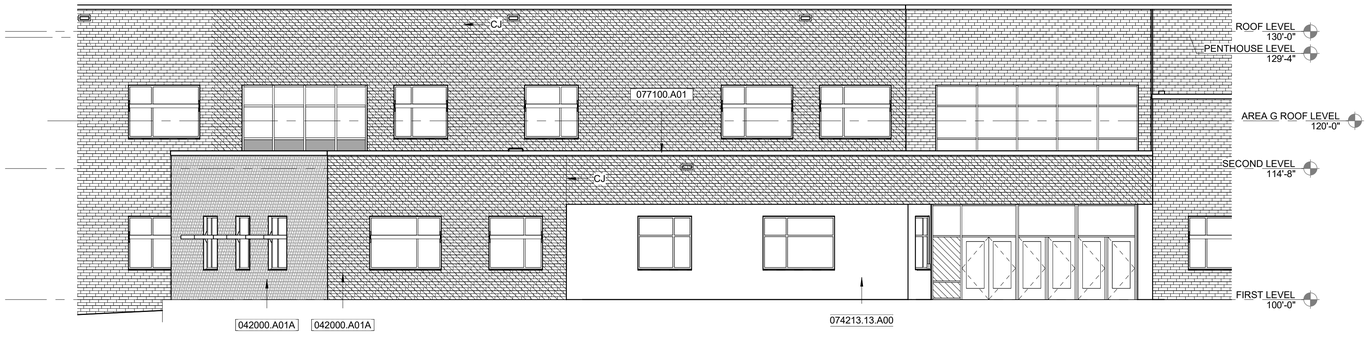
1/8" = 1'-0"



B3 A-01.03

EXTERIOR ELEVATION

1/8" = 1'-0"



A1 A-01.03

EXTERIOR ELEVATION

1/8" = 1'-0"

GENERAL PROJECT NOTES

1. THE SCREENING OF LOADING DOCKS, ROLL-OUT TRASH CONTAINERS, DUMPSTERS, OUTDOOR STORAGE, MECHANICAL AND HVAC EQUIPMENT, AND SIMILAR FACILITIES ON THE ROOF, GROUND, OR BUILDING SHALL MEET THE REQUIREMENTS OF UDO SEC. 8.2.8. SPECIFICALLY, SCREENING MUST BE DONE SO THATI
   A. IT IS INCORPORATED INTO THE OVERALL DESIGN THEME OF THE BUILDING AND LANDSCAPE.
   B. SCREENING MATERIALS ARE NOT DIFFERENT FROM OR INFERIOR TO THE PRINCIPAL MATERIALS OF THE BUILDING OR LANDSCAPE, AND ARE SIMILAR IN MATERIALS AND COLOR,
   C. SCREENED ITEMS ARE OUT OF VIEW FROM ADJACENT PROPERTIES AND PUBLIC STREETS, AND A TOTALLY OPAQUE SCREEN IS ACHIEVED.
   D. ANY GROUND-MOUNTED HVAC OR OTHER MECHANICAL OR UTILITY EQUIPMENT SIX (6) FEET TALL OR HIGHER MUST BE FENCED AND LANDSCAPED.
   E. DUMPSTER ENCLOSURES MUST MEET THE ABOVE REQUIREMENTS PLUS BE EIGHT (8) FEET TALL OR THE HEIGHT OF THE DUMPSTER, WHICHEVER IS GREATER, AND BE BUILT OF MASONRY MATERIAL WITH OPAQUE GATES. WHERE PRACTICABLE, SHRUBS OR OTHER PLANTS MUST BE PLANTED OUTSIDE THE ENCLOSURE TO VISUALLY SOFTEN THE APPEARANCE.

2. ALL OUTDOOR LIGHT FIXTURES SHALL BE LOCATED A MINIMUM OF 10 FEET FROM A PROPERTY OR RIGHT-OF-WAY LINE, AND AT LEAST TWO FEET AWAY FROM ANY REQUIRED PERIMETER OR STREETSCAPE BUFFER AND TREE SAVE AREA.

3. LAMPS FOR NON-CUTOFF LIGHT FIXTURES SHALL NOT EXCEED 100 WATTS.

4. WALL PACK LIGHT FIXTURES MUST BE FULLY SHIELDED, TRUE CUTOFF TYPE FIXTURES WITH A CONCEALED LAMP/LIGHT SOURCE. THE LIGHTING MUST BE DIRECTED DOWNWARD AND THE WATTAGE MUST NOT EXCEED 100 WATTS.

5. FLOODLIGHTS OR OTHER TYPES OF LIGHTING ARE PROHIBITED UNLESS APPROVAL IS GIVEN THROUGH THE DEVELOPMENT REVIEW PROCESS AND REFLECTED ON THE APPROVED SITE PLAN.

6. AWNINGS AND CANOPIES USED FOR ACCENTS OVER DOORS AND WINDOWS SHALL NOT BE INTERNALLY LIT.

7. BEFORE CERTIFICATES OF OCCUPANCY ARE RELEASED, THE OWNER/BUILDER MUST SUPPLY THE TOWN WITH A FINAL LETTER OF CERTIFICATION FROM THE LIGHTING ENGINEER AND/OR LIGHTING MANUFACTURER VERIFYING THAT ALL SITE LIGHTING IS INSTALLED ACCORDING TO TOWN STANDARDS, THE APPROVED PLANS, AND ANY APPLICABLE CONDITIONS.

8. ARCHITECTURAL CONSTRUCTION PLANS MUST ADHERE TO THE APPROVED SITE PLANS. ANY PROPOSED CHANGES MUST BE SUBMITED TO THE PLANNING DEPARTMENT FOR APPROVAL.

0' 4' 8' 16' 32'

NOT FOR CONSTRUCTION

Felton Grove High School (H12)

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
111 Corning Road, Ste 190
Cary, NC 27518
919-588-3602

Architect & Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer & Landscape Architect
CLH Design PA
400 Regency Forest Drive, Suite 120
Cary, NC 27518
(919) 319-6716

SEAL | DATE 3/5/21

SHEET ISSUE

1	Town of Apex Major Site Plan Submittal #1	12/1/20
2	Town of Apex Major Site Plan Submittal #2	2/12/21
3	Town of Apex Major Site Plan Submittal #3	3/5/21

RATIO

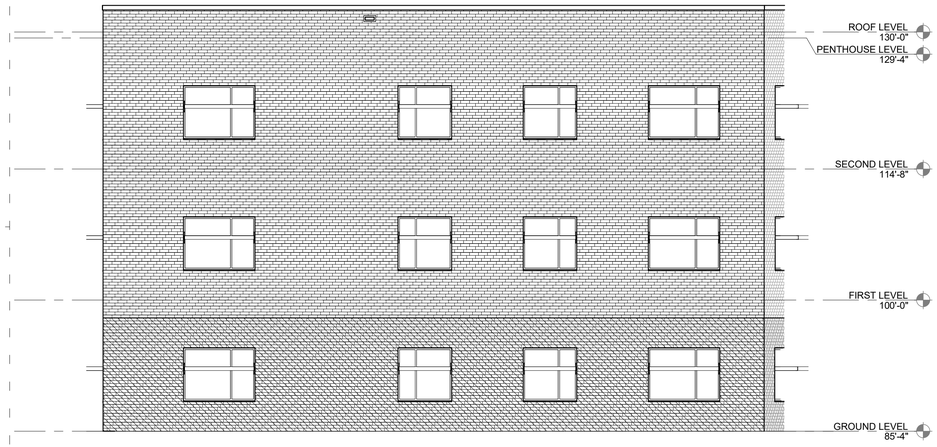
COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 19150.000

SHEET TITLE
EXTERIOR ELEVATIONS

SHEET NUMBER
A-01.03.

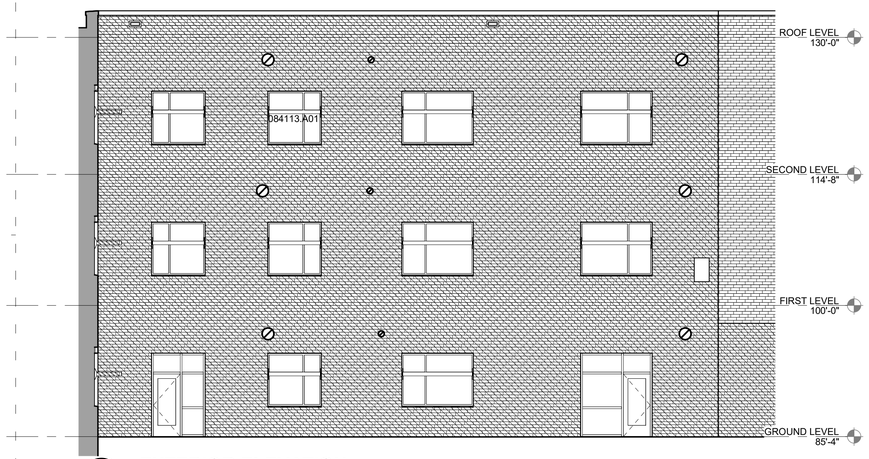
3/3/2021 3:51:52 PM



E1 / A-01.04

EXTERIOR ELEVATION

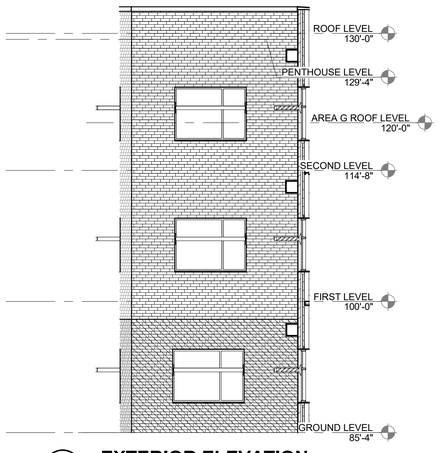
1/8" = 1'-0"



C1 / A-01.04

EXTERIOR ELEVATION

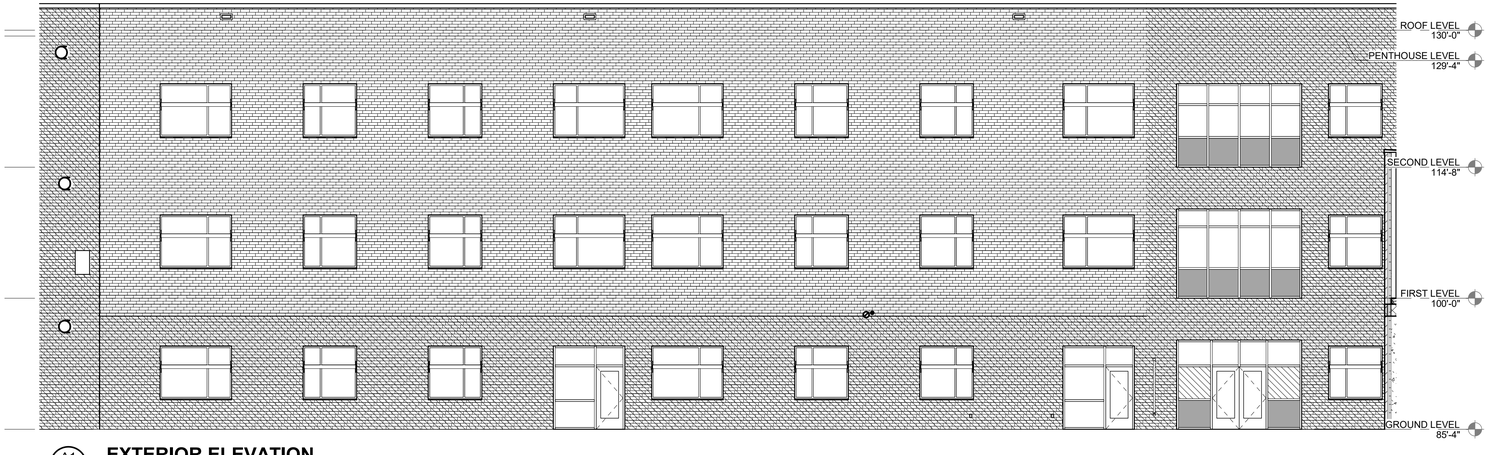
1/8" = 1'-0"



C4 / A-01.04

EXTERIOR ELEVATION

1/8" = 1'-0"



A1 / A-01.04

EXTERIOR ELEVATION

1/8" = 1'-0"

EXTERIOR MATERIALS SCHEDULE

SPECIFICATION REF.	MATERIAL	MANUFACTURER (BASIS OF DESIGN)
034100	PRE-CAST CONCRETE	
042000.A01A	FACE BRICK A	Taylor Clay Products #323 Gray Modular Wirecut
042000.A01B	FACE BRICK B	Taylor Clay Products #369 and #371 Autumn Blend Wirecut
072400.00	EIFS	DRYVIT SYSTEMS
074213.23.A00	METAL PANEL A	DRI-DESIGN METAL PANELS - ORANGE
074213.23.C01	METAL PANEL B	DRI-DESIGN PERFORATED PANELS - GRAY AND COLOR TO MATCH MAIN BUILDING PANEL ACCENT - ALTERNATE
077100.A01	COPING METAL, MANUFACTURED	COLOR TO BE EARTH TONE TO MATCH FACE BRICK B
084113.A01	ALUMINUM STOREFRONT	KAWNEER - ANODIZED ALUMINUM FINISH
084413	ALUMINUM CURTAIN WALL	KAWNEER - ANODIZED ALUMINUM FINISH
088000	GLAZING	GUARDIAN GLASS; SUNGUARD; CLEAR, INSULATING, LOW-E COATED
088113.C01	SPANDREL GLASS	GUARDIAN GLASS - CERAMIC COATED GLASS
107316.B01	ALUMINUM CANOPIES	MAPES INDUSTRIES, INC. - ANODIZED ALUMINUM FINISH
323119.A00	DECORATIVE METAL FENCES & GATES	

GENERAL PROJECT NOTES

1. THE SCREENING OF LOADING DOCKS, ROLL-OUT TRASH CONTAINERS, DUMPSTERS, OUTDOOR STORAGE, MECHANICAL AND HVAC EQUIPMENT, AND SIMILAR FACILITIES ON THE ROOF, GROUND, OR BUILDING SHALL MEET THE REQUIREMENTS OF UDO SEC. 8.2.8. SPECIFICALLY, SCREENING MUST BE DONE SO THAT!
   A. IT IS INCORPORATED INTO THE OVERALL DESIGN THEME OF THE BUILDING AND LANDSCAPE.
   B, SCREENING MATERIALS ARE NOT DIFFERENT FROM OR INFERIOR TO THE PRINCIPAL MATERIALS OF THE BUILDING OR LANDSCAPE, AND ARE SIMILAR IN MATERIALS AND COLOR,
   C. SCREENED ITEMS ARE OUT OF VIEW FROM ADJACENT PROPERTIES AND PUBLIC STREETS, AND A TOTALLY OPAQUE SCREEN IS ACHIEVED.
   D. ANY GROUND-MOUNTED HVAC OR OTHER MECHANICAL OR UTILITY EQUIPMENT SIX (6) FEET TALL OR HIGHER MUST BE FENCED AND LANDSCAPED.
   E. DUMPSTER ENCLOSURES MUST MEET THE ABOVE REQUIREMENTS PLUS BE EIGHT (8) FEET TALL OR THE HEIGHT OF THE DUMPSTER, WHICHEVER IS GREATER, AND BE BUILT OF MASONRY MATERIAL WITH OPAQUE GATES. WHERE PRACTICABLE, SHRUBS OR OTHER PLANTS MUST BE PLANTED OUTSIDE THE ENCLOSURE TO VISUALLY SOFTEN THE APPEARANCE.

2. ALL OUTDOOR LIGHT FIXTURES SHALL BE LOCATED A MINIMUM OF 10 FEET FROM A PROPERTY OR RIGHT-OF-WAY LINE, AND AT LEAST TWO FEET AWAY FROM ANY REQUIRED PERIMETER OR STREETSCAPE BUFFER AND TREE SAVE AREA.

3. LAMPS FOR NON-CUTOFF LIGHT FIXTURES SHALL NOT EXCEED 100 WATTS.

4. WALL PACK LIGHT FIXTURES MUST BE FULLY SHIELDED, TRUE CUTOFF TYPE FIXTURES WITH A CONCEALED LAMP/LIGHT SOURCE. THE LIGHTING MUST BE DIRECTED DOWNWARD AND THE WATTAGE MUST NOT EXCEED 100 WATTS.

5. FLOODLIGHTS OR OTHER TYPES OF LIGHTING ARE PROHIBITED UNLESS APPROVAL IS GIVEN THROUGH THE DEVELOPMENT REVIEW PROCESS AND REFLECTED ON THE APPROVED SITE PLAN.

6. AWNINGS AND CANOPIES USED FOR ACCENTS OVER DOORS AND WINDOWS SHALL NOT BE INTERNALLY LIT.

7. BEFORE CERTIFICATES OF OCCUPANCY ARE RELEASED, THE OWNER/BUILDER MUST SUPPLY THE TOWN WITH A FINAL LETTER OF CERTIFICATION FROM THE LIGHTING ENGINEER AND/OR LIGHTING MANUFACTURER VERIFYING THAT ALL SITE LIGHTING IS INSTALLED ACCORDING TO TOWN STANDARDS, THE APPROVED PLANS, AND ANY APPLICABLE CONDITIONS.

8. ARCHITECTURAL CONSTRUCTION PLANS MUST ADHERE TO THE APPROVED SITE PLANS. ANY PROPOSED CHANGES MUST BE SUBMITED TO THE PLANNING DEPARTMENT FOR APPROVAL.

Felton Grove High School (H12)

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
111 Corning Road, Ste 190
Cary, NC 27518
919-588-3602

Architect & Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer & Landscape Architect
CLH Design PA
400 Regency Forest Drive, Suite 120
Cary, NC 27518
(919) 319-6716

SEAL | DATE 3/5/21

SHEET ISSUE

1	Town of Apex Major Site Plan Submittal #1	12/1/20
2	Town of Apex Major Site Plan Submittal #2	2/12/21
3	Town of Apex Major Site Plan Submittal #3	3/5/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 19150.000

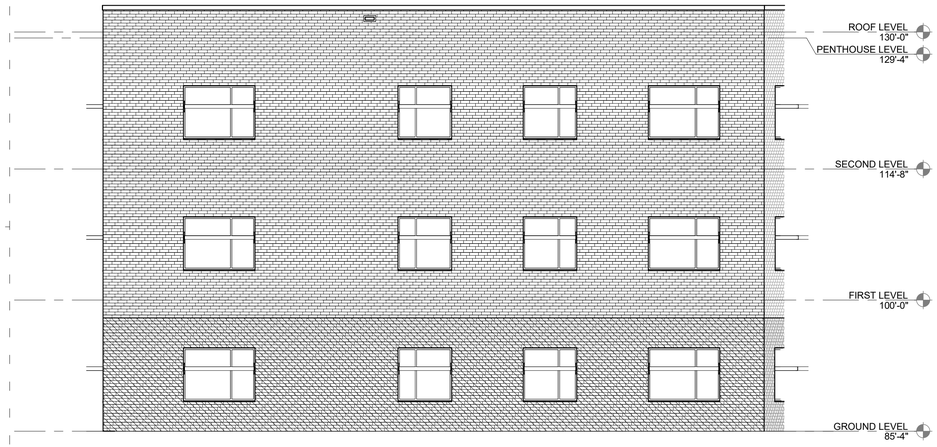
SHEET TITLE
EXTERIOR ELEVATION

SHEET NUMBER
A-01.04.

0' 0" 8' 4' 16' 8' 32' 16' 64' 32'

NOT FOR CONSTRUCTION

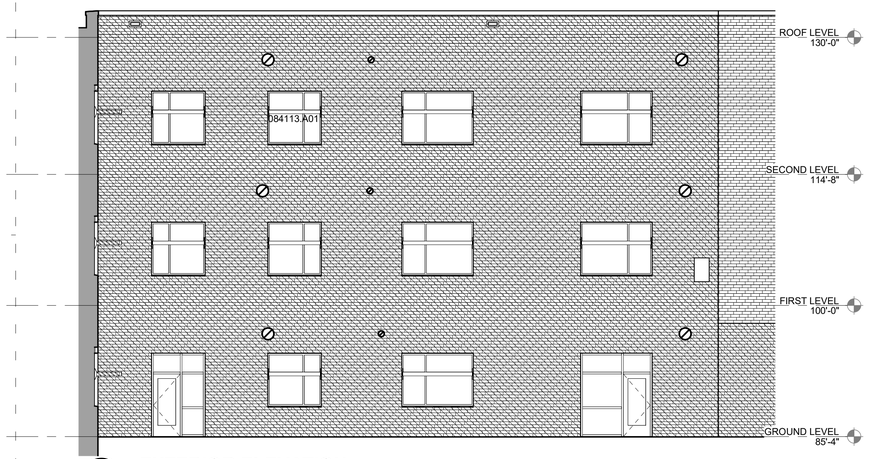
3/3/2021 3:51:59 PM



E1 / A-01.04

EXTERIOR ELEVATION

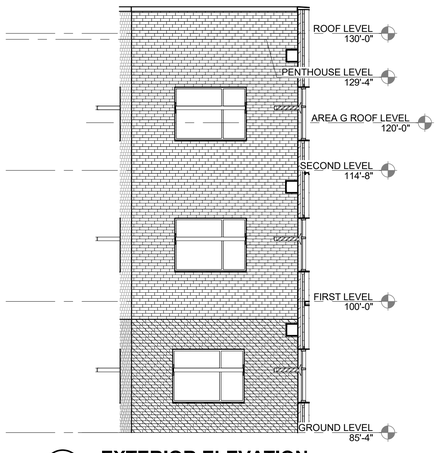
1/8" = 1'-0"



C1 / A-01.04

EXTERIOR ELEVATION

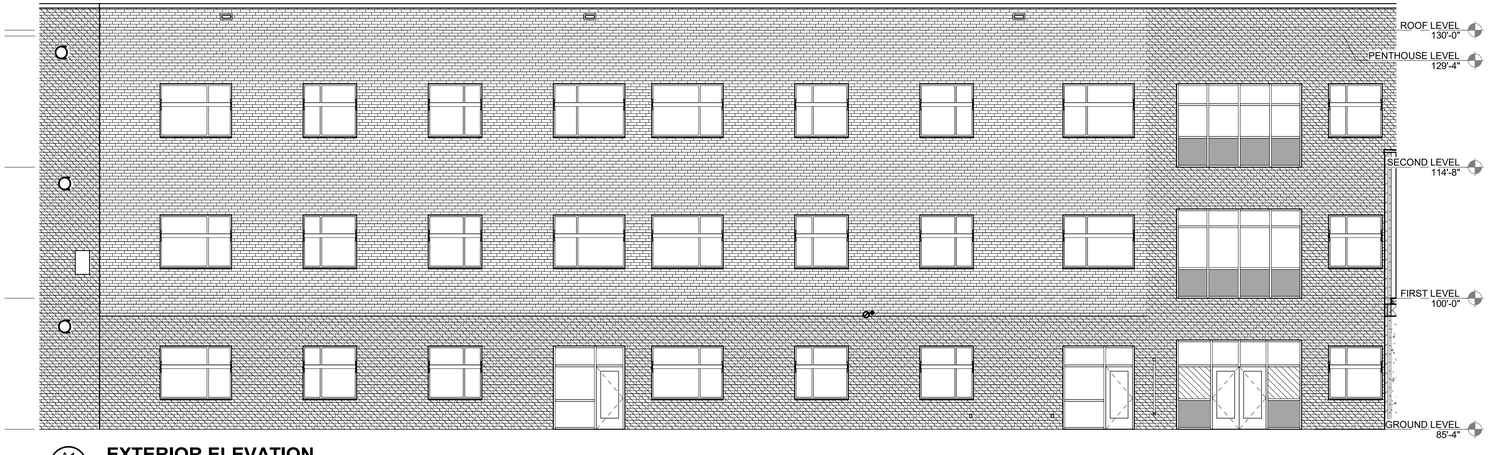
1/8" = 1'-0"



C4 / A-01.04

EXTERIOR ELEVATION

1/8" = 1'-0"



A1 / A-01.04

EXTERIOR ELEVATION

1/8" = 1'-0"

EXTERIOR MATERIALS SCHEDULE

SPECIFICATION REF.	MATERIAL	MANUFACTURER (BASIS OF DESIGN)
034100	PRE-CAST CONCRETE	
042000.A01A	FACE BRICK A	Taylor Clay Products #323 Gray Modular Wirecut
042000.A01B	FACE BRICK B	Taylor Clay Products #369 and #371 Autumn Blend Wirecut
072400.00	EIFS	DRYVIT SYSTEMS
074213.23.A00	METAL PANEL A	DRI-DESIGN METAL PANELS - ORANGE
074213.23.C01	METAL PANEL B	DRI-DESIGN PERFORATED PANELS - GRAY AND COLOR TO MATCH MAIN BUILDING PANEL ACCENT - ALTERNATE
077100.A01	COPING METAL, MANUFACTURED	COLOR TO BE EARTH TONE TO MATCH FACE BRICK B
084113.A01	ALUMINUM STOREFRONT	KAWNEER - ANODIZED ALUMINUM FINISH
084413	ALUMINUM CURTAIN WALL	KAWNEER - ANODIZED ALUMINUM FINISH
088000	GLAZING	GUARDIAN GLASS; SUNGUARD; CLEAR, INSULATING, LOW-E COATED
088113.C01	SPANDREL GLASS	GUARDIAN GLASS - CERAMIC COATED GLASS
107316.B01	ALUMINUM CANOPIES	MAPES INDUSTRIES, INC. - ANODIZED ALUMINUM FINISH
323119.A00	DECORATIVE METAL FENCES & GATES	

GENERAL PROJECT NOTES

1. THE SCREENING OF LOADING DOCKS, ROLL-OUT TRASH CONTAINERS, DUMPSTERS, OUTDOOR STORAGE, MECHANICAL AND HVAC EQUIPMENT, AND SIMILAR FACILITIES ON THE ROOF, GROUND, OR BUILDING SHALL MEET THE REQUIREMENTS OF UDO SEC. 8.2.8. SPECIFICALLY, SCREENING MUST BE DONE SO THAT!
   A. IT IS INCORPORATED INTO THE OVERALL DESIGN THEME OF THE BUILDING AND LANDSCAPE.
   B, SCREENING MATERIALS ARE NOT DIFFERENT FROM OR INFERIOR TO THE PRINCIPAL MATERIALS OF THE BUILDING OR LANDSCAPE, AND ARE SIMILAR IN MATERIALS AND COLOR,
   C. SCREENED ITEMS ARE OUT OF VIEW FROM ADJACENT PROPERTIES AND PUBLIC STREETS, AND A TOTALLY OPAQUE SCREEN IS ACHIEVED.
   D. ANY GROUND-MOUNTED HVAC OR OTHER MECHANICAL OR UTILITY EQUIPMENT SIX (6) FEET TALL OR HIGHER MUST BE FENCED AND LANDSCAPED.
   E. DUMPSTER ENCLOSURES MUST MEET THE ABOVE REQUIREMENTS PLUS BE EIGHT (8) FEET TALL OR THE HEIGHT OF THE DUMPSTER, WHICHEVER IS GREATER, AND BE BUILT OF MASONRY MATERIAL WITH OPAQUE GATES. WHERE PRACTICABLE, SHRUBS OR OTHER PLANTS MUST BE PLANTED OUTSIDE THE ENCLOSURE TO VISUALLY SOFTEN THE APPEARANCE.

2. ALL OUTDOOR LIGHT FIXTURES SHALL BE LOCATED A MINIMUM OF 10 FEET FROM A PROPERTY OR RIGHT-OF-WAY LINE, AND AT LEAST TWO FEET AWAY FROM ANY REQUIRED PERIMETER OR STREETSCAPE BUFFER AND TREE SAVE AREA.

3. LAMPS FOR NON-CUTOFF LIGHT FIXTURES SHALL NOT EXCEED 100 WATTS.

4. WALL PACK LIGHT FIXTURES MUST BE FULLY SHIELDED, TRUE CUTOFF TYPE FIXTURES WITH A CONCEALED LAMP/LIGHT SOURCE. THE LIGHTING MUST BE DIRECTED DOWNWARD AND THE WATTAGE MUST NOT EXCEED 100 WATTS.

5. FLOODLIGHTS OR OTHER TYPES OF LIGHTING ARE PROHIBITED UNLESS APPROVAL IS GIVEN THROUGH THE DEVELOPMENT REVIEW PROCESS AND REFLECTED ON THE APPROVED SITE PLAN.

6. AWNINGS AND CANOPIES USED FOR ACCENTS OVER DOORS AND WINDOWS SHALL NOT BE INTERNALLY LIT.

7. BEFORE CERTIFICATES OF OCCUPANCY ARE RELEASED, THE OWNER/BUILDER MUST SUPPLY THE TOWN WITH A FINAL LETTER OF CERTIFICATION FROM THE LIGHTING ENGINEER AND/OR LIGHTING MANUFACTURER VERIFYING THAT ALL SITE LIGHTING IS INSTALLED ACCORDING TO TOWN STANDARDS, THE APPROVED PLANS, AND ANY APPLICABLE CONDITIONS.

8. ARCHITECTURAL CONSTRUCTION PLANS MUST ADHERE TO THE APPROVED SITE PLANS. ANY PROPOSED CHANGES MUST BE SUBMITED TO THE PLANNING DEPARTMENT FOR APPROVAL.

Felton Grove High School (H12)

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
111 Corning Road, Ste 190
Cary, NC 27518
919-588-3602

Architect & Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer & Landscape Architect
CLH Design PA
400 Regency Forest Drive, Suite 120
Cary, NC 27518
(919) 319-6716

SEAL | DATE 3/5/21

SHEET ISSUE

1	Town of Apex Major Site Plan Submittal #1	12/1/20
2	Town of Apex Major Site Plan Submittal #2	2/12/21
3	Town of Apex Major Site Plan Submittal #3	3/5/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 19150.000

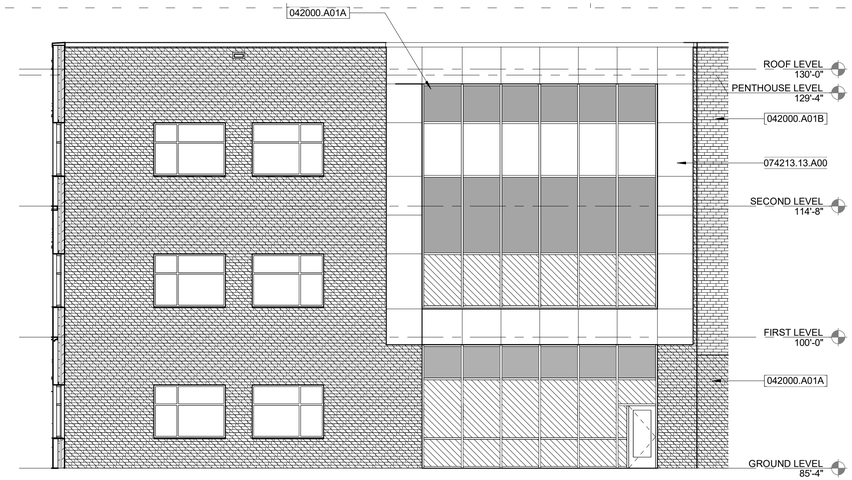
SHEET TITLE
EXTERIOR ELEVATION

SHEET NUMBER
A-01.04.

0' 0" 8' 4' 16' 8' 32' 16' 64' 32'

NOT FOR CONSTRUCTION

3/3/2021 3:51:59 PM



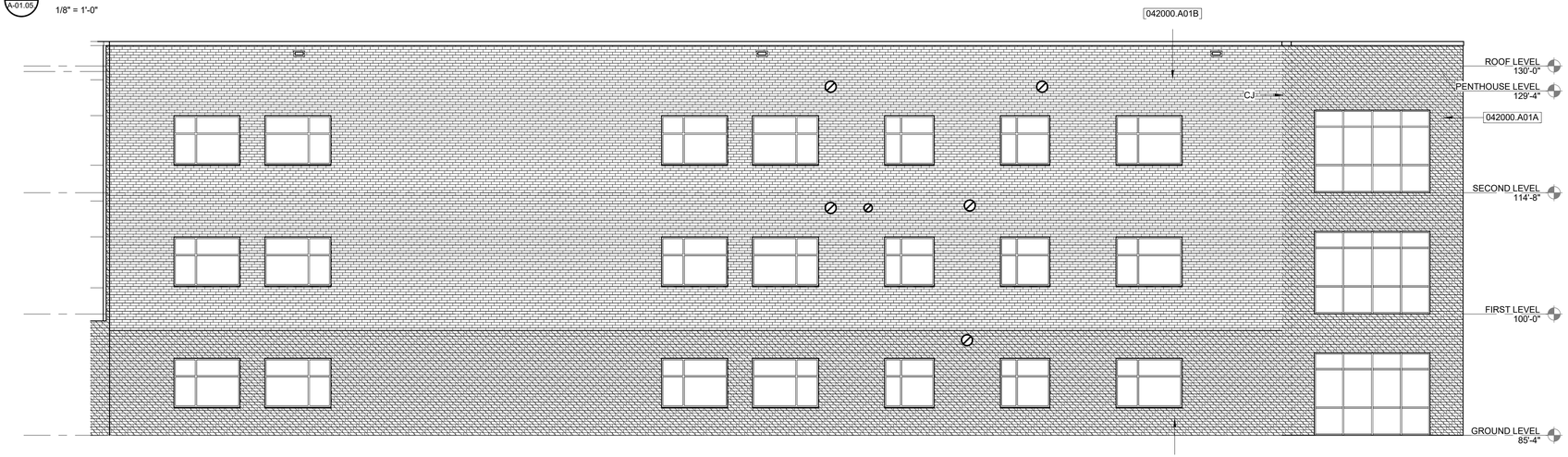
E1
A-01.05

EXTERIOR ELEVATION

1/8" = 1'-0"

EXTERIOR MATERIALS SCHEDULE

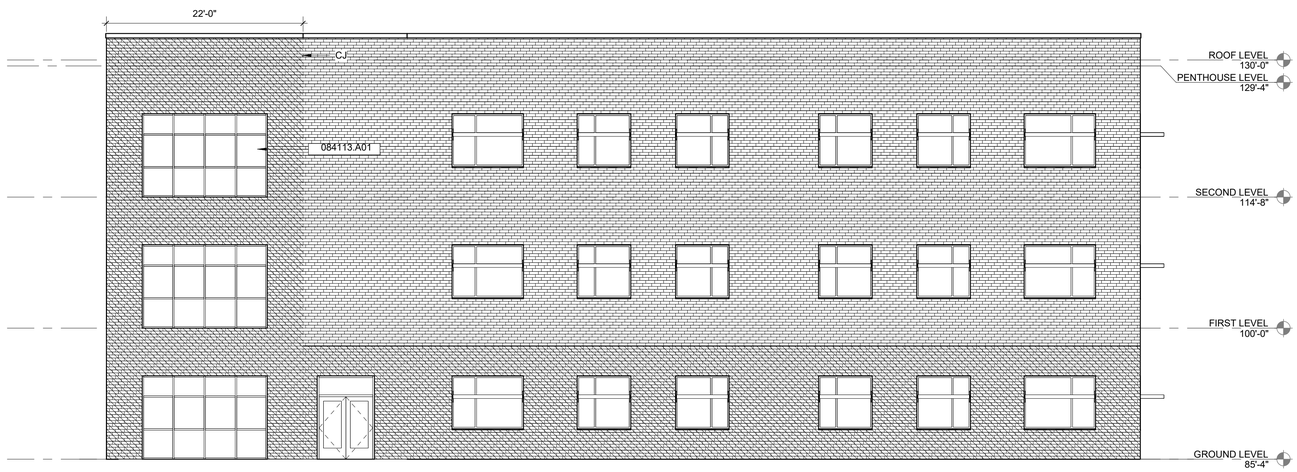
SPECIFICATION REF.	MATERIAL	MANUFACTURER (BASIS OF DESIGN)
034100	PRE-CAST CONCRETE	
042000.A01A	FACE BRICK A	Taylor Clay Products #323 Gray Modular Wirecut
042000.A01B	FACE BRICK B	Taylor Clay Products #369 and #371 Autumn Blend Wirecut
072400.00	EIFS	DRYVIT SYSTEMS
074213.23.A00	METAL PANEL A	DRI-DESIGN METAL PANELS - ORANGE
074213.23.C01	METAL PANEL B	DRI-DESIGN PERFORATED PANELS - GRAY AND COLOR TO MATCH MAIN BUILDING PANEL ACCENT - ALTERNATE
077100.A01	COPING METAL, MANUFACTURED	COLOR TO BE EARTH TONE TO MATCH FACE BRICK B
084113.A01	ALUMINUM STOREFRONT	KAWNEER - ANODIZED ALUMINUM FINISH
084413	ALUMINUM CURTAIN WALL	KAWNEER - ANODIZED ALUMINUM FINISH
088000	GLAZING	GUARDIAN GLASS; SUNGUARD; CLEAR, INSULATING, LOW-E COATED
088113.C01	SPANDREL GLASS	GUARDIAN GLASS - CERAMIC COATED GLASS
107316.B01	ALUMINUM CANOPIES	MAPES INDUSTRIES, INC. - ANODIZED ALUMINUM FINISH
323119.A00	DECORATIVE METAL FENCES & GATES	



C1
A-01.05

EXTERIOR ELEVATION

1/8" = 1'-0"



A1
A-01.05

EXTERIOR ELEVATION

1/8" = 1'-0"

GENERAL PROJECT NOTES

1. THE SCREENING OF LOADING DOCKS, ROLL-OUT TRASH CONTAINERS, DUMPSTERS, OUTDOOR STORAGE, MECHANICAL AND HVAC EQUIPMENT, AND SIMILAR FACILITIES ON THE ROOF, GROUND, OR BUILDING SHALL MEET THE REQUIREMENTS OF UDO SEC. 8.2.8. SPECIFICALLY, SCREENING MUST BE DONE SO THATI
   A. IT IS INCORPORATED INTO THE OVERALL DESIGN THEME OF THE BUILDING AND LANDSCAPE.
   B, SCREENING MATERIALS ARE NOT DIFFERENT FROM OR INFERIOR TO THE PRINCIPAL MATERIALS OF THE BUILDING OR LANDSCAPE, AND ARE SIMILAR IN MATERIALS AND COLOR,
   C. SCREENED ITEMS ARE OUT OF VIEW FROM ADJACENT PROPERTIES AND PUBLIC STREETS, AND A TOTALLY OPAQUE SCREEN IS ACHIEVED.
   D. ANY GROUND-MOUNTED HVAC OR OTHER MECHANICAL OR UTILITY EQUIPMENT SIX (6) FEET TALL OR HIGHER MUST BE FENCED AND LANDSCAPED.
   E. DUMPSTER ENCLOSURES MUST MEET THE ABOVE REQUIREMENTS PLUS BE EIGHT (8) FEET TALL OR THE HEIGHT OF THE DUMPSTER, WHICHEVER IS GREATER, AND BE BUILT OF MASONRY MATERIAL WITH OPAQUE GATES. WHERE PRACTICABLE, SHRUBS OR OTHER PLANTS MUST BE PLANTED OUTSIDE THE ENCLOSURE TO VISUALLY SOFTEN THE APPEARANCE.

2. ALL OUTDOOR LIGHT FIXTURES SHALL BE LOCATED A MINIMUM OF 10 FEET FROM A PROPERTY OR RIGHT-OF-WAY LINE, AND AT LEAST TWO FEET AWAY FROM ANY REQUIRED PERIMETER OR STREETSCAPE BUFFER AND TREE SAVE AREA.

3. LAMPS FOR NON-CUTOFF LIGHT FIXTURES SHALL NOT EXCEED 100 WATTS.

4. WALL PACK LIGHT FIXTURES MUST BE FULLY SHIELDED, TRUE CUTOFF TYPE FIXTURES WITH A CONCEALED LAMP/LIGHT SOURCE. THE LIGHTING MUST BE DIRECTED DOWNWARD AND THE WATTAGE MUST NOT EXCEED 100 WATTS.

5. FLOODLIGHTS OR OTHER TYPES OF LIGHTING ARE PROHIBITED UNLESS APPROVAL IS GIVEN THROUGH THE DEVELOPMENT REVIEW PROCESS AND REFLECTED ON THE APPROVED SITE PLAN.

6. AWNINGS AND CANOPIES USED FOR ACCENTS OVER DOORS AND WINDOWS SHALL NOT BE INTERNALLY LIT.

7. BEFORE CERTIFICATES OF OCCUPANCY ARE RELEASED, THE OWNER/BUILDER MUST SUPPLY THE TOWN WITH A FINAL LETTER OF CERTIFICATION FROM THE LIGHTING ENGINEER AND/OR LIGHTING MANUFACTURER VERIFYING THAT ALL SITE LIGHTING IS INSTALLED ACCORDING TO TOWN STANDARDS, THE APPROVED PLANS, AND ANY APPLICABLE CONDITIONS.

8. ARCHITECTURAL CONSTRUCTION PLANS MUST ADHERE TO THE APPROVED SITE PLANS. ANY PROPOSED CHANGES MUST BE SUBMITED TO THE PLANNING DEPARTMENT FOR APPROVAL.

0' 4' 8' 16' 32'

NOT FOR CONSTRUCTION

3/3/2021 3:52:01 PM

Felton Grove High School (H12)

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
111 Corning Road, Ste 190
Cary, NC 27518
919-588-3602

Architect & Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer & Landscape Architect
CLH Design PA
400 Regency Forest Drive, Suite 120
Cary, NC 27518
(919) 319-6716

SEAL | DATE 3/5/21

SHEET ISSUE

1	Town of Apex Major Site Plan Submittal #1	12/1/20
2	Town of Apex Major Site Plan Submittal #2	2/12/21
3	Town of Apex Major Site Plan Submittal #3	3/5/21

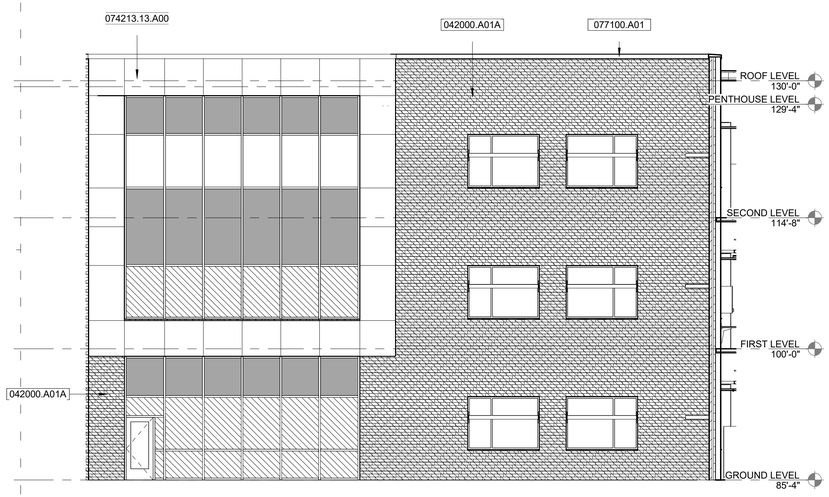
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 19150.000

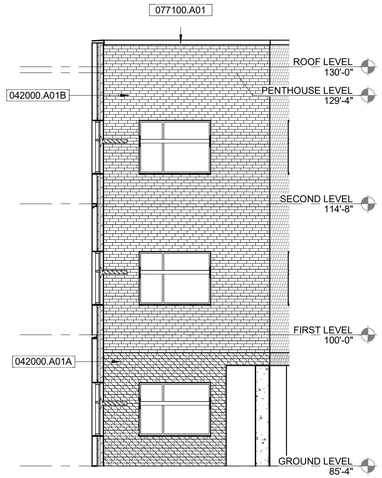
SHEET TITLE
EXTERIOR ELEVATIONS

SHEET NUMBER
A-01.05.



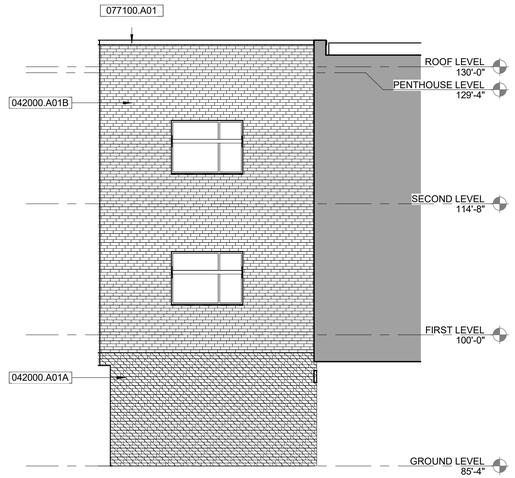
E1 A-01.06 **EXTERIOR ELEVATION**

1/8" = 1'-0"



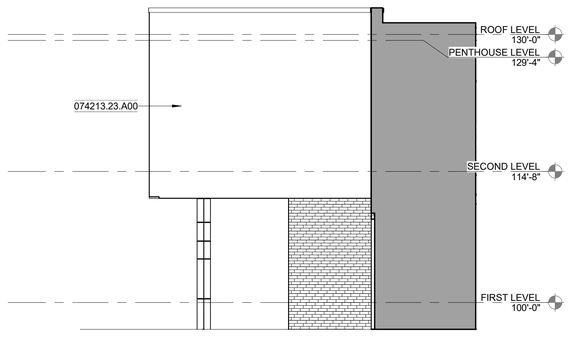
E3 A-01.06 **EXTERIOR ELEVATION**

1/8" = 1'-0"



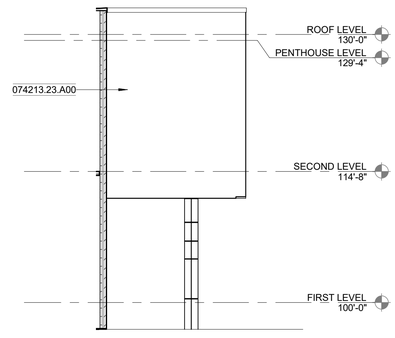
E5 A-01.06 **EXTERIOR ELEVATION**

1/8" = 1'-0"



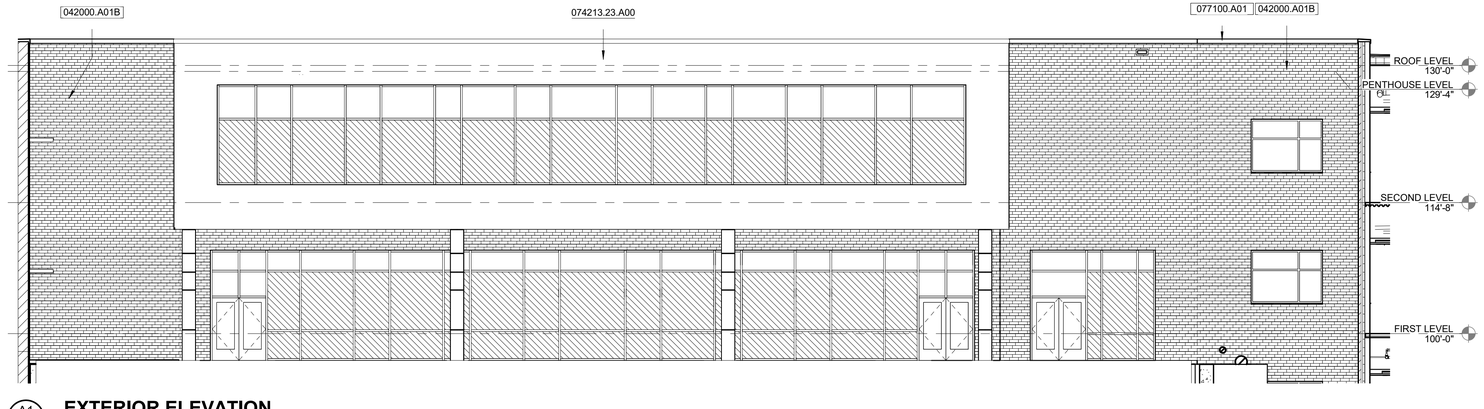
C1 A-01.06 **EXTERIOR ELEVATION**

1/8" = 1'-0"



C3 A-01.06 **EXTERIOR ELEVATION**

1/8" = 1'-0"



A1 A-01.06 **EXTERIOR ELEVATION**

1/8" = 1'-0"

EXTERIOR MATERIALS SCHEDULE

SPECIFICATION REF.	MATERIAL	MANUFACTURER (BASIS OF DESIGN)
034100	PRE-CAST CONCRETE	
042000.A01A	FACE BRICK A	Taylor Clay Products #323 Gray Modular Wirecut
042000.A01B	FACE BRICK B	Taylor Clay Products #369 and #371 Autumn Blend Wirecut
072400.00	EIFS	DRYVIT SYSTEMS
074213.23.A00	METAL PANEL A	DRI-DESIGN METAL PANELS - ORANGE
074213.23.C01	METAL PANEL B	DRI-DESIGN PERFORATED PANELS - GRAY AND COLOR TO MATCH MAIN BUILDING PANEL ACCENT - ALTERNATE
077100.A01	COPING METAL, MANUFACTURED	COLOR TO BE EARTH TONE TO MATCH FACE BRICK B
084113.A01	ALUMINUM STOREFRONT	KAWNEER - ANODIZED ALUMINUM FINISH
084413	ALUMINUM CURTAIN WALL	KAWNEER - ANODIZED ALUMINUM FINISH
088000	GLAZING	GUARDIAN GLASS; SUNGUARD; CLEAR, INSULATING, LOW-E COATED
088113.C01	SPANDREL GLASS	GUARDIAN GLASS - CERAMIC COATED GLASS
107316.B01	ALUMINUM CANOPIES	MAPES INDUSTRIES, INC. - ANODIZED ALUMINUM FINISH
323119.A00	DECORATIVE METAL FENCES & GATES	

GENERAL PROJECT NOTES

1. THE SCREENING OF LOADING DOCKS, ROLL-OUT TRASH CONTAINERS, DUMPSTERS, OUTDOOR STORAGE, MECHANICAL AND HVAC EQUIPMENT, AND SIMILAR FACILITIES ON THE ROOF, GROUND, OR BUILDING SHALL MEET THE REQUIREMENTS OF UDO SEC. 8.2.8. SPECIFICALLY, SCREENING MUST BE DONE SO THATI
   A. IT IS INCORPORATED INTO THE OVERALL DESIGN THEME OF THE BUILDING AND LANDSCAPE.
   B, SCREENING MATERIALS ARE NOT DIFFERENT FROM OR INFERIOR TO THE PRINCIPAL MATERIALS OF THE BUILDING OR LANDSCAPE, AND ARE SIMILAR IN MATERIALS AND COLOR,
   C. SCREENED ITEMS ARE OUT OF VIEW FROM ADJACENT PROPERTIES AND PUBLIC STREETS, AND A TOTALLY OPAQUE SCREEN IS ACHIEVED.
   D. ANY GROUND-MOUNTED HVAC OR OTHER MECHANICAL OR UTILITY EQUIPMENT SIX (6) FEET TALL OR HIGHER MUST BE FENCED AND LANDSCAPED.
   E. DUMPSTER ENCLOSURES MUST MEET THE ABOVE REQUIREMENTS PLUS BE EIGHT (8) FEET TALL OR THE HEIGHT OF THE DUMPSTER, WHICHEVER IS GREATER, AND BE BUILT OF MASONRY MATERIAL WITH OPAQUE GATES. WHERE PRACTICABLE, SHRUBS OR OTHER PLANTS MUST BE PLANTED OUTSIDE THE ENCLOSURE TO VISUALLY SOFTEN THE APPEARANCE.

2. ALL OUTDOOR LIGHT FIXTURES SHALL BE LOCATED A MINIMUM OF 10 FEET FROM A PROPERTY OR RIGHT-OF-WAY LINE, AND AT LEAST TWO FEET AWAY FROM ANY REQUIRED PERIMETER OR STREETSCAPE BUFFER AND TREE SAVE AREA.

3. LAMPS FOR NON-CUTOFF LIGHT FIXTURES SHALL NOT EXCEED 100 WATTS.

4. WALL PACK LIGHT FIXTURES MUST BE FULLY SHIELDED, TRUE CUTOFF TYPE FIXTURES WITH A CONCEALED LAMP/LIGHT SOURCE. THE LIGHTING MUST BE DIRECTED DOWNWARD AND THE WATTAGE MUST NOT EXCEED 100 WATTS.

5. FLOODLIGHTS OR OTHER TYPES OF LIGHTING ARE PROHIBITED UNLESS APPROVAL IS GIVEN THROUGH THE DEVELOPMENT REVIEW PROCESS AND REFLECTED ON THE APPROVED SITE PLAN.

6. AWNINGS AND CANOPIES USED FOR ACCENTS OVER DOORS AND WINDOWS SHALL NOT BE INTERNALLY LIT.

7. BEFORE CERTIFICATES OF OCCUPANCY ARE RELEASED, THE OWNER/BUILDER MUST SUPPLY THE TOWN WITH A FINAL LETTER OF CERTIFICATION FROM THE LIGHTING ENGINEER AND/OR LIGHTING MANUFACTURER VERIFYING THAT ALL SITE LIGHTING IS INSTALLED ACCORDING TO TOWN STANDARDS, THE APPROVED PLANS, AND ANY APPLICABLE CONDITIONS.

8. ARCHITECTURAL CONSTRUCTION PLANS MUST ADHERE TO THE APPROVED SITE PLANS. ANY PROPOSED CHANGES MUST BE SUBMITED TO THE PLANNING DEPARTMENT FOR APPROVAL.

0' 4' 8' 16' 32'

NOT FOR CONSTRUCTION

Felton Grove High School (H12)

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
111 Corning Road, Ste 190
Cary, NC 27518
919-588-3602

Architect & Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer & Landscape Architect
CLH Design PA
400 Regency Forest Drive, Suite 120
Cary, NC 27518
(919) 319-6716

SEAL | DATE 3/5/21

SHEET ISSUE

1	Town of Apex Major Site Plan Submittal #1	12/1/20
2	Town of Apex Major Site Plan Submittal #2	2/12/21
3	Town of Apex Major Site Plan Submittal #3	3/5/21

RATIO

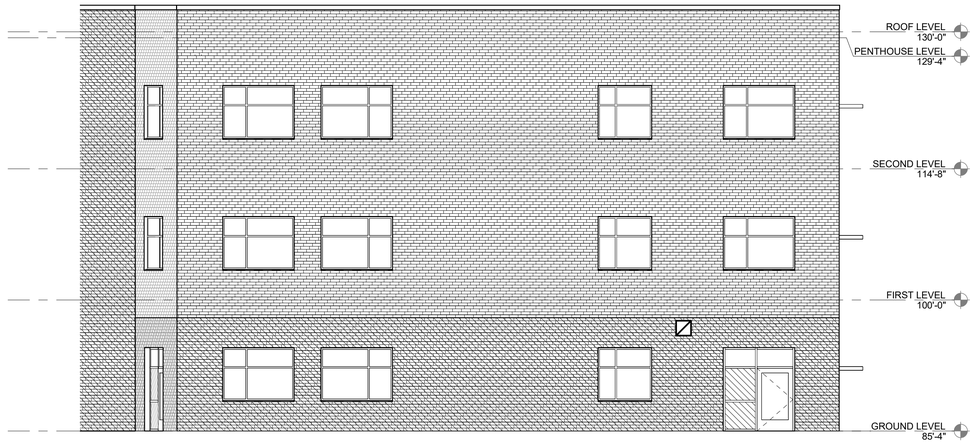
COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 19150.000

SHEET TITLE
EXTERIOR ELEVATIONS

SHEET NUMBER
A-01.06.

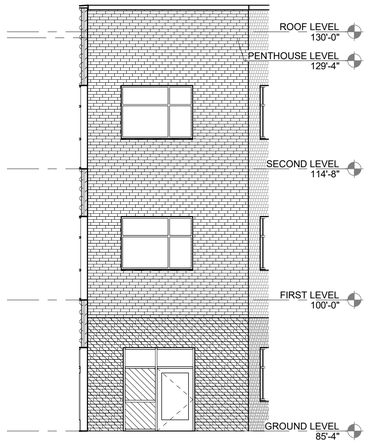
3/3/2021 3:52:03 PM



E1 A-01.07

EXTERIOR ELEVATION

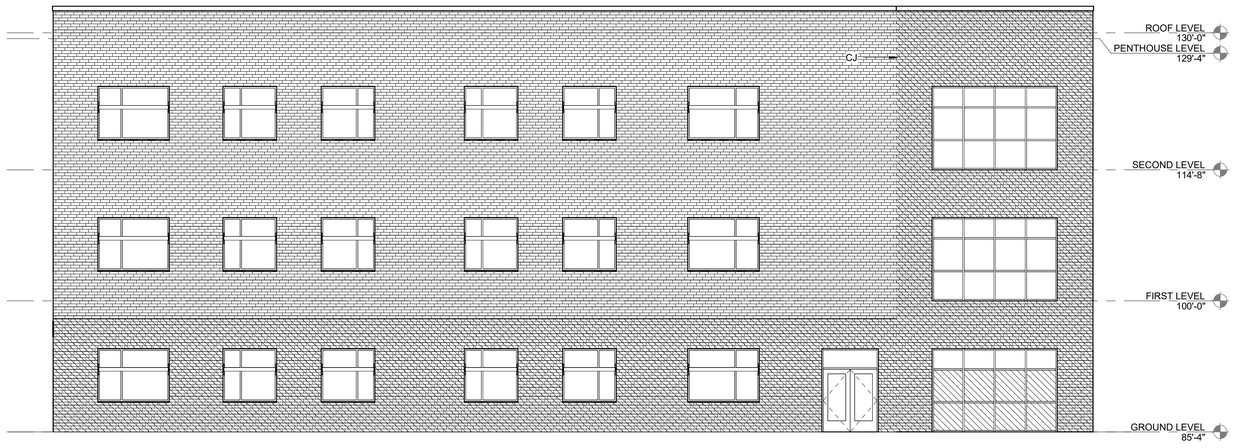
1/8" = 1'-0"



E4 A-01.07

EXTERIOR ELEVATION

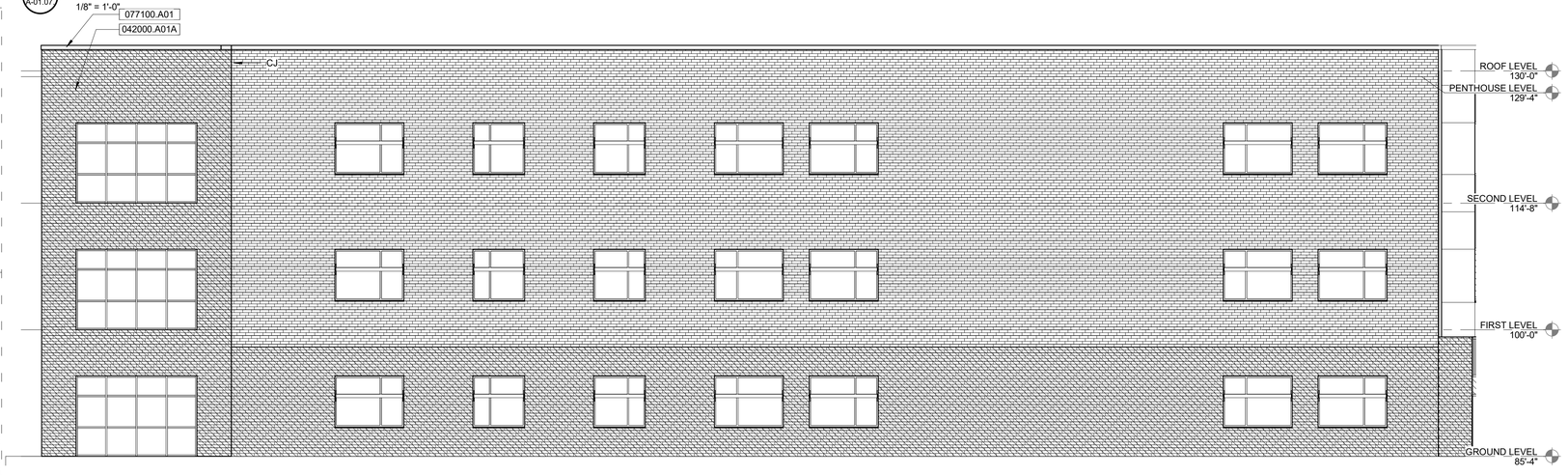
1/8" = 1'-0"



C1 A-01.07

EXTERIOR ELEVATION

1/8" = 1'-0"



A1 A-01.07

EXTERIOR ELEVATION

1/8" = 1'-0"

EXTERIOR MATERIALS SCHEDULE

SPECIFICATION REF.	MATERIAL	MANUFACTURER (BASIS OF DESIGN)
034100	PRE-CAST CONCRETE	
042000.A01A	FACE BRICK A	Taylor Clay Products #323 Gray Modular Wirecut
042000.A01B	FACE BRICK B	Taylor Clay Products #369 and #371 Autumn Blend Wirecut
072400.00	EIFS	DRYVIT SYSTEMS
074213.23.A00	METAL PANEL A	DRI-DESIGN METAL PANELS - ORANGE
074213.23.C01	METAL PANEL B	DRI-DESIGN PERFORATED PANELS - GRAY AND COLOR TO MATCH MAIN BUILDING PANEL ACCENT - ALTERNATE
077100.A01	COPING METAL, MANUFACTURED	COLOR TO BE EARTH TONE TO MATCH FACE BRICK B
084113.A01	ALUMINUM STOREFRONT	KAWNEER - ANODIZED ALUMINUM FINISH
084413	ALUMINUM CURTAIN WALL	KAWNEER - ANODIZED ALUMINUM FINISH
088000	GLAZING	GUARDIAN GLASS; SUNGUARD; CLEAR, INSULATING, LOW-E COATED
088113.C01	SPANDREL GLASS	GUARDIAN GLASS - CERAMIC COATED GLASS
107316.B01	ALUMINUM CANOPIES	MAPES INDUSTRIES, INC. - ANODIZED ALUMINUM FINISH
323119.A00	DECORATIVE METAL FENCES & GATES	

GENERAL PROJECT NOTES

1. THE SCREENING OF LOADING DOCKS, ROLL-OUT TRASH CONTAINERS, DUMPSTERS, OUTDOOR STORAGE, MECHANICAL AND HVAC EQUIPMENT, AND SIMILAR FACILITIES ON THE ROOF, GROUND, OR BUILDING SHALL MEET THE REQUIREMENTS OF UDO SEC. 8.2.8. SPECIFICALLY, SCREENING MUST BE DONE SO THATI
   A. IT IS INCORPORATED INTO THE OVERALL DESIGN THEME OF THE BUILDING AND LANDSCAPE.
   B. SCREENING MATERIALS ARE NOT DIFFERENT FROM OR INFERIOR TO THE PRINCIPAL MATERIALS OF THE BUILDING OR LANDSCAPE, AND ARE SIMILAR IN MATERIALS AND COLOR,
   C. SCREENED ITEMS ARE OUT OF VIEW FROM ADJACENT PROPERTIES AND PUBLIC STREETS, AND A TOTALLY OPAQUE SCREEN IS ACHIEVED.
   D. ANY GROUND-MOUNTED HVAC OR OTHER MECHANICAL OR UTILITY EQUIPMENT SIX (6) FEET TALL OR HIGHER MUST BE FENCED AND LANDSCAPED.
   E. DUMPSTER ENCLOSURES MUST MEET THE ABOVE REQUIREMENTS PLUS BE EIGHT (8) FEET TALL OR THE HEIGHT OF THE DUMPSTER, WHICHEVER IS GREATER, AND BE BUILT OF MASONRY MATERIAL WITH OPAQUE GATES. WHERE PRACTICABLE, SHRUBS OR OTHER PLANTS MUST BE PLANTED OUTSIDE THE ENCLOSURE TO VISUALLY SOFTEN THE APPEARANCE.

2. ALL OUTDOOR LIGHT FIXTURES SHALL BE LOCATED A MINIMUM OF 10 FEET FROM A PROPERTY OR RIGHT-OF-WAY LINE, AND AT LEAST TWO FEET AWAY FROM ANY REQUIRED PERIMETER OR STREETSCAPE BUFFER AND TREE SAVE AREA.

3. LAMPS FOR NON-CUTOFF LIGHT FIXTURES SHALL NOT EXCEED 100 WATTS.

4. WALL PACK LIGHT FIXTURES MUST BE FULLY SHIELDED, TRUE CUTOFF TYPE FIXTURES WITH A CONCEALED LAMP/LIGHT SOURCE. THE LIGHTING MUST BE DIRECTED DOWNWARD AND THE WATTAGE MUST NOT EXCEED 100 WATTS.

5. FLOODLIGHTS OR OTHER TYPES OF LIGHTING ARE PROHIBITED UNLESS APPROVAL IS GIVEN THROUGH THE DEVELOPMENT REVIEW PROCESS AND REFLECTED ON THE APPROVED SITE PLAN.

6. AWNINGS AND CANOPIES USED FOR ACCENTS OVER DOORS AND WINDOWS SHALL NOT BE INTERNALLY LIT.

7. BEFORE CERTIFICATES OF OCCUPANCY ARE RELEASED, THE OWNER/BUILDER MUST SUPPLY THE TOWN WITH A FINAL LETTER OF CERTIFICATION FROM THE LIGHTING ENGINEER AND/OR LIGHTING MANUFACTURER VERIFYING THAT ALL SITE LIGHTING IS INSTALLED ACCORDING TO TOWN STANDARDS, THE APPROVED PLANS, AND ANY APPLICABLE CONDITIONS.

8. ARCHITECTURAL CONSTRUCTION PLANS MUST ADHERE TO THE APPROVED SITE PLANS. ANY PROPOSED CHANGES MUST BE SUBMITED TO THE PLANNING DEPARTMENT FOR APPROVAL.

0' 4' 8' 16' 32'

NOT FOR CONSTRUCTION

Felton Grove High School (H12)

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
111 Corning Road, Ste 190
Cary, NC 27518
919-588-3602

Architect & Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer & Landscape Architect
CLH Design PA
400 Regency Forest Drive, Suite 120
Cary, NC 27518
(919) 319-6716

SEAL | DATE 3/5/21

SHEET ISSUE

1	Town of Apex Major Site Plan Submittal #1	12/1/20
2	Town of Apex Major Site Plan Submittal #2	2/12/21
3	Town of Apex Major Site Plan Submittal #3	3/5/21

RATIO

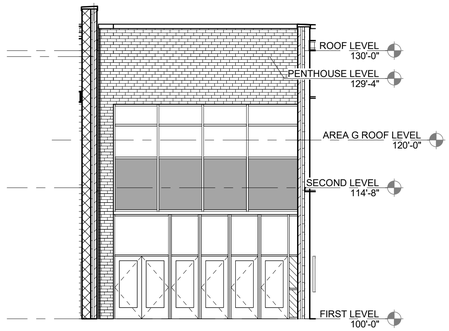
COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 19150.000

SHEET TITLE
EXTERIOR ELEVATIONS

SHEET NUMBER
A-01.07.

3/3/2021 3:52:10 PM



E1 / A-01.08

EXTERIOR ELEVATION

1/8" = 1'-0"

EXTERIOR MATERIALS SCHEDULE

SPECIFICATION REF.	MATERIAL	MANUFACTURER (BASIS OF DESIGN)
034100	PRE-CAST CONCRETE	
042000.A01A	FACE BRICK A	Taylor Clay Products #323 Gray Modular Wirecut
042000.A01B	FACE BRICK B	Taylor Clay Products #369 and #371 Autumn Blend Wirecut
072400.00	EIFS	DRYVIT SYSTEMS
074213.23.A00	METAL PANEL A	DRI-DESIGN METAL PANELS - ORANGE
074213.23.C01	METAL PANEL B	DRI-DESIGN PERFORATED PANELS - GRAY AND COLOR TO MATCH MAIN BUILDING PANEL ACCENT - ALTERNATE
077100.A01	COPING METAL, MANUFACTURED	COLOR TO BE EARTH TONE TO MATCH FACE BRICK B
084113.A01	ALUMINUM STOREFRONT	KAWNEER - ANODIZED ALUMINUM FINISH
084413	ALUMINUM CURTAIN WALL	KAWNEER - ANODIZED ALUMINUM FINISH
088000	GLAZING	GUARDIAN GLASS; SUNGUARD; CLEAR, INSULATING, LOW-E COATED
088113.C01	SPANDREL GLASS	GUARDIAN GLASS - CERAMIC COATED GLASS
107316.B01	ALUMINUM CANOPIES	MAPES INDUSTRIES, INC. - ANODIZED ALUMINUM FINISH
323119.A00	DECORATIVE METAL FENCES & GATES	

GENERAL PROJECT NOTES

1. THE SCREENING OF LOADING DOCKS, ROLL-OUT TRASH CONTAINERS, DUMPSTERS, OUTDOOR STORAGE, MECHANICAL AND HVAC EQUIPMENT, AND SIMILAR FACILITIES ON THE ROOF, GROUND, OR BUILDING SHALL MEET THE REQUIREMENTS OF UDO SEC. 8.2.8. SPECIFICALLY, SCREENING MUST BE DONE SO THATI
   A. IT IS INCORPORATED INTO THE OVERALL DESIGN THEME OF THE BUILDING AND LANDSCAPE.
   B, SCREENING MATERIALS ARE NOT DIFFERENT FROM OR INFERIOR TO THE PRINCIPAL MATERIALS OF THE BUILDING OR LANDSCAPE, AND ARE SIMILAR IN MATERIALS AND COLOR,
   C. SCREENED ITEMS ARE OUT OF VIEW FROM ADJACENT PROPERTIES AND PUBLIC STREETS, AND A TOTALLY OPAQUE SCREEN IS ACHIEVED.
   D. ANY GROUND-MOUNTED HVAC OR OTHER MECHANICAL OR UTILITY EQUIPMENT SIX (6) FEET TALL OR HIGHER MUST BE FENCED AND LANDSCAPED.
   E. DUMPSTER ENCLOSURES MUST MEET THE ABOVE REQUIREMENTS PLUS BE EIGHT (8) FEET TALL OR THE HEIGHT OF THE DUMPSTER, WHICHEVER IS GREATER, AND BE BUILT OF MASONRY MATERIAL WITH OPAQUE GATES. WHERE PRACTICABLE, SHRUBS OR OTHER PLANTS MUST BE PLANTED OUTSIDE THE ENCLOSURE TO VISUALLY SOFTEN THE APPEARANCE.

2. ALL OUTDOOR LIGHT FIXTURES SHALL BE LOCATED A MINIMUM OF 10 FEET FROM A PROPERTY OR RIGHT-OF-WAY LINE, AND AT LEAST TWO FEET AWAY FROM ANY REQUIRED PERIMETER OR STREETSCAPE BUFFER AND TREE SAVE AREA.

3. LAMPS FOR NON-CUTOFF LIGHT FIXTURES SHALL NOT EXCEED 100 WATTS.

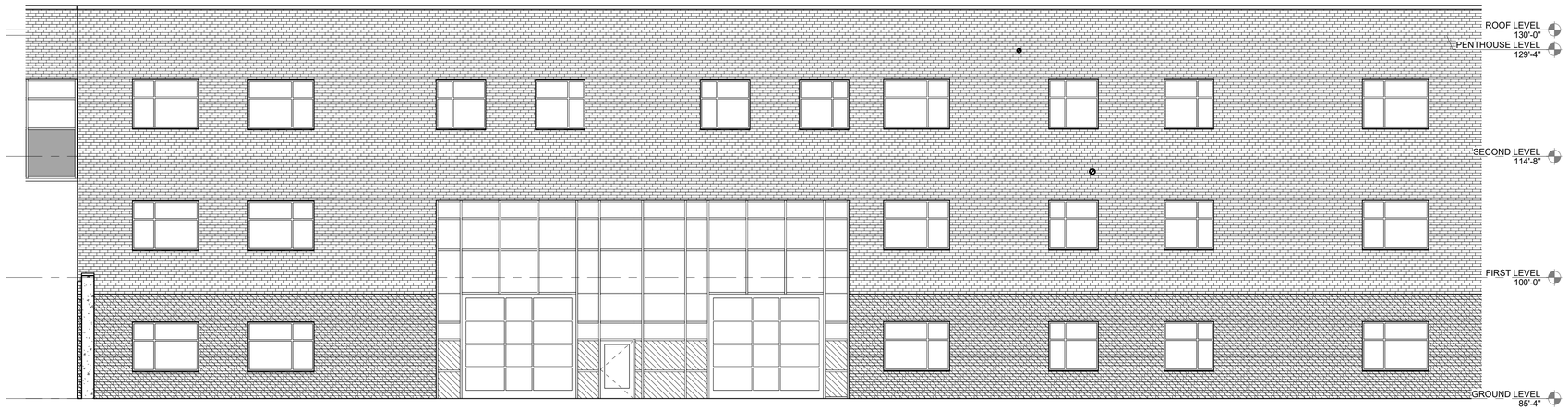
4. WALL PACK LIGHT FIXTURES MUST BE FULLY SHIELDED, TRUE CUTOFF TYPE FIXTURES WITH A CONCEALED LAMP/LIGHT SOURCE. THE LIGHTING MUST BE DIRECTED DOWNWARD AND THE WATTAGE MUST NOT EXCEED 100 WATTS.

5. FLOODLIGHTS OR OTHER TYPES OF LIGHTING ARE PROHIBITED UNLESS APPROVAL IS GIVEN THROUGH THE DEVELOPMENT REVIEW PROCESS AND REFLECTED ON THE APPROVED SITE PLAN.

6. AWNINGS AND CANOPIES USED FOR ACCENTS OVER DOORS AND WINDOWS SHALL NOT BE INTERNALLY LIT.

7. BEFORE CERTIFICATES OF OCCUPANCY ARE RELEASED, THE OWNER/BUILDER MUST SUPPLY THE TOWN WITH A FINAL LETTER OF CERTIFICATION FROM THE LIGHTING ENGINEER AND/OR LIGHTING MANUFACTURER VERIFYING THAT ALL SITE LIGHTING IS INSTALLED ACCORDING TO TOWN STANDARDS, THE APPROVED PLANS, AND ANY APPLICABLE CONDITIONS.

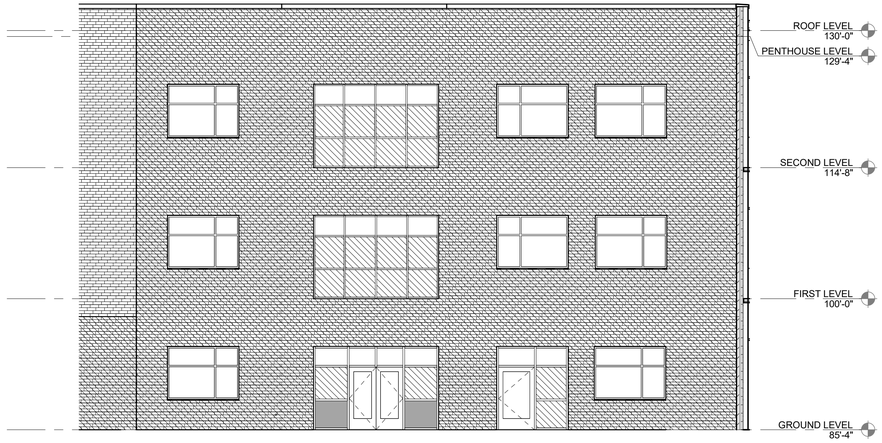
8. ARCHITECTURAL CONSTRUCTION PLANS MUST ADHERE TO THE APPROVED SITE PLANS. ANY PROPOSED CHANGES MUST BE SUBMITED TO THE PLANNING DEPARTMENT FOR APPROVAL.



C1 / A-01.08

EXTERIOR ELEVATION

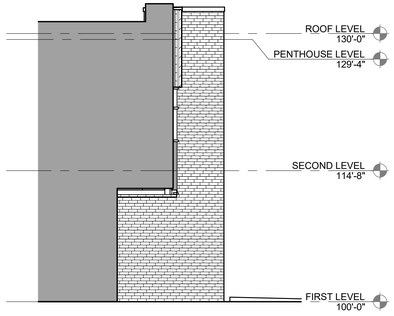
1/8" = 1'-0"



A1 / A-01.08

EXTERIOR ELEVATION

1/8" = 1'-0"



A4 / A-01.08

EXTERIOR ELEVATION

1/8" = 1'-0"

0' 4' 8' 16' 32'

NOT FOR CONSTRUCTION

Felton Grove High School (H12)

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
111 Corning Road, Ste 190
Cary, NC 27518
919-588-3602

Architect & Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer & Landscape Architect
CLH Design PA
400 Regency Forest Drive, Suite 120
Cary, NC 27518
(919) 319-6716

SEAL | DATE 3/5/21

SHEET ISSUE

1	Town of Apex Major Site Plan Submittal #1	12/1/20
2	Town of Apex Major Site Plan Submittal #2	2/12/21
3	Town of Apex Major Site Plan Submittal #3	3/5/21

RATIO

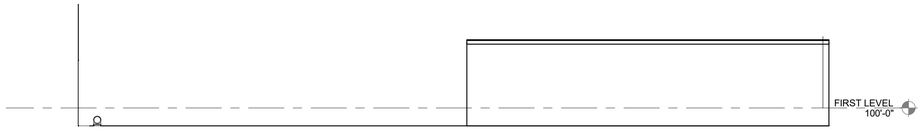
COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 19150.000

SHEET TITLE
EXTERIOR ELEVATIONS

SHEET NUMBER
A-01.08.

3/3/2021 3:52:16 PM



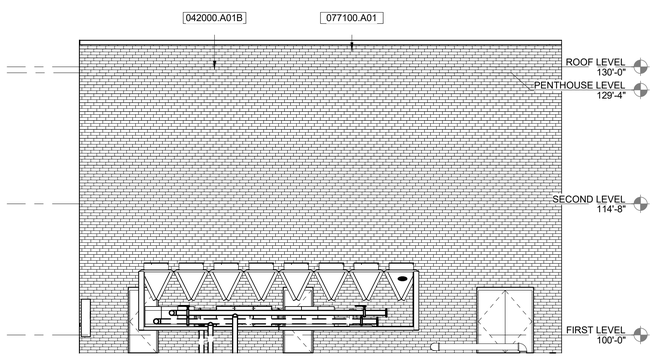
E1 A-01.09

EXTERIOR ELEVATION

1/8" = 1'-0"

EXTERIOR MATERIALS SCHEDULE

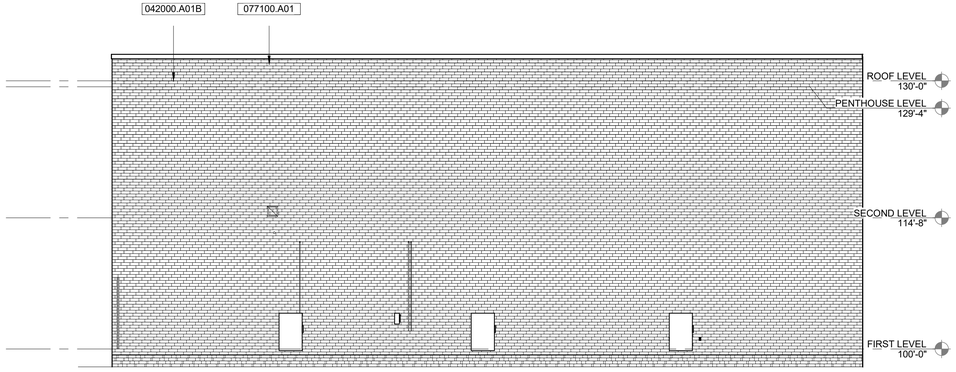
SPECIFICATION REF.	MATERIAL	MANUFACTURER (BASIS OF DESIGN)
034100	PRE-CAST CONCRETE	
042000.A01A	FACE BRICK A	Taylor Clay Products #323 Gray Modular Wirecut
042000.A01B	FACE BRICK B	Taylor Clay Products #369 and #371 Autumn Blend Wirecut
072400.00	EIFS	DRYVIT SYSTEMS
074213.23.A00	METAL PANEL A	DRI-DESIGN METAL PANELS - ORANGE
074213.23.C01	METAL PANEL B	DRI-DESIGN PERFORATED PANELS - GRAY AND COLOR TO MATCH MAIN BUILDING PANEL ACCENT - ALTERNATE
077100.A01	COPING METAL, MANUFACTURED	COLOR TO BE EARTH TONE TO MATCH FACE BRICK B
084113.A01	ALUMINUM STOREFRONT	KAWNEER - ANODIZED ALUMINUM FINISH
084413	ALUMINUM CURTAIN WALL	KAWNEER - ANODIZED ALUMINUM FINISH
088000	GLAZING	GUARDIAN GLASS; SUNGUARD; CLEAR, INSULATING, LOW-E COATED
088113.C01	SPANDREL GLASS	GUARDIAN GLASS - CERAMIC COATED GLASS
107316.B01	ALUMINUM CANOPIES	MAPES INDUSTRIES, INC. - ANODIZED ALUMINUM FINISH
323119.A00	DECORATIVE METAL FENCES & GATES	



D1 A-01.09

EXTERIOR ELEVATION

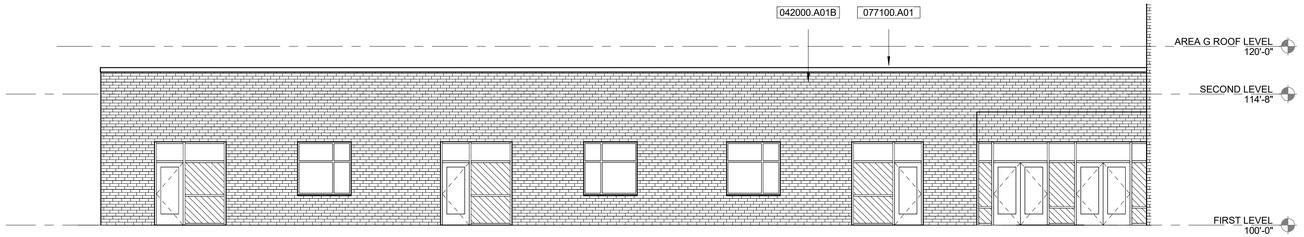
1/8" = 1'-0"



D3 A-01.09

EXTERIOR ELEVATION

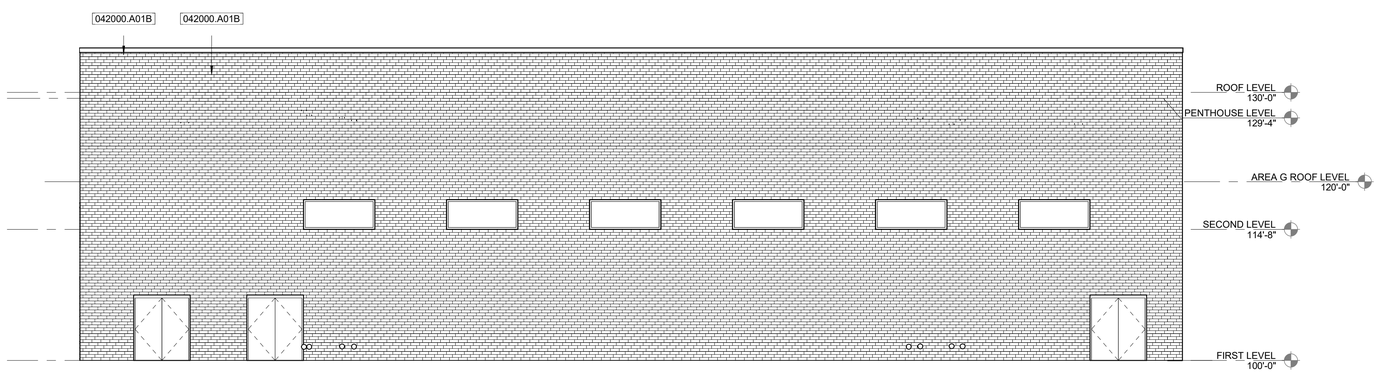
1/8" = 1'-0"



B1 A-01.09

EXTERIOR ELEVATION

1/8" = 1'-0"



A1 A-01.09

EXTERIOR ELEVATION

1/8" = 1'-0"

GENERAL PROJECT NOTES

1. THE SCREENING OF LOADING DOCKS, ROLL-OUT TRASH CONTAINERS, DUMPSTERS, OUTDOOR STORAGE, MECHANICAL AND HVAC EQUIPMENT, AND SIMILAR FACILITIES ON THE ROOF, GROUND, OR BUILDING SHALL MEET THE REQUIREMENTS OF UDO SEC. 8.2.8. SPECIFICALLY, SCREENING MUST BE DONE SO THATI
   A. IT IS INCORPORATED INTO THE OVERALL DESIGN THEME OF THE BUILDING AND LANDSCAPE.
   B, SCREENING MATERIALS ARE NOT DIFFERENT FROM OR INFERIOR TO THE PRINCIPAL MATERIALS OF THE BUILDING OR LANDSCAPE, AND ARE SIMILAR IN MATERIALS AND COLOR,
   C. SCREENED ITEMS ARE OUT OF VIEW FROM ADJACENT PROPERTIES AND PUBLIC STREETS, AND A TOTALLY OPAQUE SCREEN IS ACHIEVED.
   D. ANY GROUND-MOUNTED HVAC OR OTHER MECHANICAL OR UTILITY EQUIPMENT SIX (6) FEET TALL OR HIGHER MUST BE FENCED AND LANDSCAPED.
   E. DUMPSTER ENCLOSURES MUST MEET THE ABOVE REQUIREMENTS PLUS BE EIGHT (8) FEET TALL OR THE HEIGHT OF THE DUMPSTER, WHICHEVER IS GREATER, AND BE BUILT OF MASONRY MATERIAL WITH OPAQUE GATES. WHERE PRACTICABLE, SHRUBS OR OTHER PLANTS MUST BE PLANTED OUTSIDE THE ENCLOSURE TO VISUALLY SOFTEN THE APPEARANCE.

2. ALL OUTDOOR LIGHT FIXTURES SHALL BE LOCATED A MINIMUM OF 10 FEET FROM A PROPERTY OR RIGHT-OF-WAY LINE, AND AT LEAST TWO FEET AWAY FROM ANY REQUIRED PERIMETER OR STREETSCAPE BUFFER AND TREE SAVE AREA.

3. LAMPS FOR NON-CUTOFF LIGHT FIXTURES SHALL NOT EXCEED 100 WATTS.

4. WALL PACK LIGHT FIXTURES MUST BE FULLY SHIELDED, TRUE CUTOFF TYPE FIXTURES WITH A CONCEALED LAMP/LIGHT SOURCE. THE LIGHTING MUST BE DIRECTED DOWNWARD AND THE WATTAGE MUST NOT EXCEED 100 WATTS.

5. FLOODLIGHTS OR OTHER TYPES OF LIGHTING ARE PROHIBITED UNLESS APPROVAL IS GIVEN THROUGH THE DEVELOPMENT REVIEW PROCESS AND REFLECTED ON THE APPROVED SITE PLAN.

6. AWNINGS AND CANOPIES USED FOR ACCENTS OVER DOORS AND WINDOWS SHALL NOT BE INTERNALLY LIT.

7. BEFORE CERTIFICATES OF OCCUPANCY ARE RELEASED, THE OWNER/BUILDER MUST SUPPLY THE TOWN WITH A FINAL LETTER OF CERTIFICATION FROM THE LIGHTING ENGINEER AND/OR LIGHTING MANUFACTURER VERIFYING THAT ALL SITE LIGHTING IS INSTALLED ACCORDING TO TOWN STANDARDS, THE APPROVED PLANS, AND ANY APPLICABLE CONDITIONS.

8. ARCHITECTURAL CONSTRUCTION PLANS MUST ADHERE TO THE APPROVED SITE PLANS. ANY PROPOSED CHANGES MUST BE SUBMITED TO THE PLANNING DEPARTMENT FOR APPROVAL.

0' 4' 8' 16' 32'

NOT FOR CONSTRUCTION

Felton Grove High School (H12)

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
111 Corning Road, Ste 190
Cary, NC 27518
919-588-3602

Architect & Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer & Landscape Architect
CLH Design PA
400 Regency Forest Drive, Suite 120
Cary, NC 27518
(919) 319-6716

SEAL | DATE 3/5/21

SHEET ISSUE

1	Town of Apex Major Site Plan Submittal #1	12/1/20
2	Town of Apex Major Site Plan Submittal #2	2/12/21
3	Town of Apex Major Site Plan Submittal #3	3/5/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 19150.000

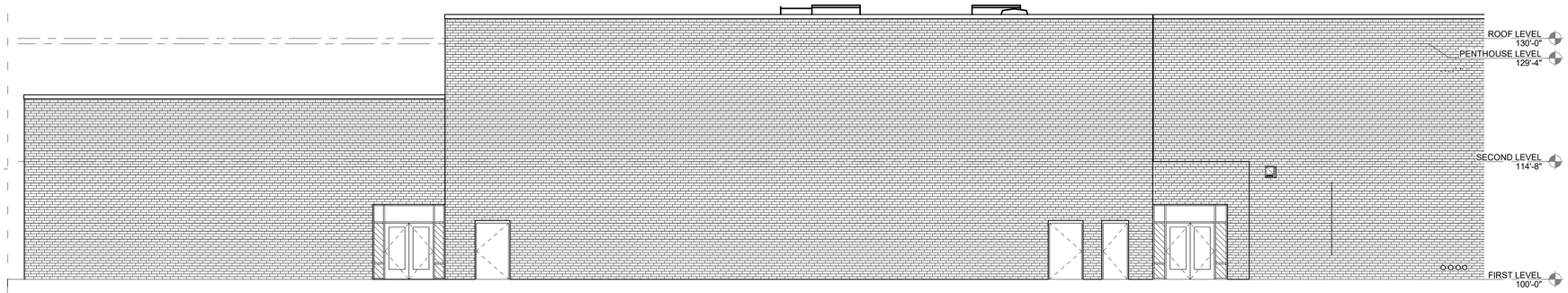
SHEET TITLE
EXTERIOR ELEVATIONS

SHEET NUMBER
A-01.09.

3/3/2021 3:52:24 PM

EXTERIOR MATERIALS SCHEDULE

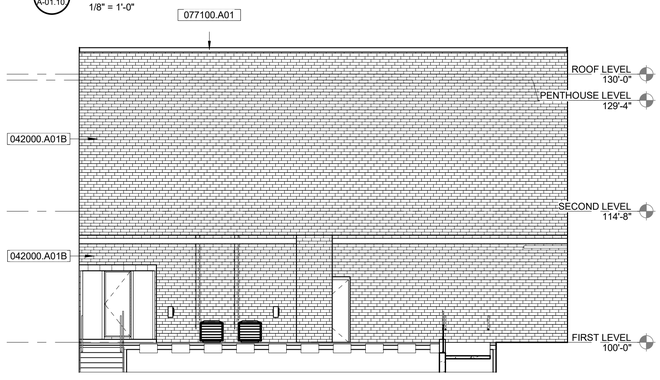
SPECIFICATION REF.	MATERIAL	MANUFACTURER (BASIS OF DESIGN)
034100	PRE-CAST CONCRETE	
042000.A01A	FACE BRICK A	Taylor Clay Products #323 Gray Modular Wirecut
042000.A01B	FACE BRICK B	Taylor Clay Products #369 and #371 Autumn Blend Wirecut
072400.00	EIFS	DRYVIT SYSTEMS
074213.23.A00	METAL PANEL A	DRI-DESIGN METAL PANELS - ORANGE
074213.23.C01	METAL PANEL B	DRI-DESIGN PERFORATED PANELS - GRAY AND COLOR TO MATCH MAIN BUILDING PANEL ACCENT - ALTERNATE
077100.A01	COPING METAL, MANUFACTURED	COLOR TO BE EARTH TONE TO MATCH FACE BRICK B
084113.A01	ALUMINUM STOREFRONT	KAWNEER - ANODIZED ALUMINUM FINISH
084413	ALUMINUM CURTAIN WALL	KAWNEER - ANODIZED ALUMINUM FINISH
088000	GLAZING	GUARDIAN GLASS; SUNGUARD; CLEAR, INSULATING, LOW-E COATED
088113.C01	SPANDREL GLASS	GUARDIAN GLASS - CERAMIC COATED GLASS
107316.B01	ALUMINUM CANOPIES	MAPES INDUSTRIES, INC. - ANODIZED ALUMINUM FINISH
323119.A00	DECORATIVE METAL FENCES & GATES	



D1 / A-01.10

EXTERIOR ELEVATION

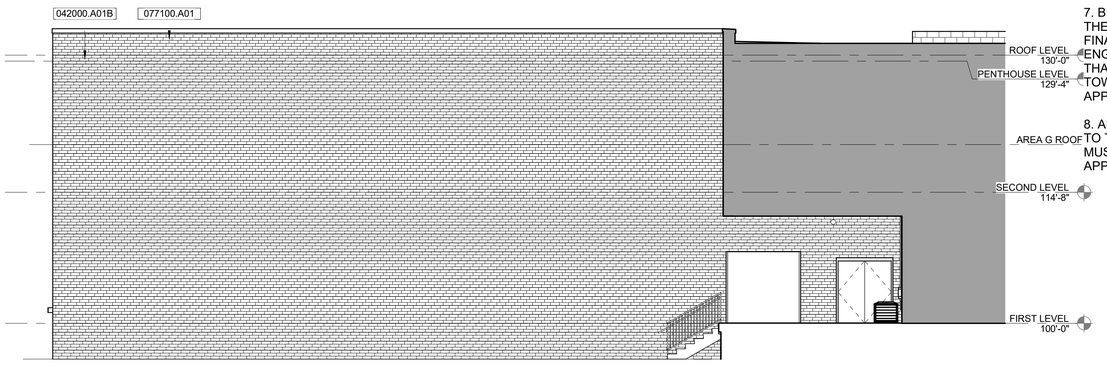
1/8" = 1'-0"



B1 / A-01.10

EXTERIOR ELEVATION

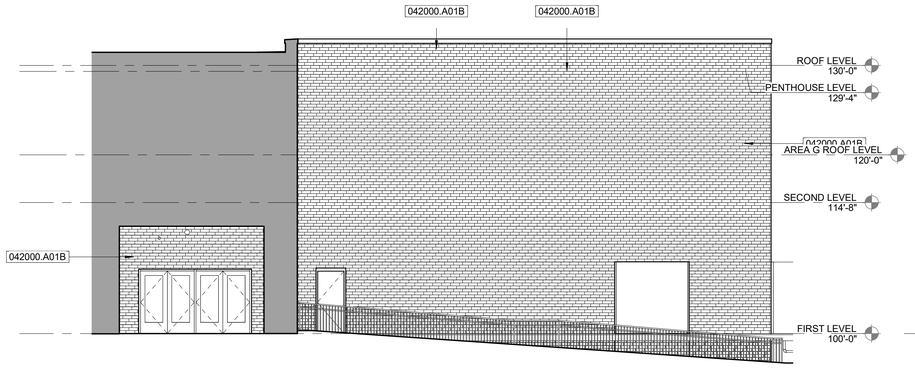
1/8" = 1'-0"



B3 / A-01.10

EXTERIOR ELEVATION

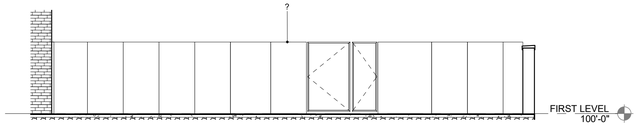
1/8" = 1'-0"



A1 / A-01.10

EXTERIOR ELEVATION

1/8" = 1'-0"



A4 / A-01.10

EXTERIOR ELEVATION

1/8" = 1'-0"

GENERAL PROJECT NOTES

1. THE SCREENING OF LOADING DOCKS, ROLL-OUT TRASH CONTAINERS, DUMPSTERS, OUTDOOR STORAGE, MECHANICAL AND HVAC EQUIPMENT, AND SIMILAR FACILITIES ON THE ROOF, GROUND, OR BUILDING SHALL MEET THE REQUIREMENTS OF UDO SEC. 8.2.8. SPECIFICALLY, SCREENING MUST BE DONE SO THATI
   A. IT IS INCORPORATED INTO THE OVERALL DESIGN THEME OF THE BUILDING AND LANDSCAPE.
   B, SCREENING MATERIALS ARE NOT DIFFERENT FROM OR INFERIOR TO THE PRINCIPAL MATERIALS OF THE BUILDING OR LANDSCAPE, AND ARE SIMILAR IN MATERIALS AND COLOR,
   C. SCREENED ITEMS ARE OUT OF VIEW FROM ADJACENT PROPERTIES AND PUBLIC STREETS, AND A TOTALLY OPAQUE SCREEN IS ACHIEVED.
   D. ANY GROUND-MOUNTED HVAC OR OTHER MECHANICAL OR UTILITY EQUIPMENT SIX (6) FEET TALL OR HIGHER MUST BE FENCED AND LANDSCAPED.
   E. DUMPSTER ENCLOSURES MUST MEET THE ABOVE REQUIREMENTS PLUS BE EIGHT (8) FEET TALL OR THE HEIGHT OF THE DUMPSTER, WHICHEVER IS GREATER, AND BE BUILT OF MASONRY MATERIAL WITH OPAQUE GATES. WHERE PRACTICABLE, SHRUBS OR OTHER PLANTS MUST BE PLANTED OUTSIDE THE ENCLOSURE TO VISUALLY SOFTEN THE APPEARANCE.

2. ALL OUTDOOR LIGHT FIXTURES SHALL BE LOCATED A MINIMUM OF 10 FEET FROM A PROPERTY OR RIGHT-OF-WAY LINE, AND AT LEAST TWO FEET AWAY FROM ANY REQUIRED PERIMETER OR STREETSCAPE BUFFER AND TREE SAVE AREA.

3. LAMPS FOR NON-CUTOFF LIGHT FIXTURES SHALL NOT EXCEED 100 WATTS.

4. WALL PACK LIGHT FIXTURES MUST BE FULLY SHIELDED, TRUE CUTOFF TYPE FIXTURES WITH A CONCEALED LAMP/LIGHT SOURCE. THE LIGHTING MUST BE DIRECTED DOWNWARD AND THE WATTAGE MUST NOT EXCEED 100 WATTS.

5. FLOODLIGHTS OR OTHER TYPES OF LIGHTING ARE PROHIBITED UNLESS APPROVAL IS GIVEN THROUGH THE DEVELOPMENT REVIEW PROCESS AND REFLECTED ON THE APPROVED SITE PLAN.

6. AWNINGS AND CANOPIES USED FOR ACCENTS OVER DOORS AND WINDOWS SHALL NOT BE INTERNALLY LIT.

7. BEFORE CERTIFICATES OF OCCUPANCY ARE RELEASED, THE OWNER/BUILDER MUST SUPPLY THE TOWN WITH A FINAL LETTER OF CERTIFICATION FROM THE LIGHTING ENGINEER AND/OR LIGHTING MANUFACTURER VERIFYING THAT ALL SITE LIGHTING IS INSTALLED ACCORDING TO TOWN STANDARDS, THE APPROVED PLANS, AND ANY APPLICABLE CONDITIONS.

8. ARCHITECTURAL CONSTRUCTION PLANS MUST ADHERE TO THE APPROVED SITE PLANS. ANY PROPOSED CHANGES MUST BE SUBMITED TO THE PLANNING DEPARTMENT FOR APPROVAL.

0' 4' 8' 16' 32'

NOT FOR CONSTRUCTION

Felton Grove High School (H12)

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
111 Corning Road, Ste 190
Cary, NC 27518
919-588-3602

Architect & Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer & Landscape Architect
CLH Design PA
400 Regency Forest Drive, Suite 120
Cary, NC 27518
(919) 319-6716

SEAL | DATE 3/5/21

SHEET ISSUE

1	Town of Apex Major Site Plan Submittal #1	12/1/20
2	Town of Apex Major Site Plan Submittal #2	2/12/21
3	Town of Apex Major Site Plan Submittal #3	3/5/21

RATIO

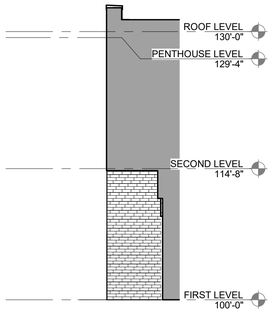
COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 19150.000

SHEET TITLE
EXTERIOR ELEVATIONS

SHEET NUMBER
A-01.10.

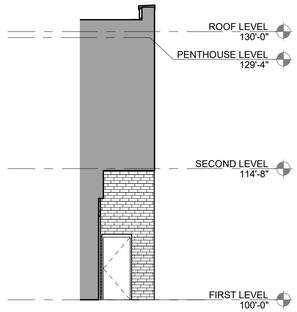
3/3/2021 3:52:31 PM



C1 A-01.11

EXTERIOR ELEVATION

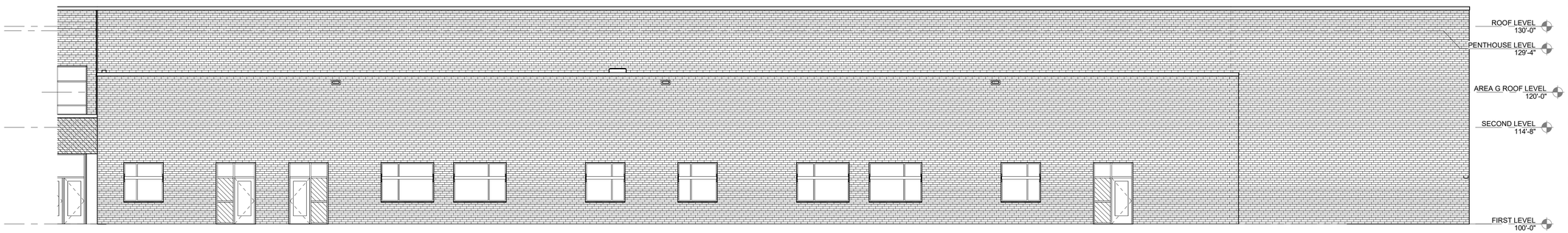
1/8" = 1'-0"



C2 A-01.11

EXTERIOR ELEVATION

1/8" = 1'-0"



B1 A-01.11

EXTERIOR ELEVATION

1/8" = 1'-0"

EXTERIOR MATERIALS SCHEDULE

SPECIFICATION REF.	MATERIAL	MANUFACTURER (BASIS OF DESIGN)
034100	PRE-CAST CONCRETE	
042000.A01A	FACE BRICK A	Taylor Clay Products #323 Gray Modular Wirecut
042000.A01B	FACE BRICK B	Taylor Clay Products #369 and #371 Autumn Blend Wirecut
072400.00	EIFS	DRYVIT SYSTEMS
074213.23.A00	METAL PANEL A	DRI-DESIGN METAL PANELS - ORANGE
074213.23.C01	METAL PANEL B	DRI-DESIGN PERFORATED PANELS - GRAY AND COLOR TO MATCH MAIN BUILDING PANEL ACCENT - ALTERNATE
077100.A01	COPING METAL, MANUFACTURED	COLOR TO BE EARTH TONE TO MATCH FACE BRICK B
084113.A01	ALUMINUM STOREFRONT	KAWNEER - ANODIZED ALUMINUM FINISH
084413	ALUMINUM CURTAIN WALL	KAWNEER - ANODIZED ALUMINUM FINISH
088000	GLAZING	GUARDIAN GLASS; SUNGUARD; CLEAR, INSULATING, LOW-E COATED
088113.C01	SPANDREL GLASS	GUARDIAN GLASS - CERAMIC COATED GLASS
107316.B01	ALUMINUM CANOPIES	MAPES INDUSTRIES, INC. - ANODIZED ALUMINUM FINISH
323119.A00	DECORATIVE METAL FENCES & GATES	

GENERAL PROJECT NOTES

1. THE SCREENING OF LOADING DOCKS, ROLL-OUT TRASH CONTAINERS, DUMPSTERS, OUTDOOR STORAGE, MECHANICAL AND HVAC EQUIPMENT, AND SIMILAR FACILITIES ON THE ROOF, GROUND, OR BUILDING SHALL MEET THE REQUIREMENTS OF UDO SEC. 8.2.8. SPECIFICALLY, SCREENING MUST BE DONE SO THATI
   A. IT IS INCORPORATED INTO THE OVERALL DESIGN THEME OF THE BUILDING AND LANDSCAPE.
   B, SCREENING MATERIALS ARE NOT DIFFERENT FROM OR INFERIOR TO THE PRINCIPAL MATERIALS OF THE BUILDING OR LANDSCAPE, AND ARE SIMILAR IN MATERIALS AND COLOR,
   C. SCREENED ITEMS ARE OUT OF VIEW FROM ADJACENT PROPERTIES AND PUBLIC STREETS, AND A TOTALLY OPAQUE SCREEN IS ACHIEVED.
   D. ANY GROUND-MOUNTED HVAC OR OTHER MECHANICAL OR UTILITY EQUIPMENT SIX (6) FEET TALL OR HIGHER MUST BE FENCED AND LANDSCAPED.
   E. DUMPSTER ENCLOSURES MUST MEET THE ABOVE REQUIREMENTS PLUS BE EIGHT (8) FEET TALL OR THE HEIGHT OF THE DUMPSTER, WHICHEVER IS GREATER, AND BE BUILT OF MASONRY MATERIAL WITH OPAQUE GATES. WHERE PRACTICABLE, SHRUBS OR OTHER PLANTS MUST BE PLANTED OUTSIDE THE ENCLOSURE TO VISUALLY SOFTEN THE APPEARANCE.

2. ALL OUTDOOR LIGHT FIXTURES SHALL BE LOCATED A MINIMUM OF 10 FEET FROM A PROPERTY OR RIGHT-OF-WAY LINE, AND AT LEAST TWO FEET AWAY FROM ANY REQUIRED PERIMETER OR STREETSCAPE BUFFER AND TREE SAVE AREA.

3. LAMPS FOR NON-CUTOFF LIGHT FIXTURES SHALL NOT EXCEED 100 WATTS.

4. WALL PACK LIGHT FIXTURES MUST BE FULLY SHIELDED, TRUE CUTOFF TYPE FIXTURES WITH A CONCEALED LAMP/LIGHT SOURCE. THE LIGHTING MUST BE DIRECTED DOWNWARD AND THE WATTAGE MUST NOT EXCEED 100 WATTS.

5. FLOODLIGHTS OR OTHER TYPES OF LIGHTING ARE PROHIBITED UNLESS APPROVAL IS GIVEN THROUGH THE DEVELOPMENT REVIEW PROCESS AND REFLECTED ON THE APPROVED SITE PLAN.

6. AWNINGS AND CANOPIES USED FOR ACCENTS OVER DOORS AND WINDOWS SHALL NOT BE INTERNALLY LIT.

7. BEFORE CERTIFICATES OF OCCUPANCY ARE RELEASED, THE OWNER/BUILDER MUST SUPPLY THE TOWN WITH A FINAL LETTER OF CERTIFICATION FROM THE LIGHTING ENGINEER AND/OR LIGHTING MANUFACTURER VERIFYING THAT ALL SITE LIGHTING IS INSTALLED ACCORDING TO TOWN STANDARDS, THE APPROVED PLANS, AND ANY APPLICABLE CONDITIONS.

8. ARCHITECTURAL CONSTRUCTION PLANS MUST ADHERE TO THE APPROVED SITE PLANS. ANY PROPOSED CHANGES MUST BE SUBMITED TO THE PLANNING DEPARTMENT FOR APPROVAL.

Felton Grove High School (H12)

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
111 Corning Road, Ste 190
Cary, NC 27518
919-588-3602

Architect & Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer & Landscape Architect
CLH Design PA
400 Regency Forest Drive, Suite 120
Cary, NC 27518
(919) 319-6716

SEAL | DATE 3/5/21

SHEET ISSUE

1	Town of Apex Major Site Plan Submittal #1	12/1/20
2	Town of Apex Major Site Plan Submittal #2	2/12/21
3	Town of Apex Major Site Plan Submittal #3	3/5/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 19150.000

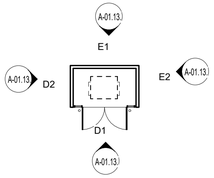
SHEET TITLE
EXTERIOR ELEVATIONS

SHEET NUMBER
A-01.11.

0' 4' 8' 16' 32'

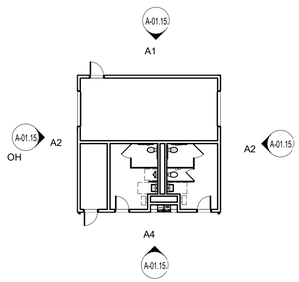
NOT FOR CONSTRUCTION

3/3/2021 3:52:37 PM



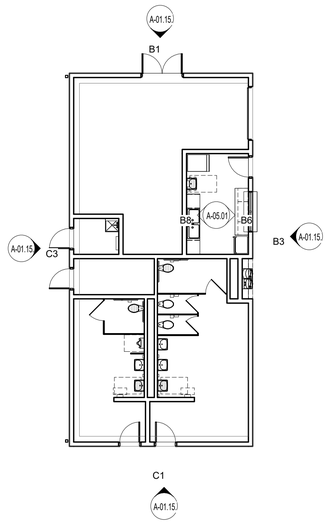
E1 A-01.12 **FIRST LEVEL FLOOR PLAN - TRASH ENCLOSURE**

1/16" = 1'-0"



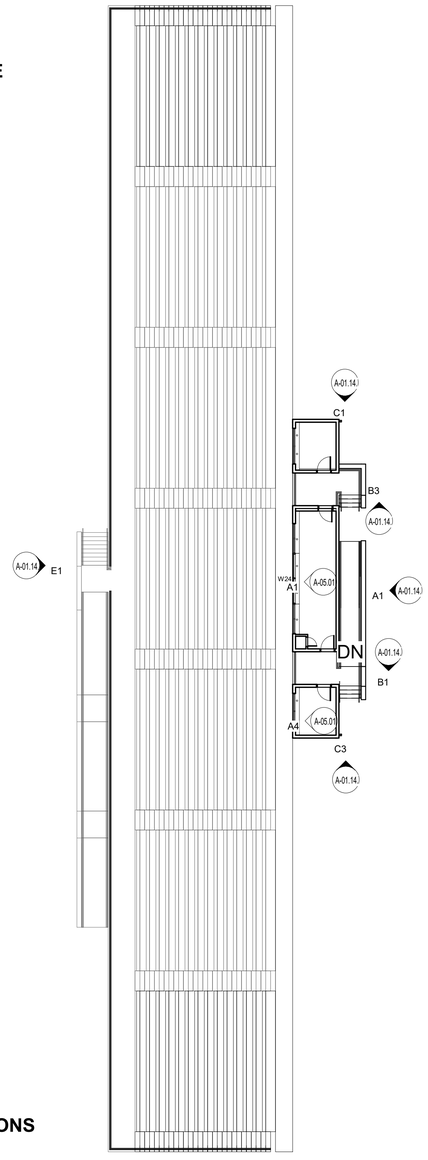
D1 A-01.12 **FIRST LEVEL FLOOR PLAN - LAWN STORAGE**

1/16" = 1'-0"



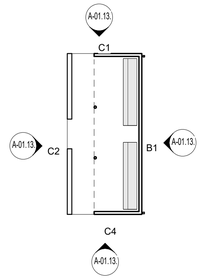
A1 A-01.12 **FIRST LEVEL FLOOR PLAN - VISITOR CONCESSIONS**

3/32" = 1'-0"



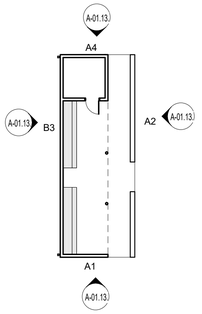
A2 A-01.12 **FIRST LEVEL FLOOR PLAN - HOME BLEACHERS AND PRESSBOX**

1/16" = 1'-0"



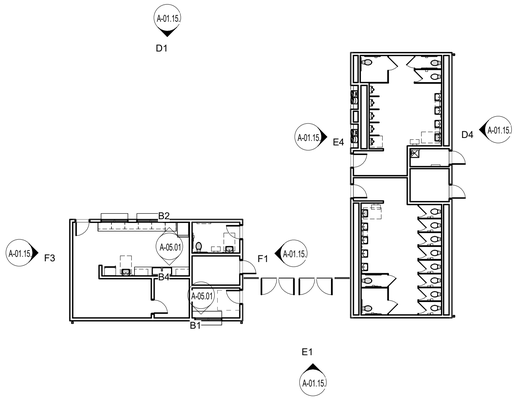
E4 A-01.12 **FIRST LEVEL FLOOR PLAN - VISITOR DUGOUT - BASEBALL AND SOFTBALL**

1/16" = 1'-0"



D4 A-01.12 **FIRST LEVEL FLOOR PLAN - HOME DUGOUT - BASEBALL AND SOFTBALL**

1/16" = 1'-0"



A3 A-01.12 **FIRST LEVEL FLOOR PLAN - ENTRY GATE**

1/16" = 1'-0"

GENERAL PROJECT NOTES

1. THE SCREENING OF LOADING DOCKS, ROLL-OUT TRASH CONTAINERS, DUMPSTERS, OUTDOOR STORAGE, MECHANICAL AND HVAC EQUIPMENT, AND SIMILAR FACILITIES ON THE ROOF, GROUND, OR BUILDING SHALL MEET THE REQUIREMENTS OF UDO SEC. 8.2.8. SPECIFICALLY, SCREENING MUST BE DONE SO THATI
   A. IT IS INCORPORATED INTO THE OVERALL DESIGN THEME OF THE BUILDING AND LANDSCAPE.
   B, SCREENING MATERIALS ARE NOT DIFFERENT FROM OR INFERIOR TO THE PRINCIPAL MATERIALS OF THE BUILDING OR LANDSCAPE, AND ARE SIMILAR IN MATERIALS AND COLOR,
   C. SCREENED ITEMS ARE OUT OF VIEW FROM ADJACENT PROPERTIES AND PUBLIC STREETS, AND A TOTALLY OPAQUE SCREEN IS ACHIEVED.
   D. ANY GROUND-MOUNTED HVAC OR OTHER MECHANICAL OR UTILITY EQUIPMENT SIX (6) FEET TALL OR HIGHER MUST BE FENCED AND LANDSCAPED.
   E. DUMPSTER ENCLOSURES MUST MEET THE ABOVE REQUIREMENTS PLUS BE EIGHT (8) FEET TALL OR THE HEIGHT OF THE DUMPSTER, WHICHEVER IS GREATER, AND BE BUILT OF MASONRY MATERIAL WITH OPAQUE GATES. WHERE PRACTICABLE, SHRUBS OR OTHER PLANTS MUST BE PLANTED OUTSIDE THE ENCLOSURE TO VISUALLY SOFTEN THE APPEARANCE.

2. ALL OUTDOOR LIGHT FIXTURES SHALL BE LOCATED A MINIMUM OF 10 FEET FROM A PROPERTY OR RIGHT-OF-WAY LINE, AND AT LEAST TWO FEET AWAY FROM ANY REQUIRED PERIMETER OR STREETSCAPE BUFFER AND TREE SAVE AREA.

3. LAMPS FOR NON-CUTOFF LIGHT FIXTURES SHALL NOT EXCEED 100 WATTS.

4. WALL PACK LIGHT FIXTURES MUST BE FULLY SHIELDED, TRUE CUTOFF TYPE FIXTURES WITH A CONCEALED LAMP/LIGHT SOURCE. THE LIGHTING MUST BE DIRECTED DOWNWARD AND THE WATTAGE MUST NOT EXCEED 100 WATTS.

5. FLOODLIGHTS OR OTHER TYPES OF LIGHTING ARE PROHIBITED UNLESS APPROVAL IS GIVEN THROUGH THE DEVELOPMENT REVIEW PROCESS AND REFLECTED ON THE APPROVED SITE PLAN.

6. AWNINGS AND CANOPIES USED FOR ACCENTS OVER DOORS AND WINDOWS SHALL NOT BE INTERNALLY LIT.

7. BEFORE CERTIFICATES OF OCCUPANCY ARE RELEASED, THE OWNER/BUILDER MUST SUPPLY THE TOWN WITH A FINAL LETTER OF CERTIFICATION FROM THE LIGHTING ENGINEER AND/OR LIGHTING MANUFACTURER VERIFYING THAT ALL SITE LIGHTING IS INSTALLED ACCORDING TO TOWN STANDARDS, THE APPROVED PLANS, AND ANY APPLICABLE CONDITIONS.

8. ARCHITECTURAL CONSTRUCTION PLANS MUST ADHERE TO THE APPROVED SITE PLANS. ANY PROPOSED CHANGES MUST BE SUBMITED TO THE PLANNING DEPARTMENT FOR APPROVAL.

Felton Grove High School (H12)

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
111 Corning Road, Ste 190
Cary, NC 27518
919-588-3602

Architect & Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer & Landscape Architect
CLH Design PA
400 Regency Forest Drive, Suite 120
Cary, NC 27518
(919) 319-6716

SEAL | DATE 03/5/21

SHEET ISSUE

1	Town of Apex Major Site Plan Submittal #1	12/1/20
2	Town of Apex Major Site Plan Submittal #2	02/12/21
3	Town of Apex Major Site Plan Submittal #3	03/5/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 12345.000

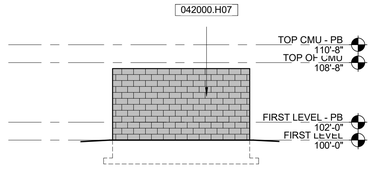
SHEET TITLE
ATHLETICS FLOOR PLANS

SHEET NUMBER
A-01.12.

0' 8' 16' 32' 64'

NOT FOR CONSTRUCTION

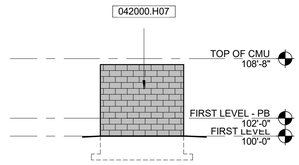
3/3/2021 4:30:04 PM



E1 A-01.13

REAR EXT ELEV - TRASH ENCL.

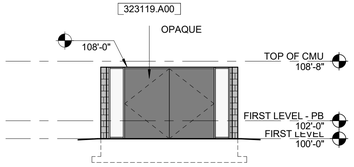
1/8" = 1'-0"



E2 A-01.13

SIDE EXT ELEV - TRASH ENCL - EAST

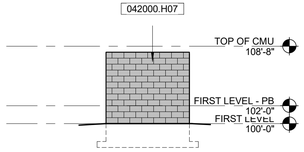
1/8" = 1'-0"



D1 A-01.13

FRONT EXT ELEV - TRASH ENCL

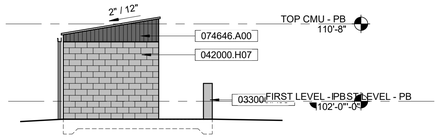
1/8" = 1'-0"



D2 A-01.13

SIDE EXT ELEV - TRASH ENCL - WEST

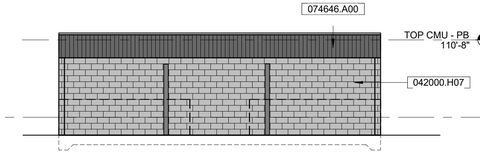
1/8" = 1'-0"



C1 A-01.13

LEFT EXT ELEV - VISITOR DUGOUT

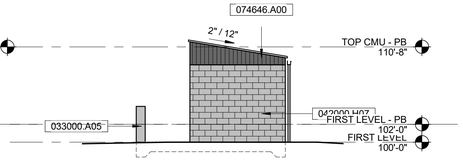
1/8" = 1'-0"



C2 A-01.13

FRONT EXT ELEV - VISITOR DUGOUT

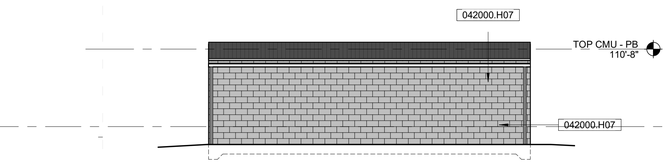
1/8" = 1'-0"



C4 A-01.13

RIGHT EXT ELEV - VISITOR DUGOUT

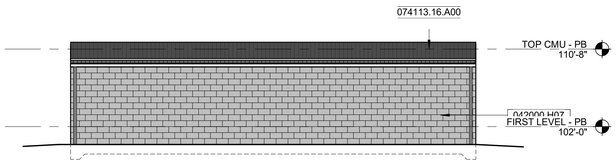
1/8" = 1'-0"



B1 A-01.13

REAR EXT ELEV - VISITOR DUGOUT

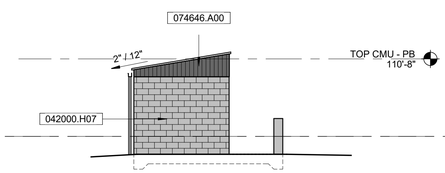
1/8" = 1'-0"



B3 A-01.13

REAR EXT ELEV - HOME DUGOUT

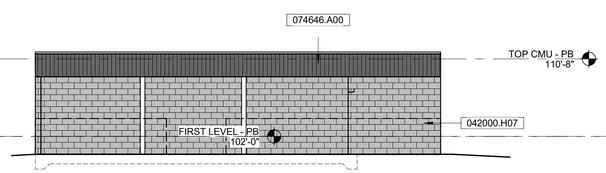
1/8" = 1'-0"



A1 A-01.13

LEFT EXT ELEV - HOME DUGOUT

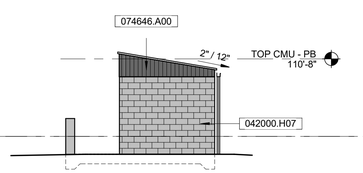
1/8" = 1'-0"



A2 A-01.13

FRONT EXT ELEV - HOME DUGOUT

1/8" = 1'-0"



A4 A-01.13

RIGHT EXT ELEV - HOME DUGOUT

1/8" = 1'-0"

0' 4' 8' 16' 32'

NOT FOR CONSTRUCTION

EXTERIOR MATERIALS SCHEDULE

SPECIFICATION REF.	MATERIAL	MANUFACTURER (BASIS OF DESIGN)
033000.A05	PRE-CAST CONCRETE	
042000.A01B	CEMENTITIOUS SIDING	HARDIPANEL HZ10 SMOOTH BOARD AND BATTEN, RICH EXPRESSO
042000.H07	GROUND FACE BLOCK	JOHNSON CONCRETE PRODUCTS JCL-3063 SHORELINE SAND
074646.A00	STANDING SEAM METAL ROOF	BERRIDGE HIGH SEAM TEE PANEL, DARK BRONZE
084113.A01	ALUMINUM STOREFRONT	KAWNEER - ANODIZED ALUMINUM FINISH
088000	GLAZING	GUARDIAN GLASS; SUNGUARD; CLEAR, INSULATING, LOW-E COATED
107316.B01	ALUMINUM CANOPIES	MAPES INDUSTRIES, INC. - ANODIZED ALUMINUM FINISH
323119.A00	DECORATIVE METAL FENCES & GATES	

GENERAL PROJECT NOTES

1. THE SCREENING OF LOADING DOCKS, ROLL-OUT TRASH CONTAINERS, DUMPSTERS, OUTDOOR STORAGE, MECHANICAL AND HVAC EQUIPMENT, AND SIMILAR FACILITIES ON THE ROOF, GROUND, OR BUILDING SHALL MEET THE REQUIREMENTS OF UDO SEC. 8.2.8. SPECIFICALLY, SCREENING MUST BE DONE SO THATI
   A. IT IS INCORPORATED INTO THE OVERALL DESIGN THEME OF THE BUILDING AND LANDSCAPE.
   B, SCREENING MATERIALS ARE NOT DIFFERENT FROM OR INFERIOR TO THE PRINCIPAL MATERIALS OF THE BUILDING OR LANDSCAPE, AND ARE SIMILAR IN MATERIALS AND COLOR,
   C. SCREENED ITEMS ARE OUT OF VIEW FROM ADJACENT PROPERTIES AND PUBLIC STREETS, AND A TOTALLY OPAQUE SCREEN IS ACHIEVED.
   D. ANY GROUND-MOUNTED HVAC OR OTHER MECHANICAL OR UTILITY EQUIPMENT SIX (6) FEET TALL OR HIGHER MUST BE FENCED AND LANDSCAPED.
   E. DUMPSTER ENCLOSURES MUST MEET THE ABOVE REQUIREMENTS PLUS BE EIGHT (8) FEET TALL OR THE HEIGHT OF THE DUMPSTER, WHICHEVER IS GREATER, AND BE BUILT OF MASONRY MATERIAL WITH OPAQUE GATES. WHERE PRACTICABLE, SHRUBS OR OTHER PLANTS MUST BE PLANTED OUTSIDE THE ENCLOSURE TO VISUALLY SOFTEN THE APPEARANCE.

2. ALL OUTDOOR LIGHT FIXTURES SHALL BE LOCATED A MINIMUM OF 10 FEET FROM A PROPERTY OR RIGHT-OF-WAY LINE, AND AT LEAST TWO FEET AWAY FROM ANY REQUIRED PERIMETER OR STREETSCAPE BUFFER AND TREE SAVE AREA.

3. LAMPS FOR NON-CUTOFF LIGHT FIXTURES SHALL NOT EXCEED 100 WATTS.

4. WALL PACK LIGHT FIXTURES MUST BE FULLY SHIELDED, TRUE CUTOFF TYPE FIXTURES WITH A CONCEALED LAMP/LIGHT SOURCE. THE LIGHTING MUST BE DIRECTED DOWNWARD AND THE WATTAGE MUST NOT EXCEED 100 WATTS.

5. FLOODLIGHTS OR OTHER TYPES OF LIGHTING ARE PROHIBITED UNLESS APPROVAL IS GIVEN THROUGH THE DEVELOPMENT REVIEW PROCESS AND REFLECTED ON THE APPROVED SITE PLAN.

6. AWNINGS AND CANOPIES USED FOR ACCENTS OVER DOORS AND WINDOWS SHALL NOT BE INTERNALLY LIT.

7. BEFORE CERTIFICATES OF OCCUPANCY ARE RELEASED, THE OWNER/BUILDER MUST SUPPLY THE TOWN WITH A FINAL LETTER OF CERTIFICATION FROM THE LIGHTING ENGINEER AND/OR LIGHTING MANUFACTURER VERIFYING THAT ALL SITE LIGHTING IS INSTALLED ACCORDING TO TOWN STANDARDS, THE APPROVED PLANS, AND ANY APPLICABLE CONDITIONS.

8. ARCHITECTURAL CONSTRUCTION PLANS MUST ADHERE TO THE APPROVED SITE PLANS. ANY PROPOSED CHANGES MUST BE SUBMITED TO THE PLANNING DEPARTMENT FOR APPROVAL.

Felton Grove High School (H12)

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
111 Corning Road, Ste 190
Cary, NC 27518
919-588-3602

Architect & Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer & Landscape Architect
CLH Design PA
400 Regency Forest Drive, Suite 120
Cary, NC 27518
(919) 319-6716

SEAL | DATE 03/5/21

SHEET ISSUE

1	Town of Apex Major Site Plan Submittal #1	12/1/20
2	Town of Apex Major Site Plan Submittal #2	02/12/21
3	Town of Apex Major Site Plan Submittal #3	03/5/21

RATIO

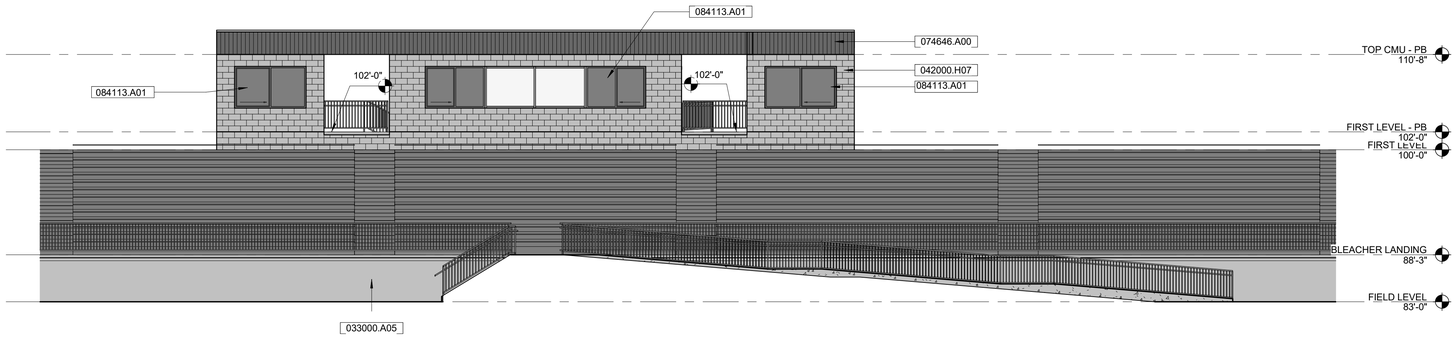
COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 12345.000

SHEET TITLE
EXTERIOR ELEVATIONS - AUX ATHL

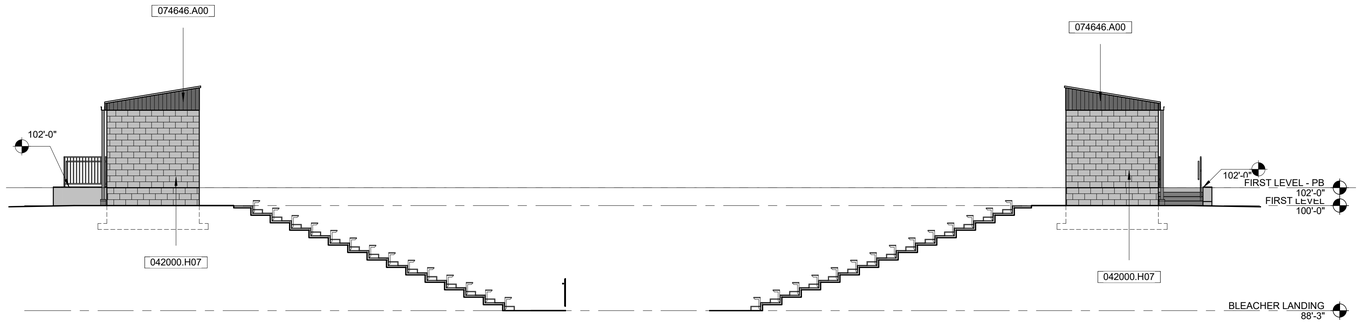
SHEET NUMBER
A-01.13.

3/3/2021 4:32:31 PM



E1 A-01.14 **WEST EXT ELEV - PRESS BOX AND GRANDSTAND**

1/8" = 1'-0"

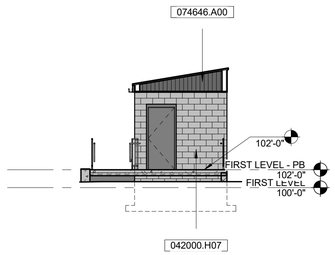


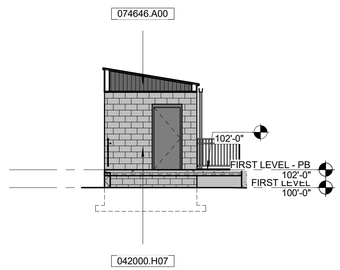
C1 A-01.14 **NORTH EXT ELEV - PRESS BOX**

1/8" = 1'-0"

C3 A-01.14 **SOUTH EXT ELEV - PRESS BOX**

1/8" = 1'-0"



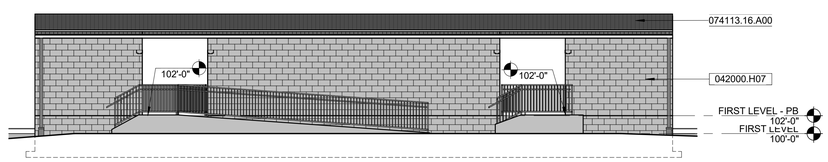


B1 A-01.14 **NORTH EXT ELEV - PRESS BOX 2**

1/8" = 1'-0"

B3 A-01.14 **SOUTH EXT ELEV - PRESS BOX 2**

1/8" = 1'-0"



A1 A-01.14 **EAST EXT ELEV - PRESS BOX**

1/8" = 1'-0"

EXTERIOR MATERIALS SCHEDULE

SPECIFICATION REF.	MATERIAL	MANUFACTURER (BASIS OF DESIGN)
033000.A05	PRE-CAST CONCRETE	
042000.A01B	CEMENTITIOUS SIDING	HARDIPANEL HZ10 SMOOTH BOARD AND BATTEN, RICH EXPRESSO
042000.H07	GROUND FACE BLOCK	JOHNSON CONCRETE PRODUCTS JCL-3063 SHORELINE SAND
074646.A00	STANDING SEAM METAL ROOF	BERRIDGE HIGH SEAM TEE PANEL, DARK BRONZE
084113.A01	ALUMINUM STOREFRONT	KAWNEER - ANODIZED ALUMINUM FINISH
088000	GLAZING	GUARDIAN GLASS; SUNGUARD; CLEAR, INSULATING, LOW-E COATED
107316.B01	ALUMINUM CANOPIES	MAPES INDUSTRIES, INC. - ANODIZED ALUMINUM FINISH
323119.A00	DECORATIVE METAL FENCES & GATES	

GENERAL PROJECT NOTES

1. THE SCREENING OF LOADING DOCKS, ROLL-OUT TRASH CONTAINERS, DUMPSTERS, OUTDOOR STORAGE, MECHANICAL AND HVAC EQUIPMENT, AND SIMILAR FACILITIES ON THE ROOF, GROUND, OR BUILDING SHALL MEET THE REQUIREMENTS OF UDO SEC. 8.2.8. SPECIFICALLY, SCREENING MUST BE DONE SO THATI
   A. IT IS INCORPORATED INTO THE OVERALL DESIGN THEME OF THE BUILDING AND LANDSCAPE.
   B, SCREENING MATERIALS ARE NOT DIFFERENT FROM OR INFERIOR TO THE PRINCIPAL MATERIALS OF THE BUILDING OR LANDSCAPE, AND ARE SIMILAR IN MATERIALS AND COLOR,
   C. SCREENED ITEMS ARE OUT OF VIEW FROM ADJACENT PROPERTIES AND PUBLIC STREETS, AND A TOTALLY OPAQUE SCREEN IS ACHIEVED.
   D. ANY GROUND-MOUNTED HVAC OR OTHER MECHANICAL OR UTILITY EQUIPMENT SIX (6) FEET TALL OR HIGHER MUST BE FENCED AND LANDSCAPED.
   E. DUMPSTER ENCLOSURES MUST MEET THE ABOVE REQUIREMENTS PLUS BE EIGHT (8) FEET TALL OR THE HEIGHT OF THE DUMPSTER, WHICHEVER IS GREATER, AND BE BUILT OF MASONRY MATERIAL WITH OPAQUE GATES. WHERE PRACTICABLE, SHRUBS OR OTHER PLANTS MUST BE PLANTED OUTSIDE THE ENCLOSURE TO VISUALLY SOFTEN THE APPEARANCE.

2. ALL OUTDOOR LIGHT FIXTURES SHALL BE LOCATED A MINIMUM OF 10 FEET FROM A PROPERTY OR RIGHT-OF-WAY LINE, AND AT LEAST TWO FEET AWAY FROM ANY REQUIRED PERIMETER OR STREETSCAPE BUFFER AND TREE SAVE AREA.

3. LAMPS FOR NON-CUTOFF LIGHT FIXTURES SHALL NOT EXCEED 100 WATTS.

4. WALL PACK LIGHT FIXTURES MUST BE FULLY SHIELDED, TRUE CUTOFF TYPE FIXTURES WITH A CONCEALED LAMP/LIGHT SOURCE. THE LIGHTING MUST BE DIRECTED DOWNWARD AND THE WATTAGE MUST NOT EXCEED 100 WATTS.

5. FLOODLIGHTS OR OTHER TYPES OF LIGHTING ARE PROHIBITED UNLESS APPROVAL IS GIVEN THROUGH THE DEVELOPMENT REVIEW PROCESS AND REFLECTED ON THE APPROVED SITE PLAN.

6. AWNINGS AND CANOPIES USED FOR ACCENTS OVER DOORS AND WINDOWS SHALL NOT BE INTERNALLY LIT.

7. BEFORE CERTIFICATES OF OCCUPANCY ARE RELEASED, THE OWNER/BUILDER MUST SUPPLY THE TOWN WITH A FINAL LETTER OF CERTIFICATION FROM THE LIGHTING ENGINEER AND/OR LIGHTING MANUFACTURER VERIFYING THAT ALL SITE LIGHTING IS INSTALLED ACCORDING TO TOWN STANDARDS, THE APPROVED PLANS, AND ANY APPLICABLE CONDITIONS.

8. ARCHITECTURAL CONSTRUCTION PLANS MUST ADHERE TO THE APPROVED SITE PLANS. ANY PROPOSED CHANGES MUST BE SUBMITED TO THE PLANNING DEPARTMENT FOR APPROVAL.

Felton Grove High School (H12)

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
111 Corning Road, Ste 190
Cary, NC 27518
919-588-3602

Architect & Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer & Landscape Architect
CLH Design PA
400 Regency Forest Drive, Suite 120
Cary, NC 27518
(919) 319-6716

SEAL | DATE 03/5/21

SHEET ISSUE

1	Town of Apex Major Site Plan Submittal #1	12/1/20
2	Town of Apex Major Site Plan Submittal #2	02/12/21
3	Town of Apex Major Site Plan Submittal #3	03/5/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 12345.000

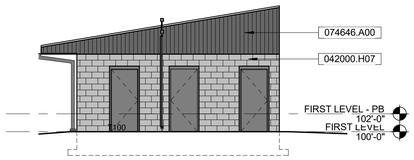
SHEET TITLE
EXTERIOR ELEVATIONS - AUX ATHL

SHEET NUMBER
A-01.14.

0' 4' 8' 16' 32'

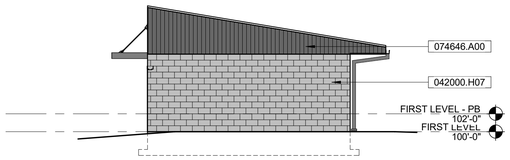
NOT FOR CONSTRUCTION

3/3/2021 4:30:12 PM



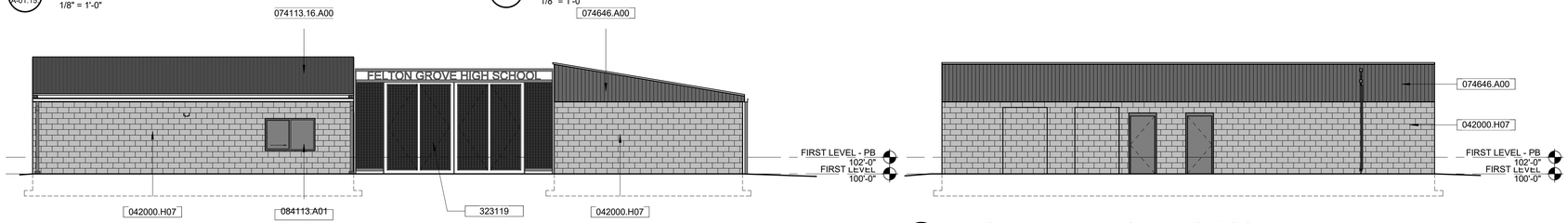
F1 A-01.15 **EAST EXT ELEV - TICKETS**

1/8" = 1'-0"



F3 A-01.15 **WEST EXT ELEV - TICKETS**

1/8" = 1'-0"

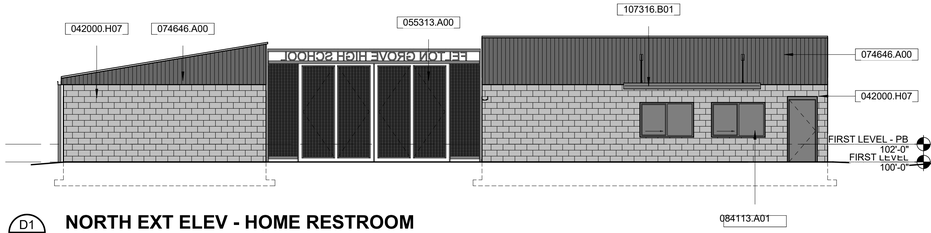


E1 A-01.15 **SOUTH EXT ELEV - TICKETS**

1/8" = 1'-0"

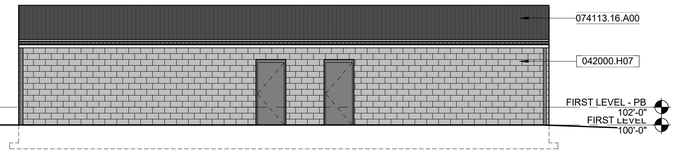
E4 A-01.15 **WEST EXT ELEV - HOME RESTROOM**

1/8" = 1'-0"



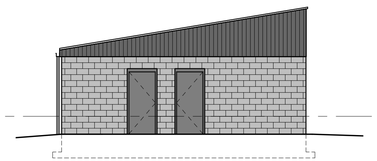
D1 A-01.15 **NORTH EXT ELEV - HOME RESTROOM**

1/8" = 1'-0"



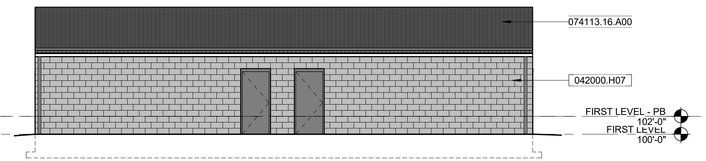
D4 A-01.15 **EAST EXT ELEV - HOME RESTROOM**

1/8" = 1'-0"



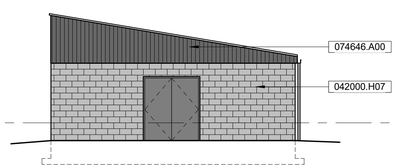
C1 A-01.15 **SOUTH EXT ELEV - VISITOR RESTROOM**

1/8" = 1'-0"



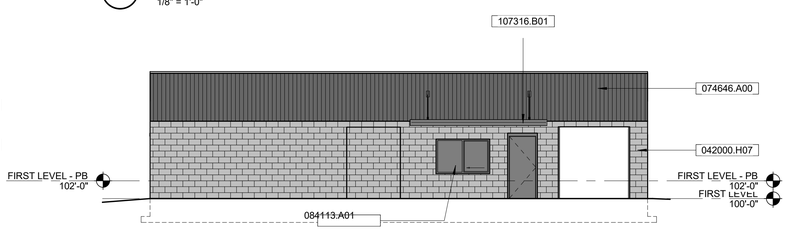
C3 A-01.15 **WEST EXT ELEV - VISITOR RESTROOM**

1/8" = 1'-0"



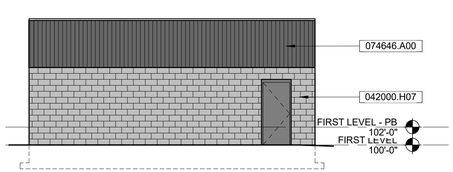
B1 A-01.15 **NORTH EXT ELEV - VISITOR RESTROOM**

1/8" = 1'-0"



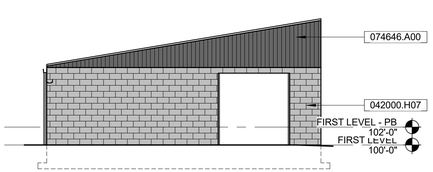
B3 A-01.15 **EAST EXT ELEV - VISITOR RESTROOM**

1/8" = 1'-0"



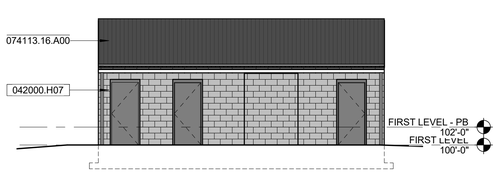
A1 A-01.15 **NORTH EXT ELEV - LAWN STORAGE**

1/8" = 1'-0"



A2 A-01.15 **EAST EXT ELEV - LAWN STORAGE**

1/8" = 1'-0"



A4 A-01.15 **SOUTH EXT ELEV - LAWN STORAGE**

1/8" = 1'-0"

EXTERIOR MATERIALS SCHEDULE

SPECIFICATION REF.	MATERIAL	MANUFACTURER (BASIS OF DESIGN)
033000.A05	PRE-CAST CONCRETE	
042000.A01B	CEMENTITIOUS SIDING	HARDIPANEL HZ10 SMOOTH BOARD AND BATTEN, RICH EXPRESSO
042000.H07	GROUND FACE BLOCK	JOHNSON CONCRETE PRODUCTS JCL-3063 SHORELINE SAND
074646.A00	STANDING SEAM METAL ROOF	BERRIDGE HIGH SEAM TEE PANEL, DARK BRONZE
084113.A01	ALUMINUM STOREFRONT	KAWNEER - ANODIZED ALUMINUM FINISH
088000	GLAZING	GUARDIAN GLASS; SUNGUARD; CLEAR, INSULATING, LOW-E COATED
107316.B01	ALUMINUM CANOPIES	MAPES INDUSTRIES, INC. - ANODIZED ALUMINUM FINISH
323119.A00	DECORATIVE METAL FENCES & GATES	

GENERAL PROJECT NOTES

1. THE SCREENING OF LOADING DOCKS, ROLL-OUT TRASH CONTAINERS, DUMPSTERS, OUTDOOR STORAGE, MECHANICAL AND HVAC EQUIPMENT, AND SIMILAR FACILITIES ON THE ROOF, GROUND, OR BUILDING SHALL MEET THE REQUIREMENTS OF UDO SEC. 8.2.8. SPECIFICALLY, SCREENING MUST BE DONE SO THATI
   A. IT IS INCORPORATED INTO THE OVERALL DESIGN THEME OF THE BUILDING AND LANDSCAPE.
   B, SCREENING MATERIALS ARE NOT DIFFERENT FROM OR INFERIOR TO THE PRINCIPAL MATERIALS OF THE BUILDING OR LANDSCAPE, AND ARE SIMILAR IN MATERIALS AND COLOR,
   C. SCREENED ITEMS ARE OUT OF VIEW FROM ADJACENT PROPERTIES AND PUBLIC STREETS, AND A TOTALLY OPAQUE SCREEN IS ACHIEVED.
   D. ANY GROUND-MOUNTED HVAC OR OTHER MECHANICAL OR UTILITY EQUIPMENT SIX (6) FEET TALL OR HIGHER MUST BE FENCED AND LANDSCAPED.
   E. DUMPSTER ENCLOSURES MUST MEET THE ABOVE REQUIREMENTS PLUS BE EIGHT (8) FEET TALL OR THE HEIGHT OF THE DUMPSTER, WHICHEVER IS GREATER, AND BE BUILT OF MASONRY MATERIAL WITH OPAQUE GATES. WHERE PRACTICABLE, SHRUBS OR OTHER PLANTS MUST BE PLANTED OUTSIDE THE ENCLOSURE TO VISUALLY SOFTEN THE APPEARANCE.

2. ALL OUTDOOR LIGHT FIXTURES SHALL BE LOCATED A MINIMUM OF 10 FEET FROM A PROPERTY OR RIGHT-OF-WAY LINE, AND AT LEAST TWO FEET AWAY FROM ANY REQUIRED PERIMETER OR STREETSCAPE BUFFER AND TREE SAVE AREA.

3. LAMPS FOR NON-CUTOFF LIGHT FIXTURES SHALL NOT EXCEED 100 WATTS.

4. WALL PACK LIGHT FIXTURES MUST BE FULLY SHIELDED, TRUE CUTOFF TYPE FIXTURES WITH A CONCEALED LAMP/LIGHT SOURCE. THE LIGHTING MUST BE DIRECTED DOWNWARD AND THE WATTAGE MUST NOT EXCEED 100 WATTS.

5. FLOODLIGHTS OR OTHER TYPES OF LIGHTING ARE PROHIBITED UNLESS APPROVAL IS GIVEN THROUGH THE DEVELOPMENT REVIEW PROCESS AND REFLECTED ON THE APPROVED SITE PLAN.

6. AWNINGS AND CANOPIES USED FOR ACCENTS OVER DOORS AND WINDOWS SHALL NOT BE INTERNALLY LIT.

7. BEFORE CERTIFICATES OF OCCUPANCY ARE RELEASED, THE OWNER/BUILDER MUST SUPPLY THE TOWN WITH A FINAL LETTER OF CERTIFICATION FROM THE LIGHTING ENGINEER AND/OR LIGHTING MANUFACTURER VERIFYING THAT ALL SITE LIGHTING IS INSTALLED ACCORDING TO TOWN STANDARDS, THE APPROVED PLANS, AND ANY APPLICABLE CONDITIONS.

8. ARCHITECTURAL CONSTRUCTION PLANS MUST ADHERE TO THE APPROVED SITE PLANS. ANY PROPOSED CHANGES MUST BE SUBMITED TO THE PLANNING DEPARTMENT FOR APPROVAL.

0' 4' 8' 16' 32'

NOT FOR CONSTRUCTION

Felton Grove High School (H12)

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
111 Corning Road, Ste 190
Cary, NC 27518
919-588-3602

Architect & Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer & Landscape Architect
CLH Design PA
400 Regency Forest Drive, Suite 120
Cary, NC 27518
(919) 319-6716

SEAL | DATE 03/5/21

SHEET ISSUE

1	Town of Apex Major Site Plan Submittal #1	12/1/20
2	Town of Apex Major Site Plan Submittal #2	02/12/21
3	Town of Apex Major Site Plan Submittal #3	03/5/21

RATIO

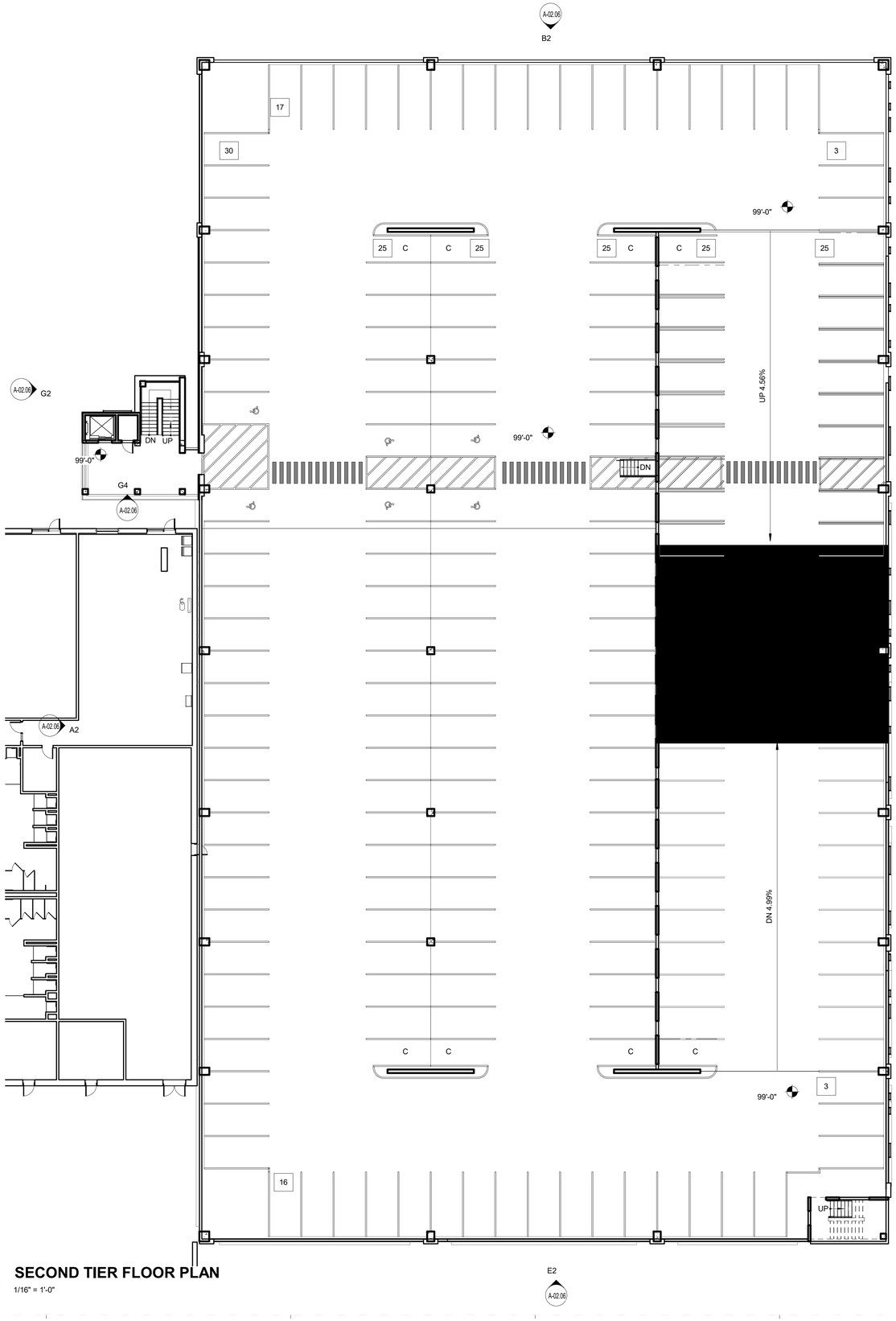
COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 12345.000

SHEET TITLE
EXTERIOR ELEVATIONS - AUX ATHL

SHEET NUMBER
A-01.15.

3/3/2021 4:30:14 PM



1 A-01.16 **SECOND TIER FLOOR PLAN**

1/16" = 1'-0"

GENERAL PROJECT NOTES

1. THE SCREENING OF LOADING DOCKS, ROLL-OUT TRASH CONTAINERS, DUMPSTERS, OUTDOOR STORAGE, MECHANICAL AND HVAC EQUIPMENT, AND SIMILAR FACILITIES ON THE ROOF, GROUND, OR BUILDING SHALL MEET THE REQUIREMENTS OF UDO SEC. 8.2.8. SPECIFICALLY, SCREENING MUST BE DONE SO THATI

A. IT IS INCORPORATED INTO THE OVERALL DESIGN THEME OF THE BUILDING AND LANDSCAPE.

B. SCREENING MATERIALS ARE NOT DIFFERENT FROM OR INFERIOR TO THE PRINCIPAL MATERIALS OF THE BUILDING OR LANDSCAPE, AND ARE SIMILAR IN MATERIALS AND COLOR.

C. SCREENED ITEMS ARE OUT OF VIEW FROM ADJACENT PROPERTIES AND PUBLIC STREETS, AND A TOTALLY OPAQUE SCREEN IS ACHIEVED.

D. ANY GROUND-MOUNTED HVAC OR OTHER MECHANICAL OR UTILITY EQUIPMENT SIX (6) FEET TALL OR HIGHER MUST BE FENCED AND LANDSCAPED.

E. DUMPSTER ENCLOSURES MUST MEET THE ABOVE REQUIREMENTS PLUS BE EIGHT (8) FEET TALL OR THE HEIGHT OF THE DUMPSTER, WHICHEVER IS GREATER, AND BE BUILT OF MASONRY MATERIAL WITH OPAQUE GATES. WHERE PRACTICABLE, SHRUBS OR OTHER PLANTS MUST BE PLANTED OUTSIDE THE ENCLOSURE TO VISUALLY SOFTEN THE APPEARANCE.

2. ALL OUTDOOR LIGHT FIXTURES SHALL BE LOCATED A MINIMUM OF 10 FEET FROM A PROPERTY OR RIGHT-OF-WAY LINE, AND AT LEAST TWO FEET AWAY FROM ANY REQUIRED PERIMETER OR STREETSCAPE BUFFER AND TREE SAVE AREA.

3. LAMPS FOR NON-CUTOFF LIGHT FIXTURES SHALL NOT EXCEED 100 WATTS.

4. WALL PACK LIGHT FIXTURES MUST BE FULLY SHIELDED, TRUE CUTOFF TYPE FIXTURES WITH A CONCEALED LAMP/LIGHT SOURCE. THE LIGHTING MUST BE DIRECTED DOWNWARD AND THE WATTAGE MUST NOT EXCEED 100 WATTS.

5. FLOODLIGHTS OR OTHER TYPES OF LIGHTING ARE PROHIBITED UNLESS APPROVAL IS GIVEN THROUGH THE DEVELOPMENT REVIEW PROCESS AND REFLECTED ON THE APPROVED SITE PLAN.

6. AWNINGS AND CANOPIES USED FOR ACCENTS OVER DOORS AND WINDOWS SHALL NOT BE INTERNALLY LIT.

7. BEFORE CERTIFICATES OF OCCUPANCY ARE RELEASED, THE OWNER/BUILDER MUST SUPPLY THE TOWN WITH A FINAL LETTER OF CERTIFICATION FROM THE LIGHTING ENGINEER AND/OR LIGHTING MANUFACTURER VERIFYING THAT ALL SITE LIGHTING IS INSTALLED ACCORDING TO TOWN STANDARDS, THE APPROVED PLANS, AND ANY APPLICABLE CONDITIONS.

8. ARCHITECTURAL CONSTRUCTION PLANS MUST ADHERE TO THE APPROVED SITE PLANS. ANY PROPOSED CHANGES MUST BE SUBMITED TO THE PLANNING DEPARTMENT FOR APPROVAL.

0' 8' 16' 32' 64'

NOT FOR CONSTRUCTION

Felton Grove High School (H12)

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
111 Corning Road, Ste 190
Cary, NC 27518
919-588-3602

Architect & Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer & Landscape Architect
CLH Design PA
400 Regency Forest Drive, Suite 120
Cary, NC 27518
(919) 319-6716

SEAL | DATE 3/5/21

SHEET ISSUE

1	Town of Apex Major Site Plan Submittal #1	12/1/20
2	Town of Apex Major Site Plan Submittal #2	02/12/21
3	Town of Apex Major Site Plan Submittal #3	3/5/21

RATIO

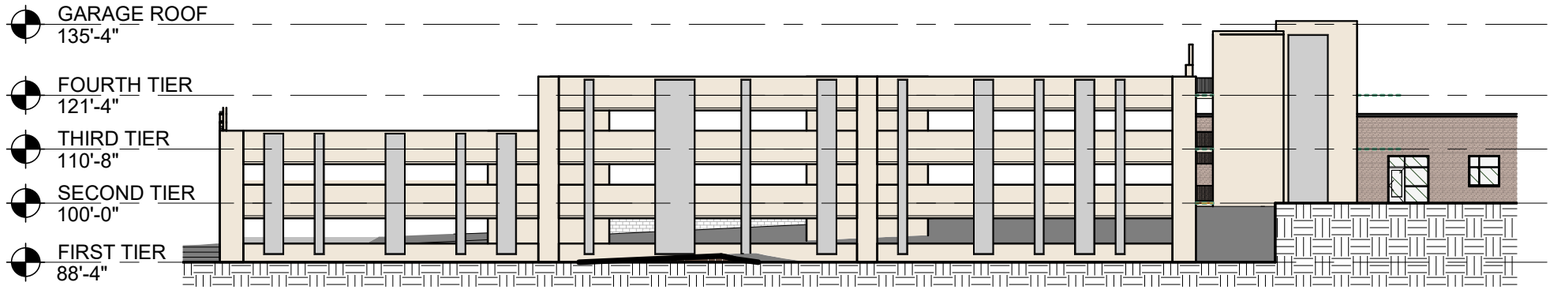
COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 12345.000

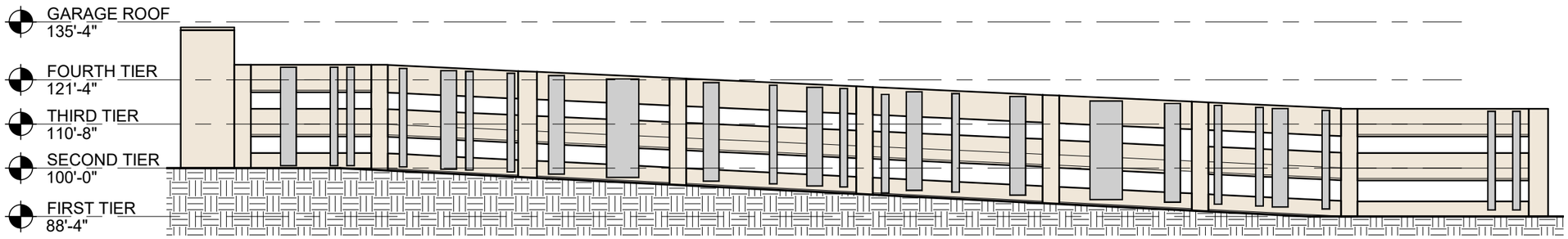
SHEET TITLE
PARKING GARAGE FLOOR PLAN

SHEET NUMBER
A-01.16.

3/3/2021 8:58:05 PM



NORTH



EAST

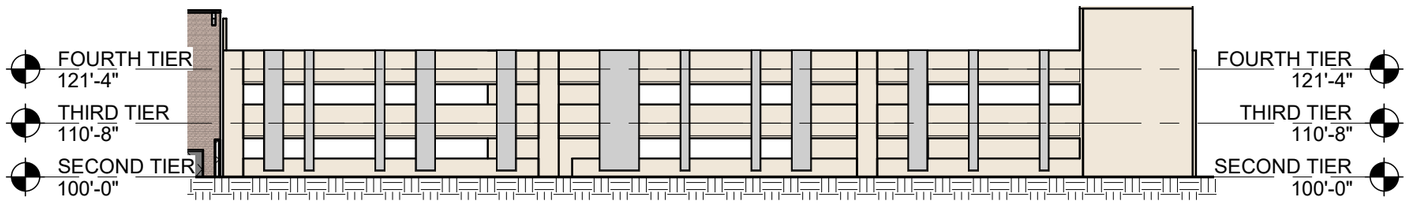
[4/1/2021 2:46:31 PM 12345.000

RATIO

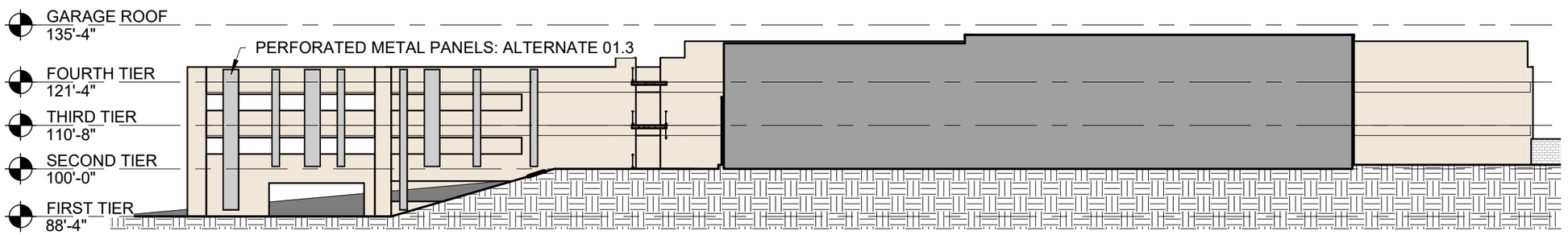
2019-xx-xx

1" = 30'-0"

EXTERIOR ELEVATIONS **Felton Grove High School**



SOUTH



WEST

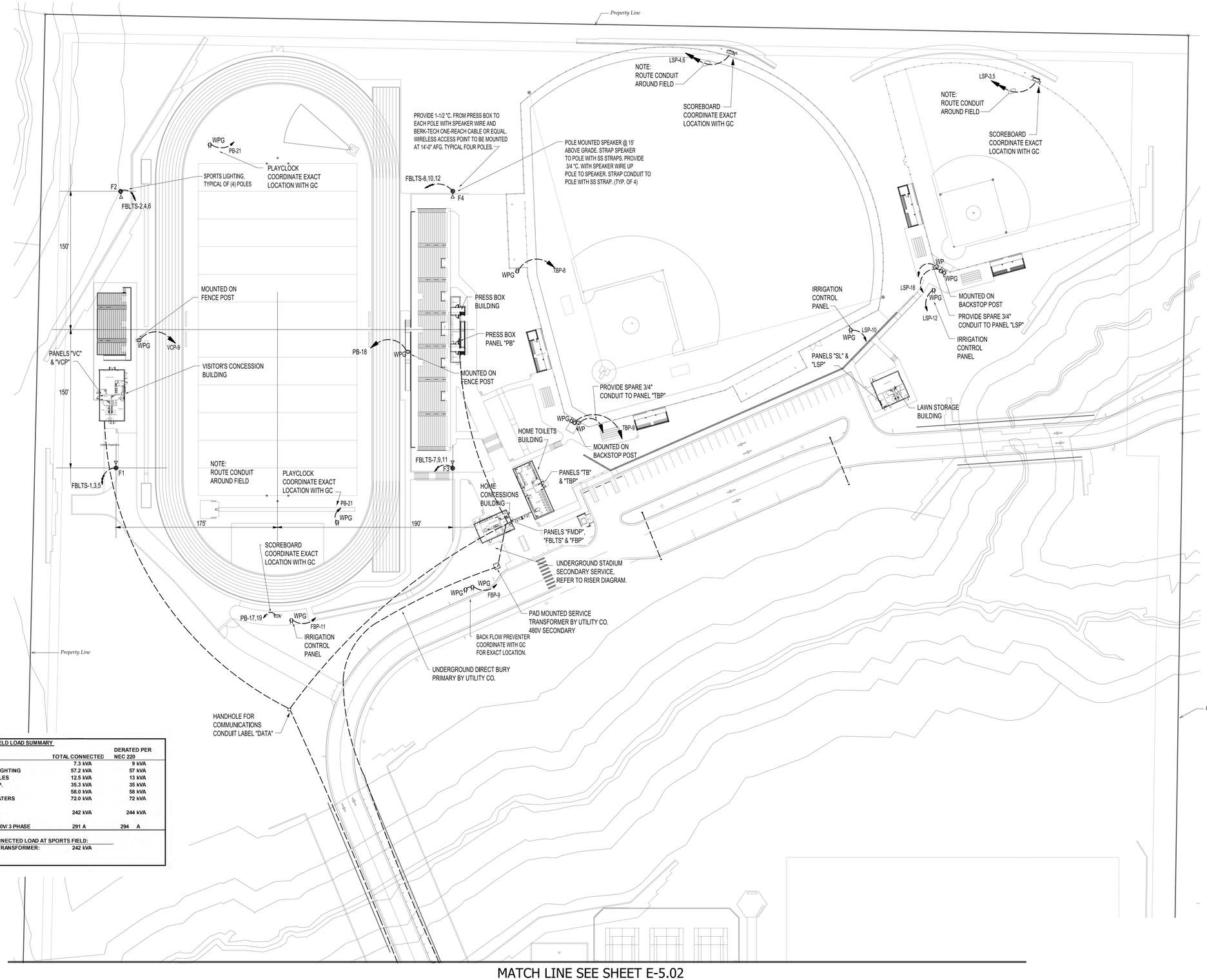
[4/1/2021 2:46:31 PM 12345.000

RATIO

2019-xx-xx

1" = 30'-0"

EXTERIOR ELEVATIONS **Felton Grove High School**



SPORTS FIELD LOAD SUMMARY

	TOTAL CONNECTED	DERATED PER NEC 220
LIGHTING	7.3 kVA	9 kVA
STADIUM LIGHTING	57.2 kVA	57 kVA
RECEPTACLES	12.5 kVA	13 kVA
MISC EQUIP.	35.3 kVA	35 kVA
HVAC	58.0 kVA	58 kVA
WATER HEATERS	72.0 kVA	72 kVA
TOTAL kVA	242 kVA	244 kVA
AMPS AT 480V/ 3 PHASE	291 A	294 A

TOTAL CONNECTED LOAD AT SPORTS FIELD:
TOTAL AT TRANSFORMER: 242 kVA

MATCH LINE SEE SHEET E-5.02

50' 25' 0 50' 100' 150'

SCALE: 1" = 50'

1 / E-04.01 ELECTRICAL SITE PLAN - NORTH

SCALE: 1"= 50'

FOR REFERENCE ONLY NOT FOR CONSTRUCTION

H12/Felton Grove High School

8550 Stephenson Road Apex, NC 27539

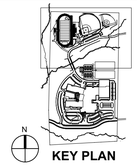
Owner
Wake County Public Schools
111 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531
License # F-0115

Civil Engineer and Landscape Architect
CLH Design PA
400 Regendcy Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716



KEY PLAN

SEAL | DATE

NORTH CAROLINA PROFESSIONAL ENGINEER ROBERT E. CLAY PRELIMINARY

SHEET ISSUE

1	Town of Apex Major Site Plan Submittal	12/01/20
2	Town of Apex Major Site Plan Submittal #2	2/12/21
3	Town of Apex Major Site Plan Submittal #3	3/05/21
4	Town of Apex Major Site Plan Submittal #4	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 3153-W

SHEET TITLE

ELECTRICAL SITE PLAN - NORTH

SHEET NUMBER

E-05.01

MATCH LINE SEE SHEET E-05.01

ELECTRICAL LOAD SUMMARY	TOTAL CONNECTED	DERATED PER NEC 220
LIGHTING	310 kVA	388 kVA
STAGE LIGHTING	180 kVA	144 kVA
RECEPTACLES	681 kVA	346 kVA
MISC. POWER	192 kVA	192 kVA
MECHANICAL EQUIP.	1165 kVA	850 kVA
KITCHEN EQUIP.	36 kVA	36 kVA
ELEVATORS	153 kVA	153 kVA
TOTAL kVA	2717 kVA	2108 kVA
AMPS AT 480V/ 3 PHASE	3268 A	2536 A
TOTAL CONNECTED LOAD AT SERVICE TRANSFORMER:		
CHILLER	832 kVA	832
BUILDING	2717 kVA	2108
TOTAL AT TRANSFORMER:	3549 kVA	2940 kVA

GENERATOR LOAD SUMMARY	TOTAL CONNECTED	DERATED PER NEC 220
LIGHTING	45 kVA	56 kVA
STAGE LIGHTING	0 kVA	0 kVA
RECEPTACLES	4 kVA	4 kVA
MECHANICAL EQUIP.	0 kVA	0 kVA
KITCHEN EQUIP.	14 kVA	11 kVA
ELEVATOR	0 kVA	0 kVA
TOTAL kVA	63 kVA	71 kVA
AMPS AT 480V/ 3 PHASE	76 A	86 A
TOTAL CONNECTED LOAD AT GENERATOR:		
CHILLER	0 kVA	
BUILDING	63 kVA	
TOTAL AT GENERATOR:	63 kVA	

PRIMARY BY UTILITY CO.

TWO 2" CONDUITS TO STADIUM

3"C SLEEVES FOR SITE LIGHTING BY UTILITY COMPANY. COORDINATE WITH UTILITY COMPANY FOR EXACT SLEEVE LOCATIONS.

HANDHOLE FOR COMMUNICATIONS CONDUIT LABEL "DATA"

PROVIDE ONE 2"C. FOR COMMUNICATIONS

UNDERGROUND DIRECT BURY PRIMARY BY UTILITY CO.

TWO 2" CONDUITS TO STADIUM

Property Line

3"C SLEEVES FOR BY UTILITY COMPA WITH UTILITY COM SLEEVE LOCATION

3"C SLEEVES FOR SITE LIGHTING BY UTILITY COMPANY. COORDINATE WITH UTILITY COMPANY FOR EXACT SLEEVE LOCATIONS.

PROVIDE ONE 2"C. FOR COMMUNICATIONS

HANDHOLE FOR COMMUNICATIONS CONDUIT, LABEL "DATA"

MDF RM

MAIN ELEC RM

UNDERGROUND SECONDARY SERVICES, REFER TO RISER DIAGRAM.

STAND-BY GENERATOR PHP-1.3.5

FOR PIV

PAD MOUNTED SERVICE TRANSFORMER BY UTILITY CO. 480V SECONDARY

BACK FLOW PREVENTER COORDINATE WITH GC FOR EXACT LOCATION.

UNDERGROUND DIRECT BURY PRIMARY BY UTILITY CO.

3"C SLEEVES FOR SITE LIGHTING BY UTILITY COMPANY. COORDINATE WITH UTILITY COMPANY FOR EXACT SLEEVE LOCATIONS.

3"C SLEEVES FOR SITE LIGHTING BY UTILITY COMPANY. COORDINATE WITH UTILITY COMPANY FOR EXACT SLEEVE LOCATIONS.

HANDHOLES FOR COMMUNICATIONS CONNECTIONS ONE 4" CONDUIT FOR FUTURE DATA CONNECTION. LABEL "FUTURE" & PROVIDE PULL STRING. TWO 4" CONDUITS FOR TELEPHONE SERVICE. LABEL "TELEPHONE" ONE 2" CONDUIT FOR CATV SERVICE. LABEL "CATV"

50' 25' 0 50' 100' 150'

SCALE: 1" = 50'

1 E-05.02 ELECTRICAL SITE PLAN - SOUTH

SCALE: 1"= 50'

FOR REFERENCE ONLY NOT FOR CONSTRUCTION

H12/Felton Grove High School

8550 Stephenson Road Apex, NC 27539

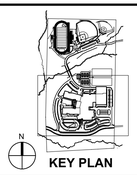
Owner
Wake County Public Schools
111 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531
License # F-0115

Civil Engineer and Landscape Architect
CLH Design PA
400 Regendcy Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716



KEY PLAN

SEAL | DATE

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 042847 BRENT E. EGAN PRELIMINARY

SHEET ISSUE

1	Town of Apex Major Site Plan Submittal	12/01/20
2	Town of Apex Major Site Plan Submittal #2	2/12/21
3	Town of Apex Major Site Plan Submittal #3	3/05/21
4	Town of Apex Major Site Plan Submittal #4	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

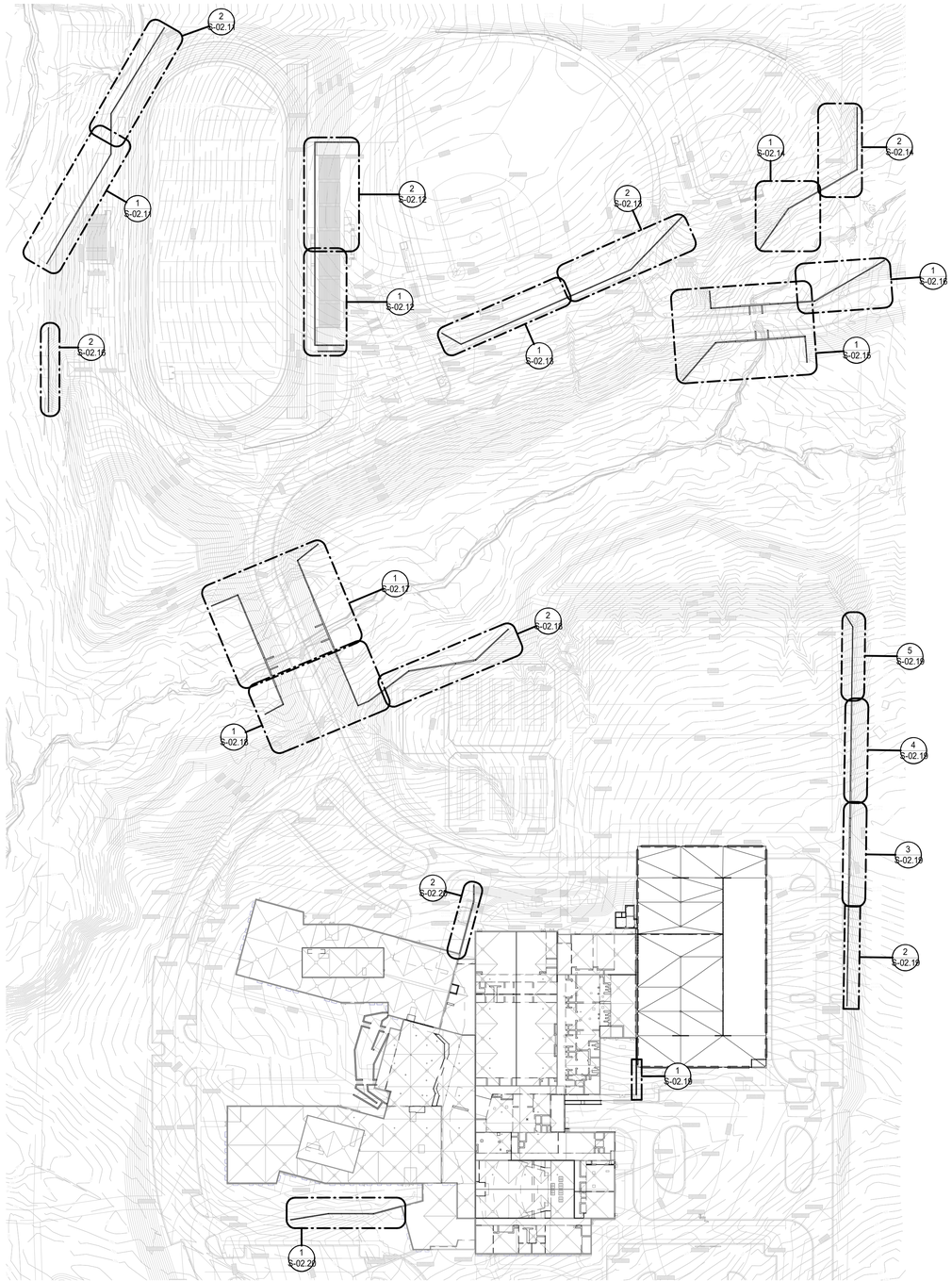
PROJECT NO. 3153-W

SHEET TITLE

ELECTRICAL SITE PLAN - SOUTH

SHEET NUMBER

E-05.02



1 S-02.10 FIRST FLOOR SLAB & FRAMING PLAN
1" = 100'-0"

NOT FOR CONSTRUCTION

3/25/2021 12:48:07 PM

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
111 Corning Road, Ste 190
Cary, NC 27518
919-588-3602

Architect & Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer & Landscape Architect
CLH Design PA
400 Regency Forest Drive, Suite 120
Cary, NC 27518
(919) 319-6716

SEAL | DATE 03/26/21

SHEET ISSUE

1	60% Construction Documents	3/26/21
2	TOA Major Site Plan Submittal #1	12/01/20
3	TOA Major Site Plan Submittal #2	02/12/21
4	TOA Major Site Plan Submittal #3	03/05/21
5	TOA Major Site Plan Submittal #4	03/26/21

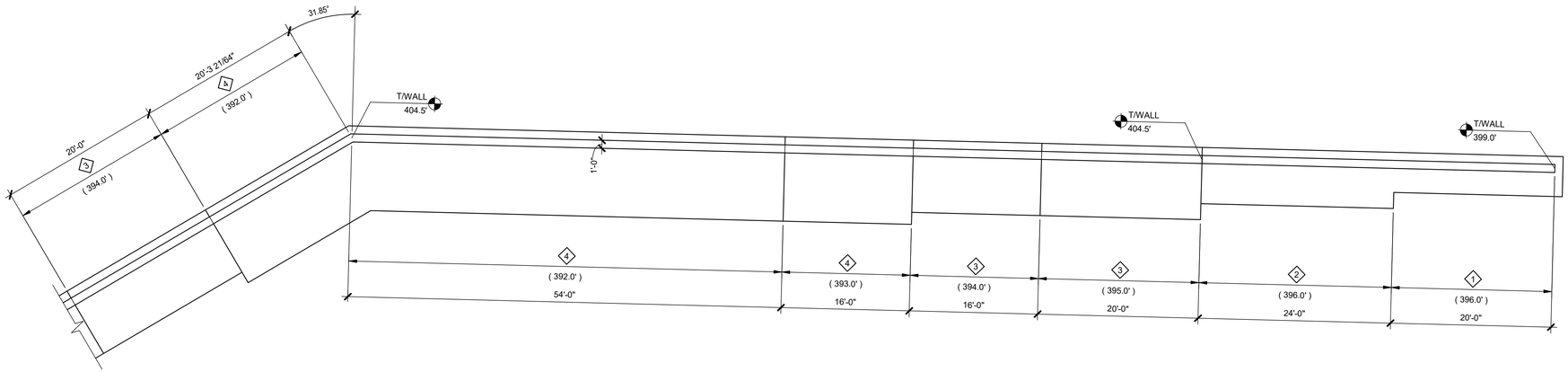
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

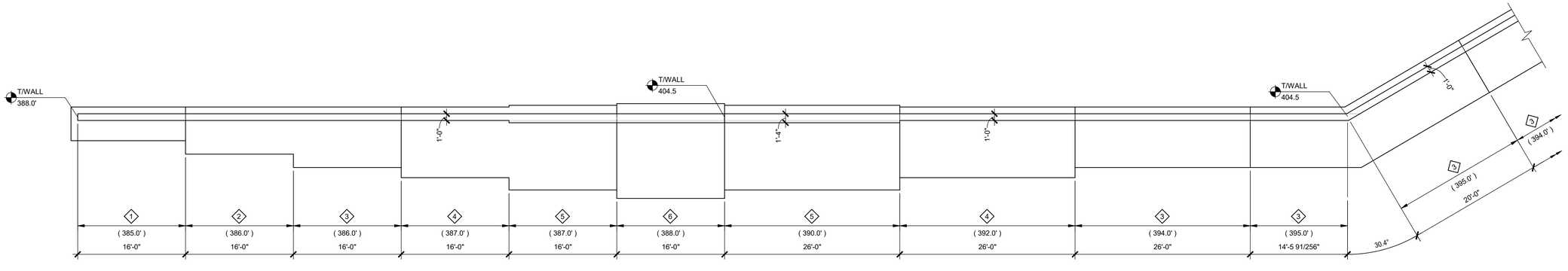
SHEET TITLE
SITE WALL OVERALL PLAN

SHEET NUMBER
S-02.10



2 S-02.11 RETAINING WALL #1 - FDN PLAN

1/8" = 1'-0"



1 S-02.11 RETAINING WALL #1 - FDN PLAN

1/8" = 1'-0"

3/25/2021 12:48:09 PM

NOT FOR CONSTRUCTION

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
111 Corning Road, Ste 190
Cary, NC 27518
919-588-3602

Architect & Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer & Landscape Architect
CLH Design PA
400 Regency Forest Drive, Suite 120
Cary, NC 27518
(919) 319-6716

SEAL | DATE 03/26/21

SHEET ISSUE

1	60% Construction Documents	3/26/21
2	TOA Major Site Plan Submittal #1	12/01/20
3	TOA Major Site Plan Submittal #2	02/12/21
4	TOA Major Site Plan Submittal #3	03/05/21
5	TOA Major Site Plan Submittal #4	03/26/21

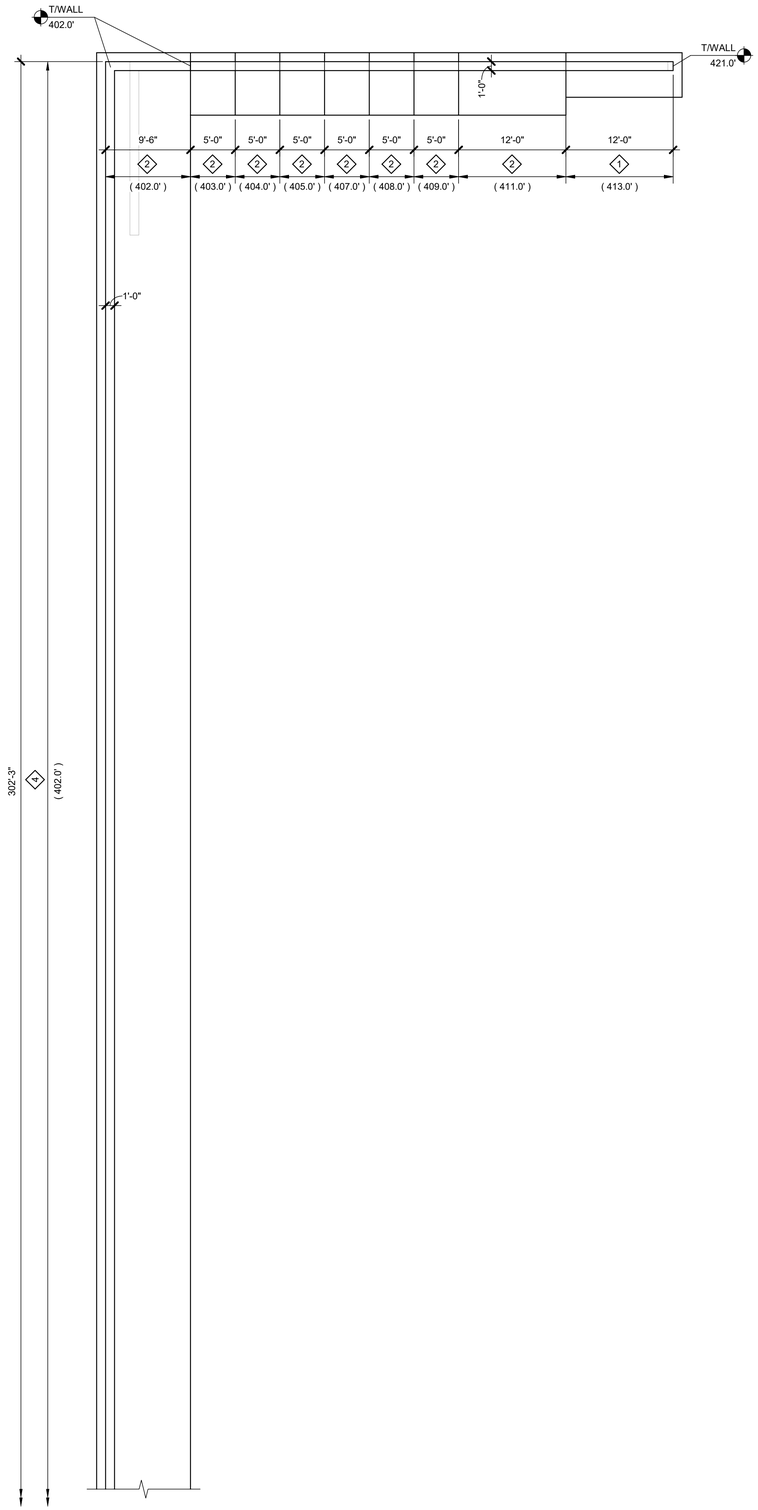
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

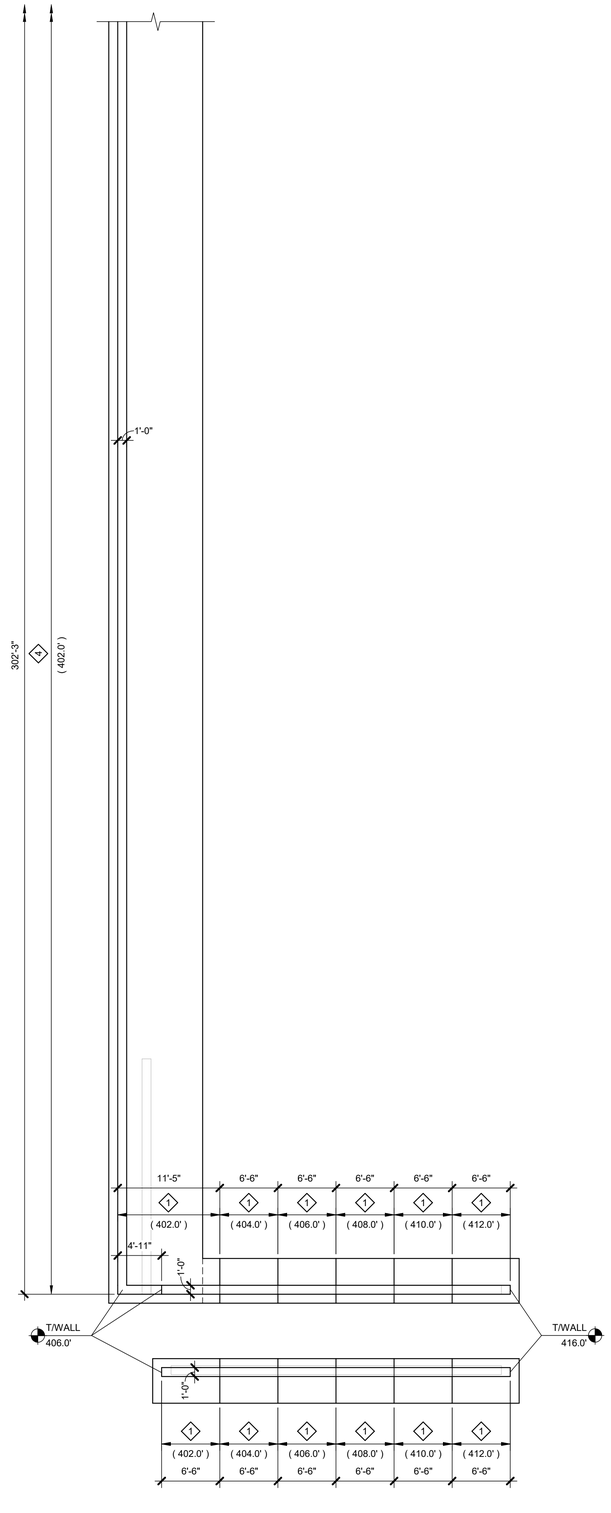
PROJECT NO. 02000.000

SHEET TITLE
SITE WALL PLANS

SHEET NUMBER
S-02.11



2 S-02.12 RETAINING WALL #4 - FDN PLAN
1/8" = 1'-0"



1 S-02.12 RETAINING WALL #3 & #4 - FDN PLAN
1/8" = 1'-0"

NOT FOR CONSTRUCTION

3/25/2021 12:48:12 PM

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
111 Corning Road, Ste 190
Cary, NC 27518
919-588-3602

Architect & Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer & Landscape Architect
CLH Design PA
400 Regency Forest Drive, Suite 120
Cary, NC 27518
(919) 319-6716

SEAL | DATE 03/26/21

SHEET ISSUE

1	60% Construction Documents	3/26/21
2	TOA Major Site Plan Submittal #1	12/01/20
3	TOA Major Site Plan Submittal #2	02/12/21
4	TOA Major Site Plan Submittal #3	03/05/21
5	TOA Major Site Plan Submittal #4	03/26/21

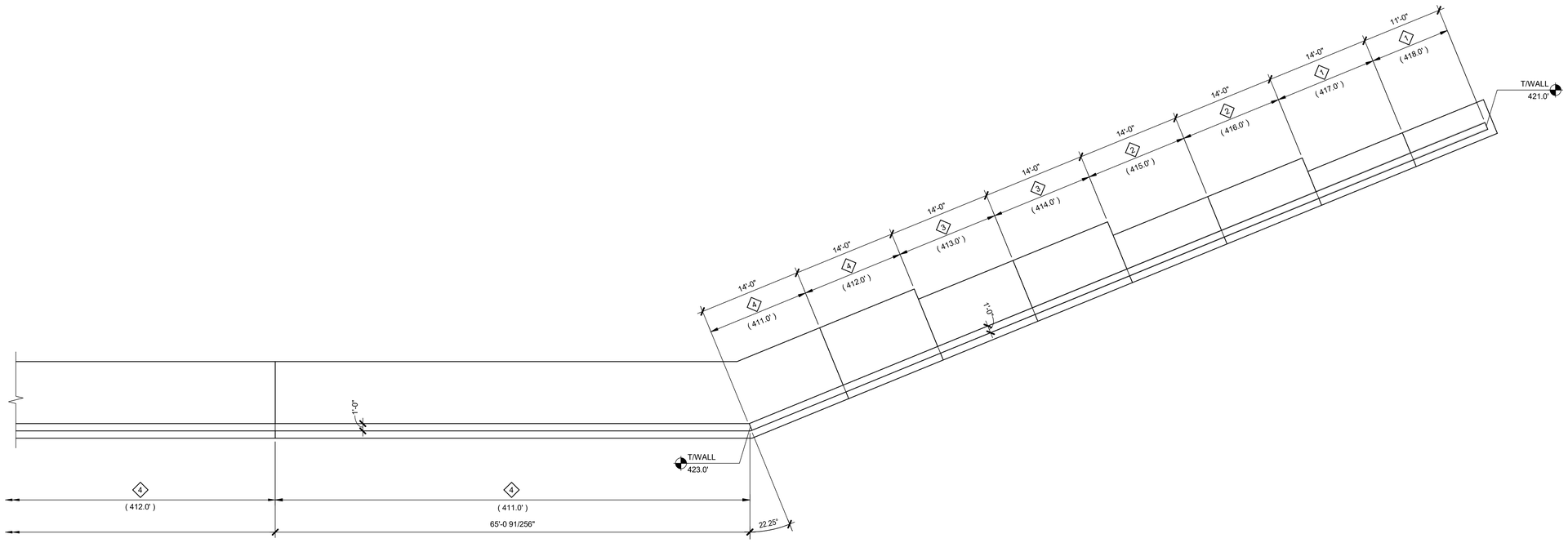
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

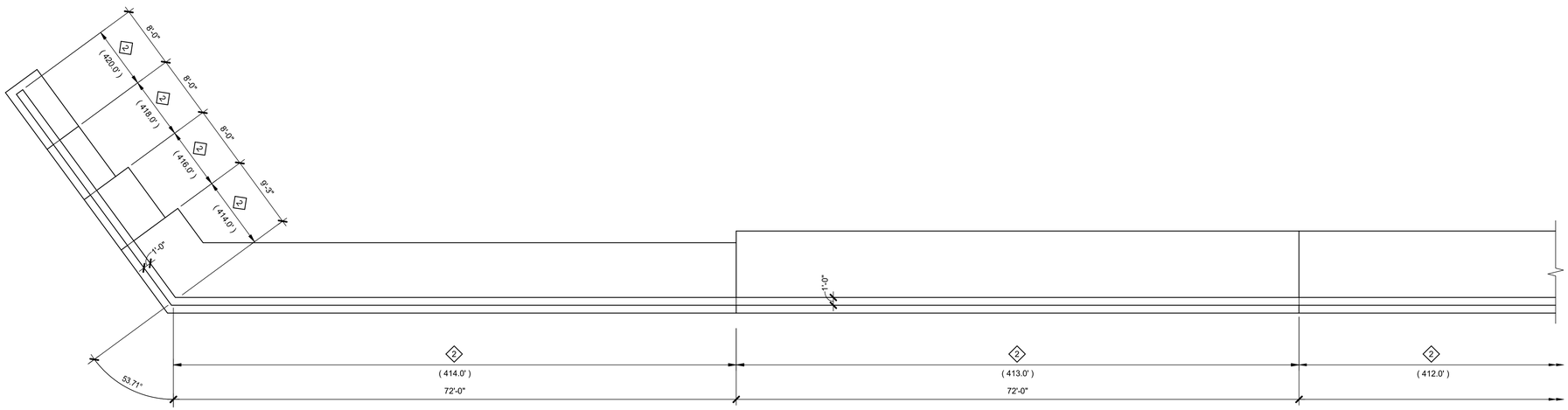
SHEET TITLE
SITE WALL PLANS

SHEET NUMBER
S-02.12



2 S-02.13 RETAINING WALL #5 - FDN PLAN

1/8" = 1'-0"



1 S-02.13 RETAINING WALL #5 - FDN PLAN

1/8" = 1'-0"

3/25/2021 12:48:15 PM

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner

Wake County Public Schools
111 Corning Road, Ste 190
Cary, NC 27518
919-588-3602

Architect & Landscape Architect

RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer

LHC Structural Engineers
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical Engineer

The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer & Landscape Architect

CLH Design PA
400 Regency Forest Drive, Suite 120
Cary, NC 27518
(919) 319-6716

SEAL | DATE 03/26/21

SHEET ISSUE

1	60% Construction Documents	3/26/21
2	TOA Major Site Plan Submittal #1	12/01/20
3	TOA Major Site Plan Submittal #2	02/12/21
4	TOA Major Site Plan Submittal #3	03/05/21
5	TOA Major Site Plan Submittal #4	03/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

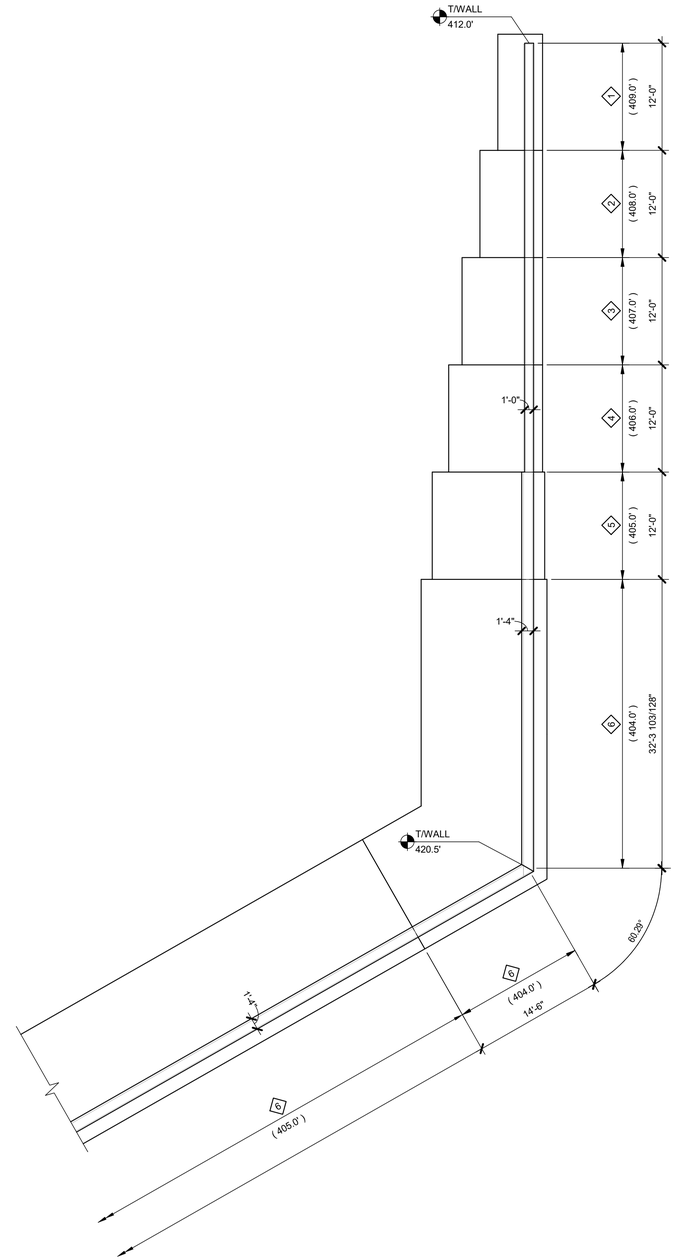
SHEET TITLE

SITE WALL PLANS

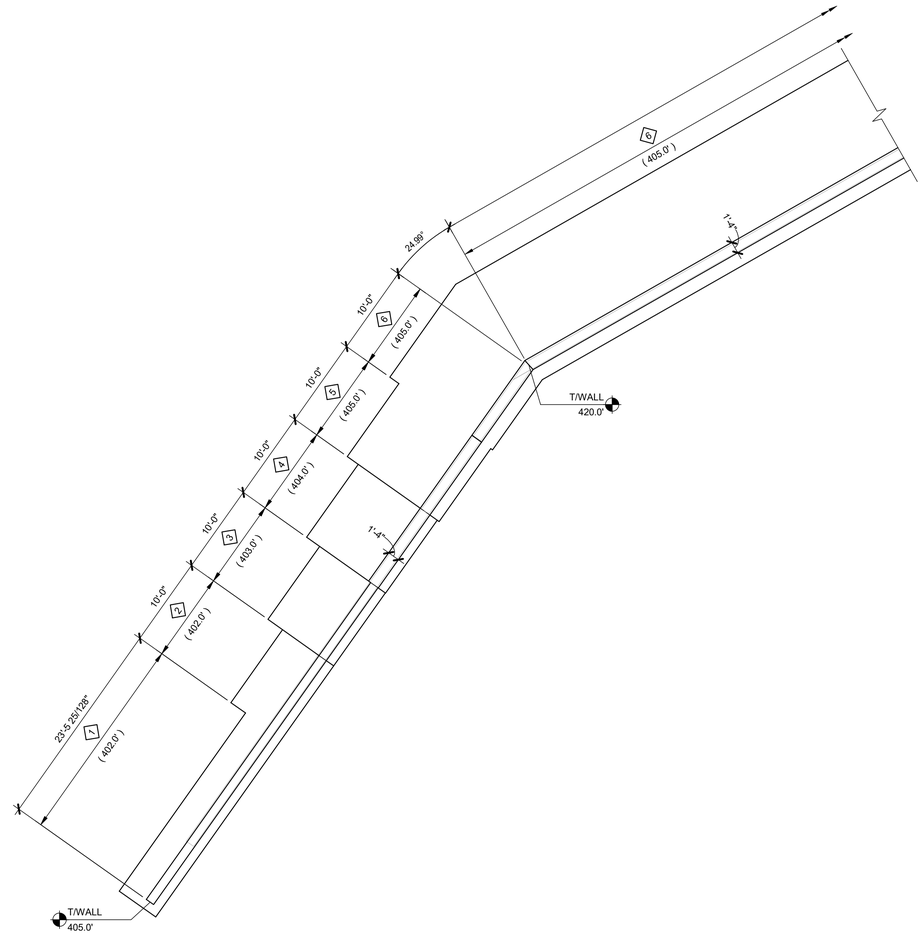
SHEET NUMBER

S-02.13

NOT FOR CONSTRUCTION



2 RETAINING WALL #8 - FDN PLAN
S-02.14 1/8" = 1'-0"



1 RETAINING WALL #8 - FDN PLAN
S-02.14 1/8" = 1'-0"

NOT FOR CONSTRUCTION

3/25/2021 12:48:17 PM

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
111 Corning Road, Ste 190
Cary, NC 27518
919-588-3602

Architect & Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer & Landscape Architect
CLH Design PA
400 Regency Forest Drive, Suite 120
Cary, NC 27518
(919) 319-6716

SEAL | DATE 03/26/21

SHEET ISSUE

1	60% Construction Documents	3/26/21
2	TOA Major Site Plan Submittal #1	12/01/20
3	TOA Major Site Plan Submittal #2	02/12/21
4	TOA Major Site Plan Submittal #3	03/05/21
5	TOA Major Site Plan Submittal #4	03/26/21

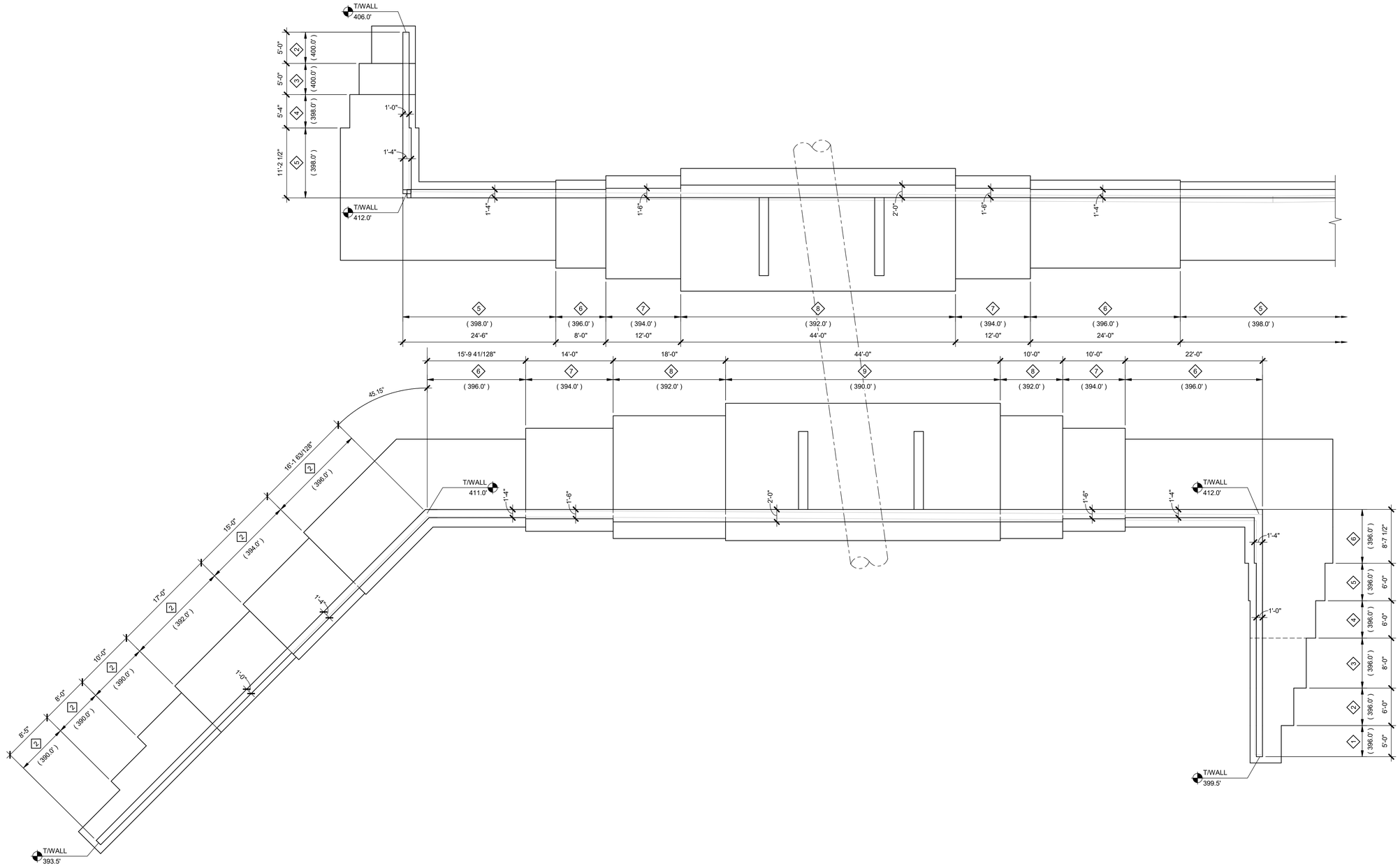
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

SHEET TITLE
SITE WALL PLANS

SHEET NUMBER
S-02.14



1 S-02.15 RETAINING WALL #9 & #11 - FDN PLAN

1/8" = 1'-0"

NOT FOR CONSTRUCTION

3/25/2021 12:48:20 PM

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
111 Corning Road, Ste 190
Cary, NC 27518
919-588-3602

Architect & Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer & Landscape Architect
CLH Design PA
400 Regency Forest Drive, Suite 120
Cary, NC 27518
(919) 319-6716

SEAL | DATE 03/26/21

SHEET ISSUE

1	60% Construction Documents	3/26/21
2	TOA Major Site Plan Submittal #1	12/01/20
3	TOA Major Site Plan Submittal #2	02/12/21
4	TOA Major Site Plan Submittal #3	03/05/21
5	TOA Major Site Plan Submittal #4	03/26/21

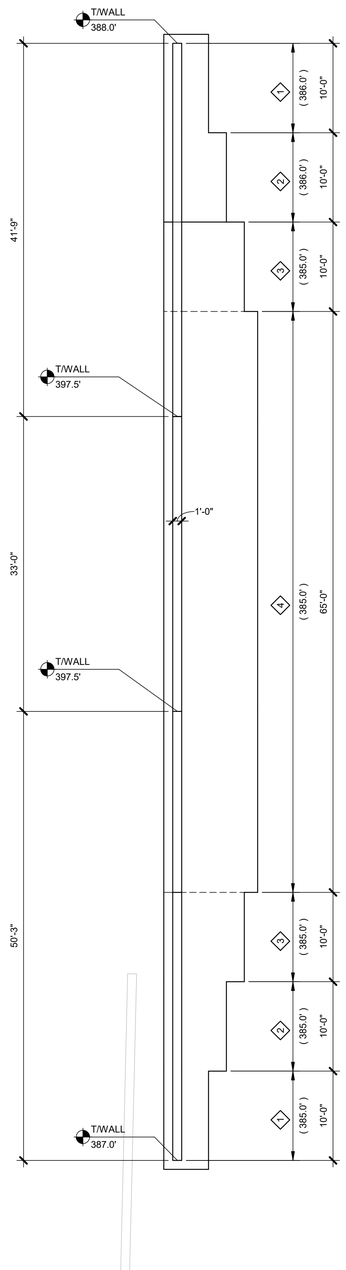
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

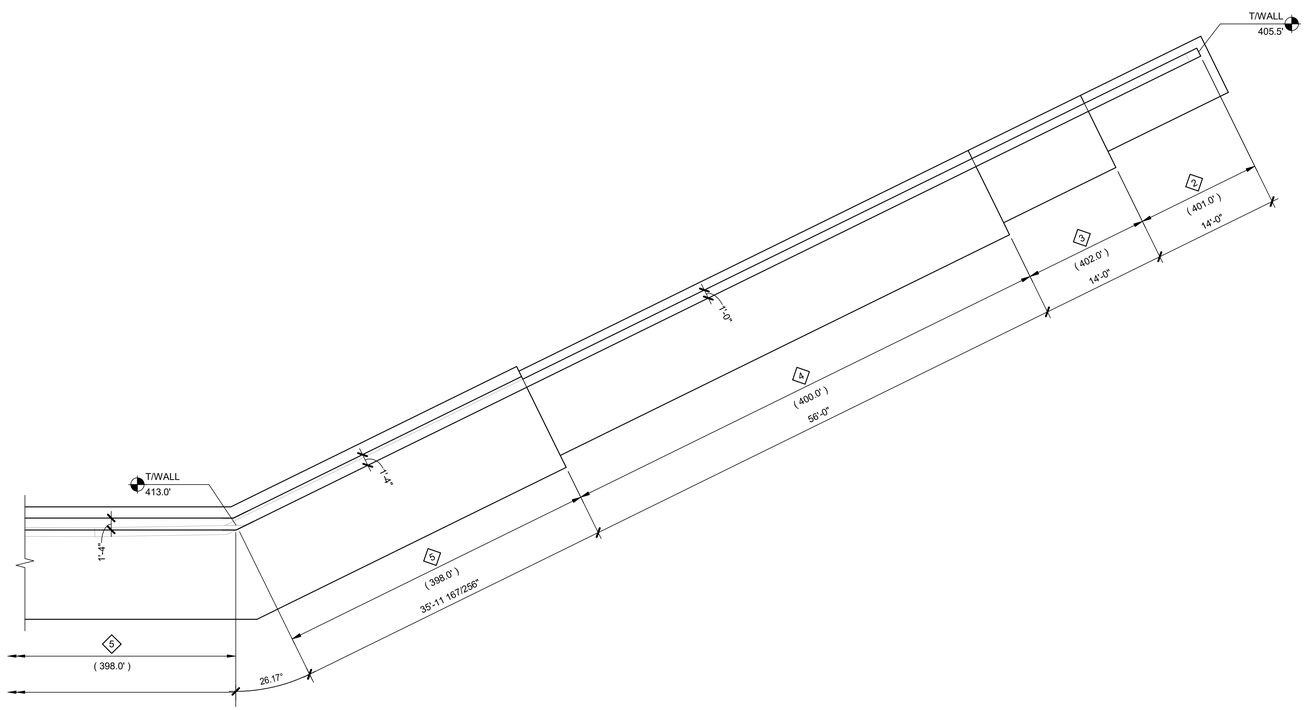
PROJECT NO. 02000.000

SHEET TITLE
SITE WALL PLANS

SHEET NUMBER
S-02.15



2 RETAINING WALL #10 - FDN PLAN
S-02.16 1/8" = 1'-0"



1 RETAINING WALL #9 - FDN PLAN
S-02.16 1/8" = 1'-0"

NOT FOR CONSTRUCTION

3/25/2021 12:48:22 PM

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
111 Corning Road, Ste 190
Cary, NC 27518
919-588-3602

Architect & Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer & Landscape Architect
CLH Design PA
400 Regency Forest Drive, Suite 120
Cary, NC 27518
(919) 319-6716

SEAL | DATE 03/26/21

SHEET ISSUE

1	60% Construction Documents	3/26/21
2	TOA Major Site Plan Submittal #1	12/01/20
3	TOA Major Site Plan Submittal #2	02/12/21
4	TOA Major Site Plan Submittal #3	03/05/21
5	TOA Major Site Plan Submittal #4	03/26/21

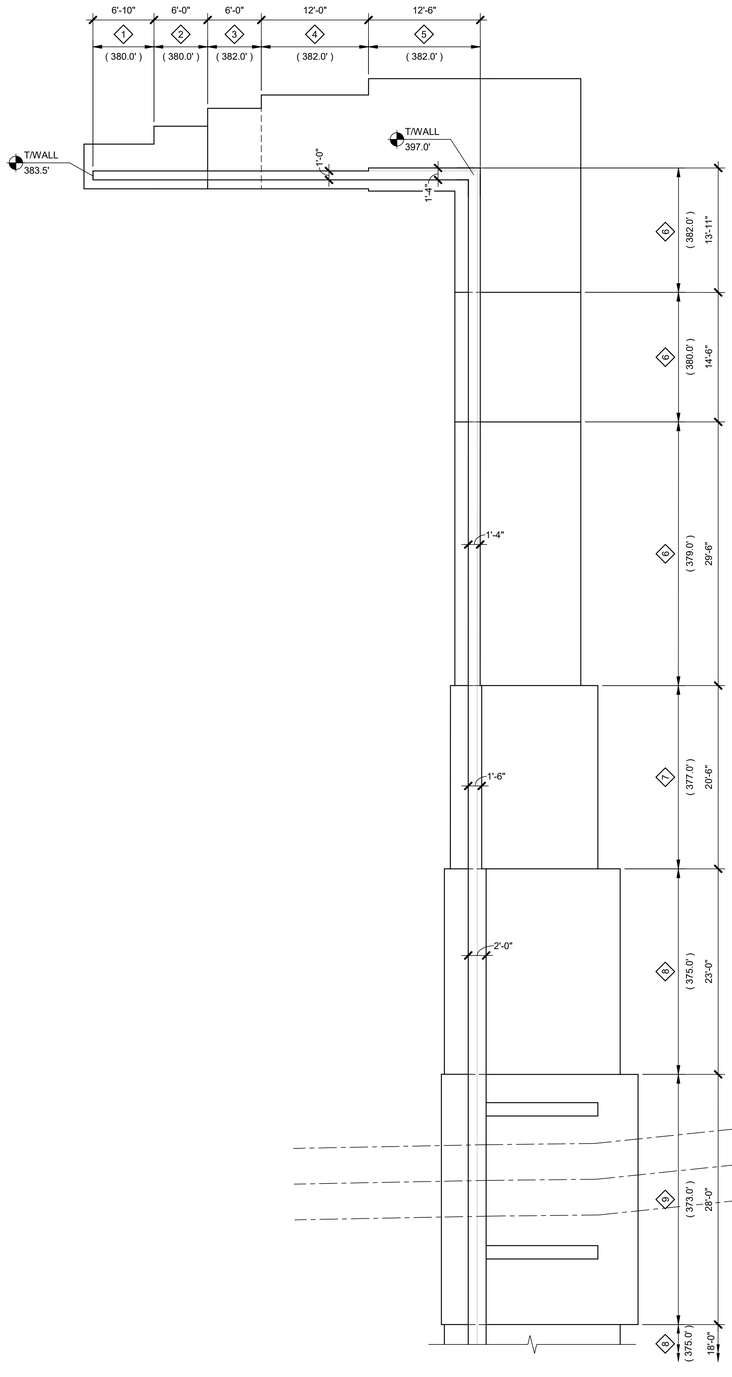
RATIO

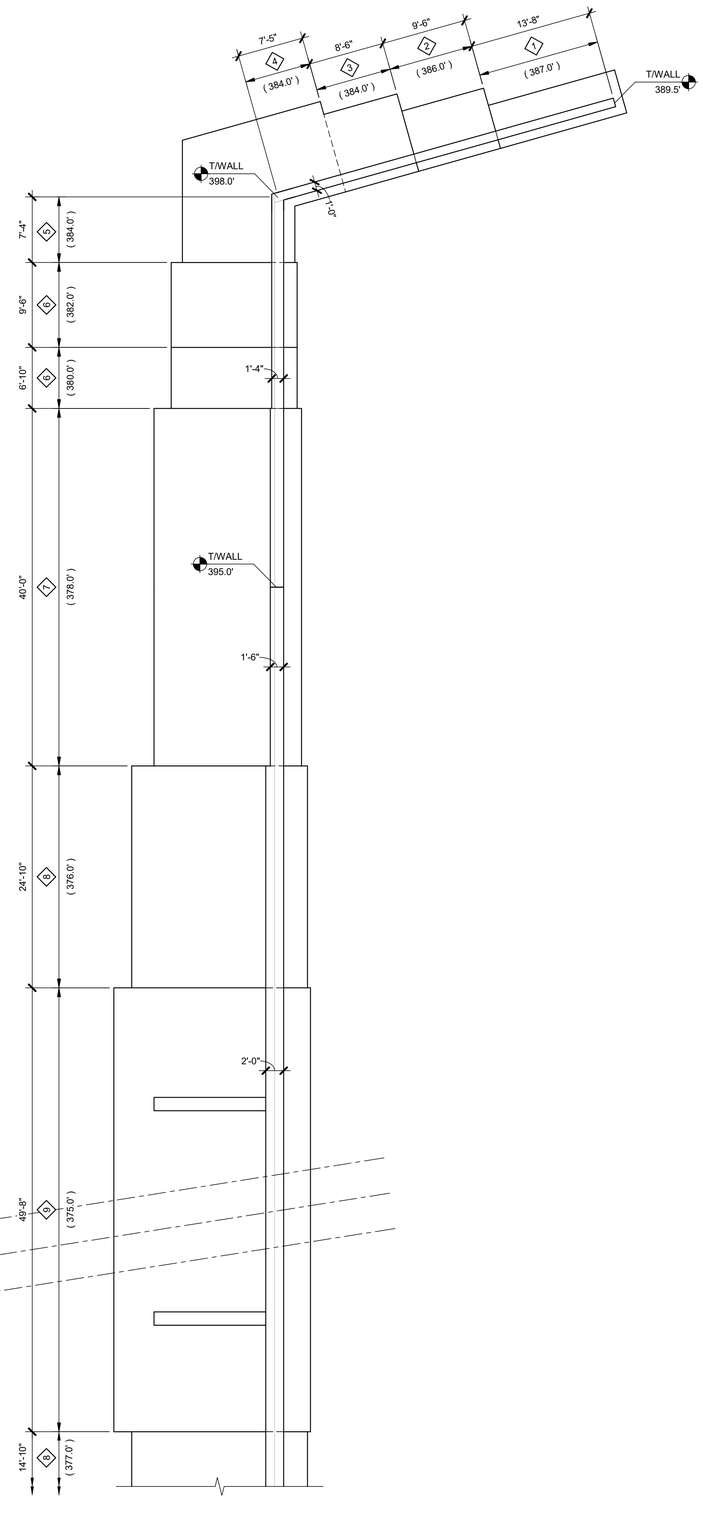
COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

SHEET TITLE
SITE WALL PLANS

SHEET NUMBER
S-02.16





1 S-02.17 RETAINING WALL #12 & #13 - FDN PLAN

1/8" = 1'-0"

NOT FOR CONSTRUCTION

3/25/2021 12:48:25 PM

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
111 Corning Road, Ste 190
Cary, NC 27518
919-588-3602

Architect & Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer & Landscape Architect
CLH Design PA
400 Regency Forest Drive, Suite 120
Cary, NC 27518
(919) 319-6716

SEAL | DATE 03/26/21

SHEET ISSUE

1	60% Construction Documents	3/26/21
2	TOA Major Site Plan Submittal #1	12/01/20
3	TOA Major Site Plan Submittal #2	02/12/21
4	TOA Major Site Plan Submittal #3	03/05/21
5	TOA Major Site Plan Submittal #4	03/26/21

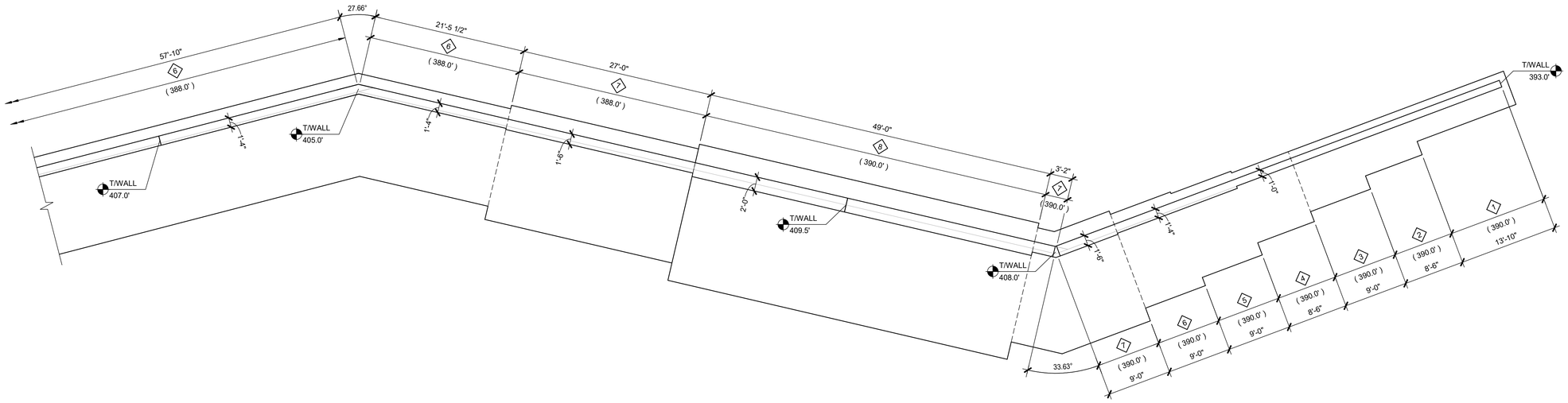
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

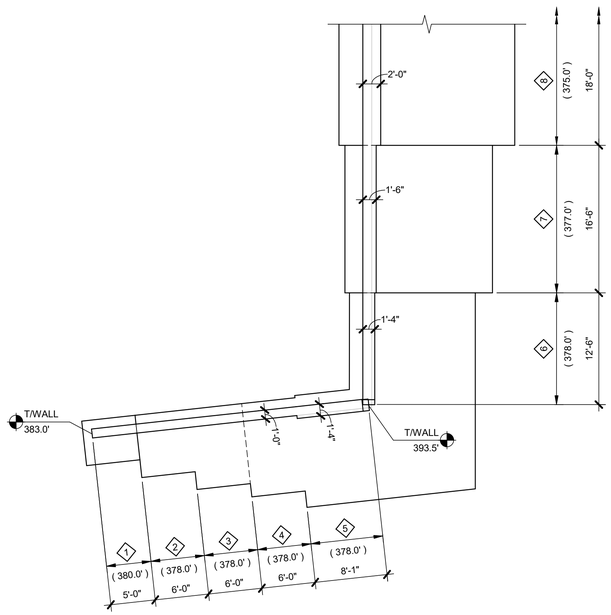
SHEET TITLE
SITE WALL PLANS

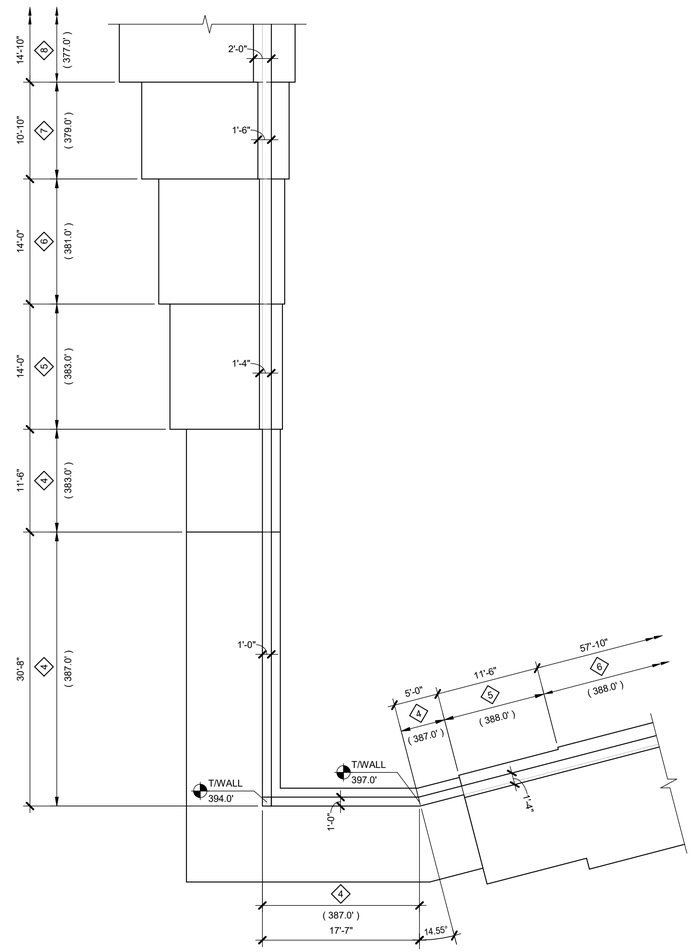
SHEET NUMBER
S-02.17



2 S-02.18 RETAINING WALL #12 - FDN PLAN

1/8" = 1'-0"





1 S-02.18 RETAINING WALL #12 & #13 - FDN PLAN

1/8" = 1'-0"

NOT FOR CONSTRUCTION

3/25/2021 12:48:28 PM

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
111 Corning Road, Ste 190
Cary, NC 27518
919-588-3602

Architect & Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer & Landscape Architect
CLH Design PA
400 Regency Forest Drive, Suite 120
Cary, NC 27518
(919) 319-6716

SEAL | DATE 03/26/21

SHEET ISSUE

1	60% Construction Documents	3/26/21
2	TOA Major Site Plan Submittal #1	12/01/20
3	TOA Major Site Plan Submittal #2	02/12/21
4	TOA Major Site Plan Submittal #3	03/05/21
5	TOA Major Site Plan Submittal #4	03/26/21

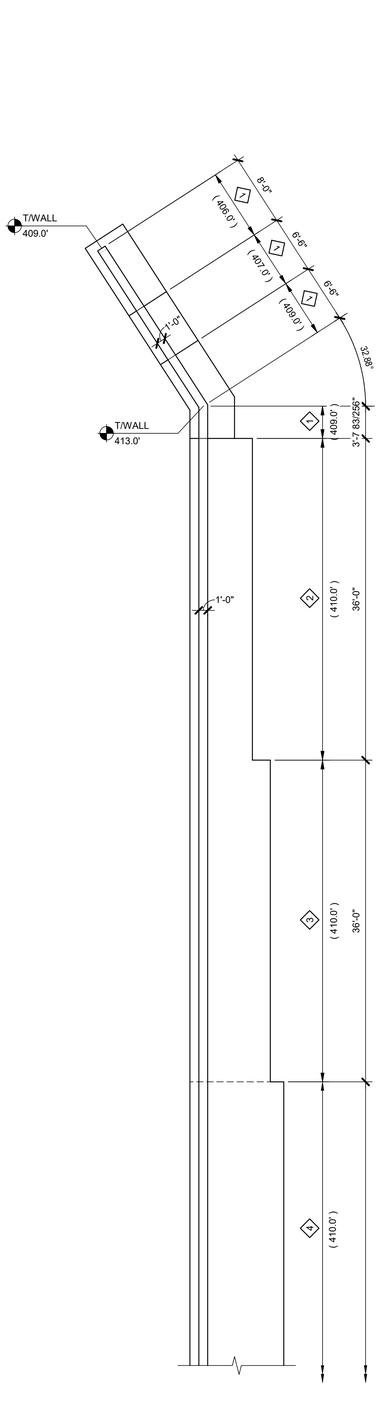
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

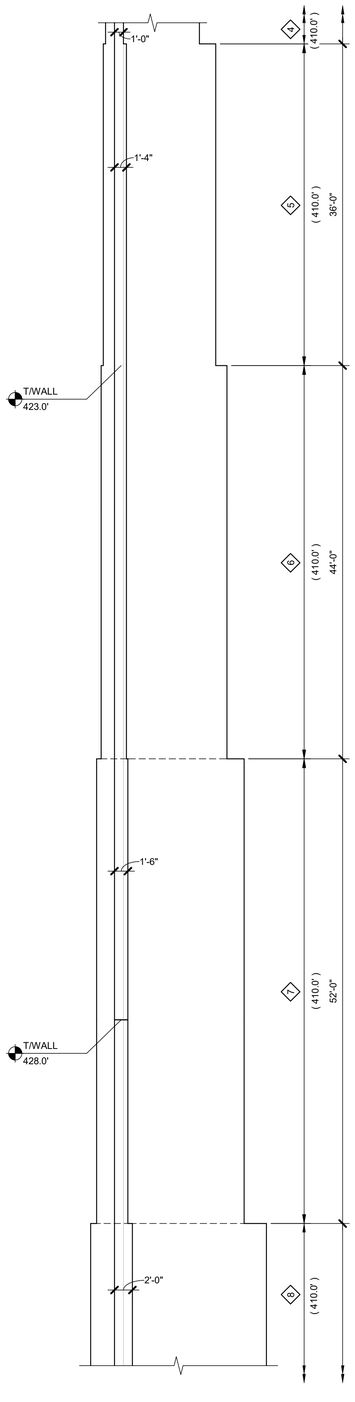
PROJECT NO. 02000.000

SHEET TITLE
SITE WALL PLANS

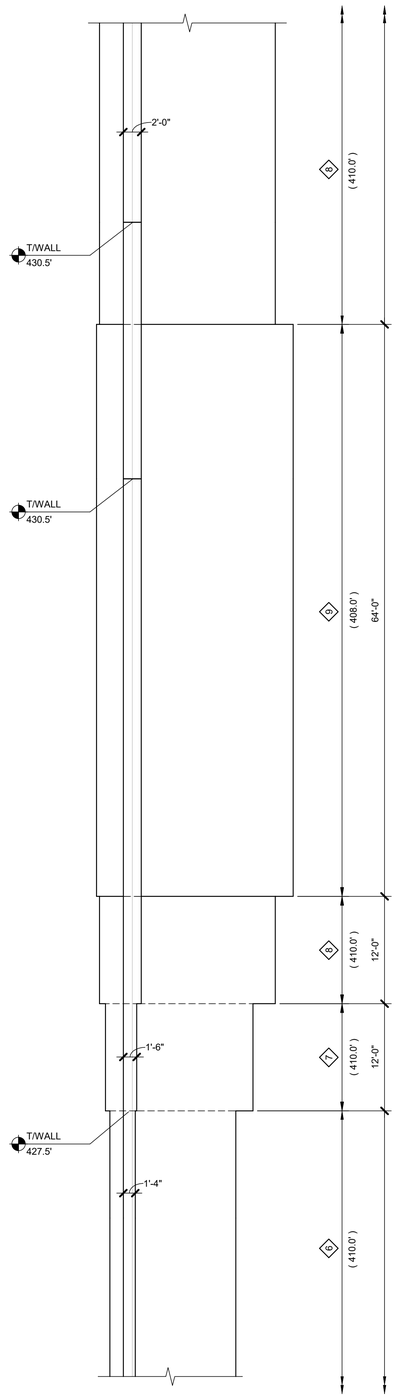
SHEET NUMBER
S-02.18



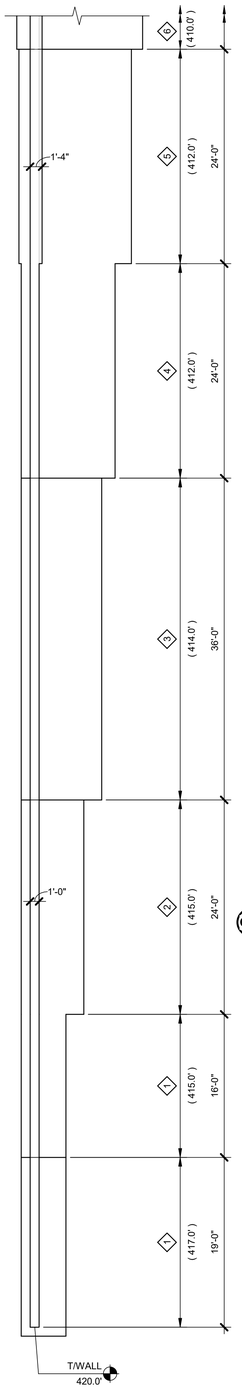
5 RETAINING WALL #15 - FDN PLAN
S-02.19 1/8" = 1'-0"



4 RETAINING WALL #15 - FDN PLAN
S-02.19 1/8" = 1'-0"



3 RETAINING WALL #15 - FDN PLAN
S-02.19 1/8" = 1'-0"



2 RETAINING WALL #15 - FDN PLAN
S-02.19 1/8" = 1'-0"

1 RETAINING WALL #14 - FDN PLAN
S-02.19 1/8" = 1'-0"

3/25/2021 12:48:34 PM

NOT FOR CONSTRUCTION

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
111 Corning Road, Ste 190
Cary, NC 27518
919-588-3602

Architect & Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer & Landscape Architect
CLH Design PA
400 Regency Forest Drive, Suite 120
Cary, NC 27518
(919) 319-6716

SEAL | DATE 03/26/21

SHEET ISSUE

1	60% Construction Documents	3/26/21
2	TOA Major Site Plan Submittal #1	12/01/20
3	TOA Major Site Plan Submittal #2	02/12/21
4	TOA Major Site Plan Submittal #3	03/05/21
5	TOA Major Site Plan Submittal #4	03/26/21

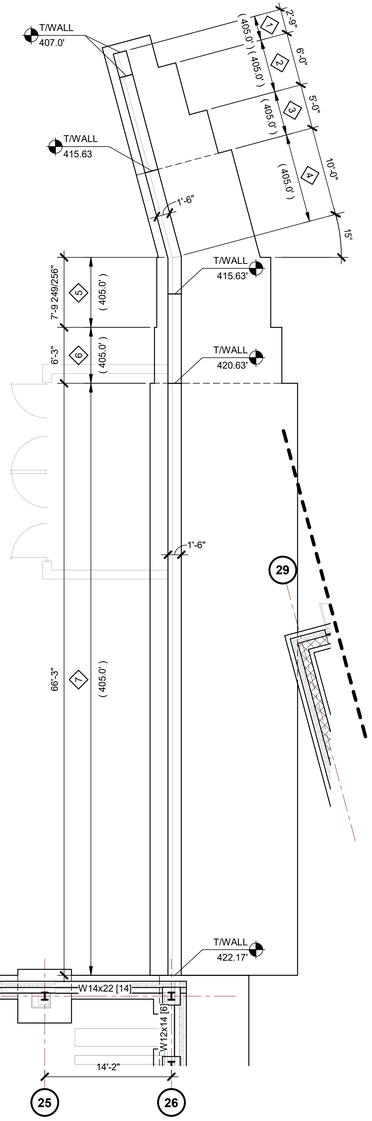
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

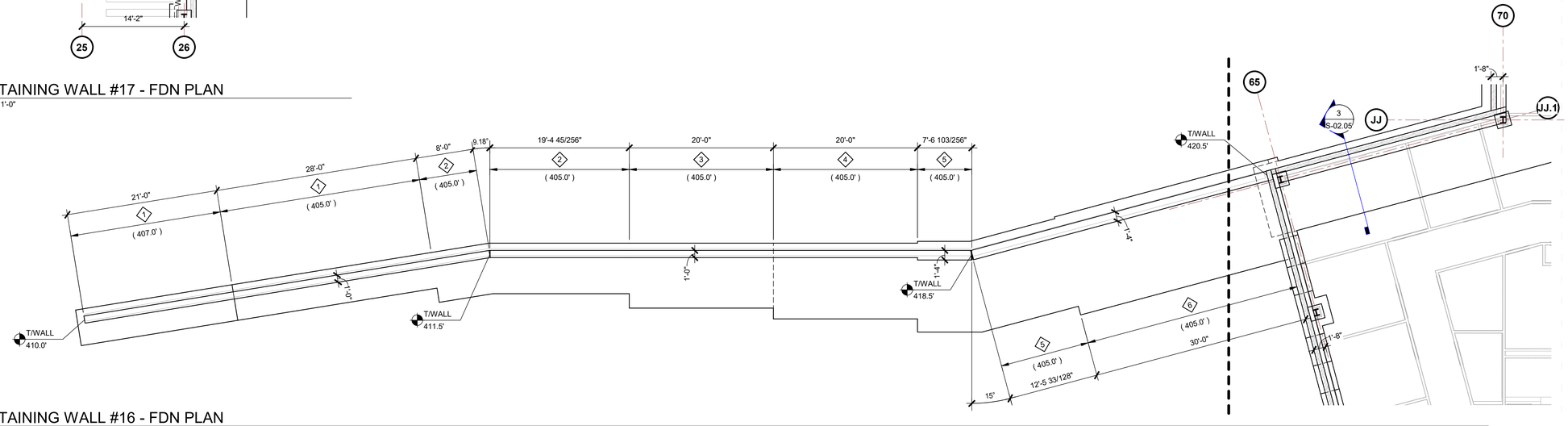
SHEET TITLE
SITE WALL PLANS

SHEET NUMBER
S-02.19



2 S-02.20 RETAINING WALL #17 - FDN PLAN

1/8" = 1'-0"



1 S-02.20 RETAINING WALL #16 - FDN PLAN

1/8" = 1'-0"

NOT FOR CONSTRUCTION

3/25/2021 12:48:38 PM

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner

Wake County Public Schools
111 Corning Road, Ste 190
Cary, NC 27518
919-588-3602

Architect & Landscape Architect

RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer

LHC Structural Engineers
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical Engineer

The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer & Landscape Architect

CLH Design PA
400 Regency Forest Drive, Suite 120
Cary, NC 27518
(919) 319-6716

SEAL | DATE 03/26/21

SHEET ISSUE

1	60% Construction Documents	3/26/21
2	TOA Major Site Plan Submittal #1	12/01/20
3	TOA Major Site Plan Submittal #2	02/12/21
4	TOA Major Site Plan Submittal #3	03/05/21
5	TOA Major Site Plan Submittal #4	03/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

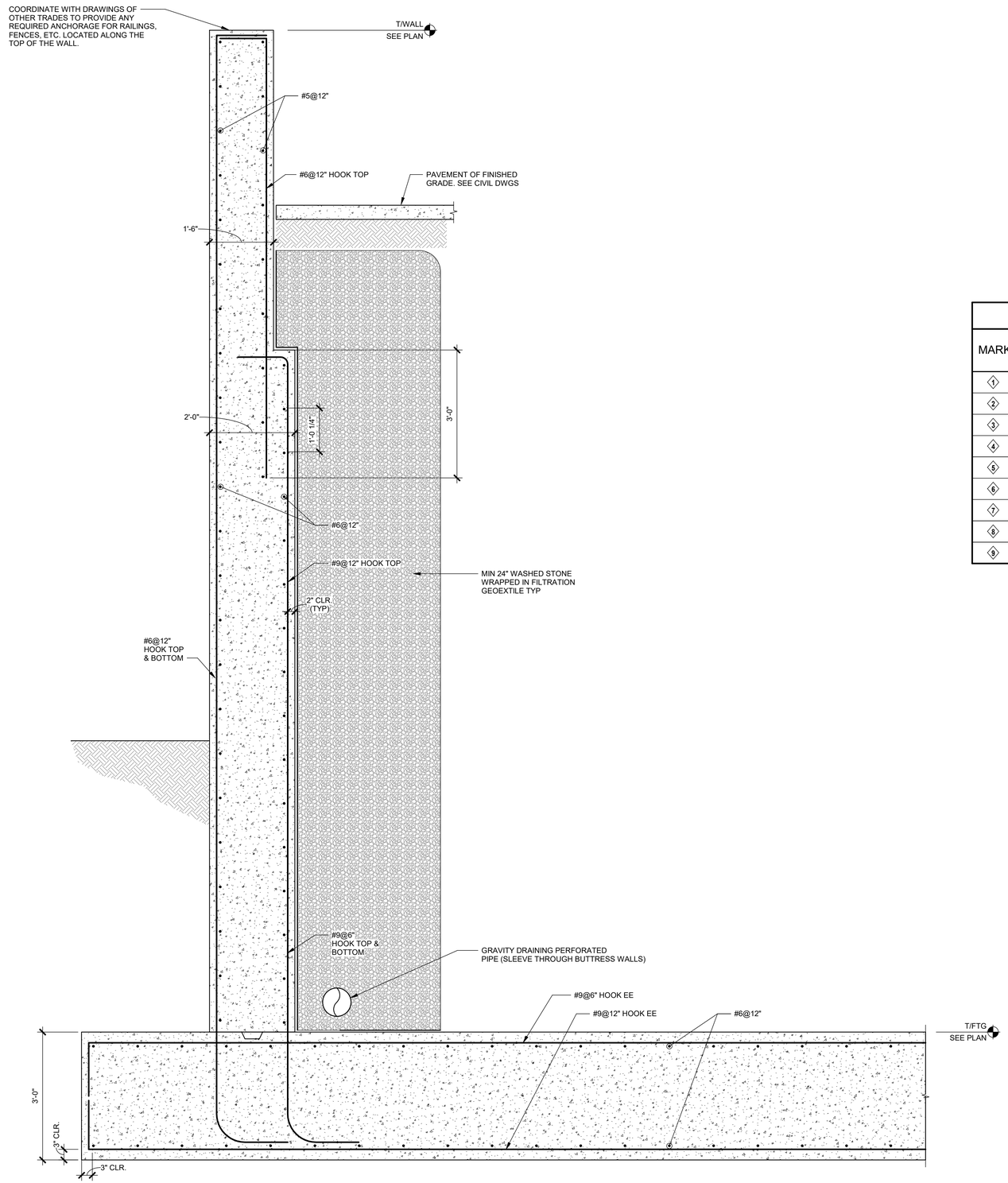
PROJECT NO. 02000.000

SHEET TITLE

SITE WALL PLANS

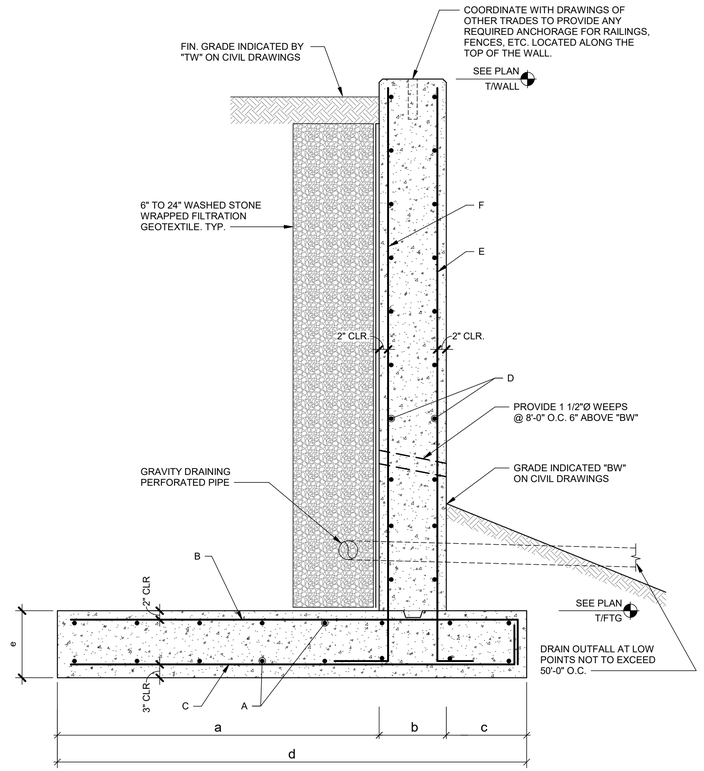
SHEET NUMBER

S-02.20



2 S-02.21 SECTION THRU CULVERT WALL
3/4" = 1'-0"

RETAINING WALL SCHEDULE													
MARK	MAX HEIGHT	DIMENSIONS					REINFORCING						REMARK
		a	b	c	d	e	A	B	C	D	E	F	
1	6'-0"	3'-0"	1'-0"	1'-0"	5'-0"	1'-0"	#4@16"	#4@8"	#4@8"	#4@16"	#4@16"	#4@16"	
2	8'-0"	5'-0"	1'-0"	1'-0"	7'-0"	1'-0"	#4@16"	#4@8"	#4@8"	#4@16"	#4@16"	#4@8"	
3	10'-0"	7'-0"	1'-0"	1'-0"	9'-0"	1'-0"	#4@16"	#5@8"	#4@8"	#4@16"	#4@16"	#5@8"	
4	12'-6"	8'-6"	1'-0"	1'-0"	10'-6"	1'-3"	#5@16"	#6@8"	#5@8"	#4@16"	#4@16"	#6@8"	
5	14'-0"	10'-0"	1'-3"	1'-3"	12'-6"	1'-3"	#5@16"	#7@8"	#5@8"	#4@12"	#4@16"	#7@8"	
6	16'-0"	11'-0"	1'-3"	1'-9"	14'-0"	1'-3"	#5@16"	#7@6"	#6@12"	#4@12"	#4@12"	#7@6"	
7	18'-0"	13'-0"	1'-6"	2'-0"	16'-6"	1'-6"	#5@16"	#7@6"	#6@12"	#5@12"	#4@12"	#7@6"	
8	20'-0"	15'-0"	2'-0"	2'-8"	19'-8"	2'-0"	#6@12"	#8@6"	#7@12"	#6@12"	#5@12"	#8@6"	
9	22'-0"	17'-0"	2'-0"	3'-0"	22'-0"	2'-8"	#6@12"	#9@6"	#8@12"	#6@12"	#5@12"	#9@6"	



1 S-02.21 RETAINING WALL SECTION
3/4" = 1'-0"

NOT FOR CONSTRUCTION

3/25/2021 12:48:41 PM

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
111 Corning Road, Ste 190
Cary, NC 27518
919-588-3602

Architect & Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer & Landscape Architect
CLH Design PA
400 Regency Forest Drive, Suite 120
Cary, NC 27518
(919) 319-6716

SEAL | DATE 03/26/21

SHEET ISSUE

1	60% Construction Documents	3/26/21
2	TOA Major Site Plan Submittal #1	12/01/20
3	TOA Major Site Plan Submittal #2	02/12/21
4	TOA Major Site Plan Submittal #3	03/05/21
5	TOA Major Site Plan Submittal #4	03/26/21

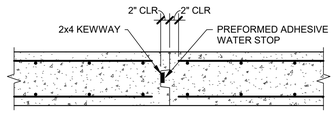
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

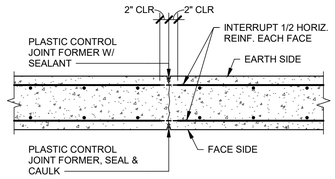
PROJECT NO. 02000.000

SHEET TITLE
SITE WALL DETAILS AND SECTIONS

SHEET NUMBER
S-02.21

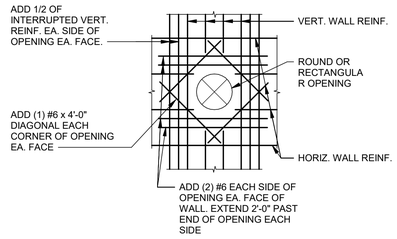


WALL CONSTRUCTION JOINT DETAIL

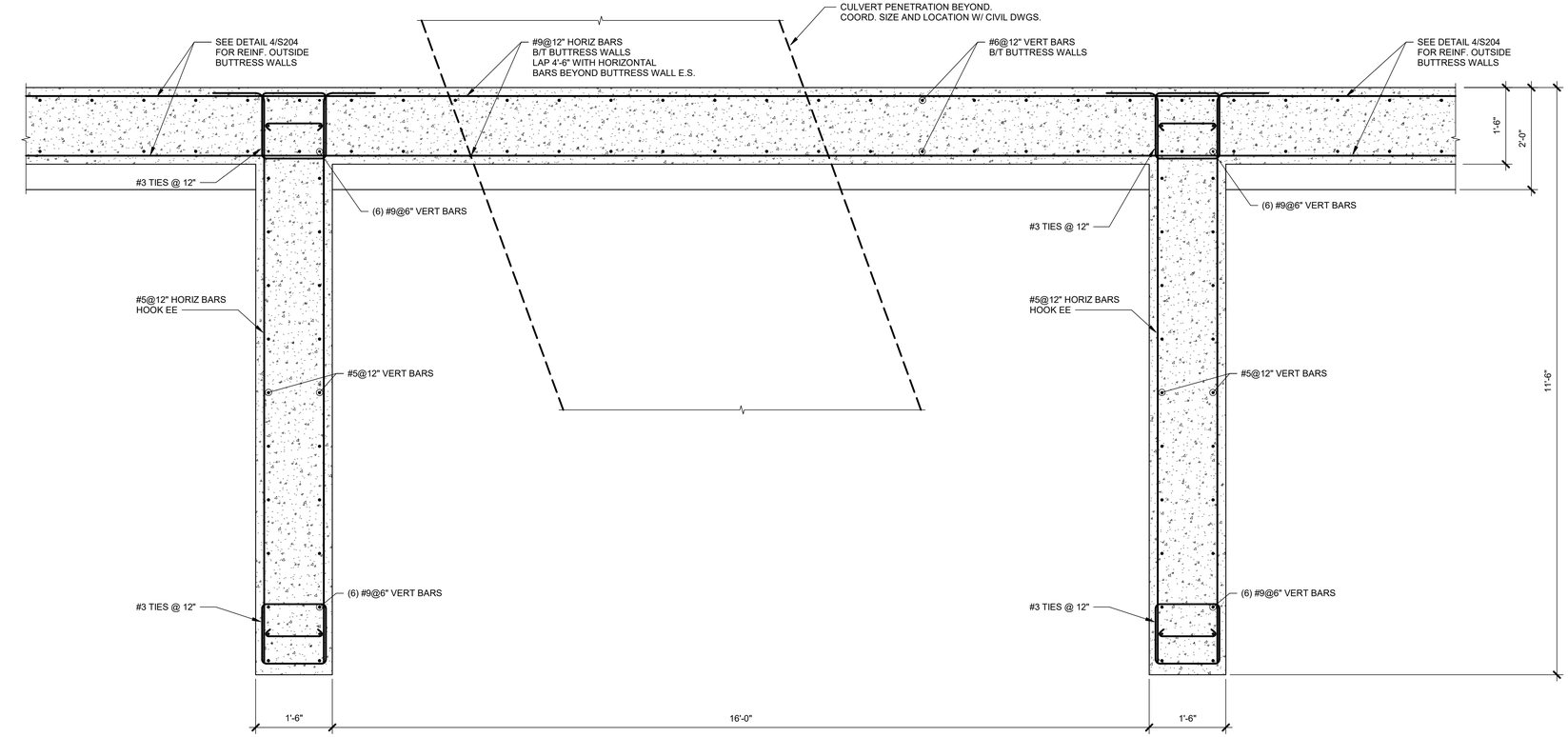


WALL CONTROL JOINT DETAIL

3 S-02.23 WALL CONTROL JOINT
3/4" = 1'-0"



2 S-02.23 CONC. WALL OPENING DETAIL
1/2" = 1'-0"



1 S-02.23 BUTTRESS WALL PLAN DETAIL
3/4" = 1'-0"

NOT FOR CONSTRUCTION

3/25/2021 12:48:43 PM

Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
111 Corning Road, Ste 190
Cary, NC 27518
919-588-3602

Architect & Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer & Landscape Architect
CLH Design PA
400 Regency Forest Drive, Suite 120
Cary, NC 27518
(919) 319-6716

SEAL | DATE 03/26/21

SHEET ISSUE

1	60% Construction Documents	3/26/21
2	TOA Major Site Plan Submittal #1	12/01/20
3	TOA Major Site Plan Submittal #2	02/12/21
4	TOA Major Site Plan Submittal #3	03/05/21
5	TOA Major Site Plan Submittal #4	03/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 02000.000

SHEET TITLE
SITE WALL DETAILS AND SECTIONS

SHEET NUMBER
S-02.23

SPECIFICATION : SEGMENTAL BLOCK RETAINING WALL WITH GEOGRID REINFORCED SOILS

PART 1 GENERAL

1.01 Section Includes:
A. Preparing site and foundation soil.
B. Constructing leveling pad for retaining wall units.
C. Furnishing and installing modular concrete retaining wall units as shown on the construction drawings or as directed by the ENGINEER Soil Engineering Consultants, PLLC (SEC)
D. Furnishing and installing geogrid reinforcement, drainage fill, and backfill to the lines and grades designated on the construction drawings.
E. Furnishing and installing all appurtenant materials required for construction of the retaining wall as shown on the construction drawings.

1.02 Related Work
A. Site Preparation from Project Specs
B. Earthwork from Project Specs

1.03 Reference Standards
A. Engineering Design
1. NCMA Design Manual for Segmental Retaining Walls
2. NCMA SRWU-1 - Determination of Connection Strength between Geosynthetics and Segmental Concrete Units
3. NCMA SRWU-2 - Determination of Shear Strength between Segmental Concrete Units

B. Segmental Retaining Wall Units
1. ASTM C-140-75 (1981 Rev) Sampling and Testing Concrete Masonry Units
2. ASTM C-1262 - Evaluating the Freeze-Thaw Durability of Manufactured Concrete Units

C. Geosynthetic Reinforcement
1. ASTM D 5262 - Test Method for Evaluating the Unconfined Tension Creep Behavior of Geosynthetics
2. ASTM D 6637 - Test Method for Determining Tensile Properties of Geogrids
3. GRI GG4(b) - Determination of the Long Term Design Strength of Flexible Geogrids
4. GRI GG5 - Test Method for Geogrid Pullout

D. Soils
1. ASTM D 698 - Moisture Density Relationship for Soils, Standard Method
2. ASTM D 422 - Particle-Size Analysis
3. ASTM D 424 - Atterberg Limits of Soils
4. ASTM D G51 - Soil pH

E. Drainage Pipe
1. ASTM D 3034 - Specification for Polyvinyl Chloride (PVC) Plastic Pipe.
2. ASTM D 1248 - Specification for Corrugated Plastic Pipe

F. Where specifications and reference documents conflict, the Owner's Engineer shall make the final determination of applicable document.

1.04 Delivery, Storage, and Handling
A. Retaining Wall Units:
1. Contractor shall check the units upon delivery to ensure that proper materials have been recieved.
2. Contractor shall prevent excessive mud, wet cement, epoxy, and like materials from coming in contact with and affixing to the units.
3. Contractor shall protect the units from damage (i.e. cracks, chips, spalls). Damaged units shall be evaluated for usage in the wall according to ASTM: C-145-75.

B. Geogrid:
1. Contractor shall check the geogrid upon delivery to ensure that the proper material has been recieved.
2. Geogrids shall be stored as recommended by manufacturer.
3. Contractor shall prevent excessive mud, wet cement, epoxy, and like materials from coming in contact with and affixing to the geogrid material.
4. Rolled geogrid material may be laid flat or stood on end for storage.

PART 2 MATERIALS

2.01 Concrete Segmental Retaining Wall Units
A. Concrete segmental units shall have a minimum 28 days compressive strength of 3000 psi and a maximum absorption of 7% by weight as determined in accordance with ASTM C 140. For areas subject to detrimental freeze-thaw cycles as determined by the Owner or Owner's Engineer the concrete shall have adequate freeze-thaw protection and meet the requirements of ASTM C 1262.
B. All units shall be sound and free of cracks or other defects that would interfere with the proper placing of the unit or significantly impair the strength or permanence of the construction.
C. SRW unit dimensions shall not differ more than +/- 1/8 inch except height, which shall not differ more than, +/- 1/16 inch, as measured in accordance with ASTM C 140.
D. SRW units shall match the color, surface finish and dimension for height, width, depth and batter as shown on the plans.
E. Cap adhesive shall meet the requirements of the SRW manufacturer.

2.02 Geosynthetic Reinforcement
A. The geosynthetic shall consist of high tenacity polyester geogrids manufactured for soil reinforcement. The polyester yarns used in the manufacture of the geosythetic shall have a molecular weight exceeding 25,000 Meg/m and carboxyl end group values less than 30. Polyester geosynthetic shall be coated with an impregnated PVC coating that resists peeling, cracking and stripping. The type, strength and placement location of the reinforcing geosynthetic shall be as shown on the plans.

2.03 Drainage Pipe
A. The drainage collection pipe shall be a perforated or slotted, PVC or corrugated HDPE pipe. The pipe and drainage aggregate may be wrapped with a geotextile that will function as a filter.
B. Drainage pipe shall be manufactured in accordance with ASTM D 3024 and/or ASTM 1248.

2.04 Geotextile Fabric
A. Drainage geotextile shall have the following minimum properties or shall meet the criteria recommended by the Wall Design Engineer.

Apparent Opening Size	ASTM D 4751	US Sieve	70
Grab Tensile	ASTM D 4632	lbs	115
Trapezoidal Tear Strength	ASTM D 4533	lbs	50
Water Flow Rate	ASTM D 4491	lbs	140
Puncture Strength	ASTM D 4833	lbs	65
Weight	ASTM D 5261	oz	4

PART 2 MATERIALS

2.05 Drainage Aggregate
A. Drainage aggregate shall be a clean crushed stone or granular fill meeting the following gradation as determined in accordance with ASTM D 422.

Sieve Size	Percent Passing
1 inch	100
3/4 inch	75-100
No. 4	0-50
No. 40	0-20
No. 200	0-5

2.06 Reinforced Backfill
A. Reinforced backfill shall be free of debris and consist of one of the following inorganic USCS soil types: GW, GP, SW, SP, SM or SC meeting the following gradation as determined in accordance with ASTM D 422.

Sieve Size	Percent Passing
1 inch	100
3/4 inch	100-75
No. 4	100-20
No. 40	0-60
No. 200	0-35

The plasticity index of the reinforced soil shall be less than 20 and the Liquid Limit less than 40.

B. The pH of the reinforced backfill shall be between 3 and 9 when tested in accordance with ASTM G-51.

C. Soil strength properties.

Soil Zone	Angle of Internal Friction	Moist Unit Weight	Cohesion
Reinforced	28 degrees	120 pcf	0 psf
Retained	28 degrees	120 pcf	0 psf
Foundation	28 degrees	120 pcf	100 psf

2.07 Impervious Fill
A. Impervious Fill shall be free of debris and consist of a USCS soil type CL.
B. At least 50% shall pass the No. 200 sieve
C. The Liquid Limit shall be less than 50, the PI >7 and plot on or above the "A" line.

The above soil properties are based on information assumed or provided to the Engineer. If the soil conditions do not reflect these properties, the Engineer shall be notified immediately.

PART 3 CONSTRUCTION

3.01 Excavation
A. Contractor shall excavate to the lines and grades shown on the construction drawings. Excavation support, if required, shall be designed by the Contractor. Contractor shall be careful not to disturb base beyond the lines shown.

3.02 Foundation Soil Preparation
A. Foundation soil shall be excavated as required for footing dimensions and degree of tilt-back shown on the construction drawings, or as directed by the Engineer.
B. Foundation soil shall be examined by the Geotechnical Engineer to insure that the actual soil strength meets or exceeds the bearing capacities stated on the elevation sheet(s). Soil not meeting the required strength shall be removed and replaced with acceptable material.
C. Over-excavated areas shall be filled with compacted backfill material.

3.03 Base Preparation
A. Place a minimum of 6 inches of compacted base material in excavated trench and compact to 95% of the maximum dry density as determined by the Standard Proctor method (ASTM D 698).
B. Base material shall be compacted to insure no gaps between the base and the retaining wall units.

3.04 Unit Installation (see Manufacturer's specs for additional details)
A. Place the first course of segmental units end to end on the prepared base so they are touching. Proper alignment may be achieved with the aid of a string line using the back of the block as a guide.
B. Segmental units shall be placed side by side for the full length of the wall.
C. Install the units of the second row, set squarely with no rocking on the first row. Backfill units with drainage fill.
D. All excess material shall be swept from the top of units prior to installing the next course.
E. Make sure the material is compacted behind the units.

3.05 Geogrid Installation
A. Geogrid shall be oriented with the highest strength axis perpendicular to the wall alignment.
B. Geogrid reinforcement shall be placed at the elevation and to the extent shown on the construction drawings or as directed by the Engineer.
C. The geogrid soil reinforcement shall be laid horizontally on compacted reinforced fill. Place geogrid to the front faces of the wall so that it is visible after wall construction, install next course of units. Place drainage fill and pull geogrid taut. Anchor geogrid prior to placing backfill.
D. Slack in the geogrid will not be allowed and shall be removed in a manner and to such a degree as approved by the Engineer.
E. Geogrid reinforcements shall be continuous throughout full embedment length. Spliced connections between shorter pieces of geogrid will not be allowed unless approved by the engineer prior to construction.

3.06 Back Fill Placement
A. Reinforced fill shall be placed and compacted to 95% of the maximum dry density as determined by the Standard Proctor method (ASTM D-698) at a moisture content within 2% of optimum in 8" recommended lift thickness unless directed otherwise by the on-site geotechnical engineer.
B. Reinforced fill shall be placed, spread, and compacted in such a manner that minimizes the development of slack in the geogrid.
C. Only lightweight hand-operated compaction equipment shall be allowed within 3 feet of the wall units.
D. Tracked construction equipment shall not be operated directly upon the geogrid. A minimum fill thickness of 6 inches is required prior to operation of tracked vehicles over the geogrid. Tracked vehicle turning should be kept to minimum to prevent tracks from displacing the fill and damaging the geogrid.
E. Rubber tired equipment may pass over the geogrid reinforcement at slow speeds, less than 10 MPH. Sudden braking and sharp turning shall be avoided.
F. At the end of each day's operation, the contractor shall slope the last level of backfill away from the wall facing to direct runoff of rainwater away from the wall face. In addition, the contractor shall not allow surface runoff from adjacent areas to enter the wall construction site.

Recommended Testing to Verify Wall Construction

The construction of the retaining wall(s) contained in this set of plans should include the inspection of walls during construction and at the completition of construction, a registered professional engineer should review the documentation and state that the walls were built according to the plans and specifications. The owner shall arrange for inspection and subsequent certification. Construction shall not begin until these arrangements are in place.

The following checklist is provided as an aid to the on-site inspector and the engineer performing the certification. It is not to be taken as all-inclusive. All items included in the wall design specification and the block and geogrid manufactures shall be followed.

Materials to be evaluated before construction begins
Block Type
Grid Type
Soils see 2.06 A, B and C
Bearing Capacity testing every 50 ft and spaced from wall face to tails of the geogrid
Soft soils and other conditions that do not meet the project specifications shall be undercut and replaced or otherwise remedied as directed by the on-site geotechnical testing firm.

Construction
Leveling Pad dimensions
Leveling Pad elevations
Leveling Pad compliance with drainage aggregate
Drianage Pipe sloping to daylight
Drainage Pipe daylighted every 50ft one block above grade at toe of wall
Drainage aggregate used in block core fill and one foot behind back of block.

The owner's engineer should verify placement of the geogrid. Since geogrid type, strength or lengths may change across the extent and height of the wall, competent construction monitoring should verify that the contractor's placement of geogrid is in accordance with construction plans and specifications.

All grid layers shall be visible from the face of wall after wall construction.

Grid length, elevation and type to be verified by on-site geotechnical testing firm for conformance with these plans.

Soil Compaction testing should be performed at least every 100 cu yd of backfill placed or one test for every 50 linear ft of wall length per geogrid placement.

Caps adhered securely to the top of top block.

Surface drainage properly accounted for

The owners on-site geotechinal engineer and/or the engineers technical representative should communicate on a regular basis with the engineer of record about retaining wall construction activities.

General Notes
1. The owner shall obtain all permits before beginning work.
2. The owner shall locate all utilities before beginning work.
3. The owner shall coordinate the construction of the retaining walls with all utilities.
4. Control runoff water by grading the slope away from the face of the wall during construction.
5. The owner is to provide a quality control program including construction monitoring by a registered Professional Engineer as required by the local Building Codes.
6. Notify SEC immediately of any discrepancies between these plans and field conditions.
7. Construct the wall to the lines and grades shown in these plans and specifications.
8. This design is based on information provided by the contractor. If the site changes it is the contractors responsibility to inform SEC of changing site conditions.
9. This design complies with section 1807 of the building code including additional loads from the buildings within 50 feet horizontal of the retaining walls.

H12/Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
111 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

KEY PLAN

SEAL | DATE 01/01/17

SHEET ISSUE

1	Town of Apex Major Site Plan Submittal #1	12/1/20
2	Town of Apex Major Site Plan Submittal #2	2/12/21
3	Town of Apex Major Site Plan Submittal #3	3/5/21
4	Town of Apex Major Site Plan Submittal #4	3/26/21

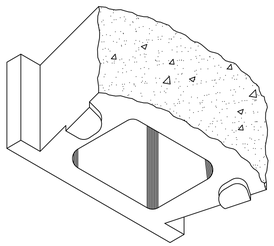
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

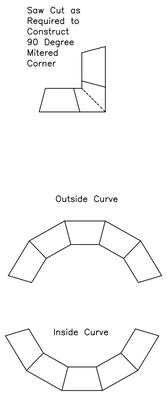
PROJECT NO. 19150.000

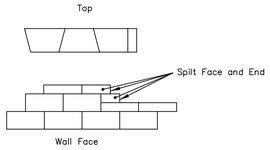
SHEET TITLE
SPECIFICATIONS

SHEET NUMBER
SX-01.01



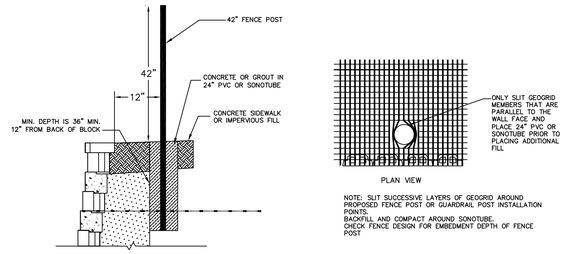
8" X 18" X 12"





1. Always Start Capping Wall From the Lowest Elevation.
2. Layout Caps Prior to Using Adhesive.
3. Cut Caps to Fit. Various Combinations of Long and Short Cap Faces will be Necessary for Radii Greater than the Minimum.
4. Alternate Short and Long Cap Faces Every Other Cap to Achieve a Straight Row of Caps.
5. Use Exterior-Grade Construction Adhesive to Secure Caps.

Cap Detail

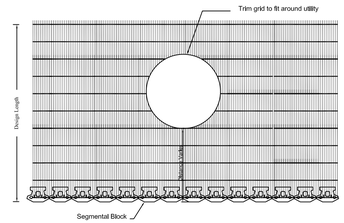


ALL HANDRAILS/GUARDRAILS MUST COMPLY WITH SECTION 1015 OF THE 2018 INTERNATIONAL BUILDING CODE.

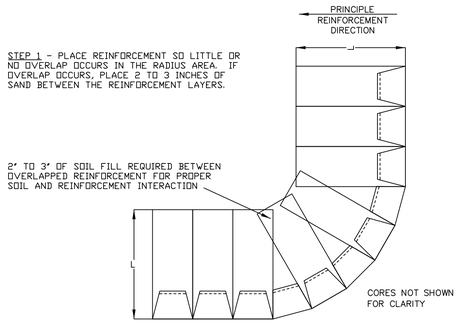
SCALE: NONE

NOTE: SLIT SUCCESSIVE LAYERS OF GEOGRID AROUND PROPOSED FENCE POST OR GUARDRAIL POST INSTALLATION POINTS.
BACKFILL AND COMPACT AROUND SONOTUBE.
CHECK FENCE DESIGN FOR EMBEDMENT DEPTH OF FENCE POST

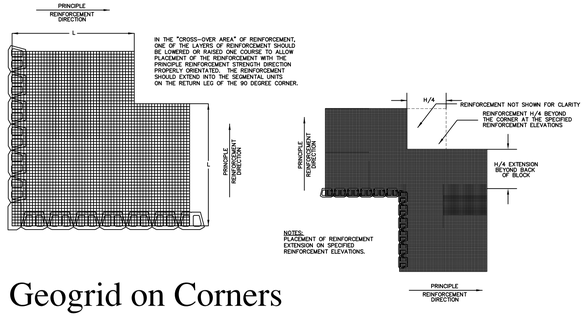
Fence/Rail Detail



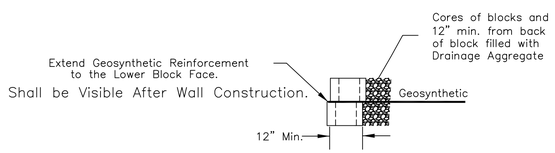
Plan at Utility



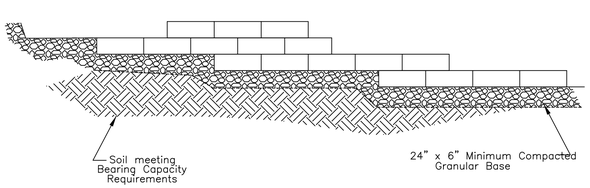
Geogrid on Curves



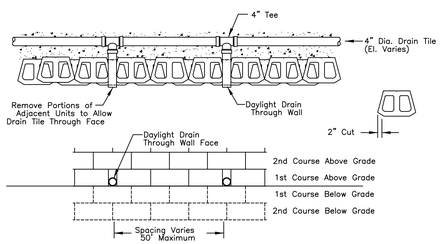
Geogrid on Corners



Connection Detail



Leveling Pad Detail



Drain Tile Detail

Note:
If water is encountered at the back of a cut, this chimney and blanket drain will be required. If the cut is dry then the Drain Tile Detail shown above will be required.

Typical Section

H12/Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
111 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

KEY PLAN

SEAL | DATE 01/01/17

SHEET ISSUE

1	Town of Apex Major Site Plan Submittal #1	12/1/20
2	Town of Apex Major Site Plan Submittal #2	2/12/21
3	Town of Apex Major Site Plan Submittal #3	3/5/21
4	Town of Apex Major Site Plan Submittal #4	3/26/21

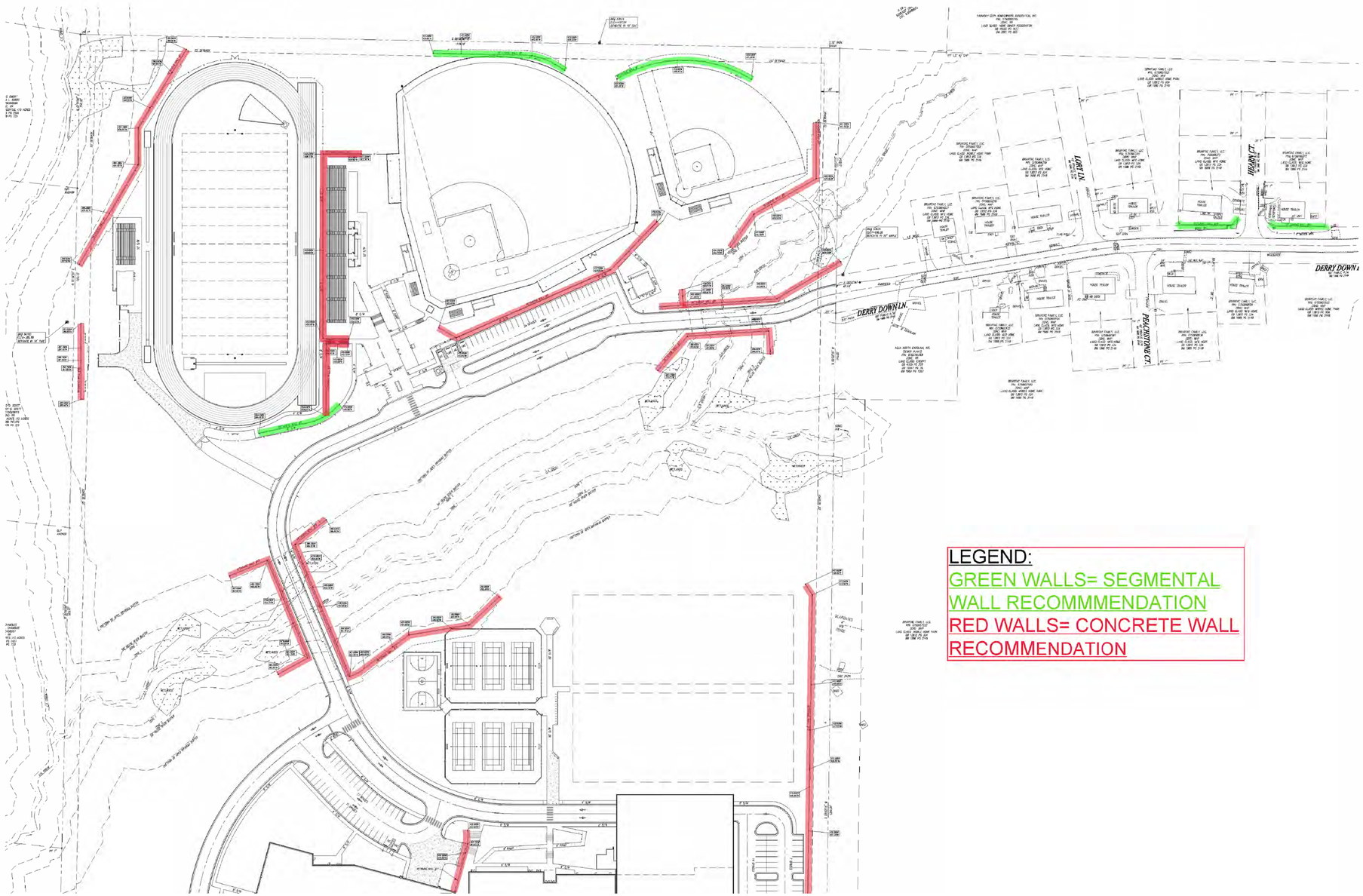
RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 19150.000

SHEET TITLE
DETAILS

SHEET NUMBER
SX-01.02



LEGEND:
GREEN WALLS= SEGMENTAL WALL RECOMMMENDATION
RED WALLS= CONCRETE WALL RECOMMENDATION

H12/Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
111 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

KEY PLAN

SEAL | DATE 01/01/17

SHEET ISSUE

1	Town of Apex Major Site Plan Submittal #1	12/1/20
2	Town of Apex Major Site Plan Submittal #2	2/12/21
3	Town of Apex Major Site Plan Submittal #3	3/5/21
4	Town of Apex Major Site Plan Submittal #4	3/26/21

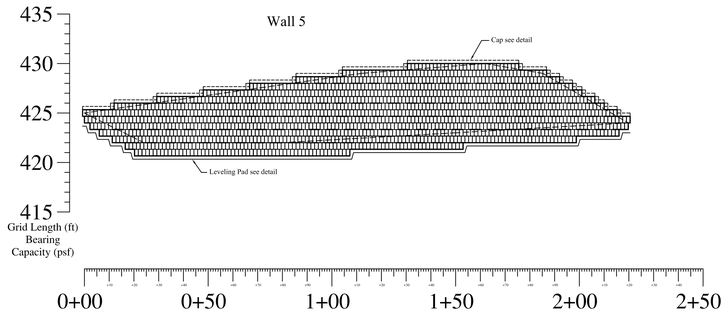
RATIO

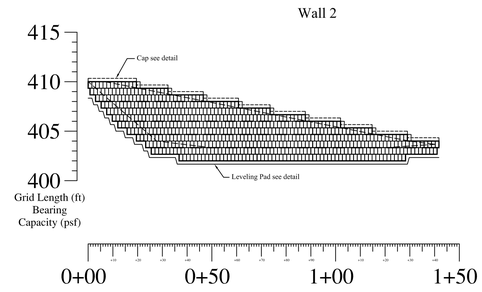
COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

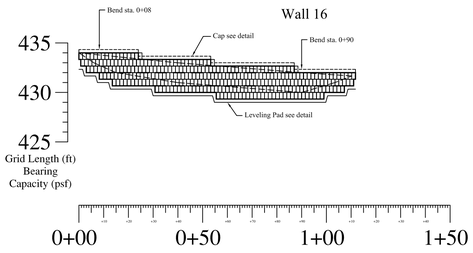
PROJECT NO. 19150.000

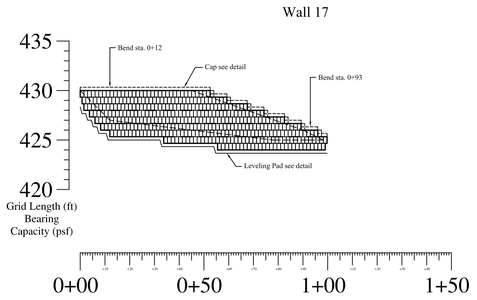
SHEET TITLE
PLAN

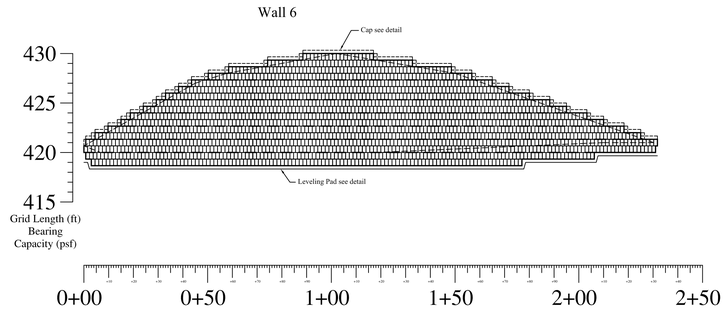
SHEET NUMBER
SX-01.03











RETAINING WALL ELEVATIONS

SCALE
H: 1"=20'
V: 1"=5'

H12/Felton Grove High School

8550 Stephenson Road
Apex, NC 27539

Owner
Wake County Public Schools
111 Corning Road, Suite 190
Cary, North Carolina 27518
(919)588-3602

Architect and Landscape Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

Structural Engineer
LHC Structural Engineers
5430 Wade Park Blvd #400
Raleigh, North Carolina 27607
(919) 832-5587

Mechanical / Electrical / Plumbing Engineer
The Wooten Company
120 North Boylan Avenue
Raleigh, North Carolina 27603
(919) 828-0531

Civil Engineer and Landscape Architect
CLH Design PA
400 Regency Forest Drive, Suite 120
Cary, North Carolina 27518
(919) 319-6716

KEY PLAN

SEAL | DATE 01/01/17

SHEET ISSUE

1	Town of Apex Major Site Plan Submittal #1	12/1/20
2	Town of Apex Major Site Plan Submittal #2	2/12/21
3	Town of Apex Major Site Plan Submittal #3	3/5/21
4	Town of Apex Major Site Plan Submittal #4	3/26/21

RATIO

COPYRIGHT NOTICE: THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH RATIO. NO OTHER USE, DISSEMINATION OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF RATIO. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

PROJECT NO. 19150.000

SHEET TITLE
ELEVATION

SHEET NUMBER
SX-01.04

H-12 (Felton Grove) High School

Traffic Impact Analysis

Stephenson Road, Apex, North Carolina

November 30, 2020

Prepared for:

Wake County Public School System
5625 Dillard Drive
Cary, NC 27518

Prepared by:

Stantec Consulting Services Inc.

801 Jones Franklin Road
Suite 300
Raleigh, NC 27606

171002245

H-12 (FELTON GROVE) HIGH SCHOOL TRAFFIC IMPACT ANALYSIS

November 30, 2020

This document entitled H-12 (Felton Grove) High School Traffic Impact Analysis was prepared by Stantec Consulting Services Inc. ("Stantec") for the account of Wake County Public School System (the "Client"). Any reliance on this document by any third party is strictly prohibited. The material in it reflects Stantec's professional judgment in light of the scope, schedule, and other limitations stated in the document and in the contract between Stantec and the Client. The opinions in the document are based on conditions and information existing at the time the document was published and do not take into account any subsequent changes. In preparing the document, Stantec did not verify the information supplied to it by others. Any use which a third party makes of this document is the responsibility of such third party. Such a third party agrees that Stantec shall not be responsible for costs or damages of any kind, if any, suffered by it or any other third party as a result of decisions made or actions taken based on this document.

Prepared by Pierre Tong

(signature)

Pierre Tong, PE

Reviewed by

(signature)

Matt Peach, PE, PTOE

Approved by Christa Greene

(signature)

Christa Greene, PE

11/30/2020

Table of Contents

EXECUTIVE SUMMARY I
RECOMMENDATIONS II

1.0 INTRODUCTION 1.1

2.0 INVENTORY OF TRAFFIC CONDITIONS 2.4
2.1 STUDY AREA 2.4
2.1.1 Thriftwood Drive 2.4
2.1.2 Derry Down Lane 2.4
2.1.3 Reunion Creek Parkway 2.4
2.2 EXISTING ROADWAY CONDITIONS 2.5

3.0 TRIP GENERATION 3.7
3.1 SIMILAR SITES PARENT QUEUE 3.7

4.0 TRIP DISTRIBUTION 4.9
4.1 NEW TRIP DISTRIBUTION AND ASSIGNMENT 4.9

5.0 TRAFFIC VOLUMES 5.24
5.1 EXISTING TRAFFIC VOLUMES 5.24
5.1.1 Previous Counts 5.24
5.1.2 Traffic Counts 5.24
5.1.3 Volume Balancing 5.24
5.2 APPROVED DEVELOPMENTS 5.25
5.3 NO-BUILD TRAFFIC VOLUMES 5.25
5.4 BUILD TRAFFIC VOLUMES 5.25
5.4.1 Peak Hour Factors 5.25

6.0 TRAFFIC ANALYSIS 6.34
6.1 2020 EXISTING 6.35
6.2 2026 NO-BUILD 6.37
6.3 2026 BUILD WITHOUT IMPROVEMENTS 6.39
6.4 2026 BUILD WITH IMPROVEMENTS 6.42
6.4.1 SimTraffic Operations 6.43
6.5 2026 BUILD WITHOUT IMPROVEMENTS – REUNION CREEK 6.46
6.6 2026 BUILD WITH IMPROVEMENTS – REUNION CREEK 6.49
6.6.1 SimTraffic Operations 6.50

7.0 RECOMMENDATIONS 7.54

8.0 CONCLUSIONS 8.61

9.0 REFERENCES 9.62

10.0 APPENDIX 10.63

LIST OF TABLES

Table 1: Existing Conditions....2.5
Table 2: Trip Generation....3.7
Table 3: Level of Service Criteria....6.34
Table 4: 2020 Existing Level of Service and Delay....6.35
Table 5: 2026 No-Build Level of Service and Delay....6.37
Table 6: 2026 Build Level of Service and Delay....6.40
Table 7: 2026 Build-Improved Level of Service and Delay....6.42
Table 8: Queue Length Summary....6.44
Table 9: 2026 Build – Reunion Creek Level of Service and Delay....6.47
Table 10: 2026 Build-Improved Level of Service and Delay....6.49
Table 11: Queue Length Summary with Reunion Creek....6.51

LIST OF FIGURES

Figure 1: Site Location and Study Area....1.2
Figure 2: Site Plan....1.3
Figure 3: Existing Lane Configurations and Traffic Control....2.6
Figure 4: Traffic Pattern....4.10
Figure 5: Traffic Pattern – Reunion Creek Alternative....4.11
Figure 6: Student Trip Distribution....4.12
Figure 7: Student Trip Distribution – Reunion Creek Alternative....4.13
Figure 8: Student Trips....4.14
Figure 9: Student Trips – Reunion Creek Alternative....4.15
Figure 10: Parent Trip Distribution....4.16
Figure 11: Parent Trip Distribution – Reunion Creek....4.17
Figure 12: Parent Trips....4.18
Figure 13: Parent Trips – Reunion Creek....4.19
Figure 14: Staff/Buses Trip Distribution....4.20
Figure 15: Staff/Buses Trip Distribution – Reunion Creek....4.21
Figure 16: Staff/Buses Trips....4.22
Figure 17: Staff/Buses Trips – Reunion Creek....4.23
Figure 18: 2020 Existing Traffic Volumes....5.26
Figure 19: Approved Development Volumes....5.27
Figure 20: Background Growth Volumes....5.28
Figure 21: 2026 No-Build Traffic Volumes....5.29
Figure 22: Total School Trips....5.30
Figure 23: Total School Trips – Reunion Creek....5.31
Figure 24: 2026 Build Traffic Volumes....5.32
Figure 25: 2026 Build – Reunion Creek Traffic Volumes....5.33
Figure 26: 2020 Existing Level of Service and Delay....6.36
Figure 27: 2026 No-Build Level of Service and Delay....6.38
Figure 28: 2026 Build Level of Service and Delay....6.41
Figure 29: 2026 Build with Improvements Level of Service and Delay....6.45
Figure 30: 2026 Build – Reunion Creek Level of Service and Delay....6.48
Figure 31: 2026 Build With Improvement – Reunion Creek Level of Service and Delay....6.53
Figure 32: Recommended Improvements without Reunion Creek Parkway Extension....7.58
Figure 33: Recommended Improvements with Reunion Creek Parkway Extension....7.59

Executive Summary

H-12, also known as Felton Grove, is a proposed high school in Apex, Wake County, North Carolina. The school is anticipated to be constructed by the start of the fall semester in 2024 and is located at 8550 Stephenson Road. The school is anticipated to open with a full freshman and sophomore class and will not be at full capacity until the fall of 2026. The school is designed for a capacity of 2,350 students.

Access to the school is anticipated to be provided by extending two existing private roadways, Derry Down Lane and Thriftwood Drive. Both facilities terminate to the east of the site and provide local access to a residential area and have existing full-movement access onto Stephenson Road.

An alternate access scenario is included in this study which assumes that Reunion Creek Parkway is extended from its current terminus west of the site and connected to Thriftwood Drive. This would provide a continuous east/west connection between E. Williams Street and Stephenson Road. This would improve traffic dispersion and reduce the volume of traffic on Stephenson Road; particularly at the intersection of Stephenson Road at Sunset Lake Road. The extension of Reunion Creek Parkway is shown on the Town of Apex Thoroughfare and Collector Street Plan Map as a future major collector. This connection is currently not funded by either the Town of Apex or the Wake County Public School System. Accordingly, this is not anticipated to be completed by the time the school is operating with at full capacity.

This report evaluates the feasibility of the adjacent transportation system to accommodate the traffic demands associated with the new school for the Build year of 2026 (i.e. full capacity). Trip generation, trip distribution, and traffic analysis for the following AM and PM peak hours scenarios are included in this study:

- 2020 Existing;
- 2026 No-Build
- 2026 Build;
- 2026 Build with Improvements;
- 2026 Build with Reunion Creek Parkway Extension;
- 2026 Build with Improvements and Reunion Creek Parkway Extension.

Capacity analyses for the AM and PM (i.e. school PM peak) peak hours in each applicable scenario were performed for the following existing intersections:

- E. Williams Street at Reunion Creek Parkway;
- E. Williams Street / N. Main Street at Sunset Lake Road / Old Smithfield Road;
- Sunset Lake Road at Stephenson Road;
- Stephenson Road at Thriftwood Drive / Tear Drop Circle;
- Stephenson Road at Derry Down Lane / Cockle Burr Drive; and
- Stephenson Road at Smith Road.

Capacity analyses for the AM and PM (i.e. school PM peak) peak hours in each applicable scenario were performed for the following proposed access points to public roads:

- Thriftwood Drive at Staff / Bus Driveway;

- Thriftwood Drive / Reunion Creek Parkway Extension at Connector Road

Results of the analysis indicate that the proposed school is projected to have impacts on the surrounding roadway network and intersections. Accordingly, recommendations for improvement are provided.

RECOMMENDATIONS

Per North Carolina General Stature 136-18(29a), School systems such as WCPSS can be reimbursed for the total cost of any public roadway improvements required by NCDOT. As such, the final determination of improvements attributed to the construction of H-12 High School is to be determined by appropriate personnel within NCDOT. To this end, and to mitigate the impact of traffic generated by the proposed school has on the surrounding roadway network, specific improvements are recommended where as others are recommended for consideration by appropriate personnel within NCDOT.

Internal Site Layout

- On-site pick-up and drop-off queue should be provided for a minimum of 2,350 feet of full-width storage space to accommodate queuing vehicles. This will provide more than 30 percent greater than the "high demand length" requirement set by the MSTA School Traffic Calculator.
- It is recommended that parent drop-off and pick-up traffic should enter and exit the site using Derry Down Lane. On-site, Derry Down Lane provides approximately 2,700 linear feet of queuing for parent traffic. Of this, approximately 400 linear feet can be used to double-lane queue parent traffic. This brings the total on-site parent queue to approximately 3,100 feet. This exceeds the high-demand length as required by the MSTA School Traffic Calculator by approximately 1,300 feet or 72 percent.
- Develop and enact a Transportation Management Plan (TMP) outlining policies and procedures for students, parents, and staff to manage traffic on-site.

It should be noted that both Derry Down Lane and Thriftwood Drive are not currently maintained by either the Town of Apex or NCDOT. The nearest existing public facility to the site is Stephenson Road, which is approximately 1,500 feet along Derry Down Lane from the H-12 property line and 1,000 feet along Thriftwood Drive from the H-12 property line.

E. Williams Street at Reunion Creek Parkway

Without Reunion Creek Parkway Extension

- There are no recommended improvements at this intersection

With Reunion Creek Parkway Extension

- Construct an exclusive northbound right-turn lane with 225 feet of full-width storage and appropriate taper
- Construct an exclusive westbound left-turn lane with 325 feet of full-width storage and appropriate taper
- Construct an exclusive westbound right-turn lane with 450 feet of full-width storage and appropriate taper
- Extend striping for the existing southbound left-turn lane as far back as possible to Straywhile Avenue
- *Consider: the installation of a traffic signal*

E. Williams Street / N. Main Street at Sunset Lake Road / Old Smithfield Road

Without Reunion Creek Parkway Extension

- *Consider: construct an exclusive northbound right-turn lane with 500 feet of full-width storage and appropriate taper.*
- *Consider: construct an exclusive westbound right-turn lane with 450 feet of full-width storage and appropriate taper.*
- *Consider: The above recommendations will require modification of the traffic signal at this intersection.*

With Reunion Creek Parkway Extension

- *Consider: construct an exclusive northbound right-turn lane with 225 feet of full-width storage and appropriate taper.*
- *Consider: construct an exclusive westbound right-turn lane with 350 feet of full-width storage and appropriate taper.*
- *Consider: The above recommendations will require modification of the traffic signal at this intersection.*

Sunset Lake Road at Stephenson Road

Without Reunion Creek Parkway Extension

- *Consider: construct a second exclusive eastbound left-turn with maximum available length of full-width storage and appropriate taper (maximum queue length = 1,150 feet).*
  - *The above recommendation to consider will require a second northbound receiving lane on Stephenson Road with a minimum of 600 feet of full with storage and appropriate taper to merge traffic into one northbound thru lane on Stephenson Road.*
  - *The above recommendation will require the existing eastbound left-turn lane be extended from it's current storage of 150 feet.*
- *Consider: extend the exclusive westbound right-turn lane to 625 feet of full-width storage and appropriate taper.*
- *Consider: extend the exclusive southbound left-turn lane to 525 feet of full-width storage and appropriate taper.*
- *Consider: The above recommendations will require modification of the traffic signal at this intersection.*

With Reunion Creek Parkway Extension

- *Consider: construct a second exclusive eastbound left-turn with 475 feet of full-width storage and appropriate taper.*
  - *The above recommendation to consider will require a second northbound receiving lane on Stephenson Road with a minimum of 600 feet of full with storage and appropriate taper to merge traffic into one northbound thru lane on Stephenson Road.*
  - *The above recommendation will require the existing eastbound left-turn lane be extended from it's current storage of 150 feet to 475 feet of full-width storage and appropriate taper.*
- *Consider: extend the exclusive westbound right-turn lane to 525 feet of full-width storage and appropriate taper.*
- *Consider: extend the exclusive southbound left-turn lane to 525 feet of full-width storage and appropriate taper.*
- *Consider: The above recommendations will require modification of the traffic signal at this intersection.*

Stephenson Road at Thriftwood Drive / Tear Drop Circle

Without Reunion Creek Parkway Extension

- Construct an exclusive northbound left-turn lane with 500 feet of full-width storage and appropriate taper
- Construct a shared eastbound left-through lane with 250 feet of full-width storage and appropriate taper
- Construct an exclusive southbound right-turn lane with 100 feet of full-width storage and appropriate taper

With Reunion Creek Parkway Extension

- Construct an exclusive northbound left-turn lane with 425 feet of full-width storage and appropriate taper
- Construct a shared eastbound left-through lane with 125 feet of full-width storage and appropriate taper

Stephenson Road at Derry Down Lane / Cockle Burr Drive

Without Reunion Creek Parkway Extension

- Construct an exclusive northbound left-turn lane with 100 feet of full-width storage and appropriate taper
- Construct a shared eastbound left-through lane with 100 feet of full-width storage and appropriate taper

With Reunion Creek Parkway Extension

- Construct an exclusive northbound left-turn lane with 100 feet of full-width storage and appropriate taper
- Construct a shared eastbound left-through lane with 100 feet of full-width storage and appropriate taper

Stephenson Road at Smith Road

Without Reunion Creek Parkway Extension

- There are no recommended improvements at this intersection

With Reunion Creek Parkway Extension

- There are no recommended improvements at this intersection

Thriftwood Drive at Staff / Bus Driveway

Without Reunion Creek Parkway Extension

- Construct an unsignalized intersection with the stop-controlled intersection being the southbound Staff/Buses Driveway approach

With Reunion Creek Parkway Extension

- Construct an unsignalized intersection with the stop-controlled approach being the southbound Staff/Buses Driveway approach
- Construct an exclusive eastbound left-turn lane with 500 feet of full-width storage and appropriate taper
- Construct an exclusive westbound right-turn lane with 275 feet of full-width storage and appropriate taper
- Construct an exclusive southbound left-turn lane with maximum available full-width storage and appropriate taper

Thriftwood Drive / Reunion Creek Parkway Extension at Connector Road

Without Reunion Creek Parkway Extension

- Provide signage and striping as necessary to inform drivers of the road termination ahead.

With Reunion Creek Parkway Extension

- Construct an unsignalized intersection with the stop-controlled approach being the southbound Connector Road approach

The recommended improvements are shown in Figures ES-1 and ES-2.

Table ES-1: Level of Service Summary

LOS/Delay		2020		2026						2026			
Intersection		Existing		No-Build		Build		Build Improved		Build w/ Reunion Creek		Build Improved w/ Reunion Creek	
		AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
E Williams St & Reunion Creek Pkwy	**Overall**	**# (4.1)**	**# (3.3)**	**# (6.8)**	**# (4.4)**	**# (35.2)**	**# (17.3)**	**# (35.2)**	**# (17.3)**	**# (8.4)**	**# (##)**	**D (40.0)**	**C (29.1)**
	EB	E (38.0)	D (31.1)	F (60.5)	E (47.2)	F (##)	F (197.4)	F (##)	F (197.4)	F (##)	F (##)	F (77.2)	D (45.8)
	WB	E (40.6)	D (26.4)	F (76.5)	E (41.8)	F (##)	F (268.8)	F (##)	F (268.8)	F (##)	F (##)	F (85.5)	D (48.7)
	NB	# (0.1)	# (0.3)	# (0.1)	# (0.3)	# (0.2)	# (0.2)	# (0.2)	# (0.2)	# (0.1)	# (0.2)	C (27.9)	C (27.4)
	SB	# (0.6)	# (0.7)	# (0.6)	# (0.7)	# (0.3)	# (0.8)	# (0.3)	# (0.8)	# (20.4)	# (0.8)	D (39.9)	B (16.2)
E Williams St/N Main St & Sunset Lake Rd/Old Smithfield Rd	**Overall**	**D (45.6)**	**C (32.2)**	**F (80.8)**	**D (35.9)**	**F (##)**	**F (133.8)**	**F (187.7)**	**E (61.0)**	**F (260.3)**	**E (67.7)**	**F (122.9)**	**E (66.4)**
	EB	C (32.4)	D (55.0)	C (29.9)	E (56.1)	F (296.4)	D (49.3)	F (##)	F (105.3)	F (209.7)	E (74.8)	F (189.2)	F (106.7)
	WB	E (56.2)	C (29.2)	F (87.6)	C (25.5)	F (##)	F (163.8)	D (54.3)	C (34.4)	C (31.1)	E (71.7)	D (47.1)	D (49.0)
	NB	D (42.4)	C (29.2)	E (75.4)	D (38.2)	F (##)	F (125.2)	F (178.6)	E (77.8)	F (##)	E (58.4)	F (130.9)	E (64.8)
	SB	D (37.1)	C (23.9)	F (88.7)	C (30.1)	F (##)	F (131.7)	F (248.7)	E (75.9)	F (##)	E (65.4)	F (137.4)	E (62.4)
Sunset Lake Rd & Stephenson Rd	**Overall**	**# (5.0)**	**# (10.0)**	**B (14.3)**	**B (16.3)**	**F (263.9)**	**E (79.9)**	**F (115.2)**	**F (84.0)**	**F (131.9)**	**D (35.2)**	**D (48.0)**	**C (31.9)**
	EB	# (4.3)	# (1.0)	A (5.9)	A (3.8)	F (##)	A (4.3)	F (132.7)	A (4.0)	F (167.4)	B (11.1)	D (38.1)	C (21.4)
	WB	# (0.0)	# (0.0)	B (10.3)	B (11.2)	F (212.1)	F (84.8)	F (114.8)	E (76.1)	F (115.7)	B (18.5)	E (57.2)	C (33.6)
	NB	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
	SB	E (38.9)	E (44.3)	D (50.4)	D (48.9)	D (54.8)	F (116.2)	E (57.2)	F (127.0)	D (54.1)	E (71.1)	E (56.0)	D (41.3)
Stephenson Rd & Thriftwood Dr/Tear Drop Cir	**Overall**	**# (1.1)**	**# (1.0)**	**# (1.0)**	**# (0.8)**	**# (198.3)**	**# (498.5)**	**# (198.3)**	**# (338.2)**	**# (8.4)**	**# (68.2)**	**# (8.4)**	**# (15.3)**
	EB	B (12.3)	B (11.8)	C (15.4)	C (15.0)	F (##)	F (##)	F (##)	F (##)	F (##)	F (179.5)	F (##)	E (37.4)
	WB	B (12.4)	B (11.2)	C (15.3)	B (13.7)	F (##)	F (##)	F (##)	F (##)	F (##)	F (112.5)	F (##)	F (112.5)
	NB	# (0.1)	# (0.2)	# (0.1)	# (0.1)	# (260.4)	# (1.2)	# (260.4)	# (1.2)	# (11.1)	# (1.2)	# (11.1)	# (1.2)
	SB	# (0.3)	# (0.1)	# (0.2)	# (0.1)	# (0.1)	# (0.1)	# (0.1)	# (0.1)	# (0.1)	# (0.1)	# (0.1)	# (0.1)
Stephenson Rd & Derry Down Ln/Cockle Burr Dr	**Overall**	**# (1.1)**	**# (0.9)**	**# (1.0)**	**# (0.7)**	**# (95.2)**	**# (5.2)**	**# (13.0)**	**# (4.5)**	**# (35.5)**	**# (3.6)**	**# (11.3)**	**# (3.4)**
	EB	B (13.2)	B (11.9)	C (17.3)	B (14.9)	F (##)	C (19.0)	E (37.7)	C (15.2)	F (245.7)	C (18.9)	F (62.0)	C (16.5)
	WB	B (12.6)	B (11.4)	C (15.6)	B (14.0)	F (199.1)	D (31.5)	F (149.4)	D (30.4)	F (96.6)	D (26.6)	F (74.1)	D (25.7)
	NB	# (0.1)	# (0.2)	# (0.1)	# (0.1)	# (3.9)	# (3.1)	# (3.9)	# (3.1)	# (3.9)	# (3.1)	# (3.9)	# (3.1)
	SB	# (0.3)	# (0.1)	# (0.2)	# (0.1)	# (0.1)	# (0.1)	# (0.1)	# (0.1)	# (0.1)	# (0.1)	# (0.1)	# (0.1)
Stephenson Rd & Smith Rd	**Overall**	**# (4.0)**	**# (7.4)**	**# (6.0)**	**# (9.8)**	**# (10.1)**	**# (10.2)**	**# (10.1)**	**# (10.2)**	**# (10.1)**	**# (10.2)**	**# (10.1)**	**# (10.2)**
	EB	# (7.6)	# (6.5)	# (7.1)	# (5.6)	# (7.2)	# (5.7)	# (7.2)	# (5.7)	# (7.2)	# (5.7)	# (7.2)	# (5.7)
	WB	# (0.0)	# (0.0)	# (0.0)	# (0.0)	# (0.0)	# (0.0)	# (0.0)	# (0.0)	# (0.0)	# (0.0)	# (0.0)	# (0.0)
	NB	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
	SB	B (12.4)	B (11.6)	C (18.7)	C (16.9)	D (28.3)	C (18.7)	D (28.3)	C (18.7)	D (28.3)	C (18.8)	D (28.3)	C (18.8)
Thriftwood Dr & Staff/Buses Dwy	**Overall**					**# (0.8)**	**# (179.7)**	**# (0.8)**	**# (179.7)**	**# (72.5)**	**# (161.1)**	**# (37.6)**	**# (13.7)**
	EB					# (0.0)	# (0.0)	# (0.0)	# (0.0)	# (16.4)	# (0.0)	# (91.3)	# (0.0)
	WB					# (0.0)	# (0.0)	# (0.0)	# (0.0)	# (0.0)	# (0.0)	# (0.0)	# (0.0)
	NB					- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
	SB					C (19.9)	F (189.6)	C (19.9)	F (189.6)	F (##)	F (169.9)	F (##)	B (14.5)
Thriftwood Dr/Reunion Creek Extension & Connector Rd	**Overall**									**# (2.3)**	**# (2.4)**	**# (2.3)**	**# (2.4)**
	EB									# (0.0)	# (0.0)	# (0.0)	# (0.0)
	WB									# (0.0)	# (0.0)	# (0.0)	# (0.0)
	NB									- (-)	- (-)	- (-)	- (-)
	SB									A (9.3)	C (17.6)	A (9.3)	C (17.6)
Connector Rd & Parent Dwy	**Overall**					**# (9.2)**	**# (8.3)**	**# (9.2)**	**# (8.3)**	**# (83.3)**	**# (10.1)**	**# (69.4)**	**# (9.6)**
	EB					- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
	WB					B (10.4)	A (9.1)	B (10.4)	A (9.1)	F (158.7)	B (12.8)	F (130.9)	B (11.7)
	NB					# (0.0)	# (0.0)	# (0.0)	# (0.0)	# (0.0)	# (0.0)	# (0.0)	# (0.0)
	SB					# (8.0)	# (7.5)	# (8.0)	# (7.5)	# (8.0)	# (7.5)	# (8.0)	# (7.5)
Derry Down Ln/Student Dwy & Connector Rd	**Overall**					**# (7.6)**	**# (5.1)**	**# (7.6)**	**# (5.1)**	**# (3.1)**	**# (2.7)**	**# (3.1)**	**# (2.7)**
	EB					# (0.0)	# (0.0)	# (0.0)	# (0.0)	# (0.0)	# (0.0)	# (0.0)	# (0.0)
	WB					# (0.0)	# (0.0)	# (0.0)	# (0.0)	# (0.0)	# (0.0)	# (0.0)	# (0.0)
	NB					C (15.3)	B (10.2)	C (15.3)	B (10.2)	B (11.0)	A (9.4)	B (11.0)	A (9.4)
	SB					- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)

X (X)

Legend:

	LOS (Delay)
	Unsignalized Intersection
	Signalized Intersection
#	No level of service provided
##	Delay exceeds 300 seconds
- (-)	No movement

Figure ES-1: Recommended Improvements without Reunion Creek Parkway Extension

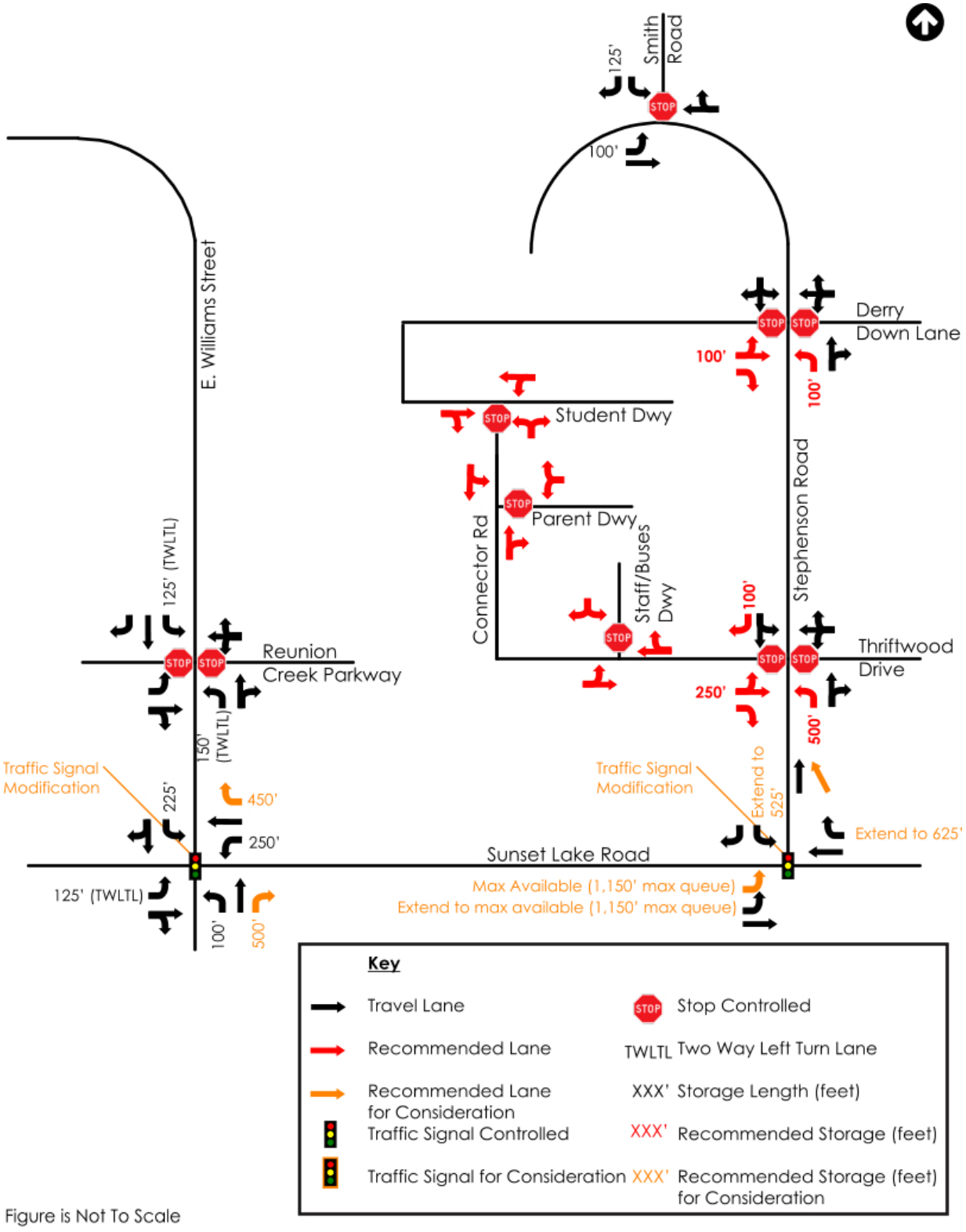


Figure is Not To Scale

Figure ES-2: Recommended Improvements with Reunion Creek Parkway Extension

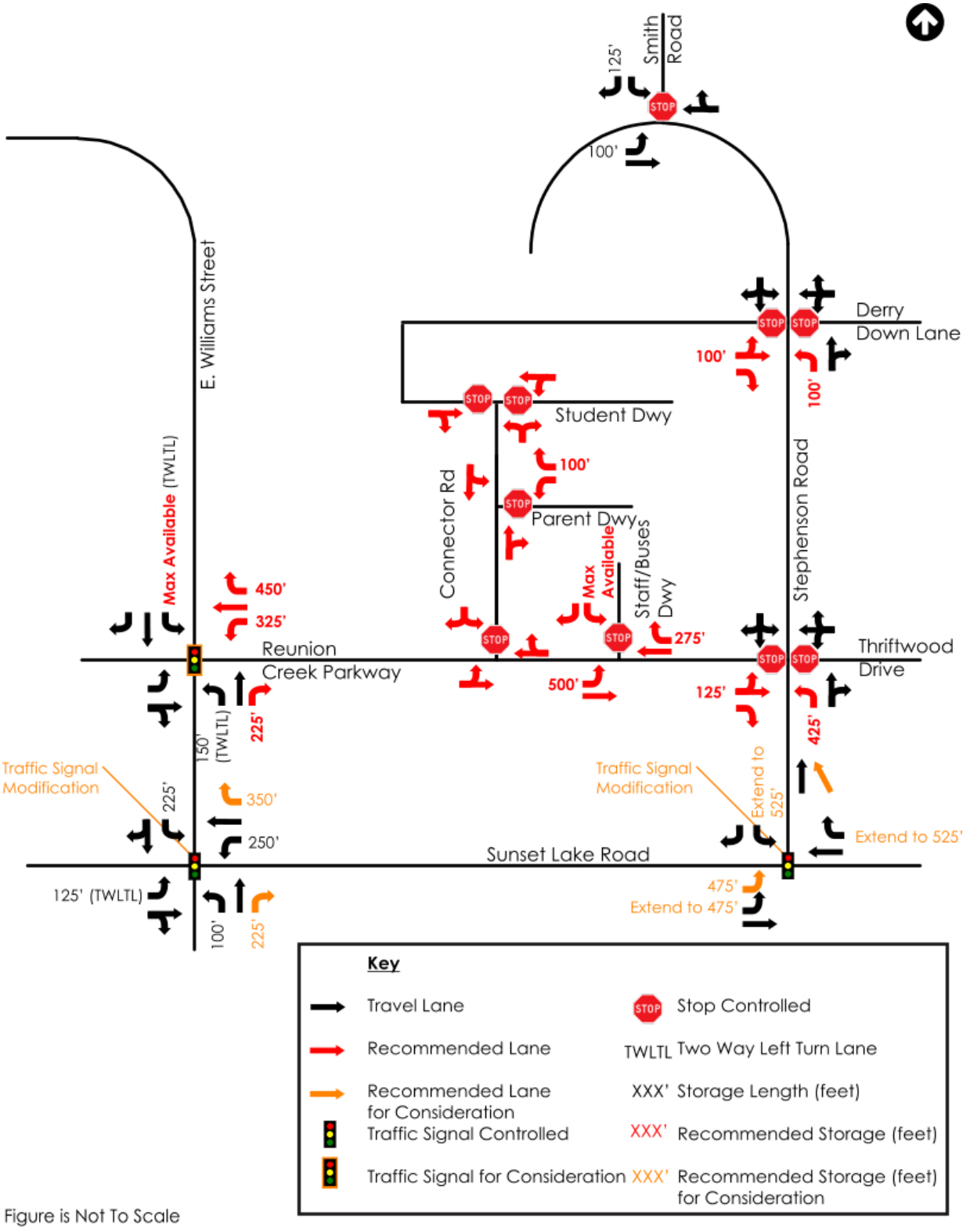


Figure is Not To Scale

1.0 INTRODUCTION

H-12, also known as Felton Grove, is a proposed high school in Apex, Wake County, North Carolina. The school is anticipated to be constructed by the start of the fall semester in 2024 and is located at 8550 Stephenson Road. The school is anticipated to open with a full freshman and sophomore class and will not be at full capacity until the fall of 2026. The school is designed for a capacity of 2,350 students.

The Town of Apex and North Carolina Department of Transportation (NCDOT) were contacted to obtain background information and to establish the elements to be covered in this traffic impact analysis (TIA). A copy of the scoping forms and approvals can be found in the appendix.

Access to the school is anticipated to be provided by extending two existing private roadways, Derry Down Lane and Thriftwood Drive. Both facilities terminate to the east of the site and provide local access to a residential area and have existing full-movement access onto Stephenson Road.

An alternate access scenario is included in this study. Where Reunion Creek Parkway is extended from its current terminus west of the site and connected to Thriftwood Drive. This would provide a continuous east/west connection between E. Williams Street and Stephenson Road. This would improve traffic dispersion and reduce the volume of traffic on Stephenson Road; particularly at the intersection of Stephenson Road at Sunset Lake Road. The extension of Reunion Creek Parkway is shown on the Town of Apex Thoroughfare and Collector Street Plan Map as a future major collector. This connection is currently not funded by either the Town of Apex or the Wake County Public School System. Accordingly, this is not anticipated to be completed by the time the school is operating at full capacity.

Figure 1 shows the existing site and study area. Figure 2 shows the most recent version of the site plan. An electronic copy of the site plan is provided in the appendix.

This report evaluates the feasibility of the adjacent transportation system to accommodate the traffic demands associated with the school expansion for the Build year of 2026. Trip generation, trip distribution, and traffic analysis for the following AM and PM peak hours scenarios are included in this study:

- 2020 Existing;
- 2026 No-Build;
- 2026 Build;
- 2026 Build with Improvements;
- 2026 Build with Reunion Creek Parkway Extension;
- 2026 Build with Improvements and Reunion Creek Parkway Extension.

Figure 1: Site Location and Study Area

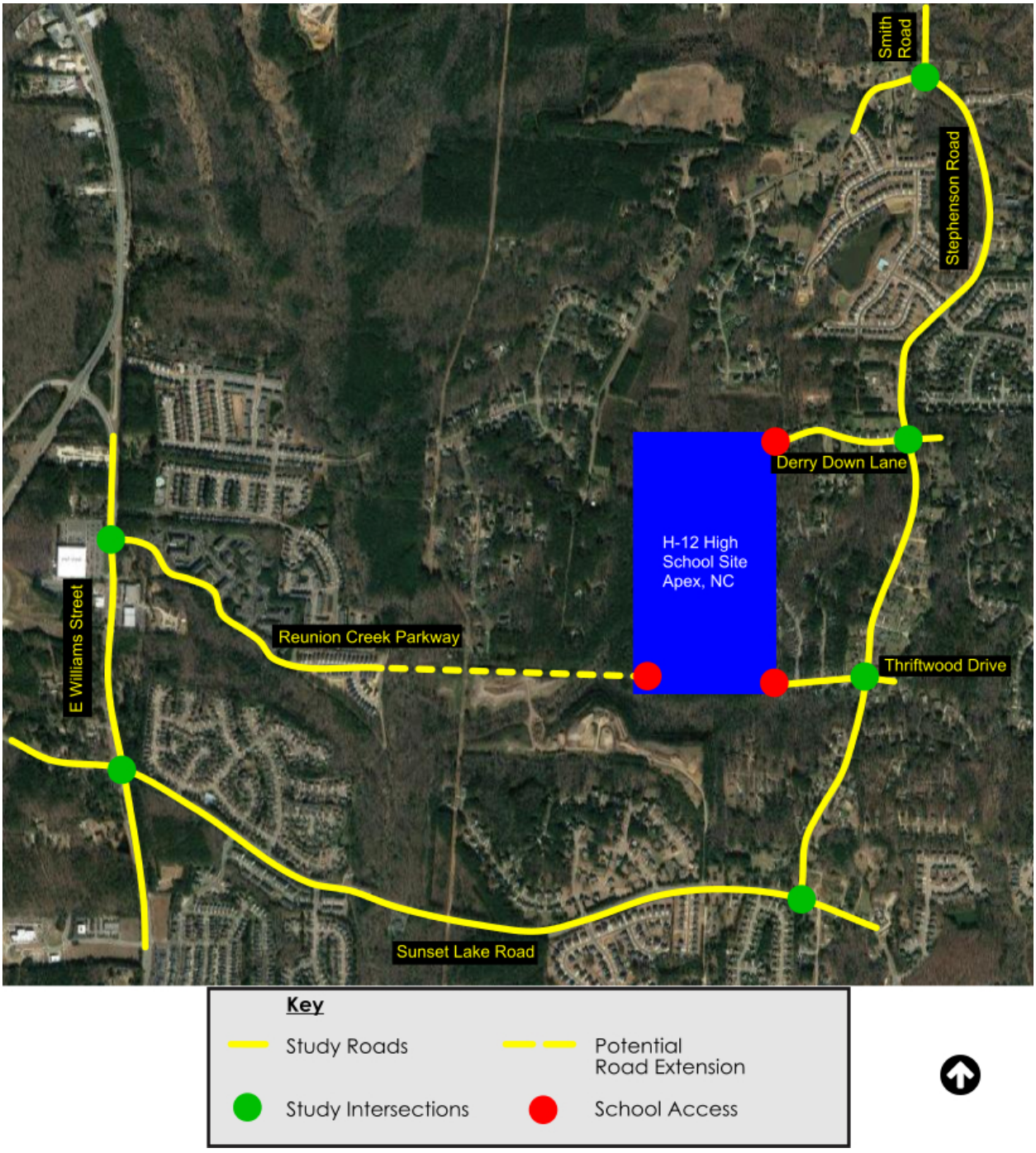


Figure 2: Site Plan

2.0 INVENTORY OF TRAFFIC CONDITIONS

2.1 STUDY AREA

Stantec coordinated with the Town of Apex, NCDOT Division 5, District 1, NCDOT Congestion Management, and NCDOT Municipal School Transportation Assistance (MSTA) to determine the appropriate study area and assumptions. The final scoping document and approval emails are included in the appendix. The following existing intersections were agreed upon to be analyzed to determine the associated impacts associated with the school expansion.

- E. Williams St. at Reunion Creek Pkwy. *existing stop-controlled intersection*
- E. Williams St. / N. Main St. at Sunset Lake Rd. / Old Smithfield Rd. *existing signalized intersection*
- Sunset Lake Road at Stephenson Road; *existing stop-controlled intersection*
- Stephenson Rd. at Thriftwood Dr. / Tear Drop Cir. *existing stop-controlled intersection*
- Stephenson Rd. at Derry Down Ln. / Cockle Burr Dr. *existing stop-controlled intersection*
- Stephenson Rd. at Smith Rd. *existing stop-controlled intersection*

The new school will be accessed by up to three (3) extensions of roads onto the site:

2.1.1 Thriftwood Drive

Classified as a major collector on the Town of Apex Thoroughfare and Collector Street Plan Map[1] (adopted February 5, 2019, last amended October 6, 2020), Thriftwood Drive travels east / west providing access to residential areas. It currently intersects Stephenson Road across from Tear Drop Circle at a full movement unsignalized intersection.

The Town of Apex Thoroughfare and Collector Street Plan Map[1] shows Thriftwood Drive ultimately being connected to Reunion Creek Parkway.

Two (2) driveways are proposed for Thriftwood Drive. One leading to staff parking and bus pick-up & drop-off zones, and another connecting Thriftwood Drive to Derry Down Lane, student parking, and parent pick-up & drop-off zones (referred to in this report as “Connector Road”).

2.1.2 Derry Down Lane

Classified as a minor collector on the Town of Apex Thoroughfare and Collector Street Plan Map[1], Derry Down Lane travels east / west providing access to residential areas. It currently intersects Stephenson Road across from Cockle Burr Drive at a full movement unsignalized intersection.

Derry Down Lane, will terminate on-site at surface parking lot and parking deck serving student drivers.

2.1.3 Reunion Creek Parkway

Classified as a major collector on the Town of Apex Thoroughfare and Collector Street Plan Map[1], Reunion Creek Parkway travels east / west providing access to residential areas. It currently intersects E. Williams Street at a full movement unsignalized intersection across from the Hope Community Church driveway.

The Town of Apex Thoroughfare and Collector Street Plan Map[1] shows Reunion Creek Parkway ultimately being connected to Thriftwood Drive.

2.2 EXISTING ROADWAY CONDITIONS

Table 1 provides a detailed description of the existing study area roadway network. All functional classification and average annual daily traffic (AADT) information were obtained from NCDOT via the NCDOT.gov website.

Table 1: Existing Conditions

Road Name	Road Number	Primary Cross-Section	Functional Classification[2]	2015-2019 AADT[3] (vpd)	Speed Limit (mph)	Maintenance Agency
E Williams Street	NC 55	2 or 3 lanes undivided	Minor Arterial	13,000 (2017)	45 mph	NCDOT
N Main Street	NC 55	2 lanes undivided	Minor Arterial	15,500 (2019)	45 mph	NCDOT
Sunset Lake Road	SR 1301	2 or 3 lanes undivided	Major Collector	11,500-12,500 (2019)	45 mph	NCDOT
Old Smithfield Road	SR 1172	3 lanes undivided	Local	-	35 mph	NCDOT
Stephenson Road	SR 1302	2 lanes undivided	Local	4,900 (2015)	35 mph	NCDOT
Reunion Creek Parkway	-	2 lanes undivided	Local	-	25 mph	Town of Apex
Thriftwood Drive	-	2 lanes undivided	Local	-	35 mph	Private Road
Tear Drop Circle	-	2 lanes undivided	Local	-	35 mph	Private Road
Derry Down Lane	-	2 lanes undivided	Local	-	35 mph	Private Road
Cockle Burr Drive	-	2 lanes undivided	Local	-	35 mph	Private Road
Smith Road	SR 1303	2 lanes undivided	Local	-	35 mph	NCDOT

Speed limits on-campus are 10 miles per hour (mph) per NCDOT MSTA. The existing lane configuration and traffic control for the study area intersections are illustrated in Figure 3.

Figure 3: Existing Lane Configurations and Traffic Control

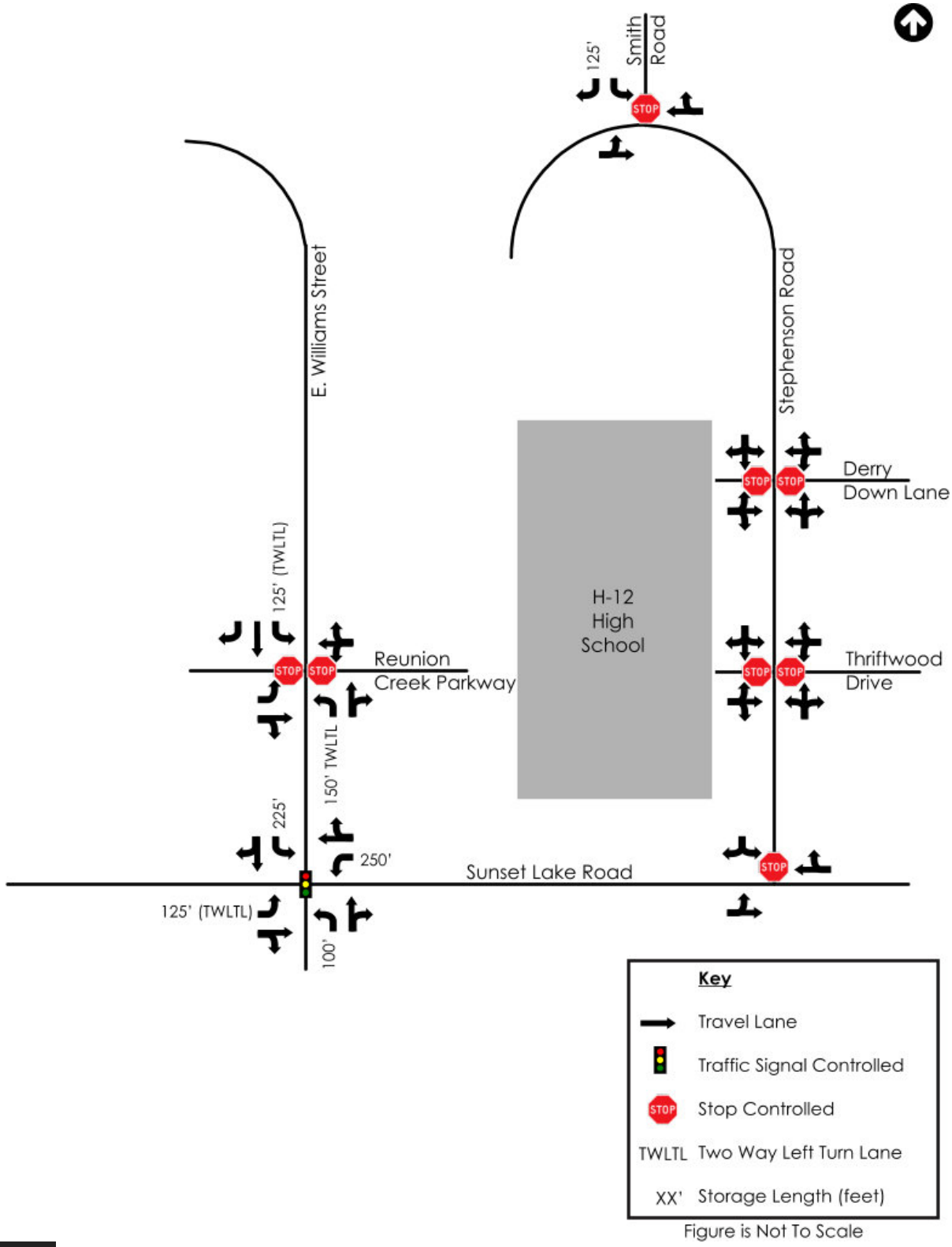


Figure is Not To Scale

3.0 TRIP GENERATION

The new high school is proposed to have a maximum enrollment of 2,350 students. At the request of NCDOT MSTA staff, available traffic data was reviewed at four (4) similar public high schools in Wake and Durham Counties. Those are as follows:

- Apex High School, Apex, Wake County
- Fuquay Varina High School; Fuquay-Varina, Wake County
- Garner High School, Garner, Wake County
- North Durham High School, Durham, Durham County

The resultant trip generation rates for AM and PM peak hour traffic was lower than the rates provided by the MSTA School Calculator[4]. To be conservative, it was recommended that the trip generation results from the MSTA School Calculator[4] be used as part of this study. This letter, supporting documentation, and MSTA School Calculator[4] can be found in the appendix. Trip generation results from the MSTA School Calculator[4] are shown in Table 2.

Table 2: Trip Generation

Category	AM Peak Hour Trips (VPH)		PM Peak Hour Trips (VPH)	
	Enter	Exit	Enter	Exit
Total Trips	**1107**	**253**	**139**	**776**
Parents	*216*	*216*	*102*	*102*
Buses	*37*	*37*	*37*	*37*
Staff	*217*	*0*	*0*	*0*
Student Drivers	*637*	*0*	*0*	*637*

3.1 SIMILAR SITES PARENT QUEUE

The traffic studies for the four (4) existing schools did not provide sufficient information to determine the on-site queuing needed for this proposed high school. This is discussed in the letter contained in the appendix of this report.

The MSTA School Calculator[4] provides a high demand length of 1,804 feet for a 2,350 student public high school. MSTA has expressed concerns regarding the MSTA School Calculator[4] under-estimating by as much as thirty percent (30%). An additional 30% of on-site queuing would result in approximately 2,345 linear feet.

Wake County Public School System staff have agreed to route parent pick-up and drop-off traffic in and out using Derry Down Lane. This provides approximately 2,700 linear feet of queuing for parent traffic. Of this, approximately 400 linear feet can be used to double-lane queue parent traffic. This brings the total on-site parent queue to approximately 3,100 feet. This exceeds the high-demand length as required by the MSTA School Calculator[4] by approximately 1,300 feet or 72 percent.

It should be noted that both Derry Down Lane and Thriftwood Drive are not currently maintained by either the Town of Apex or NCDOT. Between the site and Stephenson Road, the nearest existing public facility, traffic must use the following:

- Approximately 1,500 linear feet of Derry Down Lane from Stephenson Road to school property
- Approximately 1,000 linear feet of Thriftwood Drive from Stephenson Road to school property

4.0 TRIP DISTRIBUTION

The following subsections detail the methodology used to account for future school traffic.

4.1 NEW TRIP DISTRIBUTION AND ASSIGNMENT

Trips, as estimated by the MSTA School Calculator[4] for a 2,350-student enrollment high school, were distributed and assigned to the study intersections separately for the student, parent, and bus/staff trips. These percentages were developed using turning movement counts obtained at the existing school driveways, the school base attendance area map, historic AADT counts, and engineering judgment. The trip distribution was submitted and approved by both NCDOT and the Town of Apex staff during scoping.

The following percentages were used in the AM and PM peak hours:

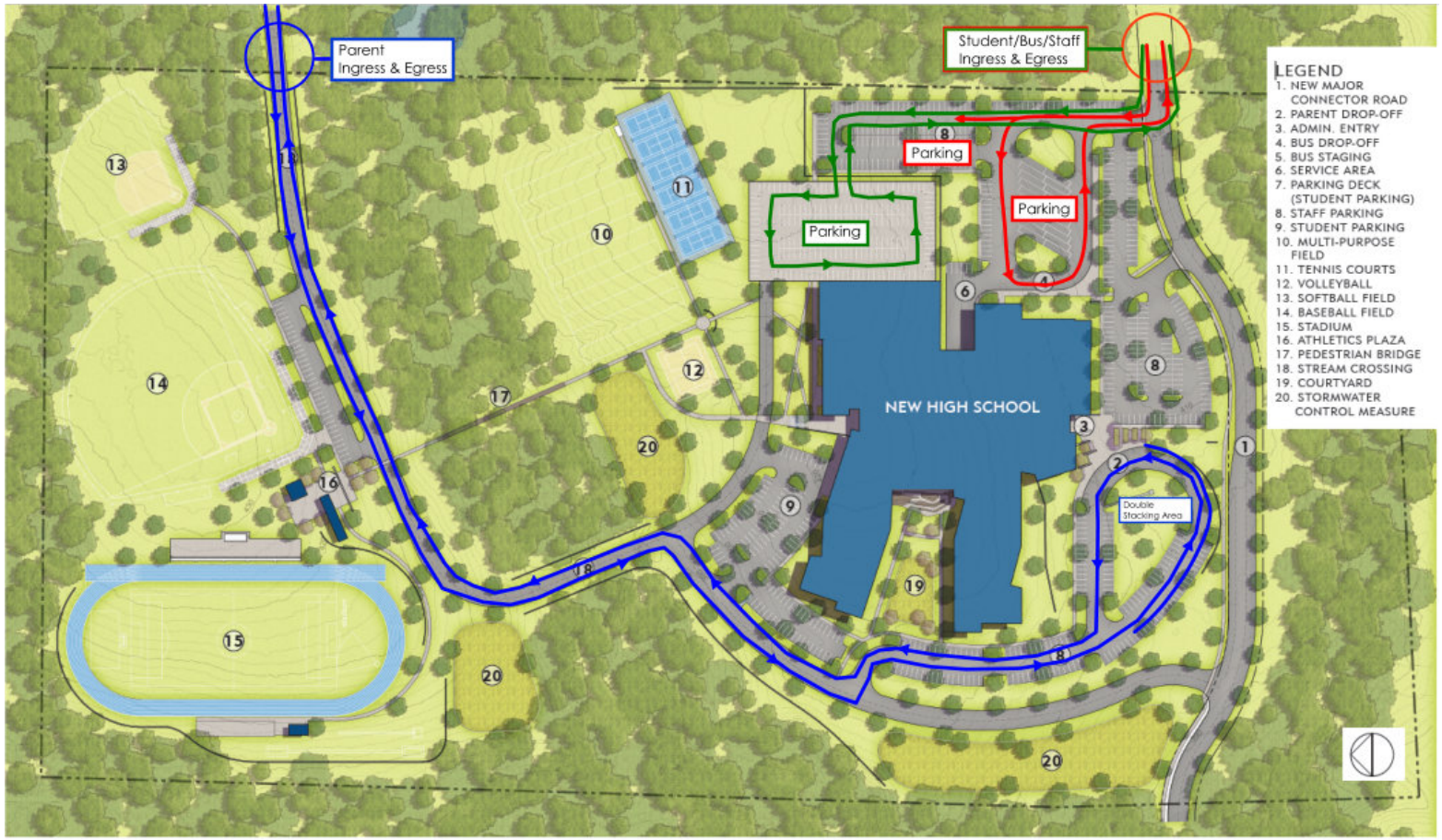
- 35 percent to/from the north on East Williams Street;
- 35 percent to/from the west on Old Smithfield Road;
- 15 percent to/from the south on East Williams Street;
- 10 percent to/from the east on Sunset Lake Road; and
- 5 percent to/from the north on Smith Road.

On-site patterns are illustrated in Figure 4 and Figure 5

Student trip distribution and trip assignment for both alternatives are illustrated in Figure 6 to Figure 9.

Parent, bus, and staff trip distribution and trip assignment for both alternatives are illustrated in Figure 10 to Figure 17.

Figure 4: Traffic Pattern



H-12 High School

2,350 Student Population

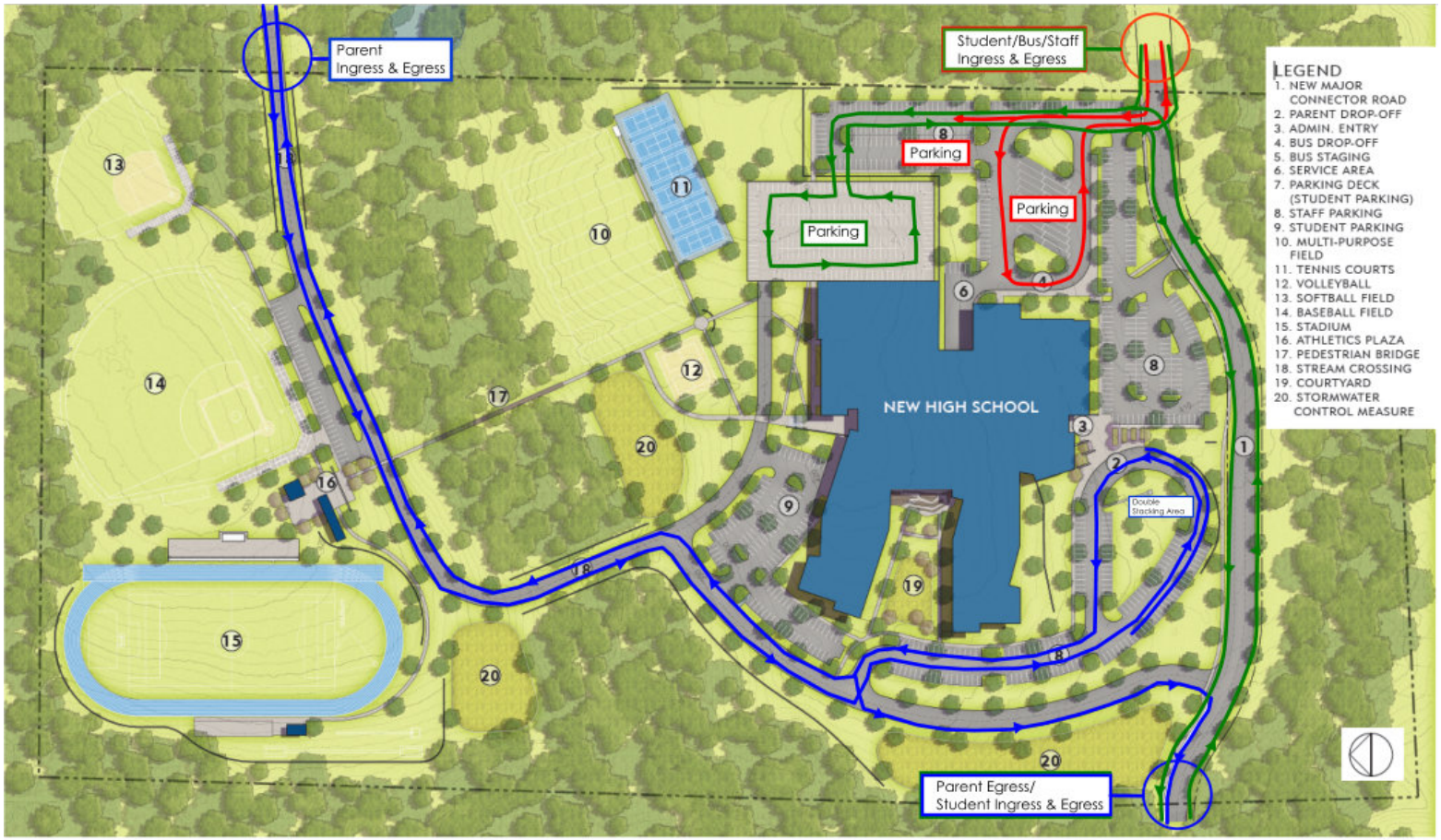
Bus / Staff Traffic
Parents Traffic
Student Traffic

Queues:
1,388 ft. Average Queue Length
1,804 ft. High Demand Queue Length

400 ft. Double Stacking
2,700 ft. Single Stacking
3,100 ft. Total Provided Stacking

SITE PLAN | RATIO

Figure 5: Traffic Pattern – Reunion Creek Alternative



H-12 High School

2,350 Student Population

Bus / Staff Traffic
Parents Traffic
Student Traffic

Queues:
1,388 ft. Average Queue Length
1,804 ft. High Demand Queue Length

400 ft. Double Stacking
2,700 ft. Single Stacking
3,100 ft. Total Provided Stacking

SITE PLAN | RATIO

Figure 6: Student Trip Distribution

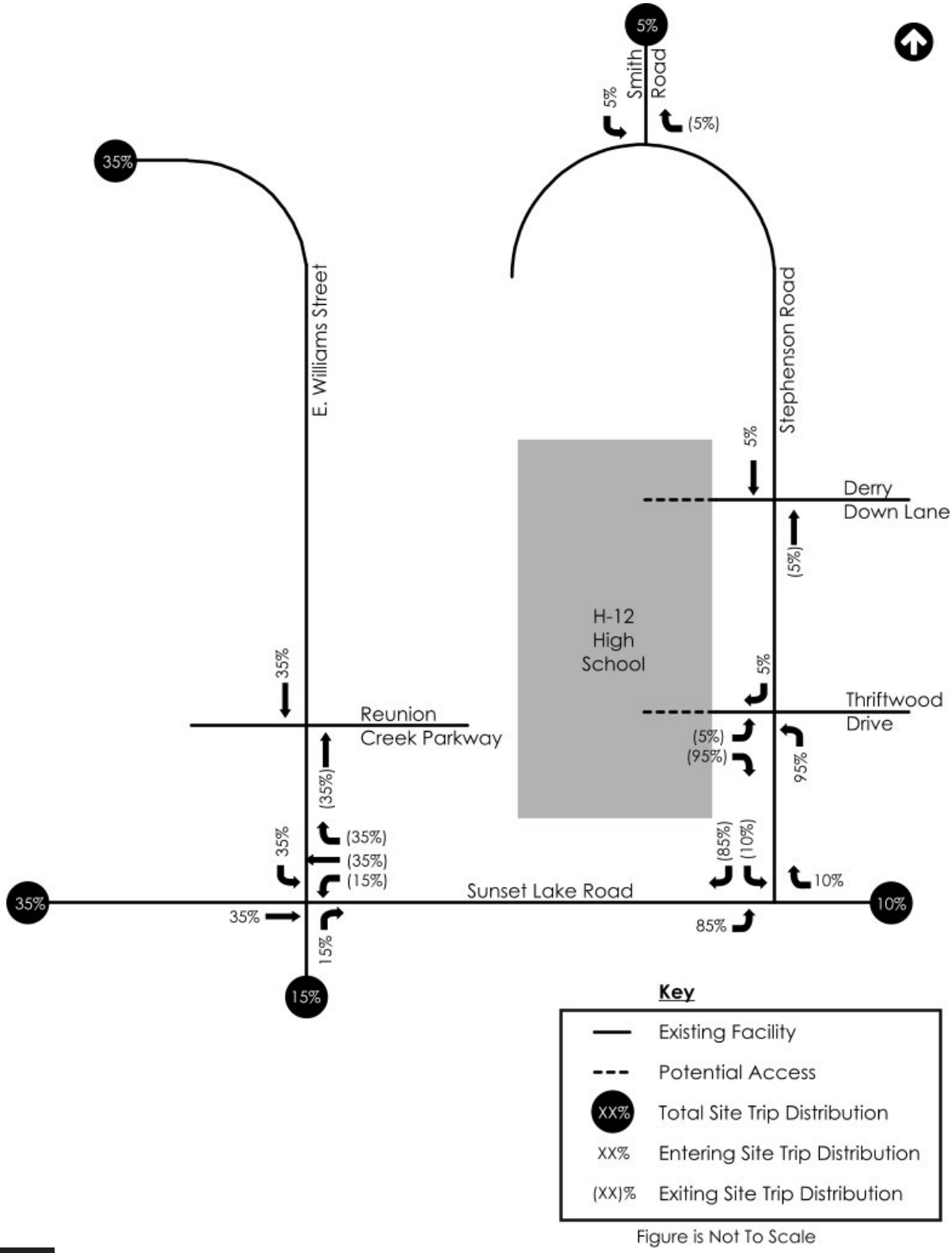


Figure is Not To Scale

Figure 7: Student Trip Distribution – Reunion Creek Alternative

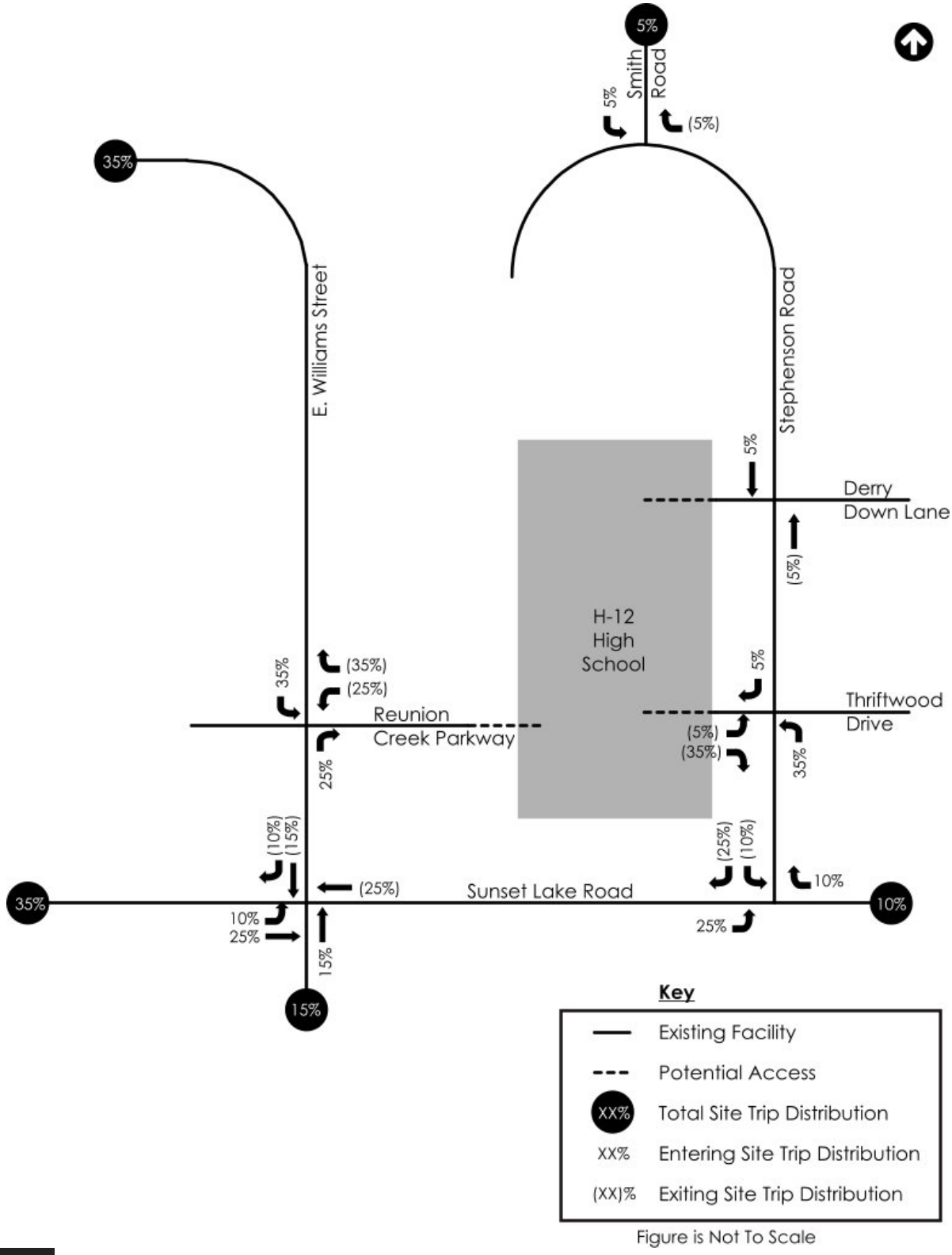


Figure is Not To Scale

Figure 8: Student Trips

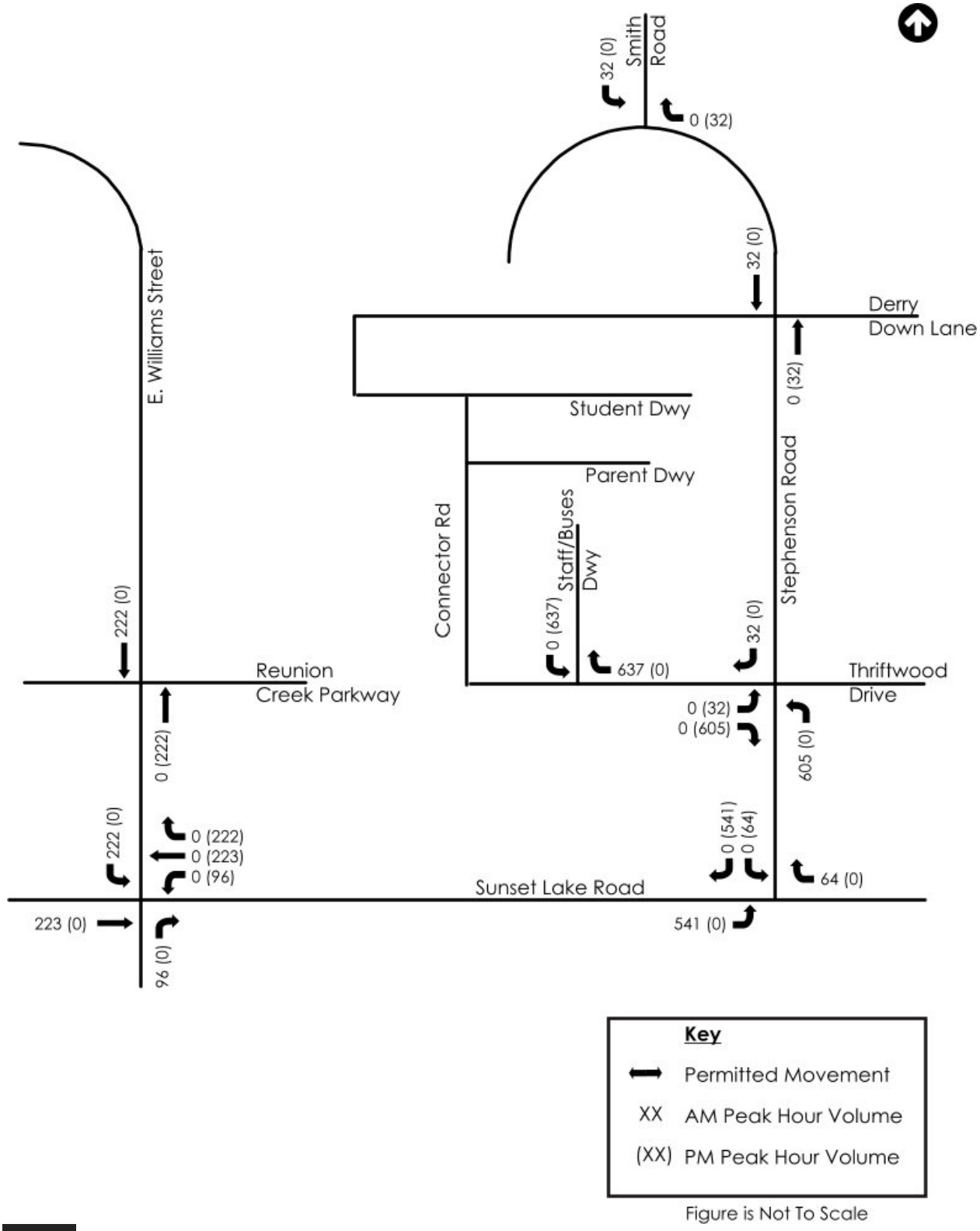


Figure 9: Student Trips – Reunion Creek Alternative

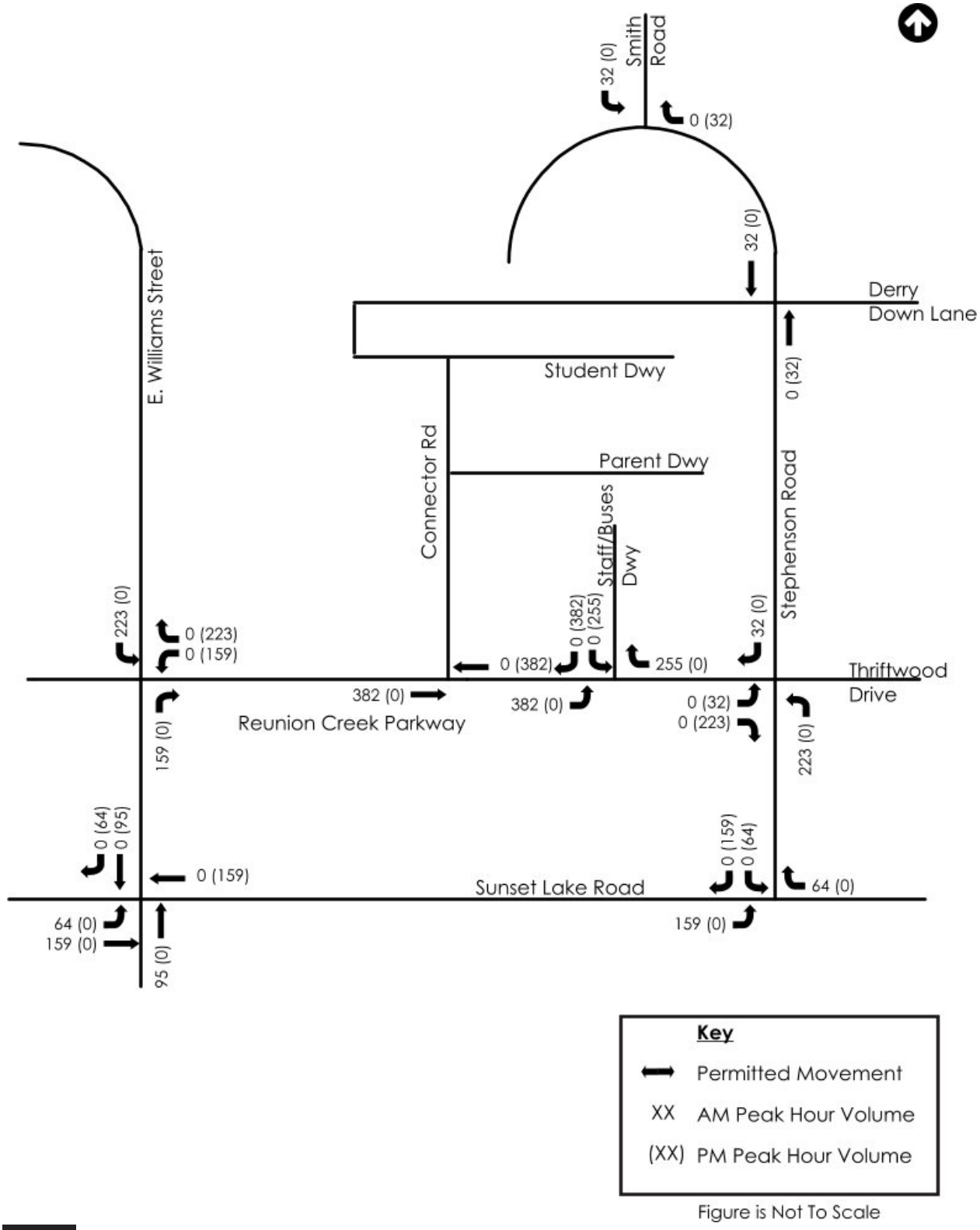


Figure 10: Parent Trip Distribution

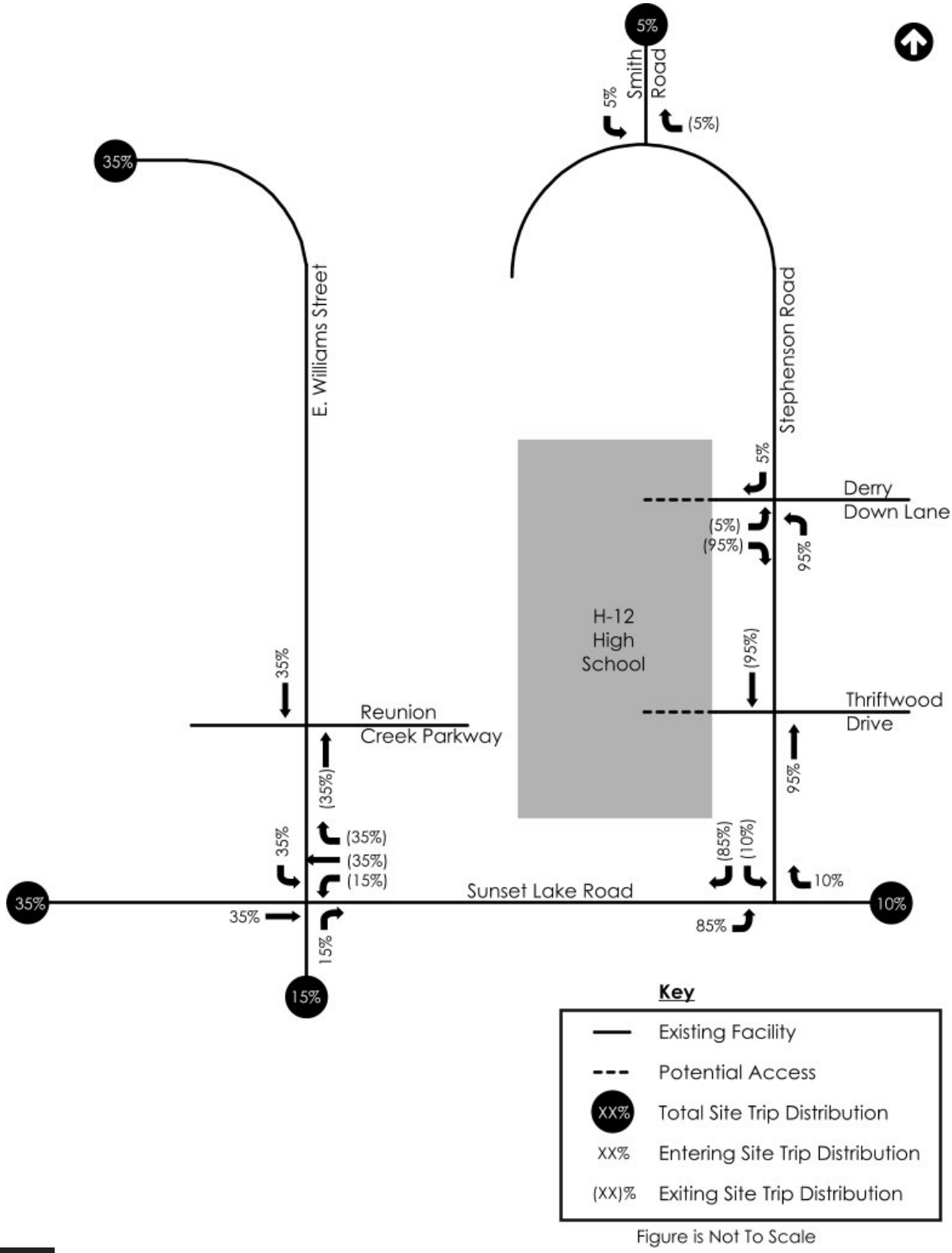


Figure is Not To Scale

Figure 11: Parent Trip Distribution – Reunion Creek

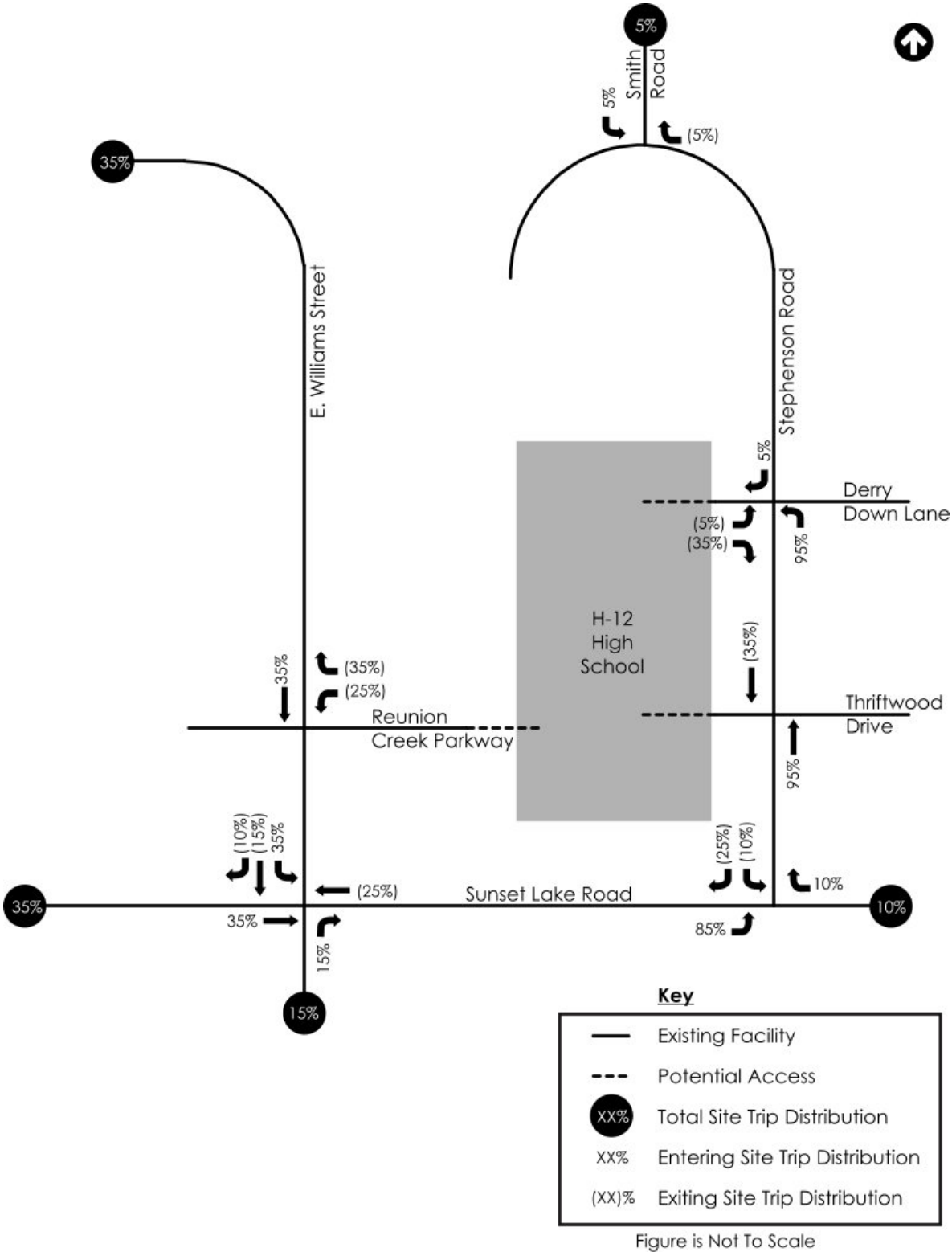


Figure 12: Parent Trips

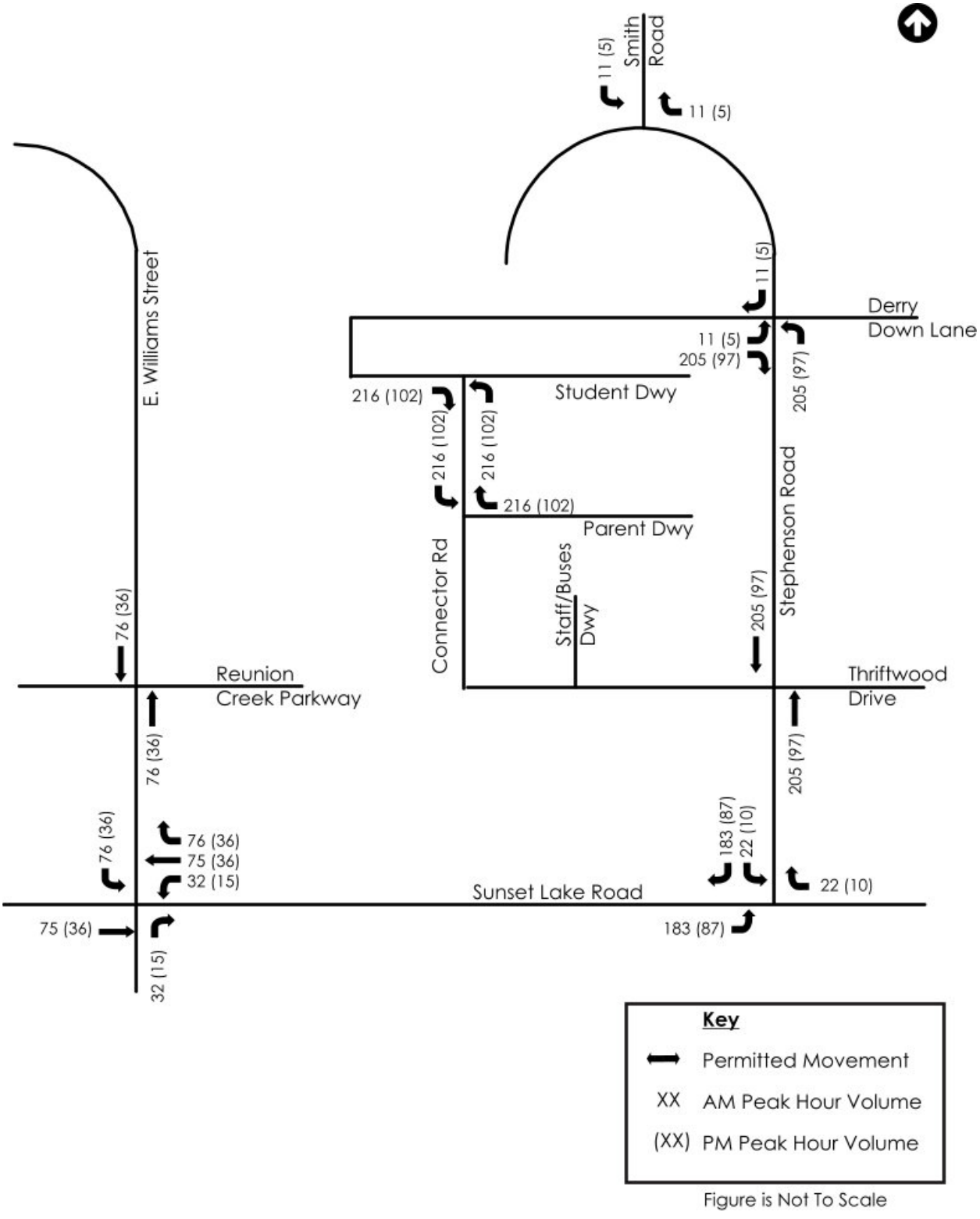


Figure 13: Parent Trips – Reunion Creek

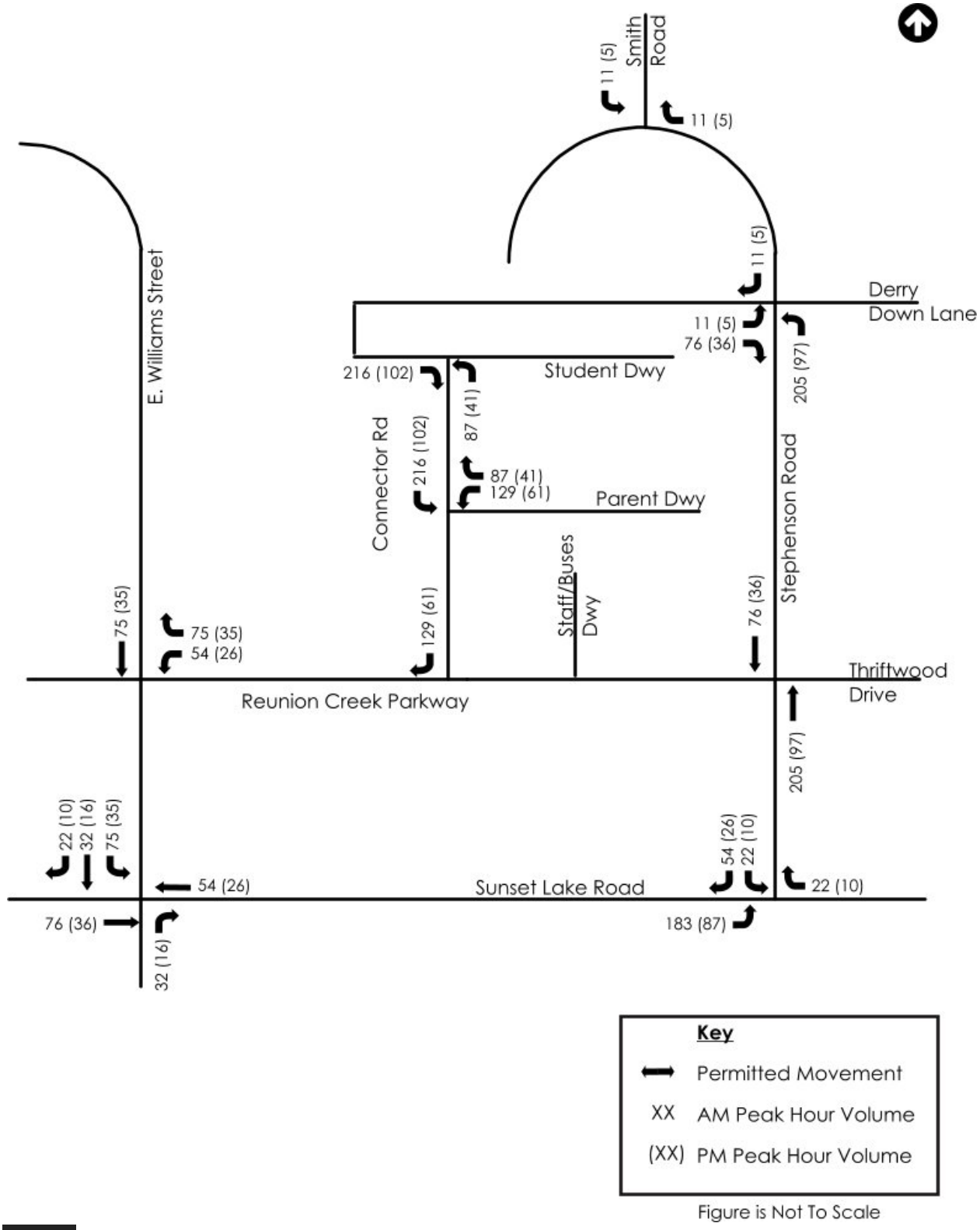


Figure 14: Staff/Buses Trip Distribution

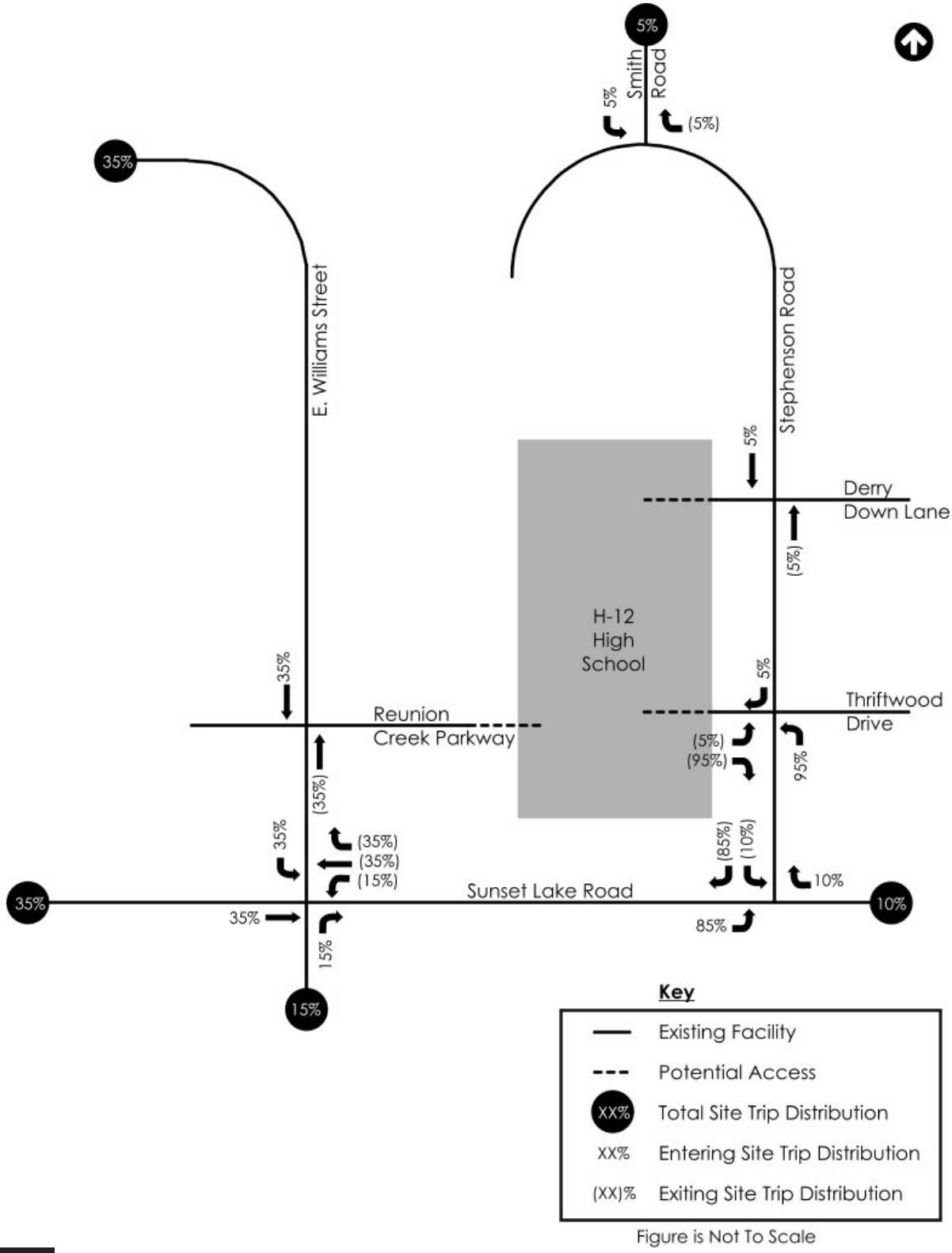


Figure is Not To Scale

Figure 15: Staff/Buses Trip Distribution – Reunion Creek

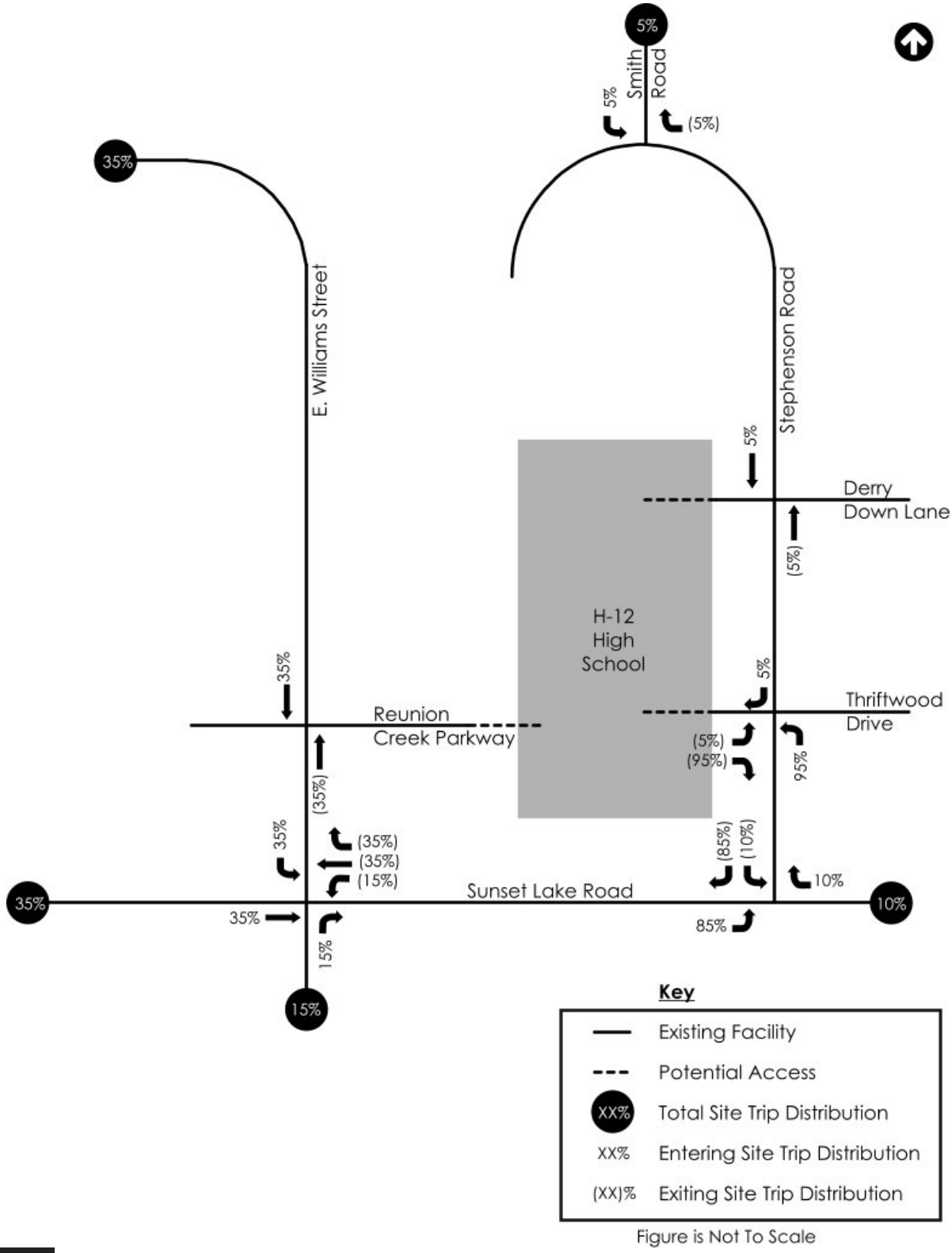


Figure is Not To Scale

Figure 16: Staff/Buses Trips

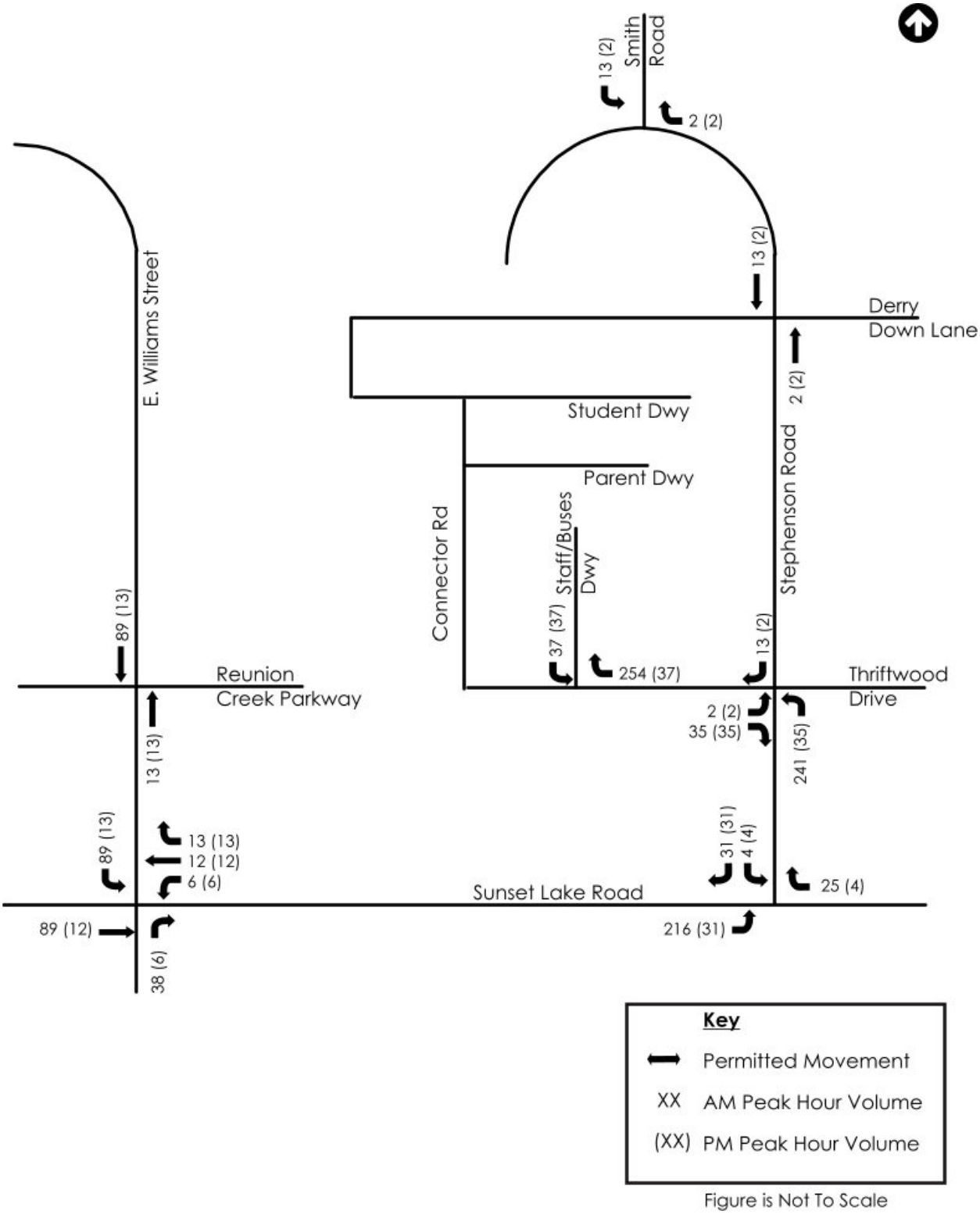


Figure 17: Staff/Buses Trips – Reunion Creek

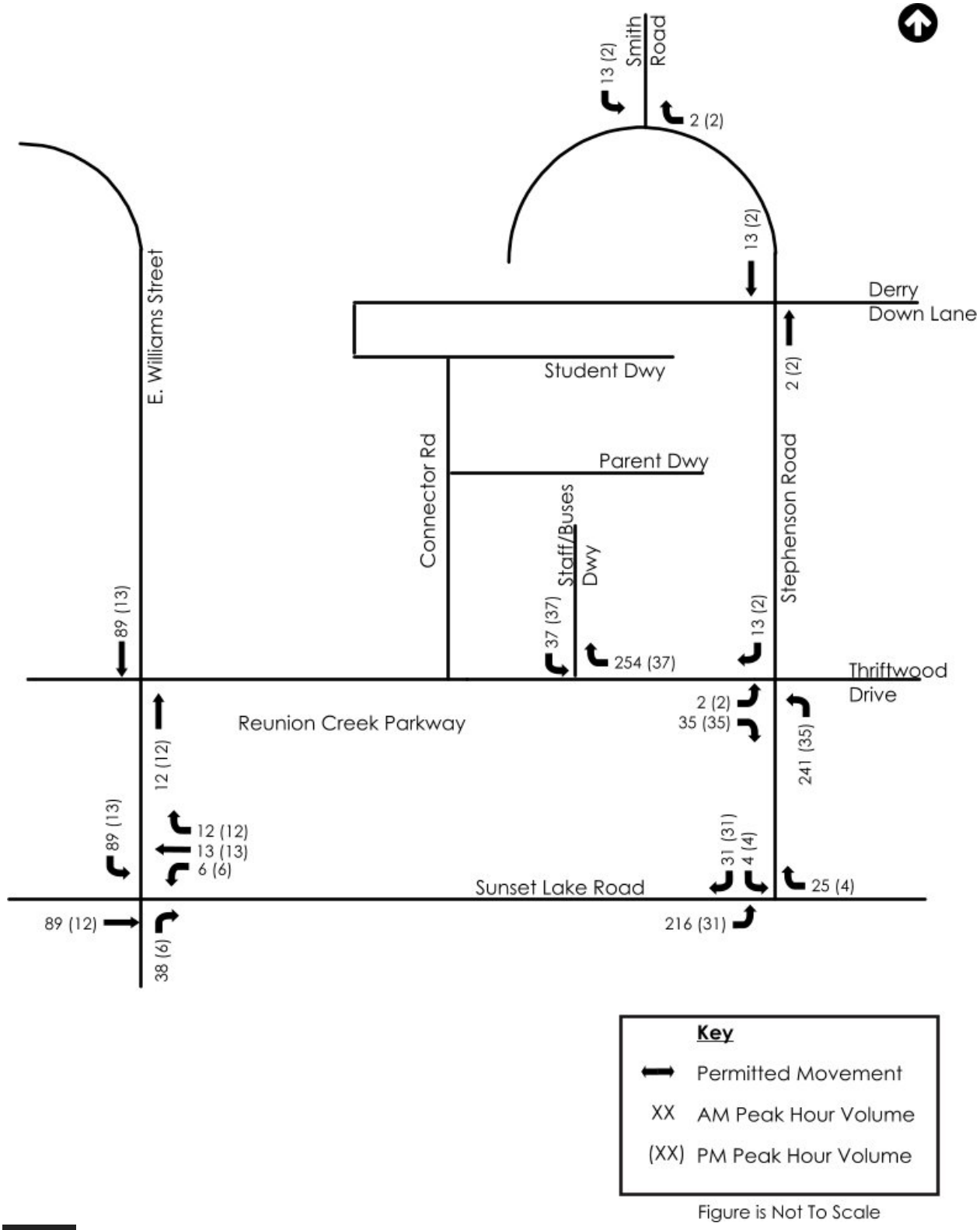


Figure is Not To Scale

5.0 TRAFFIC VOLUMES

5.1 EXISTING TRAFFIC VOLUMES

5.1.1 Previous Counts

Counts collected during the Horton Park and Sunset Lake Apartments traffic impact analysis were used at several of the study intersections. These counts are as follows:

- E Williams Street/N Main Street & Sunset Lake Road/Old Smithfield Road (Sunset Lake Apartments – 9/7/2016)
- Sunset Lake Road & Stephenson Road (Sunset Lake Apartments – 9/7/2016)
- Stephenson Road & Smith Road (Horton Park – 5/3/2017)

After a review of historical daily traffic volumes from 2003 to 2017, volumes have grown rapidly along Sunset Lake Road. Traffic on other facilities within the study area show stagnant or very little growth over the same time period. As a result, these counts were grown by 1% annually out to 2020, with the exception of through movements on Sunset Lake Road and Old Smithfield Road which were grown out by 4% annually. This approach was documented and approved as part of the NCDOT TIA Scoping Checklist. The Scoping Checklist, traffic counts, and all traffic volume calculations can be found in the appendix.

It should be noted that when volumes were not available for the 2:00-4:00 time period, volumes were adjusted proportionally based on the Sunset Lake Road & Stephenson Road intersections.

5.1.2 Traffic Counts

Where data was not available, morning (7:00 – 9:00 AM) and afternoon (2:00 – 4:00 PM) turning movement counts were collected on September 22, 2020, at the intersections listed below.

- E Williams Street & Reunion Creek Parkway
- Stephenson Road & Thriftwood Drive/Tear Drop Circle
- Stephenson Road & Derry Down Lane/Cockle Burr Drive

All counts were performed in five (5) minute intervals per NCDOT MSTA requirements. Due to the COVID-19 pandemic, these counts may not be reflective of pre-pandemic traffic. To account for this, the traffic counts discussed in section 5.1.1, and these were balanced. The traffic counts and all traffic volume calculations can be found in the appendix.

5.1.3 Volume Balancing

Using the previous traffic counts discussed in section 5.1.1 that have been projected to 2020 and the collected traffic counts discussed in section 5.1.2, the traffic volumes were then balanced throughout the study area. This produces both a balanced network and normalizes traffic to pre-pandemic levels. The balanced 2020 existing traffic volumes are shown in Figure 18 and the traffic volume calculations are provided in the appendix.

5.2 APPROVED DEVELOPMENTS

Two approved developments were also included in this analysis:

- Horton Park – located north of the H-12 High School site with access from E Williams Street and Smith Road
- Sunset Lake Apartments – located on the east side of Stephenson Road north of the Sunset Lake Road & Stephenson Road intersection

Since the Sunset Lake Apartments driveway in the future No-Build/Build scenarios is located on Stephenson Road between Sunset Lake Road and Thriftwood Drive, a slight imbalance occurs in that section of Stephenson Road. This condition exists in all future-year (i.e. 2026) traffic conditions.

Copies of these traffic studies can be found in the appendix. Site trips generated by these approved developments traveling along study roads/intersections were included in the future No-Build and Build volumes. The trips generated by the approved developments are shown in Figure 19.

5.3 NO-BUILD TRAFFIC VOLUMES

The balanced 2020 Existing traffic volumes were grown by 1% annually out to 2026, except the through movements on Sunset Lake Road and Old Smithfield Road which were grown out by 4% annually. The background growth between the Existing and No-Build scenarios is shown in Figure 20. The 2026 No-Build traffic volumes are shown in Figure 21.

5.4 BUILD TRAFFIC VOLUMES

The 2026 Build traffic volumes include the 2026 No-Build traffic and the proposed development traffic discussed in Section 3.0 and Section 4.0. The total school traffic volumes are shown in Figure 22 and Figure 23. The 2026 Build traffic volumes are shown in Figure 24. The 2026 Build traffic volumes with the Reunion Creek Extension are shown in Figure 25.

5.4.1 Peak Hour Factors

The total 2026 Build traffic volumes include both the school traffic and the traffic volumes from the 2026 No-Build analysis. The No-Build traffic volumes were assumed to operate with a peak hour factor (PHF) of 0.9 whereas traffic to/from the proposed school is assumed to operate with a PHF of 0.5. Weighted averages were used to determine the individual movement PHFs in the Build and Build-Improved analysis scenarios. Traffic volume calculations, including PHF calculations, are contained in the appendix.

Figure 18: 2020 Existing Traffic Volumes

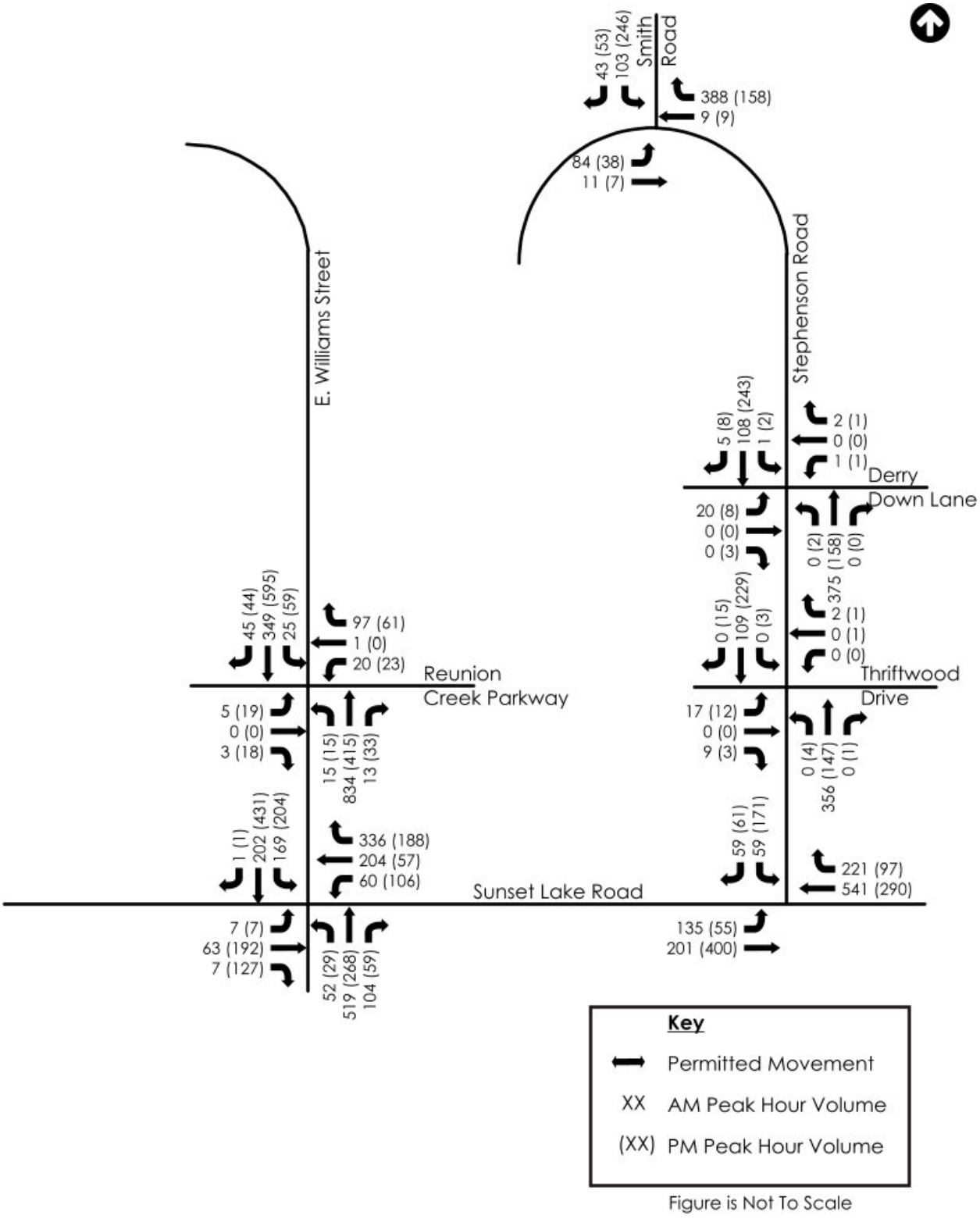


Figure 19: Approved Development Volumes

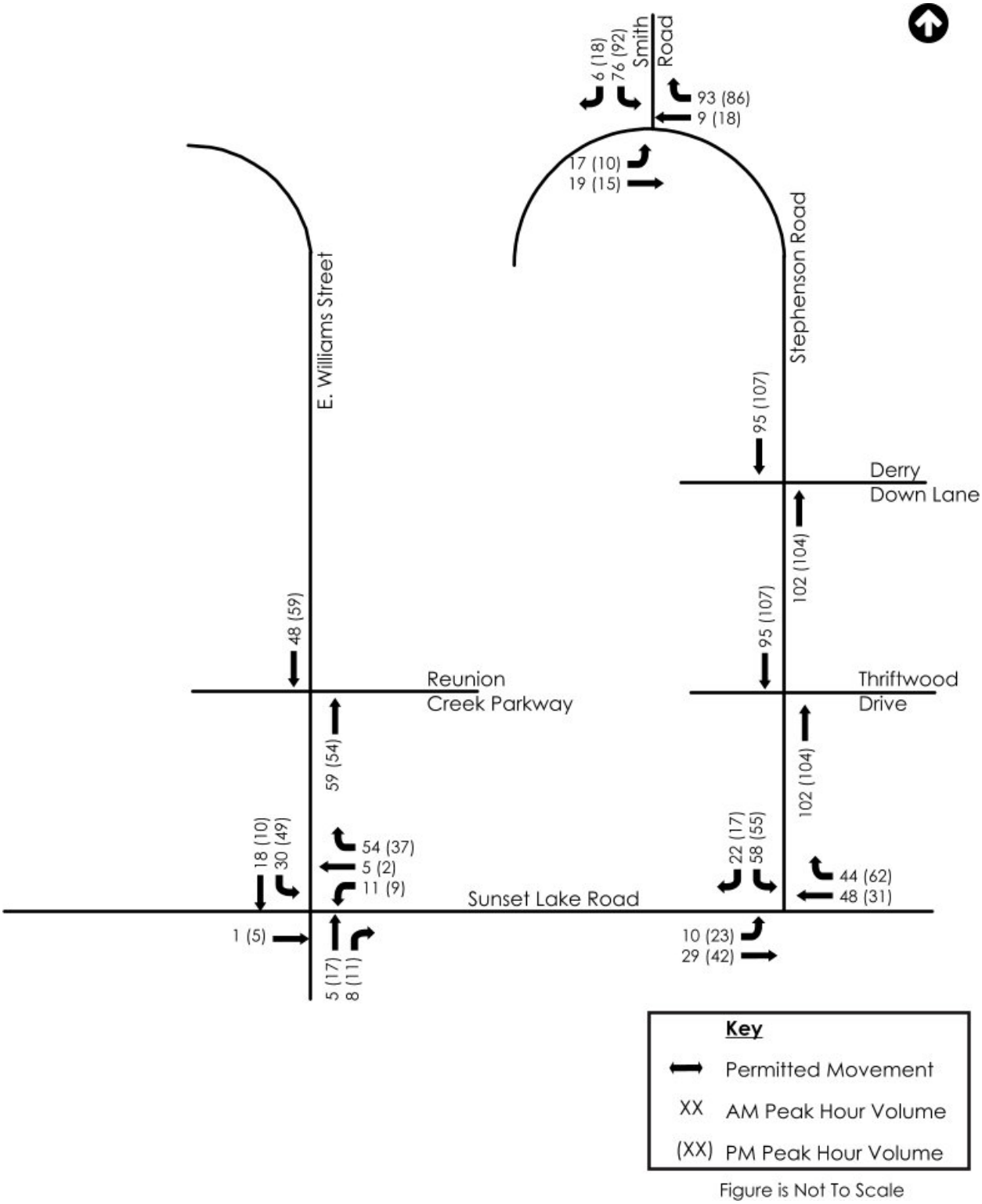


Figure 20: Background Growth Volumes

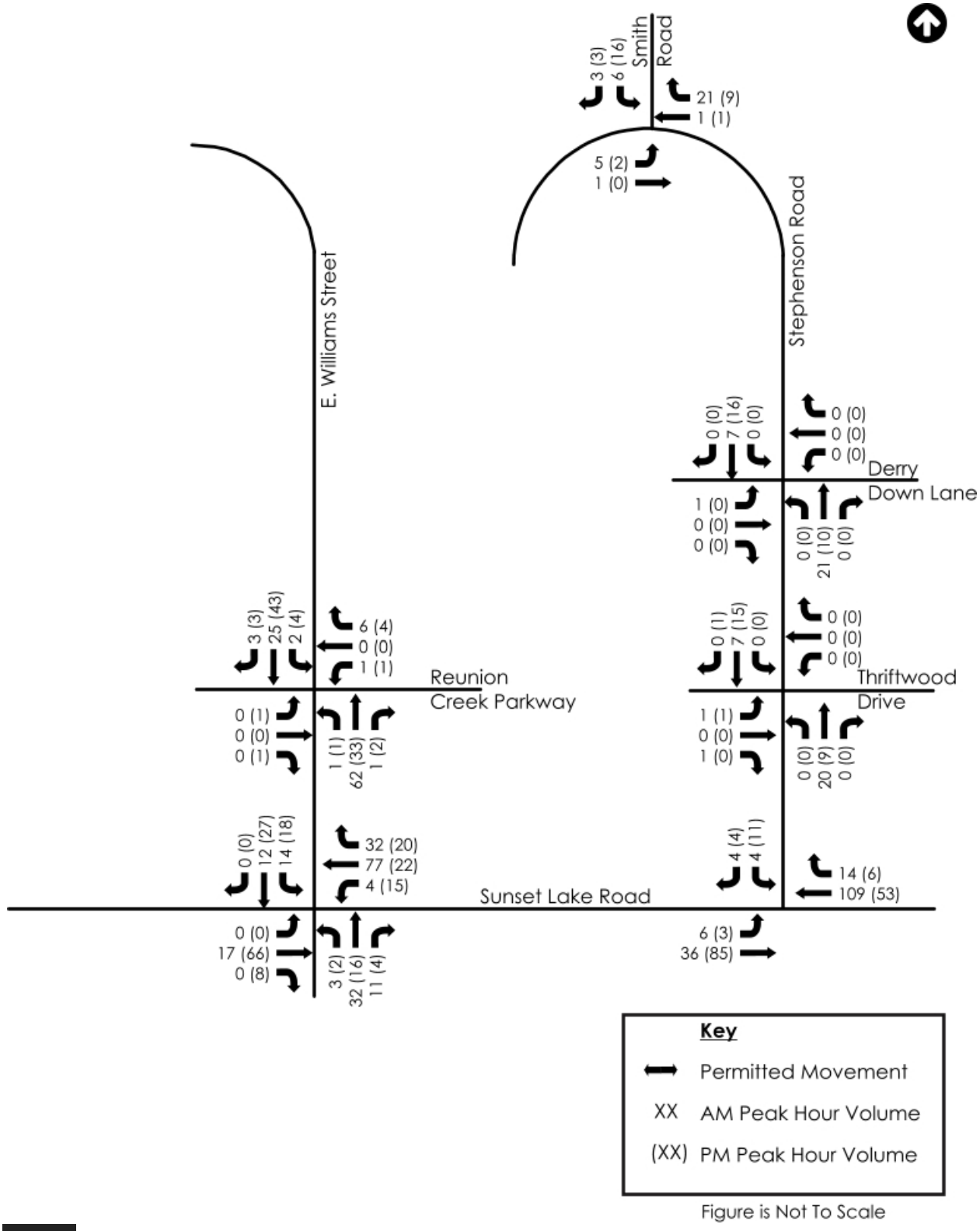


Figure 21: 2026 No-Build Traffic Volumes

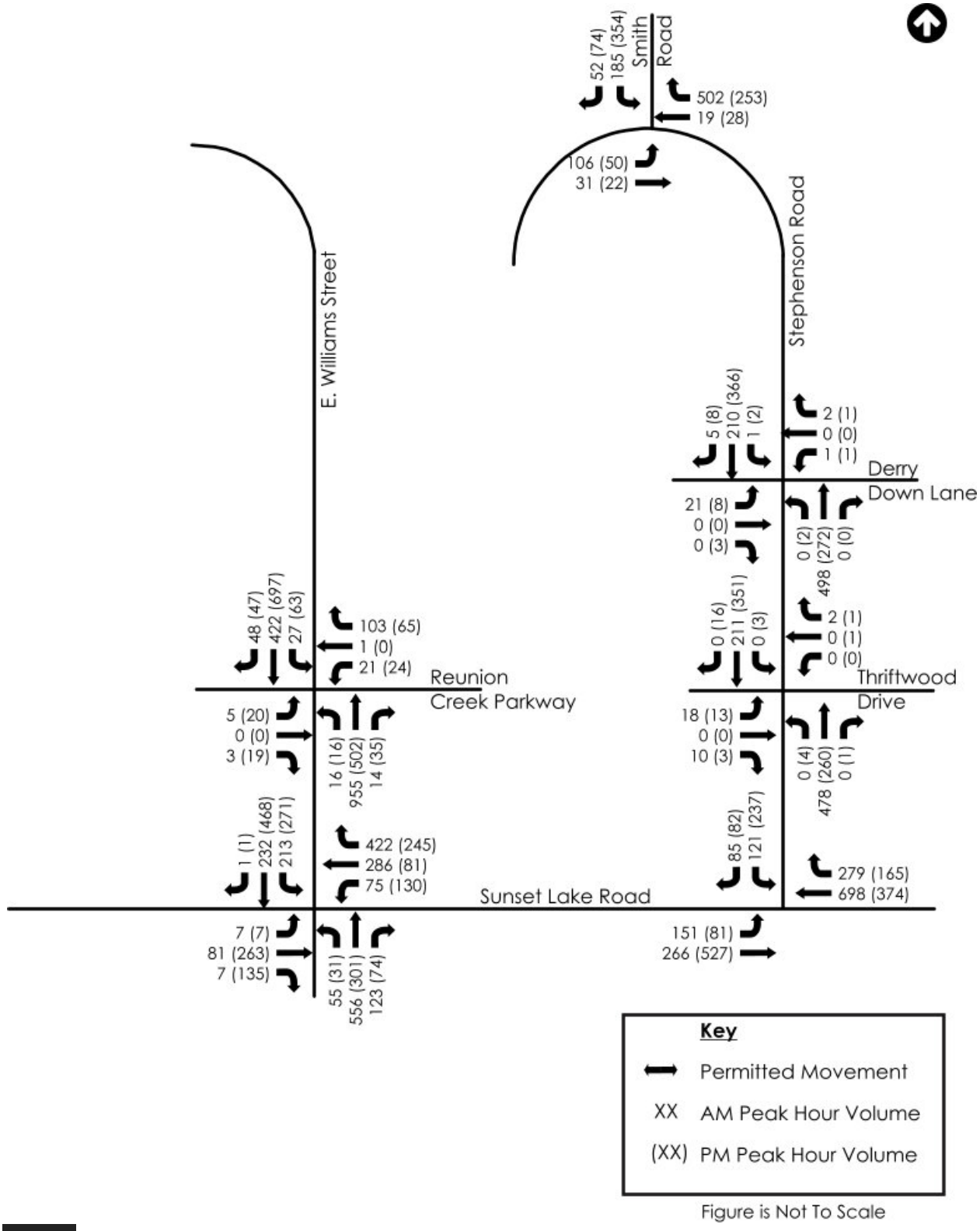


Figure 22: Total School Trips

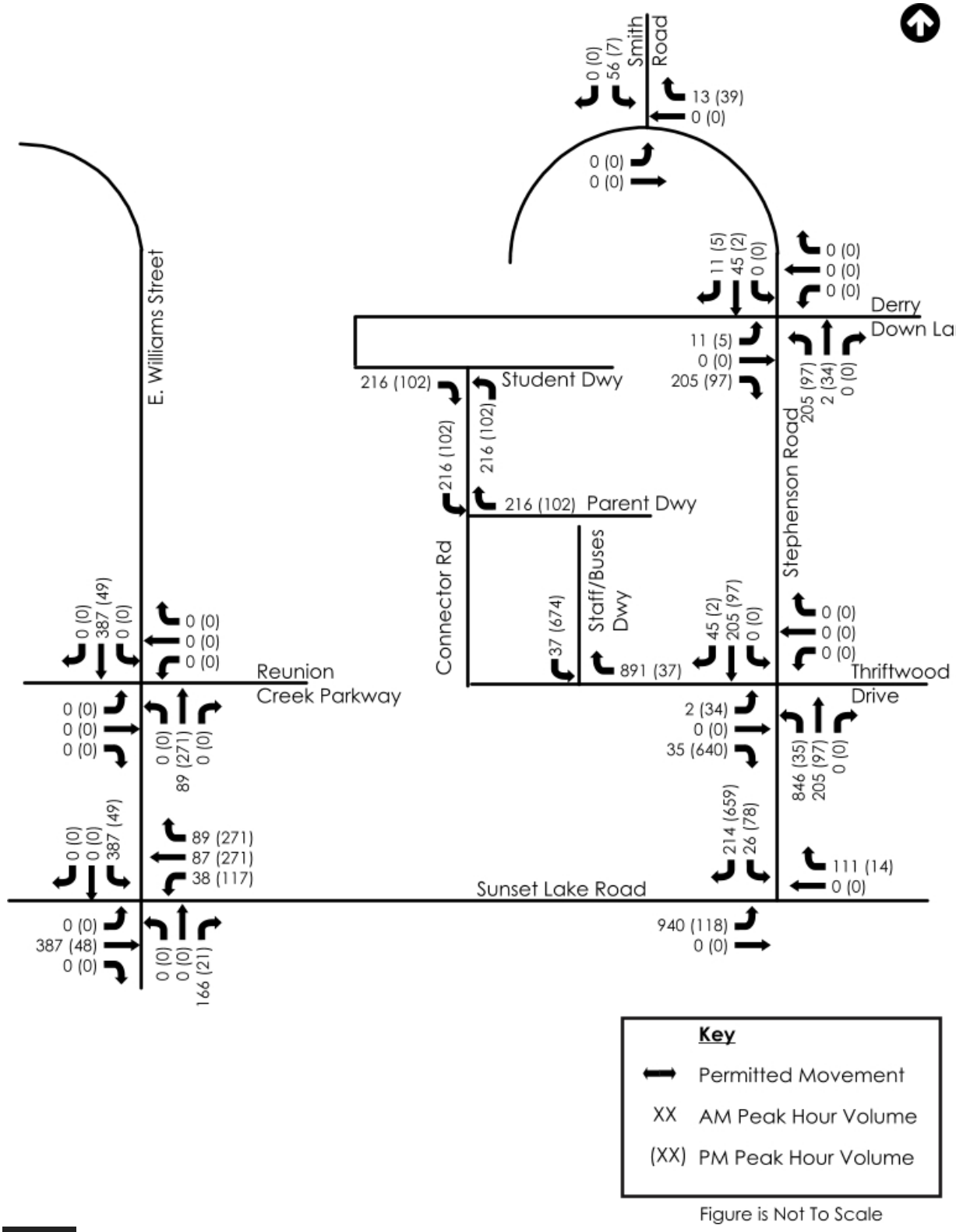


Figure 23: Total School Trips – Reunion Creek

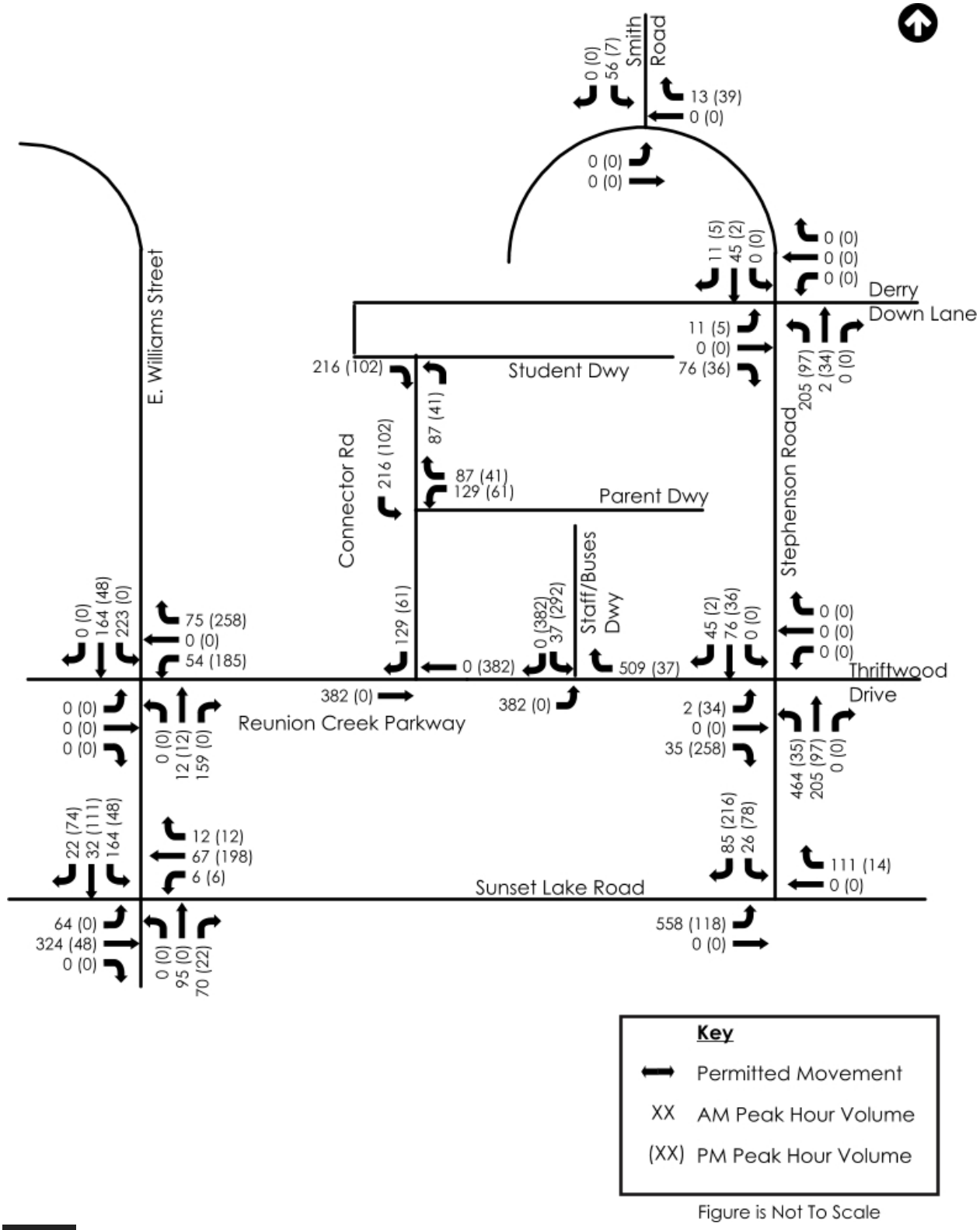


Figure 24: 2026 Build Traffic Volumes

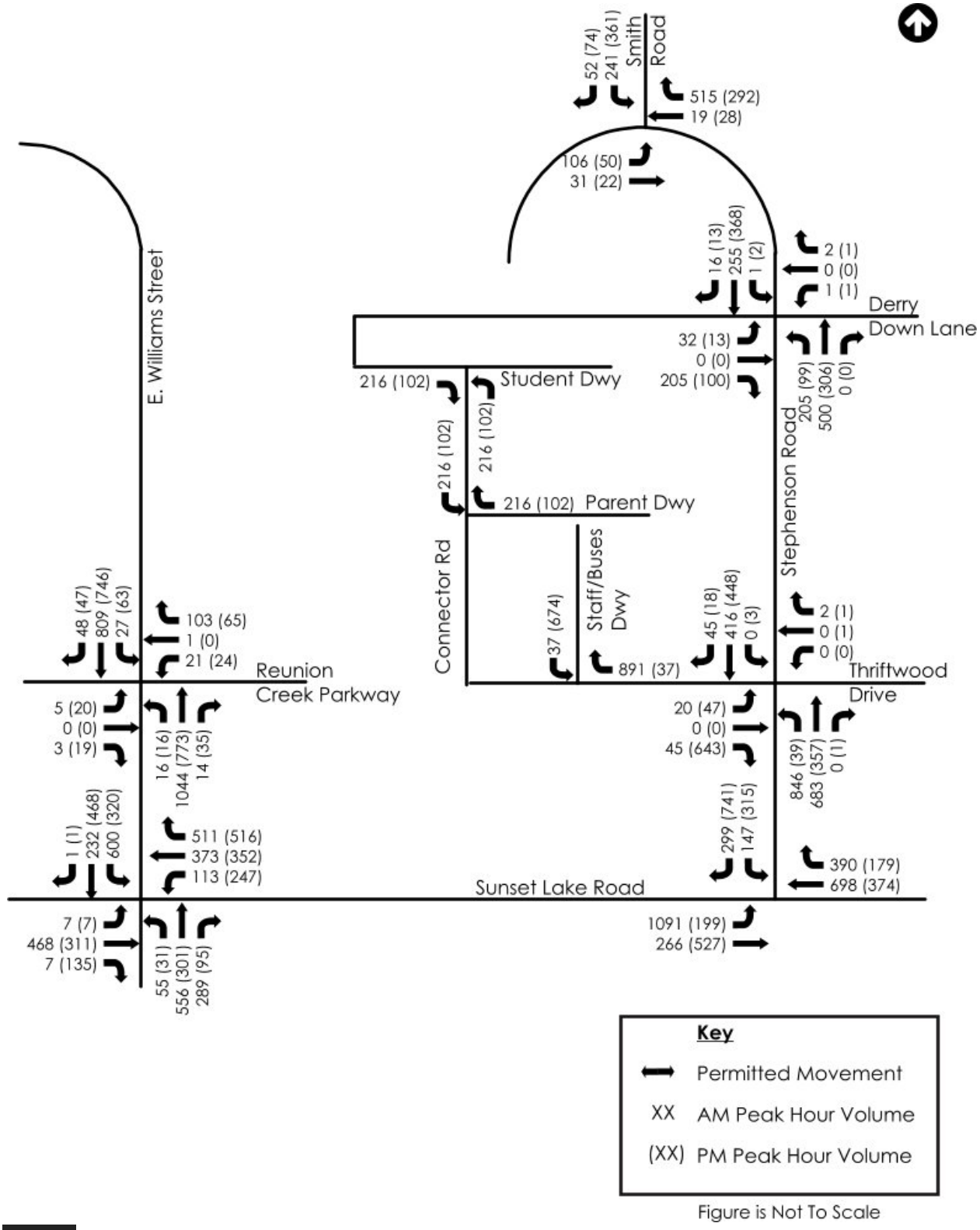
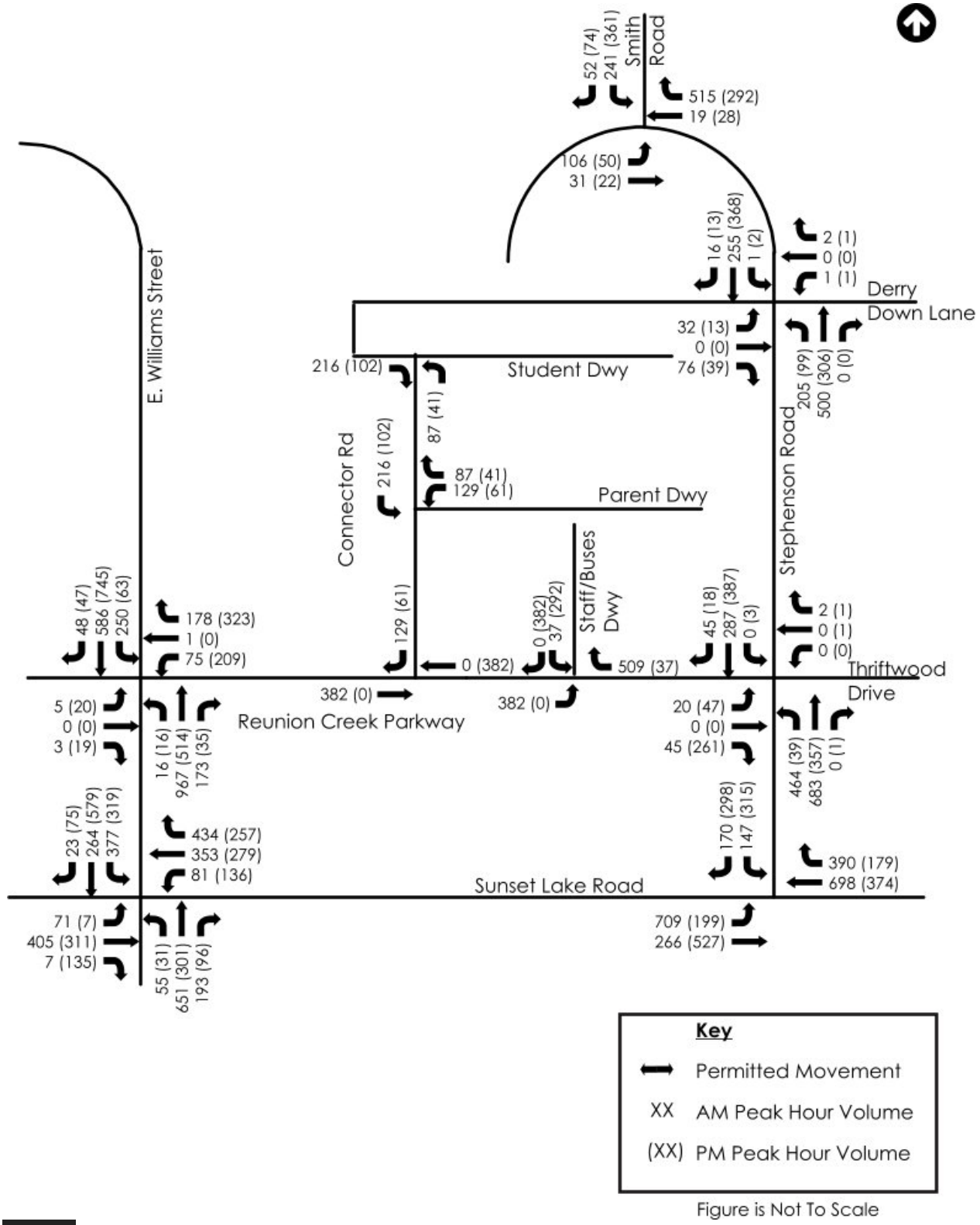


Figure is Not To Scale

Figure 25: 2026 Build – Reunion Creek Traffic Volumes



6.0 TRAFFIC ANALYSIS

Capacity analyses were performed for the roadway network in the study area. The traffic analysis program Synchro Version 10 was used to analyze all signalized and stop-controlled intersections according to methods put forth by the Transportation Research Board's Highway Capacity Manual (HCM)[5]. The HCM defines capacity as the "maximum rate of flow at which persons or vehicles can be reasonably expected to traverse a point or uniform section of a lane or roadway during a specified period under the prevailing roadway, traffic, and control conditions, usually expressed as vehicles per lane per hour."

Level of service (LOS) is a term used to describe different traffic conditions and is defined as a "qualitative measure describing operational conditions within a traffic stream, and their perception by motorists / or passengers." LOS varies from Level A, representing free flow, to Level F where traffic breakdown conditions are evident. At an unsignalized intersection, the primary traffic on the main roadway is virtually uninterrupted. Therefore, the overall delay for the intersection is usually less than what is calculated for the minor street movements. The overall intersection delay and the delay for the intersections' s minor movement(s) are reported in the summary tables of this report. Generally, LOS D is acceptable for signalized intersections in suburban areas during peak periods. For unsignalized intersections, it is not uncommon for some of the minor street movements or approaches to be operating at LOS F during peak hour conditions and that is not necessarily indicative of an area that requires improvements. Schools generate traffic uniquely as the traffic occurs for a short duration in the morning and another in mid-afternoon on weekdays while school is in session. Outside of these short durations, schools generate minimal traffic. As a result of this, NCDOT is accepting of higher delays (i.e. LOS D, E, or F) at intersections near schools.

Capacity analyses were completed by the NCDOT Congestion Management Capacity Analysis Guidelines[6], and the requirements for school traffic operations studies outlined in the MSTA School Calculator[4]. Table 3 presents the criteria of each LOS as indicated in the HCM[5].

Table 3: Level of Service Criteria

Level of Service (LOS)	Signalized Intersection Control Delay (seconds / vehicle)	Unsignalized Intersection Control Delay (seconds / vehicle)
A	≤ 10	≤ 10
B	>10 and ≤ 20	>10 and ≤ 15
C	>20 and ≤ 35	>15 and ≤ 25
D	>35 and ≤ 55	>25 and ≤ 35
E	>55 and ≤ 80	>35 and ≤ 50
F	>80	>50

Capacity analyses were performed for the following conditions:

- 2020 Existing;
- 2026 No-Build
- 2026 Build;

- 2026 Build with Improvements;
- 2026 Build with Reunion Creek Parkway Extension;
- 2026 Build with Improvements and Reunion Creek Parkway Extension.

SimTraffic runs were completed for all scenarios to observe the predicted traffic operations throughout the study area during each of the peak hours. As in standard practice, ten (10) SimTraffic analysis runs were performed for each scenario, using MSTA simulation settings. Detailed SimTraffic reports can be found in the appendix.

All Synchro files and detailed printouts can be found in the appendix. A summary of the results of the analyses is provided in the following sub-sections.

6.1 2020 EXISTING

In the base year of 2020 under the existing geometric conditions, all study intersections and approaches operate at an acceptable LOS with the following exceptions:

- Eastbound and westbound approaches at E Williams Street & Reunion Creek Parkway in the AM Peak
- Westbound approach at E Williams Street & Sunset Lake Road in the AM Peak
- Southbound approach at Sunset Lake Road & Stephenson Road in both peak hours

Synchro LOS and delay results are listed in Table 4 and illustrated in Figure 26.

Table 4: 2020 Existing Level of Service and Delay

LOS/Delay		2020 Existing				
		Overall	EB	WB	NB	SB
E Williams St & Reunion Creek Pkwy	AM	**# (4.1)**	E (38.0)	E (40.6)	# (0.1)	# (0.6)
	PM	**# (3.3)**	D (31.1)	D (26.4)	# (0.3)	# (0.7)
E Williams St/N Main St & Sunset Lake Rd/Old Smithfield Rd	AM	**D (45.6)**	C (32.4)	E (56.2)	D (42.4)	D (37.1)
	PM	**C (32.2)**	D (55.0)	C (29.2)	C (29.2)	C (23.9)
Sunset Lake Rd & Stephenson Rd	AM	**# (5.0)**	# (4.3)	# (0.0)	- (-)	E (38.9)
	PM	**# (10.0)**	# (1.0)	# (0.0)	- (-)	E (44.3)
Stephenson Rd & Thriftwood Dr/Tear Drop Cir	AM	**# (1.1)**	B (12.3)	B (12.4)	# (0.1)	# (0.3)
	PM	**# (1.0)**	B (11.8)	B (11.2)	# (0.2)	# (0.1)
Stephenson Rd & Derry Down Ln/Cockle Burr Dr	AM	**# (1.1)**	B (13.2)	B (12.6)	# (0.1)	# (0.3)
	PM	**# (0.9)**	B (11.9)	B (11.4)	# (0.2)	# (0.1)
Stephenson Rd & Smith Rd	AM	**# (4.0)**	# (7.6)	# (0.0)	- (-)	B (12.4)
	PM	**# (7.4)**	# (6.5)	# (0.0)	- (-)	B (11.6)

Legend:

X (X)	LOS (Delay)
	Unsignalized Intersection
	Signalized Intersection
#	No level of service provided
- (-)	No movement

Figure 26: 2020 Existing Level of Service and Delay

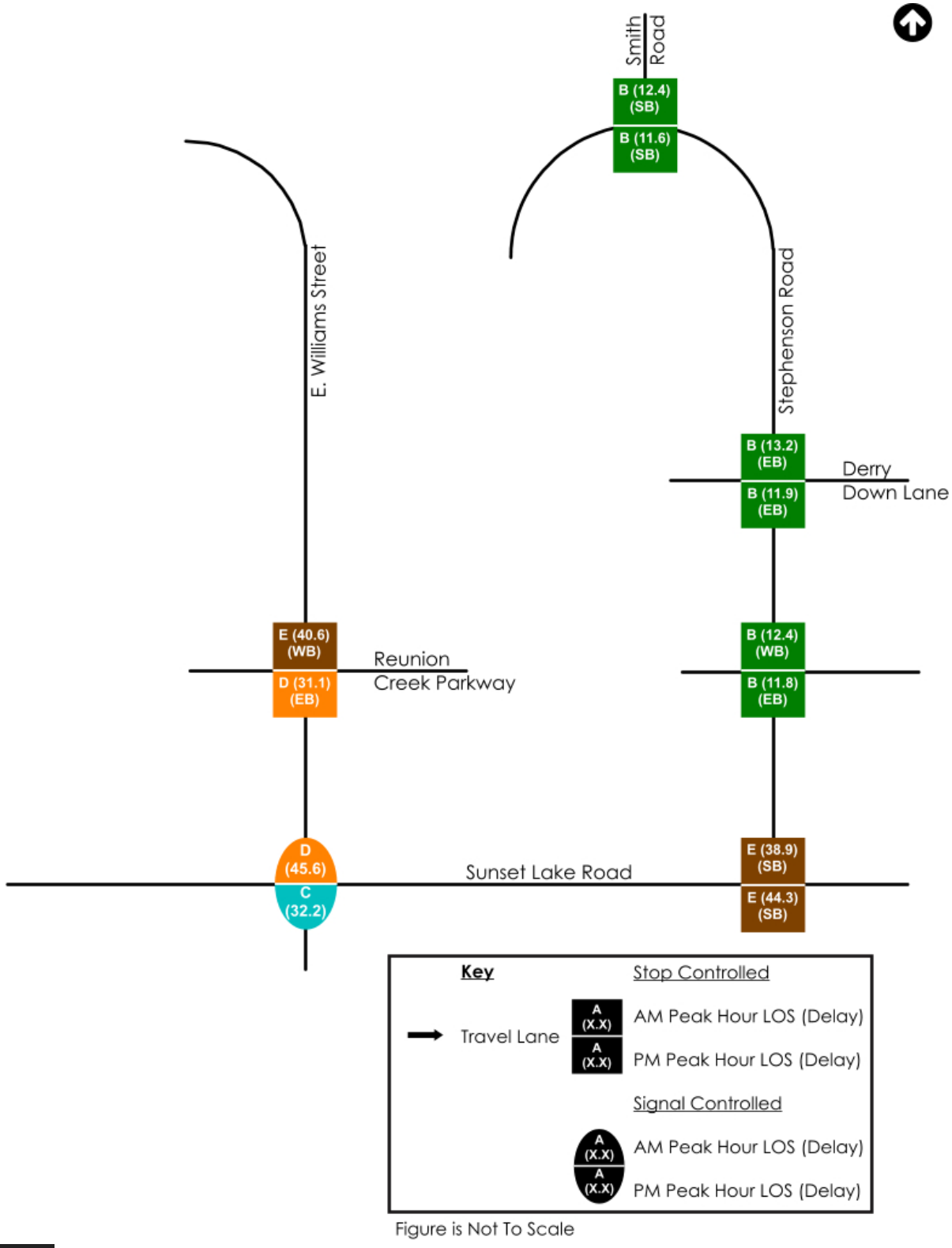


Figure is Not To Scale

6.2 2026 NO-BUILD

As part of the Sunset Lake Apartments, a traffic signal and geometric improvements at the intersection of Stephenson Road at Sunset Lake Road are assumed to be constructed in this scenario. Signal plans showing these improvements can be found in the appendix.

In the future year of 2026, all study intersections and approaches operate similarly as shown in the 2020 Existing analysis with exception of the E Williams Street & Sunset Lake Road intersection which now operates at LOS F in the AM peak hour with several approaches operating at LOS E or F in both peak hours. The operations at Sunset Lake Road & Stephenson Road improve between the Existing and No-Build analysis due to the signal and associated improvements committed to by the Sunset Lake Apartments development.

Synchro LOS and delay results are listed in Table 5 and illustrated in Figure 27.

Table 5: 2026 No-Build Level of Service and Delay

LOS/Delay		2026 No-Build				
		Overall	EB	WB	NB	SB
E Williams St & Reunion Creek Pkwy	AM	**# (6.8)**	F (60.5)	F (76.5)	# (0.1)	# (0.6)
	PM	**# (4.4)**	E (47.2)	E (41.8)	# (0.3)	# (0.7)
E Williams St/N Main St & Sunset Lake Rd/Old Smithfield Rd	AM	**F (80.8)**	C (29.9)	F (87.6)	E (75.4)	F (88.7)
	PM	**D (35.9)**	E (56.1)	C (25.5)	D (38.2)	C (30.1)
Sunset Lake Rd & Stephenson Rd	AM	**B (14.3)**	A (5.9)	B (10.3)	- (-)	D (50.4)
	PM	**B (16.3)**	A (3.8)	B (11.2)	- (-)	D (48.9)
Stephenson Rd & Thriftwood Dr/Tear Drop Cir	AM	**# (1.0)**	C (15.4)	C (15.3)	# (0.1)	# (0.2)
	PM	**# (0.8)**	C (15.0)	B (13.7)	# (0.1)	# (0.1)
Stephenson Rd & Derry Down Ln/Cockle Burr Dr	AM	**# (1.0)**	C (17.3)	C (15.6)	# (0.1)	# (0.2)
	PM	**# (0.7)**	B (14.9)	B (14.0)	# (0.1)	# (0.1)
Stephenson Rd & Smith Rd	AM	**# (6.0)**	# (7.1)	# (0.0)	- (-)	C (18.7)
	PM	**# (9.8)**	# (5.6)	# (0.0)	- (-)	C (16.9)

Legend:

X (X)	LOS (Delay)
	Unsignalized Intersection
	Signalized Intersection
#	No level of service provided
- (-)	No movement

Figure 27: 2026 No-Build Level of Service and Delay

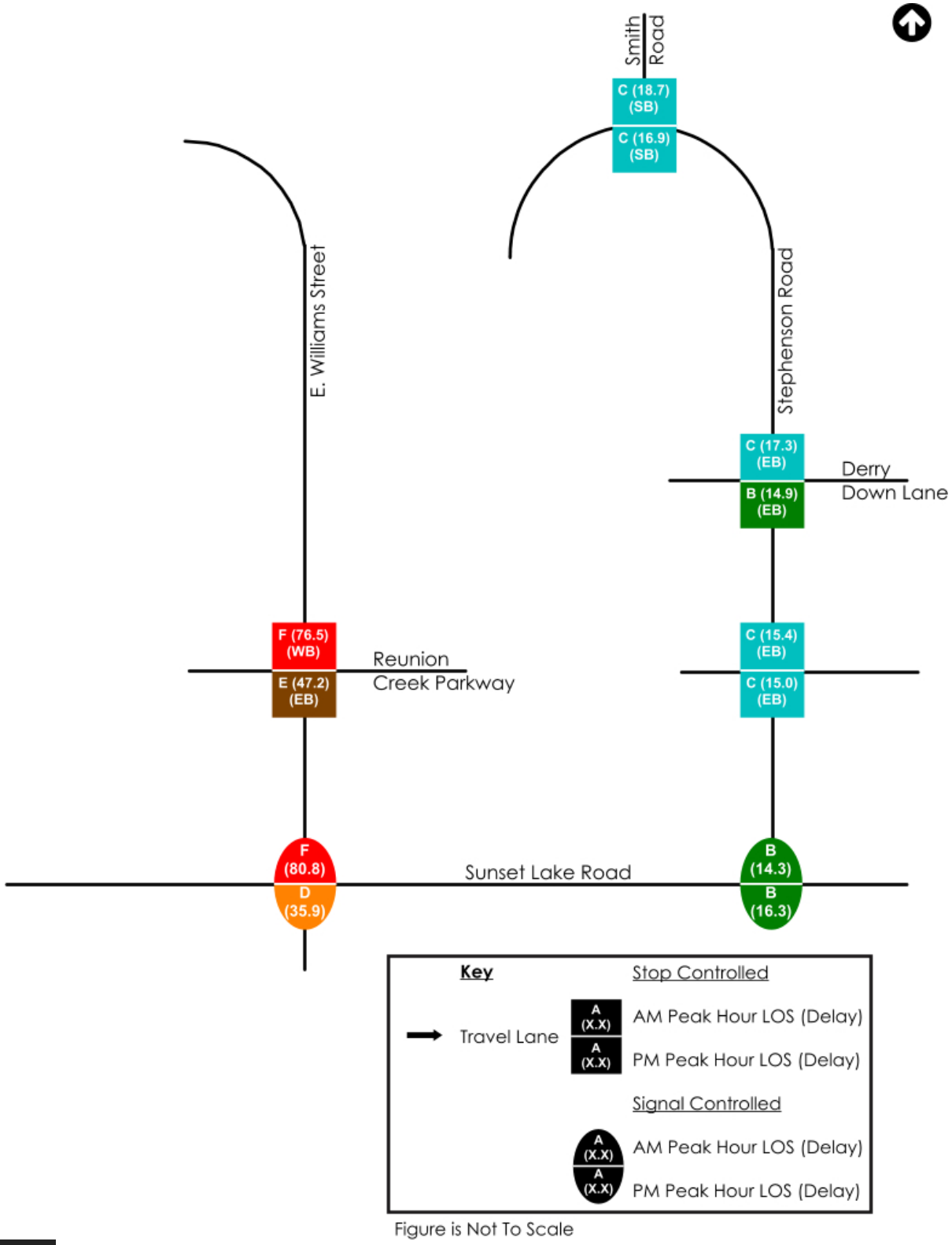


Figure is Not To Scale

6.3 2026 BUILD WITHOUT IMPROVEMENTS

This analysis scenario evaluates traffic operations with the addition of the H-12 High School trips but without any improvements. Under these conditions, study intersections and approaches operate with longer delays as detailed in Table 6 and Figure 28. The following poor operations should be noted:

- The signalized intersections at E Williams Street & Sunset Lake Road and Sunset Lake Road & Stephenson Road operate at LOS E and F in both peak hours, with many approaches having a delay over 300 seconds in the AM peak hour.
  - There is extensive queueing along Sunset Lake Road at the Sunset Lake Road & Stephenson Road intersection as a result of heavy left turns from eastbound Sunset Lake Road to access the school
- The unsignalized intersection of Stephenson Road at Thriftwood Drive operates at LOS F in both peak hours with delays exceeding 300 seconds from the side street approaches.
  - There is extensive queuing along Stephenson Road as a result of heavy left turns from northbound Stephenson Road to access the school
- The unsignalized intersection of Stephenson Road at Derry Down Lane operates at LOS F in the AM peak hour.
- The unsignalized E Williams Street & Reunion Creek Parkway intersection operates at LOS F in both peak hours as a result of queuing spilling back from the E Williams Street & Sunset Lake Road intersection.

Table 6: 2026 Build Level of Service and Delay

LOS/Delay		2026 Build				
		Overall	EB	WB	NB	SB
E Williams St & Reunion Creek Pkwy	AM	**# (35.2)**	F (##)	F (##)	# (0.2)	# (0.3)
	PM	**# (17.3)**	F (197.4)	F (268.8)	# (0.2)	# (0.8)
E Williams St/N Main St & Sunset Lake Rd/Old Smithfield Rd	AM	**F (##)**	F (296.4)	F (##)	F (##)	F (##)
	PM	**F (133.8)**	D (49.3)	F (163.8)	F (125.2)	F (131.7)
Sunset Lake Rd & Stephenson Rd	AM	**F (263.9)**	F (##)	F (212.1)	- (-)	D (54.8)
	PM	**E (79.9)**	A (4.3)	F (84.8)	- (-)	F (116.2)
Stephenson Rd & Thriftwood Dr/Tear Drop Cir	AM	**# (198.3)**	F (##)	F (##)	# (260.4)	# (0.1)
	PM	**# (498.5)**	F (##)	F (##)	# (1.2)	# (0.1)
Stephenson Rd & Derry Down Ln/Cockle Burr Dr	AM	**# (95.2)**	F (##)	F (199.1)	# (3.9)	# (0.1)
	PM	**# (5.2)**	C (19.0)	D (31.5)	# (3.1)	# (0.1)
Stephenson Rd & Smith Rd	AM	**# (10.1)**	# (7.2)	# (0.0)	- (-)	D (28.3)
	PM	**# (10.2)**	# (5.7)	# (0.0)	- (-)	C (18.7)
Thriftwood Dr & Staff/Buses Dwy	AM	**# (0.8)**	# (0.0)	# (0.0)	- (-)	C (19.9)
	PM	**# (179.7)**	# (0.0)	# (0.0)	- (-)	F (189.6)
Connector Rd & Parent Dwy	AM	**# (9.2)**	- (-)	B (10.4)	# (0.0)	# (8.0)
	PM	**# (8.3)**	- (-)	A (9.1)	# (0.0)	# (7.5)
Derry Down Ln/Student Dwy & Connector Rd	AM	**# (7.6)**	# (0.0)	# (0.0)	C (15.3)	- (-)
	PM	**# (5.1)**	# (0.0)	# (0.0)	B (10.2)	- (-)

Legend:

X (X)	LOS (Delay)
	Unsignalized Intersection
	Signalized Intersection
#	No level of service provided
##	Delay exceeds 300 seconds
- (-)	No movement

Figure 28: 2026 Build Level of Service and Delay

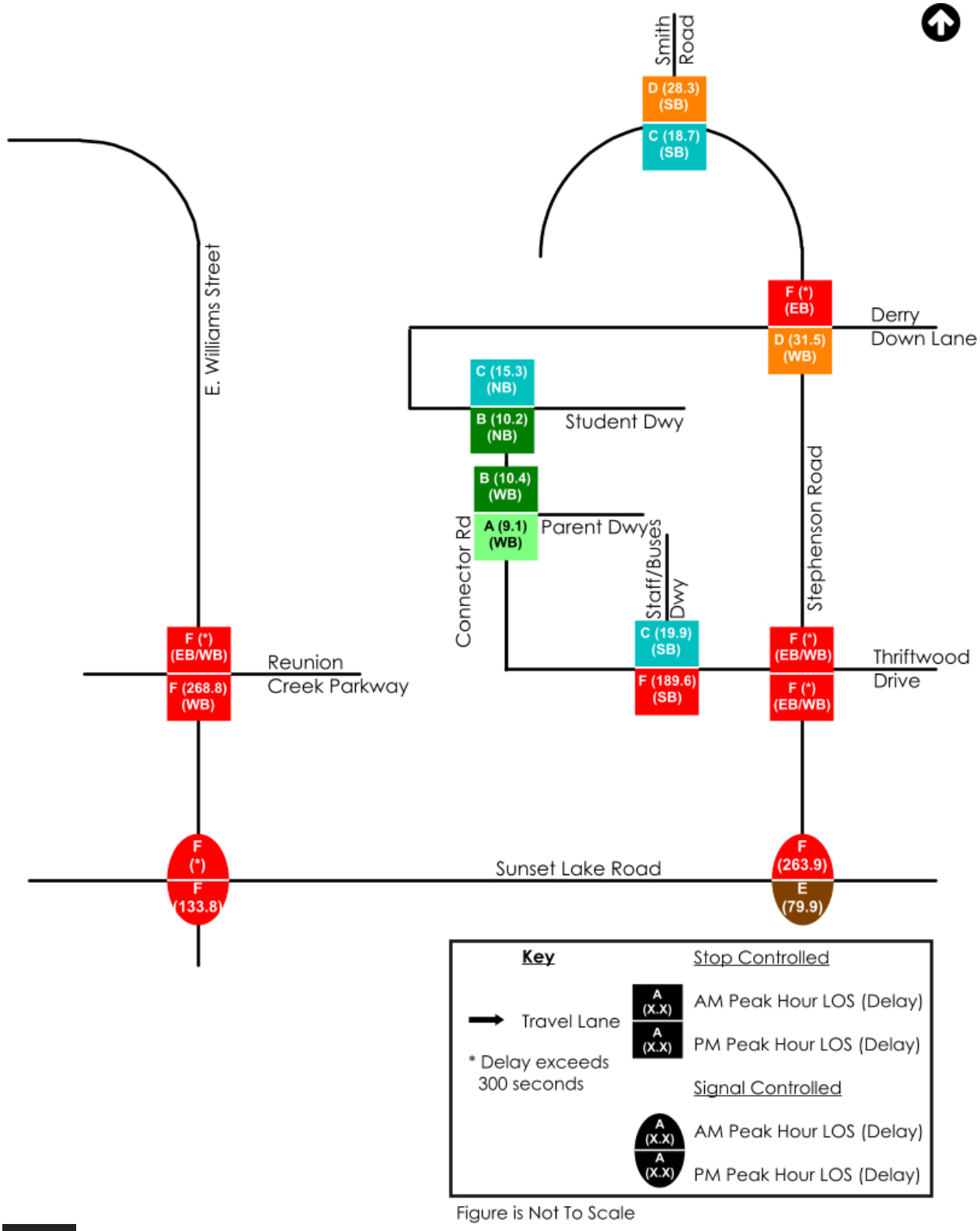


Figure is Not To Scale

6.4 2026 BUILD WITH IMPROVEMENTS

Geometric improvements such as the installation of turn-lanes are analyzed in this scenario. These items are listed in the Recommendations section. Table 7 and Figure 29 shows the results of the capacity analysis under the 2026 Build-Improved traffic conditions.

Table 7: 2026 Build-Improved Level of Service and Delay

LOS/Delay		2026 Build Improved				
		Overall	EB	WB	NB	SB
E Williams St & Reunion Creek Pkwy	AM	**# (35.2)**	F (##)	F (##)	# (0.2)	# (0.3)
	PM	**# (17.3)**	F (197.4)	F (268.8)	# (0.2)	# (0.8)
E Williams St/N Main St & Sunset Lake Rd/Old Smithfield Rd	AM	**F (187.7)**	F (##)	D (54.3)	F (178.6)	F (248.7)
	PM	**E (61.0)**	F (105.3)	C (34.4)	E (77.8)	E (75.9)
Sunset Lake Rd & Stephenson Rd	AM	**F (115.2)**	F (132.7)	F (114.8)	- (-)	E (57.2)
	PM	**F (84.0)**	A (4.0)	E (76.1)	- (-)	F (127.0)
Stephenson Rd & Thriftwood Dr/Tear Drop Cir	AM	**# (198.3)**	F (##)	F (##)	# (260.4)	# (0.1)
	PM	**# (338.2)**	F (##)	F (##)	# (1.2)	# (0.1)
Stephenson Rd & Derry Down Ln/Cockle Burr Dr	AM	**# (13.0)**	E (37.7)	F (149.4)	# (3.9)	# (0.1)
	PM	**# (4.5)**	C (15.2)	D (30.4)	# (3.1)	# (0.1)
Stephenson Rd & Smith Rd	AM	**# (10.1)**	# (7.2)	# (0.0)	- (-)	D (28.3)
	PM	**# (10.2)**	# (5.7)	# (0.0)	- (-)	C (18.7)
Thriftwood Dr & Staff/Buses Dwy	AM	**# (0.8)**	# (0.0)	# (0.0)	- (-)	C (19.9)
	PM	**# (179.7)**	# (0.0)	# (0.0)	- (-)	F (189.6)
Connector Rd & Parent Dwy	AM	**# (9.2)**	- (-)	B (10.4)	# (0.0)	# (8.0)
	PM	**# (8.3)**	- (-)	A (9.1)	# (0.0)	# (7.5)
Derry Down Ln/Student Dwy & Connector Rd	AM	**# (7.6)**	# (0.0)	# (0.0)	C (15.3)	- (-)
	PM	**# (5.1)**	# (0.0)	# (0.0)	B (10.2)	- (-)

Legend:

X (X)	LOS (Delay)
	Unsignalized Intersection
	Signalized Intersection
#	No level of service provided
##	Delay exceeds 300 seconds
- (-)	No movement

The results of this analysis show that the new turn lanes at the Stephenson Road intersections with Thriftwood Drive and Derry Down Lane do not significantly improve operations at these intersections. It was noted from the SimTraffic simulation runs however that the additional turn lanes did improve flow into and out of the school during both peak hours by allowing predominantly right-turning traffic exiting the school to not be impeded by vehicles making a left onto Stephenson Road.

Additional turn lane improvements at the intersections of E Williams St & Sunset Lake Road and Stephenson Road & Sunset Lake Road would significantly improve operations in both peak hours. The addition of a northbound right and westbound right-turn lane at the E Williams St & Sunset Lake Road may reduce the overall delay by 160 seconds in the AM peak hour and 75 seconds in the PM peak hour. The addition of a second eastbound left turn lane at Stephenson Road & Sunset Lake Road, along with a second receiving lane along northbound Stephenson Road may reduce the overall delay by 150 seconds in the AM peak hour. The second receiving lane should provide a minimum of 600 feet of full-width lane before merging into the single northbound lane on Stephenson Road. It should be noted that the adjacent development (i.e. Sunset Lake Apartments) and right-of-way constraints in the northwest quadrant of the intersection of Sunset Lake Road at Stephenson Road may prohibit the construction of this improvement.

6.4.1 SimTraffic Operations

SimTraffic runs were completed for each of the analysis scenarios. In-order to verify proposed turn-bay storage lengths, Table 8 summarizes the queuing results from the Build-improved scenario for both Synchro (95th percentile queues) and SimTraffic (maximum observed queues). As improvements are only recommended at the proposed school driveways, queues are not included in the table for other study intersections. These queues can be found in the appendix.

Table 8: Queue Length Summary

Intersection / Movement		Recommended Storage (feet)	2026 Build-Improved			
			AM Peak Hour		PM Peak Hour	
			95th %'ile Queue (ft.)	Max. Obs. Queue (ft.)	95th %'ile Queue (ft.)	Max. Obs. Queue (ft.)
Stephenson Road & Thriftwood Drive/Tear Drop Circle	Northbound Left	500	2570	600+	5	49
	Eastbound Left-Through	250	N/A	175	63	350
	Southbound Right	100	0	33	0	6
Stephenson Road & Derry Down Lane/Cockle Burr Drive	Northbound Left	100	38	73	15	63
	Eastbound Left-Through	100	98	49	13	41
Sunset Lake Road & Stephenson Road	Eastbound Left	Max Available	773	1138	42	150
	Westbound Right	625	559	725	167	537
	Southbound Left	525	312	272	514	296
E Williams Street/North Main Street & Sunset Lake Road/Old Smithfield Road	Northbound Right	500	376	600	100	477
	Westbound Right	450	419	241	175	234

N/A = No queue provided by Synchro

Queuing results show that there is sufficient storage for these movements with exception of the northbound left-turn lane at the Stephenson Road & Thriftwood Drive intersection where the HCM 95th percentile queue is 2570 feet in the AM peak, but the recommended storage length is 500 feet. In the SimTraffic simulation runs, it was observed that the queue for the northbound left movement extended south to the Sunset Lake Road & Stephenson Road intersection. As Thriftwood Drive is the student entrance and exit to the H-12 High School, the northbound left-turn movement will only occur for a short duration in the AM peak period.

Figure 29: 2026 Build with Improvements Level of Service and Delay

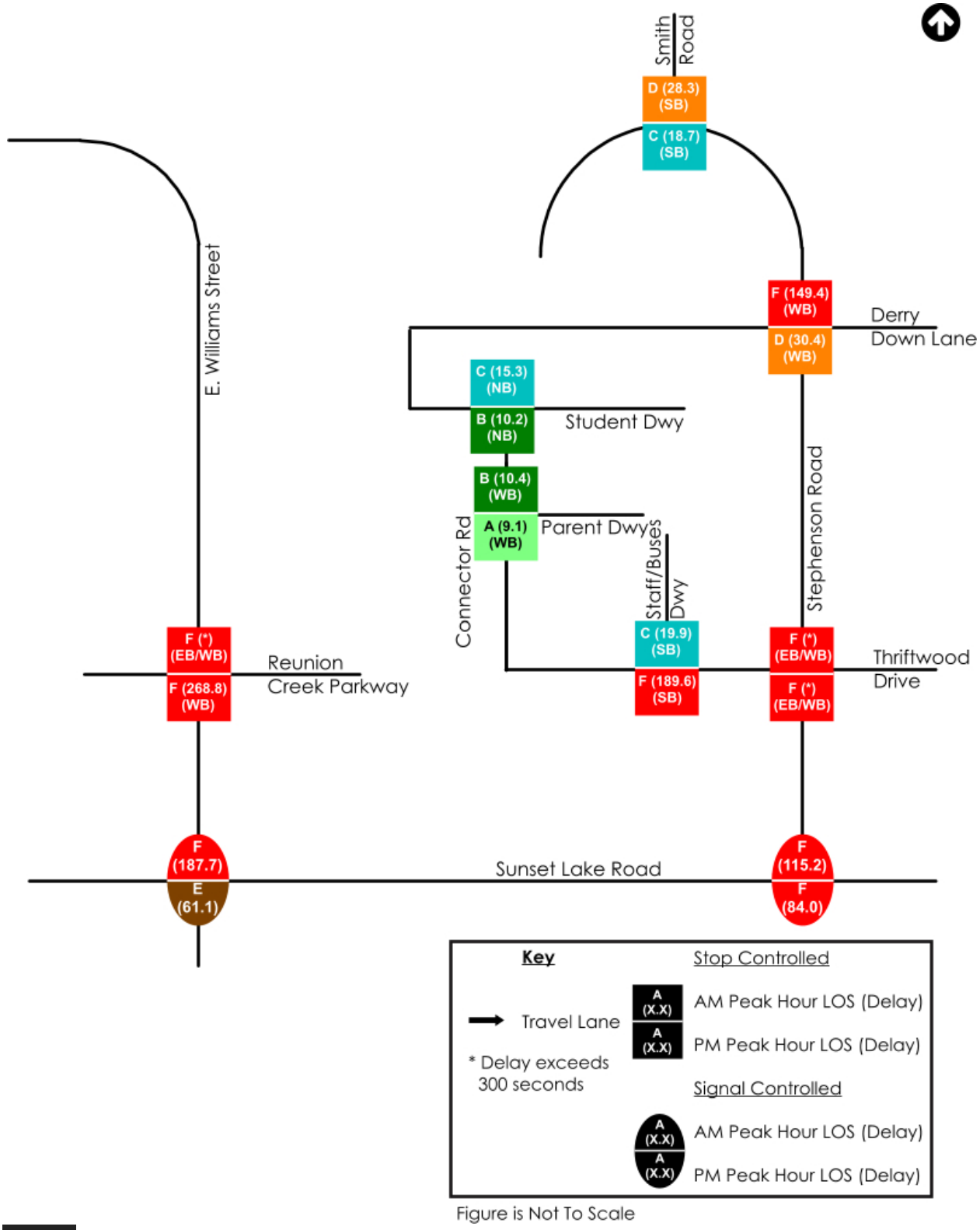


Figure is Not To Scale

6.5 2026 BUILD WITHOUT IMPROVEMENTS – REUNION CREEK

This analysis scenario evaluates traffic operations with the addition of the H-12 High School trips but with the extension of Reunion Creek Parkway to Thriftwood Drive. Under these conditions, study intersections and approaches operate with longer delays as detailed in Table 9 and Figure 30. The following poor operations should be noted:

- The signalized intersections at E Williams Street & Sunset Lake Road operate at LOS E and F in both peak hours.
- The signalized intersection of Sunset Lake Road & Stephenson Road operates at LOS F in the AM peak.
- The unsignalized intersection of Stephenson Road at Thriftwood Drive operates at LOS F in both peak hours with delays exceeding 300 seconds from the side street approaches in the AM peak.
- The unsignalized intersection of Stephenson Road at Derry Down Lane operates at LOS F in the AM peak hour.
- The unsignalized E Williams Street & Reunion Creek Parkway intersection operates at LOS F in both peak hours as a result of increased trips entering and exiting Reunion Creek Parkway to access the school. Delays exceed 300 seconds from the side street approaches.

Table 9: 2026 Build – Reunion Creek Level of Service and Delay

LOS/Delay		2026 Build w/ Reunion Creek				
		Overall	EB	WB	NB	SB
E Williams St & Reunion Creek Pkwy	AM	**# (8.4)**	F (##)	F (##)	# (0.1)	# (20.4)
	PM	**# (##)**	F (##)	F (##)	# (0.2)	# (0.8)
E Williams St/N Main St & Sunset Lake Rd/Old Smithfield Rd	AM	**F (260.3)**	F (209.7)	C (31.1)	F (##)	F (##)
	PM	**E (67.7)**	E (74.8)	E (71.7)	E (58.4)	E (65.4)
Sunset Lake Rd & Stephenson Rd	AM	**F (131.9)**	F (167.4)	F (115.7)	- (-)	D (54.1)
	PM	**D (35.2)**	B (11.1)	B (18.5)	- (-)	E (71.1)
Stephenson Rd & Thriftwood Dr/Tear Drop Cir	AM	**# (8.4)**	F (##)	F (##)	# (11.1)	# (0.1)
	PM	**# (68.2)**	F (179.5)	F (112.5)	# (1.2)	# (0.1)
Stephenson Rd & Derry Down Ln/Cockle Burr Dr	AM	**# (35.5)**	F (245.7)	F (96.6)	# (3.9)	# (0.1)
	PM	**# (3.6)**	C (18.9)	D (26.6)	# (3.1)	# (0.1)
Stephenson Rd & Smith Rd	AM	**# (10.1)**	# (7.2)	# (0.0)	- (-)	D (28.3)
	PM	**# (10.2)**	# (5.7)	# (0.0)	- (-)	C (18.8)
Thriftwood Dr & Staff/Buses Dwy	AM	**# (72.5)**	# (16.4)	# (0.0)	- (-)	F (##)
	PM	**# (161.1)**	# (0.0)	# (0.0)	- (-)	F (169.9)
Thriftwood Dr/Reunion Creek Extension & Connector Rd	AM	**# (2.3)**	# (0.0)	# (0.0)	- (-)	A (9.3)
	PM	**# (2.4)**	# (0.0)	# (0.0)	- (-)	C (17.6)
Connector Rd & Parent Dwy	AM	**# (83.3)**	- (-)	F (158.7)	# (0.0)	# (8.0)
	PM	**# (10.1)**	- (-)	B (12.8)	# (0.0)	# (7.5)
Derry Down Ln/Student Dwy & Connector Rd	AM	**# (3.1)**	# (0.0)	# (0.0)	B (11.0)	- (-)
	PM	**# (2.7)**	# (0.0)	# (0.0)	A (9.4)	- (-)

Legend:

X (X)	LOS (Delay)
	Unsignalized Intersection
	Signalized Intersection
#	No level of service provided
##	Delay exceeds 300 seconds
- (-)	No movement

Figure 30: 2026 Build – Reunion Creek Level of Service and Delay

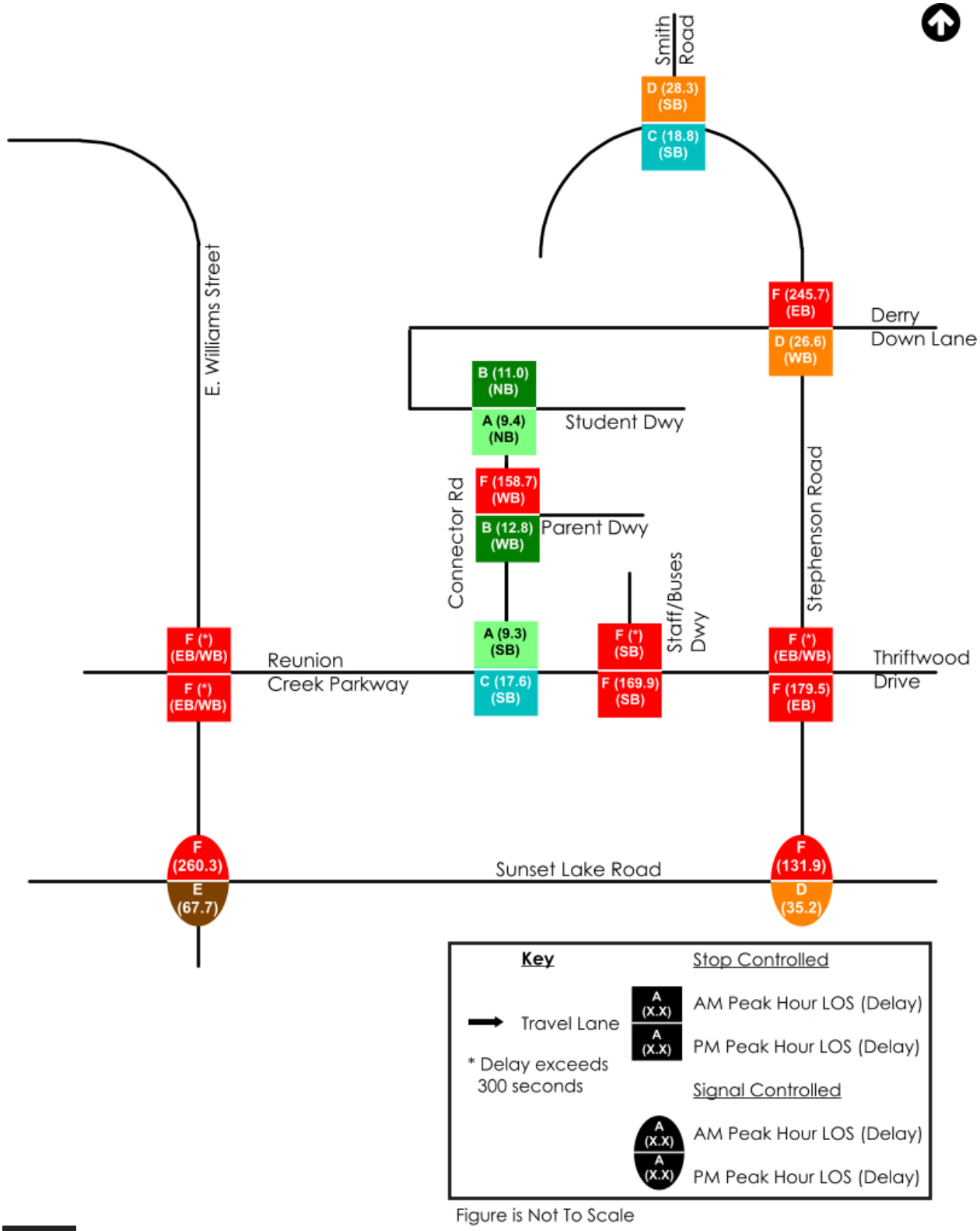


Figure is Not To Scale

6.6 2026 BUILD WITH IMPROVEMENTS – REUNION CREEK

Geometric improvements such as the installation of turn-lanes are analyzed in this scenario. These items are listed in the Recommendations section. Table 10 lists and illustrates the results of the capacity analysis under the 2026 Build-Improved traffic conditions.

Table 10: 2026 Build-Improved Level of Service and Delay

LOS/Delay		2026 Build Improved w/ Reunion Creek				
		Overall	EB	WB	NB	SB
E Williams St & Reunion Creek Pkwy	AM	**D (40.0)**	F (77.2)	F (85.5)	C (27.9)	D (39.9)
	PM	**C (29.1)**	D (45.8)	D (48.7)	C (27.4)	B (16.2)
E Williams St/N Main St & Sunset Lake Rd/Old Smithfield Rd	AM	**F (122.9)**	F (189.2)	D (47.1)	F (130.9)	F (137.4)
	PM	**E (66.4)**	F (106.7)	D (49.0)	E (64.8)	E (62.4)
Sunset Lake Rd & Stephenson Rd	AM	**D (48.0)**	D (38.1)	E (57.2)	- (-)	E (56.0)
	PM	**C (31.9)**	C (21.4)	C (33.6)	- (-)	D (41.3)
Stephenson Rd & Thriftwood Dr/Tear Drop Cir	AM	**# (8.4)**	F (##)	F (##)	# (11.1)	# (0.1)
	PM	**# (15.3)**	E (37.4)	F (112.5)	# (1.2)	# (0.1)
Stephenson Rd & Derry Down Ln/Cockle Burr Dr	AM	**# (11.3)**	F (62.0)	F (74.1)	# (3.9)	# (0.1)
	PM	**# (3.4)**	C (16.5)	D (25.7)	# (3.1)	# (0.1)
Stephenson Rd & Smith Rd	AM	**# (10.1)**	# (7.2)	# (0.0)	- (-)	D (28.3)
	PM	**# (10.2)**	# (5.7)	# (0.0)	- (-)	C (18.8)
Thriftwood Dr & Staff/Buses Dwy	AM	**# (37.6)**	# (91.3)	# (0.0)	- (-)	F (##)
	PM	**# (13.7)**	# (0.0)	# (0.0)	- (-)	B (14.5)
Thriftwood Dr/Reunion Creek Extension & Connector Rd	AM	**# (2.3)**	# (0.0)	# (0.0)	- (-)	A (9.3)
	PM	**# (2.4)**	# (0.0)	# (0.0)	- (-)	C (17.6)
Connector Rd & Parent Dwy	AM	**# (69.4)**	- (-)	F (130.9)	# (0.0)	# (8.0)
	PM	**# (9.6)**	- (-)	B (11.7)	# (0.0)	# (7.5)
Derry Down Ln/Student Dwy & Connector Rd	AM	**# (3.1)**	# (0.0)	# (0.0)	B (11.0)	- (-)
	PM	**# (2.7)**	# (0.0)	# (0.0)	A (9.4)	- (-)

Legend:

X (X)	LOS (Delay)
	Unsignalized Intersection
	Signalized Intersection
#	No level of service provided
##	Delay exceeds 300 seconds
- (-)	No movement

The results of this analysis show that the new turn lanes at the Stephenson Road intersections with Thriftwood Drive and Derry Down Lane, and E Williams Street intersection with Reunion Creek Parkway, do not significantly improve operations at these intersections. It was noted from the SimTraffic simulation runs however that the additional turn lanes did improve flow into and out of the school during both peak hours by allowing predominantly right-turning traffic exiting the school to not be impeded by vehicles making a left onto Stephenson Road.

Additional turn lane improvements at the intersections of E Williams St & Sunset Lake Road and Stephenson Road & Sunset Lake Road would significantly improve operations in the AM peak hour. The addition of a northbound right and westbound right-turn lane at the E Williams St & Sunset Lake Road may improve reduce the delay by 135 seconds in the AM peak hour and the addition of a second eastbound left turn lane at Stephenson Road & Sunset Lake Road, along with a second receiving lane along northbound Stephenson Road between Sunset Lake Road and Goolsby Court, may improve operations to LOS D in the AM peak hour.

6.6.1 SimTraffic Operations

SimTraffic runs were completed for each of the analysis scenarios. In-order to verify proposed turn-bay storage lengths, Table 8 summarizes the queuing results from the Build-improved scenario for both Synchro (95th percentile queues) and SimTraffic (maximum observed queues). For simplicity, queues are reported where turn lanes are recommended. All queues can be found in the reports provided in the appendix.

Table 11: Queue Length Summary with Reunion Creek

Intersection / Movement		Rec. Storage (feet)	2026 Build-Improved with Reunion Creek			
			AM Peak Hour		PM Peak Hour	
			95th %'ile Queue (ft.)	Max. Obs. Queue (ft.)	95th %'ile Queue (ft.)	Max. Obs. Queue (ft.)
E Williams Street & Reunion Creek Parkway	Northbound Right	225	87	325	25	325
	Westbound Left	325	160	231	308	318
	Westbound Right	450	232	274	328	425
	Southbound Left	Max Available	363	350+	104	252
Stephenson Road & Thriftwood Drive/Tear Drop Circle	Northbound Left	425	255	399	5	52
	Eastbound Left-Through	125	N/A	68	50	210
Stephenson Road & Derry Down Lane/Cockle Burr Drive	Northbound Left	100	38	93	15	70
	Eastbound Left-Through	100	98	60	13	36
Thriftwood Dr & Staff/Buses Dwy	Westbound Right	275	0	291	0	0
	Eastbound Left	500	558	599+	0	0
	Southbound Left	Max Available	N/A	656	92	548
Connector Rd & Parent Dwy	Westbound Right	100	426	80	22	78
Sunset Lake Road & Stephenson Road	Eastbound Left	475	358	460	101	201
	Westbound Right	525	357	625	88	199
	Southbound Left	525	273	280	384	455
E Williams Street/North Main Street & Sunset Lake Road/Old Smithfield Road	Northbound Right	225	147	325	60	325
	Westbound Right	350	260	417	140	360

N/A = No queue provided by Synchro

With the recommended improvements in place, there is sufficient storage at the Stephenson Road intersections with Thriftwood Drive and Derry Down Lane. At the E Williams Street & Reunion Creek Parkway intersection, there is insufficient storage available for the westbound left-through turn lane and a southbound left-turn lane.

The southbound left turn lane should be striped such that the storage length is maximized. However, the presence of Straywhite Avenue to the north prevents restriping the length needed to accommodate the queues. Realistically, the southbound lefts will likely queue in the center two way left turn lane, blocking lefts into and out of Straywhite Avenue. This is anticipate to only occur for a short duration in the AM peak period.

Heavy traffic volumes along E. Williams Street cause long delays for traffic turning left from Reunion Creek Parkway onto E. Williams Street. Signalization should be considered in the future to should Reunion Creek Parkway be connected to Thriftwood Drive. The recommended storage for the westbound left-turn lane on Reunion Creek Parkway was based on the storage necessary if a traffic signal is installed at the intersection as the storage necessary for this lane to contain the queue for this movement at a stop-controlled intersection may not be constructible.

At the Thriftwood Drive & Staff/Buses Driveway, it was noted that buses were unable to exit the driveway in the AM peak due to heavy inbound student traffic from both directions of Thriftwood Drive. This condition can be improved if student traffic is permitted to exit the site using either Derry Down Lane or Thriftwood Drive. Currently, student traffic is anticipated to exit only using Thriftwood Drive or Reunion Creek Parkway.

Figure 31: 2026 Build With Improvement – Reunion Creek Level of Service and Delay

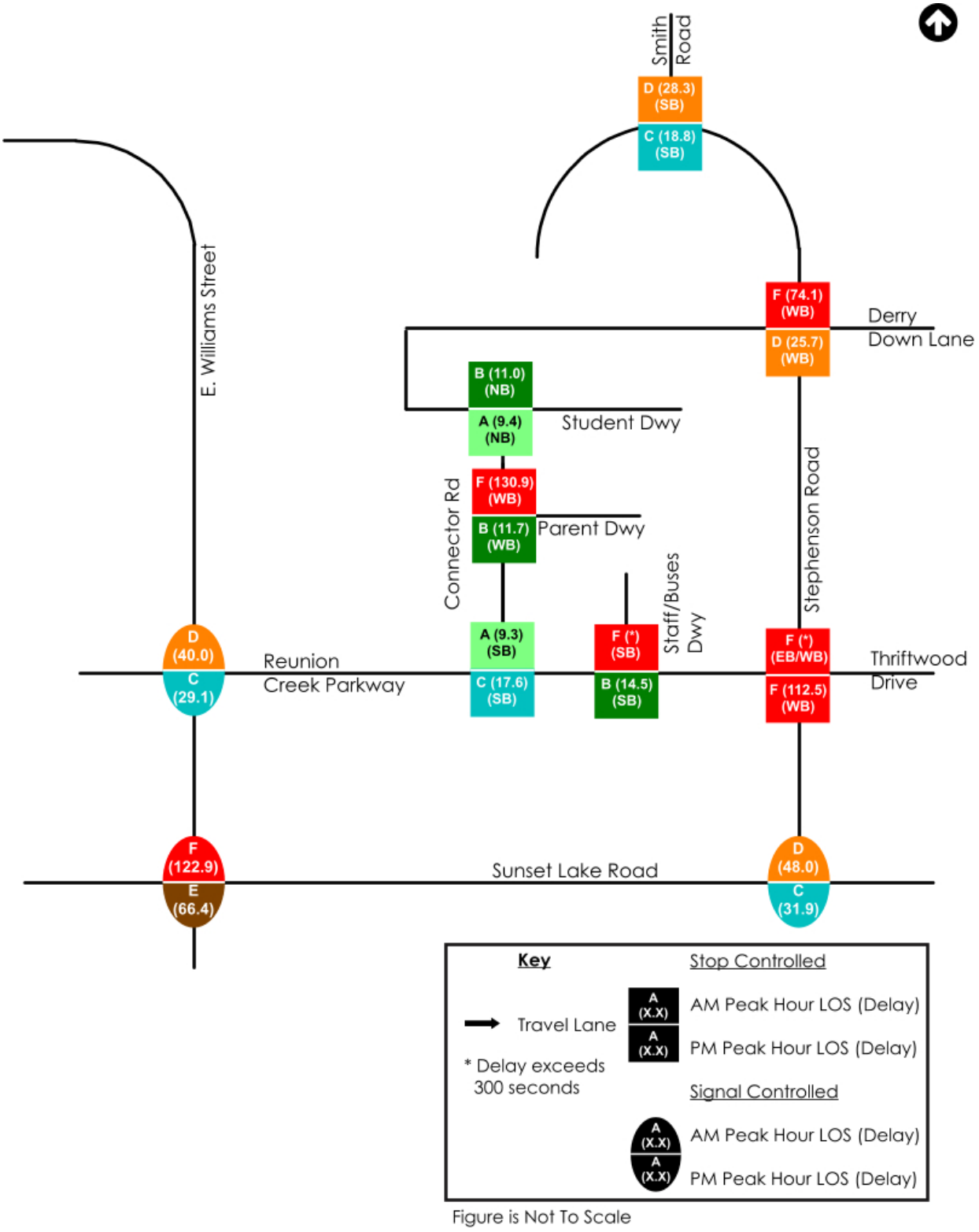


Figure is Not To Scale

7.0 RECOMMENDATIONS

Per North Carolina General Stature 136-18(29a), School systems such as WCPSS can be reimbursed for the total cost of any public roadway improvements required by NCDOT. As such, the final determination of improvements attributed to the construction of H-12 High School is to be determined by appropriate personnel within NCDOT. To this end, and to mitigate the impact of traffic generated by the proposed school has on the surrounding roadway network, specific improvements are recommended where as others are recommended for consideration by appropriate personnel within NCDOT.

Internal Site Layout

- On-site pick-up and drop-off queue should be provided for a minimum of 2,350 feet of full-width storage space to accommodate queuing vehicles. This will provide more than 30 percent greater than the "high demand length" requirement set by the MSTA School Traffic Calculator.
- It is recommended that parent drop-off and pick-up traffic should enter and exit the site using Derry Down Lane. On-site, Derry Down Lane provides approximately 2,700 linear feet of queuing for parent traffic. Of this, approximately 400 linear feet can be used to double-lane queue parent traffic. This brings the total on-site parent queue to approximately 3,100 feet. This exceeds the high-demand length as required by the MSTA School Traffic Calculator by approximately 1,300 feet or 72 percent.
- Develop and enact a Transportation Management Plan (TMP) outlining policies and procedures for students, parents, and staff to manage traffic on-site.

It should be noted that both Derry Down Lane and Thriftwood Drive are not currently maintained by either the Town of Apex or NCDOT. The nearest existing public facility to the site is Stephenson Road, which is approximately 1,500 feet along Derry Down Lane from the H-12 property line and 1,000 feet along Thriftwood Drive from the H-12 property line.

E. Williams Street at Reunion Creek Parkway

Without Reunion Creek Parkway Extension

- There are no recommended improvements at this intersection

With Reunion Creek Parkway Extension

- Construct an exclusive northbound right-turn lane with 225 feet of full-width storage and appropriate taper
- Construct an exclusive westbound left-turn lane with 325 feet of full-width storage and appropriate taper
- Construct an exclusive westbound right-turn lane with 450 feet of full-width storage and appropriate taper
- Extend striping for the existing southbound left-turn lane as far back as possible to Straywhile Avenue
- *Consider: the installation of a traffic signal*

E. Williams Street / N. Main Street at Sunset Lake Road / Old Smithfield Road

Without Reunion Creek Parkway Extension

- *Consider: construct an exclusive northbound right-turn lane with 500 feet of full-width storage and appropriate taper.*
- *Consider: construct an exclusive westbound right-turn lane with 450 feet of full-width storage and appropriate taper.*
- *Consider: The above recommendations will require modification of the traffic signal at this intersection.*

With Reunion Creek Parkway Extension

- *Consider: construct an exclusive northbound right-turn lane with 225 feet of full-width storage and appropriate taper.*
- *Consider: construct an exclusive westbound right-turn lane with 350 feet of full-width storage and appropriate taper.*
- *Consider: The above recommendations will require modification of the traffic signal at this intersection.*

Sunset Lake Road at Stephenson Road

Without Reunion Creek Parkway Extension

- *Consider: construct a second exclusive eastbound left-turn with maximum available length of full-width storage and appropriate taper (maximum queue length = 1,150 feet).*
  - *The above recommendation to consider will require a second northbound receiving lane on Stephenson Road with a minimum of 600 feet of full with storage and appropriate taper to merge traffic into one northbound thru lane on Stephenson Road.*
  - *The above recommendation will require the existing eastbound left-turn lane be extended from it's current storage of 150 feet.*
- *Consider: extend the exclusive westbound right-turn lane to 625 feet of full-width storage and appropriate taper.*
- *Consider: extend the exclusive southbound left-turn lane to 525 feet of full-width storage and appropriate taper.*
- *Consider: The above recommendations will require modification of the traffic signal at this intersection.*

With Reunion Creek Parkway Extension

- *Consider: construct a second exclusive eastbound left-turn with 475 feet of full-width storage and appropriate taper.*
  - *The above recommendation to consider will require a second northbound receiving lane on Stephenson Road with a minimum of 600 feet of full with storage and appropriate taper to merge traffic into one northbound thru lane on Stephenson Road.*
  - *The above recommendation will require the existing eastbound left-turn lane be extended from it's current storage of 150 feet to 475 feet of full-width storage and appropriate taper.*
- *Consider: extend the exclusive westbound right-turn lane to 525 feet of full-width storage and appropriate taper.*
- *Consider: extend the exclusive southbound left-turn lane to 525 feet of full-width storage and appropriate taper.*
- *Consider: The above recommendations will require modification of the traffic signal at this intersection.*

Stephenson Road at Thriftwood Drive / Tear Drop Circle

Without Reunion Creek Parkway Extension

- Construct an exclusive northbound left-turn lane with 500 feet of full-width storage and appropriate taper
- Construct a shared eastbound left-through lane with 250 feet of full-width storage and appropriate taper
- Construct an exclusive southbound right-turn lane with 100 feet of full-width storage and appropriate taper

With Reunion Creek Parkway Extension

- Construct an exclusive northbound left-turn lane with 425 feet of full-width storage and appropriate taper
- Construct a shared eastbound left-through lane with 125 feet of full-width storage and appropriate taper

Stephenson Road at Derry Down Lane / Cockle Burr Drive

Without Reunion Creek Parkway Extension

- Construct an exclusive northbound left-turn lane with 100 feet of full-width storage and appropriate taper
- Construct a shared eastbound left-through lane with 100 feet of full-width storage and appropriate taper

With Reunion Creek Parkway Extension

- Construct an exclusive northbound left-turn lane with 100 feet of full-width storage and appropriate taper
- Construct a shared eastbound left-through lane with 100 feet of full-width storage and appropriate taper

Stephenson Road at Smith Road

Without Reunion Creek Parkway Extension

- There are no recommended improvements at this intersection

With Reunion Creek Parkway Extension

- There are no recommended improvements at this intersection

Thriftwood Drive at Staff / Bus Driveway

Without Reunion Creek Parkway Extension

- Construct an unsignalized intersection with the stop-controlled intersection being the southbound Staff/Buses Driveway approach

With Reunion Creek Parkway Extension

- Construct an unsignalized intersection with the stop-controlled approach being the southbound Staff/Buses Driveway approach
- Construct an exclusive eastbound left-turn lane with 500 feet of full-width storage and appropriate taper
- Construct an exclusive westbound right-turn lane with 275 feet of full-width storage and appropriate taper
- Construct an exclusive southbound left-turn lane with maximum available full-width storage and appropriate taper

Thriftwood Drive / Reunion Creek Parkway Extension at Connector Road

Without Reunion Creek Parkway Extension

- Provide signage and striping as necessary to inform drivers of the road termination ahead.

With Reunion Creek Parkway Extension

- Construct an unsignalized intersection with the stop-controlled approach being the southbound Connector Road approach
-

Figure 32: Recommended Improvements without Reunion Creek Parkway Extension

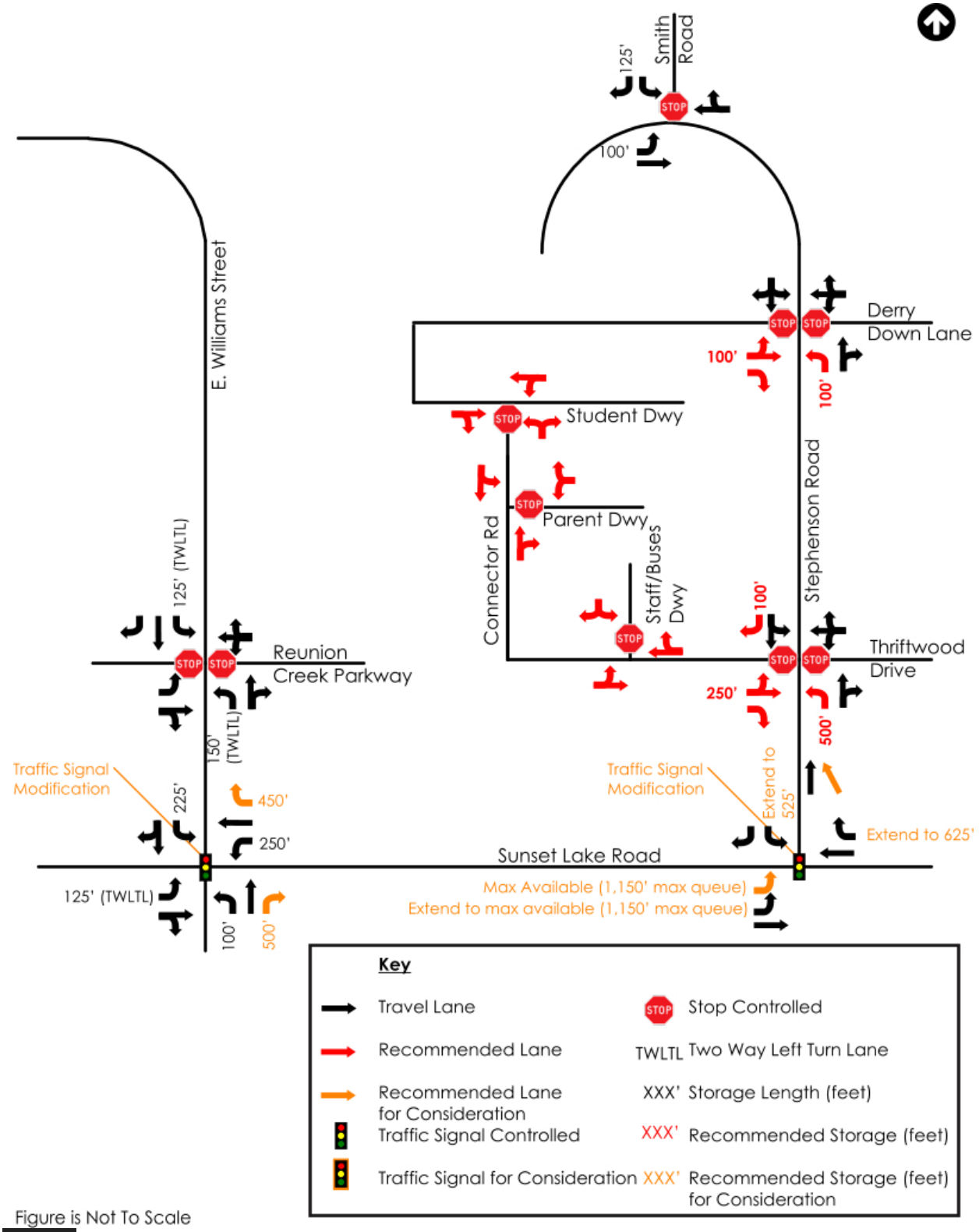


Figure is Not To Scale

Figure 33: Recommended Improvements with Reunion Creek Parkway Extension

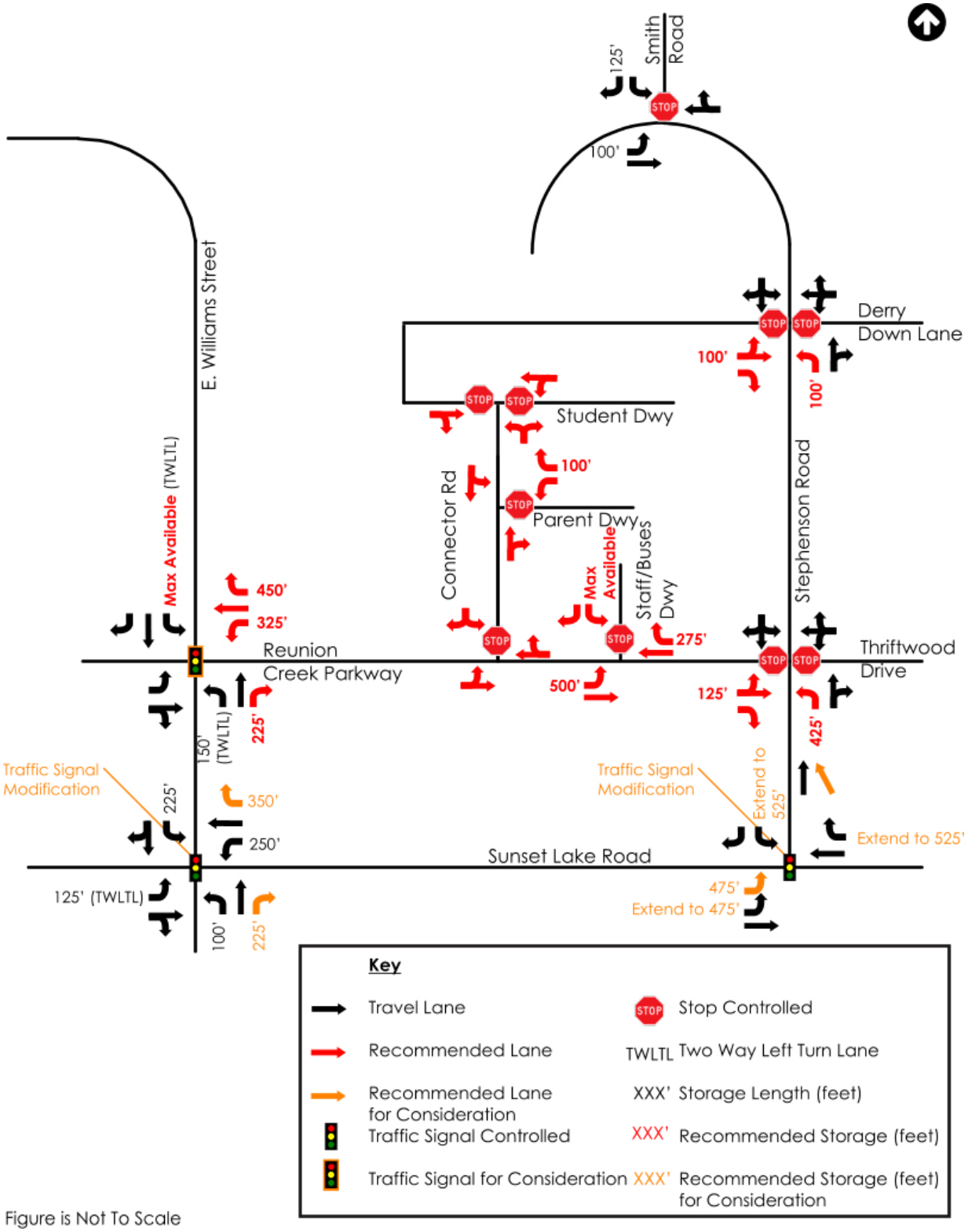


Figure is Not To Scale

8.0 CONCLUSIONS

As indicated in the traffic analysis, the proposed school is projected to have impacts on the surrounding roadway network and intersections. Accordingly, recommendations for improvement are provided.

Per North Carolina General Stature 136-18(29a), School systems such as WCPSS can be reimbursed for the total cost of any public roadway improvements required by NCDOT. As such, the final determination of improvements attributed to the construction of H-12 High School is to be determined by appropriate personnel within NCDOT. To this end, and to mitigate the impact of traffic generated by the proposed school has on the surrounding roadway network, specific improvements are recommended where as others are recommended for consideration by appropriate personnel within NCDOT.

.

9.0 REFERENCES

[1]***Thoroughfare and Collector Street Plan Map***, Town of Apex, 2020
http://apexnc.org/DocumentCenter/View/487/Transportation-Plan---Thoroughfare-and-Collector-Street-Plan-Map-PDF?bidId=

[2]***NCDOT Functional Classification Map***,
http://ncdot.maps.arcgis.com/home/webmap/viewer.html?layers=029a9a9fe26e43d687d30cd3c08b1792

[3]***2017 NCDOT Average Daily Traffic Volumes***,
https://ncdot.maps.arcgis.com/home/webmap/viewer.html?webmap=b7a26d6d8abd419f8c27f58a607b25a1

[4]***School Calculator***, North Carolina Department of Transportation (NCDOT) Municipal School Transportation Assistance (MSTA).
https://connect.ncdot.gov/municipalities/School/Documents/SchoolCalculator.zip

[5]***HCM6: Highway Capacity Manual, Sixth Edition: A Guide for Multimodal Mobility Analysis***. Washington D.C.: Transportation Research Board, 2016.

[6]***NCDOT Congestion Management Capacity Analysis Guidelines***. North Carolina Department of Transportation (NCDOT), July 2015,
https://connect.ncdot.gov/resources/safety/Congestion%20Mngmt%20and%20Signing/Congestion%20Management/Capacity%20Analysis%20Guidelines.pdf

[7]***N.C. Gen. Stat. § 136-18 (29a).***
https://www.ncleg.gov/EnactedLegislation/Statutes/HTML/BySection/Chapter_136/GS_136-18.html

10.0 APPENDIX

A link to the following files is provided via Microsoft OneDrive:

- Site Plan
- Annotated Site Plan
- NCDOT Scoping Checklist and approvals
- Similar Sites Traffic Data (i.e. local data)
- Traffic Signal Plans
- Raw Traffic Count Data
- Approved Development Traffic Studies
- Traffic Volume Calculations
- Synchro Files
- SimTraffic Reports

Not secure | apexnc.org/Doc... Paused
Todoist Apps & Schedules UDO
Legal Ad 1 / 1 70%

POST OFFICE BOX 250
APEX, NORTH CAROLINA 27502
PHONE 919-249-3426

QUASI-JUDICIAL PUBLIC HEARING

MAJOR SITE PLAN for
Felton Grove High School

Pursuant to the provisions of North Carolina General Statutes §160D-406 and to the Town of Apex Unified Development Ordinance (UDO) Section 2.2.11, notice is hereby given of a quasi-judicial public hearing before the Town Council of the Town of Apex. The purpose of this hearing is to consider the following:

Applicant: Wake County Board of Education
Authorized Agent: Renee Pfeifer, CLH Design PA
Property Address: 8550 Stephenson Rd
Acreage: +/- 66.48
Proposed Use and Square Footage of Buildings: School, public or private; 399,641 ft²
Property Identification Number (PIN): 0750545646

Public Hearing Location: Apex Town Hall
Council Chamber, 2nd Floor
73 Hunter Street, Apex, North Carolina

Town Council Public Hearing Date and Time: April 13, 2021 6:00 PM

Vicinity Map:

Property owners within 300 feet of the proposed Major Site Plan have been sent this notice via first class mail. All interested parties may appear at the public hearing and provide sworn testimony with respect to the application. In addition to the above map, the location of the property may be viewed online at https://maps.raleighnc.gov/imaps. The 2045 Land Use Map may be viewed online at www.apexnc.org/DocumentCenter/View/478. You may call 919-249-3426, Department of Planning and Community Development, with questions or for further information. To view the petition and related documents on-line: https://www.apexnc.org/DocumentCenter/View/34094.

Published Dates: March 24 – April 13, 2021

Dianne Khin, AICP
Director of Planning and Community Development

5:28 PM
3/24/2021

TOWN OF APEX
POST OFFICE BOX 250
APEX, NORTH CAROLINA 27502
PHONE 919-249-3426

PUBLIC NOTIFICATION OF QUASI-JUDICIAL PUBLIC HEARING

MAJOR SITE PLAN for Felton Grove High School

Pursuant to the provisions of North Carolina General Statutes §160D-406 and to the Town of Apex Unified Development Ordinance (UDO) Section 2.2.11, notice is hereby given of a quasi-judicial public hearing before the Town Council of the Town of Apex. The purpose of this hearing is to consider the following:

Applicant: Wake County Board of Education
Authorized Agent: Renee Pfeifer, CLH Design PA
Property Address: 8550 Stephenson Rd
Acreage: +/- 66.48
Proposed Use and Square Footage of Buildings: School, public or private; 399,641 ft^2
Property Identification Number (PIN): 0750545646

Public Hearing Location: Apex Town Hall
Council Chamber, 2nd Floor
73 Hunter Street, Apex, North Carolina

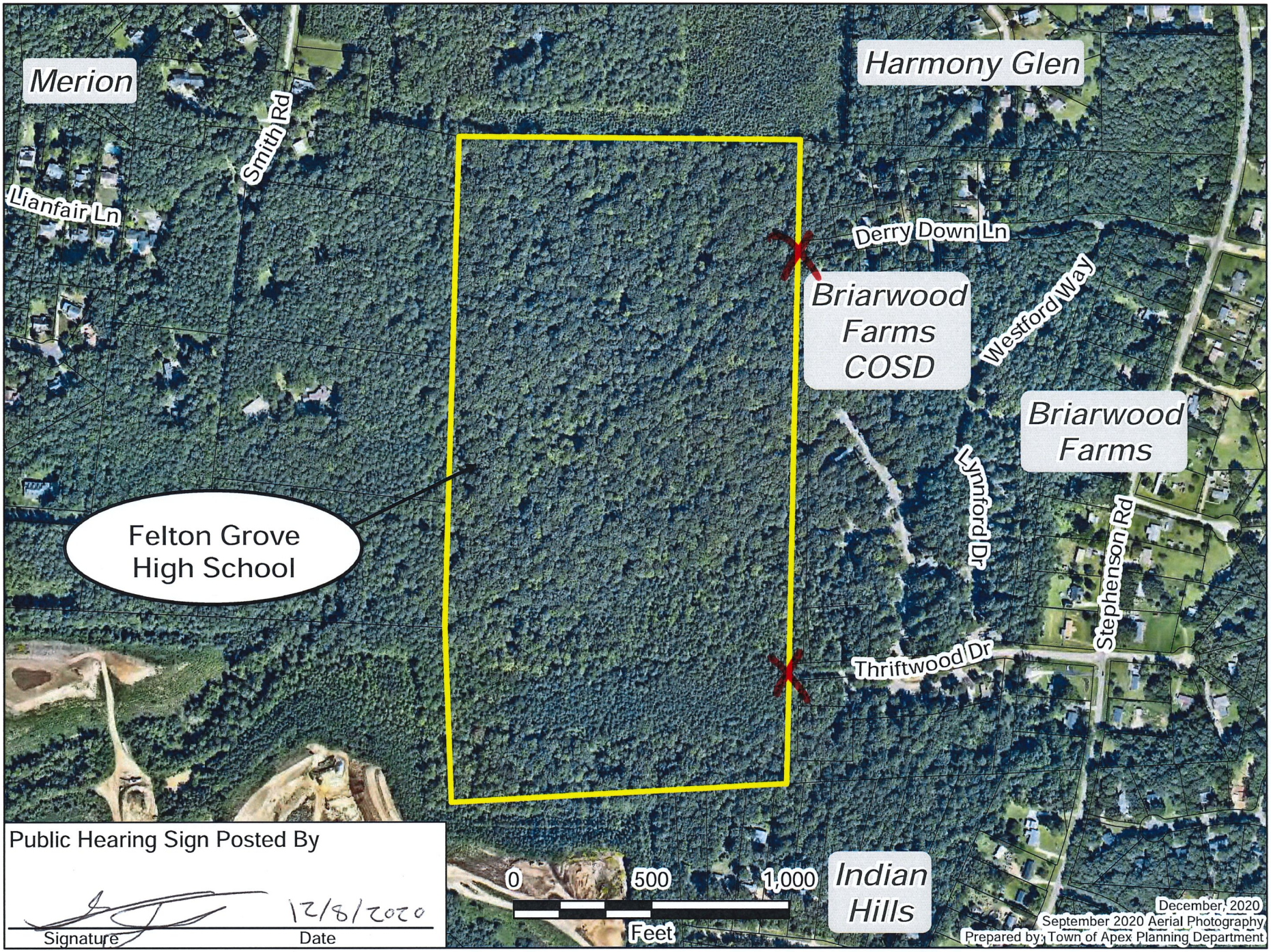
Town Council Public Hearing Date and Time: April 13, 2021 6:00 PM

Vicinity Map:

Property owners within 300 feet of the proposed Major Site Plan have been sent this notice via first class mail. All interested parties may appear at the public hearing and provide sworn testimony with respect to the application. In addition to the above map, the location of the property may be viewed online at https://maps.raleighnc.gov/imaps. The 2045 Land Use Map may be viewed online at www.apexnc.org/DocumentCenter/View/478. You may call 919-249-3426, Department of Planning and Community Development, with questions or for further information. To view the petition and related documents on-line: https://www.apexnc.org/DocumentCenter/View/34094.

Dianne Khin, AICP
Director of Planning and Community Development

Published Dates: March 24 – April 13, 2021



Public Hearing Sign Posted By

12/8/2020

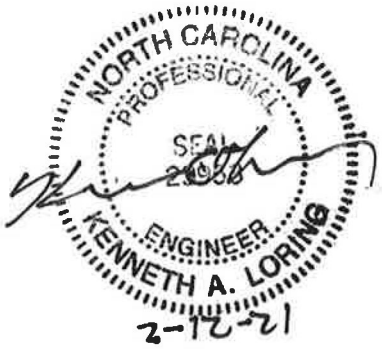
Signature Date

H12/Felton Grove High School

8550 Stephenson Road, Apex, NC 27539

WAKE COUNTY PUBLIC SCHOOL SYSTEM

Stormwater Management Design Narrative & Calculations



Site Plan Submittal #2
February 2021

Prepared by:
CLH Design, pa

CONTENTS

Design Narrative

Maps

- Quad Map
- Soils Map

Supporting Calculations

- Drainage Area Summaries
- SCM Sizing
- Pre/Post Development Analysis
- Hydraflow Calculations
  - SCM Routing

Stormwater Management Design Narrative
H12/Felton Grove High School
CLH Project No.: 19-168
February 2021

PROJECT DESCRIPTION

The 68 acre proposed H12-Felton Grove site is located in southern Apex just west of Stephenson Road and north of Sunset Lake Road. The property is located at the western terminus of Derry Down Lane and Thriftwood Drive. The project consists of building a new High School building, roadways, parking lots, athletic fields with concessions and comfort stations, stormwater control devices, water, sewer and other utility extensions to serve the property.

The site is currently vacant and wooded. The proposed impervious built upon area is 20.14 acres. All of the site impervious areas will be directed to stormwater control measures (SCMs).

Most of the site has Type B Appling and Cecil soils, with Type D Worsham and Wahadkee soils along the streams within the site.

There are no flood hazard boundaries within the property as indicated on FEMA map 3720075000J dated May 2, 2006.

There are two streams with Neuse River Buffers and several existing wetland areas on-site. All wetland and stream impacts will be permitted with NC DEQ and US Corps of Engineers.

Erosion and Sedimentation Control will be permitted with NC DEQ – Land Quality Section.

All SCM's will be permitted by the Town of Apex.

STORMWATER MANAGEMENT

All of drainage analysis points (A through G) are located at the western property line. Areas A, B, C and E post development areas are greatly reduced and have no proposed impervious areas within their limits. Area D has three proposed stormwater wetlands, Area F has one proposed dry detention basin and Area G has one proposed stormwater wetland.

The site is designed to meet the Town of Apex stormwater quality and quantity requirements. The site stormwater is designed to reduce or be equal to the pre-development rates for the 1-year and 10-year 24-hour design storm.

The proposed greenway trail required by the Town of Apex will not be included in the stormwater quantity design calculations.

Stormwater Quality

In accordance with Town of Apex's UDO section 6.1.7 A.3, stormwater treatment at this site will be achieved by capturing and slowly releasing the impervious runoff from the first 1-inch of rainfall. The four wetlands will be designed to meet this requirement. The proposed dry detention pond is designed to reduce the peak flow rates.

All of the site impervious areas will be treated by the proposed SCMs except the proposed Town of Apex greenway trail. The greenway trail is required within the proposed sanitary sewer easement at the southern side of the site.

Nitrogen Reduction

As of this date, the Town of Apex is not a named local government under 15A NCAC 02B .0235: Neuse River Basin-Nutrient Sensitive Waters Management Strategy: Basinwide Stormwater Requirements. It is anticipated that the Town may be added to that rule in the future. Since this project has been submitted for permitting prior to Apex being added to that rule, the project is considered exempt from the rule if Apex is added in the future. As such, there is no nitrogen removal required for this site.

Stormwater Quantity

The four proposed stormwater wetlands and one dry detention basin are designed to meet the current NCDEQ-MDC and Town of Apex requirements that to reduce the runoff to meet the pre-development peak flows of the 1-year, 10-year, and 100-year 24 hour Design Storms. The 100-year Design Storm shall have a minimum of 1 foot of freeboard at the SCM embankments.

The site requires a stormwater study of the downstream impacts downstream to where the site is 10 percent of the drainage area. All existing structures or culverts downstream are required to be included in the study. This report does not determine if the structures or culverts are designed to meet the current storm drainage conditions, but to determine if there are increases to the run-off that may cause negative impacts. The study determined that the run-off is below or equal to the existing run-off rates for the 1-year, 10-year and 100-year 24 hour Design Storms.

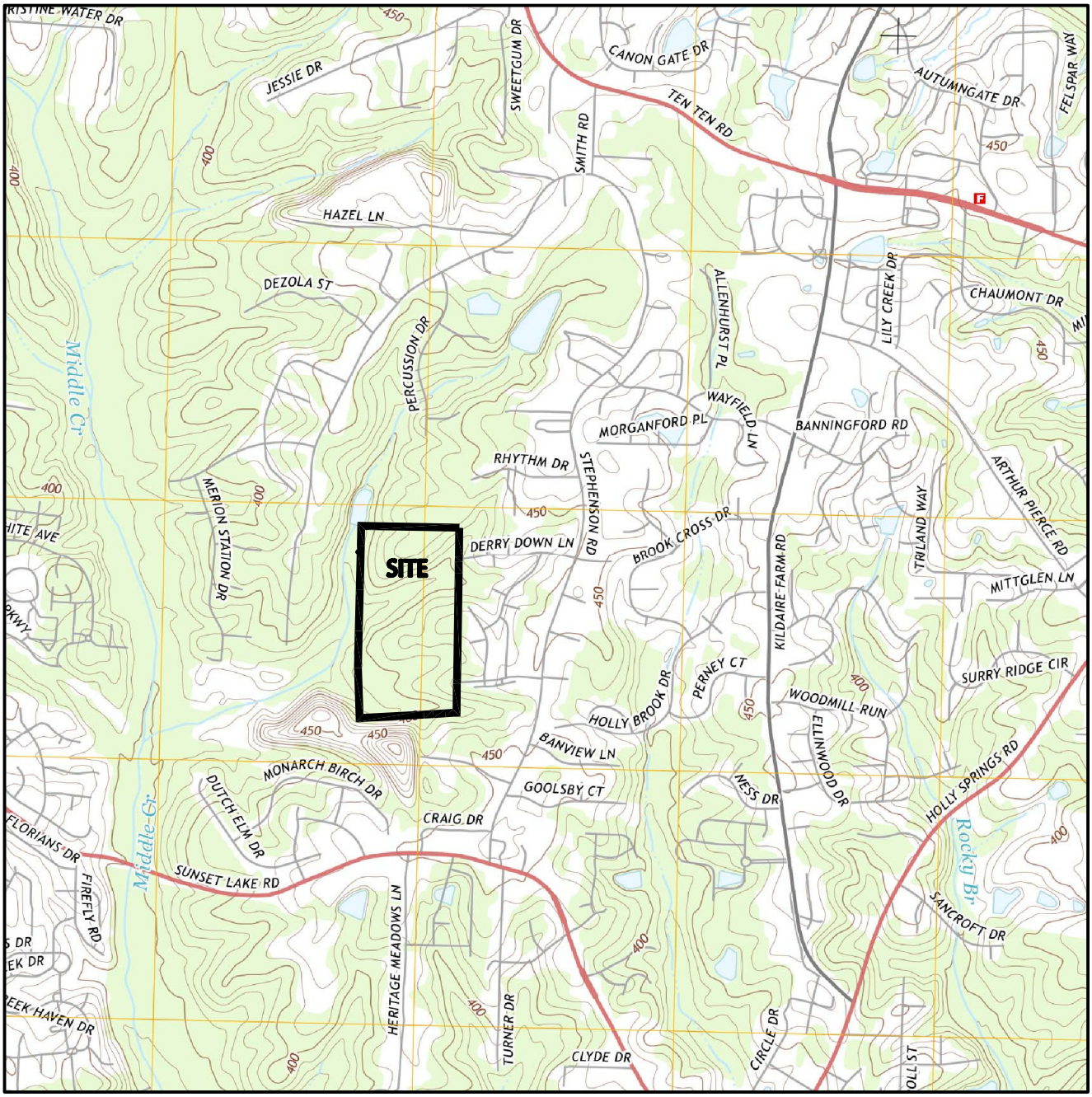
Calculations are performed using the 2021 Autocad Hydraflow program that utilizes TR-55 methods.

Table 1: Pre-Development / Post-Development Peak Runoff Comparison Summary

Drainage Area	Phase	Q_1 (cfs)	Q_{10} (cfs)	Q_{100} (cfs)	Notes
A	Pre Dev.	0.35	8.01	22.12	
	Post Dev.	0.33	4.87	12.81	
	Managed				
B	Pre Dev.	0.09	1.92	5.35	
	Post Dev.	0.03	0.40	1.02	
	Managed				
C	Pre Dev.	0.17	3.86	10.65	
	Post Dev.	0.16	1.31	3.08	
	Managed				
D	Pre Dev.	69.74	257.45	518.37	3 Stormwater Wetlands
	Post Dev.	106.04	332.16	624.41	
	Managed	68.22	237.42	509.98	
E	Pre Dev.	0.21	2.76	7.10	
	Post Dev.	0.18	2.41	6.09	
	Managed				
F	Pre Dev.	6.35	34.93	81.66	One Dry Detention Pond
	Post Dev.	9.00	34.83	67.52	
	Managed	3.97	13.14	45.62	
G	Pre Dev.	50.75	182.70	364.47	One Stormwater Wetland
	Post Dev.	76.26	240.56	455.56	
	Managed	49.00	175.02	357.45	
H	Pre Dev.	265.14	1007.95	2033.27	Existing 48” CMP culverts
	Post Dev.				
	Managed	260.10	958.19	1981.70	
I	Pre Dev.	966.04	4127.88	8713.51	Study Analysis Point
	Post Dev.				
	Managed	966.04	4127.88	8713.51	

.

Maps



SCALE: 1" = 2000'

H12/FELTON GROVE HIGH SCHOOL

8550 STEPHENSON RD, APEX, NC 27539

DATE: FEBRUARY, 2021

PROJECT NO.: 19–168

USGS QUAD MAP

REFERENCE: USGS TOPOGRAPHIC MAP: APEX

CLH DESIGN, P.A.

Regency Park
400 Regency Forest Drive
Suite 120
Cary, North Carolina 27518
Phone: (919) 319–6716
Fax: (919) 319–7516

SCALE: 1" = 2000'

H12/FELTON GROVE HIGH SCHOOL

8550 STEPHENSON RD, APEX, NC 27539

DATE: FEBRUARY, 2021

PROJECT NO.: 19-168

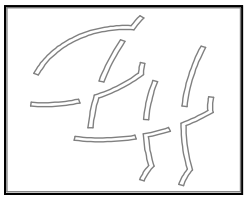
USGS SOILS MAP

REFERENCE: SHEET NUMBER 75 & 83 OF WAKE COUNTY SOILS SURVEY

CLH DESIGN, P.A.

Regency Park
400 Regency Forest Drive
Suite 120
Cary, North Carolina 27518
Phone: (919) 319-6716
Fax: (919) 319-7516

Supporting Calculations

STORMWATER PRE/POST DEVELOPMENT ANALYSIS	DATE 2/11/2021	
PROJECT NAME H-12 Felton Grove HS	PROJECT NO 19-168	
LOCATION Apex, NC	BY KAL	

STORMWATER ANALYSIS POINT: 'A'

Runoff Calculations

Pre-Development:

Site Area = 3.85 ac
Wt. CN = 55.0
Site Soils: (Hydrologic Soil Group B)

Wooded Area:	3.85 ac	CN=	55
Impervious Area:	0.00 ac	CN=	98
Lawn Area:	0.00 ac	CN=	74
Weighted CN:			55.0

Post-Development:

Site Area = 1.02 ac
Wt. CN = 59.3
Site Soils: (Hydrologic Soil Group B)

Wooded Area:	0.60 ac	CN=	55
Impervious Area:	0.00 ac	CN=	98
Lawn Area:	0.22 ac	CN=	74
Brush (No mow seed mix):	0.20 ac	CN=	56
Weighted CN:			59.3

STORMWATER PRE/POST DEVELOPMENT ANALYSIS	DATE 2/11/2021	
PROJECT NAME H-12 Felton Grove HS	PROJECT NO 19-168	
LOCATION Apex, NC	BY KAL	

STORMWATER ANALYSIS POINT: Upstream Off-site Area 'A'

Runoff Calculations

Pre-Development

Site Area = 2.40 ac
Wt. CN = 68.7
Site Soils: (Hydrologic Soil Group B)

Wooded Area:	0.95 ac	CN=	55
R 1/2 acre	0.00 ac	CN=	73
R 1/4 acre	1.45 ac	CN=	78
Weighted CN:			68.7

Post-Development

Site Area = 2.40 ac
Wt. CN = 68.7
Site Soils: (Hydrologic Soil Group B)

Wooded Area:	0.95 ac	CN=	55
R 1/2 acre	0.00 ac	CN=	73
R 1/4 acre	1.45 ac	CN=	78
Weighted CN:			68.7

STORMWATER PRE/POST DEVELOPMENT ANALYSIS	DATE 2/11/2021	
PROJECT NAME H-12 Felton Grove HS	PROJECT NO 19-168	
LOCATION Apex, NC	BY KAL	

STORMWATER ANALYSIS POINT: 'B'

Runoff Calculations

Pre-Development:

Site Area = 1.75 ac
Wt. CN = 55.0
Site Soils: (Hydrologic Soil Group B)

Wooded Area:	1.75 ac	CN=	55
Impervious Area:	0.00 ac	CN=	98
Lawn Area:	0.00 ac	CN=	74
Weighted CN:			55.0

Post-Development:

Site Area = 0.23 ac
Wt. CN = 55.8
Site Soils: (Hydrologic Soil Group B)

Wooded Area:	0.05 ac	CN=	55
Impervious Area:	0.00 ac	CN=	98
Lawn Area:	0.00 ac	CN=	74
Brush (No mow seed mix):	0.18 ac	CN=	56
Weighted CN:			55.8

STORMWATER PRE/POST DEVELOPMENT ANALYSIS	DATE 2/11/2021	
PROJECT NAME H-12 Felton Grove HS	PROJECT NO 19-168	
LOCATION Apex, NC	BY KAL	

STORMWATER ANALYSIS POINT: 'C'

Runoff Calculations

Pre-Development:

Site Area = 3.01 ac
Wt. CN = 55.0
Site Soils: (Hydrologic Soil Group B)

Wooded Area:	3.01 ac	CN=	55
Impervious Area:	0.00 ac	CN=	98
Lawn Area:	0.00 ac	CN=	74

Weighted CN: 55.0

Post-Development:

Site Area = 0.62 ac
Wt. CN = 58.8
Site Soils: (Hydrologic Soil Group B)

Wooded Area:	0.07 ac	CN=	55
Impervious Area:	0.00 ac	CN=	98
Lawn Area:	0.10 ac	CN=	74
Brush (No mow seed mix):	0.45 ac	CN=	56

Weighted CN: 58.8

STORMWATER PRE/POST DEVELOPMENT ANALYSIS	DATE 2/11/2021	
PROJECT NAME H-12 Felton Grove HS	PROJECT NO 19-168	
LOCATION Apex, NC	BY KAL	

STORMWATER ANALYSIS POINT: 'D'

Runoff Calculations

Pre-Development:

Site Area = 29.39 ac
Wt. CN = 61.6
Site Soils: (Hydrologic Soil 70% Group B - 30% Group D)

Wooded Area:	29.39 ac	CN=	62
Impervious Area:	0.00 ac	CN=	98
Lawn Area:	0.00 ac	CN=	76

Weighted CN: 61.6

Post-Development:

Site Area = 38.89 ac
Wt. CN = 79.2
Site Soils: (Hydrologic Soil 70% Group B - 30% Group D)

Wooded Area:	5.50 ac	CN=	62
Impervious Area:	10.49 ac	CN=	98
Lawn Area:	21.80 ac	CN=	76
Brush (No mow seed mix):	1.10 ac	CN=	56

Weighted CN: 79.2

STORMWATER PRE/POST DEVELOPMENT ANALYSIS	DATE 2/11/2021	
PROJECT NAME H-12 Felton Grove HS	PROJECT NO 19-168	
LOCATION Apex, NC	BY KAL	

STORMWATER ANALYSIS POINT: Upstream Off-site Area 'D'

Runoff Calculations

Pre-Development

Site Area = 101.30 ac
Wt. CN = 71.9
Site Soils: (Hydrologic Soil 70% Group B - 10% GROUP C - 15% Group D)

Wooded Area:	22.00 ac	CN=	60
R 1/2 acre	42.50 ac	CN=	73
R 1/4 acre	36.80 ac	CN=	78

Weighted CN: 71.9

Post-Development

Site Area = 101.38 ac
Wt. CN = 72.0
Site Soils: (Hydrologic Soil 70% Group B - 10% GROUP C - 15% Group D)

Wooded Area:	21.50 ac	CN=	60
R 1/2 acre	42.50 ac	CN=	73
R 1/4 acre	37.38 ac	CN=	78

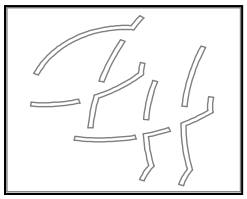
Weighted CN: 72.0

Post-Development (Excluding Area to SCMs)

Site Area = 100.69 ac
Wt. CN = 72.0
Site Soils: (Hydrologic Soil 70% Group B - 10% GROUP C - 15% Group D)

Wooded Area:	21.50 ac	CN=	60
R 1/2 acre	42.50 ac	CN=	73
R 1/4 acre	36.69 ac	CN=	78

Weighted CN: 72.0

STORMWATER PRE/POST DEVELOPMENT ANALYSIS	DATE 2/11/2021	
PROJECT NAME H-12 Felton Grove HS	PROJECT NO 19-168	
LOCATION Apex, NC	BY KAL	

STORMWATER ANALYSIS POINT: 'E'

Runoff Calculations

Pre-Development:

Site Area = 2.11 ac
Wt. CN = 57.2
Site Soils: (Hydrologic Soil 90% Group B - 10% Group D)

Wooded Area:	2.11 ac	CN=	57
Impervious Area:	0.00 ac	CN=	98
Lawn Area:	0.00 ac	CN=	75

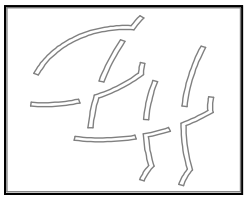
Weighted CN: 57.2

Post-Development:

Site Area = 1.42 ac
Wt. CN = 56.9
Site Soils: (Hydrologic Soil 90% Group B - 10% Group D)

Wooded Area:	0.80 ac	CN=	57
Impervious Area:	0.00 ac	CN=	98
Lawn Area:	0.02 ac	CN=	75
Brush (No mow seed mix):	0.60 ac	CN=	56

Weighted CN: 56.9

STORMWATER PRE/POST DEVELOPMENT ANALYSIS	DATE 2/11/2021	
PROJECT NAME H-12 Felton Grove HS	PROJECT NO 19-168	
LOCATION Apex, NC	BY KAL	

STORMWATER ANALYSIS POINT: 'F'

Runoff Calculations

Pre-Development:

Site Area = 15.62 ac
Wt. CN = 55.0
Site Soils: (Hydrologic Soil Grou B)

Wooded Area:	15.62 ac	CN=	55
Impervious Area:	0.00 ac	CN=	98
Lawn Area:	0.00 ac	CN=	74
Weighted CN:			55.0

Post-Development:

Site Area = 2.11 ac
Wt. CN = 68.7
Site Soils: (Hydrologic Soil Grou B)

Wooded Area:	0.35 ac	CN=	55
Impervious Area:	0.00 ac	CN=	98
Lawn Area:	1.51 ac	CN=	74
Brush (No mow seed mix):	0.25 ac	CN=	56
Weighted CN:			68.7

STORMWATER PRE/POST DEVELOPMENT ANALYSIS	DATE 2/11/2021	
PROJECT NAME H-12 Felton Grove HS	PROJECT NO 19-168	
LOCATION Apex, NC	BY KAL	

STORMWATER ANALYSIS POINT: Upstream Off-site Area 'F'

Runoff Calculations

Pre-Development

Site Area = 7.67 ac
Wt. CN = 71.7
Site Soils: (Hydrologic Soil Group B)

Wooded Area:	2.00 ac	CN=	55
R 1/2 acre	0.00 ac	CN=	73
R 1/4 acre	5.67 ac	CN=	78
Weighted CN:			71.7

Post-Development

Site Area = 8.73 ac
Wt. CN = 72.4
Site Soils: (Hydrologic Soil Group B)

Wooded Area:	2.00 ac	CN=	55
R 1/2 acre	0.00 ac	CN=	73
R 1/4 acre	6.73 ac	CN=	78
Weighted CN:			72.4

STORMWATER PRE/POST DEVELOPMENT ANALYSIS	DATE 2/11/2021	
PROJECT NAME H-12 Felton Grove HS	PROJECT NO 19-168	
LOCATION Apex, NC	BY KAL	

STORMWATER ANALYSIS POINT: 'G'

Runoff Calculations

Pre-Development:

Site Area = 12.40 ac
Wt. CN = 60.5
Site Soils: (Hydrologic Soil 75% Group B - 25% Group D)

Wooded Area:	12.40 ac	CN=	61
Impervious Area:	0.00 ac	CN=	98
Lawn Area:	0.00 ac	CN=	76

Weighted CN: 60.5

Post-Development:

Site Area = 23.81 ac
Wt. CN = 79.9
Site Soils: (Hydrologic Soil 75% Group B - 25% Group D)

Wooded Area:	6.50 ac	CN=	61
Impervious Area:	9.65 ac	CN=	98
Lawn Area:	6.91 ac	CN=	76
Brush (No mow seed mix):	0.75 ac	CN=	56

Weighted CN: 79.9

STORMWATER PRE/POST DEVELOPMENT ANALYSIS	DATE 2/11/2021	
PROJECT NAME H-12 Felton Grove HS	PROJECT NO 19-168	
LOCATION Apex, NC	BY KAL	

STORMWATER ANALYSIS POINT: Total Additional Upstream Area To Point 'G'

Runoff Calculations

Pre-Development

Site Area = 77.61 ac
Wt. CN = 71.7
Site Soils: (Hydrologic Soil 75% Group B - 25% Group D)

Wooded Area:	15.00 ac	CN=	61
R 1/2 acre	53.00 ac	CN=	74
R 1/4 acre	9.61 ac	CN=	78

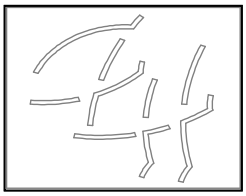
Weighted CN: 71.7

Post Development

Site Area = 76.60 ac
Wt. CN = 71.6
Site Soils: (Hydrologic Soil 75% Group B - 25% Group D)

Wooded Area:	15.00 ac	CN=	61
R 1/2 acre	53.00 ac	CN=	74
R 1/4 acre	8.60 ac	CN=	78

Weighted CN: 71.6

STORMWATER PRE/POST DEVELOPMENT ANALYSIS	DATE 2/11/2021	
PROJECT NAME H-12 Felton Grove HS	PROJECT NO 19-168	
LOCATION Apex, NC	BY KAL	

SCM D1 On-site

Site Area = 14.85 ac
Wt. CN = 81.6
Site Soils: (Hydrologic Soil 70% Group B - 30% Group D)

Wooded Area:	0.00	ac	CN=	62
Impervious Area:	3.89	ac	CN=	98
Lawn Area:	10.96	ac	CN=	76

Weighted CN: 81.6

SCM D1 Off-site

Site Area = 0.56 ac
Wt. CN = 62.3
Site Soils: (Hydrologic Soil 70% Group B - 30% Group D)

Wooded Area:	0.55	ac	CN=	62
Impervious Area:	0.01	ac	CN=	98
Lawn Area:	0.00	ac	CN=	76

Weighted CN: 62.3

SCM D2 On-site

Site Area = 11.30 ac
Wt. CN = 86.5
Site Soils: (Hydrologic Soil 70% Group B - 30% Group D)

Wooded Area:	0.00	ac	CN=	62
Impervious Area:	5.45	ac	CN=	98
Lawn Area:	5.85	ac	CN=	76

Weighted CN: 86.5

STORMWATER PRE/POST DEVELOPMENT ANALYSIS	DATE 2/11/2021	
PROJECT NAME H-12 Felton Grove HS	PROJECT NO 19-168	
LOCATION Apex, NC	BY KAL	

SCM D2 Off-site

Site Area = 0.14 ac
Wt. CN = 61.6
Site Soils: (Hydrologic Soil 70% Group B - 30% Group D)

Wooded Area:	0.14	ac	CN=	62
Impervious Area:	0.00	ac	CN=	98
Lawn Area:	0.00	ac	CN=	76

Weighted CN: 61.6

SCM D3 On-site

Site Area = 2.87 ac
Wt. CN = 84.7
Site Soils: (Hydrologic Soil 70% Group B - 30% Group D)

Wooded Area:	0.00	ac	CN=	62
Impervious Area:	1.15	ac	CN=	98
Lawn Area:	1.72	ac	CN=	76

Weighted CN: 84.7

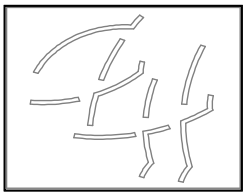
AREA D On-site Bypass

Site Area = 9.87 ac
Wt. CN = 65.7
Site Soils: (Hydrologic Soil 70% Group B - 30% Group D)

Wooded Area:	5.50	ac	CN=	62
Impervious Area:	0.00	ac	CN=	98
Lawn Area:	3.27	ac	CN=	76
Brush (No mow seed mix):	1.10	ac	CN=	56

Weighted CN: 65.7

STORMWATER PRE/POST DEVELOPMENT ANALYSIS	DATE 2/11/2021	
PROJECT NAME H-12 Felton Grove HS	PROJECT NO 19-168	
LOCATION Apex, NC	BY KAL	



SCM F — On-site

Site Area = 1.63 ac
Wt. CN = 72.5
Site Soils: (Hydrologic Soil 75% Group B - 25% Group D)

Wooded Area:	0.13	ac	CN=	55
Impervious Area:	0.00	ac	CN=	98
Lawn Area:	1.50	ac	CN=	74

Weighted CN: 72.5

SCM F — Off-site

Site Area = 8.73 ac
Wt. CN = 72.4
Site Soils: (Hydrologic Soil Group B)

Wooded Area:	2.00	ac	CN=	55
R 1/2 acre	0.00	ac	CN=	73
R 1/4 acre	6.73	ac	CN=	78

Weighted CN: 72.4

AREA F — On-site Bypass

Site Area = 0.48 ac
Wt. CN = 55.9
Site Soils: (Hydrologic Soil 75% Group B - 25% Group D)

Wooded Area:	0.22	ac	CN=	55	
Impervious Area:	0.00	ac	CN=	98	Greenway Trail
Lawn Area:	0.01	ac	CN=	74	
Brush (No mow seed mix):	0.25	ac	CN=	56	

Weighted CN: 55.9

STORMWATER PRE/POST DEVELOPMENT ANALYSIS	DATE 2/11/2021	
PROJECT NAME H-12 Felton Grove HS	PROJECT NO 19-168	
LOCATION Apex, NC	BY KAL	

SCM G On-site

Site Area = 14.73 ac
Wt. CN = 89.8
Site Soils: (Hydrologic Soil 75% Group B - 25% Group D)

Wooded Area:	0.00 ac	CN=	61
Impervious Area:	9.34 ac	CN=	98
Lawn Area:	5.39 ac	CN=	76

Weighted CN: 89.8

SCM G Off-site

Site Area = 0.02 ac
Wt. CN = 86.8
Site Soils: (Hydrologic Soil 75% Group B - 25% Group D)

Wooded Area:	0.00 ac	CN=	61
Impervious Area:	0.01 ac	CN=	98
Lawn Area:	0.01 ac	CN=	76

Weighted CN: 86.8

AREA G On-site Bypass

Site Area = 9.07 ac
Wt. CN = 60.3
Site Soils: (Hydrologic Soil 75% Group B - 25% Group D)

Wooded Area:	6.50 ac	CN=	61
Impervious Area:	0.00 ac	CN=	98
Brush (No mow seed mix):	0.25 ac	CN=	56

Weighted CN: 60.3

STORMWATER PRE/POST DEVELOPMENT ANALYSIS	DATE 2/11/2021	
PROJECT NAME H-12 Felton Grove HS	PROJECT NO 19-168	
LOCATION Apex, NC	BY KAL	

STORMWATER ANALYSIS POINT: Total Additional Upstream Area To Point 'D/E'

Runoff Calculations

Site Area = 271.00 ac
Wt. CN = 70.2
Site Soils: (Hydrologic Soil 75% Group B - 5% GROUP C - 15% Group D)

Wooded Area:	107.00	ac	CN=	60
R 1/8 acre	62.00	ac	CN=	74
R 1/2 acre	97.00	ac	CN=	78
Water Surface	5.00	ac	CN=	98

Weighted CN: 70.2

STORMWATER PRE/POST DEVELOPMENT ANALYSIS	DATE 2/11/2021	
PROJECT NAME H-12 Felton Grove HS	PROJECT NO 19-168	
LOCATION Apex, NC	BY KAL	

STORMWATER ANALYSIS POINT: Area H Landfill Culverts

Runoff Calculations

Site Area = 43.30 ac
Wt. CN = 73.4
Site Soils: (Hydrologic Soil 40% Group B - 20% GROUP C - 40% Group D)

Wooded Area:	26.30 ac	CN=	67
R 1/8 acre	0.00 ac	CN=	78
R 1/2 acre	5.00 ac	CN=	81
Land Fill	12.00 ac	CN=	84

Weighted CN: 73.4

STORMWATER PRE/POST DEVELOPMENT ANALYSIS	DATE 2/11/2021	
PROJECT NAME H-12 Felton Grove HS	PROJECT NO 19-168	
LOCATION Apex, NC	BY KAL	

STORMWATER ANALYSIS POINT: Middle Creek Area To Point 'I'

Runoff Calculations

Site Area = 2637.00 ac
Wt. CN = 67.9
Site Soils: (Hydrologic Soil 80% Group B - 5% GROUP C - 15% Group D)

Industrial	580.00	ac	CN=	93
Commercial/Business	75.00	ac	CN=	89
Wooded Area:	2151.00	ac	CN=	59
R 1/8 acre	275.00	ac	CN=	73
R 1/2 acre	195.00	ac	CN=	77
Land Fill	16.00	ac	CN=	81
Golf Course/Lawn	190.00	ac	CN=	65
Water Surface	18.00	ac	CN=	98

Weighted CN: 67.9

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	0.216	2	726	2,401	------	------	------	Area A Onsite Pre
2	SCS Runoff	0.134	2	726	1,496	------	------	------	Area A Off-site Pre
3	Combine	0.350	2	726	3,897	1, 2	------	------	Total Area A Pre
4	SCS Runoff	0.086	2	732	1,032	------	------	------	Area B Onsite Pre
5	SCS Runoff	0.168	2	726	1,877	------	------	------	Area C Onsite Pre
6	SCS Runoff	5.589	2	732	36,001	------	------	------	Area D Onsite Pre
7	SCS Runoff	64.33	2	730	267,434	------	------	------	Area D Offsite Pre
8	Combine	69.74	2	730	303,434	6, 7	------	------	Total Area D Pre
9	SCS Runoff	0.214	2	728	1,634	------	------	------	Area E Onsite Pre
10	SCS Runoff	0.730	2	736	9,444	------	------	------	Area F Onsite Pre
11	SCS Runoff	5.824	2	726	20,314	------	------	------	Area F Off-site Pre
12	Combine	6.354	2	726	29,758	10, 11	------	------	Total Area F Pre
13	SCS Runoff	2.358	2	732	15,189	------	------	------	Area G Onsite Pre
14	SCS Runoff	48.47	2	730	202,342	------	------	------	Area G Off-site Pre
15	Combine	50.75	2	730	217,531	13, 14	------	------	Toital Area G Pre
17	SCS Runoff	0.205	2	724	1,049	------	------	------	Area A Onsite Post
18	SCS Runoff	0.134	2	726	1,496	------	------	------	Area A Off-site Post
19	Combine	0.331	2	726	2,545	17, 18	------	------	Total Area A Post
20	SCS Runoff	0.026	2	720	144	------	------	------	Area B Onsite Post
21	SCS Runoff	0.161	2	720	550	------	------	------	Area C Onsite Post
22	SCS Runoff	41.12	2	730	155,699	------	------	------	Area D Onsite Post
23	SCS Runoff	64.92	2	730	269,318	------	------	------	Area D Offsite Post
24	Combine	106.04	2	730	425,017	22, 23	------	------	Total Area D Post
25	SCS Runoff	0.184	2	722	1,088	------	------	------	Area E Onsite Post
26	SCS Runoff	1.597	2	722	4,732	------	------	------	Area F Onsite Post
27	SCS Runoff	8.999	2	722	24,905	------	------	------	Area F Off-site Post
28	Combine	10.60	2	722	29,637	26, 27	------	------	Total Area F Post
29	SCS Runoff	39.49	2	722	103,578	------	------	------	Area G Onsite Post
30	SCS Runoff	47.43	2	730	198,458	------	------	------	Area G Off-site Post
31	Combine	76.26	2	724	305,920	14, 29,	------	------	Total Area G Post
33	SCS Runoff	23.56	2	722	66,609	------	------	------	Area to SCM D1 Onsite
34	SCS Runoff	0.165	2	726	723	------	------	------	Area to SCM D1 Off-site
35	Combine	23.70	2	722	67,332	33, 34	------	------	Total Area to SCM D1

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
36	Reservoir	0.318	2	1444	58,494	35	383.90	54,068	Route SCM D1
37	SCS Runoff	22.91	2	722	64,219	------	------	------	Area to SCM D2 Onsite
38	SCS Runoff	0.037	2	726	170	------	------	------	Area to SCM D2 Offsite
39	Combine	22.94	2	722	64,388	37, 38	------	------	Total Area to SCM D2
40	Reservoir	0.264	2	1444	50,834	39	392.20	53,261	Route SCM D2
41	SCS Runoff	5.342	2	722	14,983	------	------	------	Area to SCM D3 Onsite
42	Reservoir	0.070	2	1442	13,116	41	384.46	11,987	Route SCM D3
43	SCS Runoff	3.348	2	732	17,002	------	------	------	Area D Bypassing SCMs
44	SCS Runoff	64.48	2	730	267,485	------	------	------	Area D Offsite Post
45	Combine	68.22	2	730	406,932	36, 40, 42, 43, 44	------	------	Total Managed Area D Post
47	SCS Runoff	1.693	2	722	4,679	------	------	------	Area F Onsite Post
48	Combine	10.69	2	722	29,584	27, 47	------	------	Total to SCM F
49	Reservoir	3.948	2	734	29,574	48	388.90	7,295	Route SCM F
50	SCS Runoff	0.044	2	724	325	------	------	------	Area F Bypassing SCM
51	Combine	3.971	2	732	29,899	49, 50	------	------	Total Managed Area F Post
53	SCS Runoff	39.35	2	720	102,926	------	------	------	Area to SCM G Onsite
54	SCS Runoff	0.047	2	720	122	------	------	------	Area to SCM G Offsite
55	Combine	39.40	2	720	103,048	53, 54	------	------	Total Area to SCM G
56	Reservoir	0.360	2	1444	77,110	55	388.31	87,596	Route SCM G
57	SCS Runoff	1.365	2	734	9,827	------	------	------	Area G Bypassing SCM
58	Combine	49.00	2	730	285,395	30, 56, 57	------	------	Total Managed Area G Post
60	SCS Runoff	126.84	2	734	660,044	------	------	------	Additional Area to Point D-E
61	Combine	70.41	2	730	310,377	1, 4, 5, 8, 9,	------	------	Total Area A-E Pre
62	Combine	193.33	2	734	970,420	60, 61	------	------	Total A-E Post & Upstream
63	Reach	187.87	2	738	970,419	62	------	------	A-E Travel to H Landfill Culverts
64	Combine	56.66	2	730	247,289	12, 15,	------	------	Total Area F & G Pre
65	Reach	54.76	2	734	247,288	64	------	------	F&G Travel to H Landfill Culverts
66	SCS Runoff	24.85	2	736	125,838	------	------	------	Area H at Culverts
67	Combine	265.16	2	736	1,343,545	63, 65, 66	------	------	Total Flow H At Culverts Pre
69	SCS Runoff	484.42	2	772	5,397,708	------	------	------	Area I - Apex
70	Reach	483.07	2	776	5,397,708	69	------	------	Culverts Travel to I
71	Combine	966.04	2	774	10,795,419	69, 70	------	------	Total Area I Pre

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

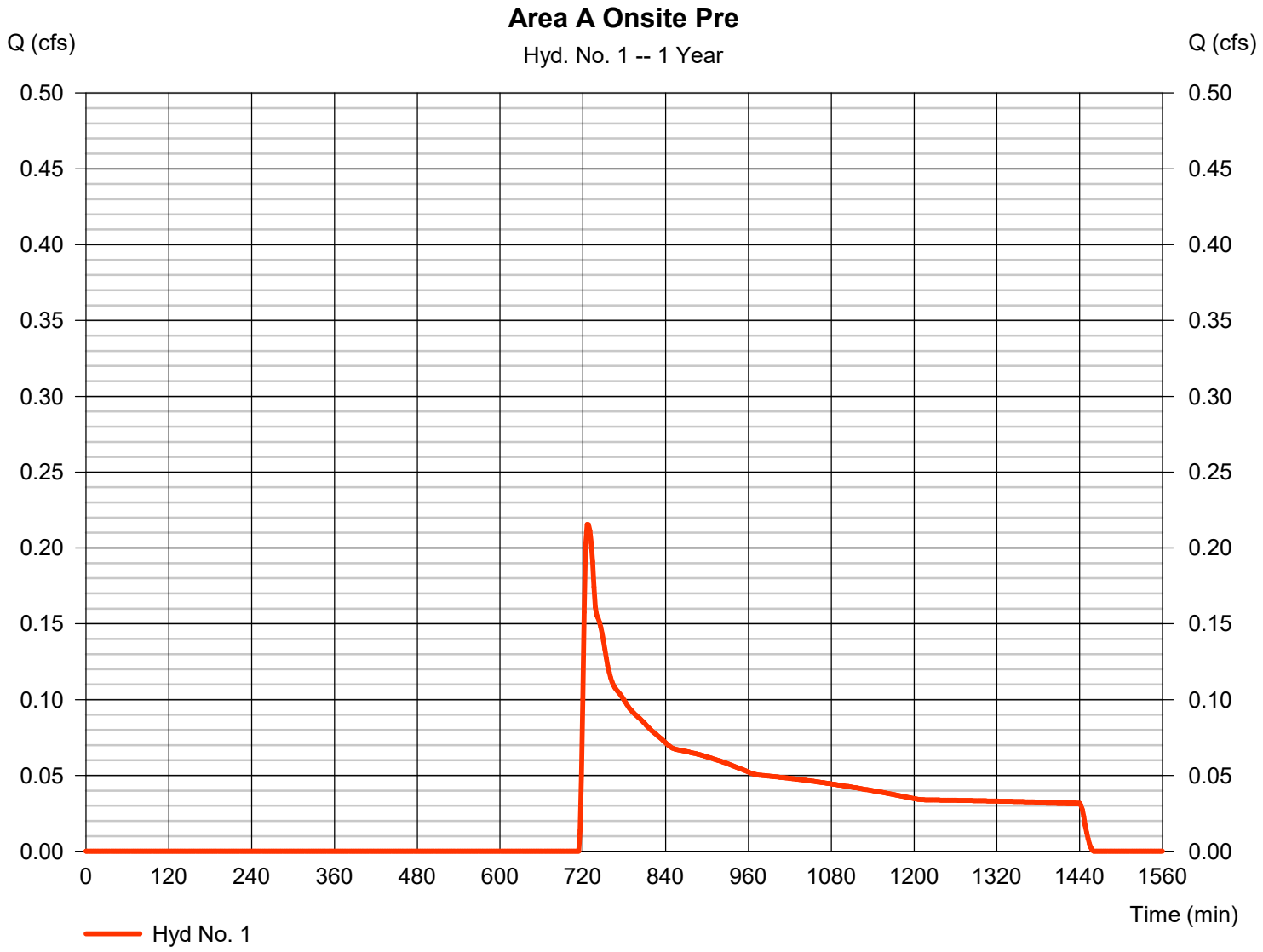
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
73	SCS Runoff	126.84	2	734	660,044	------	------	------	Additional Area to Point D-E
74	Combine	68.53	2	730	409,763	17, 20, 21, 25, 45,	------	------	Total Area A-E Post
75	Combine	191.24	2	734	1,069,806	73, 74	------	------	Total A-E Post & Upstream
76	Reach	185.85	2	738	1,069,762	75	------	------	A-E Travel to H Landfill Culverts
77	Combine	52.91	2	730	315,294	51, 58,	------	------	Total Area F & G Post
78	Reach	51.13	2	734	315,262	77	------	------	F&G Travel to H Landfill Culverts
79	SCS Runoff	24.85	2	736	125,838	------	------	------	Area H at Culverts
80	Combine	260.08	2	736	1,510,861	76, 78, 79	------	------	Total Area H At Culverts Post
82	SCS Runoff	484.42	2	772	5,397,708	------	------	------	Area I - Apex
83	Reach	483.07	2	776	5,397,708	82	------	------	Culverts Travel to I
84	Combine	966.04	2	774	10,795,419	82, 83	------	------	Total Area I Post

Hydrograph Report

Hyd. No. 1

Area A Onsite Pre

Hydrograph type	= SCS Runoff	Peak discharge	= 0.216 cfs
Storm frequency	= 1 yrs	Time to peak	= 726 min
Time interval	= 2 min	Hyd. volume	= 2,401 cuft
Drainage area	= 3.850 ac	Curve number	= 55
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 12.10 min
Total precip.	= 2.89 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



TR55 Tc Worksheet

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

Hyd. No. 1

Area A Onsite Pre

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.400		0.011		0.011		
Flow length (ft)	= 50.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.48		0.00		0.00		
Land slope (%)	= 4.00		0.00		0.00		
Travel Time (min)	**= 8.96**	**+**	**0.00**	**+**	**0.00**	**=**	**8.96**
Shallow Concentrated Flow							
Flow length (ft)	= 845.00		0.00		0.00		
Watercourse slope (%)	= 7.70		0.00		0.00		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	=4.48		0.00		0.00		
Travel Time (min)	**= 3.15**	**+**	**0.00**	**+**	**0.00**	**=**	**3.15**
Channel Flow							
X sectional flow area (sqft)	= 0.00		0.00		0.00		
Wetted perimeter (ft)	= 0.00		0.00		0.00		
Channel slope (%)	= 0.00		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	=0.00						
			0.00				
					0.00		
Flow length (ft)	({0})0.0		0.0		0.0		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

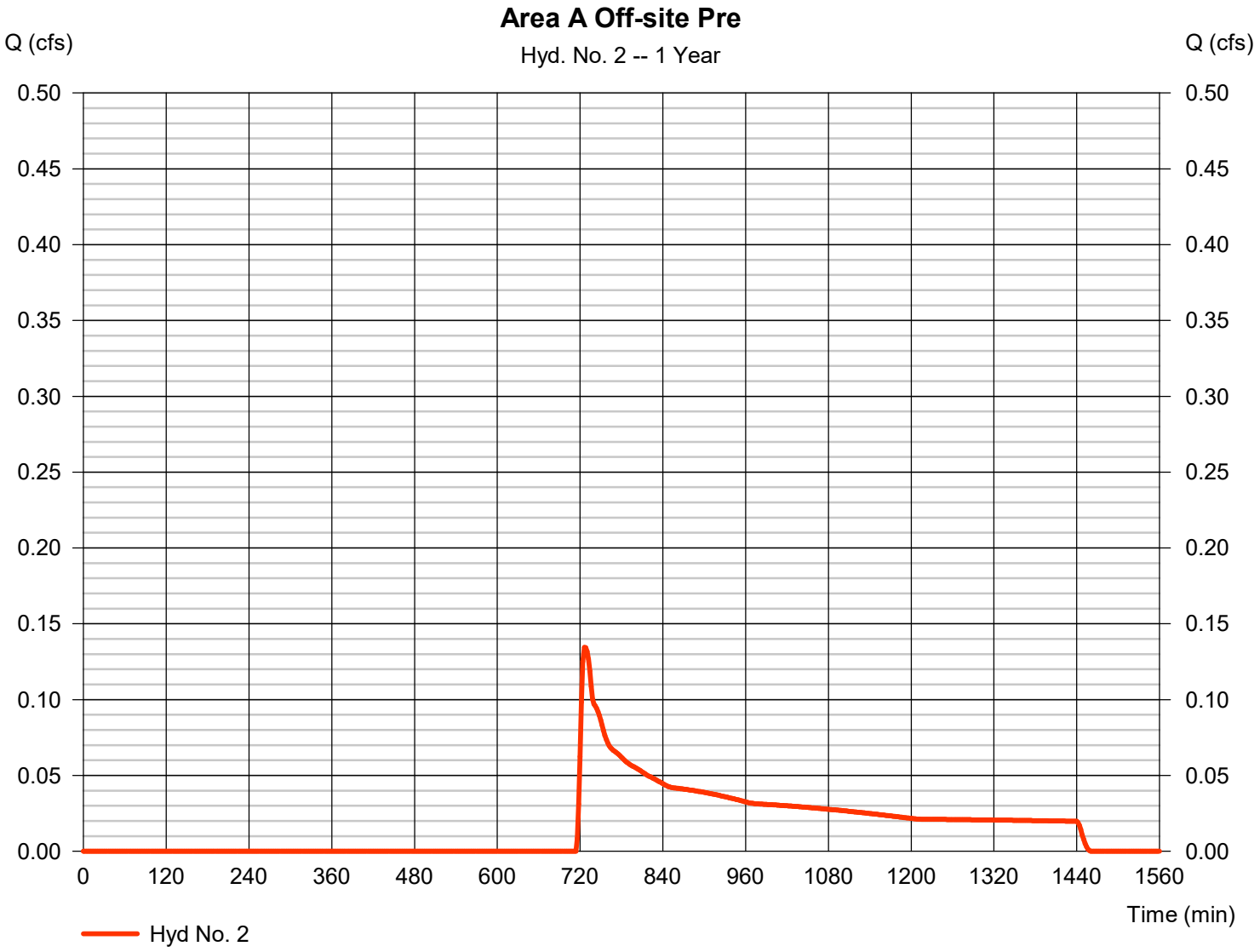
Total Travel Time, Tc ..... 12.10 min

Hydrograph Report

Hyd. No. 2

Area A Off-site Pre

Hydrograph type	= SCS Runoff	Peak discharge	= 0.134 cfs
Storm frequency	= 1 yrs	Time to peak	= 726 min
Time interval	= 2 min	Hyd. volume	= 1,496 cuft
Drainage area	= 2.400 ac	Curve number	= 55
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 12.10 min
Total precip.	= 2.89 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

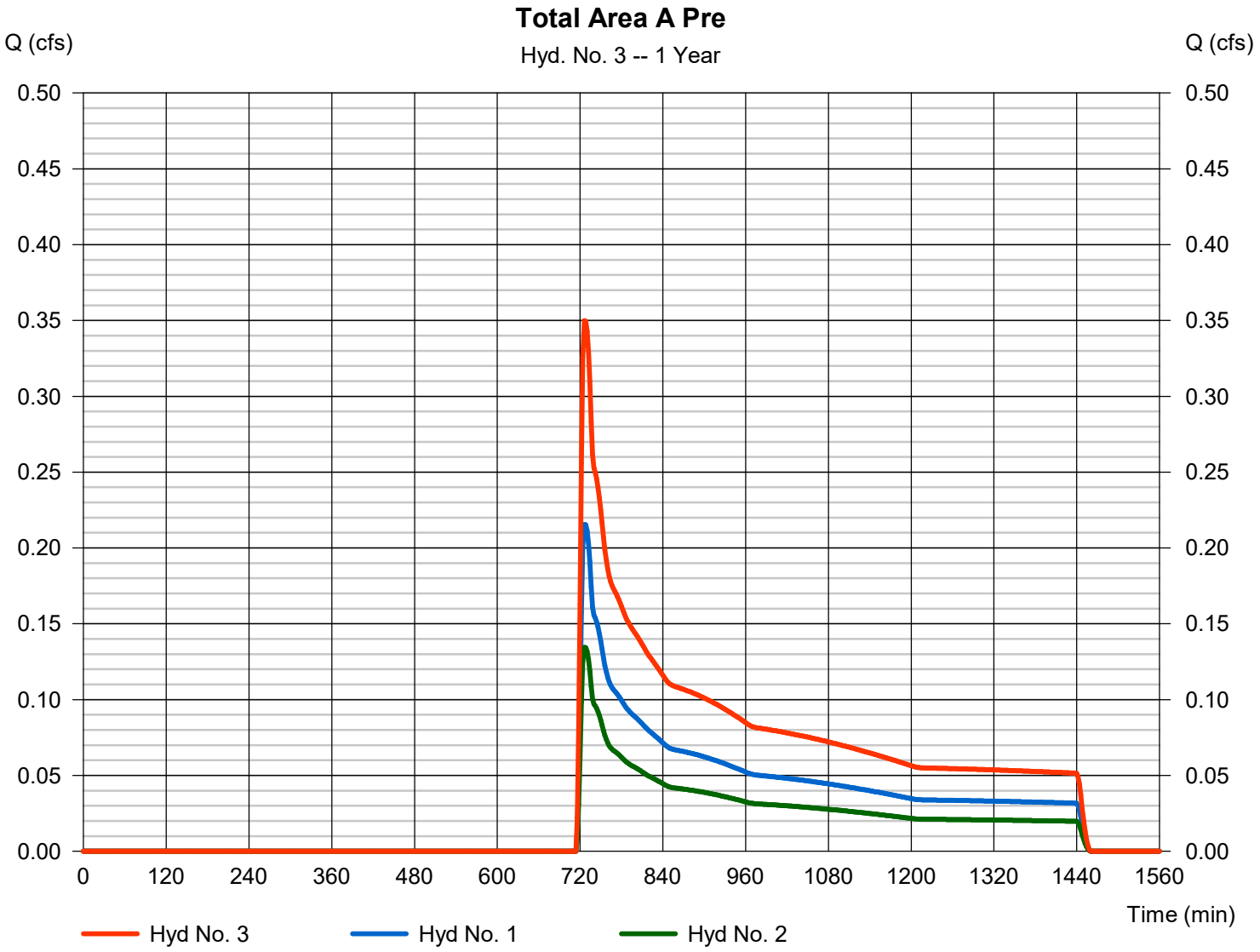


Hydrograph Report

Hyd. No. 3

Total Area A Pre

Hydrograph type	= Combine	Peak discharge	= 0.350 cfs
Storm frequency	= 1 yrs	Time to peak	= 726 min
Time interval	= 2 min	Hyd. volume	= 3,897 cuft
Inflow hyds.	= 1, 2	Contrib. drain. area	= 6.250 ac

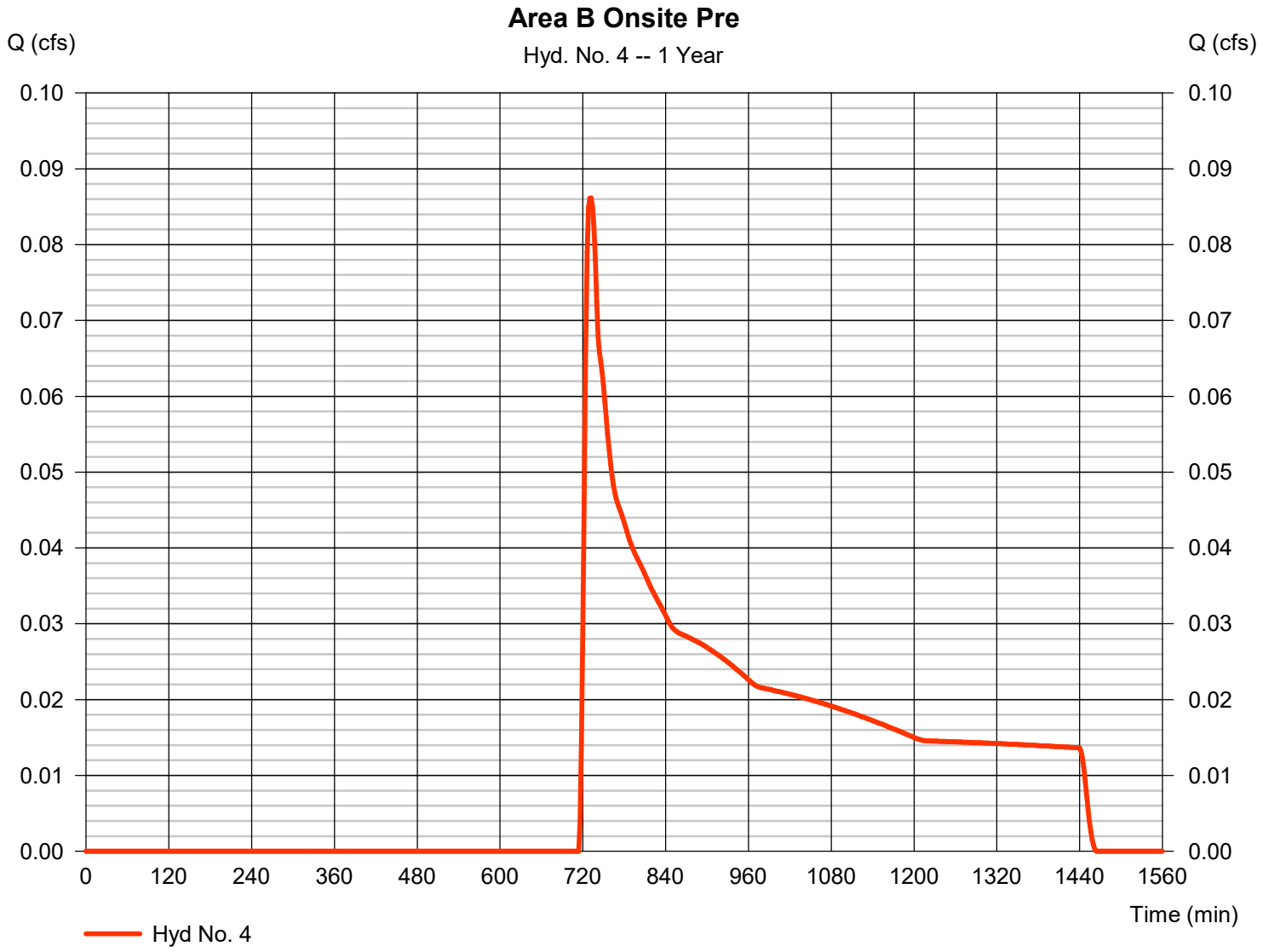


Hydrograph Report

Hyd. No. 4

Area B Onsite Pre

Hydrograph type	= SCS Runoff	Peak discharge	= 0.086 cfs
Storm frequency	= 1 yrs	Time to peak	= 732 min
Time interval	= 2 min	Hyd. volume	= 1,032 cuft
Drainage area	= 1.750 ac	Curve number	= 55
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 15.20 min
Total precip.	= 2.89 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



TR55 Tc Worksheet

Hyd. No. 4

Area B Onsite Pre

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.400		0.011		0.011		
Flow length (ft)	= 50.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.48		0.00		0.00		
Land slope (%)	= 1.50		0.00		0.00		
Travel Time (min)	**= 13.27**	**+**	**0.00**	**+**	**0.00**	**=**	**13.27**
Shallow Concentrated Flow							
Flow length (ft)	= 550.00		0.00		0.00		
Watercourse slope (%)	= 9.10		0.00		0.00		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	=4.87		0.00		0.00		
Travel Time (min)	**= 1.88**	**+**	**0.00**	**+**	**0.00**	**=**	**1.88**
Channel Flow							
X sectional flow area (sqft)	= 0.00		0.00		0.00		
Wetted perimeter (ft)	= 0.00		0.00		0.00		
Channel slope (%)	= 0.00		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	=0.00						
			0.00				
					0.00		
Flow length (ft)	({0})0.0		0.0		0.0		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

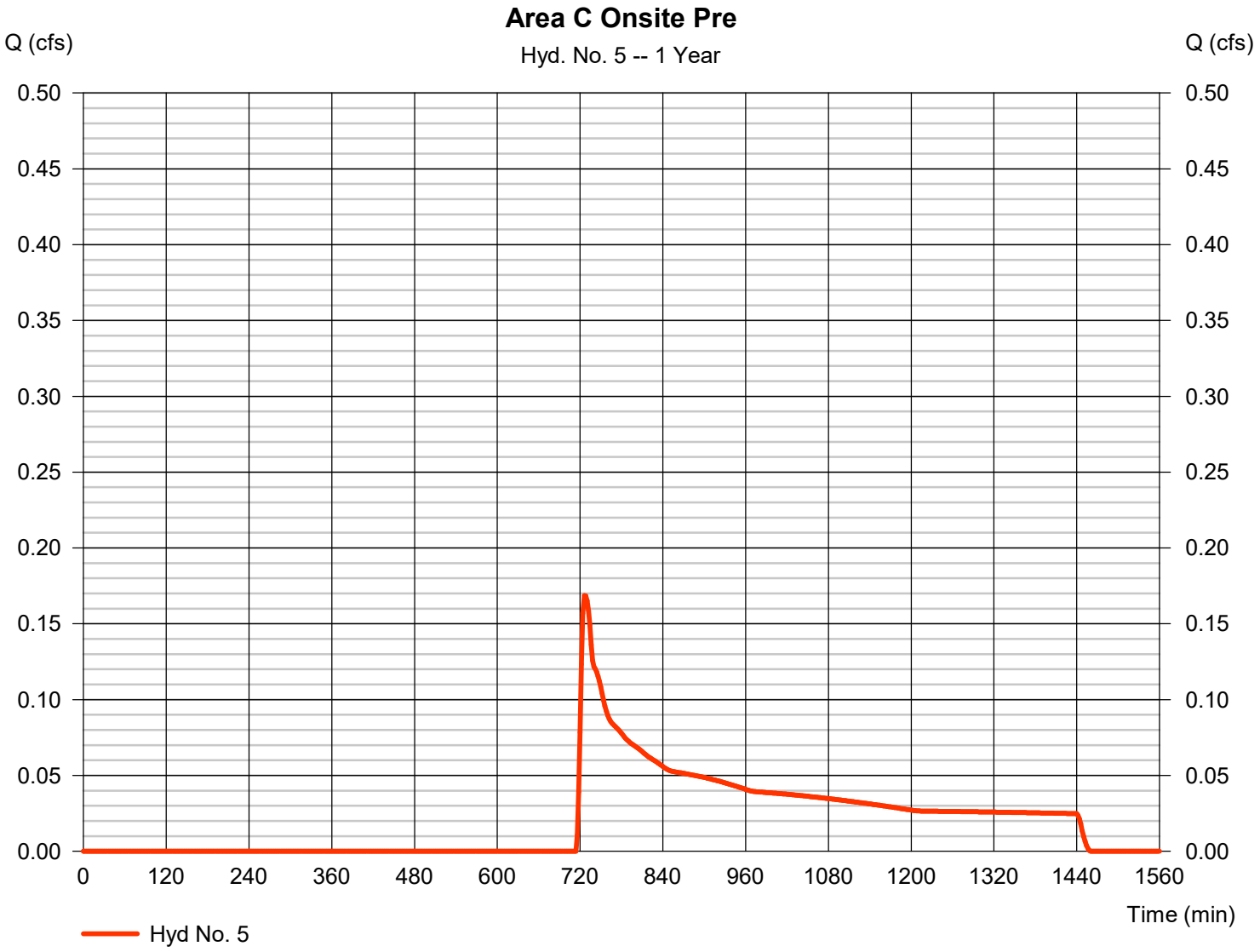
Total Travel Time, Tc ..... 15.20 min

Hydrograph Report

Hyd. No. 5

Area C Onsite Pre

Hydrograph type	= SCS Runoff	Peak discharge	= 0.168 cfs
Storm frequency	= 1 yrs	Time to peak	= 726 min
Time interval	= 2 min	Hyd. volume	= 1,877 cuft
Drainage area	= 3.010 ac	Curve number	= 55
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 10.80 min
Total precip.	= 2.89 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



TR55 Tc Worksheet

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

Hyd. No. 5

Area C Onsite Pre

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.400		0.011		0.011		
Flow length (ft)	= 50.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.48		0.00		0.00		
Land slope (%)	= 5.00		0.00		0.00		
Travel Time (min)	**= 8.20**	**+**	**0.00**	**+**	**0.00**	**=**	**8.20**
Shallow Concentrated Flow							
Flow length (ft)	= 690.00		0.00		0.00		
Watercourse slope (%)	= 7.50		0.00		0.00		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	=4.42		0.00		0.00		
Travel Time (min)	**= 2.60**	**+**	**0.00**	**+**	**0.00**	**=**	**2.60**
Channel Flow							
X sectional flow area (sqft)	= 0.00		0.00		0.00		
Wetted perimeter (ft)	= 0.00		0.00		0.00		
Channel slope (%)	= 0.00		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	=0.00						
			0.00				
					0.00		
Flow length (ft)	({0})0.0		0.0		0.0		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

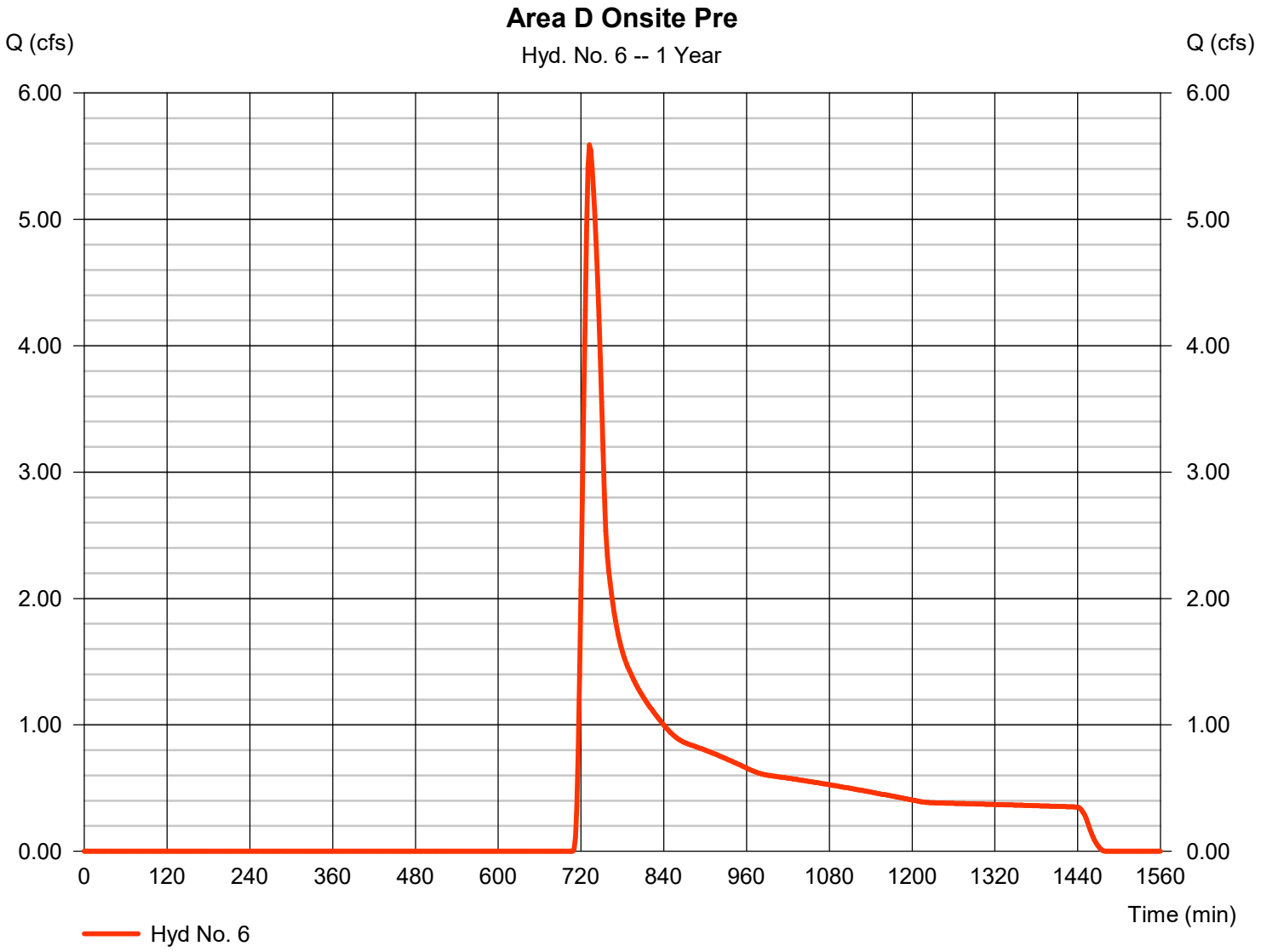
Total Travel Time, Tc ..... 10.80 min

Hydrograph Report

Hyd. No. 6

Area D Onsite Pre

Hydrograph type	=	SCS Runoff	Peak discharge	=	5.589 cfs
Storm frequency	=	1 yrs	Time to peak	=	732 min
Time interval	=	2 min	Hyd. volume	=	36,001 cuft
Drainage area	=	29.390 ac	Curve number	=	61.6
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	24.00 min
Total precip.	=	2.89 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



TR55 Tc Worksheet

Hyd. No. 6

Area D Onsite Pre

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.400		0.011		0.011		
Flow length (ft)	= 50.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.48		0.00		0.00		
Land slope (%)	= 1.00		0.00		0.00		
Travel Time (min)	**= 15.61**	**+**	**0.00**	**+**	**0.00**	**=**	**15.61**
Shallow Concentrated Flow							
Flow length (ft)	= 830.00		0.00		0.00		
Watercourse slope (%)	= 4.00		0.00		0.00		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	=3.23		0.00		0.00		
Travel Time (min)	**= 4.29**	**+**	**0.00**	**+**	**0.00**	**=**	**4.29**
Channel Flow							
X sectional flow area (sqft)	= 27.00		0.00		0.00		
Wetted perimeter (ft)	= 14.50		0.00		0.00		
Channel slope (%)	= 2.50		0.00		0.00		
Manning's n-value	= 0.030		0.015		0.015		
Velocity (ft/s)	=11.91						
			0.00				
					0.00		
Flow length (ft)	({0})2955.0		0.0		0.0		
Travel Time (min)	**= 4.13**	**+**	**0.00**	**+**	**0.00**	**=**	**4.13**

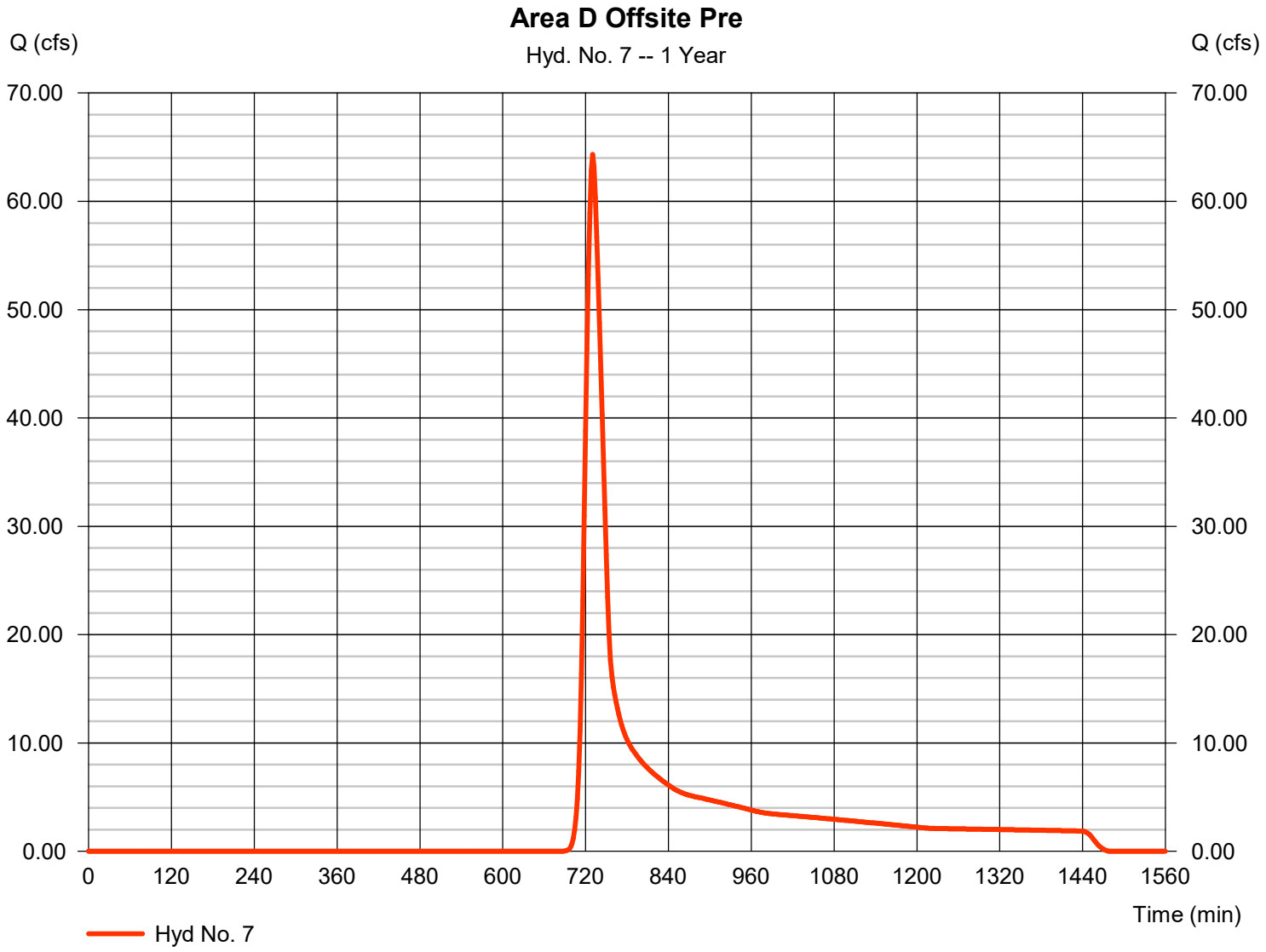
Total Travel Time, Tc ..... 24.00 min

Hydrograph Report

Hyd. No. 7

Area D Offsite Pre

Hydrograph type	=	SCS Runoff	Peak discharge	=	64.33 cfs
Storm frequency	=	1 yrs	Time to peak	=	730 min
Time interval	=	2 min	Hyd. volume	=	267,434 cuft
Drainage area	=	101.300 ac	Curve number	=	71.9
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	24.00 min
Total precip.	=	2.89 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



TR55 Tc Worksheet

Hyd. No. 7

Area D Offsite Pre

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.400		0.011		0.011		
Flow length (ft)	= 50.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.48		0.00		0.00		
Land slope (%)	= 1.00		0.00		0.00		
Travel Time (min)	**= 15.61**	**+**	**0.00**	**+**	**0.00**	**=**	**15.61**
Shallow Concentrated Flow							
Flow length (ft)	= 830.00		0.00		0.00		
Watercourse slope (%)	= 4.00		0.00		0.00		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	=3.23		0.00		0.00		
Travel Time (min)	**= 4.29**	**+**	**0.00**	**+**	**0.00**	**=**	**4.29**
Channel Flow							
X sectional flow area (sqft)	= 27.00		0.00		0.00		
Wetted perimeter (ft)	= 14.50		0.00		0.00		
Channel slope (%)	= 2.50		0.00		0.00		
Manning's n-value	= 0.030		0.015		0.015		
Velocity (ft/s)	=11.91						
			0.00				
					0.00		
Flow length (ft)	({0})2955.0		0.0		0.0		
Travel Time (min)	**= 4.13**	**+**	**0.00**	**+**	**0.00**	**=**	**4.13**

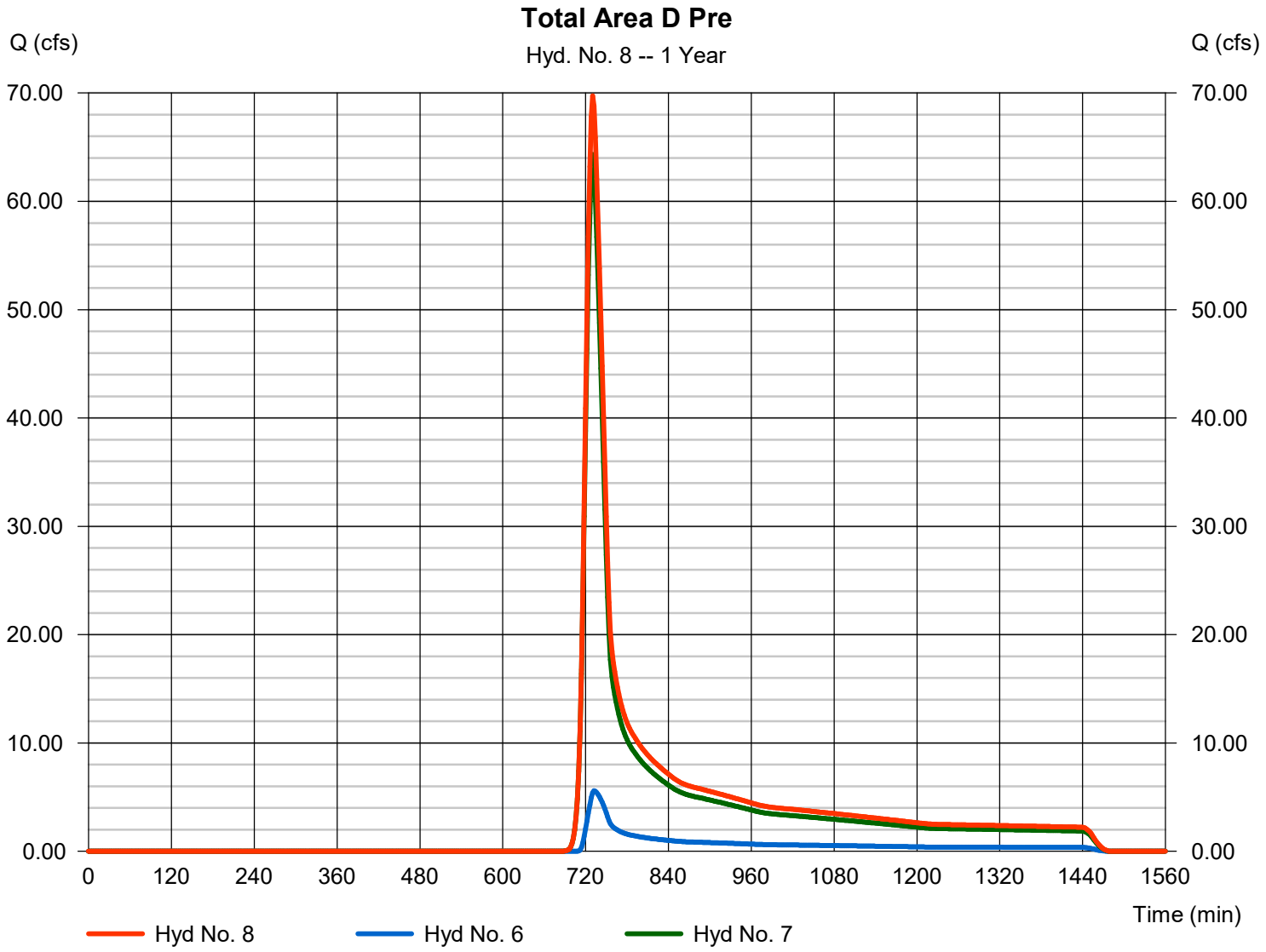
Total Travel Time, Tc ..... 24.00 min

Hydrograph Report

Hyd. No. 8

Total Area D Pre

Hydrograph type	= Combine	Peak discharge	= 69.74 cfs
Storm frequency	= 1 yrs	Time to peak	= 730 min
Time interval	= 2 min	Hyd. volume	= 303,434 cuft
Inflow hyds.	= 6, 7	Contrib. drain. area	= 130.690 ac

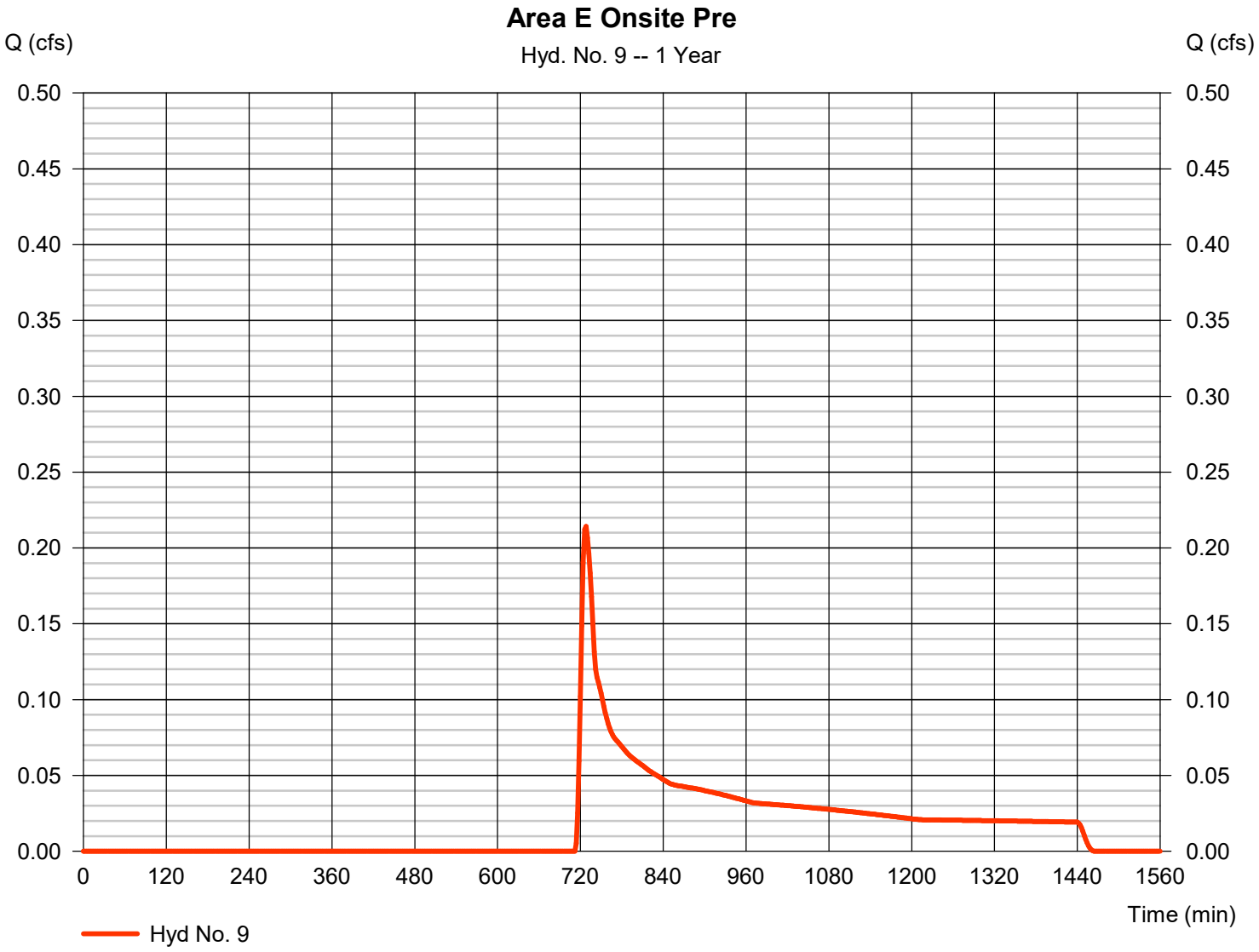


Hydrograph Report

Hyd. No. 9

Area E Onsite Pre

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.214 cfs
Storm frequency	=	1 yrs	Time to peak	=	728 min
Time interval	=	2 min	Hyd. volume	=	1,634 cuft
Drainage area	=	2.110 ac	Curve number	=	57.2
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	15.30 min
Total precip.	=	2.89 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



TR55 Tc Worksheet

Hyd. No. 9

Area E Onsite Pre

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.400		0.011		0.011		
Flow length (ft)	= 50.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.48		0.00		0.00		
Land slope (%)	= 1.50		0.00		0.00		
Travel Time (min)	**= 13.27**	**+**	**0.00**	**+**	**0.00**	**=**	**13.27**
Shallow Concentrated Flow							
Flow length (ft)	= 586.00		0.00		0.00		
Watercourse slope (%)	= 8.60		0.00		0.00		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	=4.73		0.00		0.00		
Travel Time (min)	**= 2.06**	**+**	**0.00**	**+**	**0.00**	**=**	**2.06**
Channel Flow							
X sectional flow area (sqft)	= 0.00		0.00		0.00		
Wetted perimeter (ft)	= 0.00		0.00		0.00		
Channel slope (%)	= 0.00		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	=0.00						
			0.00				
					0.00		
Flow length (ft)	({0})0.0		0.0		0.0		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

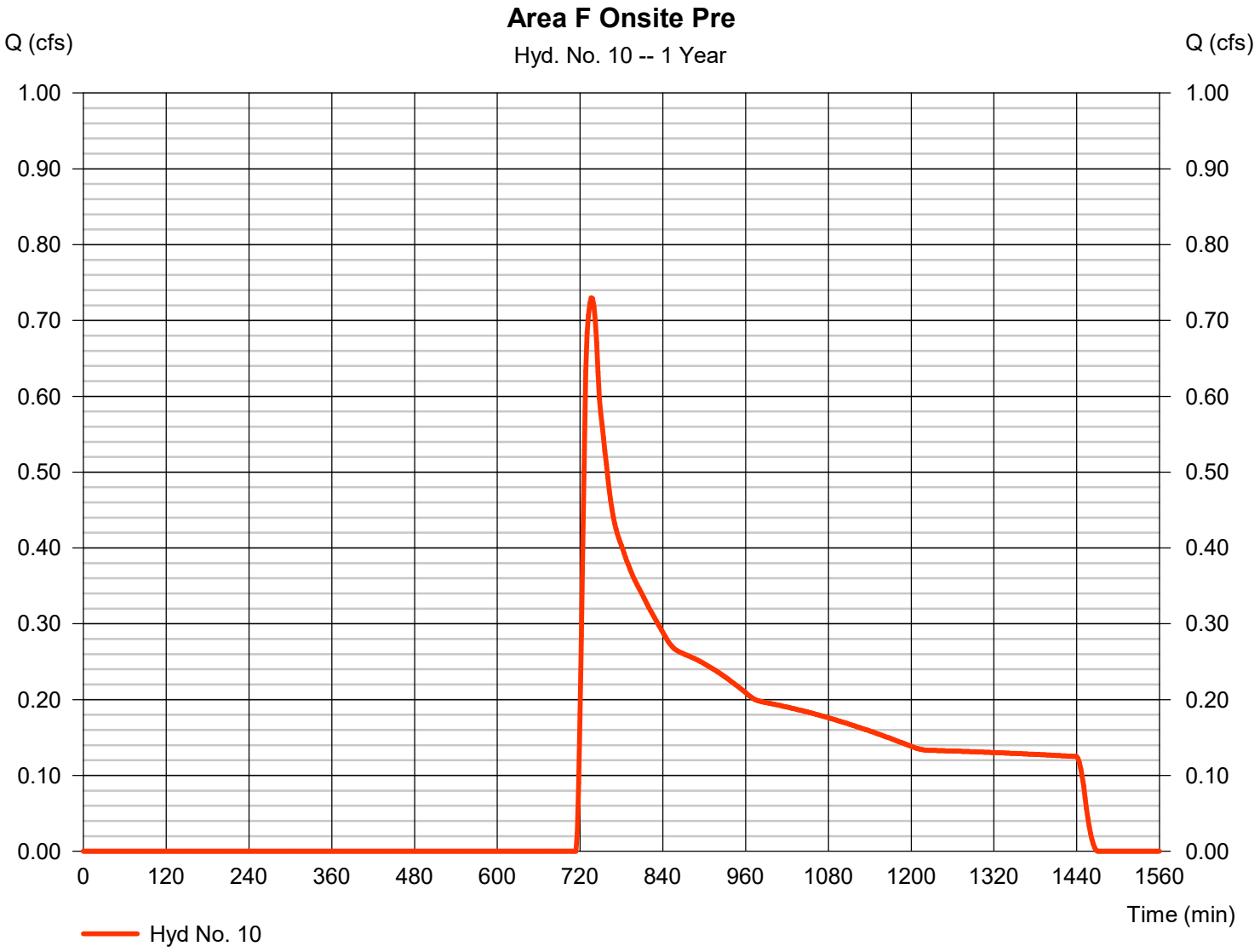
Total Travel Time, Tc ..... 15.30 min

Hydrograph Report

Hyd. No. 10

Area F Onsite Pre

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.730 cfs
Storm frequency	=	1 yrs	Time to peak	=	736 min
Time interval	=	2 min	Hyd. volume	=	9,444 cuft
Drainage area	=	15.620 ac	Curve number	=	55
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	17.60 min
Total precip.	=	2.89 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



TR55 Tc Worksheet

Hyd. No. 10

Area F Onsite Pre

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.240		0.011		0.011		
Flow length (ft)	= 50.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.48		0.00		0.00		
Land slope (%)	= 5.00		0.00		0.00		
Travel Time (min)	**= 5.45**	**+**	**0.00**	**+**	**0.00**	**=**	**5.45**
Shallow Concentrated Flow							
Flow length (ft)	= 1965.00		0.00		0.00		
Watercourse slope (%)	= 2.80		0.00		0.00		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	=2.70		0.00		0.00		
Travel Time (min)	**= 12.13**	**+**	**0.00**	**+**	**0.00**	**=**	**12.13**
Channel Flow							
X sectional flow area (sqft)	= 0.00		0.00		0.00		
Wetted perimeter (ft)	= 0.00		0.00		0.00		
Channel slope (%)	= 0.00		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	=0.00						
			0.00				
					0.00		
Flow length (ft)	({0})0.0		0.0		0.0		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

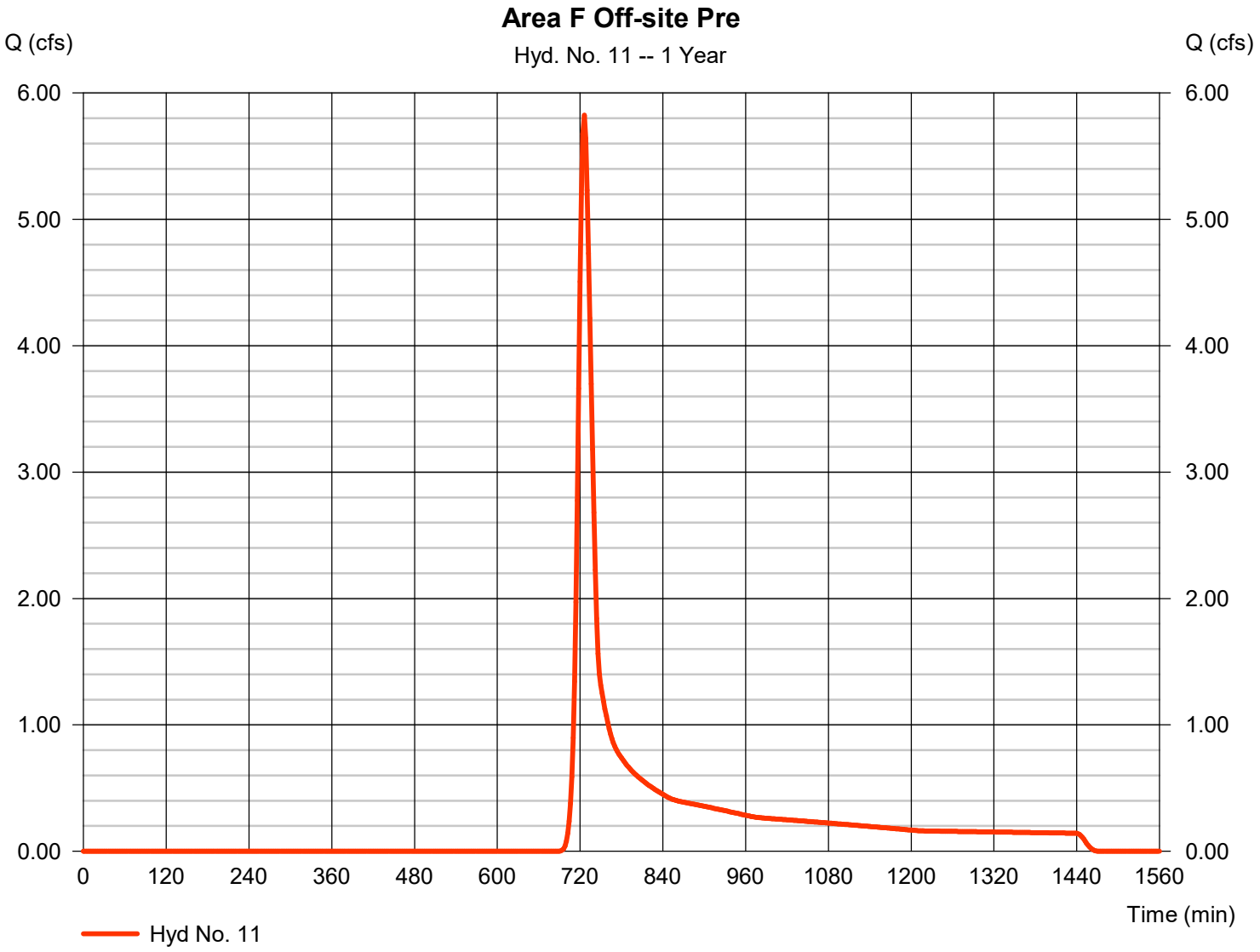
Total Travel Time, Tc ..... 17.60 min

Hydrograph Report

Hyd. No. 11

Area F Off-site Pre

Hydrograph type	=	SCS Runoff	Peak discharge	=	5.824 cfs
Storm frequency	=	1 yrs	Time to peak	=	726 min
Time interval	=	2 min	Hyd. volume	=	20,314 cuft
Drainage area	=	7.670 ac	Curve number	=	71.7
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	17.60 min
Total precip.	=	2.89 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



TR55 Tc Worksheet

Hyd. No. 11

Area F Off-site Pre

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.240		0.011		0.011		
Flow length (ft)	= 50.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.48		0.00		0.00		
Land slope (%)	= 5.00		0.00		0.00		
Travel Time (min)	**= 5.45**	**+**	**0.00**	**+**	**0.00**	**=**	**5.45**
Shallow Concentrated Flow							
Flow length (ft)	= 1965.00		0.00		0.00		
Watercourse slope (%)	= 2.80		0.00		0.00		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	=2.70		0.00		0.00		
Travel Time (min)	**= 12.13**	**+**	**0.00**	**+**	**0.00**	**=**	**12.13**
Channel Flow							
X sectional flow area (sqft)	= 0.00		0.00		0.00		
Wetted perimeter (ft)	= 0.00		0.00		0.00		
Channel slope (%)	= 0.00		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	=0.00						
			0.00				
					0.00		
Flow length (ft)	({0})0.0		0.0		0.0		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

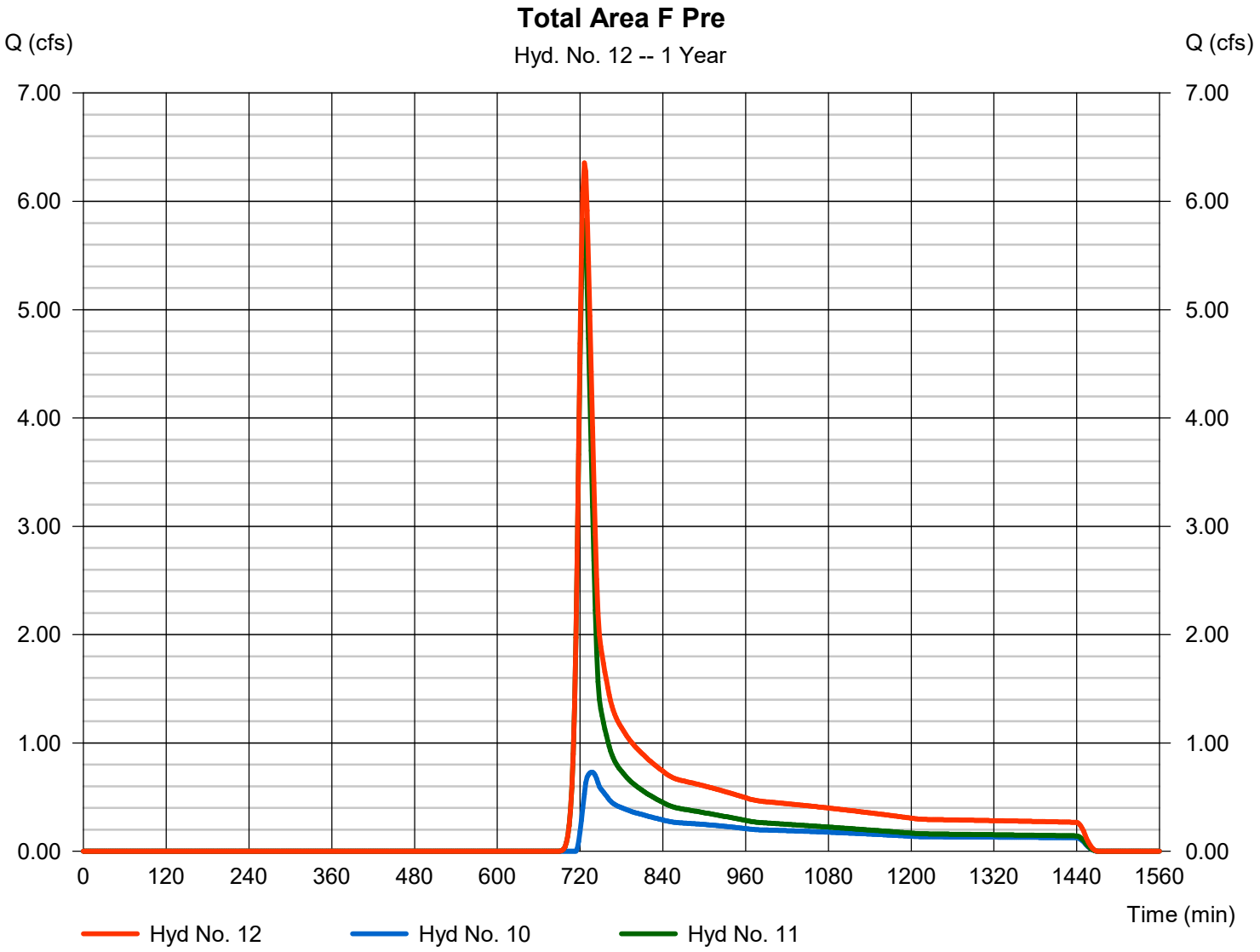
Total Travel Time, Tc ..... 17.60 min

Hydrograph Report

Hyd. No. 12

Total Area F Pre

Hydrograph type	= Combine	Peak discharge	= 6.354 cfs
Storm frequency	= 1 yrs	Time to peak	= 726 min
Time interval	= 2 min	Hyd. volume	= 29,758 cuft
Inflow hyds.	= 10, 11	Contrib. drain. area	= 23.290 ac

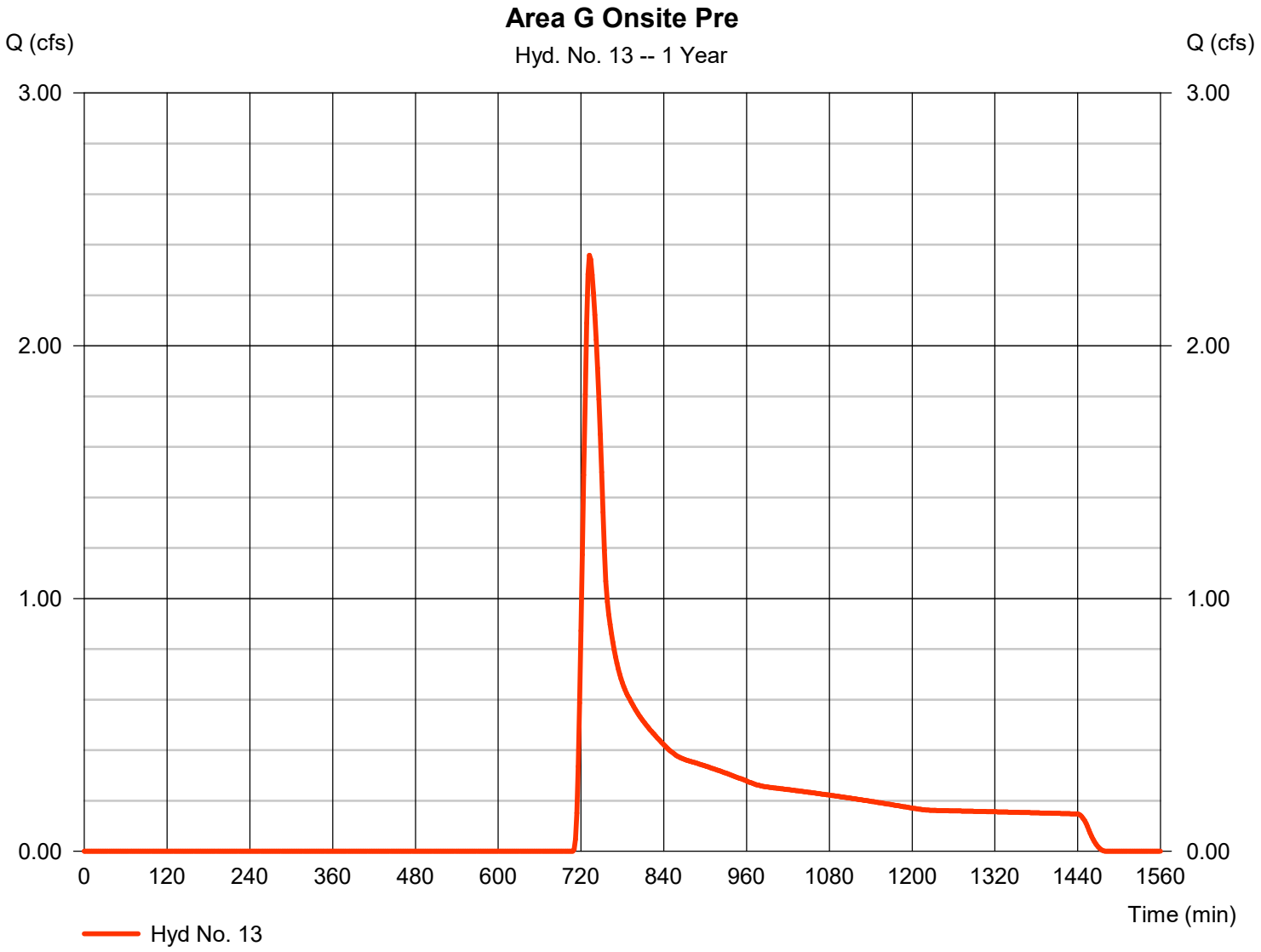


Hydrograph Report

Hyd. No. 13

Area G Onsite Pre

Hydrograph type	=	SCS Runoff	Peak discharge	=	2.358 cfs
Storm frequency	=	1 yrs	Time to peak	=	732 min
Time interval	=	2 min	Hyd. volume	=	15,189 cuft
Drainage area	=	12.400 ac	Curve number	=	61.6
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	23.80 min
Total precip.	=	2.89 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



TR55 Tc Worksheet

Hyd. No. 13

Area G Onsite Pre

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.240		0.011		0.011		
Flow length (ft)	= 50.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.50		0.00		0.00		
Land slope (%)	= 2.00		0.00		0.00		
Travel Time (min)	**= 7.84**	**+**	**0.00**	**+**	**0.00**	**=**	**7.84**
Shallow Concentrated Flow							
Flow length (ft)	= 2053.00		0.00		0.00		
Watercourse slope (%)	= 2.80		0.00		0.00		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	=2.70		0.00		0.00		
Travel Time (min)	**= 12.67**	**+**	**0.00**	**+**	**0.00**	**=**	**12.67**
Channel Flow							
X sectional flow area (sqft)	= 10.00		0.00		0.00		
Wetted perimeter (ft)	= 8.66		0.00		0.00		
Channel slope (%)	= 1.60		0.00		0.00		
Manning's n-value	= 0.025		0.015		0.015		
Velocity (ft/s)	=8.30						
			0.00				
					0.00		
Flow length (ft)	({0})1635.0		0.0		0.0		
Travel Time (min)	**= 3.28**	**+**	**0.00**	**+**	**0.00**	**=**	**3.28**

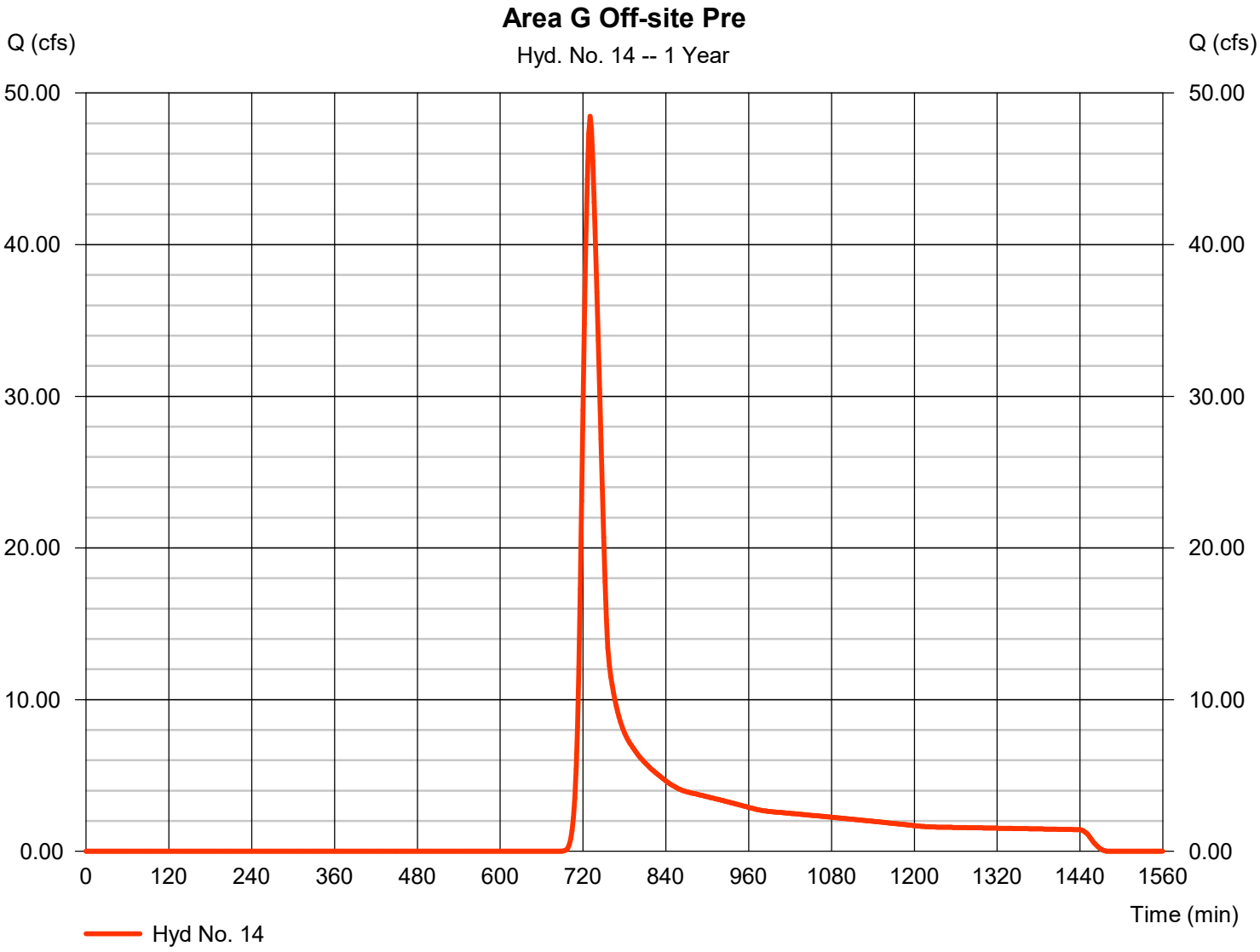
Total Travel Time, Tc ..... 23.80 min

Hydrograph Report

Hyd. No. 14

Area G Off-site Pre

Hydrograph type	=	SCS Runoff	Peak discharge	=	48.47 cfs
Storm frequency	=	1 yrs	Time to peak	=	730 min
Time interval	=	2 min	Hyd. volume	=	202,342 cuft
Drainage area	=	77.610 ac	Curve number	=	71.7
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	23.80 min
Total precip.	=	2.89 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



TR55 Tc Worksheet

Hyd. No. 14

Area G Off-site Pre

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.240		0.011		0.011		
Flow length (ft)	= 50.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.50		0.00		0.00		
Land slope (%)	= 2.00		0.00		0.00		
Travel Time (min)	**= 7.84**	**+**	**0.00**	**+**	**0.00**	**=**	**7.84**
Shallow Concentrated Flow							
Flow length (ft)	= 2053.00		0.00		0.00		
Watercourse slope (%)	= 2.80		0.00		0.00		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	=2.70		0.00		0.00		
Travel Time (min)	**= 12.67**	**+**	**0.00**	**+**	**0.00**	**=**	**12.67**
Channel Flow							
X sectional flow area (sqft)	= 10.00		0.00		0.00		
Wetted perimeter (ft)	= 8.66		0.00		0.00		
Channel slope (%)	= 1.60		0.00		0.00		
Manning's n-value	= 0.025		0.015		0.015		
Velocity (ft/s)	=8.30						
			0.00				
					0.00		
Flow length (ft)	({0})1635.0		0.0		0.0		
Travel Time (min)	**= 3.28**	**+**	**0.00**	**+**	**0.00**	**=**	**3.28**

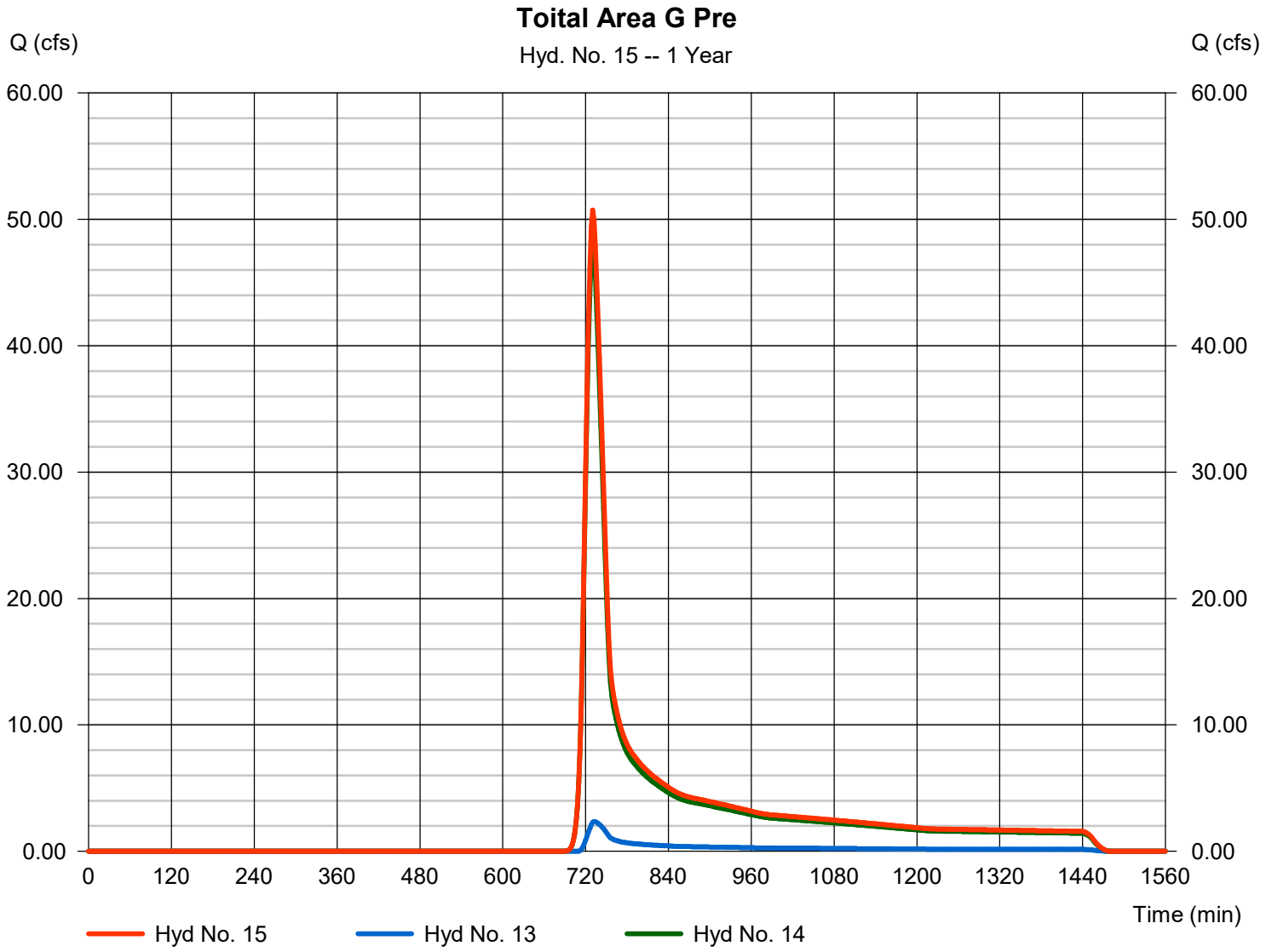
Total Travel Time, Tc ..... 23.80 min

Hydrograph Report

Hyd. No. 15

Toital Area G Pre

Hydrograph type	= Combine	Peak discharge	= 50.75 cfs
Storm frequency	= 1 yrs	Time to peak	= 730 min
Time interval	= 2 min	Hyd. volume	= 217,531 cuft
Inflow hyds.	= 13, 14	Contrib. drain. area	= 90.010 ac

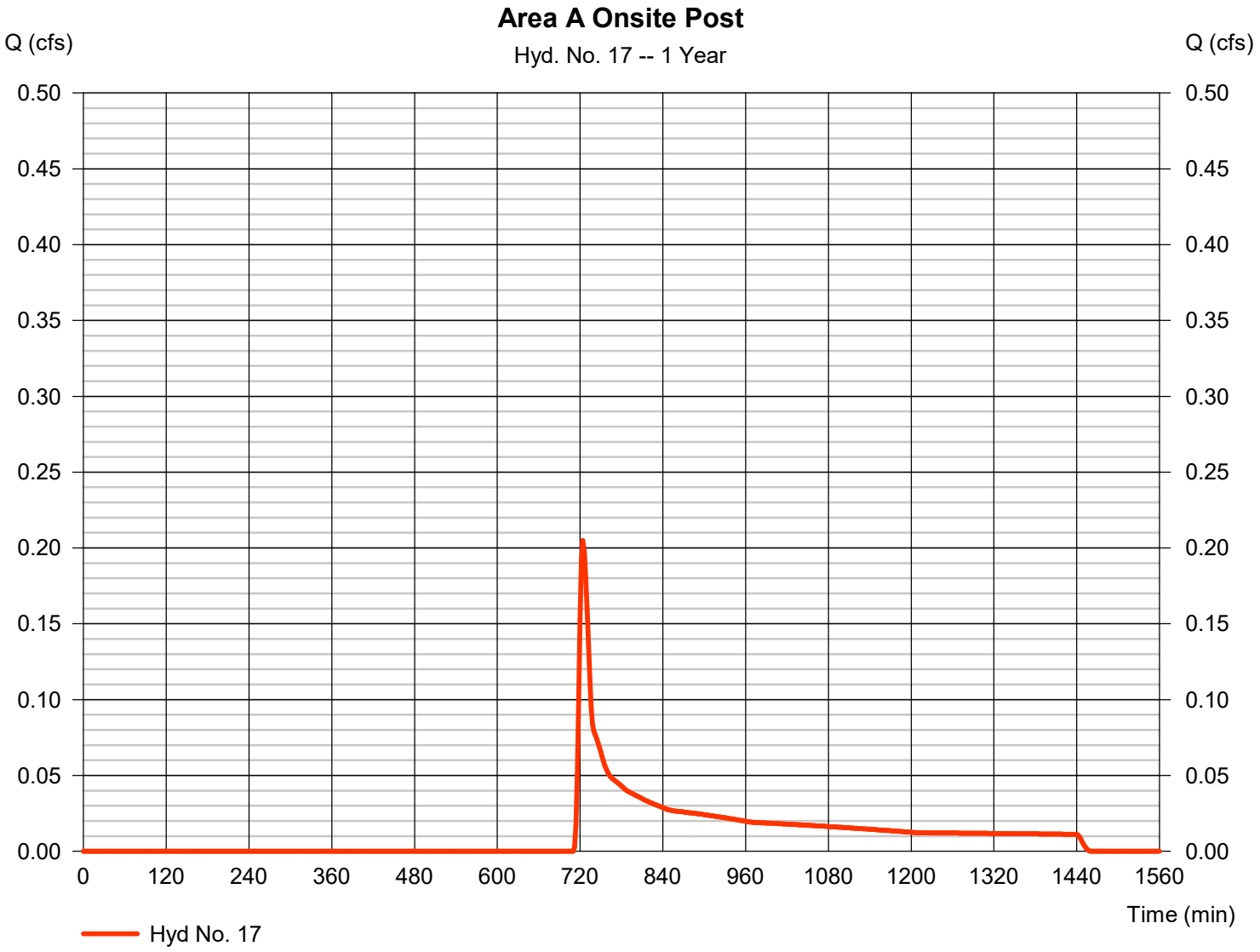


Hydrograph Report

Hyd. No. 17

Area A Onsite Post

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.205 cfs
Storm frequency	=	1 yrs	Time to peak	=	724 min
Time interval	=	2 min	Hyd. volume	=	1,049 cuft
Drainage area	=	1.020 ac	Curve number	=	59.3
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	12.10 min
Total precip.	=	2.89 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

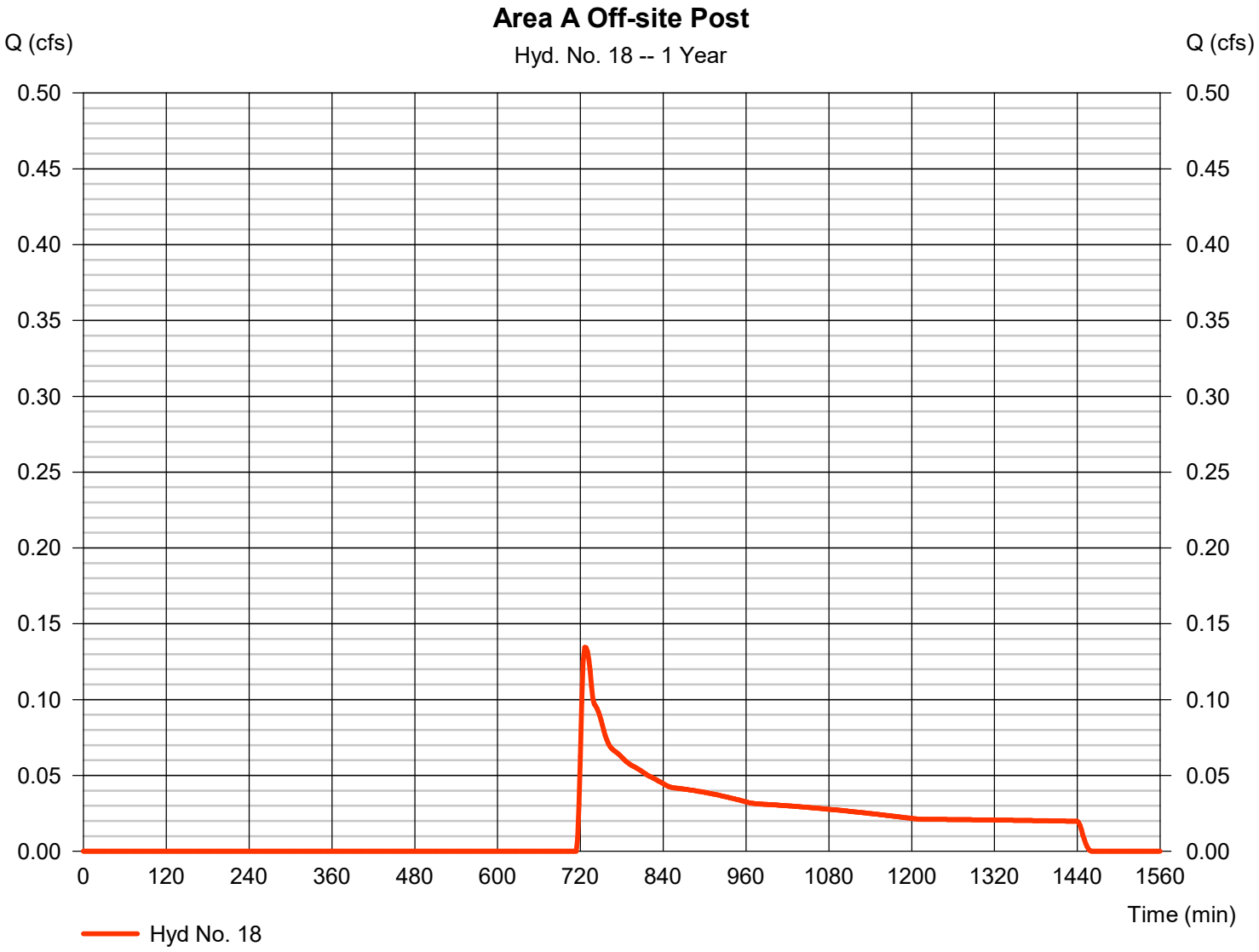


Hydrograph Report

Hyd. No. 18

Area A Off-site Post

Hydrograph type	= SCS Runoff	Peak discharge	= 0.134 cfs
Storm frequency	= 1 yrs	Time to peak	= 726 min
Time interval	= 2 min	Hyd. volume	= 1,496 cuft
Drainage area	= 2.400 ac	Curve number	= 55
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 12.10 min
Total precip.	= 2.89 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

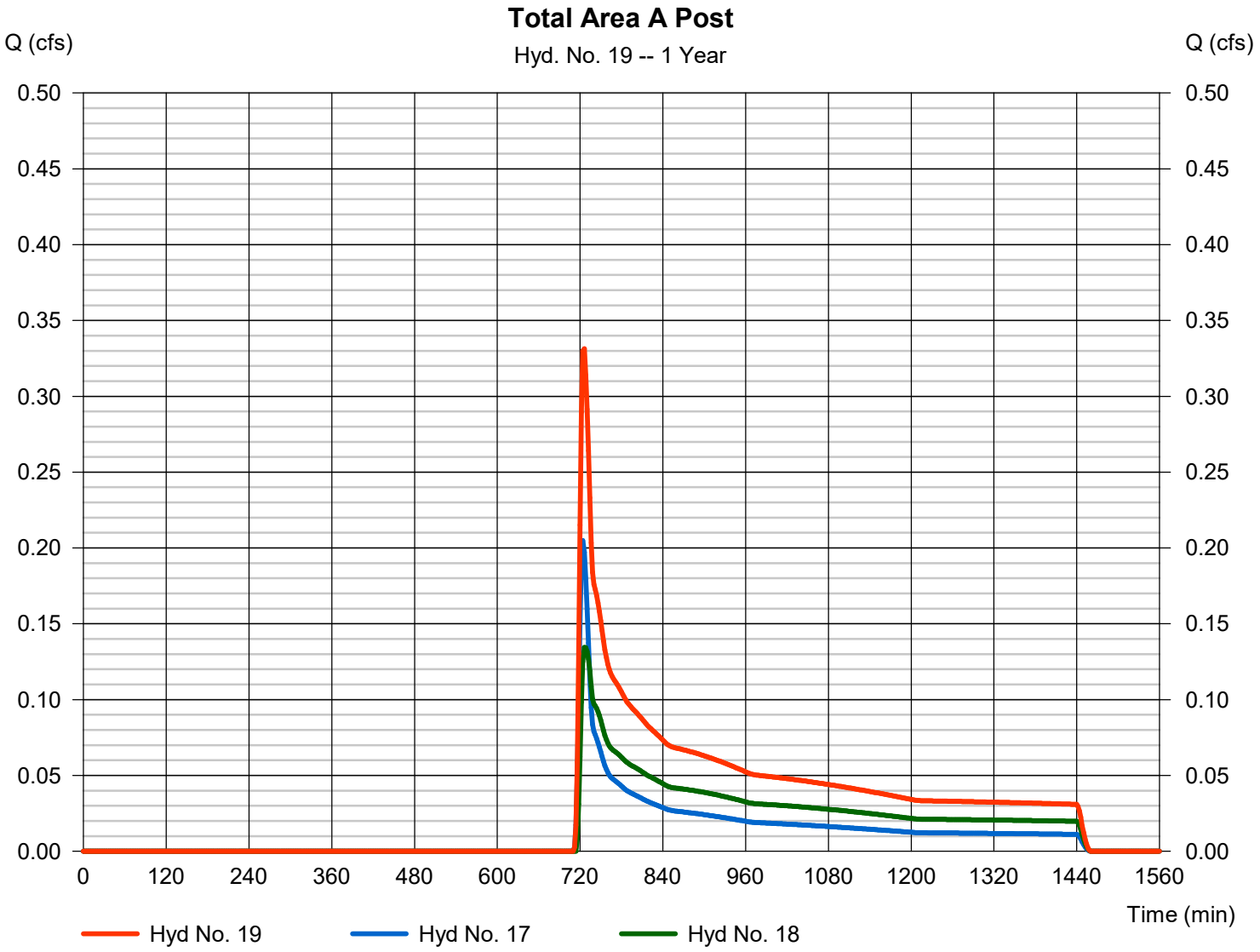


Hydrograph Report

Hyd. No. 19

Total Area A Post

Hydrograph type	= Combine	Peak discharge	= 0.331 cfs
Storm frequency	= 1 yrs	Time to peak	= 726 min
Time interval	= 2 min	Hyd. volume	= 2,545 cuft
Inflow hyds.	= 17, 18	Contrib. drain. area	= 3.420 ac

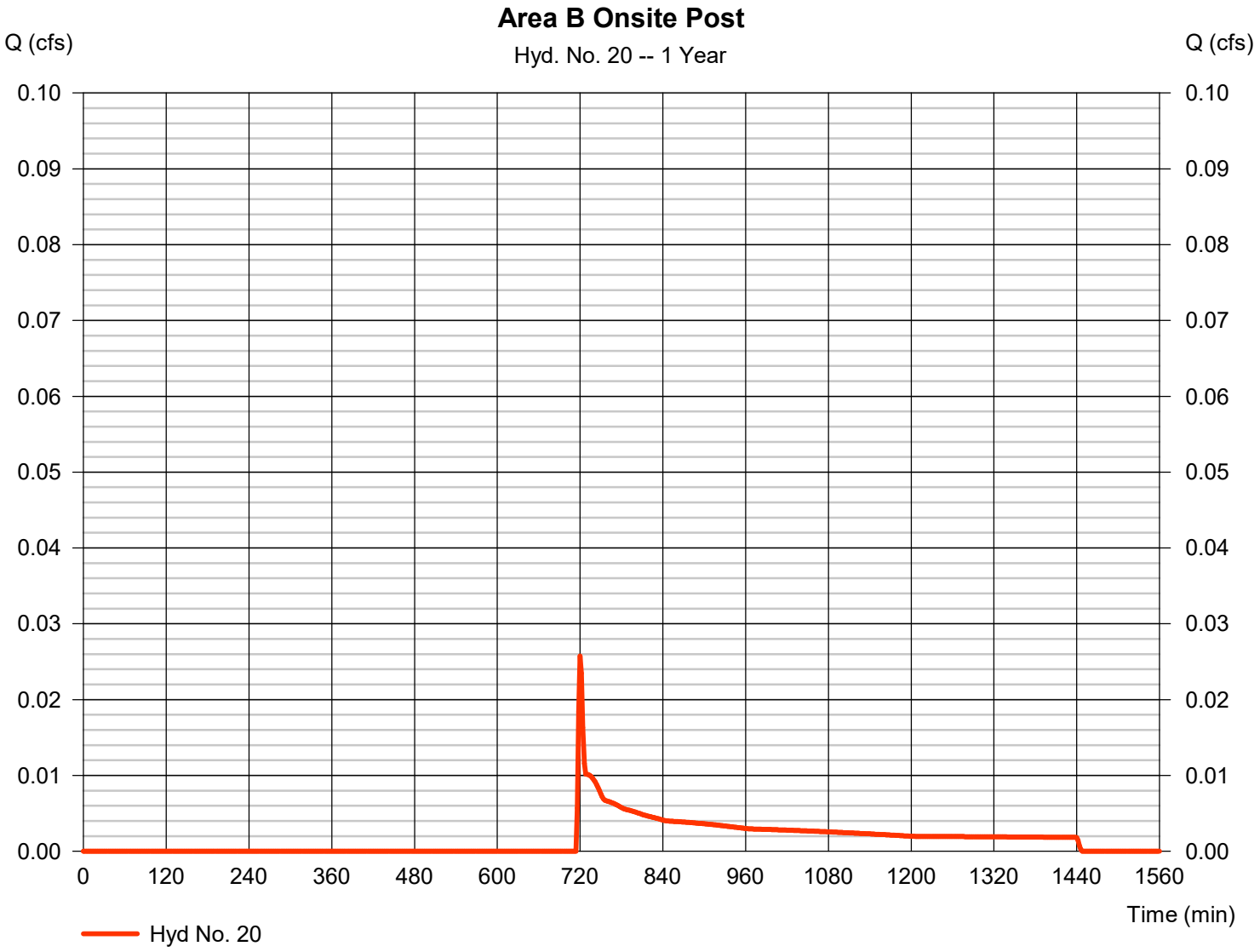


Hydrograph Report

Hyd. No. 20

Area B Onsite Post

Hydrograph type	= SCS Runoff	Peak discharge	= 0.026 cfs
Storm frequency	= 1 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 144 cuft
Drainage area	= 0.230 ac	Curve number	= 55.8
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 2.89 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

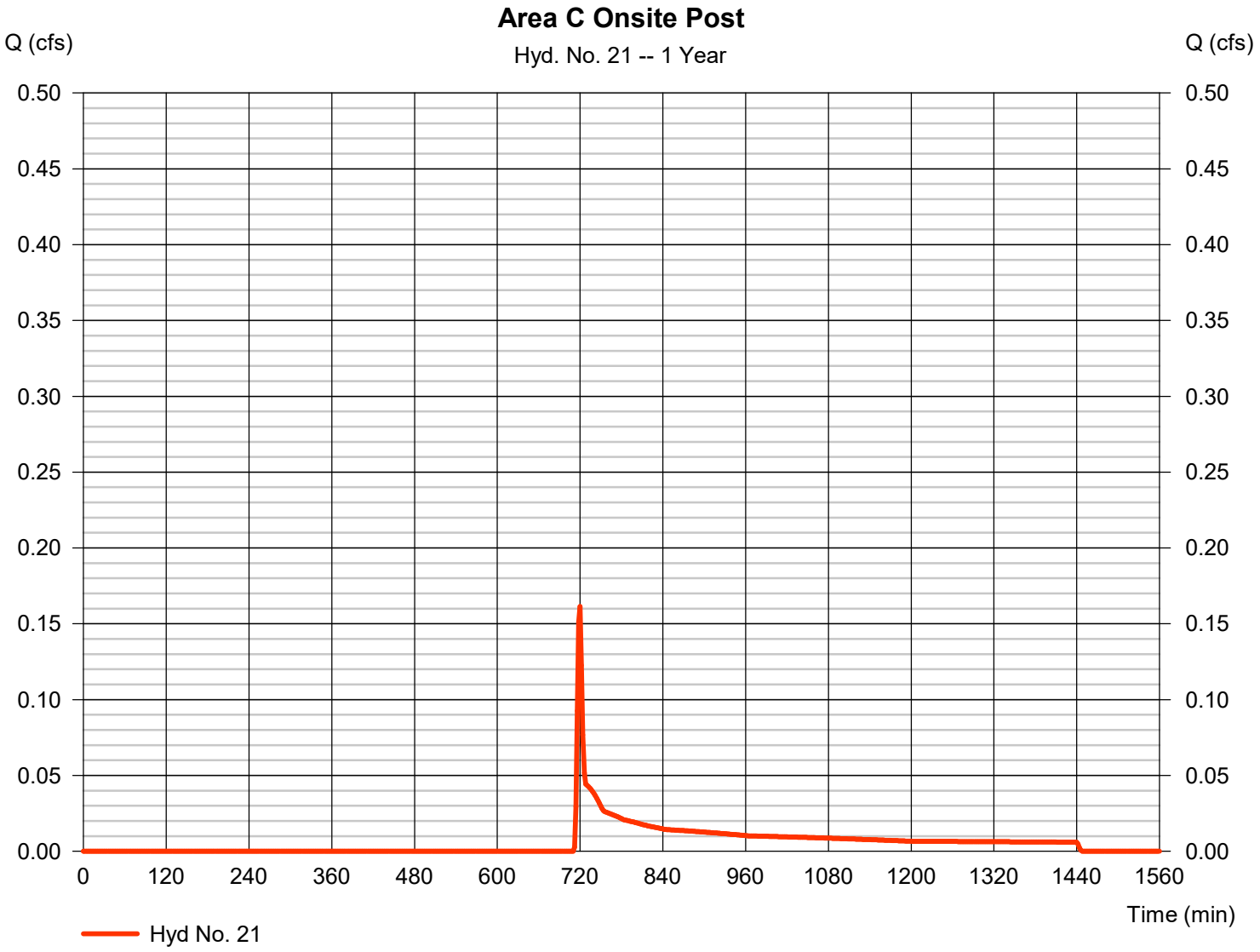


Hydrograph Report

Hyd. No. 21

Area C Onsite Post

Hydrograph type	= SCS Runoff	Peak discharge	= 0.161 cfs
Storm frequency	= 1 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 550 cuft
Drainage area	= 0.620 ac	Curve number	= 58.8
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 2.89 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

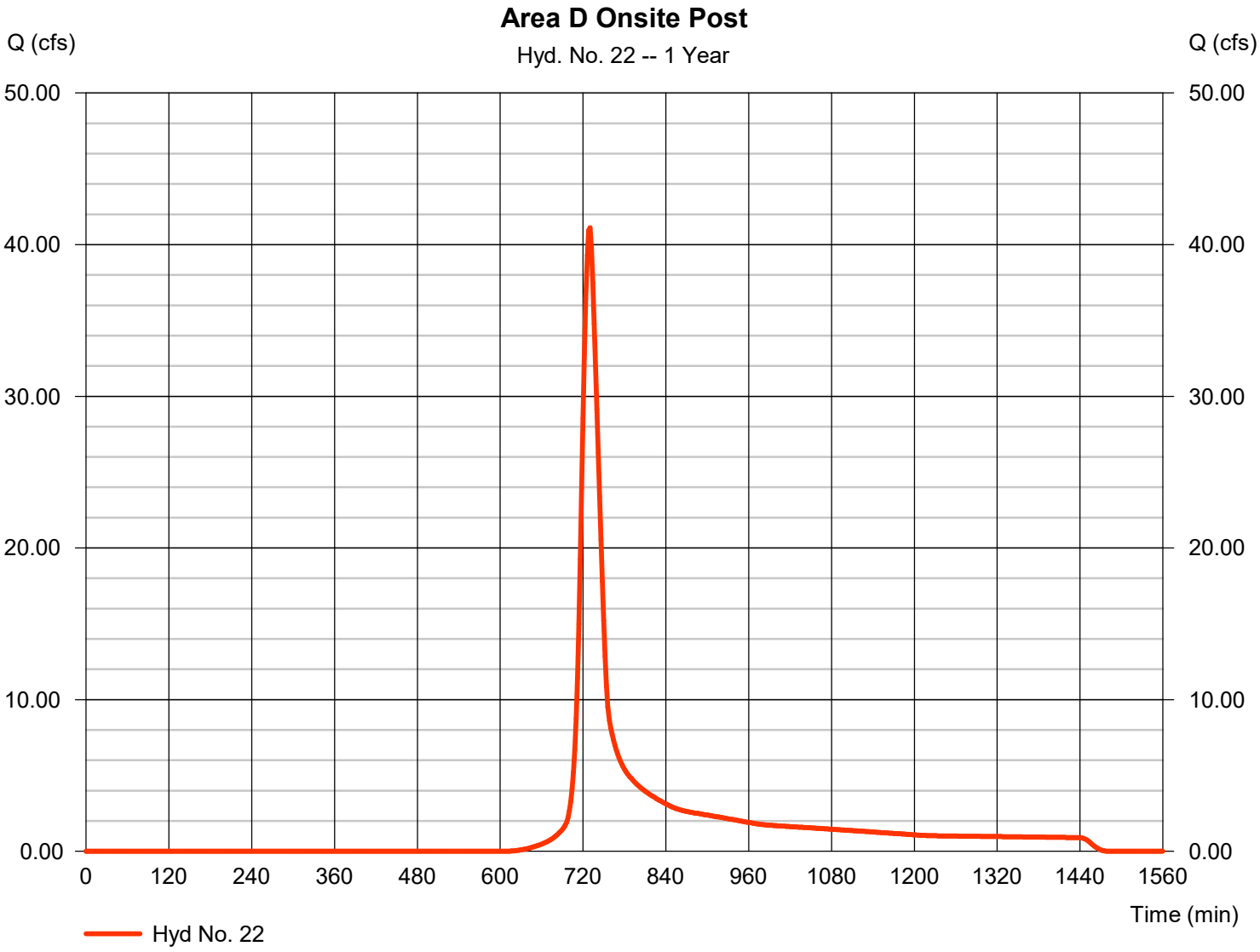


Hydrograph Report

Hyd. No. 22

Area D Onsite Post

Hydrograph type	=	SCS Runoff	Peak discharge	=	41.12 cfs
Storm frequency	=	1 yrs	Time to peak	=	730 min
Time interval	=	2 min	Hyd. volume	=	155,699 cuft
Drainage area	=	38.890 ac	Curve number	=	79.2
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	24.00 min
Total precip.	=	2.89 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



TR55 Tc Worksheet

Hyd. No. 22

Area D Onsite Post

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.400		0.011		0.011		
Flow length (ft)	= 50.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.48		0.00		0.00		
Land slope (%)	= 1.00		0.00		0.00		
Travel Time (min)	**= 15.61**	**+**	**0.00**	**+**	**0.00**	**=**	**15.61**
Shallow Concentrated Flow							
Flow length (ft)	= 830.00		0.00		0.00		
Watercourse slope (%)	= 4.00		0.00		0.00		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	=3.23		0.00		0.00		
Travel Time (min)	**= 4.29**	**+**	**0.00**	**+**	**0.00**	**=**	**4.29**
Channel Flow							
X sectional flow area (sqft)	= 27.00		0.00		0.00		
Wetted perimeter (ft)	= 14.50		0.00		0.00		
Channel slope (%)	= 2.50		0.00		0.00		
Manning's n-value	= 0.030		0.015		0.015		
Velocity (ft/s)	=11.91						
			0.00				
					0.00		
Flow length (ft)	({0})2955.0		0.0		0.0		
Travel Time (min)	**= 4.13**	**+**	**0.00**	**+**	**0.00**	**=**	**4.13**

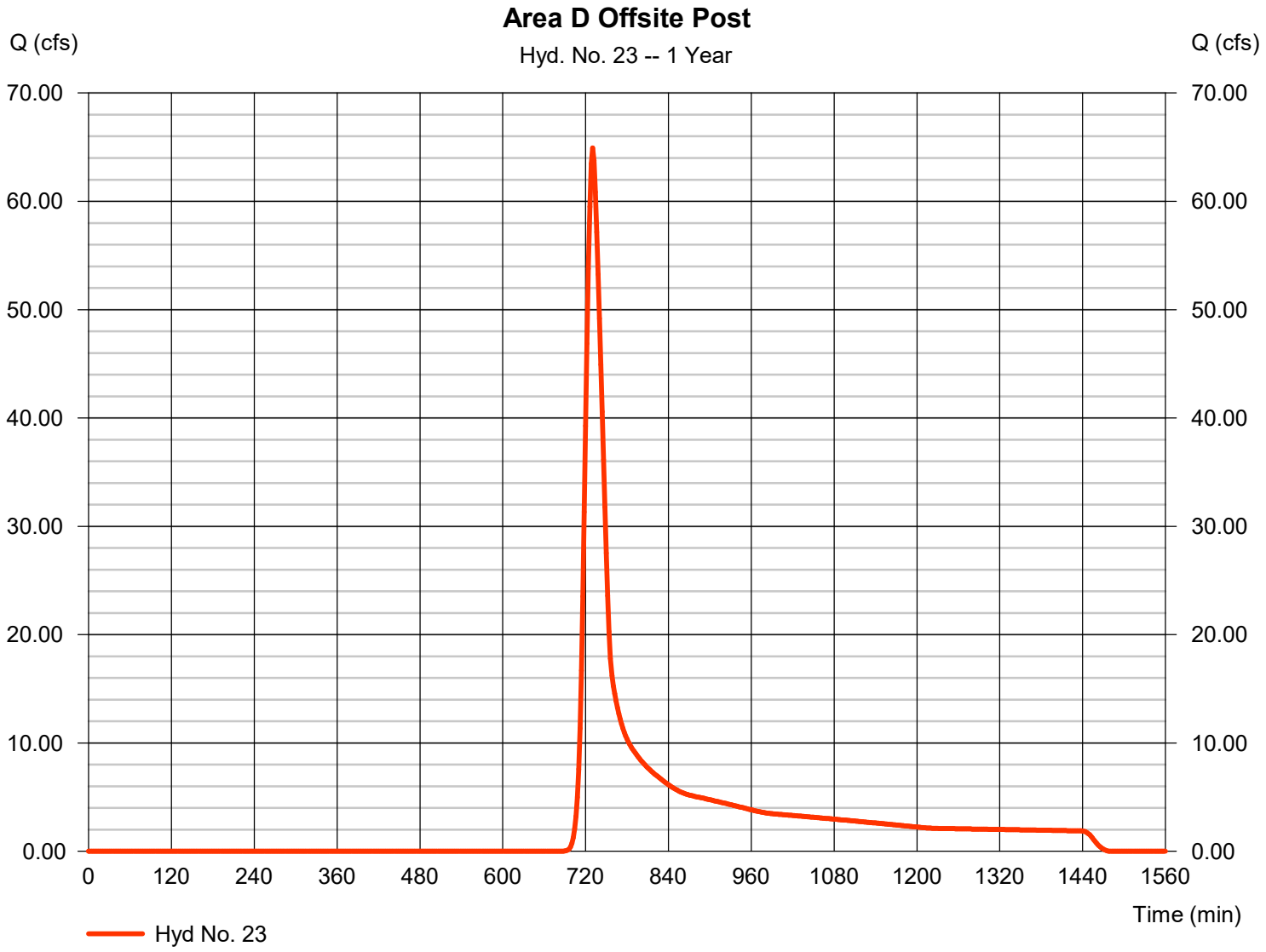
Total Travel Time, Tc ..... 24.00 min

Hydrograph Report

Hyd. No. 23

Area D Offsite Post

Hydrograph type	=	SCS Runoff	Peak discharge	=	64.92 cfs
Storm frequency	=	1 yrs	Time to peak	=	730 min
Time interval	=	2 min	Hyd. volume	=	269,318 cuft
Drainage area	=	101.380 ac	Curve number	=	72
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	24.00 min
Total precip.	=	2.89 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



TR55 Tc Worksheet

Hyd. No. 23

Area D Offsite Post

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.400		0.011		0.011		
Flow length (ft)	= 50.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.48		0.00		0.00		
Land slope (%)	= 1.00		0.00		0.00		
Travel Time (min)	**= 15.61**	**+**	**0.00**	**+**	**0.00**	**=**	**15.61**
Shallow Concentrated Flow							
Flow length (ft)	= 830.00		0.00		0.00		
Watercourse slope (%)	= 4.00		0.00		0.00		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	=3.23		0.00		0.00		
Travel Time (min)	**= 4.29**	**+**	**0.00**	**+**	**0.00**	**=**	**4.29**
Channel Flow							
X sectional flow area (sqft)	= 27.00		0.00		0.00		
Wetted perimeter (ft)	= 14.50		0.00		0.00		
Channel slope (%)	= 2.50		0.00		0.00		
Manning's n-value	= 0.030		0.015		0.015		
Velocity (ft/s)	=11.91						
			0.00				
					0.00		
Flow length (ft)	({0})2955.0		0.0		0.0		
Travel Time (min)	**= 4.13**	**+**	**0.00**	**+**	**0.00**	**=**	**4.13**

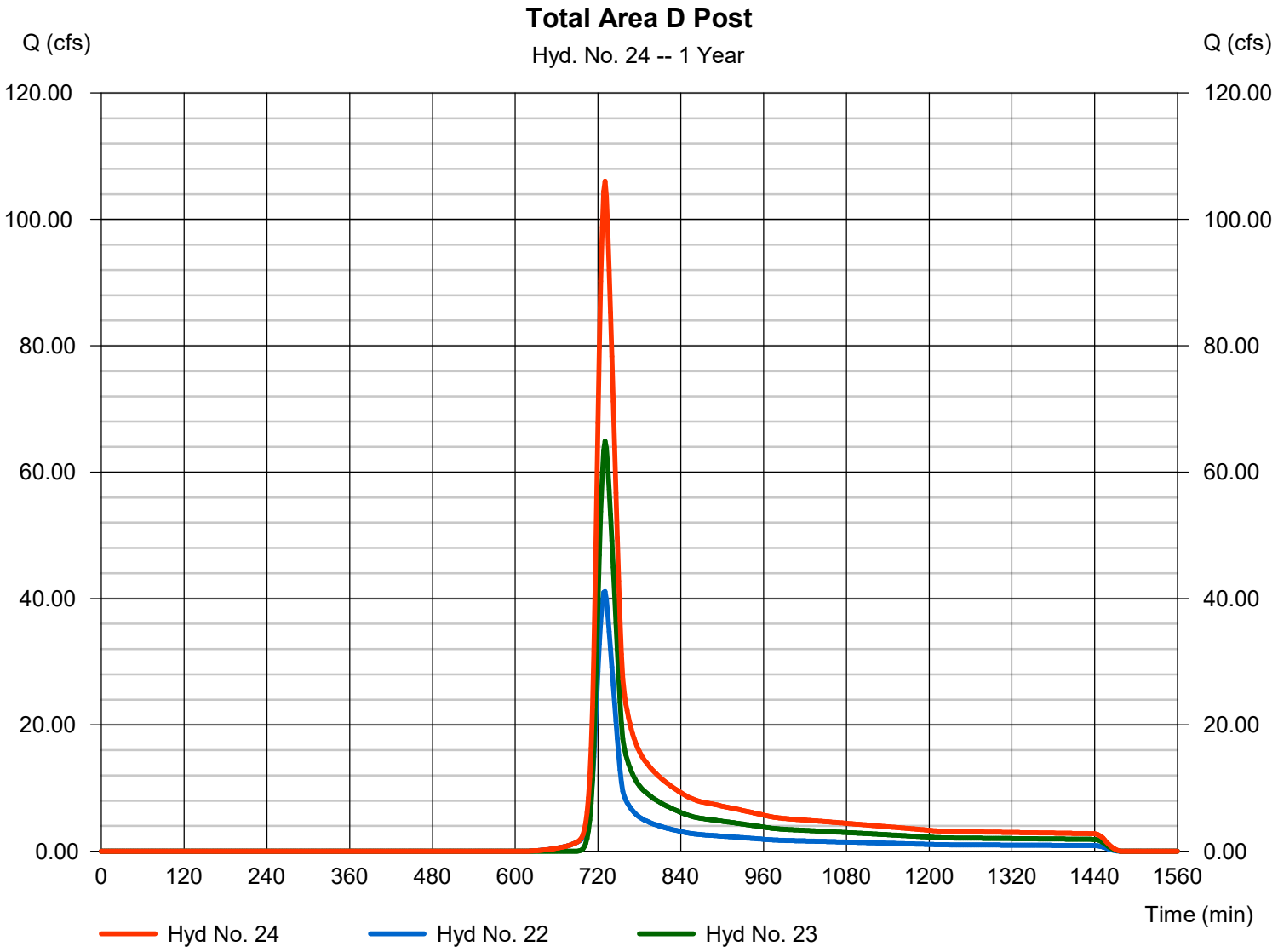
Total Travel Time, Tc ..... 24.00 min

Hydrograph Report

Hyd. No. 24

Total Area D Post

Hydrograph type	= Combine	Peak discharge	= 106.04 cfs
Storm frequency	= 1 yrs	Time to peak	= 730 min
Time interval	= 2 min	Hyd. volume	= 425,017 cuft
Inflow hyds.	= 22, 23	Contrib. drain. area	= 140.270 ac

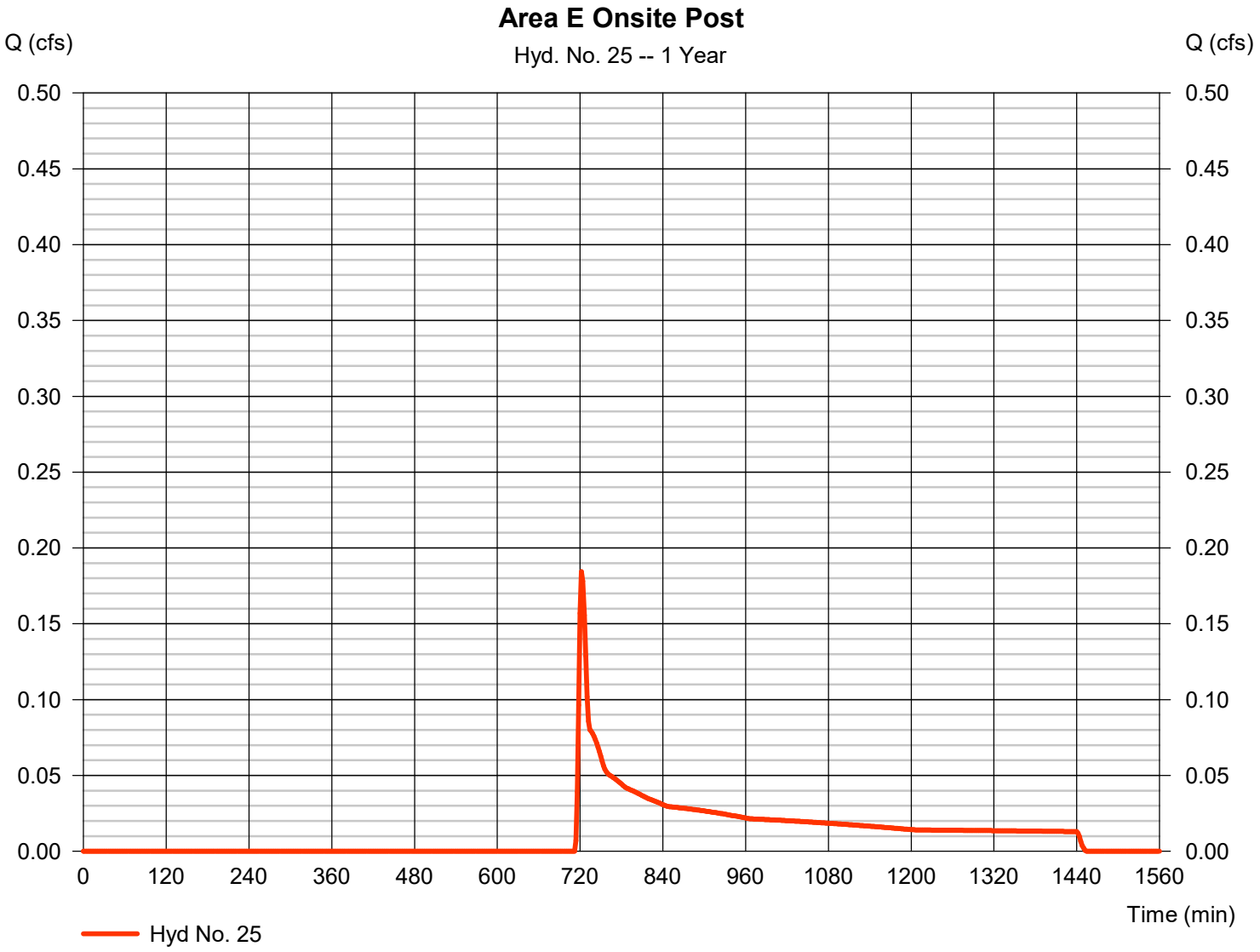


Hydrograph Report

Hyd. No. 25

Area E Onsite Post

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.184 cfs
Storm frequency	=	1 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	1,088 cuft
Drainage area	=	1.420 ac	Curve number	=	56.9
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	8.20 min
Total precip.	=	2.89 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



TR55 Tc Worksheet

Hyd. No. 25

Area E Onsite Post

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.410		0.011		0.011		
Flow length (ft)	= 50.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.48		0.00		0.00		
Land slope (%)	= 6.00		0.00		0.00		
Travel Time (min)	**= 7.77**	**+**	**0.00**	**+**	**0.00**	**=**	**7.77**
Shallow Concentrated Flow							
Flow length (ft)	= 177.00		0.00		0.00		
Watercourse slope (%)	= 17.00		0.00		0.00		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	=6.65		0.00		0.00		
Travel Time (min)	**= 0.44**	**+**	**0.00**	**+**	**0.00**	**=**	**0.44**
Channel Flow							
X sectional flow area (sqft)	= 0.00		0.00		0.00		
Wetted perimeter (ft)	= 0.00		0.00		0.00		
Channel slope (%)	= 0.00		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	=0.00						
			0.00				
					0.00		
Flow length (ft)	({0})0.0		0.0		0.0		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

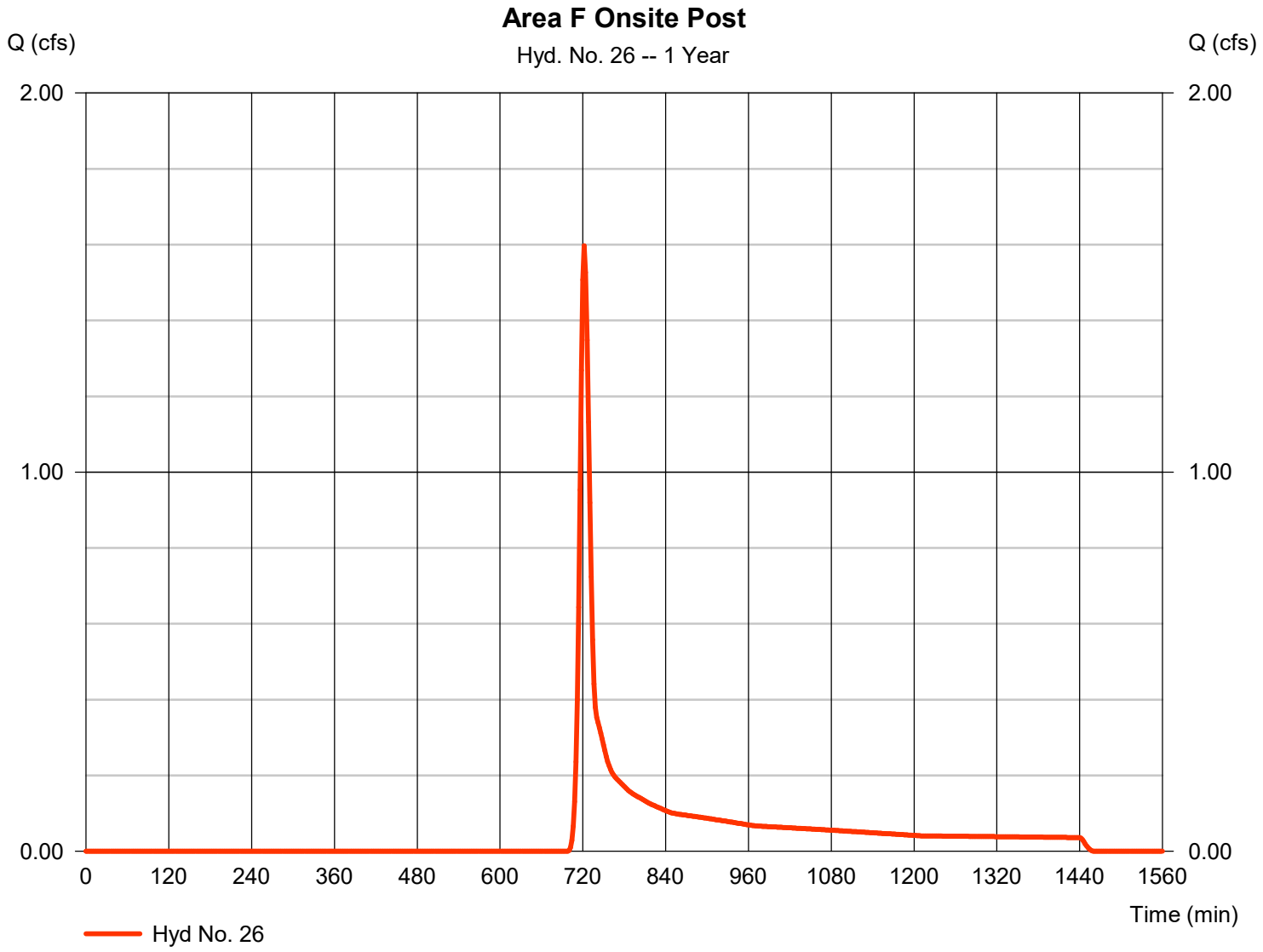
Total Travel Time, Tc ..... 8.20 min

Hydrograph Report

Hyd. No. 26

Area F Onsite Post

Hydrograph type	= SCS Runoff	Peak discharge	= 1.597 cfs
Storm frequency	= 1 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 4,732 cuft
Drainage area	= 2.110 ac	Curve number	= 68.7
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 12.60 min
Total precip.	= 2.89 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



TR55 Tc Worksheet

Hyd. No. 26

Area F Onsite Post

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.240		0.011		0.011		
Flow length (ft)	= 50.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.48		0.00		0.00		
Land slope (%)	= 5.00		0.00		0.00		
Travel Time (min)	**= 5.45**	**+**	**0.00**	**+**	**0.00**	**=**	**5.45**
Shallow Concentrated Flow							
Flow length (ft)	= 760.00		0.00		0.00		
Watercourse slope (%)	= 2.80		0.00		0.00		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	=2.70		0.00		0.00		
Travel Time (min)	**= 4.69**	**+**	**0.00**	**+**	**0.00**	**=**	**4.69**
Channel Flow							
X sectional flow area (sqft)	= 3.14		0.00		0.00		
Wetted perimeter (ft)	= 6.28		0.00		0.00		
Channel slope (%)	= 1.80		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	=8.38						
			0.00				
					0.00		
Flow length (ft)	({0})1220.0		0.0		0.0		
Travel Time (min)	**= 2.43**	**+**	**0.00**	**+**	**0.00**	**=**	**2.43**

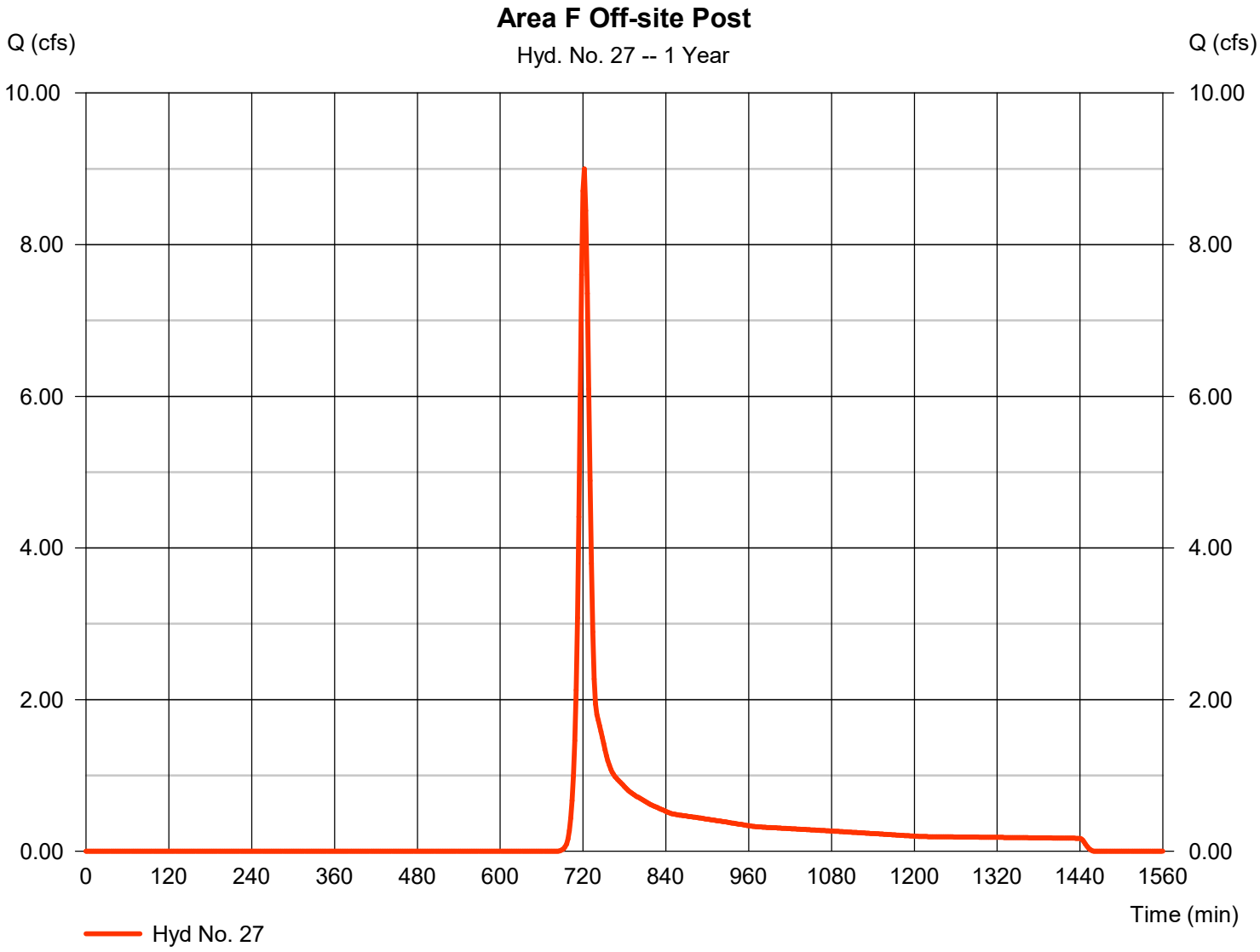
Total Travel Time, Tc ..... 12.60 min

Hydrograph Report

Hyd. No. 27

Area F Off-site Post

Hydrograph type	=	SCS Runoff	Peak discharge	=	8.999 cfs
Storm frequency	=	1 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	24,905 cuft
Drainage area	=	8.730 ac	Curve number	=	72.4
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	12.60 min
Total precip.	=	2.89 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

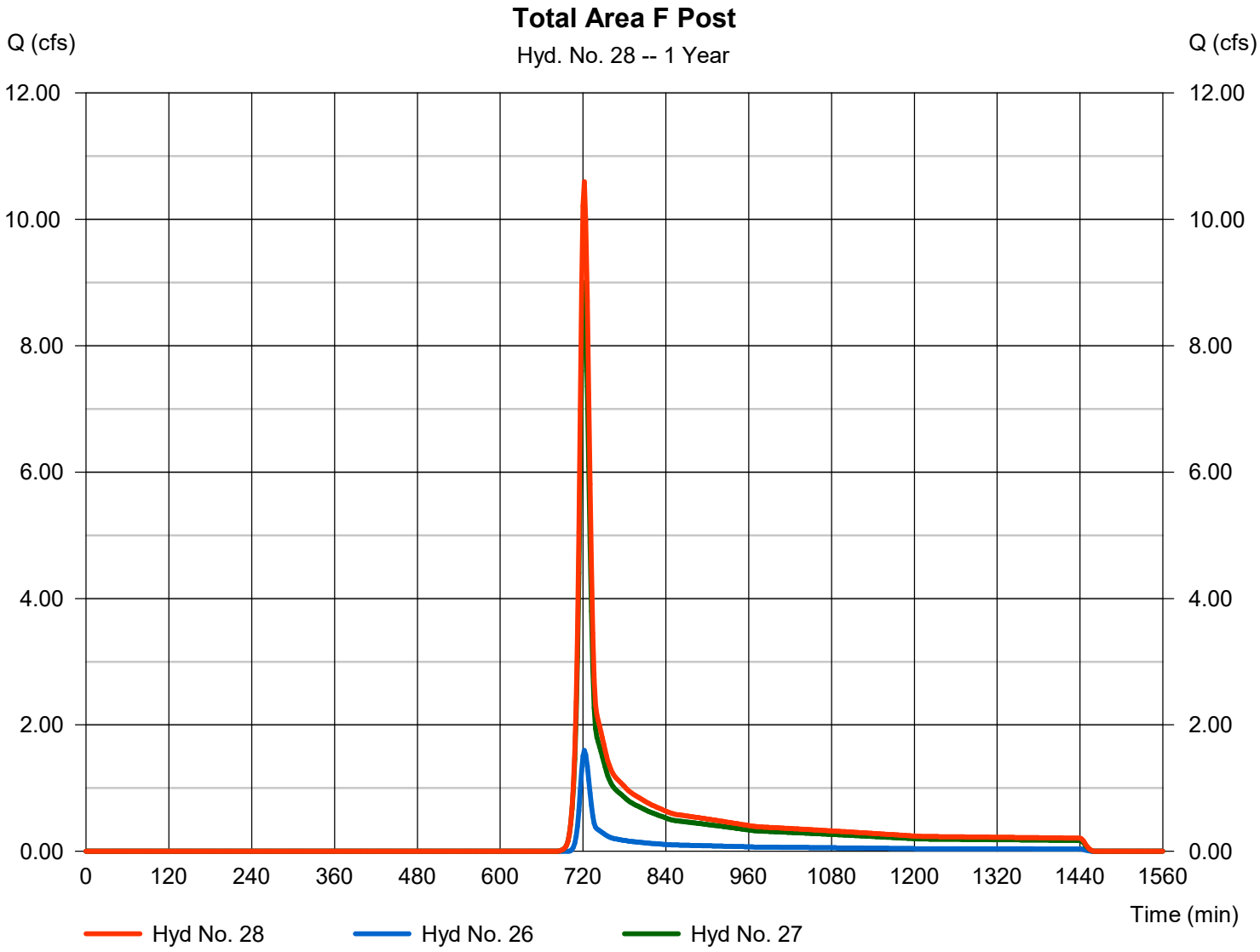


Hydrograph Report

Hyd. No. 28

Total Area F Post

Hydrograph type	= Combine	Peak discharge	= 10.60 cfs
Storm frequency	= 1 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 29,637 cuft
Inflow hyds.	= 26, 27	Contrib. drain. area	= 10.840 ac

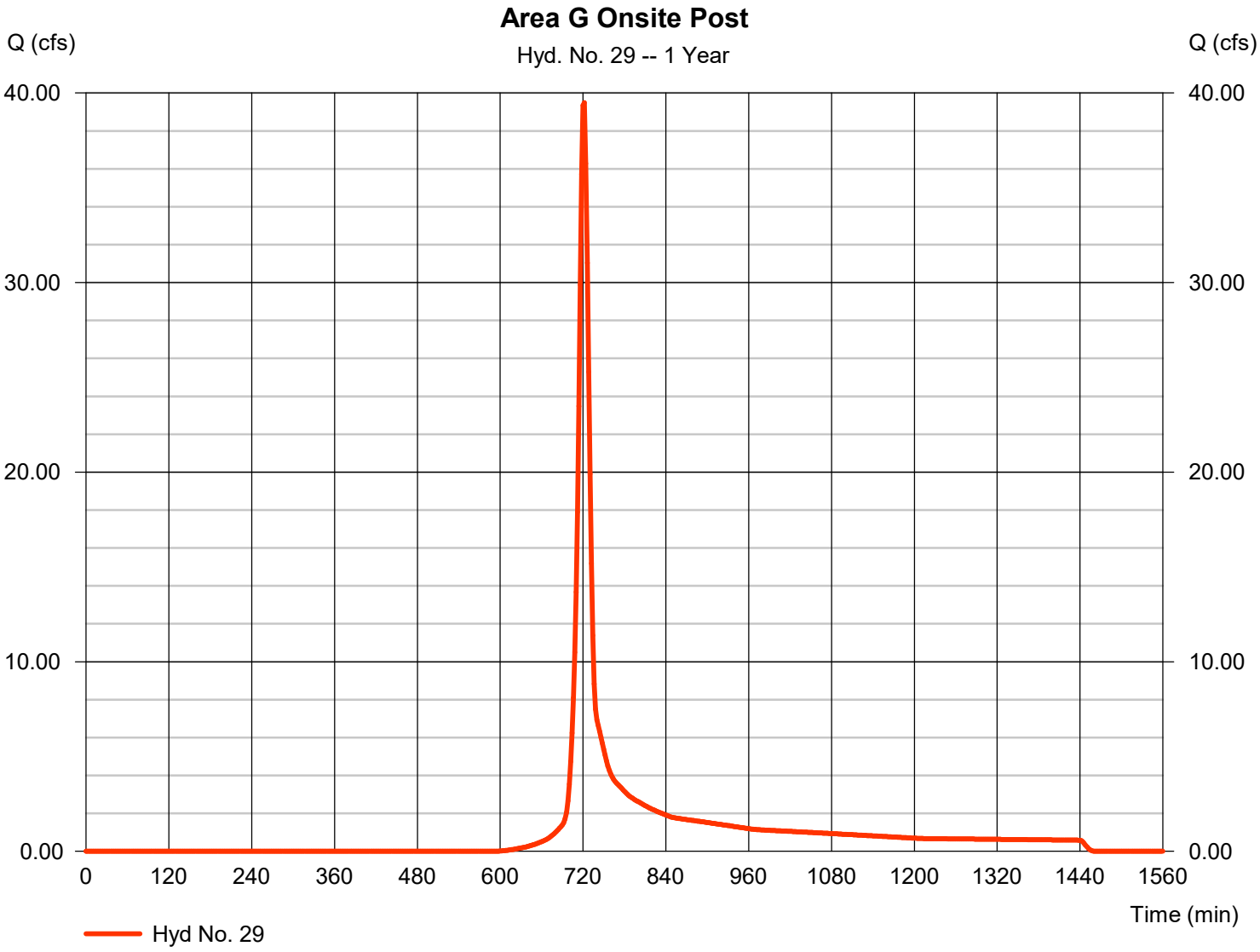


Hydrograph Report

Hyd. No. 29

Area G Onsite Post

Hydrograph type	=	SCS Runoff	Peak discharge	=	39.49 cfs
Storm frequency	=	1 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	103,578 cuft
Drainage area	=	23.810 ac	Curve number	=	79.9
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	10.40 min
Total precip.	=	2.89 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



TR55 Tc Worksheet

Hyd. No. 29

Area G Onsite Post

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.410		0.011		0.011		
Flow length (ft)	= 30.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.50		0.00		0.00		
Land slope (%)	= 2.00		0.00		0.00		
Travel Time (min)	**= 7.99**	**+**	**0.00**	**+**	**0.00**	**=**	**7.99**
Shallow Concentrated Flow							
Flow length (ft)	= 178.00		0.00		0.00		
Watercourse slope (%)	= 1.50		0.00		0.00		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	=1.98		0.00		0.00		
Travel Time (min)	**= 1.50**	**+**	**0.00**	**+**	**0.00**	**=**	**1.50**
Channel Flow							
X sectional flow area (sqft)	= 3.14		0.00		0.00		
Wetted perimeter (ft)	= 6.28		0.00		0.00		
Channel slope (%)	= 3.00		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	=10.81						
			0.00				
					0.00		
Flow length (ft)	({0})615.0		0.0		0.0		
Travel Time (min)	**= 0.95**	**+**	**0.00**	**+**	**0.00**	**=**	**0.95**

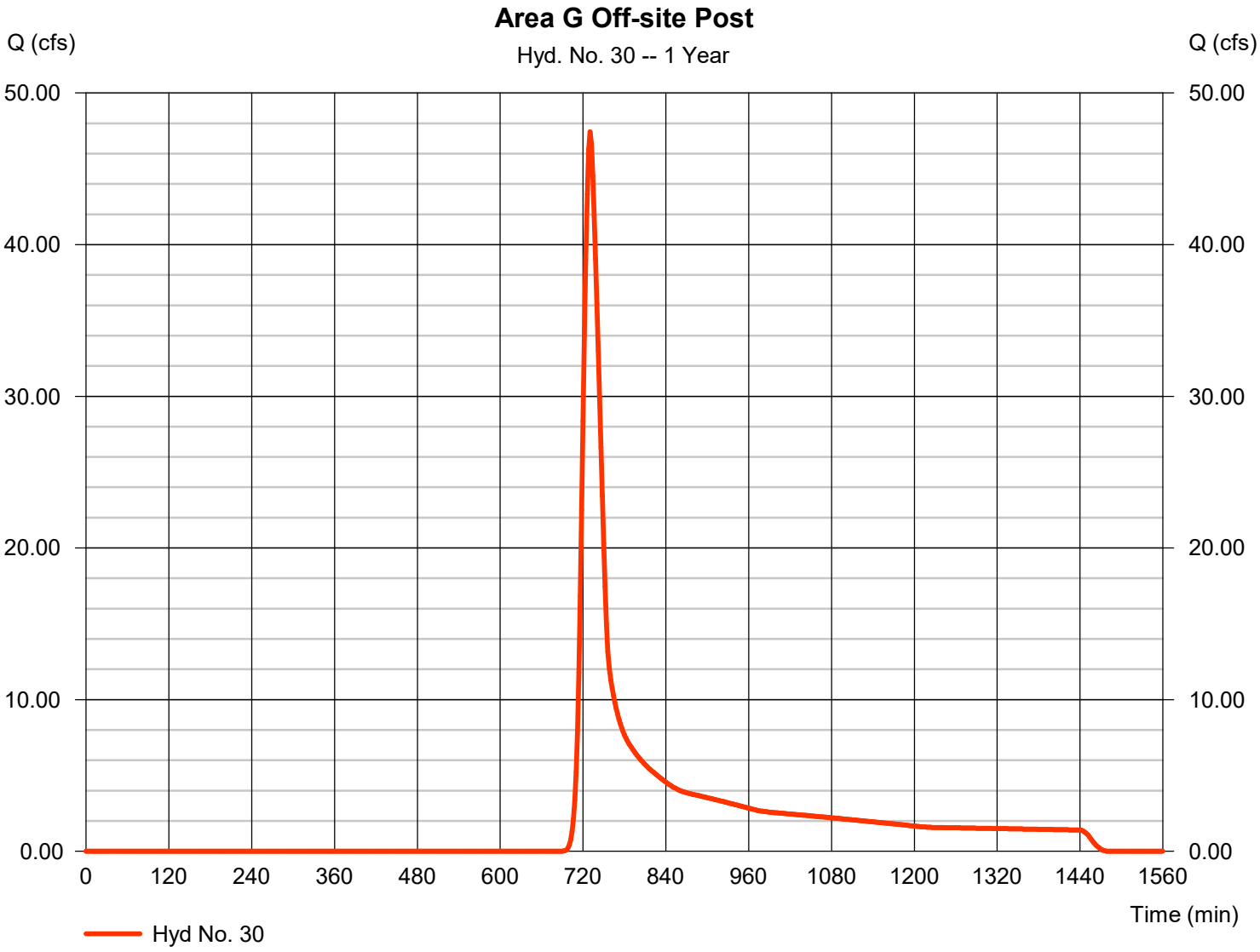
Total Travel Time, Tc ..... 10.40 min

Hydrograph Report

Hyd. No. 30

Area G Off-site Post

Hydrograph type	=	SCS Runoff	Peak discharge	=	47.43 cfs
Storm frequency	=	1 yrs	Time to peak	=	730 min
Time interval	=	2 min	Hyd. volume	=	198,458 cuft
Drainage area	=	76.600 ac	Curve number	=	71.6
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	23.80 min
Total precip.	=	2.89 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



TR55 Tc Worksheet

Hyd. No. 30

Area G Off-site Post

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.240		0.011		0.011		
Flow length (ft)	= 50.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.50		0.00		0.00		
Land slope (%)	= 2.00		0.00		0.00		
Travel Time (min)	**= 7.84**	**+**	**0.00**	**+**	**0.00**	**=**	**7.84**
Shallow Concentrated Flow							
Flow length (ft)	= 2053.00		0.00		0.00		
Watercourse slope (%)	= 2.80		0.00		0.00		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	=2.70		0.00		0.00		
Travel Time (min)	**= 12.67**	**+**	**0.00**	**+**	**0.00**	**=**	**12.67**
Channel Flow							
X sectional flow area (sqft)	= 10.00		0.00		0.00		
Wetted perimeter (ft)	= 8.66		0.00		0.00		
Channel slope (%)	= 1.60		0.00		0.00		
Manning's n-value	= 0.025		0.015		0.015		
Velocity (ft/s)	=8.30						
			0.00				
					0.00		
Flow length (ft)	({0})1635.0		0.0		0.0		
Travel Time (min)	**= 3.28**	**+**	**0.00**	**+**	**0.00**	**=**	**3.28**

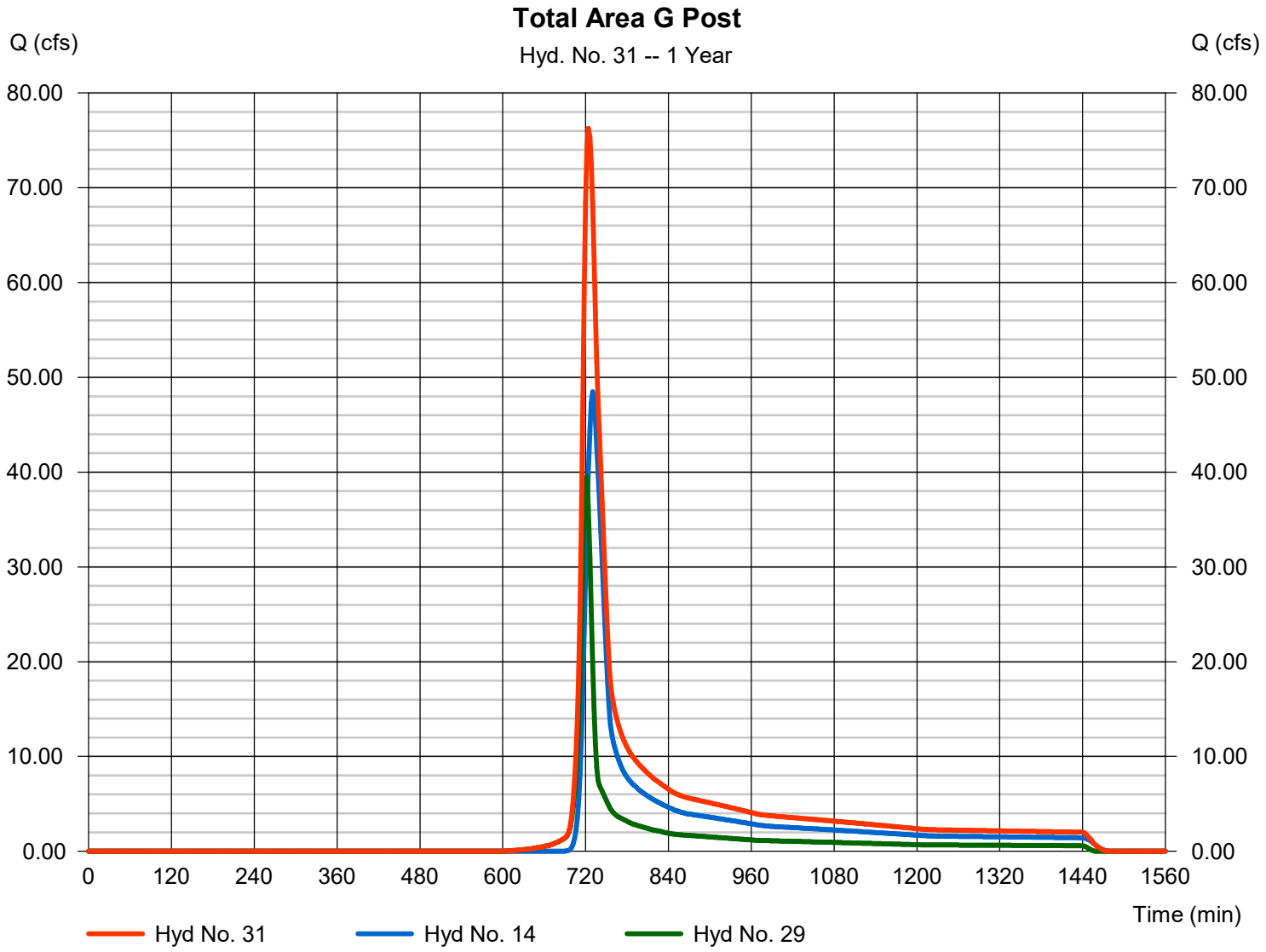
Total Travel Time, Tc ..... 23.80 min

Hydrograph Report

Hyd. No. 31

Total Area G Post

Hydrograph type	= Combine	Peak discharge	= 76.26 cfs
Storm frequency	= 1 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 305,920 cuft
Inflow hyds.	= 14, 29	Contrib. drain. area	= 101.420 ac

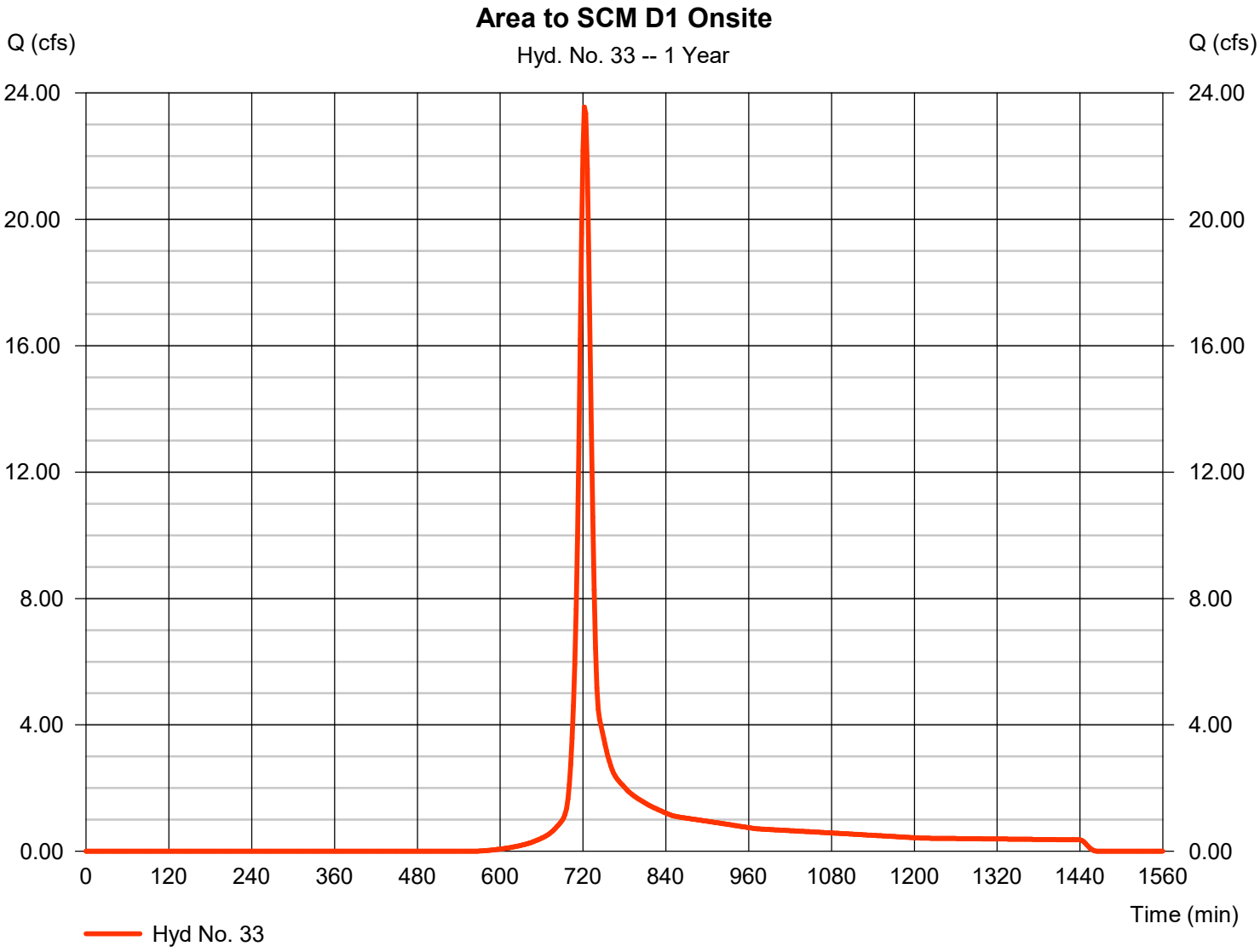


Hydrograph Report

Hyd. No. 33

Area to SCM D1 Onsite

Hydrograph type	= SCS Runoff	Peak discharge	= 23.56 cfs
Storm frequency	= 1 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 66,609 cuft
Drainage area	= 14.850 ac	Curve number	= 81.6
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 16.30 min
Total precip.	= 2.89 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



TR55 Tc Worksheet

Hyd. No. 33

Area to SCM D1 Onsite

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.410		0.011		0.011		
Flow length (ft)	= 50.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.48		0.00		0.00		
Land slope (%)	= 1.70		0.00		0.00		
Travel Time (min)	**= 12.87**	**+**	**0.00**	**+**	**0.00**	**=**	**12.87**
Shallow Concentrated Flow							
Flow length (ft)	= 140.00		0.00		0.00		
Watercourse slope (%)	= 2.00		0.00		0.00		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	=2.28		0.00		0.00		
Travel Time (min)	**= 1.02**	**+**	**0.00**	**+**	**0.00**	**=**	**1.02**
Channel Flow							
X sectional flow area (sqft)	= 3.14		0.00		0.00		
Wetted perimeter (ft)	= 6.28		0.00		0.00		
Channel slope (%)	= 2.50		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	=9.87						
			0.00				
					0.00		
Flow length (ft)	({0})1445.0		0.0		0.0		
Travel Time (min)	**= 2.44**	**+**	**0.00**	**+**	**0.00**	**=**	**2.44**

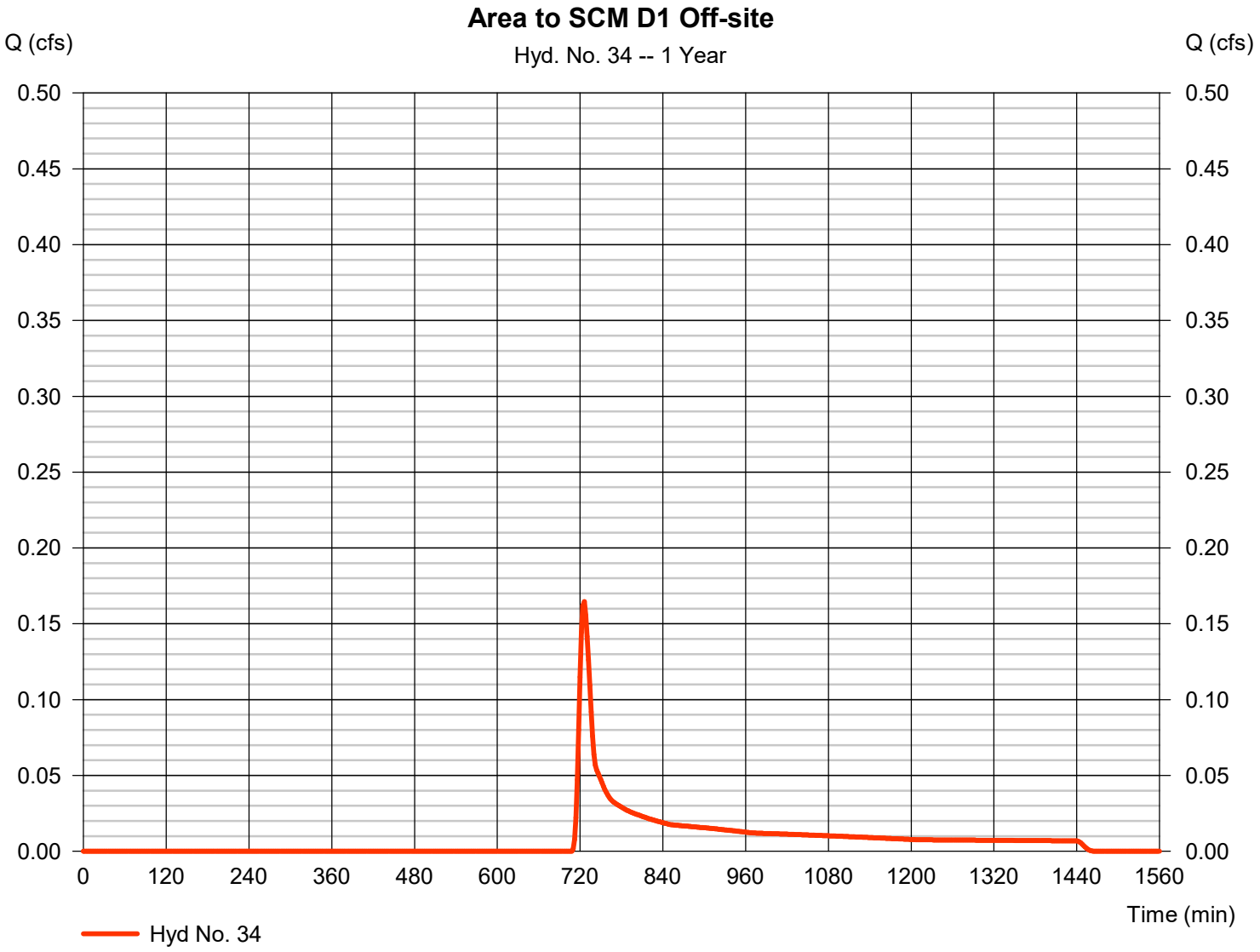
Total Travel Time, Tc ..... 16.30 min

Hydrograph Report

Hyd. No. 34

Area to SCM D1 Off-site

Hydrograph type	= SCS Runoff	Peak discharge	= 0.165 cfs
Storm frequency	= 1 yrs	Time to peak	= 726 min
Time interval	= 2 min	Hyd. volume	= 723 cuft
Drainage area	= 0.560 ac	Curve number	= 62.3
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 16.30 min
Total precip.	= 2.89 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

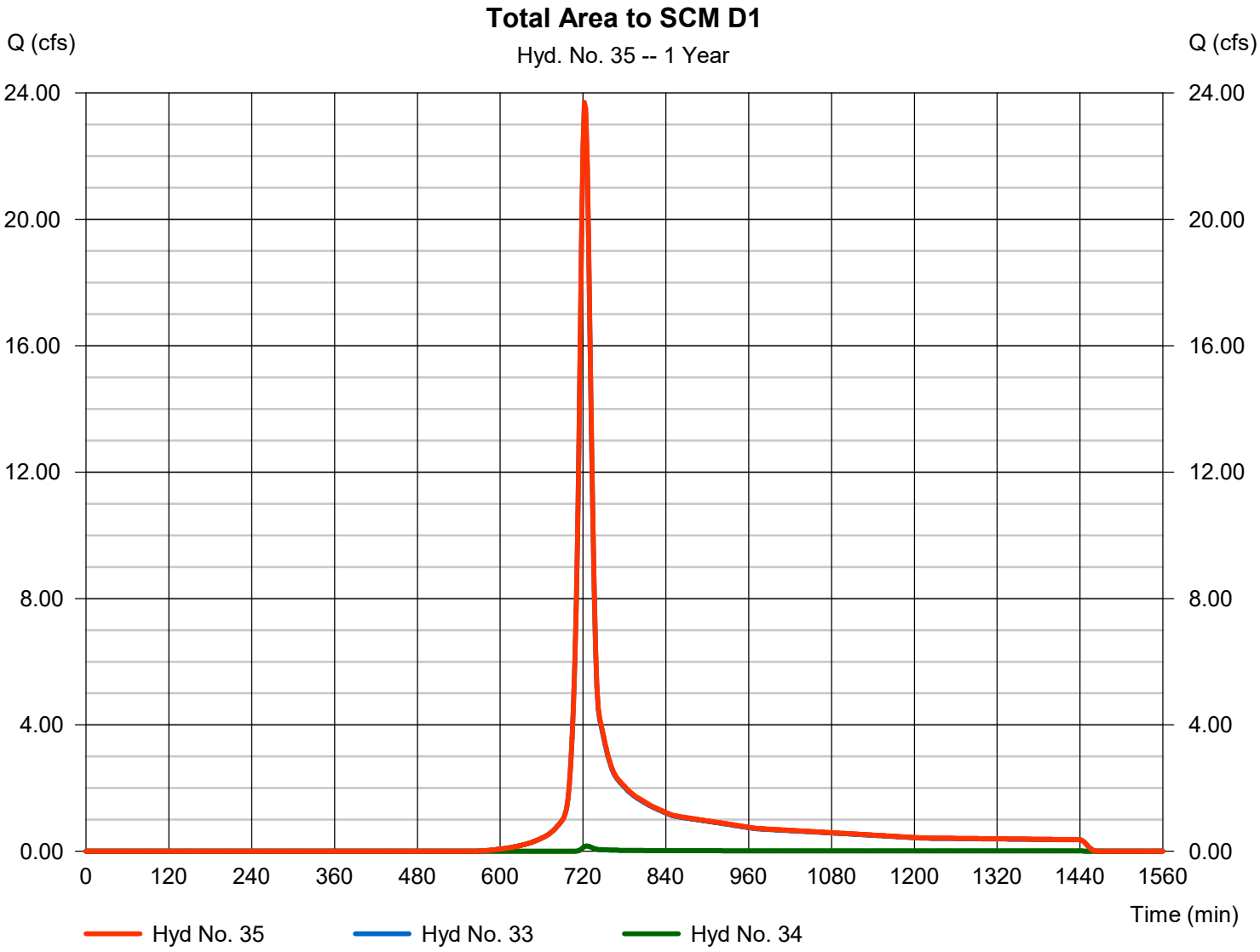


Hydrograph Report

Hyd. No. 35

Total Area to SCM D1

Hydrograph type	= Combine	Peak discharge	= 23.70 cfs
Storm frequency	= 1 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 67,332 cuft
Inflow hyds.	= 33, 34	Contrib. drain. area	= 15.410 ac



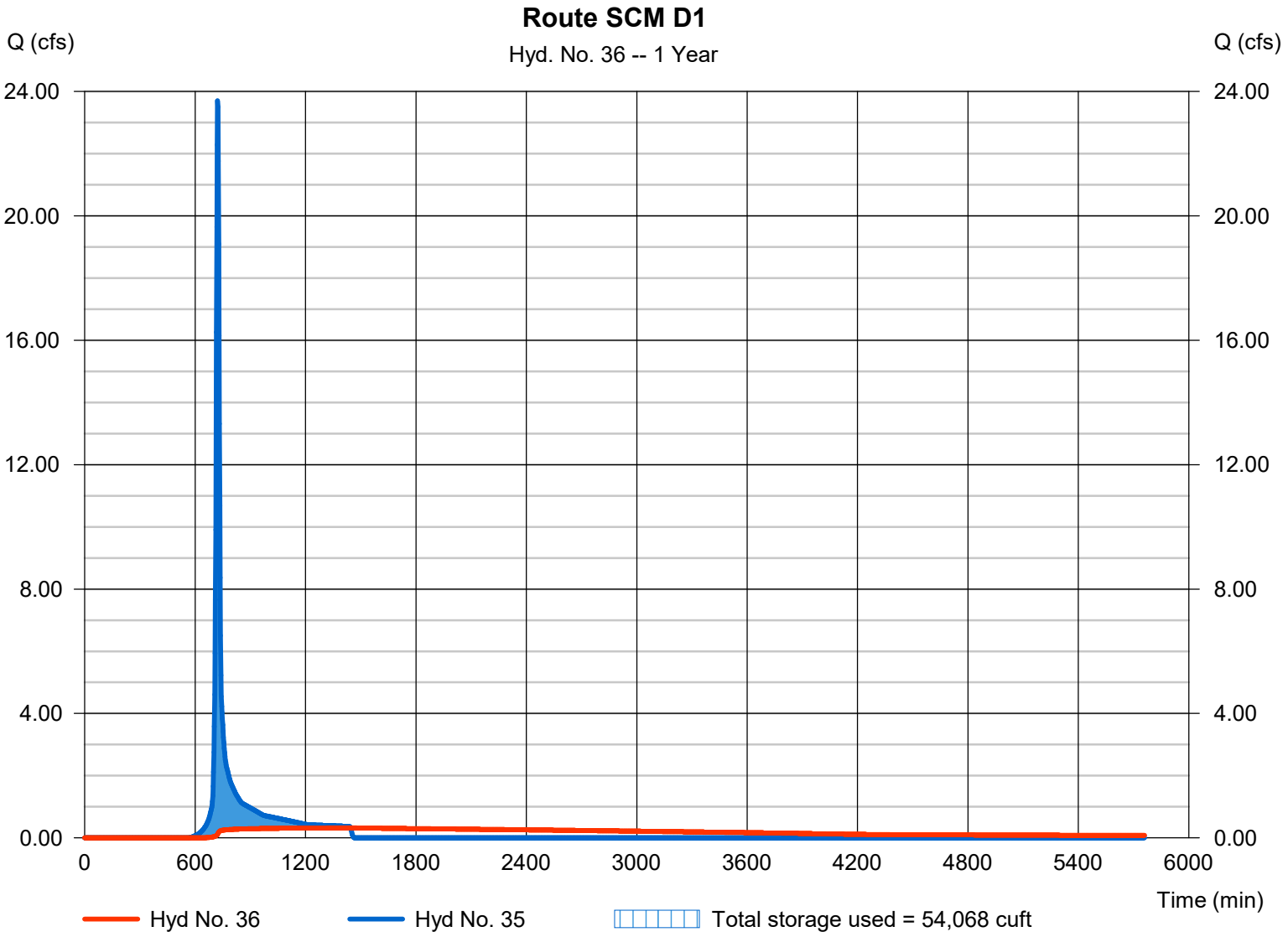
Hydrograph Report

Hyd. No. 36

Route SCM D1

Hydrograph type	=	Reservoir	Peak discharge	=	0.318 cfs
Storm frequency	=	1 yrs	Time to peak	=	1444 min
Time interval	=	2 min	Hyd. volume	=	58,494 cuft
Inflow hyd. No.	=	35 - Total Area to SCM D1	Max. Elevation	=	383.90 ft
Reservoir name	=	SCM D1	Max. Storage	=	54,068 cuft

Storage Indication method used.



Pond No. 1 - SCM D1

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 381.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	381.00	11,600	0	0
0.50	381.50	17,400	7,200	7,200
1.00	382.00	18,250	8,911	16,111
2.00	383.00	19,980	19,107	35,218
3.00	384.00	21,770	20,867	56,084
4.00	385.00	23,620	22,686	78,771
5.00	386.00	25,520	24,561	103,332
6.00	387.00	27,480	26,491	129,824
7.00	388.00	29,500	28,481	158,305
8.00	389.00	31,570	30,526	188,831

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 15.00	2.00	2.00	0.00
Span (in)	= 15.00	2.00	2.00	0.00
No. Barrels	= 1	1	1	0
Invert El. (ft)	= 378.00	381.00	382.00	0.00
Length (ft)	= 118.00	0.50	0.50	0.00
Slope (%)	= 0.80	0.10	0.10	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	Yes	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 15.50	0.50	8.00	0.00
Crest El. (ft)	= 386.50	385.00	387.50	0.00
Weir Coeff.	= 3.33	3.33	2.60	3.33
Weir Type	= 1	Rect	Broad	---
Multi-Stage	= Yes	Yes	No	No

Exfil.(in/hr) = 0.000 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	381.00	0.00	0.00	0.00	---	0.00	0.00	0.00	---	---	---	0.000
0.05	720	381.05	7.87 oc	0.00 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.004
0.10	1,440	381.10	7.87 oc	0.01 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.015
0.15	2,160	381.15	7.87 oc	0.03 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.027
0.20	2,880	381.20	7.87 oc	0.04 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.036
0.25	3,600	381.25	7.87 oc	0.04 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.043
0.30	4,320	381.30	7.87 oc	0.05 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.049
0.35	5,040	381.35	7.87 oc	0.05 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.054
0.40	5,760	381.40	7.87 oc	0.06 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.059
0.45	6,480	381.45	7.87 oc	0.06 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.064
0.50	7,200	381.50	7.87 oc	0.07 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.068
0.55	8,092	381.55	7.87 oc	0.07 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.072
0.60	8,983	381.60	7.87 oc	0.08 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.075
0.65	9,874	381.65	7.87 oc	0.08 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.079
0.70	10,765	381.70	7.87 oc	0.08 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.082
0.75	11,656	381.75	7.87 oc	0.09 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.086
0.80	12,547	381.80	7.87 oc	0.09 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.089
0.85	13,438	381.85	7.87 oc	0.09 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.092
0.90	14,329	381.90	7.87 oc	0.09 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.095
0.95	15,220	381.95	7.87 oc	0.10 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.098
1.00	16,111	382.00	7.87 oc	0.10 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.101
1.10	18,022	382.10	7.87 oc	0.11 ic	0.01 ic	---	0.00	0.00	0.00	---	---	---	0.121
1.20	19,933	382.20	7.87 oc	0.11 ic	0.04 ic	---	0.00	0.00	0.00	---	---	---	0.147
1.30	21,843	382.30	7.87 oc	0.12 ic	0.05 ic	---	0.00	0.00	0.00	---	---	---	0.165
1.40	23,754	382.40	7.87 oc	0.12 ic	0.06 ic	---	0.00	0.00	0.00	---	---	---	0.180
1.50	25,665	382.50	7.87 oc	0.13 ic	0.07 ic	---	0.00	0.00	0.00	---	---	---	0.193
1.60	27,575	382.60	7.87 oc	0.13 ic	0.08 ic	---	0.00	0.00	0.00	---	---	---	0.205
1.70	29,486	382.70	7.87 oc	0.13 ic	0.08 ic	---	0.00	0.00	0.00	---	---	---	0.216
1.80	31,396	382.80	7.87 oc	0.14 ic	0.09 ic	---	0.00	0.00	0.00	---	---	---	0.227
1.90	33,307	382.90	7.87 oc	0.14 ic	0.09 ic	---	0.00	0.00	0.00	---	---	---	0.236
2.00	35,218	383.00	7.87 oc	0.15 ic	0.10 ic	---	0.00	0.00	0.00	---	---	---	0.246
2.10	37,304	383.10	7.87 oc	0.15 ic	0.11 ic	---	0.00	0.00	0.00	---	---	---	0.255
2.20	39,391	383.20	7.87 oc	0.15 ic	0.11 ic	---	0.00	0.00	0.00	---	---	---	0.264

Continues on next page...

SCM D1

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
2.30	41,478	383.30	7.87 oc	0.16 ic	0.12 ic	---	0.00	0.00	0.00	---	---	---	0.272
2.40	43,564	383.40	7.87 oc	0.16 ic	0.12 ic	---	0.00	0.00	0.00	---	---	---	0.280
2.50	45,651	383.50	7.87 oc	0.16 ic	0.13 ic	---	0.00	0.00	0.00	---	---	---	0.288
2.60	47,738	383.60	7.87 oc	0.17 ic	0.13 ic	---	0.00	0.00	0.00	---	---	---	0.296
2.70	49,824	383.70	7.87 oc	0.17 ic	0.13 ic	---	0.00	0.00	0.00	---	---	---	0.303
2.80	51,911	383.80	7.87 oc	0.17 ic	0.14 ic	---	0.00	0.00	0.00	---	---	---	0.311
2.90	53,998	383.90	7.87 oc	0.18 ic	0.14 ic	---	0.00	0.00	0.00	---	---	---	0.318
3.00	56,084	384.00	7.87 oc	0.18 ic	0.15 ic	---	0.00	0.00	0.00	---	---	---	0.325
3.10	58,353	384.10	7.87 oc	0.18 ic	0.15 ic	---	0.00	0.00	0.00	---	---	---	0.332
3.20	60,622	384.20	7.87 oc	0.19 ic	0.15 ic	---	0.00	0.00	0.00	---	---	---	0.338
3.30	62,890	384.30	7.87 oc	0.19 ic	0.16 ic	---	0.00	0.00	0.00	---	---	---	0.345
3.40	65,159	384.40	7.87 oc	0.19 ic	0.16 ic	---	0.00	0.00	0.00	---	---	---	0.351
3.50	67,428	384.50	7.87 oc	0.19 ic	0.16 ic	---	0.00	0.00	0.00	---	---	---	0.357
3.60	69,696	384.60	7.87 oc	0.20 ic	0.17 ic	---	0.00	0.00	0.00	---	---	---	0.364
3.70	71,965	384.70	7.87 oc	0.20 ic	0.17 ic	---	0.00	0.00	0.00	---	---	---	0.370
3.80	74,233	384.80	7.87 oc	0.20 ic	0.17 ic	---	0.00	0.00	0.00	---	---	---	0.376
3.90	76,502	384.90	7.87 oc	0.21 ic	0.18 ic	---	0.00	0.00	0.00	---	---	---	0.381
4.00	78,771	385.00	7.87 oc	0.21 ic	0.18 ic	---	0.00	0.00	0.00	---	---	---	0.387
4.10	81,227	385.10	7.87 oc	0.21 ic	0.18 ic	---	0.00	0.05	0.00	---	---	---	0.446
4.20	83,683	385.20	7.87 oc	0.21 ic	0.19 ic	---	0.00	0.15	0.00	---	---	---	0.547
4.30	86,139	385.30	7.87 oc	0.22 ic	0.19 ic	---	0.00	0.27	0.00	---	---	---	0.678
4.40	88,595	385.40	7.87 oc	0.22 ic	0.19 ic	---	0.00	0.42	0.00	---	---	---	0.831
4.50	91,051	385.50	7.87 oc	0.22 ic	0.19 ic	---	0.00	0.59	0.00	---	---	---	1.004
4.60	93,508	385.60	7.87 oc	0.22 ic	0.20 ic	---	0.00	0.77	0.00	---	---	---	1.194
4.70	95,964	385.70	7.87 oc	0.23 ic	0.20 ic	---	0.00	0.98	0.00	---	---	---	1.401
4.80	98,420	385.80	7.87 oc	0.23 ic	0.20 ic	---	0.00	1.19	0.00	---	---	---	1.622
4.90	100,876	385.90	7.87 oc	0.23 ic	0.21 ic	---	0.00	1.42	0.00	---	---	---	1.857
5.00	103,332	386.00	7.87 oc	0.23 ic	0.21 ic	---	0.00	1.66	0.00	---	---	---	2.106
5.10	105,981	386.10	7.87 oc	0.24 ic	0.21 ic	---	0.00	1.92	0.00	---	---	---	2.367
5.20	108,630	386.20	7.87 oc	0.24 ic	0.21 ic	---	0.00	2.19	0.00	---	---	---	2.639
5.30	111,280	386.30	7.87 oc	0.24 ic	0.22 ic	---	0.00	2.47	0.00	---	---	---	2.924
5.40	113,929	386.40	7.87 oc	0.24 ic	0.22 ic	---	0.00	2.76	0.00	---	---	---	3.219
5.50	116,578	386.50	7.87 oc	0.24 ic	0.22 ic	---	0.00	3.06	0.00	---	---	---	3.524
5.60	119,227	386.60	7.87 oc	0.25 ic	0.22 ic	---	1.63	3.37	0.00	---	---	---	5.473
5.70	121,876	386.70	8.77 oc	0.24 ic	0.23 ic	---	4.62	3.69	0.00	---	---	---	8.770
5.80	124,525	386.80	12.67 oc	0.13 ic	0.13 ic	---	8.48	3.92 s	0.00	---	---	---	12.67
5.90	127,174	386.90	13.87 oc	0.05 ic	0.05 ic	---	11.53 s	2.23 s	0.00	---	---	---	13.87
6.00	129,824	387.00	14.04 oc	0.04 ic	0.04 ic	---	12.10 s	1.87 s	0.00	---	---	---	14.04
6.10	132,672	387.10	14.16 oc	0.03 ic	0.03 ic	---	12.46 s	1.64 s	0.00	---	---	---	14.16
6.20	135,520	387.20	14.26 oc	0.02 ic	0.02 ic	---	12.73 s	1.48 s	0.00	---	---	---	14.26
6.30	138,368	387.30	14.35 oc	0.02 ic	0.02 ic	---	12.94 s	1.36 s	0.00	---	---	---	14.34
6.40	141,216	387.40	14.44 oc	0.02 ic	0.02 ic	---	13.13 s	1.27 s	0.00	---	---	---	14.43
6.50	144,064	387.50	14.52 oc	0.01 ic	0.01 ic	---	13.28 s	1.19 s	0.00	---	---	---	14.50
6.60	146,912	387.60	14.61 oc	0.01 ic	0.01 ic	---	13.45 s	1.13 s	0.66	---	---	---	15.26
6.70	149,760	387.70	14.69 oc	0.01 ic	0.01 ic	---	13.56 s	1.08 s	1.86	---	---	---	16.52
6.80	152,609	387.80	14.77 oc	0.01 ic	0.01 ic	---	13.69 s	1.04 s	3.42	---	---	---	18.17
6.90	155,457	387.90	14.85 oc	0.01 ic	0.01 ic	---	13.76 s	1.00 s	5.26	---	---	---	20.05
7.00	158,305	388.00	14.92 oc	0.01 ic	0.01 ic	---	13.92 s	0.97 s	7.35	---	---	---	22.26
7.10	161,357	388.10	15.00 oc	0.01 ic	0.01 ic	---	13.98 s	0.94 s	9.67	---	---	---	24.61
7.20	164,410	388.20	15.08 oc	0.01 ic	0.01 ic	---	14.12 s	0.92 s	12.18	---	---	---	27.24
7.30	167,463	388.30	15.16 oc	0.01 ic	0.01 ic	---	14.18 s	0.90 s	14.88	---	---	---	29.98
7.40	170,515	388.40	15.23 oc	0.01 ic	0.01 ic	---	14.20 s	0.88 s	17.76	---	---	---	32.85
7.50	173,568	388.50	15.31 oc	0.01 ic	0.01 ic	---	14.37 s	0.87 s	20.80	---	---	---	36.05
7.60	176,620	388.60	15.38 oc	0.01 ic	0.01 ic	---	14.41 s	0.85 s	24.00	---	---	---	39.27
7.70	179,673	388.70	15.46 oc	0.01 ic	0.01 ic	---	14.54 s	0.84 s	27.34	---	---	---	42.73
7.80	182,726	388.80	15.53 oc	0.00 ic	0.00 ic	---	14.55 s	0.82 s	30.83	---	---	---	46.22
7.90	185,778	388.90	15.61 oc	0.00 ic	0.00 ic	---	14.72 s	0.82 s	34.46	---	---	---	50.00
8.00	188,831	389.00	15.68 oc	0.00 ic	0.00 ic	---	14.59 s	0.79 s	38.21	---	---	---	53.60

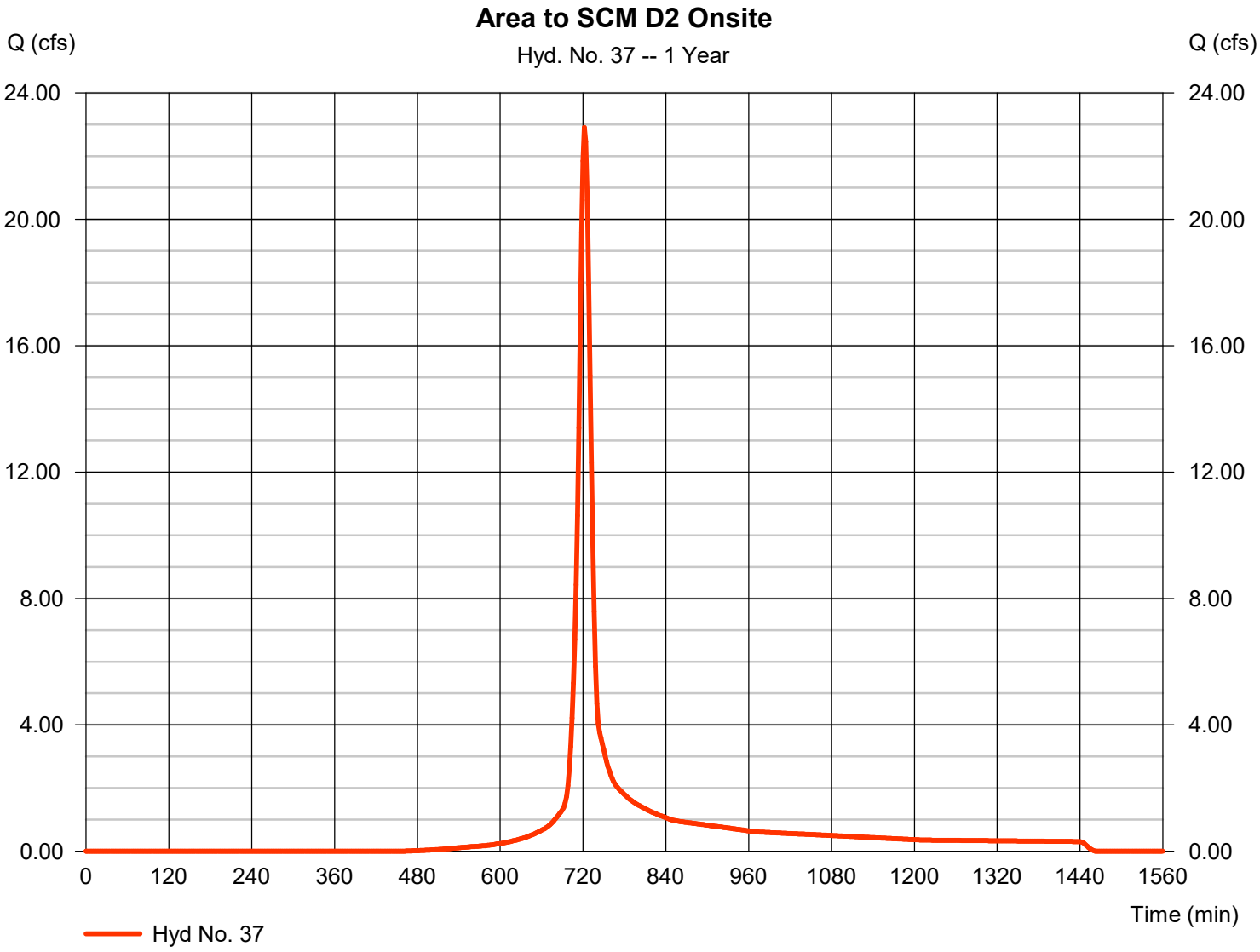
...End

Hydrograph Report

Hyd. No. 37

Area to SCM D2 Onsite

Hydrograph type	= SCS Runoff	Peak discharge	= 22.91 cfs
Storm frequency	= 1 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 64,219 cuft
Drainage area	= 11.300 ac	Curve number	= 86.5
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 13.80 min
Total precip.	= 2.89 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



TR55 Tc Worksheet

Hyd. No. 37

Area to SCM D2 Onsite

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.410		0.011		0.011		
Flow length (ft)	= 50.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.48		0.00		0.00		
Land slope (%)	= 2.00		0.00		0.00		
Travel Time (min)	**= 12.06**	**+**	**0.00**	**+**	**0.00**	**=**	**12.06**
Shallow Concentrated Flow							
Flow length (ft)	= 190.00		0.00		0.00		
Watercourse slope (%)	= 2.00		0.00		0.00		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	=2.28		0.00		0.00		
Travel Time (min)	**= 1.39**	**+**	**0.00**	**+**	**0.00**	**=**	**1.39**
Channel Flow							
X sectional flow area (sqft)	= 3.14		0.00		0.00		
Wetted perimeter (ft)	= 6.28		0.00		0.00		
Channel slope (%)	= 5.00		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	=13.96						
			0.00				
					0.00		
Flow length (ft)	({0})305.0		0.0		0.0		
Travel Time (min)	**= 0.36**	**+**	**0.00**	**+**	**0.00**	**=**	**0.36**

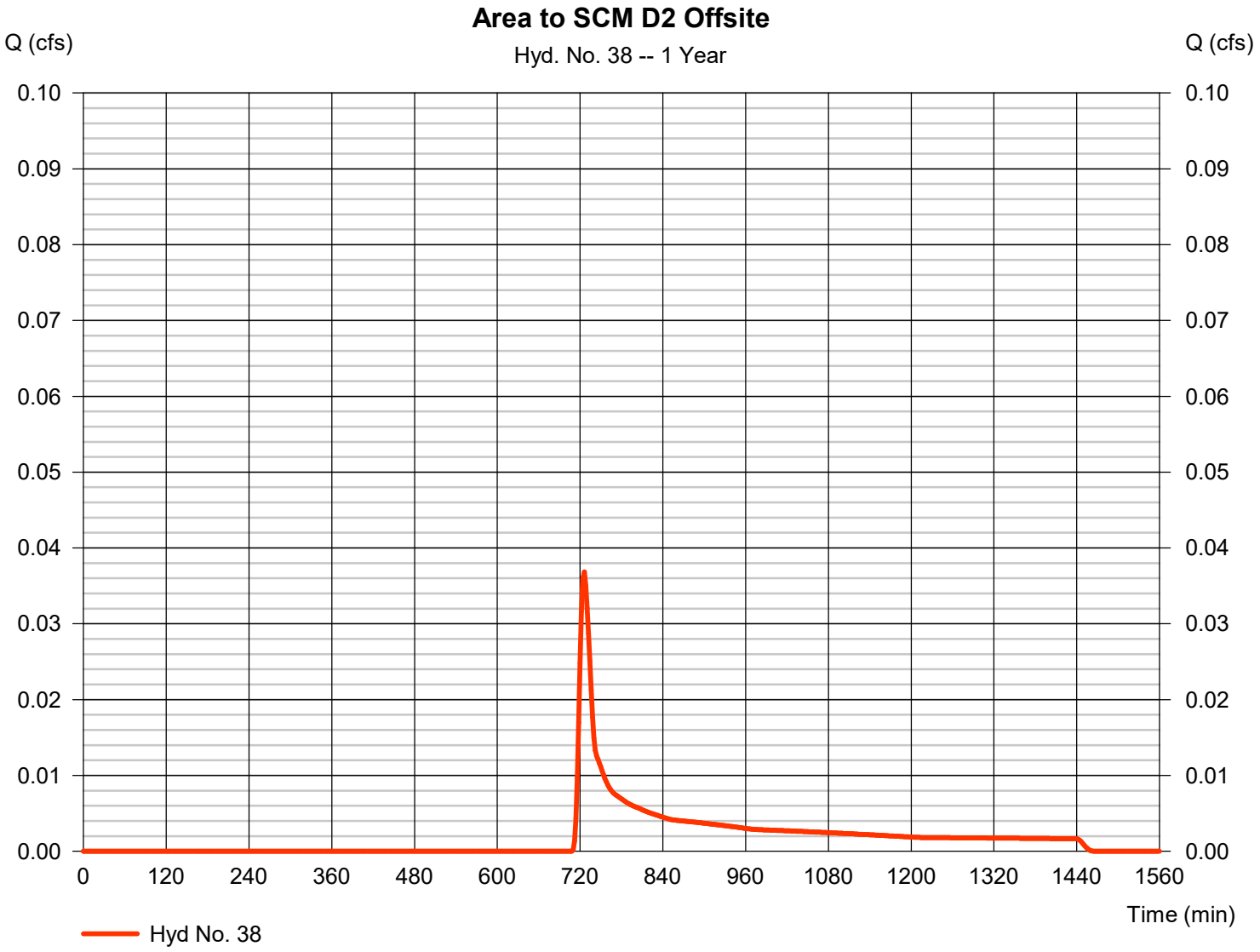
Total Travel Time, Tc ..... 13.80 min

Hydrograph Report

Hyd. No. 38

Area to SCM D2 Offsite

Hydrograph type	= SCS Runoff	Peak discharge	= 0.037 cfs
Storm frequency	= 1 yrs	Time to peak	= 726 min
Time interval	= 2 min	Hyd. volume	= 170 cuft
Drainage area	= 0.140 ac	Curve number	= 61.6
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 13.80 min
Total precip.	= 2.89 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

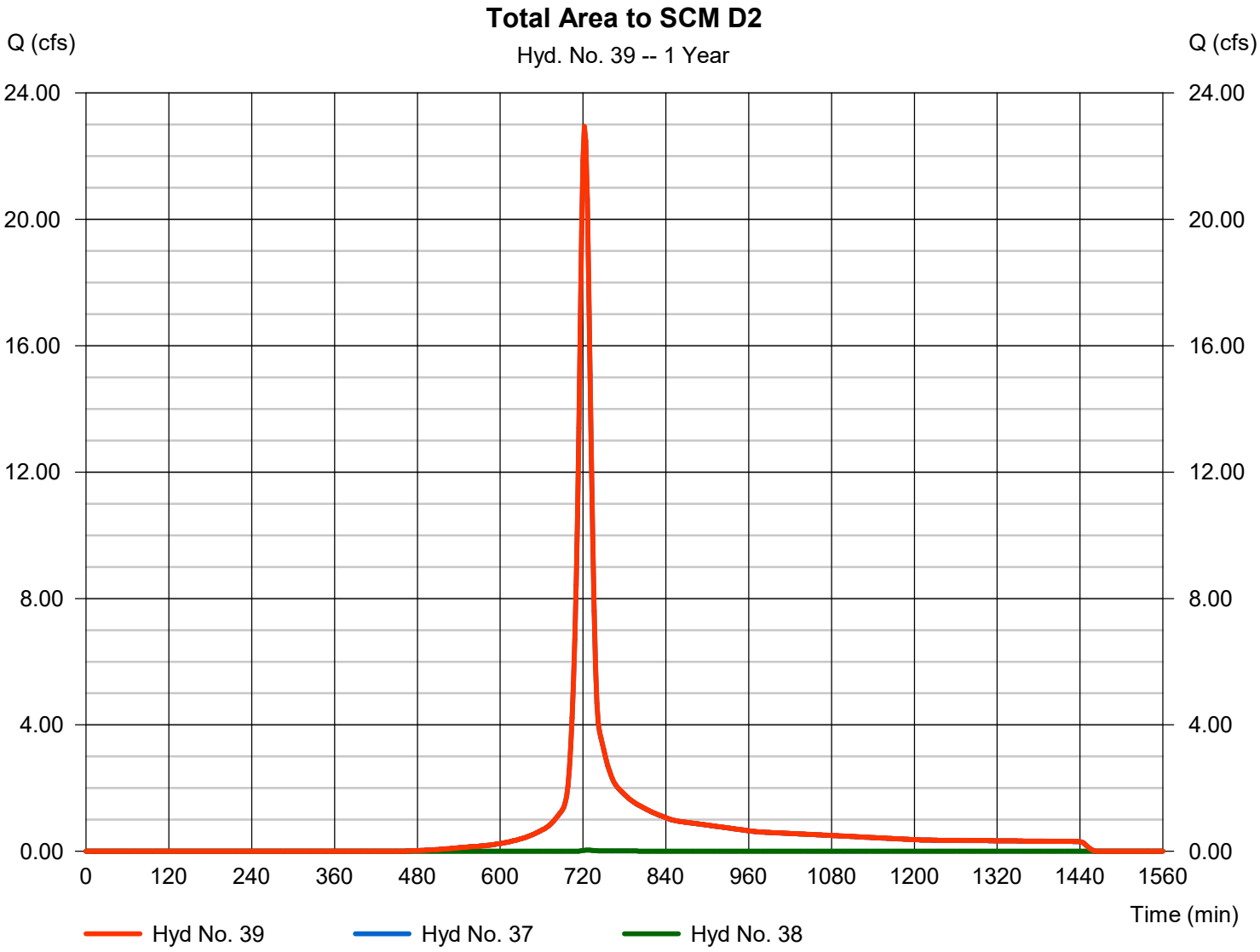


Hydrograph Report

Hyd. No. 39

Total Area to SCM D2

Hydrograph type	= Combine	Peak discharge	= 22.94 cfs
Storm frequency	= 1 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 64,388 cuft
Inflow hyds.	= 37, 38	Contrib. drain. area	= 11.440 ac



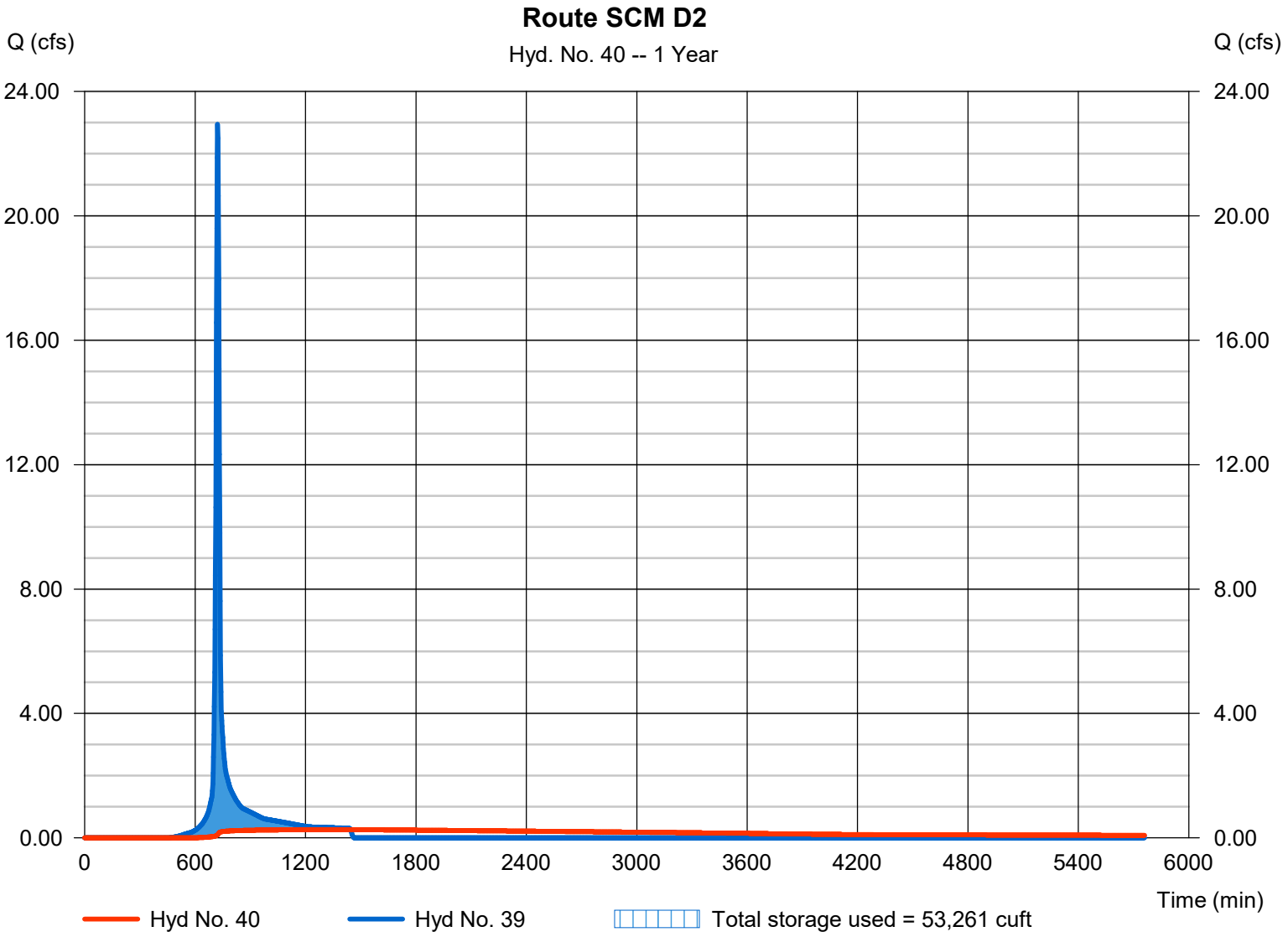
Hydrograph Report

Hyd. No. 40

Route SCM D2

Hydrograph type	=	Reservoir	Peak discharge	=	0.264 cfs
Storm frequency	=	1 yrs	Time to peak	=	1444 min
Time interval	=	2 min	Hyd. volume	=	50,834 cuft
Inflow hyd. No.	=	39 - Total Area to SCM D2	Max. Elevation	=	392.20 ft
Reservoir name	=	SCM D2	Max. Storage	=	53,261 cuft

Storage Indication method used.



Pond No. 2 - SCM D2

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 390.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	390.00	15,350	0	0
0.50	390.50	23,240	9,579	9,579
1.00	391.00	24,550	11,945	21,523
2.00	392.00	27,240	25,881	47,404
3.00	393.00	30,020	28,616	76,020
4.00	394.00	32,870	31,431	107,451
5.00	395.00	35,790	34,316	141,767
6.00	396.00	38,770	37,266	179,034

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 18.00	2.00	2.00	0.00
Span (in)	= 18.00	2.00	2.00	0.00
No. Barrels	= 1	1	1	0
Invert El. (ft)	= 387.00	390.00	391.00	0.00
Length (ft)	= 104.00	0.50	0.50	0.00
Slope (%)	= 0.50	0.01	0.01	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	Yes	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 15.00	1.00	8.00	0.00
Crest El. (ft)	= 393.50	392.50	394.50	0.00
Weir Coeff.	= 3.33	3.33	2.60	3.33
Weir Type	= 1	Rect	Broad	---
Multi-Stage	= Yes	Yes	No	No

Exfil.(in/hr) = 0.000 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	390.00	0.00	0.00	0.00	---	0.00	0.00	0.00	---	---	---	0.000
0.05	958	390.05	10.96 oc	0.00 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.004
0.10	1,916	390.10	10.96 oc	0.01 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.015
0.15	2,874	390.15	10.96 oc	0.03 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.027
0.20	3,831	390.20	10.96 oc	0.04 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.036
0.25	4,789	390.25	10.96 oc	0.04 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.043
0.30	5,747	390.30	10.96 oc	0.05 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.049
0.35	6,705	390.35	10.96 oc	0.05 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.054
0.40	7,663	390.40	10.96 oc	0.06 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.059
0.45	8,621	390.45	10.96 oc	0.06 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.064
0.50	9,579	390.50	10.96 oc	0.07 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.068
0.55	10,773	390.55	10.96 oc	0.07 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.072
0.60	11,968	390.60	10.96 oc	0.08 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.075
0.65	13,162	390.65	10.96 oc	0.08 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.079
0.70	14,357	390.70	10.96 oc	0.08 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.082
0.75	15,551	390.75	10.96 oc	0.09 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.086
0.80	16,745	390.80	10.96 oc	0.09 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.089
0.85	17,940	390.85	10.96 oc	0.09 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.092
0.90	19,134	390.90	10.96 oc	0.09 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.095
0.95	20,329	390.95	10.96 oc	0.10 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.098
1.00	21,523	391.00	10.96 oc	0.10 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.101
1.10	24,111	391.10	10.96 oc	0.11 ic	0.01 ic	---	0.00	0.00	0.00	---	---	---	0.121
1.20	26,700	391.20	10.96 oc	0.11 ic	0.04 ic	---	0.00	0.00	0.00	---	---	---	0.147
1.30	29,288	391.30	10.96 oc	0.12 ic	0.05 ic	---	0.00	0.00	0.00	---	---	---	0.165
1.40	31,876	391.40	10.96 oc	0.12 ic	0.06 ic	---	0.00	0.00	0.00	---	---	---	0.180
1.50	34,464	391.50	10.96 oc	0.13 ic	0.07 ic	---	0.00	0.00	0.00	---	---	---	0.193
1.60	37,052	391.60	10.96 oc	0.13 ic	0.08 ic	---	0.00	0.00	0.00	---	---	---	0.205
1.70	39,640	391.70	10.96 oc	0.13 ic	0.08 ic	---	0.00	0.00	0.00	---	---	---	0.216
1.80	42,228	391.80	10.96 oc	0.14 ic	0.09 ic	---	0.00	0.00	0.00	---	---	---	0.227
1.90	44,816	391.90	10.96 oc	0.14 ic	0.09 ic	---	0.00	0.00	0.00	---	---	---	0.236
2.00	47,404	392.00	10.96 oc	0.15 ic	0.10 ic	---	0.00	0.00	0.00	---	---	---	0.246
2.10	50,266	392.10	10.96 oc	0.15 ic	0.11 ic	---	0.00	0.00	0.00	---	---	---	0.255
2.20	53,127	392.20	10.96 oc	0.15 ic	0.11 ic	---	0.00	0.00	0.00	---	---	---	0.264
2.30	55,989	392.30	10.96 oc	0.16 ic	0.12 ic	---	0.00	0.00	0.00	---	---	---	0.272
2.40	58,851	392.40	10.96 oc	0.16 ic	0.12 ic	---	0.00	0.00	0.00	---	---	---	0.280

Continues on next page...

SCM D2

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
2.50	61,712	392.50	10.96 oc	0.16 ic	0.13 ic	---	0.00	0.00	0.00	---	---	---	0.288
2.60	64,574	392.60	10.96 oc	0.17 ic	0.13 ic	---	0.00	0.11	0.00	---	---	---	0.401
2.70	67,435	392.70	10.96 oc	0.17 ic	0.13 ic	---	0.00	0.30	0.00	---	---	---	0.601
2.80	70,297	392.80	10.96 oc	0.17 ic	0.14 ic	---	0.00	0.55	0.00	---	---	---	0.858
2.90	73,158	392.90	10.96 oc	0.18 ic	0.14 ic	---	0.00	0.84	0.00	---	---	---	1.160
3.00	76,020	393.00	10.96 oc	0.18 ic	0.15 ic	---	0.00	1.18	0.00	---	---	---	1.502
3.10	79,163	393.10	10.96 oc	0.18 ic	0.15 ic	---	0.00	1.55	0.00	---	---	---	1.879
3.20	82,306	393.20	10.96 oc	0.19 ic	0.15 ic	---	0.00	1.95	0.00	---	---	---	2.289
3.30	85,449	393.30	10.96 oc	0.19 ic	0.16 ic	---	0.00	2.38	0.00	---	---	---	2.728
3.40	88,593	393.40	10.96 oc	0.19 ic	0.16 ic	---	0.00	2.84	0.00	---	---	---	3.194
3.50	91,736	393.50	10.96 oc	0.19 ic	0.16 ic	---	0.00	3.33	0.00	---	---	---	3.688
3.60	94,879	393.60	10.96 oc	0.20 ic	0.17 ic	---	1.58	3.84	0.00	---	---	---	5.786
3.70	98,022	393.70	10.96 oc	0.20 ic	0.17 ic	---	4.47	4.38	0.00	---	---	---	9.216
3.80	101,165	393.80	13.49 oc	0.17 ic	0.17 ic	---	8.21	4.94	0.00	---	---	---	13.49
3.90	104,308	393.90	17.56 oc	0.09 ic	0.09 ic	---	12.64	4.74 s	0.00	---	---	---	17.56
4.00	107,451	394.00	18.53 oc	0.05 ic	0.05 ic	---	14.91 s	3.52 s	0.00	---	---	---	18.53
4.10	110,883	394.10	18.84 oc	0.04 ic	0.04 ic	---	15.60 s	3.16 s	0.00	---	---	---	18.84
4.20	114,314	394.20	19.08 oc	0.03 ic	0.03 ic	---	16.10 s	2.91 s	0.00	---	---	---	19.07
4.30	117,746	394.30	19.28 oc	0.03 ic	0.03 ic	---	16.49 s	2.73 s	0.00	---	---	---	19.28
4.40	121,178	394.40	19.46 oc	0.02 ic	0.02 ic	---	16.82 s	2.59 s	0.00	---	---	---	19.46
4.50	124,609	394.50	19.63 oc	0.02 ic	0.02 ic	---	17.11 s	2.48 s	0.00	---	---	---	19.63
4.60	128,041	394.60	19.80 oc	0.02 ic	0.02 ic	---	17.37 s	2.38 s	0.66	---	---	---	20.45
4.70	131,473	394.70	19.96 oc	0.02 ic	0.02 ic	---	17.59 s	2.31 s	1.86	---	---	---	21.79
4.80	134,904	394.80	20.11 oc	0.02 ic	0.02 ic	---	17.83 s	2.25 s	3.42	---	---	---	23.53
4.90	138,336	394.90	20.27 oc	0.01 ic	0.01 ic	---	18.02 s	2.19 s	5.26	---	---	---	25.50
5.00	141,767	395.00	20.42 oc	0.01 ic	0.01 ic	---	18.19 s	2.14 s	7.35	---	---	---	27.72
5.10	145,494	395.10	20.56 oc	0.01 ic	0.01 ic	---	18.40 s	2.11 s	9.67	---	---	---	30.20
5.20	149,221	395.20	20.71 oc	0.01 ic	0.01 ic	---	18.57 s	2.07 s	12.18	---	---	---	32.85
5.30	152,947	395.30	20.86 oc	0.01 ic	0.01 ic	---	18.77 s	2.05 s	14.88	---	---	---	35.73
5.40	156,674	395.40	21.00 oc	0.01 ic	0.01 ic	---	18.93 s	2.02 s	17.76	---	---	---	38.74
5.50	160,401	395.50	21.14 oc	0.01 ic	0.01 ic	---	19.09 s	2.00 s	20.80	---	---	---	41.90
5.60	164,127	395.60	21.28 oc	0.01 ic	0.01 ic	---	19.27 s	1.98 s	24.00	---	---	---	45.27
5.70	167,854	395.70	21.42 oc	0.01 ic	0.01 ic	---	19.43 s	1.97 s	27.34	---	---	---	48.75
5.80	171,581	395.80	21.56 oc	0.01 ic	0.01 ic	---	19.58 s	1.95 s	30.83	---	---	---	52.38
5.90	175,307	395.90	21.70 oc	0.01 ic	0.01 ic	---	19.59 s	1.93 s	34.46	---	---	---	55.98
6.00	179,034	396.00	21.84 oc	0.01 ic	0.01 ic	---	19.87 s	1.93 s	38.21	---	---	---	60.02

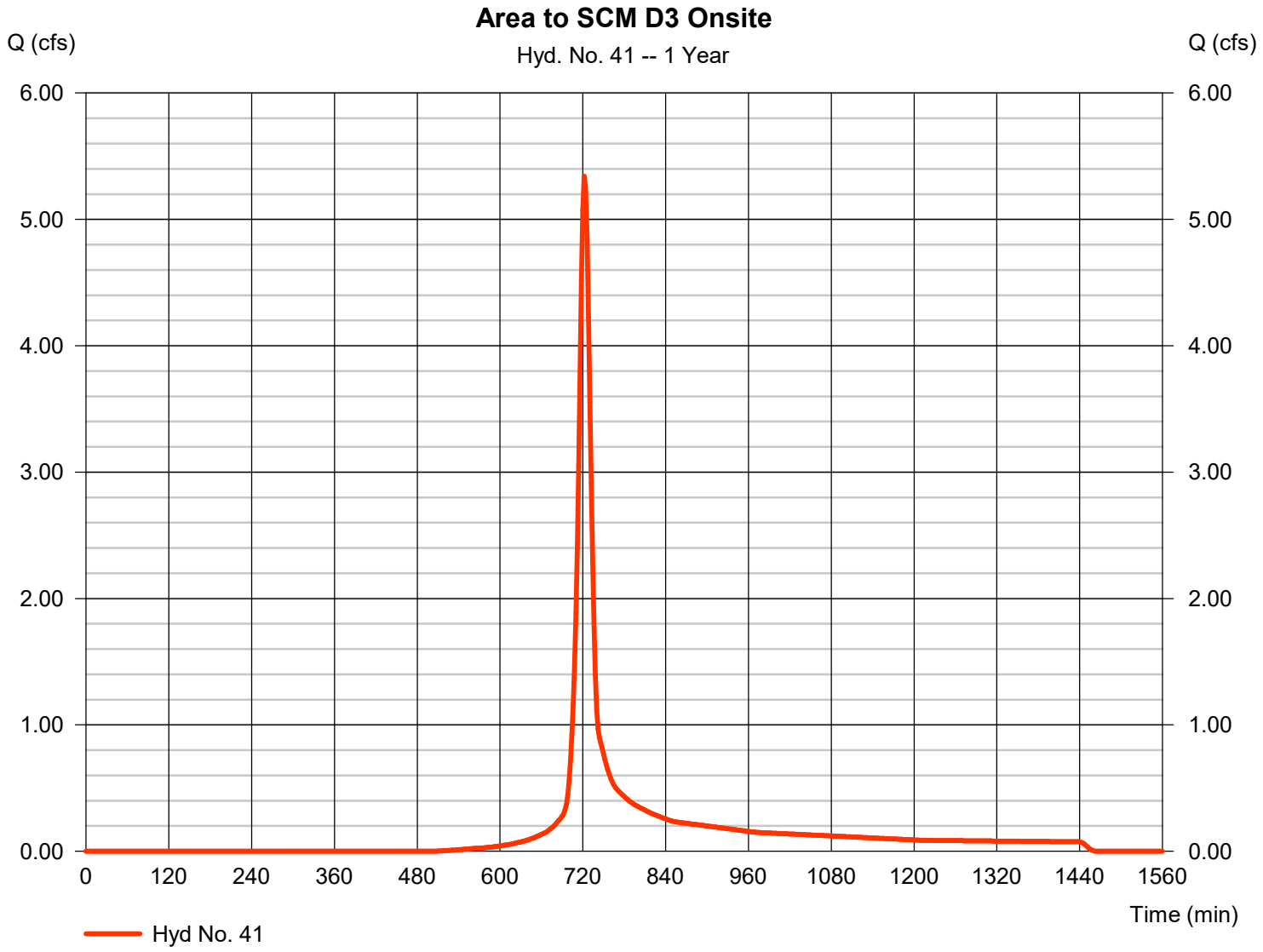
...End

Hydrograph Report

Hyd. No. 41

Area to SCM D3 Onsite

Hydrograph type	= SCS Runoff	Peak discharge	= 5.342 cfs
Storm frequency	= 1 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 14,983 cuft
Drainage area	= 2.870 ac	Curve number	= 84.7
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 14.20 min
Total precip.	= 2.89 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



TR55 Tc Worksheet

Hyd. No. 41

Area to SCM D3 Onsite

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.410		0.011		0.011		
Flow length (ft)	= 50.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.48		0.00		0.00		
Land slope (%)	= 2.00		0.00		0.00		
Travel Time (min)	**= 12.06**	**+**	**0.00**	**+**	**0.00**	**=**	**12.06**
Shallow Concentrated Flow							
Flow length (ft)	= 25.00		270.00		0.00		
Watercourse slope (%)	= 2.00		1.50		0.00		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	=2.28		2.49		0.00		
Travel Time (min)	**= 0.18**	**+**	**1.81**	**+**	**0.00**	**=**	**1.99**
Channel Flow							
X sectional flow area (sqft)	= 3.14		0.00		0.00		
Wetted perimeter (ft)	= 6.28		0.00		0.00		
Channel slope (%)	= 10.00		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	=19.74						
			0.00				
					0.00		
Flow length (ft)	({0})190.0		0.0		0.0		
Travel Time (min)	**= 0.16**	**+**	**0.00**	**+**	**0.00**	**=**	**0.16**

Total Travel Time, Tc ..... 14.20 min

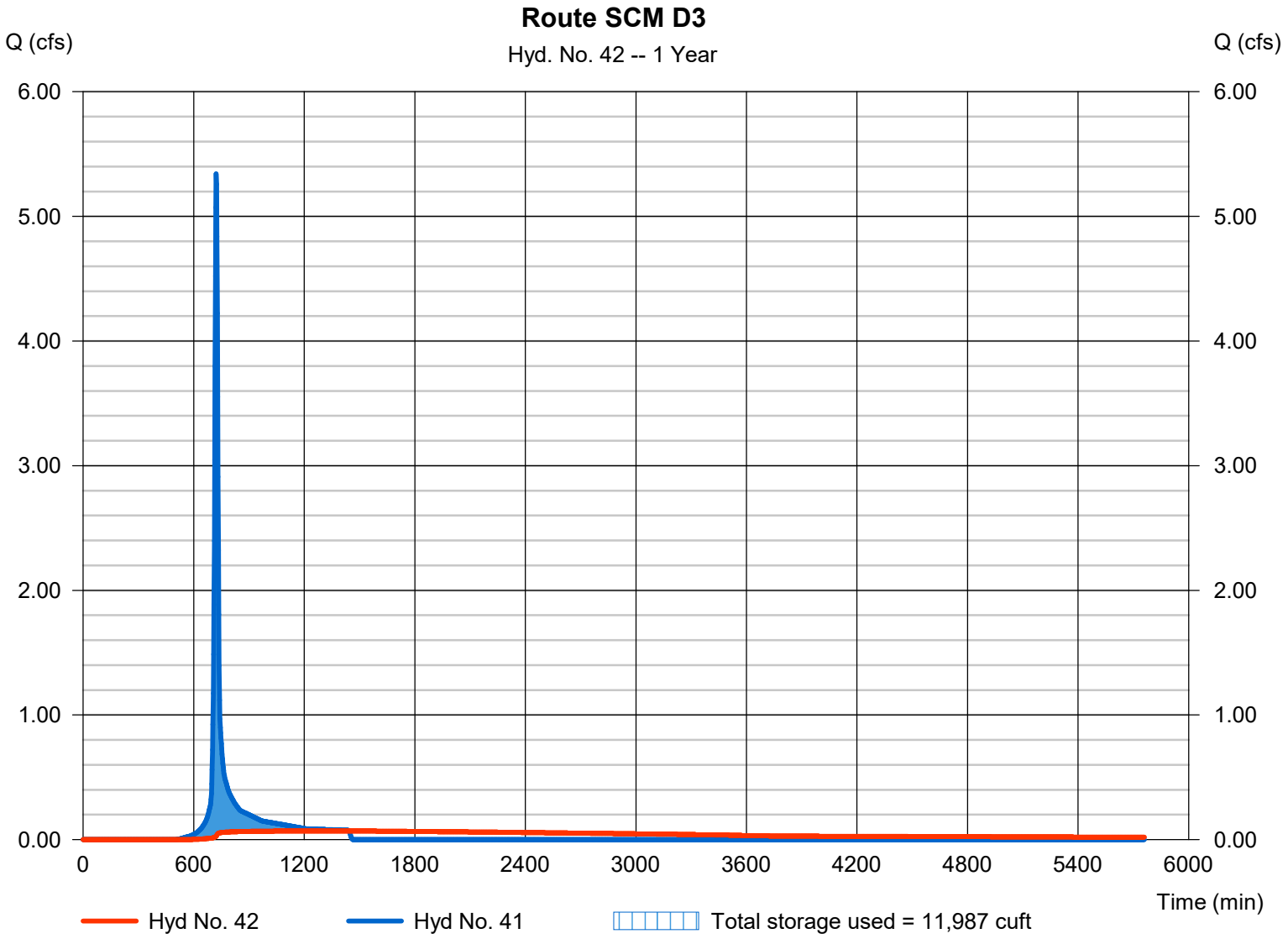
Hydrograph Report

Hyd. No. 42

Route SCM D3

Hydrograph type	=	Reservoir	Peak discharge	=	0.070 cfs
Storm frequency	=	1 yrs	Time to peak	=	1442 min
Time interval	=	2 min	Hyd. volume	=	13,116 cuft
Inflow hyd. No.	=	41 - Area to SCM D3 Onsite	Max. Elevation	=	384.46 ft
Reservoir name	=	SCM D3	Max. Storage	=	11,987 cuft

Storage Indication method used.



Pond No. 3 - SCM D3

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 382.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	382.00	2,410	0	0
0.50	382.50	4,000	1,586	1,586
1.00	383.00	4,590	2,146	3,731
2.00	384.00	5,900	5,231	8,962
3.00	385.00	7,390	6,630	15,592
4.00	386.00	9,090	8,225	23,817
5.00	387.00	10,690	9,878	33,695
6.00	388.00	12,770	11,713	45,409

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 15.00	1.00	1.00	0.00
Span (in)	= 15.00	1.00	1.00	0.00
No. Barrels	= 1	1	1	0
Invert El. (ft)	= 379.00	382.00	383.17	0.00
Length (ft)	= 110.00	0.50	0.50	0.00
Slope (%)	= 3.60	0.01	0.01	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	Yes	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 15.00	1.00	8.00	0.00
Crest El. (ft)	= 385.50	384.75	386.50	0.00
Weir Coeff.	= 3.33	3.33	2.60	3.33
Weir Type	= 1	Rect	Broad	---
Multi-Stage	= Yes	Yes	No	No

Exfil.(in/hr) = 0.000 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	382.00	0.00	0.00	0.00	---	0.00	0.00	0.00	---	---	---	0.000
0.05	159	382.05	9.11 ic	0.00 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.003
0.10	317	382.10	9.11 ic	0.01 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.006
0.15	476	382.15	9.11 ic	0.01 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.009
0.20	634	382.20	9.11 ic	0.01 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.010
0.25	793	382.25	9.11 ic	0.01 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.012
0.30	951	382.30	9.11 ic	0.01 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.013
0.35	1,110	382.35	9.11 ic	0.01 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.015
0.40	1,269	382.40	9.11 ic	0.02 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.016
0.45	1,427	382.45	9.11 ic	0.02 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.017
0.50	1,586	382.50	9.11 ic	0.02 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.018
0.55	1,800	382.55	9.11 ic	0.02 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.019
0.60	2,015	382.60	9.11 ic	0.02 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.020
0.65	2,229	382.65	9.11 ic	0.02 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.020
0.70	2,444	382.70	9.11 ic	0.02 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.021
0.75	2,658	382.75	9.11 ic	0.02 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.022
0.80	2,873	382.80	9.11 ic	0.02 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.023
0.85	3,088	382.85	9.11 ic	0.02 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.024
0.90	3,302	382.90	9.11 ic	0.02 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.024
0.95	3,517	382.95	9.11 ic	0.03 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.025
1.00	3,731	383.00	9.11 ic	0.03 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.026
1.10	4,254	383.10	9.11 ic	0.03 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.027
1.20	4,777	383.20	9.11 ic	0.03 ic	0.00 ic	---	0.00	0.00	0.00	---	---	---	0.029
1.30	5,300	383.30	9.11 ic	0.03 ic	0.01 ic	---	0.00	0.00	0.00	---	---	---	0.037
1.40	5,824	383.40	9.11 ic	0.03 ic	0.01 ic	---	0.00	0.00	0.00	---	---	---	0.042
1.50	6,347	383.50	9.11 ic	0.03 ic	0.01 ic	---	0.00	0.00	0.00	---	---	---	0.046
1.60	6,870	383.60	9.11 ic	0.03 ic	0.02 ic	---	0.00	0.00	0.00	---	---	---	0.049
1.70	7,393	383.70	9.11 ic	0.03 ic	0.02 ic	---	0.00	0.00	0.00	---	---	---	0.052
1.80	7,916	383.80	9.11 ic	0.03 ic	0.02 ic	---	0.00	0.00	0.00	---	---	---	0.055
1.90	8,439	383.90	9.11 ic	0.04 ic	0.02 ic	---	0.00	0.00	0.00	---	---	---	0.058
2.00	8,962	384.00	9.11 ic	0.04 ic	0.02 ic	---	0.00	0.00	0.00	---	---	---	0.060
2.10	9,625	384.10	9.11 ic	0.04 ic	0.02 ic	---	0.00	0.00	0.00	---	---	---	0.062
2.20	10,288	384.20	9.11 ic	0.04 ic	0.03 ic	---	0.00	0.00	0.00	---	---	---	0.065
2.30	10,951	384.30	9.11 ic	0.04 ic	0.03 ic	---	0.00	0.00	0.00	---	---	---	0.067
2.40	11,614	384.40	9.11 ic	0.04 ic	0.03 ic	---	0.00	0.00	0.00	---	---	---	0.069

Continues on next page...

SCM D3

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
2.50	12,277	384.50	9.11 ic	0.04 ic	0.03 ic	---	0.00	0.00	0.00	---	---	---	0.071
2.60	12,940	384.60	9.11 ic	0.04 ic	0.03 ic	---	0.00	0.00	0.00	---	---	---	0.073
2.70	13,603	384.70	9.11 ic	0.04 ic	0.03 ic	---	0.00	0.00	0.00	---	---	---	0.075
2.80	14,266	384.80	9.11 ic	0.04 ic	0.03 ic	---	0.00	0.04	0.00	---	---	---	0.114
2.90	14,929	384.90	9.11 ic	0.04 ic	0.03 ic	---	0.00	0.19	0.00	---	---	---	0.272
3.00	15,592	385.00	9.11 ic	0.05 ic	0.04 ic	---	0.00	0.42	0.00	---	---	---	0.497
3.10	16,415	385.10	9.11 ic	0.05 ic	0.04 ic	---	0.00	0.69	0.00	---	---	---	0.772
3.20	17,237	385.20	9.11 ic	0.05 ic	0.04 ic	---	0.00	1.01	0.00	---	---	---	1.089
3.30	18,060	385.30	9.11 ic	0.05 ic	0.04 ic	---	0.00	1.36	0.00	---	---	---	1.444
3.40	18,882	385.40	9.11 ic	0.05 ic	0.04 ic	---	0.00	1.75	0.00	---	---	---	1.832
3.50	19,705	385.50	9.11 ic	0.05 ic	0.04 ic	---	0.00	2.16	0.00	---	---	---	2.251
3.60	20,527	385.60	9.11 ic	0.05 ic	0.04 ic	---	1.58	2.61	0.00	---	---	---	4.279
3.70	21,350	385.70	9.11 ic	0.05 ic	0.04 ic	---	4.47	3.08	0.00	---	---	---	7.643
3.80	22,172	385.80	11.87 ic	0.04 ic	0.04 ic	---	8.21	3.58	0.00	---	---	---	11.87
3.90	22,994	385.90	14.47 ic	0.01 ic	0.01 ic	---	11.74 s	2.70 s	0.00	---	---	---	14.47
4.00	23,817	386.00	14.75 ic	0.01 ic	0.01 ic	---	12.39 s	2.34 s	0.00	---	---	---	14.75
4.10	24,805	386.10	14.93 ic	0.01 ic	0.01 ic	---	12.79 s	2.12 s	0.00	---	---	---	14.93
4.20	25,793	386.20	15.08 ic	0.01 ic	0.01 ic	---	13.09 s	1.97 s	0.00	---	---	---	15.08
4.30	26,780	386.30	15.22 ic	0.01 ic	0.01 ic	---	13.34 s	1.86 s	0.00	---	---	---	15.22
4.40	27,768	386.40	15.34 ic	0.00 ic	0.00 ic	---	13.55 s	1.78 s	0.00	---	---	---	15.34
4.50	28,756	386.50	15.46 ic	0.00 ic	0.00 ic	---	13.73 s	1.71 s	0.00	---	---	---	15.45
4.60	29,744	386.60	15.58 ic	0.00 ic	0.00 ic	---	13.90 s	1.66 s	0.66	---	---	---	16.22
4.70	30,732	386.70	15.70 ic	0.00 ic	0.00 ic	---	14.05 s	1.61 s	1.86	---	---	---	17.52
4.80	31,719	386.80	15.81 ic	0.00 ic	0.00 ic	---	14.19 s	1.57 s	3.42	---	---	---	19.19
4.90	32,707	386.90	15.92 ic	0.00 ic	0.00 ic	---	14.35 s	1.54 s	5.26	---	---	---	21.16
5.00	33,695	387.00	16.04 ic	0.00 ic	0.00 ic	---	14.48 s	1.52 s	7.35	---	---	---	23.35
5.10	34,866	387.10	16.12 oc	0.00 ic	0.00 ic	---	14.56 s	1.49 s	9.67	---	---	---	25.73
5.20	36,038	387.20	16.19 oc	0.00 ic	0.00 ic	---	14.67 s	1.47 s	12.18	---	---	---	28.33
5.30	37,209	387.30	16.27 oc	0.00 ic	0.00 ic	---	14.75 s	1.45 s	14.88	---	---	---	31.09
5.40	38,381	387.40	16.34 oc	0.00 ic	0.00 ic	---	14.80 s	1.43 s	17.76	---	---	---	33.99
5.50	39,552	387.50	16.41 oc	0.00 ic	0.00 ic	---	14.96 s	1.42 s	20.80	---	---	---	37.19
5.60	40,723	387.60	16.49 oc	0.00 ic	0.00 ic	---	14.98 s	1.40 s	24.00	---	---	---	40.38
5.70	41,895	387.70	16.56 oc	0.00 ic	0.00 ic	---	15.04 s	1.39 s	27.34	---	---	---	43.77
5.80	43,066	387.80	16.63 oc	0.00 ic	0.00 ic	---	15.09 s	1.38 s	30.83	---	---	---	47.30
5.90	44,237	387.90	16.71 oc	0.00 ic	0.00 ic	---	15.09 s	1.36 s	34.46	---	---	---	50.92
6.00	45,409	388.00	16.78 oc	0.00 ic	0.00 ic	---	15.29 s	1.37 s	38.21	---	---	---	54.87

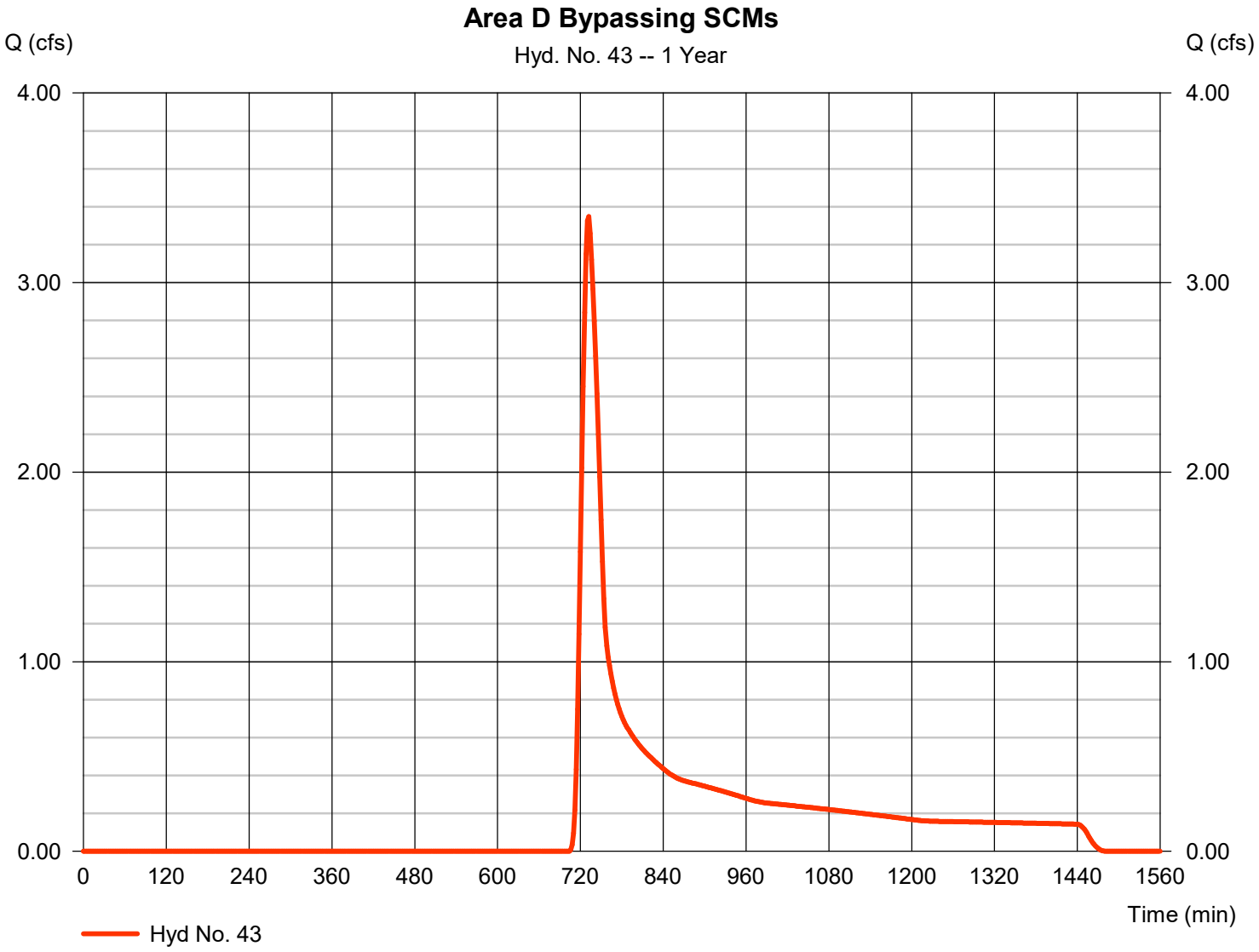
...End

Hydrograph Report

Hyd. No. 43

Area D Bypassing SCMs

Hydrograph type	= SCS Runoff	Peak discharge	= 3.348 cfs
Storm frequency	= 1 yrs	Time to peak	= 732 min
Time interval	= 2 min	Hyd. volume	= 17,002 cuft
Drainage area	= 9.870 ac	Curve number	= 65.7
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 24.00 min
Total precip.	= 2.89 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

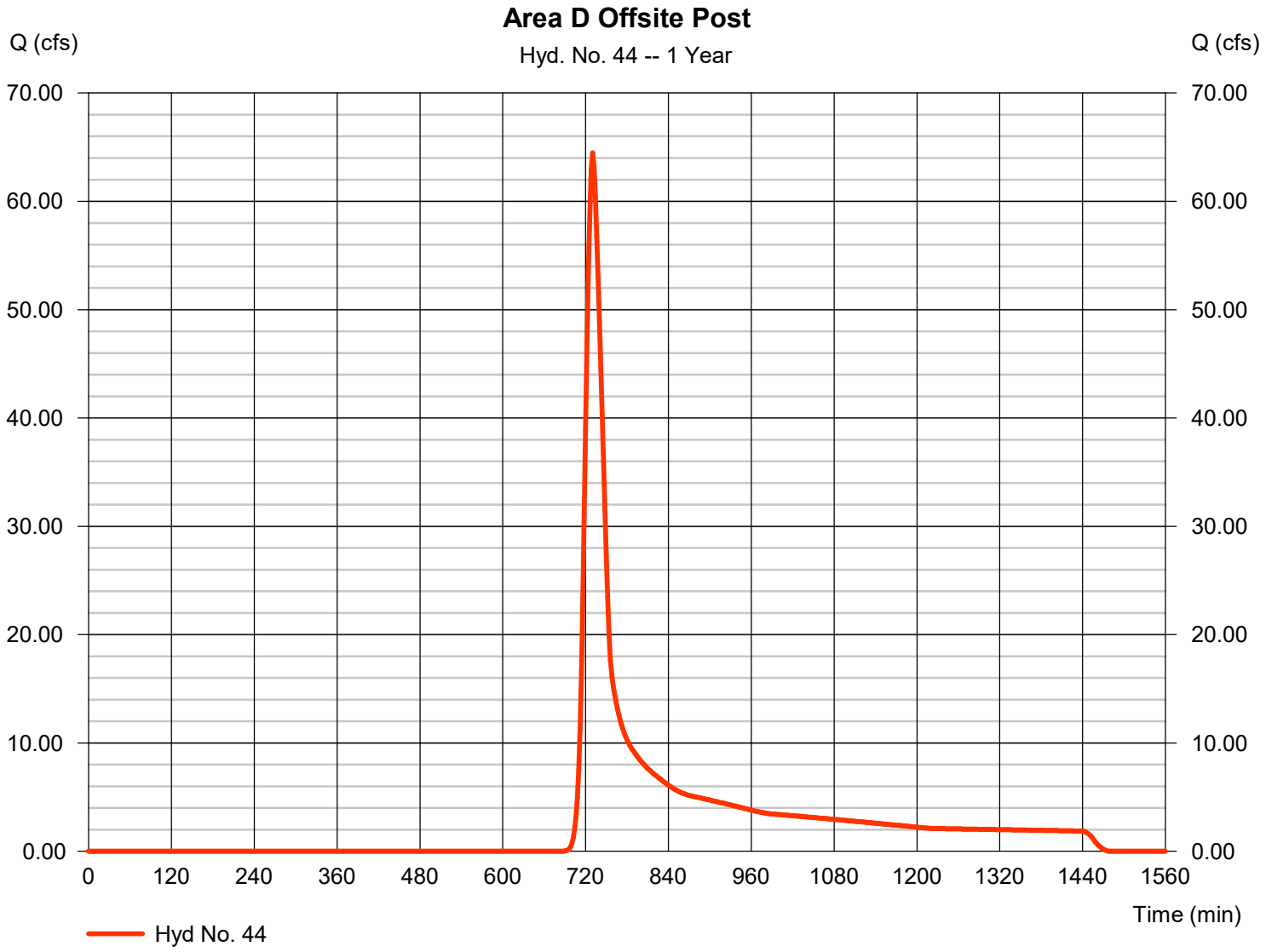


Hydrograph Report

Hyd. No. 44

Area D Offsite Post

Hydrograph type	=	SCS Runoff	Peak discharge	=	64.48 cfs
Storm frequency	=	1 yrs	Time to peak	=	730 min
Time interval	=	2 min	Hyd. volume	=	267,485 cuft
Drainage area	=	100.690 ac	Curve number	=	72
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	24.00 min
Total precip.	=	2.89 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



TR55 Tc Worksheet

Hyd. No. 44

Area D Offsite Post

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.400		0.011		0.011		
Flow length (ft)	= 50.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.48		0.00		0.00		
Land slope (%)	= 1.00		0.00		0.00		
Travel Time (min)	**= 15.61**	**+**	**0.00**	**+**	**0.00**	**=**	**15.61**
Shallow Concentrated Flow							
Flow length (ft)	= 830.00		0.00		0.00		
Watercourse slope (%)	= 4.00		0.00		0.00		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	=3.23		0.00		0.00		
Travel Time (min)	**= 4.29**	**+**	**0.00**	**+**	**0.00**	**=**	**4.29**
Channel Flow							
X sectional flow area (sqft)	= 27.00		0.00		0.00		
Wetted perimeter (ft)	= 14.50		0.00		0.00		
Channel slope (%)	= 2.50		0.00		0.00		
Manning's n-value	= 0.030		0.015		0.015		
Velocity (ft/s)	=11.91						
			0.00				
					0.00		
Flow length (ft)	({0})2955.0		0.0		0.0		
Travel Time (min)	**= 4.13**	**+**	**0.00**	**+**	**0.00**	**=**	**4.13**

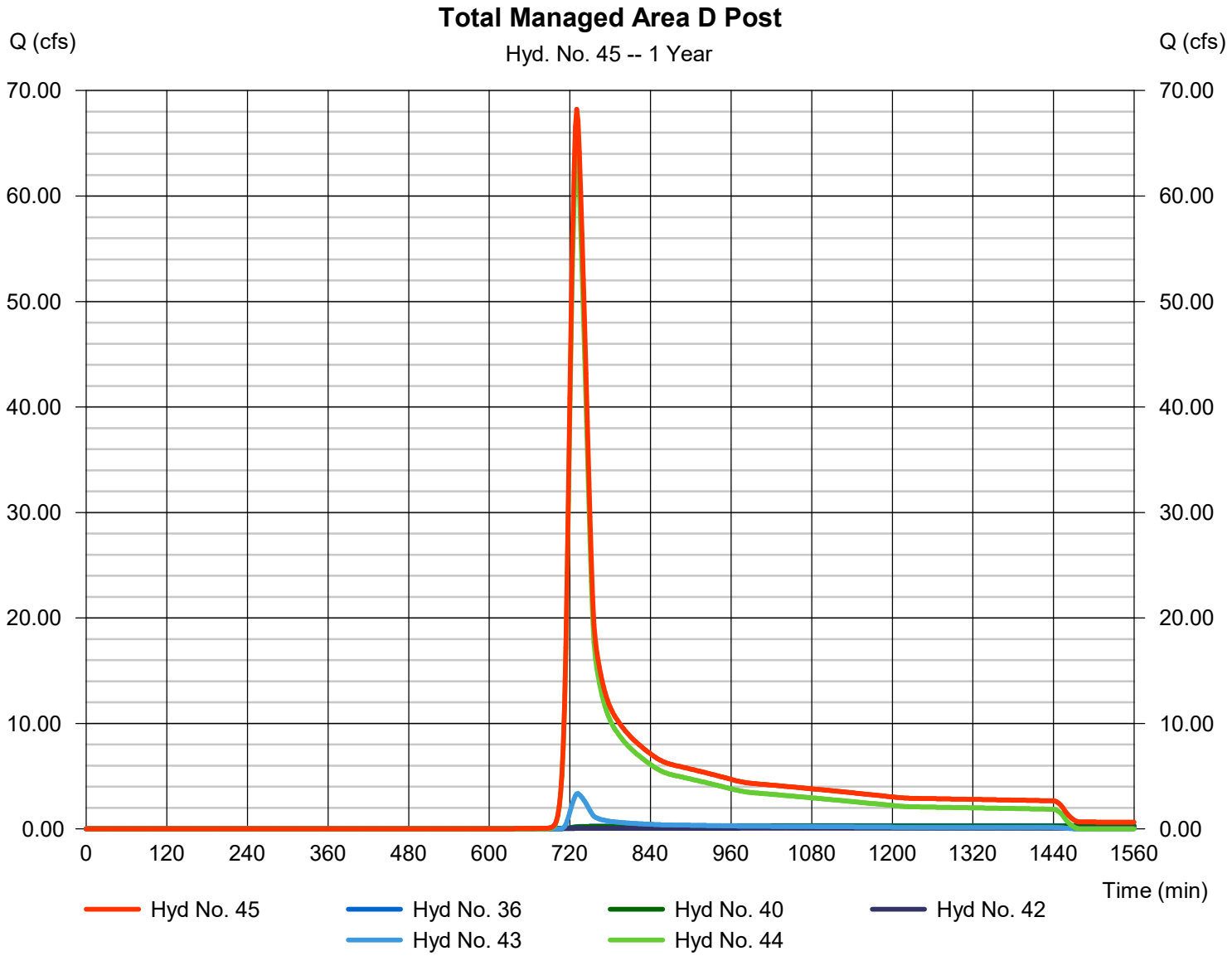
Total Travel Time, Tc ..... 24.00 min

Hydrograph Report

Hyd. No. 45

Total Managed Area D Post

Hydrograph type	= Combine	Peak discharge	= 68.22 cfs
Storm frequency	= 1 yrs	Time to peak	= 730 min
Time interval	= 2 min	Hyd. volume	= 406,932 cuft
Inflow hyds.	= 36, 40, 42, 43, 44	Contrib. drain. area	= 110.560 ac

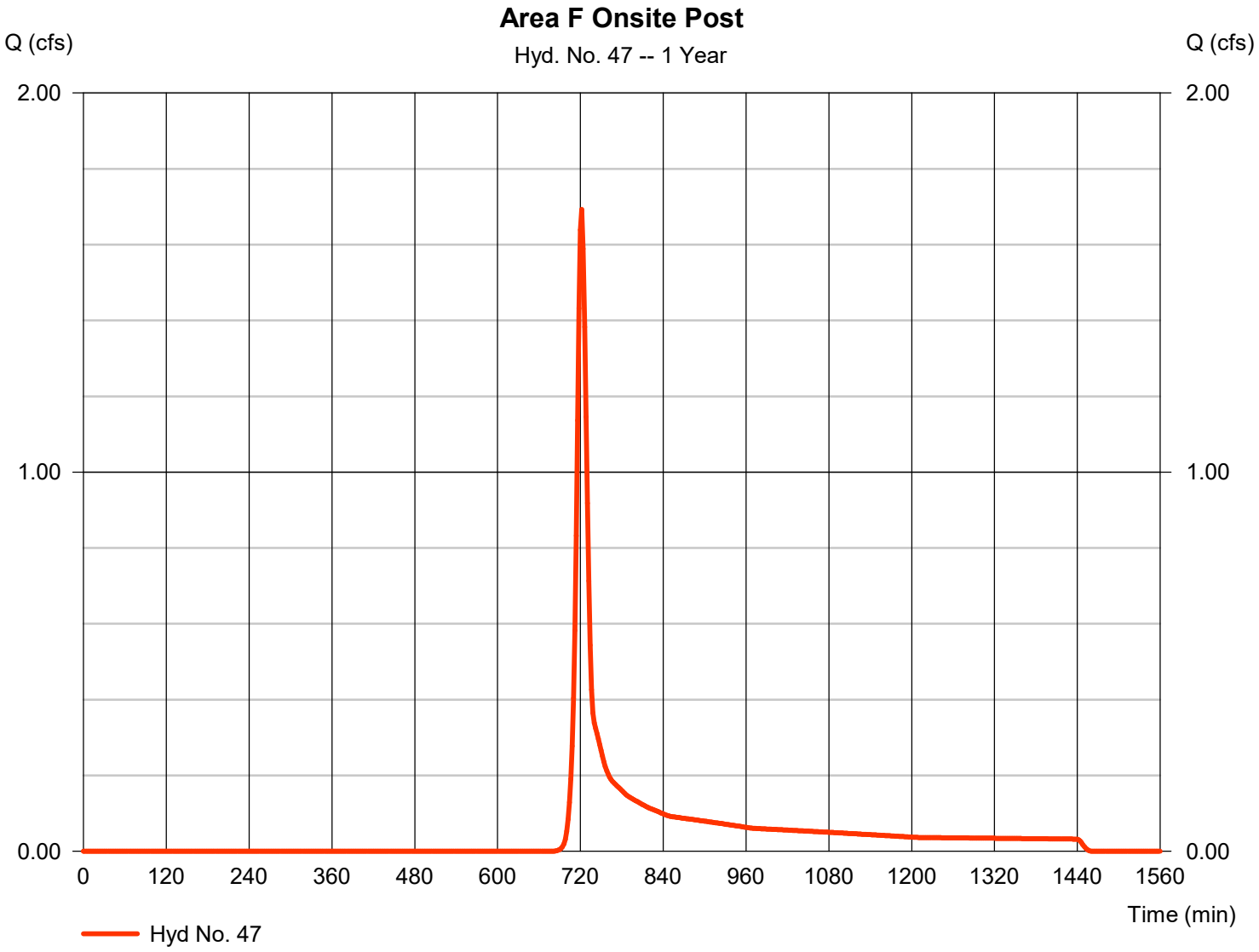


Hydrograph Report

Hyd. No. 47

Area F Onsite Post

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.693 cfs
Storm frequency	=	1 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	4,679 cuft
Drainage area	=	1.630 ac	Curve number	=	72.5
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	12.60 min
Total precip.	=	2.89 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



TR55 Tc Worksheet

Hyd. No. 47

Area F Onsite Post

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.240		0.011		0.011		
Flow length (ft)	= 50.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.48		0.00		0.00		
Land slope (%)	= 5.00		0.00		0.00		
Travel Time (min)	**= 5.45**	**+**	**0.00**	**+**	**0.00**	**=**	**5.45**
Shallow Concentrated Flow							
Flow length (ft)	= 760.00		0.00		0.00		
Watercourse slope (%)	= 2.80		0.00		0.00		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	=2.70		0.00		0.00		
Travel Time (min)	**= 4.69**	**+**	**0.00**	**+**	**0.00**	**=**	**4.69**
Channel Flow							
X sectional flow area (sqft)	= 3.14		0.00		0.00		
Wetted perimeter (ft)	= 6.28		0.00		0.00		
Channel slope (%)	= 1.80		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	=8.38						
			0.00				
					0.00		
Flow length (ft)	({0})1220.0		0.0		0.0		
Travel Time (min)	**= 2.43**	**+**	**0.00**	**+**	**0.00**	**=**	**2.43**

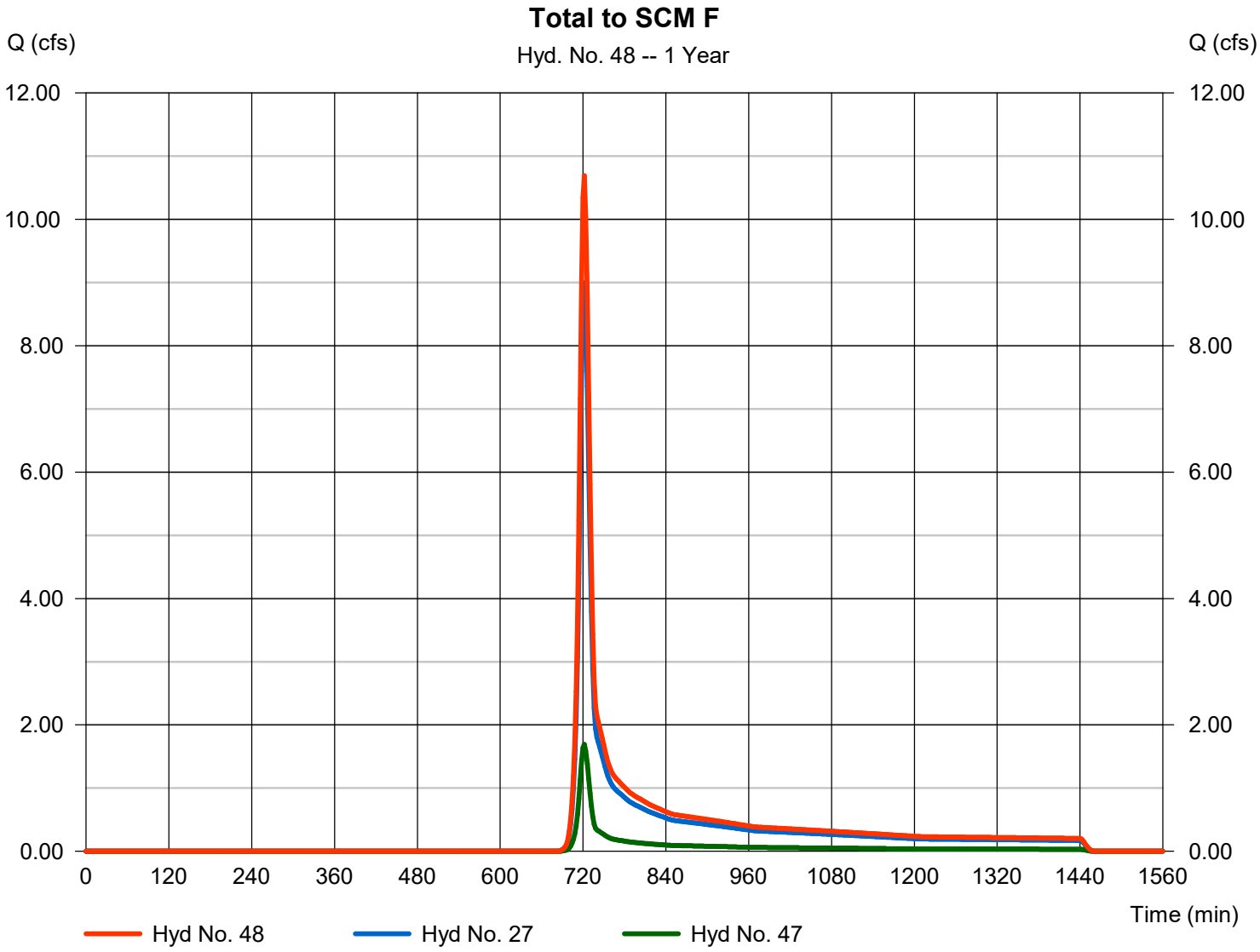
Total Travel Time, Tc ..... 12.60 min

Hydrograph Report

Hyd. No. 48

Total to SCM F

Hydrograph type	= Combine	Peak discharge	= 10.69 cfs
Storm frequency	= 1 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 29,584 cuft
Inflow hyds.	= 27, 47	Contrib. drain. area	= 10.360 ac



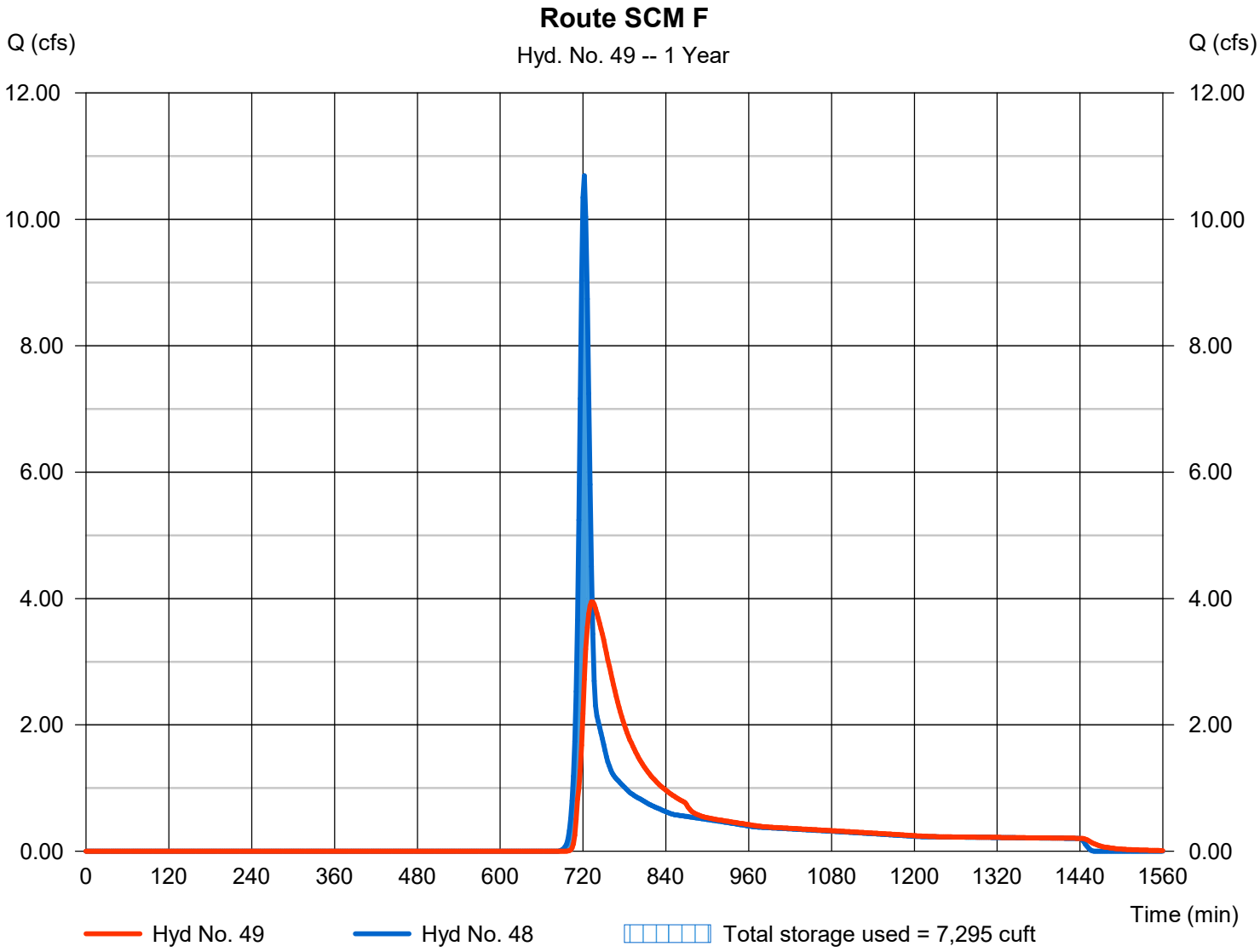
Hydrograph Report

Hyd. No. 49

Route SCM F

Hydrograph type	=	Reservoir	Peak discharge	=	3.948 cfs
Storm frequency	=	1 yrs	Time to peak	=	734 min
Time interval	=	2 min	Hyd. volume	=	29,574 cuft
Inflow hyd. No.	=	48 - Total to SCM F	Max. Elevation	=	388.90 ft
Reservoir name	=	SCM F	Max. Storage	=	7,295 cuft

Storage Indication method used.



Pond Report

Pond No. 4 - SCM F

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 387.50 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	387.50	20	0	0
0.50	388.00	4,640	827	827
1.50	389.00	10,160	7,221	8,049
2.50	390.00	11,540	10,842	18,890
3.50	391.00	13,010	12,266	31,157
4.50	392.00	14,550	13,771	44,928
5.50	393.00	16,140	15,337	60,265

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 18.00	15.00	0.00	0.00
Span (in)	= 18.00	15.00	0.00	0.00
No. Barrels	= 1	1	0	0
Invert El. (ft)	= 387.50	387.50	0.00	0.00
Length (ft)	= 46.00	0.50	0.00	0.00
Slope (%)	= 1.00	0.01	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 12.00	12.00	Inactive	0.00
Crest El. (ft)	= 389.50	391.00	389.50	0.00
Weir Coeff.	= 3.33	2.60	3.33	3.33
Weir Type	= 1	Broad	Rect	---
Multi-Stage	= Yes	No	Yes	No

Exfil.(in/hr) = 0.000 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	387.50	0.00	0.00	---	---	0.00	0.00	0.00	---	---	---	0.000
0.05	83	387.55	0.01 ic	0.01 ic	---	---	0.00	0.00	0.00	---	---	---	0.009
0.10	165	387.60	0.04 ic	0.04 ic	---	---	0.00	0.00	0.00	---	---	---	0.035
0.15	248	387.65	0.08 ic	0.08 ic	---	---	0.00	0.00	0.00	---	---	---	0.078
0.20	331	387.70	0.13 ic	0.13 ic	---	---	0.00	0.00	0.00	---	---	---	0.132
0.25	414	387.75	0.22 ic	0.21 ic	---	---	0.00	0.00	0.00	---	---	---	0.205
0.30	496	387.80	0.29 ic	0.29 ic	---	---	0.00	0.00	0.00	---	---	---	0.293
0.35	579	387.85	0.39 ic	0.39 ic	---	---	0.00	0.00	0.00	---	---	---	0.386
0.40	662	387.90	0.52 ic	0.50 ic	---	---	0.00	0.00	0.00	---	---	---	0.498
0.45	745	387.95	0.62 ic	0.62 ic	---	---	0.00	0.00	0.00	---	---	---	0.622
0.50	827	388.00	0.77 ic	0.77 ic	---	---	0.00	0.00	0.00	---	---	---	0.767
0.60	1,549	388.10	1.07 ic	1.07 ic	---	---	0.00	0.00	0.00	---	---	---	1.069
0.70	2,272	388.20	1.42 ic	1.41 ic	---	---	0.00	0.00	0.00	---	---	---	1.414
0.80	2,994	388.30	1.79 ic	1.78 ic	---	---	0.00	0.00	0.00	---	---	---	1.785
0.90	3,716	388.40	2.18 ic	2.18 ic	---	---	0.00	0.00	0.00	---	---	---	2.178
1.00	4,438	388.50	2.59 ic	2.59 ic	---	---	0.00	0.00	0.00	---	---	---	2.587
1.10	5,160	388.60	2.97 ic	2.97 ic	---	---	0.00	0.00	0.00	---	---	---	2.974
1.20	5,882	388.70	3.41 ic	3.37 ic	---	---	0.00	0.00	0.00	---	---	---	3.366
1.30	6,604	388.80	3.72 ic	3.67 ic	---	---	0.00	0.00	0.00	---	---	---	3.672
1.40	7,327	388.90	3.96 ic	3.96 ic	---	---	0.00	0.00	0.00	---	---	---	3.961
1.50	8,049	389.00	4.21 ic	4.21 ic	---	---	0.00	0.00	0.00	---	---	---	4.210
1.60	9,133	389.10	4.50 ic	4.48 ic	---	---	0.00	0.00	0.00	---	---	---	4.475
1.70	10,217	389.20	4.73 ic	4.72 ic	---	---	0.00	0.00	0.00	---	---	---	4.725
1.80	11,301	389.30	4.96 ic	4.96 ic	---	---	0.00	0.00	0.00	---	---	---	4.956
1.90	12,385	389.40	5.18 ic	5.18 ic	---	---	0.00	0.00	0.00	---	---	---	5.180
2.00	13,469	389.50	5.43 ic	5.41 ic	---	---	0.00	0.00	0.00	---	---	---	5.409
2.10	14,554	389.60	6.29 oc	5.02 ic	---	---	1.26	0.00	0.00	---	---	---	6.288
2.20	15,638	389.70	7.66 oc	4.09 ic	---	---	3.58	0.00	0.00	---	---	---	7.664
2.30	16,722	389.80	9.34 oc	2.95 ic	---	---	6.39 s	0.00	0.00	---	---	---	9.336
2.40	17,806	389.90	10.19 oc	2.33 ic	---	---	7.87 s	0.00	0.00	---	---	---	10.19
2.50	18,890	390.00	10.81 oc	1.92 ic	---	---	8.88 s	0.00	0.00	---	---	---	10.81
2.60	20,117	390.10	11.31 oc	1.63 ic	---	---	9.68 s	0.00	0.00	---	---	---	11.31
2.70	21,344	390.20	11.71 ic	1.40 ic	---	---	10.30 s	0.00	0.00	---	---	---	11.70
2.80	22,570	390.30	12.05 ic	1.23 ic	---	---	10.82 s	0.00	0.00	---	---	---	12.04
2.90	23,797	390.40	12.38 ic	1.09 ic	---	---	11.28 s	0.00	0.00	---	---	---	12.37
3.00	25,023	390.50	12.68 ic	0.98 ic	---	---	11.69 s	0.00	0.00	---	---	---	12.67

Continues on next page...

SCM F

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
3.10	26,250	390.60	12.98 ic	0.89 ic	---	---	12.07 s	0.00	0.00	---	---	---	12.96
3.20	27,477	390.70	13.27 ic	0.81 ic	---	---	12.42 s	0.00	0.00	---	---	---	13.24
3.30	28,703	390.80	13.54 ic	0.75 ic	---	---	12.78 s	0.00	0.00	---	---	---	13.53
3.40	29,930	390.90	13.81 ic	0.70 ic	---	---	13.10 s	0.00	0.00	---	---	---	13.79
3.50	31,157	391.00	14.08 ic	0.65 ic	---	---	13.42 s	0.00	0.00	---	---	---	14.07
3.60	32,534	391.10	14.34 ic	0.61 ic	---	---	13.70 s	0.99	0.00	---	---	---	15.30
3.70	33,911	391.20	14.59 ic	0.57 ic	---	---	14.00 s	2.79	0.00	---	---	---	17.36
3.80	35,288	391.30	14.84 ic	0.54 ic	---	---	14.29 s	5.13	0.00	---	---	---	19.96
3.90	36,665	391.40	15.08 ic	0.51 ic	---	---	14.52 s	7.89	0.00	---	---	---	22.93
4.00	38,042	391.50	15.32 ic	0.49 ic	---	---	14.80 s	11.03	0.00	---	---	---	26.32
4.10	39,420	391.60	15.56 ic	0.47 ic	---	---	15.09 s	14.50	0.00	---	---	---	30.05
4.20	40,797	391.70	15.79 ic	0.44 ic	---	---	15.27 s	18.27	0.00	---	---	---	33.99
4.30	42,174	391.80	16.02 ic	0.42 ic	---	---	15.48 s	22.33	0.00	---	---	---	38.23
4.40	43,551	391.90	16.24 ic	0.40 ic	---	---	15.72 s	26.64	0.00	---	---	---	42.76
4.50	44,928	392.00	16.47 ic	0.39 ic	---	---	15.95 s	31.20	0.00	---	---	---	47.54
4.60	46,462	392.10	16.68 ic	0.37 ic	---	---	16.21 s	36.00	0.00	---	---	---	52.58
4.70	47,995	392.20	16.90 ic	0.36 ic	---	---	16.40 s	41.01	0.00	---	---	---	57.77
4.80	49,529	392.30	17.11 ic	0.35 ic	---	---	16.72 s	46.25	0.00	---	---	---	63.31
4.90	51,063	392.40	17.32 ic	0.33 ic	---	---	16.80 s	51.68	0.00	---	---	---	68.81
5.00	52,596	392.50	17.53 ic	0.32 ic	---	---	17.02 s	57.32	0.00	---	---	---	74.66
5.10	54,130	392.60	17.74 ic	0.31 ic	---	---	17.19 s	63.15	0.00	---	---	---	80.65
5.20	55,664	392.70	17.94 ic	0.31 ic	---	---	17.55 s	69.16	0.00	---	---	---	87.01
5.30	57,197	392.80	18.14 ic	0.30 ic	---	---	17.63 s	75.35	0.00	---	---	---	93.28
5.40	58,731	392.90	18.34 ic	0.29 ic	---	---	17.94 s	81.72	0.00	---	---	---	99.95
5.50	60,265	393.00	18.54 ic	0.28 ic	---	---	18.05 s	88.25	0.00	---	---	---	106.57

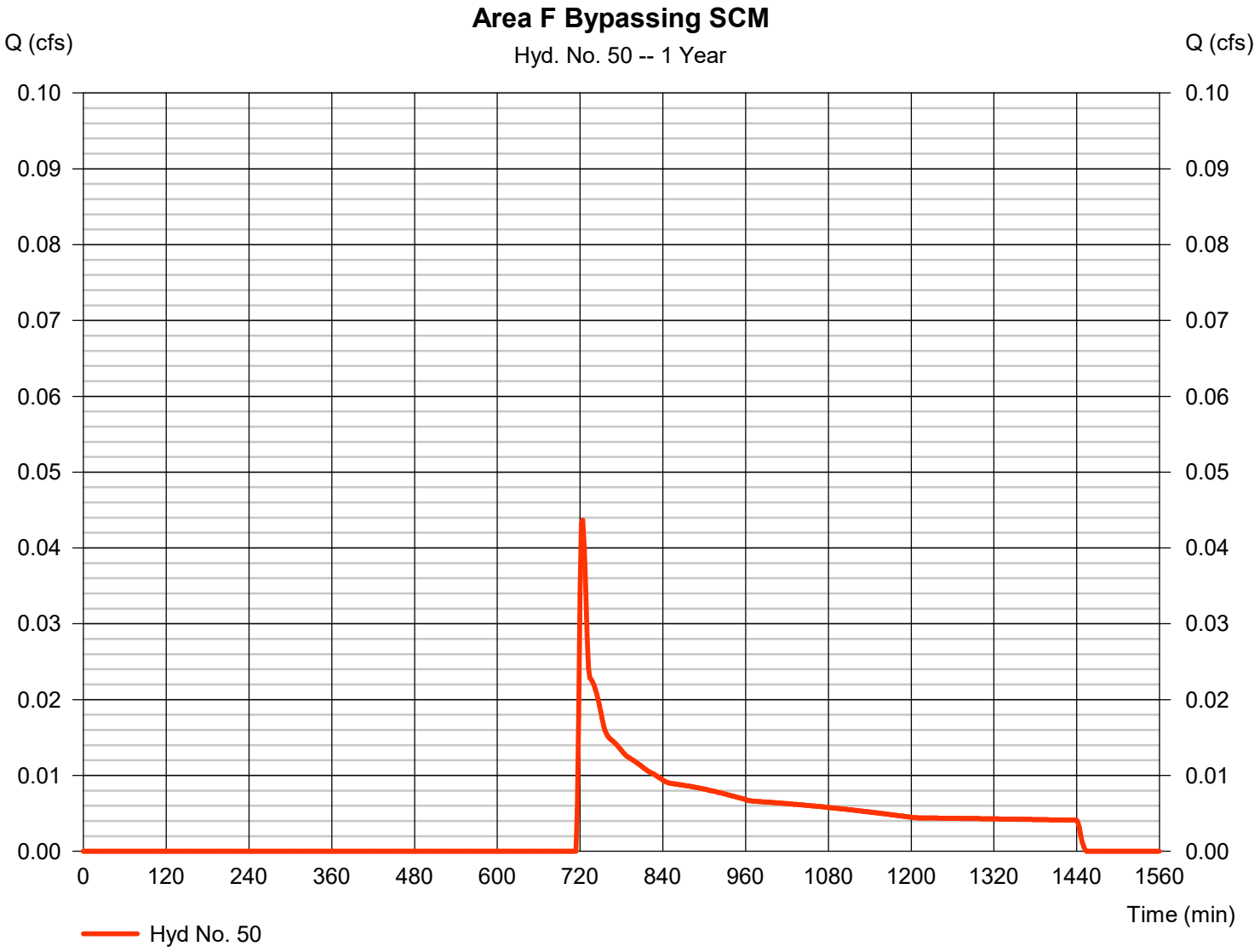
...End

Hydrograph Report

Hyd. No. 50

Area F Bypassing SCM

Hydrograph type	= SCS Runoff	Peak discharge	= 0.044 cfs
Storm frequency	= 1 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 325 cuft
Drainage area	= 0.480 ac	Curve number	= 55.9
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 8.60 min
Total precip.	= 2.89 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



TR55 Tc Worksheet

Hyd. No. 50

Area F Bypassing SCM

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.410		0.011		0.011		
Flow length (ft)	= 50.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.48		0.00		0.00		
Land slope (%)	= 6.00		0.00		0.00		
Travel Time (min)	**= 7.77**	**+**	**0.00**	**+**	**0.00**	**=**	**7.77**
Shallow Concentrated Flow							
Flow length (ft)	= 215.00		0.00		0.00		
Watercourse slope (%)	= 7.00		0.00		0.00		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	=4.27		0.00		0.00		
Travel Time (min)	**= 0.84**	**+**	**0.00**	**+**	**0.00**	**=**	**0.84**
Channel Flow							
X sectional flow area (sqft)	= 0.00		0.00		0.00		
Wetted perimeter (ft)	= 0.00		0.00		0.00		
Channel slope (%)	= 0.00		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	=0.00						
			0.00				
					0.00		
Flow length (ft)	({0})0.0		0.0		0.0		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

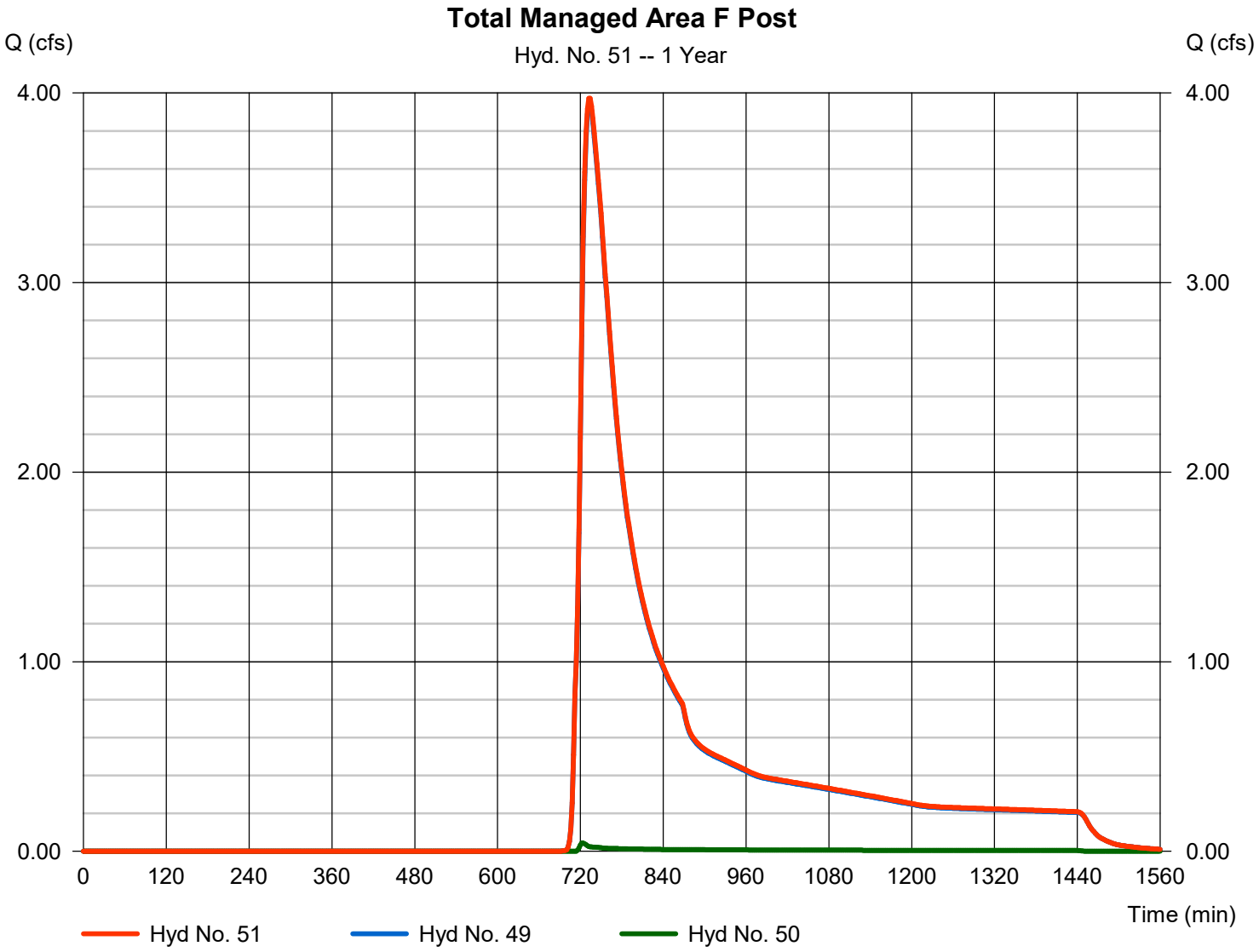
Total Travel Time, Tc ..... 8.60 min

Hydrograph Report

Hyd. No. 51

Total Managed Area F Post

Hydrograph type	= Combine	Peak discharge	= 3.971 cfs
Storm frequency	= 1 yrs	Time to peak	= 732 min
Time interval	= 2 min	Hyd. volume	= 29,899 cuft
Inflow hyds.	= 49, 50	Contrib. drain. area	= 0.480 ac

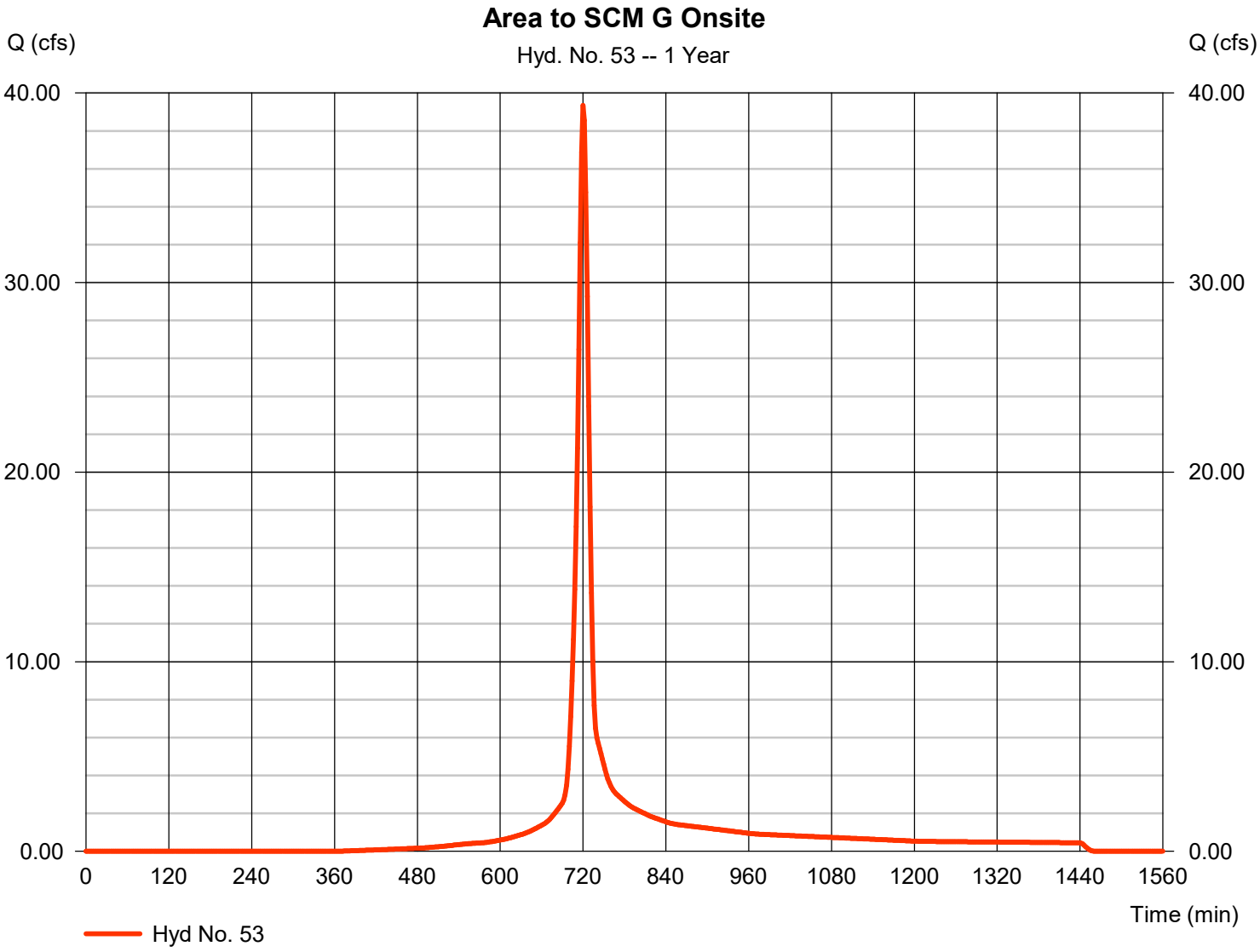


Hydrograph Report

Hyd. No. 53

Area to SCM G Onsite

Hydrograph type	= SCS Runoff	Peak discharge	= 39.35 cfs
Storm frequency	= 1 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 102,926 cuft
Drainage area	= 14.730 ac	Curve number	= 89.8
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 10.40 min
Total precip.	= 2.89 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

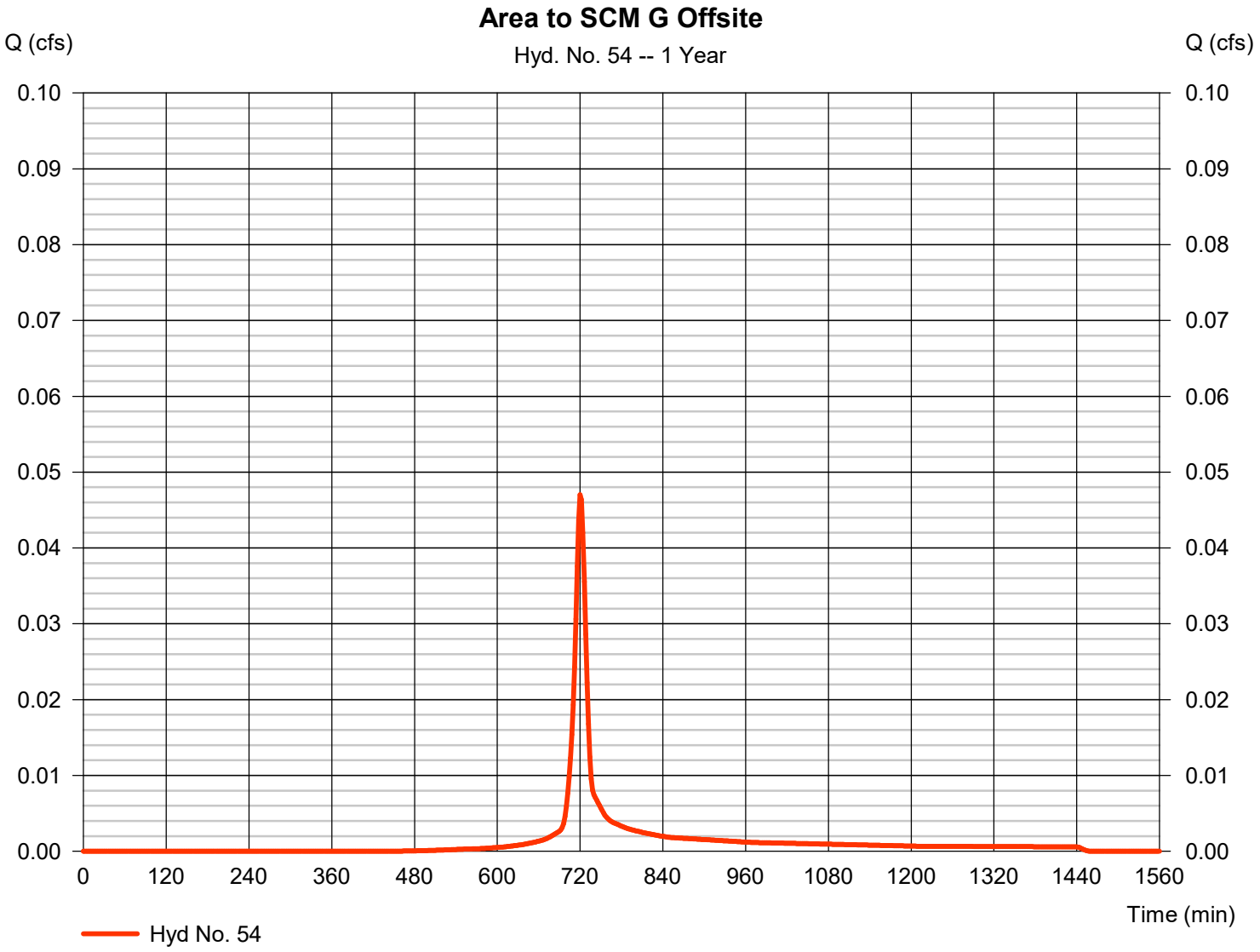


Hydrograph Report

Hyd. No. 54

Area to SCM G Offsite

Hydrograph type	= SCS Runoff	Peak discharge	= 0.047 cfs
Storm frequency	= 1 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 122 cuft
Drainage area	= 0.020 ac	Curve number	= 86.8
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 10.40 min
Total precip.	= 2.89 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

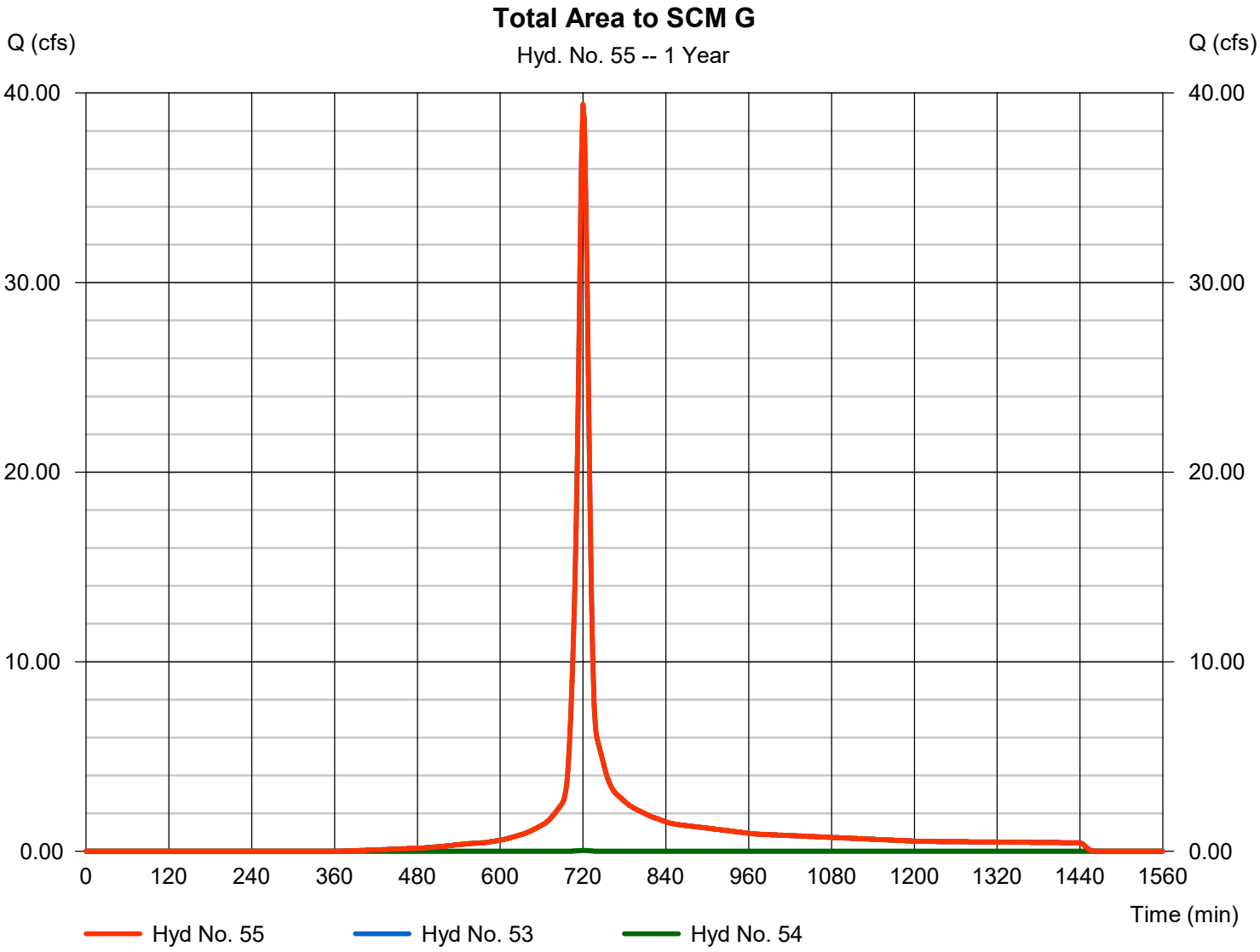


Hydrograph Report

Hyd. No. 55

Total Area to SCM G

Hydrograph type	= Combine	Peak discharge	= 39.40 cfs
Storm frequency	= 1 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 103,048 cuft
Inflow hyds.	= 53, 54	Contrib. drain. area	= 14.750 ac



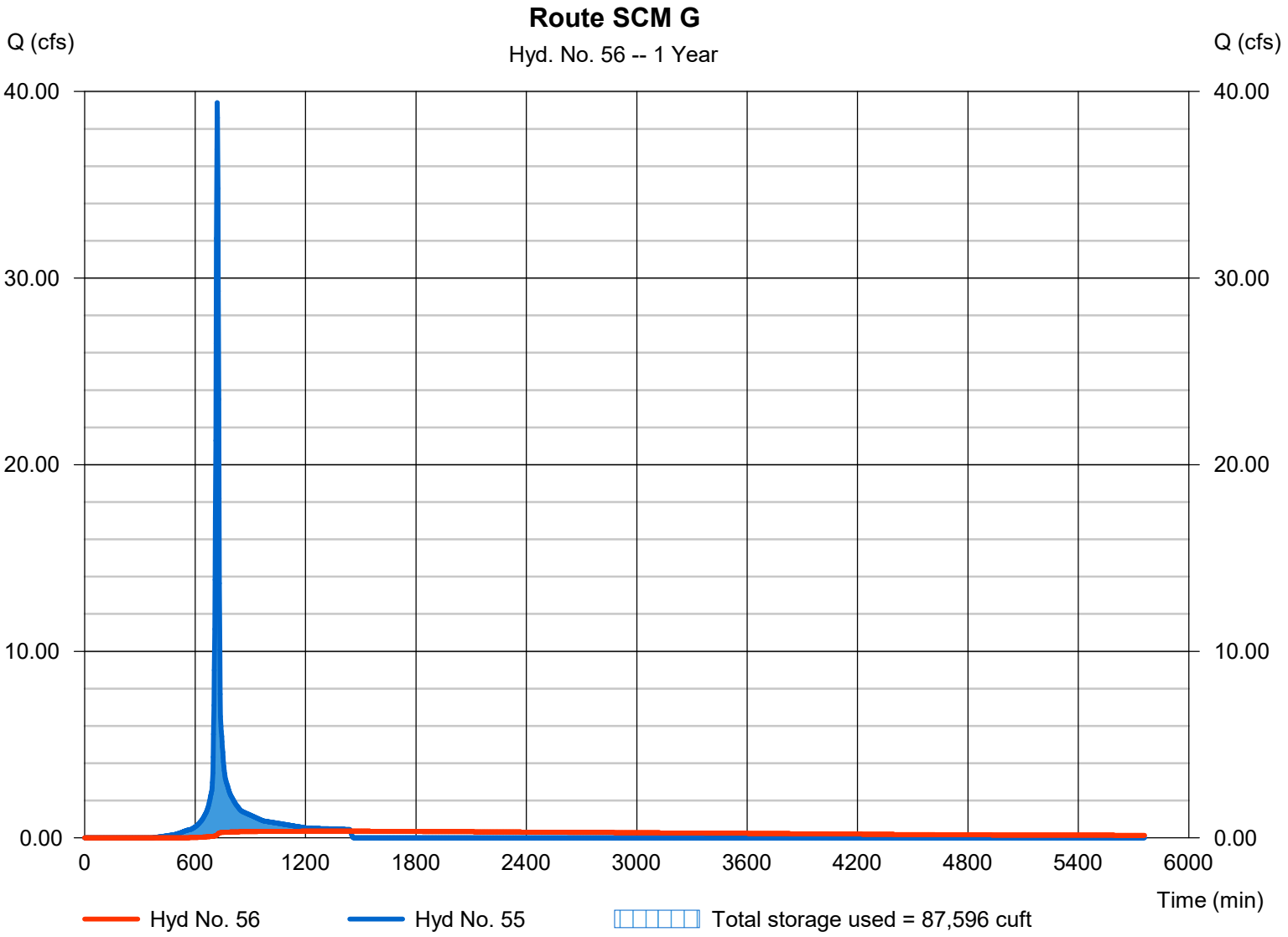
Hydrograph Report

Hyd. No. 56

Route SCM G

Hydrograph type	=	Reservoir	Peak discharge	=	0.360 cfs
Storm frequency	=	1 yrs	Time to peak	=	1444 min
Time interval	=	2 min	Hyd. volume	=	77,110 cuft
Inflow hyd. No.	=	55 - Total Area to SCM G	Max. Elevation	=	388.31 ft
Reservoir name	=	SCM G	Max. Storage	=	87,596 cuft

Storage Indication method used.



Pond No. 5 - SCM G

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 386.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	386.00	24,430	0	0
0.50	386.50	36,650	15,166	15,166
1.00	387.00	38,400	18,759	33,925
2.00	388.00	41,960	40,163	74,087
3.00	389.00	45,580	43,753	117,841
4.00	390.00	49,250	47,398	165,239
5.00	391.00	52,970	51,094	216,333
6.00	392.00	60,600	56,737	273,069

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 18.00	2.50	2.00	0.00
Span (in)	= 18.00	2.50	2.00	0.00
No. Barrels	= 1	1	1	0
Invert El. (ft)	= 383.00	386.00	387.00	0.00
Length (ft)	= 140.00	0.50	0.50	0.00
Slope (%)	= 0.50	0.01	0.01	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	Yes	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 15.00	1.00	8.00	0.00
Crest El. (ft)	= 390.50	389.50	391.50	0.00
Weir Coeff.	= 3.33	3.33	2.60	3.33
Weir Type	= 1	Rect	Broad	---
Multi-Stage	= Yes	Yes	No	No

Exfil.(in/hr) = 0.000 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	386.00	0.00	0.00	0.00	---	0.00	0.00	0.00	---	---	---	0.000
0.05	1,517	386.05	10.48 oc	0.00 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.005
0.10	3,033	386.10	10.48 oc	0.02 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.018
0.15	4,550	386.15	10.48 oc	0.04 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.035
0.20	6,066	386.20	10.48 oc	0.05 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.051
0.25	7,583	386.25	10.48 oc	0.06 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.063
0.30	9,099	386.30	10.48 oc	0.07 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.073
0.35	10,616	386.35	10.48 oc	0.08 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.081
0.40	12,132	386.40	10.48 oc	0.09 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.089
0.45	13,649	386.45	10.48 oc	0.10 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.096
0.50	15,166	386.50	10.48 oc	0.10 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.103
0.55	17,041	386.55	10.48 oc	0.11 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.110
0.60	18,917	386.60	10.48 oc	0.12 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.116
0.65	20,793	386.65	10.48 oc	0.12 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.121
0.70	22,669	386.70	10.48 oc	0.13 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.127
0.75	24,545	386.75	10.48 oc	0.13 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.132
0.80	26,421	386.80	10.48 oc	0.14 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.137
0.85	28,297	386.85	10.48 oc	0.14 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.142
0.90	30,173	386.90	10.48 oc	0.15 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.146
0.95	32,049	386.95	10.48 oc	0.15 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.151
1.00	33,925	387.00	10.48 oc	0.16 ic	0.00	---	0.00	0.00	0.00	---	---	---	0.155
1.10	37,941	387.10	10.48 oc	0.16 ic	0.01 ic	---	0.00	0.00	0.00	---	---	---	0.179
1.20	41,957	387.20	10.48 oc	0.17 ic	0.04 ic	---	0.00	0.00	0.00	---	---	---	0.208
1.30	45,973	387.30	10.48 oc	0.18 ic	0.05 ic	---	0.00	0.00	0.00	---	---	---	0.228
1.40	49,990	387.40	10.48 oc	0.19 ic	0.06 ic	---	0.00	0.00	0.00	---	---	---	0.246
1.50	54,006	387.50	10.48 oc	0.19 ic	0.07 ic	---	0.00	0.00	0.00	---	---	---	0.262
1.60	58,022	387.60	10.48 oc	0.20 ic	0.08 ic	---	0.00	0.00	0.00	---	---	---	0.276
1.70	62,039	387.70	10.48 oc	0.21 ic	0.08 ic	---	0.00	0.00	0.00	---	---	---	0.290
1.80	66,055	387.80	10.48 oc	0.21 ic	0.09 ic	---	0.00	0.00	0.00	---	---	---	0.303
1.90	70,071	387.90	10.48 oc	0.22 ic	0.09 ic	---	0.00	0.00	0.00	---	---	---	0.315
2.00	74,087	388.00	10.48 oc	0.23 ic	0.10 ic	---	0.00	0.00	0.00	---	---	---	0.327
2.10	78,463	388.10	10.48 oc	0.23 ic	0.11 ic	---	0.00	0.00	0.00	---	---	---	0.338
2.20	82,838	388.20	10.48 oc	0.24 ic	0.11 ic	---	0.00	0.00	0.00	---	---	---	0.349
2.30	87,213	388.30	10.48 oc	0.24 ic	0.12 ic	---	0.00	0.00	0.00	---	---	---	0.359
2.40	91,589	388.40	10.48 oc	0.25 ic	0.12 ic	---	0.00	0.00	0.00	---	---	---	0.369

Continues on next page...

SCM G

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
2.50	95,964	388.50	10.48 oc	0.25 ic	0.13 ic	---	0.00	0.00	0.00	---	---	---	0.379
2.60	100,339	388.60	10.48 oc	0.26 ic	0.13 ic	---	0.00	0.00	0.00	---	---	---	0.389
2.70	104,715	388.70	10.48 oc	0.26 ic	0.13 ic	---	0.00	0.00	0.00	---	---	---	0.398
2.80	109,090	388.80	10.48 oc	0.27 ic	0.14 ic	---	0.00	0.00	0.00	---	---	---	0.407
2.90	113,465	388.90	10.48 oc	0.27 ic	0.14 ic	---	0.00	0.00	0.00	---	---	---	0.416
3.00	117,841	389.00	10.48 oc	0.28 ic	0.15 ic	---	0.00	0.00	0.00	---	---	---	0.425
3.10	122,580	389.10	10.48 oc	0.28 ic	0.15 ic	---	0.00	0.00	0.00	---	---	---	0.433
3.20	127,320	389.20	10.48 oc	0.29 ic	0.15 ic	---	0.00	0.00	0.00	---	---	---	0.442
3.30	132,060	389.30	10.48 oc	0.29 ic	0.16 ic	---	0.00	0.00	0.00	---	---	---	0.450
3.40	136,800	389.40	10.48 oc	0.30 ic	0.16 ic	---	0.00	0.00	0.00	---	---	---	0.458
3.50	141,540	389.50	10.48 oc	0.30 ic	0.16 ic	---	0.00	0.00	0.00	---	---	---	0.466
3.60	146,280	389.60	10.48 oc	0.31 ic	0.17 ic	---	0.00	0.11	0.00	---	---	---	0.579
3.70	151,019	389.70	10.48 oc	0.31 ic	0.17 ic	---	0.00	0.30	0.00	---	---	---	0.779
3.80	155,759	389.80	10.48 oc	0.32 ic	0.17 ic	---	0.00	0.55	0.00	---	---	---	1.036
3.90	160,499	389.90	10.48 oc	0.32 ic	0.18 ic	---	0.00	0.84	0.00	---	---	---	1.339
4.00	165,239	390.00	10.48 oc	0.32 ic	0.18 ic	---	0.00	1.18	0.00	---	---	---	1.681
4.10	170,348	390.10	10.48 oc	0.33 ic	0.18 ic	---	0.00	1.55	0.00	---	---	---	2.058
4.20	175,458	390.20	10.48 oc	0.33 ic	0.19 ic	---	0.00	1.95	0.00	---	---	---	2.468
4.30	180,567	390.30	10.48 oc	0.34 ic	0.19 ic	---	0.00	2.38	0.00	---	---	---	2.907
4.40	185,676	390.40	10.48 oc	0.34 ic	0.19 ic	---	0.00	2.84	0.00	---	---	---	3.375
4.50	190,786	390.50	10.48 oc	0.34 ic	0.19 ic	---	0.00	3.33	0.00	---	---	---	3.868
4.60	195,895	390.60	10.48 oc	0.35 ic	0.20 ic	---	1.58	3.84	0.00	---	---	---	5.966
4.70	201,004	390.70	10.48 oc	0.35 ic	0.20 ic	---	4.47	4.38	0.00	---	---	---	9.397
4.80	206,114	390.80	13.63 oc	0.30 ic	0.19 ic	---	8.21	4.94	0.00	---	---	---	13.63
4.90	211,223	390.90	17.73 oc	0.15 ic	0.09 ic	---	12.64	4.85 s	0.00	---	---	---	17.73
5.00	216,333	391.00	18.62 oc	0.08 ic	0.05 ic	---	14.95 s	3.53 s	0.00	---	---	---	18.62
5.10	222,006	391.10	18.88 oc	0.06 ic	0.04 ic	---	15.62 s	3.16 s	0.00	---	---	---	18.88
5.20	227,680	391.20	19.08 oc	0.05 ic	0.03 ic	---	16.08 s	2.91 s	0.00	---	---	---	19.08
5.30	233,354	391.30	19.25 oc	0.04 ic	0.03 ic	---	16.45 s	2.72 s	0.00	---	---	---	19.25
5.40	239,027	391.40	19.40 oc	0.04 ic	0.02 ic	---	16.76 s	2.58 s	0.00	---	---	---	19.40
5.50	244,701	391.50	19.55 oc	0.03 ic	0.02 ic	---	17.02 s	2.46 s	0.00	---	---	---	19.54
5.60	250,375	391.60	19.69 oc	0.03 ic	0.02 ic	---	17.25 s	2.37 s	0.66	---	---	---	20.33
5.70	256,048	391.70	19.82 oc	0.03 ic	0.02 ic	---	17.47 s	2.29 s	1.86	---	---	---	21.67
5.80	261,722	391.80	19.95 oc	0.02 ic	0.02 ic	---	17.68 s	2.23 s	3.42	---	---	---	23.37
5.90	267,395	391.90	20.08 oc	0.02 ic	0.01 ic	---	17.84 s	2.17 s	5.26	---	---	---	25.31
6.00	273,069	392.00	20.21 oc	0.02 ic	0.01 ic	---	18.02 s	2.12 s	7.35	---	---	---	27.53

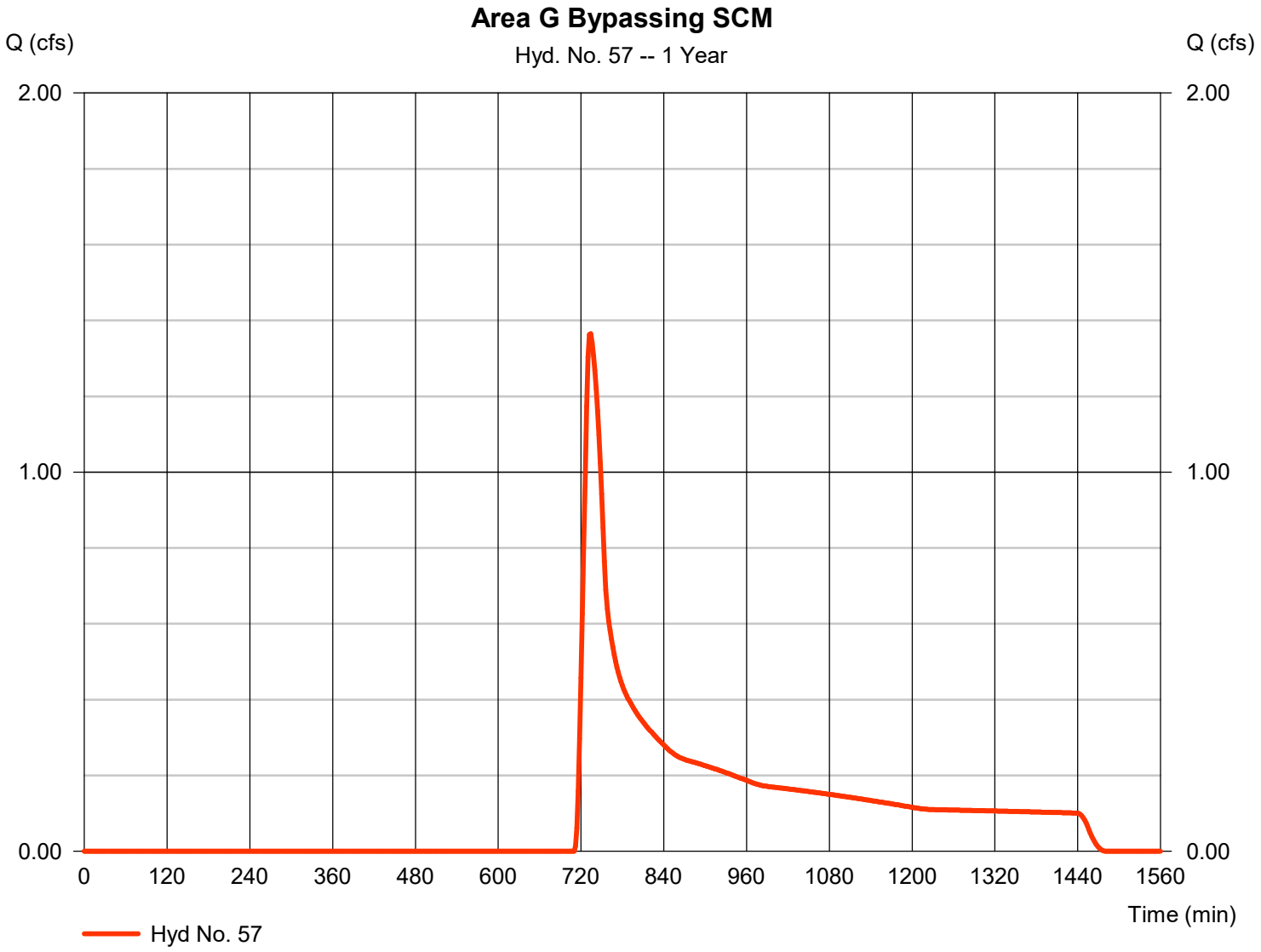
...End

Hydrograph Report

Hyd. No. 57

Area G Bypassing SCM

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.365 cfs
Storm frequency	=	1 yrs	Time to peak	=	734 min
Time interval	=	2 min	Hyd. volume	=	9,827 cuft
Drainage area	=	9.070 ac	Curve number	=	60.3
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	23.80 min
Total precip.	=	2.89 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

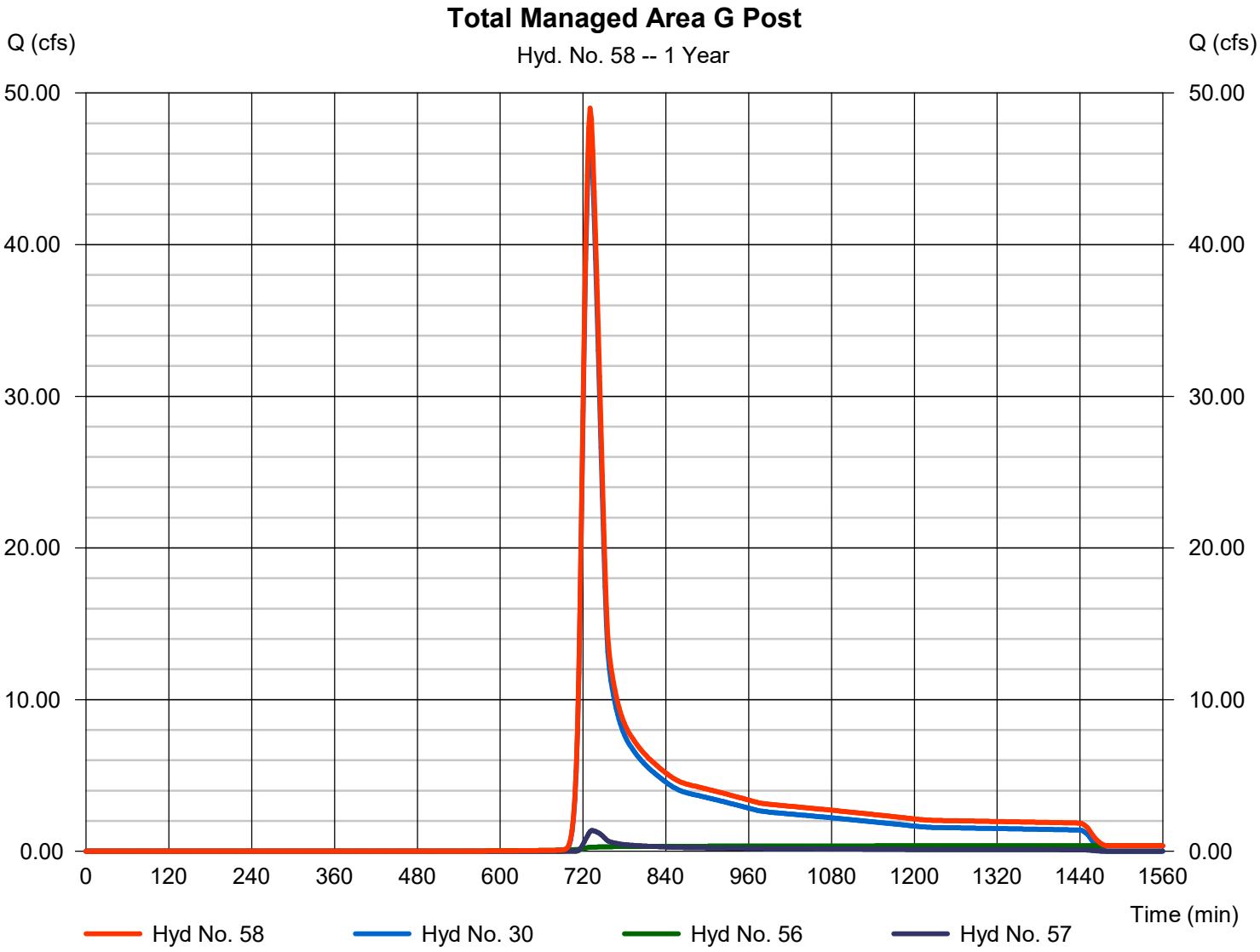


Hydrograph Report

Hyd. No. 58

Total Managed Area G Post

Hydrograph type	= Combine	Peak discharge	= 49.00 cfs
Storm frequency	= 1 yrs	Time to peak	= 730 min
Time interval	= 2 min	Hyd. volume	= 285,395 cuft
Inflow hyds.	= 30, 56, 57	Contrib. drain. area	= 85.670 ac

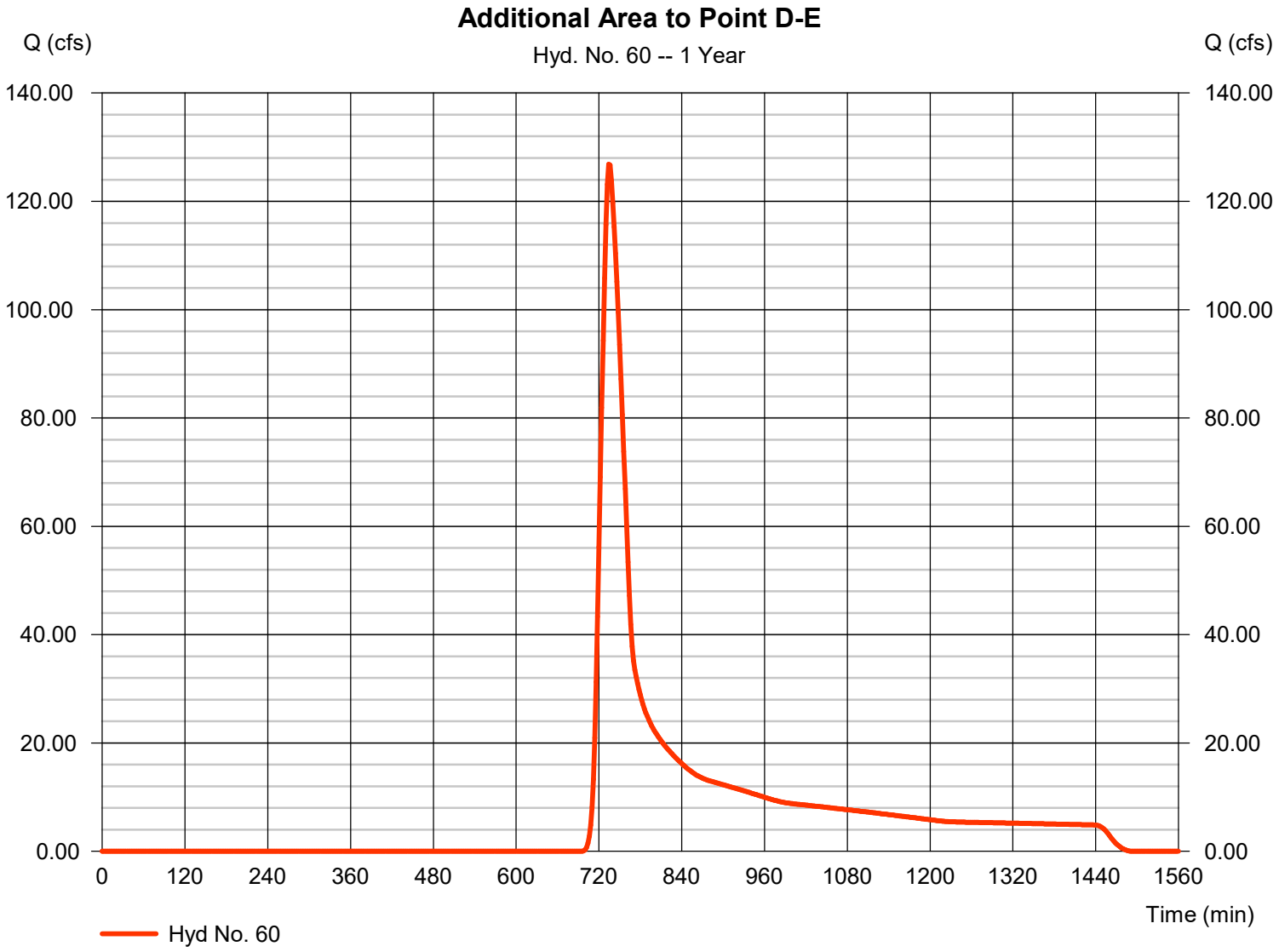


Hydrograph Report

Hyd. No. 60

Additional Area to Point D-E

Hydrograph type	=	SCS Runoff	Peak discharge	=	126.84 cfs
Storm frequency	=	1 yrs	Time to peak	=	734 min
Time interval	=	2 min	Hyd. volume	=	660,044 cuft
Drainage area	=	271.000 ac	Curve number	=	70.2
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	32.50 min
Total precip.	=	2.89 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



TR55 Tc Worksheet

Hyd. No. 60

Additional Area to Point D-E

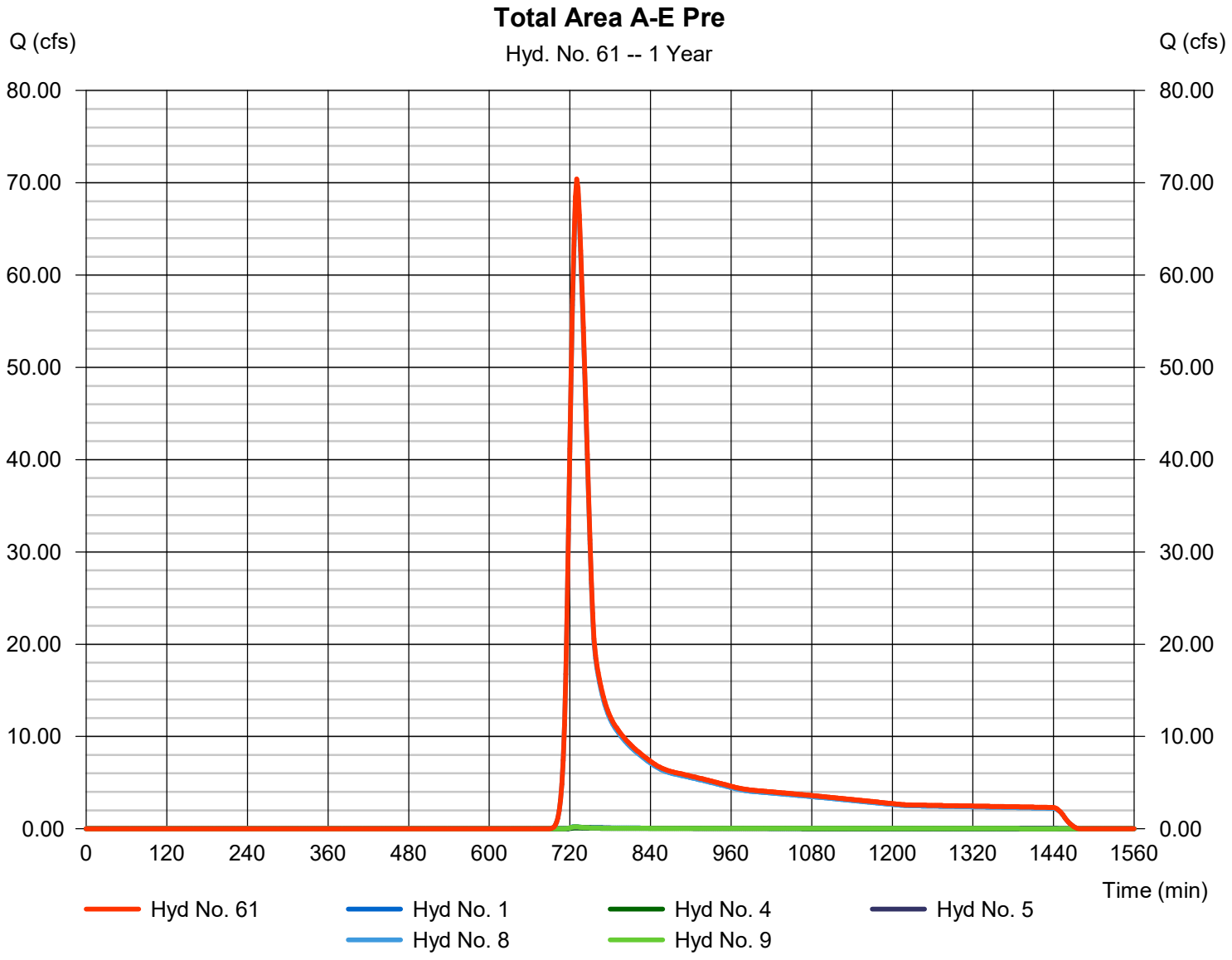
Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.400		0.011		0.011		
Flow length (ft)	= 50.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.48		0.00		0.00		
Land slope (%)	= 2.00		0.00		0.00		
Travel Time (min)	**= 11.83**	**+**	**0.00**	**+**	**0.00**	**=**	**11.83**
Shallow Concentrated Flow							
Flow length (ft)	= 1700.00		0.00		0.00		
Watercourse slope (%)	= 2.00		0.00		0.00		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	=2.28		0.00		0.00		
Travel Time (min)	**= 12.42**	**+**	**0.00**	**+**	**0.00**	**=**	**12.42**
Channel Flow							
X sectional flow area (sqft)	= 16.00		0.00		0.00		
Wetted perimeter (ft)	= 11.66		0.00		0.00		
Channel slope (%)	= 0.60		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	=9.51						
			0.00				
					0.00		
Flow length (ft)	({0})4700.0		0.0		0.0		
Travel Time (min)	**= 8.24**	**+**	**0.00**	**+**	**0.00**	**=**	**8.24**
Total Travel Time, Tc							**32.50 min**

Hydrograph Report

Hyd. No. 61

Total Area A-E Pre

Hydrograph type	= Combine	Peak discharge	= 70.41 cfs
Storm frequency	= 1 yrs	Time to peak	= 730 min
Time interval	= 2 min	Hyd. volume	= 310,377 cuft
Inflow hyds.	= 1, 4, 5, 8, 9	Contrib. drain. area	= 10.720 ac

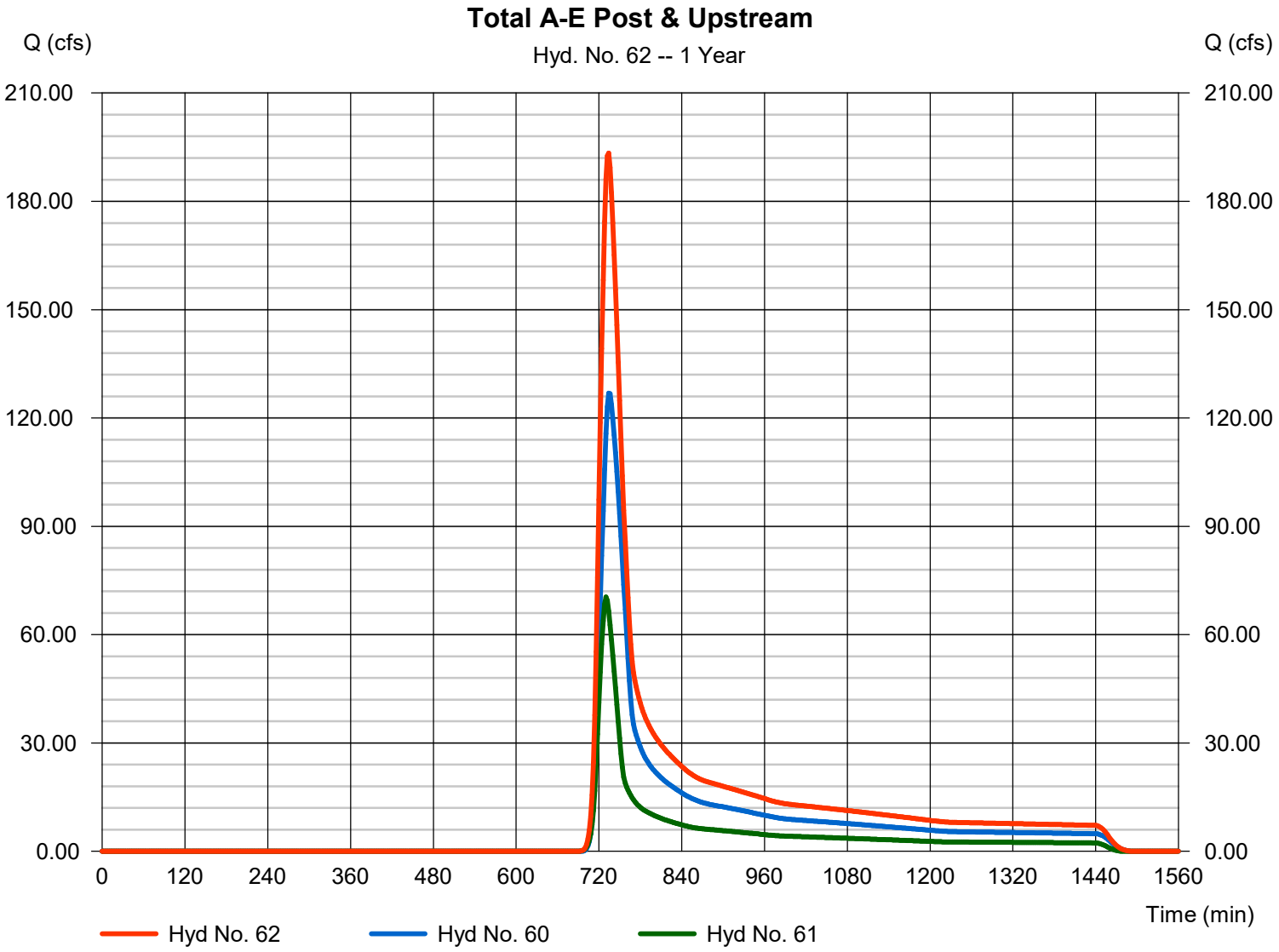


Hydrograph Report

Hyd. No. 62

Total A-E Post & Upstream

Hydrograph type	= Combine	Peak discharge	= 193.33 cfs
Storm frequency	= 1 yrs	Time to peak	= 734 min
Time interval	= 2 min	Hyd. volume	= 970,420 cuft
Inflow hyds.	= 60, 61	Contrib. drain. area	= 271.000 ac



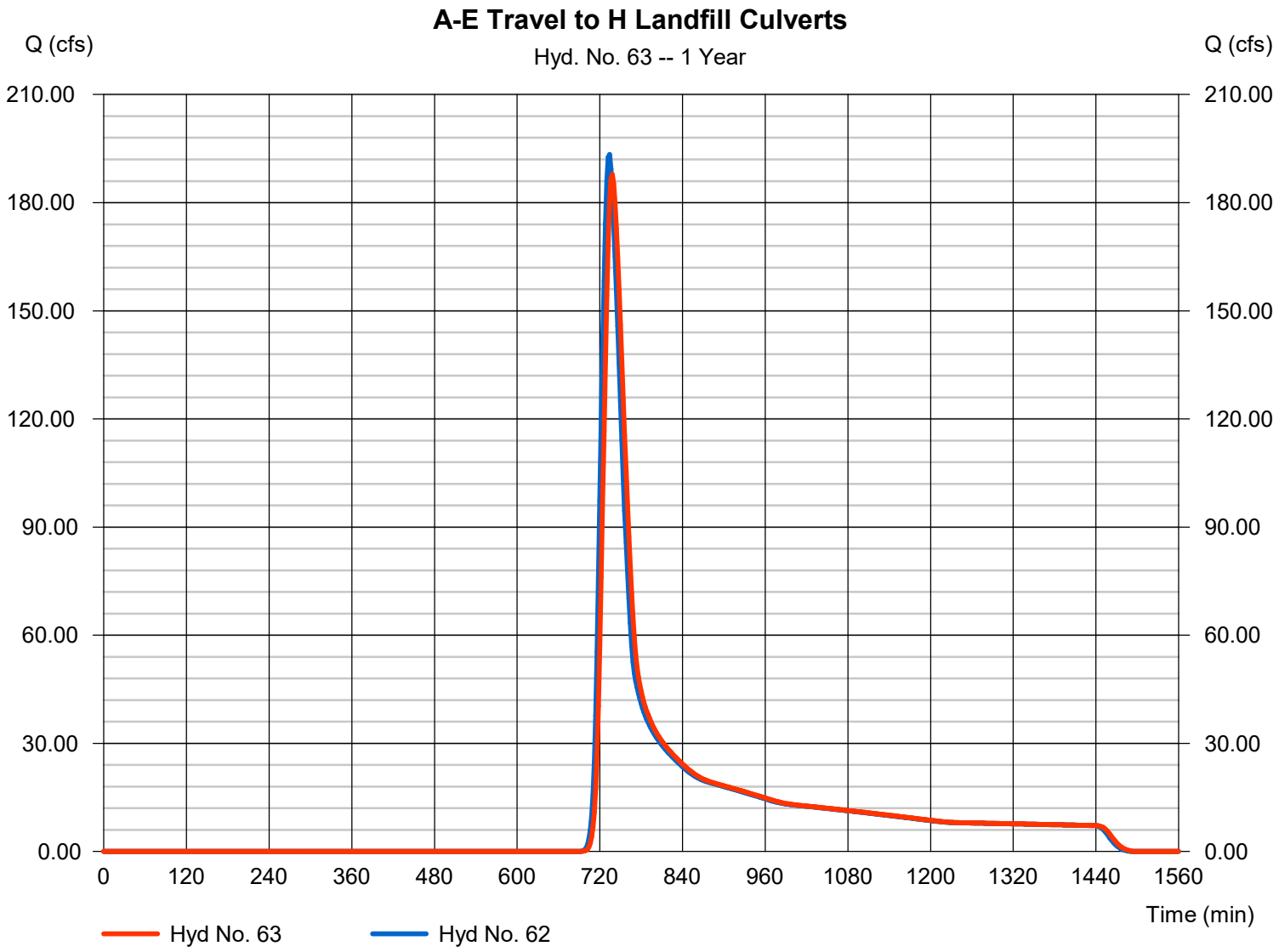
Hydrograph Report

Hyd. No. 63

A-E Travel to H Landfill Culverts

Hydrograph type	=	Reach	Peak discharge	=	187.87 cfs
Storm frequency	=	1 yrs	Time to peak	=	738 min
Time interval	=	2 min	Hyd. volume	=	970,419 cuft
Inflow hyd. No.	=	62 - Total A-E Post & Upstream	Section type	=	Trapezoidal
Reach length	=	1500.0 ft	Channel slope	=	0.7 %
Manning's n	=	0.025	Bottom width	=	6.0 ft
Side slope	=	2.0:1	Max. depth	=	2.0 ft
Rating curve x	=	1.509	Rating curve m	=	1.374
Ave. velocity	=	5.66 ft/s	Routing coeff.	=	0.4743

Modified Att-Kin routing method used.

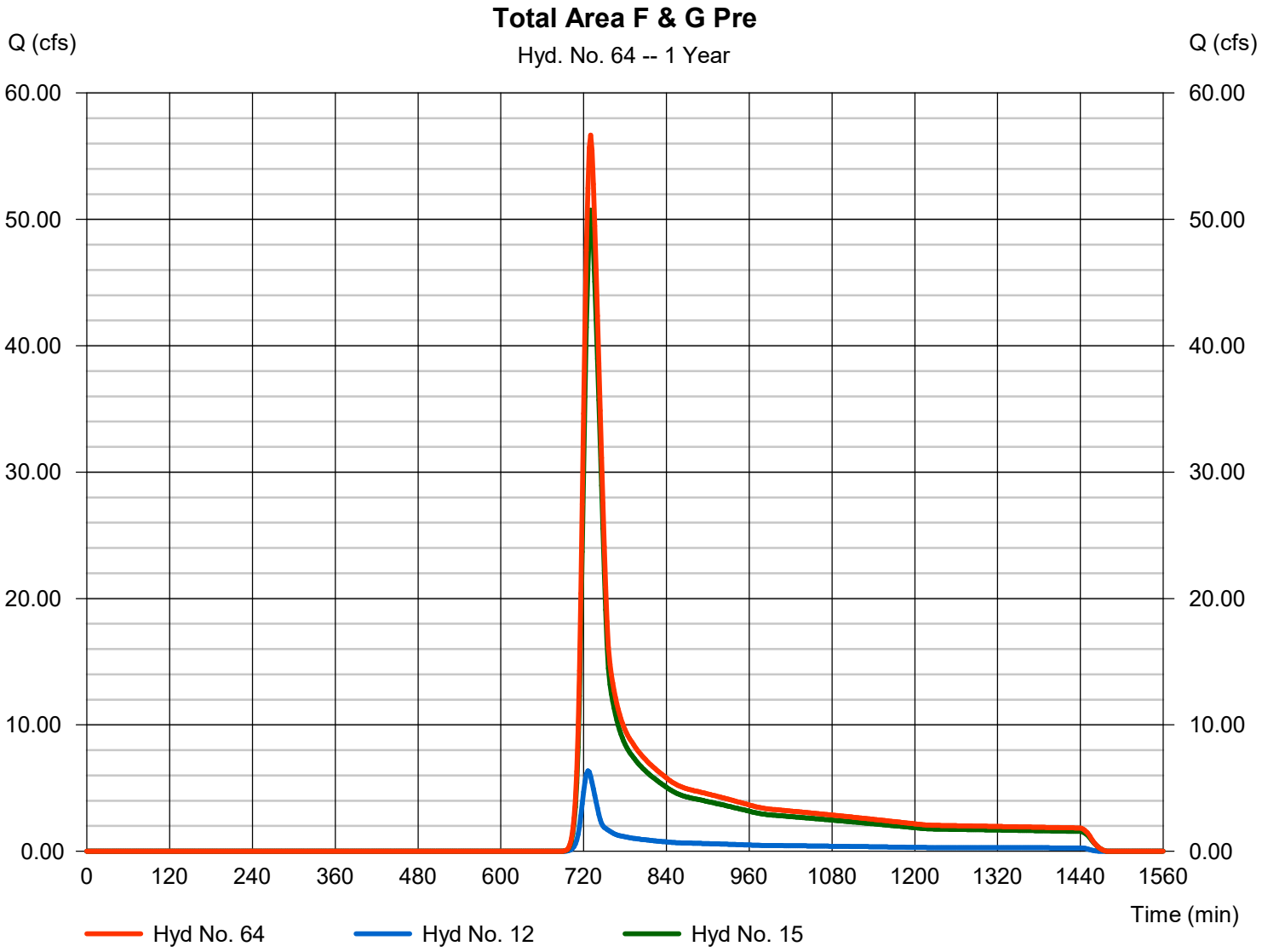


Hydrograph Report

Hyd. No. 64

Total Area F & G Pre

Hydrograph type	= Combine	Peak discharge	= 56.66 cfs
Storm frequency	= 1 yrs	Time to peak	= 730 min
Time interval	= 2 min	Hyd. volume	= 247,289 cuft
Inflow hyds.	= 12, 15	Contrib. drain. area	= 0.000 ac



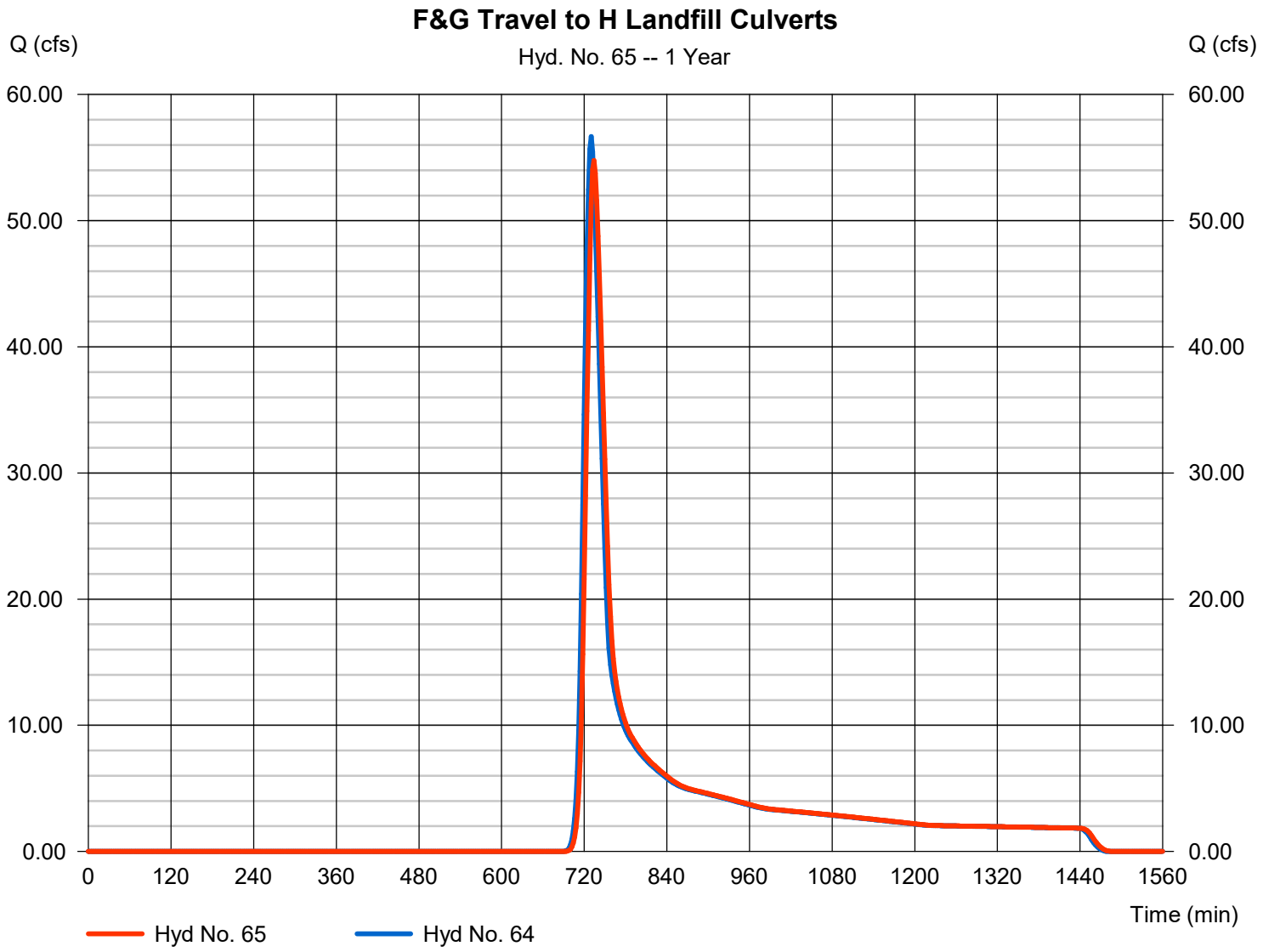
Hydrograph Report

Hyd. No. 65

F&G Travel to H Landfill Culverts

Hydrograph type	=	Reach	Peak discharge	=	54.76 cfs
Storm frequency	=	1 yrs	Time to peak	=	734 min
Time interval	=	2 min	Hyd. volume	=	247,288 cuft
Inflow hyd. No.	=	64 - Total Area F & G Pre	Section type	=	Trapezoidal
Reach length	=	1300.0 ft	Channel slope	=	1.5 %
Manning's n	=	0.025	Bottom width	=	6.0 ft
Side slope	=	2.0:1	Max. depth	=	2.0 ft
Rating curve x	=	2.209	Rating curve m	=	1.374
Ave. velocity	=	5.34 ft/s	Routing coeff.	=	0.5063

Modified Att-Kin routing method used.

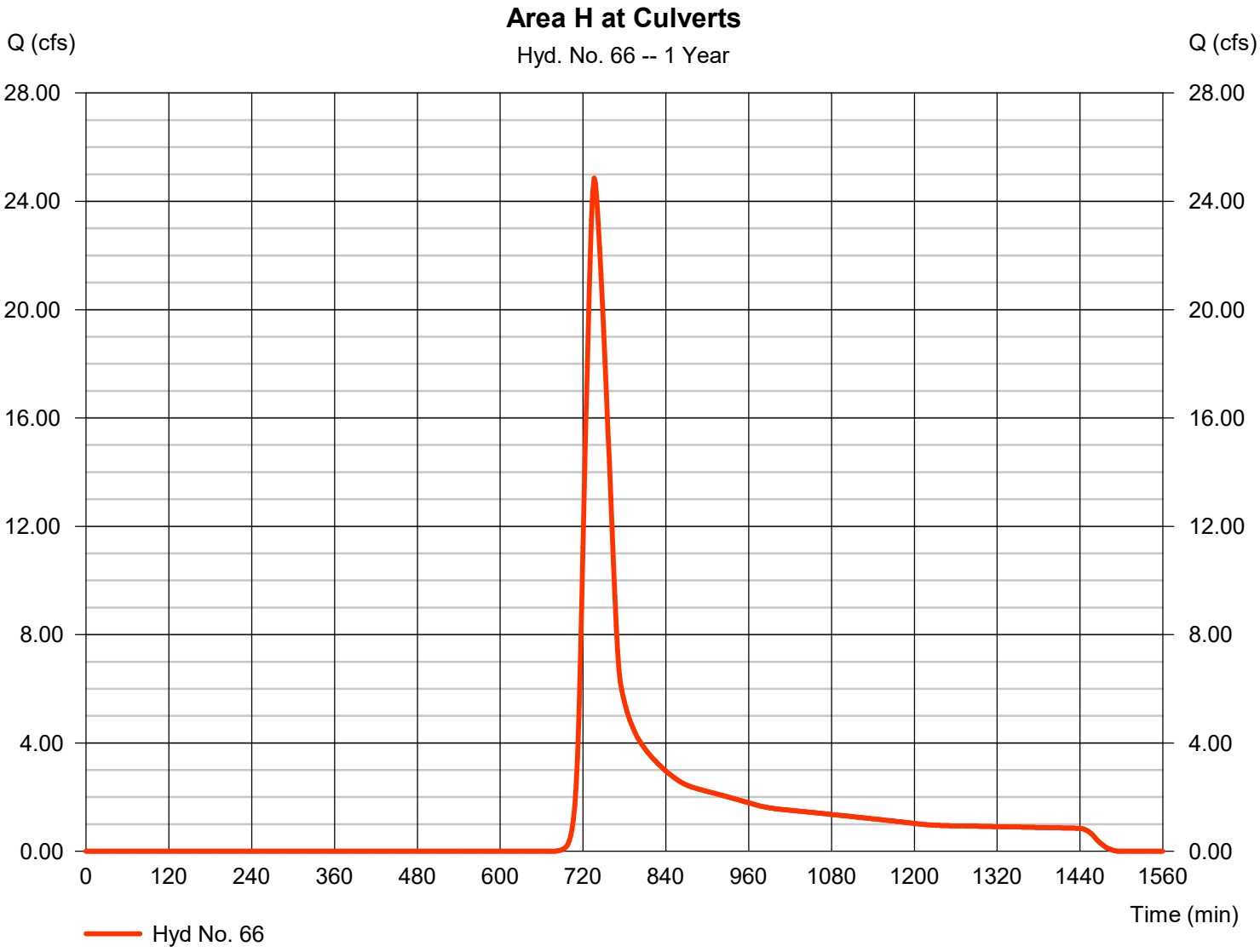


Hydrograph Report

Hyd. No. 66

Area H at Culverts

Hydrograph type	=	SCS Runoff	Peak discharge	=	24.85 cfs
Storm frequency	=	1 yrs	Time to peak	=	736 min
Time interval	=	2 min	Hyd. volume	=	125,838 cuft
Drainage area	=	43.300 ac	Curve number	=	73.4
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	35.10 min
Total precip.	=	2.89 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



TR55 Tc Worksheet

Hyd. No. 66

Area H at Culverts

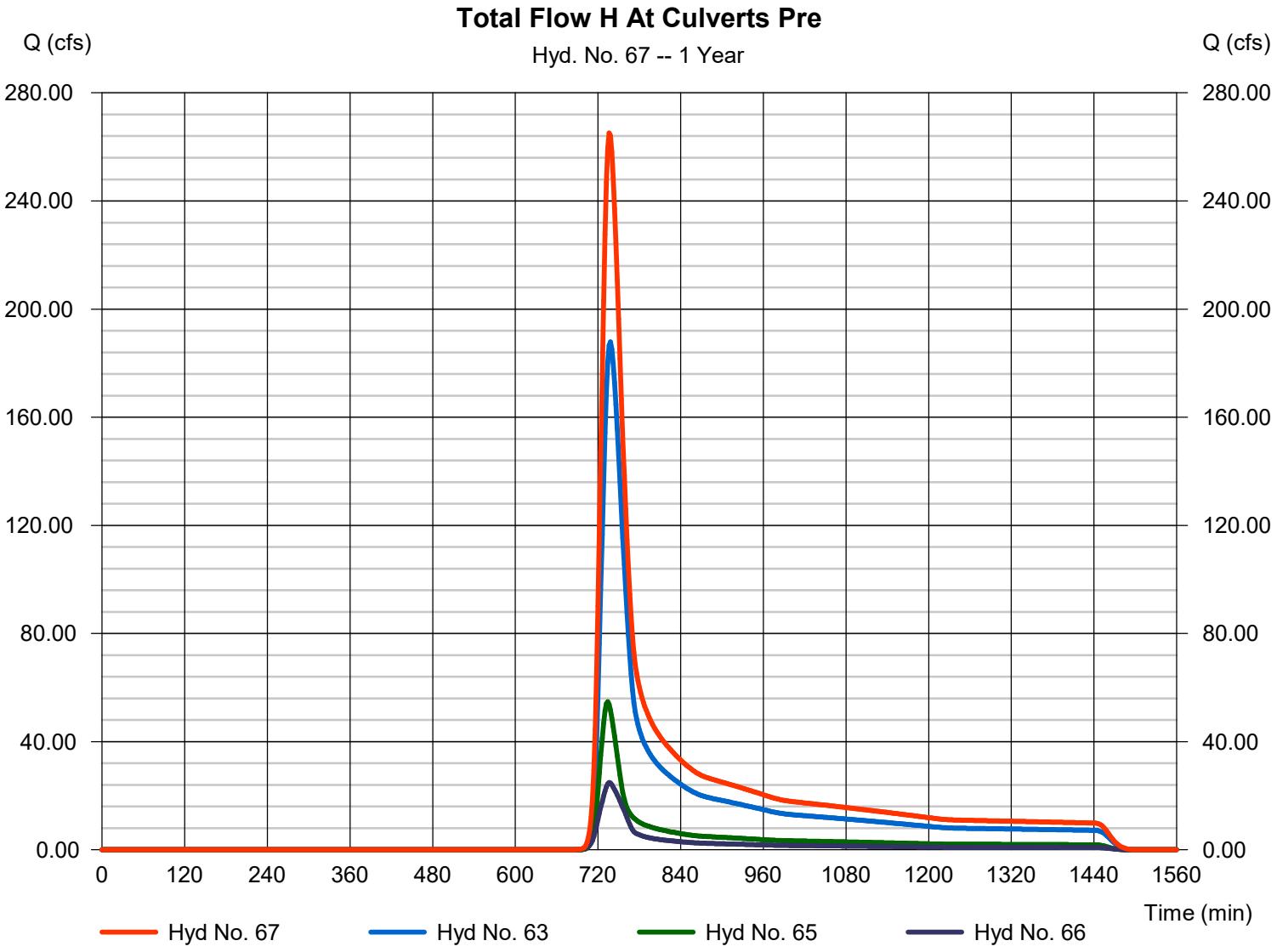
Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.400		0.011		0.011		
Flow length (ft)	= 50.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.48		0.00		0.00		
Land slope (%)	= 2.00		0.00		0.00		
Travel Time (min)	**= 11.83**	**+**	**0.00**	**+**	**0.00**	**=**	**11.83**
Shallow Concentrated Flow							
Flow length (ft)	= 1700.00		0.00		0.00		
Watercourse slope (%)	= 2.00		0.00		0.00		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	=2.28		0.00		0.00		
Travel Time (min)	**= 12.42**	**+**	**0.00**	**+**	**0.00**	**=**	**12.42**
Channel Flow							
X sectional flow area (sqft)	= 16.00		0.00		0.00		
Wetted perimeter (ft)	= 11.66		0.00		0.00		
Channel slope (%)	= 0.60		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	=9.51						
			0.00				
					0.00		
Flow length (ft)	({0})6200.0		0.0		0.0		
Travel Time (min)	**= 10.86**	**+**	**0.00**	**+**	**0.00**	**=**	**10.86**
Total Travel Time, Tc							**35.10 min**

Hydrograph Report

Hyd. No. 67

Total Flow H At Culverts Pre

Hydrograph type	= Combine	Peak discharge	= 265.16 cfs
Storm frequency	= 1 yrs	Time to peak	= 736 min
Time interval	= 2 min	Hyd. volume	= 1,343,545 cuft
Inflow hyds.	= 63, 65, 66	Contrib. drain. area	= 43.300 ac

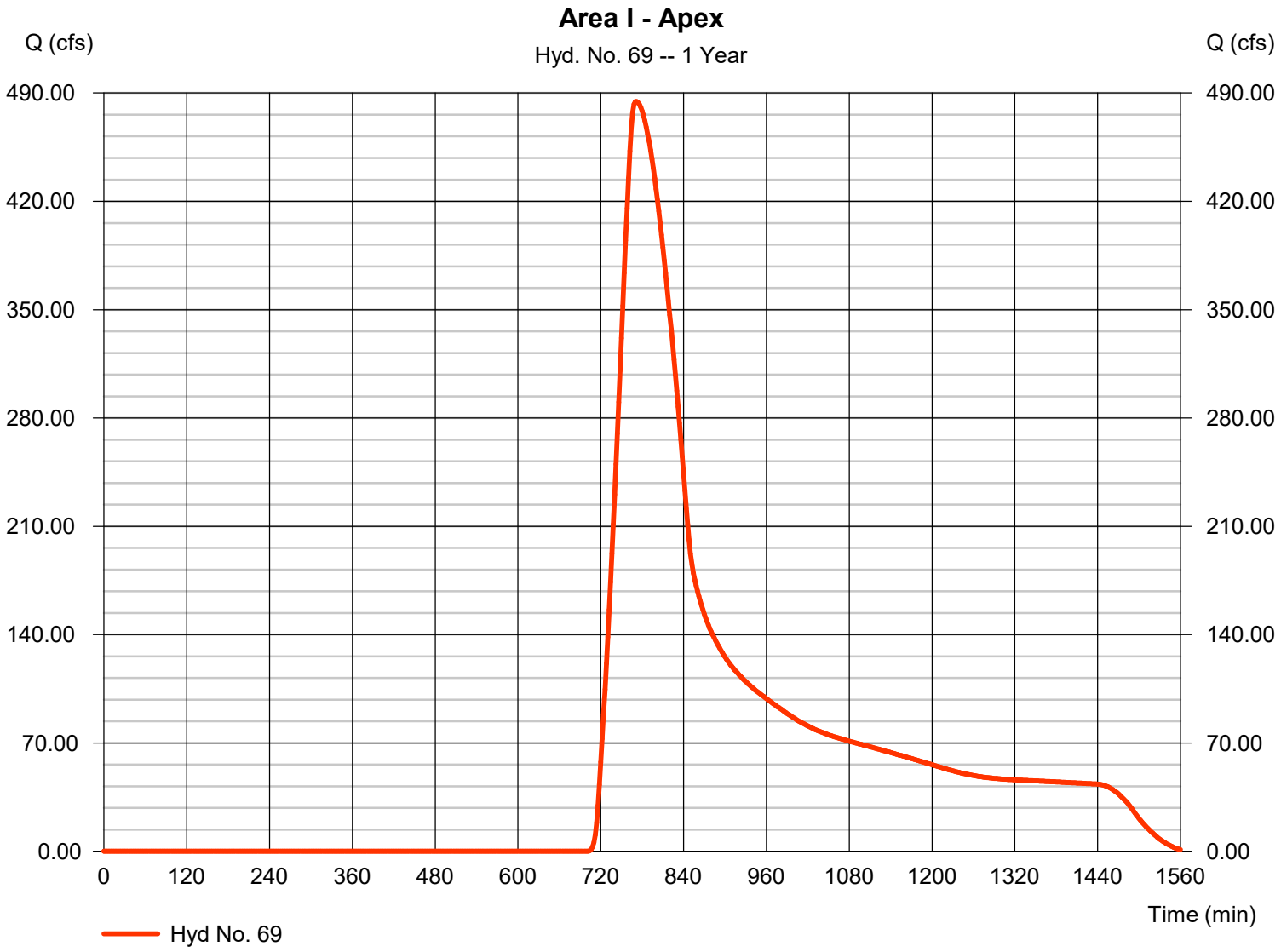


Hydrograph Report

Hyd. No. 69

Area I - Apex

Hydrograph type	=	SCS Runoff	Peak discharge	=	484.42 cfs
Storm frequency	=	1 yrs	Time to peak	=	772 min
Time interval	=	2 min	Hyd. volume	=	5,397,708 cuft
Drainage area	=	2637.000 ac	Curve number	=	67.9
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	87.40 min
Total precip.	=	2.89 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



TR55 Tc Worksheet

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

Hyd. No. 69

Area I - Apex

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.410		0.011		0.011		
Flow length (ft)	= 50.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.48		0.00		0.00		
Land slope (%)	= 2.00		0.00		0.00		
Travel Time (min)	**= 12.06**	**+**	**0.00**	**+**	**0.00**	**=**	**12.06**
Shallow Concentrated Flow							
Flow length (ft)	= 110.00		0.00		0.00		
Watercourse slope (%)	= 2.00		0.00		0.00		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	=2.28		0.00		0.00		
Travel Time (min)	**= 0.80**	**+**	**0.00**	**+**	**0.00**	**=**	**0.80**
Channel Flow							
X sectional flow area (sqft)	= 7.08		11.66		0.00		
Wetted perimeter (ft)	= 9.43		16.00		0.00		
Channel slope (%)	= 2.00		0.70		0.00		
Manning's n-value	= 0.015		0.025		0.015		
Velocity (ft/s)	=11.59						
			4.03				
					0.00		
Flow length (ft)	({0})3400.0		16850.0		0.0		
Travel Time (min)	**= 4.89**	**+**	**69.62**	**+**	**0.00**	**=**	**74.51**

Total Travel Time, Tc ..... 87.40 min

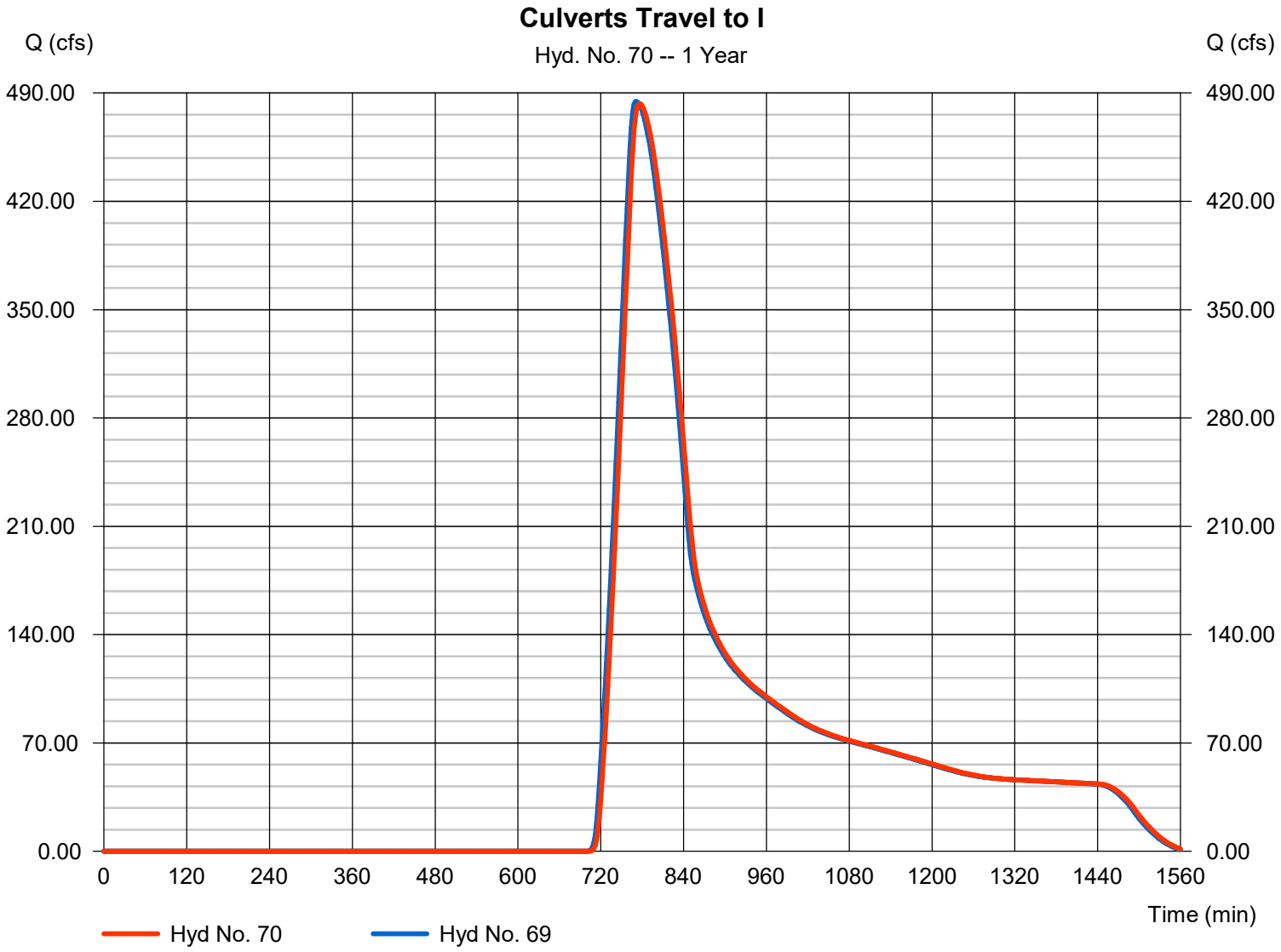
Hydrograph Report

Hyd. No. 70

Culverts Travel to I

Hydrograph type	=	Reach	Peak discharge	=	483.07 cfs
Storm frequency	=	1 yrs	Time to peak	=	776 min
Time interval	=	2 min	Hyd. volume	=	5,397,708 cuft
Inflow hyd. No.	=	69 - Area I - Apex	Section type	=	Trapezoidal
Reach length	=	1670.0 ft	Channel slope	=	0.7 %
Manning's n	=	0.025	Bottom width	=	6.0 ft
Side slope	=	2.0:1	Max. depth	=	2.0 ft
Rating curve x	=	1.509	Rating curve m	=	1.374
Ave. velocity	=	7.26 ft/s	Routing coeff.	=	0.5279

Modified Att-Kin routing method used.

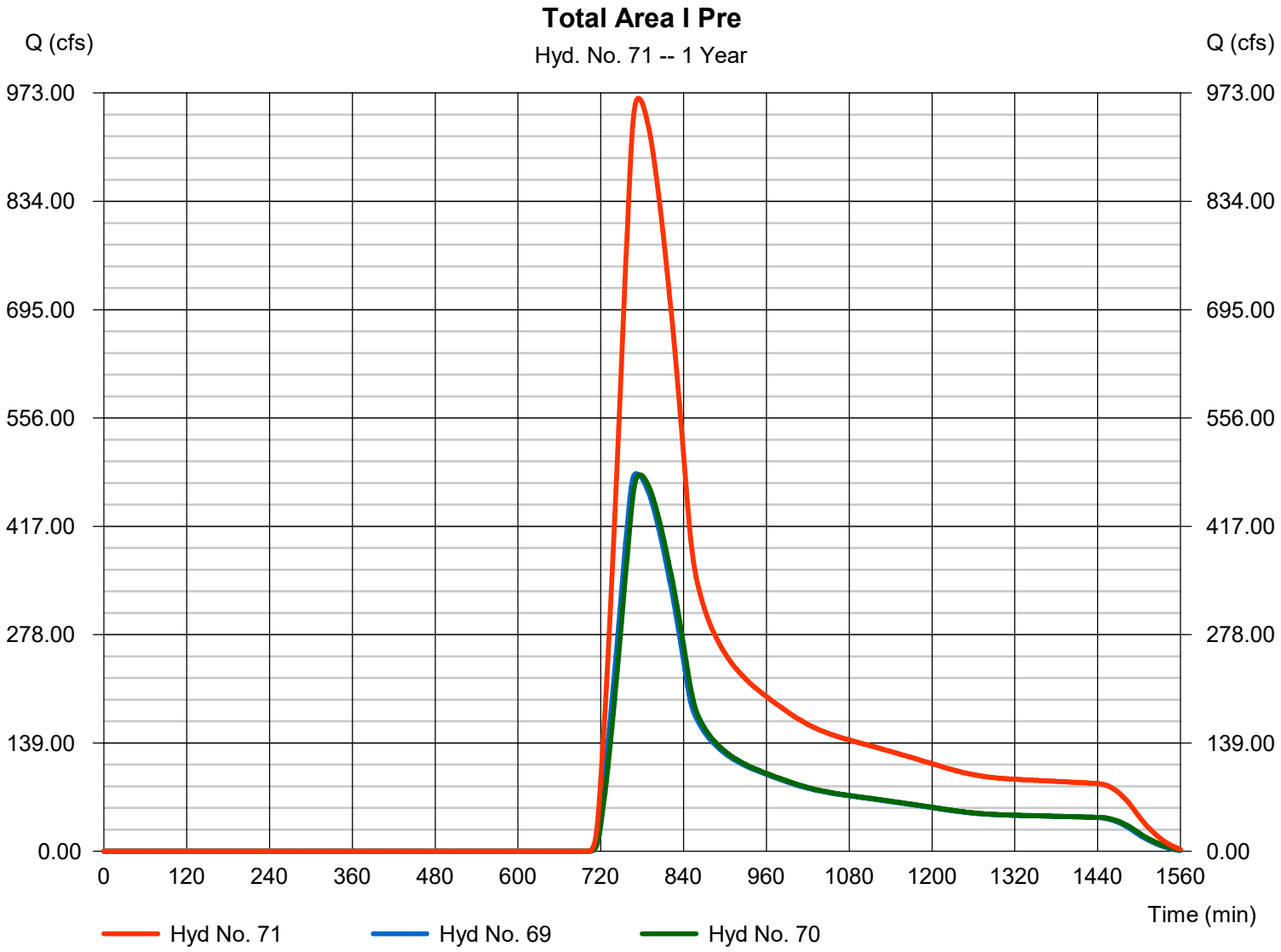


Hydrograph Report

Hyd. No. 71

Total Area I Pre

Hydrograph type	= Combine	Peak discharge	= 966.04 cfs
Storm frequency	= 1 yrs	Time to peak	= 774 min
Time interval	= 2 min	Hyd. volume	= 10,795,419 cuft
Inflow hyds.	= 69, 70	Contrib. drain. area	= 2637.000 ac

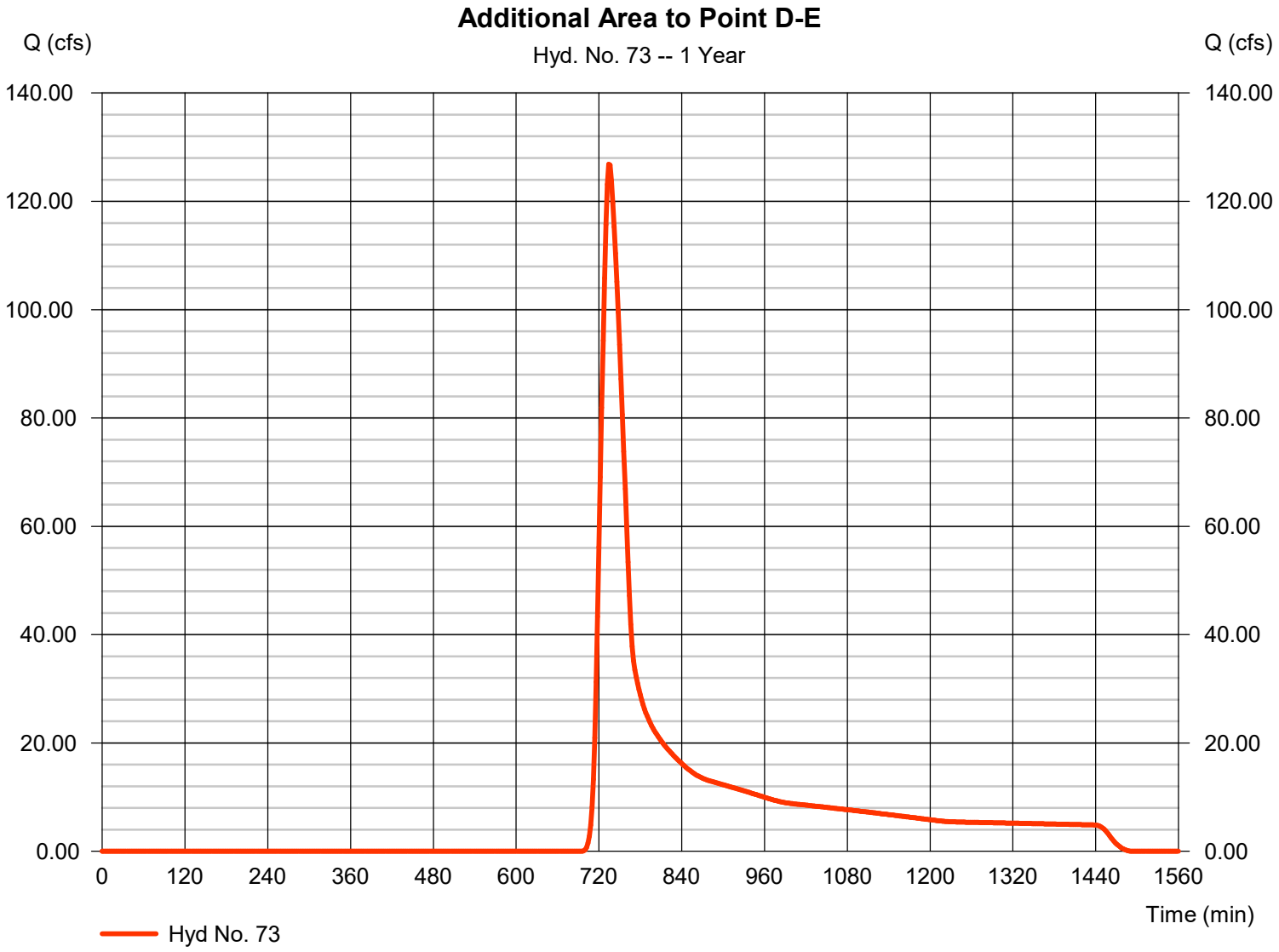


Hydrograph Report

Hyd. No. 73

Additional Area to Point D-E

Hydrograph type	=	SCS Runoff	Peak discharge	=	126.84 cfs
Storm frequency	=	1 yrs	Time to peak	=	734 min
Time interval	=	2 min	Hyd. volume	=	660,044 cuft
Drainage area	=	271.000 ac	Curve number	=	70.2
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	32.50 min
Total precip.	=	2.89 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



TR55 Tc Worksheet

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

Hyd. No. 73

Additional Area to Point D-E

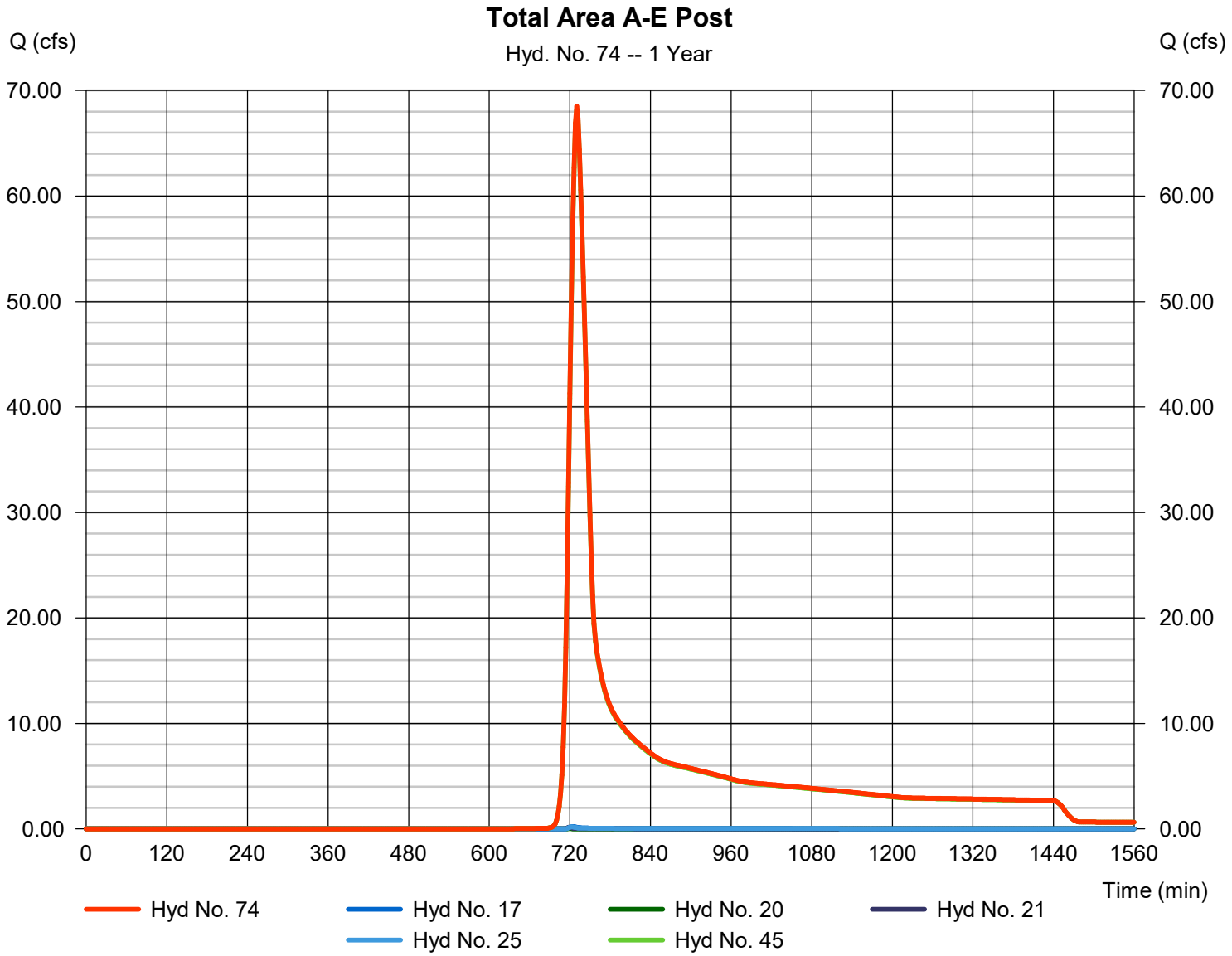
Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.400		0.011		0.011		
Flow length (ft)	= 50.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.48		0.00		0.00		
Land slope (%)	= 2.00		0.00		0.00		
Travel Time (min)	**= 11.83**	**+**	**0.00**	**+**	**0.00**	**=**	**11.83**
Shallow Concentrated Flow							
Flow length (ft)	= 1700.00		0.00		0.00		
Watercourse slope (%)	= 2.00		0.00		0.00		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	=2.28		0.00		0.00		
Travel Time (min)	**= 12.42**	**+**	**0.00**	**+**	**0.00**	**=**	**12.42**
Channel Flow							
X sectional flow area (sqft)	= 16.00		0.00		0.00		
Wetted perimeter (ft)	= 11.66		0.00		0.00		
Channel slope (%)	= 0.60		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	=9.51						
			0.00				
					0.00		
Flow length (ft)	({0})4700.0		0.0		0.0		
Travel Time (min)	**= 8.24**	**+**	**0.00**	**+**	**0.00**	**=**	**8.24**
Total Travel Time, Tc							**32.50 min**

Hydrograph Report

Hyd. No. 74

Total Area A-E Post

Hydrograph type	= Combine	Peak discharge	= 68.53 cfs
Storm frequency	= 1 yrs	Time to peak	= 730 min
Time interval	= 2 min	Hyd. volume	= 409,763 cuft
Inflow hyds.	= 17, 20, 21, 25, 45	Contrib. drain. area	= 3.290 ac

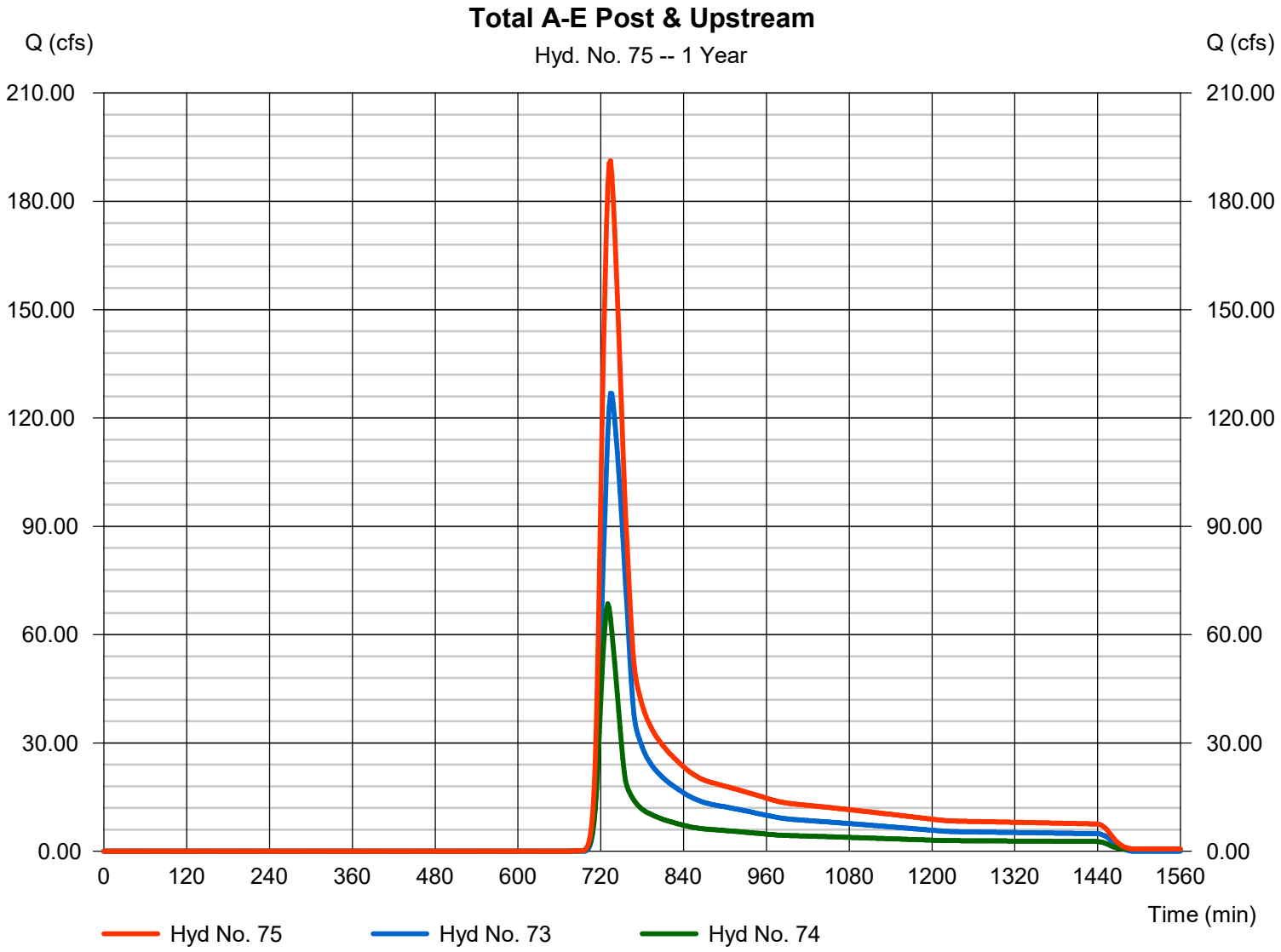


Hydrograph Report

Hyd. No. 75

Total A-E Post & Upstream

Hydrograph type	= Combine	Peak discharge	= 191.24 cfs
Storm frequency	= 1 yrs	Time to peak	= 734 min
Time interval	= 2 min	Hyd. volume	= 1,069,806 cuft
Inflow hyds.	= 73, 74	Contrib. drain. area	= 271.000 ac



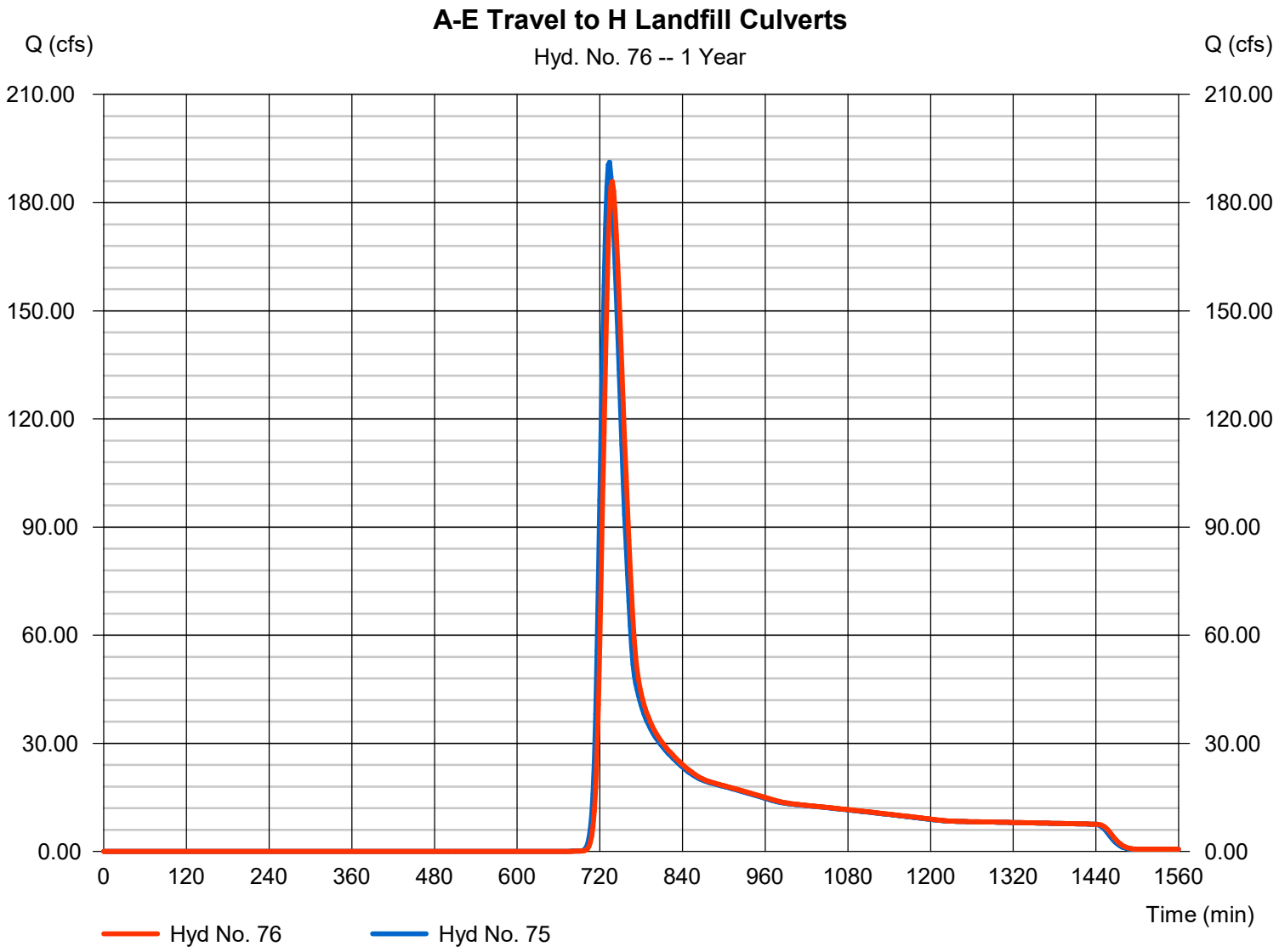
Hydrograph Report

Hyd. No. 76

A-E Travel to H Landfill Culverts

Hydrograph type	=	Reach	Peak discharge	=	185.85 cfs
Storm frequency	=	1 yrs	Time to peak	=	738 min
Time interval	=	2 min	Hyd. volume	=	1,069,762 cuft
Inflow hyd. No.	=	75 - Total A-E Post & Upstream	Section type	=	Trapezoidal
Reach length	=	1500.0 ft	Channel slope	=	0.7 %
Manning's n	=	0.025	Bottom width	=	6.0 ft
Side slope	=	2.0:1	Max. depth	=	2.0 ft
Rating curve x	=	1.509	Rating curve m	=	1.374
Ave. velocity	=	5.64 ft/s	Routing coeff.	=	0.4733

Modified Att-Kin routing method used.

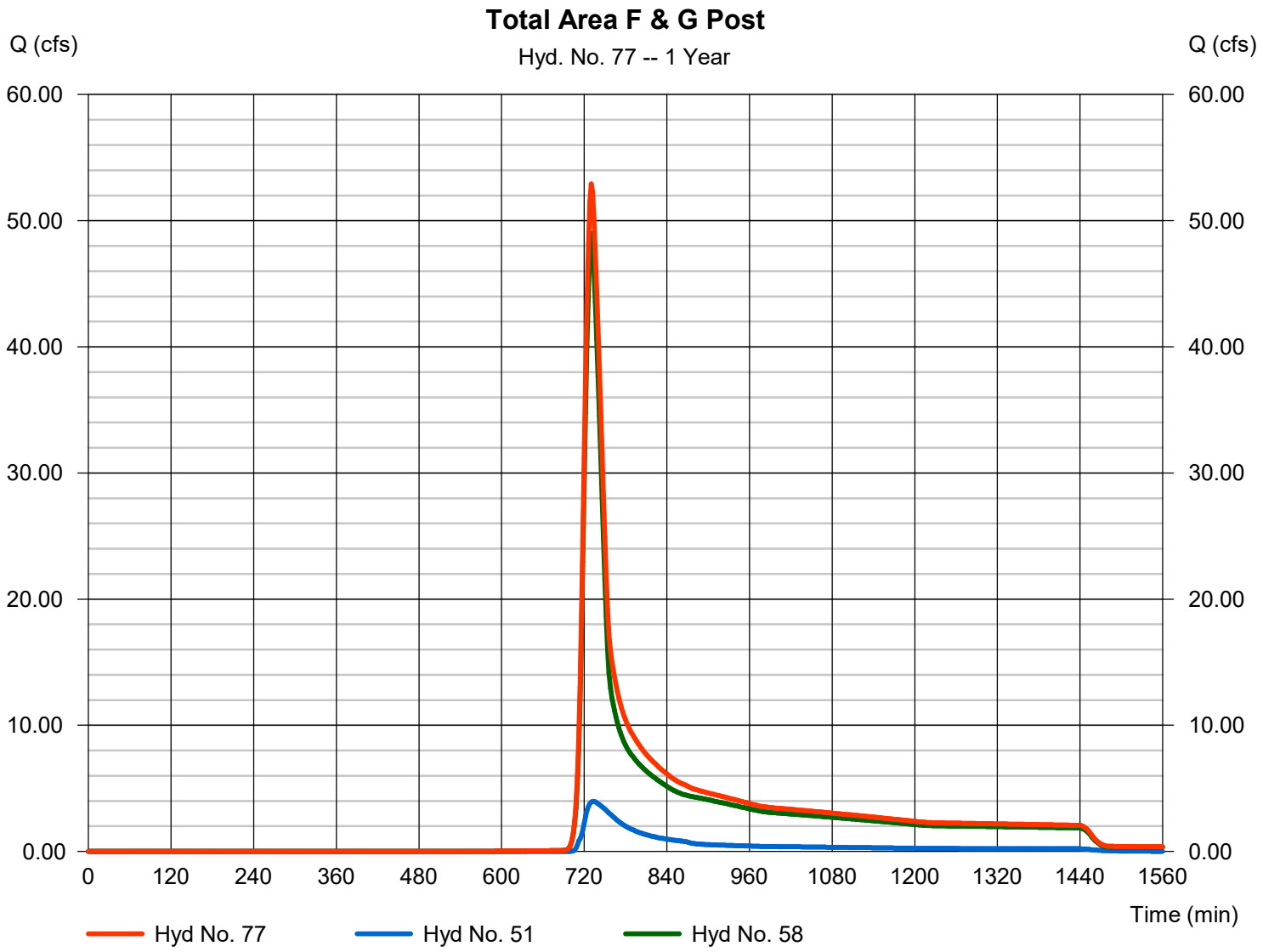


Hydrograph Report

Hyd. No. 77

Total Area F & G Post

Hydrograph type	= Combine	Peak discharge	= 52.91 cfs
Storm frequency	= 1 yrs	Time to peak	= 730 min
Time interval	= 2 min	Hyd. volume	= 315,294 cuft
Inflow hyds.	= 51, 58	Contrib. drain. area	= 0.000 ac



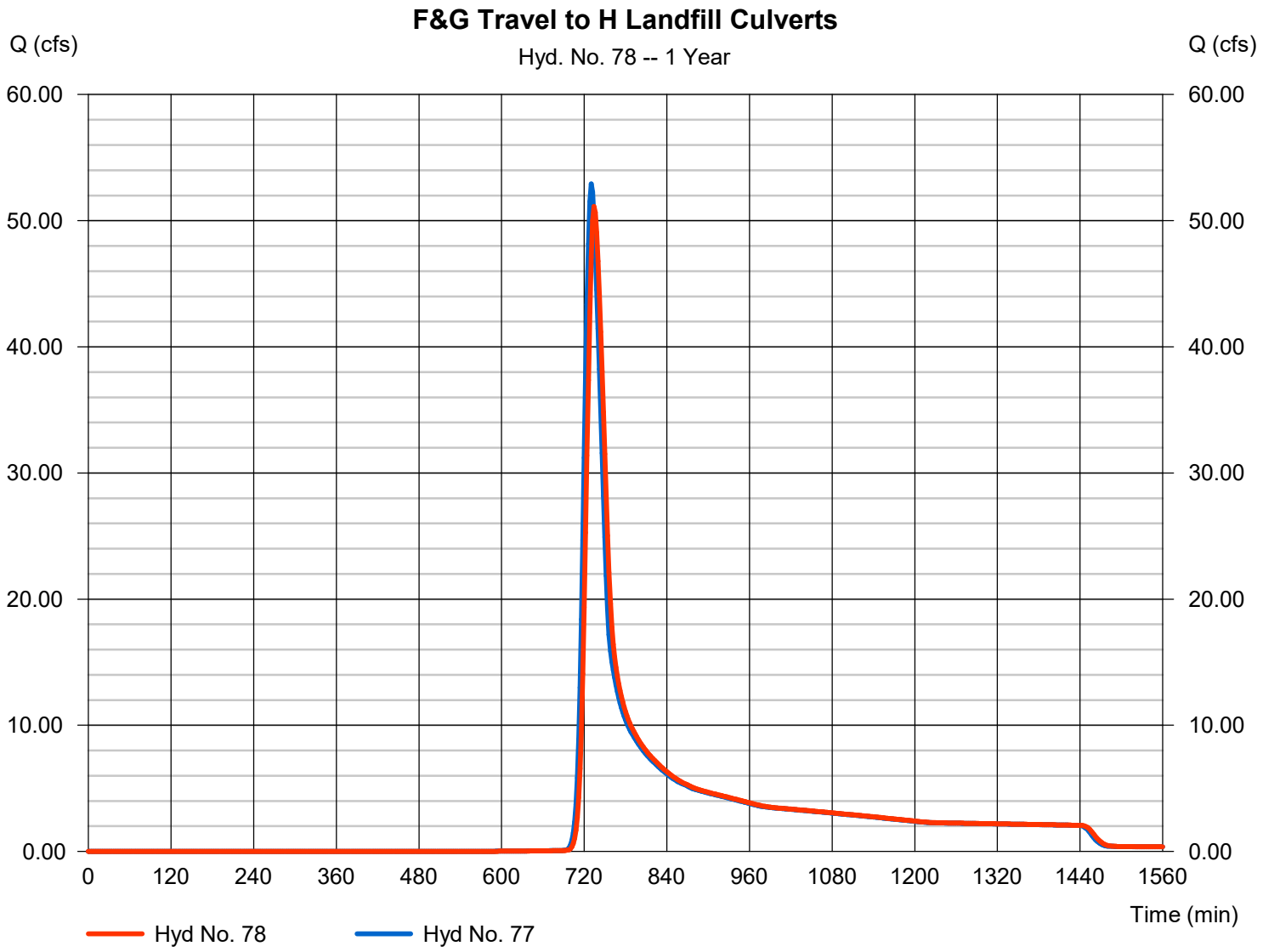
Hydrograph Report

Hyd. No. 78

F&G Travel to H Landfill Culverts

Hydrograph type	=	Reach	Peak discharge	=	51.13 cfs
Storm frequency	=	1 yrs	Time to peak	=	734 min
Time interval	=	2 min	Hyd. volume	=	315,262 cuft
Inflow hyd. No.	=	77 - Total Area F & G Post	Section type	=	Trapezoidal
Reach length	=	1300.0 ft	Channel slope	=	1.5 %
Manning's n	=	0.025	Bottom width	=	6.0 ft
Side slope	=	2.0:1	Max. depth	=	2.0 ft
Rating curve x	=	2.209	Rating curve m	=	1.374
Ave. velocity	=	5.25 ft/s	Routing coeff.	=	0.4992

Modified Att-Kin routing method used.

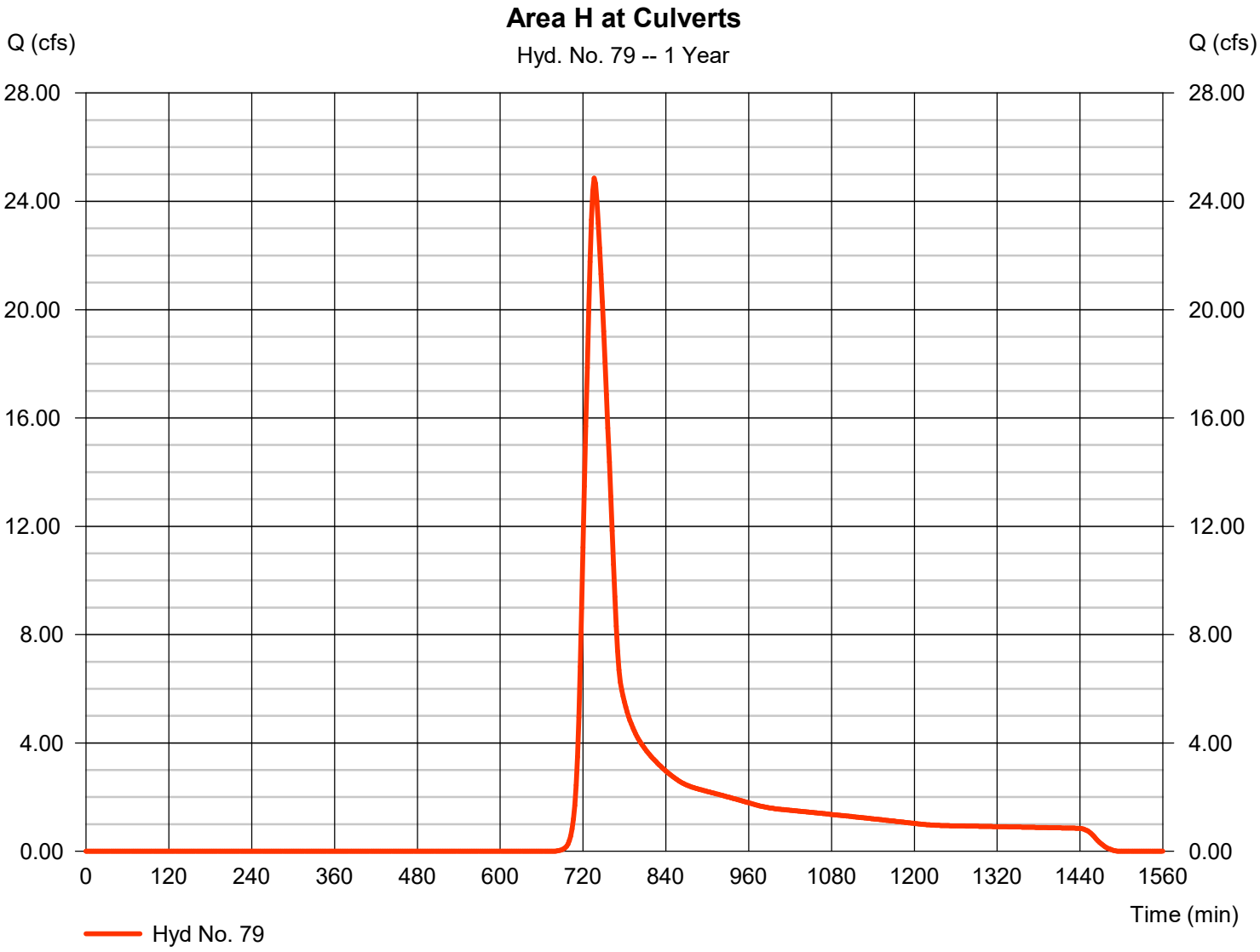


Hydrograph Report

Hyd. No. 79

Area H at Culverts

Hydrograph type	=	SCS Runoff	Peak discharge	=	24.85 cfs
Storm frequency	=	1 yrs	Time to peak	=	736 min
Time interval	=	2 min	Hyd. volume	=	125,838 cuft
Drainage area	=	43.300 ac	Curve number	=	73.4
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	35.10 min
Total precip.	=	2.89 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



TR55 Tc Worksheet

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

Hyd. No. 79

Area H at Culverts

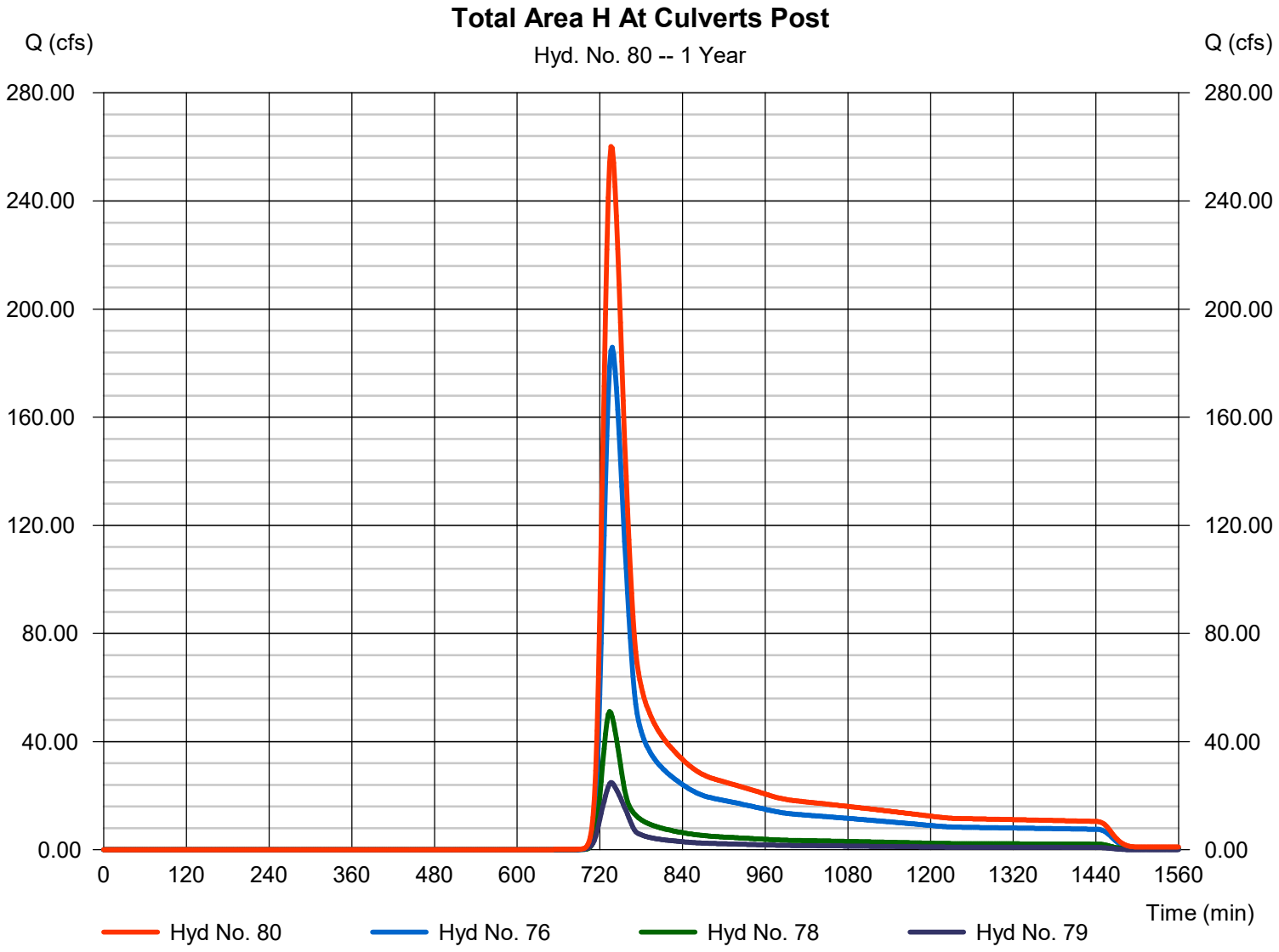
Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.400		0.011		0.011		
Flow length (ft)	= 50.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.48		0.00		0.00		
Land slope (%)	= 2.00		0.00		0.00		
Travel Time (min)	**= 11.83**	**+**	**0.00**	**+**	**0.00**	**=**	**11.83**
Shallow Concentrated Flow							
Flow length (ft)	= 1700.00		0.00		0.00		
Watercourse slope (%)	= 2.00		0.00		0.00		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	=2.28		0.00		0.00		
Travel Time (min)	**= 12.42**	**+**	**0.00**	**+**	**0.00**	**=**	**12.42**
Channel Flow							
X sectional flow area (sqft)	= 16.00		0.00		0.00		
Wetted perimeter (ft)	= 11.66		0.00		0.00		
Channel slope (%)	= 0.60		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	=9.51						
			0.00				
					0.00		
Flow length (ft)	({0})6200.0		0.0		0.0		
Travel Time (min)	**= 10.86**	**+**	**0.00**	**+**	**0.00**	**=**	**10.86**
Total Travel Time, Tc							**35.10 min**

Hydrograph Report

Hyd. No. 80

Total Area H At Culverts Post

Hydrograph type	= Combine	Peak discharge	= 260.08 cfs
Storm frequency	= 1 yrs	Time to peak	= 736 min
Time interval	= 2 min	Hyd. volume	= 1,510,861 cuft
Inflow hyds.	= 76, 78, 79	Contrib. drain. area	= 43.300 ac

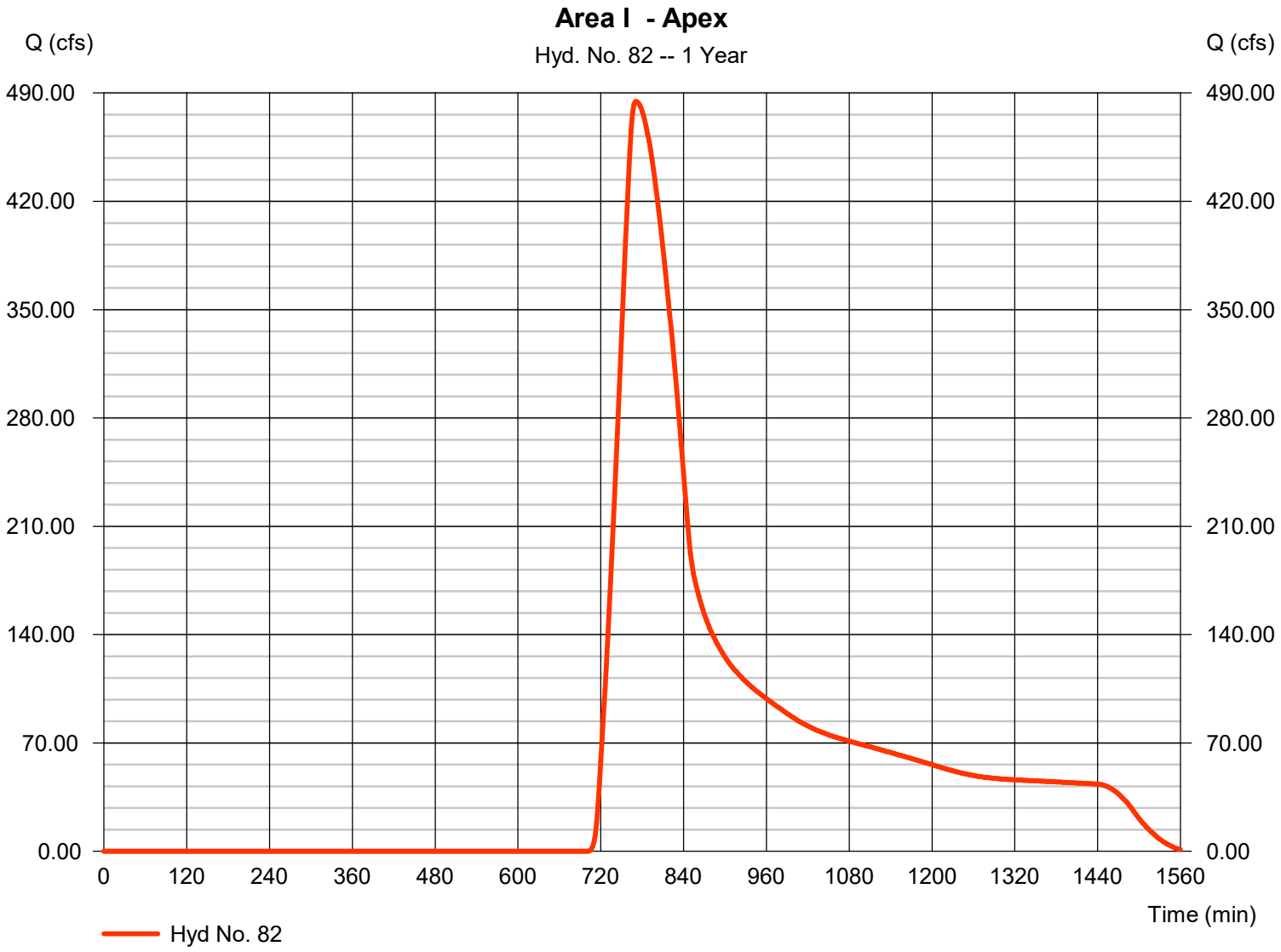


Hydrograph Report

Hyd. No. 82

Area I - Apex

Hydrograph type	= SCS Runoff	Peak discharge	= 484.42 cfs
Storm frequency	= 1 yrs	Time to peak	= 772 min
Time interval	= 2 min	Hyd. volume	= 5,397,708 cuft
Drainage area	= 2637.000 ac	Curve number	= 67.9
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 87.40 min
Total precip.	= 2.89 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



TR55 Tc Worksheet

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

Hyd. No. 82

Area I - Apex

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.410		0.011		0.011		
Flow length (ft)	= 50.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.48		0.00		0.00		
Land slope (%)	= 2.00		0.00		0.00		
Travel Time (min)	**= 12.06**	**+**	**0.00**	**+**	**0.00**	**=**	**12.06**
Shallow Concentrated Flow							
Flow length (ft)	= 110.00		0.00		0.00		
Watercourse slope (%)	= 2.00		0.00		0.00		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	=2.28		0.00		0.00		
Travel Time (min)	**= 0.80**	**+**	**0.00**	**+**	**0.00**	**=**	**0.80**
Channel Flow							
X sectional flow area (sqft)	= 7.08		11.66		0.00		
Wetted perimeter (ft)	= 9.43		16.00		0.00		
Channel slope (%)	= 2.00		0.70		0.00		
Manning's n-value	= 0.015		0.025		0.015		
Velocity (ft/s)	=11.59						
			4.03				
					0.00		
Flow length (ft)	({0})3400.0		16850.0		0.0		
Travel Time (min)	**= 4.89**	**+**	**69.62**	**+**	**0.00**	**=**	**74.51**

Total Travel Time, Tc ..... 87.40 min

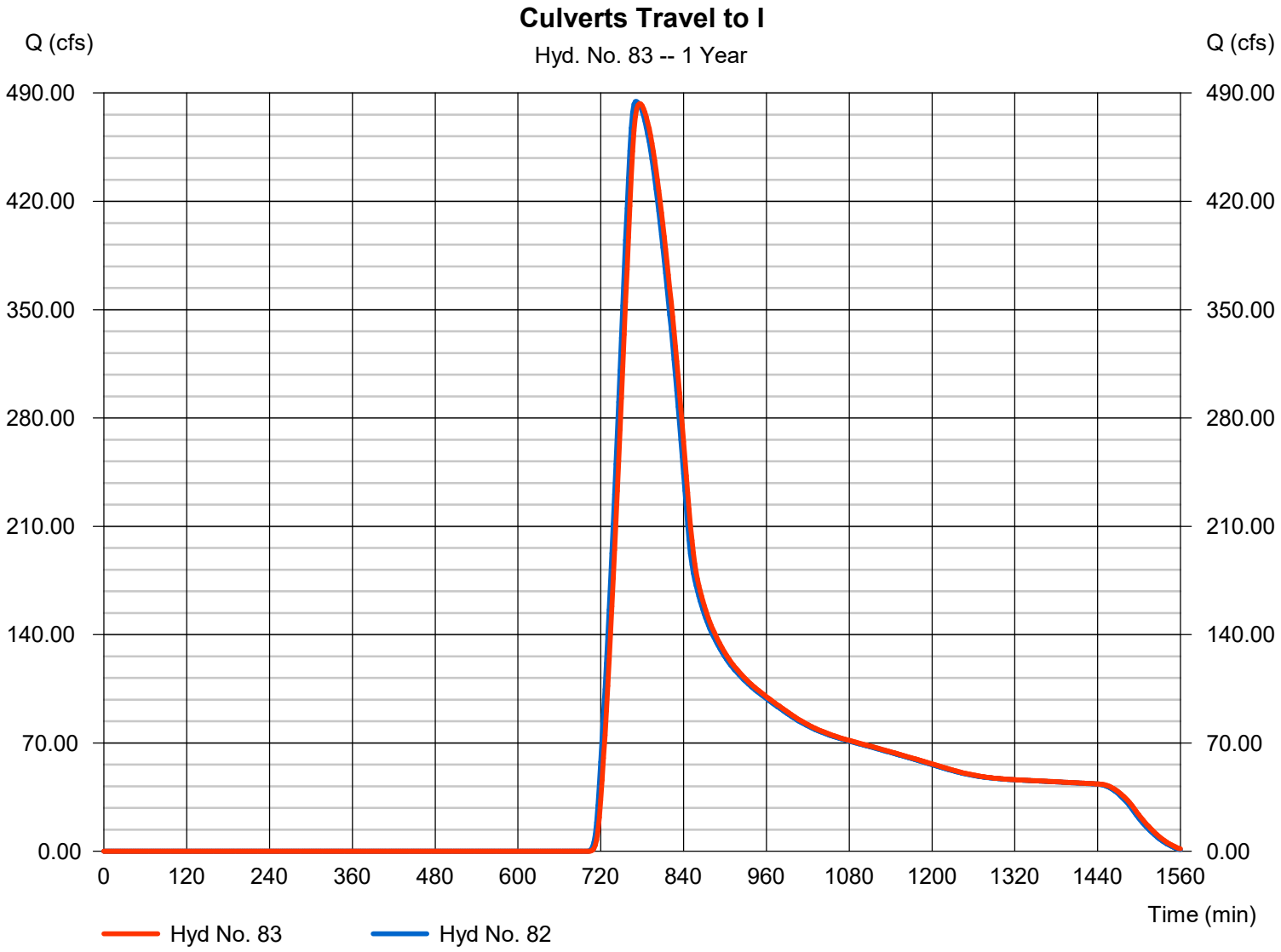
Hydrograph Report

Hyd. No. 83

Culverts Travel to I

Hydrograph type	=	Reach	Peak discharge	=	483.07 cfs
Storm frequency	=	1 yrs	Time to peak	=	776 min
Time interval	=	2 min	Hyd. volume	=	5,397,708 cuft
Inflow hyd. No.	=	82 - Area I - Apex	Section type	=	Trapezoidal
Reach length	=	1670.0 ft	Channel slope	=	0.7 %
Manning's n	=	0.025	Bottom width	=	6.0 ft
Side slope	=	2.0:1	Max. depth	=	2.0 ft
Rating curve x	=	1.509	Rating curve m	=	1.374
Ave. velocity	=	7.26 ft/s	Routing coeff.	=	0.5279

Modified Att-Kin routing method used.

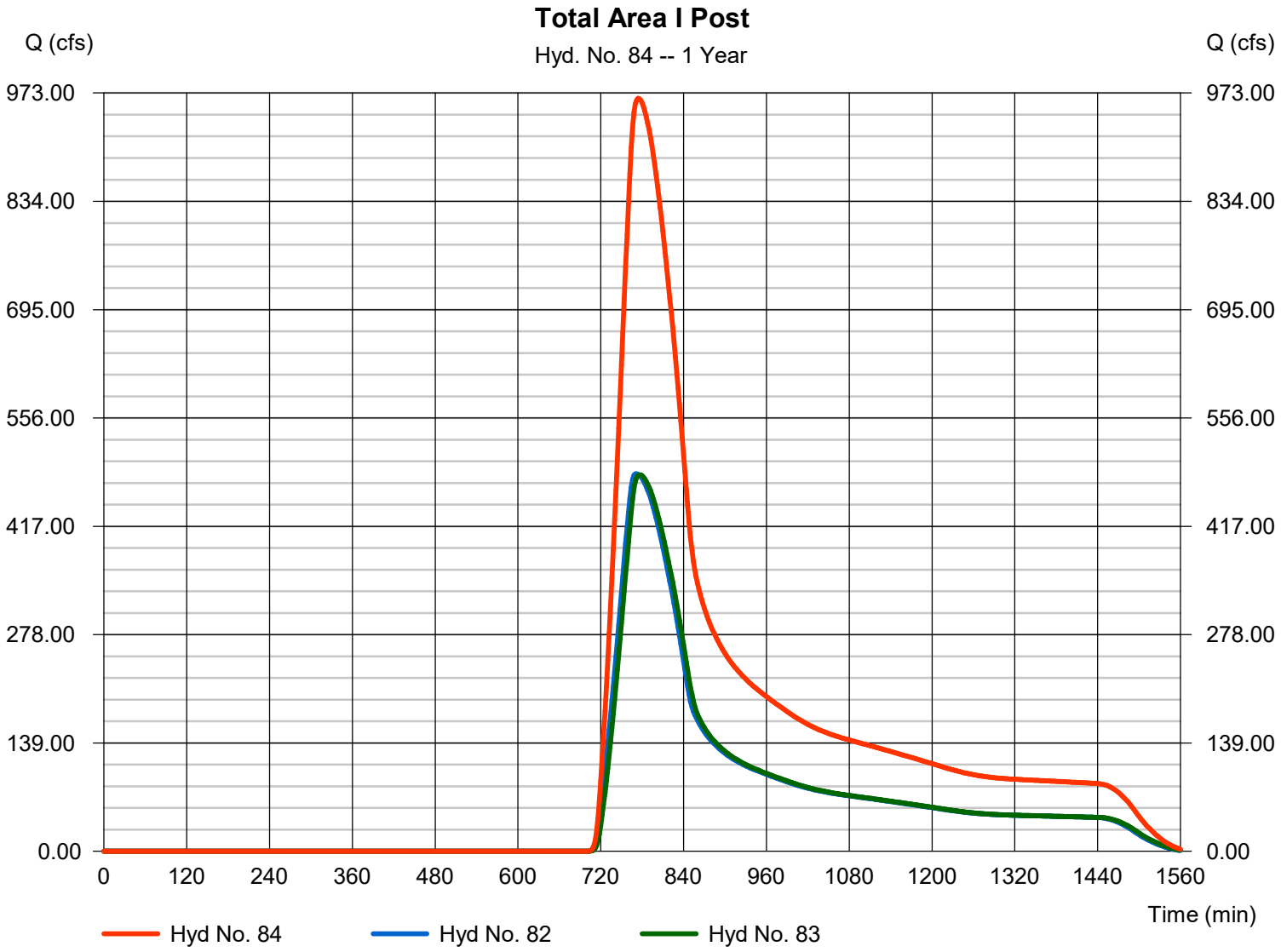


Hydrograph Report

Hyd. No. 84

Total Area I Post

Hydrograph type	= Combine	Peak discharge	= 966.04 cfs
Storm frequency	= 1 yrs	Time to peak	= 774 min
Time interval	= 2 min	Hyd. volume	= 10,795,419 cuft
Inflow hyds.	= 82, 83	Contrib. drain. area	= 2637.000 ac



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	4.931	2	722	14,774	------	------	------	Area A Onsite Pre
2	SCS Runoff	3.074	2	722	9,210	------	------	------	Area A Off-site Pre
3	Combine	8.005	2	722	23,984	1, 2	------	------	Total Area A Pre
4	SCS Runoff	1.917	2	724	6,349	------	------	------	Area B Onsite Pre
5	SCS Runoff	3.855	2	722	11,551	------	------	------	Area C Onsite Pre
6	SCS Runoff	38.37	2	730	153,933	------	------	------	Area D Onsite Pre
7	SCS Runoff	219.24	2	728	817,730	------	------	------	Area D Offsite Pre
8	Combine	257.45	2	730	971,663	6, 7	------	------	Total Area D Pre
9	SCS Runoff	2.755	2	724	8,706	------	------	------	Area E Onsite Pre
10	SCS Runoff	15.29	2	726	58,124	------	------	------	Area F Onsite Pre
11	SCS Runoff	19.72	2	724	62,436	------	------	------	Area F Off-site Pre
12	Combine	34.93	2	726	120,559	10, 11	------	------	Total Area F Pre
13	SCS Runoff	16.19	2	730	64,946	------	------	------	Area G Onsite Pre
14	SCS Runoff	166.59	2	728	621,892	------	------	------	Area G Off-site Pre
15	Combine	182.70	2	730	686,838	13, 14	------	------	Toital Area G Pre
17	SCS Runoff	1.791	2	722	4,987	------	------	------	Area A Onsite Post
18	SCS Runoff	3.074	2	722	9,210	------	------	------	Area A Off-site Post
19	Combine	4.865	2	722	14,196	17, 18	------	------	Total Area A Post
20	SCS Runoff	0.400	2	718	842	------	------	------	Area B Onsite Post
21	SCS Runoff	1.311	2	718	2,684	------	------	------	Area C Onsite Post
22	SCS Runoff	109.74	2	728	402,669	------	------	------	Area D Onsite Post
23	SCS Runoff	220.31	2	728	821,388	------	------	------	Area D Offsite Post
24	Combine	330.05	2	728	1,224,058	22, 23	------	------	Total Area D Post
25	SCS Runoff	2.410	2	720	5,909	------	------	------	Area E Onsite Post
26	SCS Runoff	6.012	2	722	15,791	------	------	------	Area F Onsite Post
27	SCS Runoff	28.85	2	720	75,191	------	------	------	Area F Off-site Post
28	Combine	34.83	2	720	90,981	26, 27	------	------	Total Area F Post
29	SCS Runoff	101.68	2	720	264,029	------	------	------	Area G Onsite Post
30	SCS Runoff	163.74	2	728	611,531	------	------	------	Area G Off-site Post
31	Combine	240.56	2	724	885,921	14, 29,	------	------	Total Area G Post
33	SCS Runoff	58.31	2	722	164,068	------	------	------	Area to SCM D1 Onsite
34	SCS Runoff	1.012	2	724	3,004	------	------	------	Area to SCM D1 Off-site
35	Combine	59.31	2	722	167,072	33, 34	------	------	Total Area to SCM D1

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
36	Reservoir	2.548	2	844	150,149	35	386.17	107,742	Route SCM D1
37	SCS Runoff	50.39	2	722	144,035	------	------	------	Area to SCM D2 Onsite
38	SCS Runoff	0.243	2	724	726	------	------	------	Area to SCM D2 Offsite
39	Combine	50.63	2	722	144,761	37, 38	------	------	Total Area to SCM D2
40	Reservoir	3.340	2	788	127,177	39	393.43	89,523	Route SCM D2
41	SCS Runoff	12.25	2	722	34,756	------	------	------	Area to SCM D3 Onsite
42	Reservoir	1.878	2	744	32,268	41	385.41	18,973	Route SCM D3
43	SCS Runoff	16.18	2	730	62,300	------	------	------	Area D Bypassing SCMs
44	SCS Runoff	218.81	2	728	815,798	------	------	------	Area D Offsite Post
45	Combine	237.42	2	730	1,187,694	36, 40, 42, 43, 44	------	------	Total Managed Area D Post
47	SCS Runoff	5.407	2	720	14,090	------	------	------	Area F Onsite Post
48	Combine	34.25	2	720	89,281	27, 47	------	------	Total to SCM F
49	Reservoir	12.97	2	732	89,271	48	390.61	26,322	Route SCM F
50	SCS Runoff	0.757	2	720	1,885	------	------	------	Area F Bypassing SCM
51	Combine	13.14	2	732	91,156	49, 50	------	------	Total Managed Area F Post
53	SCS Runoff	80.47	2	720	217,368	------	------	------	Area to SCM G Onsite
54	SCS Runoff	0.103	2	720	272	------	------	------	Area to SCM G Offsite
55	Combine	80.58	2	720	217,640	53, 54	------	------	Total Area to SCM G
56	Reservoir	1.712	2	972	163,223	55	390.01	165,657	Route SCM G
57	SCS Runoff	10.91	2	730	44,552	------	------	------	Area G Bypassing SCM
58	Combine	175.02	2	730	819,307	30, 56, 57	------	------	Total Managed Area G Post
60	SCS Runoff	476.83	2	734	2,111,072	------	------	------	Additional Area to Point D-E
61	Combine	267.30	2	728	1,013,043	1, 4, 5, 8, 9,	------	------	Total Area A-E Pre
62	Combine	729.59	2	732	3,124,115	60, 61	------	------	Total A-E Post & Upstream
63	Reach	719.68	2	734	3,124,113	62	------	------	A-E Travel to H Landfill Culverts
64	Combine	216.12	2	728	807,398	12, 15,	------	------	Total Area F & G Pre
65	Reach	212.94	2	732	807,396	64	------	------	F&G Travel to H Landfill Culverts
66	SCS Runoff	80.80	2	736	370,628	------	------	------	Area H at Culverts
67	Combine	1007.55	2	734	4,302,135	63, 65, 66	------	------	Total Flow H At Culverts Pre
69	SCS Runoff	2069.32	2	768	18,443,486	------	------	------	Area I - Apex
70	Reach	2066.04	2	770	18,443,470	69	------	------	Culverts Travel to I
71	Combine	4127.88	2	768	36,886,940	69, 70	------	------	Total Area I Pre

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

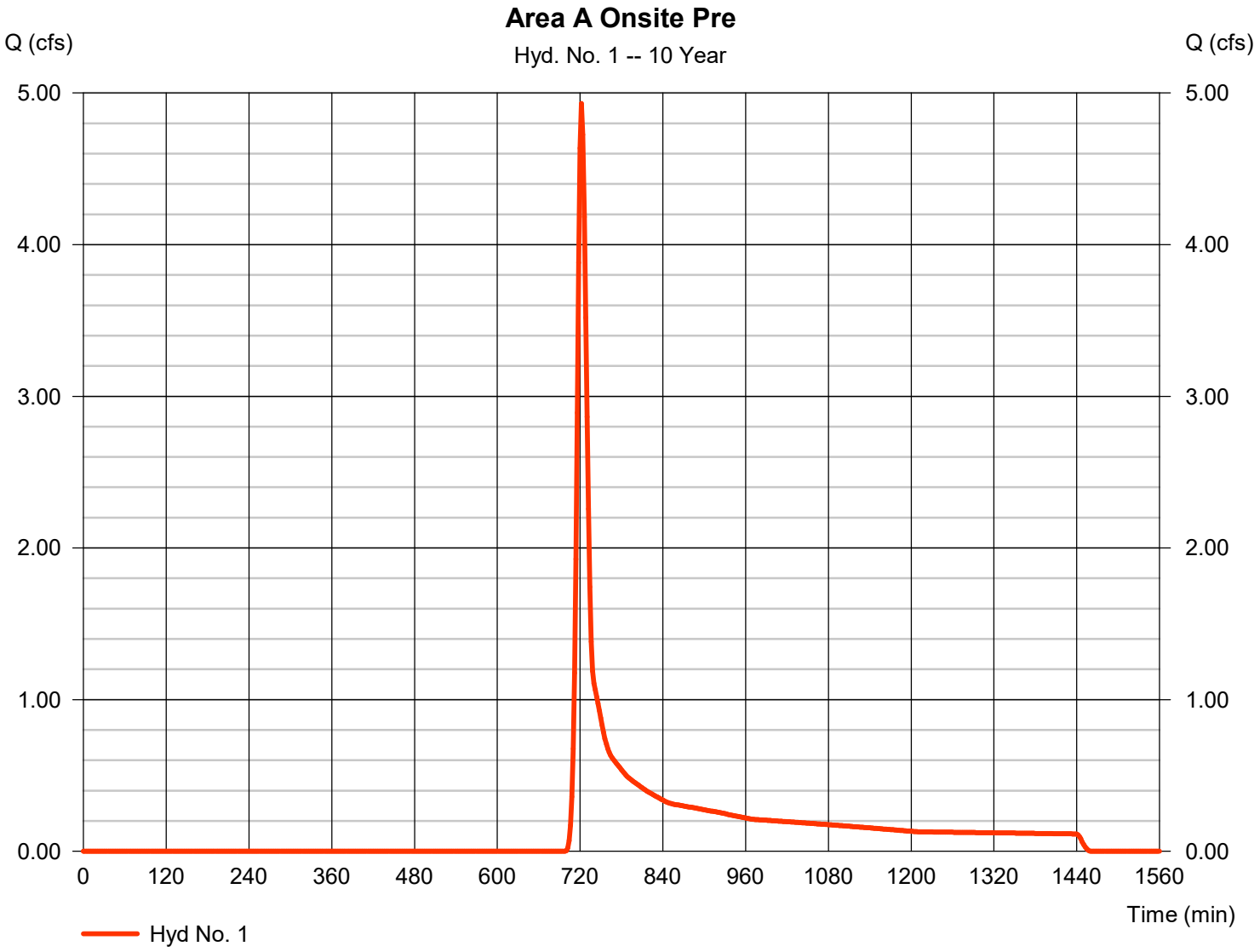
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
73	SCS Runoff	476.83	2	734	2,111,072	------	------	------	Additional Area to Point D-E
74	Combine	239.32	2	730	1,202,116	17, 20, 21, 25, 45,	------	------	Total Area A-E Post
75	Combine	705.29	2	732	3,313,189	73, 74	------	------	Total A-E Post & Upstream
76	Reach	694.57	2	736	3,313,144	75	------	------	A-E Travel to H Landfill Culverts
77	Combine	188.15	2	730	910,464	51, 58,	------	------	Total Area F & G Post
78	Reach	186.16	2	732	910,414	77	------	------	F&G Travel to H Landfill Culverts
79	SCS Runoff	80.80	2	736	370,628	------	------	------	Area H at Culverts
80	Combine	958.19	2	734	4,594,181	76, 78, 79	------	------	Total Area H At Culverts Post
82	SCS Runoff	2069.32	2	768	18,443,486	------	------	------	Area I - Apex
83	Reach	2066.04	2	770	18,443,470	82	------	------	Culverts Travel to I
84	Combine	4127.88	2	768	36,886,940	82, 83	------	------	Total Area I Post

Hydrograph Report

Hyd. No. 1

Area A Onsite Pre

Hydrograph type	=	SCS Runoff	Peak discharge	=	4.931 cfs
Storm frequency	=	10 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	14,774 cuft
Drainage area	=	3.850 ac	Curve number	=	55
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	12.10 min
Total precip.	=	5.09 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

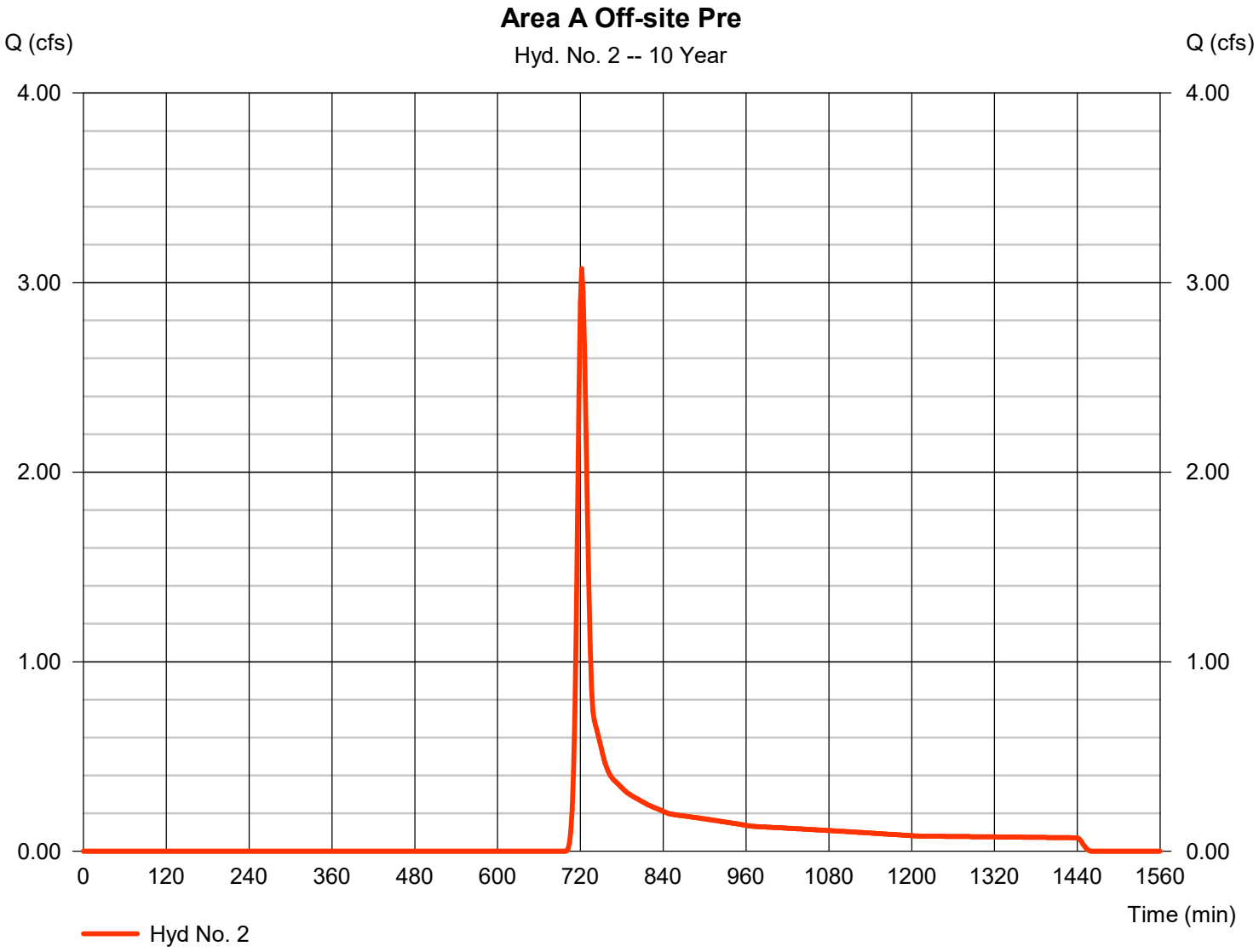


Hydrograph Report

Hyd. No. 2

Area A Off-site Pre

Hydrograph type	= SCS Runoff	Peak discharge	= 3.074 cfs
Storm frequency	= 10 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 9,210 cuft
Drainage area	= 2.400 ac	Curve number	= 55
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 12.10 min
Total precip.	= 5.09 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

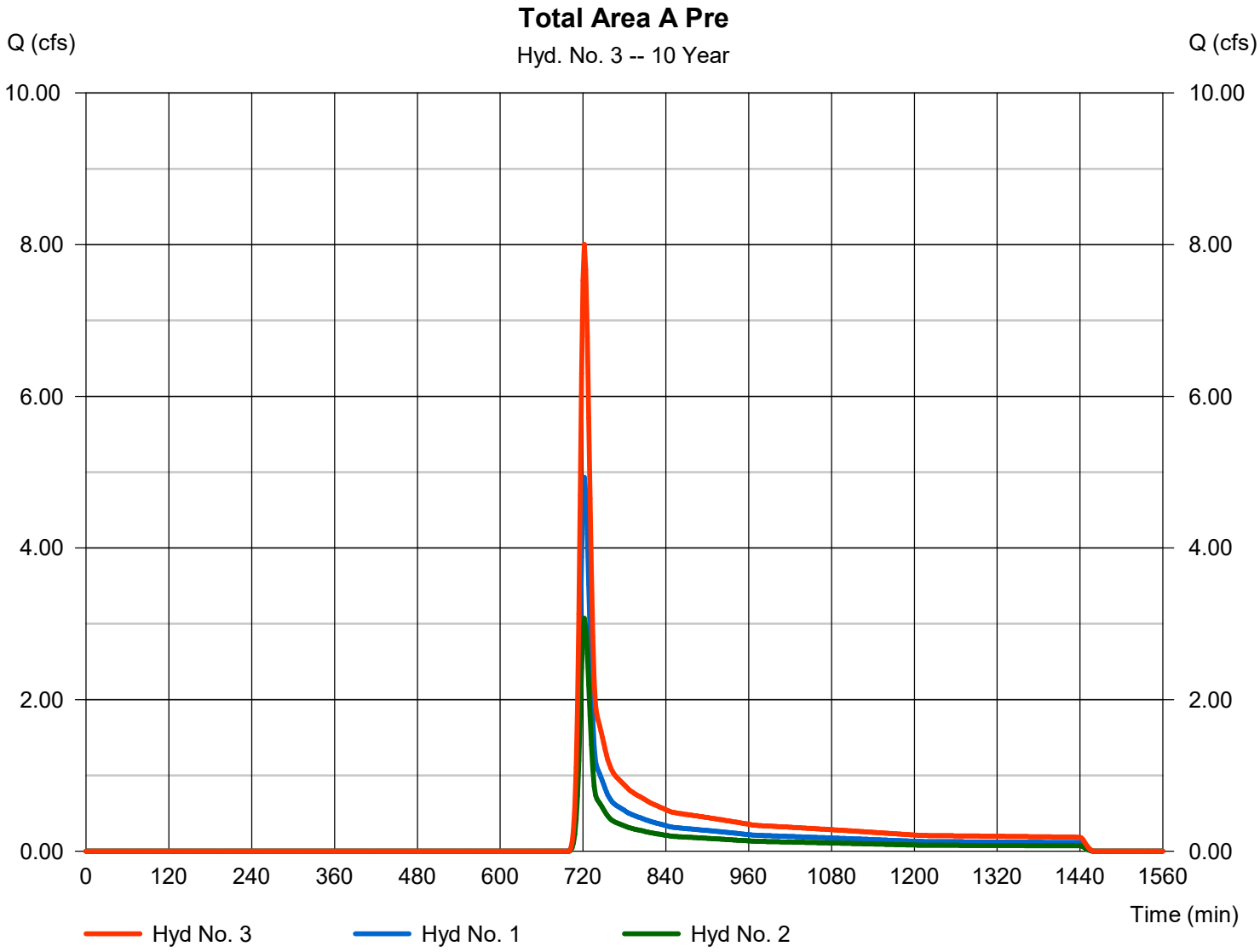


Hydrograph Report

Hyd. No. 3

Total Area A Pre

Hydrograph type	= Combine	Peak discharge	= 8.005 cfs
Storm frequency	= 10 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 23,984 cuft
Inflow hyds.	= 1, 2	Contrib. drain. area	= 6.250 ac

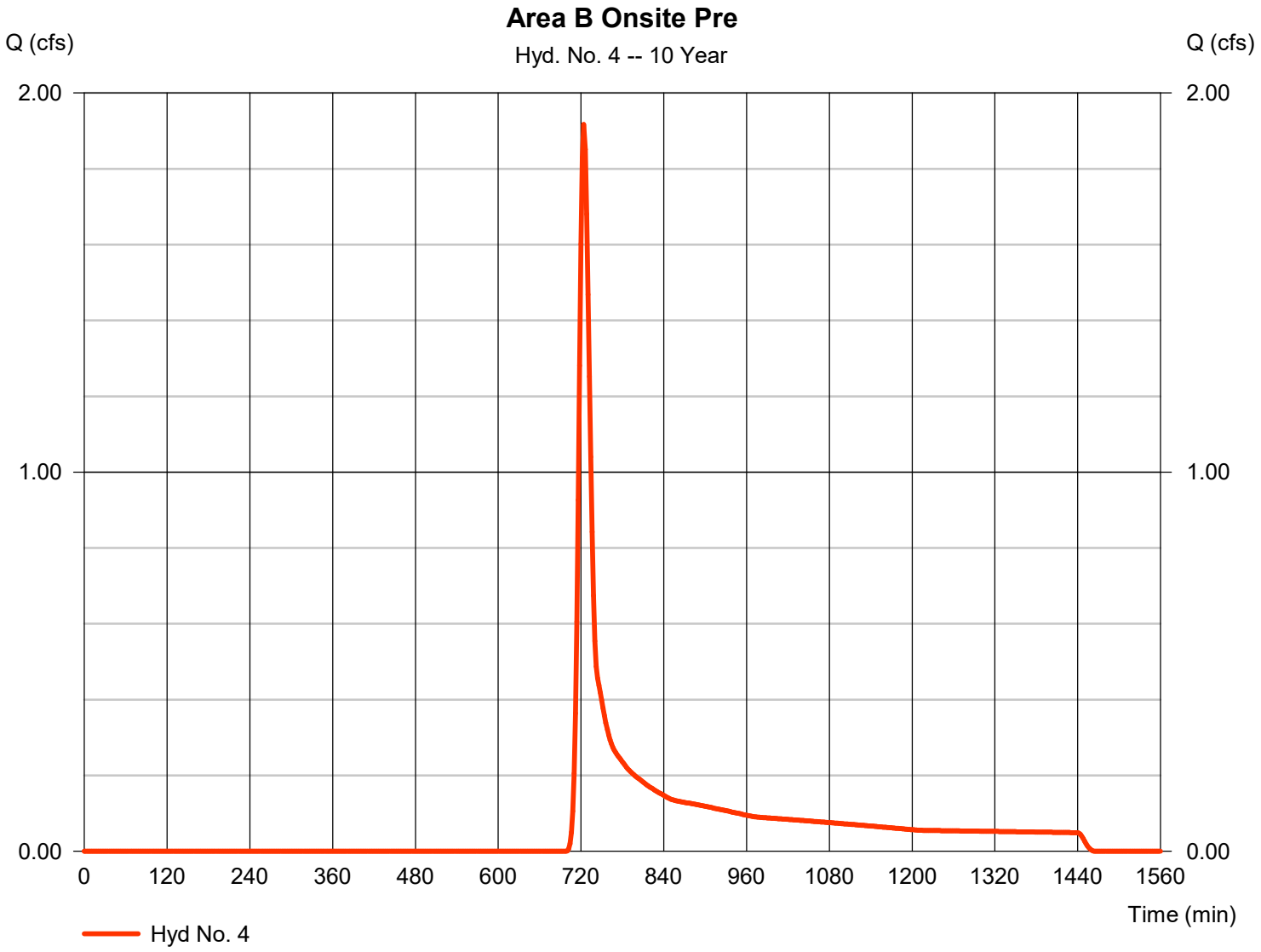


Hydrograph Report

Hyd. No. 4

Area B Onsite Pre

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.917 cfs
Storm frequency	=	10 yrs	Time to peak	=	724 min
Time interval	=	2 min	Hyd. volume	=	6,349 cuft
Drainage area	=	1.750 ac	Curve number	=	55
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	15.20 min
Total precip.	=	5.09 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

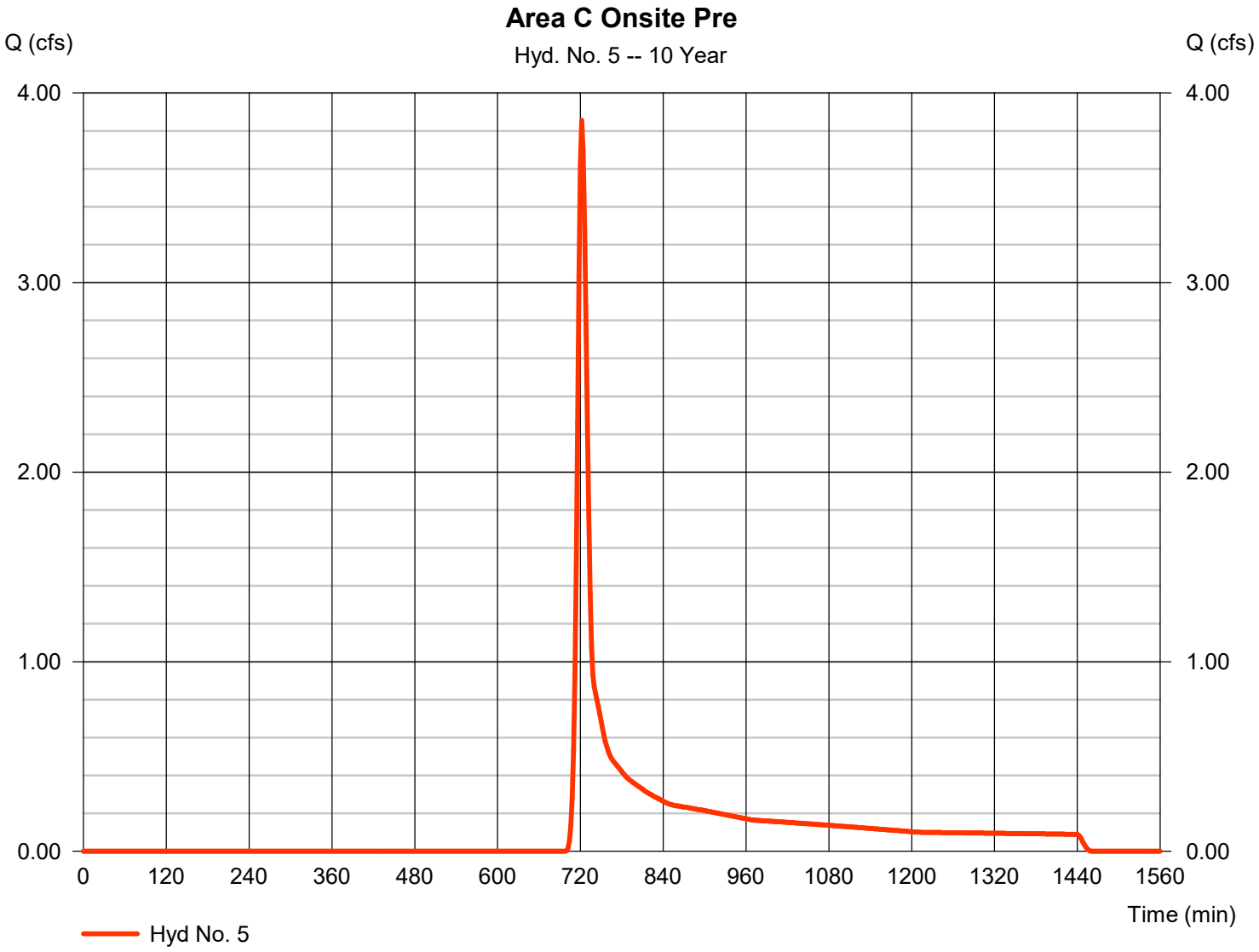


Hydrograph Report

Hyd. No. 5

Area C Onsite Pre

Hydrograph type	= SCS Runoff	Peak discharge	= 3.855 cfs
Storm frequency	= 10 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 11,551 cuft
Drainage area	= 3.010 ac	Curve number	= 55
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 10.80 min
Total precip.	= 5.09 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

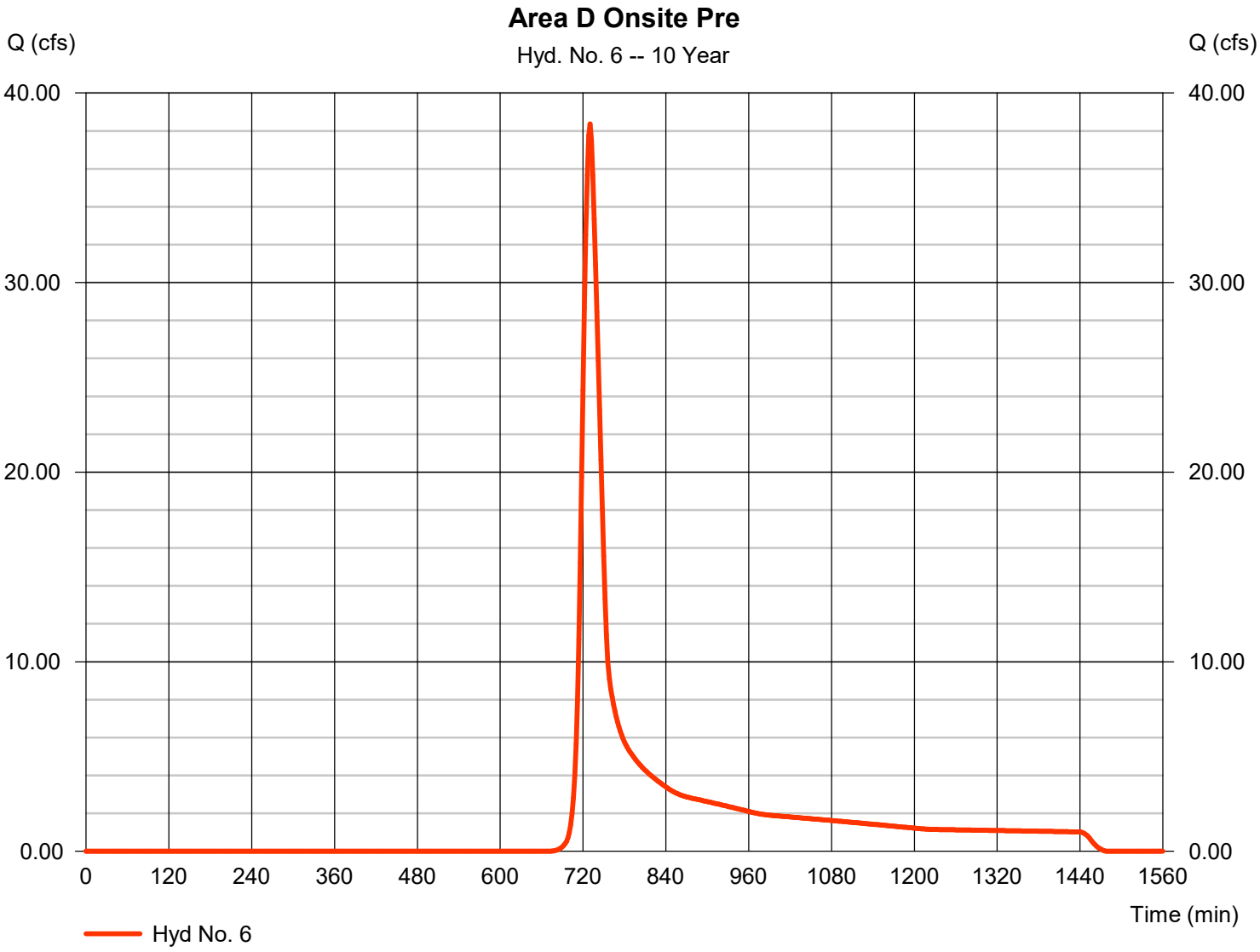


Hydrograph Report

Hyd. No. 6

Area D Onsite Pre

Hydrograph type	= SCS Runoff	Peak discharge	= 38.37 cfs
Storm frequency	= 10 yrs	Time to peak	= 730 min
Time interval	= 2 min	Hyd. volume	= 153,933 cuft
Drainage area	= 29.390 ac	Curve number	= 61.6
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 24.00 min
Total precip.	= 5.09 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

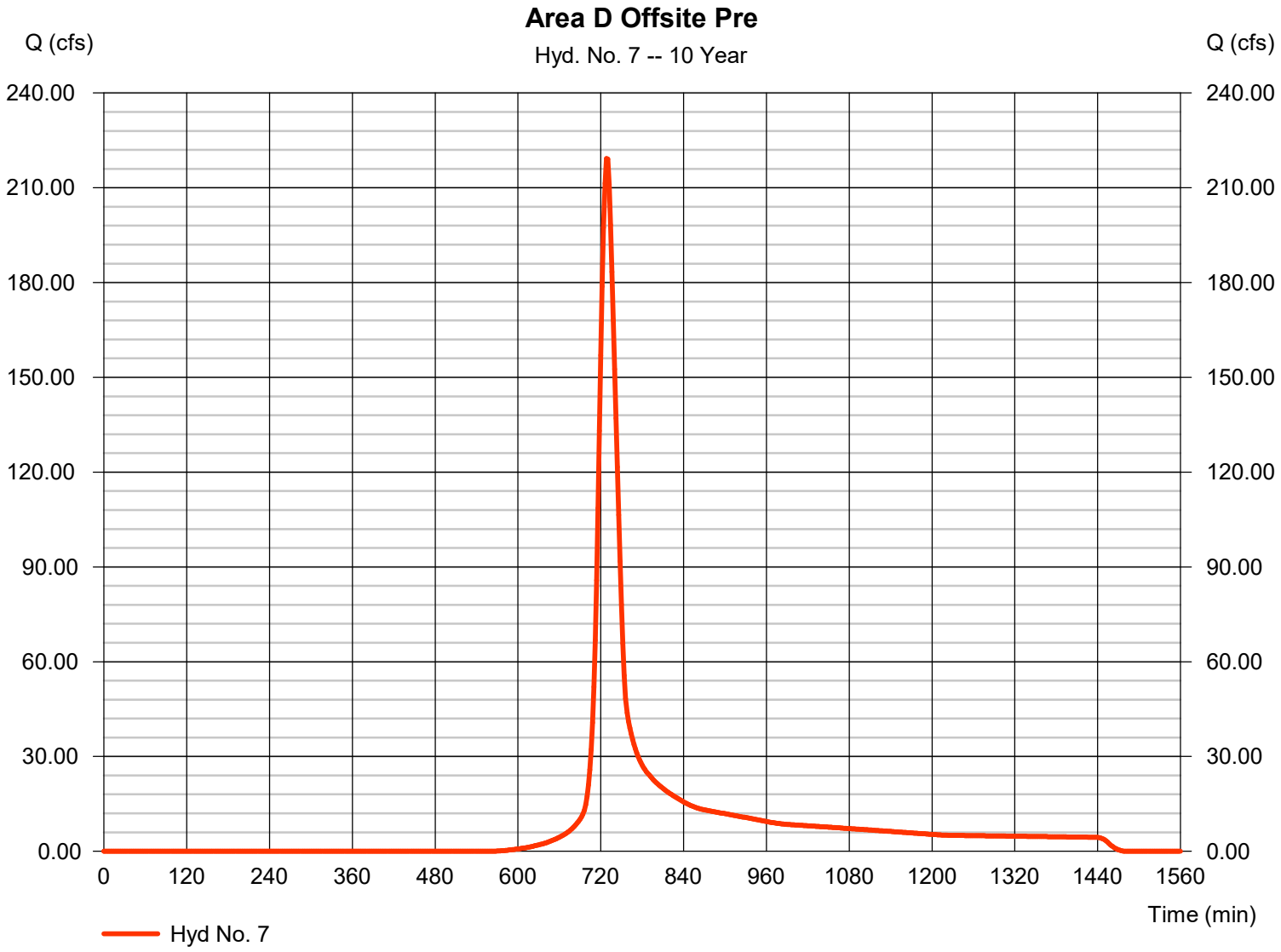


Hydrograph Report

Hyd. No. 7

Area D Offsite Pre

Hydrograph type	=	SCS Runoff	Peak discharge	=	219.24 cfs
Storm frequency	=	10 yrs	Time to peak	=	728 min
Time interval	=	2 min	Hyd. volume	=	817,730 cuft
Drainage area	=	101.300 ac	Curve number	=	71.9
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	24.00 min
Total precip.	=	5.09 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

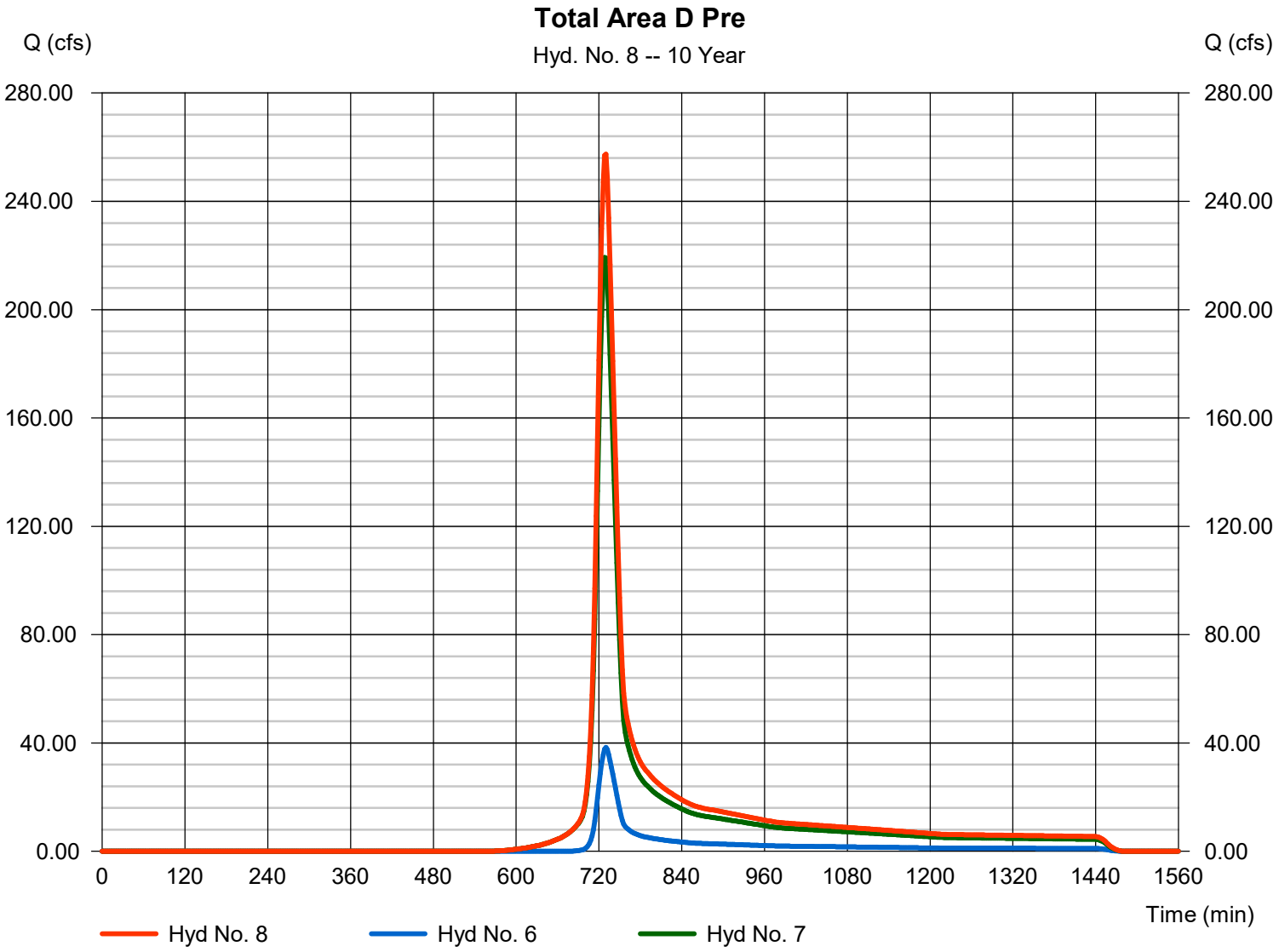


Hydrograph Report

Hyd. No. 8

Total Area D Pre

Hydrograph type	= Combine	Peak discharge	= 257.45 cfs
Storm frequency	= 10 yrs	Time to peak	= 730 min
Time interval	= 2 min	Hyd. volume	= 971,663 cuft
Inflow hyds.	= 6, 7	Contrib. drain. area	= 130.690 ac

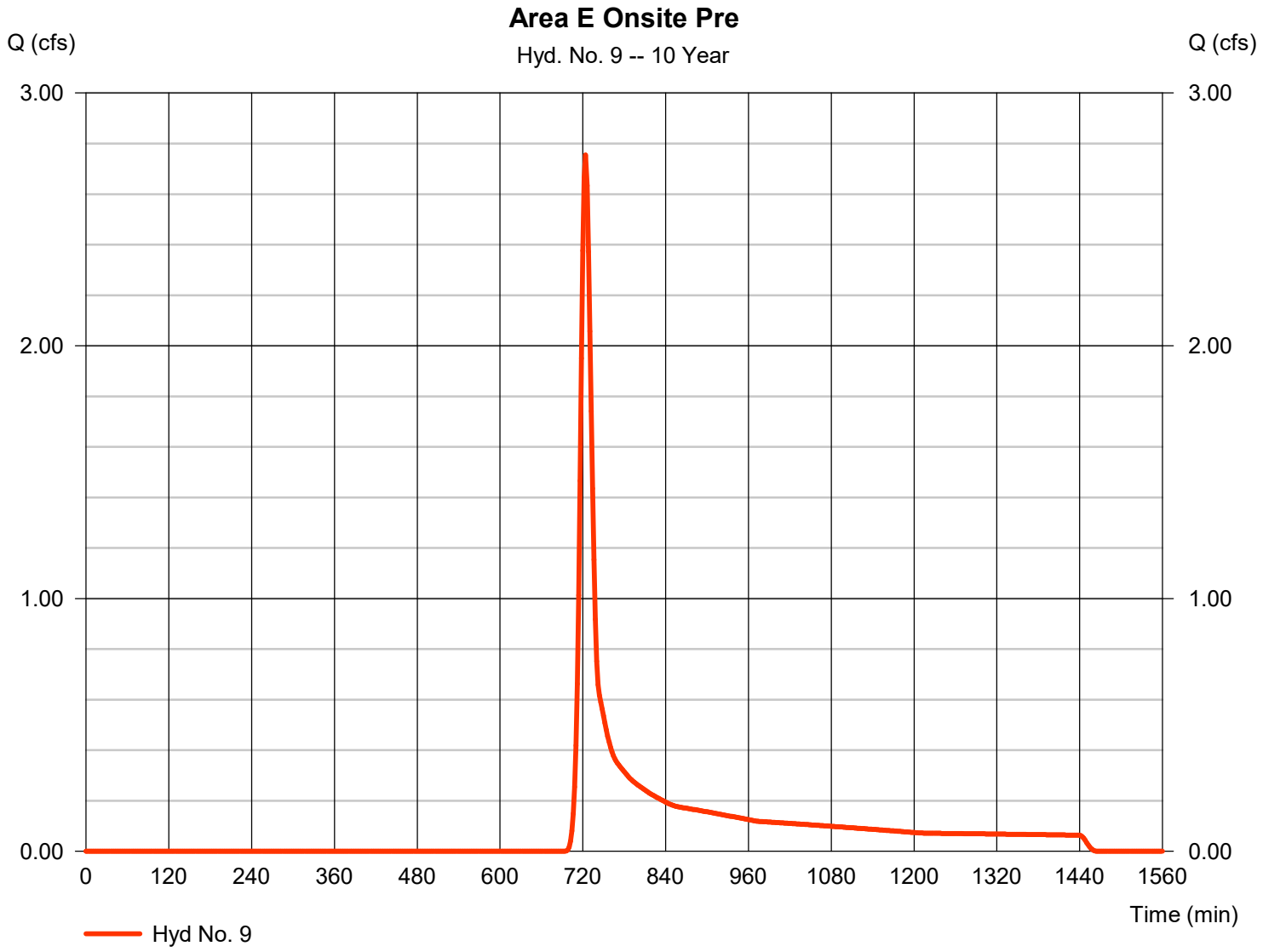


Hydrograph Report

Hyd. No. 9

Area E Onsite Pre

Hydrograph type	=	SCS Runoff	Peak discharge	=	2.755 cfs
Storm frequency	=	10 yrs	Time to peak	=	724 min
Time interval	=	2 min	Hyd. volume	=	8,706 cuft
Drainage area	=	2.110 ac	Curve number	=	57.2
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	15.30 min
Total precip.	=	5.09 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

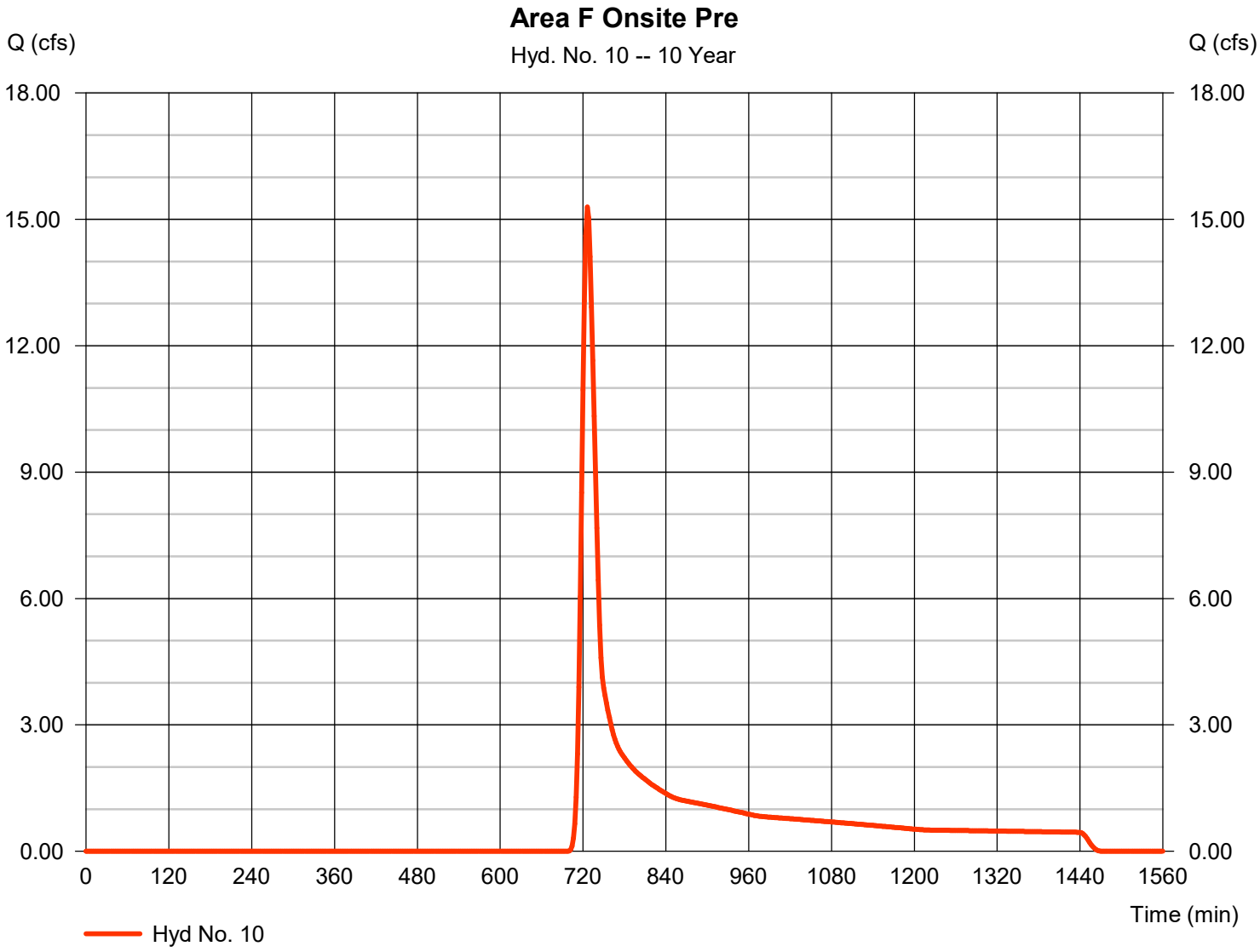


Hydrograph Report

Hyd. No. 10

Area F Onsite Pre

Hydrograph type	=	SCS Runoff	Peak discharge	=	15.29 cfs
Storm frequency	=	10 yrs	Time to peak	=	726 min
Time interval	=	2 min	Hyd. volume	=	58,124 cuft
Drainage area	=	15.620 ac	Curve number	=	55
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	17.60 min
Total precip.	=	5.09 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

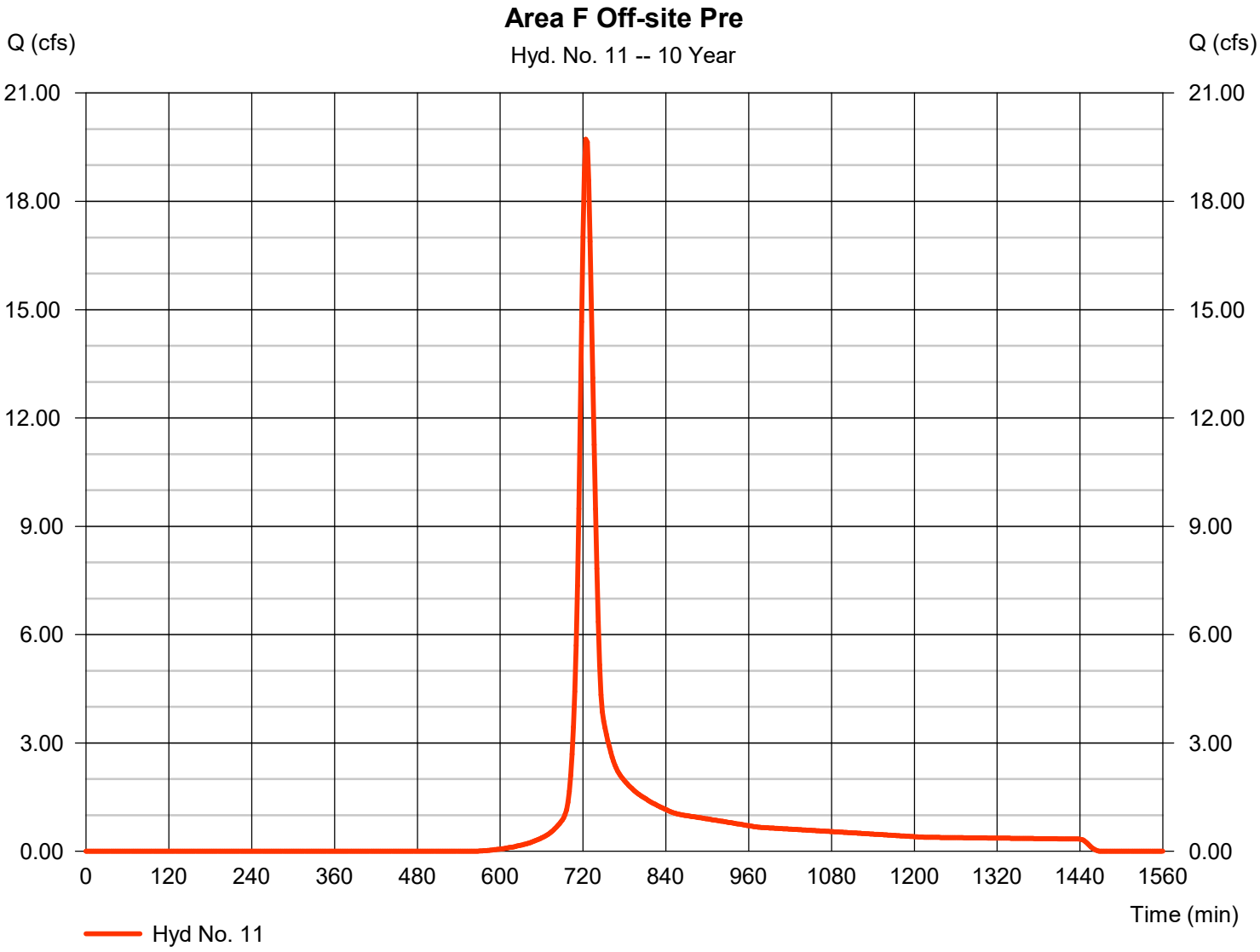


Hydrograph Report

Hyd. No. 11

Area F Off-site Pre

Hydrograph type	=	SCS Runoff	Peak discharge	=	19.72 cfs
Storm frequency	=	10 yrs	Time to peak	=	724 min
Time interval	=	2 min	Hyd. volume	=	62,436 cuft
Drainage area	=	7.670 ac	Curve number	=	71.7
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	17.60 min
Total precip.	=	5.09 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

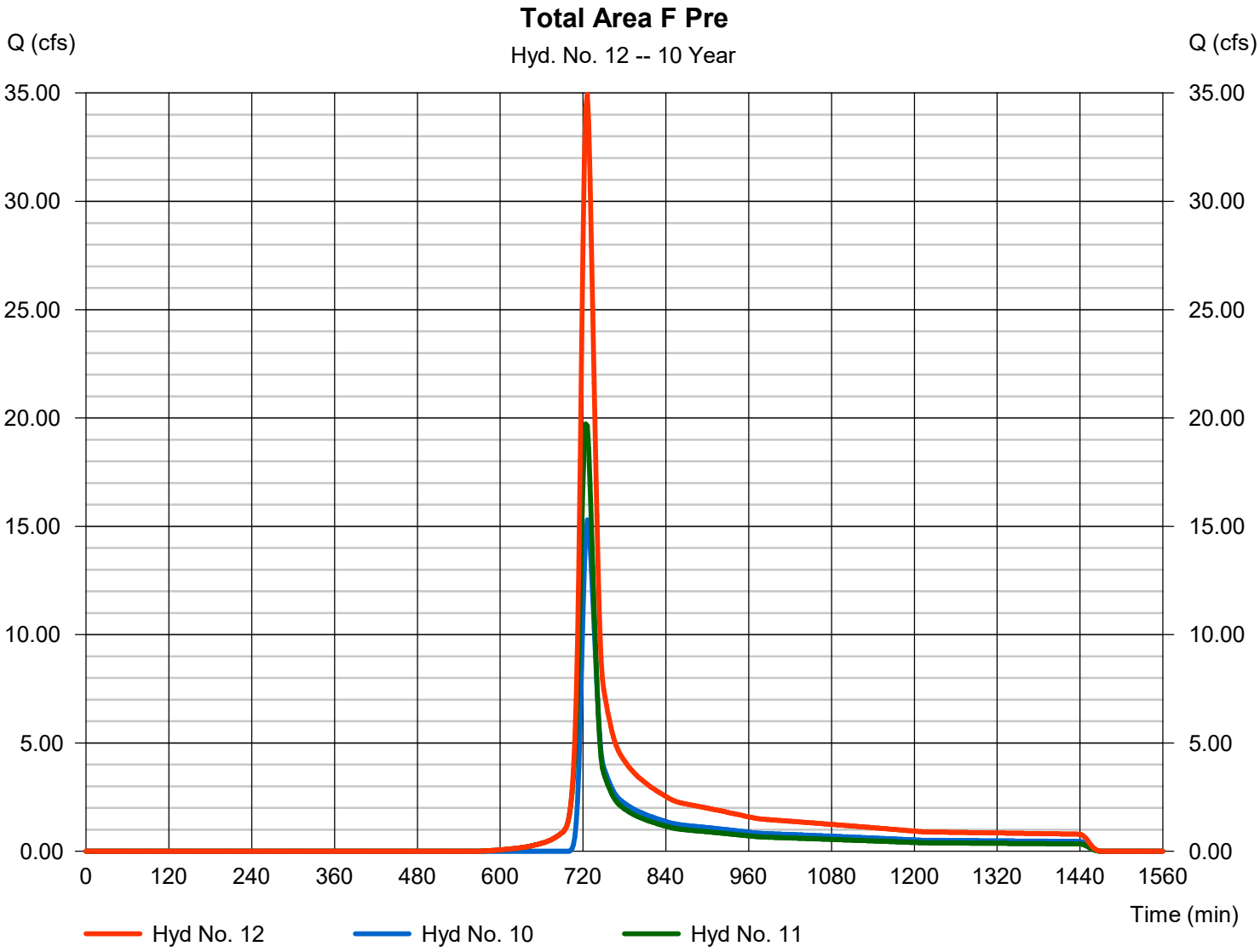


Hydrograph Report

Hyd. No. 12

Total Area F Pre

Hydrograph type	= Combine	Peak discharge	= 34.93 cfs
Storm frequency	= 10 yrs	Time to peak	= 726 min
Time interval	= 2 min	Hyd. volume	= 120,559 cuft
Inflow hyds.	= 10, 11	Contrib. drain. area	= 23.290 ac



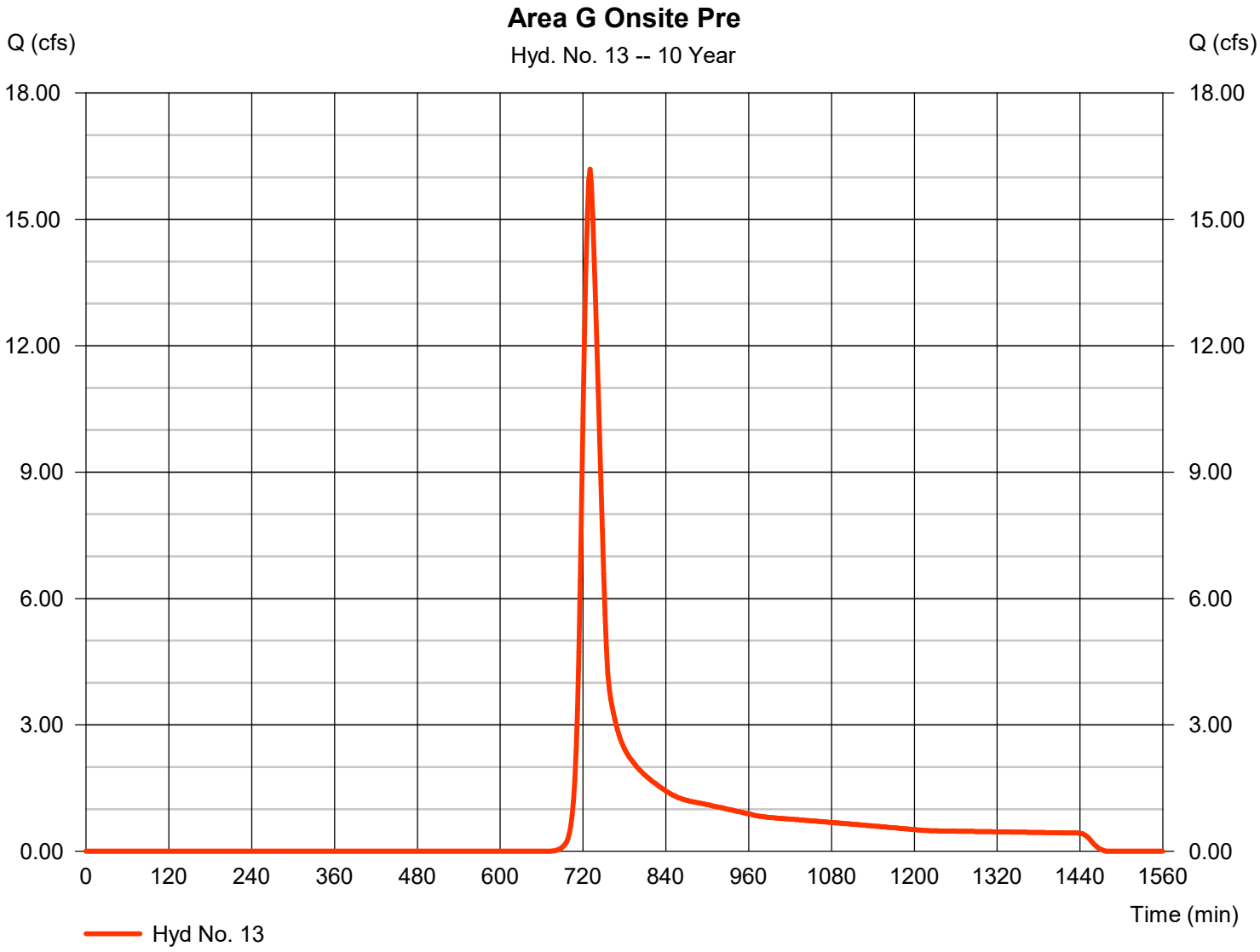
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Friday, 02 / 12 / 2021

Hyd. No. 13

Area G Onsite Pre

Hydrograph type	=	SCS Runoff	Peak discharge	=	16.19 cfs
Storm frequency	=	10 yrs	Time to peak	=	730 min
Time interval	=	2 min	Hyd. volume	=	64,946 cuft
Drainage area	=	12.400 ac	Curve number	=	61.6
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	23.80 min
Total precip.	=	5.09 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

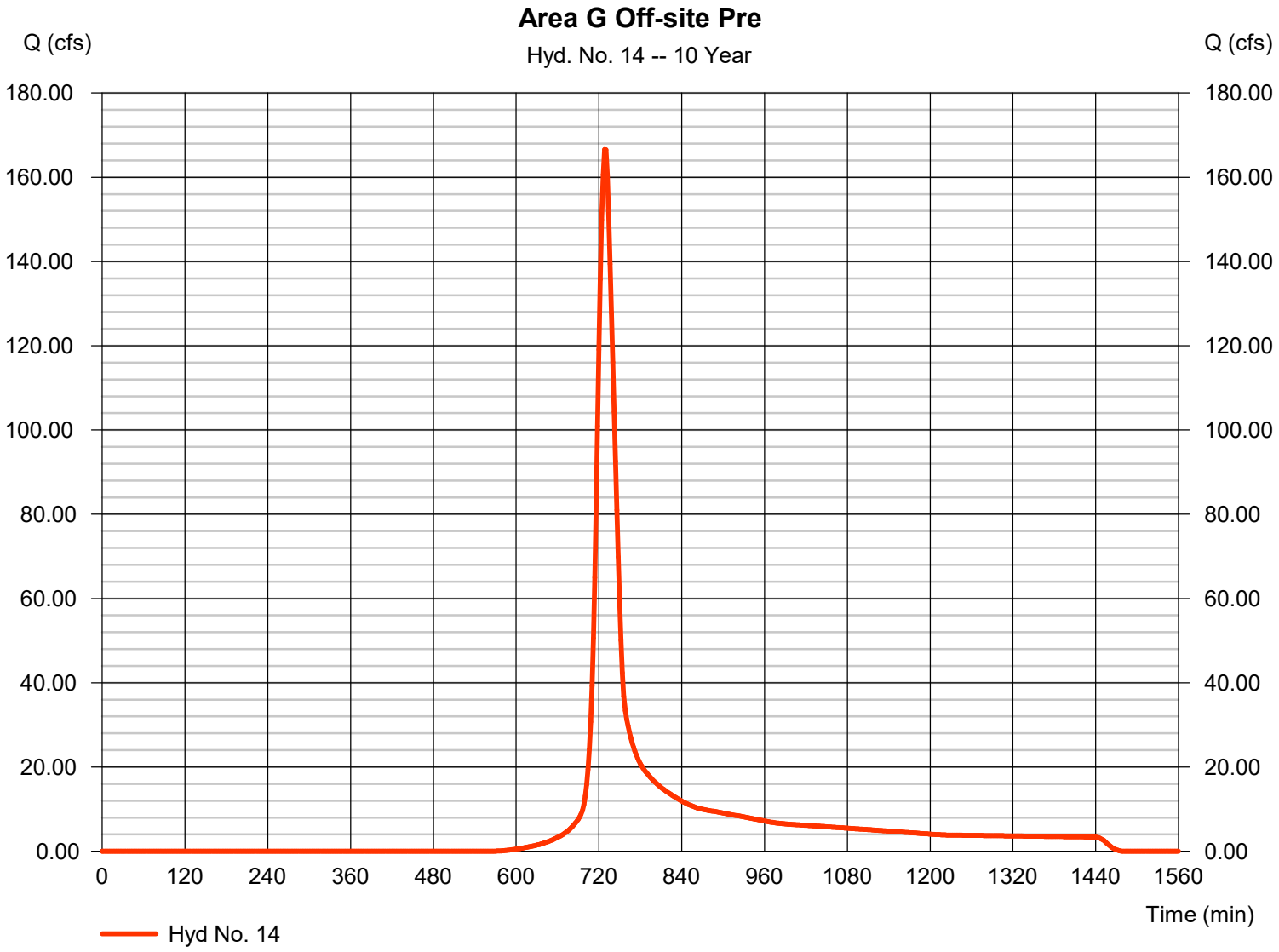


Hydrograph Report

Hyd. No. 14

Area G Off-site Pre

Hydrograph type	=	SCS Runoff	Peak discharge	=	166.59 cfs
Storm frequency	=	10 yrs	Time to peak	=	728 min
Time interval	=	2 min	Hyd. volume	=	621,892 cuft
Drainage area	=	77.610 ac	Curve number	=	71.7
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	23.80 min
Total precip.	=	5.09 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

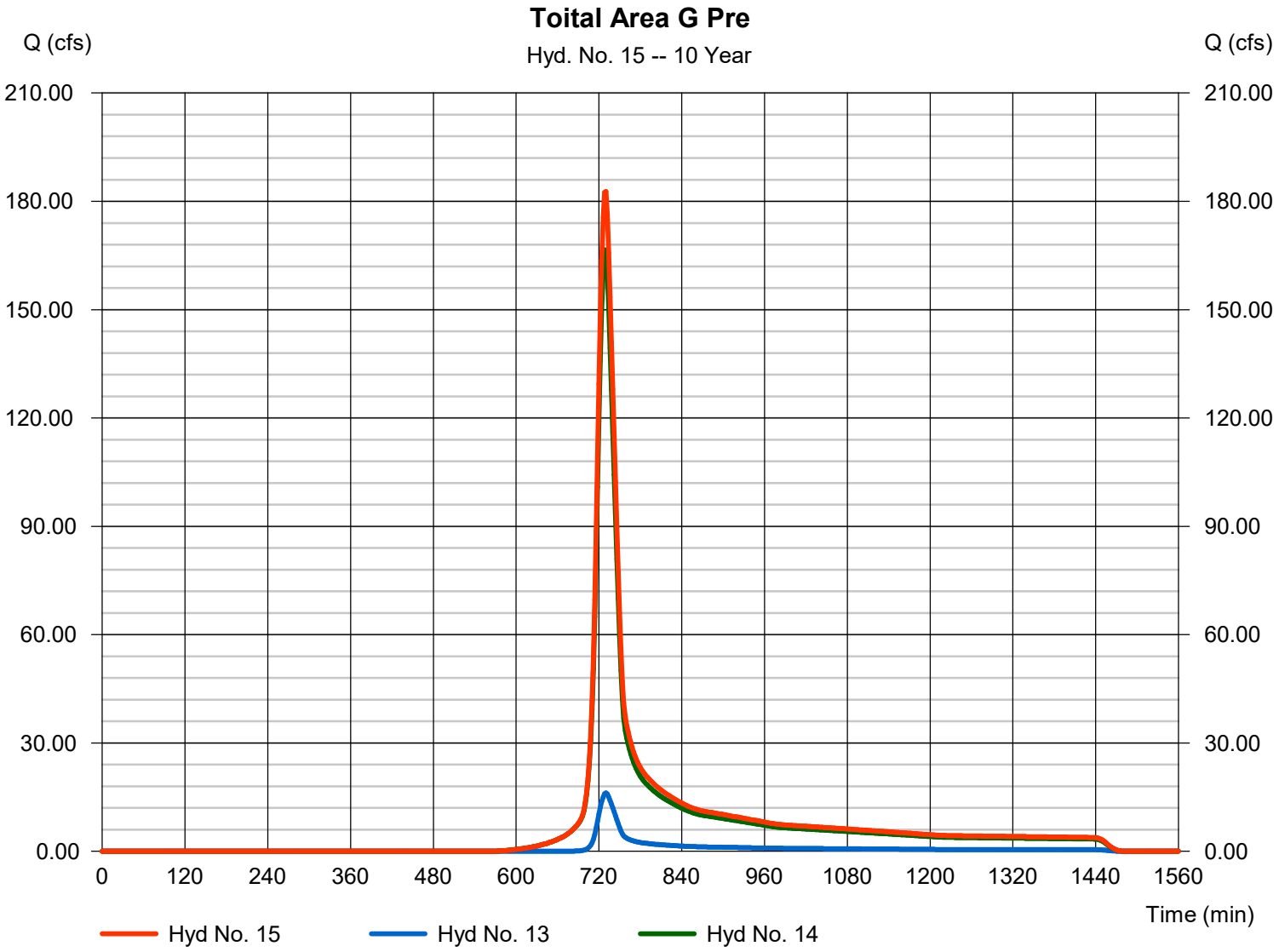


Hydrograph Report

Hyd. No. 15

Toital Area G Pre

Hydrograph type	= Combine	Peak discharge	= 182.70 cfs
Storm frequency	= 10 yrs	Time to peak	= 730 min
Time interval	= 2 min	Hyd. volume	= 686,838 cuft
Inflow hyds.	= 13, 14	Contrib. drain. area	= 90.010 ac

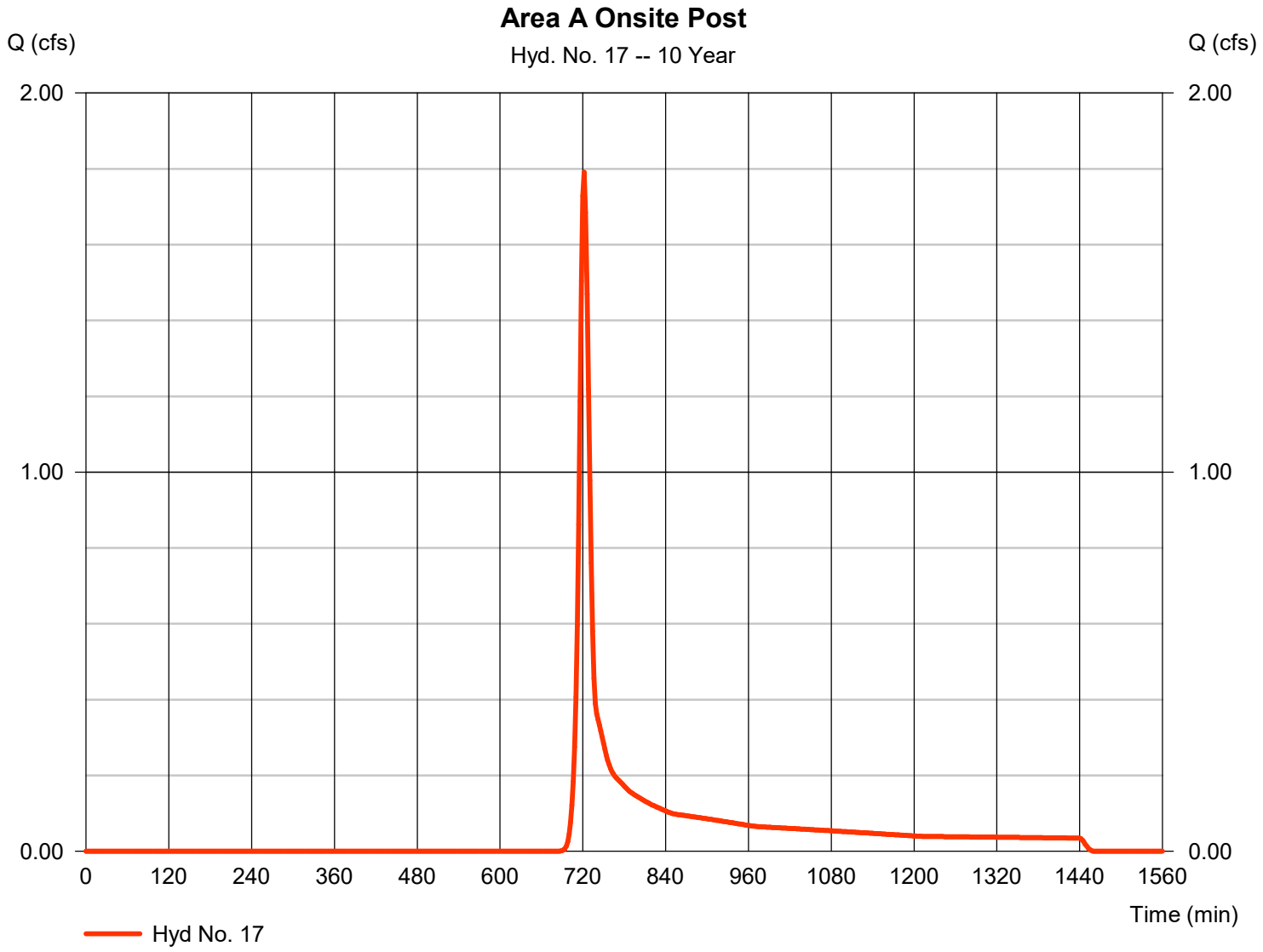


Hydrograph Report

Hyd. No. 17

Area A Onsite Post

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.791 cfs
Storm frequency	=	10 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	4,987 cuft
Drainage area	=	1.020 ac	Curve number	=	59.3
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	12.10 min
Total precip.	=	5.09 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

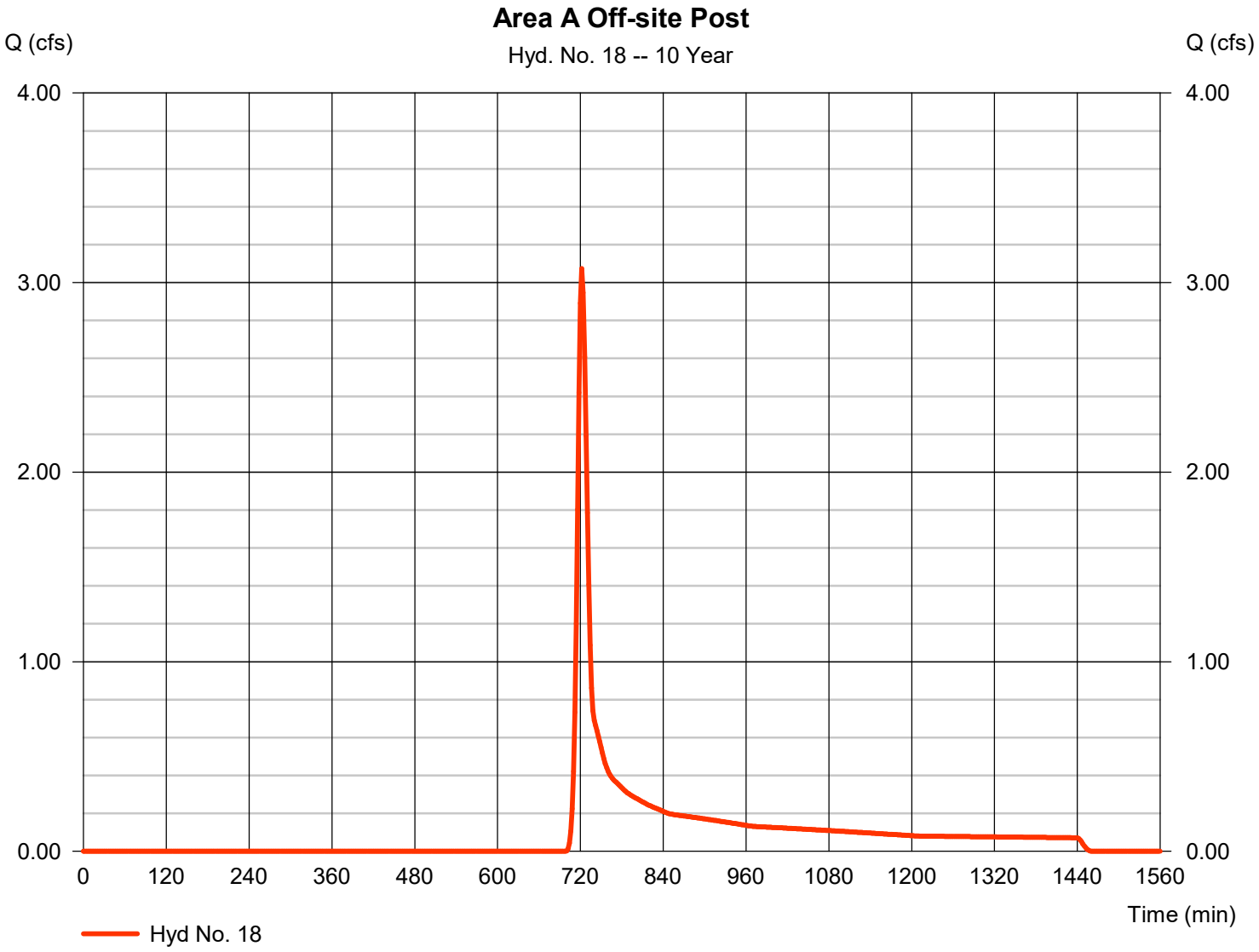


Hydrograph Report

Hyd. No. 18

Area A Off-site Post

Hydrograph type	=	SCS Runoff	Peak discharge	=	3.074 cfs
Storm frequency	=	10 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	9,210 cuft
Drainage area	=	2.400 ac	Curve number	=	55
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	12.10 min
Total precip.	=	5.09 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

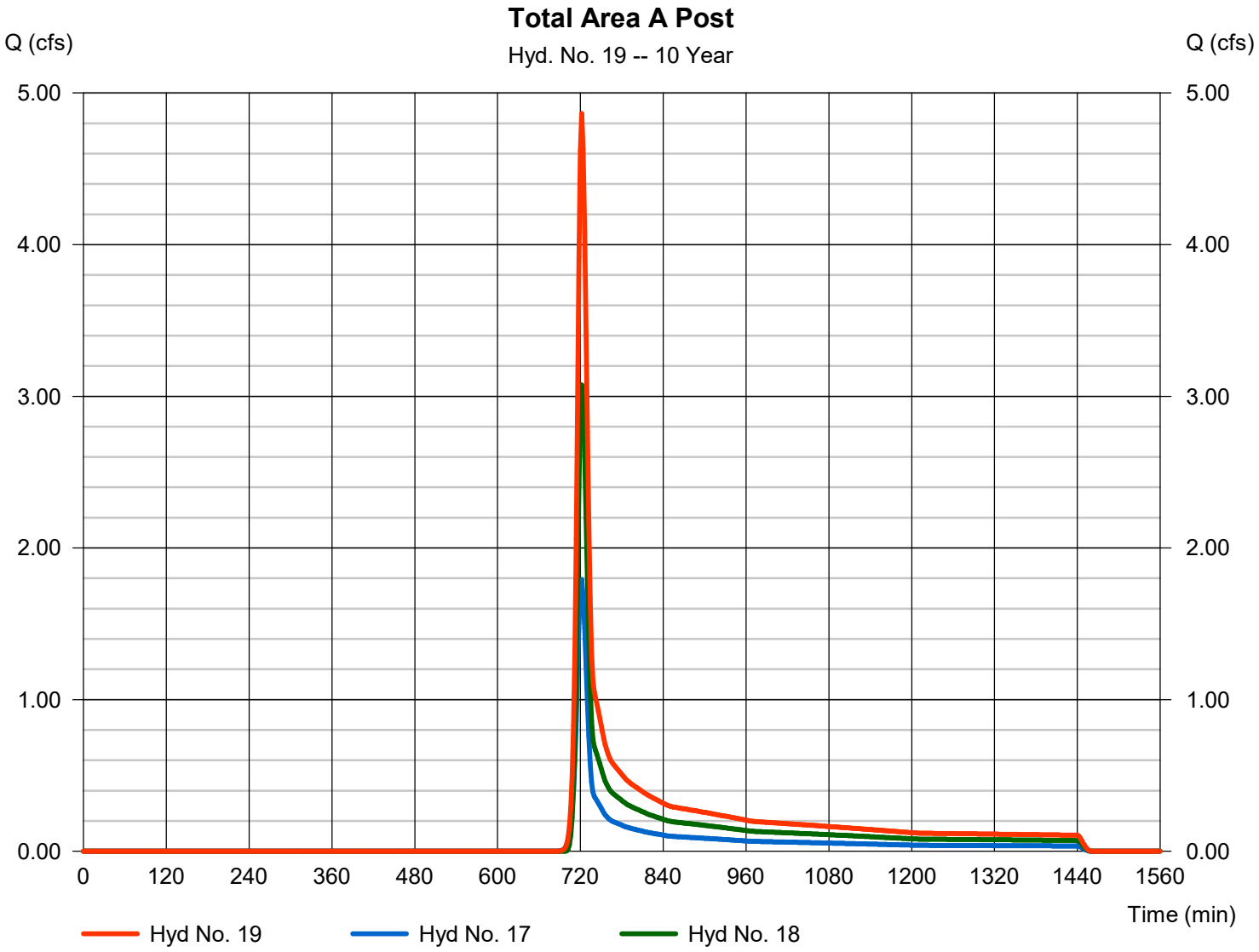


Hydrograph Report

Hyd. No. 19

Total Area A Post

Hydrograph type	= Combine	Peak discharge	= 4.865 cfs
Storm frequency	= 10 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 14,196 cuft
Inflow hyds.	= 17, 18	Contrib. drain. area	= 3.420 ac

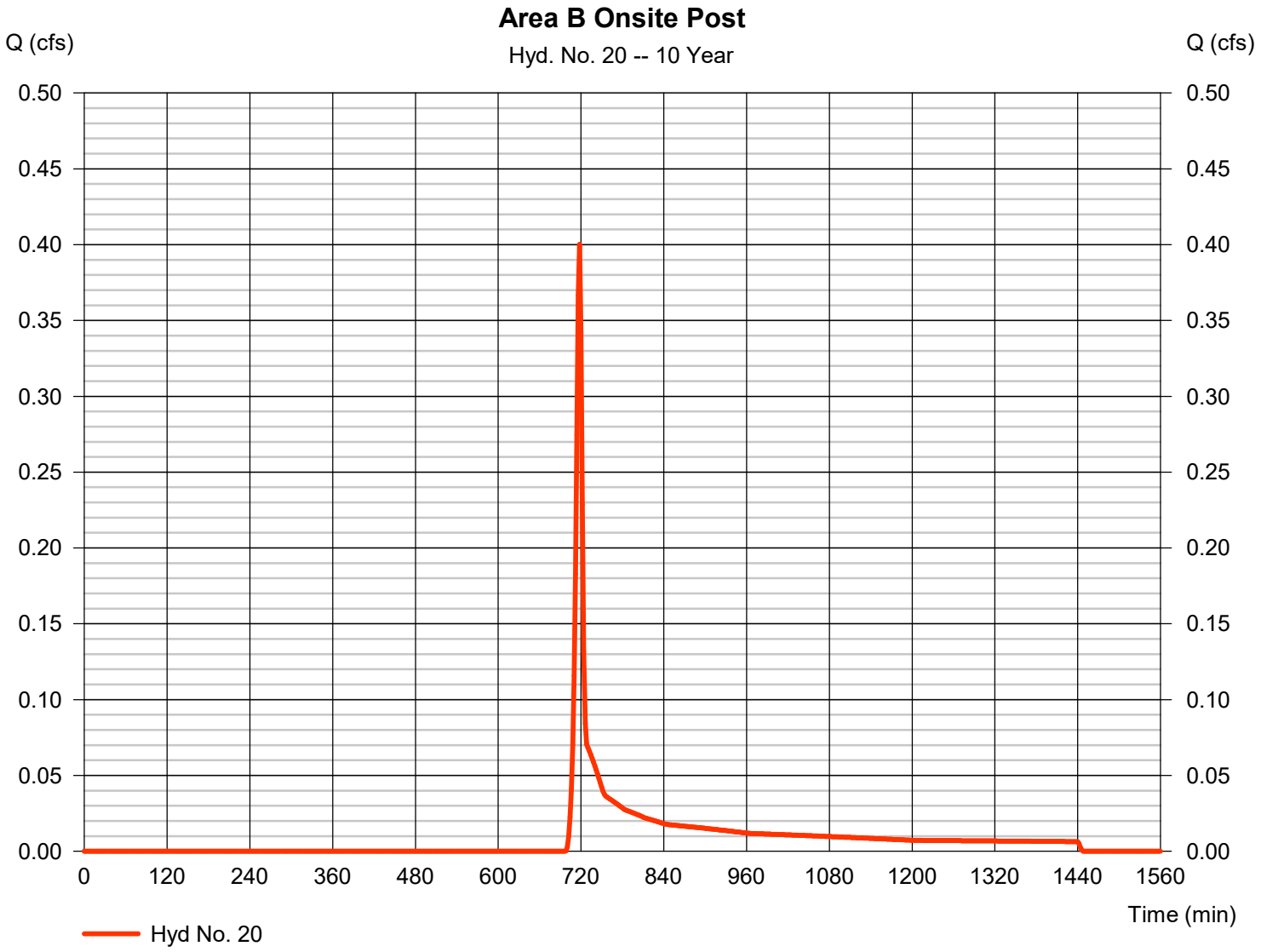


Hydrograph Report

Hyd. No. 20

Area B Onsite Post

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.400 cfs
Storm frequency	=	10 yrs	Time to peak	=	718 min
Time interval	=	2 min	Hyd. volume	=	842 cuft
Drainage area	=	0.230 ac	Curve number	=	55.8
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	5.09 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

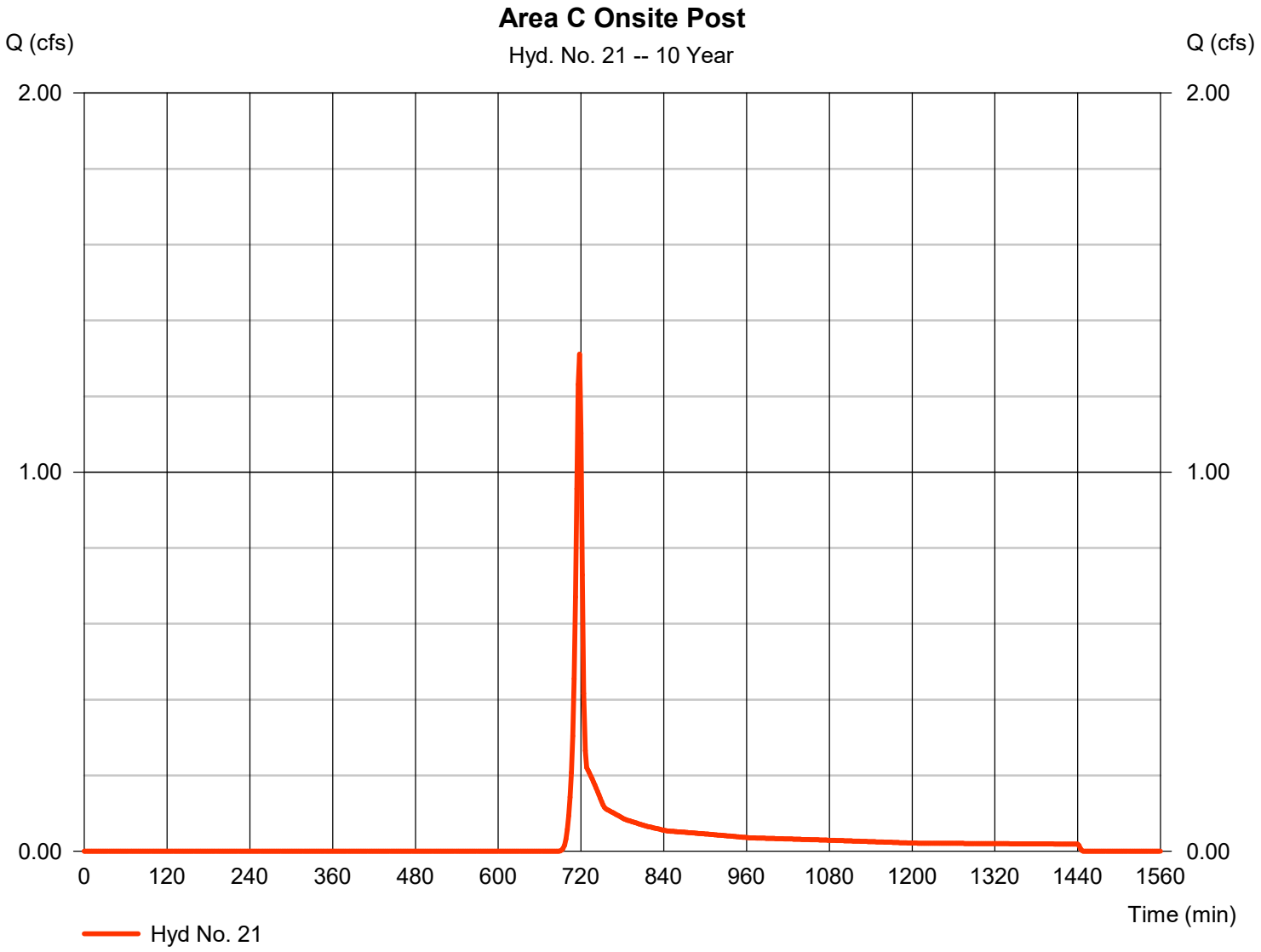


Hydrograph Report

Hyd. No. 21

Area C Onsite Post

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.311 cfs
Storm frequency	=	10 yrs	Time to peak	=	718 min
Time interval	=	2 min	Hyd. volume	=	2,684 cuft
Drainage area	=	0.620 ac	Curve number	=	58.8
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	5.09 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

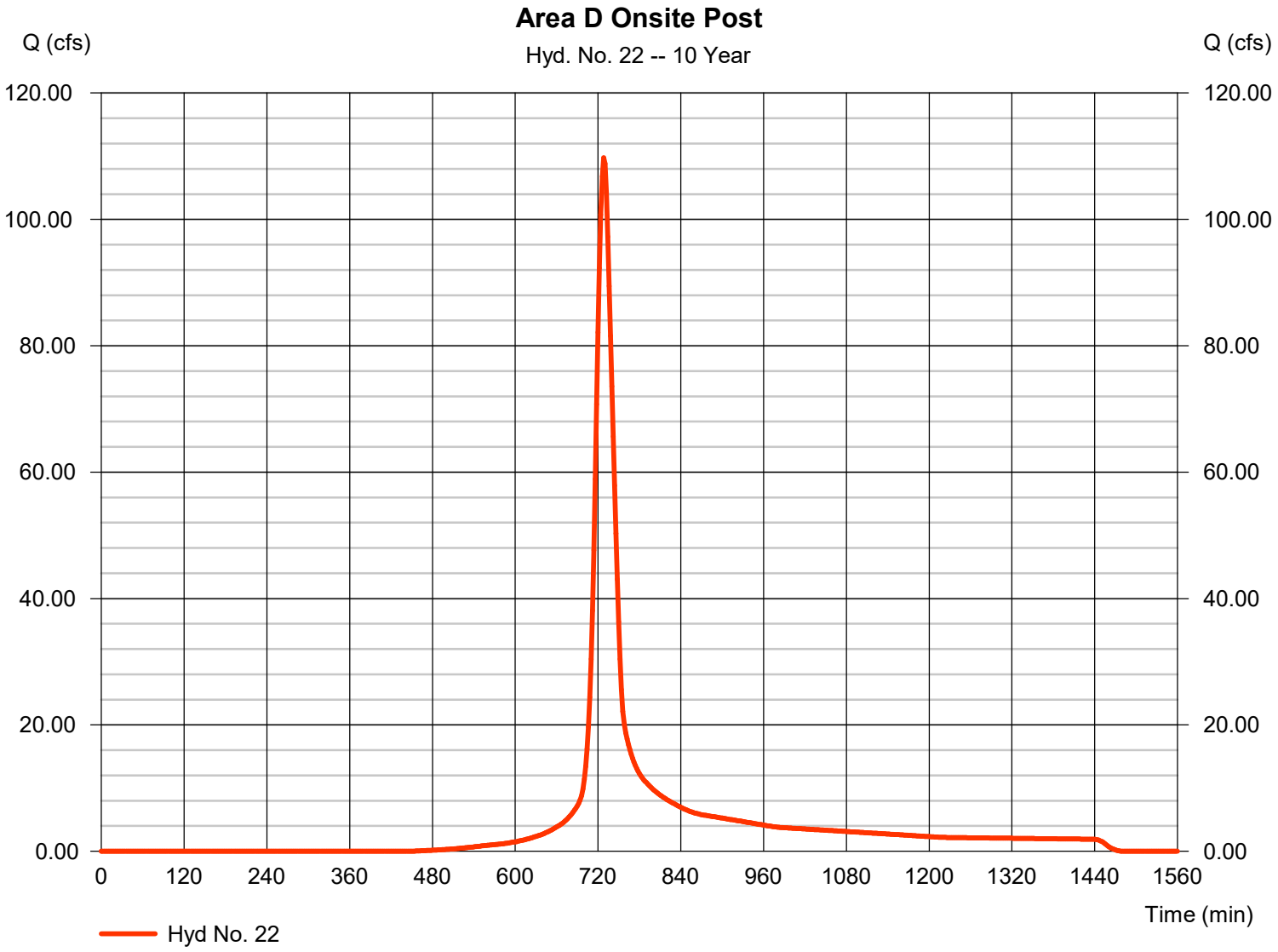


Hydrograph Report

Hyd. No. 22

Area D Onsite Post

Hydrograph type	=	SCS Runoff	Peak discharge	=	109.74 cfs
Storm frequency	=	10 yrs	Time to peak	=	728 min
Time interval	=	2 min	Hyd. volume	=	402,669 cuft
Drainage area	=	38.890 ac	Curve number	=	79.2
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	24.00 min
Total precip.	=	5.09 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

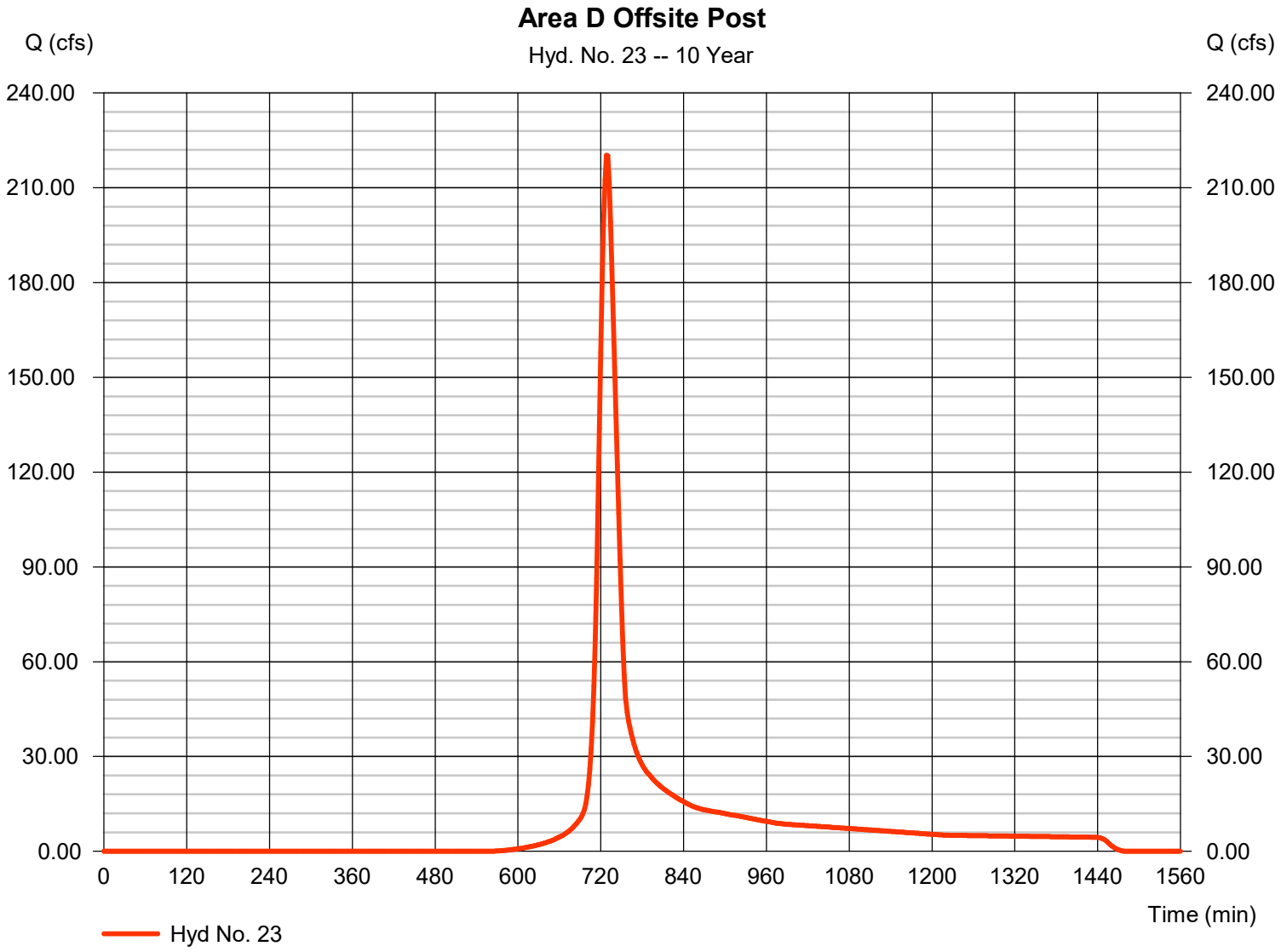


Hydrograph Report

Hyd. No. 23

Area D Offsite Post

Hydrograph type	=	SCS Runoff	Peak discharge	=	220.31 cfs
Storm frequency	=	10 yrs	Time to peak	=	728 min
Time interval	=	2 min	Hyd. volume	=	821,388 cuft
Drainage area	=	101.380 ac	Curve number	=	72
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	24.00 min
Total precip.	=	5.09 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

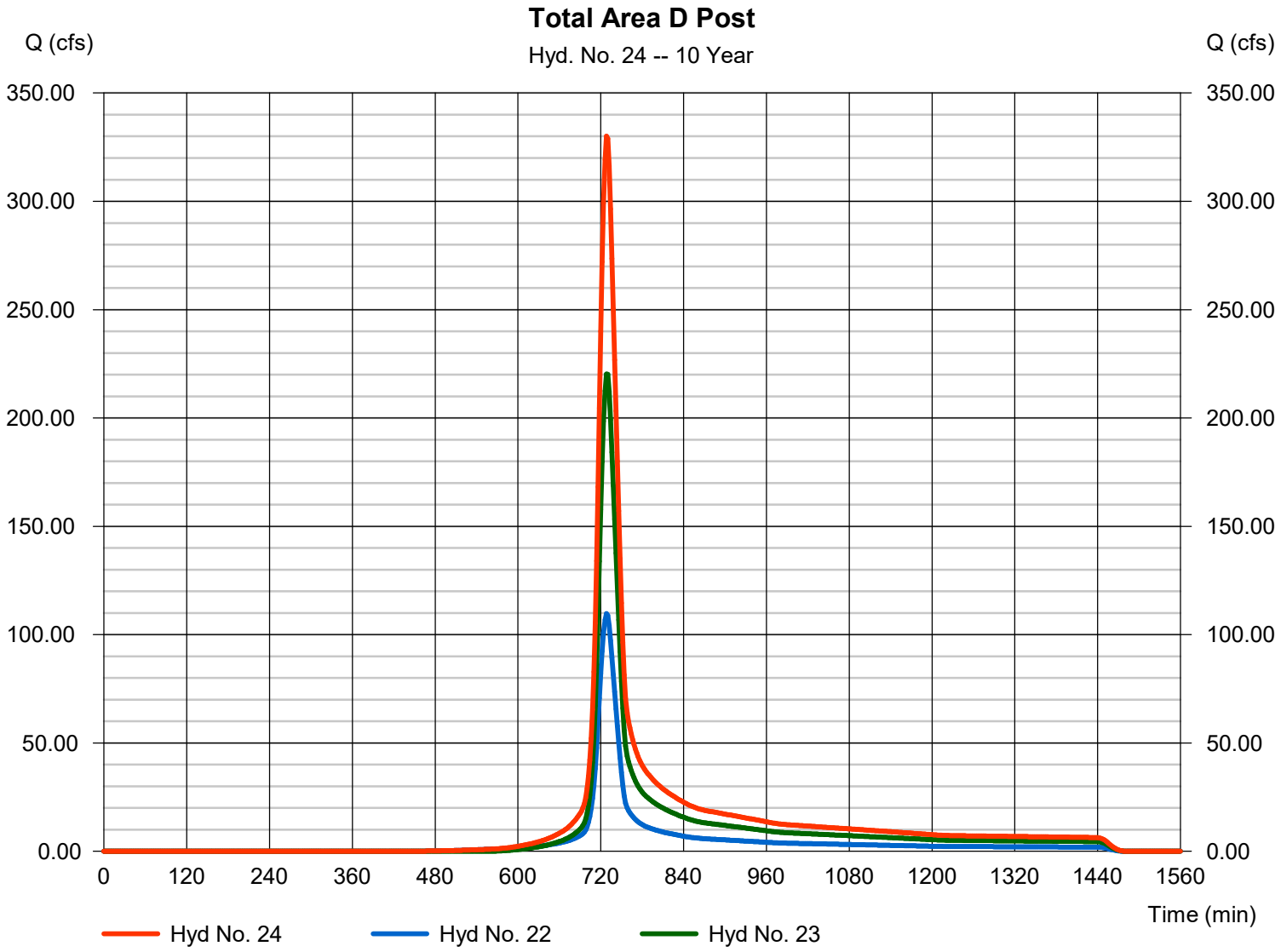


Hydrograph Report

Hyd. No. 24

Total Area D Post

Hydrograph type	= Combine	Peak discharge	= 330.05 cfs
Storm frequency	= 10 yrs	Time to peak	= 728 min
Time interval	= 2 min	Hyd. volume	= 1,224,058 cuft
Inflow hyds.	= 22, 23	Contrib. drain. area	= 140.270 ac

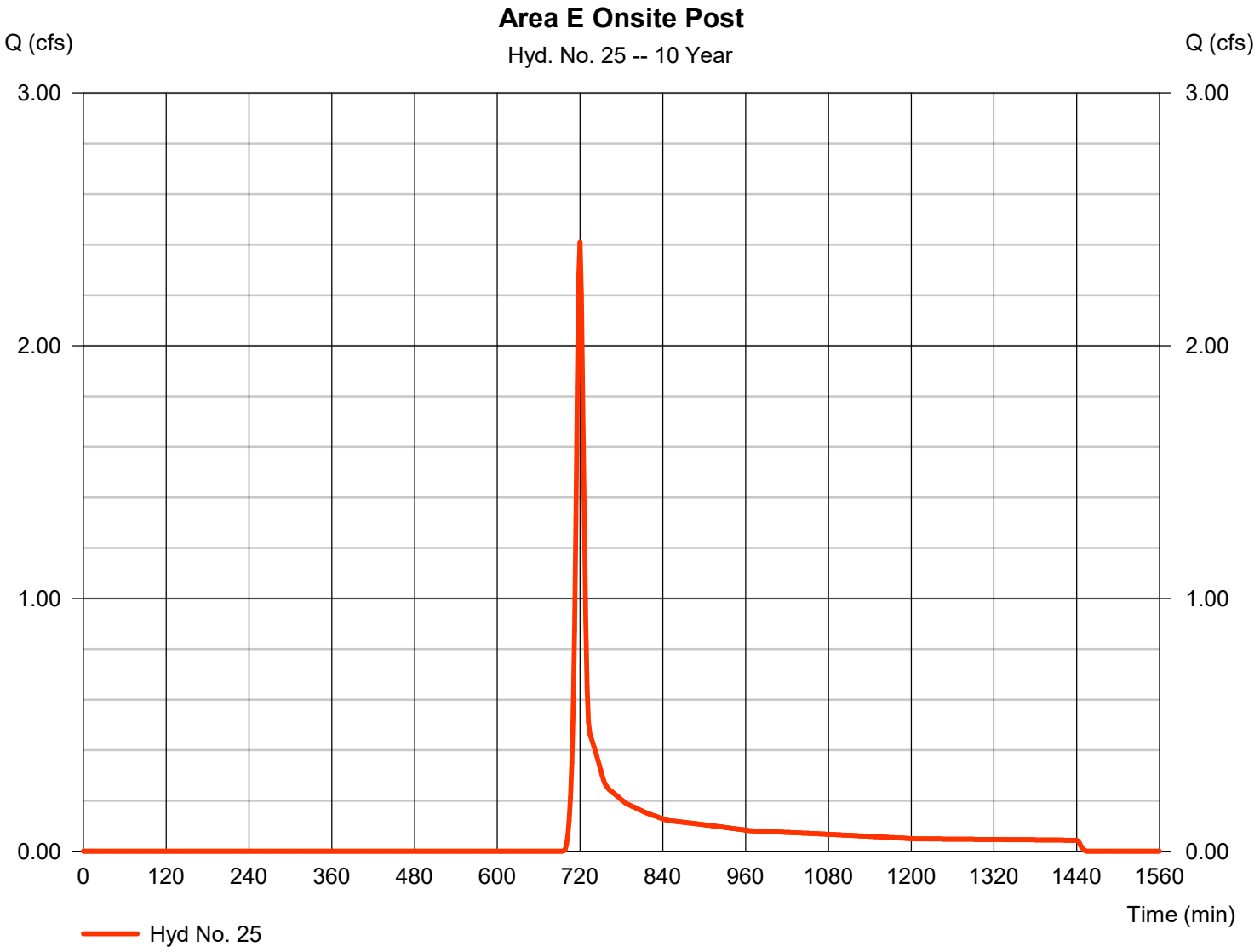


Hydrograph Report

Hyd. No. 25

Area E Onsite Post

Hydrograph type	=	SCS Runoff	Peak discharge	=	2.410 cfs
Storm frequency	=	10 yrs	Time to peak	=	720 min
Time interval	=	2 min	Hyd. volume	=	5,909 cuft
Drainage area	=	1.420 ac	Curve number	=	56.9
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	8.20 min
Total precip.	=	5.09 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

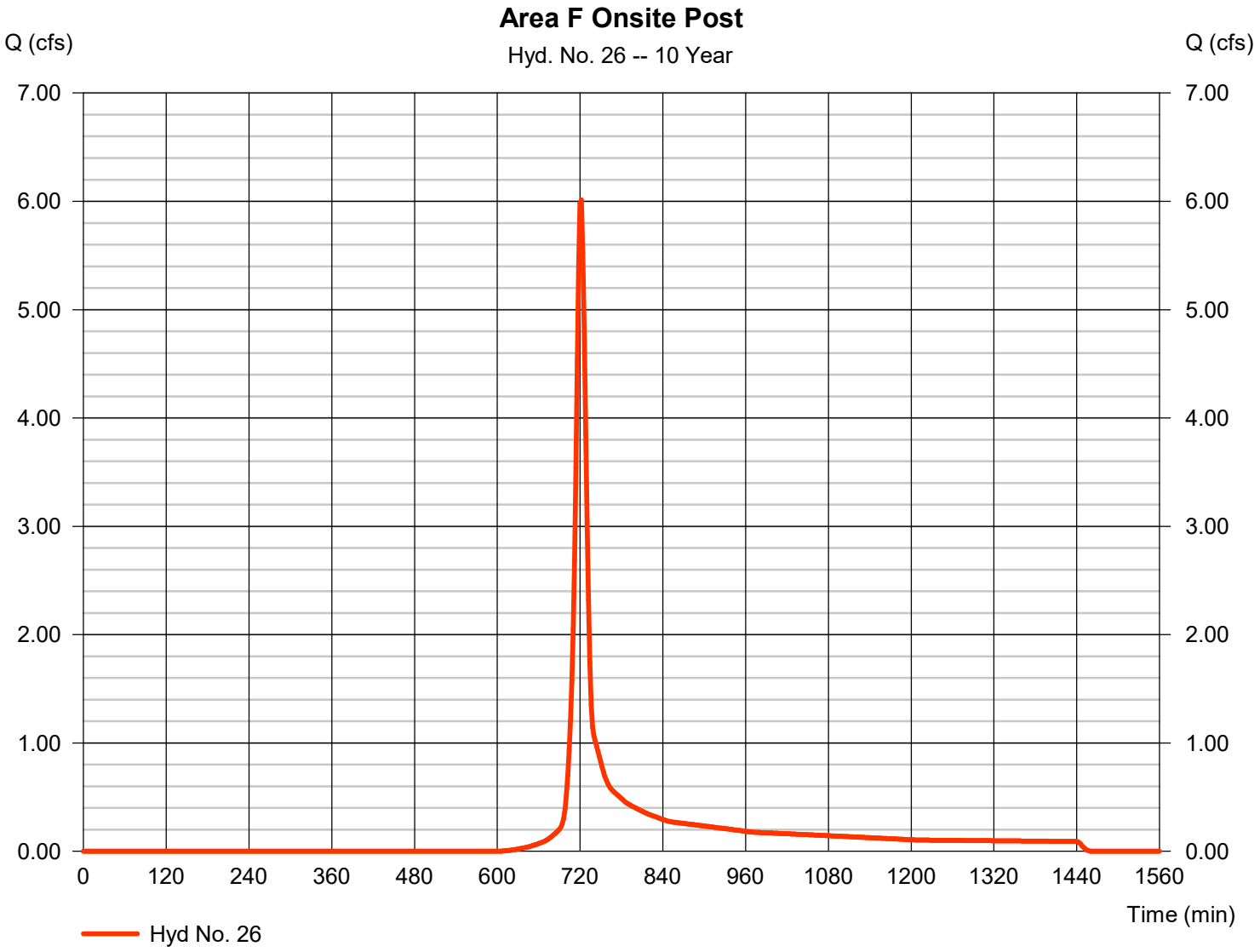


Hydrograph Report

Hyd. No. 26

Area F Onsite Post

Hydrograph type	=	SCS Runoff	Peak discharge	=	6.012 cfs
Storm frequency	=	10 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	15,791 cuft
Drainage area	=	2.110 ac	Curve number	=	68.7
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	12.60 min
Total precip.	=	5.09 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

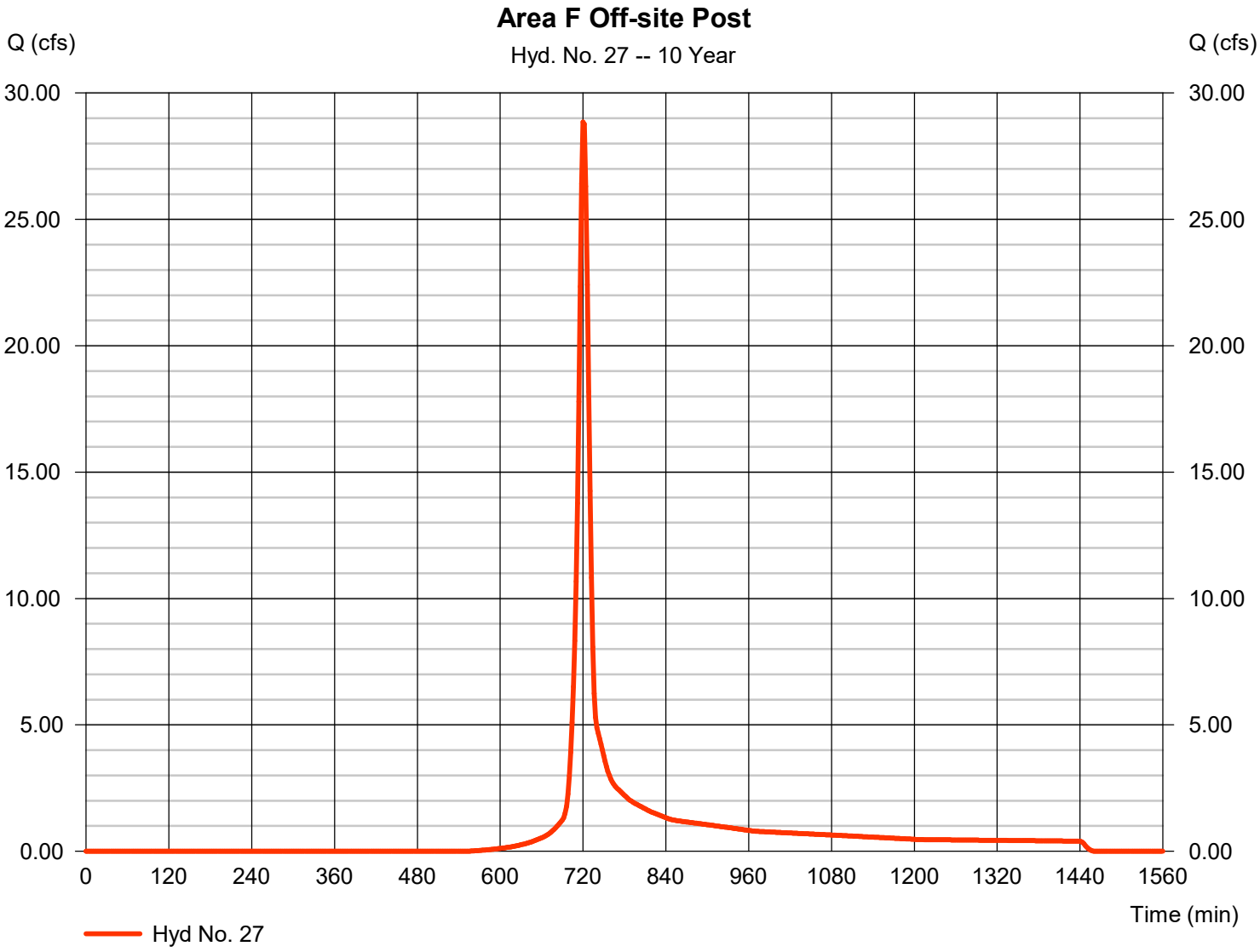


Hydrograph Report

Hyd. No. 27

Area F Off-site Post

Hydrograph type	=	SCS Runoff	Peak discharge	=	28.85 cfs
Storm frequency	=	10 yrs	Time to peak	=	720 min
Time interval	=	2 min	Hyd. volume	=	75,191 cuft
Drainage area	=	8.730 ac	Curve number	=	72.4
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	12.60 min
Total precip.	=	5.09 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

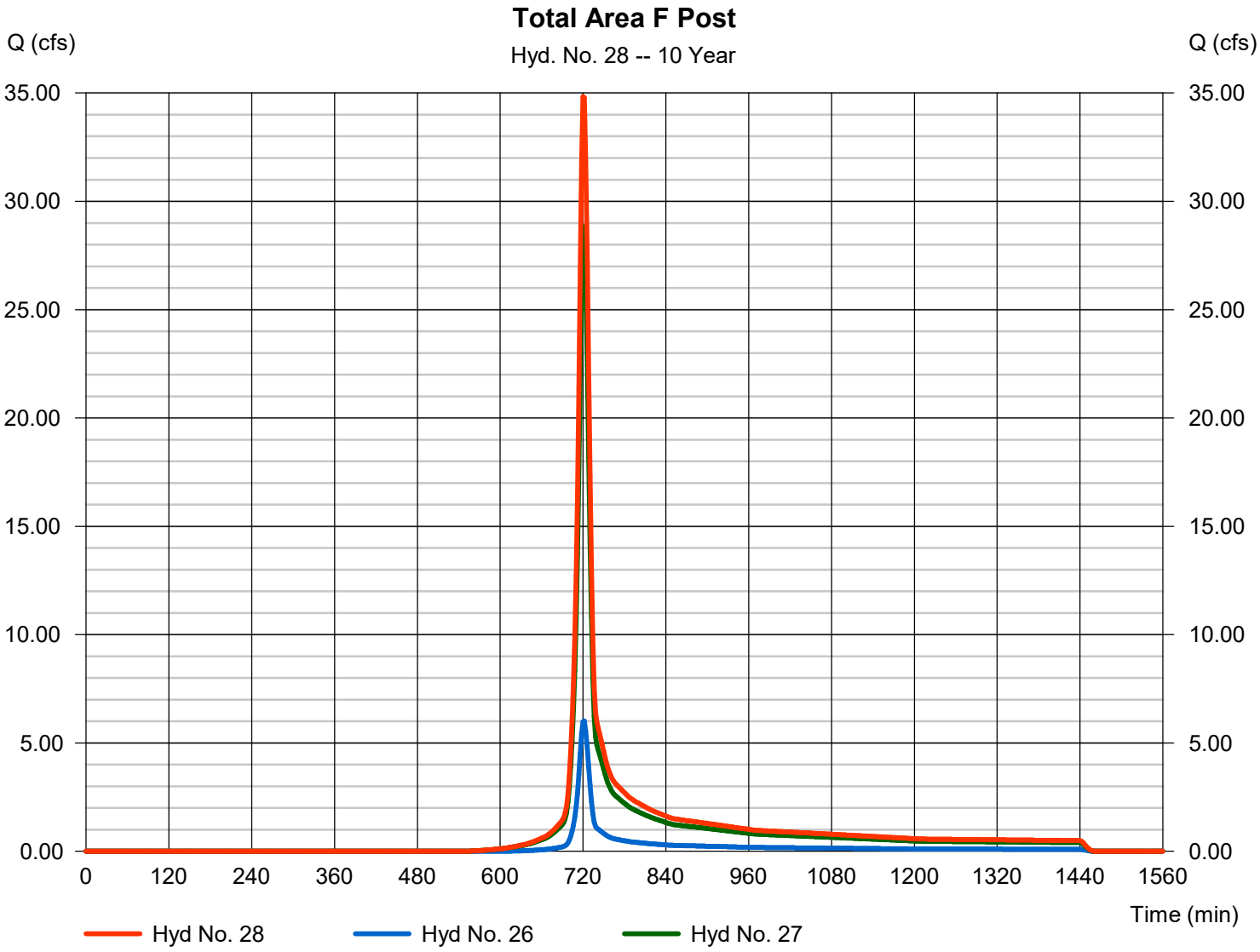


Hydrograph Report

Hyd. No. 28

Total Area F Post

Hydrograph type	= Combine	Peak discharge	= 34.83 cfs
Storm frequency	= 10 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 90,981 cuft
Inflow hyds.	= 26, 27	Contrib. drain. area	= 10.840 ac

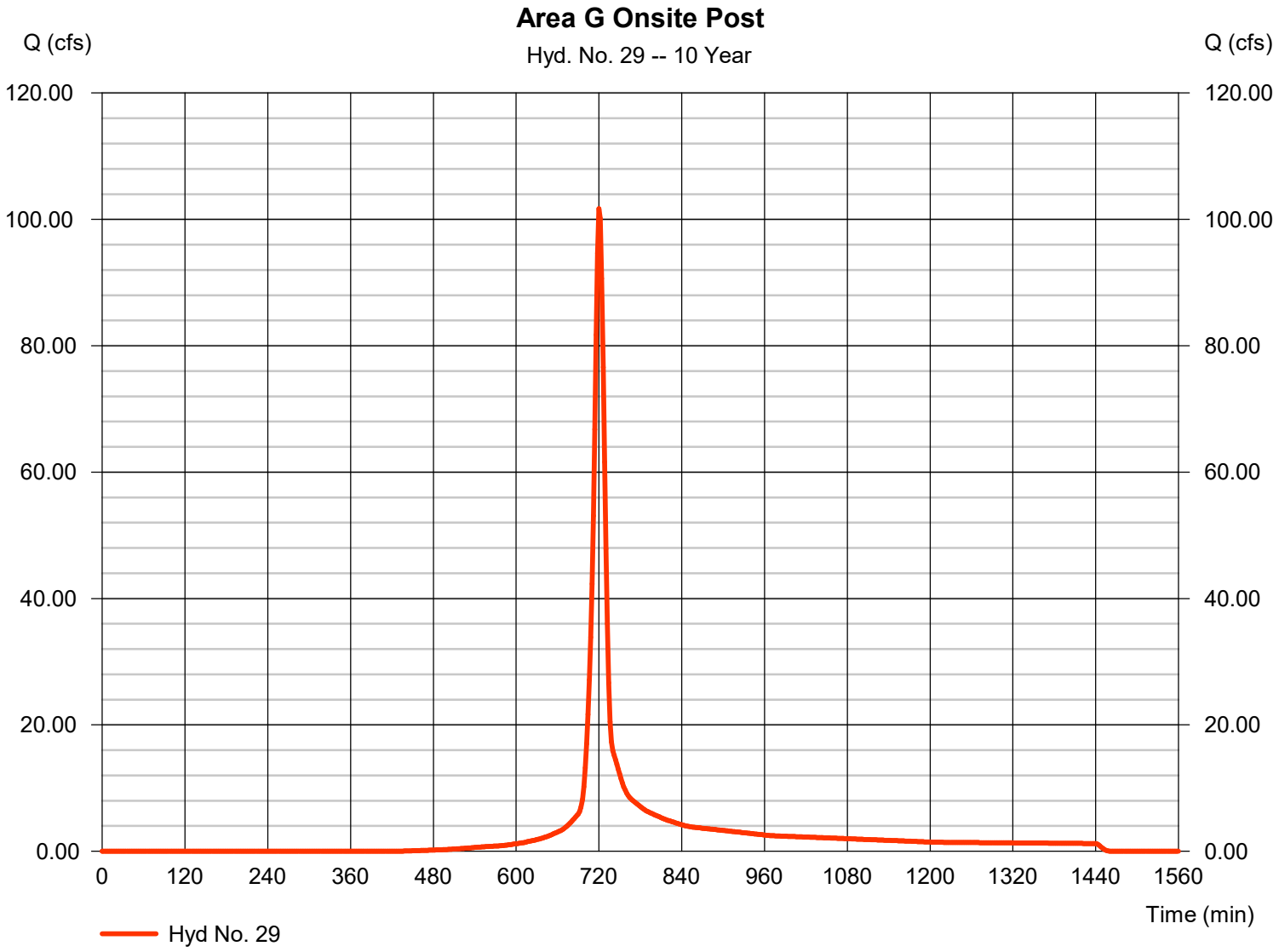


Hydrograph Report

Hyd. No. 29

Area G Onsite Post

Hydrograph type	= SCS Runoff	Peak discharge	= 101.68 cfs
Storm frequency	= 10 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 264,029 cuft
Drainage area	= 23.810 ac	Curve number	= 79.9
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 10.40 min
Total precip.	= 5.09 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

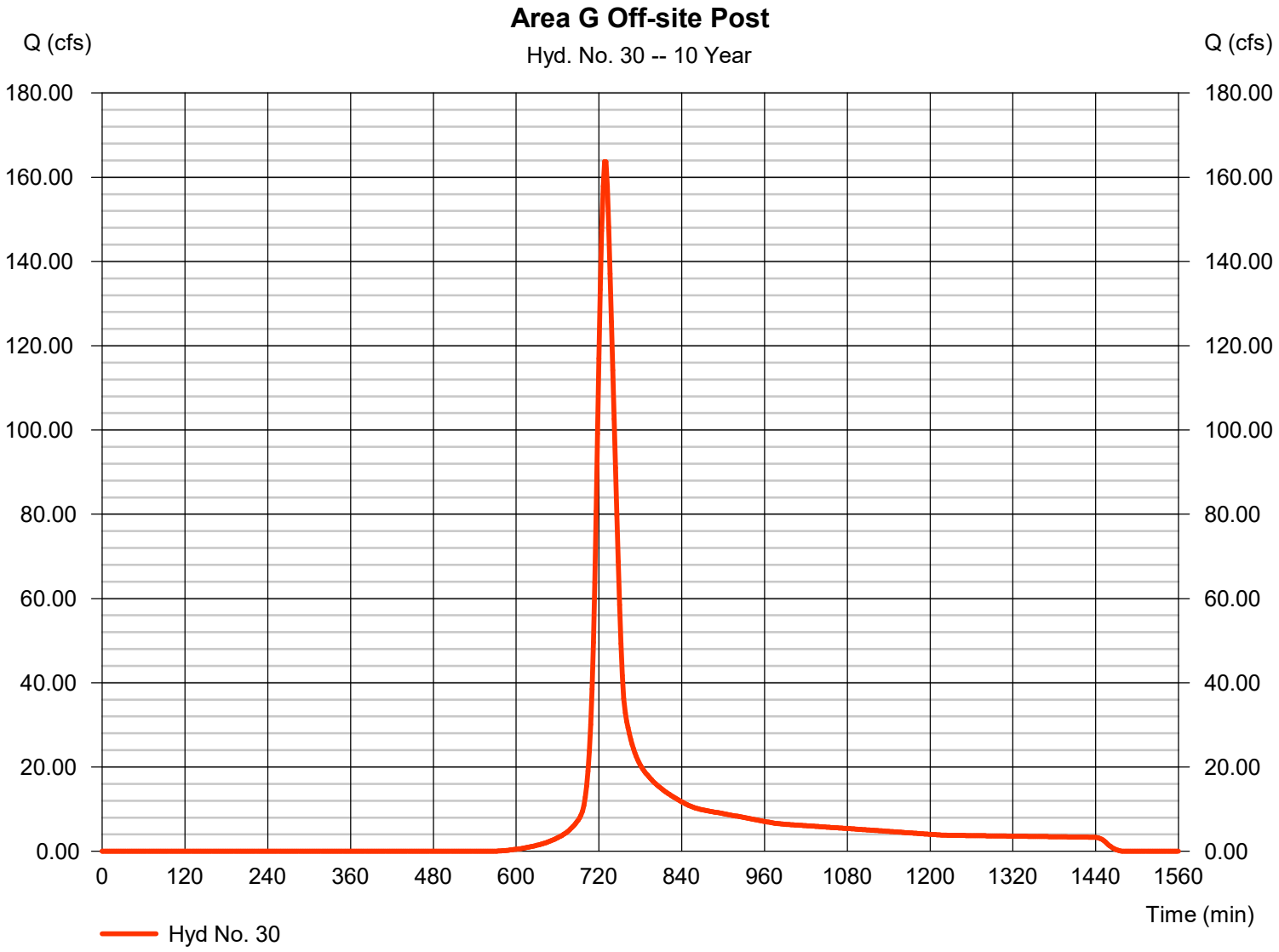


Hydrograph Report

Hyd. No. 30

Area G Off-site Post

Hydrograph type	=	SCS Runoff	Peak discharge	=	163.74 cfs
Storm frequency	=	10 yrs	Time to peak	=	728 min
Time interval	=	2 min	Hyd. volume	=	611,531 cuft
Drainage area	=	76.600 ac	Curve number	=	71.6
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	23.80 min
Total precip.	=	5.09 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

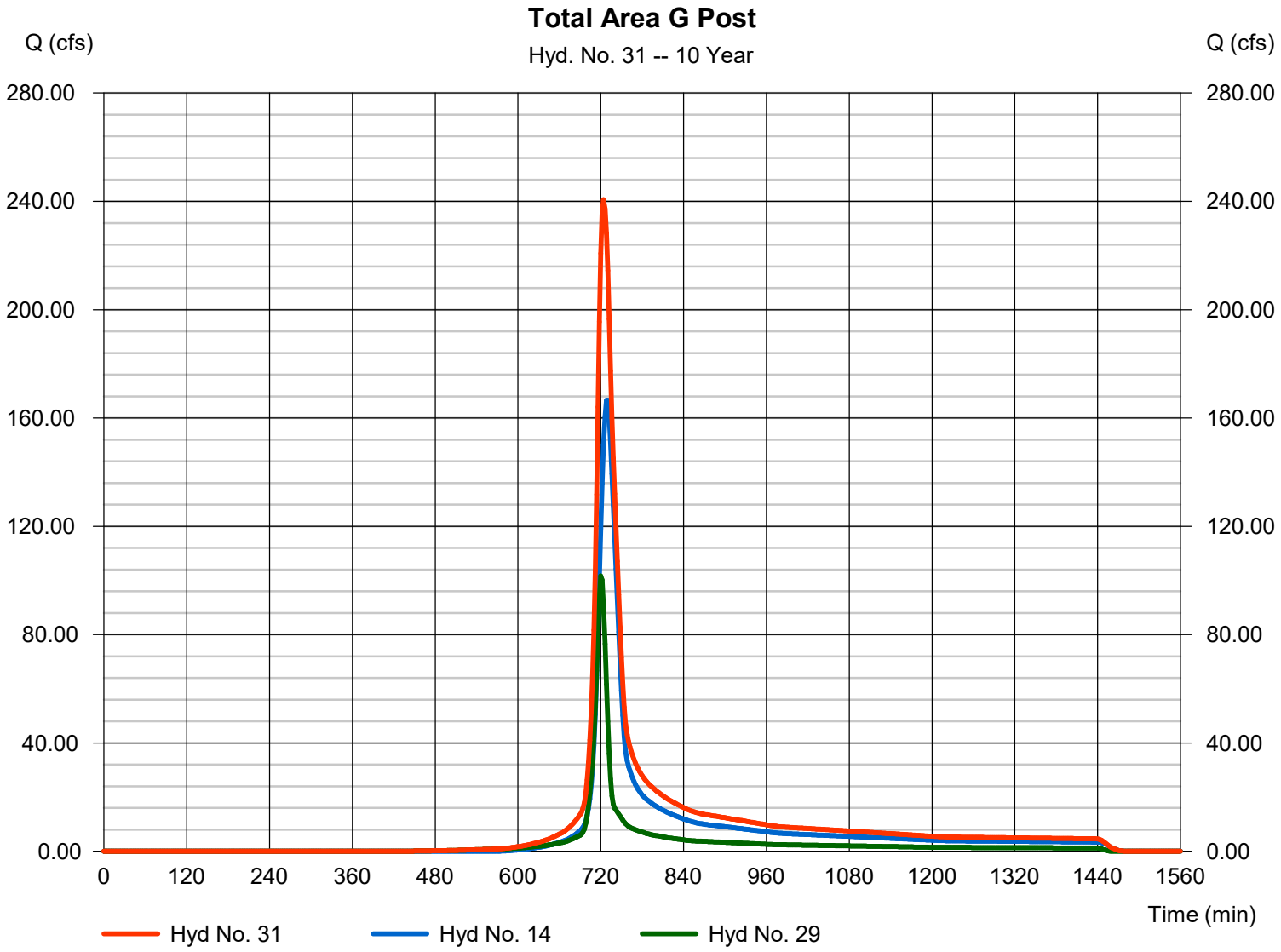


Hydrograph Report

Hyd. No. 31

Total Area G Post

Hydrograph type	= Combine	Peak discharge	= 240.56 cfs
Storm frequency	= 10 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 885,921 cuft
Inflow hyds.	= 14, 29	Contrib. drain. area	= 101.420 ac

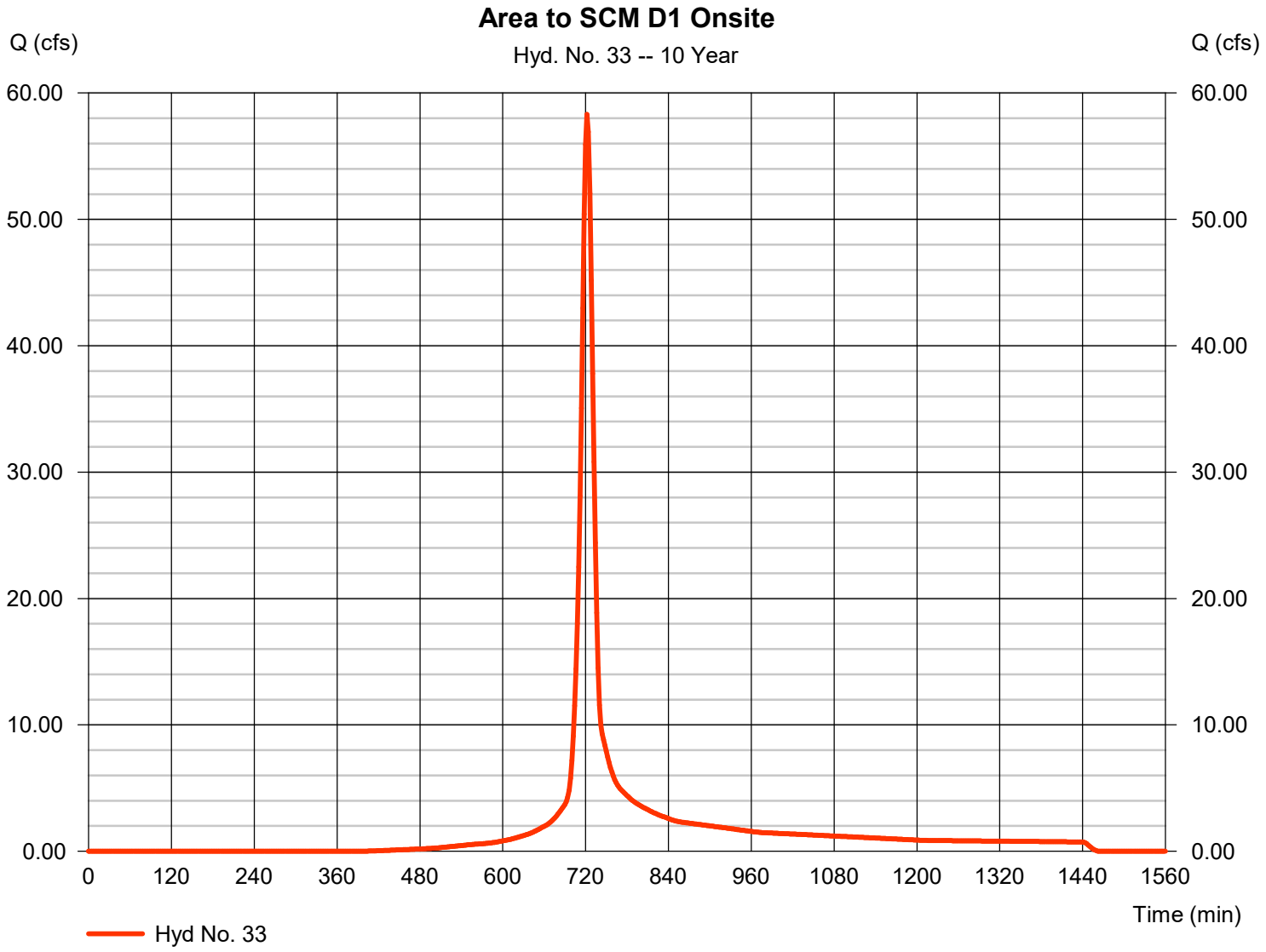


Hydrograph Report

Hyd. No. 33

Area to SCM D1 Onsite

Hydrograph type	= SCS Runoff	Peak discharge	= 58.31 cfs
Storm frequency	= 10 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 164,068 cuft
Drainage area	= 14.850 ac	Curve number	= 81.6
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 16.30 min
Total precip.	= 5.09 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

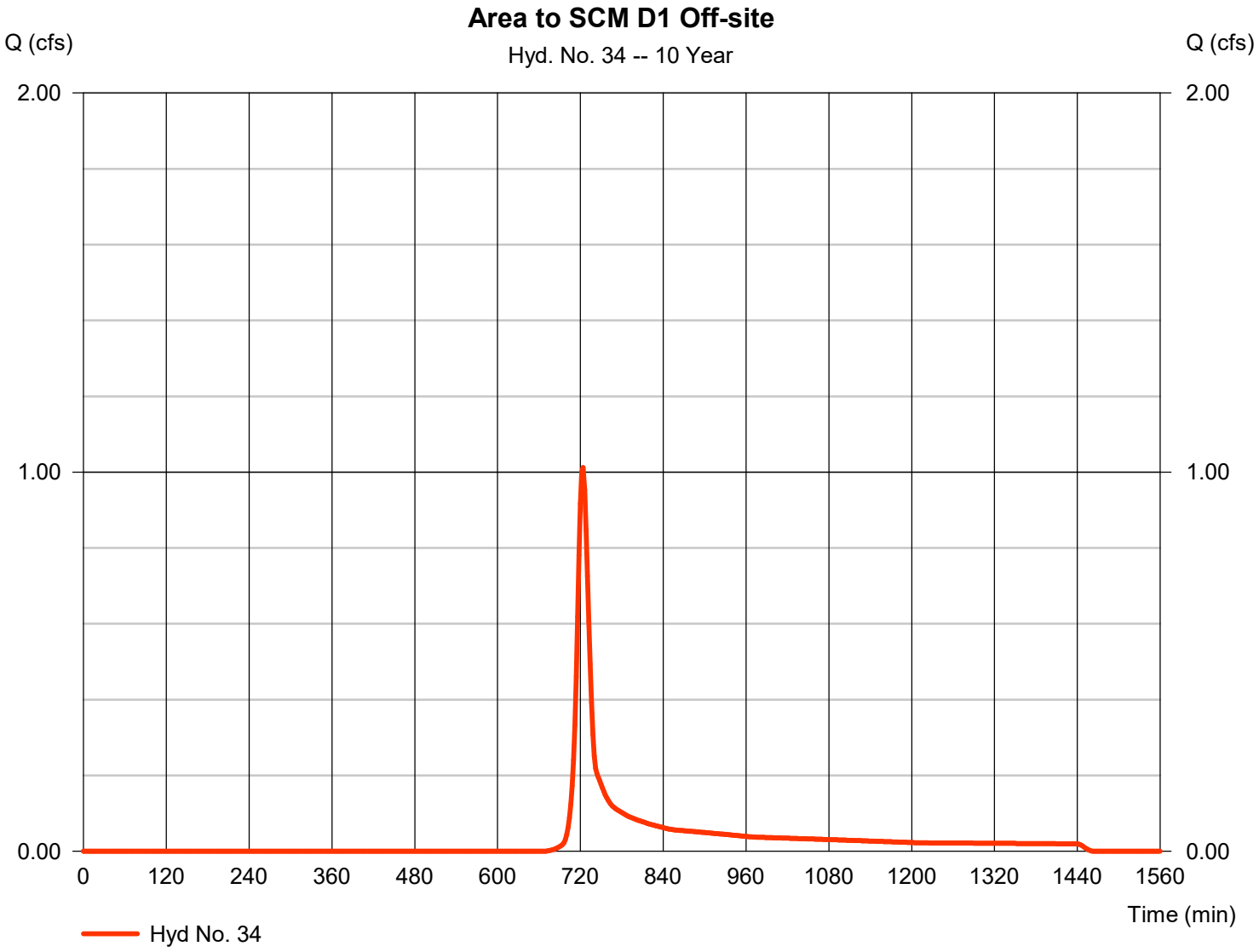


Hydrograph Report

Hyd. No. 34

Area to SCM D1 Off-site

Hydrograph type	= SCS Runoff	Peak discharge	= 1.012 cfs
Storm frequency	= 10 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 3,004 cuft
Drainage area	= 0.560 ac	Curve number	= 62.3
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 16.30 min
Total precip.	= 5.09 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

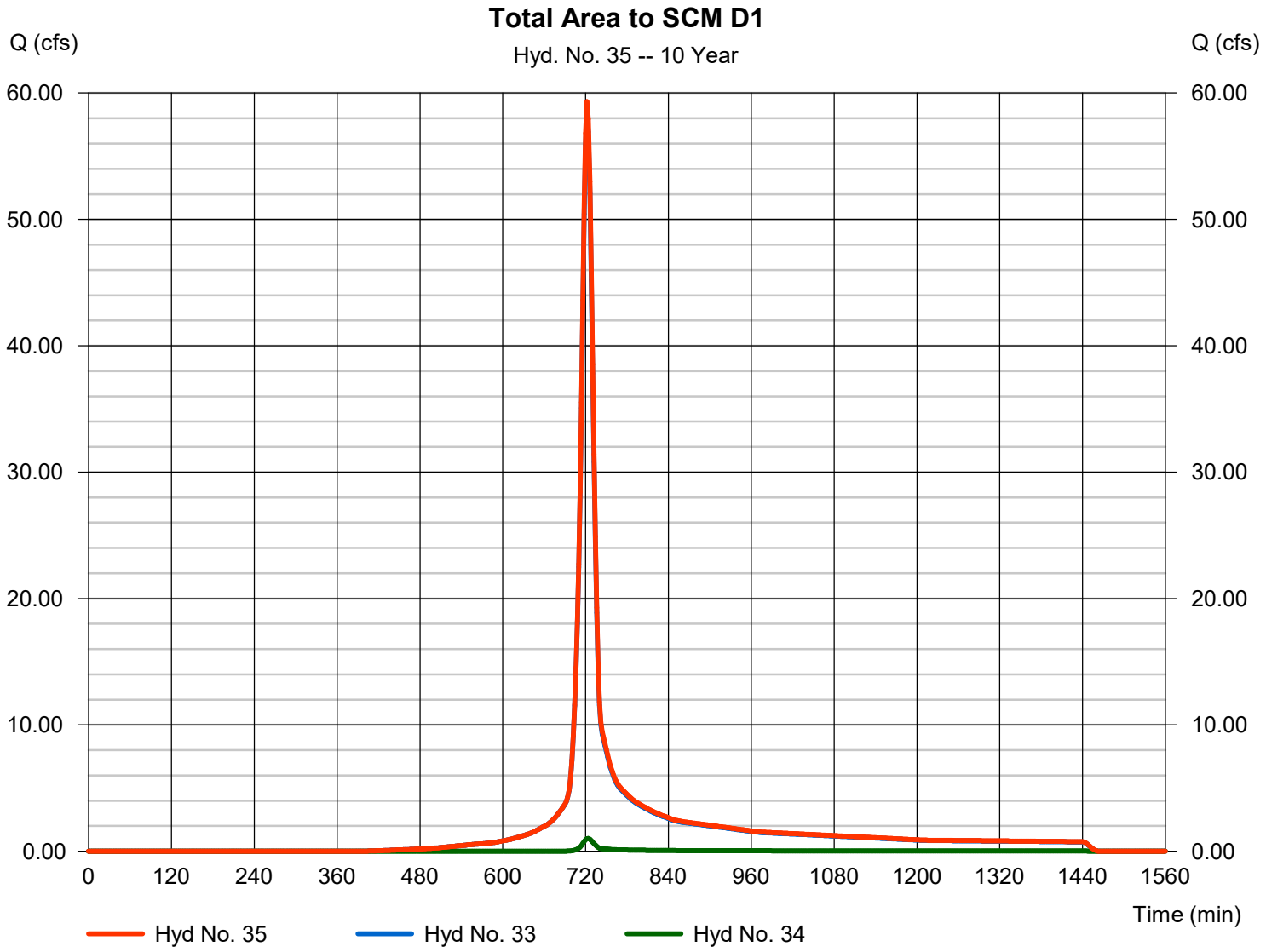


Hydrograph Report

Hyd. No. 35

Total Area to SCM D1

Hydrograph type	= Combine	Peak discharge	= 59.31 cfs
Storm frequency	= 10 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 167,072 cuft
Inflow hyds.	= 33, 34	Contrib. drain. area	= 15.410 ac



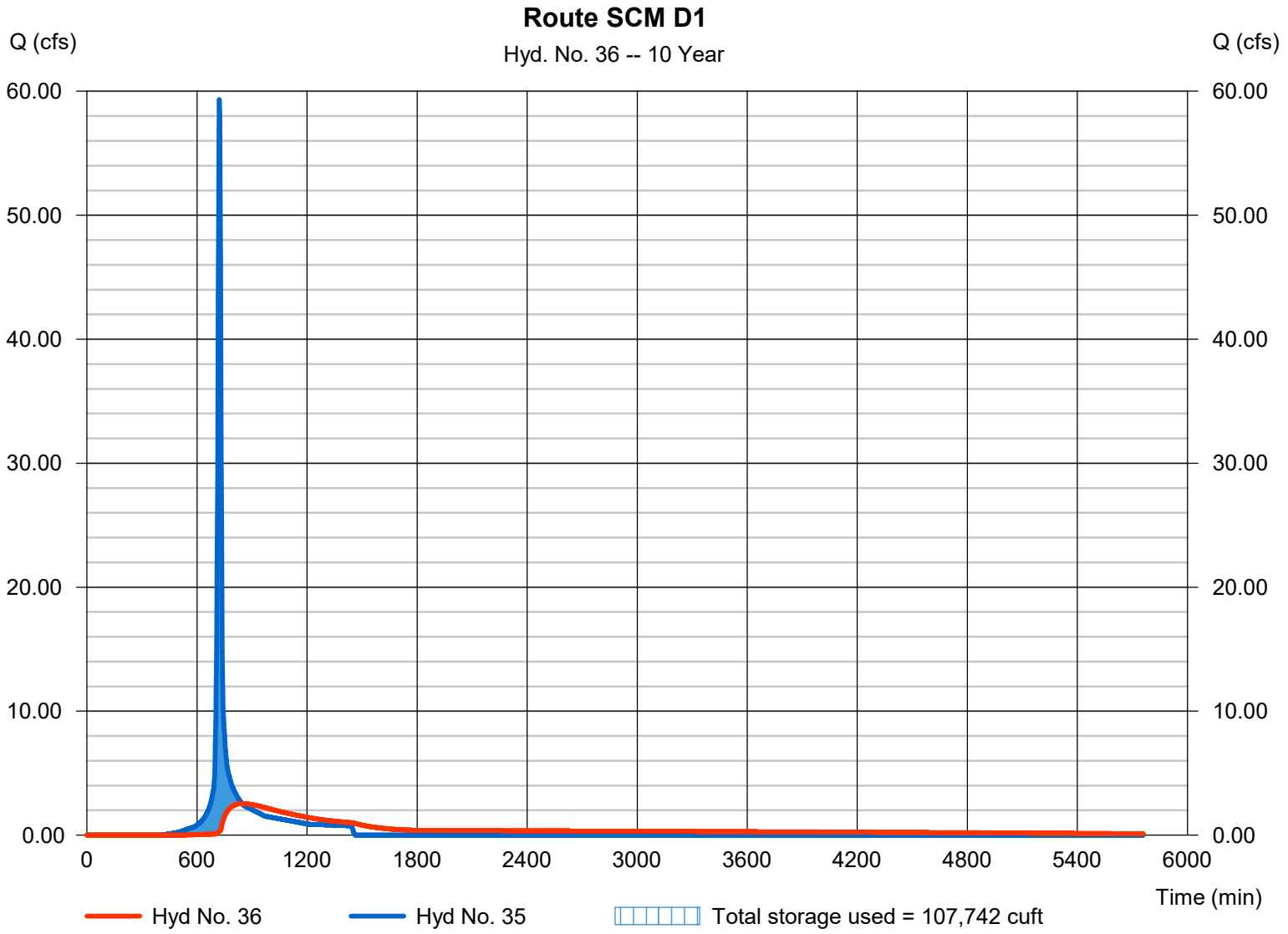
Hydrograph Report

Hyd. No. 36

Route SCM D1

Hydrograph type	=	Reservoir	Peak discharge	=	2.548 cfs
Storm frequency	=	10 yrs	Time to peak	=	844 min
Time interval	=	2 min	Hyd. volume	=	150,149 cuft
Inflow hyd. No.	=	35 - Total Area to SCM D1	Max. Elevation	=	386.17 ft
Reservoir name	=	SCM D1	Max. Storage	=	107,742 cuft

Storage Indication method used.

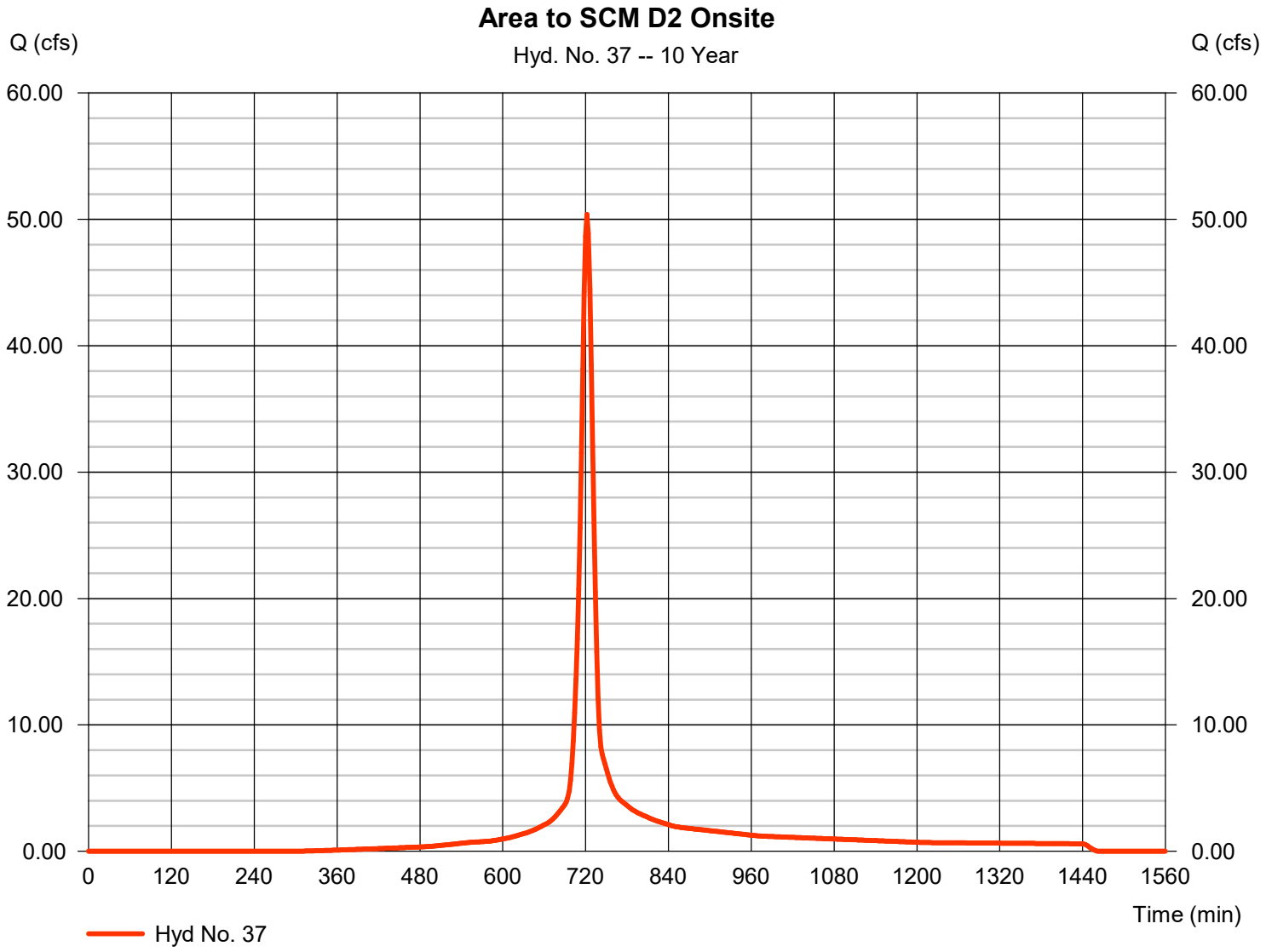


Hydrograph Report

Hyd. No. 37

Area to SCM D2 Onsite

Hydrograph type	= SCS Runoff	Peak discharge	= 50.39 cfs
Storm frequency	= 10 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 144,035 cuft
Drainage area	= 11.300 ac	Curve number	= 86.5
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 13.80 min
Total precip.	= 5.09 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

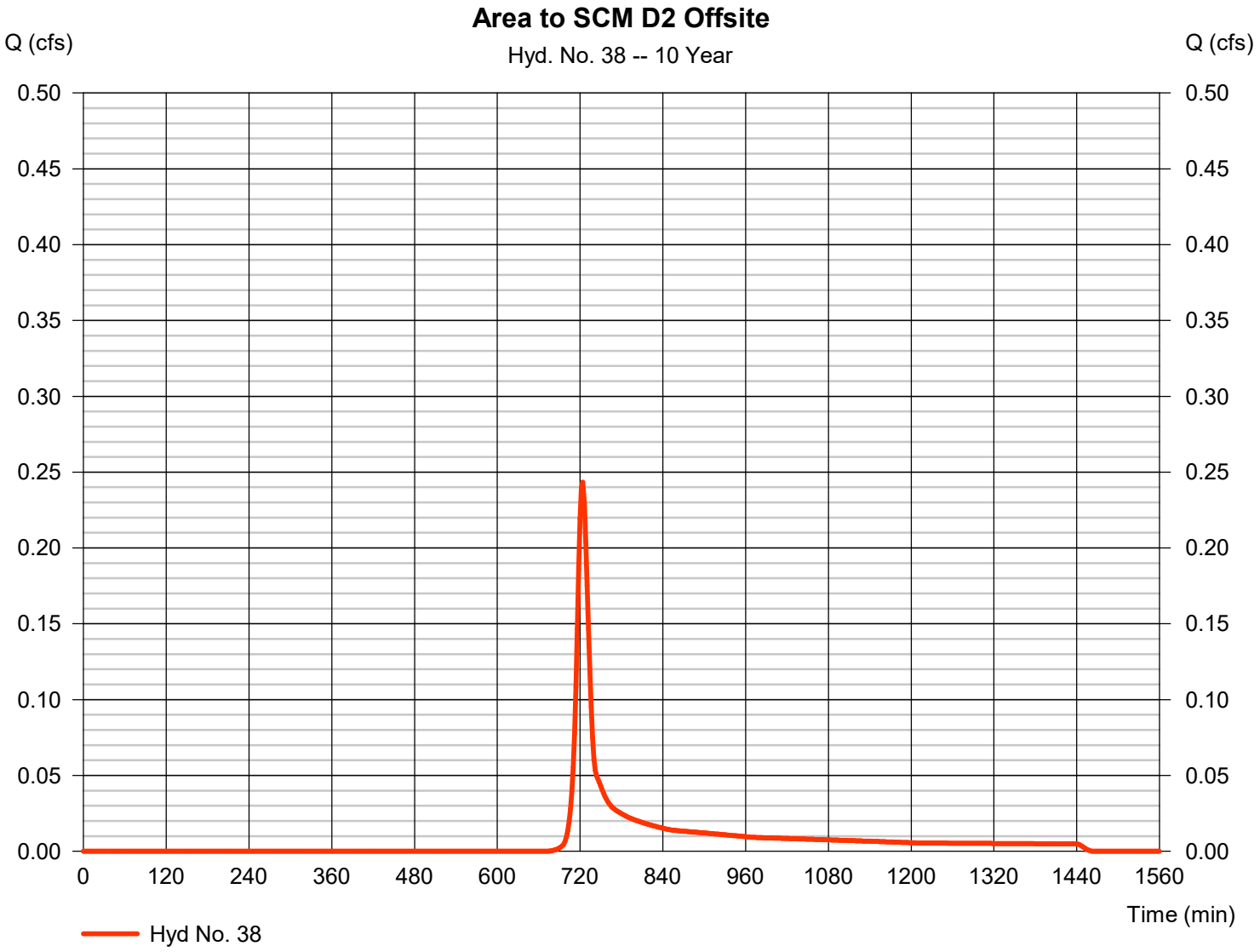


Hydrograph Report

Hyd. No. 38

Area to SCM D2 Offsite

Hydrograph type	= SCS Runoff	Peak discharge	= 0.243 cfs
Storm frequency	= 10 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 726 cuft
Drainage area	= 0.140 ac	Curve number	= 61.6
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 13.80 min
Total precip.	= 5.09 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

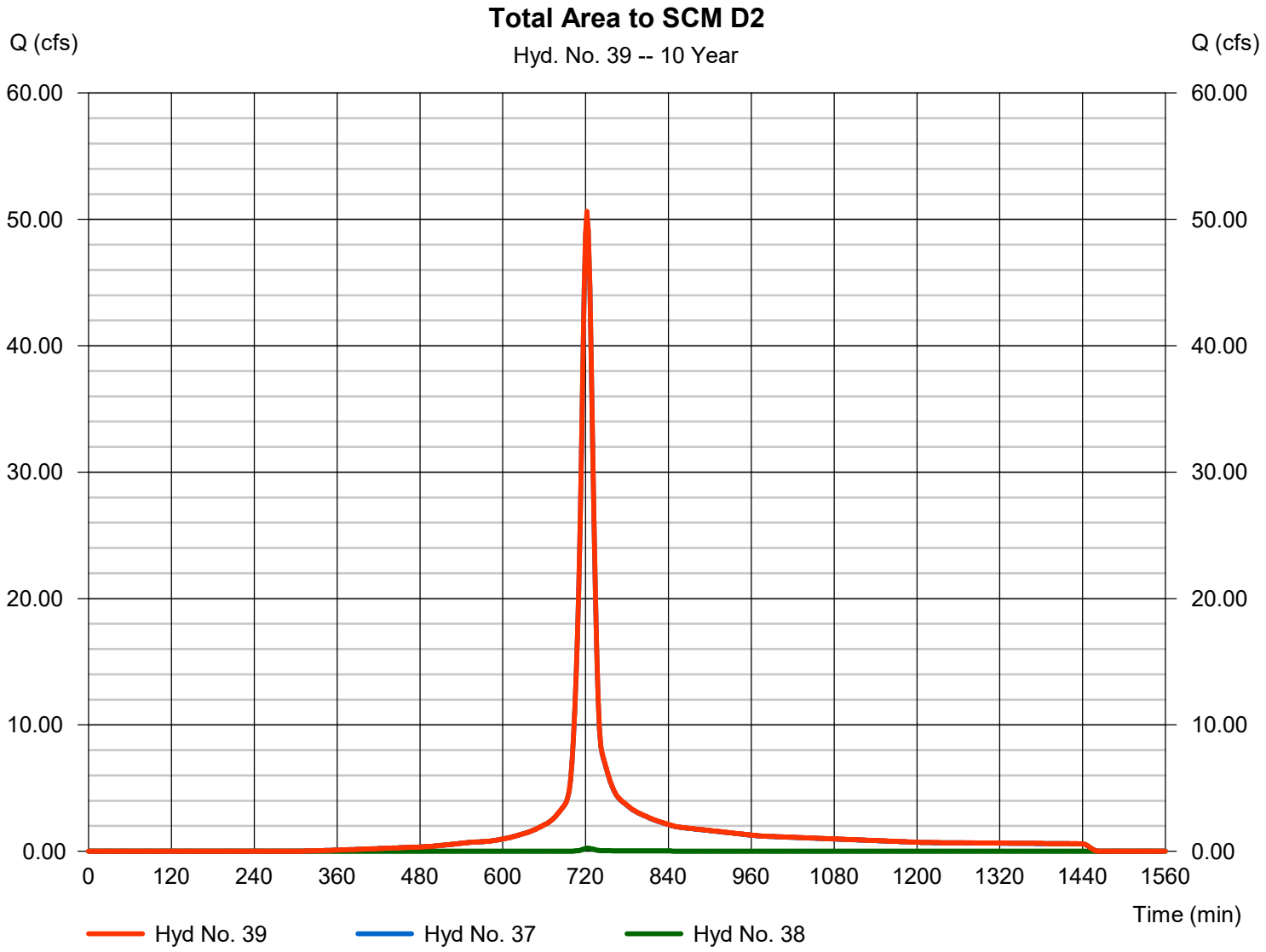


Hydrograph Report

Hyd. No. 39

Total Area to SCM D2

Hydrograph type	= Combine	Peak discharge	= 50.63 cfs
Storm frequency	= 10 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 144,761 cuft
Inflow hyds.	= 37, 38	Contrib. drain. area	= 11.440 ac



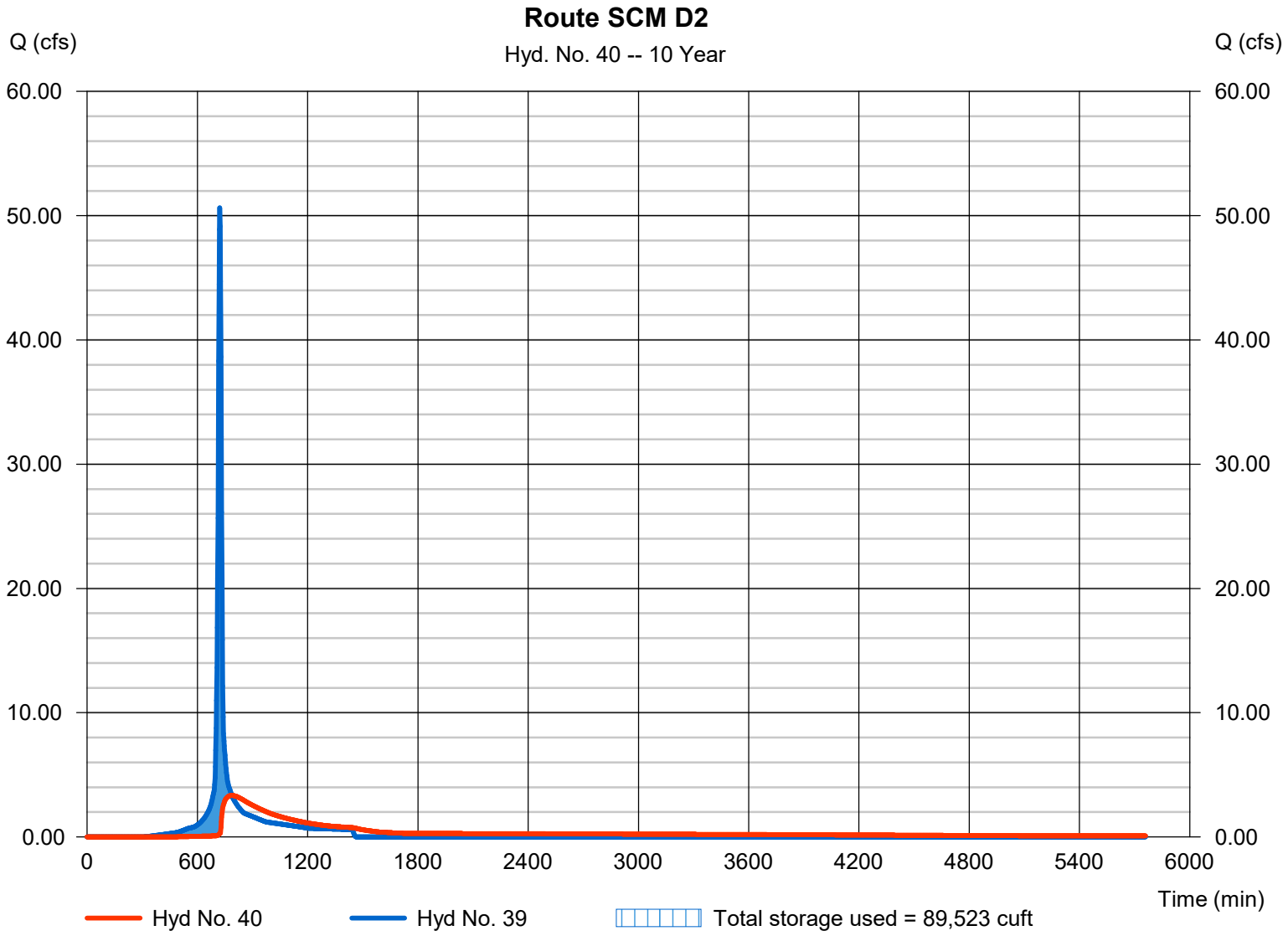
Hydrograph Report

Hyd. No. 40

Route SCM D2

Hydrograph type	=	Reservoir	Peak discharge	=	3.340 cfs
Storm frequency	=	10 yrs	Time to peak	=	788 min
Time interval	=	2 min	Hyd. volume	=	127,177 cuft
Inflow hyd. No.	=	39 - Total Area to SCM D2	Max. Elevation	=	393.43 ft
Reservoir name	=	SCM D2	Max. Storage	=	89,523 cuft

Storage Indication method used.

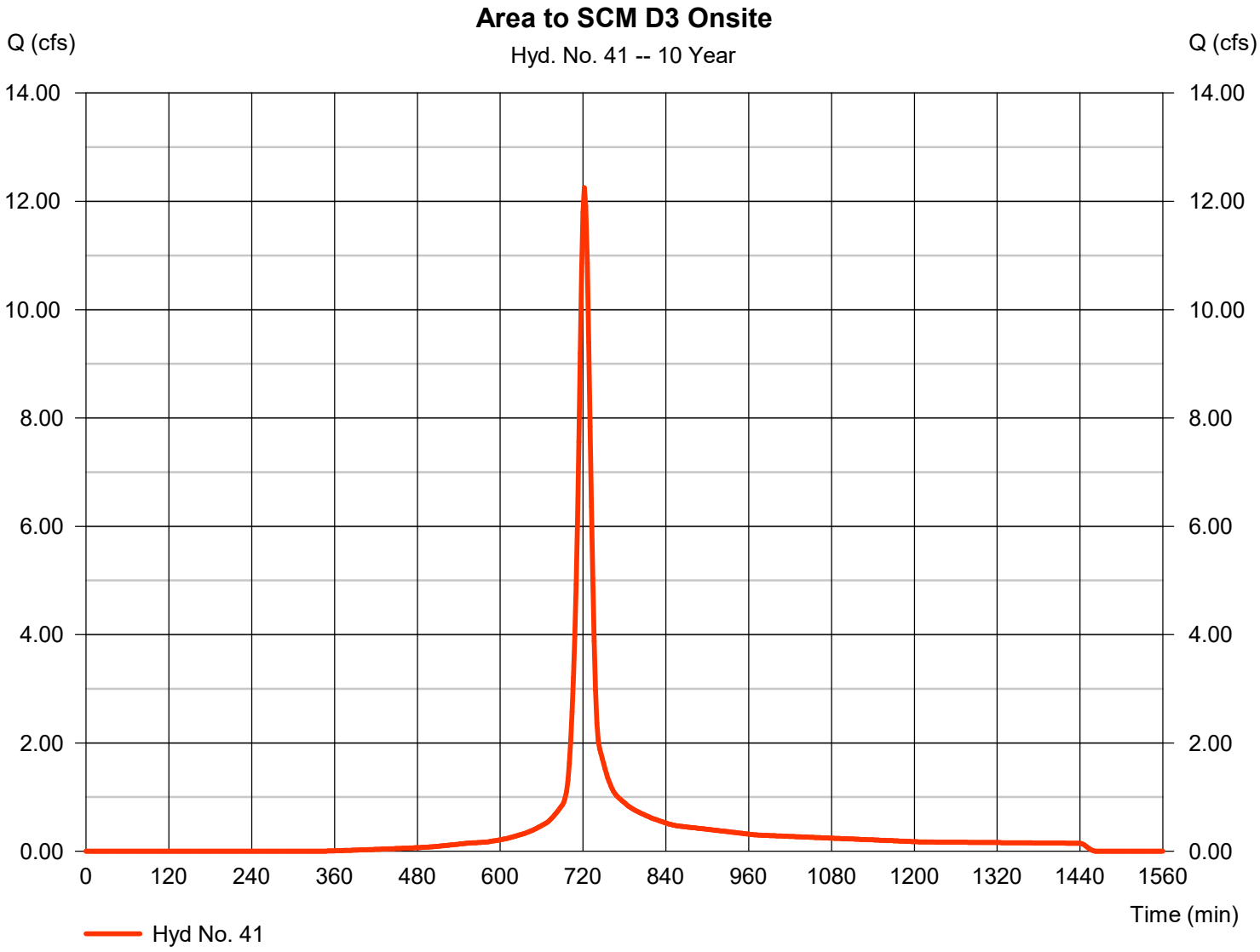


Hydrograph Report

Hyd. No. 41

Area to SCM D3 Onsite

Hydrograph type	= SCS Runoff	Peak discharge	= 12.25 cfs
Storm frequency	= 10 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 34,756 cuft
Drainage area	= 2.870 ac	Curve number	= 84.7
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 14.20 min
Total precip.	= 5.09 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



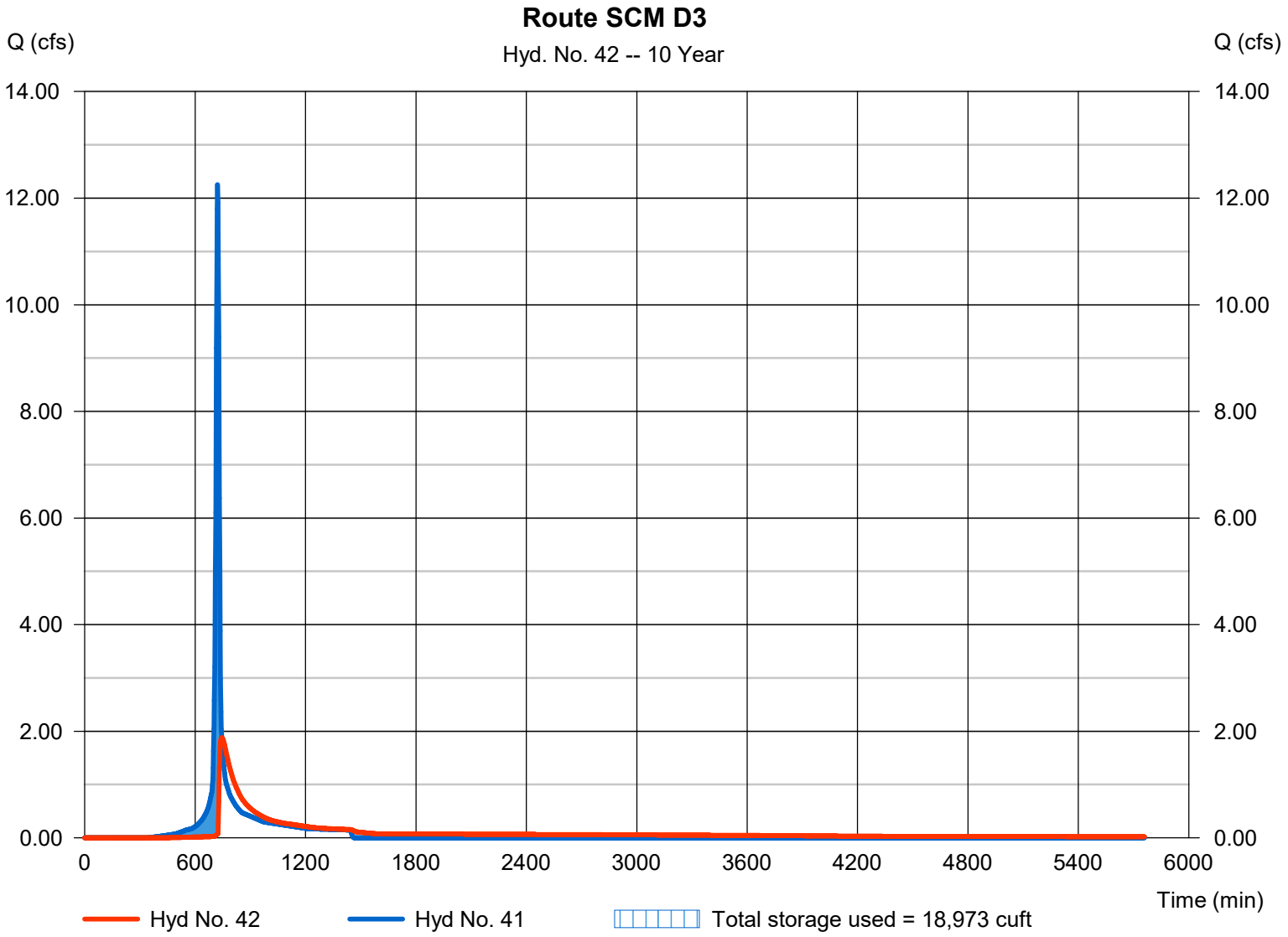
Hydrograph Report

Hyd. No. 42

Route SCM D3

Hydrograph type	=	Reservoir	Peak discharge	=	1.878 cfs
Storm frequency	=	10 yrs	Time to peak	=	744 min
Time interval	=	2 min	Hyd. volume	=	32,268 cuft
Inflow hyd. No.	=	41 - Area to SCM D3 Onsite	Max. Elevation	=	385.41 ft
Reservoir name	=	SCM D3	Max. Storage	=	18,973 cuft

Storage Indication method used.

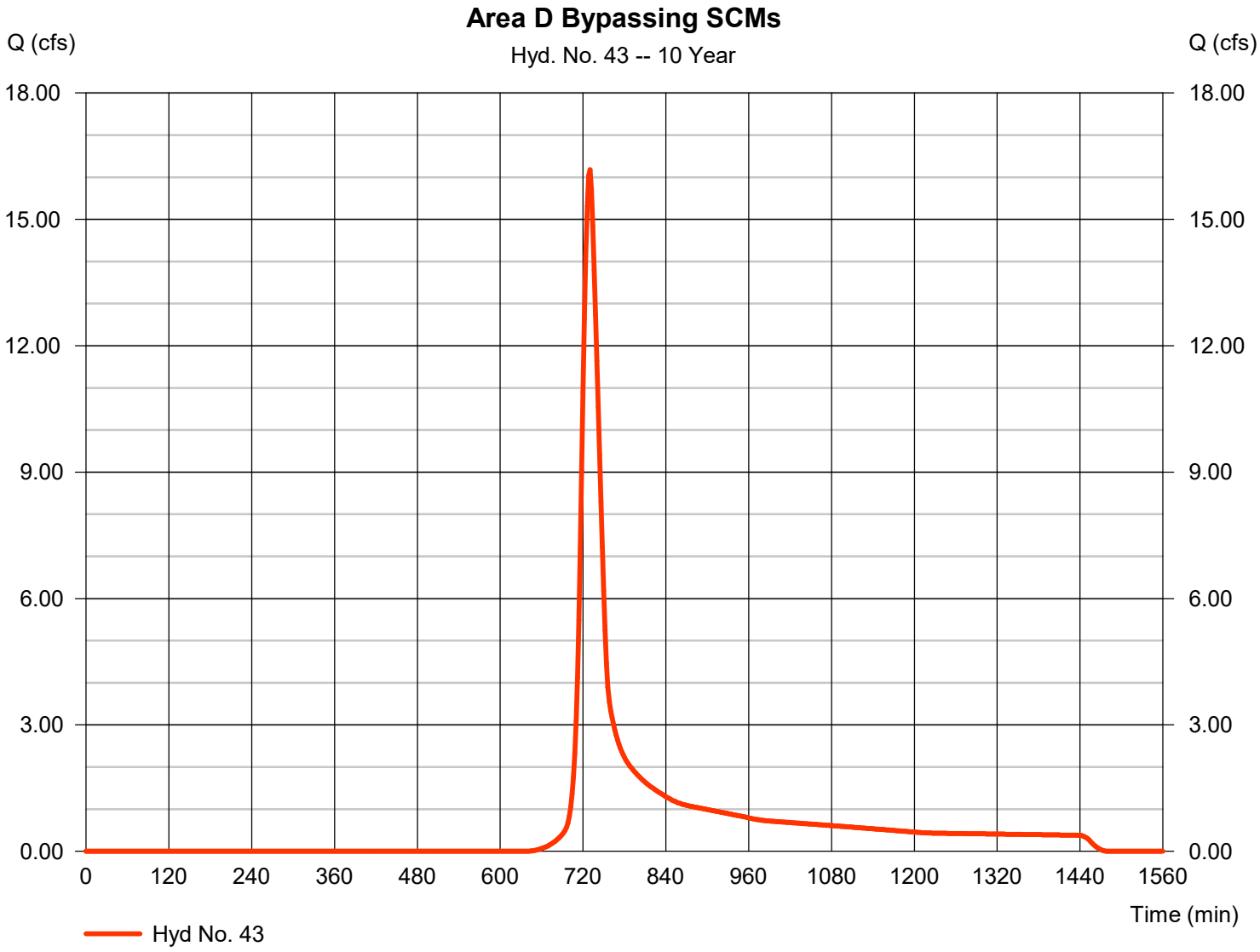


Hydrograph Report

Hyd. No. 43

Area D Bypassing SCMs

Hydrograph type	= SCS Runoff	Peak discharge	= 16.18 cfs
Storm frequency	= 10 yrs	Time to peak	= 730 min
Time interval	= 2 min	Hyd. volume	= 62,300 cuft
Drainage area	= 9.870 ac	Curve number	= 65.7
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 24.00 min
Total precip.	= 5.09 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

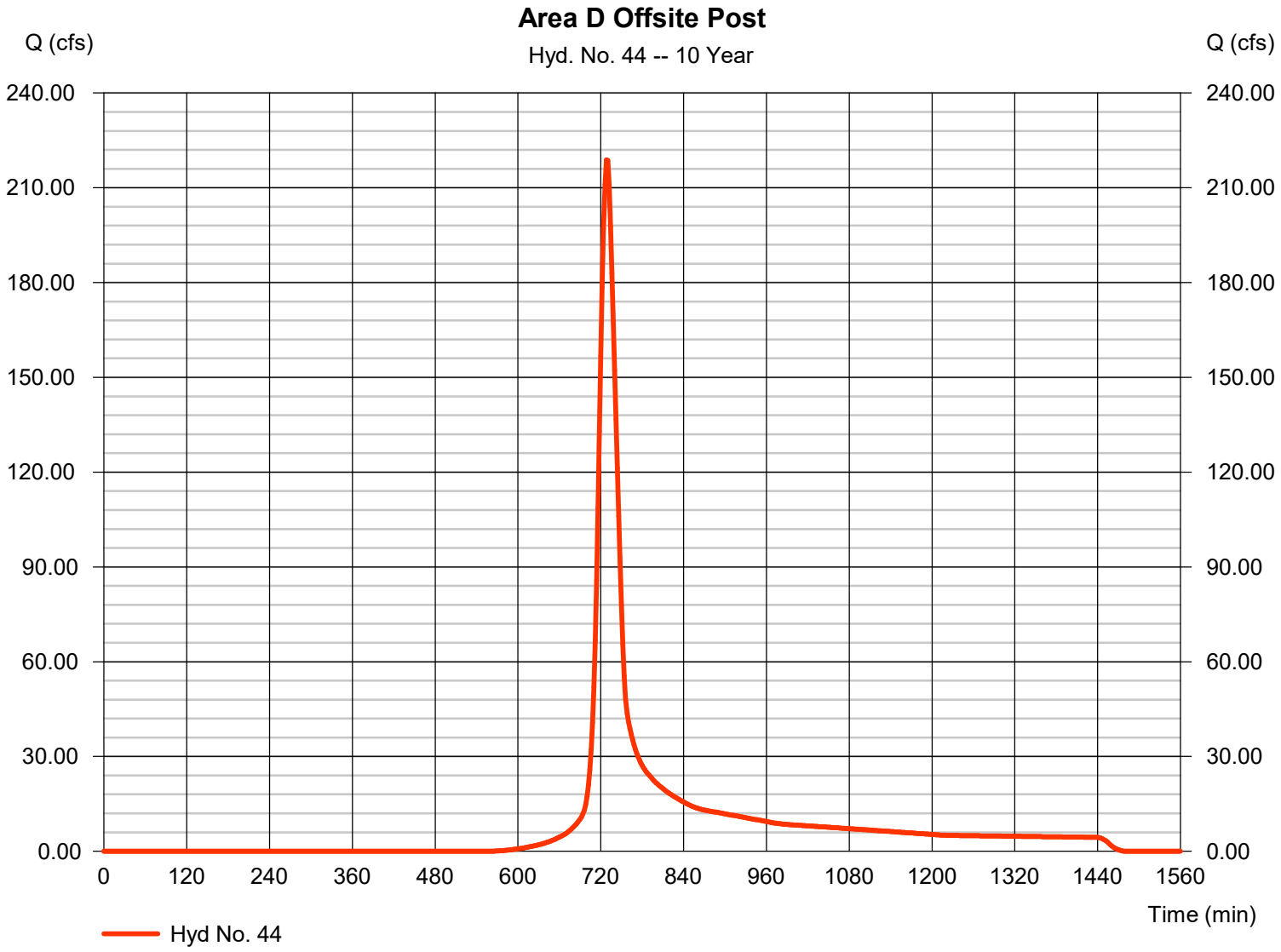


Hydrograph Report

Hyd. No. 44

Area D Offsite Post

Hydrograph type	=	SCS Runoff	Peak discharge	=	218.81 cfs
Storm frequency	=	10 yrs	Time to peak	=	728 min
Time interval	=	2 min	Hyd. volume	=	815,798 cuft
Drainage area	=	100.690 ac	Curve number	=	72
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	24.00 min
Total precip.	=	5.09 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

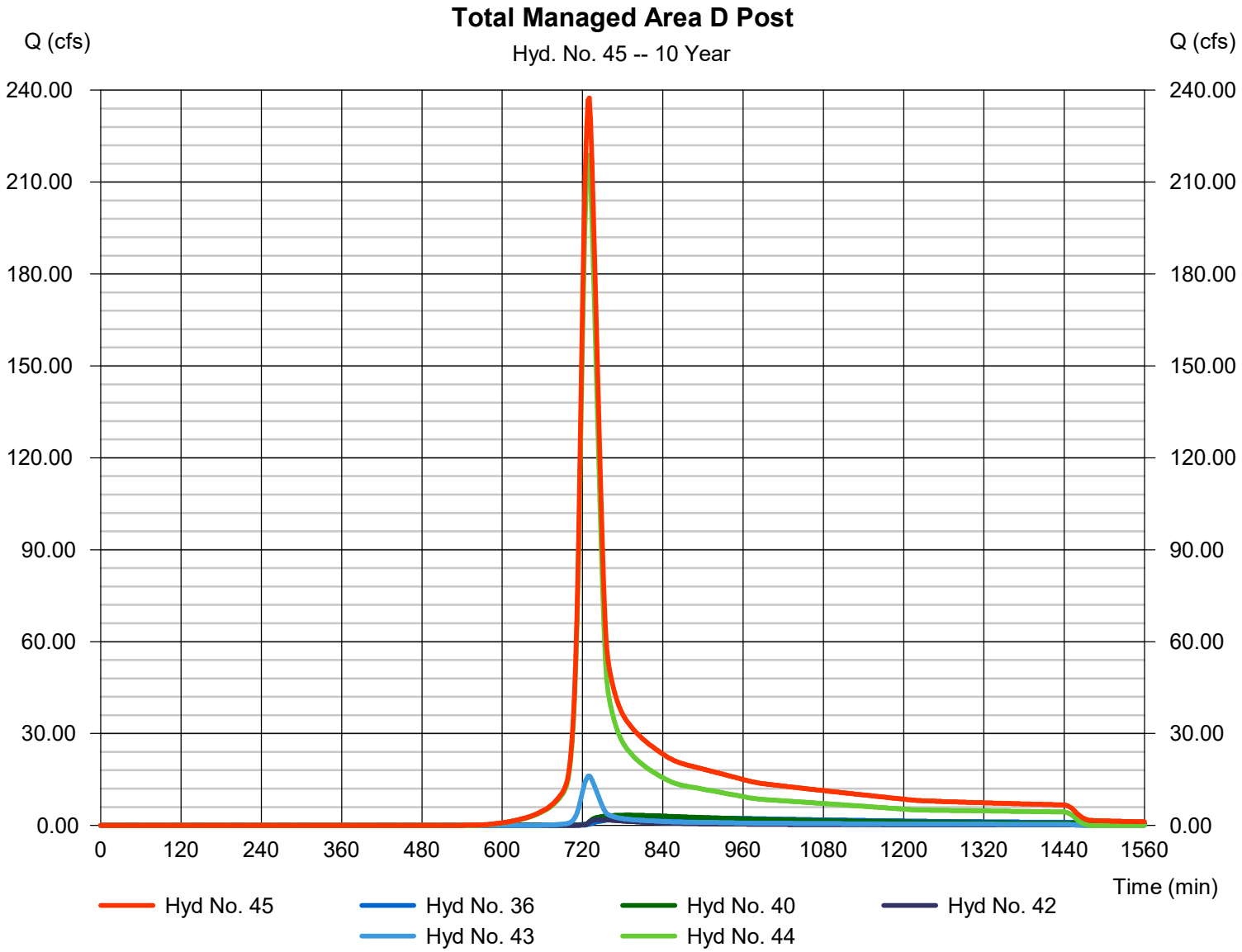


Hydrograph Report

Hyd. No. 45

Total Managed Area D Post

Hydrograph type	= Combine	Peak discharge	= 237.42 cfs
Storm frequency	= 10 yrs	Time to peak	= 730 min
Time interval	= 2 min	Hyd. volume	= 1,187,694 cuft
Inflow hyds.	= 36, 40, 42, 43, 44	Contrib. drain. area	= 110.560 ac

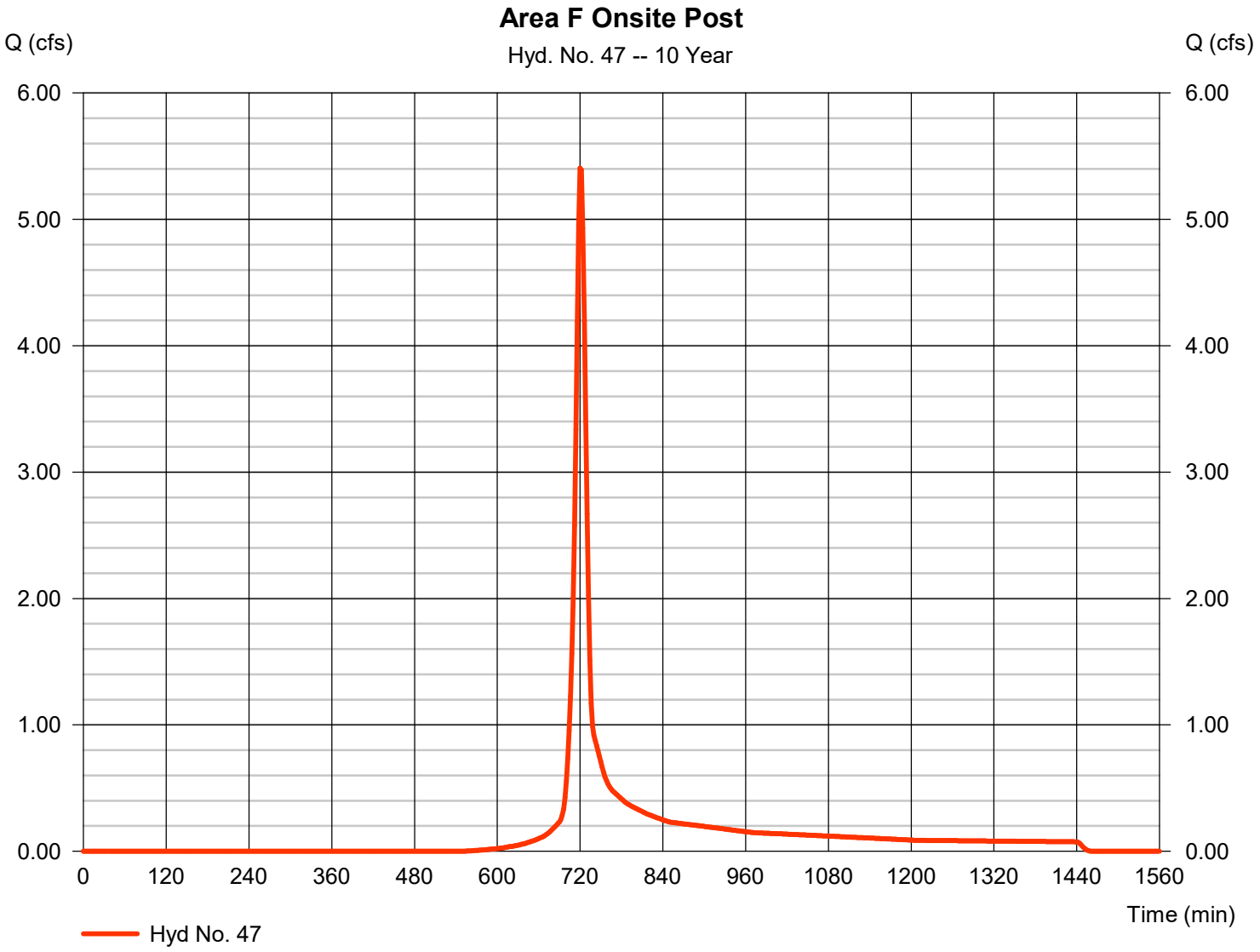


Hydrograph Report

Hyd. No. 47

Area F Onsite Post

Hydrograph type	=	SCS Runoff	Peak discharge	=	5.407 cfs
Storm frequency	=	10 yrs	Time to peak	=	720 min
Time interval	=	2 min	Hyd. volume	=	14,090 cuft
Drainage area	=	1.630 ac	Curve number	=	72.5
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	12.60 min
Total precip.	=	5.09 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

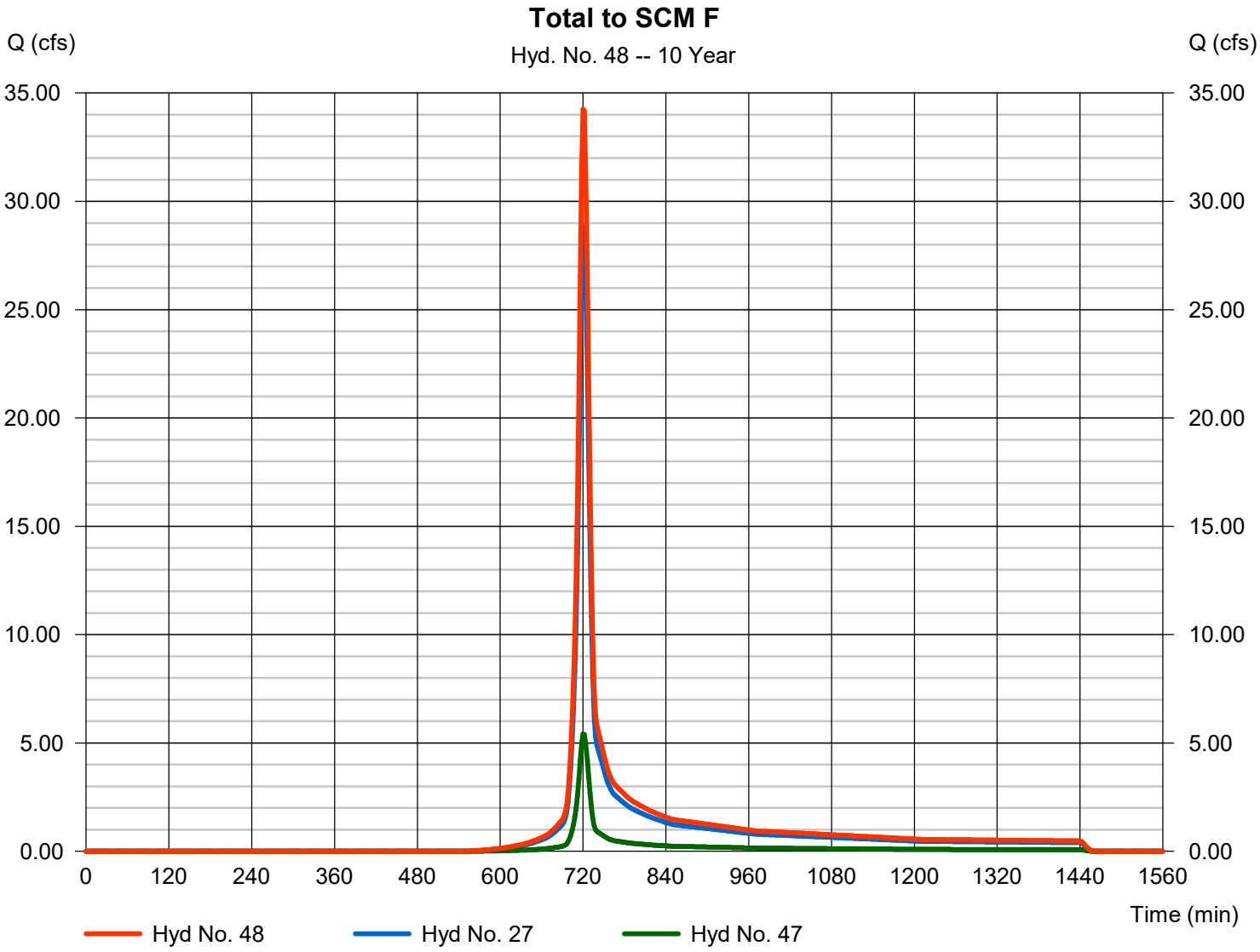


Hydrograph Report

Hyd. No. 48

Total to SCM F

Hydrograph type	= Combine	Peak discharge	= 34.25 cfs
Storm frequency	= 10 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 89,281 cuft
Inflow hyds.	= 27, 47	Contrib. drain. area	= 10.360 ac



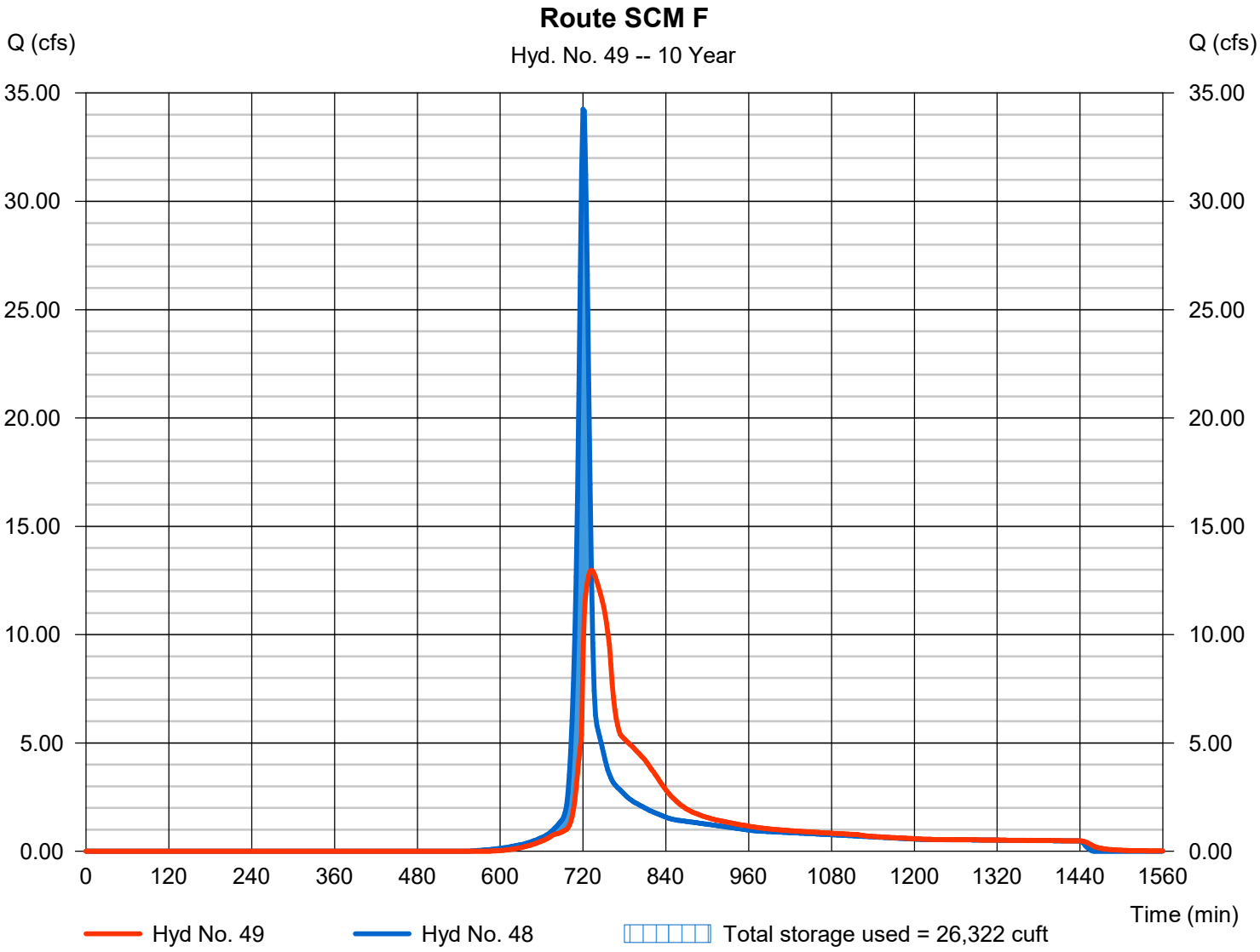
Hydrograph Report

Hyd. No. 49

Route SCM F

Hydrograph type	=	Reservoir	Peak discharge	=	12.97 cfs
Storm frequency	=	10 yrs	Time to peak	=	732 min
Time interval	=	2 min	Hyd. volume	=	89,271 cuft
Inflow hyd. No.	=	48 - Total to SCM F	Max. Elevation	=	390.61 ft
Reservoir name	=	SCM F	Max. Storage	=	26,322 cuft

Storage Indication method used.

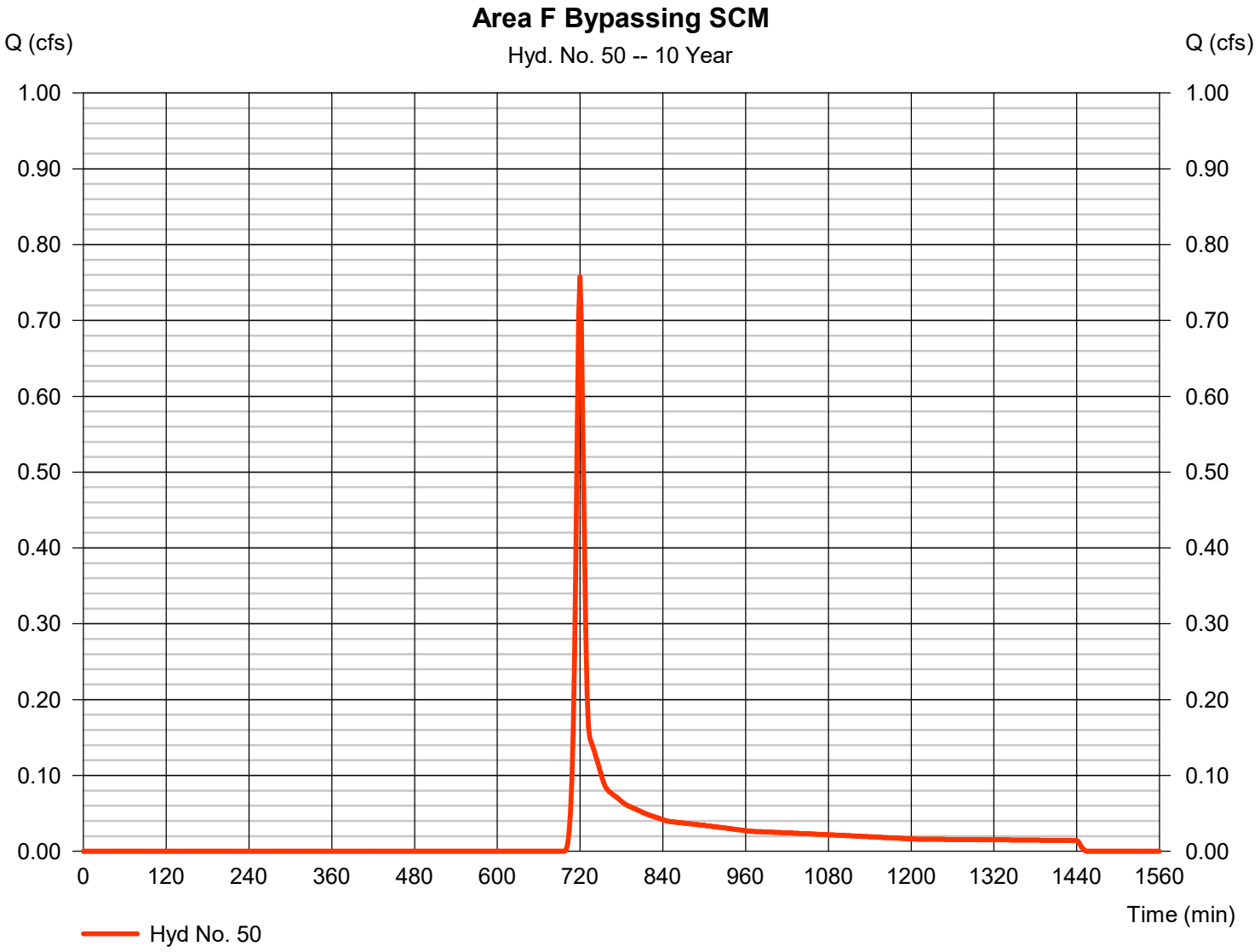


Hydrograph Report

Hyd. No. 50

Area F Bypassing SCM

Hydrograph type	= SCS Runoff	Peak discharge	= 0.757 cfs
Storm frequency	= 10 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 1,885 cuft
Drainage area	= 0.480 ac	Curve number	= 55.9
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 8.60 min
Total precip.	= 5.09 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

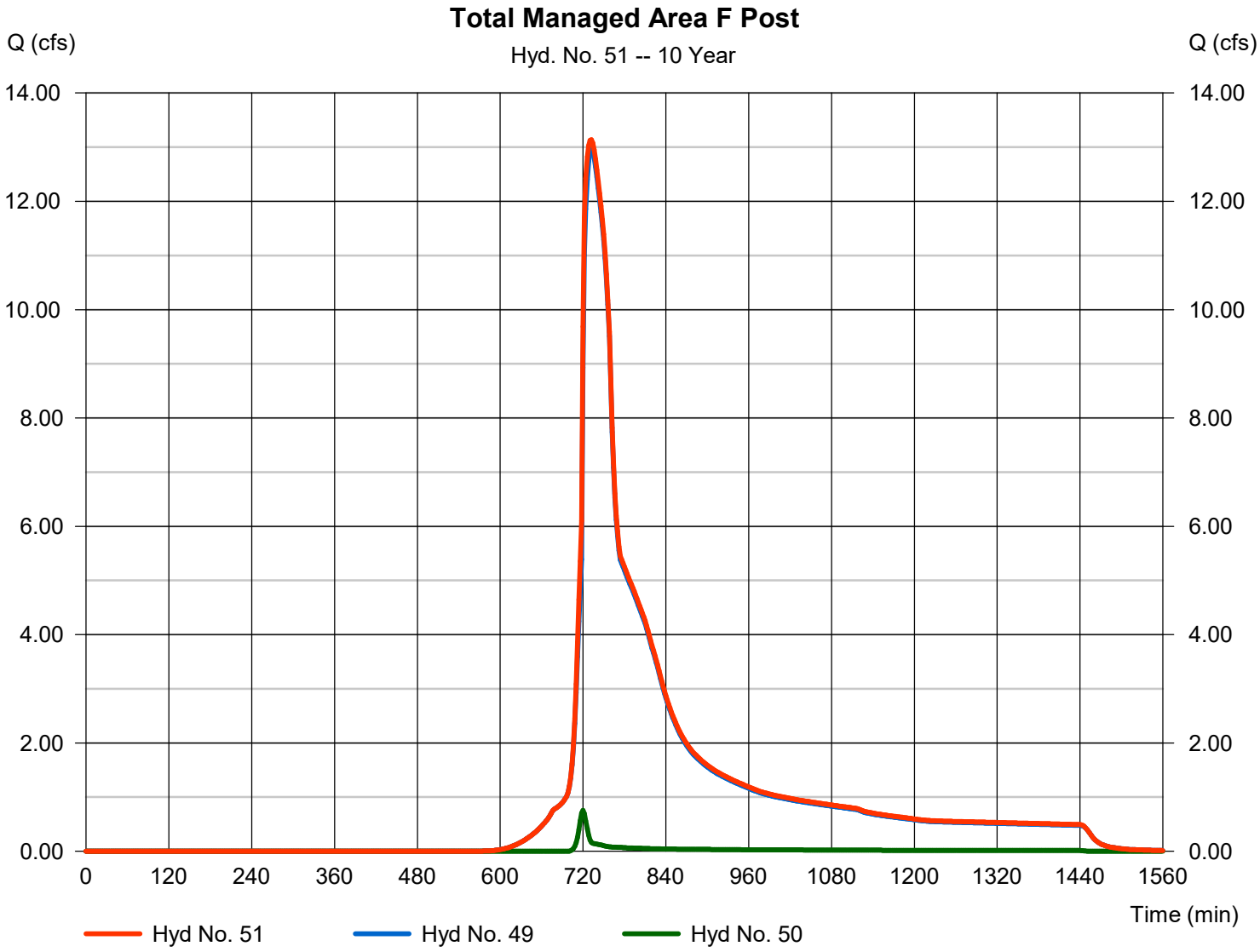


Hydrograph Report

Hyd. No. 51

Total Managed Area F Post

Hydrograph type	= Combine	Peak discharge	= 13.14 cfs
Storm frequency	= 10 yrs	Time to peak	= 732 min
Time interval	= 2 min	Hyd. volume	= 91,156 cuft
Inflow hyds.	= 49, 50	Contrib. drain. area	= 0.480 ac

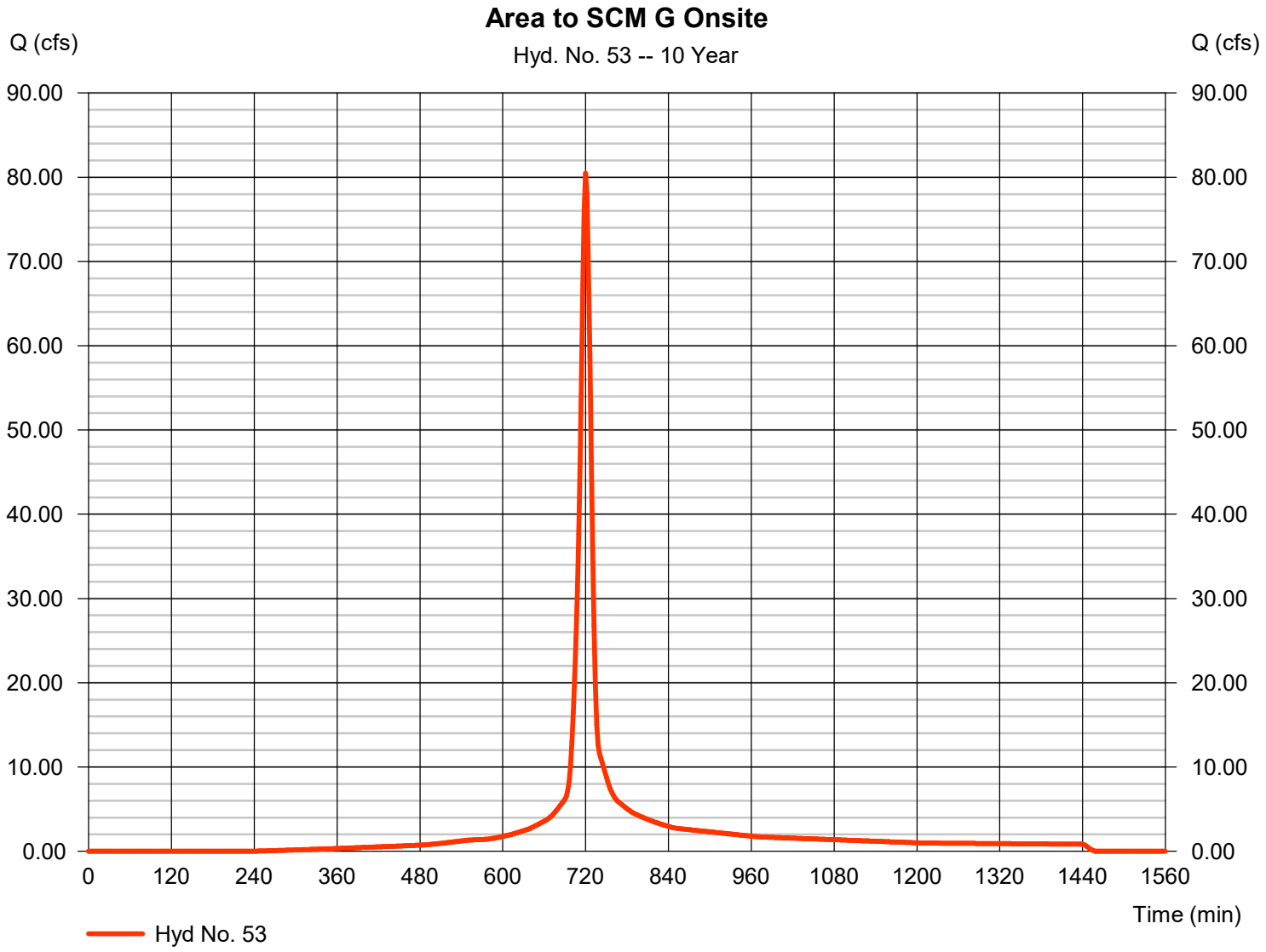


Hydrograph Report

Hyd. No. 53

Area to SCM G Onsite

Hydrograph type	=	SCS Runoff	Peak discharge	=	80.47 cfs
Storm frequency	=	10 yrs	Time to peak	=	720 min
Time interval	=	2 min	Hyd. volume	=	217,368 cuft
Drainage area	=	14.730 ac	Curve number	=	89.8
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	10.40 min
Total precip.	=	5.09 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

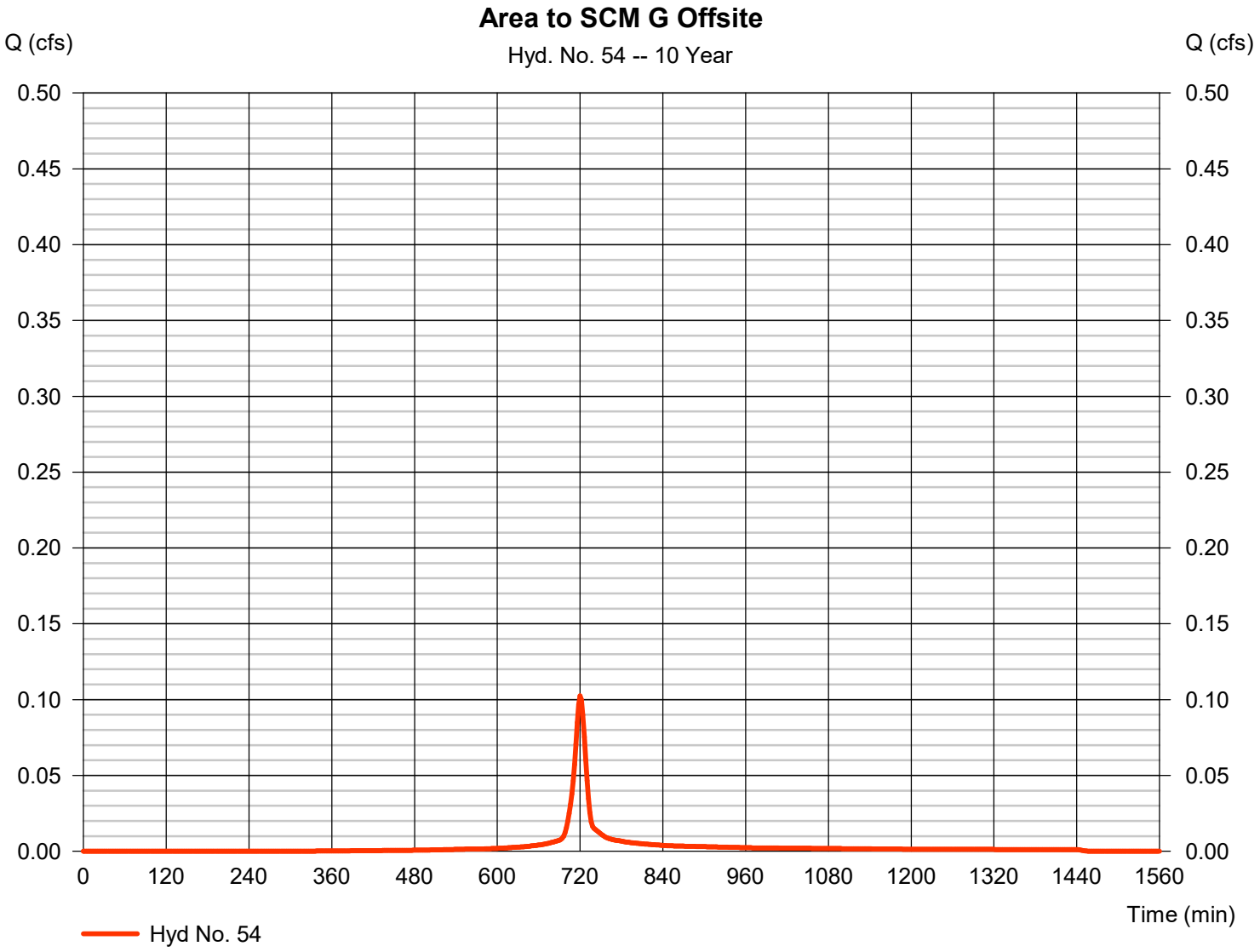


Hydrograph Report

Hyd. No. 54

Area to SCM G Offsite

Hydrograph type	= SCS Runoff	Peak discharge	= 0.103 cfs
Storm frequency	= 10 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 272 cuft
Drainage area	= 0.020 ac	Curve number	= 86.8
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 10.40 min
Total precip.	= 5.09 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

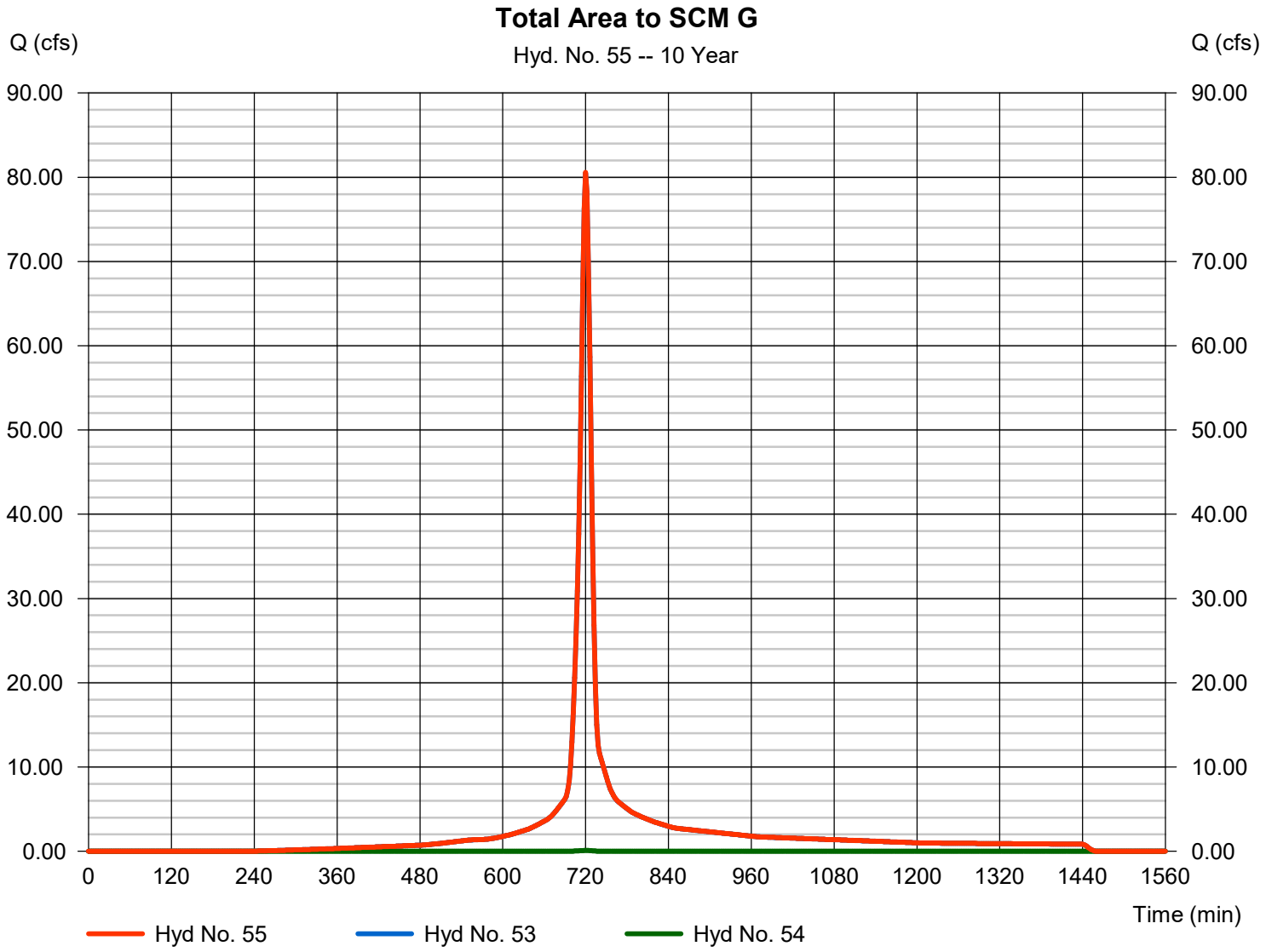


Hydrograph Report

Hyd. No. 55

Total Area to SCM G

Hydrograph type	= Combine	Peak discharge	= 80.58 cfs
Storm frequency	= 10 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 217,640 cuft
Inflow hyds.	= 53, 54	Contrib. drain. area	= 14.750 ac



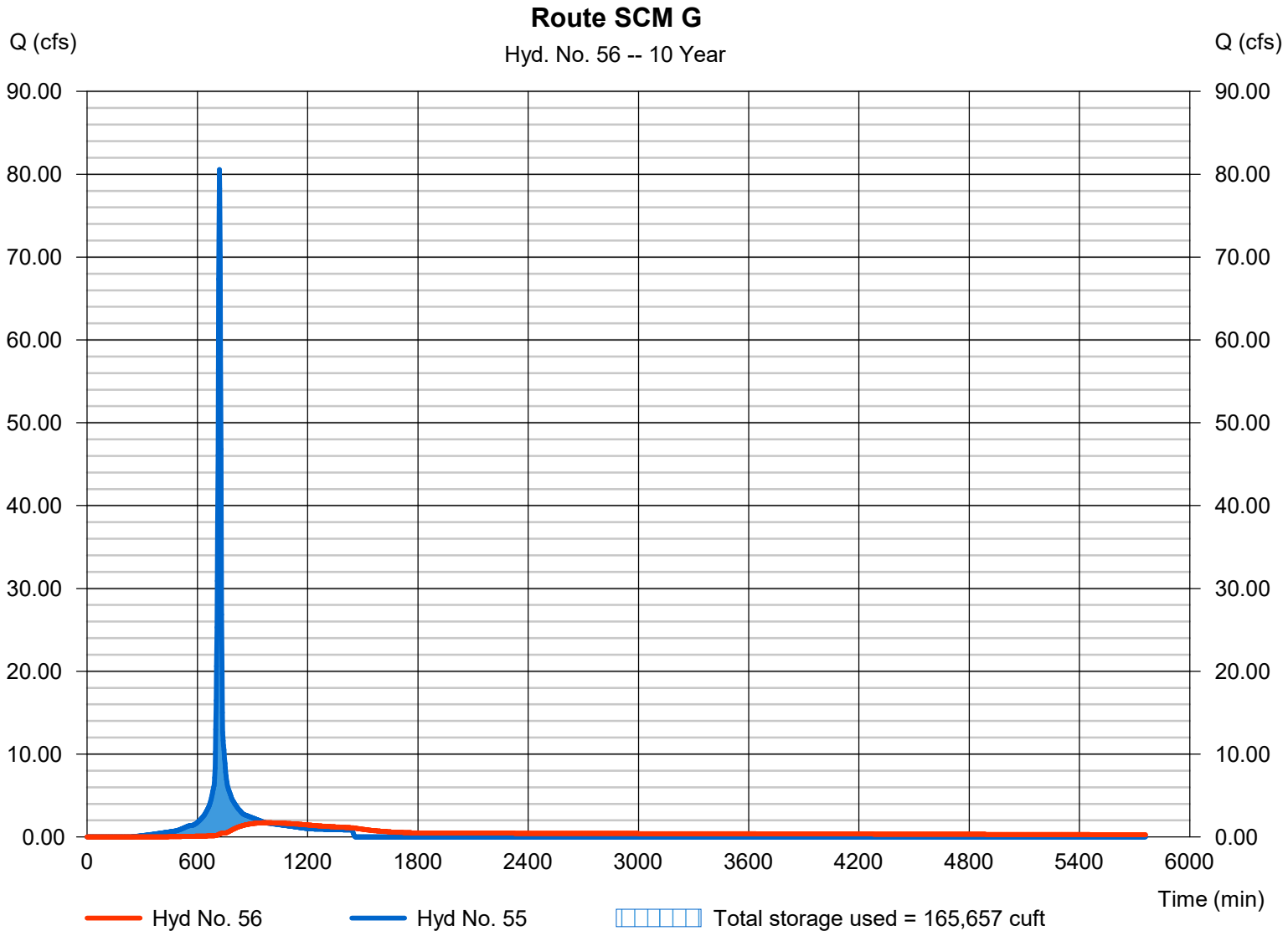
Hydrograph Report

Hyd. No. 56

Route SCM G

Hydrograph type	= Reservoir	Peak discharge	= 1.712 cfs
Storm frequency	= 10 yrs	Time to peak	= 972 min
Time interval	= 2 min	Hyd. volume	= 163,223 cuft
Inflow hyd. No.	= 55 - Total Area to SCM G	Max. Elevation	= 390.01 ft
Reservoir name	= SCM G	Max. Storage	= 165,657 cuft

Storage Indication method used.

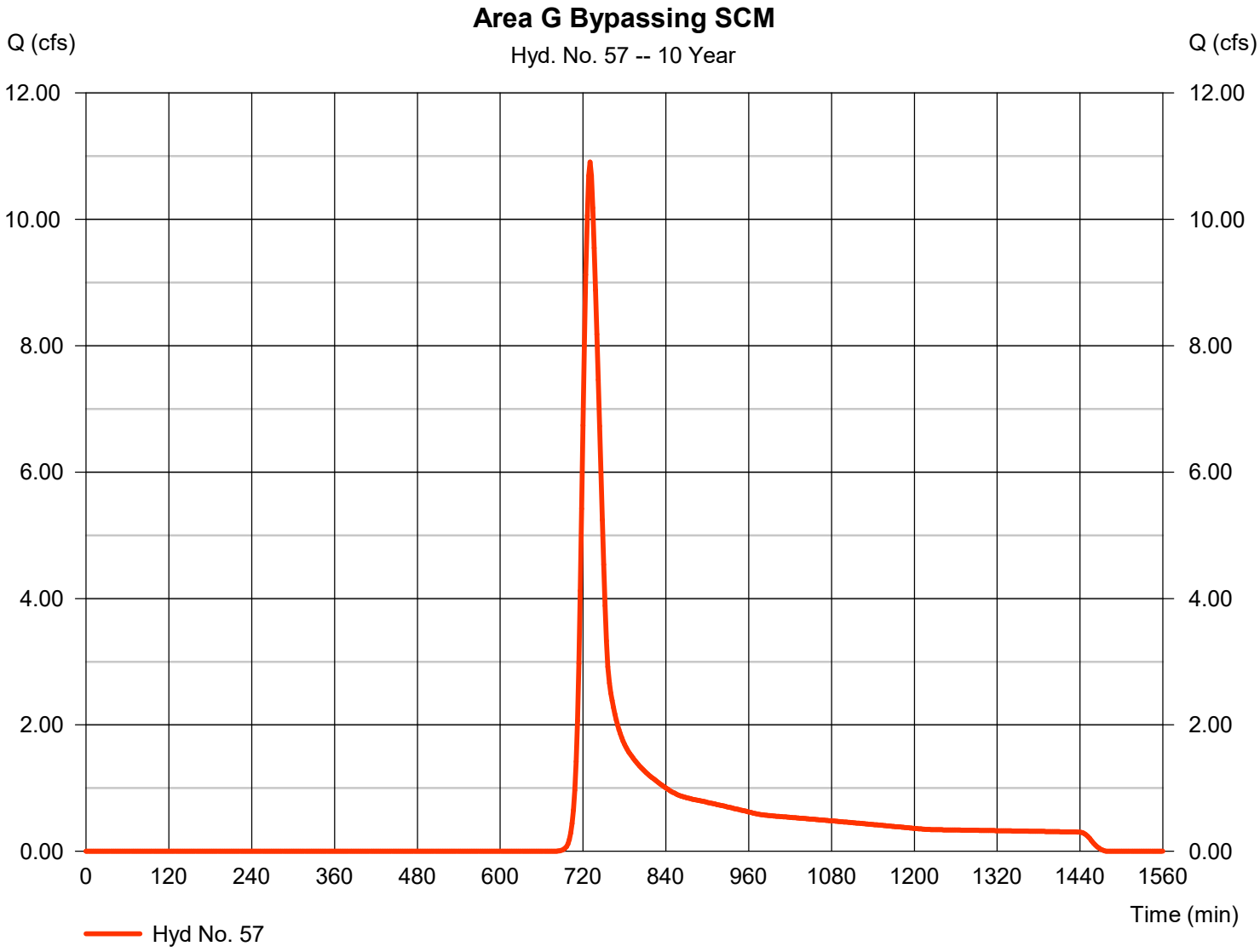


Hydrograph Report

Hyd. No. 57

Area G Bypassing SCM

Hydrograph type	=	SCS Runoff	Peak discharge	=	10.91 cfs
Storm frequency	=	10 yrs	Time to peak	=	730 min
Time interval	=	2 min	Hyd. volume	=	44,552 cuft
Drainage area	=	9.070 ac	Curve number	=	60.3
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	23.80 min
Total precip.	=	5.09 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

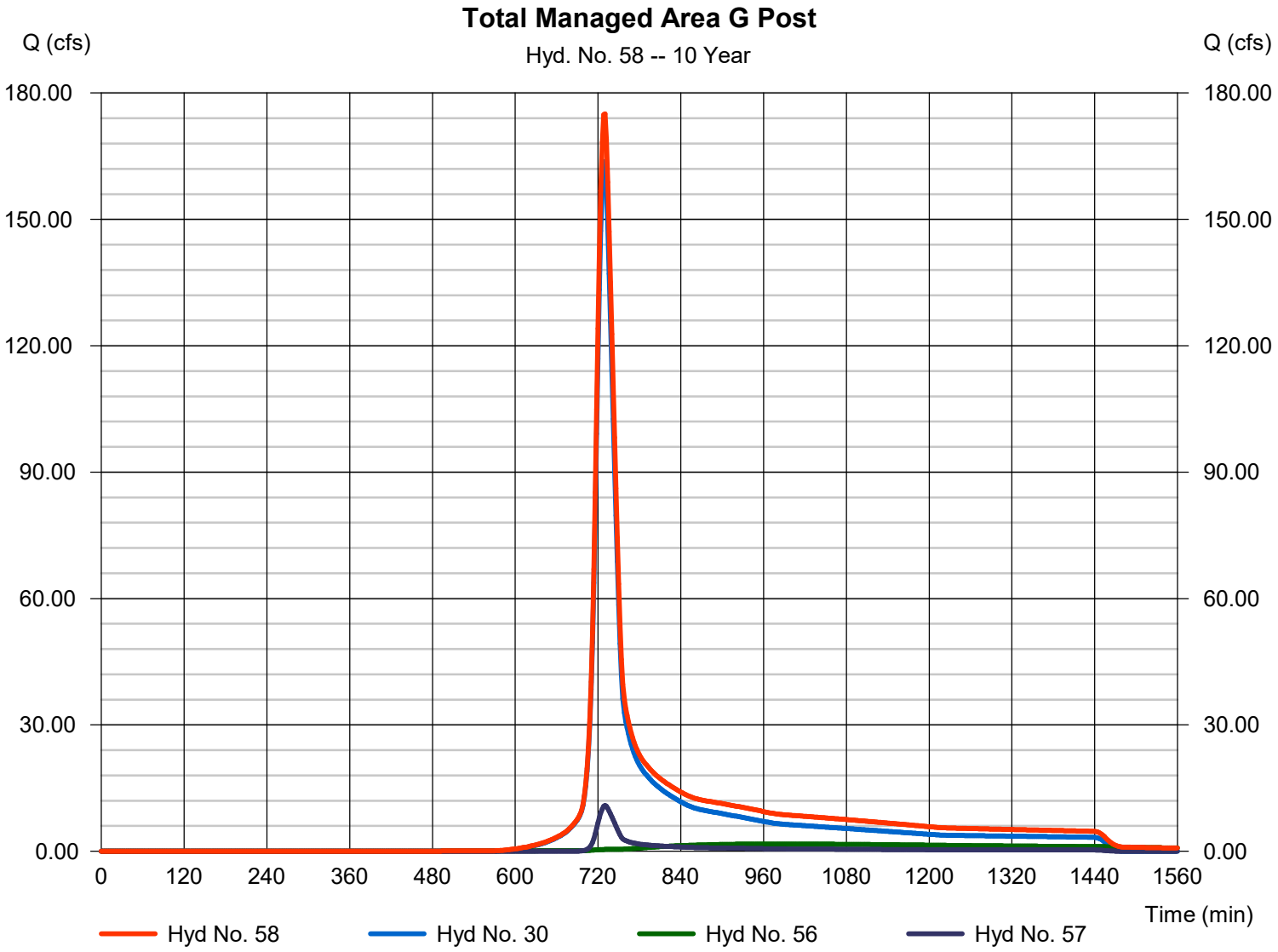


Hydrograph Report

Hyd. No. 58

Total Managed Area G Post

Hydrograph type	= Combine	Peak discharge	= 175.02 cfs
Storm frequency	= 10 yrs	Time to peak	= 730 min
Time interval	= 2 min	Hyd. volume	= 819,307 cuft
Inflow hyds.	= 30, 56, 57	Contrib. drain. area	= 85.670 ac

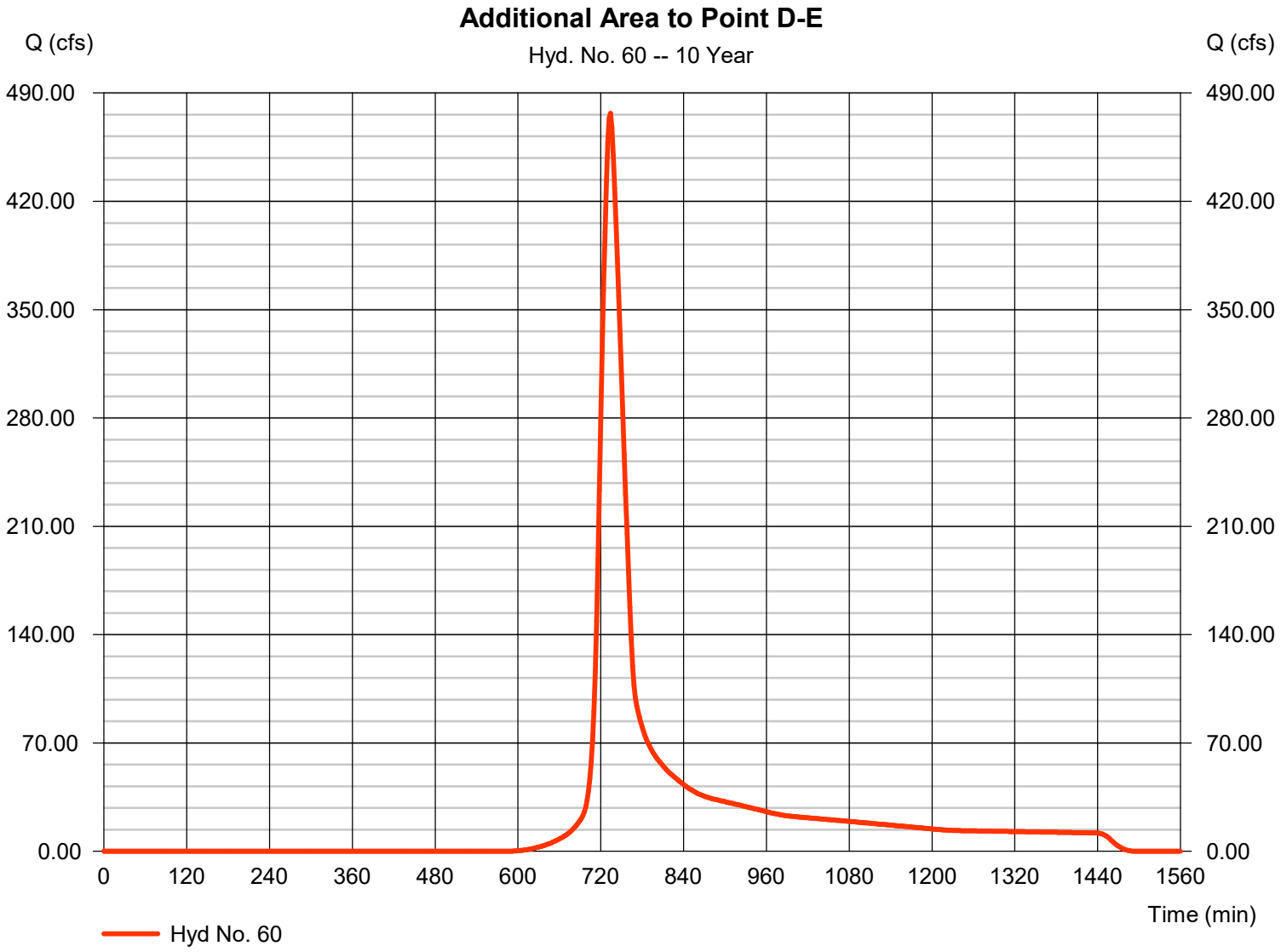


Hydrograph Report

Hyd. No. 60

Additional Area to Point D-E

Hydrograph type	=	SCS Runoff	Peak discharge	=	476.83 cfs
Storm frequency	=	10 yrs	Time to peak	=	734 min
Time interval	=	2 min	Hyd. volume	=	2,111,072 cuft
Drainage area	=	271.000 ac	Curve number	=	70.2
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	32.50 min
Total precip.	=	5.09 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

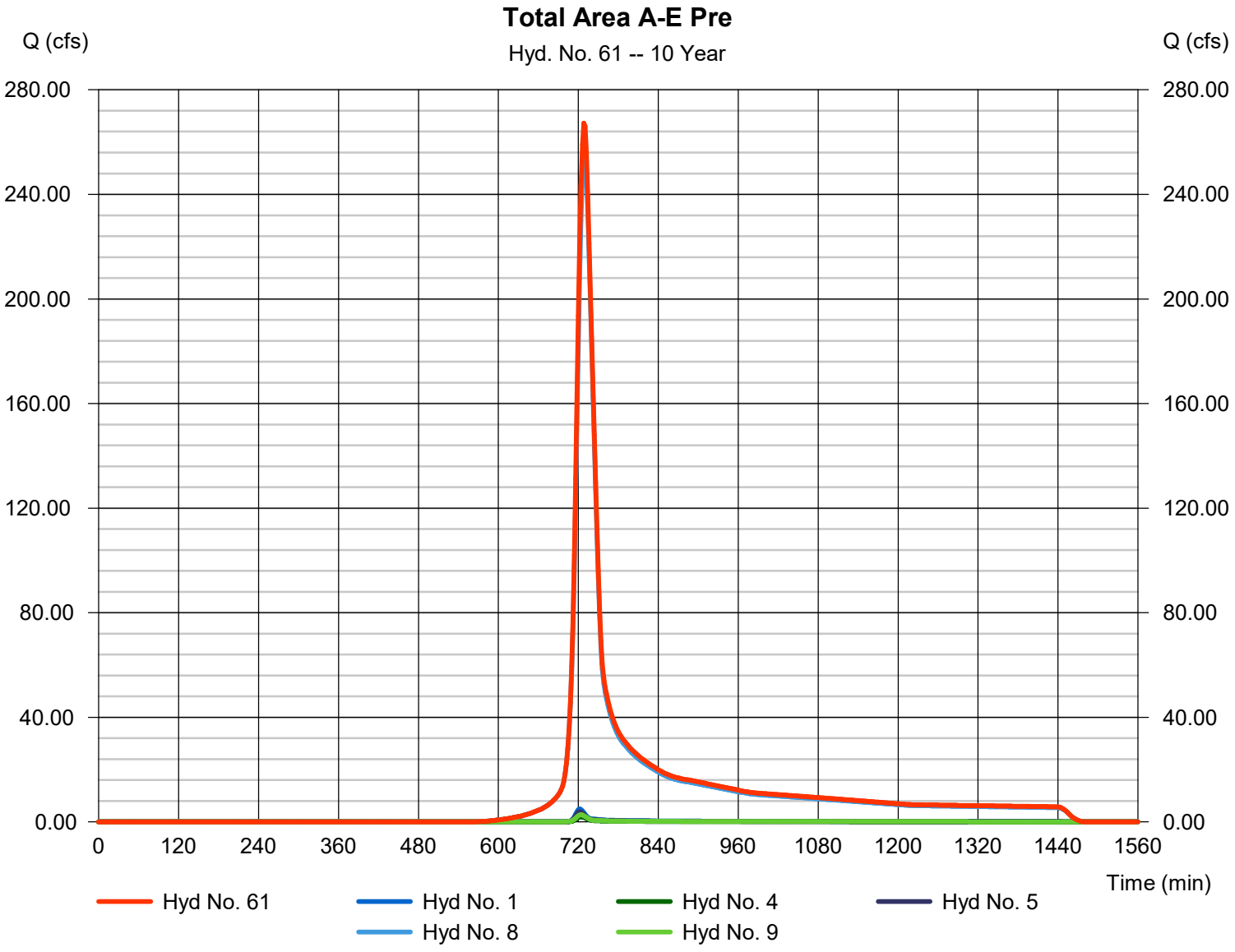


Hydrograph Report

Hyd. No. 61

Total Area A-E Pre

Hydrograph type	= Combine	Peak discharge	= 267.30 cfs
Storm frequency	= 10 yrs	Time to peak	= 728 min
Time interval	= 2 min	Hyd. volume	= 1,013,043 cuft
Inflow hyds.	= 1, 4, 5, 8, 9	Contrib. drain. area	= 10.720 ac

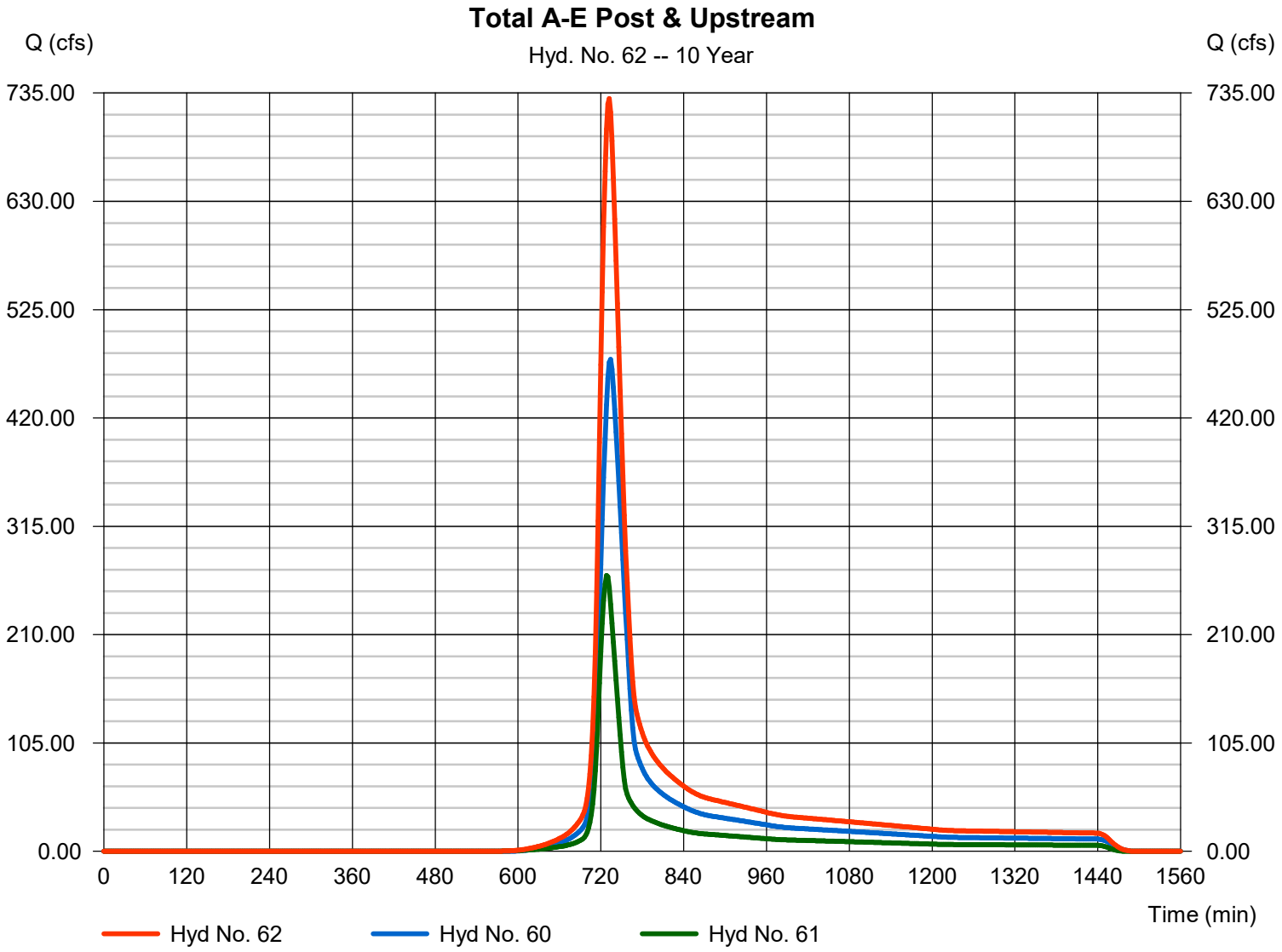


Hydrograph Report

Hyd. No. 62

Total A-E Post & Upstream

Hydrograph type	= Combine	Peak discharge	= 729.59 cfs
Storm frequency	= 10 yrs	Time to peak	= 732 min
Time interval	= 2 min	Hyd. volume	= 3,124,115 cuft
Inflow hyds.	= 60, 61	Contrib. drain. area	= 271.000 ac



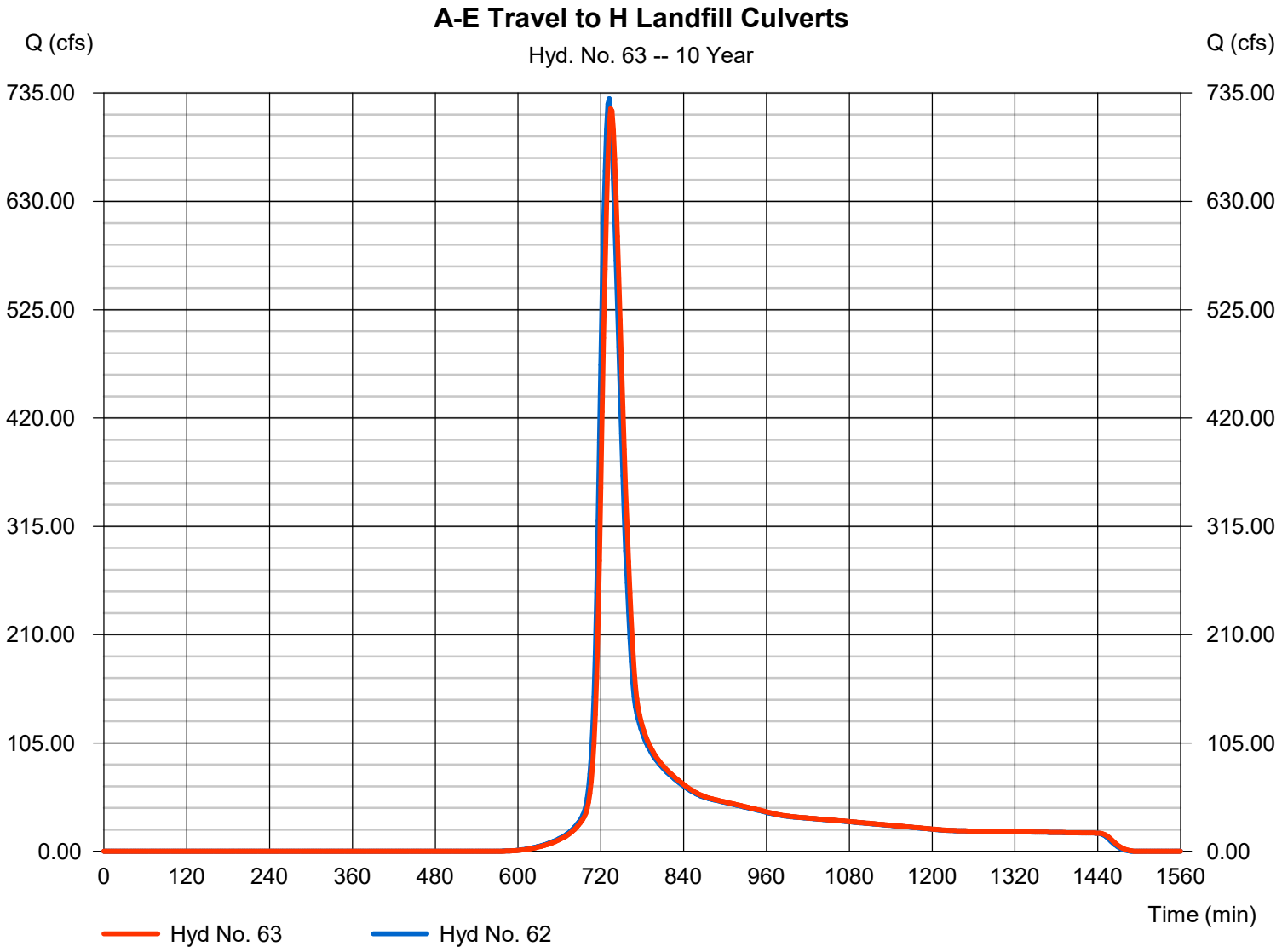
Hydrograph Report

Hyd. No. 63

A-E Travel to H Landfill Culverts

Hydrograph type	=	Reach	Peak discharge	=	719.68 cfs
Storm frequency	=	10 yrs	Time to peak	=	734 min
Time interval	=	2 min	Hyd. volume	=	3,124,113 cuft
Inflow hyd. No.	=	62 - Total A-E Post & Upstream	Section type	=	Trapezoidal
Reach length	=	1500.0 ft	Channel slope	=	0.7 %
Manning's n	=	0.025	Bottom width	=	6.0 ft
Side slope	=	2.0:1	Max. depth	=	2.0 ft
Rating curve x	=	1.509	Rating curve m	=	1.374
Ave. velocity	=	8.12 ft/s	Routing coeff.	=	0.6172

Modified Att-Kin routing method used.

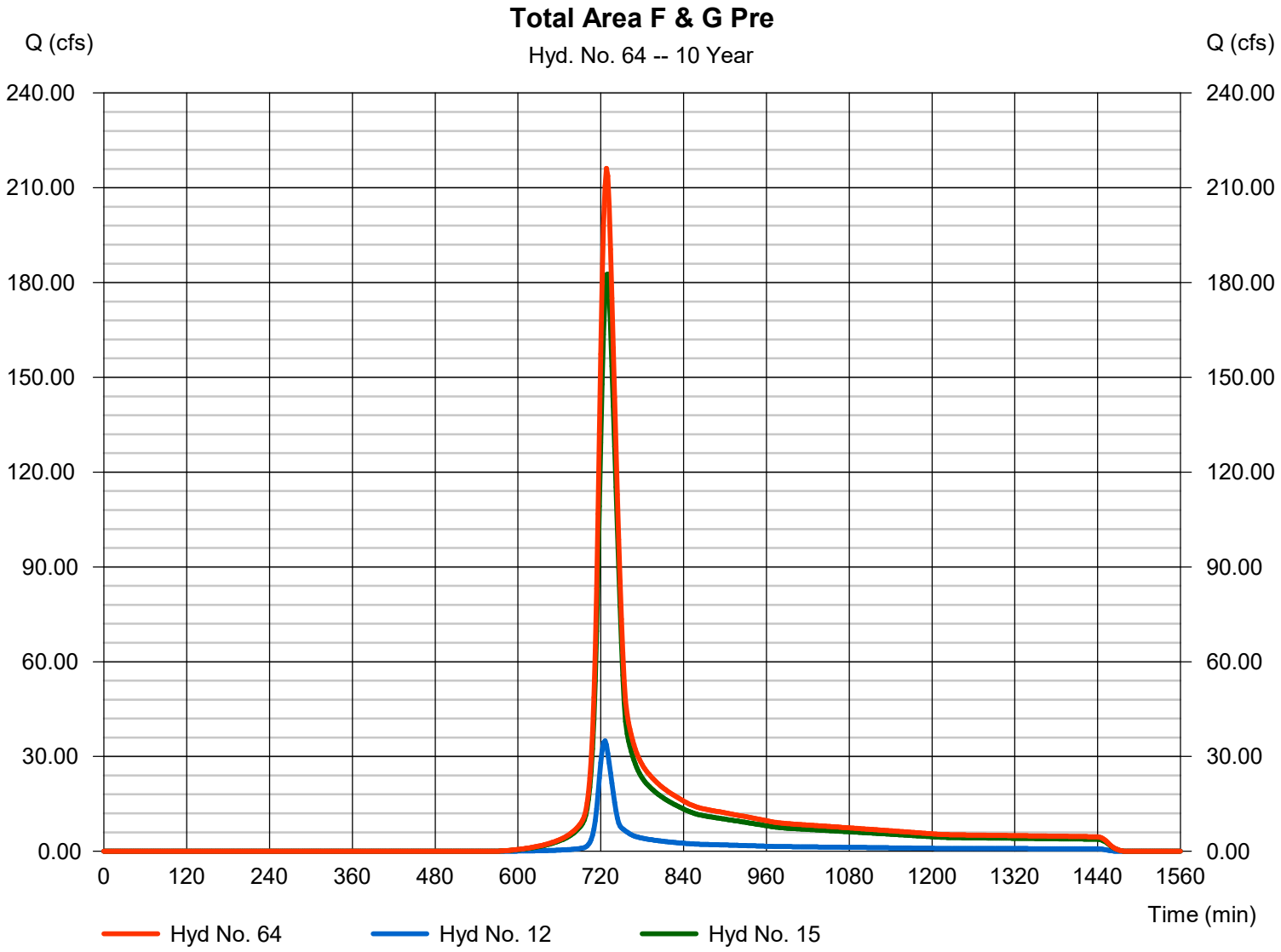


Hydrograph Report

Hyd. No. 64

Total Area F & G Pre

Hydrograph type	= Combine	Peak discharge	= 216.12 cfs
Storm frequency	= 10 yrs	Time to peak	= 728 min
Time interval	= 2 min	Hyd. volume	= 807,398 cuft
Inflow hyds.	= 12, 15	Contrib. drain. area	= 0.000 ac



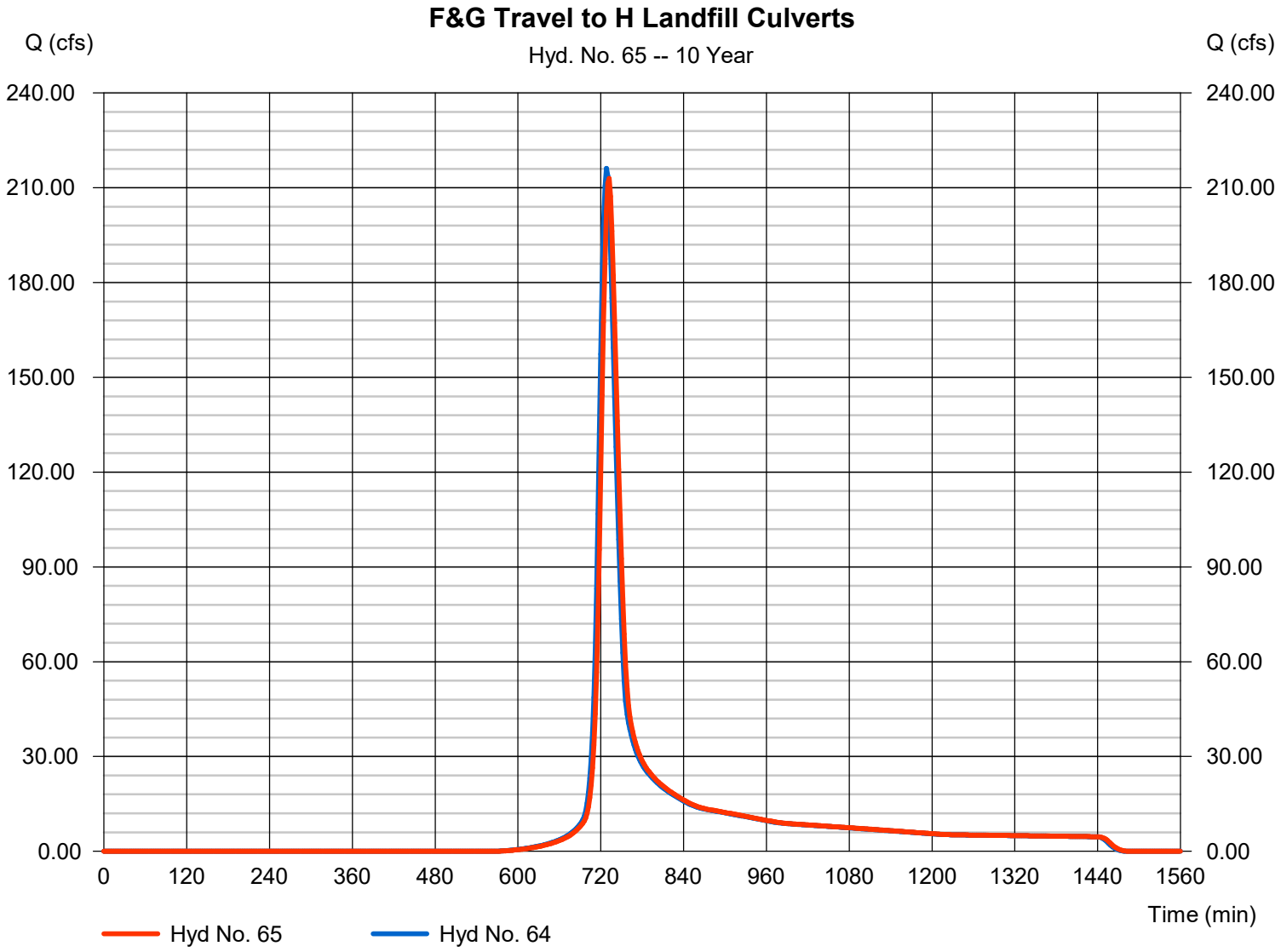
Hydrograph Report

Hyd. No. 65

F&G Travel to H Landfill Culverts

Hydrograph type	=	Reach	Peak discharge	=	212.94 cfs
Storm frequency	=	10 yrs	Time to peak	=	732 min
Time interval	=	2 min	Hyd. volume	=	807,396 cuft
Inflow hyd. No.	=	64 - Total Area F & G Pre	Section type	=	Trapezoidal
Reach length	=	1300.0 ft	Channel slope	=	1.5 %
Manning's n	=	0.025	Bottom width	=	6.0 ft
Side slope	=	2.0:1	Max. depth	=	2.0 ft
Rating curve x	=	2.209	Rating curve m	=	1.374
Ave. velocity	=	7.69 ft/s	Routing coeff.	=	0.6559

Modified Att-Kin routing method used.

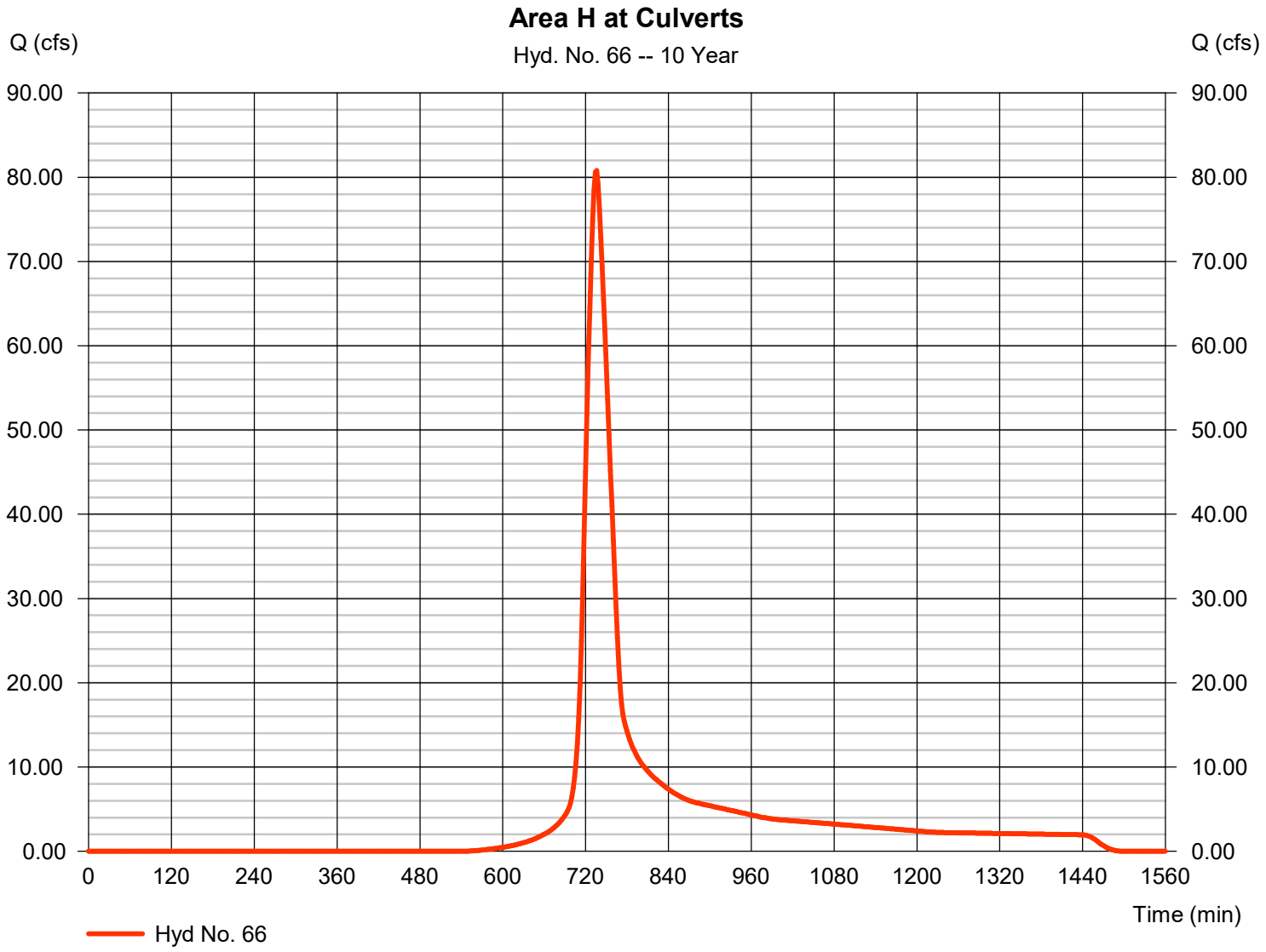


Hydrograph Report

Hyd. No. 66

Area H at Culverts

Hydrograph type	=	SCS Runoff	Peak discharge	=	80.80 cfs
Storm frequency	=	10 yrs	Time to peak	=	736 min
Time interval	=	2 min	Hyd. volume	=	370,628 cuft
Drainage area	=	43.300 ac	Curve number	=	73.4
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	35.10 min
Total precip.	=	5.09 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

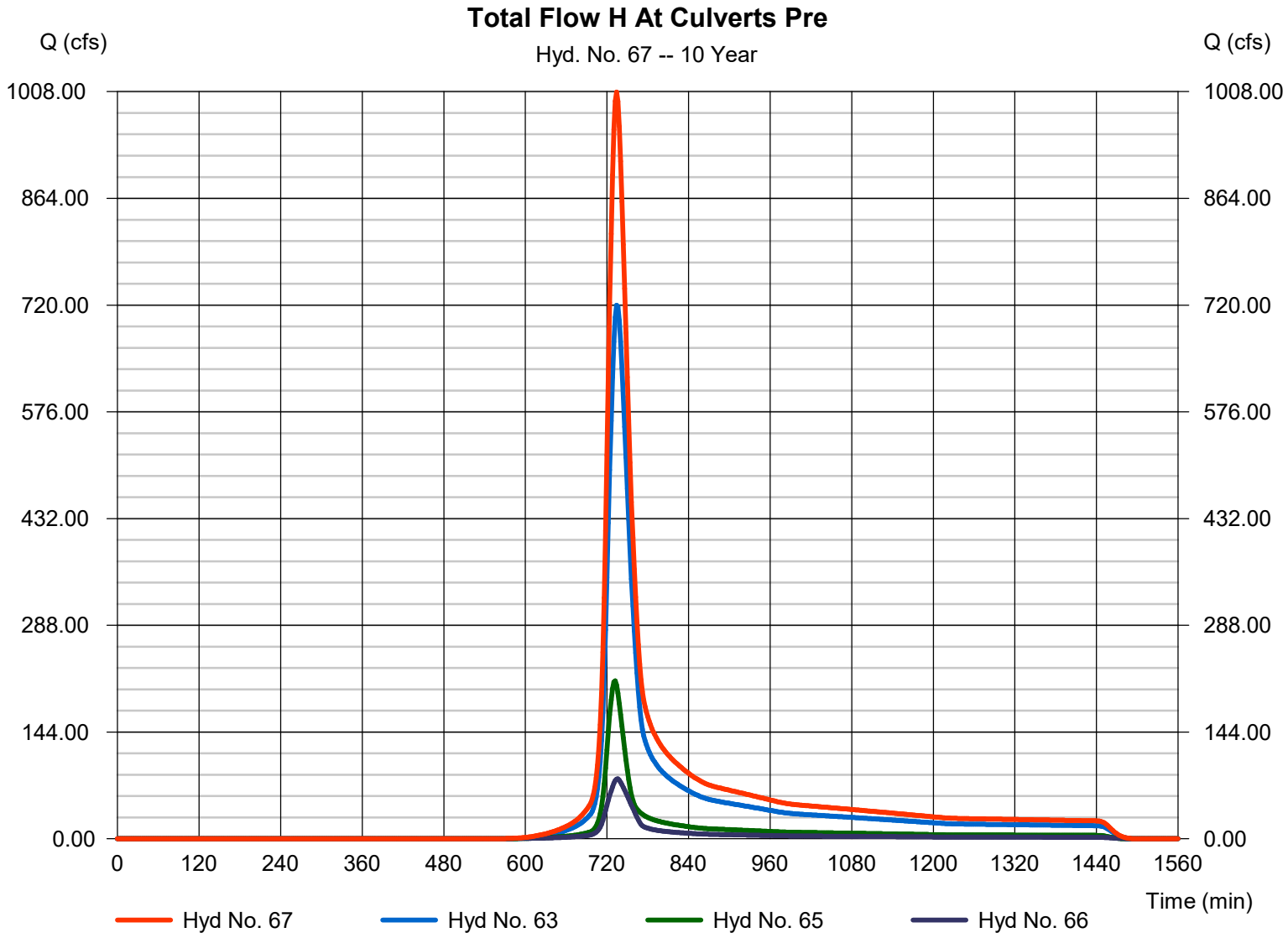


Hydrograph Report

Hyd. No. 67

Total Flow H At Culverts Pre

Hydrograph type	= Combine	Peak discharge	= 1007.55 cfs
Storm frequency	= 10 yrs	Time to peak	= 734 min
Time interval	= 2 min	Hyd. volume	= 4,302,135 cuft
Inflow hyds.	= 63, 65, 66	Contrib. drain. area	= 43.300 ac

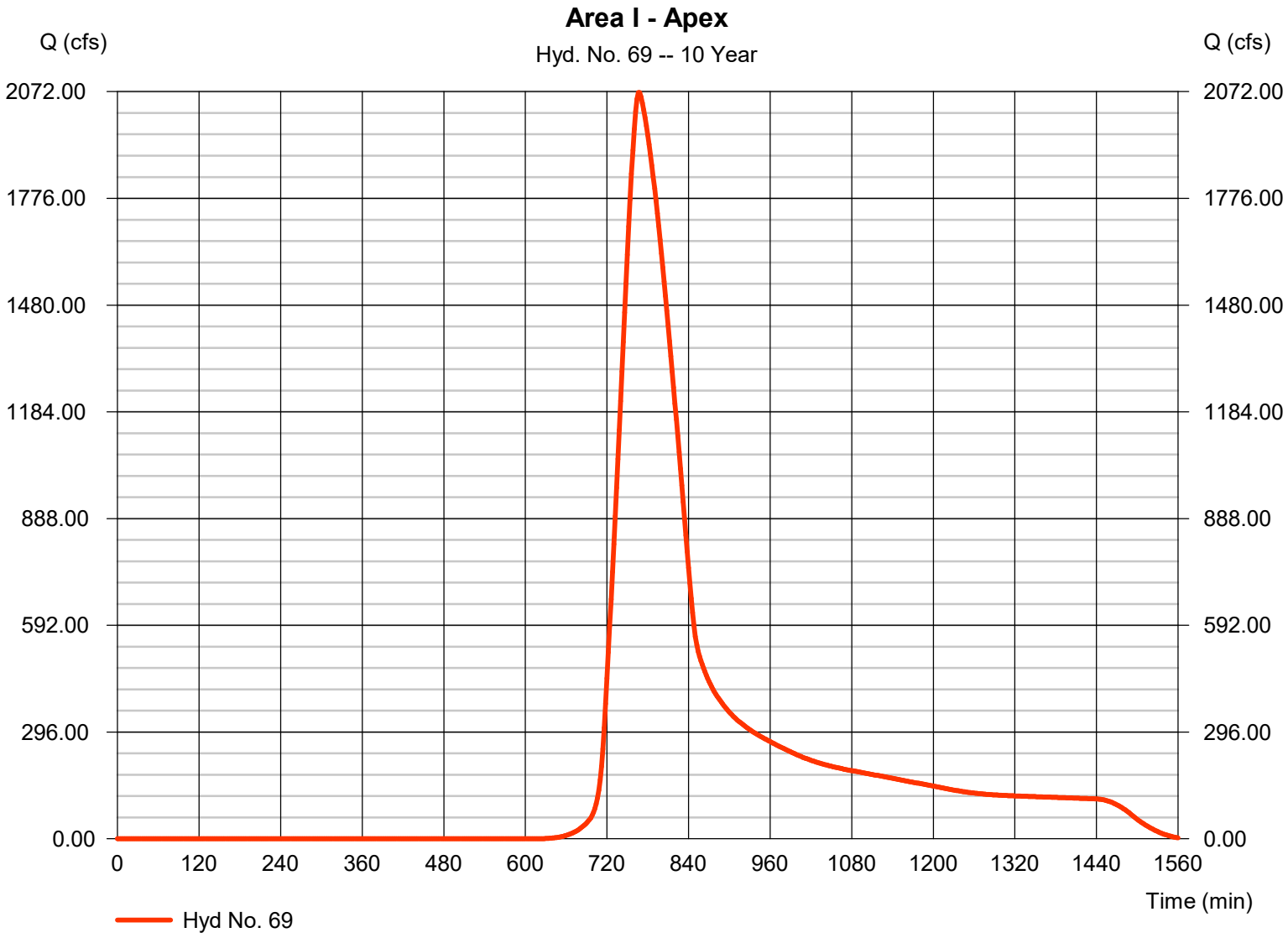


Hydrograph Report

Hyd. No. 69

Area I - Apex

Hydrograph type	=	SCS Runoff	Peak discharge	=	2069.32 cfs
Storm frequency	=	10 yrs	Time to peak	=	768 min
Time interval	=	2 min	Hyd. volume	=	18,443,486 cuft
Drainage area	=	2637.000 ac	Curve number	=	67.9
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	87.40 min
Total precip.	=	5.09 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



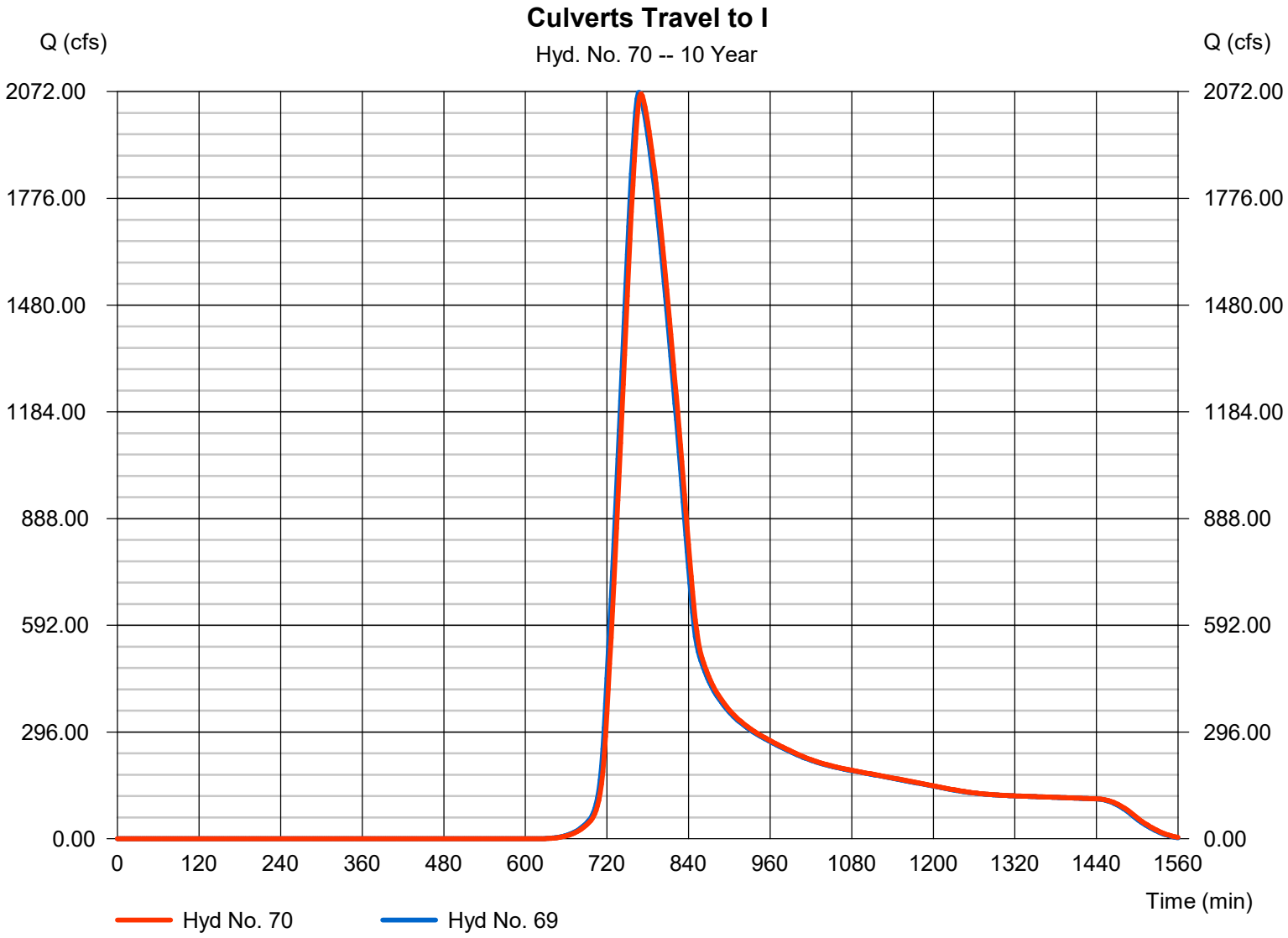
Hydrograph Report

Hyd. No. 70

Culverts Travel to I

Hydrograph type	=	Reach	Peak discharge	=	2066.04 cfs
Storm frequency	=	10 yrs	Time to peak	=	770 min
Time interval	=	2 min	Hyd. volume	=	18,443,470 cuft
Inflow hyd. No.	=	69 - Area I - Apex	Section type	=	Trapezoidal
Reach length	=	1670.0 ft	Channel slope	=	0.7 %
Manning's n	=	0.025	Bottom width	=	6.0 ft
Side slope	=	2.0:1	Max. depth	=	2.0 ft
Rating curve x	=	1.509	Rating curve m	=	1.374
Ave. velocity	=	10.79 ft/s	Routing coeff.	=	0.6949

Modified Att-Kin routing method used.

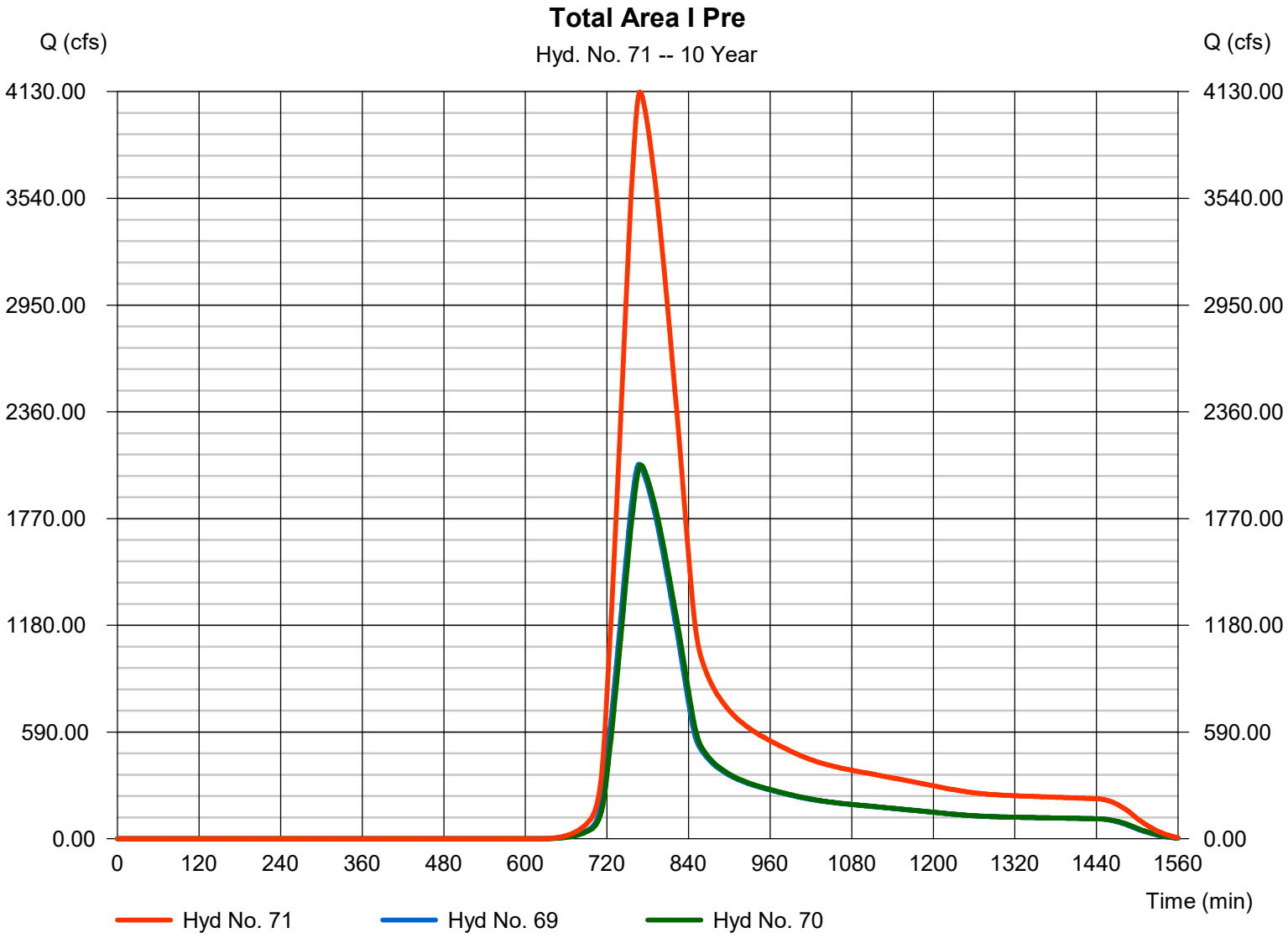


Hydrograph Report

Hyd. No. 71

Total Area I Pre

Hydrograph type	= Combine	Peak discharge	= 4127.88 cfs
Storm frequency	= 10 yrs	Time to peak	= 768 min
Time interval	= 2 min	Hyd. volume	= 36,886,940 cuft
Inflow hyds.	= 69, 70	Contrib. drain. area	= 2637.000 ac

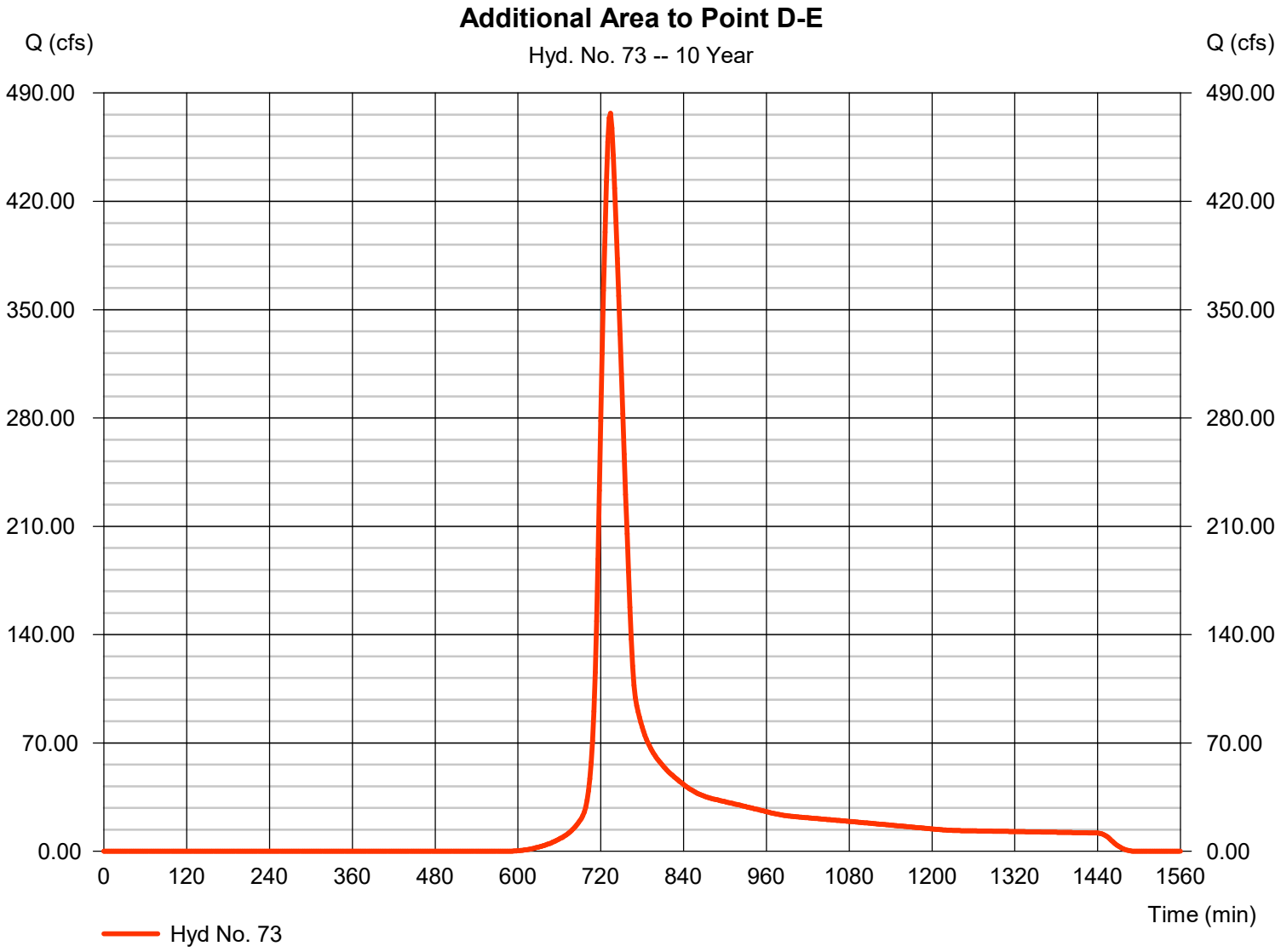


Hydrograph Report

Hyd. No. 73

Additional Area to Point D-E

Hydrograph type	=	SCS Runoff	Peak discharge	=	476.83 cfs
Storm frequency	=	10 yrs	Time to peak	=	734 min
Time interval	=	2 min	Hyd. volume	=	2,111,072 cuft
Drainage area	=	271.000 ac	Curve number	=	70.2
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	32.50 min
Total precip.	=	5.09 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

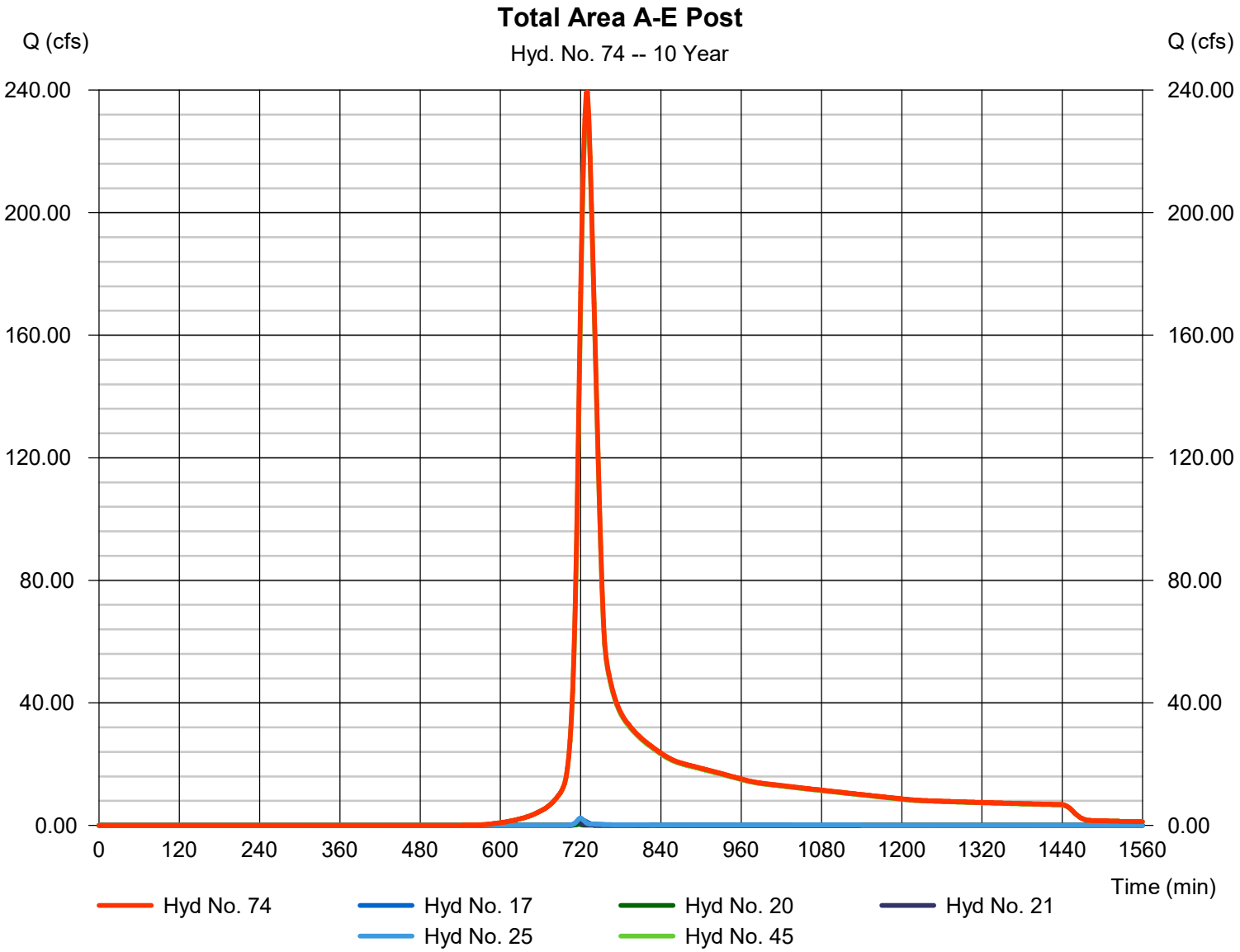


Hydrograph Report

Hyd. No. 74

Total Area A-E Post

Hydrograph type	= Combine	Peak discharge	= 239.32 cfs
Storm frequency	= 10 yrs	Time to peak	= 730 min
Time interval	= 2 min	Hyd. volume	= 1,202,116 cuft
Inflow hyds.	= 17, 20, 21, 25, 45	Contrib. drain. area	= 3.290 ac

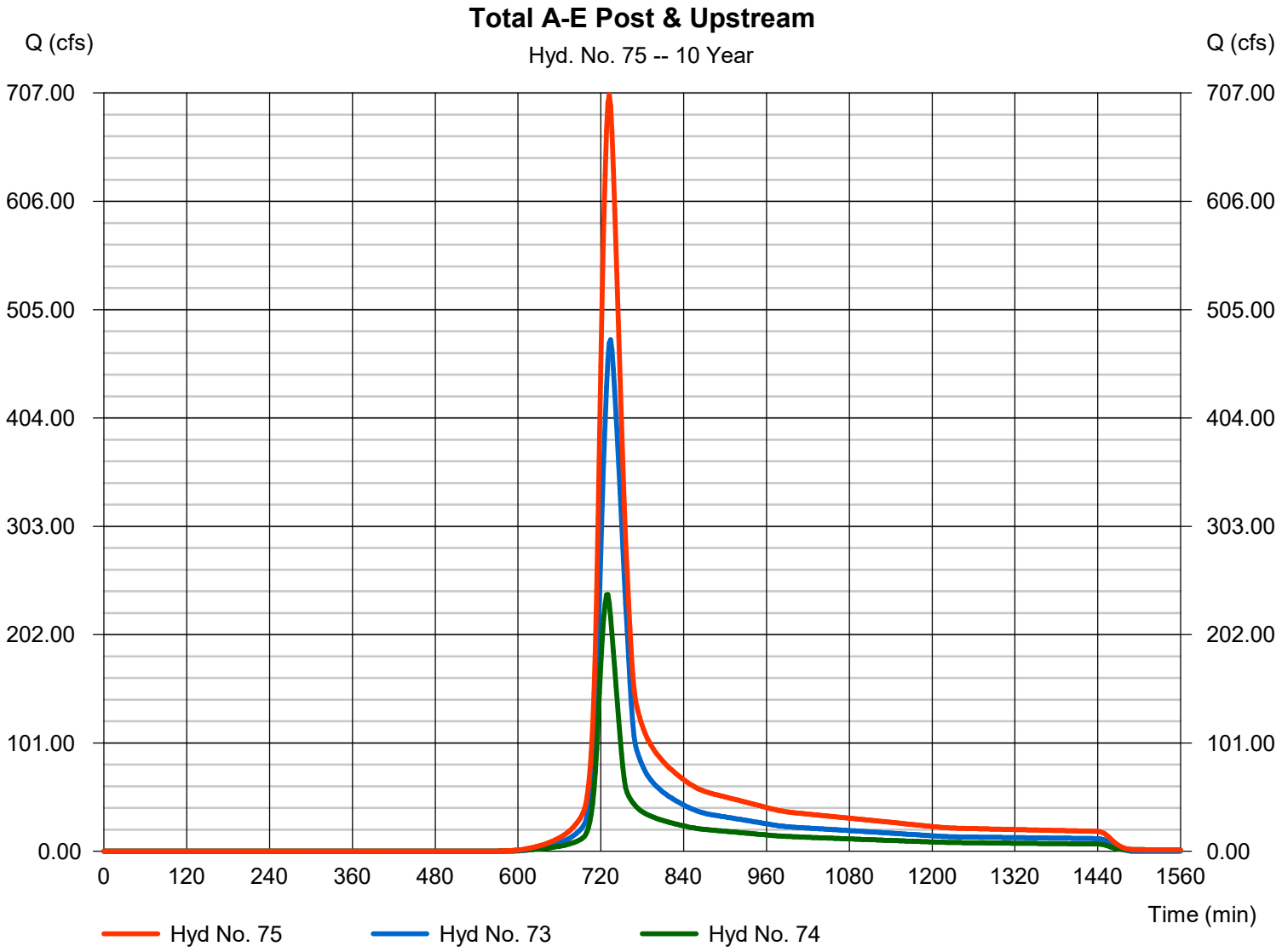


Hydrograph Report

Hyd. No. 75

Total A-E Post & Upstream

Hydrograph type	= Combine	Peak discharge	= 705.29 cfs
Storm frequency	= 10 yrs	Time to peak	= 732 min
Time interval	= 2 min	Hyd. volume	= 3,313,189 cuft
Inflow hyds.	= 73, 74	Contrib. drain. area	= 271.000 ac



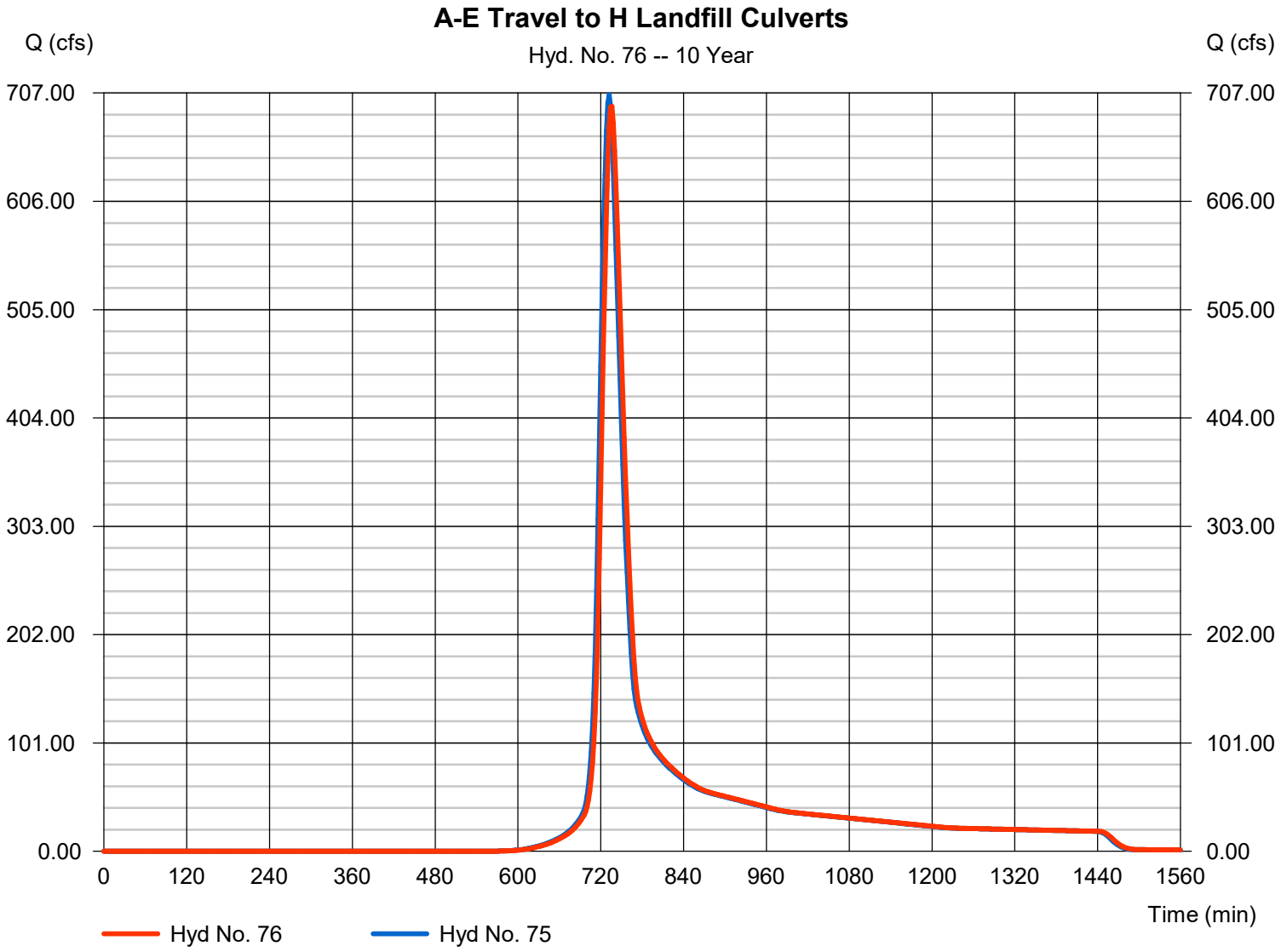
Hydrograph Report

Hyd. No. 76

A-E Travel to H Landfill Culverts

Hydrograph type	=	Reach	Peak discharge	=	694.57 cfs
Storm frequency	=	10 yrs	Time to peak	=	736 min
Time interval	=	2 min	Hyd. volume	=	3,313,144 cuft
Inflow hyd. No.	=	75 - Total A-E Post & Upstream	Section type	=	Trapezoidal
Reach length	=	1500.0 ft	Channel slope	=	0.7 %
Manning's n	=	0.025	Bottom width	=	6.0 ft
Side slope	=	2.0:1	Max. depth	=	2.0 ft
Rating curve x	=	1.509	Rating curve m	=	1.374
Ave. velocity	=	8.05 ft/s	Routing coeff.	=	0.6132

Modified Att-Kin routing method used.

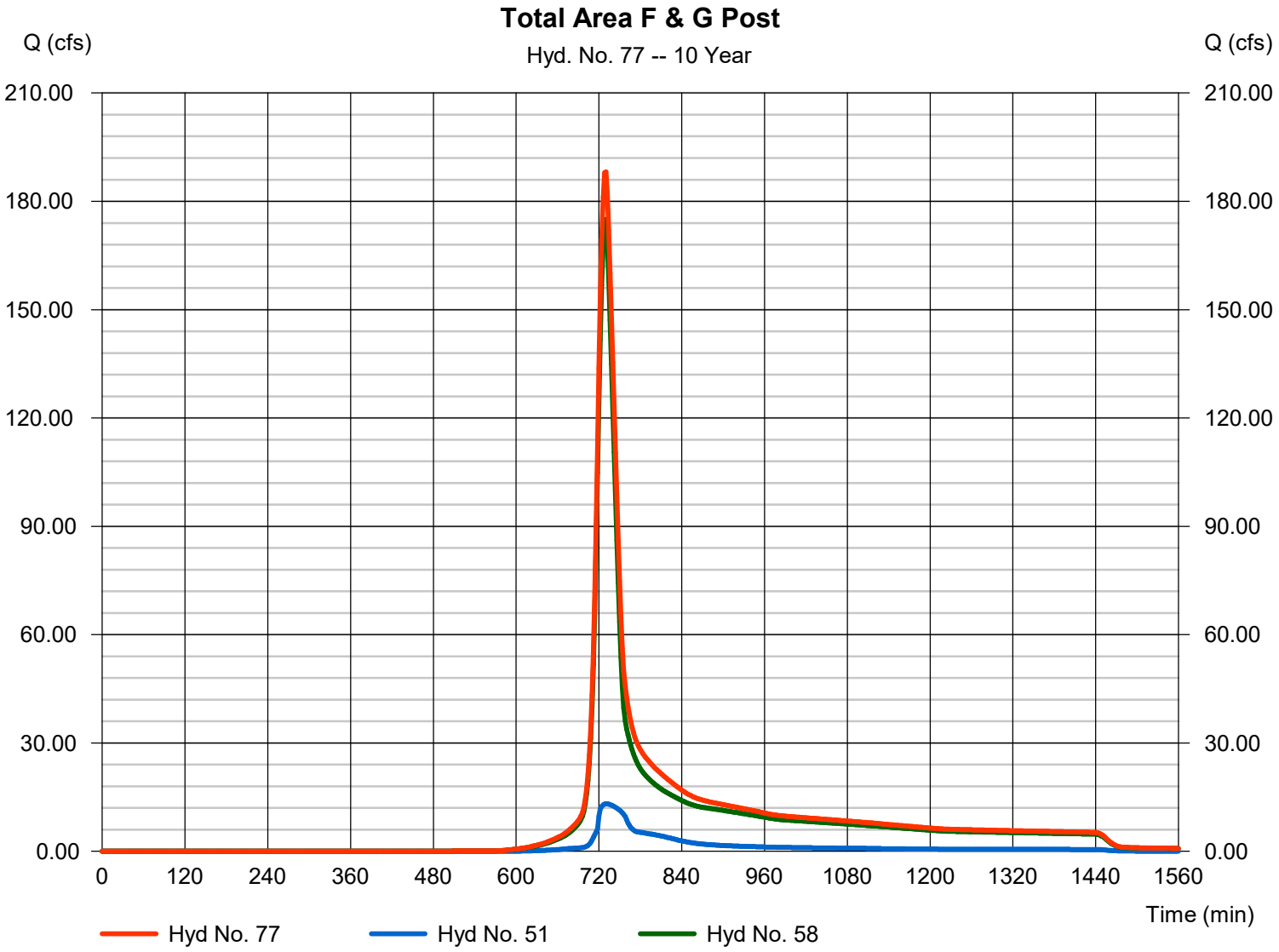


Hydrograph Report

Hyd. No. 77

Total Area F & G Post

Hydrograph type	= Combine	Peak discharge	= 188.15 cfs
Storm frequency	= 10 yrs	Time to peak	= 730 min
Time interval	= 2 min	Hyd. volume	= 910,464 cuft
Inflow hyds.	= 51, 58	Contrib. drain. area	= 0.000 ac



Hydrograph Report

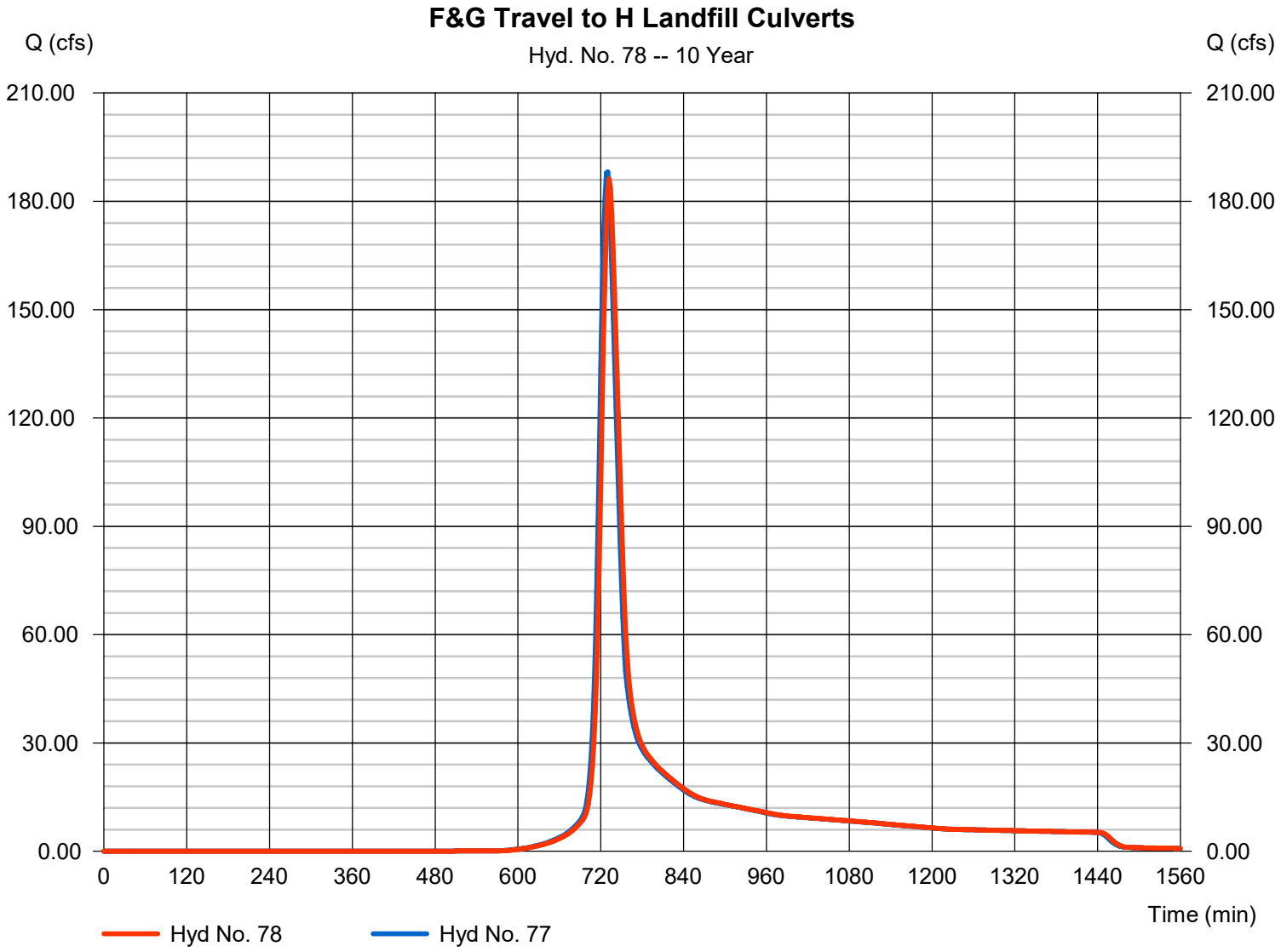
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Friday, 02 / 12 / 2021

Hyd. No. 78

F&G Travel to H Landfill Culverts

Hydrograph type	=	Reach	Peak discharge	=	186.16 cfs
Storm frequency	=	10 yrs	Time to peak	=	732 min
Time interval	=	2 min	Hyd. volume	=	910,414 cuft
Inflow hyd. No.	=	77 - Total Area F & G Post	Section type	=	Trapezoidal
Reach length	=	1300.0 ft	Channel slope	=	1.5 %
Manning's n	=	0.025	Bottom width	=	6.0 ft
Side slope	=	2.0:1	Max. depth	=	2.0 ft
Rating curve x	=	2.209	Rating curve m	=	1.374
Ave. velocity	=	7.41 ft/s	Routing coeff.	=	0.6394

Modified Att-Kin routing method used.

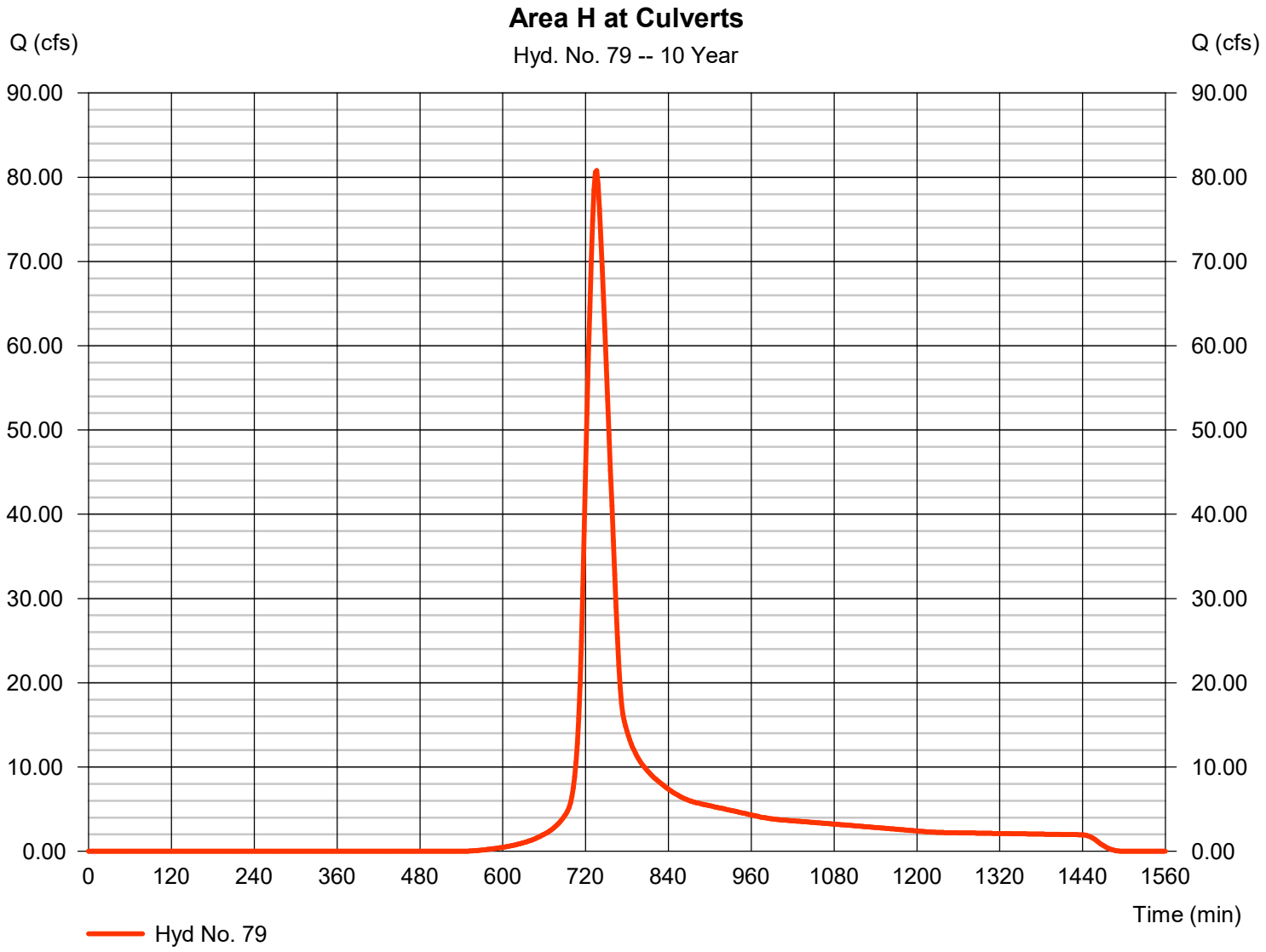


Hydrograph Report

Hyd. No. 79

Area H at Culverts

Hydrograph type	=	SCS Runoff	Peak discharge	=	80.80 cfs
Storm frequency	=	10 yrs	Time to peak	=	736 min
Time interval	=	2 min	Hyd. volume	=	370,628 cuft
Drainage area	=	43.300 ac	Curve number	=	73.4
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	35.10 min
Total precip.	=	5.09 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

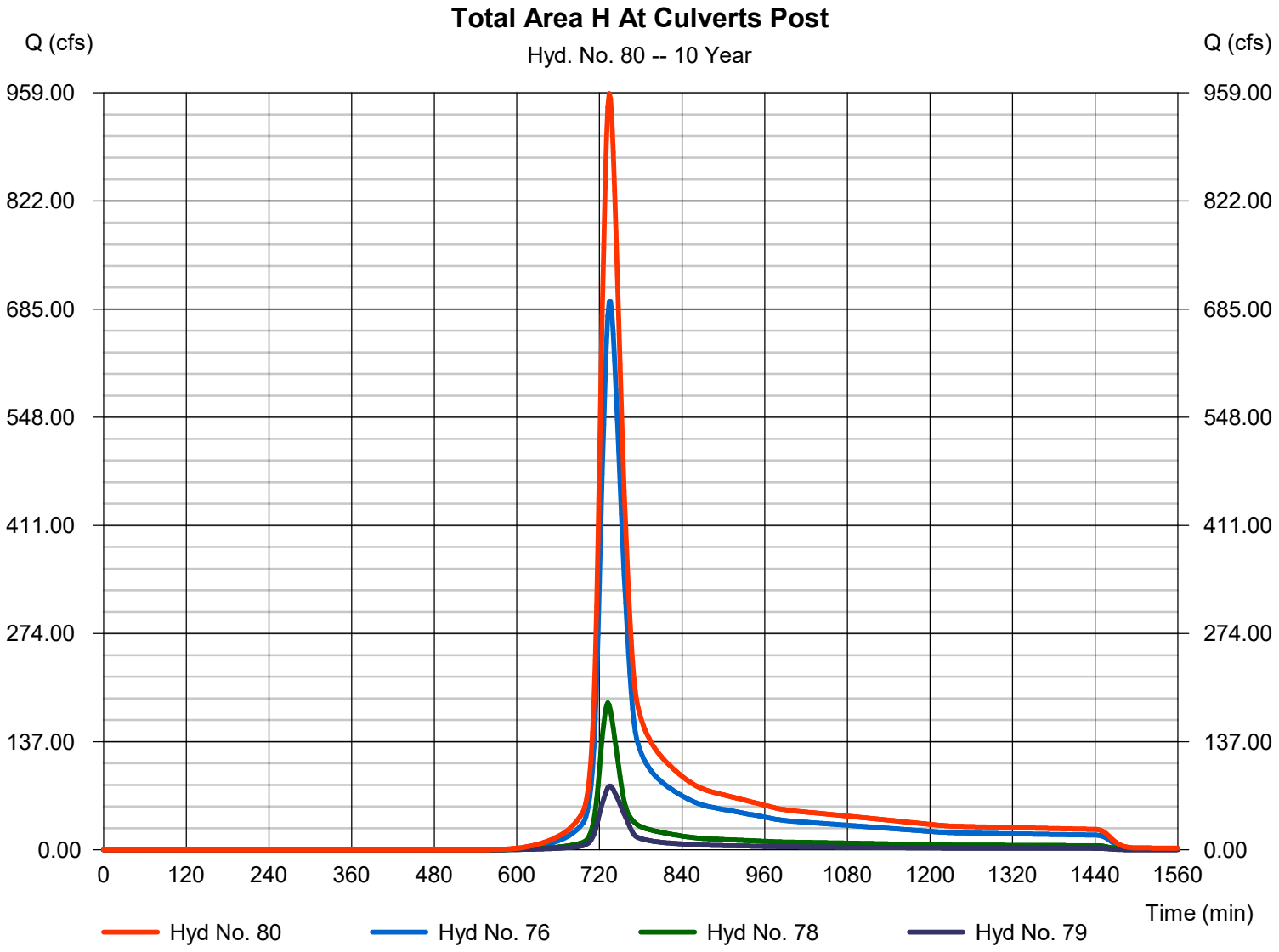


Hydrograph Report

Hyd. No. 80

Total Area H At Culverts Post

Hydrograph type	= Combine	Peak discharge	= 958.19 cfs
Storm frequency	= 10 yrs	Time to peak	= 734 min
Time interval	= 2 min	Hyd. volume	= 4,594,181 cuft
Inflow hyds.	= 76, 78, 79	Contrib. drain. area	= 43.300 ac

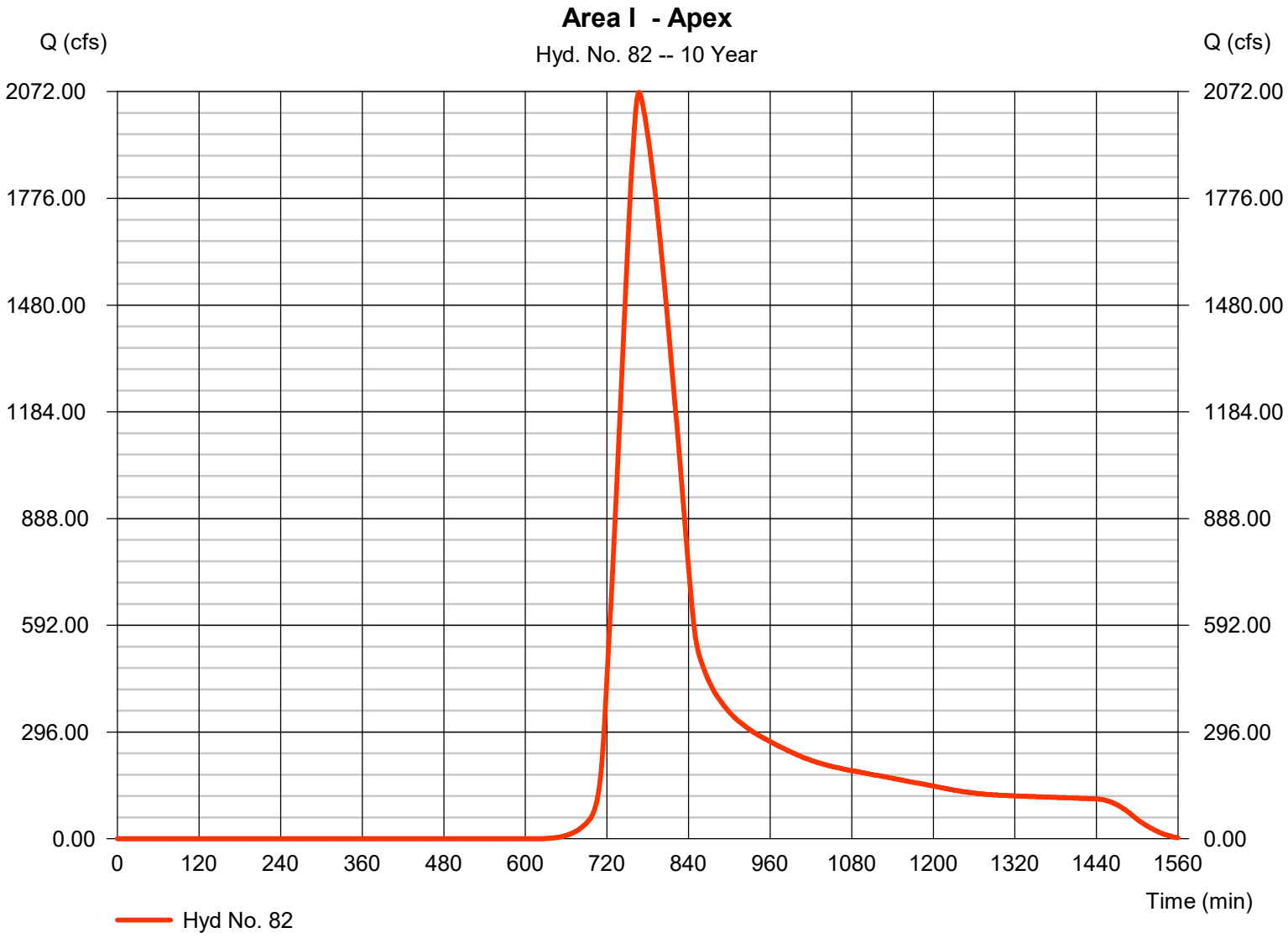


Hydrograph Report

Hyd. No. 82

Area I - Apex

Hydrograph type	= SCS Runoff	Peak discharge	= 2069.32 cfs
Storm frequency	= 10 yrs	Time to peak	= 768 min
Time interval	= 2 min	Hyd. volume	= 18,443,486 cuft
Drainage area	= 2637.000 ac	Curve number	= 67.9
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 87.40 min
Total precip.	= 5.09 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



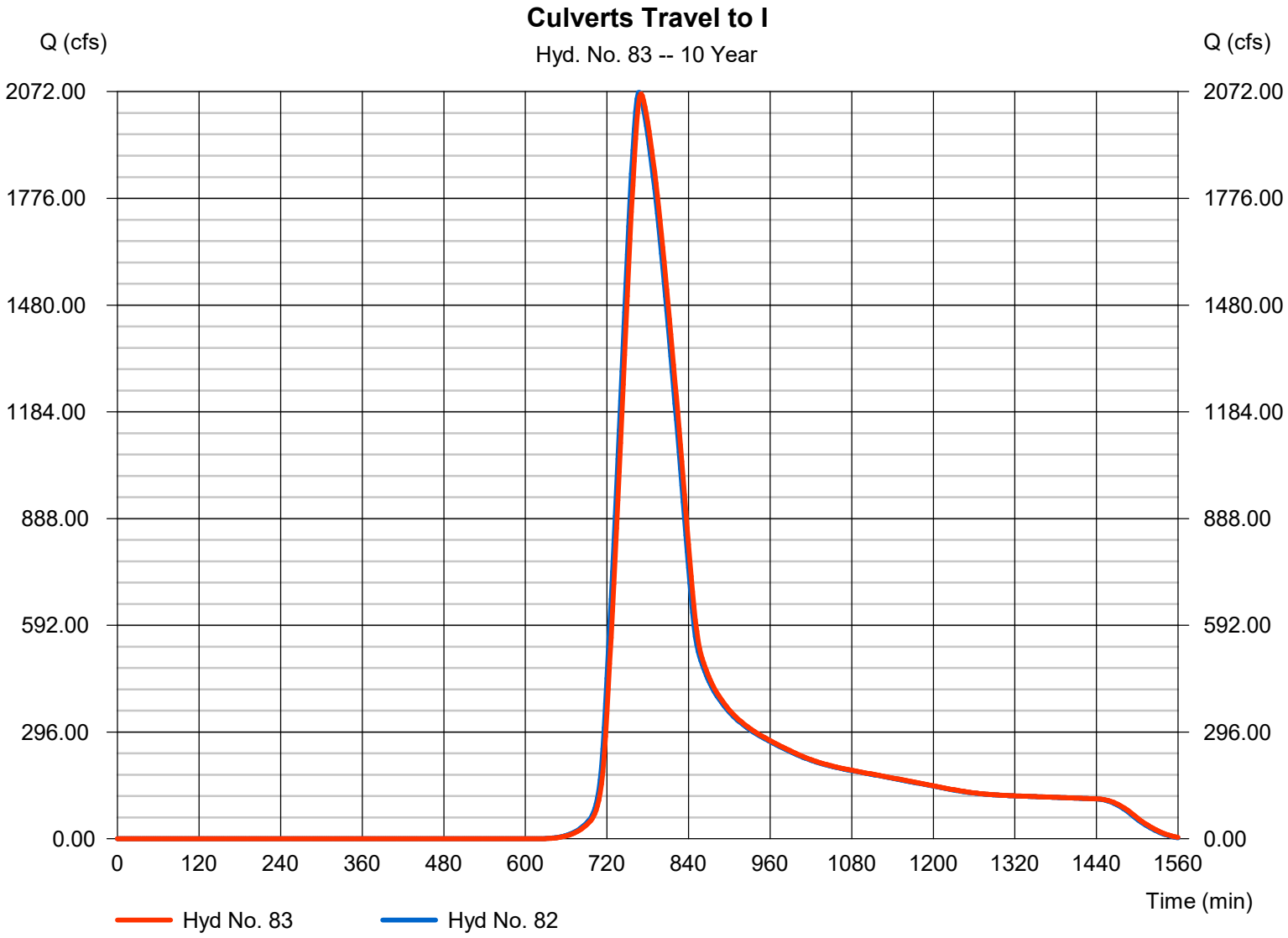
Hydrograph Report

Hyd. No. 83

Culverts Travel to I

Hydrograph type	=	Reach	Peak discharge	=	2066.04 cfs
Storm frequency	=	10 yrs	Time to peak	=	770 min
Time interval	=	2 min	Hyd. volume	=	18,443,470 cuft
Inflow hyd. No.	=	82 - Area I - Apex	Section type	=	Trapezoidal
Reach length	=	1670.0 ft	Channel slope	=	0.7 %
Manning's n	=	0.025	Bottom width	=	6.0 ft
Side slope	=	2.0:1	Max. depth	=	2.0 ft
Rating curve x	=	1.509	Rating curve m	=	1.374
Ave. velocity	=	10.79 ft/s	Routing coeff.	=	0.6949

Modified Att-Kin routing method used.

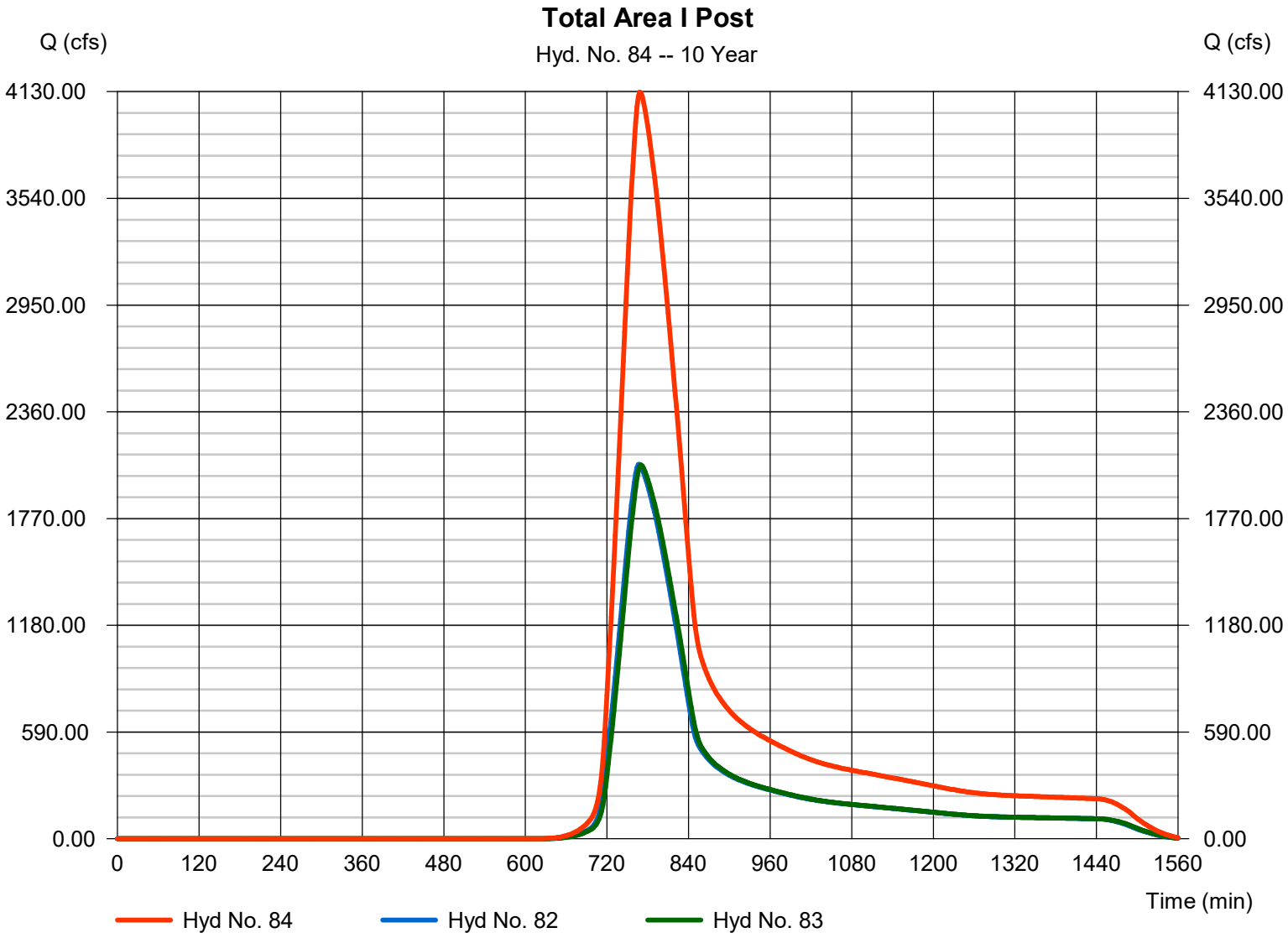


Hydrograph Report

Hyd. No. 84

Total Area I Post

Hydrograph type	= Combine	Peak discharge	= 4127.88 cfs
Storm frequency	= 10 yrs	Time to peak	= 768 min
Time interval	= 2 min	Hyd. volume	= 36,886,940 cuft
Inflow hyds.	= 82, 83	Contrib. drain. area	= 2637.000 ac



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	13.63	2	722	36,332	------	------	------	Area A Onsite Pre
2	SCS Runoff	8.496	2	722	22,648	------	------	------	Area A Off-site Pre
3	Combine	22.12	2	722	58,980	1, 2	------	------	Total Area A Pre
4	SCS Runoff	5.349	2	724	15,614	------	------	------	Area B Onsite Pre
5	SCS Runoff	10.65	2	722	28,405	------	------	------	Area C Onsite Pre
6	SCS Runoff	90.03	2	730	337,564	------	------	------	Area D Onsite Pre
7	SCS Runoff	428.42	2	728	1,571,968	------	------	------	Area D Offsite Pre
8	Combine	518.37	2	728	1,909,532	6, 7	------	------	Total Area D Pre
9	SCS Runoff	7.103	2	724	20,529	------	------	------	Area E Onsite Pre
10	SCS Runoff	43.59	2	726	142,936	------	------	------	Area F Onsite Pre
11	SCS Runoff	38.48	2	724	120,290	------	------	------	Area F Off-site Pre
12	Combine	81.66	2	724	263,226	10, 11	------	------	Total Area F Pre
13	SCS Runoff	37.99	2	730	142,423	------	------	------	Area G Onsite Pre
14	SCS Runoff	326.52	2	728	1,198,150	------	------	------	Area G Off-site Pre
15	Combine	364.47	2	728	1,340,572	13, 14	------	------	Toital Area G Pre
17	SCS Runoff	4.316	2	722	11,339	------	------	------	Area A Onsite Post
18	SCS Runoff	8.496	2	722	22,648	------	------	------	Area A Off-site Post
19	Combine	12.81	2	722	33,987	17, 18	------	------	Total Area A Post
20	SCS Runoff	1.018	2	718	2,038	------	------	------	Area B Onsite Post
21	SCS Runoff	3.077	2	718	6,154	------	------	------	Area C Onsite Post
22	SCS Runoff	194.53	2	728	718,273	------	------	------	Area D Onsite Post
23	SCS Runoff	429.88	2	728	1,577,261	------	------	------	Area D Offsite Post
24	Combine	624.41	2	728	2,295,533	22, 23	------	------	Total Area D Post
25	SCS Runoff	6.093	2	720	14,008	------	------	------	Area E Onsite Post
26	SCS Runoff	12.15	2	720	31,492	------	------	------	Area F Onsite Post
27	SCS Runoff	55.37	2	720	143,751	------	------	------	Area F Off-site Post
28	Combine	67.52	2	720	175,244	26, 27	------	------	Total Area F Post
29	SCS Runoff	177.41	2	720	467,841	------	------	------	Area G Onsite Post
30	SCS Runoff	321.43	2	728	1,179,500	------	------	------	Area G Off-site Post
31	Combine	455.56	2	724	1,665,991	14, 29,	------	------	Total Area G Post
33	SCS Runoff	99.91	2	722	286,137	------	------	------	Area to SCM D1 Onsite
34	SCS Runoff	2.303	2	722	6,520	------	------	------	Area to SCM D1 Off-site
35	Combine	102.22	2	722	292,657	33, 34	------	------	Total Area to SCM D1

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
36	Reservoir	20.62	2	740	275,184	35	387.93	156,195	Route SCM D1
37	SCS Runoff	82.06	2	722	240,446	------	------	------	Area to SCM D2 Onsite
38	SCS Runoff	0.561	2	722	1,593	------	------	------	Area to SCM D2 Offsite
39	Combine	82.62	2	722	242,039	37, 38	------	------	Total Area to SCM D2
40	Reservoir	20.43	2	738	224,105	39	394.60	127,974	Route SCM D2
41	SCS Runoff	20.31	2	722	58,942	------	------	------	Area to SCM D3 Onsite
42	Reservoir	14.64	2	728	56,415	41	385.96	23,501	Route SCM D3
43	SCS Runoff	34.86	2	728	128,997	------	------	------	Area D Bypassing SCMs
44	SCS Runoff	426.95	2	728	1,566,526	------	------	------	Area D Offsite Post
45	Combine	509.98	2	728	2,251,225	36, 40, 42, 43, 44	------	------	Total Managed Area D Post
47	SCS Runoff	10.36	2	720	26,909	------	------	------	Area F Onsite Post
48	Combine	65.74	2	720	170,660	27, 47	------	------	Total to SCM F
49	Reservoir	44.66	2	728	170,650	48	391.94	44,097	Route SCM F
50	SCS Runoff	1.976	2	720	4,554	------	------	------	Area F Bypassing SCM
51	Combine	45.62	2	726	175,205	49, 50	------	------	Total Managed Area F Post
53	SCS Runoff	127.06	2	720	352,814	------	------	------	Area to SCM G Onsite
54	SCS Runoff	0.166	2	720	453	------	------	------	Area to SCM G Offsite
55	Combine	127.23	2	720	353,267	53, 54	------	------	Total Area to SCM G
56	Reservoir	17.97	2	740	297,140	55	390.93	212,594	Route SCM G
57	SCS Runoff	26.46	2	730	99,680	------	------	------	Area G Bypassing SCM
58	Combine	357.45	2	730	1,576,320	30, 56, 57	------	------	Total Managed Area G Post
60	SCS Runoff	955.12	2	732	4,136,777	------	------	------	Additional Area to Point D-E
61	Combine	544.57	2	728	2,010,413	1, 4, 5, 8, 9,	------	------	Total Area A-E Pre
62	Combine	1467.49	2	730	6,147,193	60, 61	------	------	Total A-E Post & Upstream
63	Reach	1460.15	2	734	6,147,189	62	------	------	A-E Travel to H Landfill Culverts
64	Combine	441.72	2	728	1,603,798	12, 15,	------	------	Total Area F & G Pre
65	Reach	438.08	2	730	1,603,796	64	------	------	F&G Travel to H Landfill Culverts
66	SCS Runoff	154.76	2	734	700,964	------	------	------	Area H at Culverts
67	Combine	2032.24	2	732	8,451,954	63, 65, 66	------	------	Total Flow H At Culverts Pre
69	SCS Runoff	4368.08	2	766	37,141,272	------	------	------	Area I - Apex
70	Reach	4360.76	2	768	37,141,256	69	------	------	Culverts Travel to I
71	Combine	8713.51	2	768	74,282,512	69, 70	------	------	Total Area I Pre

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

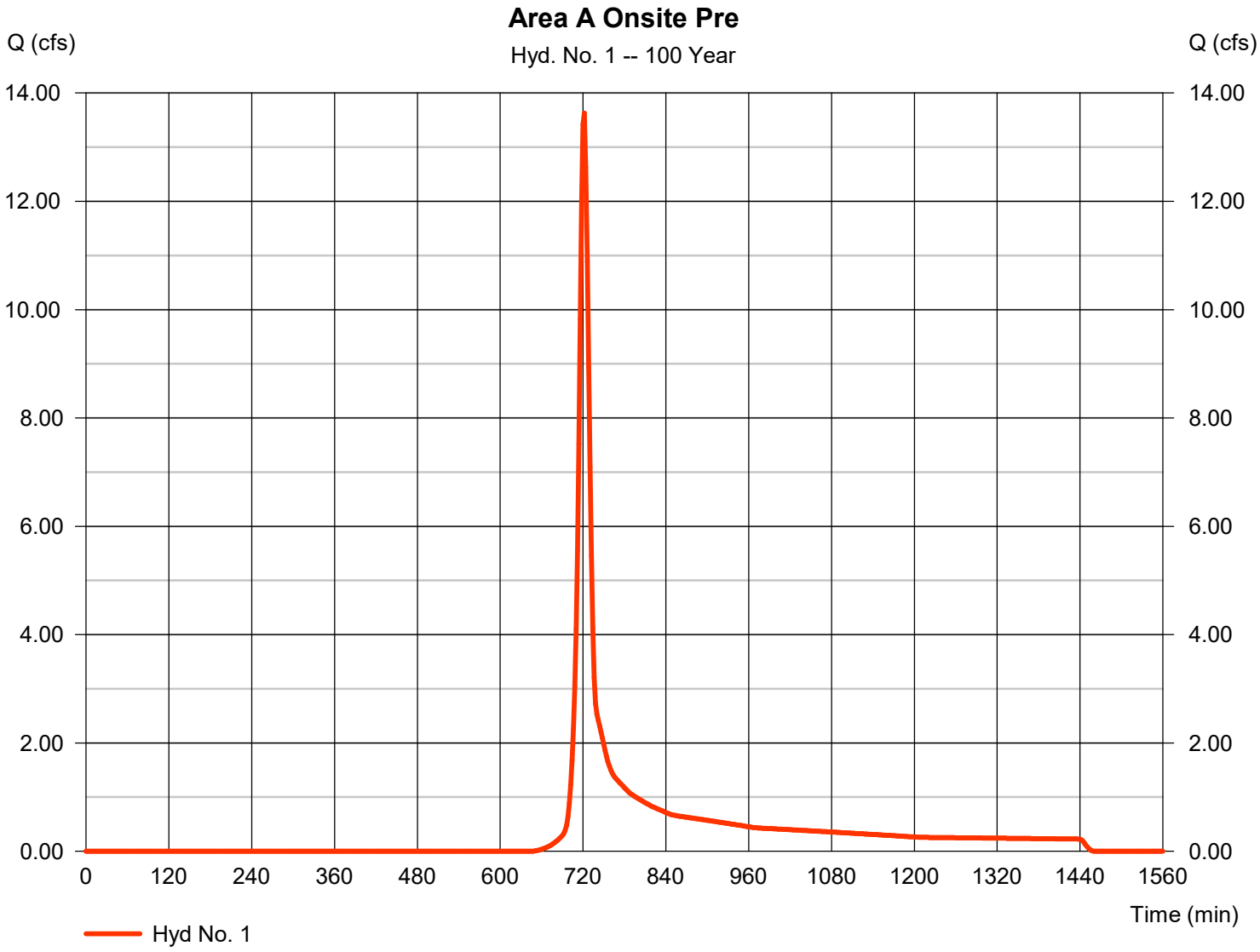
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
73	SCS Runoff	955.12	2	732	4,136,777	------	------	------	Additional Area to Point D-E
74	Combine	515.48	2	728	2,284,765	17, 20, 21, 25, 45,	------	------	Total Area A-E Post
75	Combine	1447.73	2	732	6,421,542	73, 74	------	------	Total A-E Post & Upstream
76	Reach	1439.33	2	734	6,421,509	75	------	------	A-E Travel to H Landfill Culverts
77	Combine	400.44	2	728	1,751,525	51, 58,	------	------	Total Area F & G Post
78	Reach	398.03	2	732	1,751,480	77	------	------	F&G Travel to H Landfill Culverts
79	SCS Runoff	154.76	2	734	700,964	------	------	------	Area H at Culverts
80	Combine	1981.70	2	734	8,873,954	76, 78, 79	------	------	Total Area H At Culverts Post
82	SCS Runoff	4368.08	2	766	37,141,272	------	------	------	Area I - Apex
83	Reach	4360.76	2	768	37,141,256	82	------	------	Culverts Travel to I
84	Combine	8713.51	2	768	74,282,512	82, 83	------	------	Total Area I Post

Hydrograph Report

Hyd. No. 1

Area A Onsite Pre

Hydrograph type	= SCS Runoff	Peak discharge	= 13.63 cfs
Storm frequency	= 100 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 36,332 cuft
Drainage area	= 3.850 ac	Curve number	= 55
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 12.10 min
Total precip.	= 7.61 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

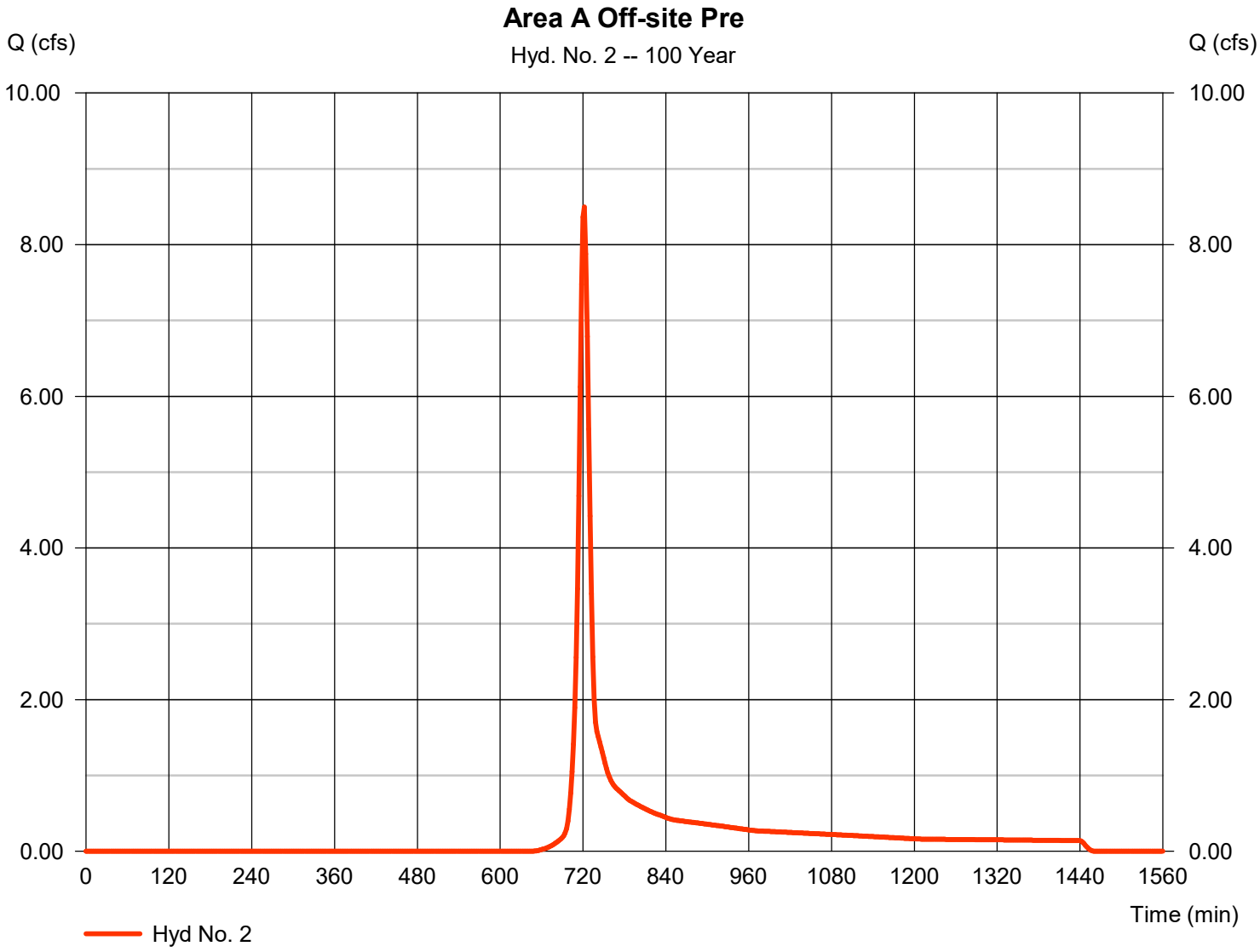


Hydrograph Report

Hyd. No. 2

Area A Off-site Pre

Hydrograph type	=	SCS Runoff	Peak discharge	=	8.496 cfs
Storm frequency	=	100 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	22,648 cuft
Drainage area	=	2.400 ac	Curve number	=	55
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	12.10 min
Total precip.	=	7.61 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

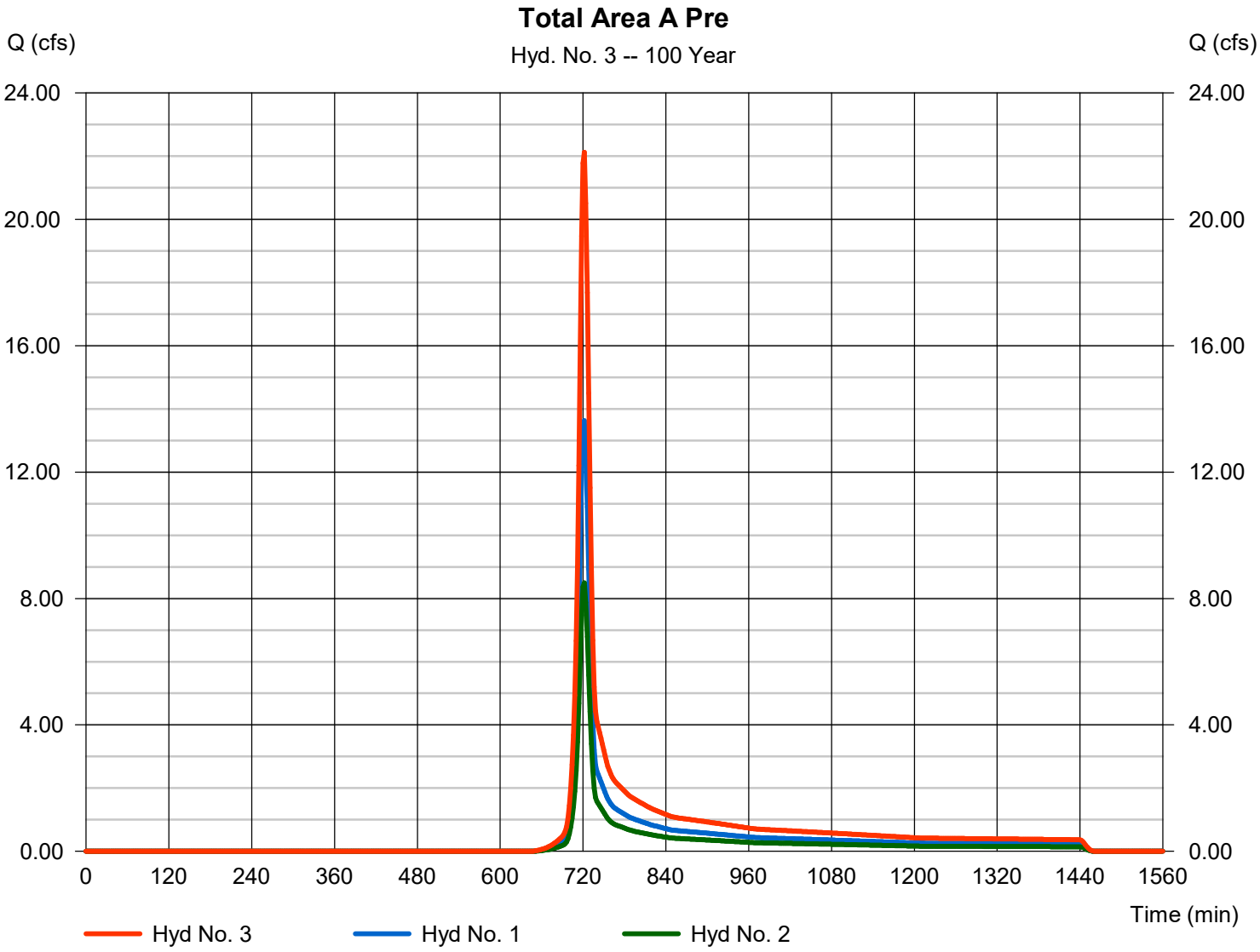


Hydrograph Report

Hyd. No. 3

Total Area A Pre

Hydrograph type	= Combine	Peak discharge	= 22.12 cfs
Storm frequency	= 100 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 58,980 cuft
Inflow hyds.	= 1, 2	Contrib. drain. area	= 6.250 ac

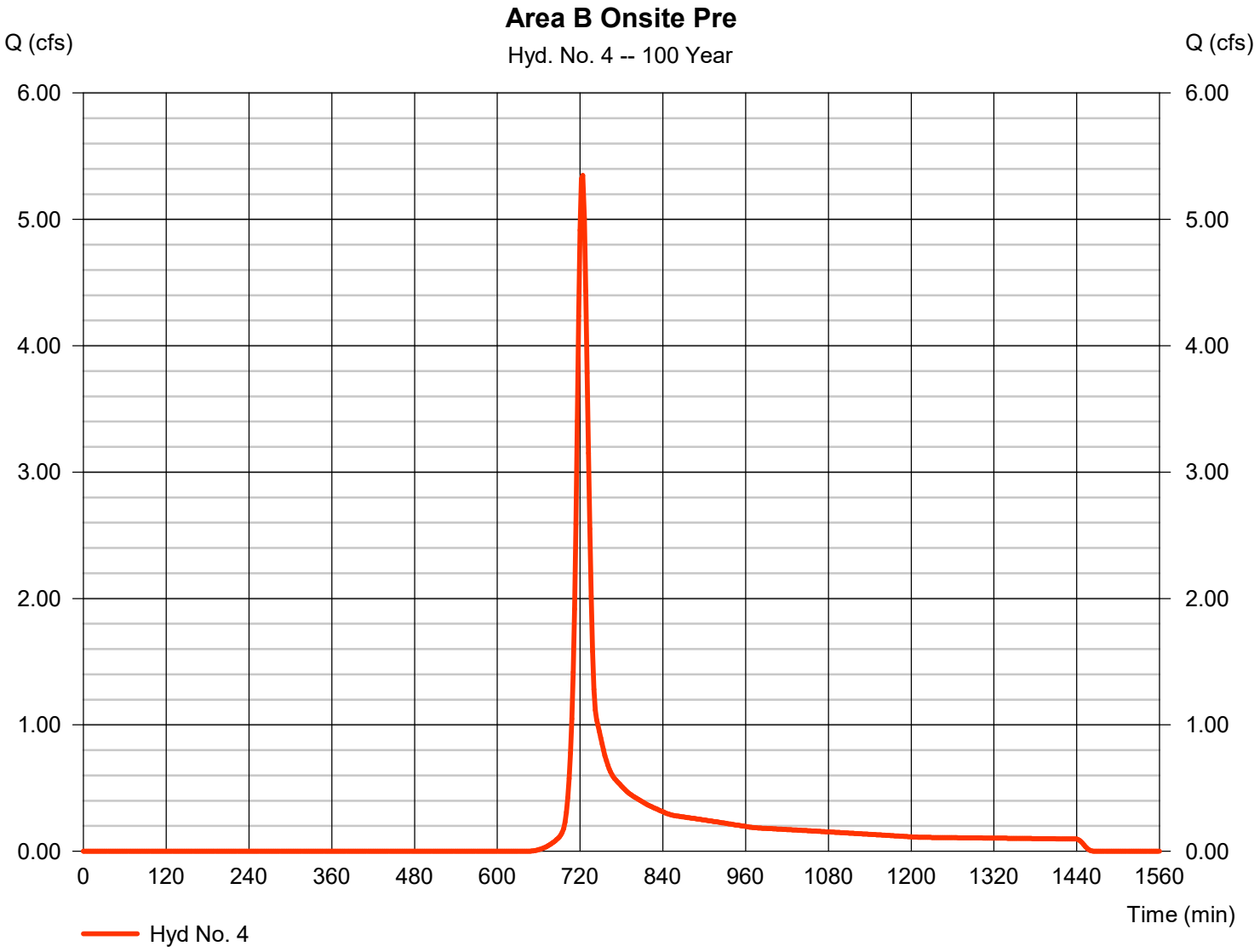


Hydrograph Report

Hyd. No. 4

Area B Onsite Pre

Hydrograph type	=	SCS Runoff	Peak discharge	=	5.349 cfs
Storm frequency	=	100 yrs	Time to peak	=	724 min
Time interval	=	2 min	Hyd. volume	=	15,614 cuft
Drainage area	=	1.750 ac	Curve number	=	55
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	15.20 min
Total precip.	=	7.61 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

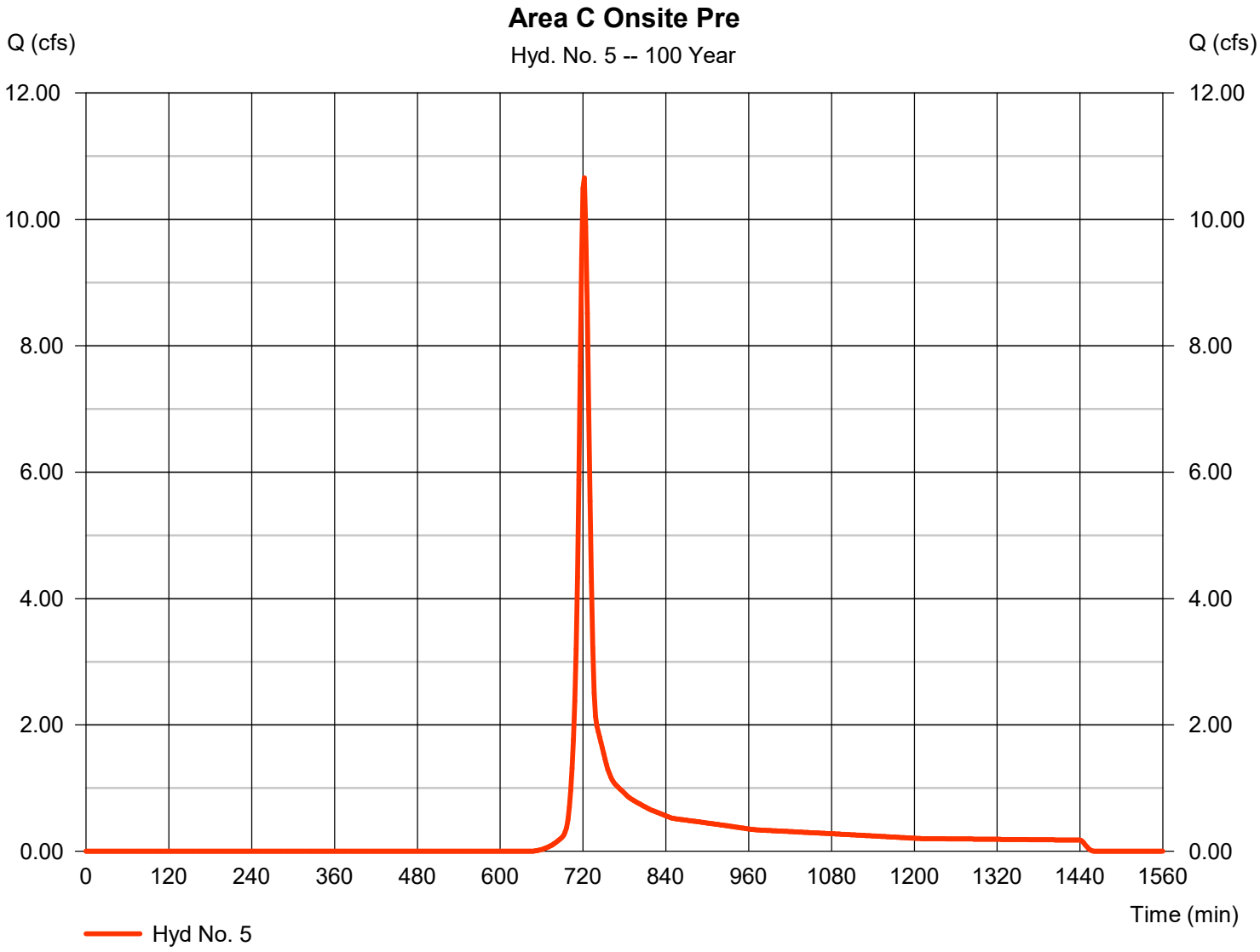


Hydrograph Report

Hyd. No. 5

Area C Onsite Pre

Hydrograph type	=	SCS Runoff	Peak discharge	=	10.65 cfs
Storm frequency	=	100 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	28,405 cuft
Drainage area	=	3.010 ac	Curve number	=	55
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	10.80 min
Total precip.	=	7.61 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

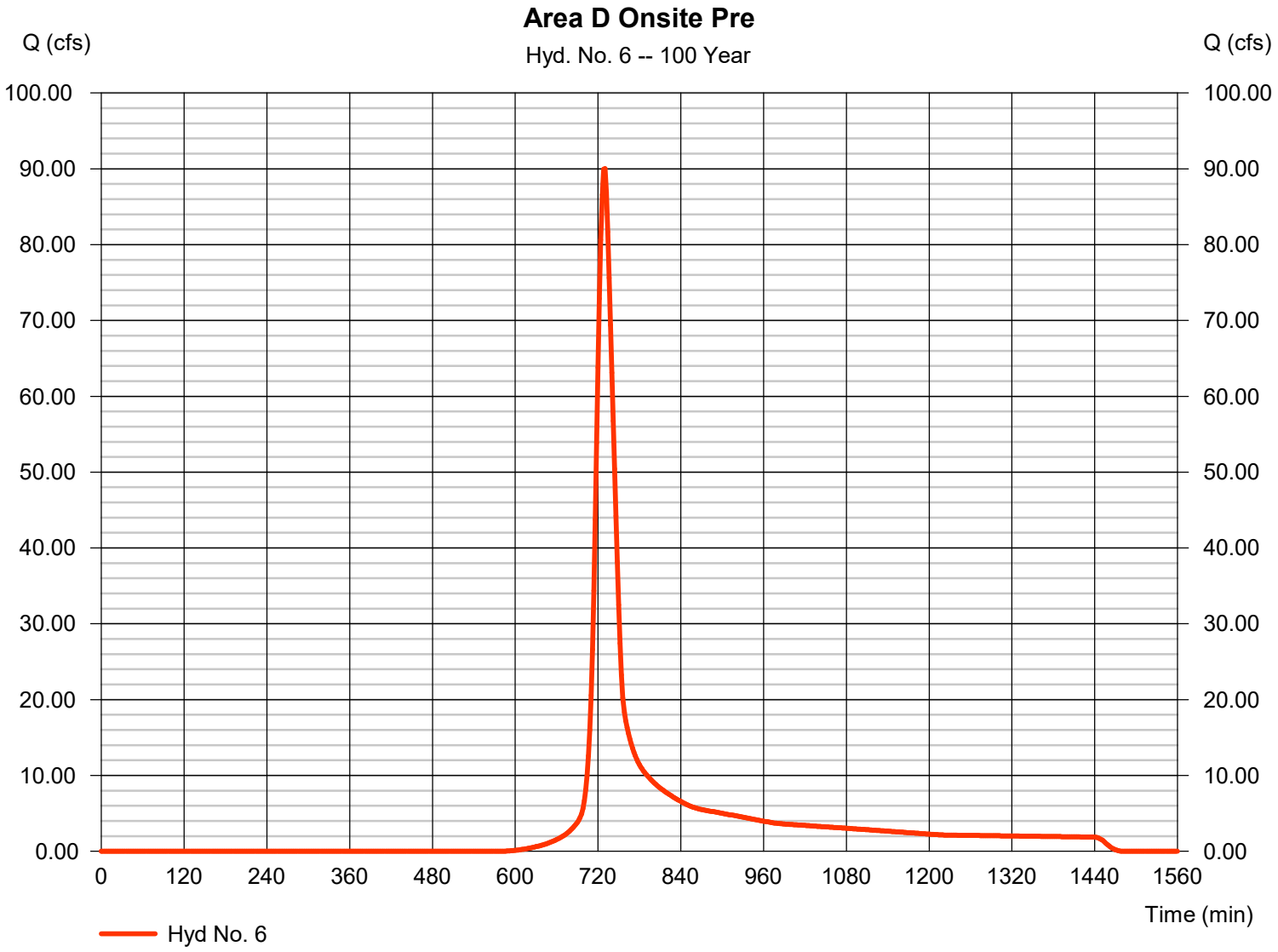


Hydrograph Report

Hyd. No. 6

Area D Onsite Pre

Hydrograph type	=	SCS Runoff	Peak discharge	=	90.03 cfs
Storm frequency	=	100 yrs	Time to peak	=	730 min
Time interval	=	2 min	Hyd. volume	=	337,564 cuft
Drainage area	=	29.390 ac	Curve number	=	61.6
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	24.00 min
Total precip.	=	7.61 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

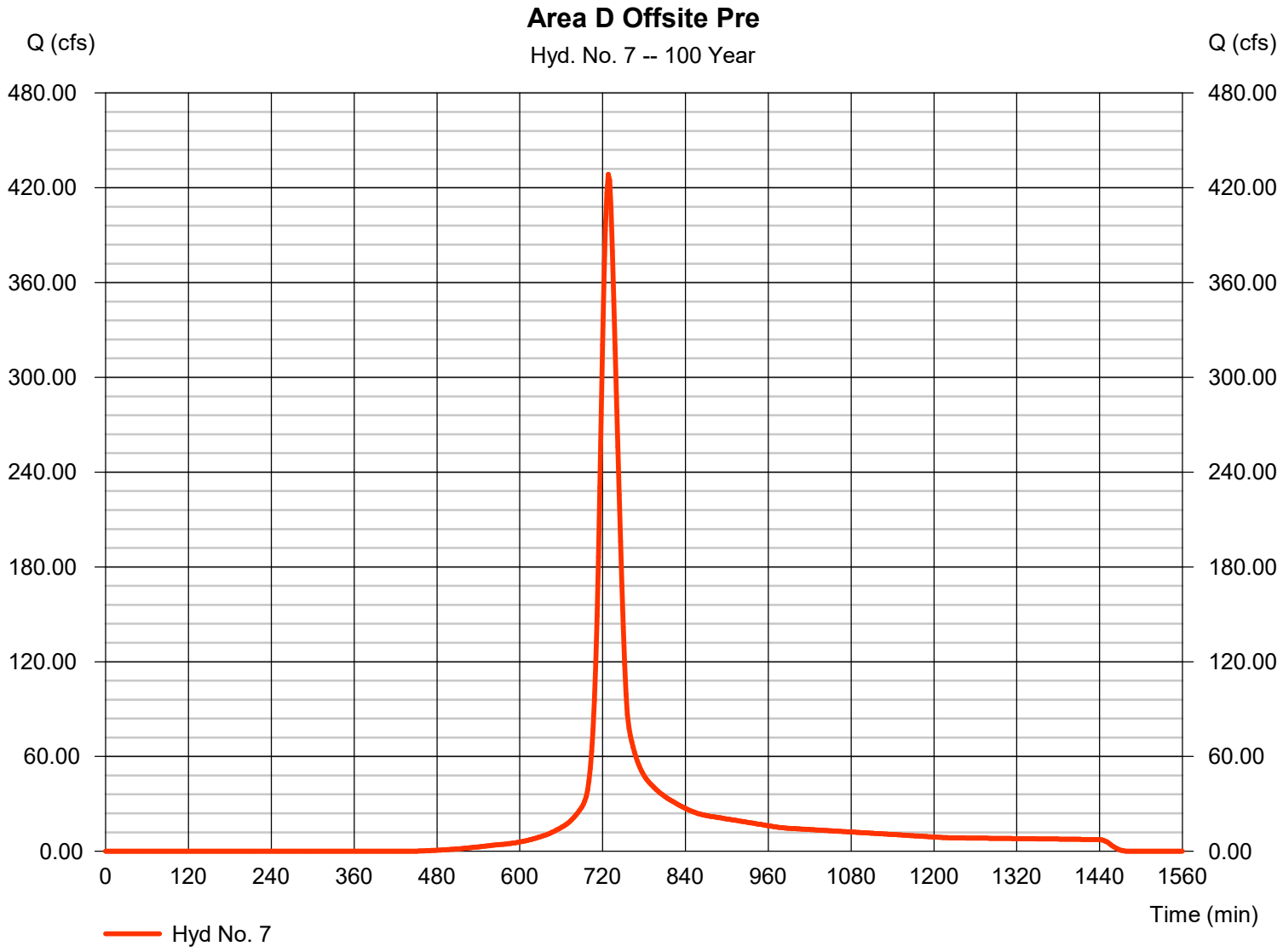


Hydrograph Report

Hyd. No. 7

Area D Offsite Pre

Hydrograph type	=	SCS Runoff	Peak discharge	=	428.42 cfs
Storm frequency	=	100 yrs	Time to peak	=	728 min
Time interval	=	2 min	Hyd. volume	=	1,571,968 cuft
Drainage area	=	101.300 ac	Curve number	=	71.9
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	24.00 min
Total precip.	=	7.61 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

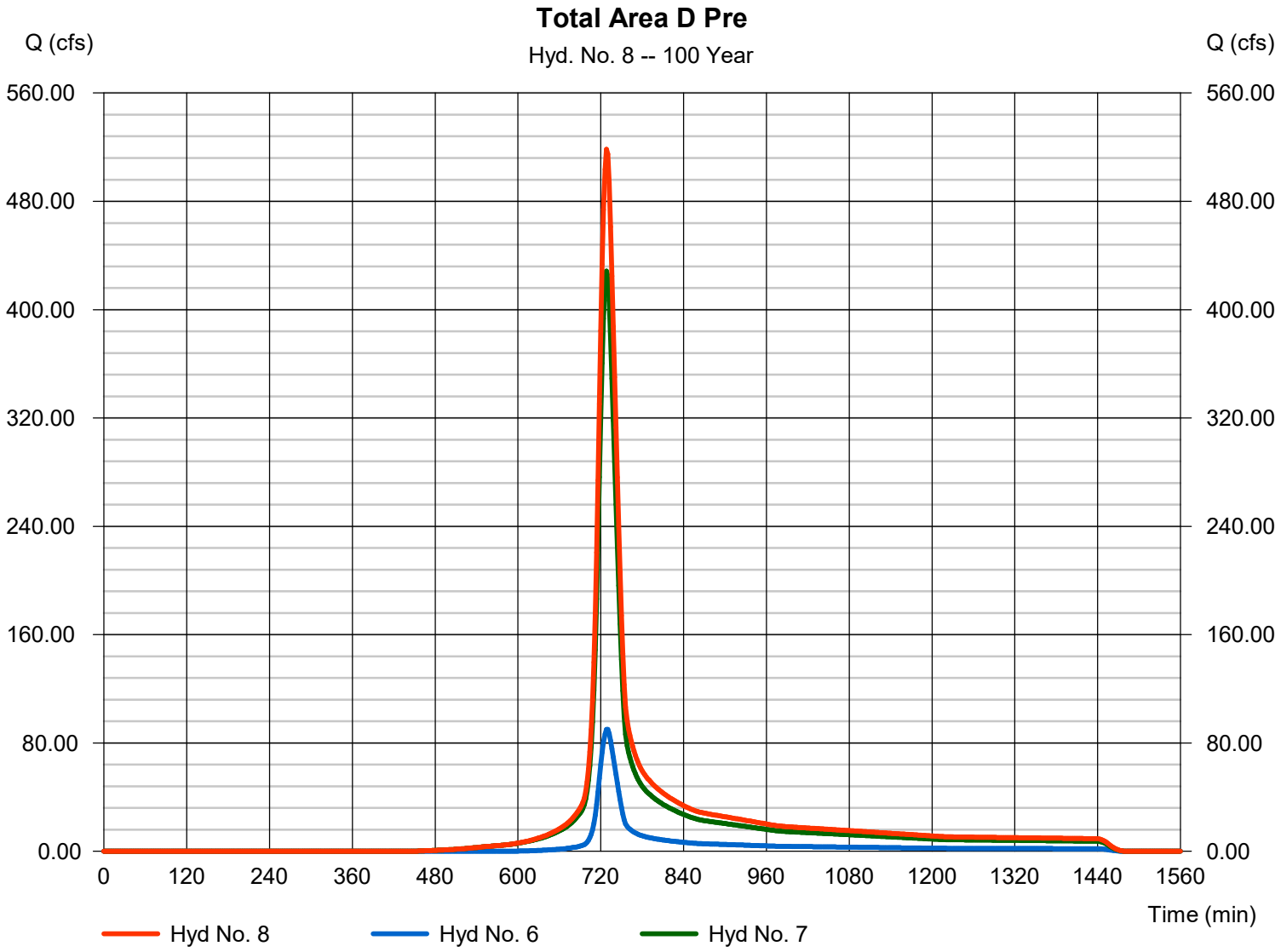


Hydrograph Report

Hyd. No. 8

Total Area D Pre

Hydrograph type	= Combine	Peak discharge	= 518.37 cfs
Storm frequency	= 100 yrs	Time to peak	= 728 min
Time interval	= 2 min	Hyd. volume	= 1,909,532 cuft
Inflow hyds.	= 6, 7	Contrib. drain. area	= 130.690 ac

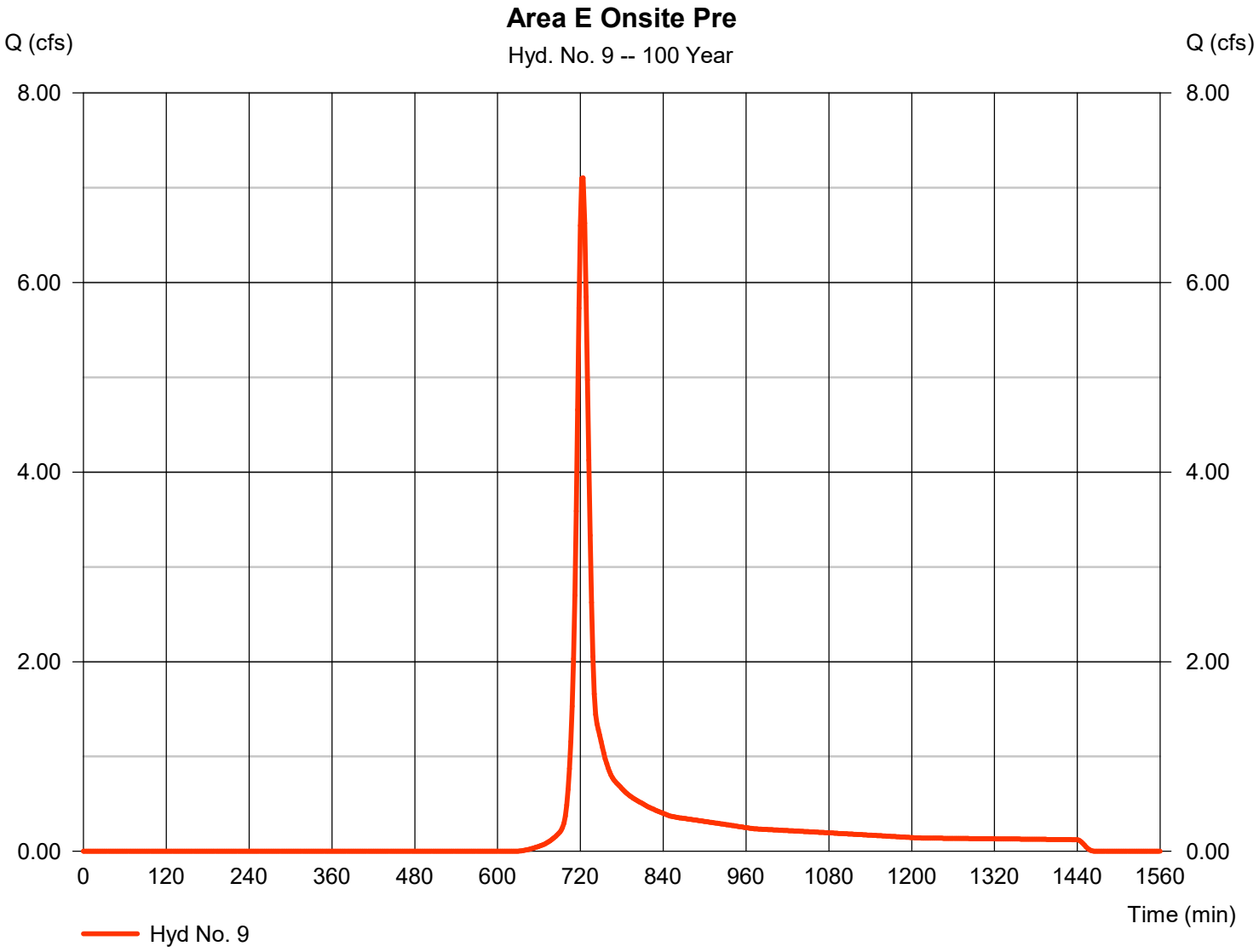


Hydrograph Report

Hyd. No. 9

Area E Onsite Pre

Hydrograph type	= SCS Runoff	Peak discharge	= 7.103 cfs
Storm frequency	= 100 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 20,529 cuft
Drainage area	= 2.110 ac	Curve number	= 57.2
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 15.30 min
Total precip.	= 7.61 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

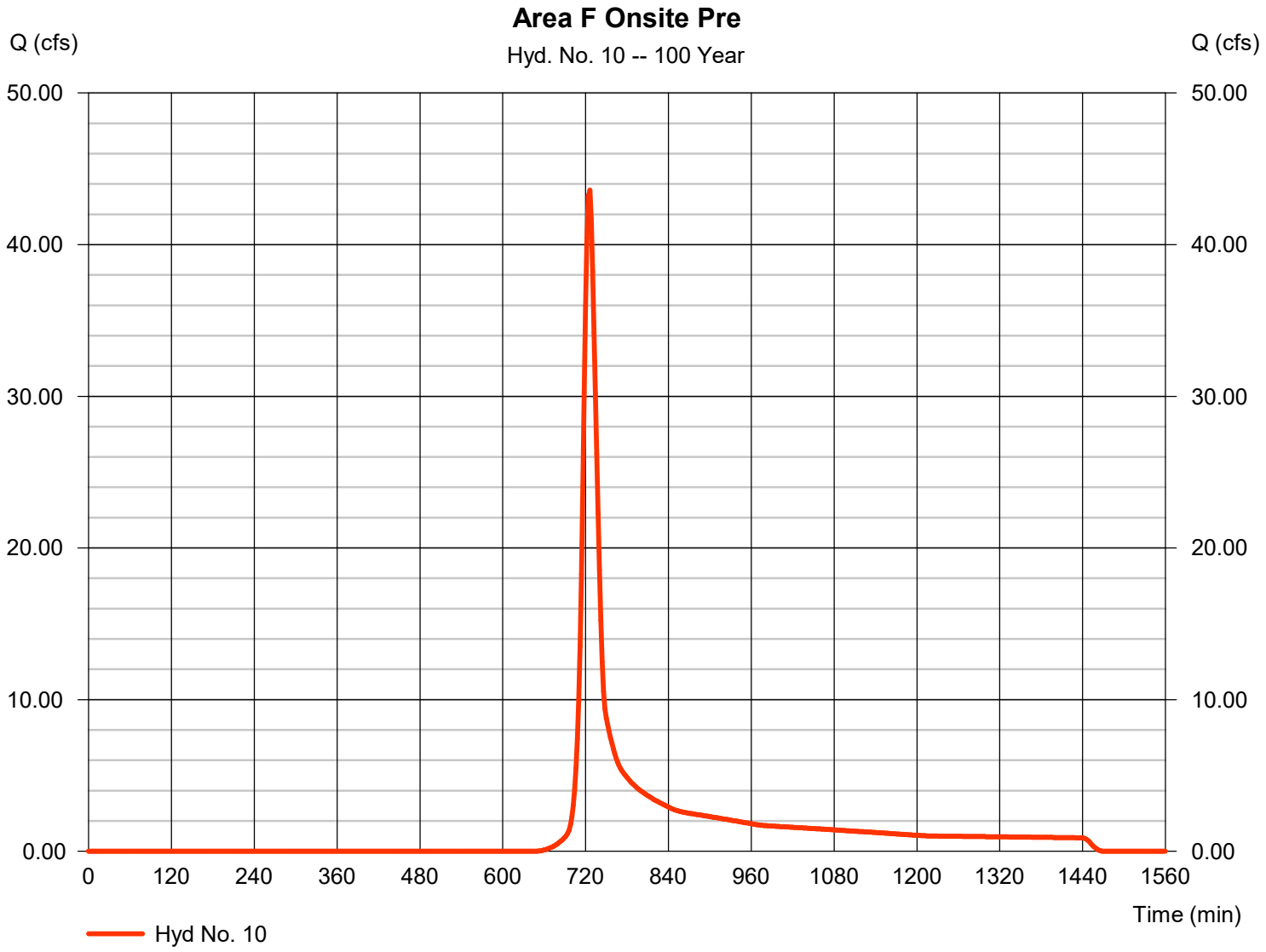


Hydrograph Report

Hyd. No. 10

Area F Onsite Pre

Hydrograph type	= SCS Runoff	Peak discharge	= 43.59 cfs
Storm frequency	= 100 yrs	Time to peak	= 726 min
Time interval	= 2 min	Hyd. volume	= 142,936 cuft
Drainage area	= 15.620 ac	Curve number	= 55
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 17.60 min
Total precip.	= 7.61 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

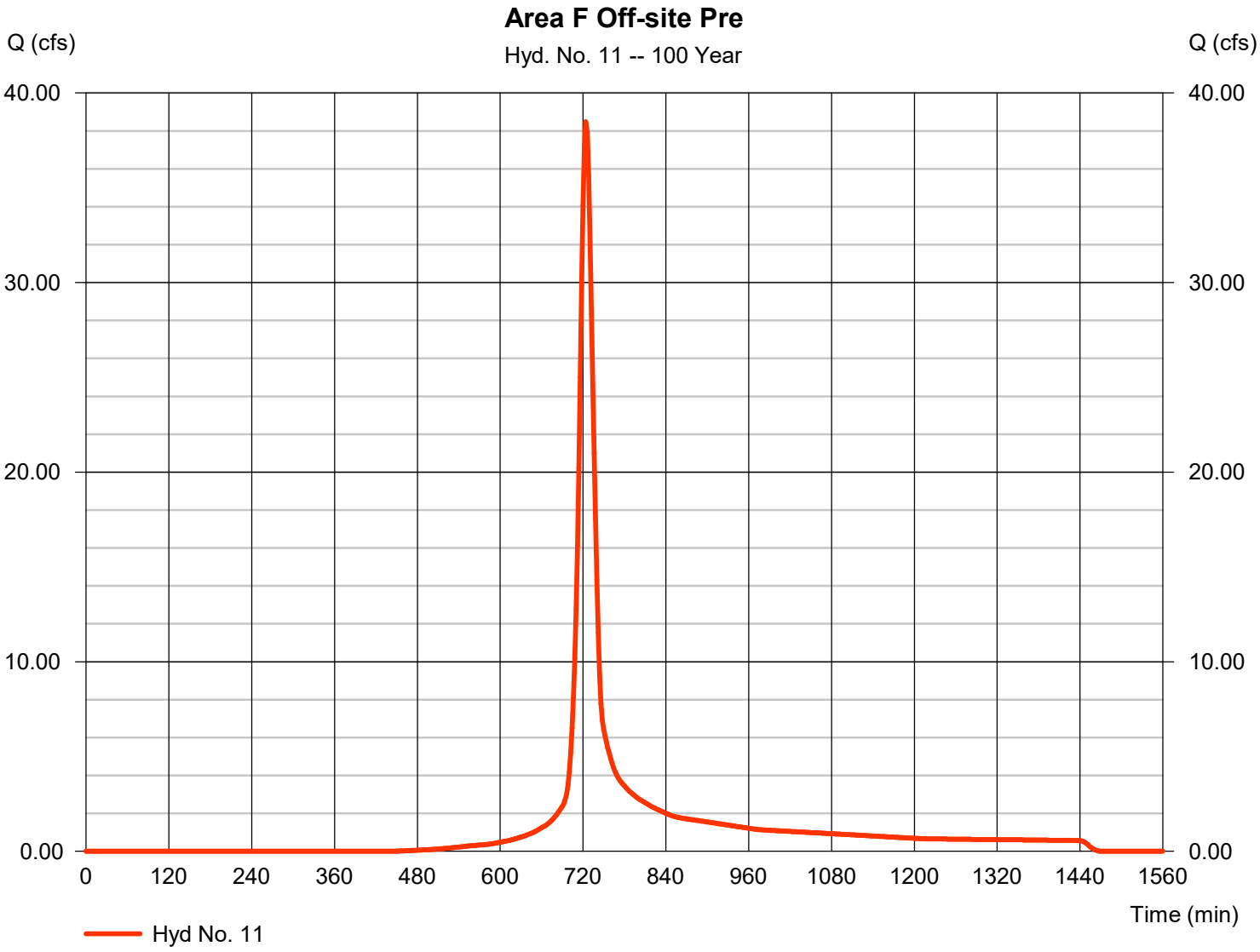


Hydrograph Report

Hyd. No. 11

Area F Off-site Pre

Hydrograph type	=	SCS Runoff	Peak discharge	=	38.48 cfs
Storm frequency	=	100 yrs	Time to peak	=	724 min
Time interval	=	2 min	Hyd. volume	=	120,290 cuft
Drainage area	=	7.670 ac	Curve number	=	71.7
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	17.60 min
Total precip.	=	7.61 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

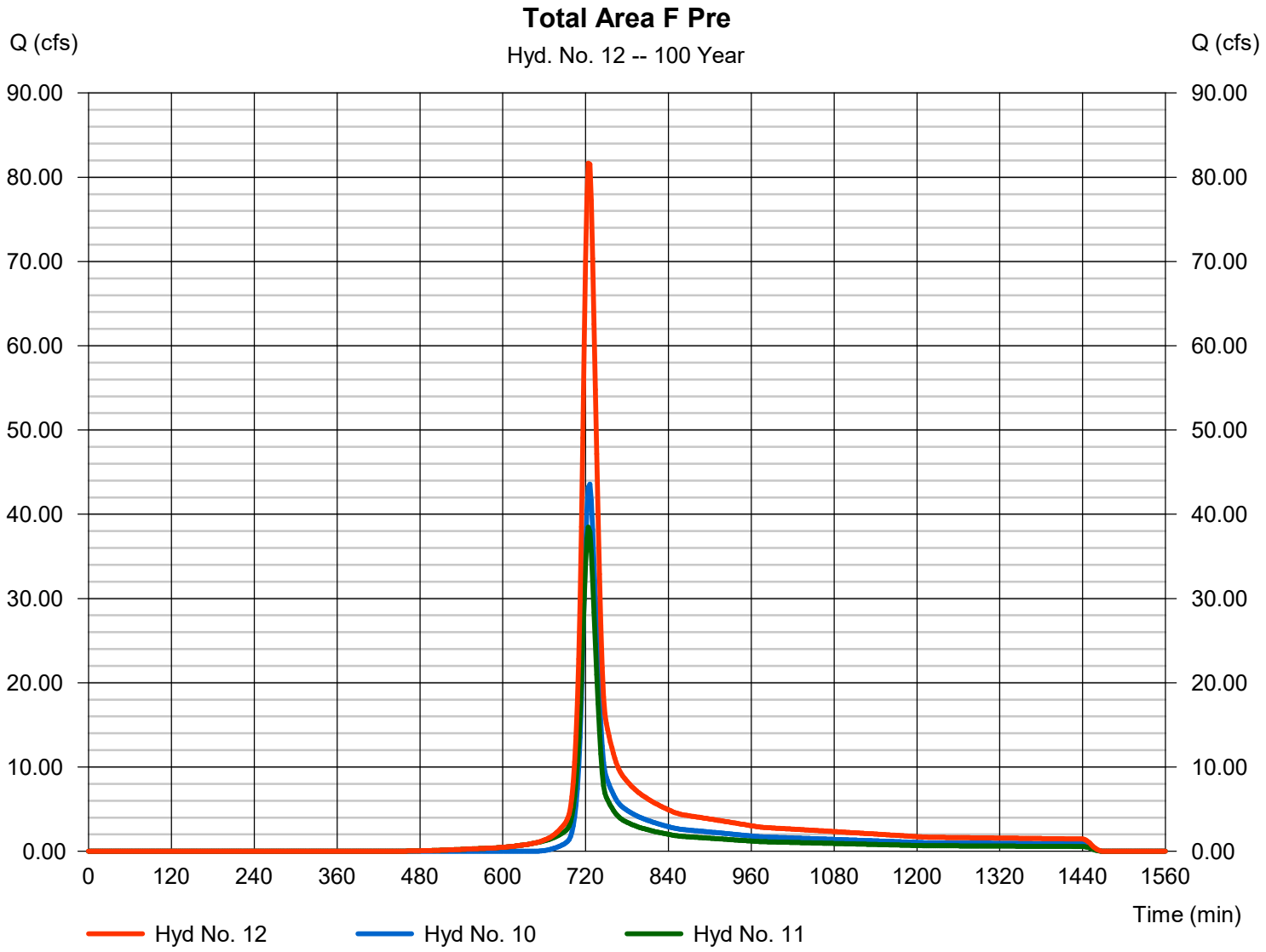


Hydrograph Report

Hyd. No. 12

Total Area F Pre

Hydrograph type	= Combine	Peak discharge	= 81.66 cfs
Storm frequency	= 100 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 263,226 cuft
Inflow hyds.	= 10, 11	Contrib. drain. area	= 23.290 ac

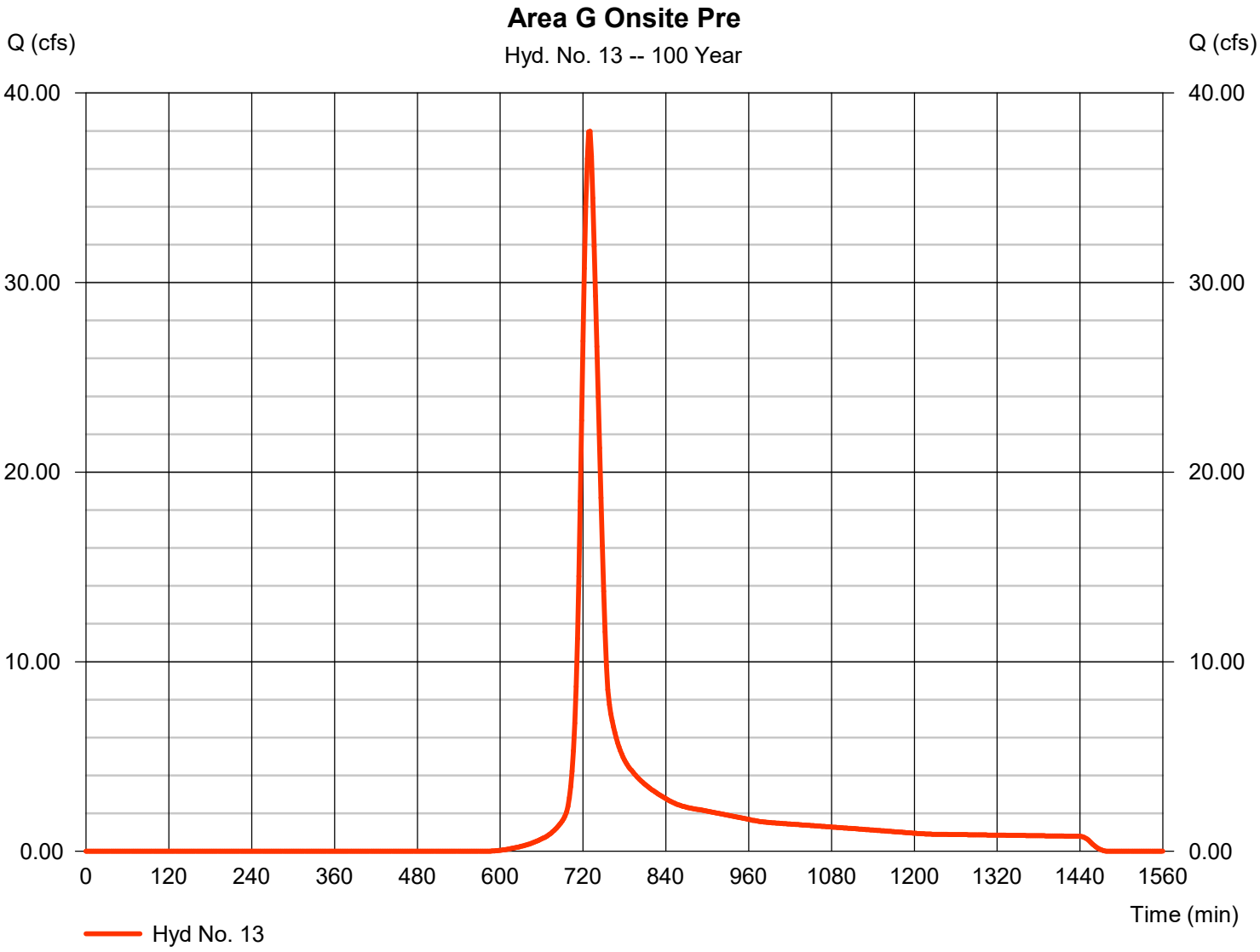


Hydrograph Report

Hyd. No. 13

Area G Onsite Pre

Hydrograph type	=	SCS Runoff	Peak discharge	=	37.99 cfs
Storm frequency	=	100 yrs	Time to peak	=	730 min
Time interval	=	2 min	Hyd. volume	=	142,423 cuft
Drainage area	=	12.400 ac	Curve number	=	61.6
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	23.80 min
Total precip.	=	7.61 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



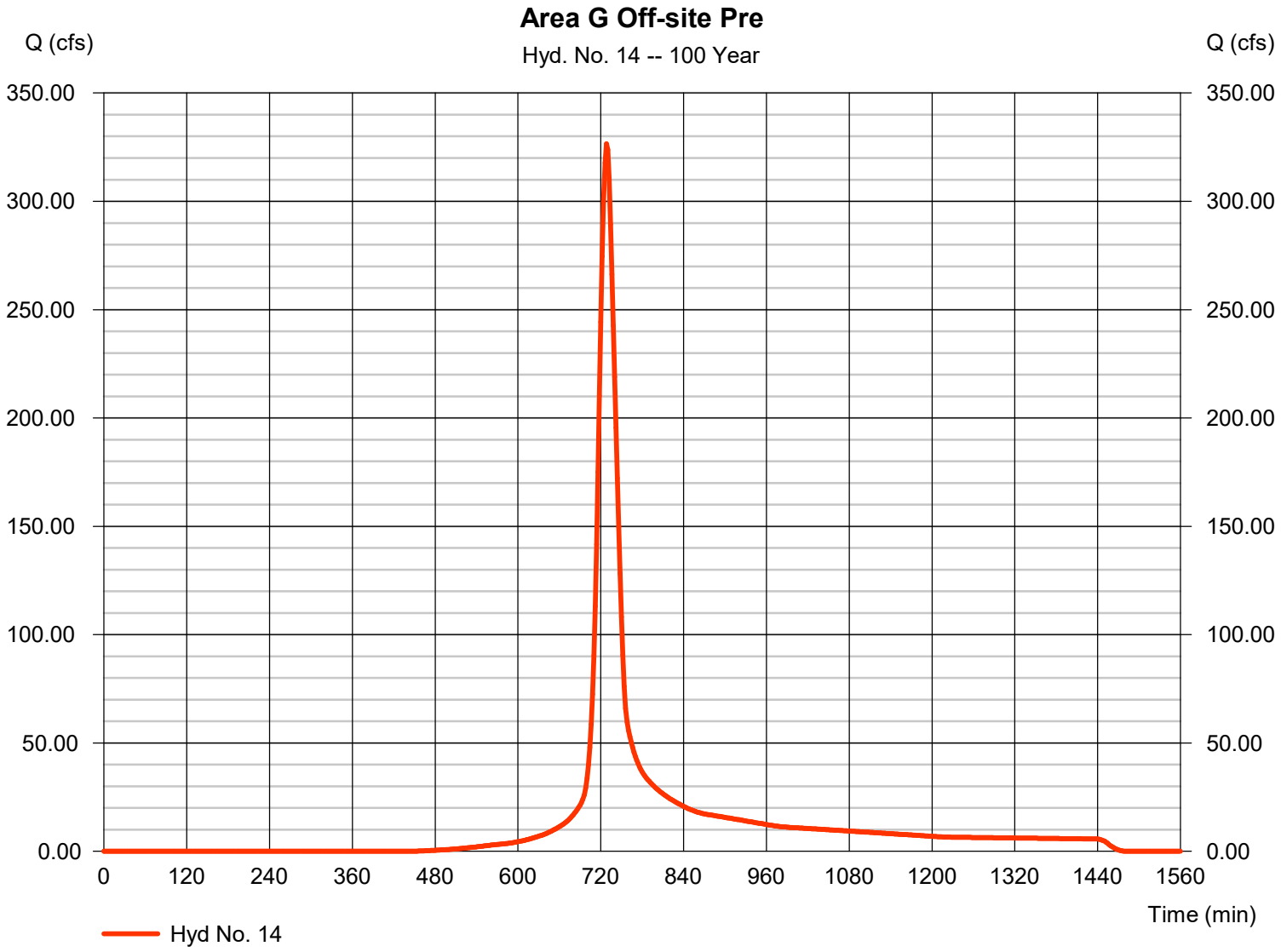
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Friday, 02 / 12 / 2021

Hyd. No. 14

Area G Off-site Pre

Hydrograph type	=	SCS Runoff	Peak discharge	=	326.52 cfs
Storm frequency	=	100 yrs	Time to peak	=	728 min
Time interval	=	2 min	Hyd. volume	=	1,198,150 cuft
Drainage area	=	77.610 ac	Curve number	=	71.7
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	23.80 min
Total precip.	=	7.61 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

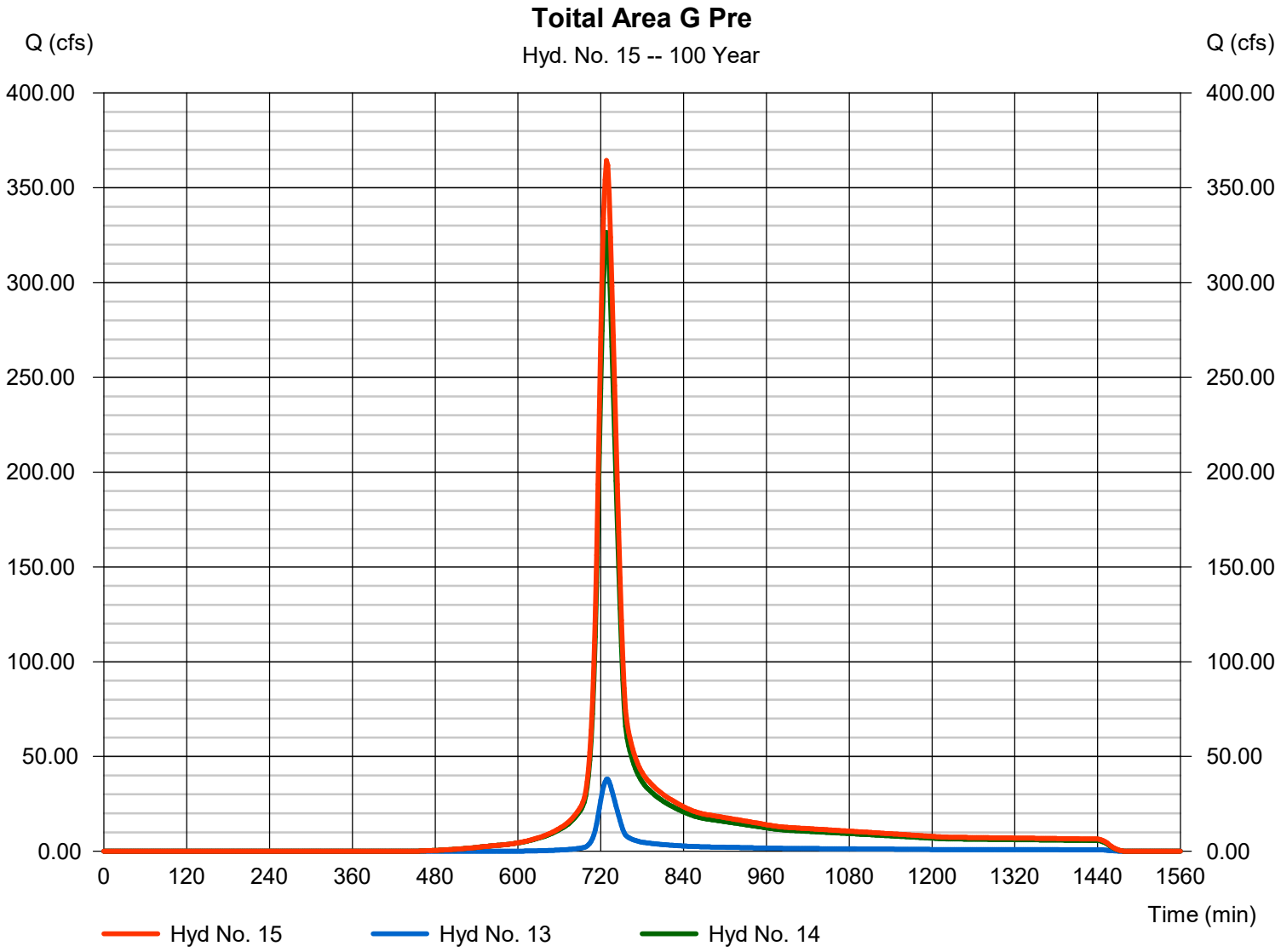


Hydrograph Report

Hyd. No. 15

Toital Area G Pre

Hydrograph type	=	Combine	Peak discharge	=	364.47 cfs
Storm frequency	=	100 yrs	Time to peak	=	728 min
Time interval	=	2 min	Hyd. volume	=	1,340,572 cuft
Inflow hyds.	=	13, 14	Contrib. drain. area	=	90.010 ac

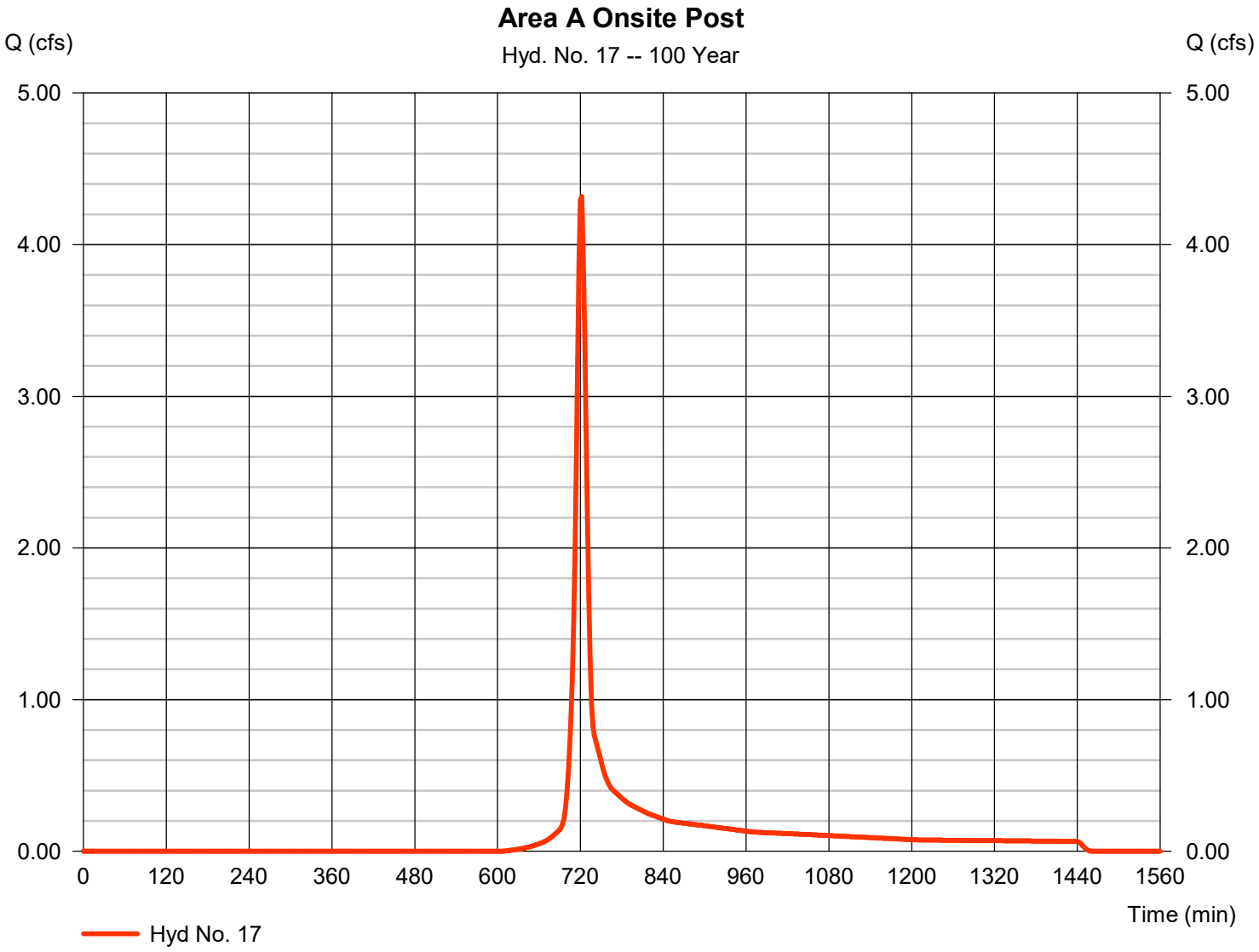


Hydrograph Report

Hyd. No. 17

Area A Onsite Post

Hydrograph type	=	SCS Runoff	Peak discharge	=	4.316 cfs
Storm frequency	=	100 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	11,339 cuft
Drainage area	=	1.020 ac	Curve number	=	59.3
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	12.10 min
Total precip.	=	7.61 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

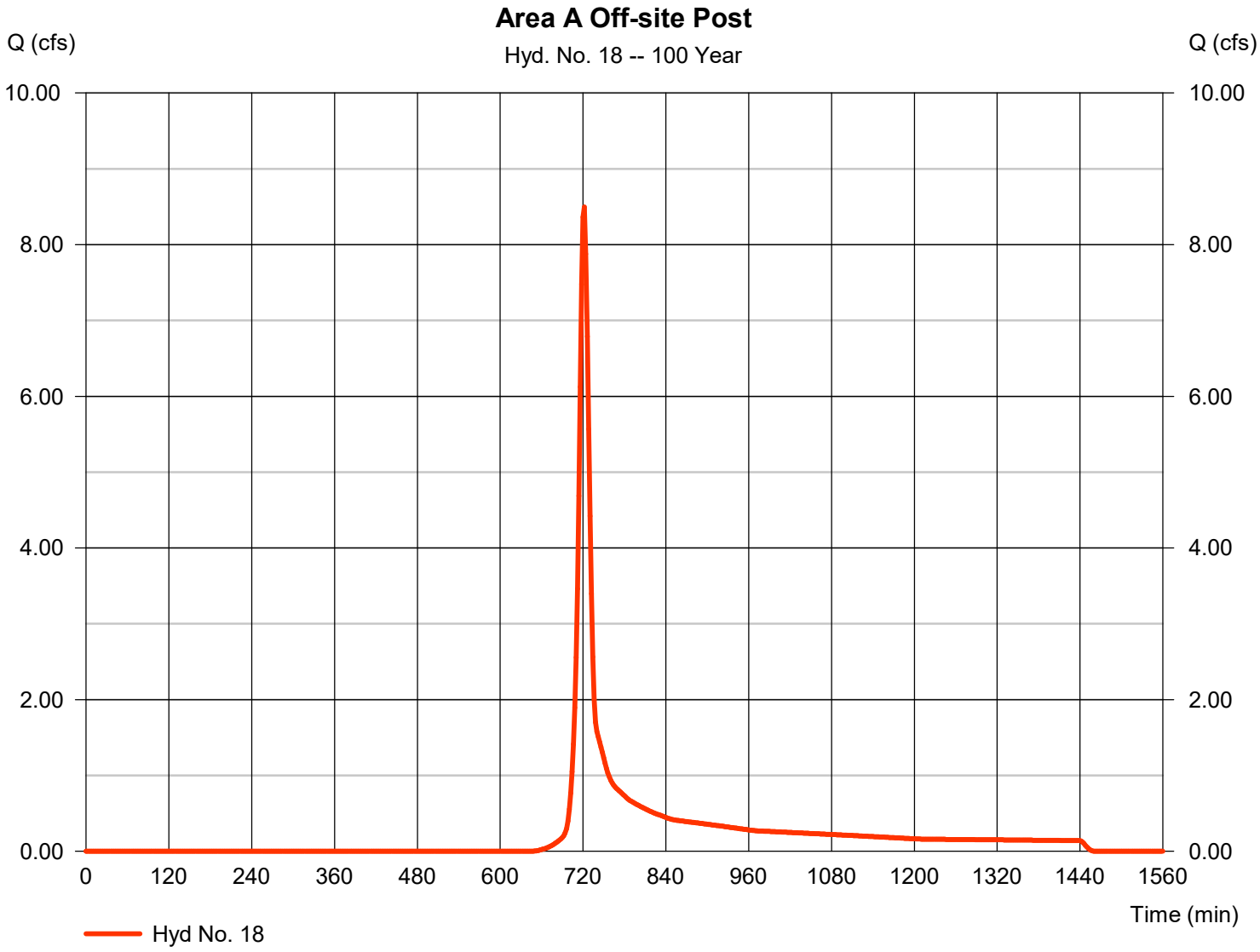


Hydrograph Report

Hyd. No. 18

Area A Off-site Post

Hydrograph type	=	SCS Runoff	Peak discharge	=	8.496 cfs
Storm frequency	=	100 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	22,648 cuft
Drainage area	=	2.400 ac	Curve number	=	55
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	12.10 min
Total precip.	=	7.61 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

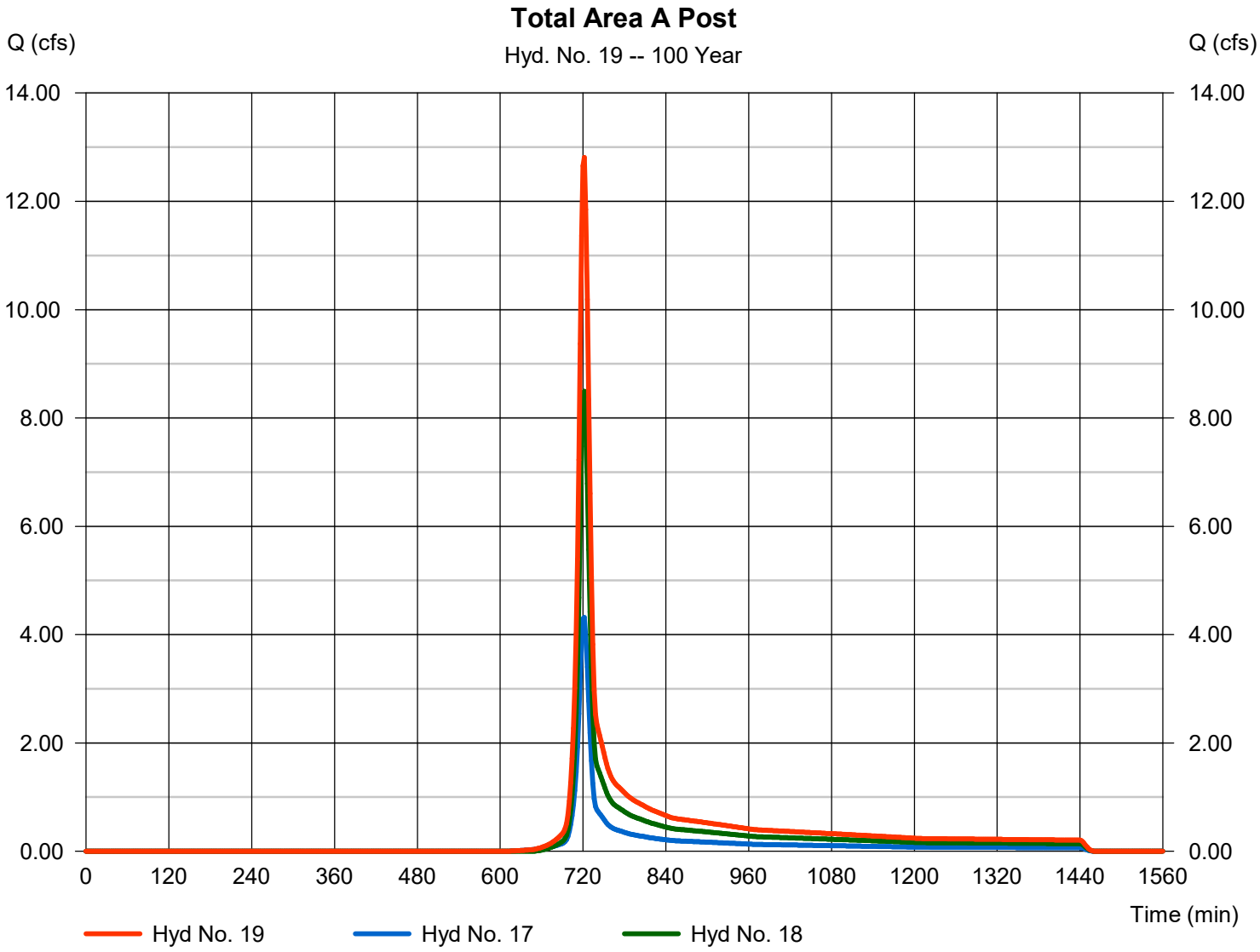


Hydrograph Report

Hyd. No. 19

Total Area A Post

Hydrograph type	= Combine	Peak discharge	= 12.81 cfs
Storm frequency	= 100 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 33,987 cuft
Inflow hyds.	= 17, 18	Contrib. drain. area	= 3.420 ac

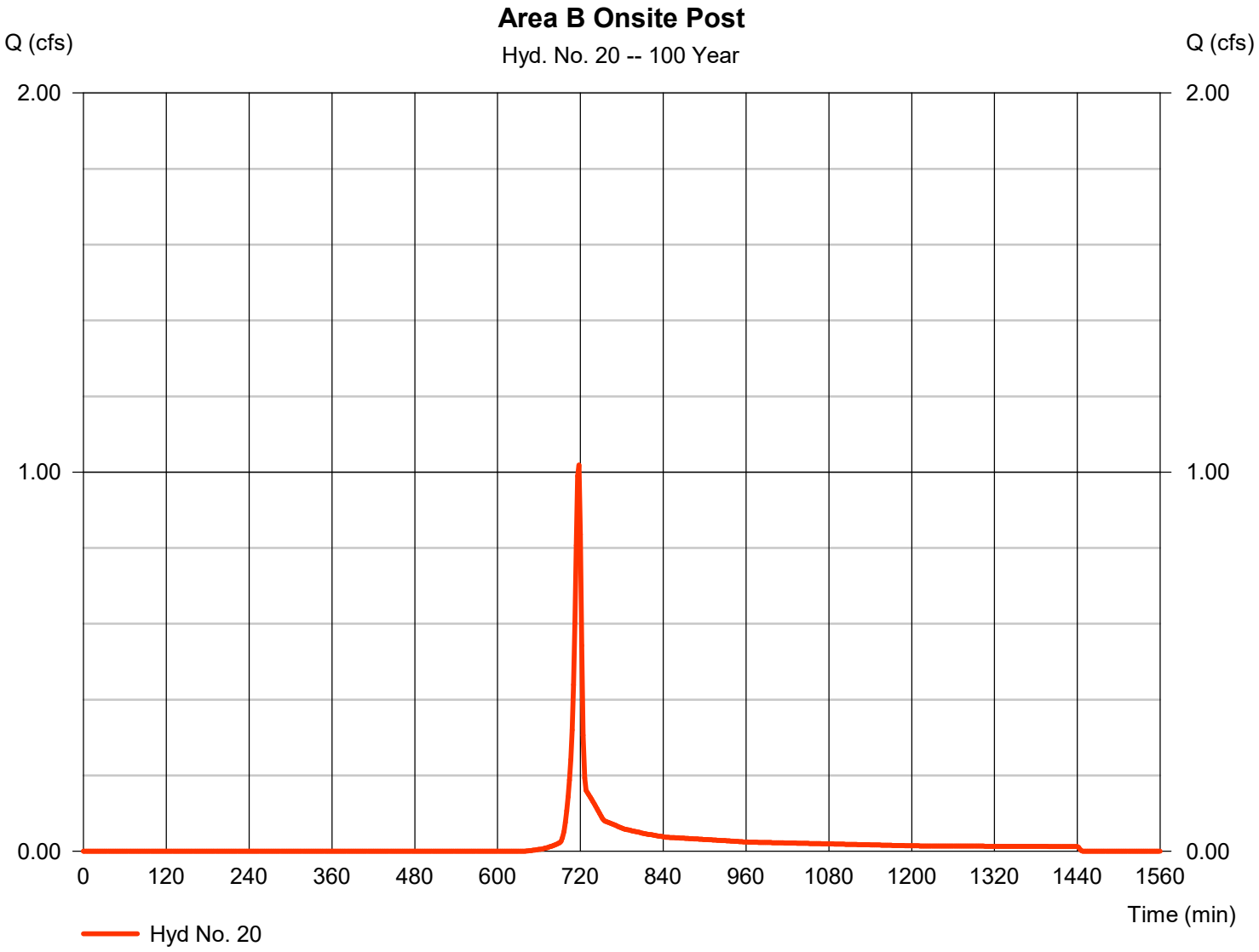


Hydrograph Report

Hyd. No. 20

Area B Onsite Post

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.018 cfs
Storm frequency	=	100 yrs	Time to peak	=	718 min
Time interval	=	2 min	Hyd. volume	=	2,038 cuft
Drainage area	=	0.230 ac	Curve number	=	55.8
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	7.61 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

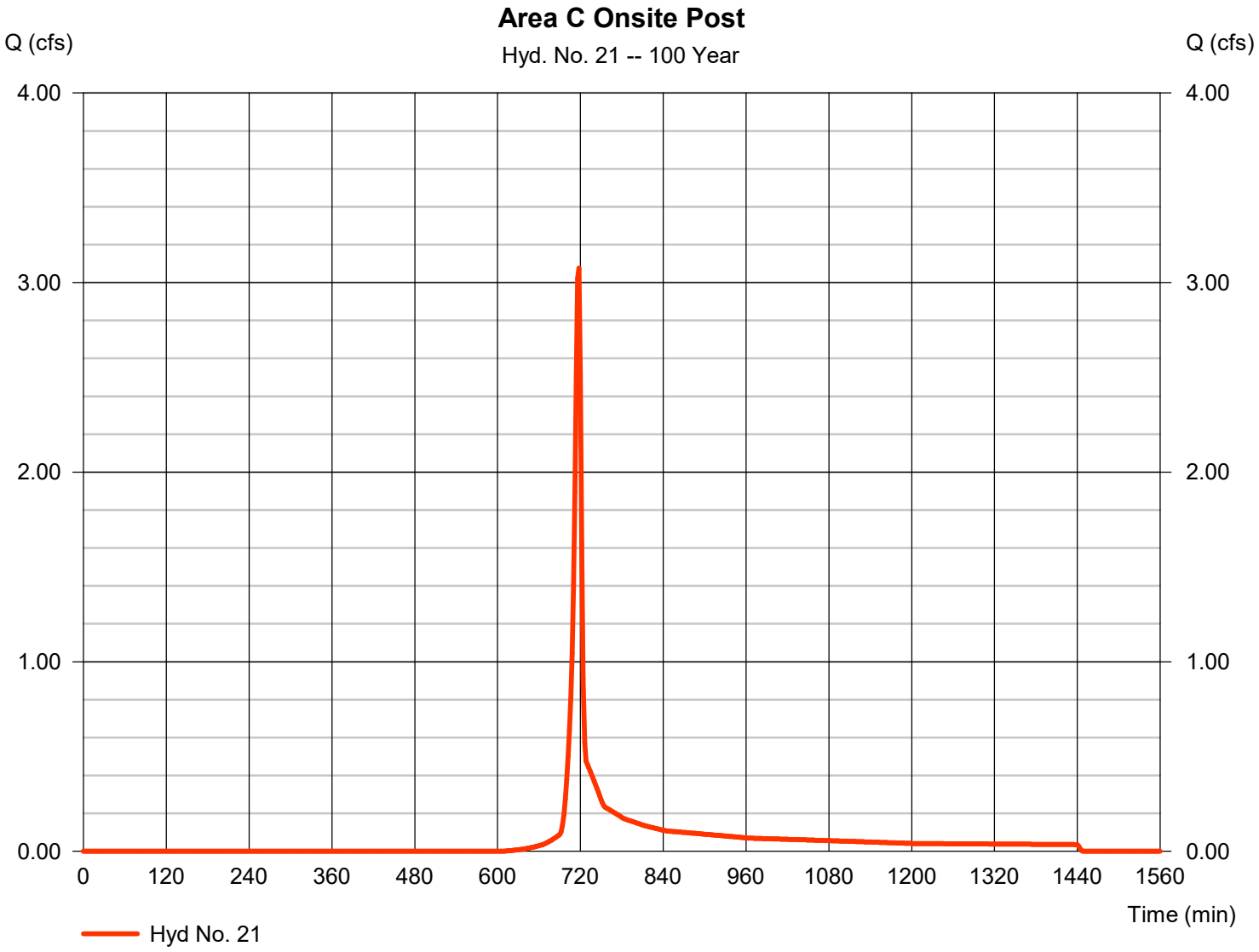


Hydrograph Report

Hyd. No. 21

Area C Onsite Post

Hydrograph type	=	SCS Runoff	Peak discharge	=	3.077 cfs
Storm frequency	=	100 yrs	Time to peak	=	718 min
Time interval	=	2 min	Hyd. volume	=	6,154 cuft
Drainage area	=	0.620 ac	Curve number	=	58.8
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	7.61 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

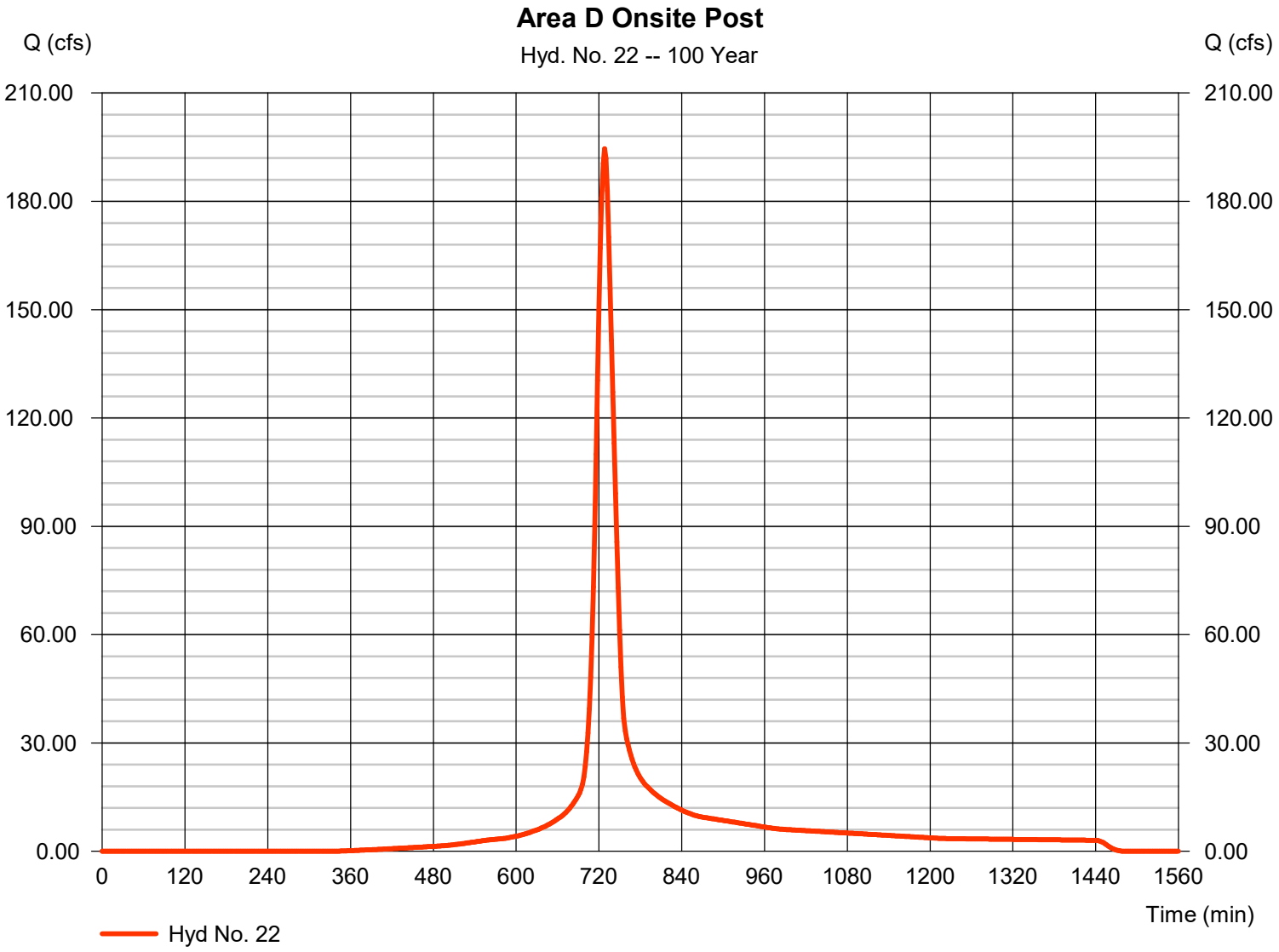


Hydrograph Report

Hyd. No. 22

Area D Onsite Post

Hydrograph type	=	SCS Runoff	Peak discharge	=	194.53 cfs
Storm frequency	=	100 yrs	Time to peak	=	728 min
Time interval	=	2 min	Hyd. volume	=	718,273 cuft
Drainage area	=	38.890 ac	Curve number	=	79.2
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	24.00 min
Total precip.	=	7.61 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

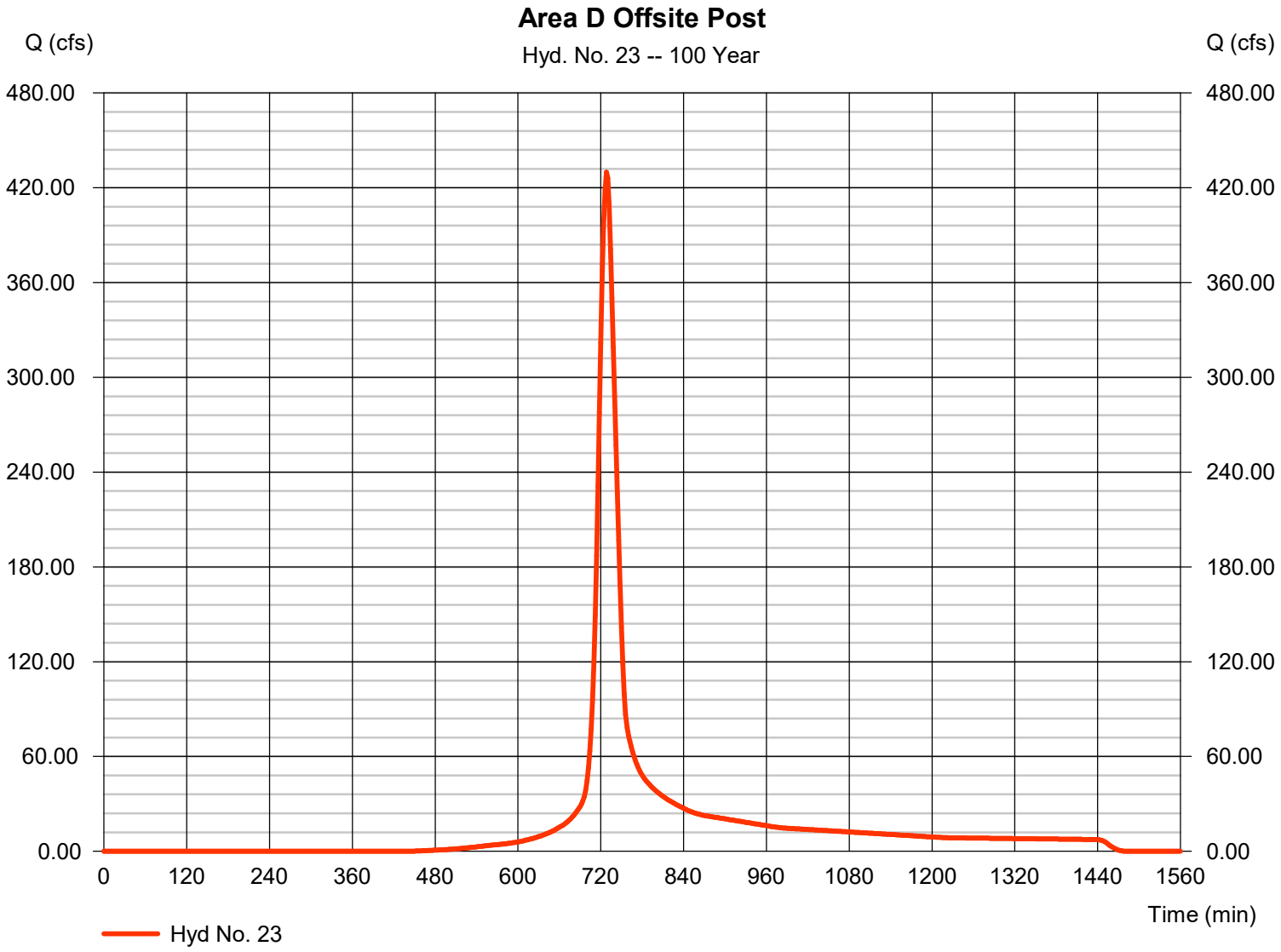


Hydrograph Report

Hyd. No. 23

Area D Offsite Post

Hydrograph type	=	SCS Runoff	Peak discharge	=	429.88 cfs
Storm frequency	=	100 yrs	Time to peak	=	728 min
Time interval	=	2 min	Hyd. volume	=	1,577,261 cuft
Drainage area	=	101.380 ac	Curve number	=	72
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	24.00 min
Total precip.	=	7.61 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

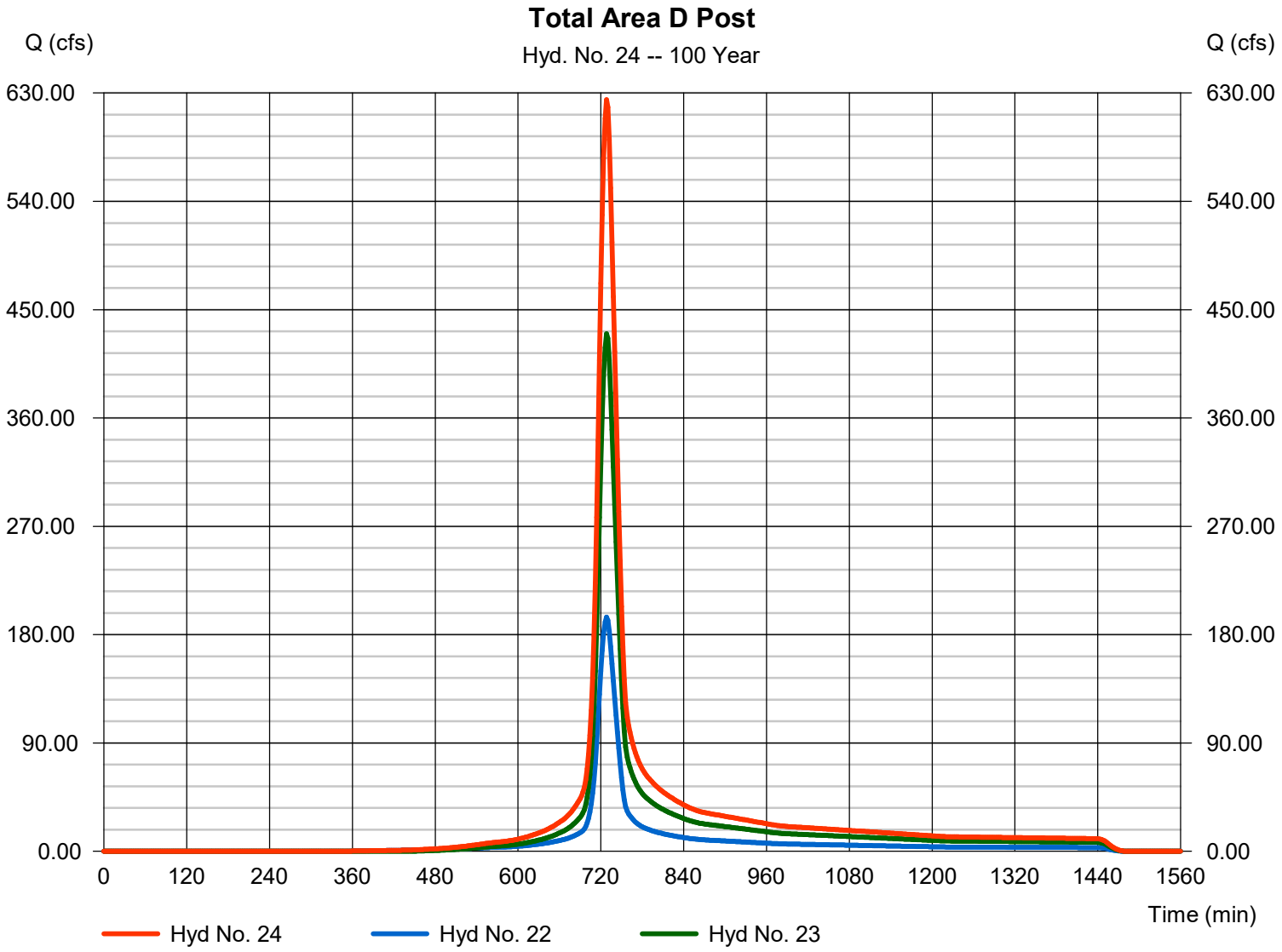


Hydrograph Report

Hyd. No. 24

Total Area D Post

Hydrograph type	= Combine	Peak discharge	= 624.41 cfs
Storm frequency	= 100 yrs	Time to peak	= 728 min
Time interval	= 2 min	Hyd. volume	= 2,295,533 cuft
Inflow hyds.	= 22, 23	Contrib. drain. area	= 140.270 ac

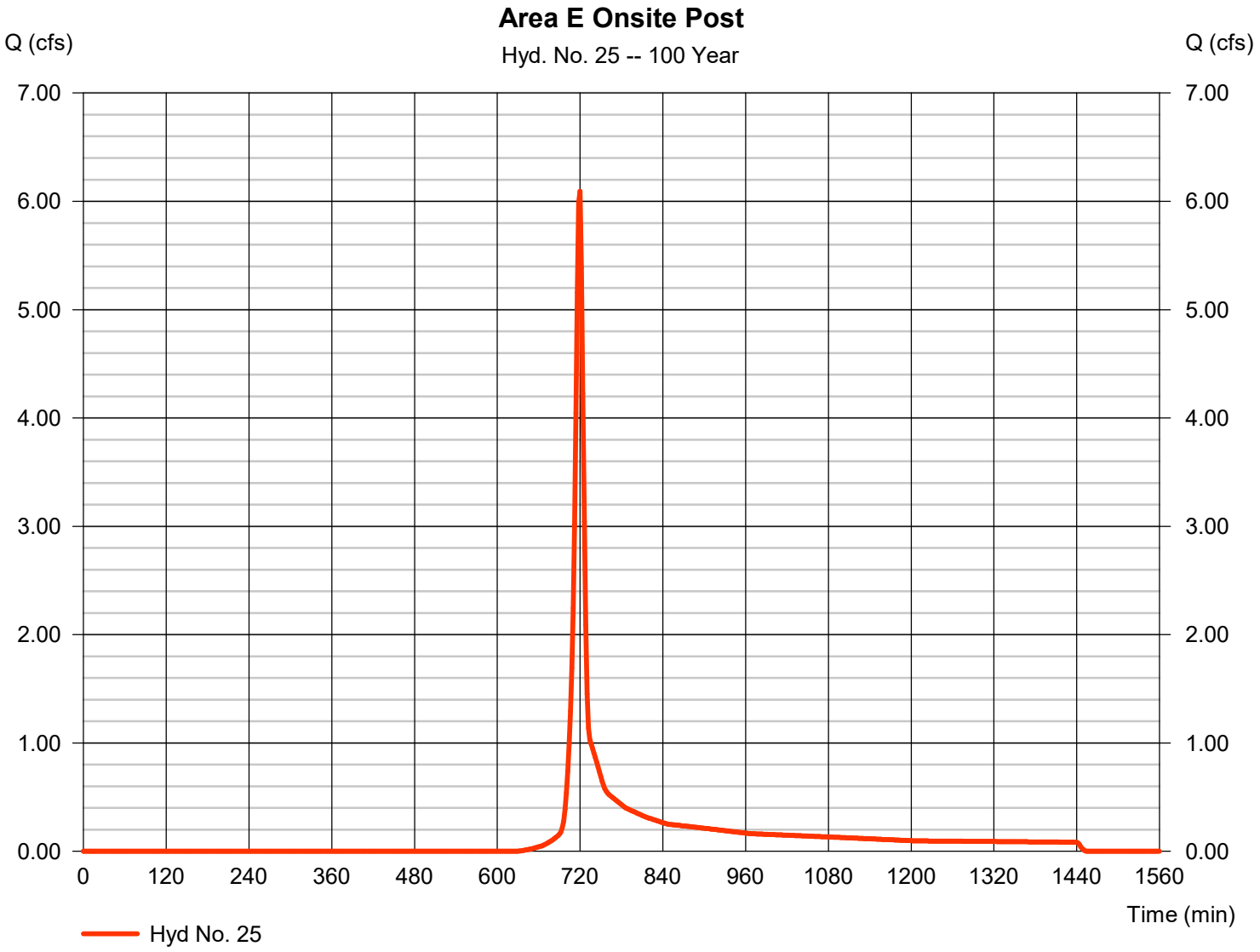


Hydrograph Report

Hyd. No. 25

Area E Onsite Post

Hydrograph type	=	SCS Runoff	Peak discharge	=	6.093 cfs
Storm frequency	=	100 yrs	Time to peak	=	720 min
Time interval	=	2 min	Hyd. volume	=	14,008 cuft
Drainage area	=	1.420 ac	Curve number	=	56.9
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	8.20 min
Total precip.	=	7.61 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

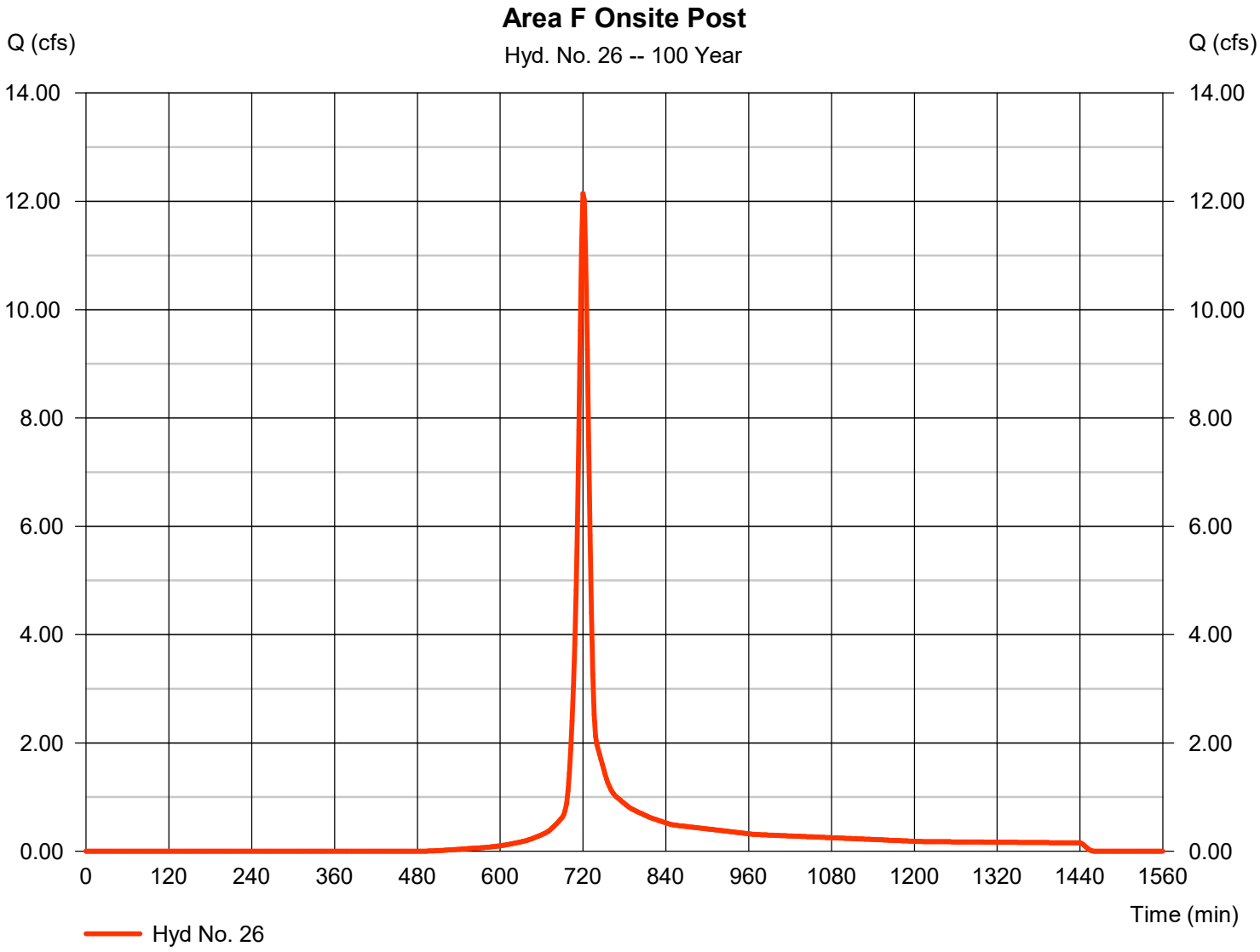


Hydrograph Report

Hyd. No. 26

Area F Onsite Post

Hydrograph type	= SCS Runoff	Peak discharge	= 12.15 cfs
Storm frequency	= 100 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 31,492 cuft
Drainage area	= 2.110 ac	Curve number	= 68.7
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 12.60 min
Total precip.	= 7.61 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

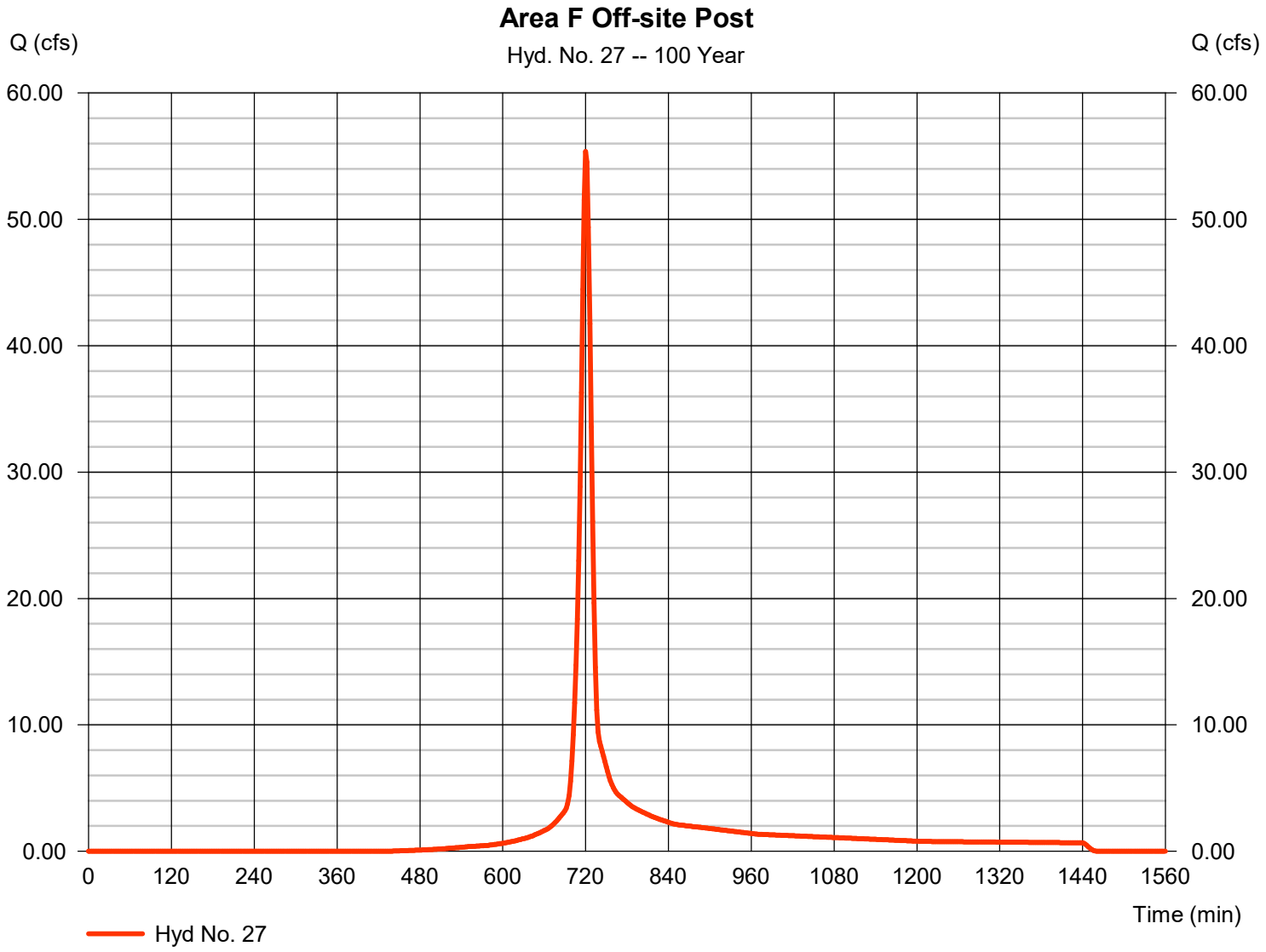


Hydrograph Report

Hyd. No. 27

Area F Off-site Post

Hydrograph type	=	SCS Runoff	Peak discharge	=	55.37 cfs
Storm frequency	=	100 yrs	Time to peak	=	720 min
Time interval	=	2 min	Hyd. volume	=	143,751 cuft
Drainage area	=	8.730 ac	Curve number	=	72.4
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	12.60 min
Total precip.	=	7.61 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

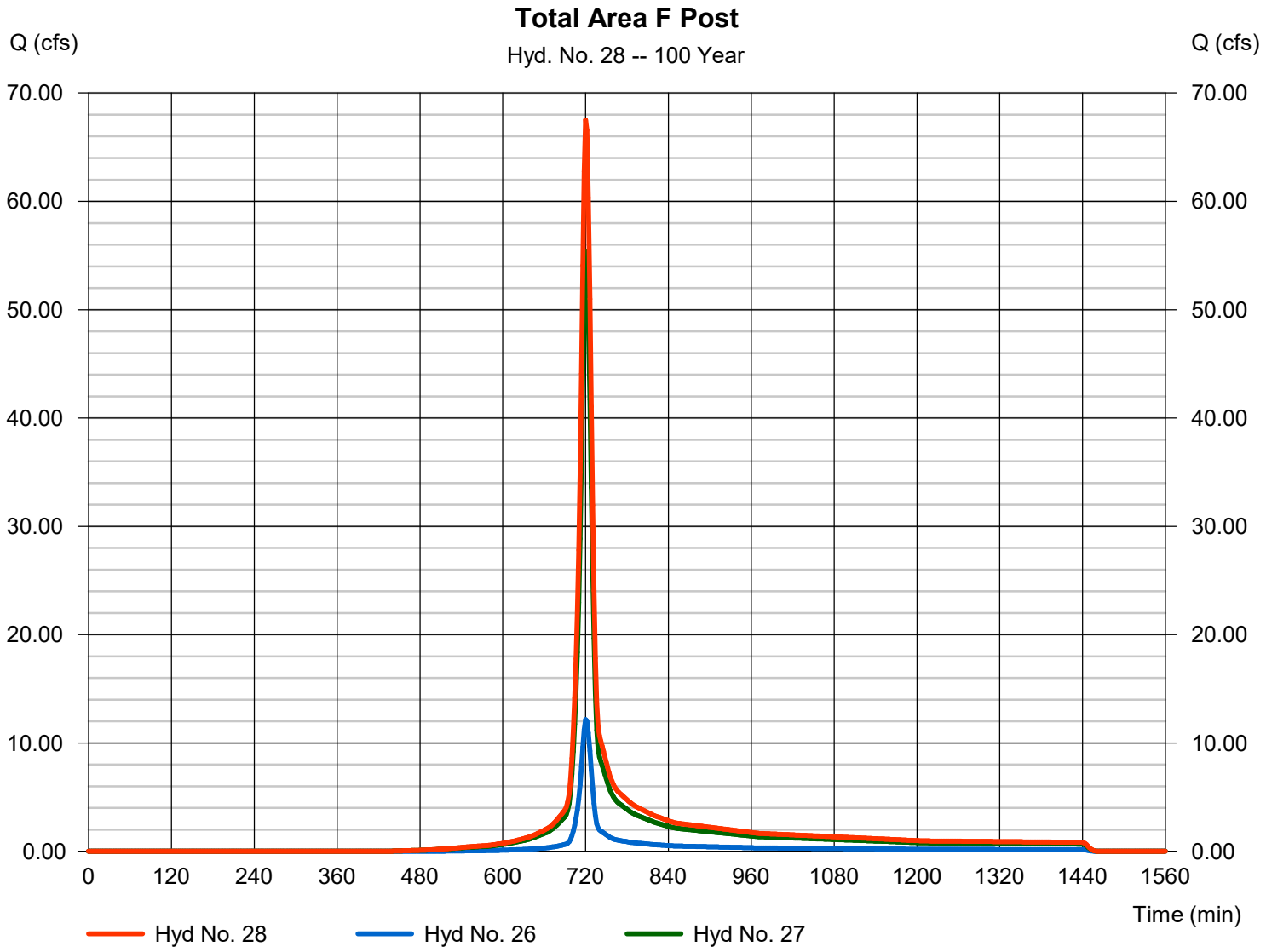


Hydrograph Report

Hyd. No. 28

Total Area F Post

Hydrograph type	= Combine	Peak discharge	= 67.52 cfs
Storm frequency	= 100 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 175,244 cuft
Inflow hyds.	= 26, 27	Contrib. drain. area	= 10.840 ac

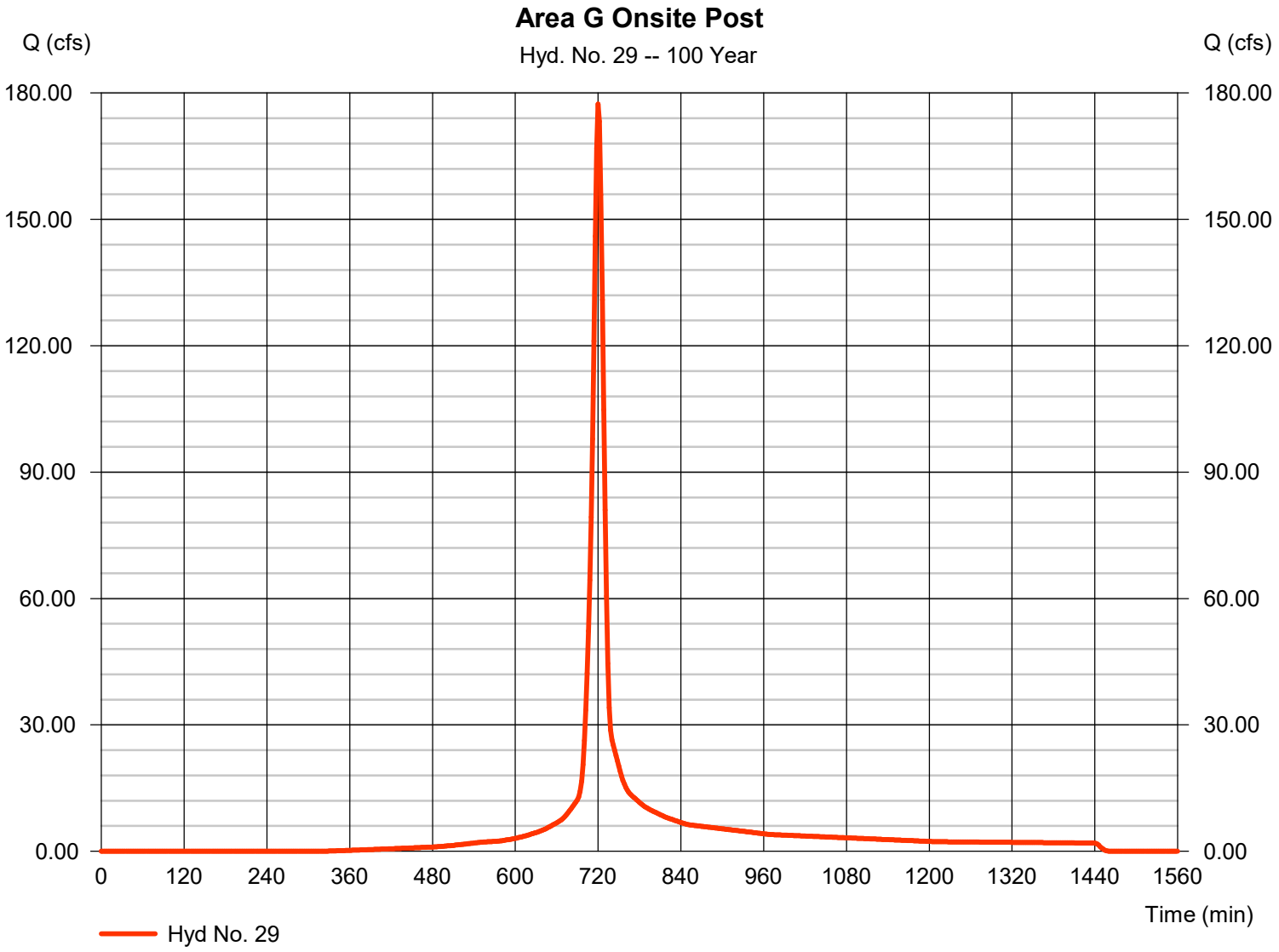


Hydrograph Report

Hyd. No. 29

Area G Onsite Post

Hydrograph type	= SCS Runoff	Peak discharge	= 177.41 cfs
Storm frequency	= 100 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 467,841 cuft
Drainage area	= 23.810 ac	Curve number	= 79.9
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 10.40 min
Total precip.	= 7.61 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

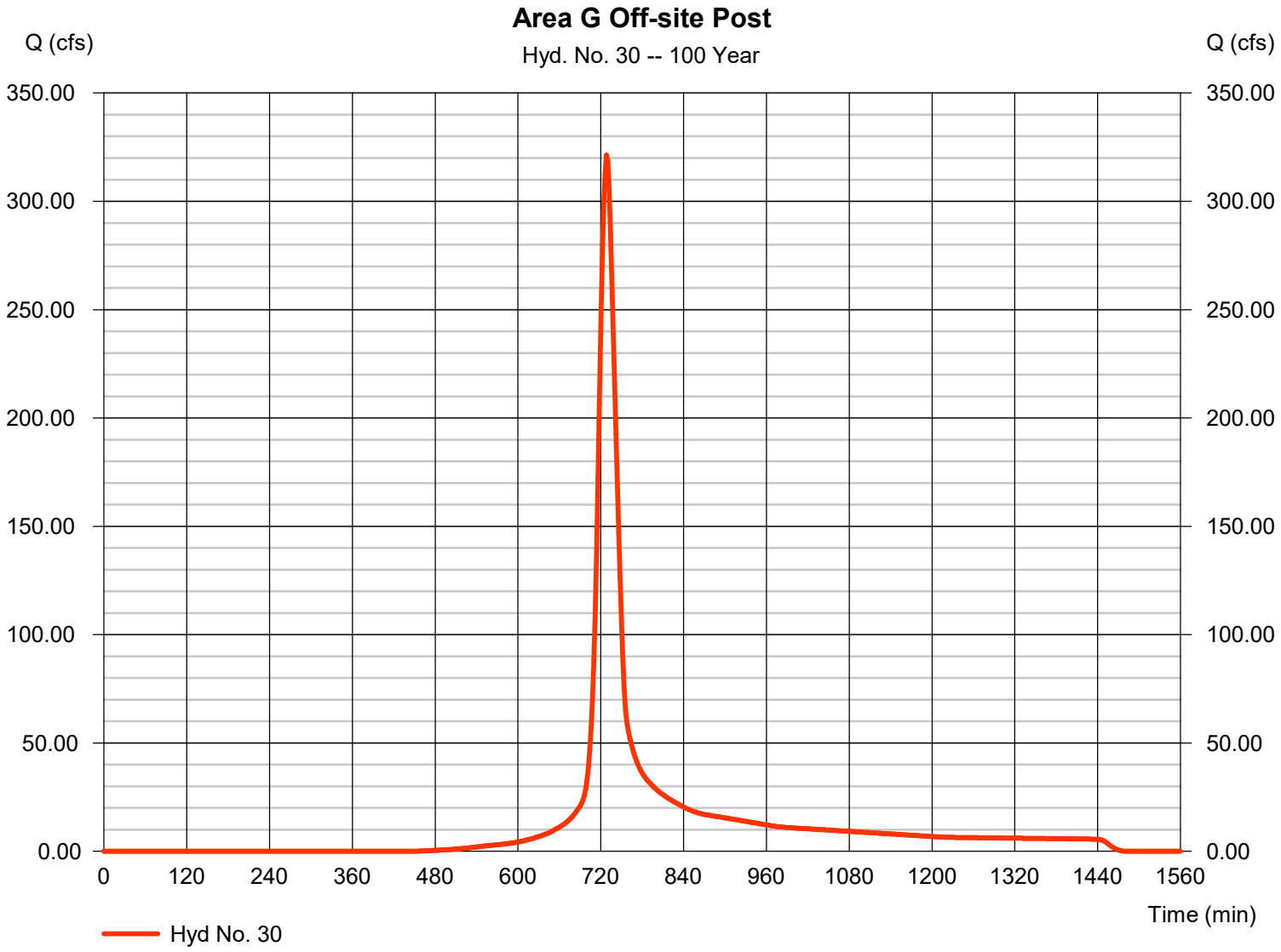


Hydrograph Report

Hyd. No. 30

Area G Off-site Post

Hydrograph type	=	SCS Runoff	Peak discharge	=	321.43 cfs
Storm frequency	=	100 yrs	Time to peak	=	728 min
Time interval	=	2 min	Hyd. volume	=	1,179,500 cuft
Drainage area	=	76.600 ac	Curve number	=	71.6
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	23.80 min
Total precip.	=	7.61 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

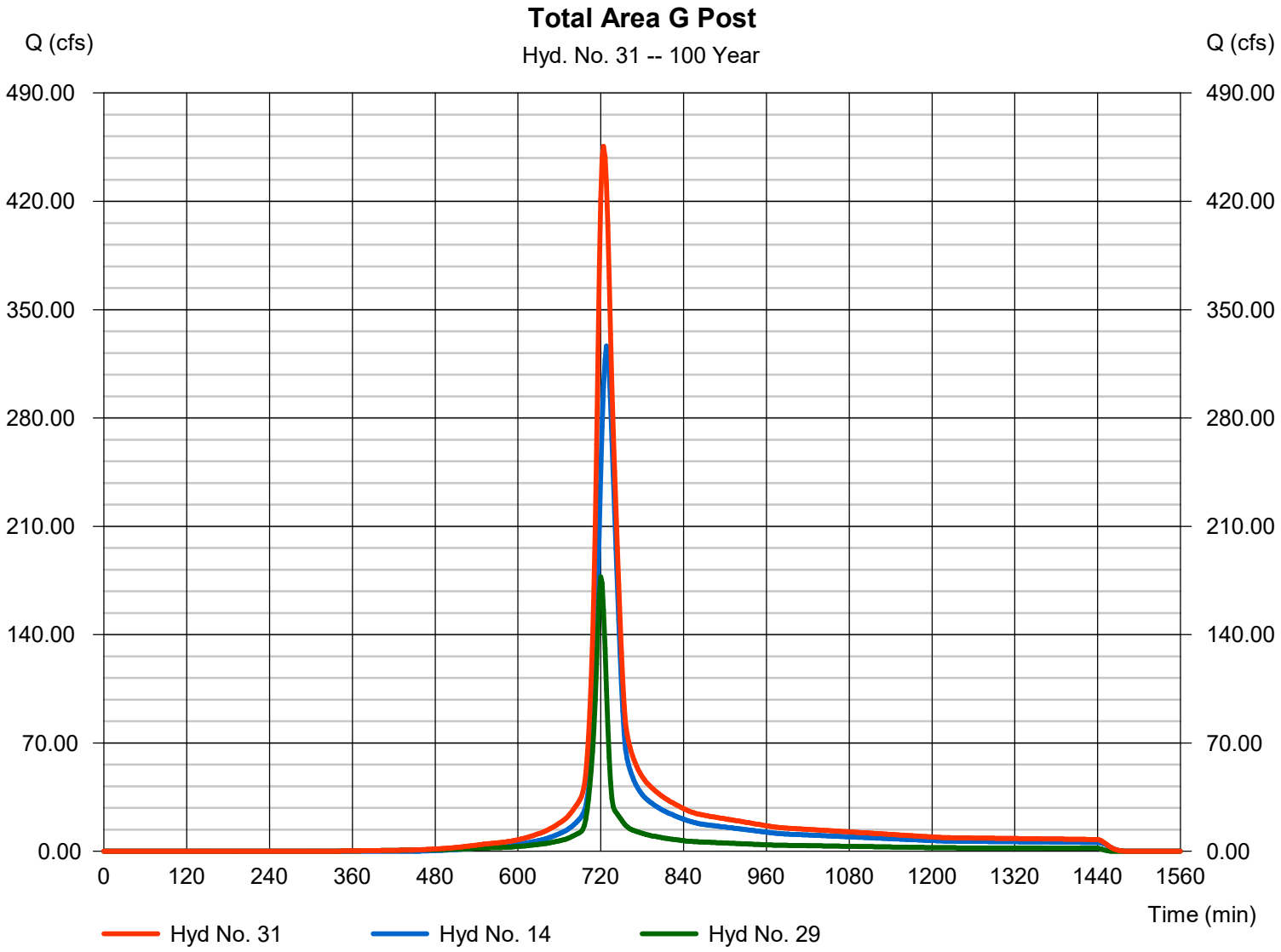


Hydrograph Report

Hyd. No. 31

Total Area G Post

Hydrograph type	= Combine	Peak discharge	= 455.56 cfs
Storm frequency	= 100 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 1,665,991 cuft
Inflow hyds.	= 14, 29	Contrib. drain. area	= 101.420 ac

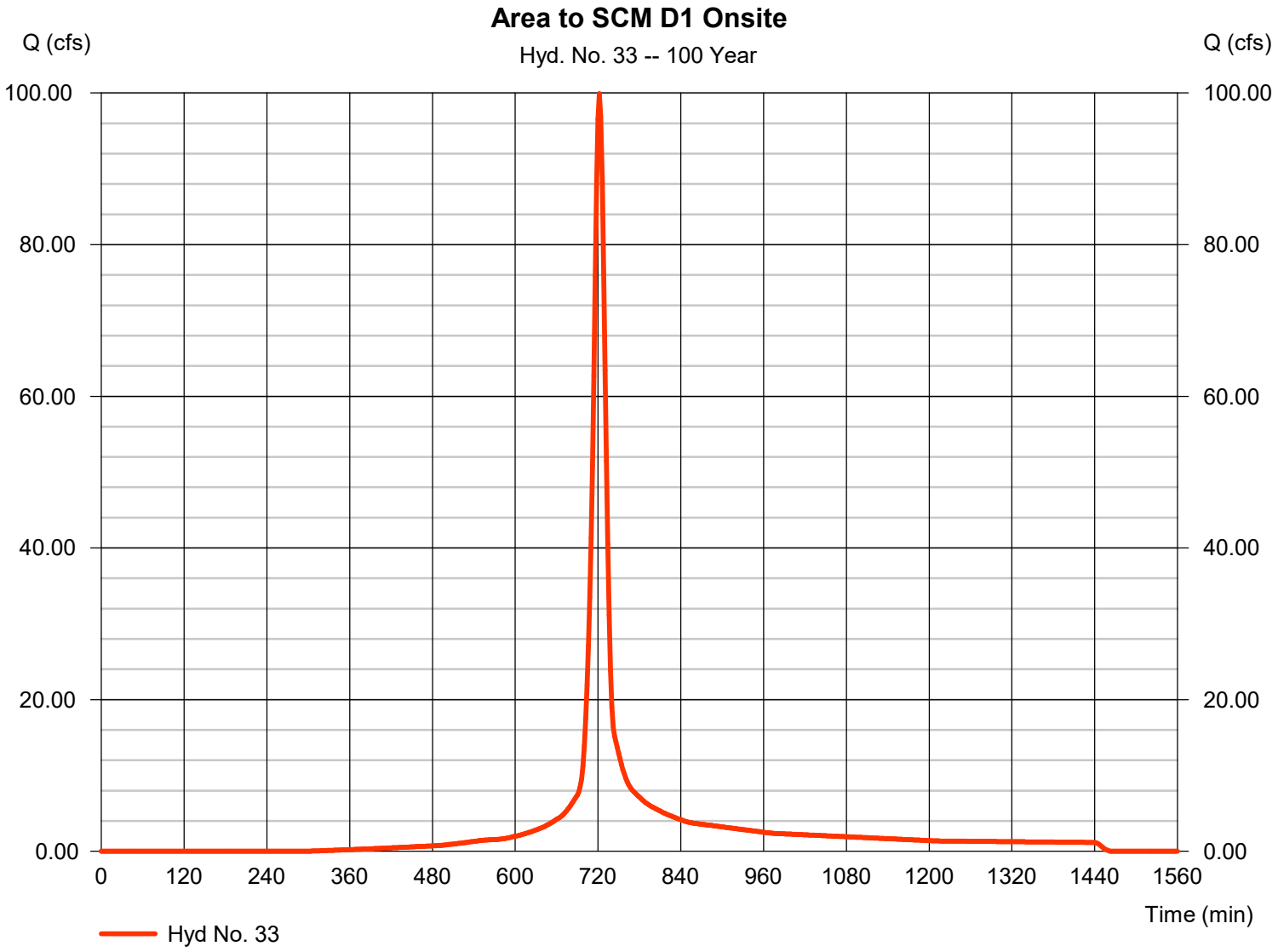


Hydrograph Report

Hyd. No. 33

Area to SCM D1 Onsite

Hydrograph type	= SCS Runoff	Peak discharge	= 99.91 cfs
Storm frequency	= 100 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 286,137 cuft
Drainage area	= 14.850 ac	Curve number	= 81.6
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 16.30 min
Total precip.	= 7.61 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

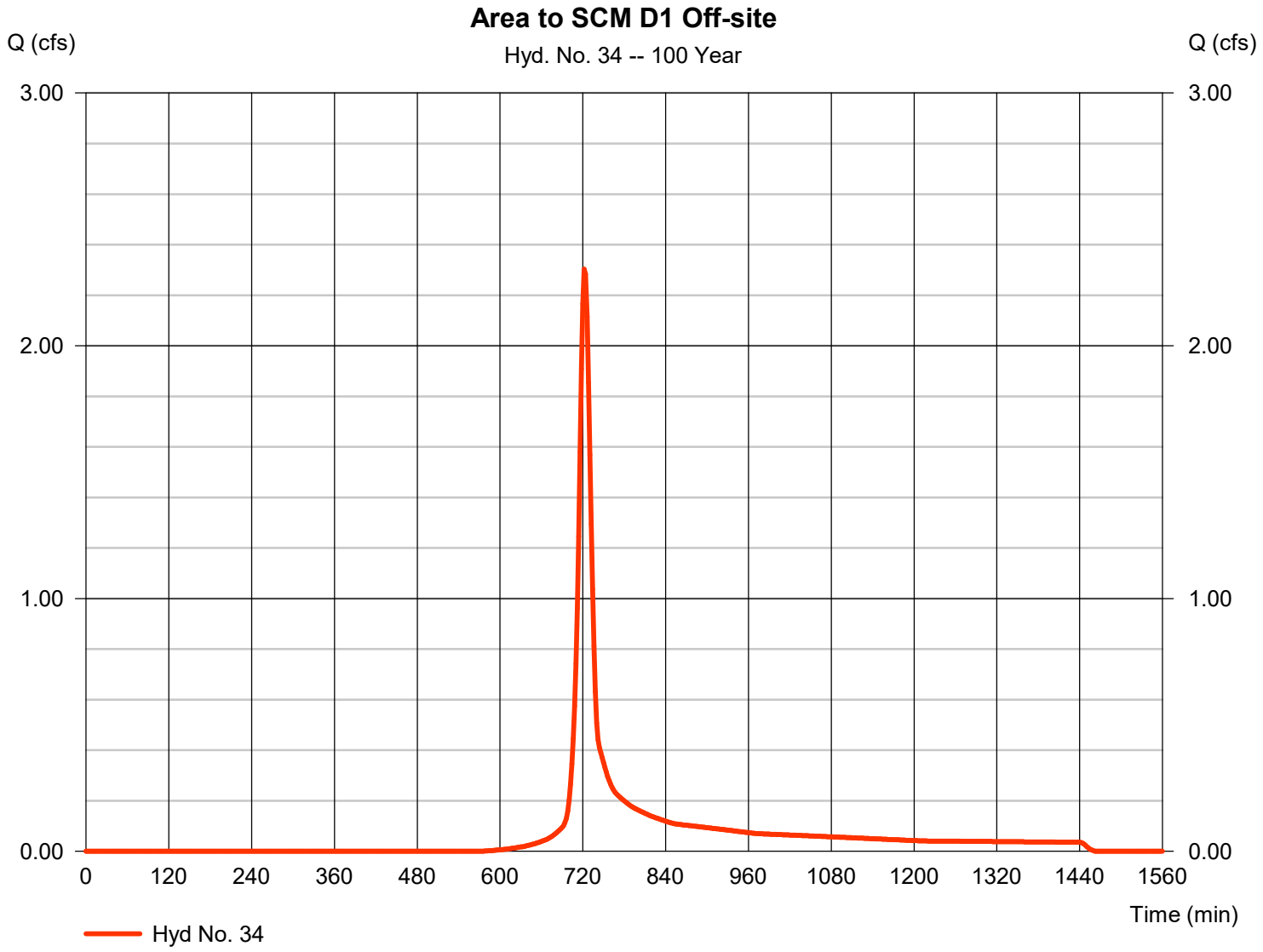


Hydrograph Report

Hyd. No. 34

Area to SCM D1 Off-site

Hydrograph type	= SCS Runoff	Peak discharge	= 2.303 cfs
Storm frequency	= 100 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 6,520 cuft
Drainage area	= 0.560 ac	Curve number	= 62.3
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 16.30 min
Total precip.	= 7.61 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

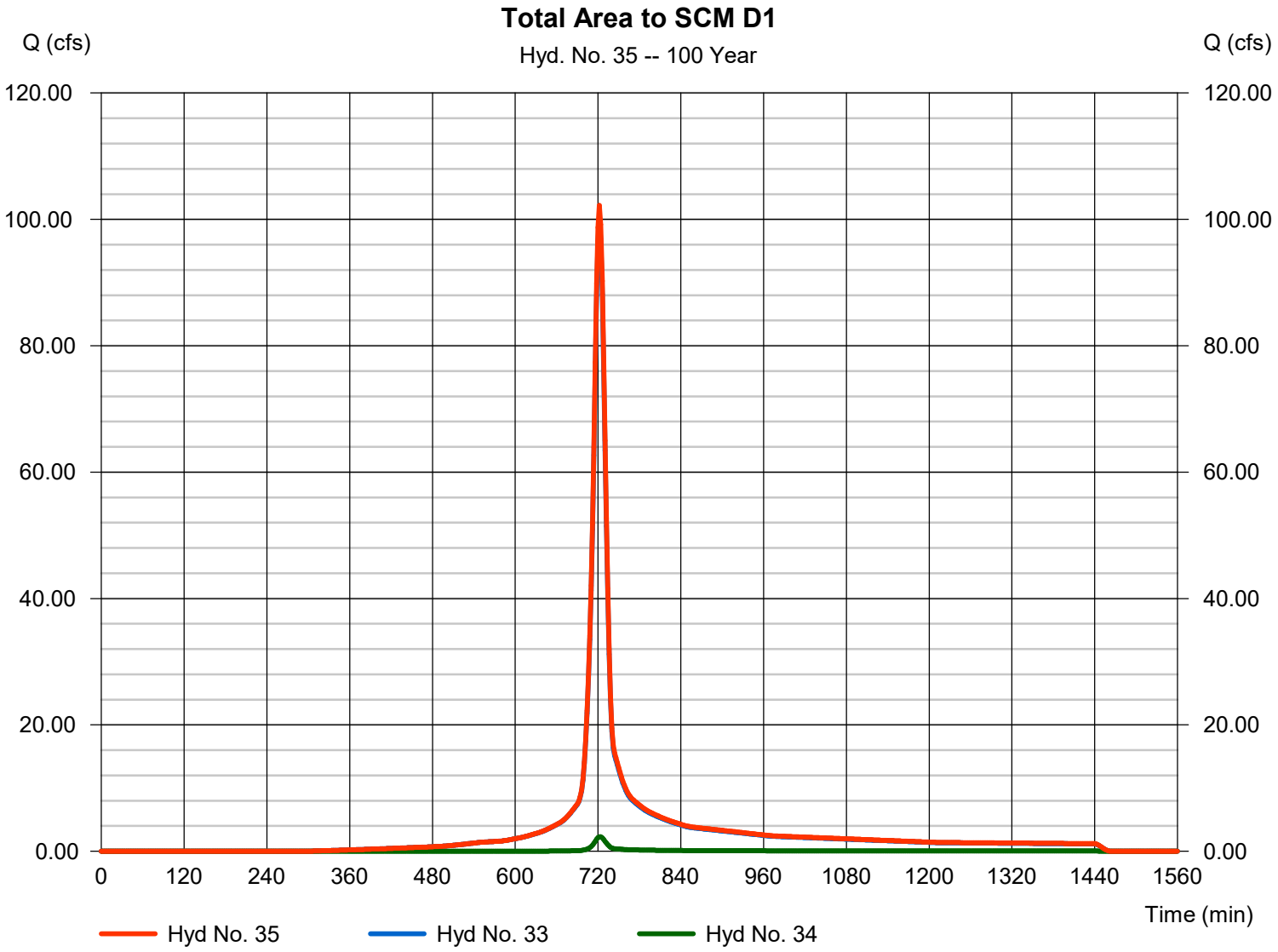


Hydrograph Report

Hyd. No. 35

Total Area to SCM D1

Hydrograph type	= Combine	Peak discharge	= 102.22 cfs
Storm frequency	= 100 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 292,657 cuft
Inflow hyds.	= 33, 34	Contrib. drain. area	= 15.410 ac



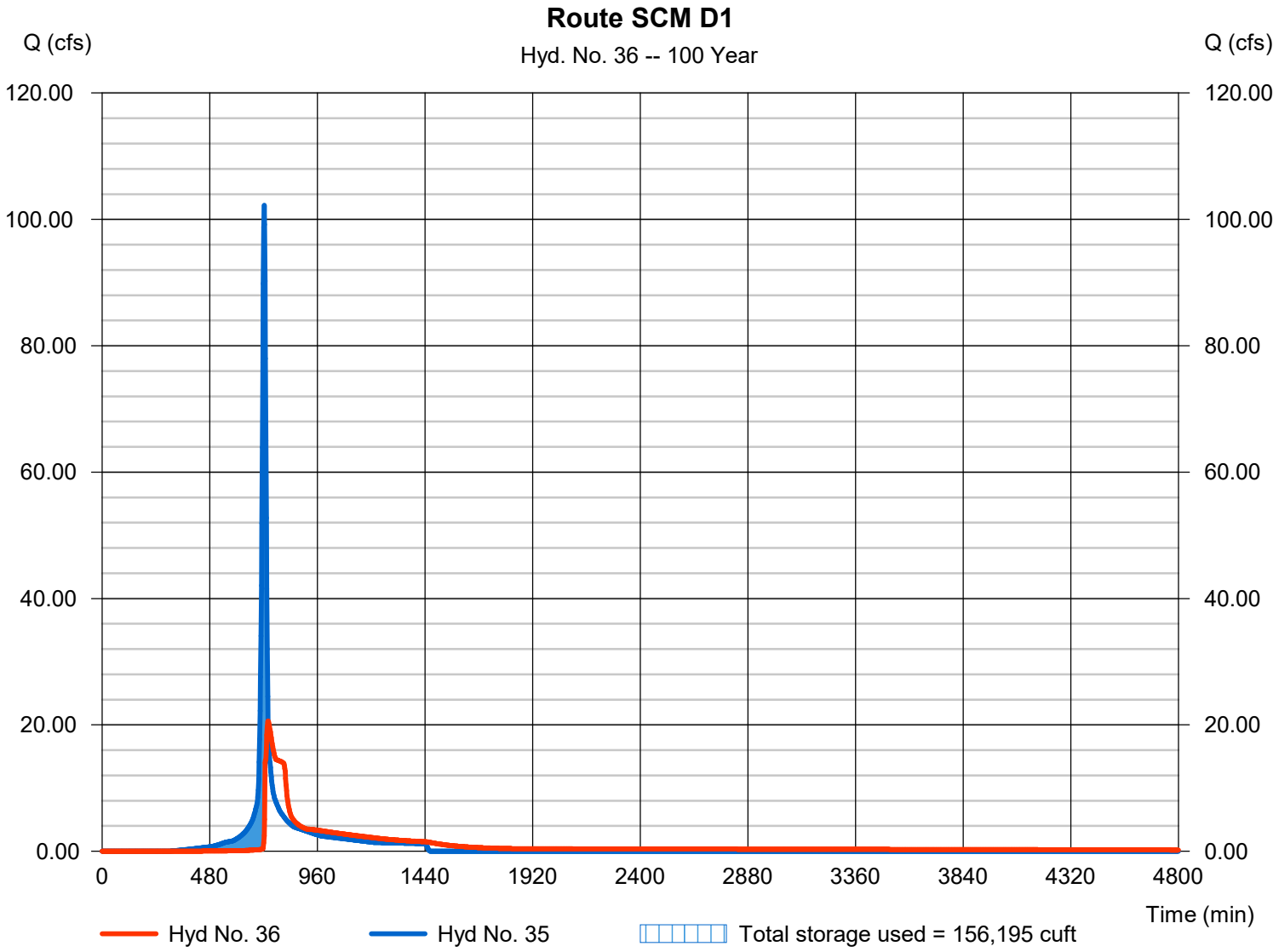
Hydrograph Report

Hyd. No. 36

Route SCM D1

Hydrograph type	=	Reservoir	Peak discharge	=	20.62 cfs
Storm frequency	=	100 yrs	Time to peak	=	740 min
Time interval	=	2 min	Hyd. volume	=	275,184 cuft
Inflow hyd. No.	=	35 - Total Area to SCM D1	Max. Elevation	=	387.93 ft
Reservoir name	=	SCM D1	Max. Storage	=	156,195 cuft

Storage Indication method used.

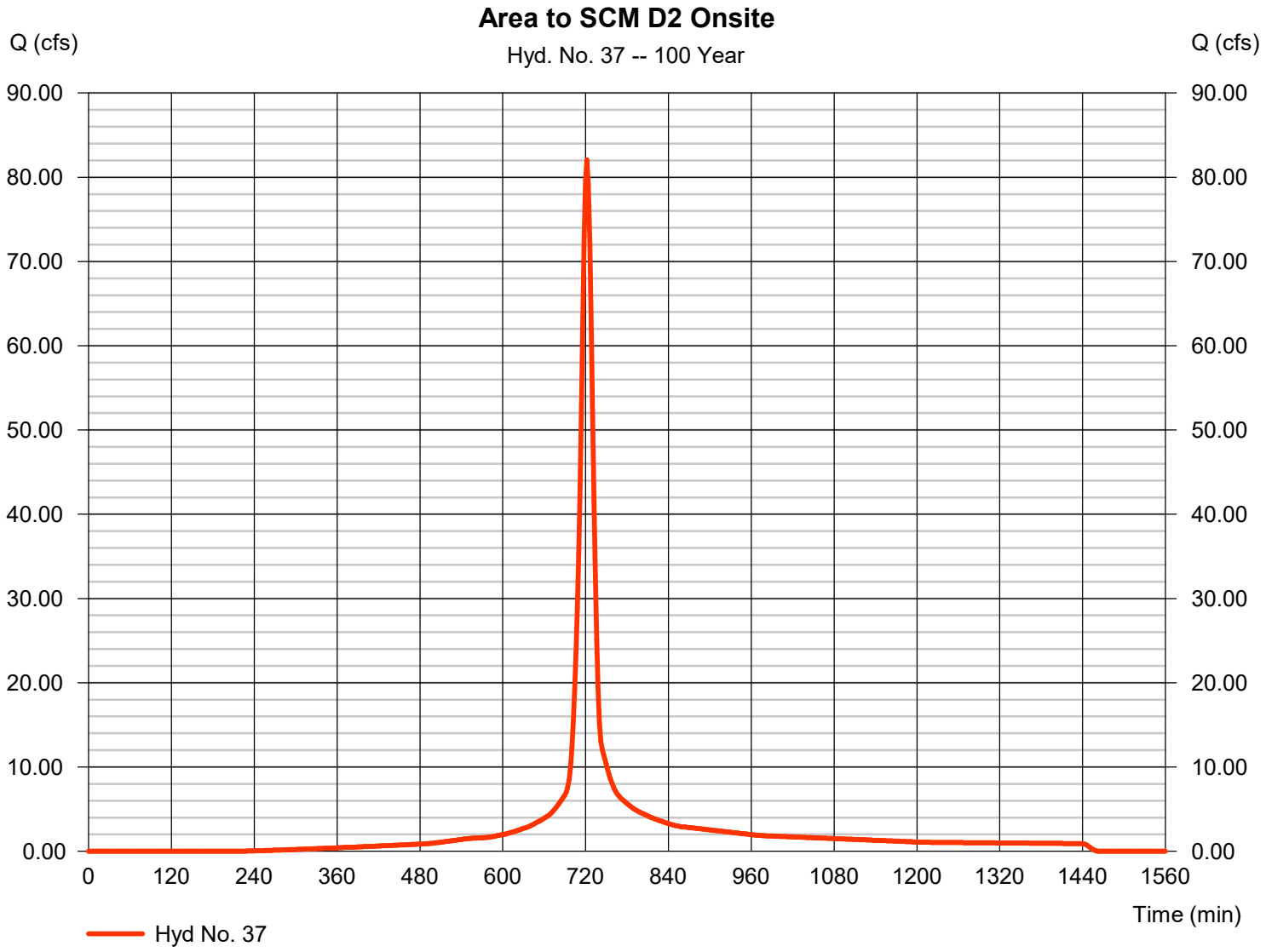


Hydrograph Report

Hyd. No. 37

Area to SCM D2 Onsite

Hydrograph type	= SCS Runoff	Peak discharge	= 82.06 cfs
Storm frequency	= 100 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 240,446 cuft
Drainage area	= 11.300 ac	Curve number	= 86.5
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 13.80 min
Total precip.	= 7.61 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

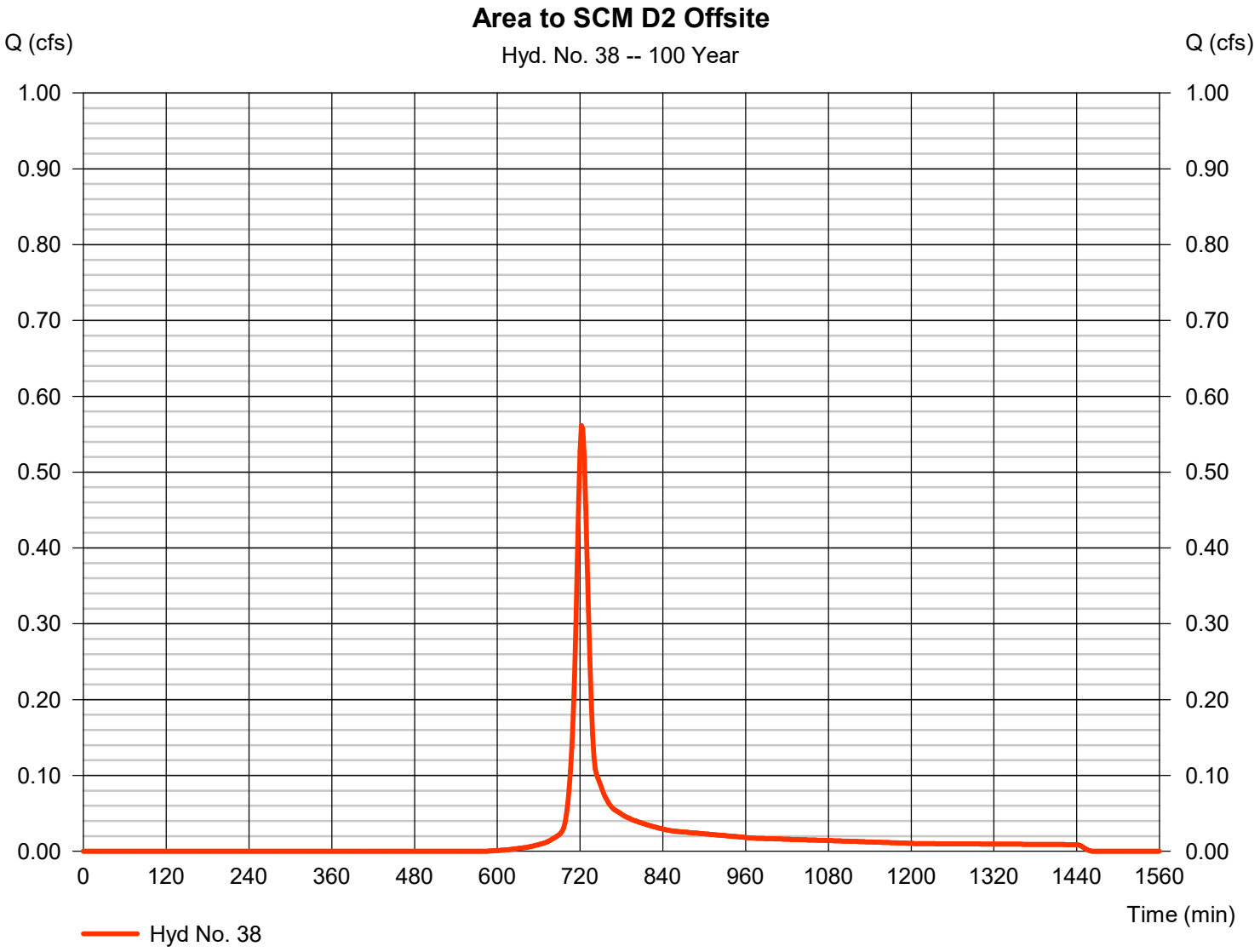


Hydrograph Report

Hyd. No. 38

Area to SCM D2 Offsite

Hydrograph type	= SCS Runoff	Peak discharge	= 0.561 cfs
Storm frequency	= 100 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 1,593 cuft
Drainage area	= 0.140 ac	Curve number	= 61.6
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 13.80 min
Total precip.	= 7.61 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

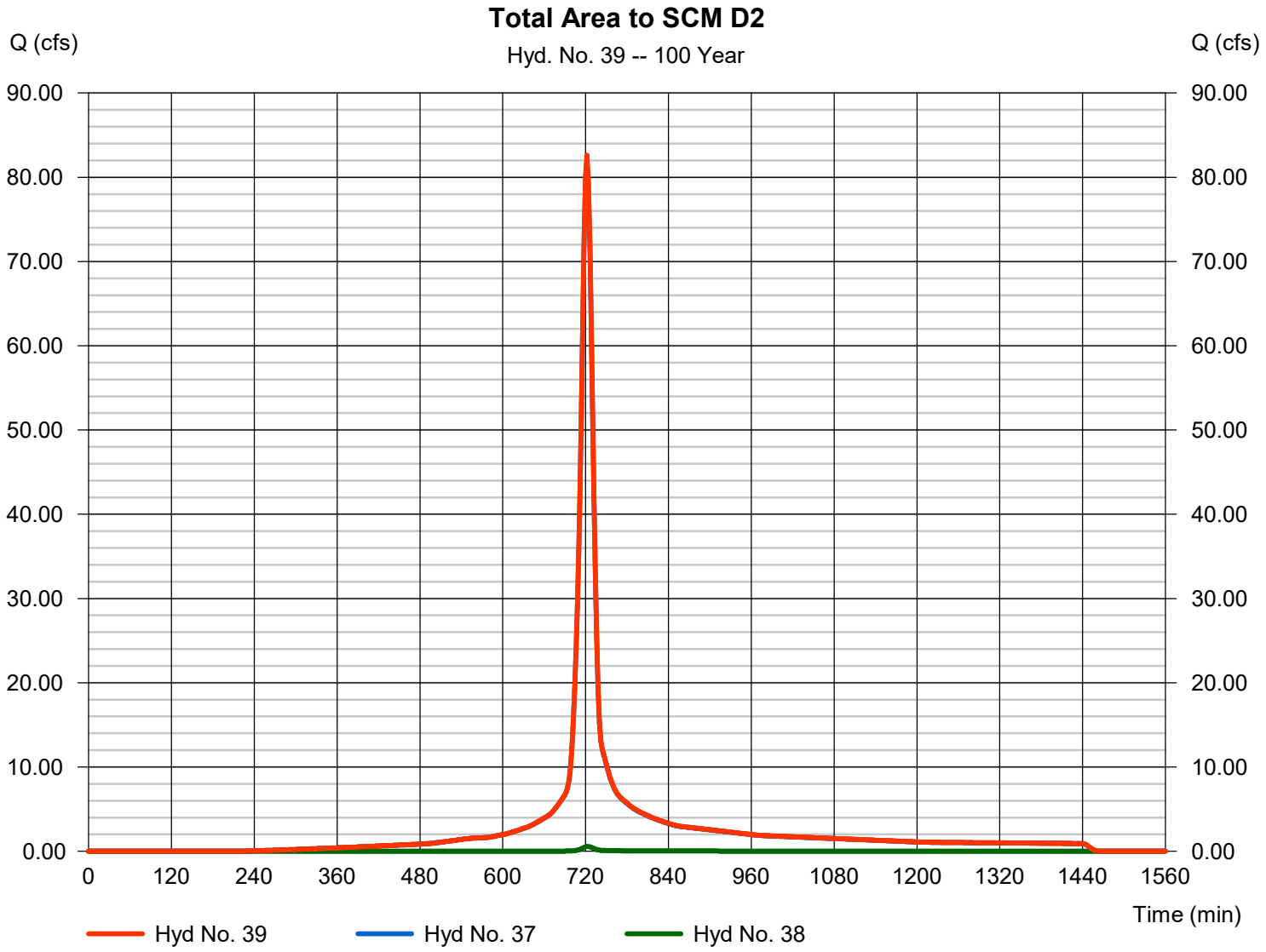


Hydrograph Report

Hyd. No. 39

Total Area to SCM D2

Hydrograph type	= Combine	Peak discharge	= 82.62 cfs
Storm frequency	= 100 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 242,039 cuft
Inflow hyds.	= 37, 38	Contrib. drain. area	= 11.440 ac



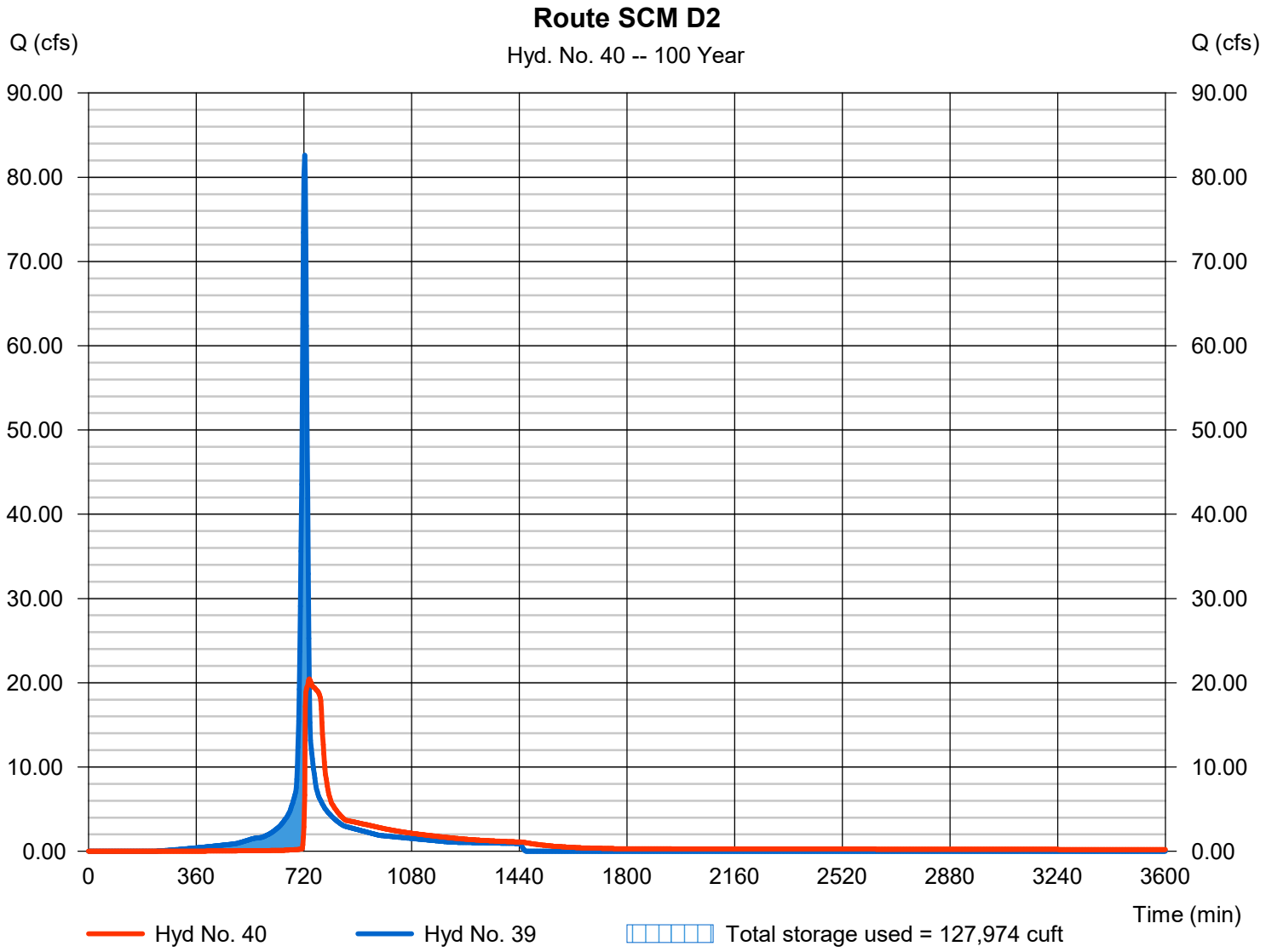
Hydrograph Report

Hyd. No. 40

Route SCM D2

Hydrograph type	=	Reservoir	Peak discharge	=	20.43 cfs
Storm frequency	=	100 yrs	Time to peak	=	738 min
Time interval	=	2 min	Hyd. volume	=	224,105 cuft
Inflow hyd. No.	=	39 - Total Area to SCM D2	Max. Elevation	=	394.60 ft
Reservoir name	=	SCM D2	Max. Storage	=	127,974 cuft

Storage Indication method used.

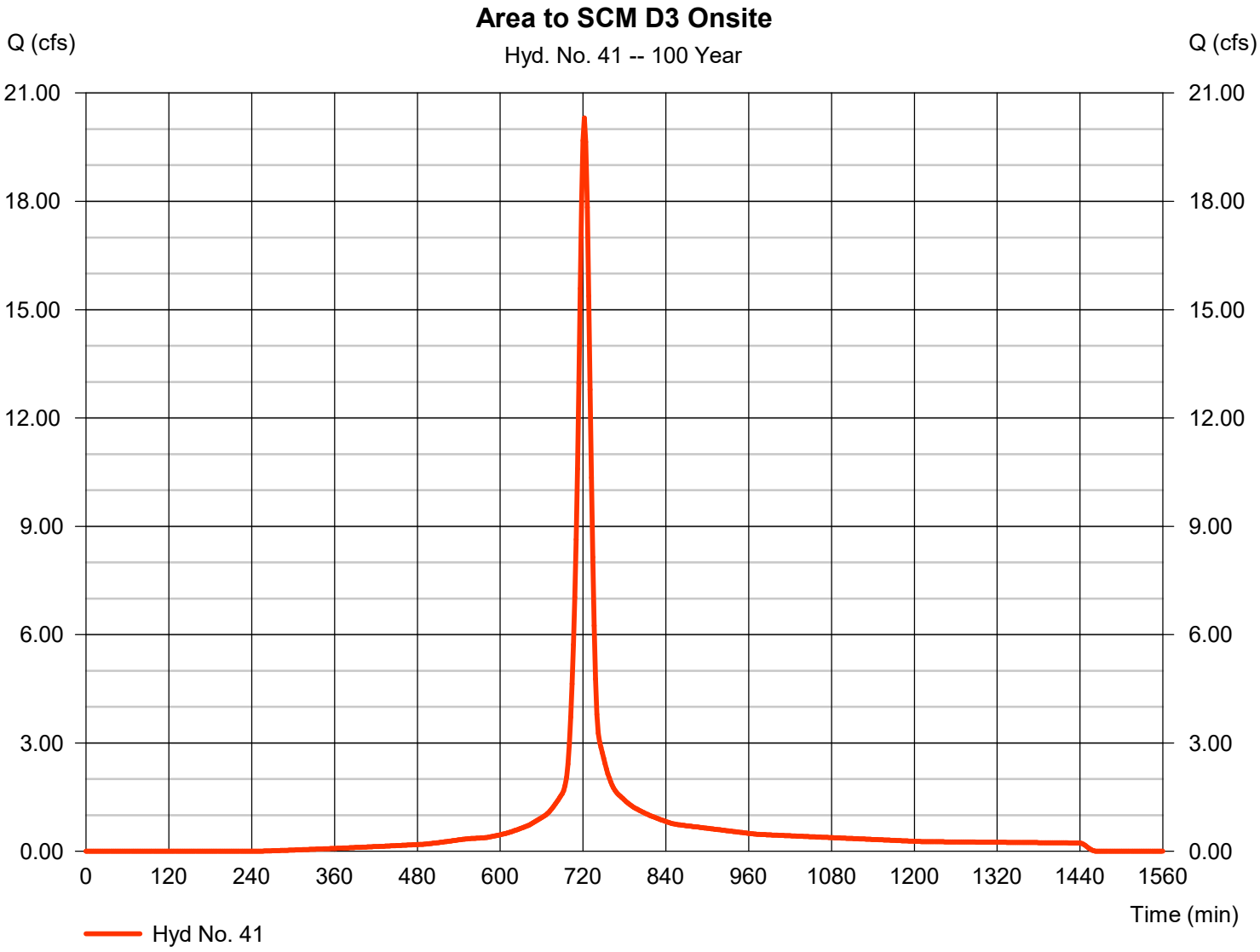


Hydrograph Report

Hyd. No. 41

Area to SCM D3 Onsite

Hydrograph type	= SCS Runoff	Peak discharge	= 20.31 cfs
Storm frequency	= 100 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 58,942 cuft
Drainage area	= 2.870 ac	Curve number	= 84.7
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 14.20 min
Total precip.	= 7.61 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



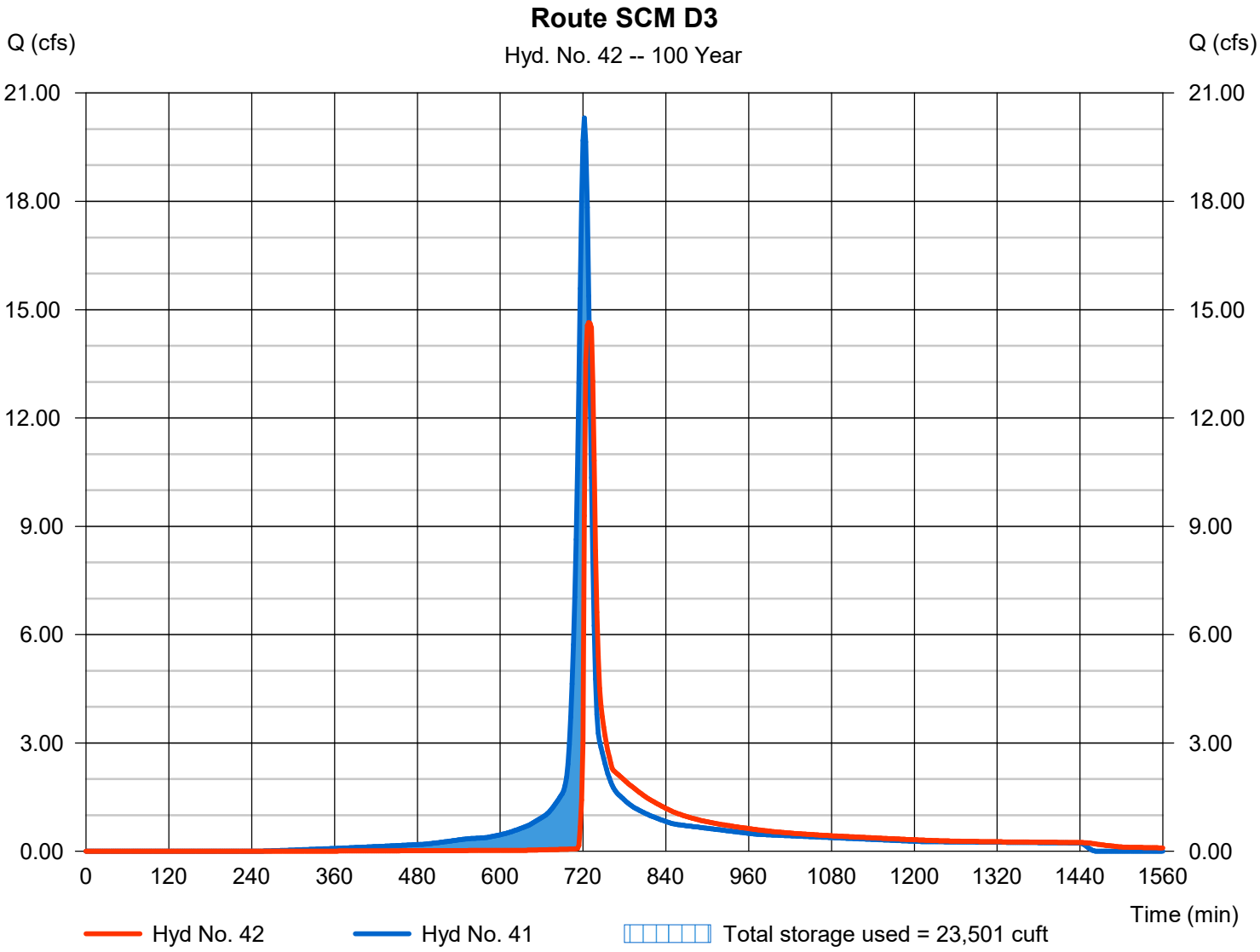
Hydrograph Report

Hyd. No. 42

Route SCM D3

Hydrograph type	=	Reservoir	Peak discharge	=	14.64 cfs
Storm frequency	=	100 yrs	Time to peak	=	728 min
Time interval	=	2 min	Hyd. volume	=	56,415 cuft
Inflow hyd. No.	=	41 - Area to SCM D3 Onsite	Max. Elevation	=	385.96 ft
Reservoir name	=	SCM D3	Max. Storage	=	23,501 cuft

Storage Indication method used.

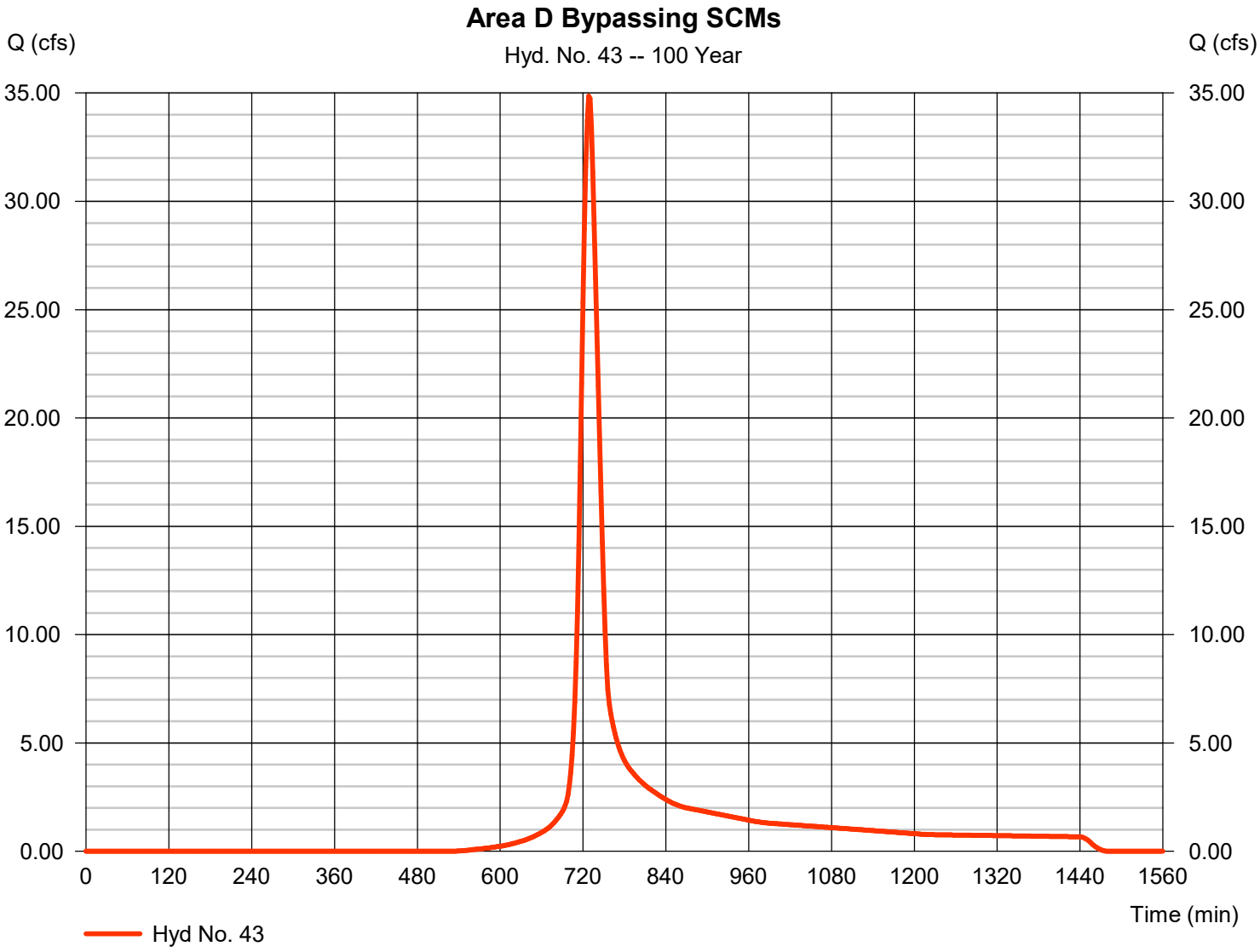


Hydrograph Report

Hyd. No. 43

Area D Bypassing SCMs

Hydrograph type	=	SCS Runoff	Peak discharge	=	34.86 cfs
Storm frequency	=	100 yrs	Time to peak	=	728 min
Time interval	=	2 min	Hyd. volume	=	128,997 cuft
Drainage area	=	9.870 ac	Curve number	=	65.7
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	24.00 min
Total precip.	=	7.61 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

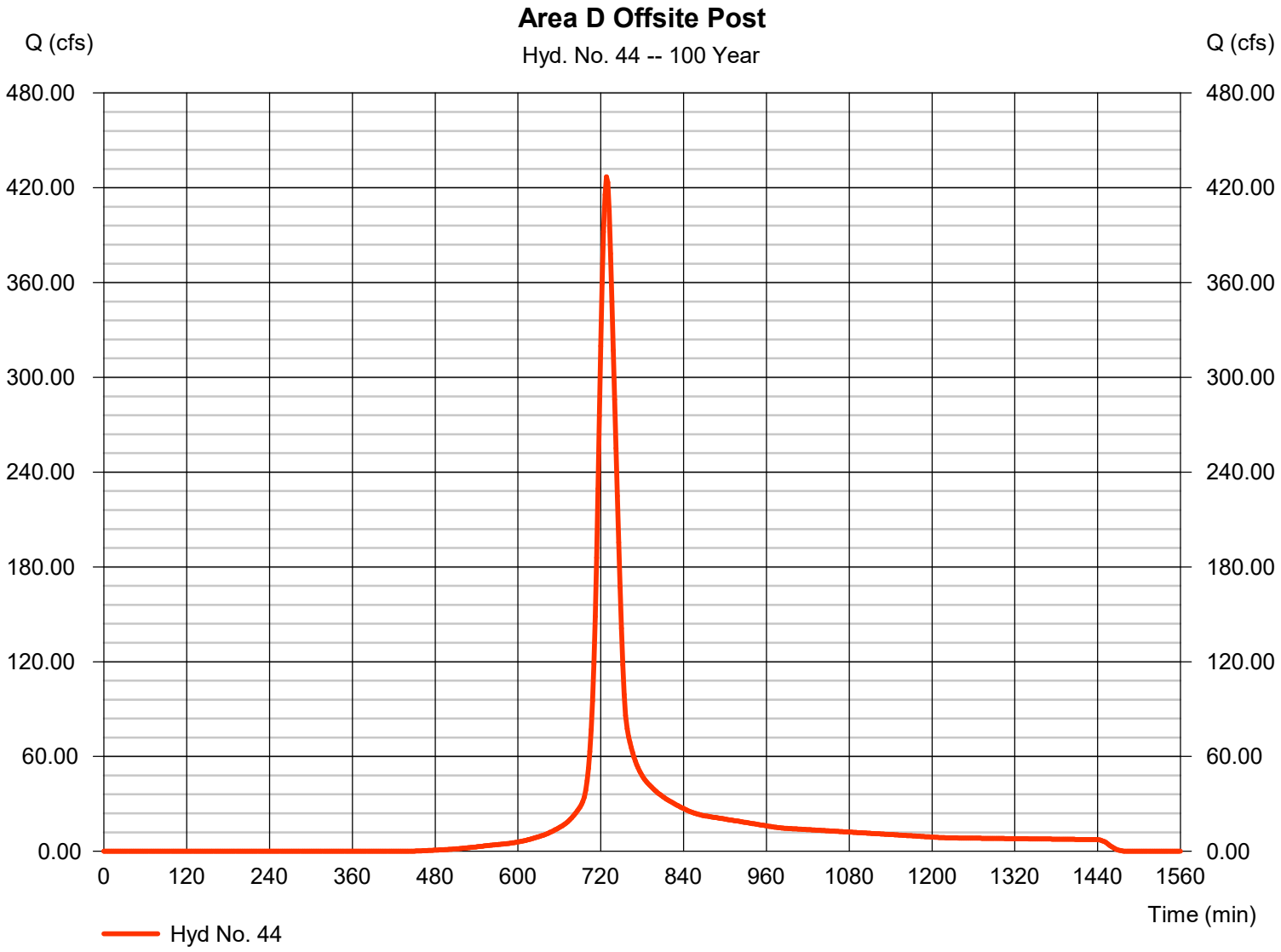


Hydrograph Report

Hyd. No. 44

Area D Offsite Post

Hydrograph type	=	SCS Runoff	Peak discharge	=	426.95 cfs
Storm frequency	=	100 yrs	Time to peak	=	728 min
Time interval	=	2 min	Hyd. volume	=	1,566,526 cuft
Drainage area	=	100.690 ac	Curve number	=	72
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	24.00 min
Total precip.	=	7.61 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

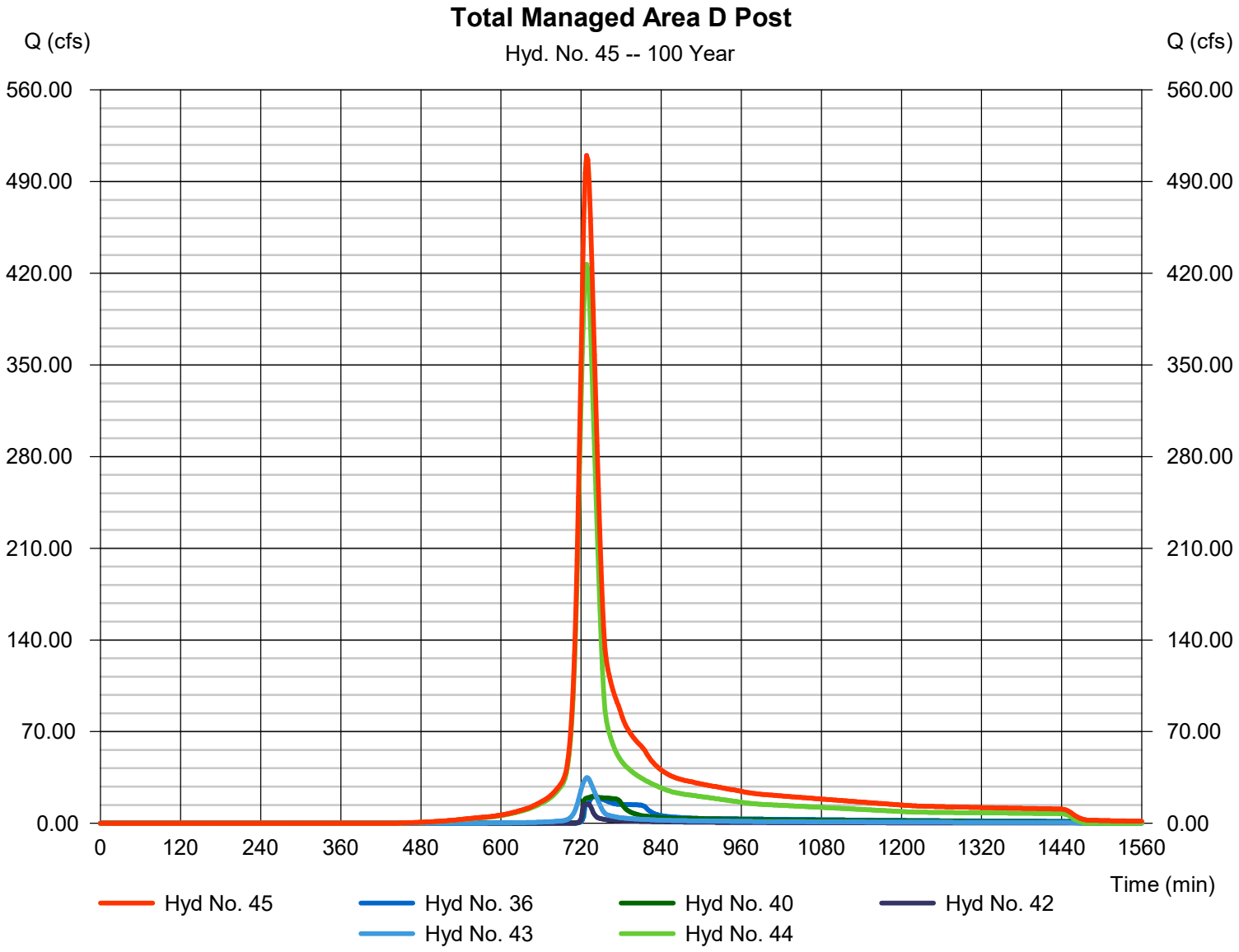


Hydrograph Report

Hyd. No. 45

Total Managed Area D Post

Hydrograph type	= Combine	Peak discharge	= 509.98 cfs
Storm frequency	= 100 yrs	Time to peak	= 728 min
Time interval	= 2 min	Hyd. volume	= 2,251,225 cuft
Inflow hyds.	= 36, 40, 42, 43, 44	Contrib. drain. area	= 110.560 ac

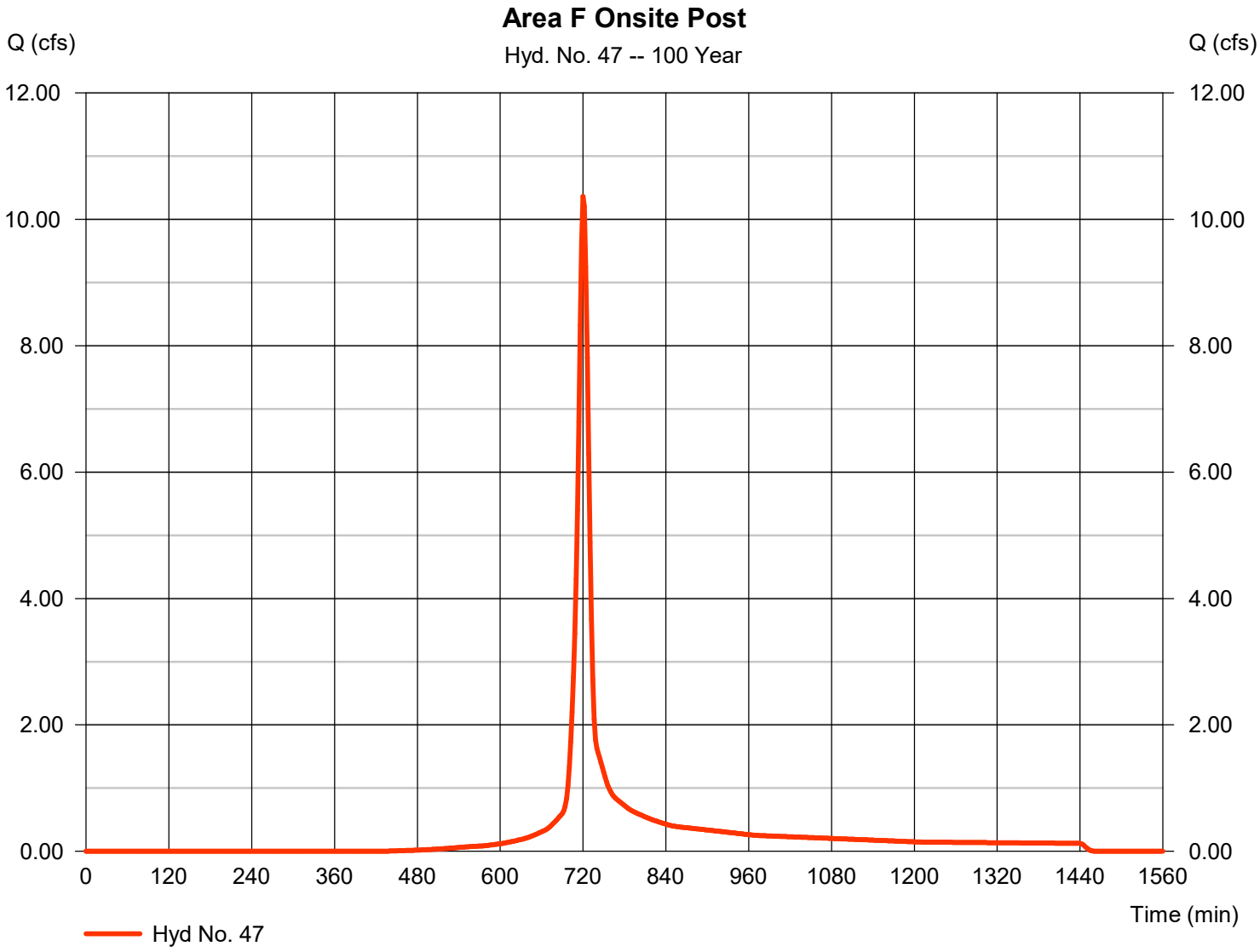


Hydrograph Report

Hyd. No. 47

Area F Onsite Post

Hydrograph type	=	SCS Runoff	Peak discharge	=	10.36 cfs
Storm frequency	=	100 yrs	Time to peak	=	720 min
Time interval	=	2 min	Hyd. volume	=	26,909 cuft
Drainage area	=	1.630 ac	Curve number	=	72.5
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	12.60 min
Total precip.	=	7.61 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

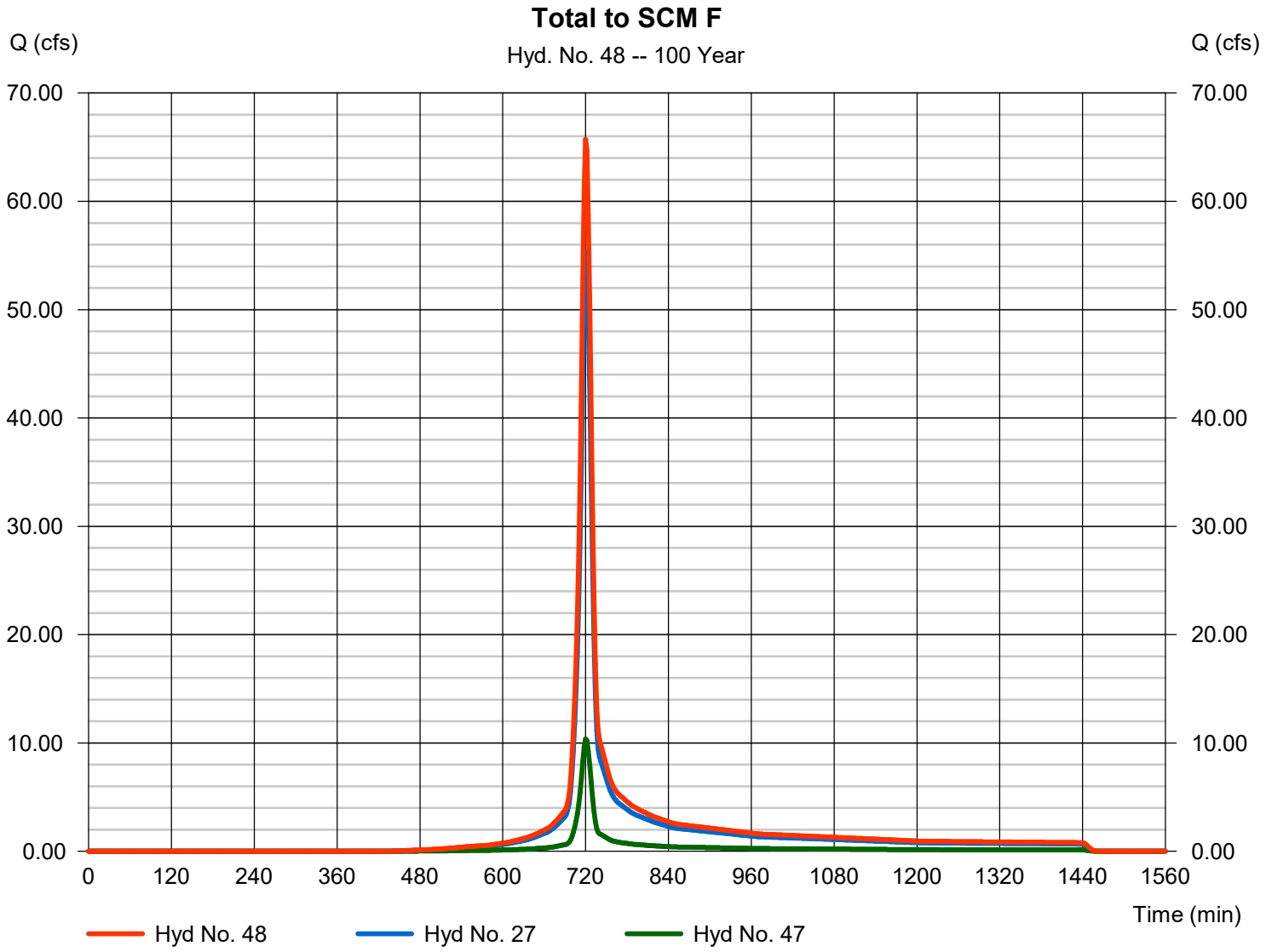


Hydrograph Report

Hyd. No. 48

Total to SCM F

Hydrograph type	= Combine	Peak discharge	= 65.74 cfs
Storm frequency	= 100 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 170,660 cuft
Inflow hyds.	= 27, 47	Contrib. drain. area	= 10.360 ac



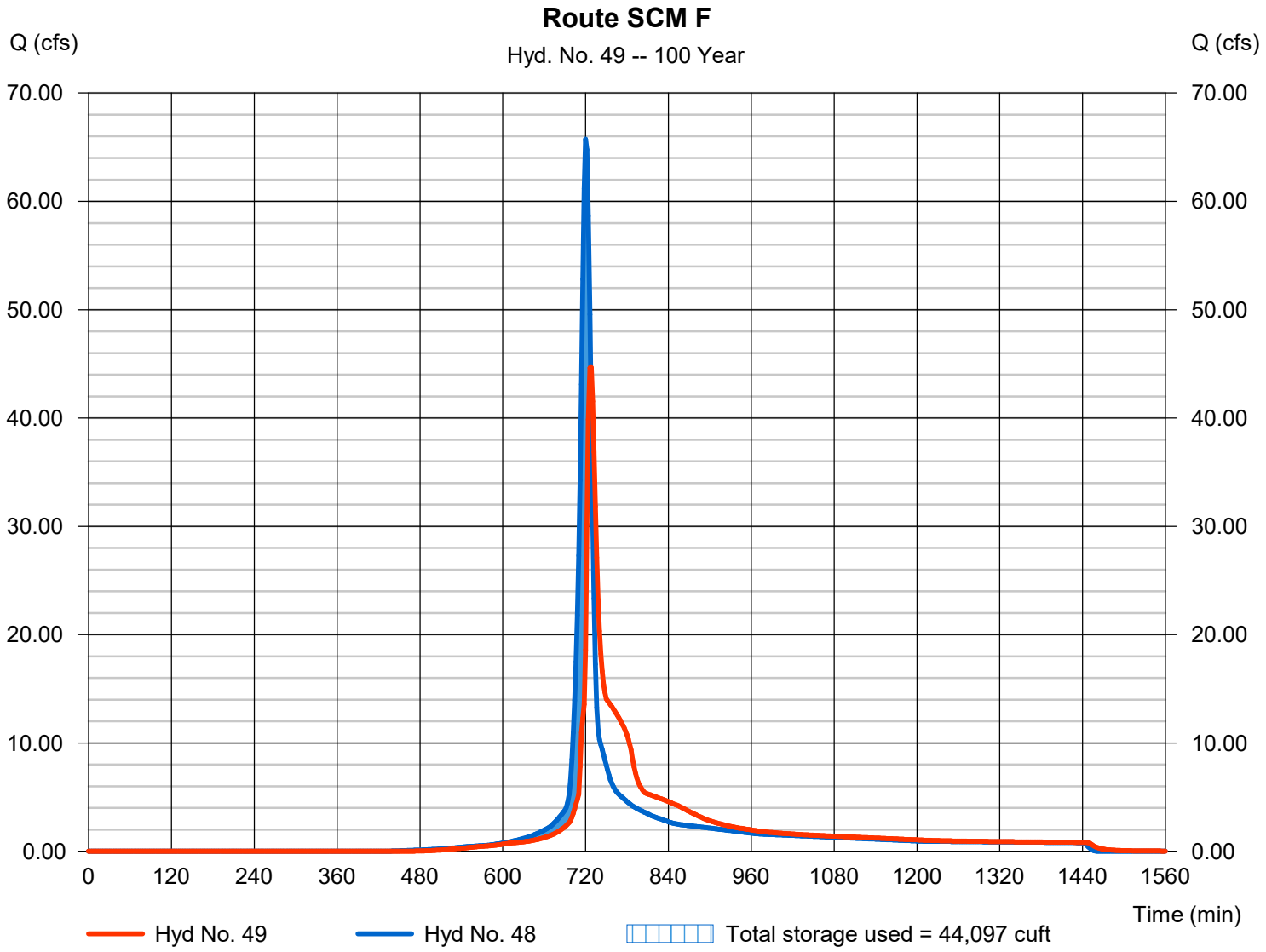
Hydrograph Report

Hyd. No. 49

Route SCM F

Hydrograph type	=	Reservoir	Peak discharge	=	44.66 cfs
Storm frequency	=	100 yrs	Time to peak	=	728 min
Time interval	=	2 min	Hyd. volume	=	170,650 cuft
Inflow hyd. No.	=	48 - Total to SCM F	Max. Elevation	=	391.94 ft
Reservoir name	=	SCM F	Max. Storage	=	44,097 cuft

Storage Indication method used.

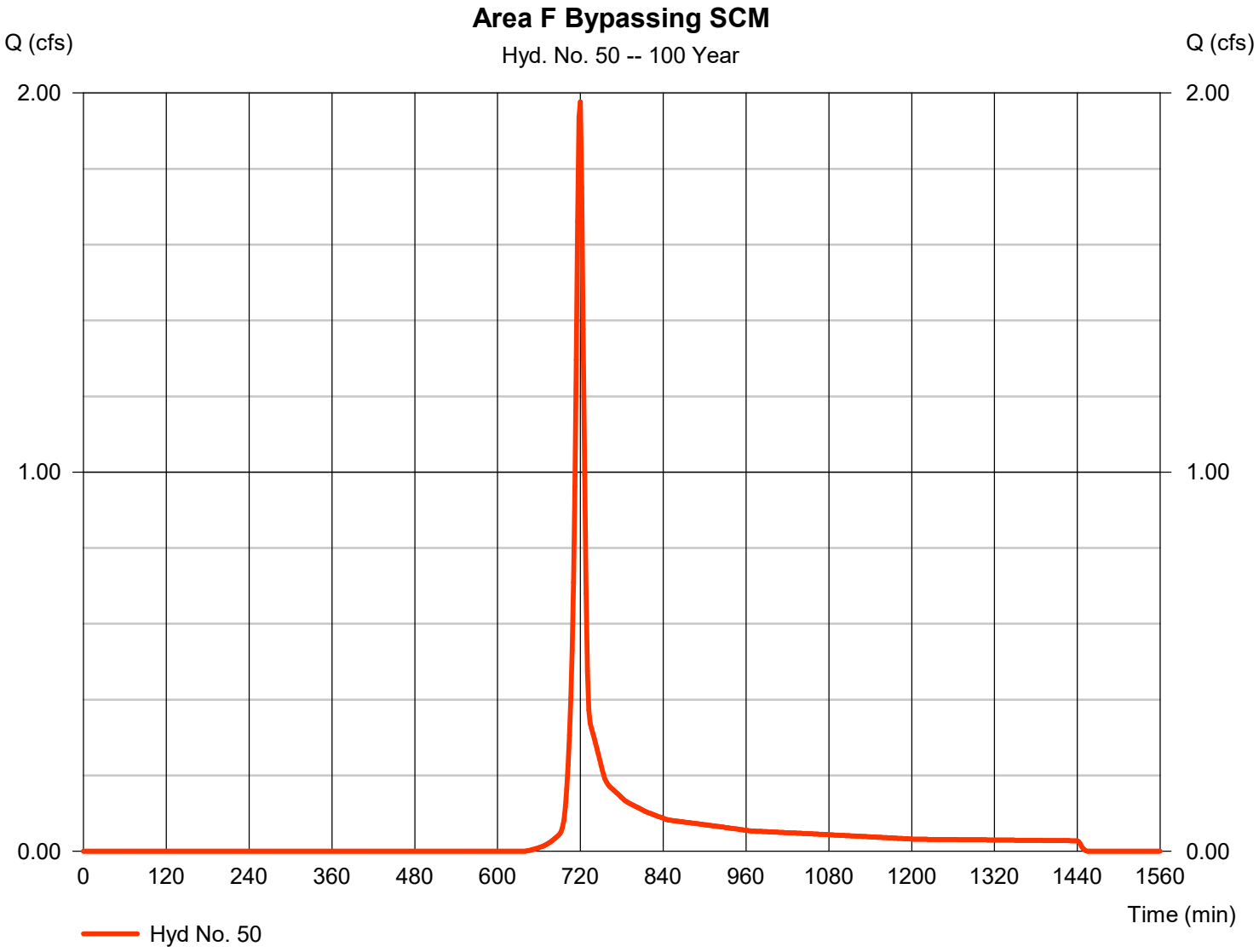


Hydrograph Report

Hyd. No. 50

Area F Bypassing SCM

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.976 cfs
Storm frequency	=	100 yrs	Time to peak	=	720 min
Time interval	=	2 min	Hyd. volume	=	4,554 cuft
Drainage area	=	0.480 ac	Curve number	=	55.9
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	8.60 min
Total precip.	=	7.61 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

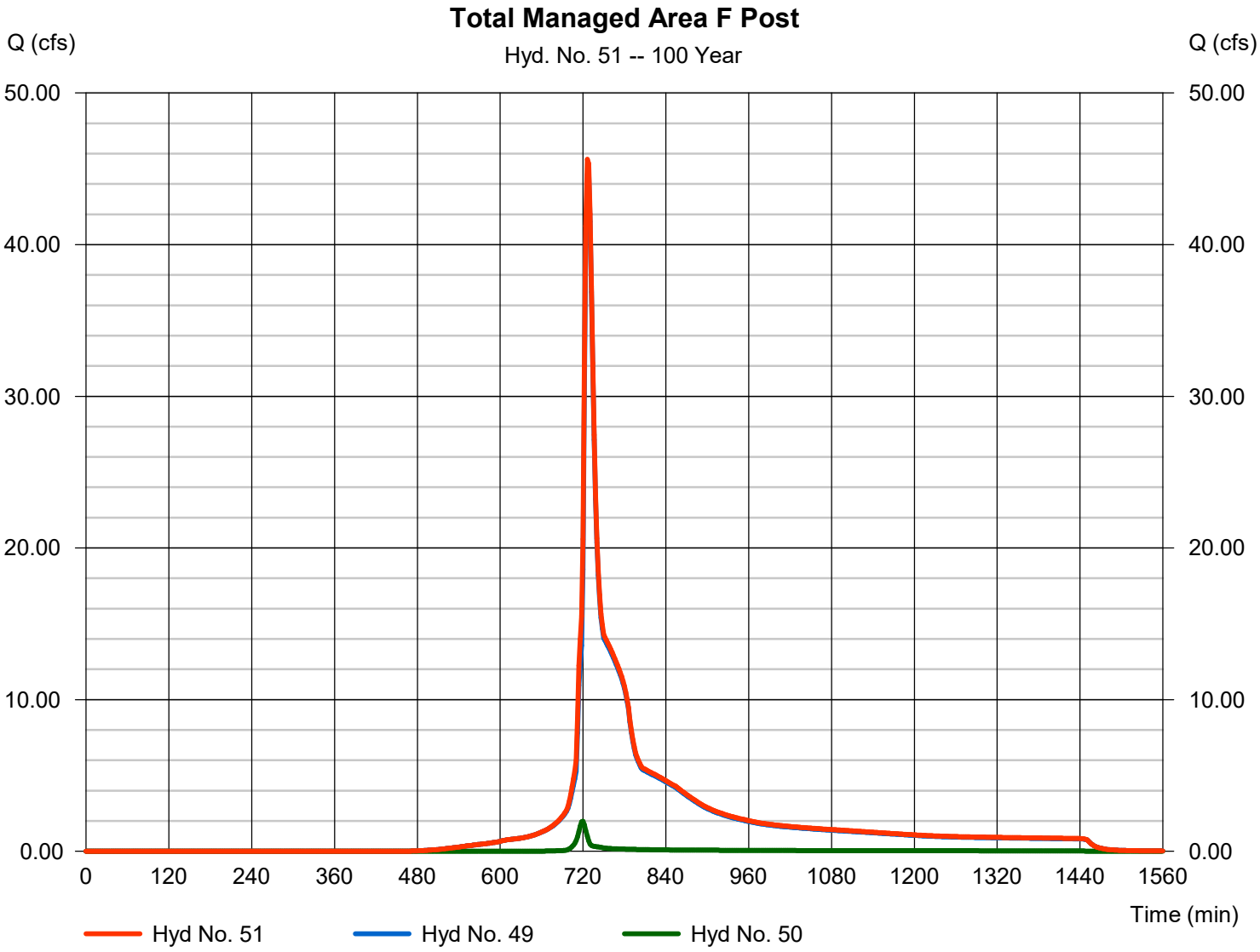


Hydrograph Report

Hyd. No. 51

Total Managed Area F Post

Hydrograph type	= Combine	Peak discharge	= 45.62 cfs
Storm frequency	= 100 yrs	Time to peak	= 726 min
Time interval	= 2 min	Hyd. volume	= 175,205 cuft
Inflow hyds.	= 49, 50	Contrib. drain. area	= 0.480 ac

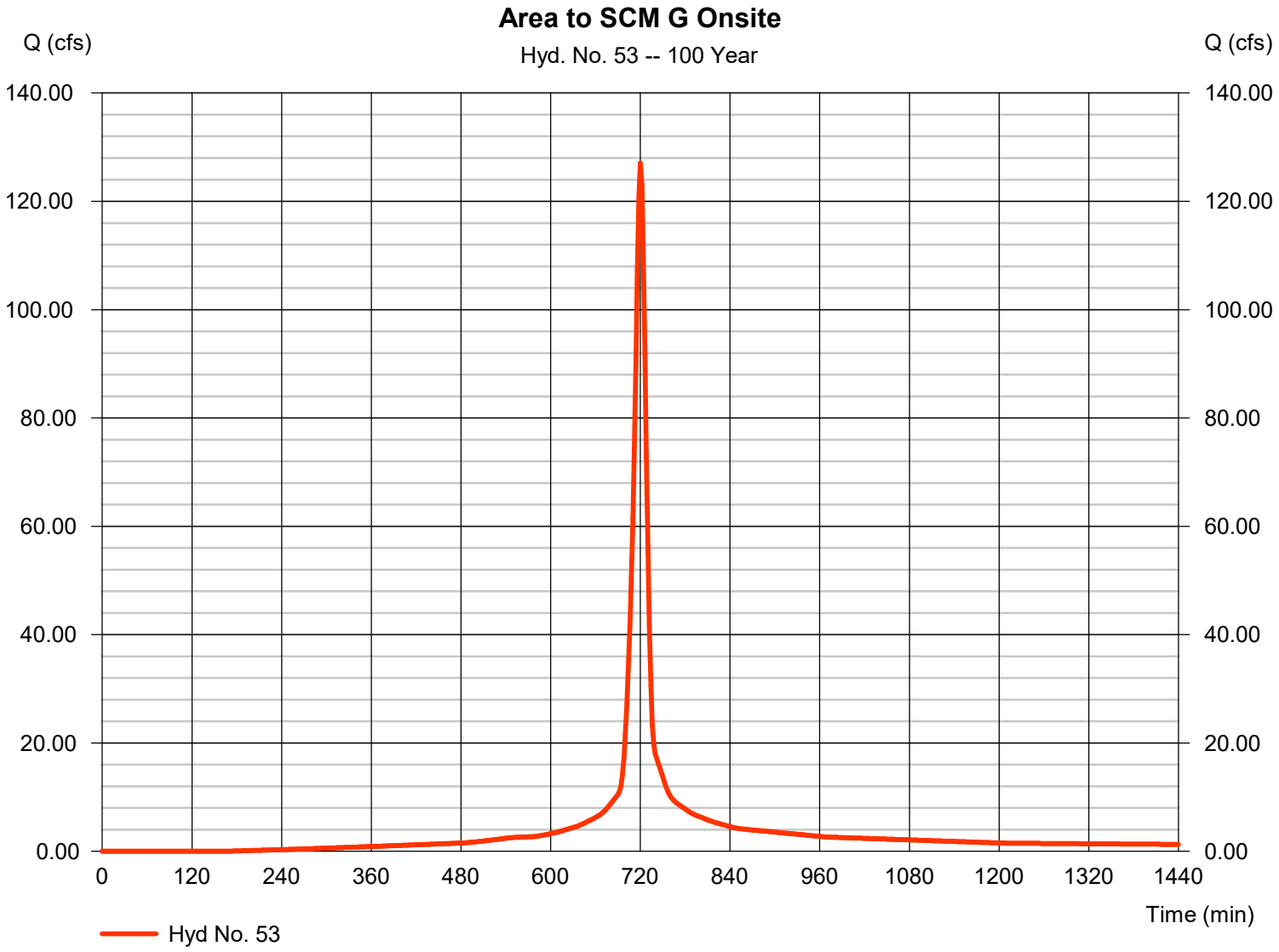


Hydrograph Report

Hyd. No. 53

Area to SCM G Onsite

Hydrograph type	= SCS Runoff	Peak discharge	= 127.06 cfs
Storm frequency	= 100 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 352,814 cuft
Drainage area	= 14.730 ac	Curve number	= 89.8
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 10.40 min
Total precip.	= 7.61 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

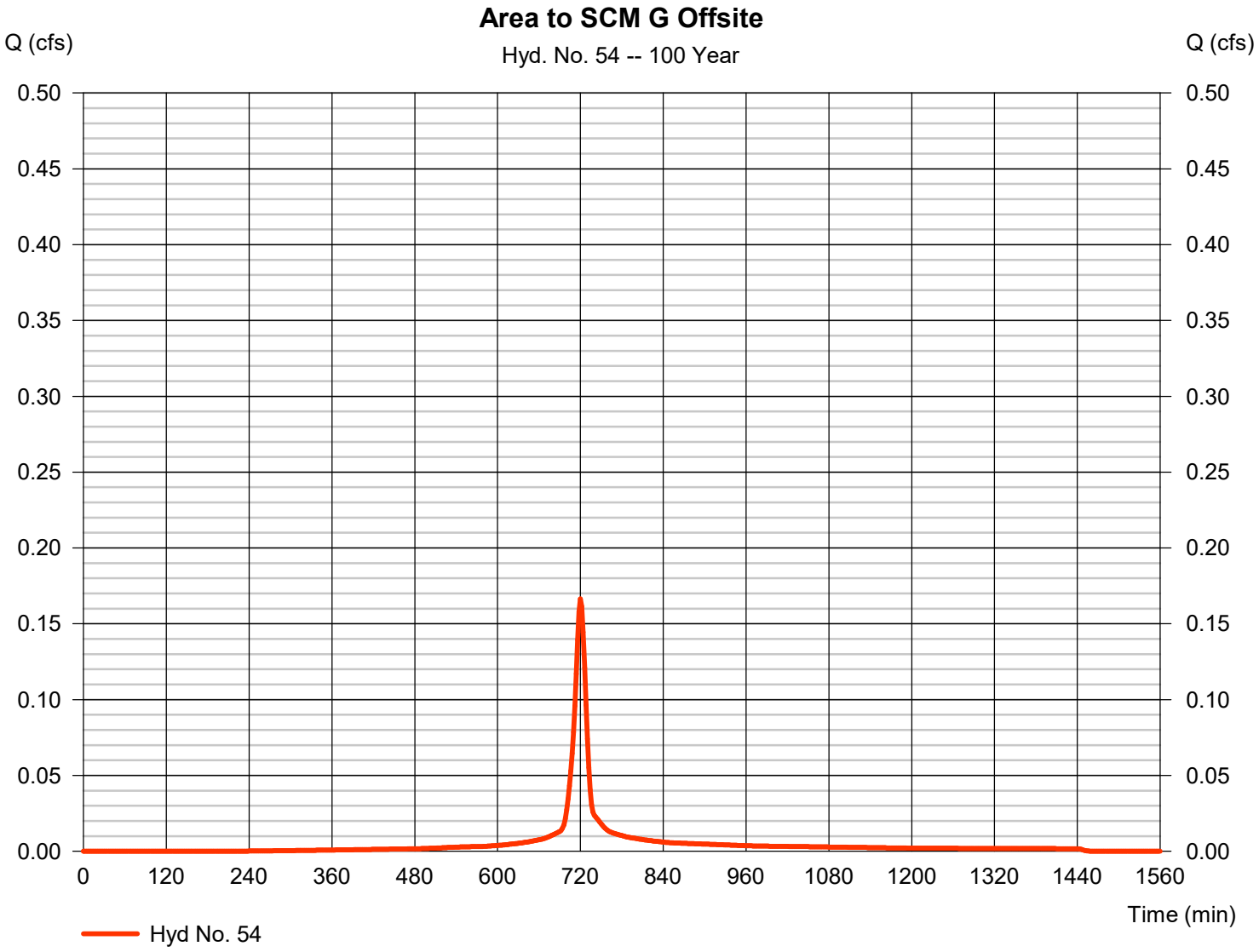


Hydrograph Report

Hyd. No. 54

Area to SCM G Offsite

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.166 cfs
Storm frequency	=	100 yrs	Time to peak	=	720 min
Time interval	=	2 min	Hyd. volume	=	453 cuft
Drainage area	=	0.020 ac	Curve number	=	86.8
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	10.40 min
Total precip.	=	7.61 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

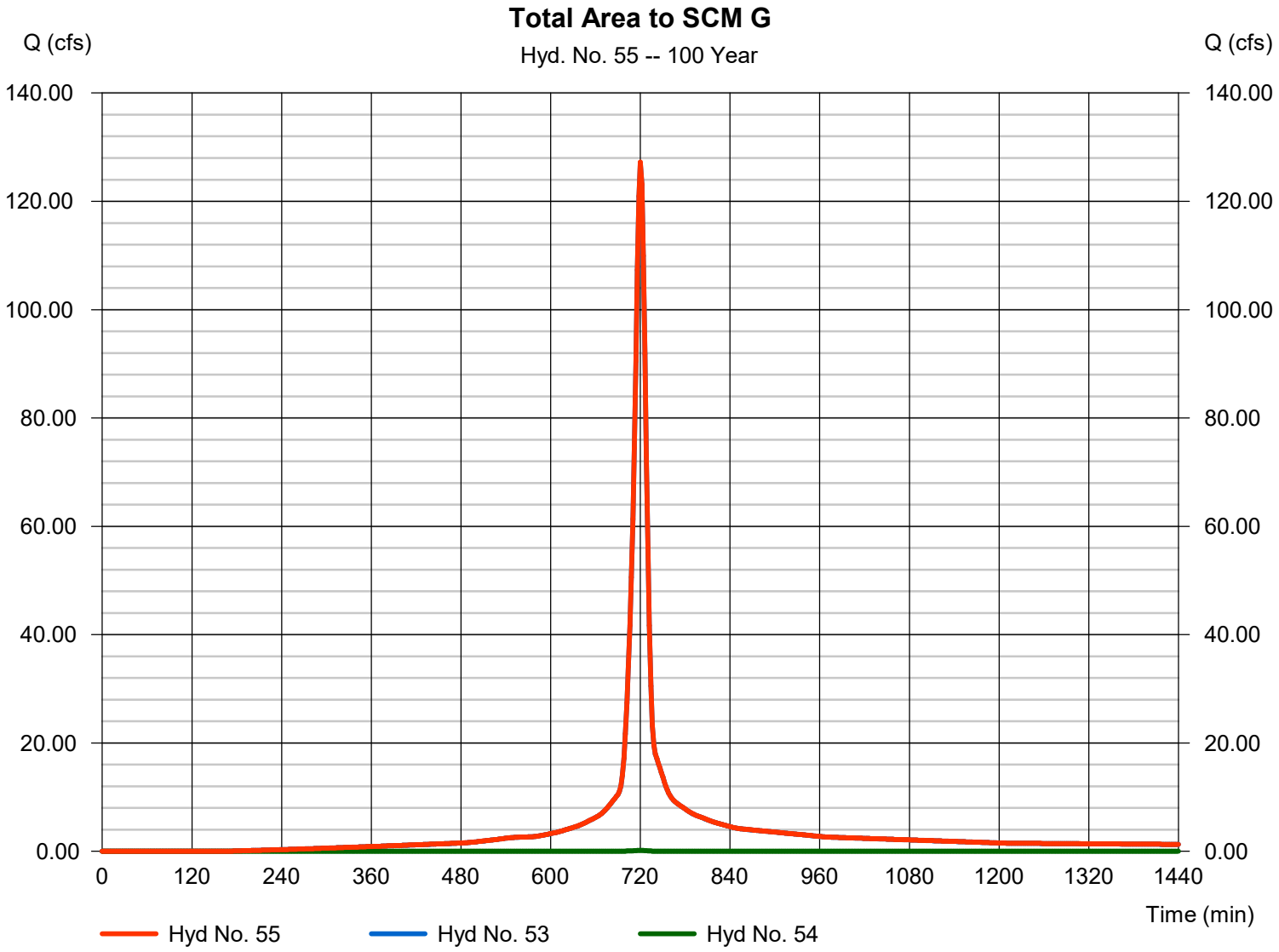


Hydrograph Report

Hyd. No. 55

Total Area to SCM G

Hydrograph type	= Combine	Peak discharge	= 127.23 cfs
Storm frequency	= 100 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 353,267 cuft
Inflow hyds.	= 53, 54	Contrib. drain. area	= 14.750 ac



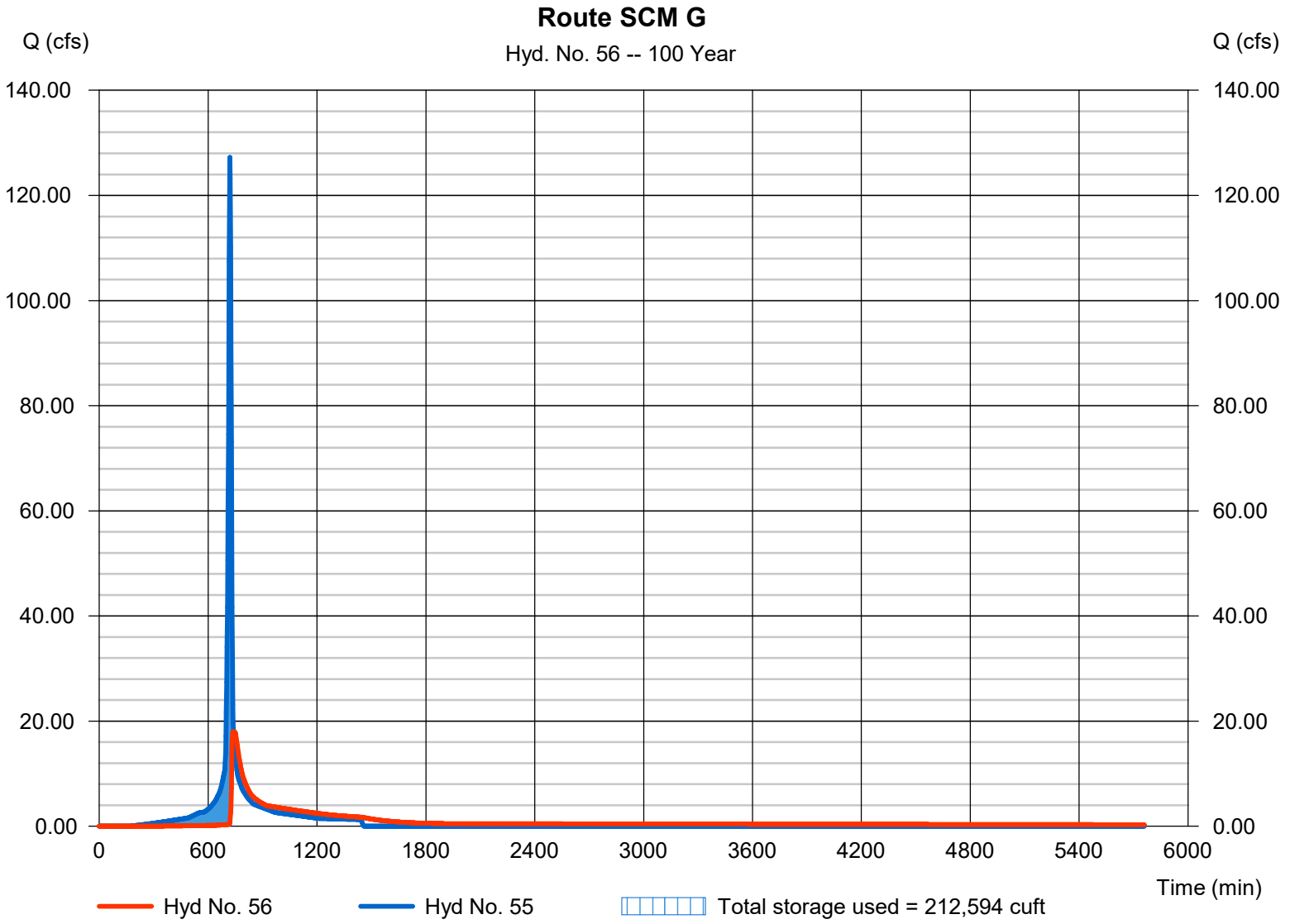
Hydrograph Report

Hyd. No. 56

Route SCM G

Hydrograph type	=	Reservoir	Peak discharge	=	17.97 cfs
Storm frequency	=	100 yrs	Time to peak	=	740 min
Time interval	=	2 min	Hyd. volume	=	297,140 cuft
Inflow hyd. No.	=	55 - Total Area to SCM G	Max. Elevation	=	390.93 ft
Reservoir name	=	SCM G	Max. Storage	=	212,594 cuft

Storage Indication method used.

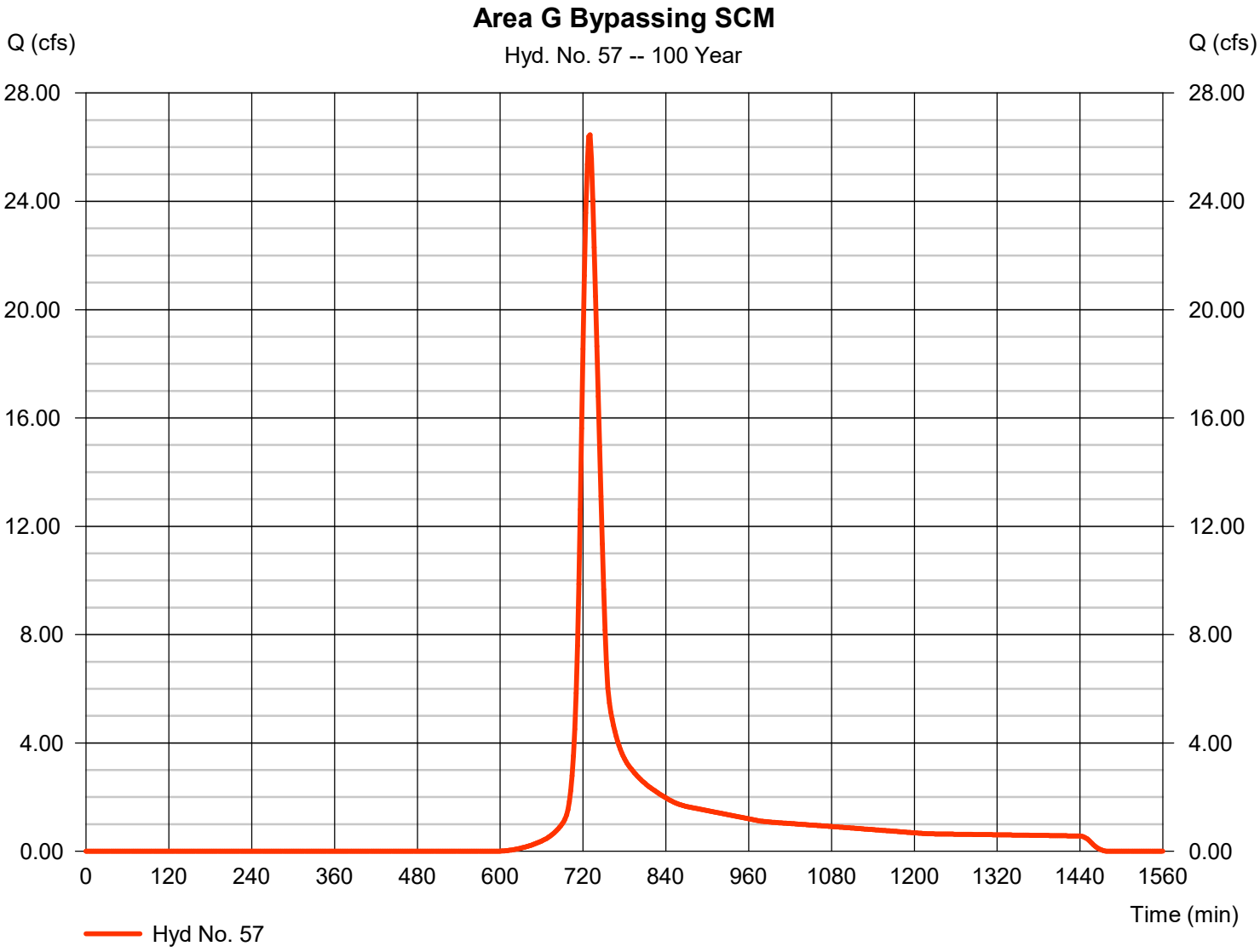


Hydrograph Report

Hyd. No. 57

Area G Bypassing SCM

Hydrograph type	=	SCS Runoff	Peak discharge	=	26.46 cfs
Storm frequency	=	100 yrs	Time to peak	=	730 min
Time interval	=	2 min	Hyd. volume	=	99,680 cuft
Drainage area	=	9.070 ac	Curve number	=	60.3
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	23.80 min
Total precip.	=	7.61 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

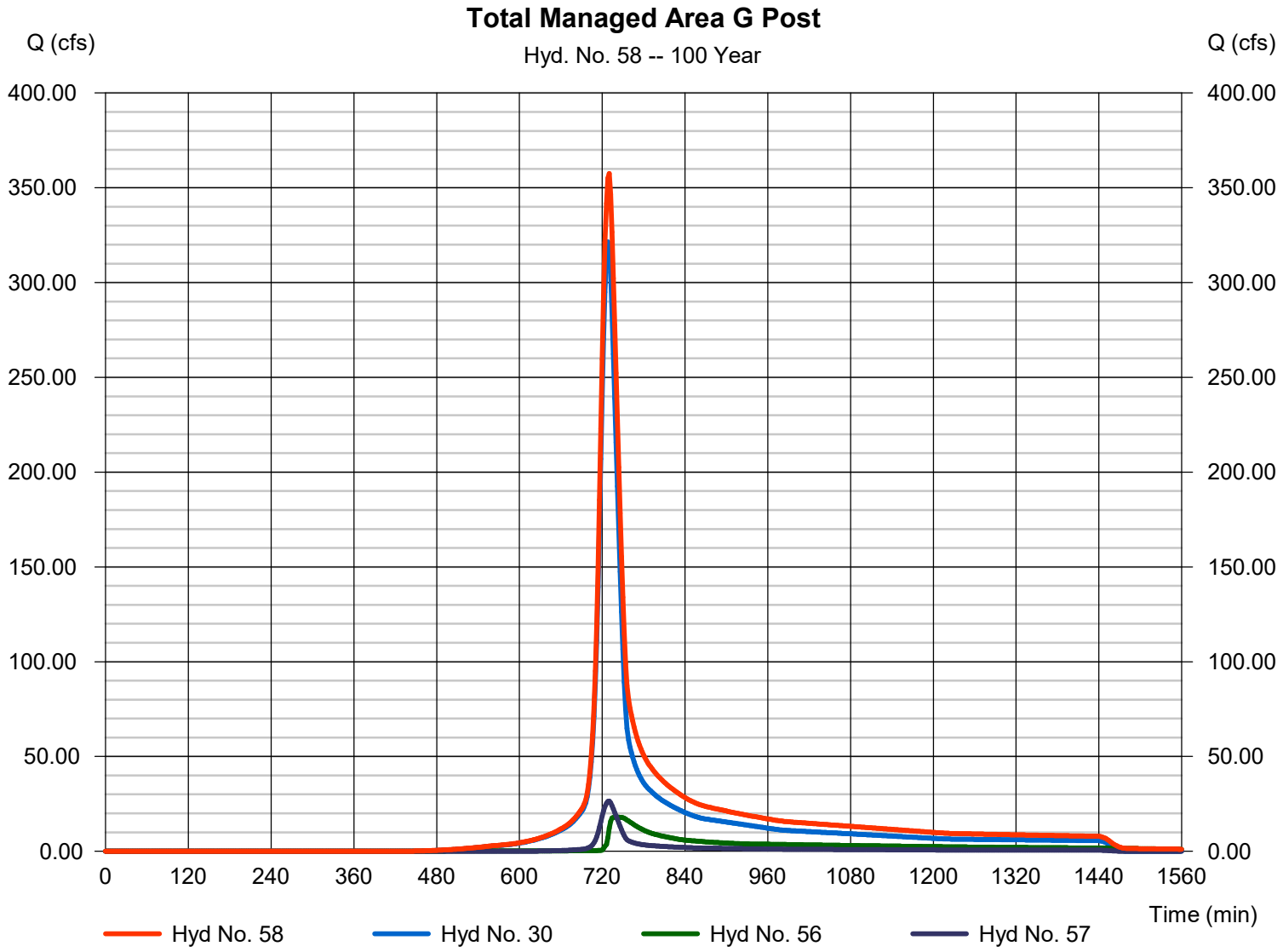


Hydrograph Report

Hyd. No. 58

Total Managed Area G Post

Hydrograph type	=	Combine	Peak discharge	=	357.45 cfs
Storm frequency	=	100 yrs	Time to peak	=	730 min
Time interval	=	2 min	Hyd. volume	=	1,576,320 cuft
Inflow hyds.	=	30, 56, 57	Contrib. drain. area	=	85.670 ac

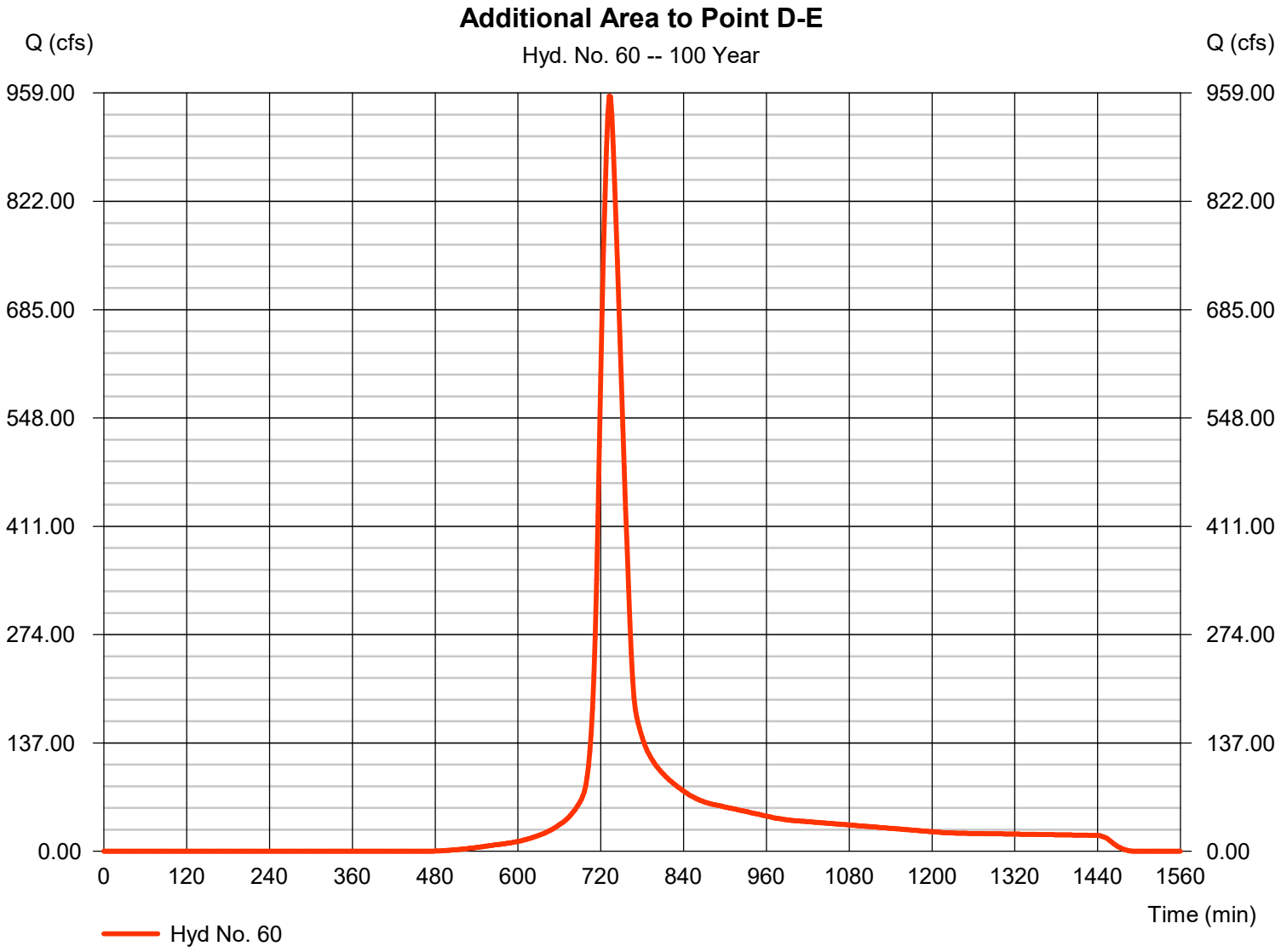


Hydrograph Report

Hyd. No. 60

Additional Area to Point D-E

Hydrograph type	= SCS Runoff	Peak discharge	= 955.12 cfs
Storm frequency	= 100 yrs	Time to peak	= 732 min
Time interval	= 2 min	Hyd. volume	= 4,136,777 cuft
Drainage area	= 271.000 ac	Curve number	= 70.2
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 32.50 min
Total precip.	= 7.61 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

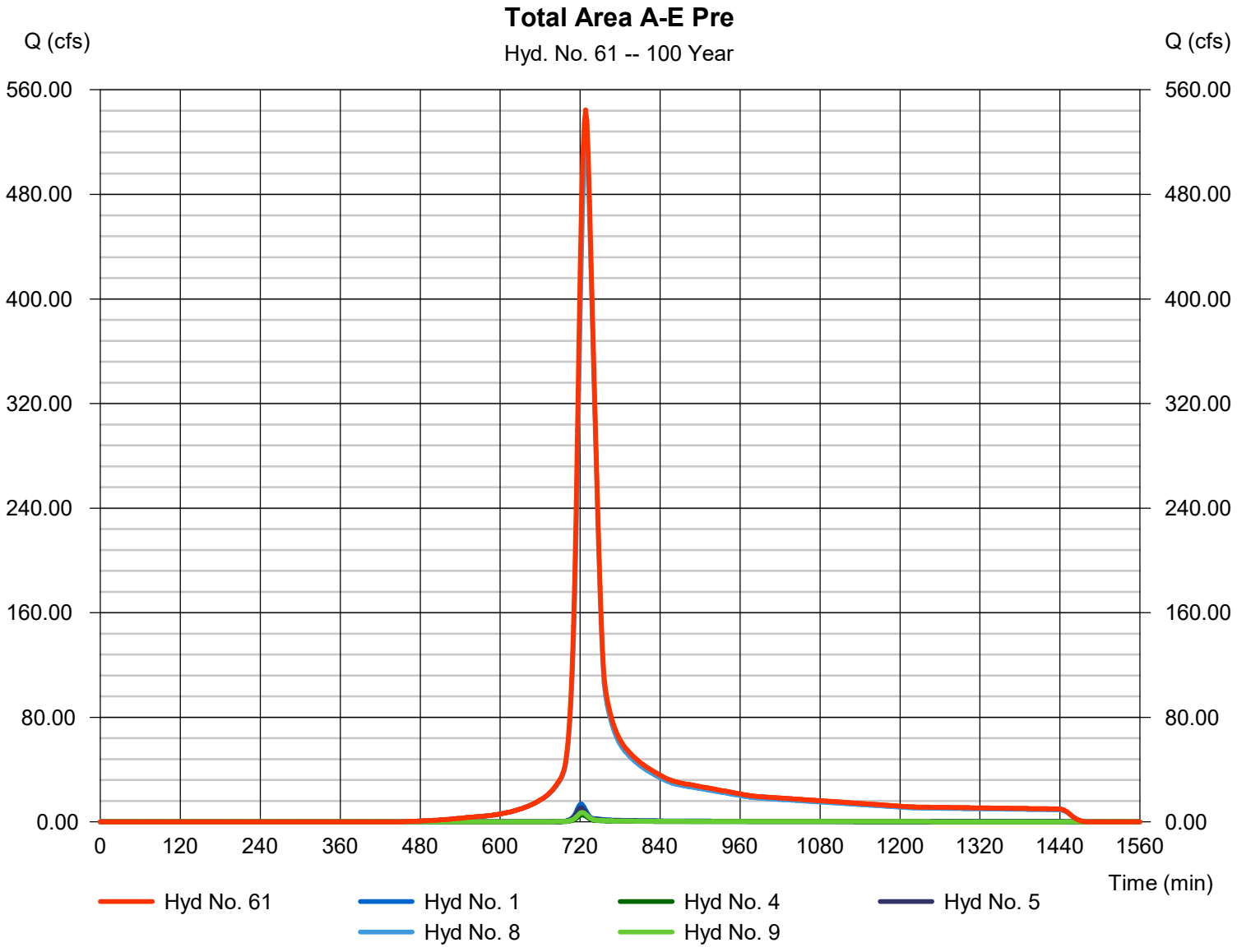


Hydrograph Report

Hyd. No. 61

Total Area A-E Pre

Hydrograph type	= Combine	Peak discharge	= 544.57 cfs
Storm frequency	= 100 yrs	Time to peak	= 728 min
Time interval	= 2 min	Hyd. volume	= 2,010,413 cuft
Inflow hyds.	= 1, 4, 5, 8, 9	Contrib. drain. area	= 10.720 ac

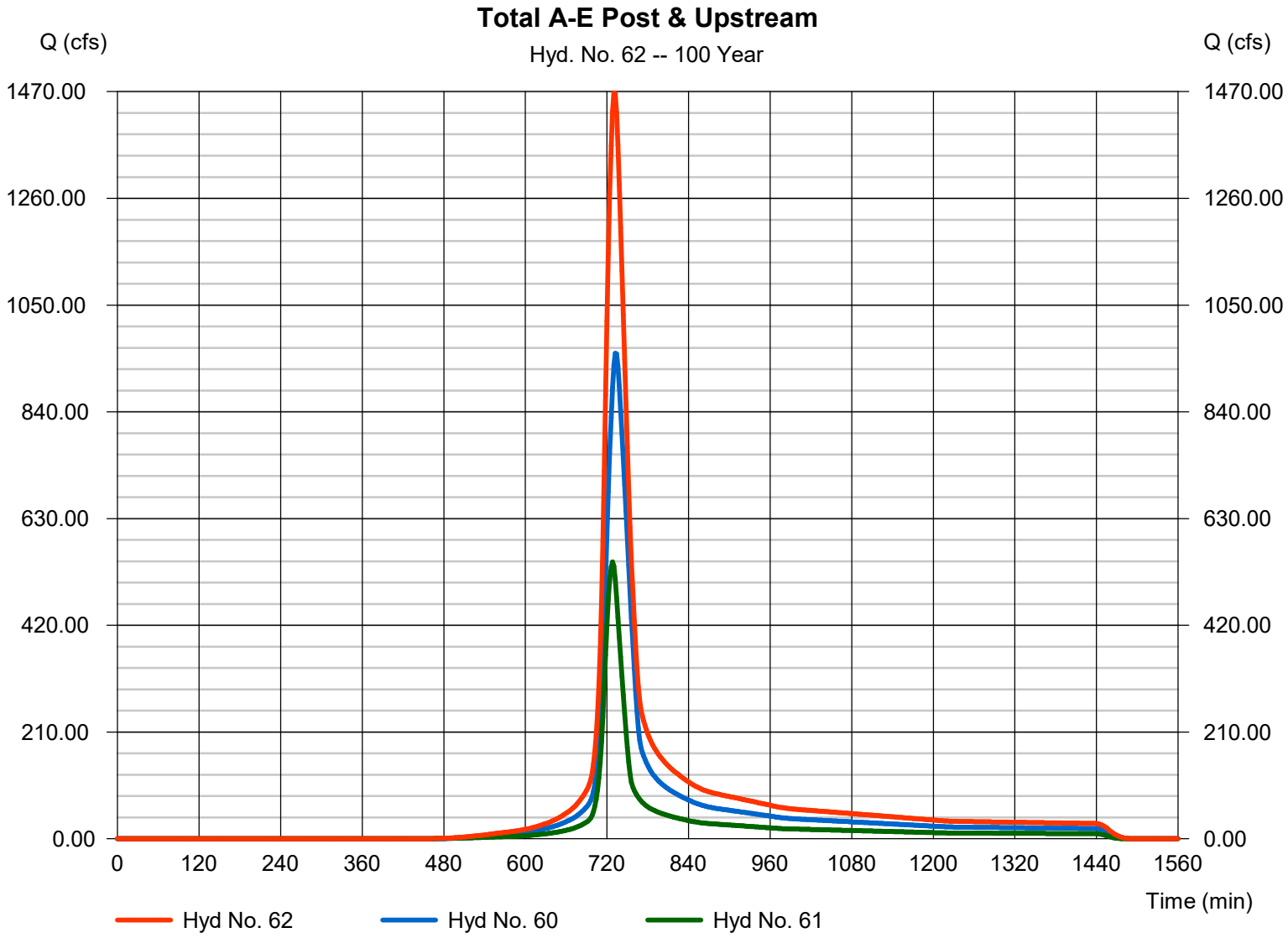


Hydrograph Report

Hyd. No. 62

Total A-E Post & Upstream

Hydrograph type	= Combine	Peak discharge	= 1467.49 cfs
Storm frequency	= 100 yrs	Time to peak	= 730 min
Time interval	= 2 min	Hyd. volume	= 6,147,193 cuft
Inflow hyds.	= 60, 61	Contrib. drain. area	= 271.000 ac



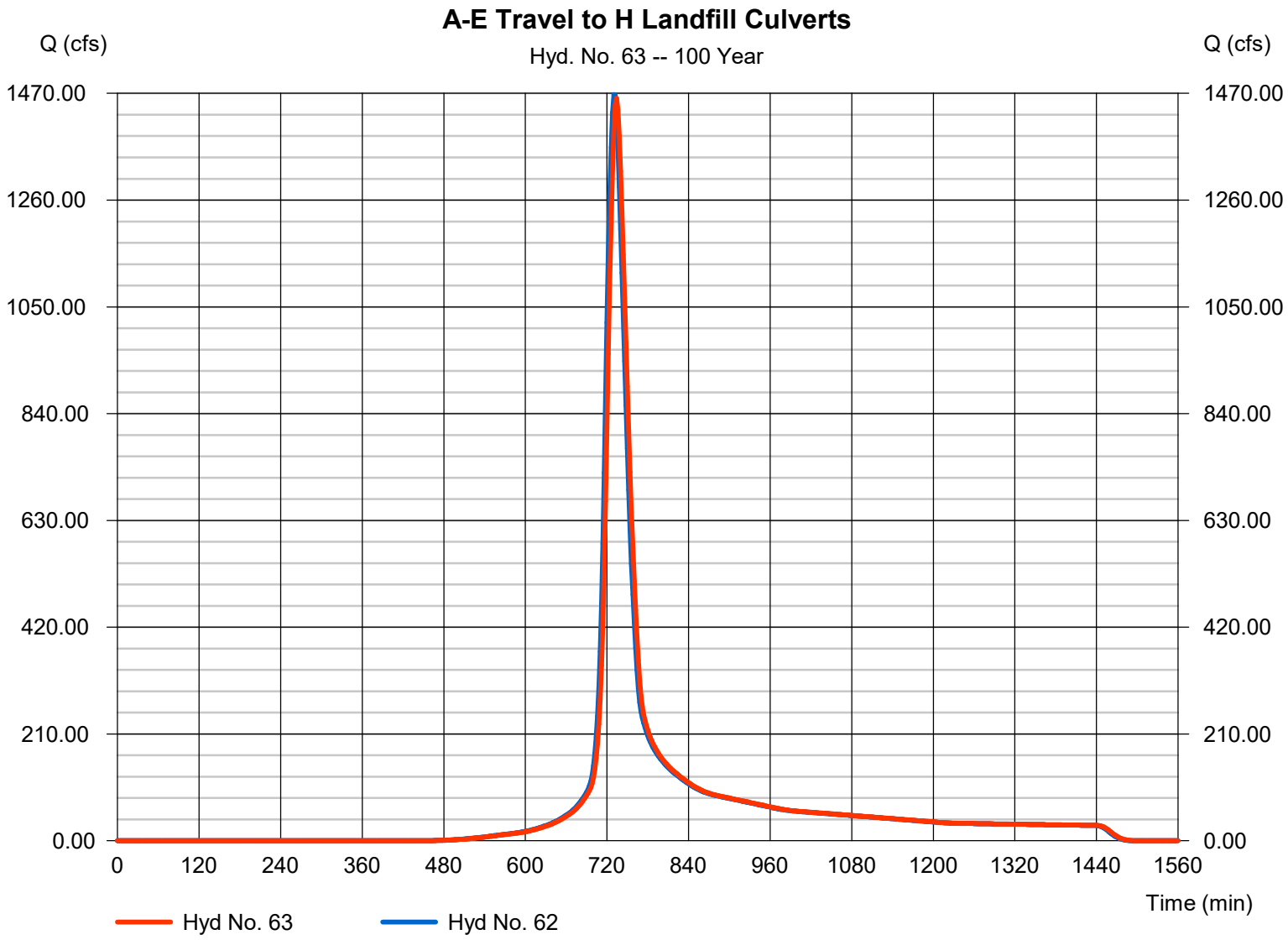
Hydrograph Report

Hyd. No. 63

A-E Travel to H Landfill Culverts

Hydrograph type	=	Reach	Peak discharge	=	1460.15 cfs
Storm frequency	=	100 yrs	Time to peak	=	734 min
Time interval	=	2 min	Hyd. volume	=	6,147,189 cuft
Inflow hyd. No.	=	62 - Total A-E Post & Upstream	Section type	=	Trapezoidal
Reach length	=	1500.0 ft	Channel slope	=	0.7 %
Manning's n	=	0.025	Bottom width	=	6.0 ft
Side slope	=	2.0:1	Max. depth	=	2.0 ft
Rating curve x	=	1.509	Rating curve m	=	1.374
Ave. velocity	=	9.82 ft/s	Routing coeff.	=	0.7012

Modified Att-Kin routing method used.

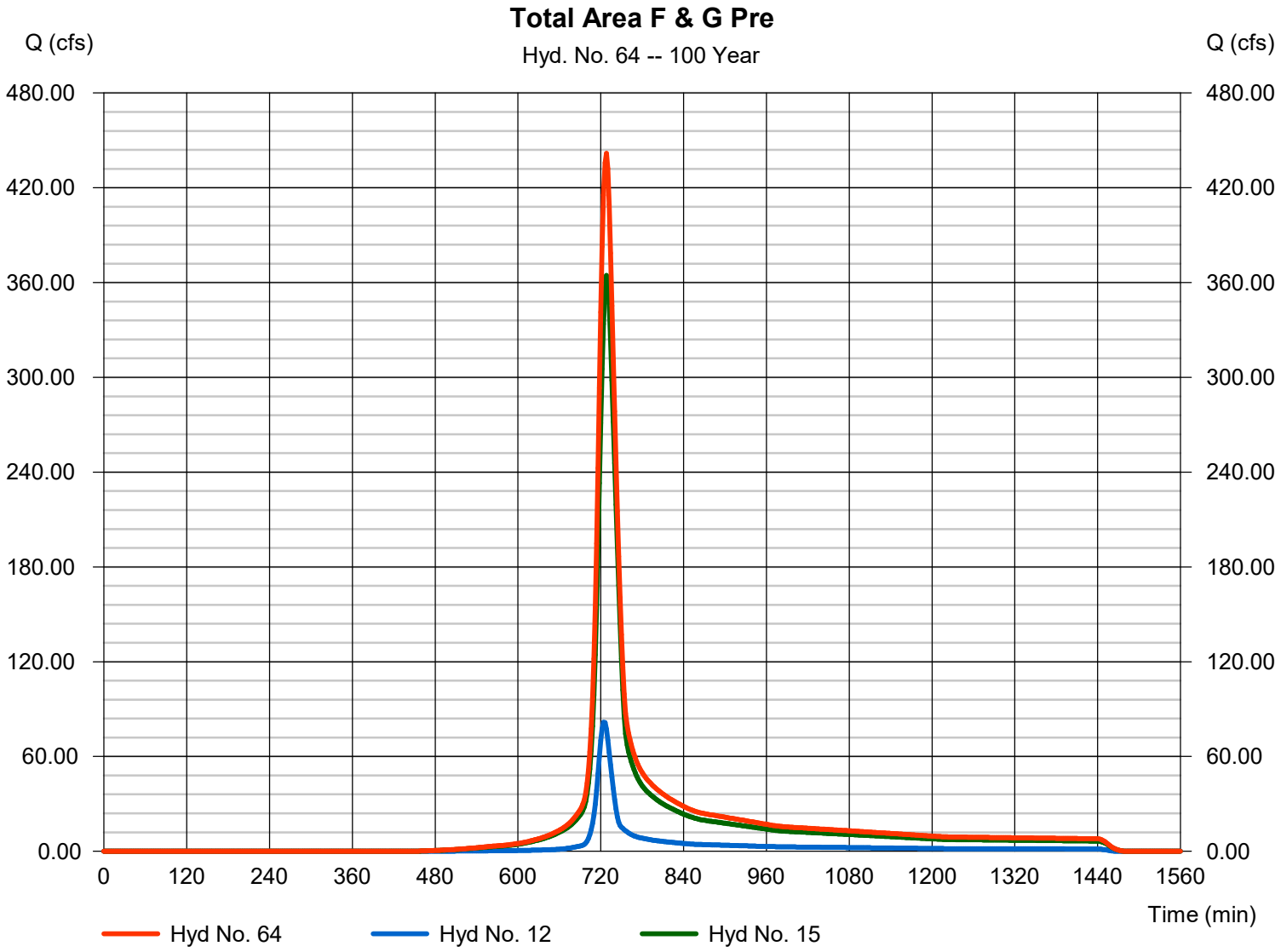


Hydrograph Report

Hyd. No. 64

Total Area F & G Pre

Hydrograph type	= Combine	Peak discharge	= 441.72 cfs
Storm frequency	= 100 yrs	Time to peak	= 728 min
Time interval	= 2 min	Hyd. volume	= 1,603,798 cuft
Inflow hyds.	= 12, 15	Contrib. drain. area	= 0.000 ac



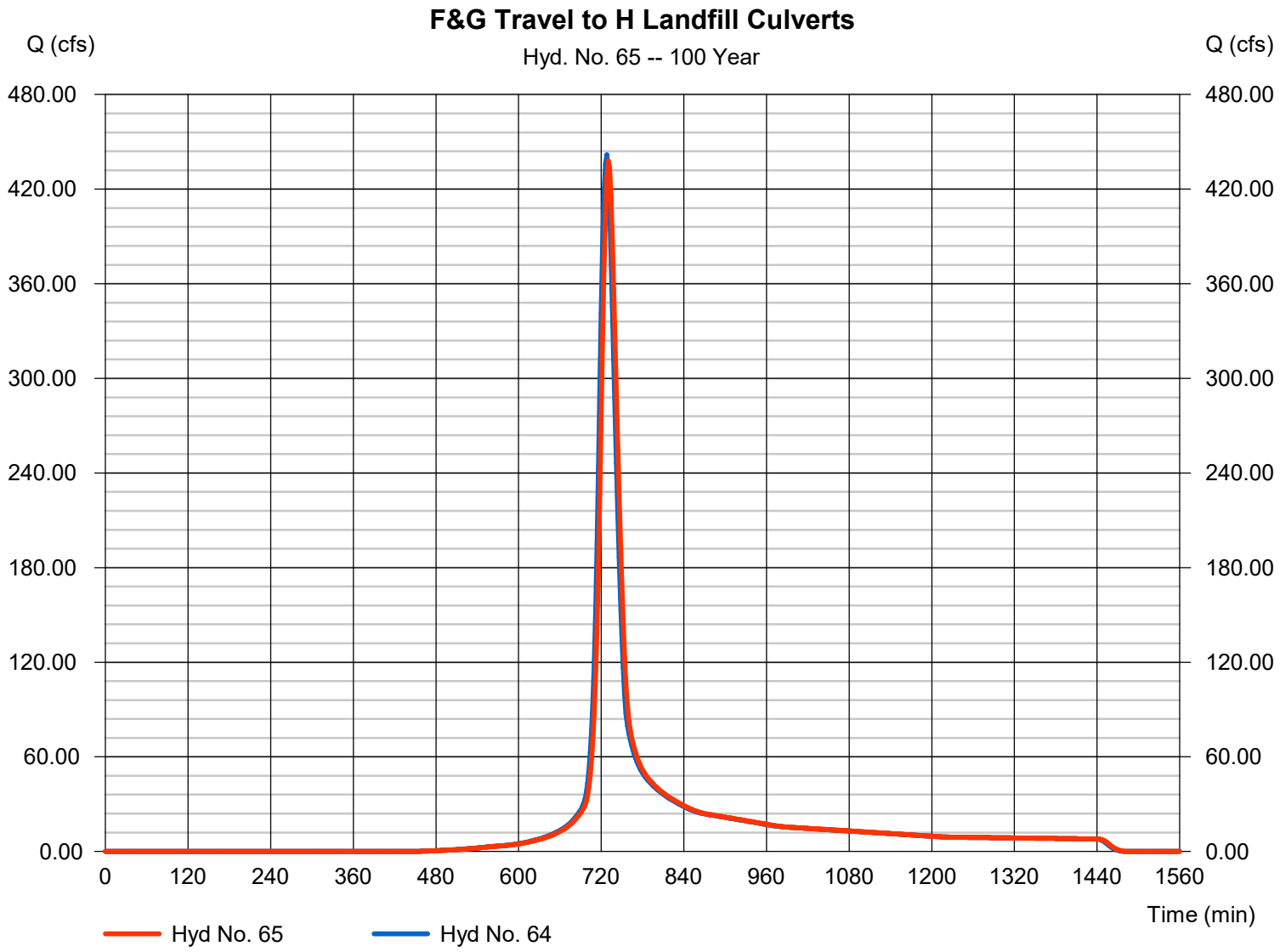
Hydrograph Report

Hyd. No. 65

F&G Travel to H Landfill Culverts

Hydrograph type	=	Reach	Peak discharge	=	438.08 cfs
Storm frequency	=	100 yrs	Time to peak	=	730 min
Time interval	=	2 min	Hyd. volume	=	1,603,796 cuft
Inflow hyd. No.	=	64 - Total Area F & G Pre	Section type	=	Trapezoidal
Reach length	=	1300.0 ft	Channel slope	=	1.5 %
Manning's n	=	0.025	Bottom width	=	6.0 ft
Side slope	=	2.0:1	Max. depth	=	2.0 ft
Rating curve x	=	2.209	Rating curve m	=	1.374
Ave. velocity	=	9.35 ft/s	Routing coeff.	=	0.7443

Modified Att-Kin routing method used.

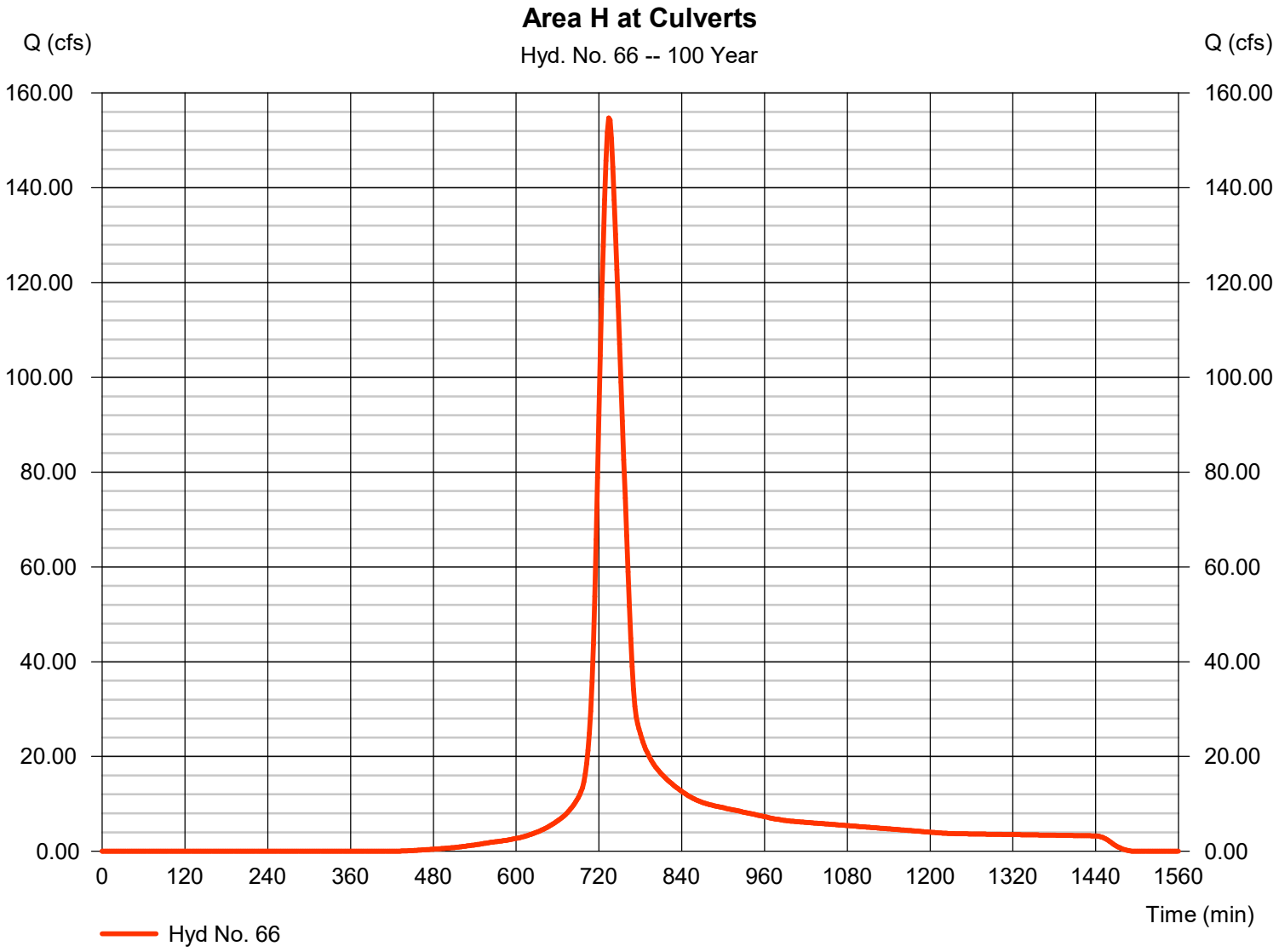


Hydrograph Report

Hyd. No. 66

Area H at Culverts

Hydrograph type	=	SCS Runoff	Peak discharge	=	154.76 cfs
Storm frequency	=	100 yrs	Time to peak	=	734 min
Time interval	=	2 min	Hyd. volume	=	700,964 cuft
Drainage area	=	43.300 ac	Curve number	=	73.4
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	35.10 min
Total precip.	=	7.61 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

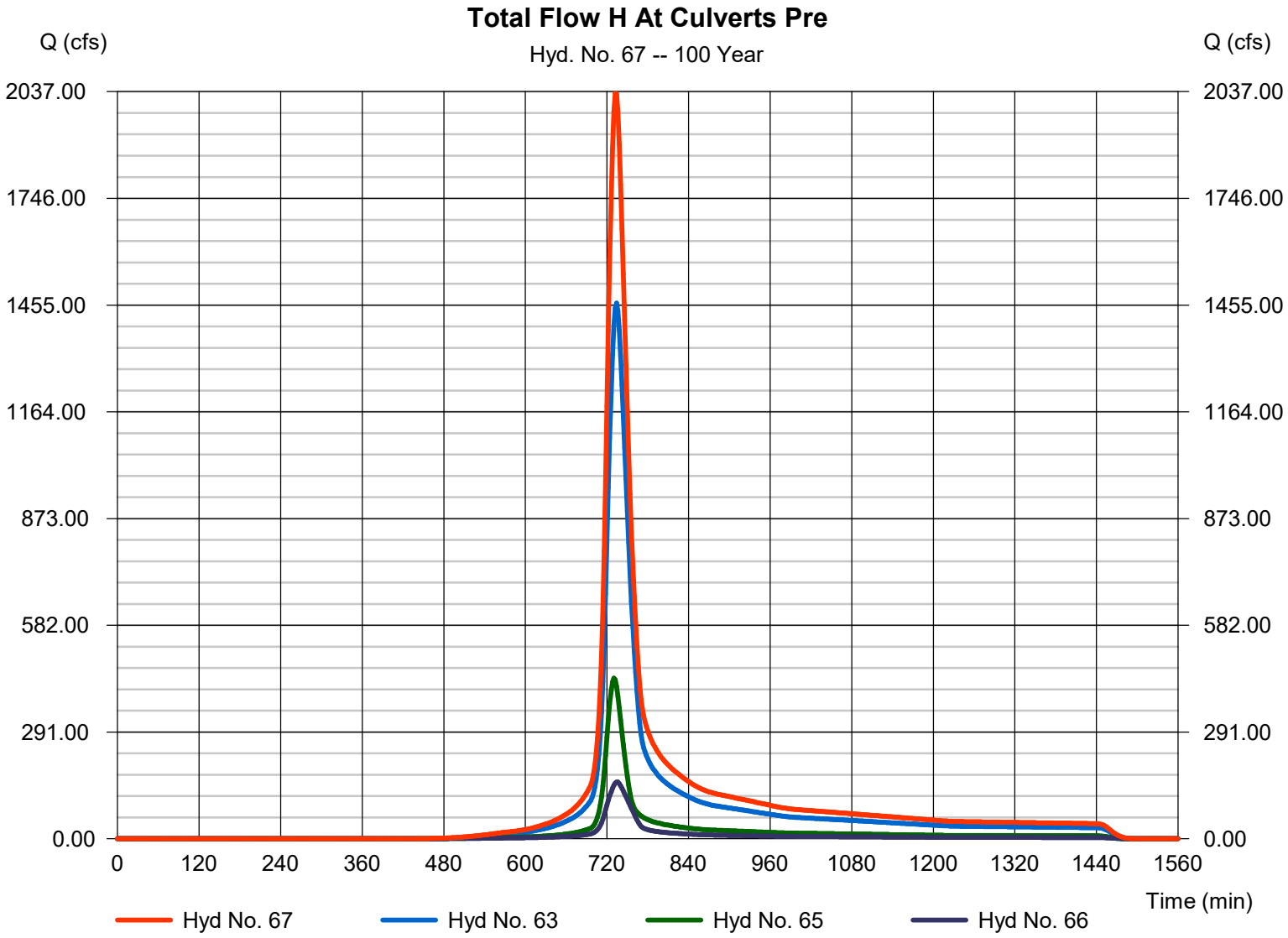


Hydrograph Report

Hyd. No. 67

Total Flow H At Culverts Pre

Hydrograph type	= Combine	Peak discharge	= 2032.24 cfs
Storm frequency	= 100 yrs	Time to peak	= 732 min
Time interval	= 2 min	Hyd. volume	= 8,451,954 cuft
Inflow hyds.	= 63, 65, 66	Contrib. drain. area	= 43.300 ac

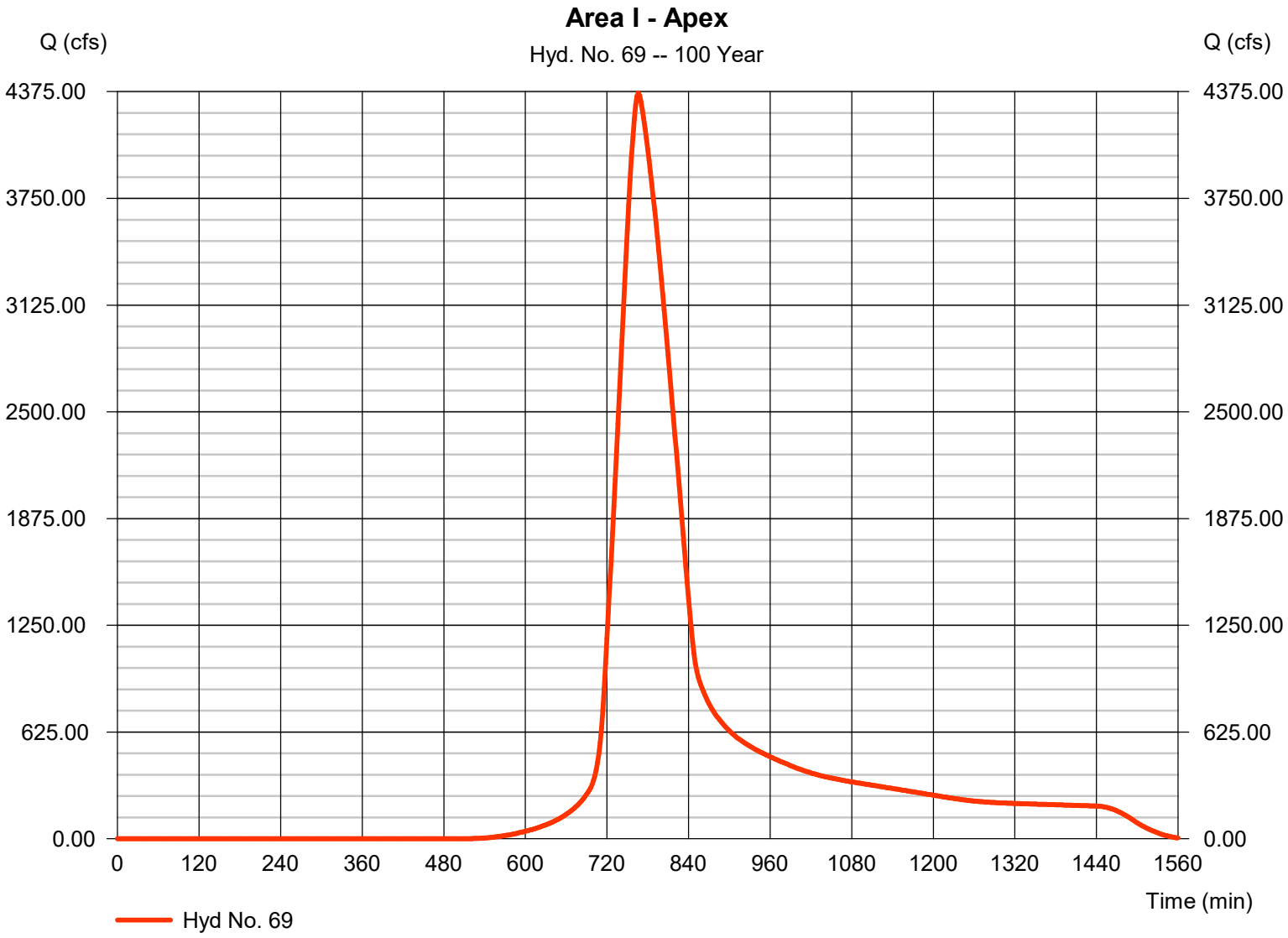


Hydrograph Report

Hyd. No. 69

Area I - Apex

Hydrograph type	=	SCS Runoff	Peak discharge	=	4368.08 cfs
Storm frequency	=	100 yrs	Time to peak	=	766 min
Time interval	=	2 min	Hyd. volume	=	37,141,272 cuft
Drainage area	=	2637.000 ac	Curve number	=	67.9
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	87.40 min
Total precip.	=	7.61 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



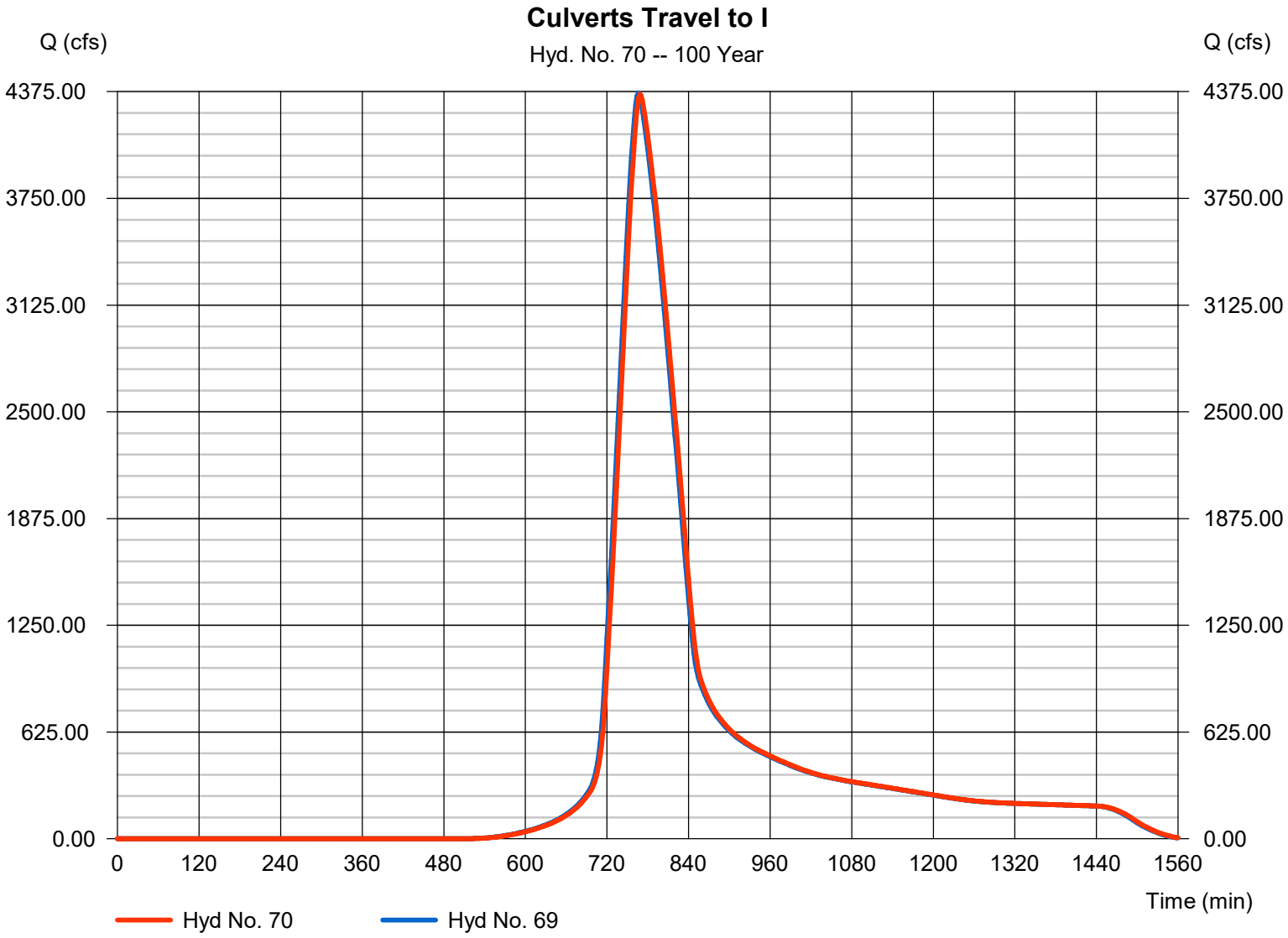
Hydrograph Report

Hyd. No. 70

Culverts Travel to I

Hydrograph type	=	Reach	Peak discharge	=	4360.76 cfs
Storm frequency	=	100 yrs	Time to peak	=	768 min
Time interval	=	2 min	Hyd. volume	=	37,141,256 cuft
Inflow hyd. No.	=	69 - Area I - Apex	Section type	=	Trapezoidal
Reach length	=	1670.0 ft	Channel slope	=	0.7 %
Manning's n	=	0.025	Bottom width	=	6.0 ft
Side slope	=	2.0:1	Max. depth	=	2.0 ft
Rating curve x	=	1.509	Rating curve m	=	1.374
Ave. velocity	=	13.22 ft/s	Routing coeff.	=	0.7897

Modified Att-Kin routing method used.

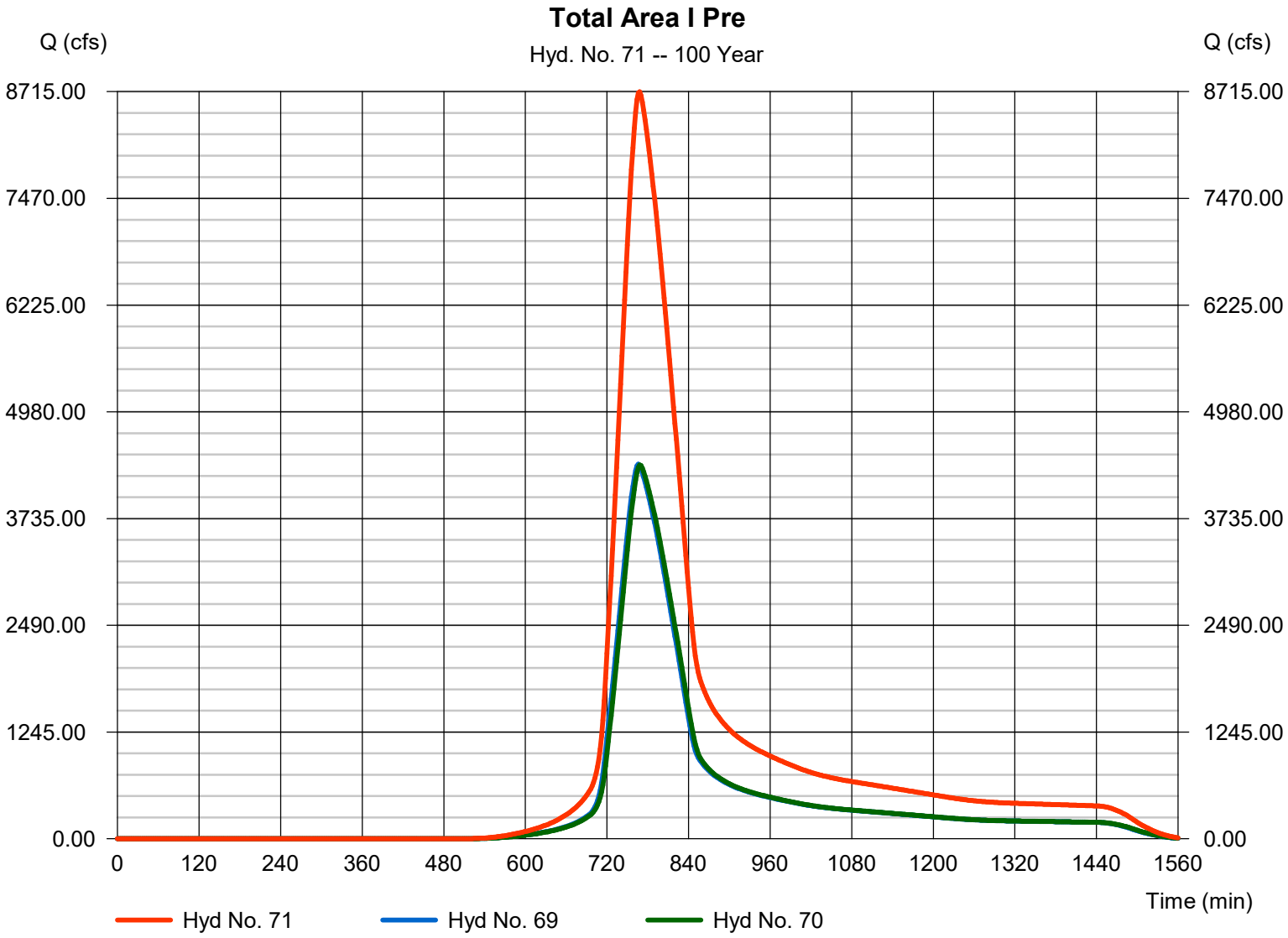


Hydrograph Report

Hyd. No. 71

Total Area I Pre

Hydrograph type	= Combine	Peak discharge	= 8713.51 cfs
Storm frequency	= 100 yrs	Time to peak	= 768 min
Time interval	= 2 min	Hyd. volume	= 74,282,512 cuft
Inflow hyds.	= 69, 70	Contrib. drain. area	= 2637.000 ac

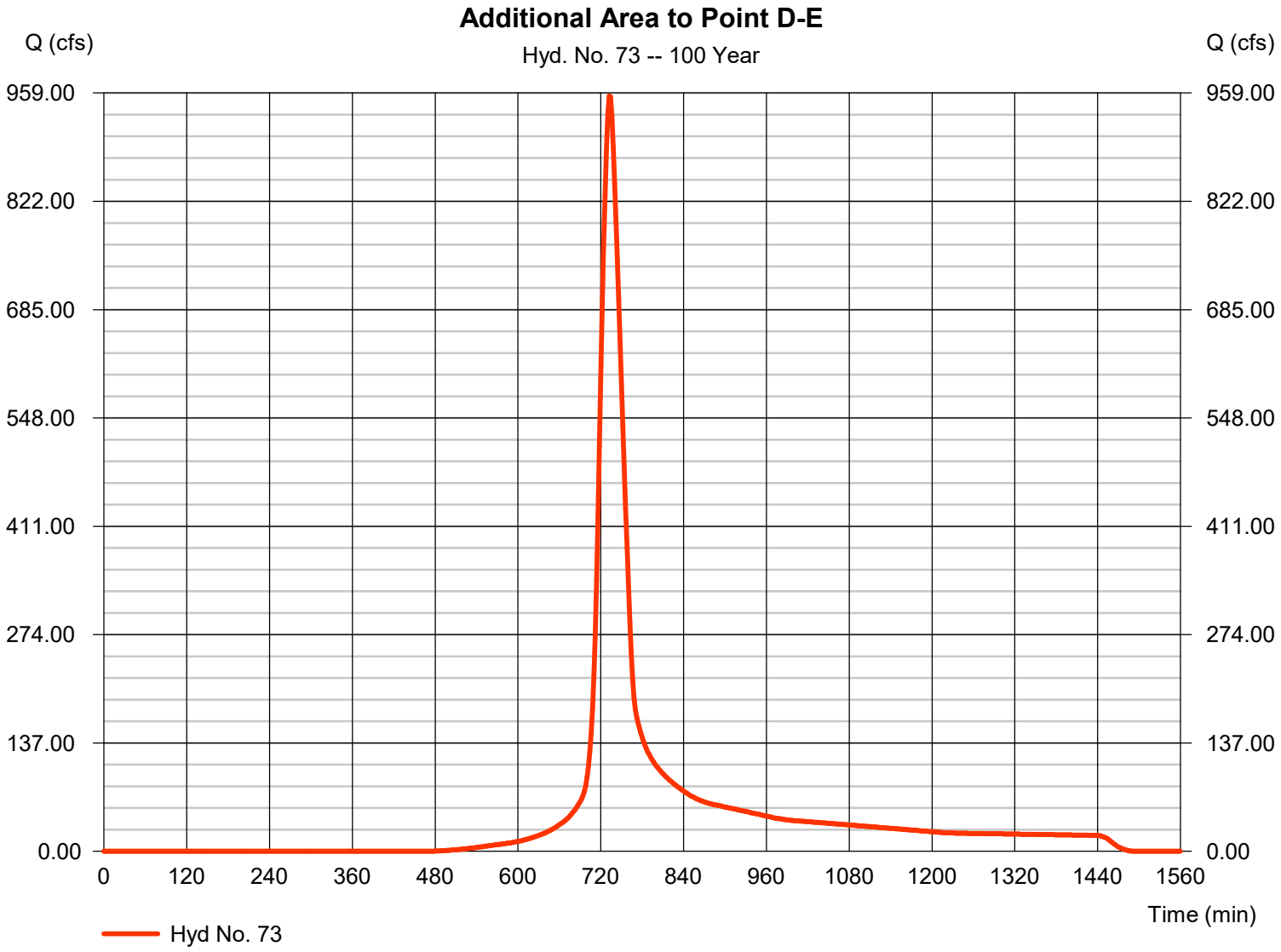


Hydrograph Report

Hyd. No. 73

Additional Area to Point D-E

Hydrograph type	=	SCS Runoff	Peak discharge	=	955.12 cfs
Storm frequency	=	100 yrs	Time to peak	=	732 min
Time interval	=	2 min	Hyd. volume	=	4,136,777 cuft
Drainage area	=	271.000 ac	Curve number	=	70.2
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	32.50 min
Total precip.	=	7.61 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

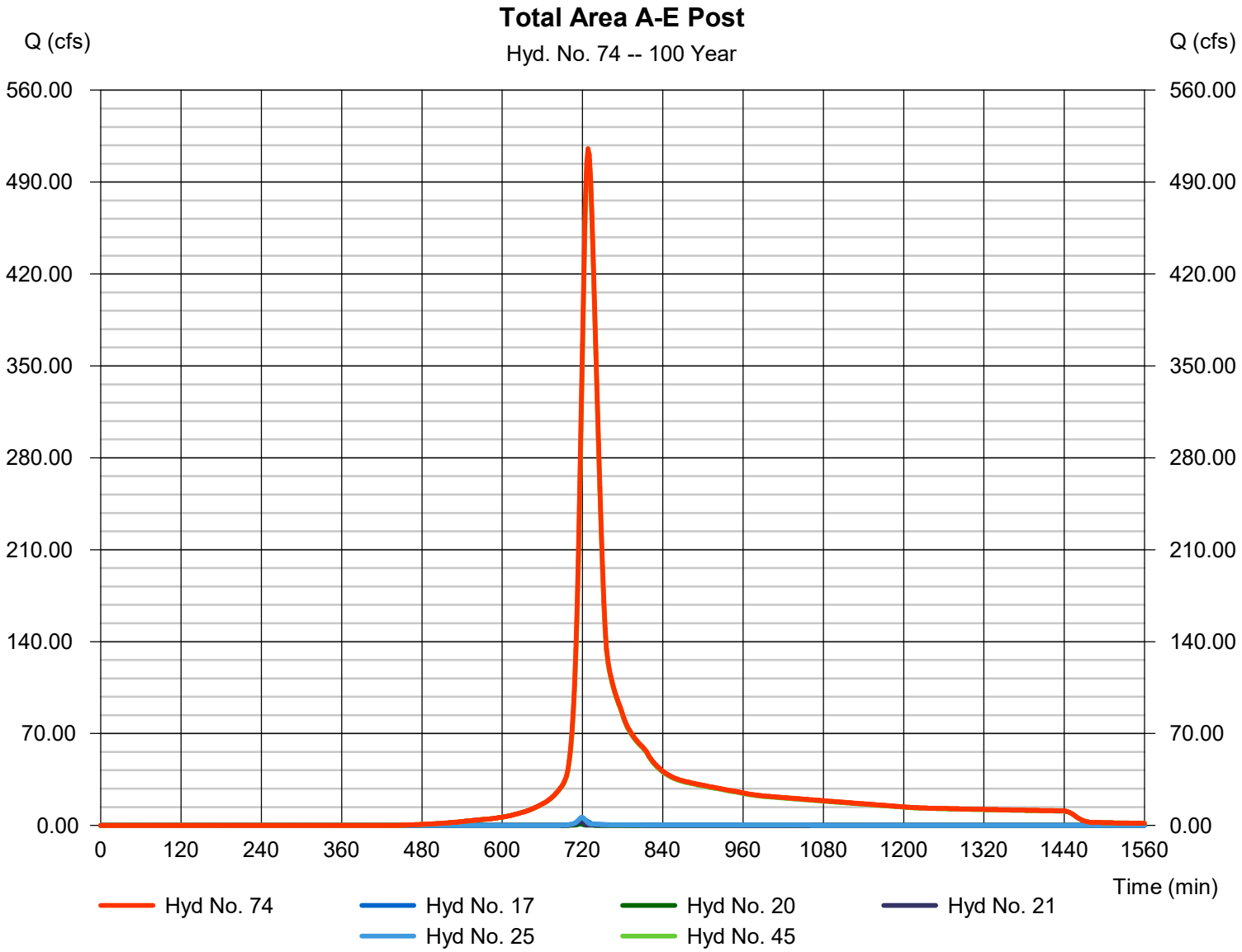


Hydrograph Report

Hyd. No. 74

Total Area A-E Post

Hydrograph type	= Combine	Peak discharge	= 515.48 cfs
Storm frequency	= 100 yrs	Time to peak	= 728 min
Time interval	= 2 min	Hyd. volume	= 2,284,765 cuft
Inflow hyds.	= 17, 20, 21, 25, 45	Contrib. drain. area	= 3.290 ac

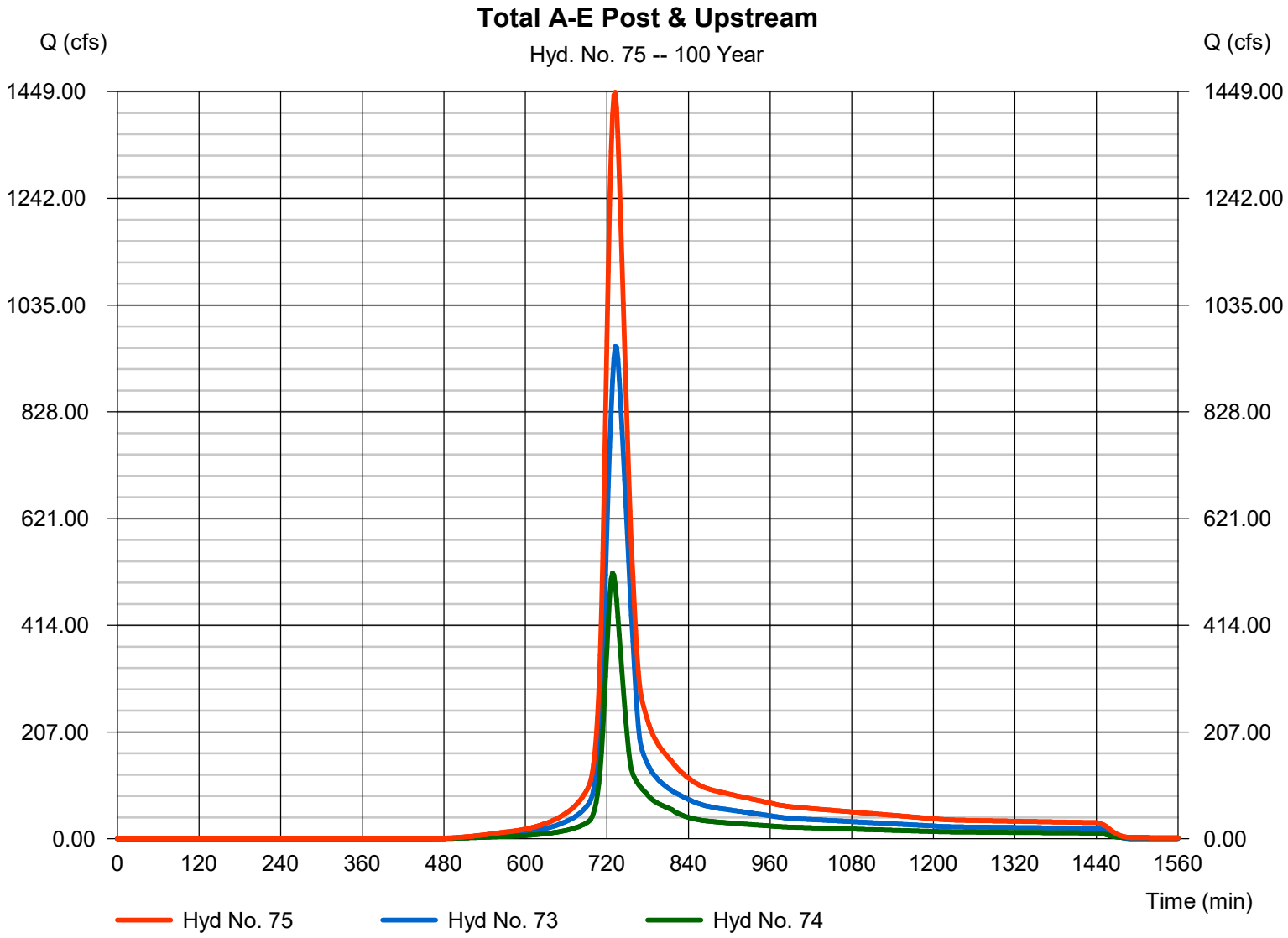


Hydrograph Report

Hyd. No. 75

Total A-E Post & Upstream

Hydrograph type	= Combine	Peak discharge	= 1447.73 cfs
Storm frequency	= 100 yrs	Time to peak	= 732 min
Time interval	= 2 min	Hyd. volume	= 6,421,542 cuft
Inflow hyds.	= 73, 74	Contrib. drain. area	= 271.000 ac



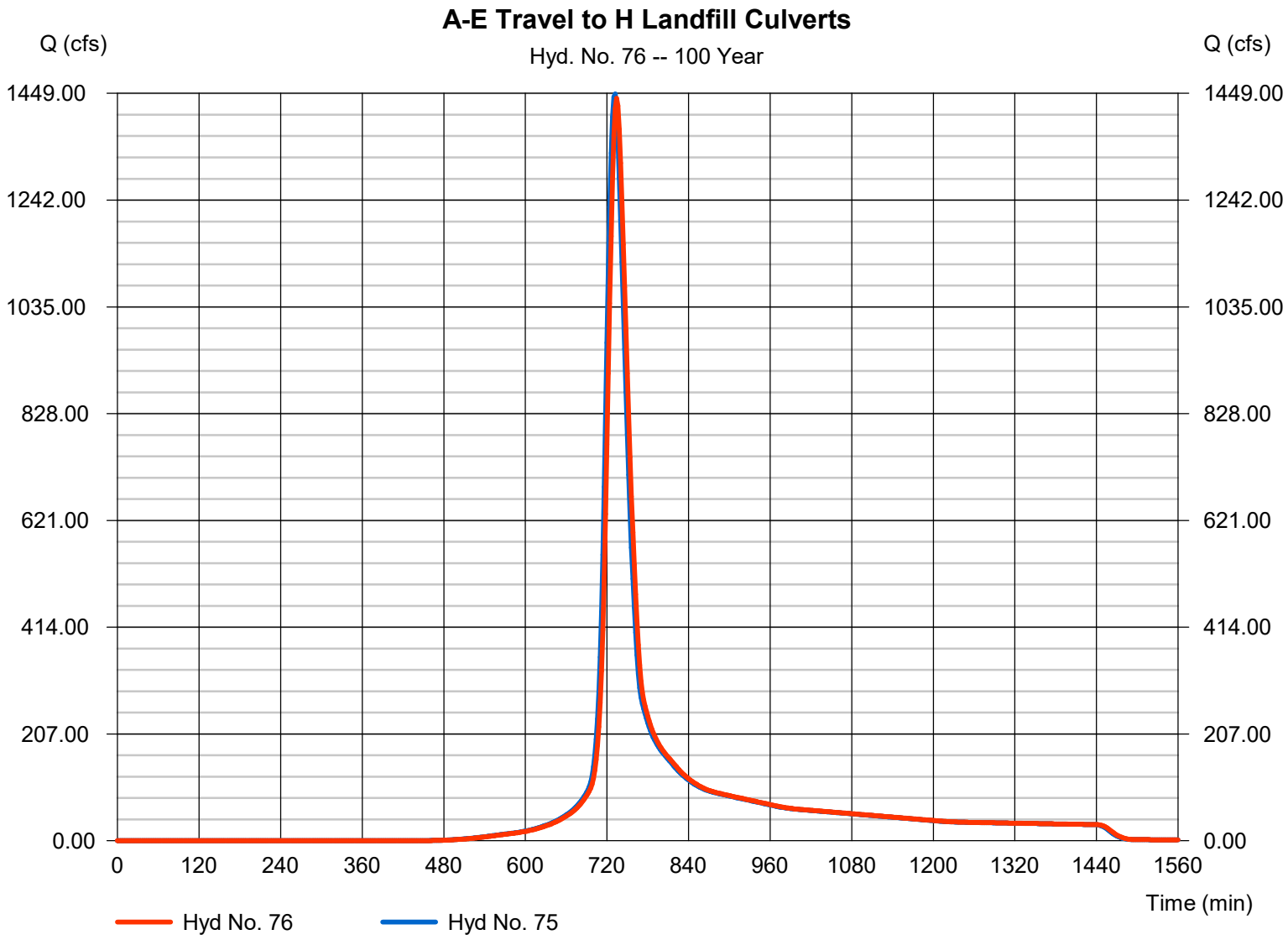
Hydrograph Report

Hyd. No. 76

A-E Travel to H Landfill Culverts

Hydrograph type	=	Reach	Peak discharge	=	1439.33 cfs
Storm frequency	=	100 yrs	Time to peak	=	734 min
Time interval	=	2 min	Hyd. volume	=	6,421,509 cuft
Inflow hyd. No.	=	75 - Total A-E Post & Upstream	Section type	=	Trapezoidal
Reach length	=	1500.0 ft	Channel slope	=	0.7 %
Manning's n	=	0.025	Bottom width	=	6.0 ft
Side slope	=	2.0:1	Max. depth	=	2.0 ft
Rating curve x	=	1.509	Rating curve m	=	1.374
Ave. velocity	=	9.79 ft/s	Routing coeff.	=	0.6995

Modified Att-Kin routing method used.

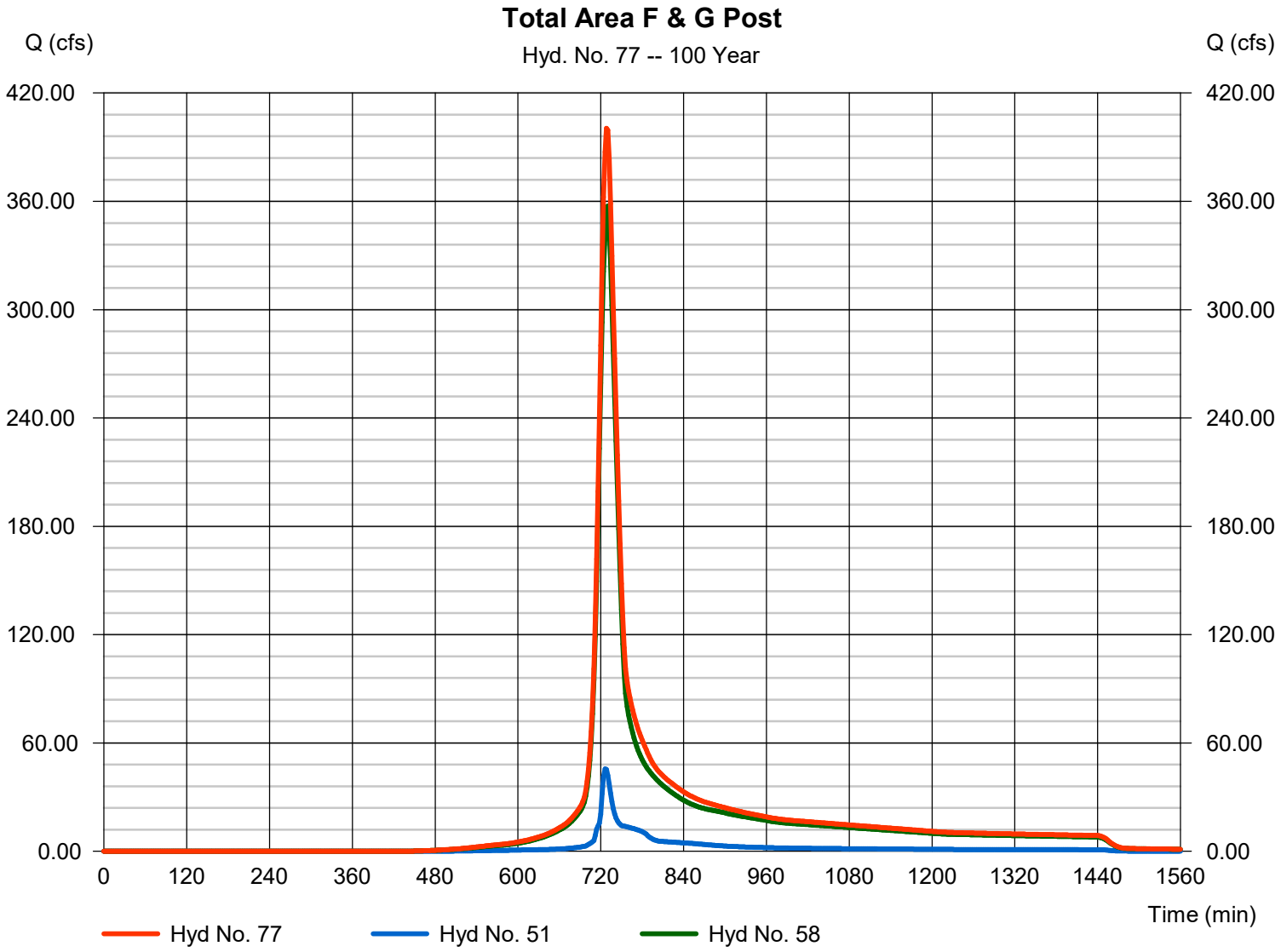


Hydrograph Report

Hyd. No. 77

Total Area F & G Post

Hydrograph type	= Combine	Peak discharge	= 400.44 cfs
Storm frequency	= 100 yrs	Time to peak	= 728 min
Time interval	= 2 min	Hyd. volume	= 1,751,525 cuft
Inflow hyds.	= 51, 58	Contrib. drain. area	= 0.000 ac



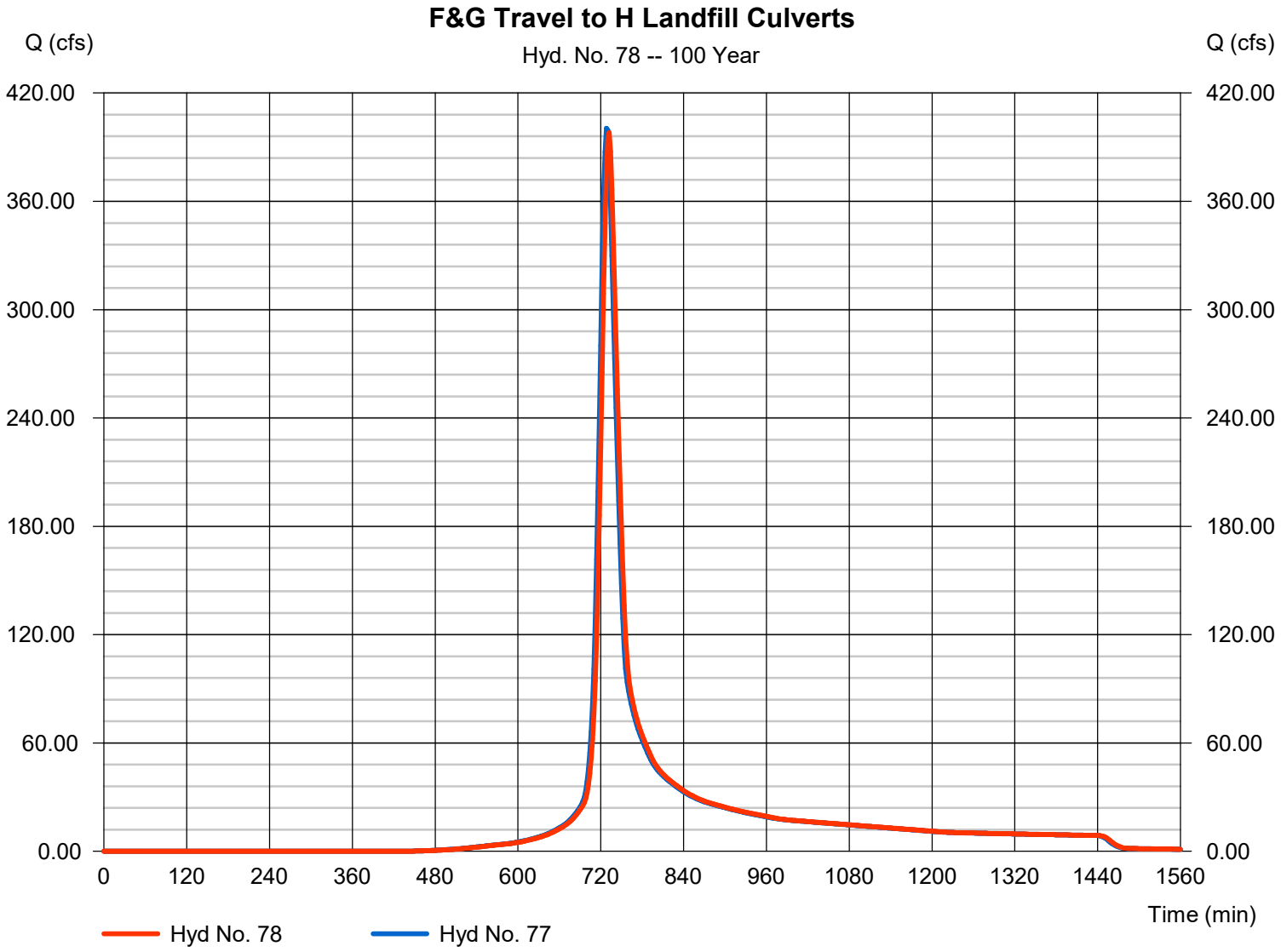
Hydrograph Report

Hyd. No. 78

F&G Travel to H Landfill Culverts

Hydrograph type	=	Reach	Peak discharge	=	398.03 cfs
Storm frequency	=	100 yrs	Time to peak	=	732 min
Time interval	=	2 min	Hyd. volume	=	1,751,480 cuft
Inflow hyd. No.	=	77 - Total Area F & G Post	Section type	=	Trapezoidal
Reach length	=	1300.0 ft	Channel slope	=	1.5 %
Manning's n	=	0.025	Bottom width	=	6.0 ft
Side slope	=	2.0:1	Max. depth	=	2.0 ft
Rating curve x	=	2.209	Rating curve m	=	1.374
Ave. velocity	=	9.10 ft/s	Routing coeff.	=	0.7319

Modified Att-Kin routing method used.

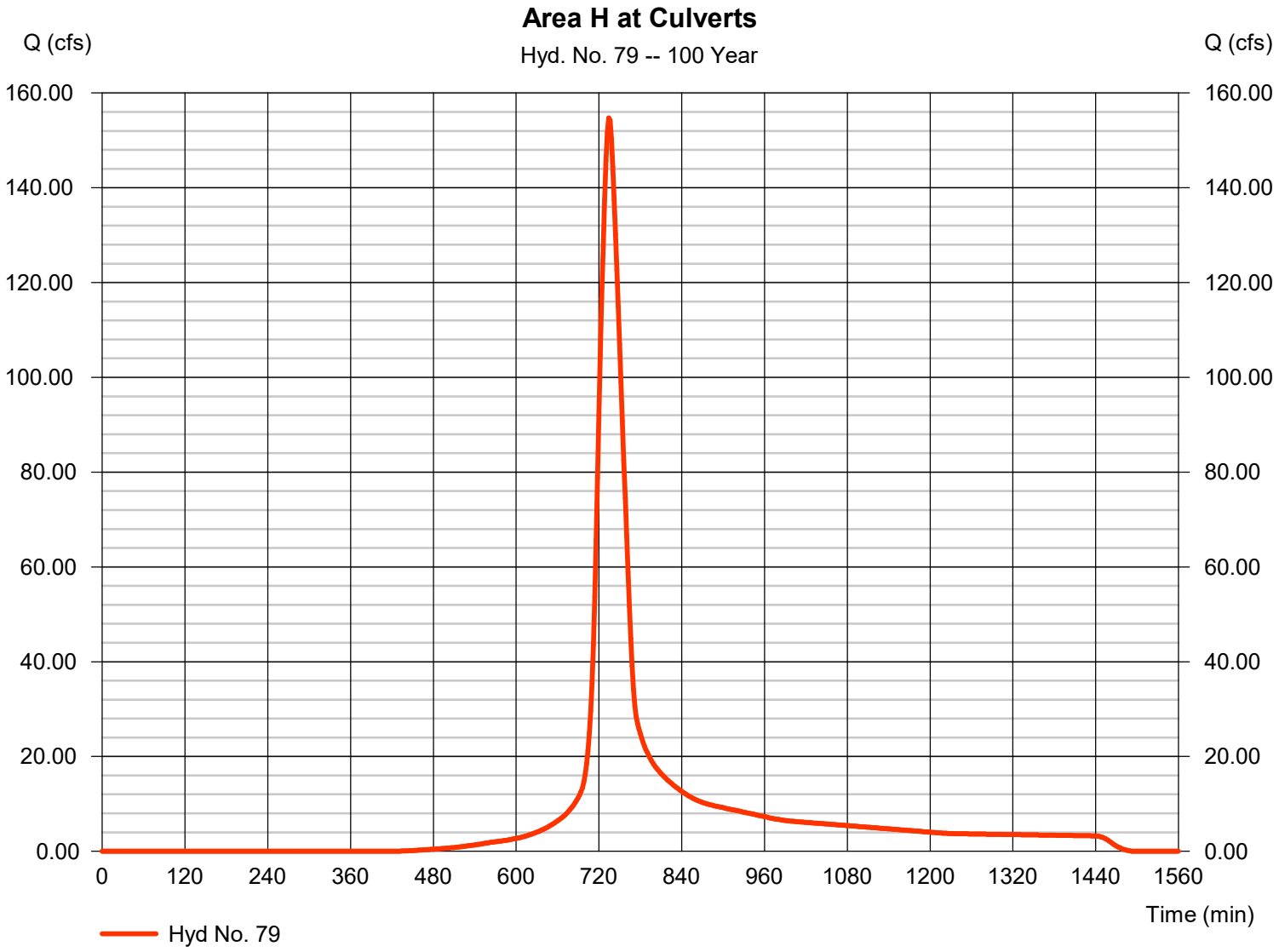


Hydrograph Report

Hyd. No. 79

Area H at Culverts

Hydrograph type	=	SCS Runoff	Peak discharge	=	154.76 cfs
Storm frequency	=	100 yrs	Time to peak	=	734 min
Time interval	=	2 min	Hyd. volume	=	700,964 cuft
Drainage area	=	43.300 ac	Curve number	=	73.4
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	35.10 min
Total precip.	=	7.61 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

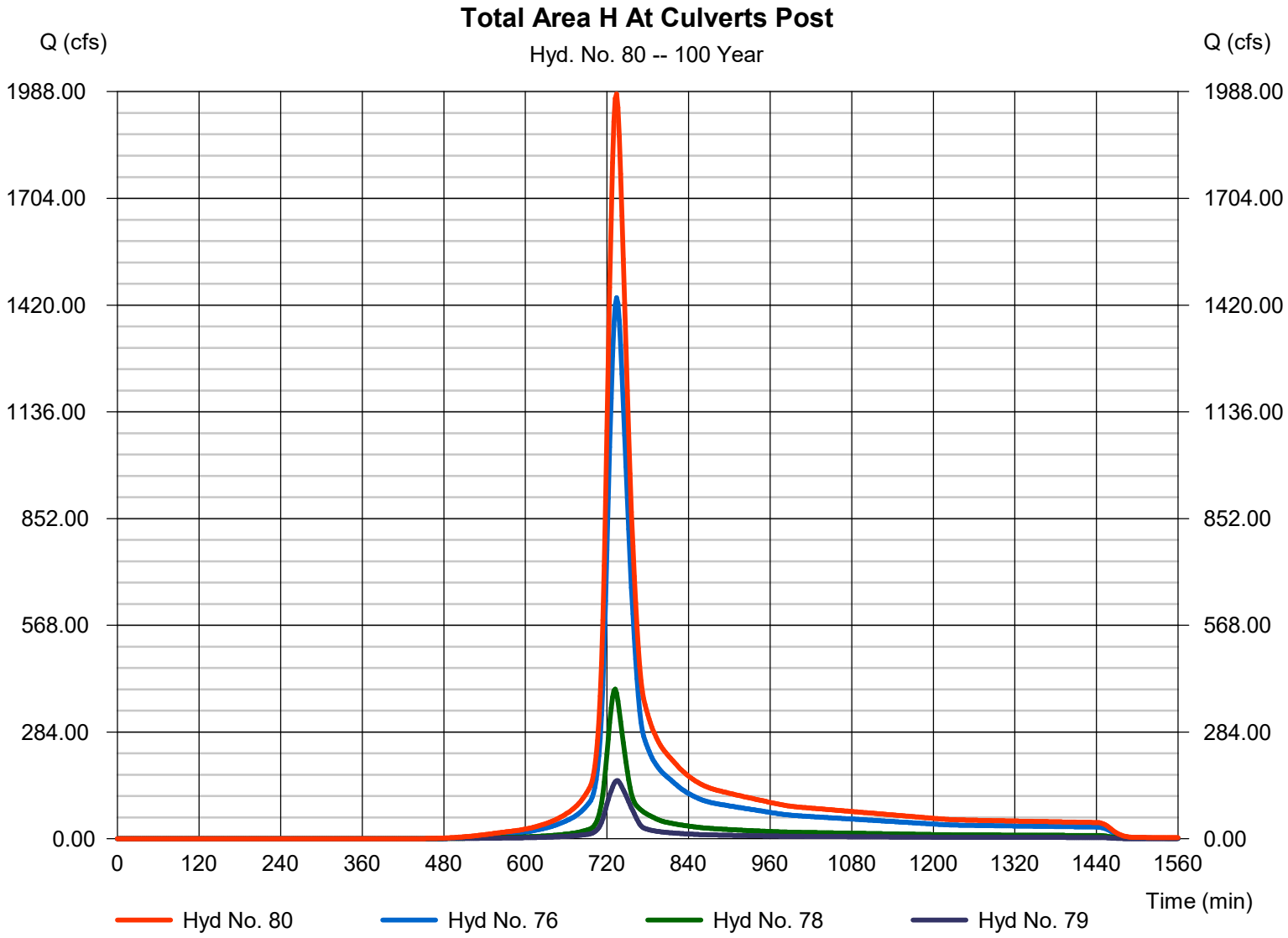


Hydrograph Report

Hyd. No. 80

Total Area H At Culverts Post

Hydrograph type	= Combine	Peak discharge	= 1981.70 cfs
Storm frequency	= 100 yrs	Time to peak	= 734 min
Time interval	= 2 min	Hyd. volume	= 8,873,954 cuft
Inflow hyds.	= 76, 78, 79	Contrib. drain. area	= 43.300 ac

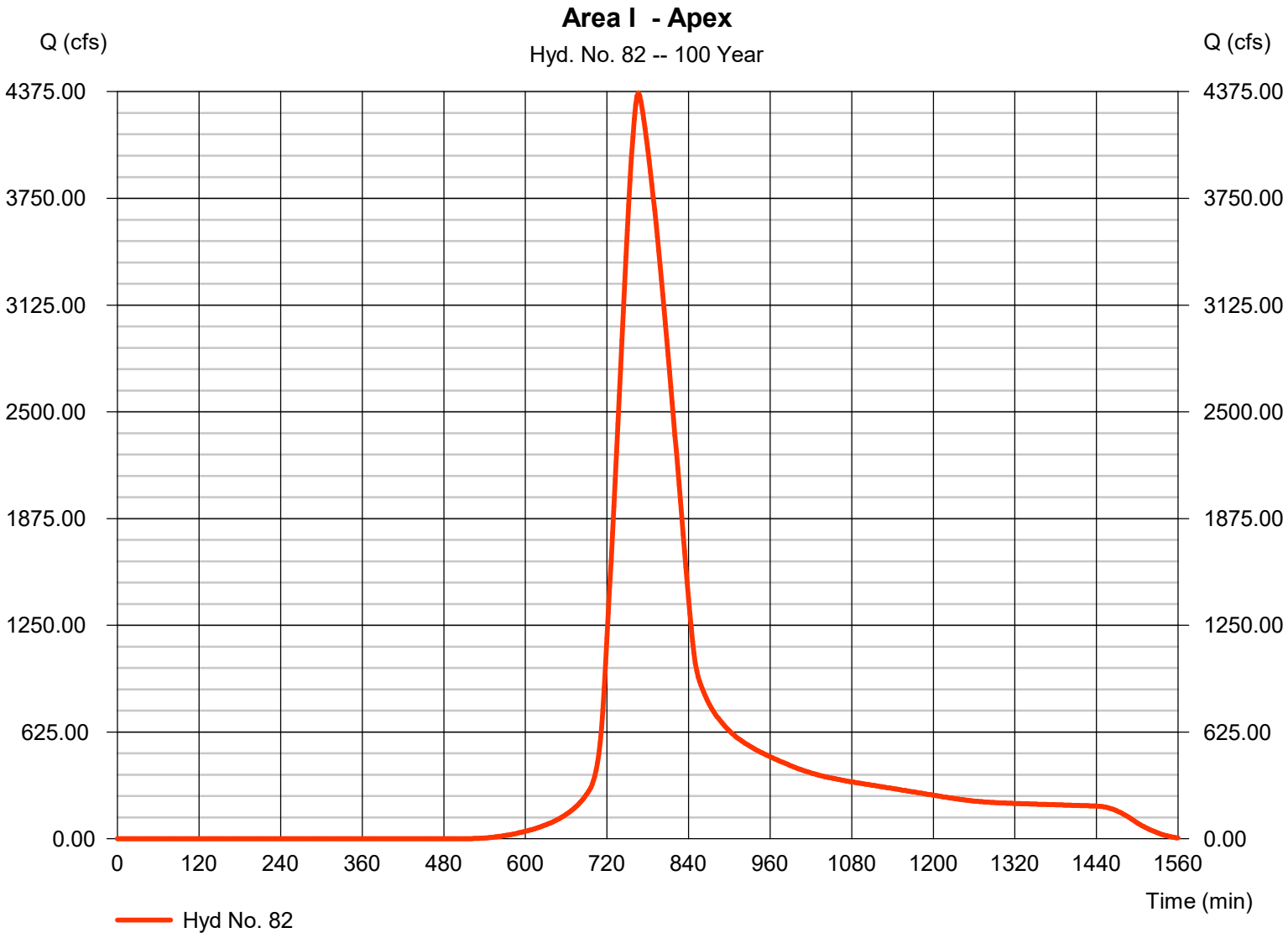


Hydrograph Report

Hyd. No. 82

Area I - Apex

Hydrograph type	= SCS Runoff	Peak discharge	= 4368.08 cfs
Storm frequency	= 100 yrs	Time to peak	= 766 min
Time interval	= 2 min	Hyd. volume	= 37,141,272 cuft
Drainage area	= 2637.000 ac	Curve number	= 67.9
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 87.40 min
Total precip.	= 7.61 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



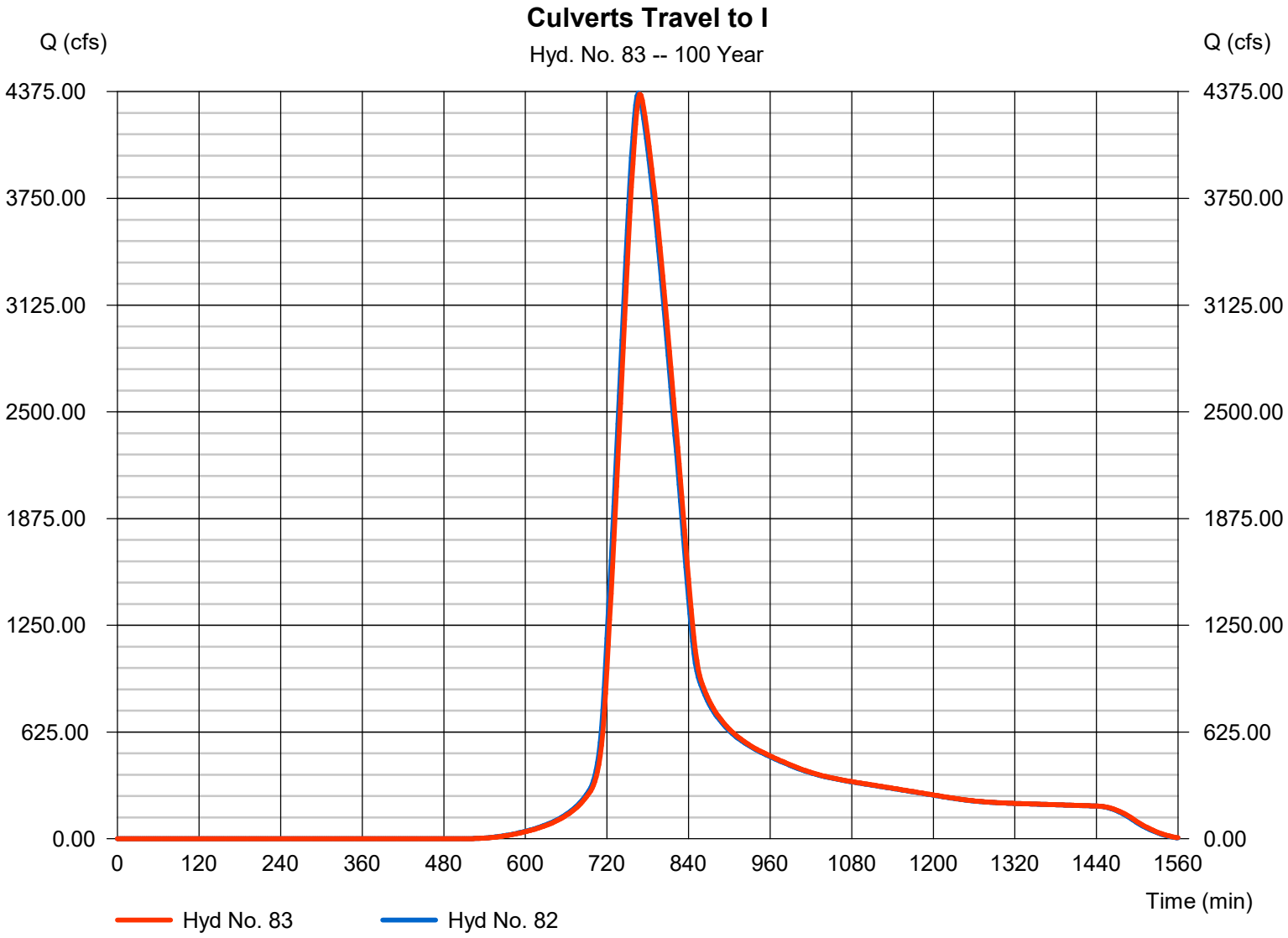
Hydrograph Report

Hyd. No. 83

Culverts Travel to I

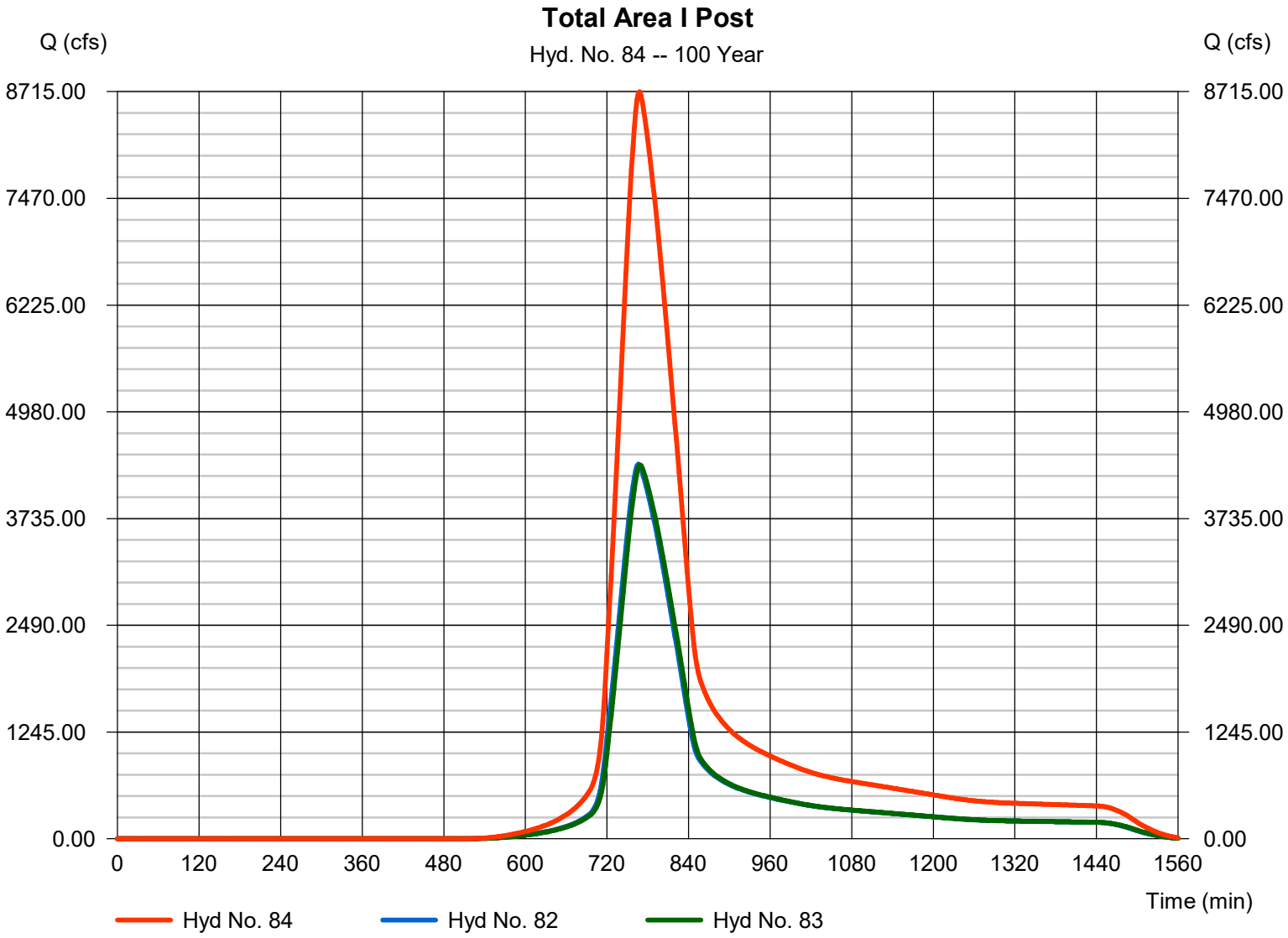
Hydrograph type	=	Reach	Peak discharge	=	4360.76 cfs
Storm frequency	=	100 yrs	Time to peak	=	768 min
Time interval	=	2 min	Hyd. volume	=	37,141,256 cuft
Inflow hyd. No.	=	82 - Area I - Apex	Section type	=	Trapezoidal
Reach length	=	1670.0 ft	Channel slope	=	0.7 %
Manning's n	=	0.025	Bottom width	=	6.0 ft
Side slope	=	2.0:1	Max. depth	=	2.0 ft
Rating curve x	=	1.509	Rating curve m	=	1.374
Ave. velocity	=	13.22 ft/s	Routing coeff.	=	0.7897

Modified Att-Kin routing method used.



Hydrograph Report

Hyd. No. 84

Total Area I Post

Hydrograph type	= Combine	Peak discharge	= 8713.51 cfs
Storm frequency	= 100 yrs	Time to peak	= 768 min
Time interval	= 2 min	Hyd. volume	= 74,282,512 cuft
Inflow hyds.	= 82, 83	Contrib. drain. area	= 2637.000 ac