

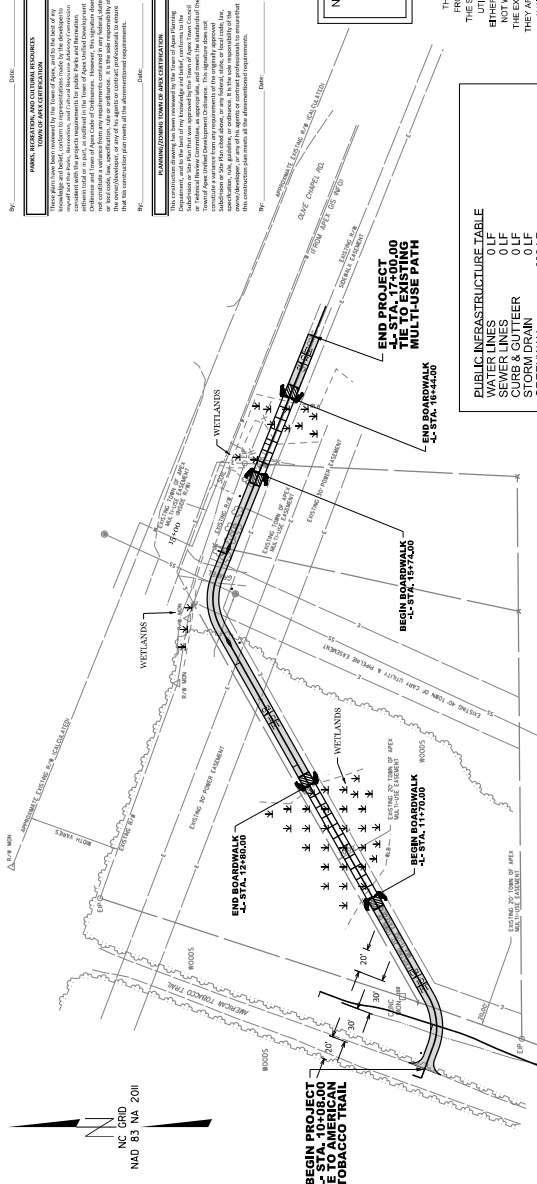
# CONSTRUCTION PLANS FOR:

TOWN OF APEX  
NORTH CAROLINA

# APEX WEST GREENWAY

LOCATION:  
FROM OLIVE CHAPEL RD. TO AMERICAN TOBACCO TRAIL

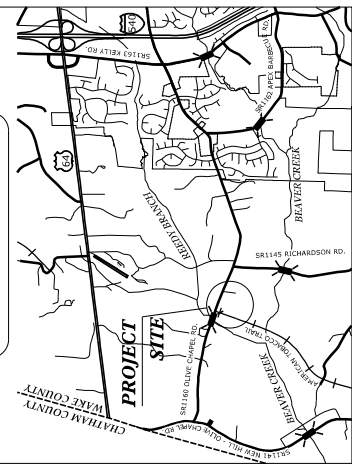
TYPE OF WORK:  
GRADING, PAVING, STRUCTURE, DRAINAGE, & EROSION CONTROL



## GENERAL NOTES

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING ALL ILLUSTRATED KNOWN UNDERGROUND ELEMENTS. ADDITIONALLY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR EXERCISING REASONABLE EFFORTS TO PROTECT ALL KNOWN AND UNKNOWN UNDERGROUND UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING NECESSARY PERMITS AND APPROVED DESIGN.
- CONTRACTOR SHALL HOLD HARMLESS THE OWNER AND THE ENGINEER FOR DAMAGES, INJURIES OR OTHER ACCIDENTS WHICH OCCUR DURING THESE CONSTRUCTION ACTIVITIES.
- REES AND EXISTING UNDERGROUND NOT DEMONSTRATED FOR REMOVAL SHALL BE PROTECTED DURING CONSTRUCTION.
- CONTRACTOR SHALL PROVIDE EXCAVATION AND TRAFFIC CONTROL AS REQUIRED BY LOCAL AUTHORITIES AND ALL APPLICABLE OSHA REGULATIONS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR SCHEDULING AND COORDINATION OF ALL ILLUSTRATED CONSTRUCTION ACTIVITIES AT THE JOB SITE.
- CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND MARKING ALL UTILITIES PRIOR TO CONSTRUCTION ACTIVITIES.
- SUCH WORK SHALL BE COORDINATED WITH THE ENGINEER.
- UTILITIES SIGNS, BARRICADES, FLAG MEN OR GUARDS, PER NCDOT STANDARDS, AS REQUIRED TO ENSURE THE SAFETY OF ALL VEHICULAR AND PEDESTRIAN TRAFFIC DURING CONSTRUCTION ACTIVITIES.
- UNDER ALL CIRCUMSTANCES SHALL ANY UNMANNED EXCAVATION BE LEFT OPEN OR UNPROTECTED DURING UNMANNED HOURS, UTILITIES SIGNS, BARRICADES, ETC. TO ENSURE THE SAFETY OF THE GENERAL PUBLIC.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK AS ILLUSTRATED ON PLANS, IF EXISTING CONDITIONS DIFFER FROM THOSE ILLUSTRATED ON PLANS. NOTIFY ENGINEER PRIOR TO CONSTRUCTION ACTIVITIES.
- VERIFY ALL DIMENSIONS AND GRADES AT THE JOB SITE. IF DIFFERENCES ARE FOUND, NOTIFY ENGINEER SO THAT MODIFICATIONS TO THESE DRAWINGS CAN BE MADE.
- CONTRACTOR SHALL PROVIDE 24 HOURS NOTICE TO THE TOWN OF APEX FOR ALL REQUIRED INSPECTIONS.
- ALL UTILITIES OR STRUCTURES NOT DEMONSTRATED FOR REMOVAL OR MODIFICATION ARE TO REMAIN AND BE PROTECTED FROM DAMAGE.
- ALL DEMOLITION WORK SHALL BE PERFORMED WITH THE CARE AND PRECISION SO AS TO PREVENT THE ARBITRARY DESTRUCTION OR INTERRUPTION OF CONCEALED UTILITIES WHICH ARE INTENDED TO REMAIN IN USE. THE ROUTING OF ALL UTILITIES SHALL BE APPROVED BY THE ENGINEER AND OWNER PRIOR TO CONSTRUCTION.
- ALL WASTE MATERIAL GENERATED FROM DEMOLITION WORK SHALL BE DEPOSITED OFF SITE IN ACCORDANCE WITH TOWN OF APEX REGULATIONS.
- ALL STRUCTURES/UTILITIES DEMONSTRATED FOR MODIFICATION SHALL BE PROTECTED BY THE CONTRACTOR DURING CONSTRUCTION.
- ANY NOTICE OR REFERENCE TO ANY ELEMENT WHICH DOES NOT SPECIFICALLY ACTION BY THE CONTRACTOR SHALL BE CONSIDERED AS INFORMATION ONLY.
- CONTRACTOR SHALL NOTIFY THE NCDOT DISTRICT ENGINEER, IN ACCORDANCE WITH ALL DREWAY PERMITS & ENCROACHMENT AGREEMENTS, PRIOR TO BEGINNING ANY WORK WITHIN THE STATE MAINTAINED RIGHT OF WAY.

## VICINITY MAP



## PROJECT DATA

Name: Apex West Greenway	Address: 2925 Olive Chapel Rd.	Aspx, NC 27502
Parent ID: 0711-36-5271	Phone: 919-857-8977	0721-09-3015
Project Coordinates:	Latitude: 36.726555	Longitude: -78.390904
Preparer:	Company Name: Wethefill Engineering Contact Name: Jonathan Heffner Address: 1233 Jones Franklin Rd. Raleigh, NC 27606 Phone: 919-857-8977 Email: <a href="mailto:jheffner@wethefill.com">jheffner@wethefill.com</a>	
Contract Purchaser:	Name: Town of Apex Parks & Recreation Contact Name: Andrew Havens Address: 73 Hunter St. Aspx, NC 27502 Phone: 919-299-3400 Email: <a href="mailto:awhavens@apexnc.gov">awhavens@apexnc.gov</a>	
Amendment Number:	N/A	
Current 2005 Land Use:	Rural Density Residential	
Required setbacks:	2 rear	
Watershed Protection Overlay District:	Primary	
FEMA:	Outside 100-yr floodplain for Reedy Branch	
Gross Area of Buildings:	N/A	
Gross Four Area:	N/A	
Building Height:	N/A	
Minimum Number of Parking Spaces:	N/A	
Maximum Number of Parking Spaces Permitted:	N/A	
Parking Spaces Provided:	N/A	
Number of Handicapped Spaces:	N/A	
Percentage of Parking on Side and Rear:	N/A	
Amount and Percentage of Built-Up Area Allowed:	N/A	
Amount and Percentage of Built-Up Area Proposed:	N/A	
Gross Area and Percent of RCA required:	N/A	
Gross Area and Percent of RCA provided:	N/A	
Two Community Amenities:	N/A	
Type of Grading:	95%	
Natural Drainage Patterns Preserved:	N/A	

NO.	DATE	DESCRIPTION

PLANS PREPARED BY:  
**Apex**  
TOWN OF APEX  
North Carolina  
Aspx, NC 27502  
919.272.7468

PROJECT CONTACT:  
TOWN OF APEX  
PARKS AND GREENWAY PLANNER  
AS EXISTING  
Aspx, NC 27502  
919.272.7468

APEX WEST GREENWAY  
CONNECTION FROM  
OLIVE CHAPEL ROAD  
TO AMERICAN TOBACCO TRAIL

PLANS PREPARED BY:  
**WETHEFILL ENGINEERING**  
1233 JONES FRANKLIN RD., SUITE 100  
RALEIGH, NC 27606  
919.857.8977 FAX: 919.857.8307

UNLESS ALL NOTES ARE COMPLETED

SCALE: AS SHOWN  
DATE: MARCH 4, 2020

COVER SHEET  
NET PROJECT NO.: 20326.01

# CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale

## BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin
- Computed Property Corner
- Property Monument
- Parcel/Sequence Number
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary
- Proposed Wetland Boundary
- Existing Endangered Animal Boundary
- Existing Endangered Plant Boundary
- Existing Historic Property Boundary
- Known Contamination Area: Soil
- Potential Contamination Area: Soil
- Known Contamination Area: Water
- Potential Contamination Area: Water
- Contaminated Site: Known or Potential

## BUILDINGS AND OTHER CULTURE:

- Gas Pump Vent or UG Tank Cap
- Sign
- Well
- Small Mine
- Foundation
- Area Outline
- Cemetery
- Building
- School
- Church
- Dam

## HYDROLOGY:

- Stream or Body of Water
- Hydro, Pool or Reservoir
- Jurisdictional Stream
- Buffer Zone 1
- Buffer Zone 2
- Flow Arrow
- Disappearing Stream
- Spring
- Welland
- Proposed Lateral, Tail, Head Ditch
- False Sump

## RAILROADS:

- Standard Gauge
- RR Signal Milepost
- Switch
- RR Abandoned
- RR Dismantled

## RIGHT OF WAY & PROJECT CONTROL:

- Secondary Horiz and Vert Control Point
- Primary Horiz Control Point
- Exist Permanent Easement Pin and Cap
- New Permanent Easement Pin and Cap
- Vertical Benchmark
- Existing Right of Way Marker
- Existing Right of Way Line
- New Right of Way Line
- New Right of Way Line with Pin and Cap
- New Right of Way Line with Concrete or Granite RW Marker
- New Control of Access Line with Concrete CA Marker
- Existing Control of Access
- New Control of Access
- Existing Easement Line
- New Temporary Construction Easement
- New Temporary Drainage Easement
- New Permanent Drainage Easement
- New Permanent Drainage / Utility Easement
- New Permanent Utility Easement
- New Temporary Utility Easement
- New Aerial Utility Easement

## ROADS AND RELATED FEATURES:

- Existing Edge of Pavement
- Existing Curb
- Proposed Slope Stakes Cut
- Proposed Slope Stakes Fill
- Proposed Curb Ramp
- Existing Metal Guardrail
- Proposed Guardrail
- Existing Cable Guidrail
- Proposed Cable Guidrail
- Equality Symbol
- Pavement Removal
- VEGETATION:
- Single Tree
- Single Shrub

## WATER:

- Water Manhole
- Water Meter
- Water Valve
- Water Hydrant
- UG Water Line LOS B (S.U.E.)\*
- UG Water Line LOS C (S.U.E.)\*
- UG Water Line LOS D (S.U.E.)\*
- Above Ground Water Line

## TV:

- TV Pedestal
- TV Tower
- UG TV Cable Hand Hole
- UG TV Cable LOS B (S.U.E.)\*
- UG TV Cable LOS C (S.U.E.)\*
- UG TV Cable LOS D (S.U.E.)\*
- UG Fiber Optic Cable LOS B (S.U.E.)\*
- UG Fiber Optic Cable LOS C (S.U.E.)\*
- UG Fiber Optic Cable LOS D (S.U.E.)\*

## GAS:

- Gas Valve
- Gas Meter
- UG Gas Line LOS B (S.U.E.)\*
- UG Gas Line LOS C (S.U.E.)\*
- UG Gas Line LOS D (S.U.E.)\*
- Above Ground Gas Line

## SANITARY SEWER:

- Sanitary Sewer Manhole
- Sanitary Sewer Cleanout
- UG Sanitary Sewer Line
- Above Ground Sanitary Sewer
- SS Forced Main Line LOS B (S.U.E.)\*
- SS Forced Main Line LOS C (S.U.E.)\*
- SS Forced Main Line LOS D (S.U.E.)\*

## MISCELLANEOUS:

- Utility Pole
- Utility Pole with Base
- Utility Located Object
- Utility Traffic Signal Box
- Utility Unknown UG Line LOS B (S.U.E.)\*
- UG Tank; Water, Gas, Oil
- Underground Storage Tank, Approx. Loc.
- AG Tank; Water, Gas, Oil
- Geoenvironmental Boring
- UG Test Hole LOS A (S.U.E.)\*
- Abandoned According to Utility Records
- End of Information
- E.O.I.

## EROSION CONTROL:

- Temporary Silt Fence
- Temporary Silt Fence Outlet
- Temporary Rock Sill Check Dam
- Pipe Inlet Protection
- Pipe Outlet Protection
- Limits of Disturbance
- Tree Protection Area Limits
- Yard Inlet Protection

This signature affirmed below certifies that this sheet has been reviewed and approved solely per the certifications signed on the lower sheet of these construction plans.

Date	Date	Date	Date
DATE	DATE	DATE	DATE
DATE	DATE	DATE	DATE
DATE	DATE	DATE	DATE

CONVENTIONAL SYMBOLS

NET PROJECT NO.: 20326.01

DATE PREPARED FOR: APEX WEST GREENWAY

PROJECT CONTACT: APEX ENGINEERING

APPROVED BY: [Signature]

DATE: [Date]

APEX ENGINEERING

1233 DOWNE ROAD, SUITE 100, WELLS, NC 27606

PH: 919.857.8077 FAX: 919.857.8107

UNLESS ALL NOTATIONS COMPLETED

APEX WEST GREENWAY

CONNECTION FROM OLIVE CHAPEL ROAD TO AMERICAN TOBACCO TRAIL

PLANS PREPARED BY: APEX ENGINEERING

DATE: [Date]

NO.	DATE	DESCRIPTION

APEX ENGINEERING

1233 DOWNE ROAD, SUITE 100, WELLS, NC 27606

PH: 919.857.8077 FAX: 919.857.8107

UNLESS ALL NOTATIONS COMPLETED

**Required Site Plan 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 Tree 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:
  - a. One foot away from any saved tree for each inch of diameter at breast height,
  - b. Along the outside line of the 100-year floodplain and the outside edge of any riparian buffer, and
  - c. 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.
- 5) 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 rights-of-way), and shall be contained entirely on site.
- 6) 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.
- 7) 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 landscaping.
  - 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.
- 8) 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.
- 9) 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.
- 10) Individual signs are not approved as part of the 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.
- 11) 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. 160.0. 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 integral timent or veneer that is a medium or dark brown or rust color.
- 12) 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.

- 13) Prior to approval of a Final Plat or issuance of a Certificate of Occupancy for any development where a Stormwater Control Measure (SCM) is required, contact the Environmental Programs Manager at 919-249-3413 to demonstrate that the required structure is in place, is operational, and complies with all relevant portions of UDO Sec. 6.112 Engineered Stormwater Controls. If the SCM is used as part of a temporary erosion control measure, the inspection will occur during the appropriate phase of construction.
- 14) All water and sewer lines shall be installed with a minimum of three (3) feet of cover.
- 15) Maintain a minimum of 18 inches of vertical separation between utilities.
- 16) Verify all illustrated utility crossings prior to construction and notify the engineer if conflicts are encountered.
- 17) Contractor shall coordinate utility relocation or abandonment with local utility companies as required.
- 18) All meter connections to Town potable water shall have a Town-approved backflow prevention assembly installed.
- 19) Water and sewer shall be at least 10 feet laterally from existing or proposed sewers. Where local conditions prevent a separation of at least 10 feet, the water main may be laid closer, provided that the elevation of the bottom of the water main is at least three (3) inches above the top of the sewer with a horizontal separation of at least 18 inches above the top of the sewer with a horizontal separation of at least three (3) feet.
- 20) All new public water and sewer lines contained within a Town of Apex Public Utility Easement will require a Water Distribution Extension Permit and/or a Gravity Sewer Extension Permit to the release of construction drawings. All Water Distribution Extension Permit Applications shall be accompanied by a Sealed Engineer's Report per the Town of Apex Spec. Book. Please contact the Engineering Division at 919-249-3394 to obtain these permit applications.
- 21) A plumbing permit issued by the Building Inspection Division is required for all plumbing systems, including storm drainage systems, installed outside the Public Right-of-Way or a Public Utility Easement. These systems shall be inspected and approved by the plumbing inspector prior to covering. Contact the Building Inspections Director at 919-249-3383 for information including the utilization of a third-party inspection agency.
- 22) It is the responsibility of the owner or his representative(s) to locate and identify all existing and proposed utilities and to clearly identify them on the approved plans.
- 23) No private utility easements shall be allowed to be counted in the calculations for buffers, RCA, or required landscape areas.
- 24) All landscaping is required to be installed prior to a Certificate of Occupancy for the project, or in the case of phased development, for the phase of the project. If the applicant chooses to delay the installation of landscaping from April 1 through September 1, then the applicant shall provide a cash bond equal to 150% of the cost of materials and installation, based on the highest estimate received, to ensure installation of the required landscaping. Additional exceptions may be granted by the Planning Director in accordance with UDO Sec. 8.2.2.E.
- 25) Required buffers must meet the minimum opacity requirements for the particular type of buffer as described in UDO Sec. 8.2.6.
- 26) Any vegetation that is dead, substandard, unhealthy, or poor structural quality, or missing shall be replaced in conformance with Town standards.
- 27) All plant material shall be allowed to reach their mature size and maintained at their mature size. Plants shall not be cut or severely pruned so that their natural form is impaired.
- 28) All slopes equal to 2:1 shall be stabilized with permanent slope retention or a suitable combination of plantings and retention devices.
- 29) Slopes steeper than 3:1 but less than 2:1 shall be stabilized with permanent groundcover, not with turf grass.
- 30) 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.
- 31) Lamps for non-cutoff light fixtures shall not exceed 100 watts.
- 32) Wall rack light fixtures must be fully-shielded, true cutoff type fixtures with concealed lamp/light source. The lighting must be directed downward and the wattage must not exceed 100 watts.
- 33) Floodlights or other types of lighting are prohibited unless approval is given plan.
- 34) Awnings and canopies used for accents over doors and windows shall not be internally lit.

- 35) 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.
- 36) Architectural construction plans must adhere to the approved site plans. Any proposed changes must be submitted to the Planning Department for approval.

**Town of Apex Construction Sequence**

1. Through the Infrastructure Inspections Manager at (919) 249-3386, schedule a pre-construction meeting with inspectors and other Town staff.
2. Fill out Survey/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 for a final inspection of protection measures. Planning will forward approval to Water Resources. Erosion Control field staff.
6. Submit the applicable S&E performance guarantee to the Development Services Supervisor at 249-3394 in Development Services. An invoice can be requested from Water Resources at (919) 362-8166. The erosion control Letter of Plan Approval will not be issued until the guarantee has been submitted.
7. Request a Letter of Plan Approval for sedimentation and erosion control measures from Water Resources staff at (919) 362-8166.
8. Complete and submit an electronic Notice of Intent (e-NOI) form with NCEMWR requesting a Certificate of Coverage (COC) under the NCGO Construction Stormwater General Permit. Visit the following website: <https://dec.nc.gov/about/divisions/energy-mineral-land-resources/energy-mineral-landpermits/stormwater-permits/construction-sw>
9. The COC must be submitted to the Town prior to the commencement of any land disturbing activity. 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. When completed, call Water Resources staff at (919) 362-8166 for an on-site inspection and to request a Certificate of Compliance. Water Resources will also forward a copy to the Building Inspections & Permitting Department.
10. Complete a Grading Permit Application, if required, from the Building Inspections & Permitting Department.
11. Once a Grading Permit is reviewed and issued by the Building Inspections & Permitting Department, arrange a pre-construction meeting with Rudy Baker at 249-3383 prior to any grading activities. This meeting is separate from any other pre-construction meetings required in the Construction Sequence.
12. Post Grading Permit prominently on site at all times.
13. Begin clearing, grubbing, and rough grade of the site in accordance with the approved grading plan.
14. Stockpile a sufficient amount of topsoil to cover 3 inches over landscaped areas at the end of the project.
15. 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.
16. After completion of any phase of grading or when land disturbing activities have temporarily ceased, establish groundcover on swales and ditches and graded slopes steeper than 3:1 within 7 calendar days; slopes that are 3:1 or flatter must establish groundcover within 14 calendar days.
17. Stabilize site areas as brought up to finished grade with vegetation or paving.
18. Prior to plat approval, all disturbance 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.
19. 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.
20. 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.
21. 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 a Certificate of Completion. Visit the State website listed above and submit an electronic Notice of Termination (e-NOI) to end coverage under the NCGO permit.
22. The Property Owner/Home Owners Association will be responsible for permanent erosion control maintenance of the site.

The signatories affirmed below certify that this sheet has been reviewed and approved solely per the certifications signed on the cover sheet of these construction plans.	
Date	WT - Stormwater
Date	Planning
Date	Planning - Transportation
Date	Fire
Date	Parks, Recreation & Cultural Res.

DATE: MARCH 4, 2020

REVISED:	DESCRIPTION:

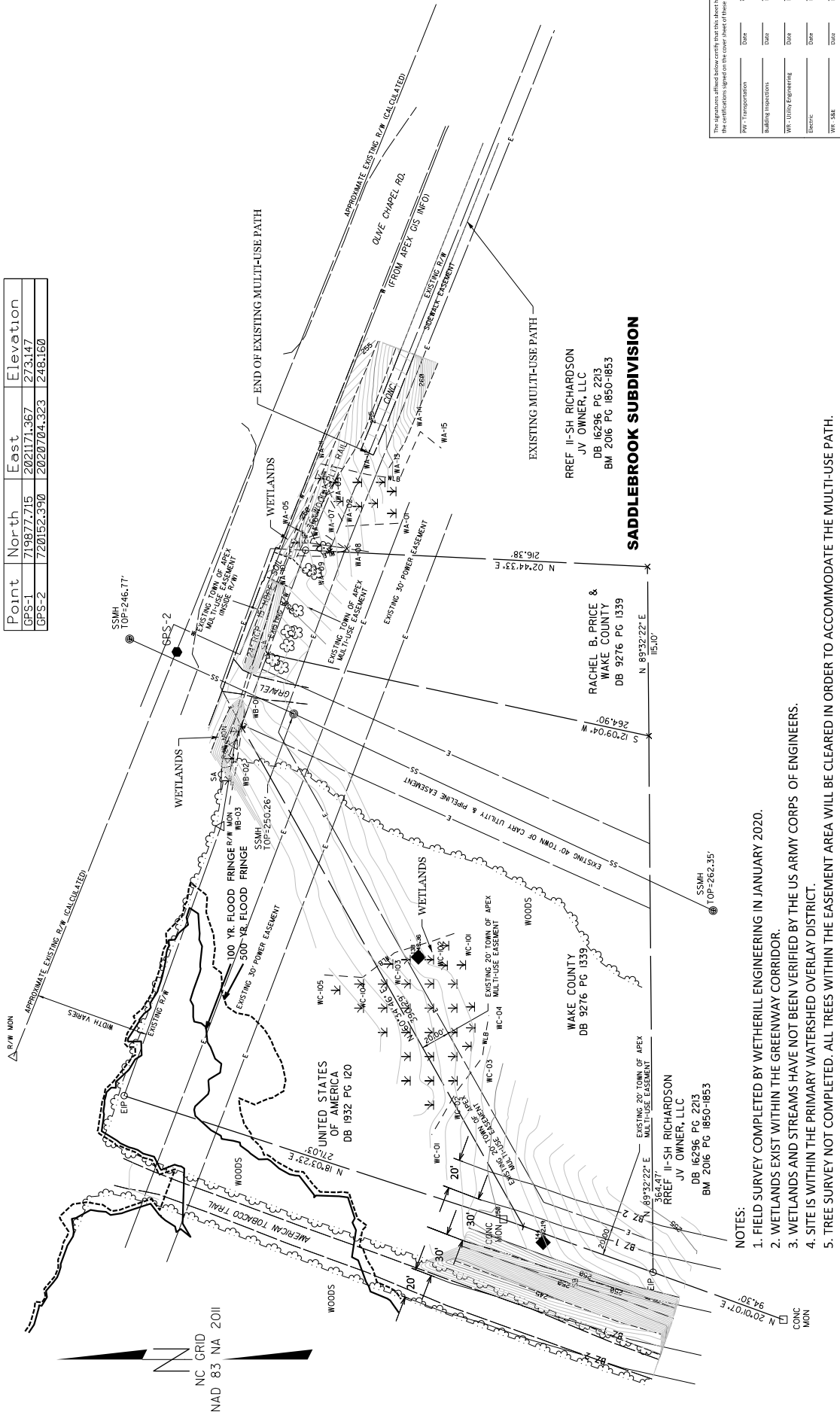
PLANS PREPARED BY: **WATERBURY ENGINEERING**  
 1233 DOWNS FARM RD., WARRINGTON, N.C. 27689  
 TEL: 919.853.8077 FAX: 919.853.8307  
 WWW.WATERBURYENGINEERING.COM  
 UNLESS ALL NOTES ARE COMPLETED

NOTES	
NET PROJECT NO.: <b>20326.01</b>	
<b>3</b>	





Point	North	East	Elevation
GPS-1	719877.715	2021171.367	273.147
GPS-2	720152.390	2020704.323	248.160



**SADDLEBROOK SUBDIVISION**

RREF II-SH RICHARDSON  
JV OWNER, LLC  
DB 16296 PG 223  
BM 2016 PG 1850-1853

RACHEL B. PRICE &  
WAKE COUNTY  
DB 9276 PG 1339

UNITED STATES  
OF AMERICA  
DB 1932 PG 120

WAKE COUNTY  
DB 9276 PG 1339

RREF II-SH RICHARDSON  
JV OWNER, LLC  
DB 16296 PG 223  
BM 2016 PG 1850-1853

**NOTES:**

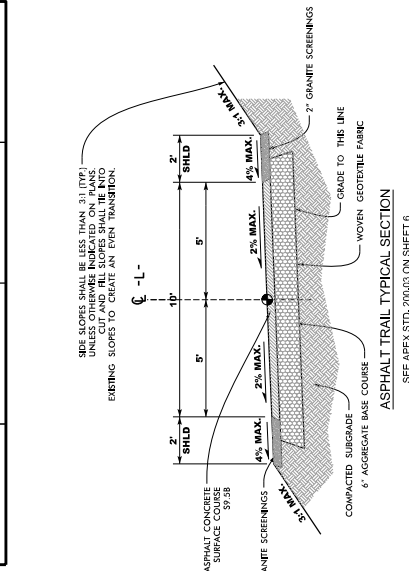
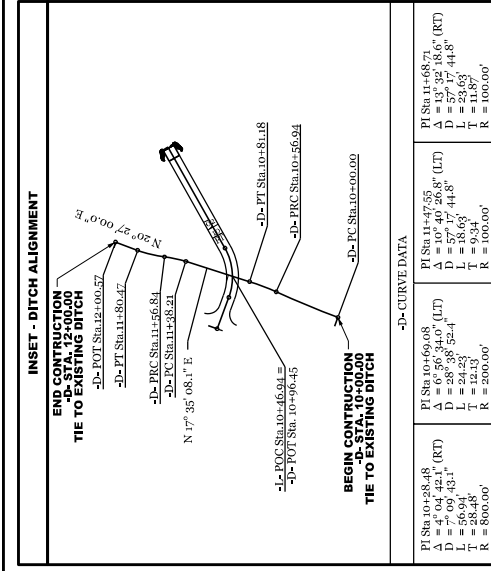
1. FIELD SURVEY COMPLETED BY WETHERILL ENGINEERING IN JANUARY 2020.
2. WETLANDS EXIST WITHIN THE GREENWAY CORRIDOR.
3. WETLANDS AND STREAMS HAVE NOT BEEN VERIFIED BY THE US ARMY CORPS OF ENGINEERS.
4. SITE IS WITHIN THE PRIMARY WATERSHED OVERLAY DISTRICT.
5. TREE SURVEY NOT COMPLETED. ALL TREES WITHIN THE EASEMENT AREA WILL BE CLEARED IN ORDER TO ACCOMMODATE THE MULTI-USE PATH.

Signature	Date	Role
_____	_____	Proj. Transmittal
_____	_____	Permitting
_____	_____	Planning
_____	_____	Public Works
_____	_____	Public Safety
_____	_____	Public Utilities
_____	_____	Other

The signatures affirmed below certify that this sheet has been reviewed and approved solely per the certifications signed on the cover sheet of these construction plans.

<p>WETHERILL ENGINEERING 1223 Boone Branch Rd., Raleigh, NC 27606 Tel: 919.851.8077 Fax: 919.851.8107</p>	<p>PLANS PREPARED BY: <b>WETHERILL ENGINEERING</b></p>	<p>DATE: MARCH 4, 2020</p>						
<p>PROJECT CONTACT: PARKS AND GREENWAY PLANNER WAKE COUNTY 1200 S. HARRIS ST., RALEIGH, NC 27605 919.272.7468</p>	<p>APEX WEST GREENWAY CONNECTION FROM OLIVE CHAPEL ROAD TO AMERICAN TOBACCO TRAIL</p>	<p>EXISTING CONDITIONS</p>						
<p>REVISIONS:</p> <table border="1"> <thead> <tr> <th>NO.</th> <th>DATE</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	NO.	DATE	DESCRIPTION				<p>WEI PROJECT NO.: <b>20326.01</b></p>	<p><b>4</b></p>
NO.	DATE	DESCRIPTION						





CHAIN	BEGIN STATION	END STATION
-L-	(TIE TO AMERICAN TOBACCO TRAIL)	10+80.00
-L-	(END BOARDWALK)	12+80.00
-L-	(END BOARDWALK)	16+44.00

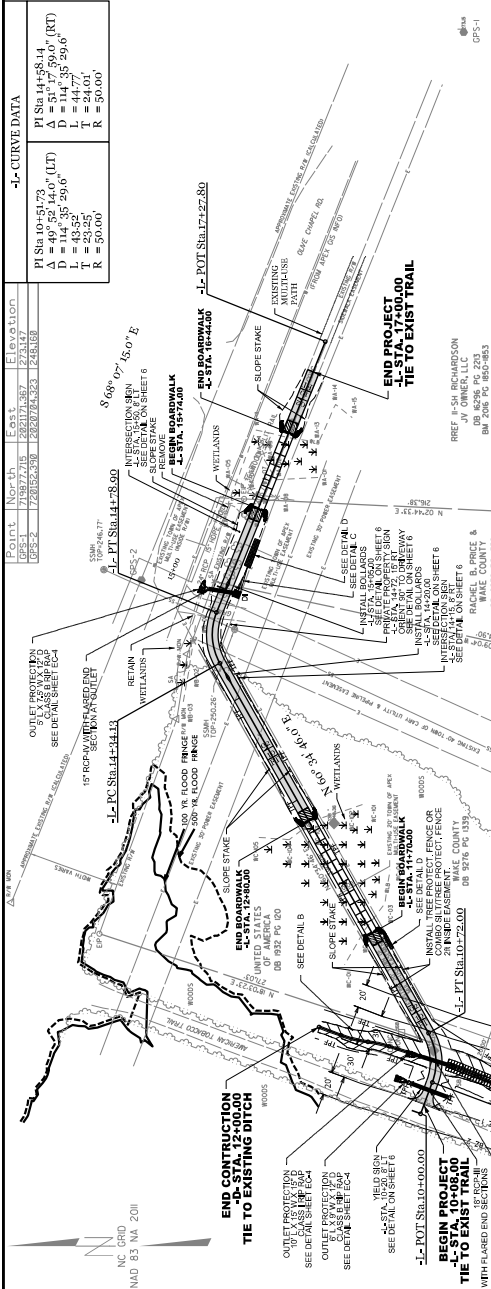
NOTE:  
 TRANSITION FROM 2% CROSS SLOPE TO 0% CROSS SLOPE AT BOARDWALK USING A 10' INCREMENT.  
 USE 10' INCREMENT TO TRANSITION CROSS SLOPE TO EXISTING TRAIL.

PLANS - 1" = 50'  
 PROFILE (HORIZONTAL) - 1" = 50'  
 PROFILE (VERTICAL) - 1" = 50'

PLAN & PROFILE SHEET  
 MET PROJECT NO.: 20326.01  
 DATE: 04/20/2020

UNLESS ALL NOTES ARE COMPLETED

1233 Boone Road, Raleigh, NC 27606  
 BOB: 919.857.8777 FAX: 919.857.9107



**PROFILES**

Station	Profile Type	PI	TA	LA	EA	RT
10+29.54	BEGIN DITCH TIE TO EXISTING DITCH	10+29.54	10+29.54	10+29.54	10+29.54	10+29.54
10+48.18	BEGIN GRADE TIE TO EXISTING TRAIL	10+48.18	10+48.18	10+48.18	10+48.18	10+48.18
10+66.81	BEGIN BOARDWALK	10+66.81	10+66.81	10+66.81	10+66.81	10+66.81
10+80.00	BEGIN DITCH TIE TO EXISTING DITCH	10+80.00	10+80.00	10+80.00	10+80.00	10+80.00
10+95.00	EXIST 42" DIP SS INVERT UNKNOWN (TOWN OF CARY)	10+95.00	10+95.00	10+95.00	10+95.00	10+95.00
11+00.00	BEGIN DITCH TIE TO EXISTING TRAIL	11+00.00	11+00.00	11+00.00	11+00.00	11+00.00
11+14.00	BEGIN BOARDWALK	11+14.00	11+14.00	11+14.00	11+14.00	11+14.00
11+24.00	BEGIN GRADE TIE TO EXISTING TRAIL	11+24.00	11+24.00	11+24.00	11+24.00	11+24.00
11+40.00	BEGIN BOARDWALK	11+40.00	11+40.00	11+40.00	11+40.00	11+40.00
11+56.81	BEGIN DITCH TIE TO EXISTING DITCH	11+56.81	11+56.81	11+56.81	11+56.81	11+56.81
11+74.00	BEGIN BOARDWALK	11+74.00	11+74.00	11+74.00	11+74.00	11+74.00
11+84.47	BEGIN DITCH TIE TO EXISTING DITCH	11+84.47	11+84.47	11+84.47	11+84.47	11+84.47
11+94.00	BEGIN BOARDWALK	11+94.00	11+94.00	11+94.00	11+94.00	11+94.00
12+00.00	BEGIN GRADE TIE TO EXISTING TRAIL	12+00.00	12+00.00	12+00.00	12+00.00	12+00.00
12+10.00	BEGIN BOARDWALK	12+10.00	12+10.00	12+10.00	12+10.00	12+10.00
12+24.00	BEGIN DITCH TIE TO EXISTING DITCH	12+24.00	12+24.00	12+24.00	12+24.00	12+24.00
12+40.00	BEGIN BOARDWALK	12+40.00	12+40.00	12+40.00	12+40.00	12+40.00
12+56.81	BEGIN DITCH TIE TO EXISTING DITCH	12+56.81	12+56.81	12+56.81	12+56.81	12+56.81
12+66.81	BEGIN BOARDWALK	12+66.81	12+66.81	12+66.81	12+66.81	12+66.81
12+80.00	BEGIN GRADE TIE TO EXISTING TRAIL	12+80.00	12+80.00	12+80.00	12+80.00	12+80.00
12+84.47	BEGIN BOARDWALK	12+84.47	12+84.47	12+84.47	12+84.47	12+84.47
12+94.00	BEGIN DITCH TIE TO EXISTING DITCH	12+94.00	12+94.00	12+94.00	12+94.00	12+94.00
13+00.00	BEGIN BOARDWALK	13+00.00	13+00.00	13+00.00	13+00.00	13+00.00
13+14.00	BEGIN GRADE TIE TO EXISTING TRAIL	13+14.00	13+14.00	13+14.00	13+14.00	13+14.00
13+15.00	BEGIN DITCH TIE TO EXISTING DITCH	13+15.00	13+15.00	13+15.00	13+15.00	13+15.00
13+24.00	BEGIN BOARDWALK	13+24.00	13+24.00	13+24.00	13+24.00	13+24.00
13+40.00	BEGIN DITCH TIE TO EXISTING TRAIL	13+40.00	13+40.00	13+40.00	13+40.00	13+40.00
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13+66.81	BEGIN GRADE TIE TO EXISTING TRAIL	13+66.81	13+66.81	13+66.81	13+66.81	13+66.81
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13+94.00	BEGIN BOARDWALK	13+94.00	13+94.00	13+94.00	13+94.00	13+94.00
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14+94.00	BEGIN BOARDWALK	14+94.00	14+94.00	14+94.00	14+94.00	14+94.00
15+00.00	BEGIN GRADE TIE TO EXISTING TRAIL	15+00.00	15+00.00	15+00.00	15+00.00	15+00.00
15+14.00	BEGIN BOARDWALK	15+14.00	15+14.00	15+14.00	15+14.00	15+14.00
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15+94.00	BEGIN BOARDWALK	15+94.00	15+94.00	15+94.00	15+94.00	15+94.00
16+00.00	BEGIN GRADE TIE TO EXISTING TRAIL	16+00.00	16+00.00	16+00.00	16+00.00	16+00.00
16+14.00	BEGIN BOARDWALK	16+14.00	16+14.00	16+14.00	16+14.00	16+14.00
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16+94.00	BEGIN BOARDWALK	16+94.00	16+94.00	16+94.00	16+94.00	16+94.00
17+00.00	BEGIN GRADE TIE TO EXISTING TRAIL	17+00.00	17+00.00	17+00.00	17+00.00	17+00.00

UNLESS ALL NOTES ARE COMPLETED

1233 Boone Road, Raleigh, NC 27606  
 BOB: 919.857.8777 FAX: 919.857.9107

APEX WEST GREENWAY  
 CONNECTION FROM  
 OLIVE CHAPEL ROAD  
 TO AMERICAN TOBACCO TRAIL

DATE: 04/20/2020

### TYPICAL GREENWAY REGULATORY AND WARNING SIGNAGE

REGULATORY TYPE	REGULATORY SIGNAGE	SIZE
STOP	STOP	18" x 18"
YIELD	YIELD	18" x 18"
SPEED LIMIT	15	18" x 18"
NO LEFT TURN	NO LEFT TURN	18" x 18"
NO RIGHT TURN	NO RIGHT TURN	18" x 18"
NO TRUCKS	NO TRUCKS	18" x 18"
NO PUBLIC ACCESS	NO PUBLIC ACCESS	18" x 18"

### CONSTRUCTION DETAILS

CONSTRUCTION DETAILS

1. SIGN FACE

2. NYLON WASHER

3. LOCK WASHER

4. LOCKING NUT

5. 1/2" O.D. POST

6. 1/4" THICK INSERT

7. SIGN FACE

### GREENWAY SIGNAGE

#### GENERAL

### GREENWAY SIGNAGE

#### WAYFINDING

**DIAGONAL**  
45° x 12" x 4"  
PARK NAME  
DIRECTIONAL SIGNAGE  
DIRECTION: TOWARD

**MILEAGE**  
36" x 6" x 4"  
MILE  
MILEAGE SIGNAGE

**ID SIGN**  
72" x 12" x 4"  
PARK NAME  
ID SIGNAGE

LOCATED AT TRAIL START LOOP REFERENCE: TBD

LOCATE AT STREET/BIKEWALK BIKEWAY DIRECTION: TBD

LOCATE AT STREET/BIKEWALK BIKEWAY DIRECTION: TBD

### GREENWAY SECTIONS

**ASPHALT PAVED PATH**  
4" MAX. ASPHALT  
2" MIN. CROSS SLOPE  
PAVEMENT DESIGN: 1" SURFACE COURSE, 6" AGGREGATE BASE COURSE, 2" GRANITE SCREENING SHOULDER

**CONCRETE PAVED PATH**  
4" MAX. CONCRETE  
2% MIN. CROSS SLOPE  
PAVEMENT DESIGN: 1" SURFACE COURSE, 6" AGGREGATE BASE COURSE, 2" GRANITE SCREENING SHOULDER

CONTROL JOINTS TO BE PERPENDICULAR TO RUN OF WALK  
EXPANSION JOINTS TO BE PERPENDICULAR TO RUN OF WALK

CONSTRUCTION MANAGEMENT APPROVED BY THE TOWN OF PEPE

### GREENWAY DETAILS

#### (STANDARD BOLLARD)

TYPICAL BOLLARD CLASSICAL AT ENTRANCE

PAVED TRAIL

FIXED BOLLARD

FIXED BOLLARD

FIXED BOLLARD

THERMOPLASTIC YELLOW, 10 MILS

PAVEMENT MARKING DETAIL (TOP VIEW)

NOTES:

- BOLLARDS SHALL BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS AND SHALL BE TYPICALLY 4" DIA.
- BOLLARDS SHALL BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS AND SHALL BE TYPICALLY 27 INCHES ABOVE GRADE PER MANUFACTURER'S SPECIFICATIONS.
- BOLLARDS SHALL BE INSTALLED MINIMUM 10 FEET FROM THE BACK CURB BAWP WHEN APPLICABLE.
- DO NOT SEPARATION BETWEEN BOLLARDS AND BOLLARDS WHEN TRAIL IS 6 FEET IN WIDTH. BOLLARDS SHALL NOT BE REQUIRED WHEN MOTOR VEHICLE ACCESS IS BLOCKED BY PEDESTRIAN RAILING OR FENCING.

### GREENWAY DETAILS

#### BENCH, TRASH, RECYCLING, DOG STATION

RECREATION BENCH WITH 2x4x6 YELLOW PINE SLATS

BENCH DETAILS

WHEEL CHAIR ACCESSIBLE CONCRETE PAD

TRASH BAG DISPENSER

TRASH RECEPTACLE WITH 30 GAL CAPACITY

RECYCLING RECEPTACLE WITH 30 GAL CAPACITY

DOG STATION WITH 18" DIA. HOLES

TRASH, RECYCLING AND DOG STATION DETAILS

NOTES:

- BENCHES SHALL BE MADE OF 2x4x6 YELLOW PINE SLATS OR EQUIVALENT.
- BENCHES TO BE INSTALLED BY THE TOWN OF PEPE.
- BENCHES SHALL BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS AND SHALL BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS.
- BENCHES SHALL BE MOUNTED IN BAWP.
- BENCHES SHALL BE MOUNTED IN BAWP.
- TRASH RECEPTACLE SHALL BE OCC (BLACK) WITH DOME LID AND PUSH OPEN DOOR (RECYCLING SHOULD BE BLUE) WITH DOME LID AND PUSH OPEN DOOR (RECYCLING SHOULD BE BLUE) WITH DOME LID AND PUSH OPEN DOOR.
- DOG STATION SHALL BE CONCRETE.
- PRODUCTS SHALL BE PER MANUFACTURER'S SPECIFICATIONS AND SHALL BE PER MANUFACTURER'S SPECIFICATIONS.
- TRASH BAG DISPENSER SHALL BE PER MANUFACTURER'S SPECIFICATIONS AND SHALL BE PER MANUFACTURER'S SPECIFICATIONS.
- RECYCLING RECEPTACLE SHALL BE PER MANUFACTURER'S SPECIFICATIONS AND SHALL BE PER MANUFACTURER'S SPECIFICATIONS.
- BENCHES SHALL BE MOUNTED IN BAWP.
- BENCHES SHALL BE MOUNTED IN BAWP.
- BENCHES SHALL BE MOUNTED IN BAWP.

This signature affirmed below certifies that this sheet has been reviewed and approved safety per the specifications shown on the lower sheet of these construction plans.

DATE	DATE	DATE	DATE	DATE	DATE
DATE	DATE	DATE	DATE	DATE	DATE

DATE: FEBRUARY 4, 2020

CONSTRUCTION DETAILS

NET PROJECT NO.: 20326.01

SCALE: AS SHOWN

UNLESS ALL DIMENSIONS COMPLIANT

APEX WEST GREENWAY CONNECTION FROM OLIVE CHAPEL ROAD TO AMERICAN TOBACCO TRAIL

UNLESS ALL DIMENSIONS COMPLIANT

DATE: FEBRUARY 4, 2020

CONSTRUCTION DETAILS

NET PROJECT NO.: 20326.01

DATE: FEBRUARY 4, 2020

CONSTRUCTION DETAILS

NET PROJECT NO.: 20326.01

**GROUND STABILIZATION AND MATERIALS HANDLING PRACTICES FOR COMPLIANCE WITH THE NCG01 CONSTRUCTION GENERAL PERMIT**

The details and specifications on this plan sheet will result in the construction activity being considered compliant with the Ground Stabilization and Materials Handling actions of the NCG01 Construction General Permit (Sections E and F, respectively). The permittees 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	
Site Area Description	Required Ground Stabilization Timeframes
	Stabilize within this many calendar days after ceasing land disturbance
(a) Perimeter dikes, swales, ditches, and perimeter slopes	7
(b) High Quality Water (HQW) Zones	7
(c) Slopes steeper than 3:1	7
(d) Slopes 3:1 to 4:1	14
(e) Areas with slopes flatter than 4:1	14

**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	
Technique	Description
Stabilize the ground sufficiently so that rain will not dislodge the soil. Use one of the techniques in the table below:	
<b>Temporary Stabilization</b>	<ul style="list-style-type: none"> <li>Permanent grass seed covered with straw or other mulches and tackifiers</li> <li>Hydroseeding</li> <li>Rollled erosion control products with or without temporary grass seed</li> <li>Appropriately applied straw or other mulch</li> <li>Plastic sheeting</li> </ul>
<b>Permanent Stabilization</b>	<ul style="list-style-type: none"> <li>Permanent grass seed covered with straw or other mulches and tackifiers</li> <li>Geotextile fabrics such as permanent soil reinforcement matting</li> <li>Hydroseeding</li> <li>Strips or other permanent plantings covered with mulch</li> <li>Drift pins and evenly distributed ground cover</li> <li>Structural methods such as concrete, asphalt or retaining walls</li> <li>Rollled erosion control products with grass seed</li> </ul>

**POLYACRYLAMIDES (PAMS) AND FLOCCULANTS**

- Select flocculants that are appropriate for the soils being exposed during construction, selecting from the *NC DWR List of Approved PAMS/Flocculants*.
- Apply flocculants at or before the inlets to Erosion and Sediment Control Measures.
- Apply flocculants at the concentrations specified in the *NC DWR List of Approved PAMS/Flocculants* and in accordance with the manufacturer's instructions.
- Provide ponding area for containment of treated stormwater before discharging onsite.
- Store flocculants in leak-proof containers that are kept under storm-resistant cover or surrounded by secondary containment structures.

**EQUIPMENT AND VEHICLE MAINTENANCE**

- Maintain vehicles and equipment to prevent discharge of fluids.
- Identify drip pans under any stored equipment.
- Identify leaks and repair as soon as feasible, or remove leaking equipment from the project.
- Collect all spent fluids, store in separate containers and properly dispose as hazardous waste (recycle when possible).
- Remove leaking vehicles and construction equipment from service until the problem has been corrected.
- 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**

- Never bury or burn waste. Place litter and debris in approved waste containers.
- Provide a sufficient number and size of waste containers (e.g. dumpster, trash receptacle) on site to contain construction and domestic wastes.
- Locate waste containers at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
- 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.
- Cover waste containers at the end of each workday and before storm events or provide secondary containment. Repair or replace damaged waste containers.
- Anchor all lightweight items in waste containers during times of high winds.
- Empty waste containers as needed to prevent overflow. Clean up immediately if containers overflow.
- Dispose waste off-site at an approved disposal facility.
- On business days, cleanup and dispose of waste in designated waste containers.

**PAINT AND OTHER LIQUID WASTE**

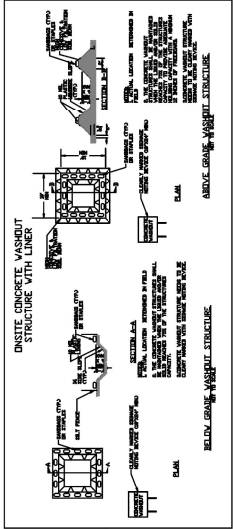
- Do not dump paint and other liquid waste into storm drain, streams or wetlands.
- Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
- Contain liquid wastes in a controlled area.
- Containment must be labeled, sized and placed appropriately for the needs of site.
- Prevent the discharge of soaps, solvents, detergents and other liquid wastes from construction sites.

**PORTABLE TOILETS**

- 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 sit fence or place on a gravel pad and surround with sand bags.
- Provide staking or anchoring of portable toilets during periods of high winds or in high foot traffic areas.
- Monitor portable toilet 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**

- Show stockpile locations on plans. Locate earthen material stockpile areas at least 50 feet away from storm drain inlets, streams or wetlands. Provide erosion controls and surface waters unless it can be shown no other alternatives are reasonably available.
- Protect stockpile with sit fence installed along toe of slope with a minimum offset of five feet from the toe of stockpile.
- Provide stable stone access point when feasible.
- Stabilize stockpile within the timeframes provided on this sheet and in accordance with the approved plan and specifications. 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**

- Do not discharge concrete or cement slurry from the site.
- Dispose of, or recycle set/dried, hardened concrete residue in accordance with local and state solid waste regulations and at an approved facility.
- 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 sit fence.
- 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 standards details are not available, use one of the two types of temporary concrete washouts provided on this detail.
- 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 a storm drain system or receiving surface waters. Liquid waste must be pumped to a storm drain system or receiving surface waters.
- Locate washout at least 50 feet from storm drain inlets and surface waters unless it can be shown that no other alternatives are reasonably available. As a minimum, install protection of storm drain inlet(s) closest to the washout which could receive spills or overflow.
- Locate washout 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.
- Limit. Post signage on the washout itself to identify the location.
- 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.
- 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**

- Store and apply herbicides, pesticides and rodenticides in accordance with label restrictions.
- 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.
- 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.
- Do not stockpile these materials onsite.

**HAZARDOUS AND TOXIC WASTE**

- Create designated hazardous waste collection areas on-site.
- Place hazardous waste containers under cover or in secondary containment.
- Do not store hazardous chemicals, drums or bagged materials directly on the ground.

**EFFECTIVE: 04/01/19**

<p>REVISIONS:</p> <table border="1"> <thead> <tr> <th>NO.</th> <th>DATE</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	NO.	DATE	DESCRIPTION													<p>PLANS PREPARED BY:</p> <p><b>Apex</b>  <small>1200 W. ARMY AVENUE, SUITE 200              RALEIGH, NC 27605              919.272.7468</small></p> <p>PROJECT CONTACT:              JESSICA HARRIS  <small>1233 DOWNE STREET, SUITE 100              RALEIGH, NC 27605              919.857.7468</small></p>	<p>PLANS PREPARED BY:</p> <p><b>WATTELL ENGINEERING</b>  <small>1233 DOWNE STREET, SUITE 100              RALEIGH, NC 27605              919.857.7468</small></p>	<p>DATE: MARCH 4, 2020</p> <p>PROJECT NO.: <b>20326.01</b></p> <p>PROJECT NAME: <b>EC-1</b></p>
NO.	DATE	DESCRIPTION																

The signatories affirm below certify that this sheet has been reviewed and approved solely per the certifications signed on the cover sheet of these construction plans.

DATE	NAME	TITLE
_____	WV - Stormwater	_____
_____	Planning	_____
_____	Planning - Transportation	_____
_____	Fire	_____
_____	Public, Recreation & Cultural Resources	_____



**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 gauges maintained in good working order	Only on days with rainfall	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-observed 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 calendar days and within 24 hours of a rain event 2.10 inch in 24-hours	1. Description 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 operating properly. 5. Description, evidence, and date of corrective actions taken. 6. Identification of the discharge outfalls inspected.
(3) Stormwater discharge controls (SDCs)	At least once per 7 calendar days and within 24 hours of a rain event 2.10 inch in 24 hours	1. Date and time of the inspection. 2. Evidence of indicators of stormwater pollutants such as oil shewn, floating or suspended solids or discoloration. 3. Indication of visible sediment leaving the site. 4. Identification of the discharge outfalls inspected. 5. If visible sediment is found outside of the limits, then a record of the following shall be made: 1. Action taken to clean up or stabilize the sediment that has left the site. 2. Description, evidence, and date of corrective actions taken, and an explanation as to the actions taken to control future releases.
(4) Stormwater stabilization measures	At least once per 7 calendar days and within 24 hours of a rain event 2.10 inch in 24 hours	If the stream is impaired or sediment-laden, the following shall be made: 1. Description, evidence and date of corrective actions taken, and an explanation as to the actions taken to control future releases. 2. Records of the required reports to the appropriate Division (where applicable).
(5) Ground stabilization measures	After each phase of grading	1. The phase of grading (installation of perimeter E&SC measures, clearing and grubbing, installation of storm drainage facilities, completion of all land-disturbing activities, and construction of individual permit ground cover). 2. Documentation that the required ground stabilization measures have been provided within the required time frame. If the required ground stabilization measures are not provided within the required time frame, the permittee shall be notified as soon as possible.

NOTE: The rain inspection resets the 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 cover age 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 to indicate compliance with approved E&SC measures. This documentation is required upon the 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 inspection 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:

- This General Permit as well as the Certificate of Coverage, after it is received.
- 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 a similar inspection form that does not include all the required elements 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 eNOI 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, or  
• 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	• <b>Within 24 hours</b> , an oral or electronic notification. • <b>Within 7 calendar days</b> , a report that contains a description of the sediment and action 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 impaired or sediment-laden, the permittee shall determine if additional requirements are needed to assure compliance with the federal or state impaired-waters conditions.
(b) Oil spills and release of hazardous substances	• <b>Within 24 hours</b> , an oral or electronic notification. The notification shall include information about the date, time, nature, volume and location of the spill or release. • <b>Anticipated bypasses</b> (40 CFR 122.41(m)(3)) • <b>Unanticipated bypasses</b> (40 CFR 122.41(m)(3))
(c) Noncompliance with the conditions that may endanger health or the environment	• <b>Within 24 hours</b> , an oral or electronic notification. The report shall include an evaluation of the anticipated quality and effect of the bypass. • <b>Within 7 calendar days</b> , a report that includes an evaluation of the quality and effect of the bypass.
(d) Noncompliance with the conditions that may endanger health or the environment	• <b>Within 24 hours</b> , an oral or electronic notification. The report shall include an evaluation of the anticipated quality and effect of the bypass. • <b>Within 7 calendar days</b> , a report that includes a description of the noncompliance, and the plan of noncompliance. 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 recurrence of the noncompliance. (40 CFR 122.41(i)(6)). • Division staff may waive the requirement for a written report on a case-by-case basis.

**NORTH CAROLINA**  
*Environmental Quality*

**EFFECTIVE: 04/01/19**

The signatory affirms below certify that this sheet has been reviewed and approved safety per the certifications signed on the cover sheet of these construction plans.

DATE	DATE	DATE	DATE
Permit Preparation	Permit Review	Permit Issuance	Permit Termination
Permit Preparation	Permit Review	Permit Issuance	Permit Termination
Permit Preparation	Permit Review	Permit Issuance	Permit Termination
Permit Preparation	Permit Review	Permit Issuance	Permit Termination

DATE: MARCH 4, 2020

PROJECT NO: **20326.01**

PROJECT NAME: **EC-2**

PLANS PREPARED BY:

**WATERBURY ENGINEERING**

1233 BOWEN ROAD, SUITE 100, WASHINGTON, NC 27606  
Tel: 919.857.8077 Fax: 919.858.9307

UNLESS ALL NOTES ARE COMPLETED

PLANS PREPARED BY:

**Apex**

10000 OAK RIDGE, SUITE 100, WASHINGTON, NC 27606  
Tel: 919.272.7468

PROJECT CONTACT:  
PARKS AND GREENWAY PLANNER  
APRIL 2020  
Tel: 919.272.7468

**APEX WEST GREENWAY**  
CONNECTION FROM  
OLIVE CHAPEL ROAD  
TO AMERICAN TOBACCO TRAIL

**SECTION G: ITEM (4)**  
**DRAW DOWN OF SEDIMENT BASINS FOR MAINTENANCE OR CLOSEOUT**

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:

- 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,
- 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,
- Dewatering discharges are treated with controls to minimize discharges of pollutants that is removed from the sediment basin. Examples of appropriate controls include properly sited, designed and maintained dewatering tanks, weir tanks, and filtration systems.
- 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,
- Velocity dissipation devices such as check dams, sediment traps, and riprap are provided at the discharge points of all dewatering devices, and
- 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.

## SOIL STABILIZATION TIMEFRAMES

SITE DESCRIPTION	STABILIZATION TIME	TIMEFRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQM) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10:1 OR LESS IN LENGTH AND ARE NOT STEEPER THAN 3:1 IN DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	14 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH.
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE. EXCEPT FOR PERIMETERS AND HQM ZONES.

**NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.**

**ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.**

**EROSION CONTROL NARRATIVE**

THIS PROJECT CONSISTS OF THE CONSTRUCTION OF A GREENWAY TRAIL DRIVE PIPE INSTALLATION, CHANNEL WORK, AND PEDESTRIAN BRIDGES. EROSION AND SEDIMENT CONTROL MEASURES INCLUDE SILT FENCE, SPECIAL SEDIMENT CONTROL FENCE OUTLETS, PIPE INLET PROTECTION, AND SEDIMENT CHECK DAMS.

**DISTURBED AREA: 0.6 ACRES**  
**WATER SOURCE: REEDY BRANCH; FROM SOURCE TO BEAVER CREEK, CAPE FEAR RIVER BASIN. CLASSIFICATION: WS-IV;NSW**

**NPDES**

The Federal Clean Water Act requires that National Pollutant Discharge Elimination Systems (NPDES) permits be obtained for discharges of stormwater runoff from construction activities disturbing one or more acres. In North Carolina, the NPDES stormwater discharge permit for construction activities is considered automatically effective once the NC Division of Land Resources or the delegated local program approves the Soil Erosion and Sedimentation Control Plan. Applicants will receive a copy of the permit once the Soil Erosion and Sedimentation Control Plan has been reviewed and a Letter of Plan Approval is issued. Should you have questions regarding NPDES permit, please contact Sara Knies, (DENR-Surface Water Protection) at (919) 791-4238.

**Wetlands**

Any project having the possibility of wetlands (indicators being flood hazard solid or alluvial soils, wetland vegetation, blue line streams, etc.) within its boundaries should be investigated by the U.S. Army Corps of Engineers prior to any disturbance to determine the existence of wetlands and any requirement thereof. For information contact James Lastinger, Raleigh Field Office, U.S. Army Corps of Engineers, (919) 554-4884 ext. 32.

Sd. #	Description	Symbol
400.01	Temporary Silt Fence	
400.02	Temporary Silt Fence Outlet	
400.05	Temporary Rock Silt Check Dam	
400.10	Pipe Inlet Protection (Plywood & Stone)	
400.18	Pipe Outlet Protection	
	Limits of Disturbance	— to —
	Tree Protection Area Limits	— to —
400.04	Yard Inlet Protection	

The signatories affirm below certify that this sheet has been reviewed and approved safety per the certifications signed on the lower sheet of these construction plans.

Rev. 7: Preparation	_____	Date	_____	Rev. 8: Stormwater	_____	Date	_____
Building Inspections	_____	Date	_____	Planning	_____	Date	_____
Rev. 1: Utility Engineering	_____	Date	_____	Planning - Transportation	_____	Date	_____
Electric	_____	Date	_____	Fire	_____	Date	_____
Rev. 5: S&E	_____	Date	_____	Public, Recreation & Cultural Resources	_____	Date	_____

DATE: MARCH 4, 2020

**EROSION CONTROL NOTES**

NET PROJECT NO.: **20326.01**

**EC-3**

PLANS PREPARED BY:

**WATTELL ENGINEERING**  
 1233 DOWNE ROAD, SUITE 100, N.C. 27606  
 BOB: 919.857.8077 FAX: 919.858.9107

UNLESS ALL NOTATIONS COMPLIANT

**APEX WEST GREENWAY**  
 CONNECTION FROM  
 OLIVE CHAPEL ROAD  
 TO AMERICAN TOBACCO TRAIL

**Apex**  
 TOWN OF APEX  
 WATER CONTROL  
 APEX, NC 27502

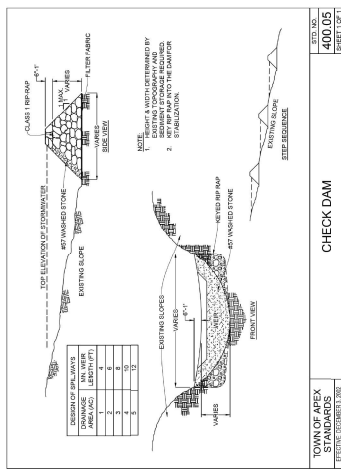
REV. NO.	DATE	DESCRIPTION

PROJECT CONTACT:  
 PROJECT MANAGER AND GREENWAY PLANNER  
 APEX, NC 27502  
 919.272.7468

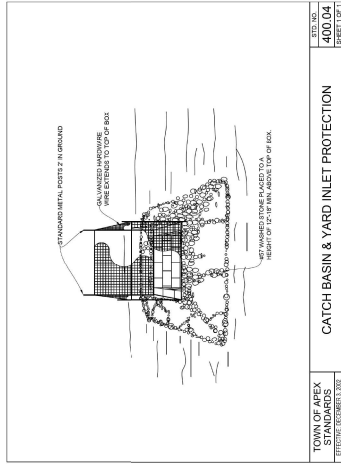
Town of Apex Construction Sequence

The following begins only after Construction Plans are approved, signed by Town staff and copies are received.

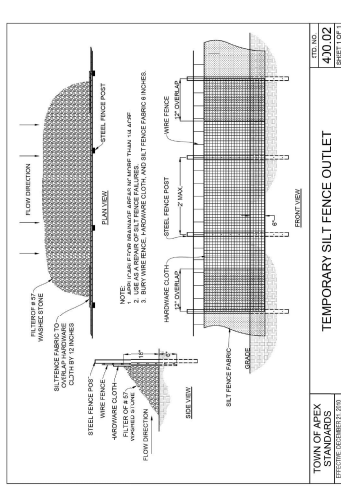
1. With the infrastructure inspections Manager at (919) 249-3386, schedule a pre-construction meeting with inspectors and other Town staff.
2. Fill out Tree/Protection Fencing Installation Permit Application (obtain from Planning Department).
3. Have a surveyor flag property lines, easements, buffers, 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 for a final inspection of protection measures. Planning will forward approval to Water Resources, Erosion Control field staff.
6. Submit the applicable S&E performance guarantees to the Development Services Supervisor at 249-3394 in Development Services. An invoice can be requested from Water Resources at (919) 362-8166. The erosion control Letter of Plan Approval will not be issued until the guarantee has been submitted. Request a Letter of Plan Approval for sedimentation and erosion control measures from Water Resources staff at (919) 362-8166.
7. Complete and submit an electronic Notice of Intent (e-NOI) form with NCDENR requesting a Certificate of Coverage (COC) under the NCGO1 Construction Stormwater General Permit. Visit the following website: <https://denr.nc.gov/about/divisions/energy-mineral-land-resources/energy-mineral-land-permits/stormwater-permits/construction-sw>. The COC must be submitted to the Town prior to the commencement of any land disturbing activity.
8. 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.
9. When completed, call Water Resources staff at (919) 362-8166 for an on-site inspection and to request a Certificate of Compliance. Water Resources will also forward a copy to the Building Inspections & Permitting Department.
10. Complete a Grading Permit Application, if required, from the Building Inspections & Permitting Department. Once a Grading Permit is reviewed and issued by the Building Inspections & Permitting Department, arrange a pre-construction meeting with Rudy Baker at 249-3381 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 groundcover on swales and ditches and graded slopes steeper than 3:1 within 7 calendar days; slopes that are 3:1 or flatter must establish groundcover within 14 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 an electronic Notice of Termination (e-NOT) to end coverage under this NCGO1 permit.
21. The Property Owner/Home Owners Association will be responsible for permanent erosion control maintenance of the site.



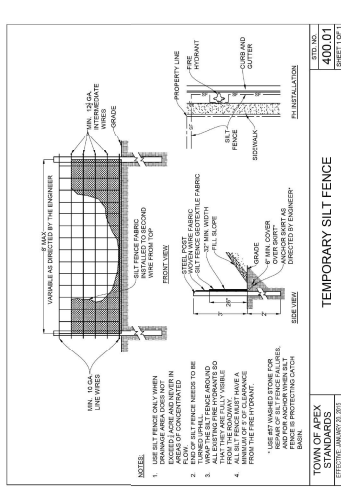
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 SHEET 1 OF 1  
 400.05  
 CHECK DAM



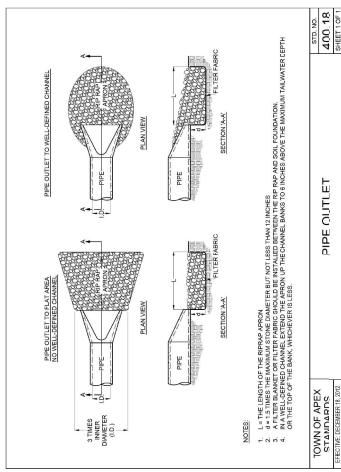
TOWN OF APEX STANDARDS  
 SHEET 1 OF 1  
 400.04  
 CATCH BASIN & YARD INLET PROTECTION



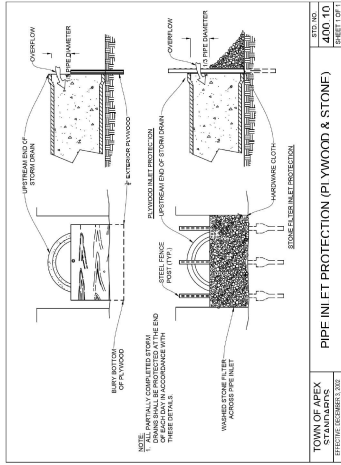
TOWN OF APEX STANDARDS  
 SHEET 1 OF 1  
 400.02  
 TEMPORARY SILT FENCE OUTLET



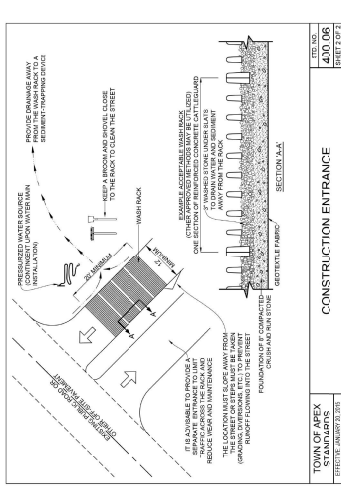
TOWN OF APEX STANDARDS  
 SHEET 1 OF 1  
 400.01  
 TEMPORARY SILT FENCE



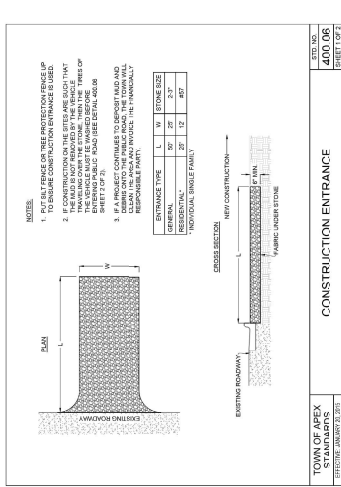
TOWN OF APEX STANDARDS  
 SHEET 1 OF 1  
 400.18  
 PIPE OUTLET



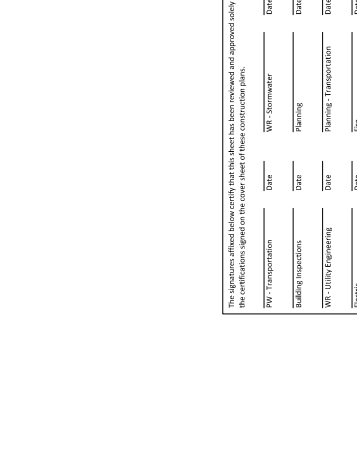
TOWN OF APEX STANDARDS  
 SHEET 1 OF 1  
 400.10  
 PIPE INLET PROTECTION (PLYWOOD & STONE)



TOWN OF APEX STANDARDS  
 SHEET 1 OF 1  
 400.06  
 CONSTRUCTION ENTRANCE



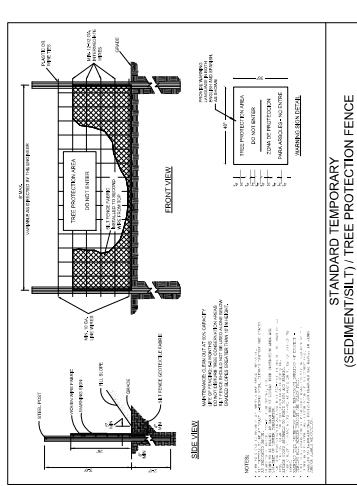
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 400.06  
 CONSTRUCTION ENTRANCE



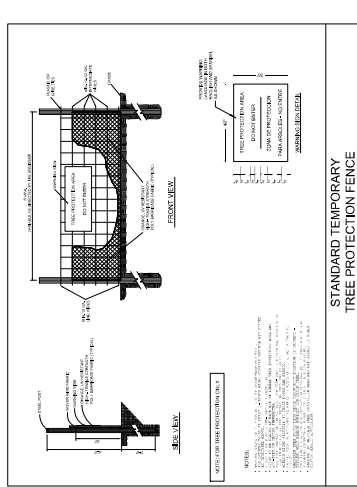
TOWN OF APEX STANDARDS  
 SHEET 1 OF 1  
 400.08  
 STANDARD TEMPORARY TREE PROTECTION FENCE



TOWN OF APEX STANDARDS  
 SHEET 1 OF 1  
 400.08  
 STANDARD TEMPORARY TREE PROTECTION FENCE



TOWN OF APEX STANDARDS  
 SHEET 1 OF 1  
 400.08  
 STANDARD TEMPORARY TREE PROTECTION FENCE



TOWN OF APEX STANDARDS  
 SHEET 1 OF 1  
 400.08  
 STANDARD TEMPORARY TREE PROTECTION FENCE

NO. DATE	DESCRIPTION

PLANS PREPARED BY:  
  
 1233 DOWNS DRIVE, APT. 100, APEX, NC 27504  
 TEL: 919.857.8077 FAX: 919.857.8107

PROJECT CONTACT:  
 PARKS AND GREENWAY PLANNER  
 TOWN OF APEX  
 1233 DOWNS DRIVE, APT. 100  
 APEX, NC 27504  
 919.272.7468

PROJECT CONTACT:  
 PARKS AND GREENWAY PLANNER  
 TOWN OF APEX  
 1233 DOWNS DRIVE, APT. 100  
 APEX, NC 27504  
 919.272.7468

PROJECT CONTACT:  
 PARKS AND GREENWAY PLANNER  
 TOWN OF APEX  
 1233 DOWNS DRIVE, APT. 100  
 APEX, NC 27504  
 919.272.7468



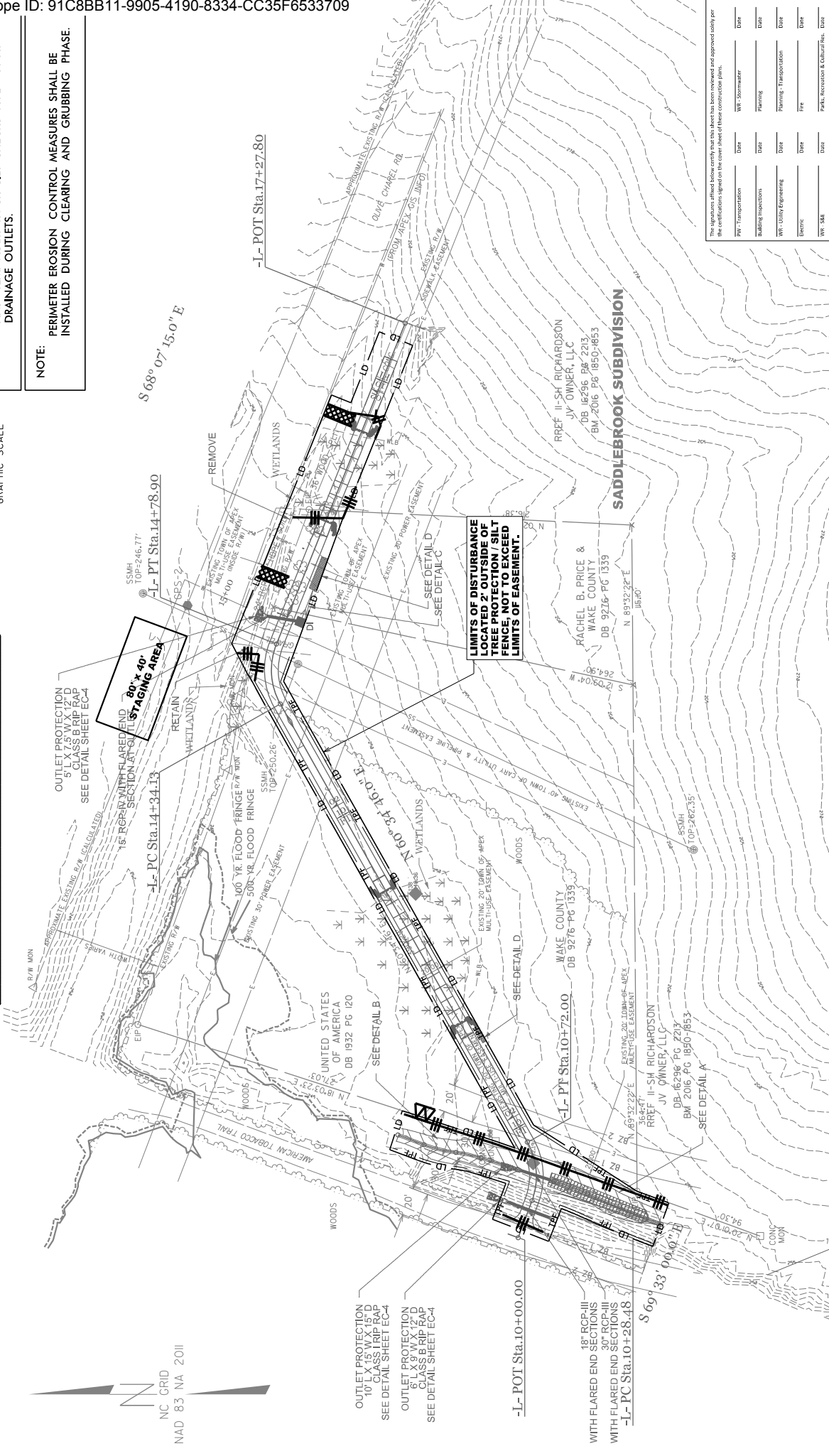
**BOARDWALK TO BE CONSTRUCTED TOP-DOWN,  
NO GRUBBING IN WETLANDS ALLOWED.**

30' 0' 30'  
GRAPHIC SCALE

NOTE: PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.

NOTE: PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

N  
NAD 83 NA 2011



This signature affirmed below certifies that this sheet has been reviewed and approved solely per the certifications signed on the cover sheet of these construction plans.

DATE	DATE	DATE	DATE	DATE	DATE
DATE	DATE	DATE	DATE	DATE	DATE
DATE	DATE	DATE	DATE	DATE	DATE
DATE	DATE	DATE	DATE	DATE	DATE
DATE	DATE	DATE	DATE	DATE	DATE
DATE	DATE	DATE	DATE	DATE	DATE

DATE: MARCH 4, 2020

EROSION CONTROL PLAN  
CLEARING AND GRUBBING PHASE

PROJECT NO.: 20326.01

EC-5

UNLESS ALL NOTES ARE COMPLETED

PLANS PREPARED BY: **Apex ENGINEERING**

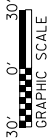
1233 Boone Branch Rd., Raleigh, NC 27606  
BOB 919.857.8777 FAX 919.857.9107

PROJECT CONTACT: **Apex ENGINEERING**

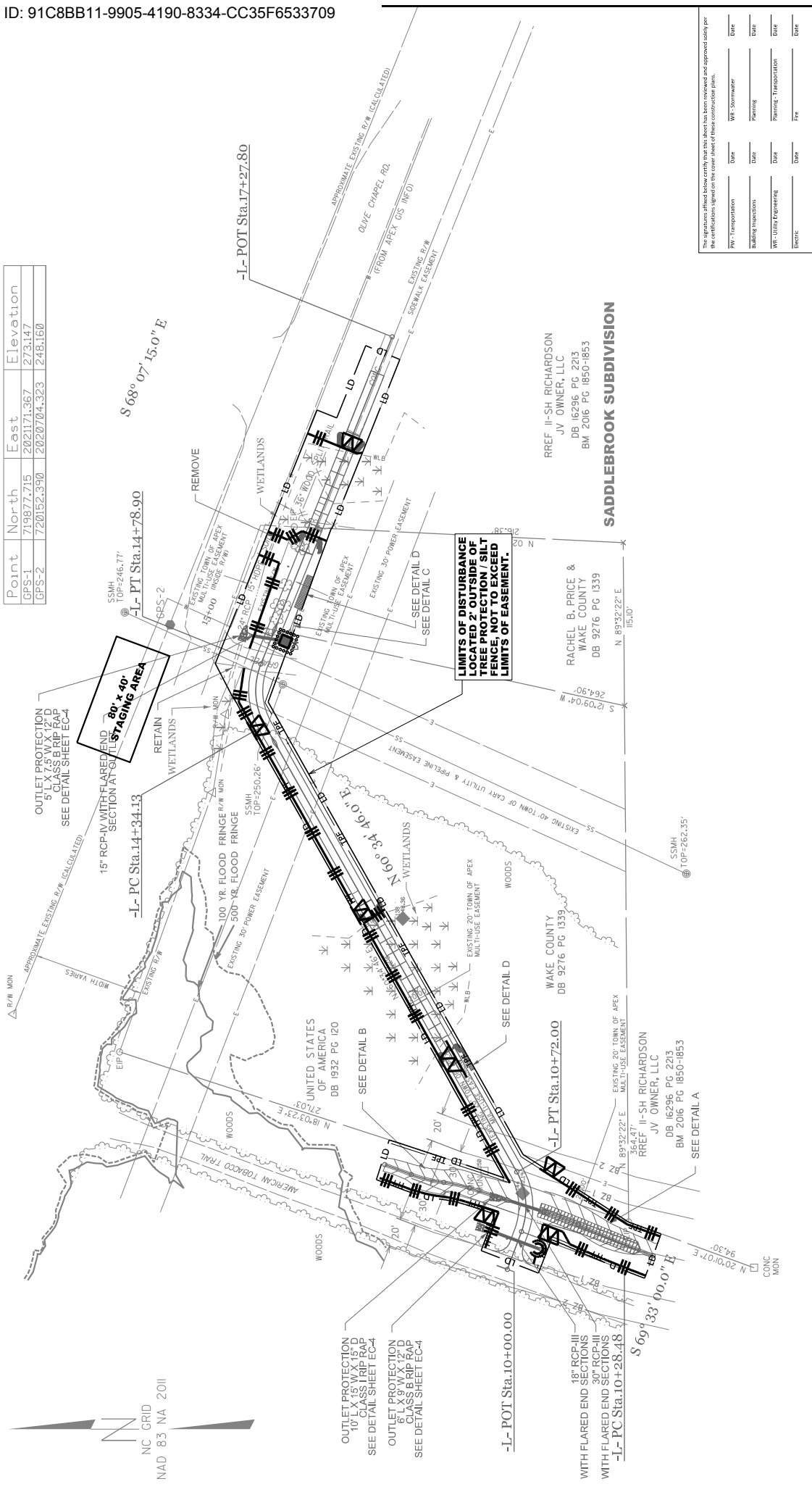
PROJECT NO.: 20326.01  
PROJECT NAME: EROSION CONTROL PLAN  
PROJECT LOCATION: SADDLEBROOK SUBDIVISION

REVISIONS:	DATE	DESCRIPTION

FINAL EROSION CONTROL PHASE



Point	North	East	Elevation
GPS-1	719877.715	202171.367	273.147
GPS-2	720152.350	202070.323	248.160



**LIMITS OF DISTURBANCE LOCATED 2' OUTSIDE OF TREE PROTECTION / SILT FENCE, NOT TO EXCEED LIMITS OF EASEMENT.**

REVISIONS:	DATE	DESCRIPTION

DATE: MARCH 4, 2020

EROSION CONTROL PLAN  
FINAL PHASE

WEI PROJECT NO.: 20326.01

UNLESS ALL NOTES ARE COMPLETED

PLANS PREPARED BY:

**WATERLILY ENGINEERING**

1233 Boone Branch Rd., Raleigh, NC 27606  
Box 918 853.8077 Fax: 919.853.9307

MAINT PREPARED FOR:

**Apex**

PROJECT CONTACT:  
PARKS AND GREENWAY PLANNER  
APRIL 2020  
919.272.7468

REVISIONS:	DATE	DESCRIPTION

The signatures affirmed below certify that this sheet has been reviewed and approved solely per the certifications signed on the lower sheet of these construction plans.

DATE	DATE	DATE	DATE	DATE	DATE

RREF II-SH RICHARDSON  
JV OWNER, LLC  
DB 16296 PG 2213  
BM 2016 PG 1850-1853

RACHEL B. PRICE &  
WAKE COUNTY  
DB 9276 PG 1339

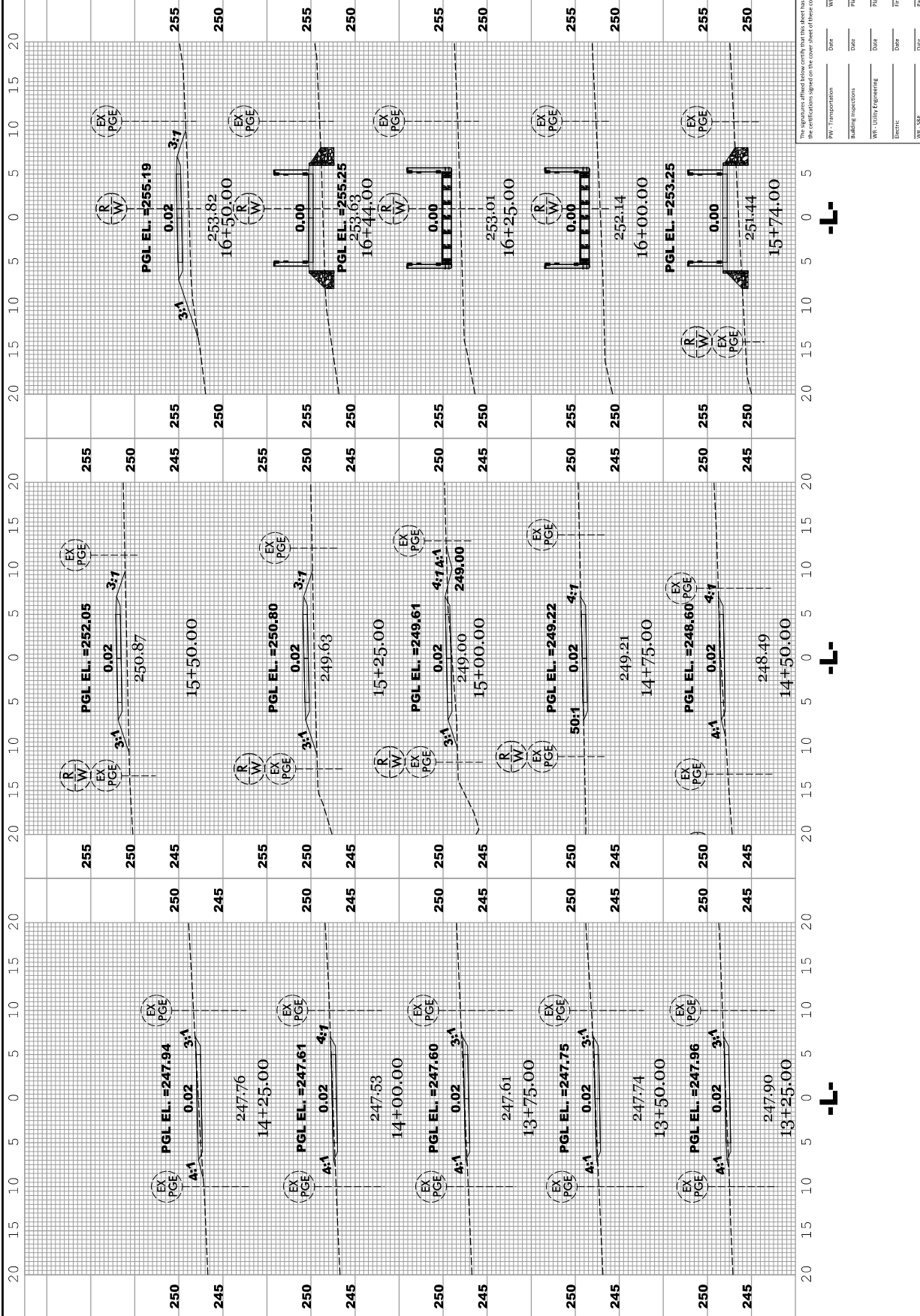
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JV OWNER, LLC  
DB 16296 PG 2213  
BM 2016 PG 1850-1853

**SADDLEBROOK SUBDIVISION**

**EC-6**





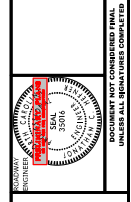


The signatures affirmed below certify that this sheet has been reviewed and approved solely per the certifications signed on the lower sheet of these construction plans.

DATE	DATE	DATE	DATE
DATE	DATE	DATE	DATE
DATE	DATE	DATE	DATE
DATE	DATE	DATE	DATE
DATE	DATE	DATE	DATE
DATE	DATE	DATE	DATE

REV	DATE	DESCRIPTION

PLANS PREPARED BY:  
 PROJECT CONTACT:  
 PEDES AND GREENWAY PLANNER  
 1000 N. W. 20th St.  
 AURORA, NC 27003  
 919.272.7468



1233 Boone Road, Inc. Member, N.C. 27006  
 Box 919 919.857.8077 Fax: 919.858.9307

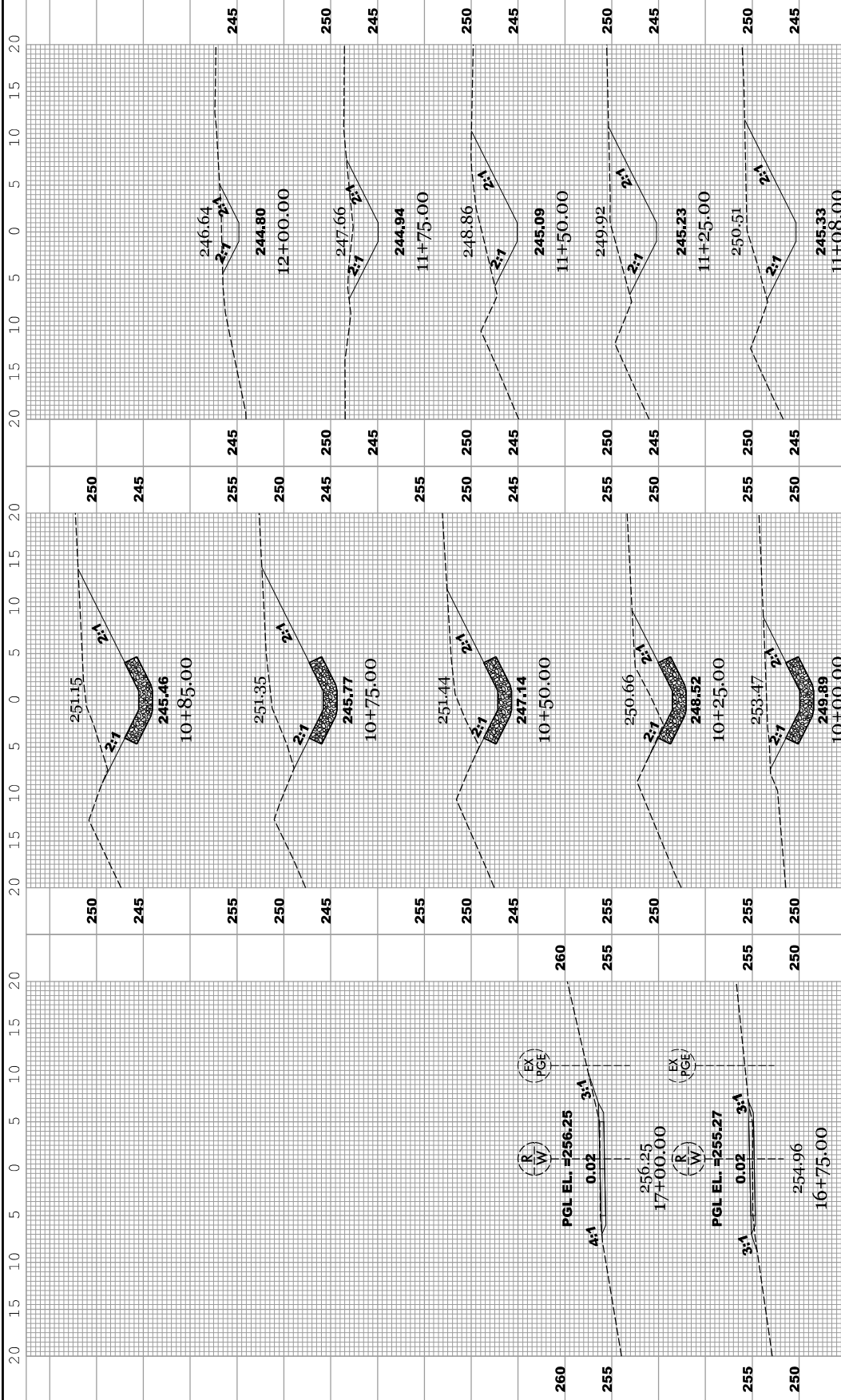
PLANS PREPARED BY:  
 PROJECT CONTACT:  
 PEDES AND GREENWAY PLANNER  
 1000 N. W. 20th St.  
 AURORA, NC 27003  
 919.272.7468

DATE: FEBRUARY 4, 2020  
 SHEET PROJECT NO.: 20326.01

CROSS SECTIONS

UNLESS ALL NOTES ARE COMPLIANT

**X-2**



The signatures affirmed below certify that this sheet has been reviewed and approved solely per the certifications signed on the cover sheet of these construction plans.

DATE: MARCH 4, 2020

SCALE: AS SHOWN

PROJECT NO.: 20326.01

PROJECT NAME: APEX WEST GREENWAY CONNECTION FROM OLIVE CHAPEL ROAD TO AMERICAN TOBACCO TRAIL

PROJECT LOCATION: APEX, NORTH CAROLINA

PROJECT OWNER: TOWN OF APEX, NORTH CAROLINA

DESIGNED BY: [Signature]

CHECKED BY: [Signature]

IN CHARGE: [Signature]

DATE: [Blank]

DATE: [Blank]

DATE: [Blank]

DATE: [Blank]

DATE: [Blank]

DATE: [Blank]

DATE: [Blank]

DATE: [Blank]

DATE: [Blank]

REVISIONS:

NO.	DATE	DESCRIPTION

PLANS PREPARED BY:

**Apex ENGINEERING**

1222 Boone Street, Apex, NC 27606  
 Box: 919 851 8077 Fax: 919 851 8307

REGISTERED PROFESSIONAL ENGINEER  
 STATE OF NORTH CAROLINA  
 EXPIRES 12/31/2020  
 UNLESS ALL NOTATIONS COMPLIANT

**APEX WEST GREENWAY**

CONNECTION FROM OLIVE CHAPEL ROAD TO AMERICAN TOBACCO TRAIL

CROSS SECTIONS

20326.01

**X-3**

**NOTES:**

THE ELEVATED TIMBER BOARDWALK HAS BEEN DESIGNED FOR A PEDESTRIAN LIVE LOAD OF 30 PSF OR A VEHICULAR LOAD OF 10000 LBS. (H-5) AND A WIND LOAD ON SUPERSTRUCTURE OF 54 PSF.

FOR CONCRETE APPROACH SLABS, SEE PROJECT SPECIFICATIONS.

FOR CONCRETE APPROACH SLABS, SEE PROJECT SPECIFICATIONS.

ALL DIMENSIONS ARE BASED ON NOMINAL DIMENSIONS.

ALL EXPOSED CORNERS OF 2x8 TOP RAILS SHALL BE FINISHED WITH 1/2" MINIMUM RADIUS.

PRE-DRILLED HOLES MAY BE NECESSARY TO PREVENT SPLITTING OF TIMBERS DURING CONSTRUCTION. 2x6 DECKING TO BE ATTACHED TO JOIST USING 3" x 1/4" SCREWS. DECKING SHALL BE ATTACHED WITH TWO GALVANIZED OR STAINLESS STEEL SCREWS AT EVERY JOIST. DECKING SHALL BE PLACED TO AVOID CUPPING.

2x6 RAILING TO BE ATTACHED TO EACH RAIL POST USING 4" NO. 10 x 3/4" GALVANIZED OR STAINLESS STEEL SCREWS. RAILING SHALL BE PLACED TO AVOID CUPPING.

ALL BOLTS, NUTS, WASHERS, STAPLES ETC. SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A153.

SIMPSON STRONG TIE CONNECTORS (WHERE USED) SHALL BE GALVANIZED.

ALL WORK SHALL BE ACCOMPLISHED AS DIRECTED BY THE ENGINEER. ANY DISCREPANCIES FOUND ON THIS DRAWING SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING.

2x6 BOTTOM SUPPORT RAIL TO BE INSTALLED 2" ABOVE DECK SURFACE.

ALL STEEL PARTS AND HARDWARE IN ACCORDANCE WITH ARTICLE 1016 OF THE NCDOT STANDARD SPECIFICATIONS. GALVANIZE ALL CHAIN LINK FENCE FABRIC, POSTS, RAILS, FITTINGS, HARDWARE AND ACCESSORIES SHALL BE BLACK VINYL COATED IN ACCORDANCE WITH ARTICLE 1050 OF THE NCDOT STANDARD SPECIFICATIONS.

CHAIN LINK FENCE FABRIC SHALL BE INSTALLED USING A FENCE STRETCHER TO ACHIEVE ADEQUATE TENSION.

CHAIN LINK FENCE SHALL BE INSTALLED PRIOR TO THE INSTALLATION OF THE TOP AND BOTTOM RAILS.

CLASS I RIP RAP SHALL BE IN ACCORDANCE WITH NCDOT STANDARD SPECIFICATIONS.

COST OF APPROACH RAILS SHALL BE INCLUDED IN THE PRICE BID FOR TIMBER BOARDWALK.

COST OF FILTER FABRIC SHALL BE INCLUDED IN LIN. FT. OF TIMBER BOARDWALK.

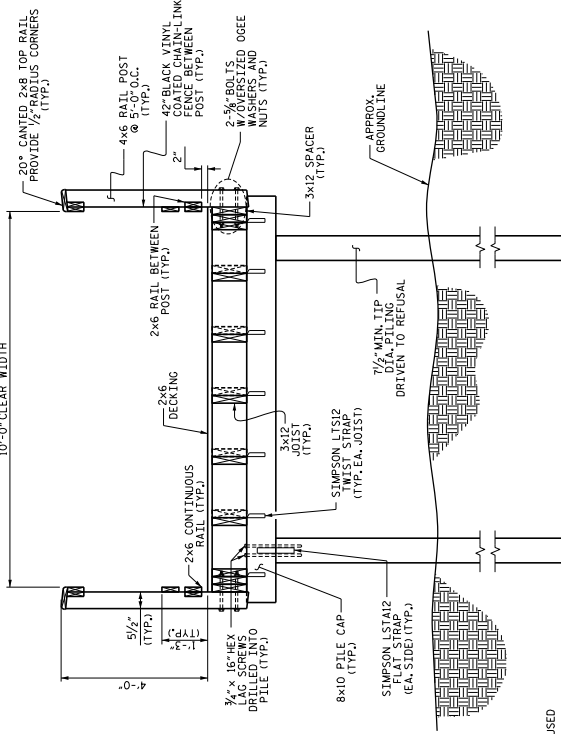
X-BRACE TIMBER PILES IN THE TRANSVERSE DIRECTION WHEN THE HEIGHT FROM THE BOTTOM OF THE PILE CAP TO THE NATURAL GROUND SURFACE EXCEEDS 5'. ATTACH X-BRACING TO THE PILES WITH 3/4" HEX BOLTS AT EACH END. X-BRACING IN THE LONGITUDINAL DIRECTION WILL NOT BE ALLOWED. FOR X-BRACING, SEE DETAIL.

VINYL COATED CHAIN LINK FENCE SHALL BE KNUCKLED AT BOTH ENDS.

PAY ITEMS	
TIMBER BOARDWALK	180.00 LIN. FT.
BOARDWALK PILES	465 LIN. FT.
CONCRETE APPROACH SLAB	4 EACH
CLASS I RIP RAP	10 TONS

ELEVATED TIMBER GREENWAY LOCATIONS		
SECTION NO.	BEGIN STATION	END STATION
1	11+70.00	12+80.00
2	15+74.00	16+44.00



SECTION A-A

**FOUNDATION NOTES:**

PILES ARE DESIGNED FOR A FACTORED RESISTANCE OF 6 KIPS PER PILE. DRIVE PILES TO A REQUIRED RESISTANCE OF 10 KIPS PER PILE.

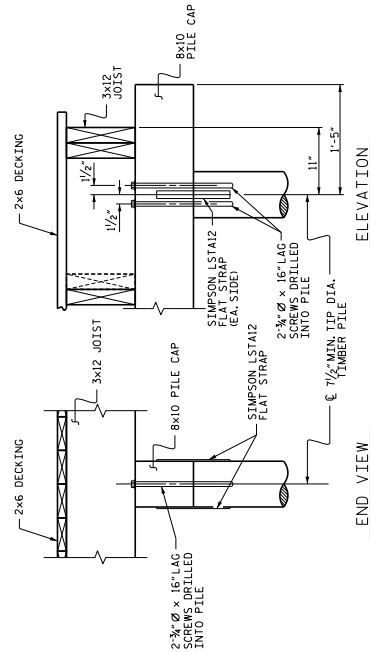
PILES SHALL BE DRIVEN TO A MINIMUM DEPTH OF 9 FEET.

A HAMMER WITH A RATED ENERGY OF AT LEAST 10,000 FOOT-POUNDS SHOULD BE USED TO DRIVE THE PILES.

IN ORDER TO MINIMIZE DAMAGE TO THE TIMBER PILES DURING DRIVING, IT IS RECOMMENDED TO LIMIT THE COMPRESSIVE DRIVING STRESS TO THREE TIMES THE ALLOWABLE DESIGN STRESS OF THE TIMBER PILE.

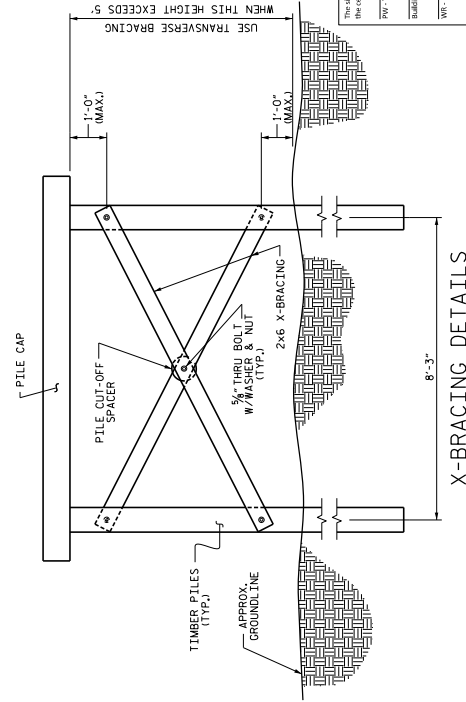
DRIVING SHOULD BE TERMINATED IMMEDIATELY IF REFUSAL (I.E. 4 BLOWS PER INCH) IS REACHED TO MINIMIZE DAMAGING THE PILES.

WHEN PILE REFUSAL OCCURS AT 5 FEET OR LESS, THE GEOTECHNICAL ENGINEER OF RECORD SHOULD BE CONTACTED FOR FURTHER DIRECTION.



ELEVATION

8x10 PILE CAP CONNECTION TO PILE



X-BRACING DETAILS

TYPICAL BOARDWALK DETAILS

This signature sheet below certifies that this sheet has been reviewed and approved safety per the certifications signed on the lower sheet of these construction plans.

DATE	DATE	DATE	DATE
DATE	DATE	DATE	DATE
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DATE	DATE	DATE	DATE

DATE: MARCH 4, 2020

TYPICAL BOARDWALK DETAILS

NET PROJECT NO.: 20326.01

S-1



PLANS PREPARED BY:  
**APEX ENGINEERING**  
 1233 Boone Road, Raleigh, NC 27606  
 Fax: 919.851.8077 Fax: 919.851.8107

**APEX WEST GREENWAY**  
 CONNECTION FROM  
 OLIVE CHAPEL ROAD  
 TO AMERICAN TOBACCO TRAIL

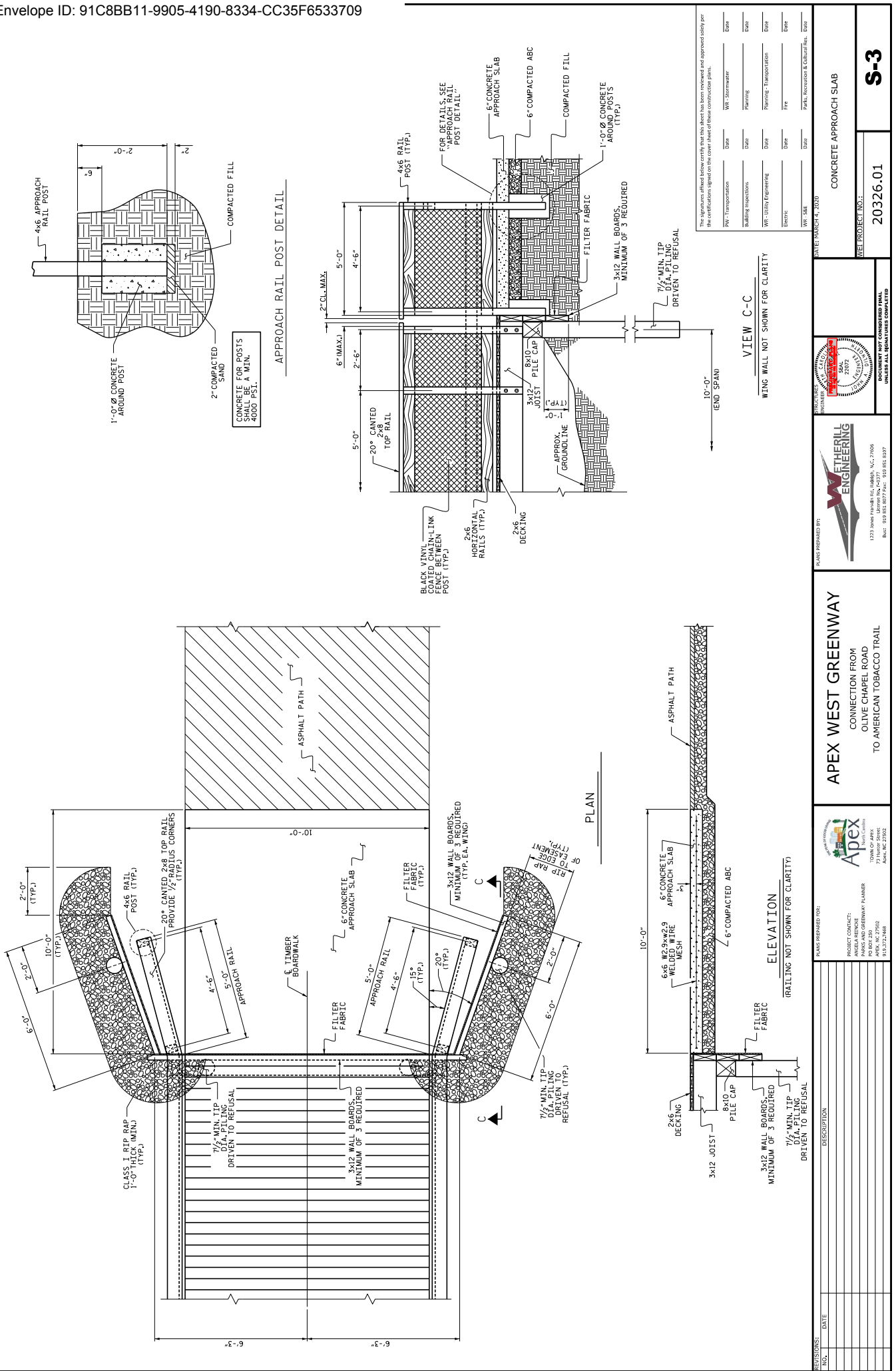


PROJECT CONTACT:  
 PARKS AND GREENWAY PLANNER  
 TOWN OF APEX  
 1233 BOONE ROAD  
 RALEIGH, NC 27606  
 919.272.7468

NO.	DATE	DESCRIPTION







**REVISIONS:**

NO.	DATE	DESCRIPTION

DATE: JANUARY 4, 2020

CONCRETE APPROACH SLAB

WEI PROJECT NO.: 20326.01

UNLESS ALL NOTATIONS COMPLIANT

**APEX ENGINEERING**  
 1333 DOWNE FARM RD., SUITE 101, COLLEGE PARK, MD 20740  
 TEL: 301.544.2777 FAX: 301.544.2778

PLANS PREPARED BY: [Signature]

**APEX WEST GREENWAY**  
 CONNECTION FROM  
 OLIVE CHAPEL ROAD  
 TO AMERICAN TOBACCO TRAIL

**APEX ENGINEERING**  
 1333 DOWNE FARM RD., SUITE 101, COLLEGE PARK, MD 20740  
 TEL: 301.544.2777 FAX: 301.544.2778

PROJECT CONTACT: [Name]  
 PROJECT NO.: [Number]  
 PROJECT ADDRESS: [Address]  
 PROJECT DATE: [Date]

PROJECT TYPE: PARKS AND GREENWAY PLANNER

DATE: [Date]

SCALE: [Scale]

DATE: [Date]

DATE: [Date]

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**S-3**