

**Director's Report**

Project Name: Lakepointe  
 Description: Final site plan and PDA re-approval  
 Date on Agenda this packet pertains to: August 15, 2024

- |  |  |
|--|--|
| <input type="checkbox"/> Public Hearing            | <input type="checkbox"/> Special Land Use                  |
| <input type="checkbox"/> Initial Submittal         | <input type="checkbox"/> Rezoning                          |
| <input checked="" type="checkbox"/> Revised Plans  | <input checked="" type="checkbox"/> Other: PDA re-approval |
| <input type="checkbox"/> Preliminary Approval      |  |
| <input checked="" type="checkbox"/> Final Approval |  |

Contact	Consultants & Departments	Approval	Denial	Approved w/Conditions	Other	Comments
Sean O'Neil	CDD Director	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Subject to all staff and consultant review comments being addressed.
DLZ	Engineering Consultant	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See letters dated 04/10/2024 and 008/07/24.
Justin Quagliata	Former Staff Planner	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See letter dated 04/02/2024.
John Holland	WLT Fire Chief	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See letter dated 03/24/2024.
Lisa Hamameh	Township Attorney	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See letter dated 08/07/2024.



INNOVATIVE IDEAS  
EXCEPTIONAL DESIGN  
UNMATCHED CLIENT SERVICE

April 10, 2024

Sean O' Neil, Director  
Community Development Department  
Charter Township of White Lake  
7525 Highland Road  
White Lake, Michigan 48383

**RE: Lake Pointe – Final Site Plan and Final Engineering Plan –7<sup>th</sup> Review**

DLZ # 1745-0385-00

Dear Mr. O' Neil,

Our office has reviewed the above-mentioned revised plans prepared by Seiber, Keast, Lehner Engineering and dated February 13, 2024. These plans were reviewed for conformance with the Township Engineering Design Standards. We offer the following comments for your consideration:

Please note that comments from our December 21, 2023 review are listed in *italics*. Responses to those comments are listed in **bold**. New comments are listed in standard type.

*Preliminary Site Plan Comments*-The following comments from our Preliminary Site Plan review letter dated January 7, 2020 will need to be addressed:

Grading/Paving

- 1. The proposed bypass lane on the west side of the Union Lake Road has been removed from this submittal. We defer to Oakland County Road Commission regarding the requirements for this bypass lane.* **Comment remains as a notation.**

Storm Sewer & Storm Water Management

- 1. The plans have been revised to utilize detention instead of retention. A detention basin outlet has been provided which will leave the site, cross Union Lake Road, and discharge through the West*

*Valley site which is currently under common ownership. The FEP plans for both developments will need to be coordinated to ensure capacity is available in the West Valley development and proposed outlet. Condo Documents will need to be clarified for both developments regarding shared maintenance responsibility. The Road Commission for Oakland County will need to approve and permit the proposed storm sewer outlet crossing. **Comment remains as a notation. We also note that the FEP plans for both developments have been coordinated and that capacity is available in and accounted for in the West Valley storm sewer system. A supplemental sheet (Overall Storm Water Management System “West Valley & Lake Pointe”) has been included in the FEP sets for both developments.***

### Final Site Plan/Final Engineering Plan Comments-

#### Grading/Paving

- 1. An off- site easement will be required from Independence Village for construction of proposed sidewalk should the area for construction fall outside the existing Union Lake Road right of way. Please verify location of right of way relative to proposed sidewalk. Comment remains. Design engineer has indicated that the applicant will be sending an easement request to the Independence Village owner requesting an easement for the sidewalk that is proposed across the Independence Village frontage. **Comment remains as a notation.***
- 2. Note that the grading plan has been reviewed for general conformance with the Township’s requirements for grading. More detailed grading reviews will be conducted on individual buildings at time of plot plan submittal. **Comment remains as a notation.***

#### Sanitary Sewer

- 1. The sanitary sewer proposed along the Union Lake Road frontage is proposed to be constructed as part of the proposed West Valley development. Note that approval of this development is subject to the approval of that offsite sanitary sewer, and it must be available for use by this development. In addition, an off-site easement will be required from Independence Village granted to West Valley for construction of proposed sanitary sewer should the area for construction fall outside the existing Union Lake Road right of way. Please verify location of right of way relative to proposed sanitary sewer. Design engineer has noted that the existing sanitary sewer to the northwest along Union Lake Road is within the future 60’ half right of way for Union Lake Road. **Comment remains as a notation in regard to West Valley approval requirements.***
  - 2. It should be noted that the REU unit assignment factor of 0.6 REU per unit is acceptable for the purpose of capacity calculations however the Township Ordinance requires 1.0 REU per unit for the purpose of capital connection charges. **Comment remains as a notation.***
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3. *Approvals/permits will be required from OCWRC and EGLE. Once sanitary sewer revisions have been addressed, please provide signed & sealed electronic set for submittal to WRC along with a completed part 41 Permit Application. Easement exhibits have been submitted for review and comments were provided in our April 6, 2021 review letter. Please provide revised easement exhibits for review. Comment addressed. Revised easement exhibits were submitted, and outstanding comments have been addressed. Please reference our April 28, 2021 PDA review letter. In addition, a signed and sealed electronic set for sanitary sewer permit application and a Part 41 permit application have recently been provided. We note that EGLE held the previous permit submittal until the sanitary sewer plans and permit application were submitted for West Valley. No sanitary sewer permit has been issued for Lake Pointe. Resubmittal of plans and permit application to EGLE is currently in process. **Comment remains as a notation.***

### Watermain

1. *The plans show a 20-foot-wide watermain easement which is acceptable. Easement exhibits shall be provided for review as attachments to the Township standard conveyance document. Easement exhibits have been submitted for review and comments were provided in our April 6, 2021 review letter. Please provide revised easement exhibits for review. Comment addressed. Revised easements exhibits were submitted, and outstanding comments have been addressed. Please reference our April 28, 2021, PDA review letter. **Comment remains as a notation.***
2. *A permit will be required from EGLE for the watermain portion of the project. Once the watermain items have been addressed, please provide 5 signed & sealed hard copies of applicable plan sheets along with a completed, electronic Act 399 permit application for Township signature and submittal to EGLE. Comment outstanding; An EGLE Act 399 permit was issued April 14, 2021 and is valid for 2 years, so it is now expired. The permit will need to be renewed. Comment addressed. Signed and sealed plans and permit application for watermain permit renewal have been submitted electronically to our office; submittal to the appropriate agencies for permit renewal is currently in process. **Comment remains as a notation.***

### Stormwater Management

1. *A Storm Water Management Facilities Easement, Maintenance Agreement and Lien document will need to be completed and exhibits provided for review. Easement exhibits have been submitted for review and comments were provided in our April 6, 2021 review letter. Please provide revised easement exhibits for review. Comment addressed. Revised easements exhibits were submitted, and*
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*outstanding comments have been addressed. Please reference our April 28, 2021, PDA review letter.*

**Comment remains as a notation.**

2. *Flows from the proposed detention basin for this development are proposed to be routed through proposed storm sewer in the proposed West Valley development to the southeast on the south side of Union Lake Road. Note that the West Valley development will require Final Engineering Plan approval prior to approval of Lake Pointe, since the feasibility of Lake Pointe will depend on installation of storm sewer within the West Valley development. **Comment remains as a notation.***
3. *The footings for the proposed retaining wall along the east and southeast part of the property will need to be placed such that the footings have no negative influence with respect to vertical or lateral stresses on the adjacent storm sewer. Please verify this will not occur. Comment partially addressed. The design engineer has stated that “The retaining wall has not yet been designed. The retaining wall has been shifted so the face of wall is at least 10 feet away (horizontally) from the storm sewer. Given that the depth of the storm sewer is less than 10 feet and that the retaining wall will have some sort of buried foundation depth, the retaining wall foundation loads on underlying soils should not have an influence on the storm sewer.” We request that the engineer who will design the wall provide an analysis of the loads and potential impacts the wall may have on surrounding utilities. Please provide completed analysis to our office. Comment addressed; signed & sealed wall design calculations have been provided. Note the wall calculations have not been reviewed by this office but will be filed with the project documents for future reference. **Comment remains as a notation.***
4. **Since Lake Pointe is dependent on West Valley for conveyance of stormwater flows from the Lake Pointe site, we are requesting confirmation from EGLE that they are aware of Lake Pointe’s stormwater contribution to West Valley’s ultimate stormwater outlet and that EGLE has evaluated and approves of this. This confirmation shall be required prior to final engineering approval for Lake Pointe.**

#### Required Permits and Approvals

The following permits and approvals will be required:

1. Permit from the Road Commission for all work within the Union Lake Road Right-Of-Way including the proposed storm sewer crossing.
  2. SESC permit from OCWRC. **Permit #000698-2021-CO issued 2021.**
  3. A Notice of Coverage for Stormwater Discharge under the NPDES program as administered by EGLE is required.
  4. Watermain permit from EGLE (Expired)- Renewal of permit in progress.
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5. Sanitary sewer permit from OCWRC (We found record of approval from May 17, 2021; OCWRC Job #S21-0125 CW). It will have to be determined if this is still valid or if resubmittal is required.
6. Sanitary sewer permit from EGLE (We recall EGLE was holding their review of plans until West Valley plans were submitted for review concurrently)
7. Executed Stormwater Maintenance Agreement
8. Easements for Sanitary Sewer and Watermain
9. Sidewalk easement from Independence Village

### **Recommendation**

The plans are approvable subject to the applicant acquiring the approvals/permits referenced above, and the related West Valley approvals including that mentioned in Comment 4 under Stormwater Management above.

Please contact our office should you have any questions.

Sincerely,

DLZ Michigan



Michael Leuffgen, P.E.  
Department Manager



Victoria Loemker, P. E.  
Senior Engineer

Cc: Justin Quagliata, Community Development, *via email*  
Hannah Kennedy-Galley, Community Development, *via email*  
Aaron Potter, DPS Director, White Lake Township, *via email*  
Jason Hanifen, Fire Marshall, White Lake Township, *via email*

Rik Kowall, Supervisor  
Anthony L. Noble, Clerk  
Mike Roman, Treasurer



Trustees  
Scott Ruggles  
Liz Fessler Smith  
Andrea C. Voorheis  
Michael Powell

## WHITE LAKE TOWNSHIP

7525 Highland Road • White Lake, Michigan 48383-2900 • (248) 698-3300 • www.whitelaketwp.com

April 2, 2024

JMF White Lake, LLC  
1700 W. Big Beaver Road, Suite 120  
Troy, MI 48084

ATTN: Michael Furnari

**RE: Lake Pointe – Final Site Plan Backcheck #4  
Parcel Number 12-36-177-003**

Dear Mr. Furnari:

Community Development Department staff have completed the second backcheck for the above referenced project. The following comments from the previous backcheck dated December 26, 2023 are listed below. Responses to those comments are provided in **(green)**.

- All required landscape areas in excess of 200 square feet shall be irrigated to assist in maintaining a healthy condition for all plantings and lawn areas. **An irrigation plan shall be provided. (Comment outstanding).** **(Comment addressed. Sheet LS-3 has been revised accordingly).** **(Note: an irrigation plan dated February 3, 2024 (revision date February 21, 2024) has been provided).**
- All required site irrigation systems shall include a rain sensor or similar measure to ensure irrigation does not occur during or shortly after precipitation events. All site plans shall note installation of required irrigation. **Add note to landscape plan. (Comment addressed. A note has been added to Sheet LS-3).**
- Trees shall not be planted closer than four feet to a property line. **Add note to landscape plan. (Comment partially addressed. Note 22 has been added to Sheet LS-1. However, the spelling of the word “planted” is incorrect and shall be addressed).** **(Comment addressed. Note 22 has been revised).**
- Trees identified for protection during construction and the means of protection shall be identified prior to final site plan. No construction shall occur until tree protection has been installed and approved by the Community Development Director. **Add note to landscape plan. (Comment addressed. A note has been added to Sheet LS-3).**
- Austrian Pine and White Pine are not an acceptable evergreen tree. **Pine trees are prohibited in the Township. Revise landscape plan to provide an acceptable species of evergreen tree and remove all references to pine trees. (Comment partially addressed. The landscape legend on Sheet LS-2 still lists pine species. Revise the landscape legend accordingly).** **(Comment remains outstanding).** **(Comment outstanding. Contrary to the response letter, the landscape legend on Sheet LS-2 still needs revision).**

- No more than two planted trees in a row shall be of the same species. **Revise landscape plan. (Comment outstanding).** (Comment addressed. Tree cluster/grouping planting notes have been added to Sheet LS-2).
- The landscape plan mentions mulch. Per the Zoning Ordinance, the mulch product itself shall be at least doubled-shredded quality. **Revise landscape plan. (Comment partially addressed. The tree planting, evergreen planting, and shrub planting details on Sheet LS-2 still do not note double-shredded mulch. Revise accordingly).** (Comment addressed. The details on Sheet LS-3 have been revised accordingly).
- As stated in previous correspondence (dated February 22, 2021), **the building materials shall be labeled on the building elevations, Sheets A201 and A203.** (Comment outstanding). (Comment remains outstanding). (Comment addressed. Material notations have been added to the elevations).
- As stated in previous correspondence (dated February 22, 2021), **elevations and building material details shall be provided for the clubhouse building.** (Comment addressed. Community building elevations have been provided).
- **Architectural plan sheets A101, A102, A200, A201, A203 all list West Valley list in the title block. While the residential buildings proposed between both projects are the same, plans in the Lake Pointe plan set shall be titled as such. Revise accordingly.** (Comment outstanding). (Comment addressed. The title blocks on the aforementioned sheets have been revised).
- As stated in previous correspondence (dated February 22, 2021), Sheet LS-5 indicates a decorative street light is proposed adjacent to the entrance of the development, and pedestrian bollard lighting is proposed at several places along the internal sidewalk network. Neither of the lighting types are full cutoff luminaries as required for outdoor lighting. However, the Zoning Ordinance permits non-cutoff fixtures if they are decorative pedestrian fixtures less than 100 watts and pedestrian fixtures shall not use clear globes. **Wattage for each luminaire shall be noted on Sheet LS-5, and lighting fixture specification sheets (cut sheets) shall be submitted for the two aforementioned luminaries.** (Comment outstanding). (Comment remains outstanding). (Comment addressed. Luminaire wattage has been added to Sheet LS-5 and cut sheets have been provided for both of the aforementioned luminaries).
- **The lighting fixture specification sheet (cut sheet) shall be submitted for the proposed entrance sign panel “uplighting.” The method of sign illumination is subject to review and approval by the Planning Division. Note uplighting is prohibited in the Township and the sign panel uplighting detail on Sheet LS-4 shall be removed.** (Comment addressed. The sign panel uplighting detail on Sheet LS-5 have been removed).

Prior to scheduling a pre-construction meeting, the following items shall be addressed: **(Comments outstanding).** (Comments remain outstanding). (Comments remain outstanding).

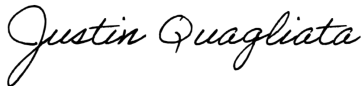
- Planned Development Agreement (PDA) review and approval. **(A revised PDA, submitted April 1, 2024, is currently under review).**
- Final Engineering Plan (FEP) review and approval (completed administratively).
- Provide documentation satisfactory to the Township Attorney evidencing ownership of the property.



- Submit ~~reciprocal access~~ **pathway/sidewalk** easement agreement (must be reviewed, approved, and executed prior to scheduling a pre-construction meeting).
- Submit required utility (water, sewer, storm sewer) easement agreements (must be reviewed, approved, and executed prior to scheduling a pre-construction meeting).
- Provide a construction cost estimate sealed by the design engineer.
- Provide inspection fees (payable at the pre-construction meeting).
- Provide Certificates of Insurance listing DLZ and the Township as Additional Insured. Note XCU (Explosion, Collapse, and Underground) coverage must be provided.
- Provide a copy of all applicable agency permits to Township (must be submitted prior to scheduling a pre-construction meeting).
- Five (5) hard copies of the final plans must be brought to the pre-construction meeting for signing/stamping.

If you have any questions regarding this matter, please contact me at (248) 698-3300 ext. 177 or by email at [justinq@whitelaketwp.com](mailto:justinq@whitelaketwp.com).

Sincerely,



Justin Quagliata  
Staff Planner

cc: Sean O'Neil, Community Development Director  
Nick Spencer, Building Official  
Michael Leuffgen, DLZ  
Victoria Loemker, DLZ  
Jason Emerine, Seiber Keast Lehner, Inc.



Fire Department  
Charter Township  
of White Lake

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## Site / Construction Plan Review

To: Sean O'Neil, Planning Department Director

Date: 03/26/24

Project: Lake Pointe

File #: Not Shown

Date on Plans: 02/13/24 (revision)

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The Fire Department has the following comments with regard to the revised plans for the project known as Lake Pointe:

**The Fire Department has no further comments regarding this project as submitted.**

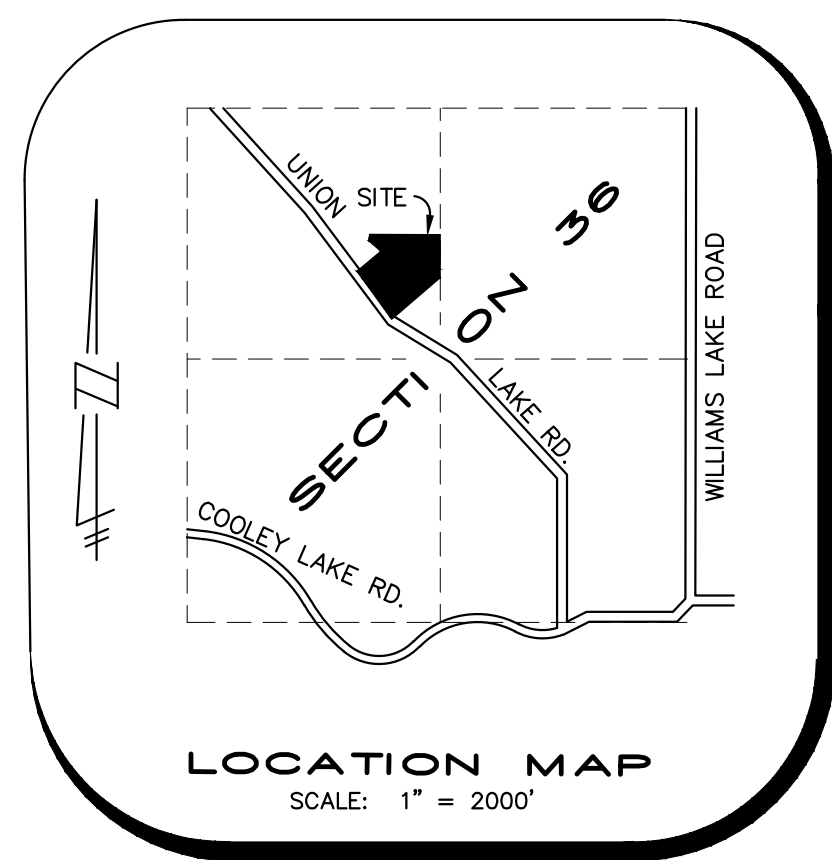
John Holland  
Fire Chief  
Charter Township of White Lake  
(248)698-3993  
[jholland@whitelaketwp.com](mailto:jholland@whitelaketwp.com)

Plans are reviewed using the International Fire Code (IFC), 2015 Edition and Referenced NFPA Standards.

# ENGINEERING CONSTRUCTION PLANS FOR LAKE POINTE

A MULTI FAMILY DEVELOPMENT  
SECTION 36, TOWN 3 NORTH, RANGE 8 EAST, WHITE LAKE TOWNSHIP,  
OAKLAND COUNTY, MICHIGAN

PREPARED FOR:  
**JMF, WHITE LAKE, LLC**  
1700 W. BIG BEAVER ROAD, STE. 120  
TROY, MI 48084  
PHONE: (248) 602-2220



### BENCHMARKS

BM#1 - CONCRETE MONUMENT AT SOUTHWEST CORNER OF PROPERTY.  
ELEVATION: 948.29 NAVD88

BM#2 - TELECOM MANHOLE COVER AT NORTHEAST CORNER OF CARPATHIAN DRIVE AND UNION LAKE ROAD.  
ELEVATION: 984.75 NAVD88

BM#3 - TELECOM MANHOLE COVER ±485' WSET OF CENTER OF SECTION 36 ALONG THE SOUTH PROPERTY LINE.  
ELEVATION: 962.72 NAVD88

NCS PID D16198  
ELEVATION 966.63 NAVD88

### LEGAL DESCRIPTION

**LEGAL DESCRIPTION - OVERALL PARCEL RECOMBINATION:**  
A PARCEL OF LAND BEING A PART OF THE SOUTHEAST ¼ OF THE NORTHWEST ¼ OF SECTION 36, T.3N., R.8E., WHITE LAKE TOWNSHIP, OAKLAND COUNTY, MICHIGAN, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTH ¼ POST OF SAID SECTION 36, T.3N., R.8E., OAKLAND COUNTY, MICHIGAN, THENCE PROCEEDING ALONG THE NORTH AND SOUTH ¼ LINE OF SAID SECTION 36, SOUTH 00 DEGREES 03 MINUTES 47 SECONDS EAST, 1315.77 FEET TO THE NORTHEAST CORNER OF THE SOUTHEAST ¼ OF THE NORTHWEST ¼ OF SAID SECTION, THENCE IN PART ALONG THE WESTERLY LINE OF BOCOVINA COUNTRYSIDE HOMES, OAKLAND COUNTY PLAN NO. 755, MASTER DEED AS RECORDED IN LIBER 12457, PAGES 419 THROUGH 492, 1<sup>ST</sup> AMENDMENT AS RECORDED IN LIBER 13514, PAGES 811 THROUGH 817 OAKLAND COUNTY RECORDS, SOUTH 00 DEGREES 18 MINUTES 25 SECONDS EAST, 475.18 FEET, THENCE ALONG THE NORTHWESTERLY LINE OF CARPATHIAN DRIVE AS RECORDED IN BOCOVINA HOMESITES, OAKLAND PLAN NO. 754, MASTER DEED AS RECORDED IN LIBER 12457, PAGES 493 THROUGH 563, 1<sup>ST</sup> AMENDMENT AS RECORDED IN LIBER 13514, PAGES 801 THROUGH 810, OAKLAND COUNTY RECORDS, SOUTH 46 DEGREES 03 MINUTES 08 SECONDS WEST, 580.14 FEET TO THE CENTERLINE OF UNION LAKE ROAD, THENCE ALONG THE ARC OF A CURVE TO THE RIGHT, RADIUS 1432.69 FEET, CENTRAL ANGLE 12 DEGREES 18 MINUTES 04 SECONDS, (THE CHORD OF SAID CURVE BEARS NORTH 42 DEGREES 30 MINUTES 07 SECONDS WEST, 307.00 FEET) AND HAVING AN ARC DISTANCE OF 307.58 FEET; THENCE CONTINUING ALONG SAID CENTERLINE THE FOLLOWING TWO COURSES, NORTH 36 DEGREES 21 MINUTES 05 SECONDS WEST, 21.54 FEET AND NORTH 36 DEGREES 44 MINUTES 42 SECONDS WEST, 468.27 FEET; THENCE NORTH 21 DEGREES 07 MINUTES 22 SECONDS EAST, 307.10 FEET; THENCE SOUTH 88 DEGREES 32 MINUTES 43 SECONDS EAST, 812.20 FEET TO THE POINT OF BEGINNING OF THE PARCEL, HEREIN DESCRIBED, CONTAINING 580,140 GROSS SQUARE FEET OR 13.32 GROSS ACRES OF LAND, MORE OR LESS, ALSO BEING SUBJECT TO THE RIGHTS OF THE PUBLIC AND/OR ANY OTHER GOVERNMENTAL UNIT IN ANY PART OF UNION LAKE ROAD TAKEN, USED OR DEDICATED FOR STREET, ROAD, HIGHWAY OR PUBLIC UTILITY PURPOSES. ALSO BEING SUBJECT TO ANY OTHER EASEMENTS, RESTRICTIONS OR CONDITIONS OF RECORD, SIDWELL NOS.: 12-36-177-003, 12-36-177-002.

### GENERAL NOTES

- THE CONTRACTOR SHALL CONTACT THE TOWNSHIP ENGINEER AT (248) 334-9901 48 HOURS PRIOR TO BEGINNING OF CONSTRUCTION. THE CONTRACTOR SHALL KEEP THE INSPECTOR APPRAISED OF THE NEED FOR INSPECTION ON A DAY TO DAY BASIS. LACKING SPECIFIC SCHEDULING WITH THE INSPECTOR, THE CONTRACTOR SHALL GIVE 48 HOURS NOTICE TO THE TOWNSHIP ENGINEER PRIOR TO RECOMMENDING WORK. INSPECTION FAILURE TO INFORM THE INSPECTOR OR THE TOWNSHIP ENGINEER OF A WORK CANCELLATION MAY RESULT IN A ONE HALF DAY INSPECTION CHARGE TO THE DEVELOPER.
- THE DEVELOPER SHALL CONTACT THE TOWNSHIP PLANNING DEPARTMENT AT (248) 698-3300 TO SCHEDULE A PRE-CONSTRUCTION MEETING. THE DEVELOPER'S PRIME SITE CONTRACTOR SHALL ATTEND. A COPY OF ALL PERMITS MUST BE SUBMITTED TO THE PLANNING DEPARTMENT PRIOR TO SCHEDULING THE MEETING.
- ALL CONSTRUCTION MUST CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS ADOPTED BY WHITE LAKE TOWNSHIP.
- CONTRACTOR SHALL CONTACT MISS DIG AT 1-800-482-7171, 72 HOURS IN ADVANCE OF CONSTRUCTION, FOR EXISTING UNDERGROUND UTILITY LOCATIONS.
- ALL SOIL EROSION AND SILTATION MUST BE CONTROLLED AND CONTAINED ON-SITE.
- ALL EXCAVATION, INCLUDING ALL UTILITIES AND LEADS, UNDER OR WITHIN 1 ON 1 INFLUENCE OF ANY PAVEMENT (INCLUDING SIDEWALKS), EXISTING OR PROPOSED, OR WHERE SAND BACKFILL IS CALLED FOR ON THE PLAN, SHALL BE BACKFILLED AND COMPACTED WITH GRANULAR MATERIAL (SAND) MDOT CLASS II TO 95 PERCENT MAXIMUM UNIT DENSITY (ALL OTHERS 90 PERCENT).
- THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES AND FACILITIES. THE CONTRACTOR SHALL EXPOSE EXISTING UTILITIES AT THE PROPOSED UTILITY CROSSINGS PRIOR TO THE START OF UNDERGROUND CONSTRUCTION. ANY CONFLICTS WITH UTILITIES SHALL BE IMMEDIATELY REPORTED TO THE PROJECT ENGINEER.
- WHERE TWO UTILITIES CROSS, INCLUDING SANITARY SEWER LEADS, PROVIDE POROUS GRADE "B" BACKFILL MATERIAL COMPACTED TO THE UNDERSIDE OF THE HIGHER UTILITY OR AS SPECIFIED ON THE DETAIL SHEET.
- DUST CONTROL SHALL BE MAINTAINED AT ALL TIMES.
- ANY MUD TRACKED ONTO UNION LAKE ROAD SHALL BE REMOVED DAILY.
- IF DEWATERING IS DETERMINED TO BE REQUIRED, IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO IDENTIFY THE AREA TO BE DEWATERED, SUBMIT A DEWATERING PLAN TO THE WHITE LAKE TOWNSHIP ENGINEERING DIVISION FOR REVIEW, TO MONITOR AND TO DETERMINE THAT THERE WILL NOT BE ANY IMPACT TO ANY ADJOINING OR OFFSITE PROPERTIES. DEWATERING PROCEDURES SHALL BE IN COMPLIANCE WITH WHITE LAKE TOWNSHIP.
- A ROAD COMMISSION FOR OAKLAND COUNTY RIGHT-OF-WAY PERMIT IS REQUIRED FOR ANY WORK WITHIN THE UNION LAKE ROAD RIGHTS-OF-WAY (OR ANY PUBLIC ROAD RIGHT-OF-WAY) AND/OR ANY TOWNSHIP EASEMENT.
- CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY LOCATIONS, INVERTS AND GRADES PRIOR TO THE START OF ANY WORK.
- ALL PAVEMENT MARKINGS, TRAFFIC CONTROL SIGNS, AND PARKING SIGNS SHALL COMPLY WITH THE DESIGN AND PLACEMENT REQUIREMENTS OF THE 2011 MICHIGAN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
- WHITE LAKE TOWNSHIP HAS NO RESPONSIBILITY TO IMPROVE OR MAINTAIN THE PRIVATE STREETS CONTAINED WITHIN OR PRIVATE STREETS PROVIDING ACCESS TO THE PROPERTY DESCRIBED IN THE PLAN.
- IN ORDER TO VERIFY COMPLIANCE WITH APPROVED PLANS, FULL-TIME CONSTRUCTION OBSERVATION WILL GENERALLY BE REQUIRED DURING ALL PHASES OF UNDERGROUND SITE CONSTRUCTION INCLUDING INSTALLATION OF SANITARY SEWER, STORM SEWERS, DRAINS, WATER MAINS AND APPURTENANCES AS WELL AS PRIVATE STREET CURBING AND PAVING CONSTRUCTION. INTERMITTENT OBSERVATIONS WILL BE MADE FOR SITE GRADING, PARKING LOT CURBING AND PAVING, RETAINING WALL CONSTRUCTION AND OTHER SURFACE ACTIVITY.

### LAKE POINTE

Quantity Summary

SANITARY SEWER		QUANTITY
1	6" PVC SDR 35 HOUSE LEAD	1,506 L.F.
2	8" PVC TRUSS SANITARY SEWER	1,387 L.F.
3	4" DIA. MANHOLE	10 EA.
WATER MAIN		QUANTITY
1	8" WATER MAIN D.I. CL54	2,216 L.F.
2	HYDRANT, VALVE & BOX	7 EA.
3	8" G.V.&W.	3 EA.
4	8"x12" TAPPING SLEEVE, VALVE & WELL	2 EA.
5	1" WATER SERVICE	1,101 L.F.
STORM SEWER		QUANTITY
1	12" C-76 CL 4	1,886 L.F.
2	15" C-76 CL 4	611 L.F.
3	18" C-76 CL 4	592 L.F.
4	21" C-76 CL 4	543 L.F.
5	24" C-76 CL 4	47 L.F.
6	2" DIA. INLET	9 EA.
7	4" DIA. CATCH BASIN	21 EA.
8	6" DIA. CATCH BASIN	1 EA.
9	4" DIA. MANHOLE	5 EA.
10	6" DIA. OVERFLOW MANHOLE	1 EA.
11	24" CONC. END SECTION W/ RIP RAP	1 EA.
12	6" DIA. CONTECH CS-6	1 EA.
13	36" STANDPIPE	1 EA.
PAVING		QUANTITY
1	INTERNAL ASPH. PAVEMENT (4" ON 10")	5,124 S.Y.
2	R.C.O.C. ROW ASPHALT PAVEMENT	511 S.Y.
3	CONCRETE SIDEWALK	22,880 S.F.
4	THICKENED EDGE CONCRETE WALK	537 L.F.
5	24" MOUNTABLE CONC. & STANDARD GUTTER	2,922 L.F.
6	F4 CONC. CURB& GUTTER	396 L.F.
7	B2 ROLL CURB WITH GUTTER	121 L.F.

ESTIMATED QUANTITIES ARE FOR REFERENCE ONLY. CONTRACTOR SHALL DETERMINE THE QUANTITIES OF WORK REQUIRED TO COMPLETE THE PROJECT.



- ### SHEET INDEX
- COVER SHEET
  - COMPOSITE UTILITY AND OVERALL SITE PLAN
  - EXISTING CONDITIONS AND DEMOLITION PLAN
  - GRADING & S.E.S.C. PLAN
  - GRADING & S.E.S.C. PLAN
  - GRADING & S.E.S.C. PLAN
  - PROPOSED CONTOUR PLAN
  - DETAILED GRADING PLAN FOR ADA PATHWAYS
  - ROAD AND SANITARY SEWER PLAN
  - ROAD AND SANITARY SEWER PROFILES
  - WATERMAIN PLAN
  - 10A. WATER MAIN PROFILES
  11. STORM SEWER PLAN
  12. STORM SEWER PROFILES
  13. STORM SEWER PROFILES
  14. CONTECH CS-6 DETAILS
  15. DETENTION BASIN PLAN, CALCULATIONS AND PROFILE
  16. DRAINAGE DISTRIBUTION PLAN & STORM SEWER CALCULATIONS
  - 16A. OVERALL STORM WATER MANAGEMENT SYSTEM "WEST VALLEY & LAKE POINTE"
  17. APPROACH PLAN
  - ND1. NOTES AND DETAILS
  - ND2. NOTES AND DETAILS

- ### DETAILS:
- WHITE LAKE TOWNSHIP  
SANITARY SEWER STANDARD DETAILS  
WATER MAIN STANDARD DETAILS  
STORM SEWER STANDARD DETAILS
- OAKLAND COUNTY  
SOIL EROSION AND SEDIMENTATION CONTROL DETAILS
- ### LANDSCAPE PLANS:
- LS-1 OVERALL LANDSCAPE PLAN  
LS-2 GENERAL LANDSCAPE PLANTING DETAIL  
LS-3 PLANT MATERIAL LIST AND PLANT DETAILS  
LS-4 BLDG. FOUNDATION, CLUBHOUSE AND ENTRY PLANTINGS  
LS-5 SITE AMENITY, PERGOLA AND ENTRY SIGN DETAILS  
LS-6 POOL DECK PLAN  
LS-7 POOL PERGOLA/TRELLIS ELEVATIONS & DETAILS
- ### IRRIGATION PLANS:
- IRR-1 IRRIGATION PLAN  
IRR-2 IRRIGATION PLAN  
IRR-3 IRRIGATION PLAN  
IRR-4 IRRIGATION NOTES & DETAILS
- ### ARCHITECTURE PLANS:
- A100 BUILDING PLANS  
A101 UNIT ELEVATIONS  
A200 BUILDING PLANS  
A201 BUILDING ELEVATIONS  
A202 BUILDING PLANS  
A203 BUILDING ELEVATIONS  
A204 BUILDING PLANS  
A205 BUILDING ELEVATIONS  
AS-1 SITE PLAN  
CB4.0 COMMUNITY BUILDING ELVATIONS

CLINTON TOWNSHIP OFFICE  
17001 NINETEEN MILE ROAD, SUITE 3  
CLINTON TOWNSHIP, MI 48038  
586.412.7050

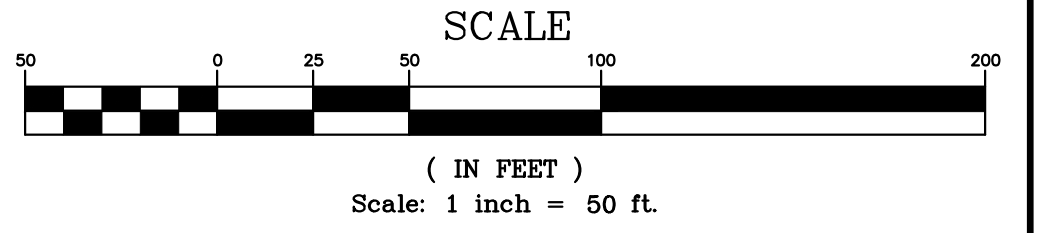
FARMINGTON HILLS OFFICE  
39205 COUNTRY CLUB DRIVE, SUITE C8  
FARMINGTON HILLS, MI 48331  
248.308.3331

ARCHITECTURAL PLANS PROVIDED BY:  
**ALEXANDER V. BOGAERTS AND ASSOCIATES, P.C.**  
2445 FRANKLIN ROAD  
BLOOMFIELD HILLS, MICHIGAN 48302  
PHONE: 248.334.5000

LANDSCAPE PLANS PROVIDED BY:  
**FELINO PASCUAL & ASSOCIATES LANDSCAPE ARCHITECTURE**  
24333 ORCHARD LAKE ROAD, SUITE G  
FARMINGTON, MICHIGAN 48336  
PHONE: 248.557.5588

SURVEY PROVIDED BY:  
**ALPINE ENGINEERING, INC.**  
46892 WEST ROAD, SUITE 109  
NOVI, MICHIGAN 48377  
PHONE: 248.926.3765

REVISIONS			ENGINEER'S SEAL
NO.	ITEM	DATE	
1.	REVISE PER OWNER	6-3-20	
2.	REVISE GRADES ON UNITS 2 AND 6	11-9-20	
3.	REV PER 11-20-20 WL TWP LETTER	02-02-21	
4.	REVISE PER WHITE LAKE TWP	03-03-21	
5.	ADD WATER MAIN PROFILES PER E.G.L.E.	04-07-21	
6.	REVISED PER TOWNSHIP	04-25-23	
8.	REVISE PER AGENCIES	02-13-24	
DATE:	DESIGNED BY: A.A.	JOB NUMBER: 18-039	
	CHECKED BY: P.K.	DRAWING FILE: 18089CY.dwg	



- ### NOTES
- ON-SITE SANITARY SEWERS, AND WATER MAINS SHALL BE CENTERED IN A 20-FOOT WIDE EASEMENT.
  - ALL OFF-SITE SANITARY AND WATER MAIN IMPROVEMENTS WILL BECOME PUBLIC PROPERTY.
  - CRITICAL STORM STRUCTURES WILL BE FITTED WITH TRAPS.
  - PERIODIC MAINTENANCE OF THE STORM WATER DETENTION BASIN WILL BE REQUIRED.
  - PROVISIONS PURSUANT TO OAKLAND COUNTY DRAIN COMMISSION EROSION CONTROL MANUAL WILL BE UNDERTAKEN INCLUDING, BUT NOT LIMITED TO, SILT FENCE AND INLET FILTERS.
  - "NO PARKING - FIRE LANE" SIGNAGE SHALL BE INSTALLED PROHIBITING PARKING ON ONE SIDE OF THE STREET.
  - PROPOSED GRADES WILL MATCH EXISTING ELEVATIONS AT THE PROPERTY LINE UNLESS RETAINING WALLS ARE PROVIDED OR GRADING EASEMENTS OBTAINED.
  - A PERMIT FROM THE ROAD COMMISSION FOR OAKLAND COUNTY WILL BE REQUIRED FOR ALL WORK IN THE UNION LAKE ROAD RIGHT-OF-WAY.
  - ALL WATER MAIN SHALL BE CLASS 54 DUCTILE IRON. ALL GATE VALVES SHALL BE PLACED IN GATE WELLS.
  - ALL STRUCTURES EXCEPT FOR INLETS WHICH CONNECT TO CATCH BASINS WILL BE A MINIMUM OF FOUR FEET IN DIAMETER.
  - THE DEVELOPMENT SHALL BE CONSTRUCTED AS A SINGLE PHASE.
  - THE CONSTRUCTION TYPE OF THE PROPOSED BUILDINGS IS WOOD CONSTRUCTION WITH BRICK VENEER AND SLAB ON GRADE.
  - THE FRONT PORCH LIGHTS AND THE COACH LIGHTS WILL UTILIZE 75 WATT BULBS.

### PARKING CALCULATIONS

SPACES REQUIRED:  
 2 SPACES FOR EACH UNIT, PLUS 1/4 SPACE FOR EACH BEDROOM.  
 2 SPACES FOR EACH UNIT = 138 SPACES  
 138 BEDROOMS/4 = 34.5 SPACES  
 TOTAL SPACES REQUIRED = 172.5

SPACES PROVIDED:  
 2 SPACES PER GARAGE = 138  
 2 SPACES PER DRIVEWAY = 138  
 ADDITIONAL PARKING SPACES = 31  
 TOTAL SPACES PROVIDED = 307

Accessible Parking Spaces	
Total Parking Spaces (Excluding Garages)	169
Accessible Spaces	
Per 2010 ADA (208.2.3 Residential Facilities)	
Total Required (Minimum 2% of the total)	4
Total Provided	
Standard Accessible Spaces	2
Van Accessible Spaces	2
	4

- ### SITE DATA
- EXISTING ZONING: R1-C/SINGLE FAMILY RESIDENTIAL AND LB/LOCAL BUSINESS
  - SITE AREA: 13.32 ACRES GROSS, 12.76 ACRES NET
  - PROPOSED LAND USE: ATTACHED SINGLE FAMILY DEVELOPMENT APARTMENTS- MULTI FAMILY
  - ALL PROPOSED UNITS ARE 2-BEDROOMS
  - DENSITY: 69 UNITS/12.76 ACRES = 5.41 UNITS/ACRE
  - PROPERTY LINE SETBACK = FRONT 40 FEET  
SIDE 25 FEET  
REAR 25 FEET
  - INTERNAL SETBACK = 30 FEET FROM BACK OF CURB.
  - SIDE YARD SETBACK: MIN. 20 FEET BETWEEN BUILDINGS
  - DWELLING UNITS: 69 - (2 BEDROOM UNITS)
  - TRASH DISPOSAL SHALL BE BY CURB SIDE PICKUP.
  - LIGHTING SHALL BE PROVIDED BY PHOTOCELL OPERATED LIGHTS LOCATED ON THE FRONT OF EACH HOME.

### WETLANDS

NO WETLANDS EXIST ON SITE.

### FLOODPLAIN INFORMATION

THE SUBJECT PROPERTY LIES WITHIN A ZONE "X" FLOOD HAZARD AREA - "AREAS OF MINIMAL FLOODING", PER THE NATIONAL FLOOD INSURANCE PROGRAM, FLOOD INSURANCE RATE MAP, MAP NUMBER 26125C0477F, MAP EFFECTIVE SEPTEMBER 29, 2006.

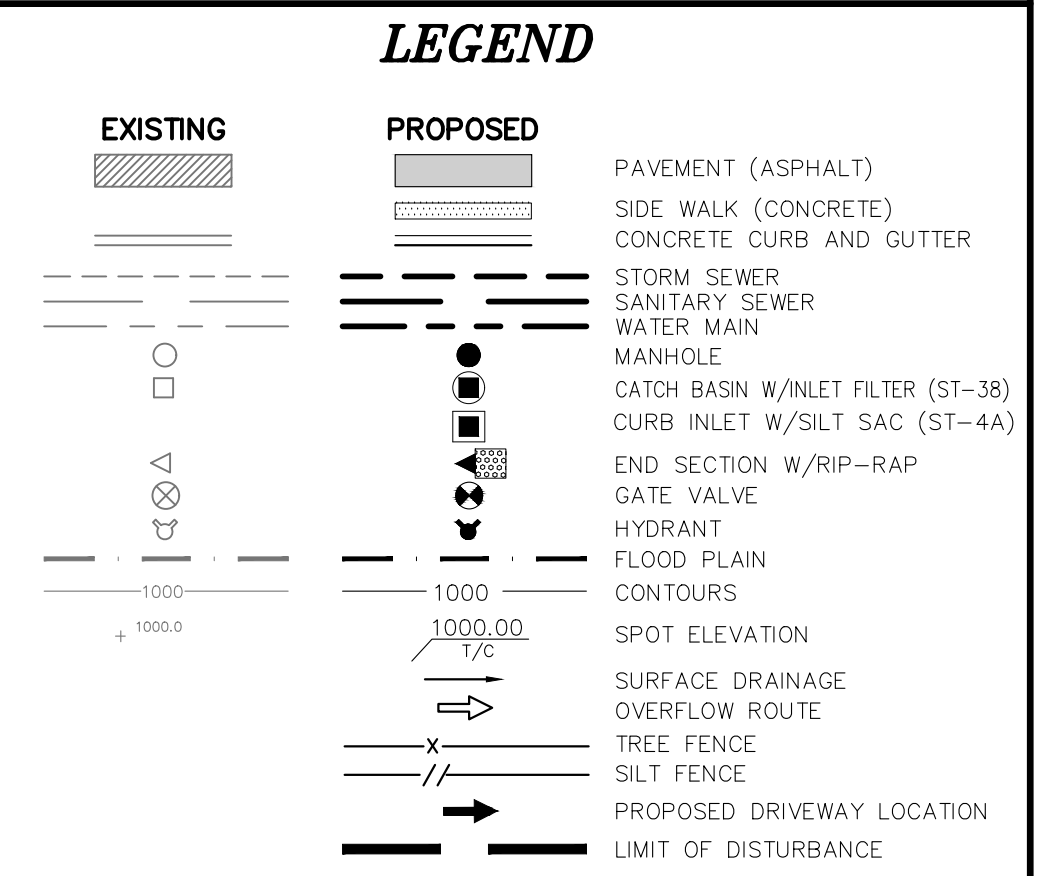
### DENSITY CALCULATION:

AREA OF RESIDENTIAL SITE = 13.32 Ac.  
 AREA OF 60' R.O.W. = 0.56 Ac.  
 DENSITY AREA = 13.32-0.56 = 12.76 Ac.  
 AREA OF INTERNAL ROADS = 1.31 Ac.  
 NET DENSITY AREA = 12.76-1.31 = 11.45 Ac.  
 NET DENSITY AREA = 498,762 S.F.

### IF RM-1 ZONING APPLIED:

FOR 2 BEDROOMS UNITS  
 REQUIRED 6,000 S.F./UNIT  
 DEDUCT 10,000 S.F. FOR FIRST UNIT

TOTAL ALLOWABLE UNITS =  
 498,762 - 10,000 / 6,000 = 81  
 TOTAL ALLOWABLE UNITS = 82 UNITS  
 TOTAL UNITS PROVIDED = 69 UNITS  
 (5.41 UNITS / ACRE)



- ### LIST OF ALL REQUIRED STATE AND FEDERAL PERMITS
- | TYPE              | AGENCY | STATUS    |
|-------------------|--------|-----------|
| 1. NPDES          | MDEQ   | NOT FILED |
| 2. SANITARY SEWER | MDEQ   | NOT FILED |
| 3. WATER MAIN     | MDEQ   | NOT FILED |

### LOT COVERAGE:

GROSS AREA OF SITE = 13.32 Ac.  
 BUILDING AREA = 3.05 Ac.  
 PROPOSED LOT COVERAGE = 3.05 / 13.32 = 22.89%

### OPEN SPACE

NET SITE AREA = 555,826 S.F.  
 ROADS = 57,063 S.F.  
 SIDEWALKS = 31,908 S.F.  
 DRIVEWAYS = 24,358 S.F.  
 BUILDINGS = 132,860 S.F.  
 CLUBHOUSE & POOL = 132,860 S.F.  
 LAWN AREA = 366,700 S.F. = 8.42 AC.

## LAKE POINTE

SECTION 36, TOWN 3 NORTH, RANGE 8 EAST  
 WHITE LAKE TWP., OAKLAND COUNTY, MICHIGAN

### REVISIONS

NO.	ITEM	DATE
1.	REVISE PER OWNER	6-3-20
2.	REVISE GRADES ON UNITS 2 AND 6	11-9-20
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5.	REVISED PER TOWNSHIP	04-25-23
6.	REVISED PER TOWNSHIP	7-27-23
7.	REVISED PER AGENCIES	02-13-24

### COMPOSITE UTILITY AND OVERALL SITE PLAN

DATE: 04-08-2020 DESIGNED BY: A.A. JOB NUMBER: 19-039  
 CHECKED BY: J.E. DRAWING FILE: 190309CU.dwg

UTILITY WARNING  
 UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.

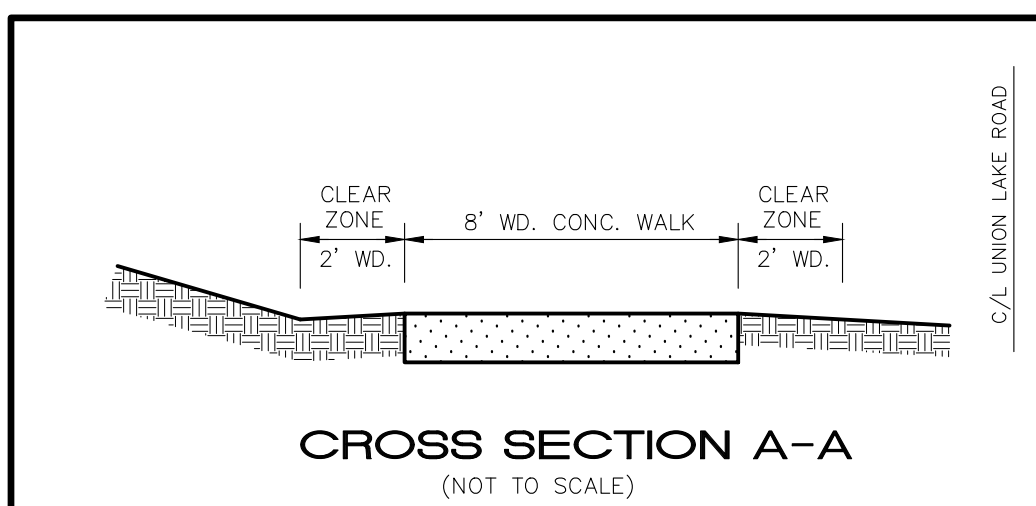
**811** Know what's below. Call before you dig.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION.

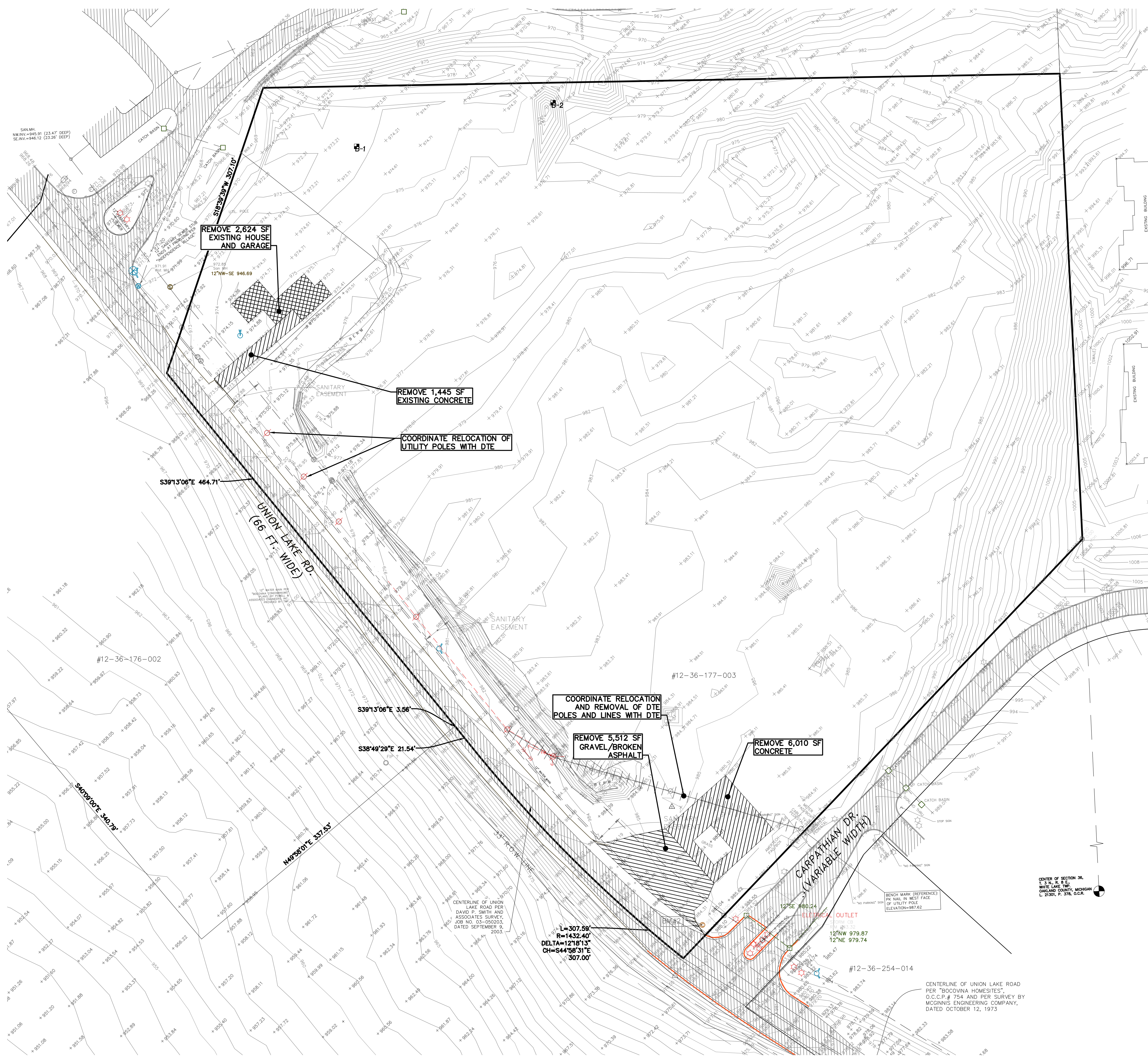
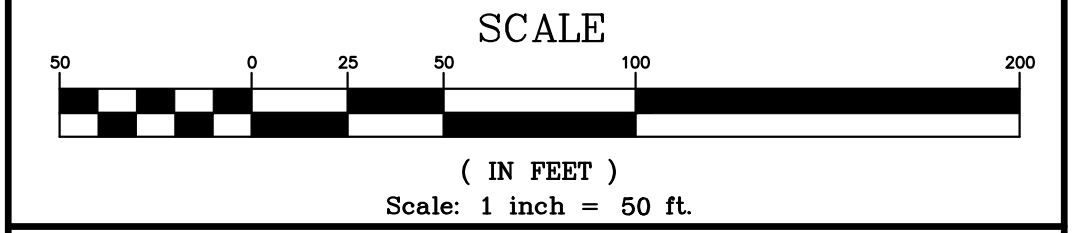
CLAYTON TOWNSHIP OFFICE: 1700 NINETEEN MILE ROAD, SUITE 3 CLAYTON TOWNSHIP, MI 48038 588.412.7050  
 PARMENTIER & GIBBS: 38205 COUNTRY CLUB DRIVE, SUITE C8 PARMENTIER & GIBBS 248.308.3341

### STORM STRUCTURE SCHEDULE

NO.	TYPE	SIZE (DIA)	SUMP DEPTH (feet)	FRAME AND COVER
1	CATCH BASIN	4	2	EJW 7065 Frame Type M1 Cover
2	CATCH BASIN	4	2	EJW 7065 Frame Type M1 Cover
3	MANHOLE	4	0	EJW 1040 Frame Type B Cover
4	CATCH BASIN	4	2	EJW 7065 Frame Type M1 Cover
5	CATCH BASIN	4	2	EJW 1040 Frame Type N Cover
6	CATCH BASIN	4	2	EJW 1040 Frame Type N Cover
7	CATCH BASIN	6	2	EJW 1040 Frame Type N Cover
8	CATCH BASIN	4	2	EJW 1040 Frame Type N Cover
9	CATCH BASIN	4	2	EJW 7065 Frame Type M1 Cover
10	CATCH BASIN	4	2	EJW 7065 Frame Type M1 Cover
11	CATCH BASIN	4	2	EJW 1040 Frame Type N Cover
12	CATCH BASIN	4	2	EJW 1040 Frame Type N Cover
13	CATCH BASIN	4	2	EJW 1040 Frame Type N Cover
14	INLET	2	0	EJW 1040 Frame Type N Cover
15	CATCH BASIN	4	2	EJW 7065 Frame Type M1 Cover
16	CATCH BASIN	4	2	EJW 1040 Frame Type N Cover
17	CATCH BASIN	4	2	EJW 1040 Frame Type N Cover
18	CATCH BASIN	4	2	EJW 1040 Frame Type N Cover
19	INLET	2	0	EJW 1040 Frame Type N Cover
20	CATCH BASIN	4	2	EJW 7045 Frame Type M1 Cover
21	INLET	2	0	EJW 7045 Frame Type M1 Cover
22	CATCH BASIN	4	2	EJW 1040 Frame Type N Cover
23	MANHOLE	4	0	EJW 1040 Frame Type B Cover
24	CATCH BASIN	4	2	EJW 1040 Frame Type N Cover
25	CATCH BASIN	4	2	EJW 1040 Frame Type N Cover
26	MANHOLE	4	0	EJW 1040 Frame Type B Cover
27	INLET	2	0	EJW 1040 Frame Type N Cover
28	INLET	2	0	EJW 1040 Frame Type N Cover
29	CATCH BASIN	4	2	EJW 7065 Frame Type M1 Cover
30	INLET	2	0	EJW 7065 Frame Type M1 Cover
31	INLET	2	0	EJW 1040 Frame Type N Cover
32	INLET	2	0	EJW 1040 Frame Type N Cover
34C	MANHOLE	4	0	EJW 1040 Frame Type B Cover
34D	MANHOLE	4	0	EJW 1040 Frame Type B Cover
OMH	OVERFLOW MANHOLE	6	0	EJW 1040 Frame Type B Cover
SP	STAND PIPE	3		SEE DETAIL ON SHEET 15
CS	CONTECH	6		SEE DETAIL ON SHEET 14



- ### PROPOSED IMPROVEMENTS
- MUNICIPAL SEWER TO BE PROVIDED BY CONSTRUCTING A GRAVITY SEWER. ALL ON-SITE GRAVITY SEWER SHALL BE 8-INCH DIAMETER.
  - WATER SUPPLY TO BE PROVIDED BY CONNECTING TO EXISTING 12" WATER MAINS ALONG UNION LAKE ROAD. ALL WATER MAIN SHALL BE 8-INCH DIAMETER UNLESS OTHERWISE NOTED.
  - ON-SITE STORM WATER DETENTION SHALL BE PROVIDED PER OAKLAND COUNTY DRAIN COMMISSION STANDARDS. ALL STORM DRAINAGE EASEMENTS SHALL BE A MINIMUM OF 20 FEET WIDE IF NECESSARY.
  - ROADWAYS SHALL BE 27' WD. (B-B) WITH CONC. CURB & GUTTER AND ASPHALT PAVEMENT. ALL ROADWAYS SHALL BE PRIVATE. ALL SIDEWALKS SHALL BE 5 FEET WIDE. UNLESS OTHERWISE NOTED, AND MEET ALL ADA REQUIREMENTS.
  - ALL ELECTRIC, CABLE T.V. AND TELEPHONE LINES SHALL BE LOCATED UNDERGROUND, AND SHALL BE PLACED WITHIN EASEMENTS DEDICATED FOR SUCH USE.



**LEGEND**

EXISTING	PROPOSED	DESCRIPTION
		PAVEMENT (ASPHALT)
		SIDE WALK (CONCRETE)
		CONCRETE CURB AND GUTTER
		STORM SEWER
		SANITARY SEWER
		WATER MAIN
		MANHOLE
		CATCH BASIN W/INLET FILTER (ST-38)
		CURB INLET W/SILT SAC (ST-4A)
		END SECTION W/RIP-RAP
		GATE VALVE
		HYDRANT
		FLOOD PLAIN
		CONTOURS
		SPOT ELEVATION
		SURFACE DRAINAGE
		OVERFLOW ROUTE
		TREE FENCE
		SILT FENCE
		PROPOSED DRIVEWAY LOCATION
		LIMIT OF DISTURBANCE

**LAKE POINTE**  
SECTION 36, TOWN 3 NORTH, RANGE 8 EAST  
WHITE LAKE TWP., OAKLAND COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING
NO.	ITEM	DATE
1.	REVISE PER OWNER	6-3-20
2.	REVISE GRADES ON UNITS 2 AND 6	11-9-20
3.	REV PER 11-20-20 WL TWP LETTER	02-02-21
4.	REVISE PER WHITE LAKE TWP	03-03-21
6.	REVISED PER TOWNSHIP	04-25-23
7.	REVISED PER TOWNSHIP	7-27-23
8.	REVISE PER AGENCIES	02-13-24

UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.

**811** Know what's below. Call before you dig.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF AND/OR RELOCATION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION.

DATE: 04-08-2020 DESIGNED BY: A.A. JOB NUMBER: 19-039  
CHECKED BY: J.E. DRAWING FILE: 19039DM.dwg

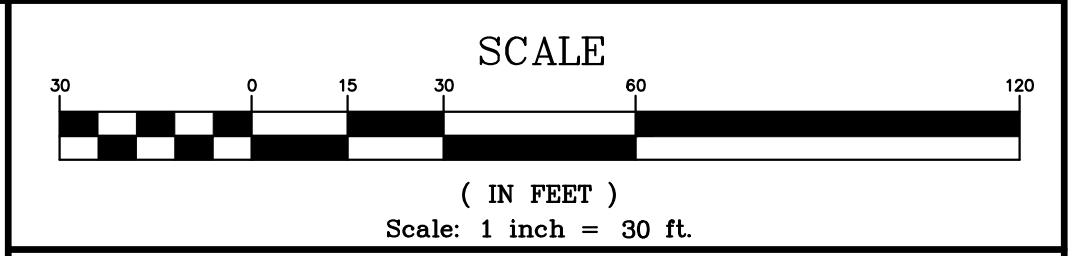
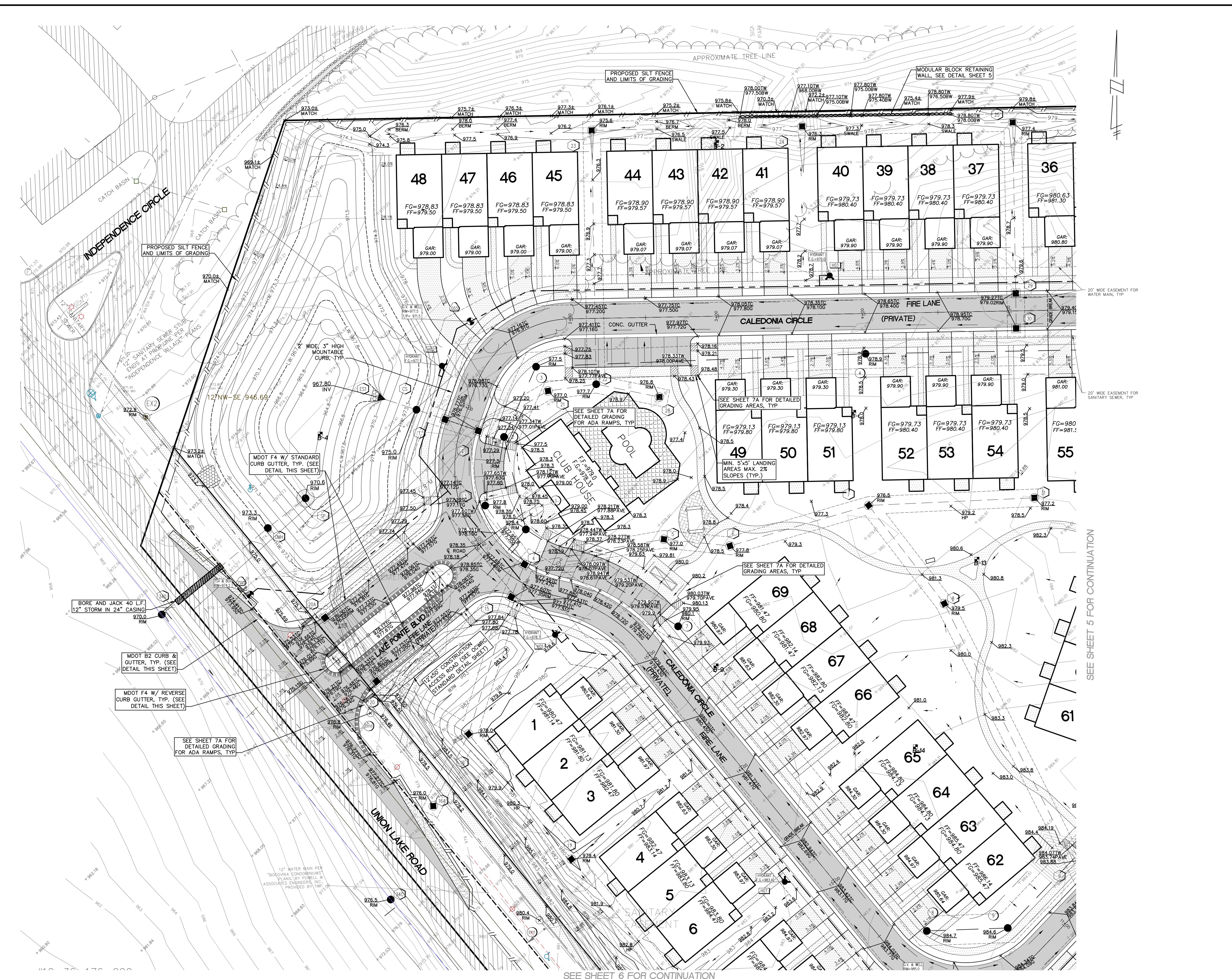
**EXISTING CONDITIONS AND DEMOLITION PLAN**

**SKL SEIBER KEAST LEHNER ENGINEERING | SURVEYING**

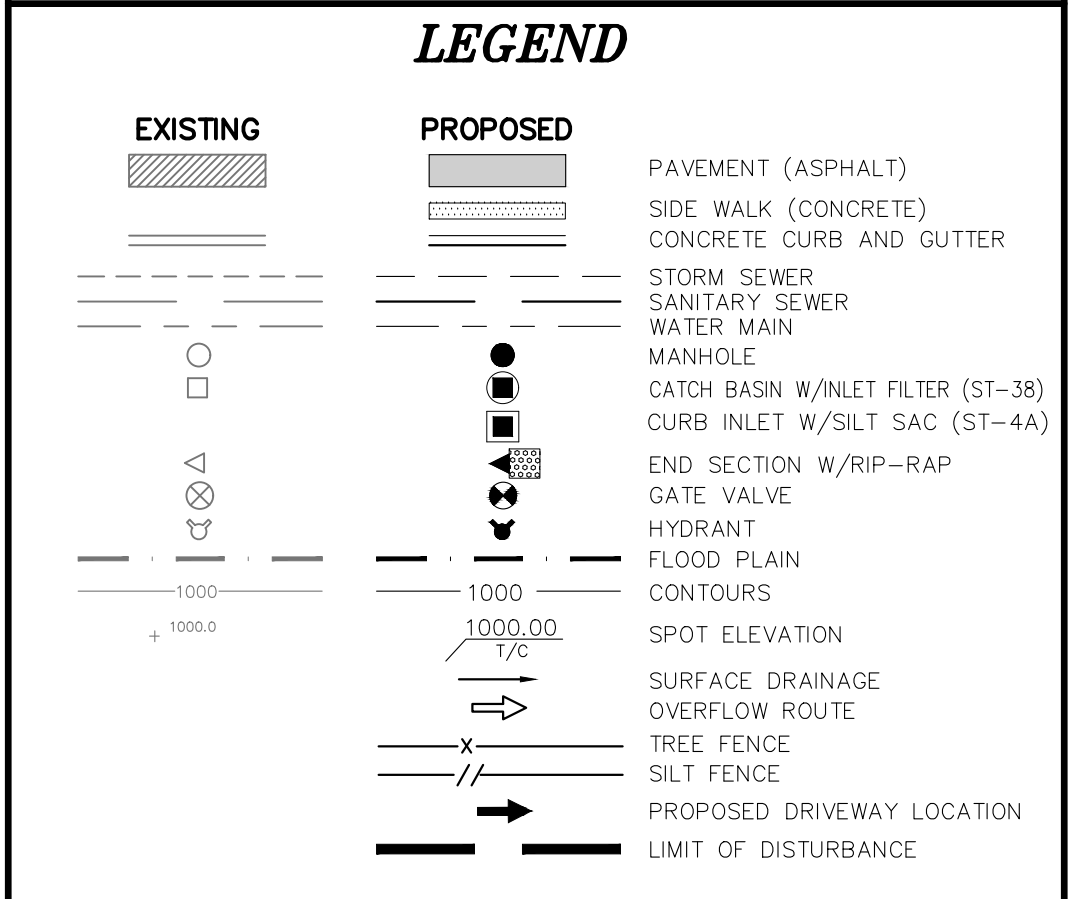
CLAYTON TOWNSHIP OFFICE: 1700 NINETEEN MILE ROAD, SUITE 3 CLAYTON, MICHIGAN 48038 588.412.7050

PARMENTON HILLS OFFICE: 38206 COUNTRY CLUB DRIVE, SUITE C8 PARMENTON HILLS, MI 48381 248.308.3341

**SHEET 3**



- O.C.W.R.C. S.E.S.C. NOTES**
- CONTRACTOR SHALL MAINTAIN ALL SOIL EROSION CONTROLS WEEKLY AND AFTER EVERY STORM EVENT.
  - SEE SHEET ND1 FOR SOIL EROSION CONTROL MAINTENANCE.
- GRADING NOTES**
- PROVIDE MINIMUM 2% SLOPE IN SIDE YARD AND REAR YARD SWALES.
  - MAINTAIN A MAXIMUM 1V:3H SLOPE FROM HOUSE TO SIDE YARD SWALES.
  - AFTER INITIAL EXAMINATION & GRADING OF THE RETENTION BASIN, SILT FENCE SHALL BE PLACED AROUND THE BASINS UNTIL PERMANENT VEGETATION IS ESTABLISHED.
- PAVING NOTES**
- SIDEWALKS AND RAMP CONSTRUCTION SHALL BE ACCORDANCE WITH ADA STANDARDS. (SEE SHEET ND1 FOR RAMP DETAILS)
  - SEE SHEET ND1 & 16 FOR ALL CURB AND PAVING DETAILS.
  - SEE UNION LAKE ROAD APPROACH PLAN NOTES ON SHEETS 16.



**LAKE POINTE**  
SECTION 36, TOWN 3 NORTH, RANGE 8 EAST  
WHITE LAKE TWP., OAKLAND COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING
NO.	DESCRIPTION	DATE
1.	REVISE PER OWNER	6-3-20
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6.	REVISED PER TOWNSHIP	04-25-23
7.	REVISED PER TOWNSHIP	7-27-23
8.	REVISE PER AGENCIES	02-13-24

UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.

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THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF AND/OR RELOCATION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION.

DATE: 04-08-2020 DESIGNED BY: A.A. JOB NUMBER: 19-039  
CHECKED BY: J.E. DRAWING FILE: 19039GR.dwg

**GRADING & S.E.S.C. PLAN**

**SKL SEIBER KEAST LEHNER ENGINEERING | SURVEYING**

CLINTON TOWNSHIP OFFICE: 1700 NINETEEN MILE ROAD, SUITE 3 CLINTON TOWNSHIP, MI 48838 588.412.7050

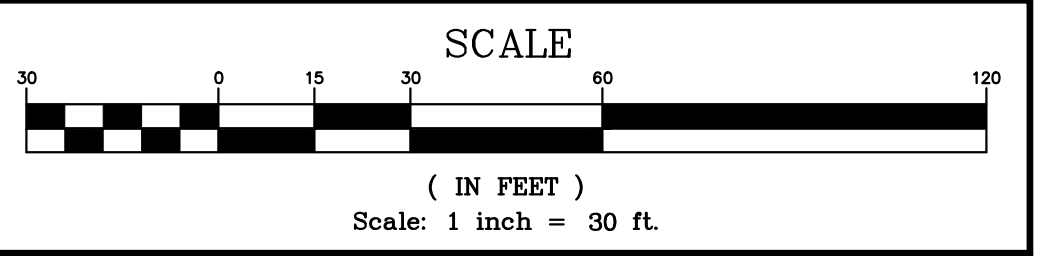
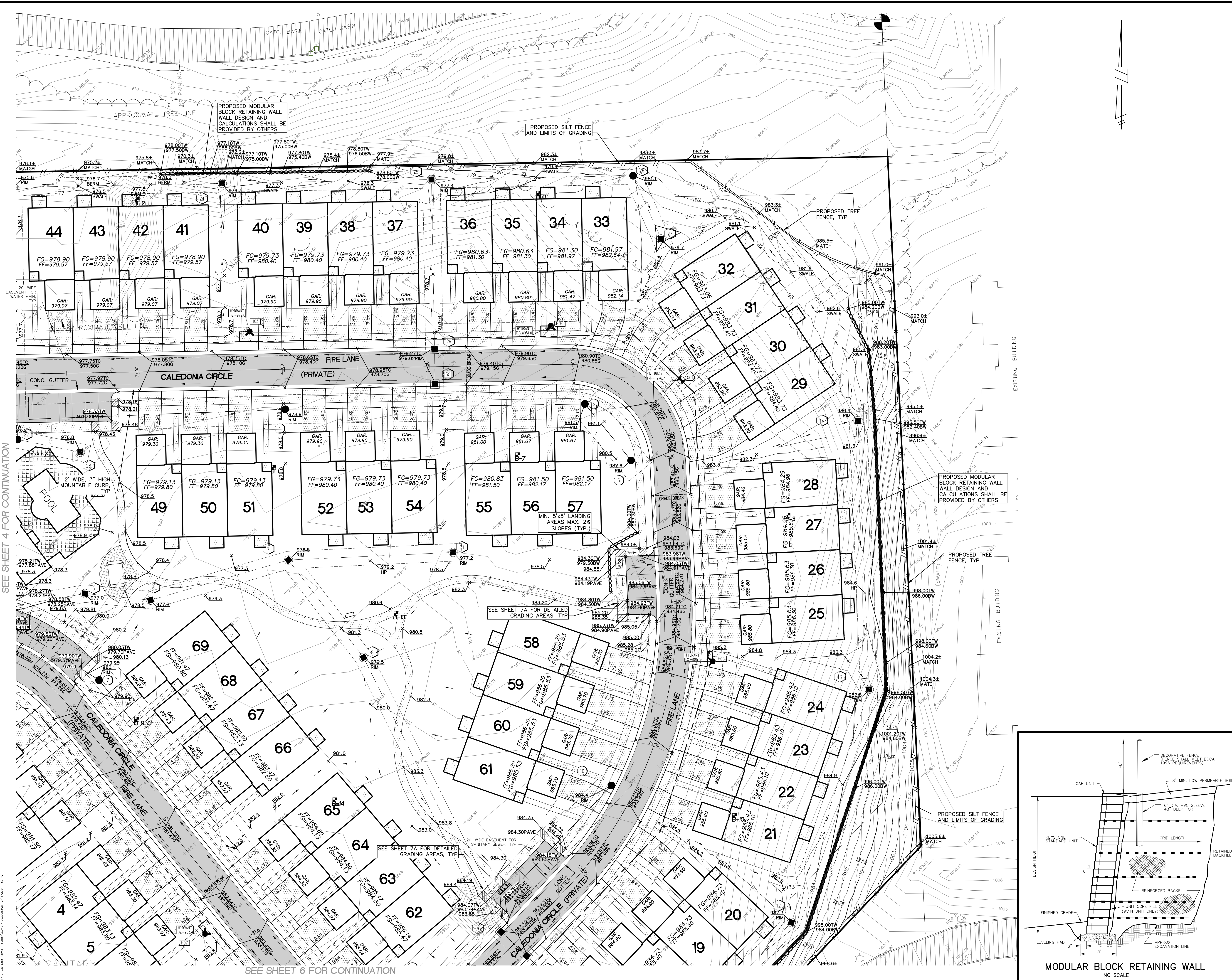
PARMENTON HILLS OFFICE: 38206 COUNTRY CLUB DRIVE, SUITE C8 PARMENTON HILLS, MI 48381 248.308.3341

SHEET 4

19039GR.dwg - 04/08/2020 10:00 AM

SEE SHEET 5 FOR CONTINUATION

SEE SHEET 6 FOR CONTINUATION



**O.C.W.R.C. S.E.S.C. NOTES**

- CONTRACTOR SHALL MAINTAIN ALL SOIL EROSION CONTROLS WEEKLY AND AFTER EVERY STORM EVENT.
- SEE SHEET ND1 FOR SOIL EROSION CONTROL MAINTENANCE.

**GRADING NOTES**

- PROVIDE MINIMUM 2% SLOPE IN SIDE YARD AND REAR YARD SWALES.
- MAINTAIN A MAXIMUM 1V:3H SLOPE FROM HOUSE TO SIDE YARD SWALES.
- AFTER INITIAL EXAMINATION & GRADING OF THE RETENTION BASIN, SILT FENCE SHALL BE PLACED AROUND THE BASINS UNTIL PERMANENT VEGETATION IS ESTABLISHED.

**PAVING NOTES**

- SIDEWALKS AND RAMP CONSTRUCTION SHALL BE ACCORDANCE WITH ADA STANDARDS. (SEE SHEET ND1 FOR RAMP DETAILS)
- SEE SHEET ND1 & 16 FOR ALL CURB AND PAVING DETAILS.
- SEE UNION LAKE ROAD APPROACH PLAN NOTES ON SHEETS 16.

**LEGEND**

EXISTING	PROPOSED	DESCRIPTION
[Symbol]	[Symbol]	PAVEMENT (ASPHALT)
[Symbol]	[Symbol]	SIDE WALK (CONCRETE)
[Symbol]	[Symbol]	CONCRETE CURB AND GUTTER
[Symbol]	[Symbol]	STORM SEWER
[Symbol]	[Symbol]	SANITARY SEWER
[Symbol]	[Symbol]	WATER MAIN
[Symbol]	[Symbol]	MANHOLE
[Symbol]	[Symbol]	CATCH BASIN W/INLET FILTER (ST-38)
[Symbol]	[Symbol]	CURB INLET W/SILT SAC (ST-4A)
[Symbol]	[Symbol]	END SECTION W/RIP-RAP
[Symbol]	[Symbol]	GATE VALVE
[Symbol]	[Symbol]	HYDRANT
[Symbol]	[Symbol]	FLOOD PLAIN
[Symbol]	[Symbol]	CONTOURS
[Symbol]	[Symbol]	SPOT ELEVATION
[Symbol]	[Symbol]	SURFACE DRAINAGE
[Symbol]	[Symbol]	OVERFLOW ROUTE
[Symbol]	[Symbol]	TREE FENCE
[Symbol]	[Symbol]	SILT FENCE
[Symbol]	[Symbol]	PROPOSED DRIVEWAY LOCATION
[Symbol]	[Symbol]	LIMIT OF DISTURBANCE

**LAKE POINTE**  
**SECTION 36, TOWN 3 NORTH, RANGE 8 EAST**  
**WHITE LAKE TWP., OAKLAND COUNTY, MICHIGAN**

**REVISIONS**

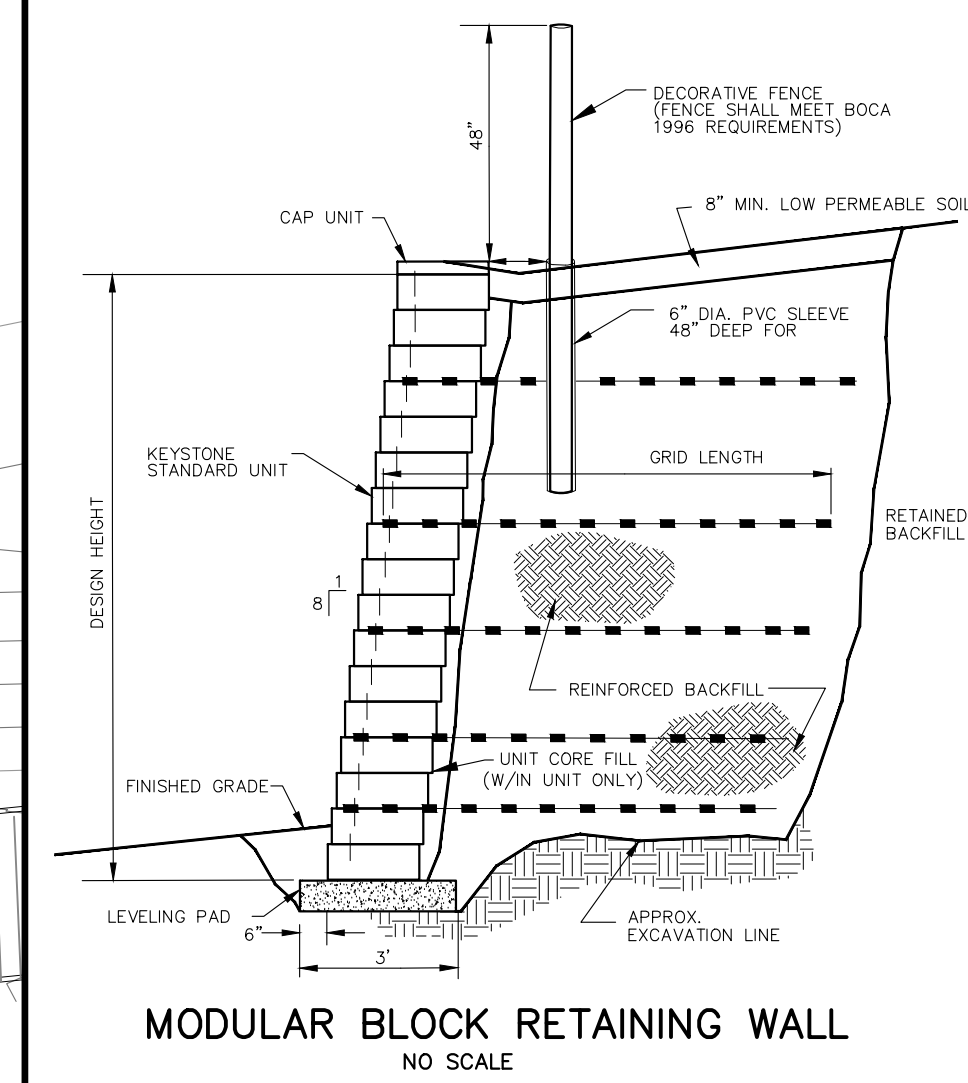
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**UTILITY WARNING**  
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 CHECKED BY: J.E. DRAWING FILE: 19039GR.dwg

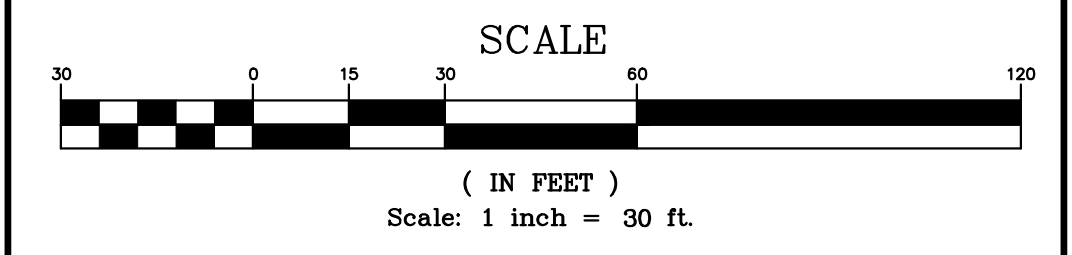


**GRADING & S.E.S.C. PLAN**

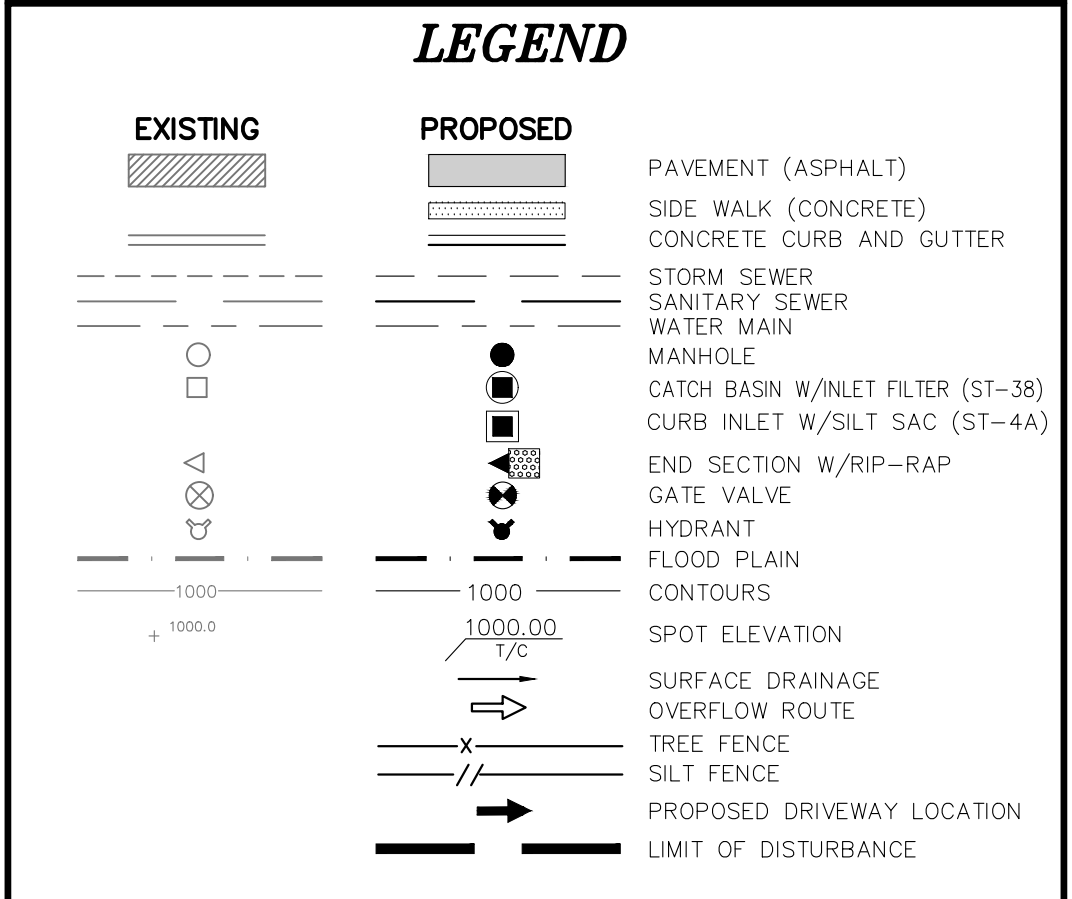
**SKL SEIBER KEAST LEHNER ENGINEERING | SURVEYING**

CLINTON TOWNSHIP OFFICE: 1700 NINETEEN MILE ROAD, SUITE 3 CLINTON TOWNSHIP, MI 48038 588.412.7060  
 PARMINGTON HILLS OFFICE: 38205 COUNTRY CLUB DRIVE, SUITE C8 PARMINGTON HILLS, MI 48361 248.308.3341

**SHEET 5**



- O.C.W.R.C. S.E.S.C. NOTES**
- CONTRACTOR SHALL MAINTAIN ALL SOIL EROSION CONTROLS WEEKLY AND AFTER EVERY STORM EVENT.
  - SEE SHEET ND1 FOR SOIL EROSION CONTROL MAINTENANCE.
- GRADING NOTES**
- PROVIDE MINIMUM 2% SLOPE IN SIDE YARD AND REAR YARD SWALES.
  - MAINTAIN A MAXIMUM 1V:3H SLOPE FROM HOUSE TO SIDE YARD SWALES.
  - AFTER INITIAL EXAMINATION & GRADING OF THE RETENTION BASIN, SILT FENCE SHALL BE PLACED AROUND THE BASINS UNTIL PERMANENT VEGETATION IS ESTABLISHED.
- PAVING NOTES**
- SIDEWALKS AND RAMP CONSTRUCTION SHALL BE ACCORDANCE WITH ADA STANDARDS. (SEE SHEET ND1 FOR RAMP DETAILS)
  - SEE SHEET ND1 & 16 FOR ALL CURB AND PAVING DETAILS.
  - SEE UNION LAKE ROAD APPROACH PLAN NOTES ON SHEETS 16.



**LAKE POINTE**  
SECTION 36, TOWN 3 NORTH, RANGE 8 EAST  
WHITE LAKE TWP., OAKLAND COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING
NO.	ITEM	DATE
1.	REVISED PER OWNER	6-3-20
2.	REVISED GRADINGS ON UNITS 2 AND 6	11-9-20
3.	REV PER 11-20-20 WL TWP LETTER	02-02-21
4.	REVISED PER WHITE LAKE TWP	03-03-21
6.	REVISED PER TOWNSHIP	04-25-23
7.	REVISED PER TOWNSHIP	7-27-23
8.	REVISED PER AGENCIES	02-13-24

UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.

**811** Know what's below. Call before you dig.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF AND/OR RELOCATION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION.

DATE: 04-08-2020 DESIGNED BY: A.A. JOB NUMBER: 19-039  
CHECKED BY: J.E. DRAWING FILE: 19039GR.dwg

**GRADING & S.E.S.C. PLAN**

**SKL SEIBER KEAST LEHNER ENGINEERING | SURVEYING**

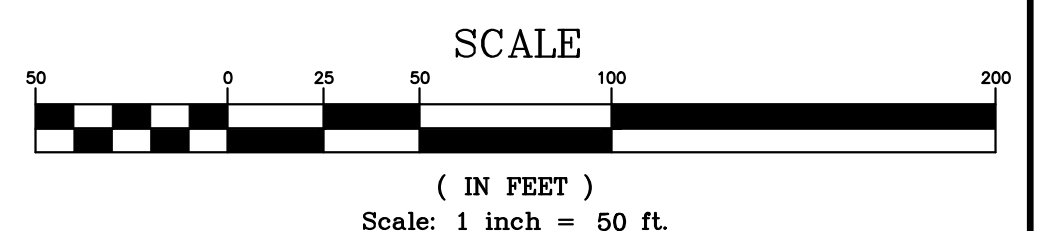
CLINTON TOWNSHIP OFFICE: 1700 NINETEEN MILE ROAD, SUITE 3 CLINTON TOWNSHIP, MI 48831 588.412.7060

FARMINGTON HILLS OFFICE: 38205 COUNTRY CLUB DRIVE, SUITE C8 FARMINGTON HILLS, MI 48331 248.308.3341

PARCEL ACRES

SHEET 6





**LEGEND**

EXISTING	PROPOSED	
		PAVEMENT (ASPHALT)
		SIDE WALK (CONCRETE)
		CONCRETE CURB AND GUTTER
		STORM SEWER
		SANITARY SEWER
		WATER MAIN
		MANHOLE
		CATCH BASIN W/INLET FILTER (ST-38)
		CURB INLET W/SILT SAC (ST-4A)
		END SECTION W/RIP-RAP
		GATE VALVE
		HYDRANT
		FLOOD PLAIN
		CONTOURS
		SPOT ELEVATION
		SURFACE DRAINAGE
		OVERFLOW ROUTE
		TREE FENCE
		SILT FENCE
		PROPOSED DRIVEWAY LOCATION
		LIMIT OF DISTURBANCE

**LAKE POINTE**  
SECTION 36, TOWN 3 NORTH, RANGE 8 EAST  
WHITE LAKE TWP., OAKLAND COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING
NO.	ITEM	DATE
1.	REVISE PER OWNER	6-3-20
2.	REVISE GRADES ON UNITS 2 AND 6	11-9-20
3.	REV PER 11-20-20 WL TWP LETTER	02-02-21
4.	REVISE PER WHITE LAKE TWP	03-03-21
6.	REVISED PER TOWNSHIP	04-25-23
7.	REVISED PER TOWNSHIP	7-27-23
8.	REVISED PER AGENCIES	02-13-24

UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.

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THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF AND/OR RELOCATION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION.

DATE: 04-08-2020 DESIGNED BY: A.A. JOB NUMBER: 19-039  
CHECKED BY: J.E. DRAWING FILE: 19039GR.dwg

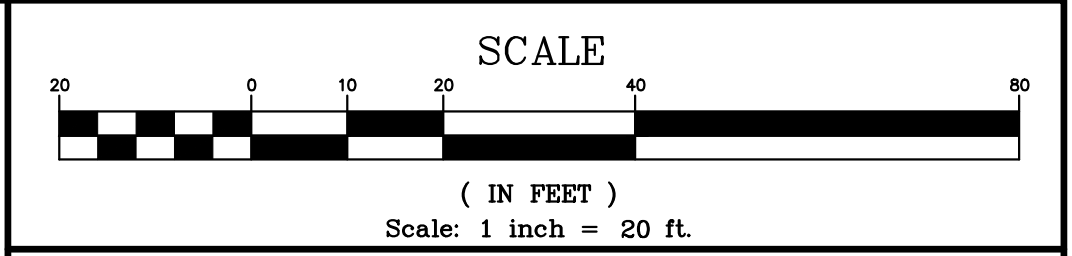
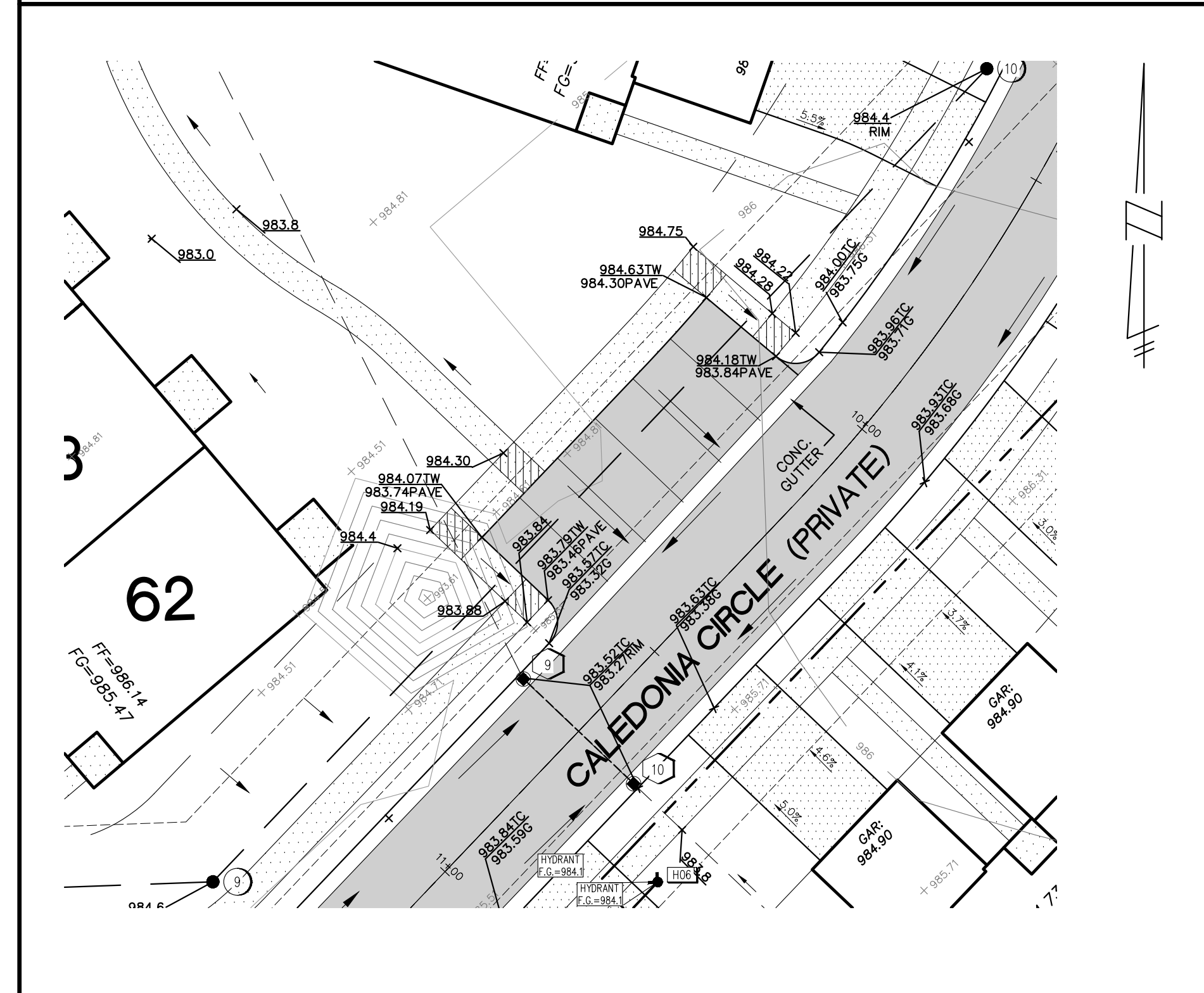
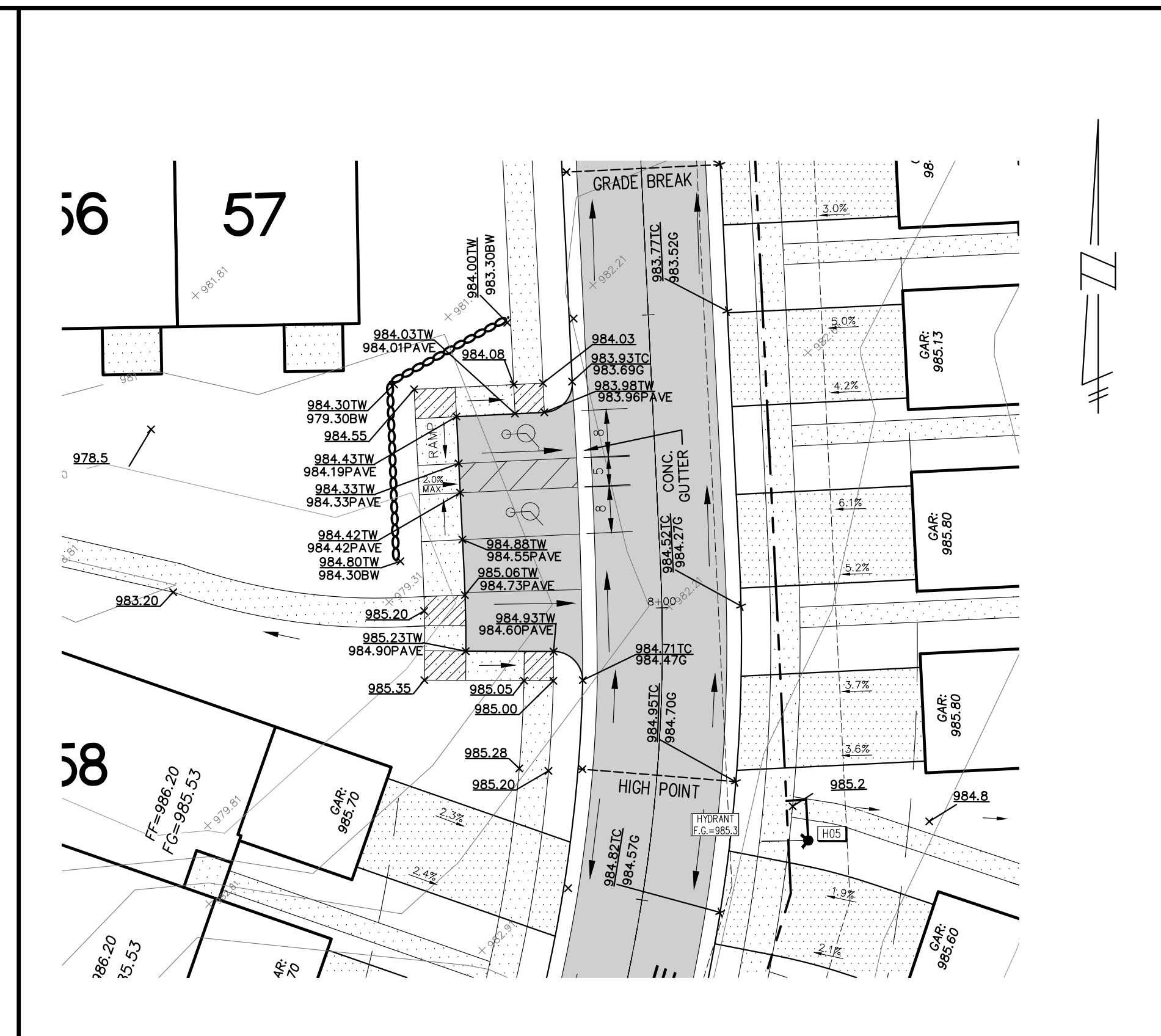
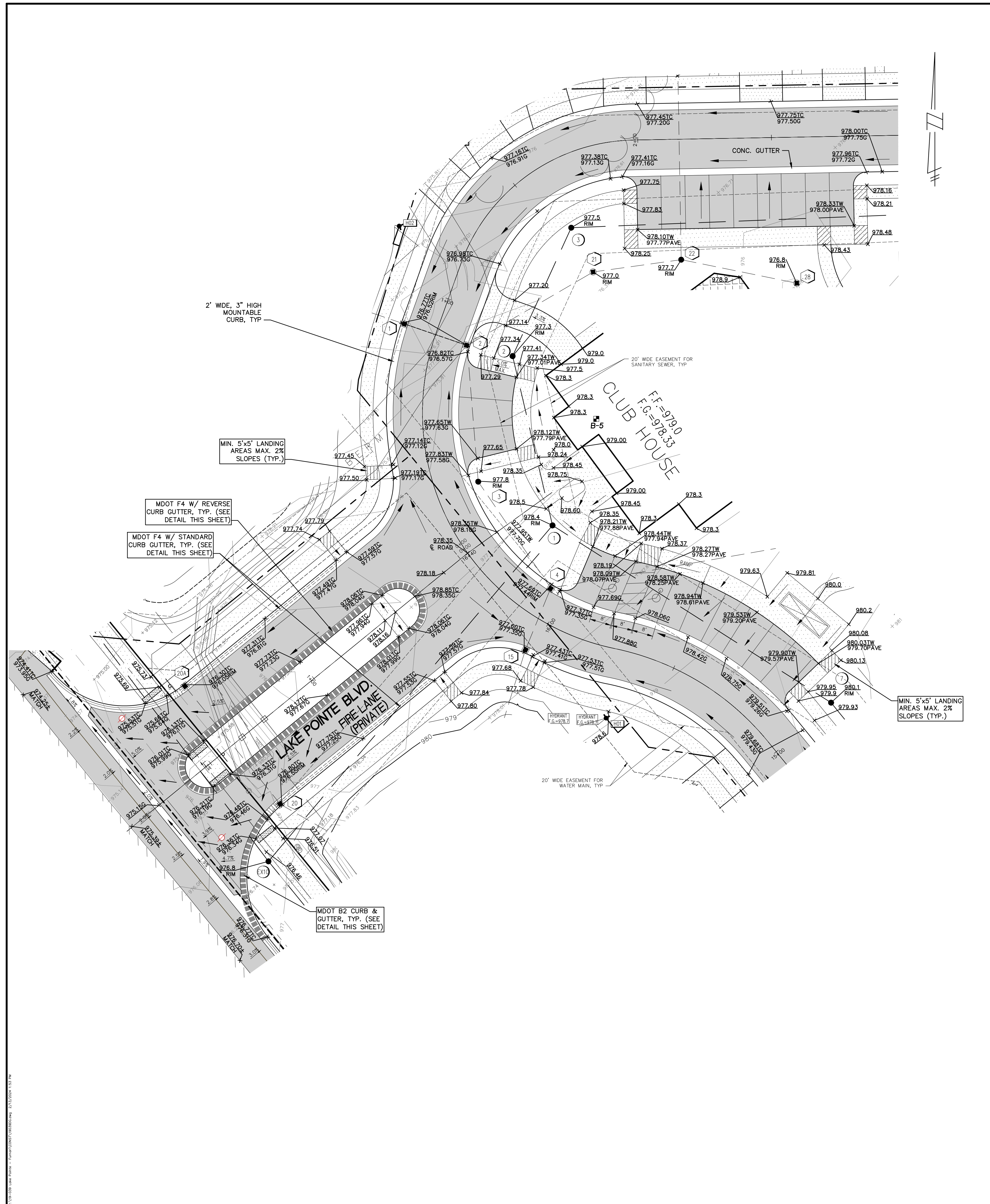
**PROPOSED CONTOUR PLAN**

**SKL SEIBER KEAST LEHNER ENGINEERING | SURVEYING**

CLINTON TOWNSHIP OFFICE: 1700 NINETEEN MILE ROAD, SUITE 3 CLINTON TOWNSHIP, MI 48038 588.412.7050

PARENTON HILLS OFFICE: 38206 COUNTRY CLUB DRIVE, SUITE C8 PARENTON HILLS, MI 48851 248.308.3311

**SHEET 7**



- O.C.W.R.C. S.E.S.C. NOTES**
- CONTRACTOR SHALL MAINTAIN ALL SOIL EROSION CONTROLS WEEKLY AND AFTER EVERY STORM EVENT.
  - SEE SHEET ND1 FOR SOIL EROSION CONTROL MAINTENANCE.
- GRADING NOTES**
- PROVIDE MINIMUM 2% SLOPE IN SIDE YARD AND REAR YARD SWALES.
  - MAINTAIN A MAXIMUM 1V:3H SLOPE FROM HOUSE TO SIDE YARD SWALES.
  - AFTER INITIAL EXAMINATION & GRADING OF THE RETENTION BASIN, SILT FENCE SHALL BE PLACED AROUND THE BASINS UNTIL PERMANENT VEGETATION IS ESTABLISHED.
- PAVING NOTES**
- SIDEWALKS AND RAMP CONSTRUCTION SHALL BE ACCORDANCE WITH ADA STANDARDS. (SEE SHEET ND1 FOR RAMP DETAILS)
  - SEE SHEET ND1 & 16 FOR ALL CURB AND PAVING DETAILS.
  - SEE UNION LAKE ROAD APPROACH PLAN NOTES ON SHEETS 16.

**LEGEND**

EXISTING	PROPOSED	
		PAVEMENT (ASPHALT)
		SIDE WALK (CONCRETE) CONCRETE CURB AND GUTTER
		STORM SEWER
		SANITARY SEWER
		WATER MAIN
		MANHOLE
		CATCH BASIN W/INLET FILTER (ST-38)
		CURB INLET W/SILT SAC (ST-4A)
		END SECTION W/RIP-RAP
		GATE VALVE
		HYDRANT
		FLOOD PLAIN
		CONTOURS
		SPOT ELEVATION
		SURFACE DRAINAGE
		OVERFLOW ROUTE
		TREE FENCE
		SILT FENCE
		PROPOSED DRIVEWAY LOCATION
		LIMIT OF DISTURBANCE

**LAKE POINTE**

**SECTION 36, TOWN 3 NORTH, RANGE 8 EAST**  
**WHITE LAKE TWP., OAKLAND COUNTY, MICHIGAN**

REVISIONS		UTILITY WARNING
NO.	ITEM	DATE
1.	REVISE PER OWNER	6-3-20
2.	REVISE GRADES ON UNITS 2 AND 6	11-9-20
3.	REV PER 11-20-20 WL TWP LETTER	02-02-21
4.	REVISE PER WHITE LAKE TWP	03-03-21
6.	REVISED PER TOWNSHIP	04-25-23
7.	REVISED PER TOWNSHIP	7-27-23
8.	REVISE PER AGENCIES	02-13-24

UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.

**811** Know what's below.  
Call before you dig.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF AND/OR RELOCATION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION.

DATE: 04-08-2020 DESIGNED BY: A.A. JOB NUMBER: 19-039  
CHECKED BY: J.E. DRAWING FILE: 19039DG.dwg

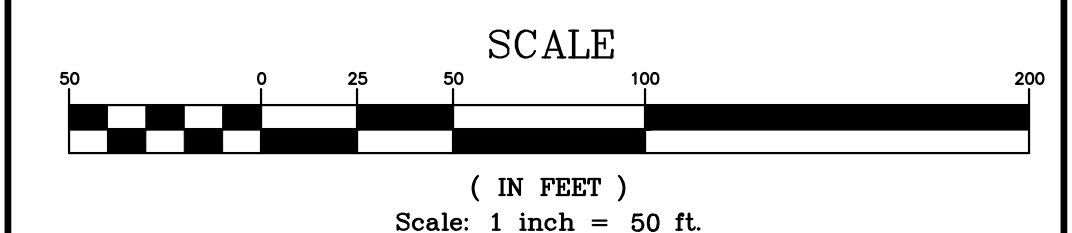
**DETAILED GRADING PLAN FOR ADA PATHWAYS**

**SKL SEIBER KEAST LEHNER ENGINEERING | SURVEYING**

CLINTON TOWNSHIP OFFICE: 1700 NINETEEN MILE ROAD, SUITE 3 CLINTON TOWNSHIP, MI 48038 588.412.7060

FARMINGTON HILLS OFFICE: 38205 COUNTRY CLUB DRIVE, SUITE C8 FARMINGTON HILLS, MI 48331 248.308.3341

SHEET  
**7A**



**SANITARY SEWER BASIS OF DESIGN**  
 CONNECTION TO PROPOSED MANHOLE / 12-INCH PVC TRUSS  
 ON THE NORTHEAST SIDE OF UNION LAKE ROAD AT LAKE POINTE BLVD.

**INITIAL DESIGN AND ULTIMATE**

RESIDENTIAL EQUIVALENCY UNIT (REU) CALCULATION			
Area (Ac)	Number of Units	Unit Factor	REUs
13.32	69	0.6	41.4
Health Club / Fitness Center w Showers &/or Pool			
Area (SF)	Number of Fixtures	Unit Factor	REUs
	5	1.29	6.5
		<b>TOTAL</b>	<b>47.9</b>
<b>POPULATION</b>		= 2.7 people/unit x 129.20 people = 47.9 units	
<b>POPULATION DENSITY</b>		= 129.20 people / 13.32 Acres = 9.70 ppl / ac	
<b>AVERAGE FLOW</b>		= 129.20 people x 100 gal/cap/day = 12,920 gal/day = 0.0200 cfs	
<b>PEAK FACTOR</b>		= (18+SQRT(P/1000))/(4+SQRT(P/1000)) = 4.21 (28,400 > Pop > 500)	
<b>PEAK FLOW</b>		= PEAK FACTOR X AVERAGE FLOW = 0.0842 cfs	

COMPACTED SAND BACKFILL UNDER THE INFLUENCE OF ROADS. MATERIAL COMPACTED TO 95% MAXIMUM UNIT DENSITY.

**NOTES**

- ALL SANITARY SEWER SHALL BE PVC TRUSS PIPE OR APPROVED EQUIVALENT.
- ALL SANITARY SEWER LEADS SHALL BE SDR 23.5 PVC PIPE.
- ALL TRENCHES WITHIN 1 ON 1 SLOPE FROM TOP OF CURBS SHALL BE BACKFILLED WITH GRANULAR MATERIAL CLASS II AND COMPACTED TO 95% OF MAXIMUM UNIT WEIGHT.
- SANITARY LEADS SHALL BE A MINIMUM OF 1% GRADE, A MAXIMUM OF 150 LF AND A MINIMUM 6" DIAMETER.
- SANITARY LEADS SHALL BE BURIED AT LEAST 5 FEET DEEP WHERE UNDER THE INFLUENCE OF PAVEMENT.
- ALL SANITARY MANHOLES SHALL BE 4' DIAMETER UNLESS OTHERWISE NOTED.

**LEGEND**

EXISTING	PROPOSED	DESCRIPTION
[Symbol]	[Symbol]	PAVEMENT (ASPHALT)
[Symbol]	[Symbol]	SIDE WALK (CONCRETE)
[Symbol]	[Symbol]	CONCRETE CURB AND GUTTER
[Symbol]	[Symbol]	STORM SEWER
[Symbol]	[Symbol]	SANITARY SEWER
[Symbol]	[Symbol]	WATER MAIN
[Symbol]	[Symbol]	MANHOLE
[Symbol]	[Symbol]	CATCH BASIN W/INLET FILTER (ST-38)
[Symbol]	[Symbol]	CURB INLET W/SILT SAC (ST-4A)
[Symbol]	[Symbol]	END SECTION W/RIP-RAP
[Symbol]	[Symbol]	GATE VALVE
[Symbol]	[Symbol]	HYDRANT
[Symbol]	[Symbol]	FLOOD PLAIN
[Symbol]	[Symbol]	CONTOURS
[Symbol]	[Symbol]	SPOT ELEVATION
[Symbol]	[Symbol]	SURFACE DRAINAGE
[Symbol]	[Symbol]	OVERFLOW ROUTE
[Symbol]	[Symbol]	TREE FENCE
[Symbol]	[Symbol]	SILT FENCE
[Symbol]	[Symbol]	PROPOSED DRIVEWAY LOCATION
[Symbol]	[Symbol]	LIMIT OF DISTURBANCE

**LAKE POINTE**  
 SECTION 36, TOWN 3 NORTH, RANGE 8 EAST  
 WHITE LAKE TWP., OAKLAND COUNTY, MICHIGAN

REVISIONS			UTILITY WARNING
NO.	ITEM	DATE	UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.  <b>811</b> Know what's below. Call before you dig.  THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF AND/OR RELOCATION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION.
1.	REVISE PER OWNER	6-3-20	
2.	REVISE GRADES ON UNITS 2 AND 6	11-9-20	
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4.	REVISE PER WHITE LAKE TWP	03-03-21	
6.	REVISED PER TOWNSHIP	04-25-23	
7.	REVISED PER TOWNSHIP	7-27-23	
8.	REVISE PER AGENCIES	02-13-24	

DATE: 04-08-2020 DESIGNED BY: A.A. JOB NUMBER: 19-039  
 CHECKED BY: J.E. DRAWING FILE: 19039RD.dwg

**ROAD AND SANITARY SEWER PLAN**

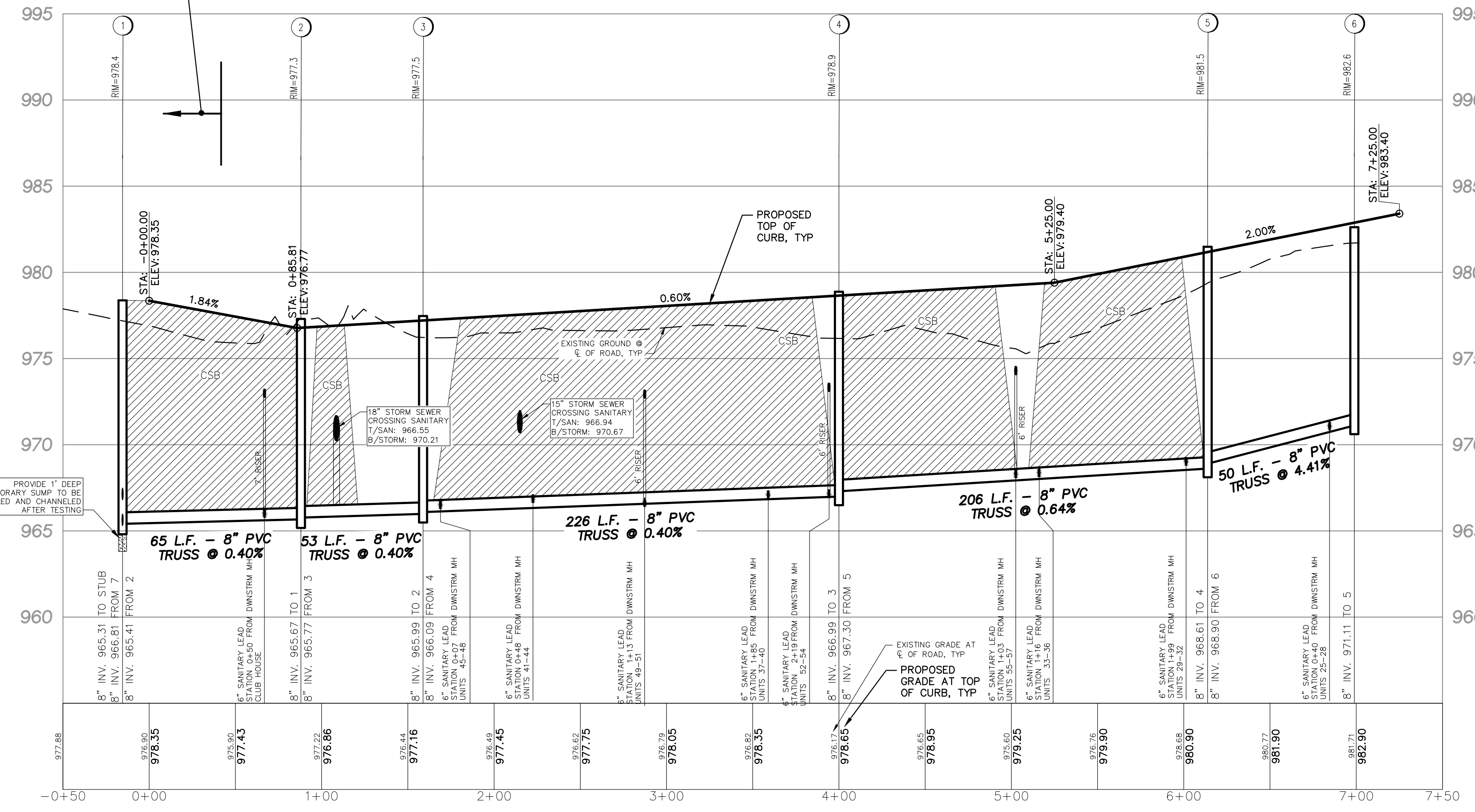
**SKL SEIBER KEAST LEHNER ENGINEERING | SURVEYING**

CLINTON TOWNSHIP OFFICE: 1700 NINETEEN MILE ROAD, SUITE 3 CLINTON TOWNSHIP, MI 48036 588.412.7060

PARMENTON HILLS OFFICE: 38205 COUNTRY CLUB DRIVE, SUITE C8 PARMENTON HILLS, MI 48381 248.308.3341

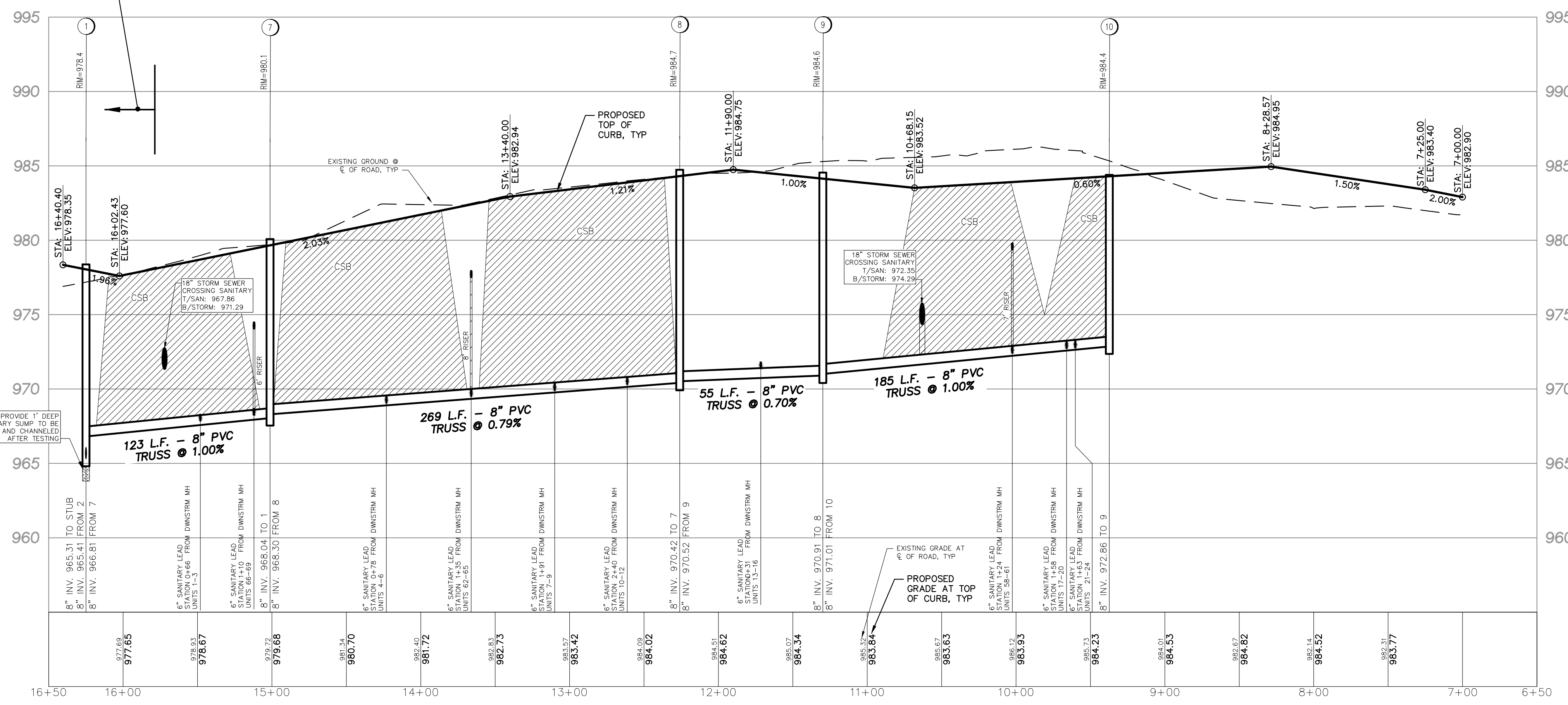
**SHEET 8**

SEE GRADING PLAN (SHEET 4) FOR INTERSECTION GRADING DETAIL

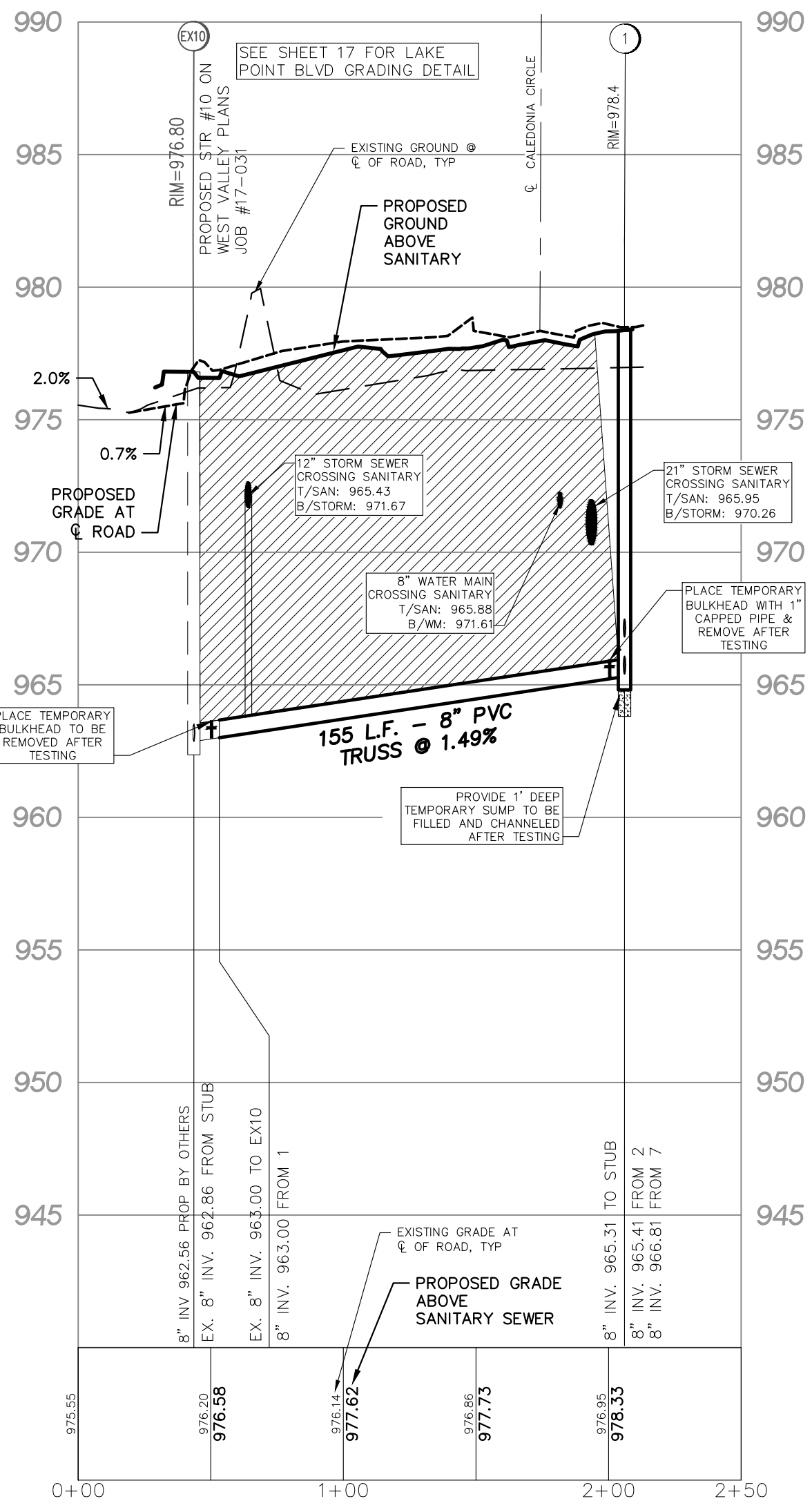


CALEDONIA CIRCLE  
SCALE: HORIZONTAL: 1" = 50'  
VERTICAL: 1" = 5'

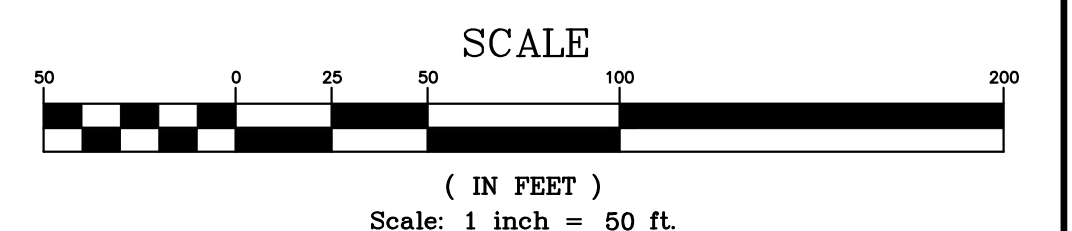
SEE GRADING PLAN (SHEET 4) FOR INTERSECTION GRADING DETAIL



CALEDONIA CIRCLE  
SCALE: HORIZONTAL: 1" = 50'  
VERTICAL: 1" = 5'



LAKE POINTE BLVD  
SCALE: HORIZONTAL: 1" = 50'  
VERTICAL: 1" = 5'



LEGEND		
	EXISTING	PAVEMENT (ASPHALT)
	PROPOSED	PAVEMENT (ASPHALT)
		CONCRETE CURB AND GUTTER
		STORM SEWER
		SANITARY SEWER
		WATER MAIN
		MANHOLE
		CATCH BASIN W/INLET FILTER (ST-38)
		CURB INLET W/SILT SAC (ST-4A)
		END SECTION W/RIP-RAP
		GATE VALVE
		HYDRANT
		FLOOD PLAIN
		CONTOURS
		SPOT ELEVATION
		SURFACE DRAINAGE
		OVERFLOW ROUTE
		TREE FENCE
		SILT FENCE
		PROPOSED DRIVEWAY LOCATION
		LIMIT OF DISTURBANCE

**LAKE POINTE**  
SECTION 36, TOWN 3 NORTH, RANGE 8 EAST  
WHITE LAKE TWP., OAKLAND COUNTY, MICHIGAN

REVISIONS			UTILITY WARNING
NO.	DESCRIPTION	DATE	UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.  Know what's below. Call before you dig.  THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF AND/OR RELOCATION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION.
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DATE: 04-08-2020 DESIGNED BY: A.A. JOB NUMBER: 19-039  
CHECKED BY: J.E. DRAWING FILE: 19039RD.dwg

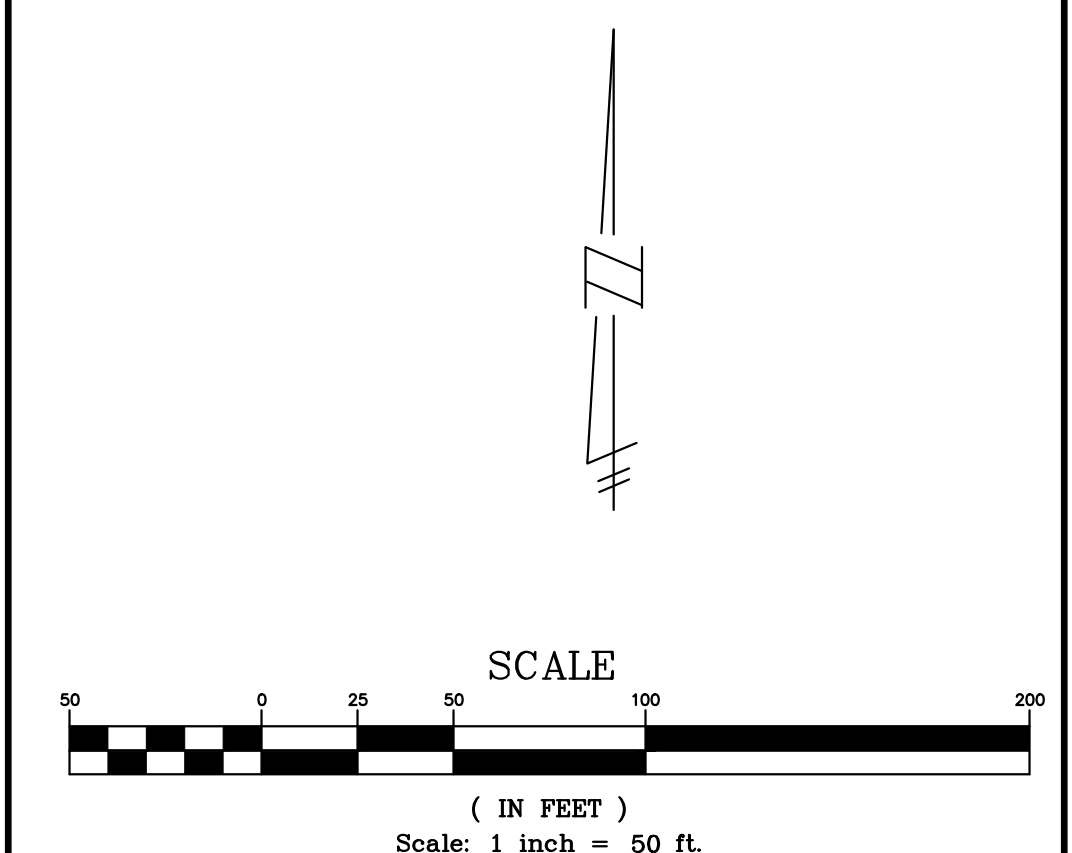
**ROAD AND SANITARY SEWER PROFILES**

**SKL SEIBER KEAST LEHNER ENGINEERING | SURVEYING**

CLINTON TOWNSHIP OFFICE: 1700 NINETEEN MILE ROAD, SUITE 3 CLINTON TOWNSHIP, MI 48038 588.412.7060

PARENTON HILLS OFFICE: 38205 COUNTRY CLUB DRIVE, SUITE C8 PARENTON HILLS, MI 48381 248.308.3311

**SHEET 9**



LOWER WATER MAIN AS NECESSARY TO MAINTAIN 18" MINIMUM VERTICAL SEPARATION BETWEEN UTILITIES.  
 COMPACTED SAND BACKFILL UNDER THE INFLUENCE OF ROADS. MATERIAL COMPACTED TO 95% MAXIMUM UNIT WEIGHT.

**NOTES**

1. ALL TRENCHES WITHIN 1 ON 1 SLOPE FROM TOP OF CURBS SHALL BE BACKFILLED WITH GRANULAR MATERIAL CLASS II AND COMPACTED TO 95% OF MAXIMUM UNIT WEIGHT.
2. WATER MAINS SHALL BE INSTALLED WITH A MINIMUM OF 6'-0" OF COVER EXCEPT AT GATE WELLS WHERE THEY SHALL BE INSTALLED WITH A 5' DEPTH OF COVER.
3. ALL WATER MAIN SHALL BE DUCTILE IRON, CLASS 54, CEMENT LINED.
4. ALL HYDRANTS MUST BE A MINIMUM OF 6' (FROM CENTER) OFF THE BACK OF CURB.
5. HYDRANT LEADS ARE 6". LENGTH OF LEAD IS 13' UNLESS OTHERWISE NOTED.
6. ALL WATER SERVICES ARE TO BE 1" DIAMETER. ALL WATER SERVICES SHALL BE COPPER K OR 200 PSI BLUE POLY SDR9 TUBING WITH TRACER WIRE, OR APPROVED EQUAL.

**LEGEND**

EXISTING	PROPOSED	
		PAVEMENT (ASPHALT)
		CONCRETE CURB AND GUTTER
		STORM SEWER
		SANITARY SEWER
		WATER MAIN
		MANHOLE
		CATCH BASIN W/INLET FILTER (ST-38)
		CURB INLET W/SILT SAC (ST-4A)
		END SECTION W/RIP-RAP
		HYDRANT
		FLOOD PLAIN
		CONTOURS
		SPOT ELEVATION
		SURFACE DRAINAGE
		OVERFLOW ROUTE
		TREE FENCE
		SILT FENCE
		PROPOSED DRIVEWAY LOCATION
		LIMIT OF DISTURBANCE

**LAKE POINTE**

SECTION 36, TOWN 3 NORTH, RANGE 8 EAST  
 WHITE LAKE TWP., OAKLAND COUNTY, MICHIGAN

**REVISIONS**

NO.	ITEM	DATE
1.	REVISE PER OWNER	6-3-20
2.	REVISE GRADES ON UNITS 2 AND 6	11-9-20
3.	REV PER 11-20-20 WL TWP LETTER	02-02-21
4.	REVISE PER WHITE LAKE TWP	03-03-21
6.	REVISED PER TOWNSHIP	04-25-23
7.	REVISED PER TOWNSHIP	7-27-23
8.	REVISED PER AGENCIES	02-13-24

**UTILITY WARNING**

UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.

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THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF AND/OR RELOCATION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION.

DATE: 04-08-2020 DESIGNED BY: A.A. JOB NUMBER: 19-039  
 CHECKED BY: J.E. DRAWING FILE: 19039WM.dwg

**WATERMAIN PLAN**

**SKL SEIBER KEAST LEHNER ENGINEERING | SURVEYING**

CLINTON TOWNSHIP OFFICE: 1700 NINETEEN MILE ROAD, SUITE 3 CLINTON TOWNSHIP, MI 48038 588.412.7050

PARRAMONTOUR HILLS OFFICE: 38206 COUNTRY CLUB DRIVE, SUITE C8 PARRAMONTOUR HILLS, MI 48381 248.308.3341

**SHEET 10**



SANM 8100-1945.01 (23.47' DEEP)  
 UNV-046.12 (23.26' DEEP)

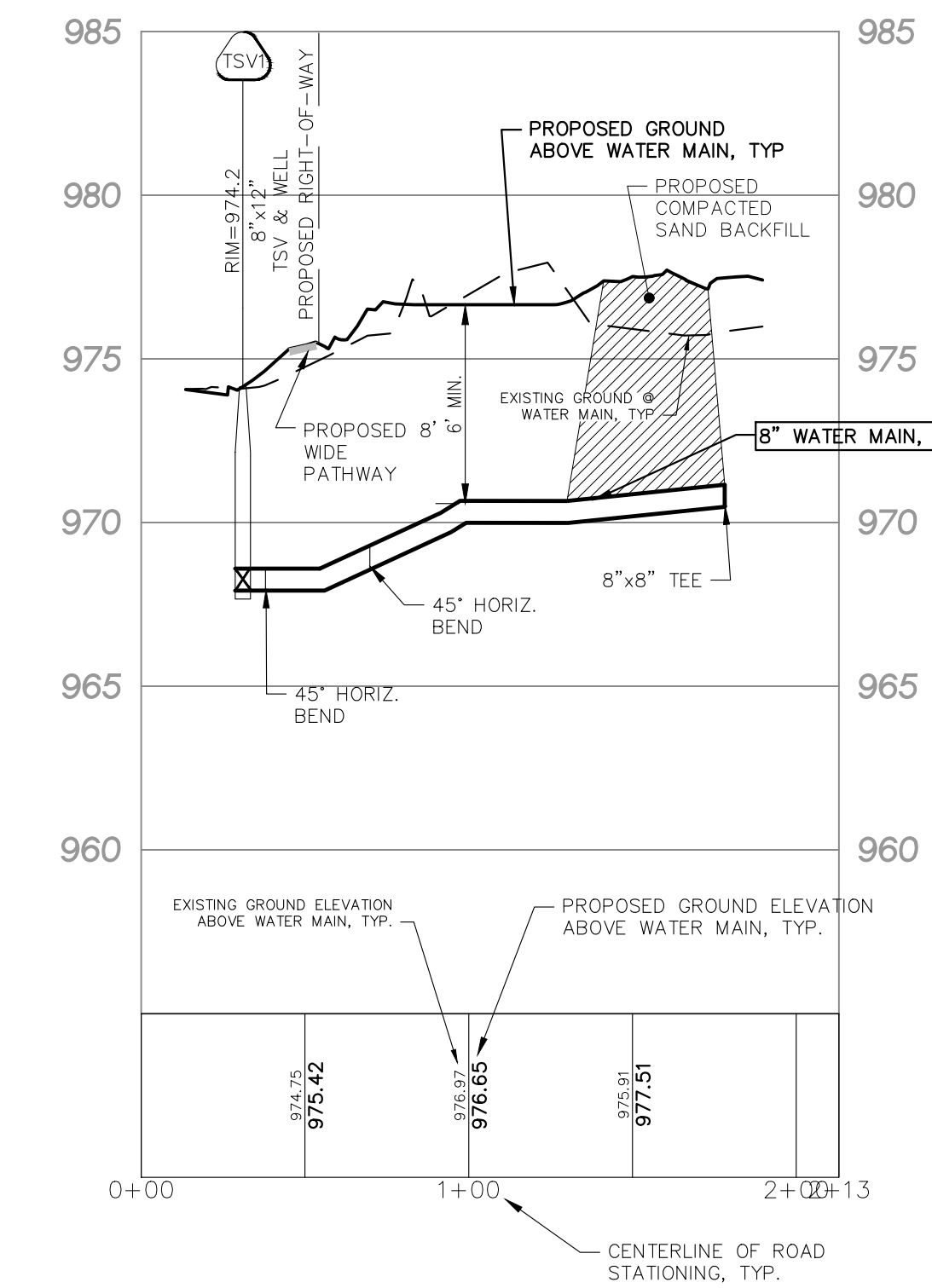
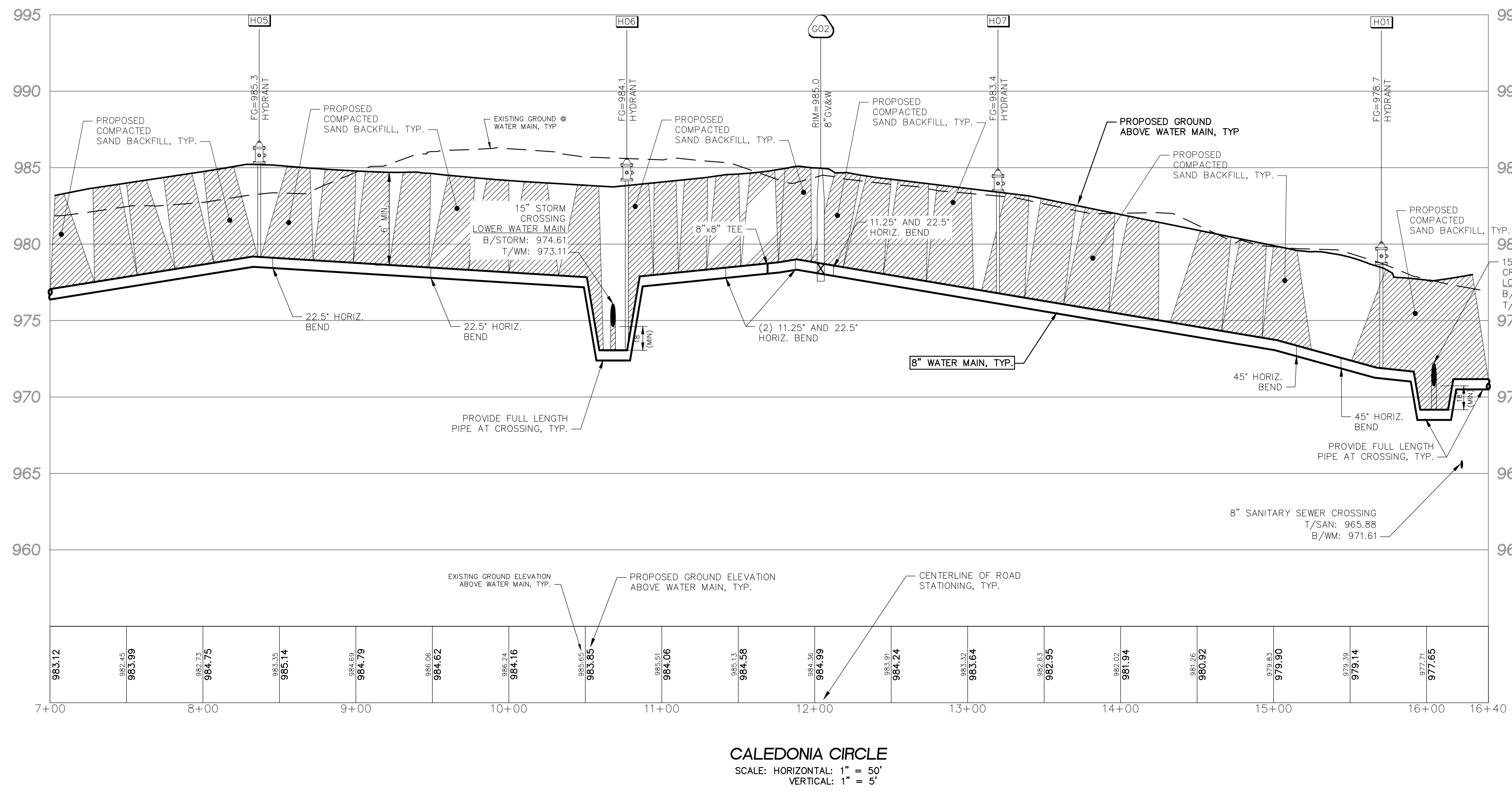
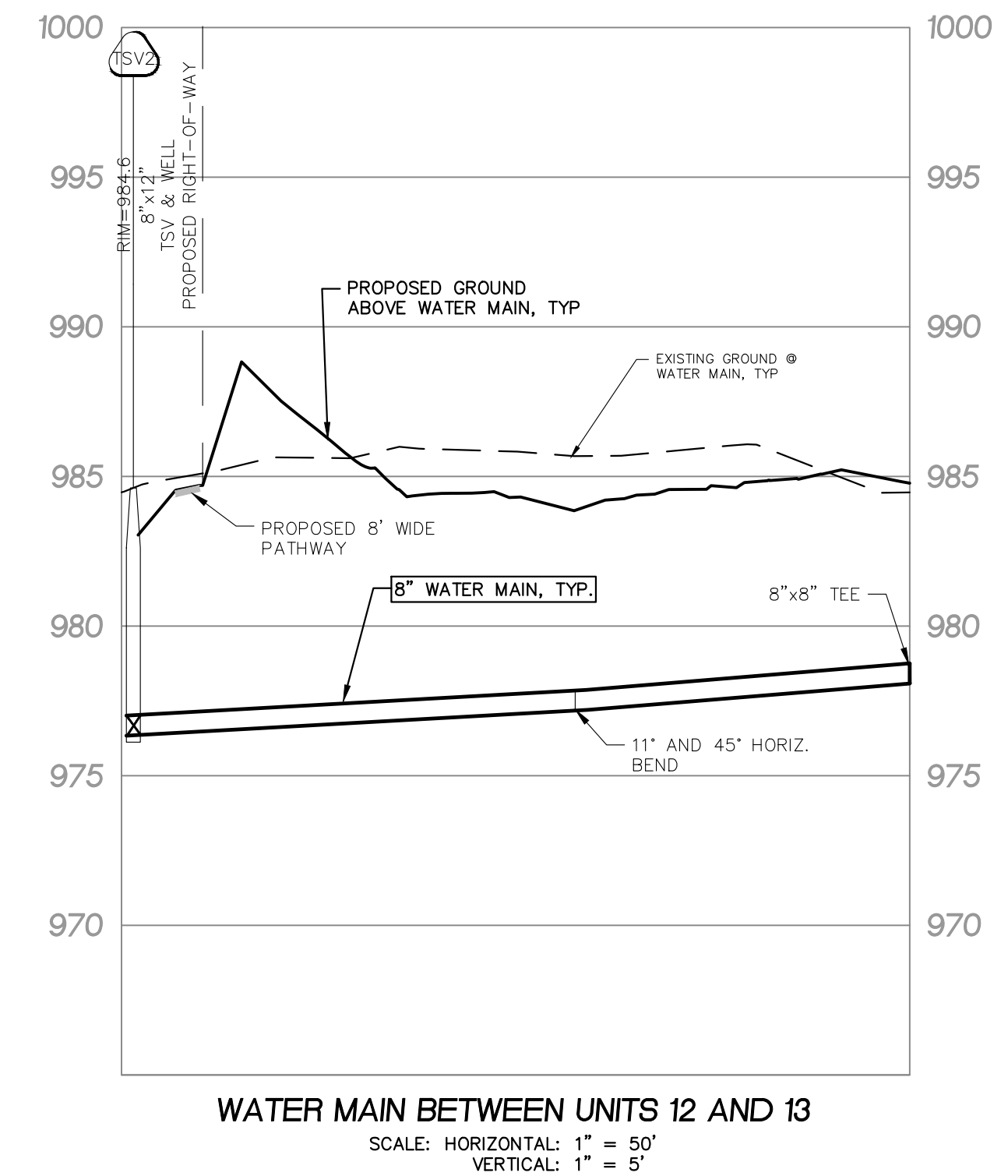
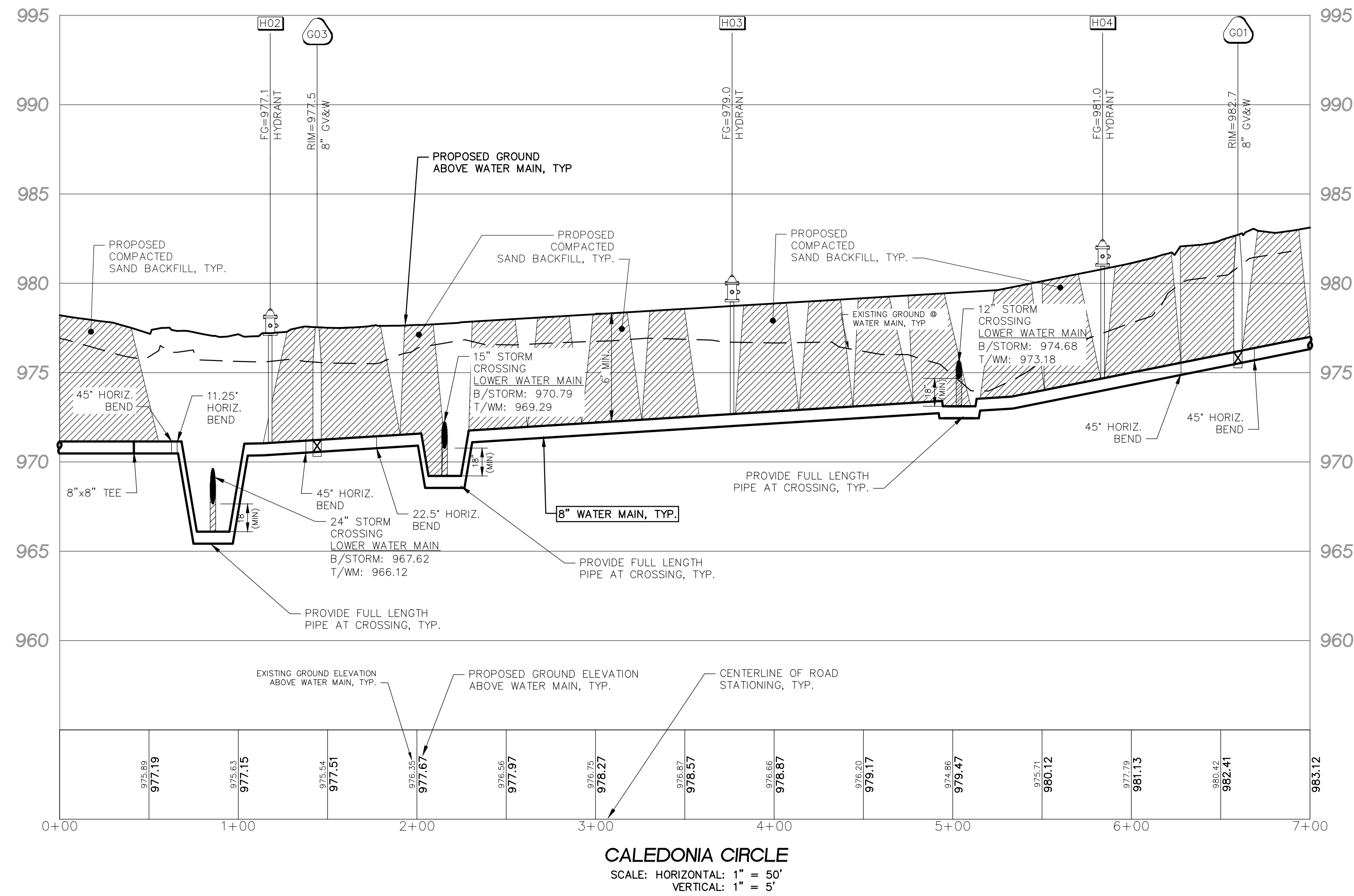
12" WATER MAIN PER "BOCovina CONDOMINIUM" PLANS, BY POWELL & ASSOCIATES ENGINEERS, INC., PROVIDED BY TWP.

CENTERLINE OF UNION LAKE ROAD PER "BOCovina HOMESTES" O.C.P.# 754 AND PER SURVEY BY MCGINNIS ENGINEERING COMPANY, DATED OCTOBER 12, 1973

CENTER OF SECTION 36, T. 3 N., R. 8 E., WHITE LAKE TWP., OAKLAND COUNTY, MICHIGAN, L. 21301, P. 378, O.C.R.

CENTERLINE OF UNION LAKE ROAD PER "BOCovina HOMESTES" O.C.P.# 754 AND PER SURVEY BY MCGINNIS ENGINEERING COMPANY, DATED OCTOBER 12, 1973

H 1/4 LINE OF SECTION 36 AS PREVIOUSLY SURVEYED



**LEGEND**

EXISTING	PROPOSED	DESCRIPTION
[Symbol]	[Symbol]	PAVEMENT (ASPHALT)
[Symbol]	[Symbol]	SIDE WALK (CONCRETE)
[Symbol]	[Symbol]	CONCRETE CURB AND GUTTER
[Symbol]	[Symbol]	STORM SEWER
[Symbol]	[Symbol]	SANITARY SEWER
[Symbol]	[Symbol]	WATER MAIN
[Symbol]	[Symbol]	MANHOLE
[Symbol]	[Symbol]	CATCH BASIN W/INLET FILTER (ST-38)
[Symbol]	[Symbol]	CURB INLET W/SILT SAC (ST-4A)
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[Symbol]	[Symbol]	SPOT ELEVATION
[Symbol]	[Symbol]	SURFACE DRAINAGE
[Symbol]	[Symbol]	OVERFLOW ROUTE
[Symbol]	[Symbol]	TREE FENCE
[Symbol]	[Symbol]	SILT FENCE
[Symbol]	[Symbol]	PROPOSED DRIVEWAY LOCATION
[Symbol]	[Symbol]	LIMIT OF DISTURBANCE

**LAKE POINTE**  
**SECTION 36, TOWN 3 NORTH, RANGE 8 EAST**  
**WHITE LAKE TWP., OAKLAND COUNTY, MICHIGAN**

REVISIONS		UTILITY WARNING
NO.	ITEM	DATE
1	REVISE PER OWNER	6-3-20
2	REVISE GRADES ON UNITS 2 AND 6	11-9-20
3	REV PER 11-20-20 WL TWP LETTER	02-02-21
4	REVISE PER WHITE LAKE TWP	03-03-21
5	ADD WATER MAIN PROFILES PER E.G.L.E	04-07-21
6	REVISED PER TOWNSHIP	04-25-23
7	REVISED PER TOWNSHIP	7-27-23
8	REVISE PER AGENCIES	02-13-24

**UTILITY WARNING**  
UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.

**811** Know what's below. Call before you dig.

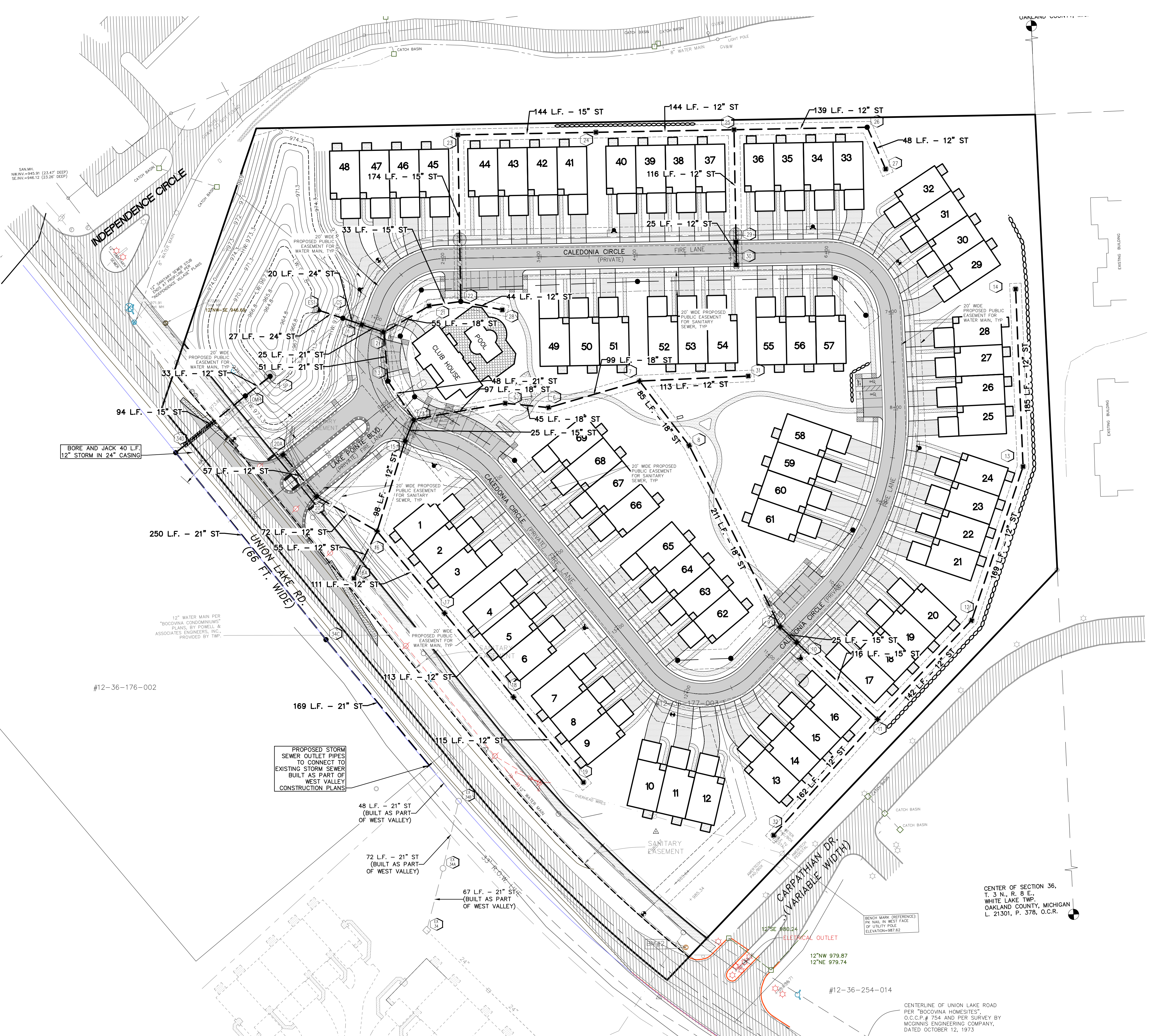
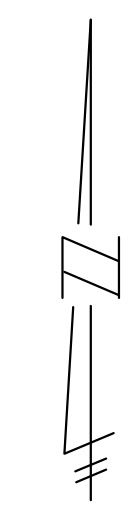
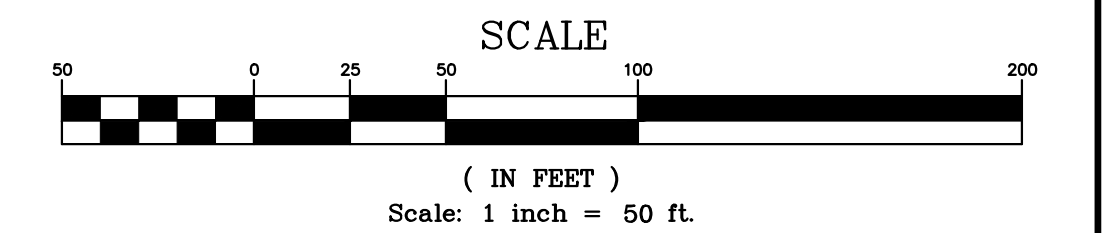
DATE: 04-08-2020 DESIGNED BY: A.A. JOB NUMBER: 19-039  
CHECKED BY: J.E. DRAWING FILE: 19039WM.dwg

**WATER MAIN PROFILES**

**SKL SEIBER KEAST LEHNER ENGINEERING | SURVEYING**

CLINTON TOWNSHIP OFFICE: 1700 NINETEEN MILE ROAD, SUITE 3 CLINTON TOWNSHIP, MI 48038 588.412.7050  
PARRINGTON HILLS OFFICE: 38205 COUNTRY CLUB DRIVE, SUITE C8 PARRINGTON HILLS, MI 48381 248.308.3311

**SHEET 10A**



LOWER WATER MAIN AS NECESSARY TO MAINTAIN 18" MINIMUM VERTICAL SEPARATION BETWEEN UTILITIES.

COMPACTED SAND BACKFILL UNDER THE INFLUENCE OF ROADS. MATERIAL COMPACTED TO 95% MAXIMUM UNIT DENSITY.

### LEGEND

EXISTING	PROPOSED	
		PAYEMENT (ASPHALT)
		SIDE WALK (CONCRETE)
		CONCRETE CURB AND GUTTER
		STORM SEWER
		SANITARY SEWER
		WATER MAIN
		MANHOLE
		CATCH BASIN W/INLET FILTER (ST-38)
		CURB INLET W/SILT SAC (ST-4A)
		END SECTION W/R/P-RAP
		GATE VALVE
		HYDRANT
		FLOOD PLAIN
		CONTOURS
		SPOT ELEVATION
		SURFACE DRAINAGE
		OVERFLOW ROUTE
		TREE FENCE
		SILT FENCE
		PROPOSED DRIVEWAY LOCATION
		LIMIT OF DISTURBANCE

## LAKE POINTE

SECTION 36, TOWN 3 NORTH, RANGE 8 EAST  
WHITE LAKE TWP., OAKLAND COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING
NO.	ITEM	DATE
1.	REVISE PER OWNER	6-3-20
2.	REVISE GRADES ON UNITS 2 AND 6	11-9-20
3.	REV PER 11-20-20 WL TWP LETTER	02-02-21
4.	REVISE PER WHITE LAKE TWP	03-03-21
6.	REVISED PER TOWNSHIP	04-25-23
7.	REVISED PER TOWNSHIP	7-27-23
8.	REVISE PER AGENCIES	02-13-24

UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.

**811** Know what's below. Call before you dig.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF AND/OR RELOCATION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION.

DATE: 04-08-2020 DESIGNED BY: A.A. JOB NUMBER: 19-039  
CHECKED BY: J.E. DRAWING FILE: 19039SST.dwg

### STORM SEWER PLAN

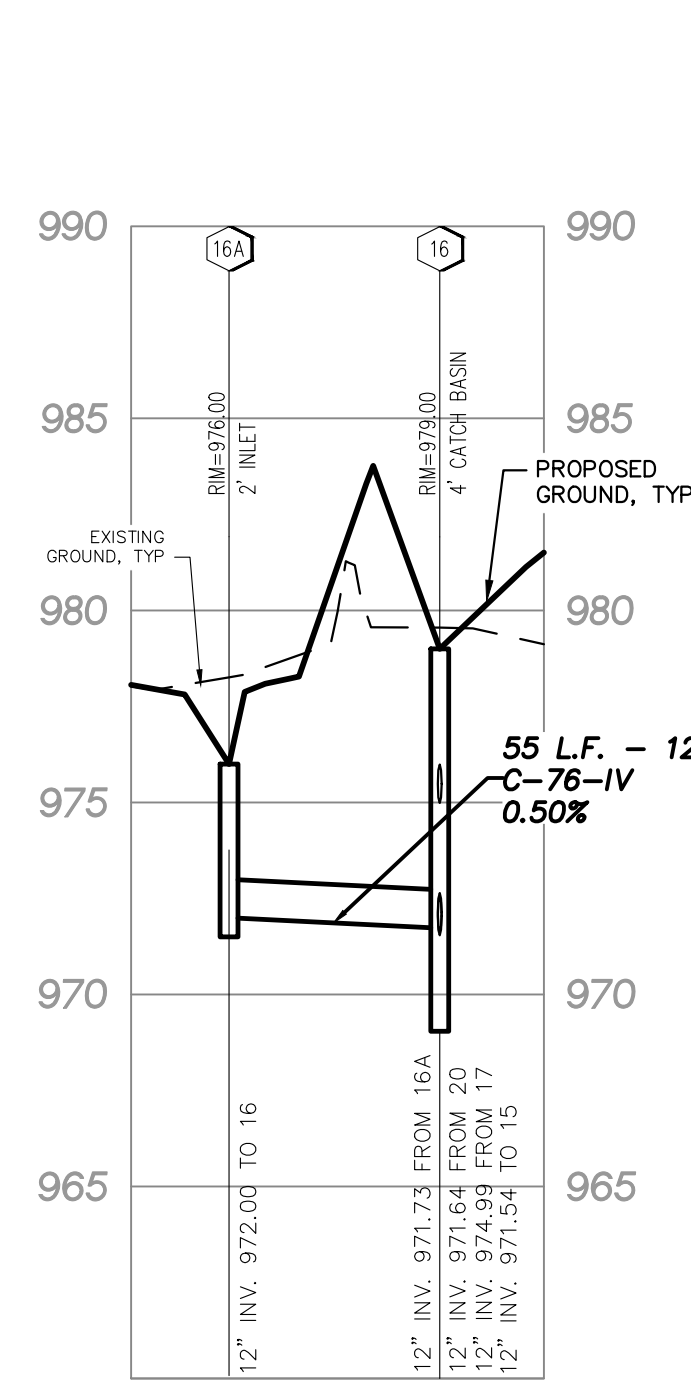
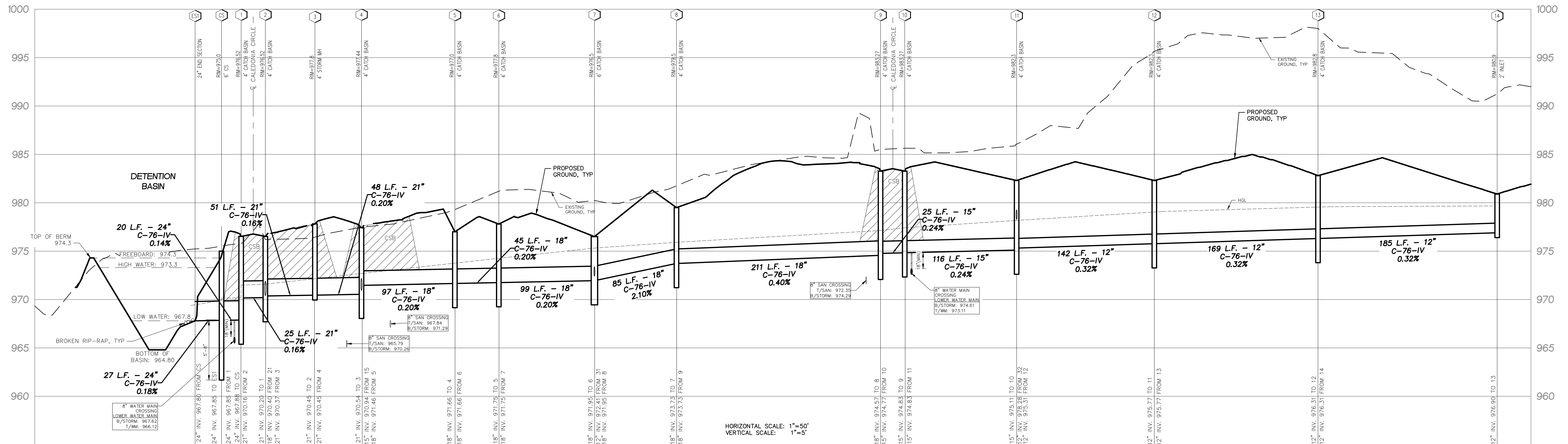
**SKL** SEIBER KEAST LEHNER  
ENGINEERING | SURVEYING

CLINTON TOWNSHIP OFFICE: 1700 NINETEEN MILE ROAD, SUITE 3 CLINTON TOWNSHIP, MI 48831 588.412.7050

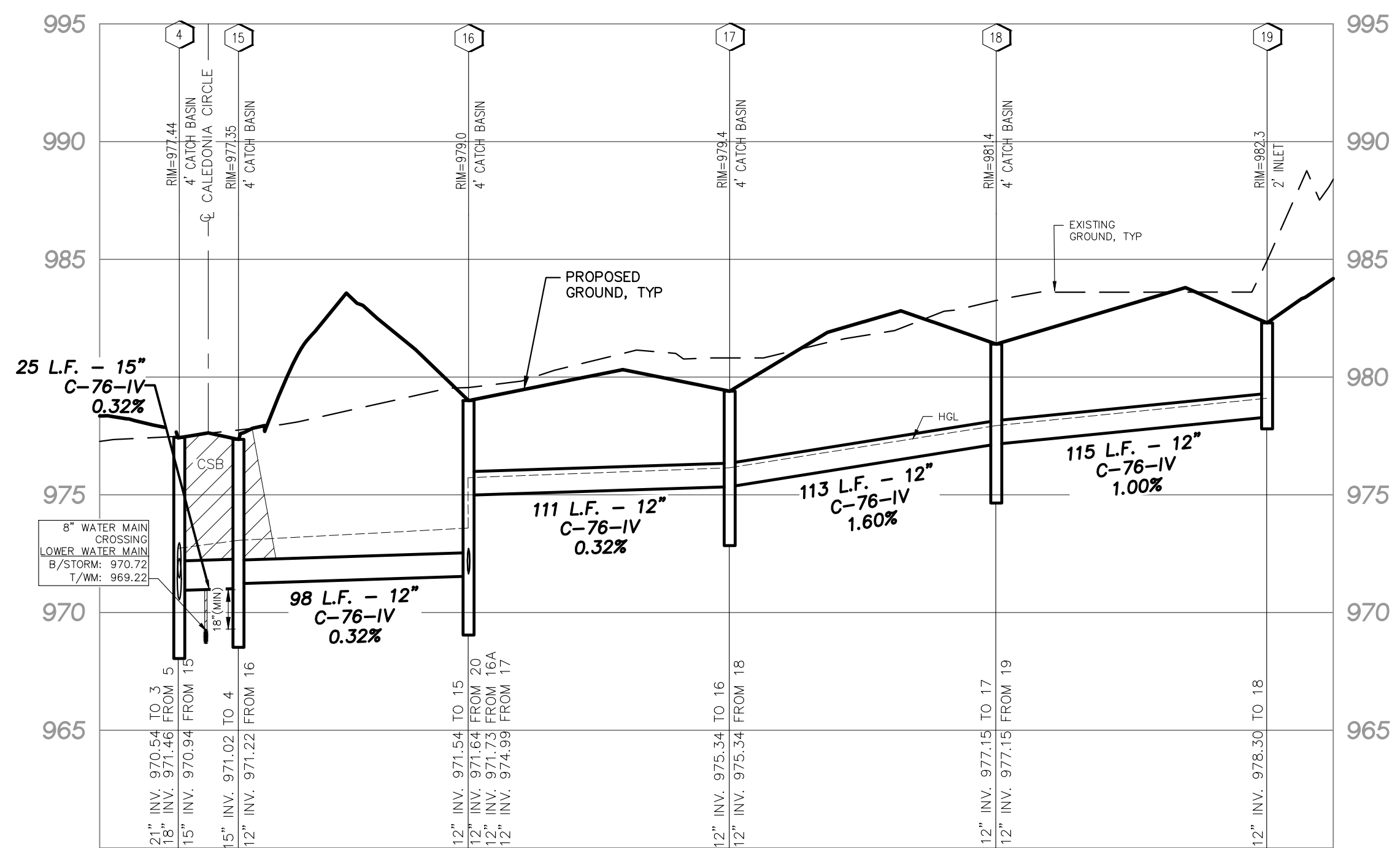
FARMINGTON HILLS OFFICE: 38205 COUNTRY CLUB DRIVE, SUITE C8 FARMINGTON HILLS, MI 48331 248.308.3341

SHEET 11

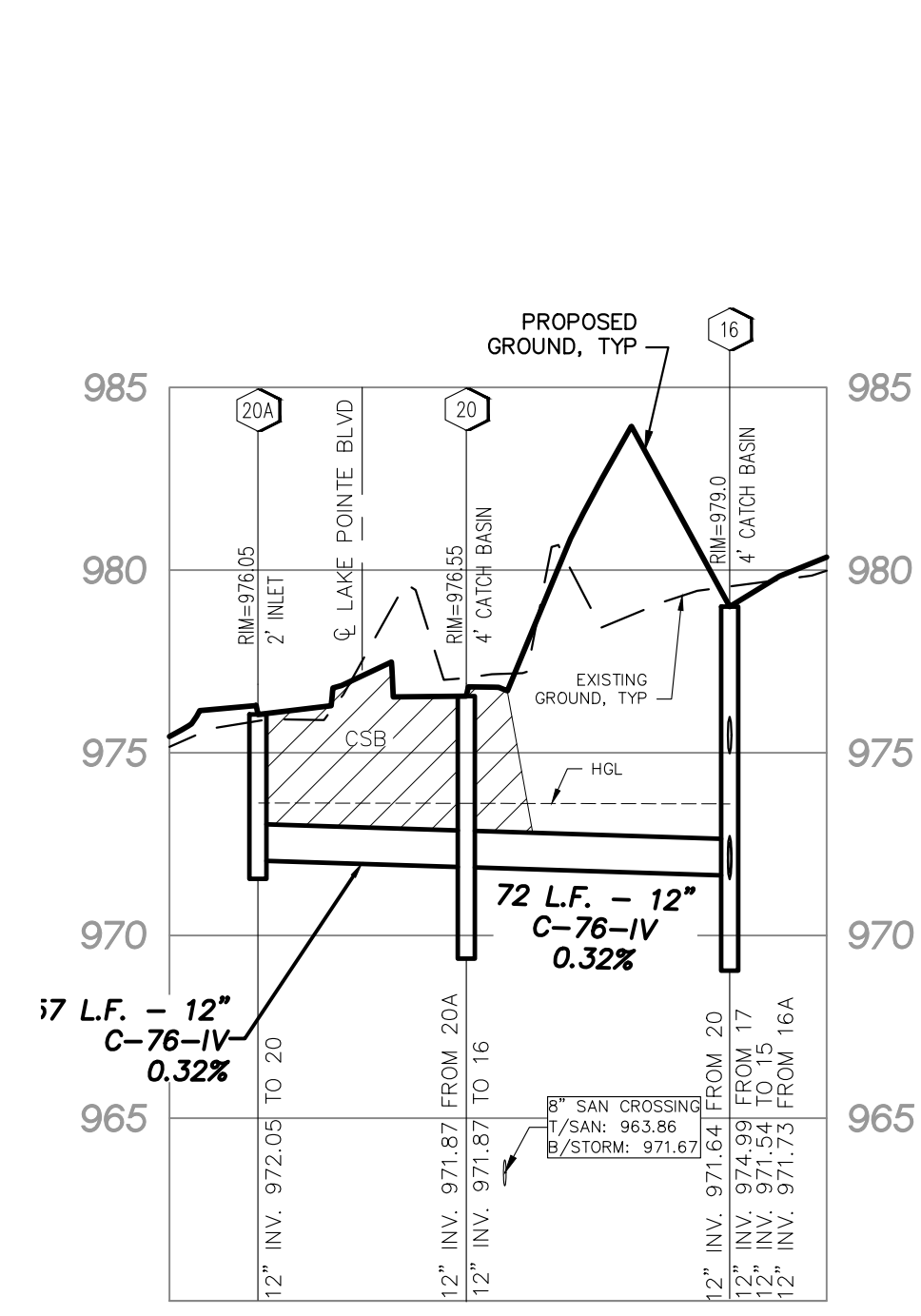
19-039-001.dwg - 04/08/2020 - 09:50:00 AM - 11/11/2023 - 10:00:00 AM



HORIZONTAL SCALE: 1"=50'  
VERTICAL SCALE: 1"=5'



HORIZONTAL SCALE: 1"=50'  
VERTICAL SCALE: 1"=5'



HORIZONTAL SCALE: 1"=50'  
VERTICAL SCALE: 1"=5'

**LAKE POINTE**  
SECTION 36, TOWN 3 NORTH, RANGE 8 EAST  
WHITE LAKE TWP., OAKLAND COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING
NO.	ITEM	DATE
1.	REVISE PER OWNER	6-3-20
2.	REVISE GRADES ON UNITS 2 AND 6	11-9-20
3.	REV PER 11-20-20 W.L. TWP LETTER	02-02-21
4.	REVISE PER WHITE LAKE TWP	03-03-21
6.	REVISED PER TOWNSHIP	04-25-23
7.	REVISED PER TOWNSHIP	7-27-23
8.	REVISED PER AGENCIES	02-13-24

DATE: 04-08-2020    DESIGNED BY: A.A.    JOB NUMBER: 19-039  
CHECKED BY: J.E.    DRAWING FILE: 19039ST.dwg

**STORM SEWER PROFILES**

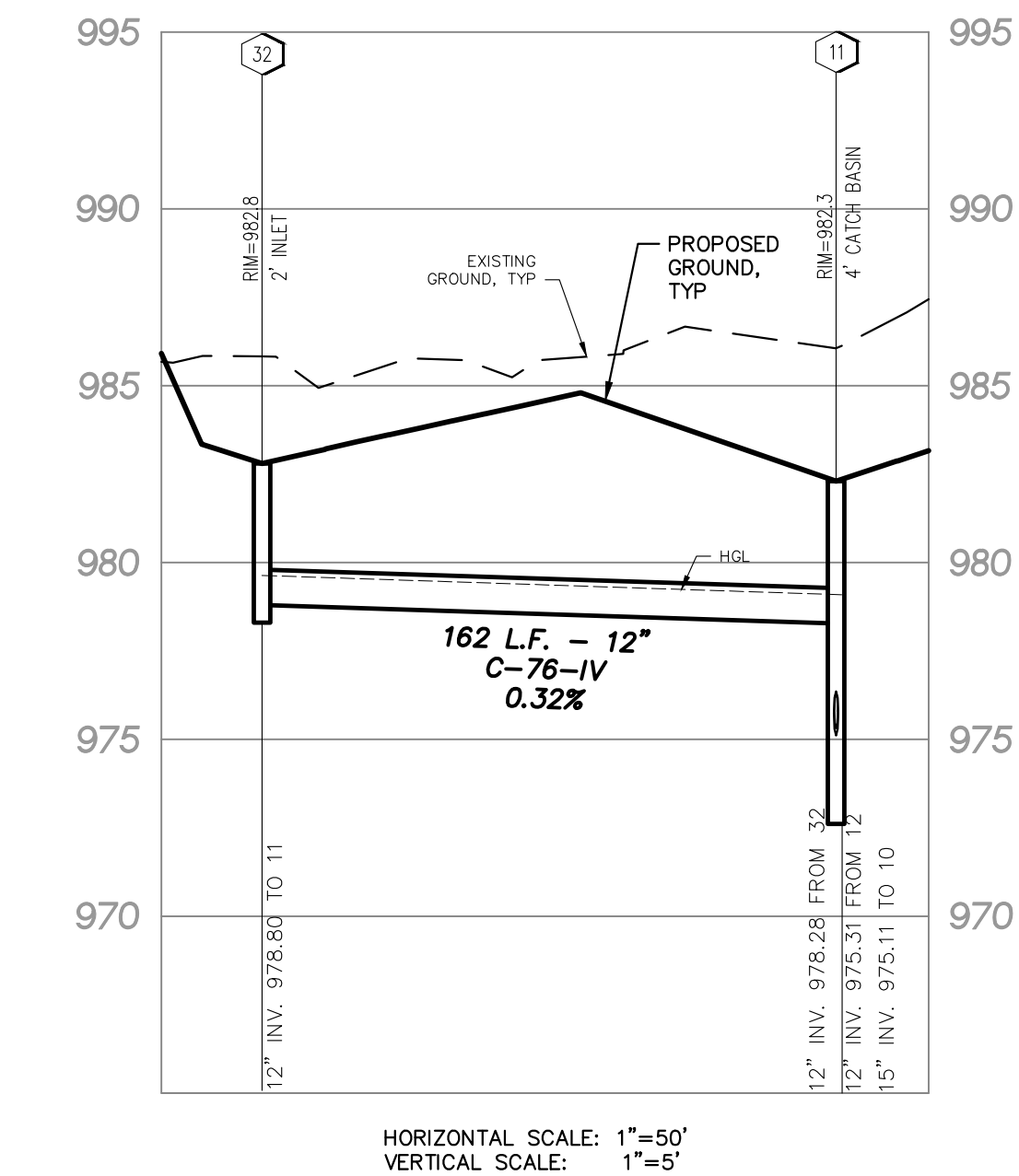
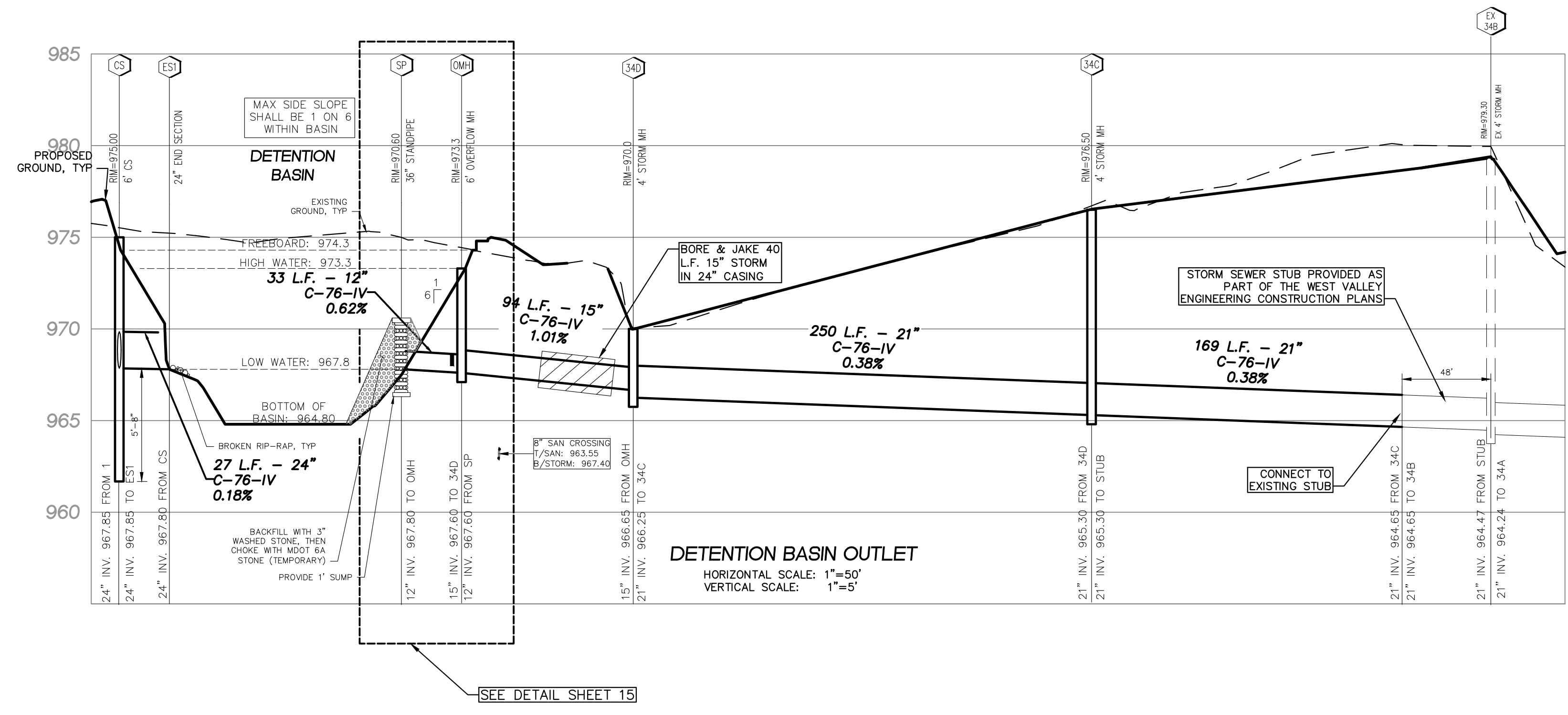
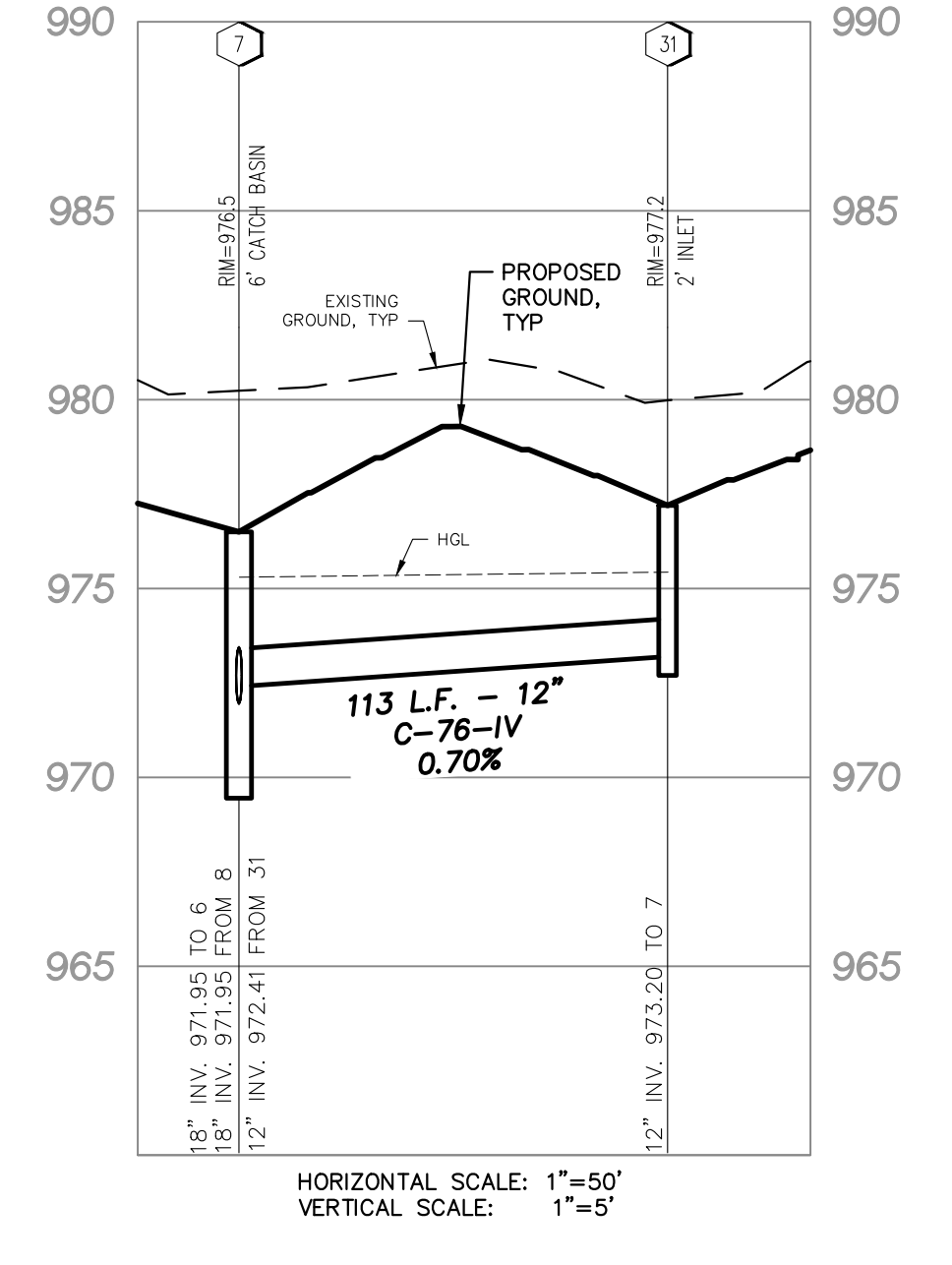
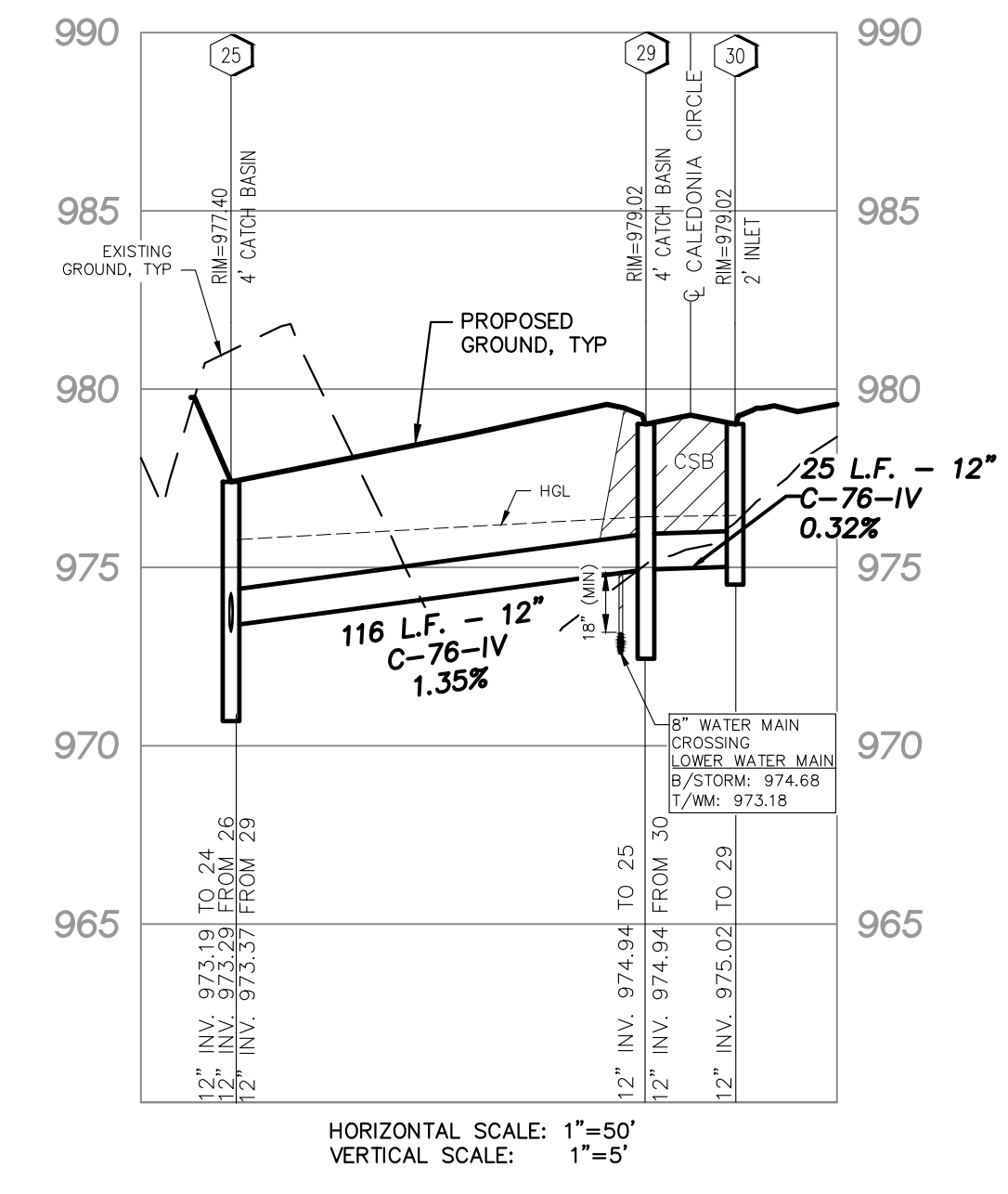
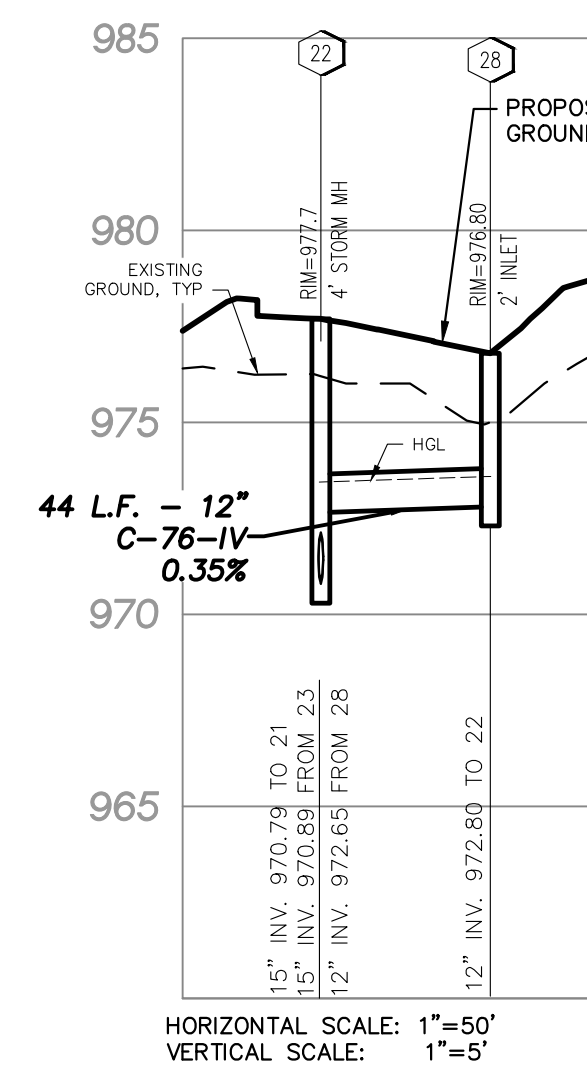
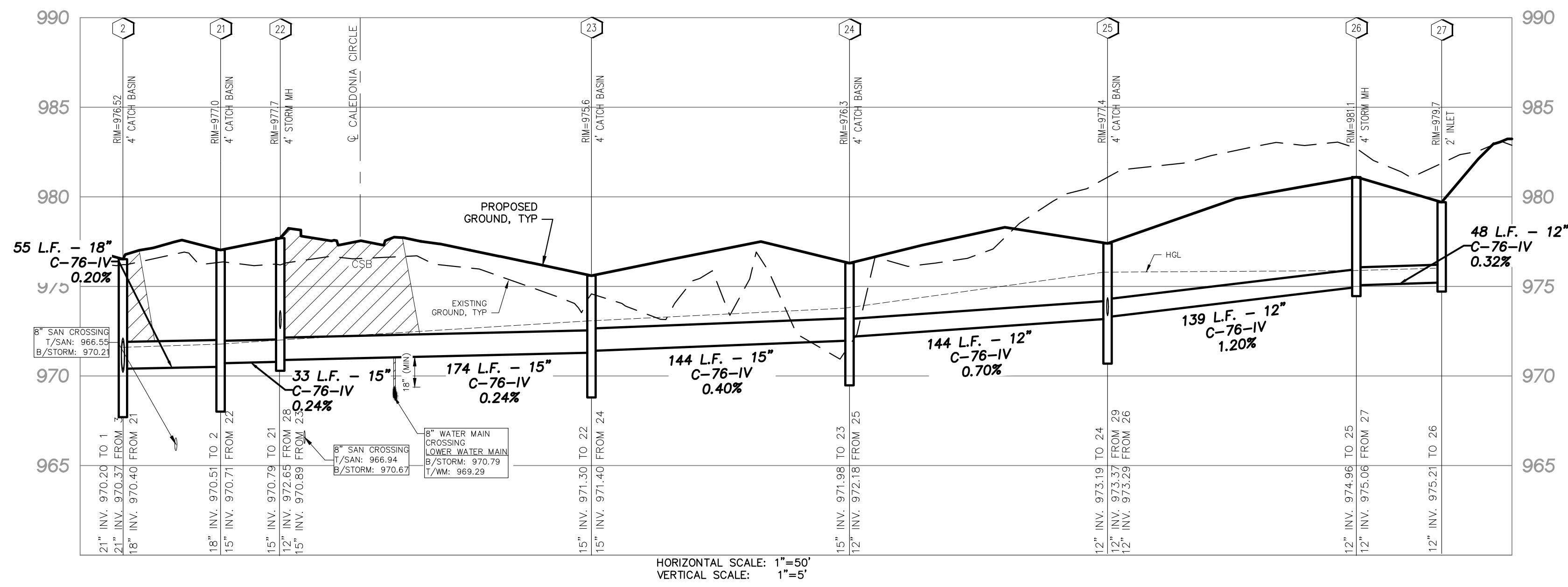
**SEIBER KEAST LEHNER**  
ENGINEERING | SURVEYING

CLINTON TOWNSHIP OFFICE  
1700 NINETEEN MILE ROAD, SUITE 3  
CLINTON TOWNSHIP, MI 48036  
588.412.7060

PARRISVILLE HILLS OFFICE  
38205 COUNTRY CLUB DRIVE, SUITE C8  
PARRISVILLE HILLS, MI 48831  
248.308.3331

**SHEET**  
**12**





**LAKE POINTE**  
SECTION 36, TOWN 3 NORTH, RANGE 8 EAST  
WHITE LAKE TWP., OAKLAND COUNTY, MICHIGAN

REVISIONS			UTILITY WARNING
NO.	ITEM	DATE	UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.  Know what's below. Call before you dig.  THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF AND/OR RELOCATION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION.
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8.	REVISED PER AGENCIES	02-13-24	

DATE: 04-08-2020    DESIGNED BY: A.A.    JOB NUMBER: 19-039  
CHECKED BY: J.E.    DRAWING FILE: 19039ST.dwg

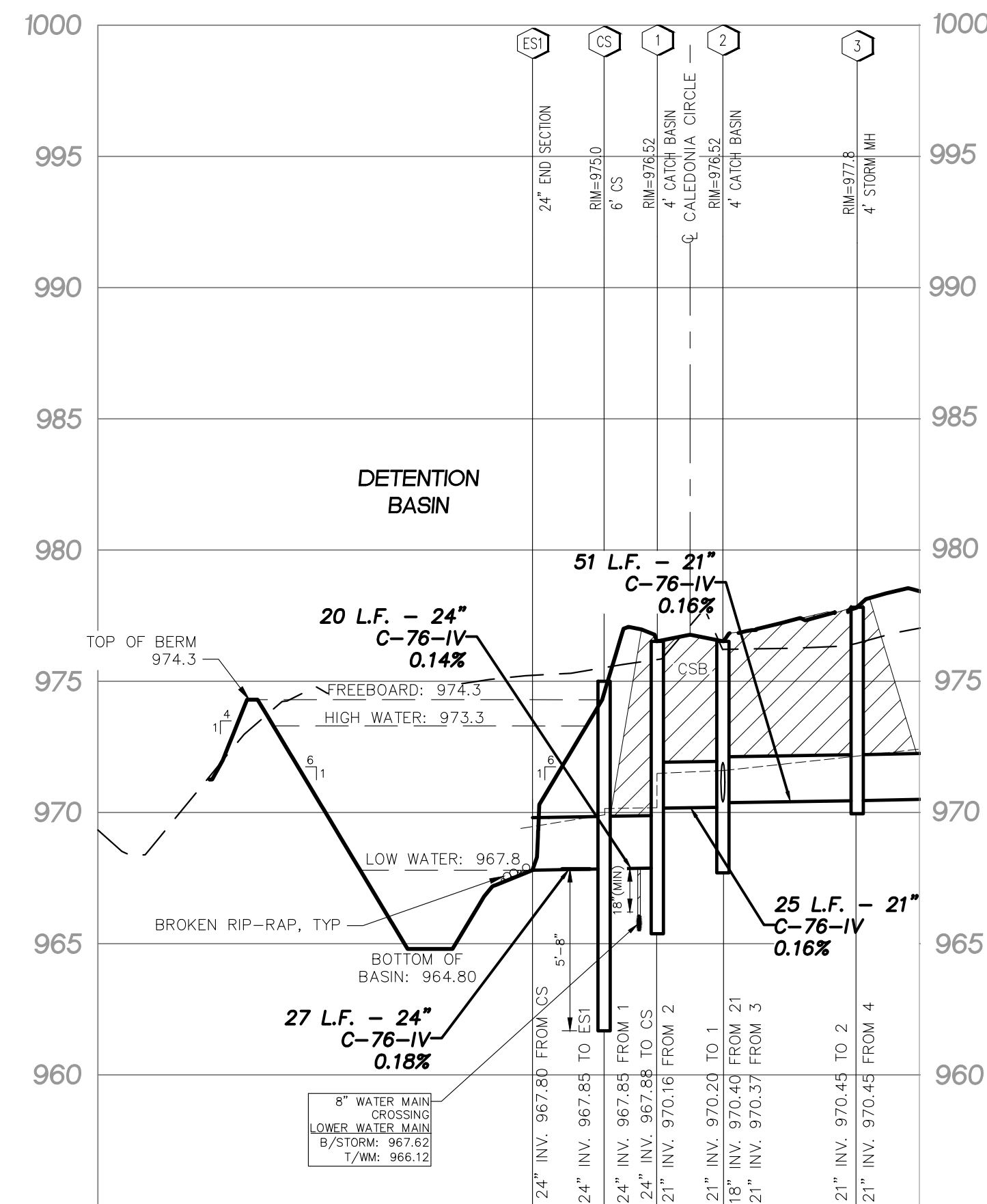
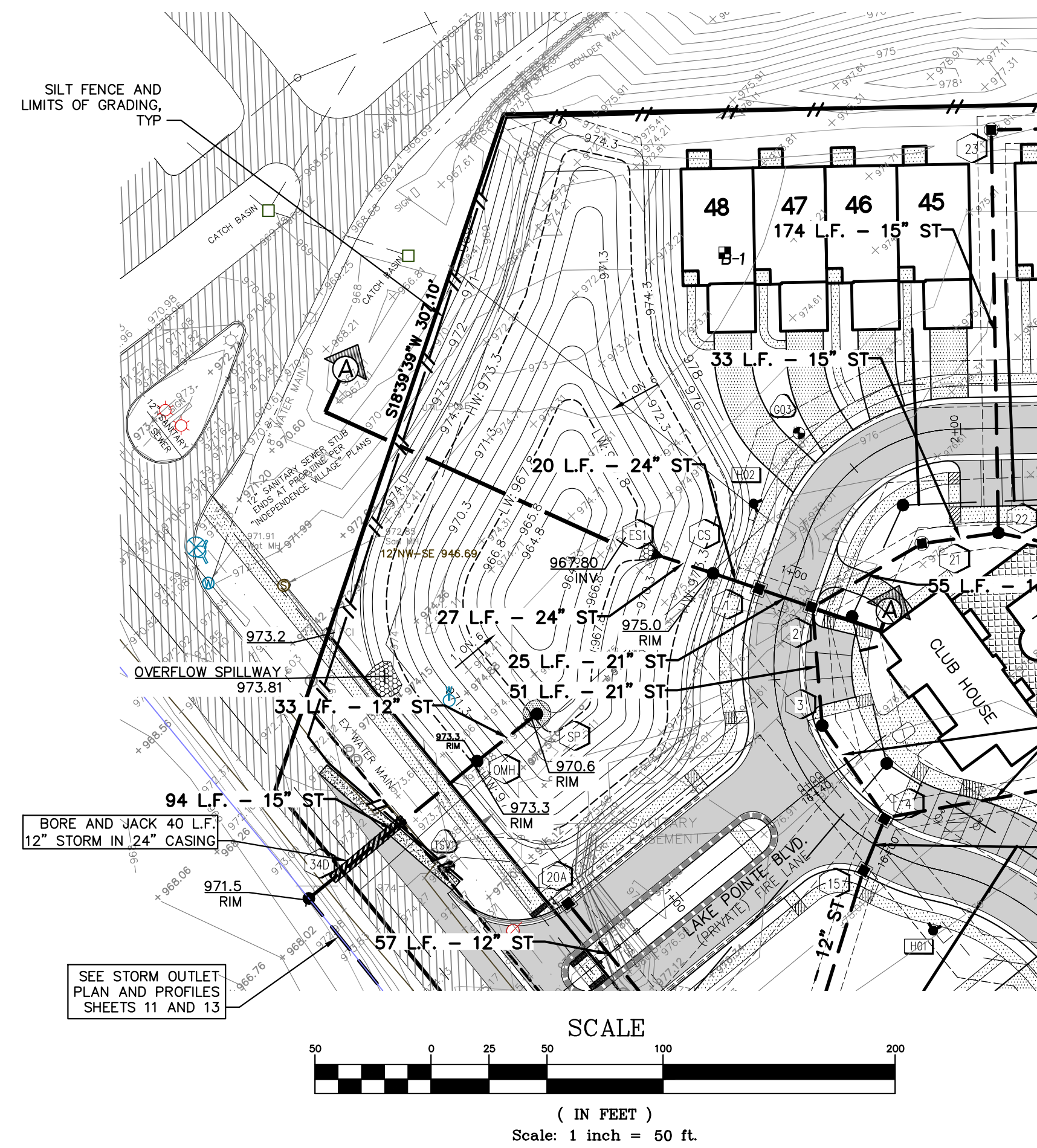
**STORM SEWER PROFILES**

**SEIBER KEAST LEHNER**  
ENGINEERING | SURVEYING

CLINTON TOWNSHIP OFFICE: 1700 NINETEEN MILE ROAD, SUITE 3 CLINTON TOWNSHIP, MI 48831 588.412.7060  
PARMINGTON HILLS OFFICE: 38205 COUNTRY CLUB DRIVE, SUITE C8 PARMINGTON HILLS, MI 48361 248.308.3311

SHEET  
**13**





### Detention Basin Calculations

**DETERMINE DETENTION VOLUME REQUIREMENTS (100-YEAR STORM)**

Ac =	11.64	Ac	Developed ON-SITE area tributary to the Detention Basin
Q <sub>all</sub> =	2.33	cfs	Allowable Outflow (Total Area x 0.2 cfs/Ac.)
C =	0.53		
Q <sub>0</sub> = Q <sub>all</sub> / (Ac * C) =		0.38	cfs/Ac. Imp
T = -25 + sqrt(10312.5/Q <sub>0</sub> ) =		139.88	min
Vs = (16500*T)/(T+25) - 40*Q <sub>0</sub> *T =		11876	cf/Ac. Imp
Vt = Vs * Ac * C =		72,880	ft <sup>3</sup> req'd

**DETERMINE DETENTION VOLUME REQUIREMENTS (1-YEAR STORM)**

OCWRC Volume (1-yr Storm)

Vr = 4320 \* C \* A = **26,511 ft<sup>3</sup>**

**DETERMINE VOLUME PROVIDED FOR 1 YEAR AND 100-YEAR STORMS**

	Elevation	Area	Vol (ft <sup>3</sup> )	
Low Water	967.8	6,248	3,396	
	968.3	7,336	3,396	
	969.3	9,785	11,957	1 Year Storm EL. = 970.60 ft
	970.3	12,665	23,182	Volume provided = 27,517 ft <sup>3</sup>
	971.3	16,238	37,633	
High Water	972.3	20,112	55,808	100 Year Storm EL. = 973.30 ft
	973.3	24,135	77,932	Volume provided = 77,932 ft <sup>3</sup>

**DETERMINE OUTLET SIZE TO DEWATER 1 YEAR STORM IN 48 HOURS**

Volume of Storage =	27,517	ft <sup>3</sup>
Median Surface Area =	9,827	ft <sup>2</sup>
Orifice Area Required =	0.038	
Area of 1" diameter hole =	0.00545	
Number of holes required =	6.96	
<b>Therefore use</b>	<b>7</b>	<b>1" Diameter Holes</b>

**DETERMINE 100-YEAR DETENTION BASIN OUTLET SIZE**

Orifice Formula, Q = 0.625*A*sqrt(64.4*H)	
Q <sub>all</sub> =	2.33 cfs
Outlet Size =	6.000 in
Invert Elevation =	967.80 ft
Springline EL. =	968.05 ft
H =	5.25 ft
Area Req'd = A =	0.2026 sf
Area of Outlet Used =	0.1963 sf
Diameter Req'd =	6.000 in
<b>USE</b>	<b>6.000 in Dia Outlet</b>
Q Discharge =	2.26 cfs

**SIZE PRIMARY OVERFLOW STRUCTURE (OMH)**

Size of Overflow MH =	6 ft
% of MH that can be used as a Weir =	50 %
Calculated Length of Weir = L =	9.42 ft
Acegrage Tributary to Overflow (onsite + offsite) =	12.58 Ac
Composite Runoff Coefficient =	0.53

(From Pipe Flow Calculations)

Longest Time of Flow to Basin =	21.19 min
Sum of all Flow into the Basin =	23.74 cfs
Volume of Basin (Det Calcs) =	77,932 ft <sup>3</sup>
Storage Elevation =	973.30 ft
Freeboard Elevation =	974.30 ft
Time to Fill Basin Vprow / Flow into Basin =	54.71 min.
l = 175 / (T+25) =	1.73 in / hr
Qexp = C <sup>1</sup> *A =	11.50 cfs
Qweir = 3.33*(l) <sup>3/2</sup>	

Calculate how high the water will rise above the Overflow Structure to pass the expected flow.

h =	0.51 ft
Rim Overflow MH =	973.30 ft
Elevation of Water during Overflow Conditions =	973.81 ft

Elevation of Water during Overflow Condition is Less than

### Determine "C" Factor for Detention Basin

**DETERMINE "C" FACTOR**

	Area	C	Area * C
AREA TRIBUTARY TO ON-SITE STORM SEWER	10.95 Ac.		
AREA TRIBUTARY TO CB 16A	0.94 Ac.		
AREA OF DETENTION BASIN	0.69 Ac.		
TOTAL AREA TRIBUTARY TO DETENTION BASIN	12.58 Ac		
DETENTION BASIN LOW WATER	0.17 Ac	@ 1.00	= 0.17
PAVING AREA (WALKS, DRIVE, ROAD)	3.14 Ac	@ 0.80	= 2.51
BUILDING AREA	3.19 Ac	@ 0.90	= 2.87
LAWN AREA INCLUDING DETENTION BASIN AREA	6.25 Ac	@ 0.20	= 1.25
<b>TOTAL AREA</b>	<b>12.58 Ac</b>	<b>@</b>	<b>6.63</b>

Cavg = A \* C / TOTAL ACRES = **0.53**

### Determine On-Site Area to be Detained for in Detention Basin Calculations

(Note: Exclude ROW Area Tributary to CB 16A)

TOTAL AREA TRIBUTARY TO DETENTION BASIN	=	12.58 Ac
AREA TRIBUTARY TO CB 16A	=	-0.94 Ac
ON-SITE AREA TRIBUTARY TO DETENTION BASIN	=	11.64 Ac

### NOTES:

- ALL TRENCHES WITHIN 1 ON 1 SLOPE FROM TOP OF CURBS SHALL BE BACKFILLED WITH GRANULAR MATERIAL CLASS II AND COMPACTED TO 95% OF MAXIMUM UNIT WEIGHT.
- ALL END SECTIONS SHALL BE CONSTRUCTED ACCORDING TO THE "END SECTION AND BAR SCREEN DETAIL" ON SHEET ND.

### LEGEND

EXISTING	PROPOSED	
		PAVEMENT (ASPHALT)
		SIDE WALK (CONCRETE)
		CONCRETE CURB AND GUTTER
		STORM SEWER
		SANITARY SEWER
		WATER MAIN
		MANHOLE
		CATCH BASIN W/INLET FILTER (ST-38)
		CURB INLET W/SILT SAC (ST-4A)
		END SECTION W/RIP-RAP
		GATE VALVE
		HYDRANT
		FLOOD PLAIN
		CONTOURS
		SPOT ELEVATION
		SURFACE DRAINAGE
		OVERFLOW ROUTE
		TREE FENCE
		SILT FENCE
		PROPOSED DRIVEWAY LOCATION
		LIMIT OF DISTURBANCE

### LAKE POINTE

SECTION 36, TOWN 3 NORTH, RANGE 8 EAST  
WHITE LAKE TWP., OAKLAND COUNTY, MICHIGAN

### REVISIONS

NO.	ITEM	DATE
1.	REVISE PER OWNER	6-3-20
2.	REVISE GRADES ON UNITS 2 AND 6	11-9-20
3.	REV PER 11-20-20 WLL TWP LETTER	02-02-21
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**UTILITY WARNING**  
UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.



DATE: 04-08-2020 DESIGNED BY: A.A. JOB NUMBER: 19-039  
CHECKED BY: J.E. DRAWING FILE: 19039DB.dwg

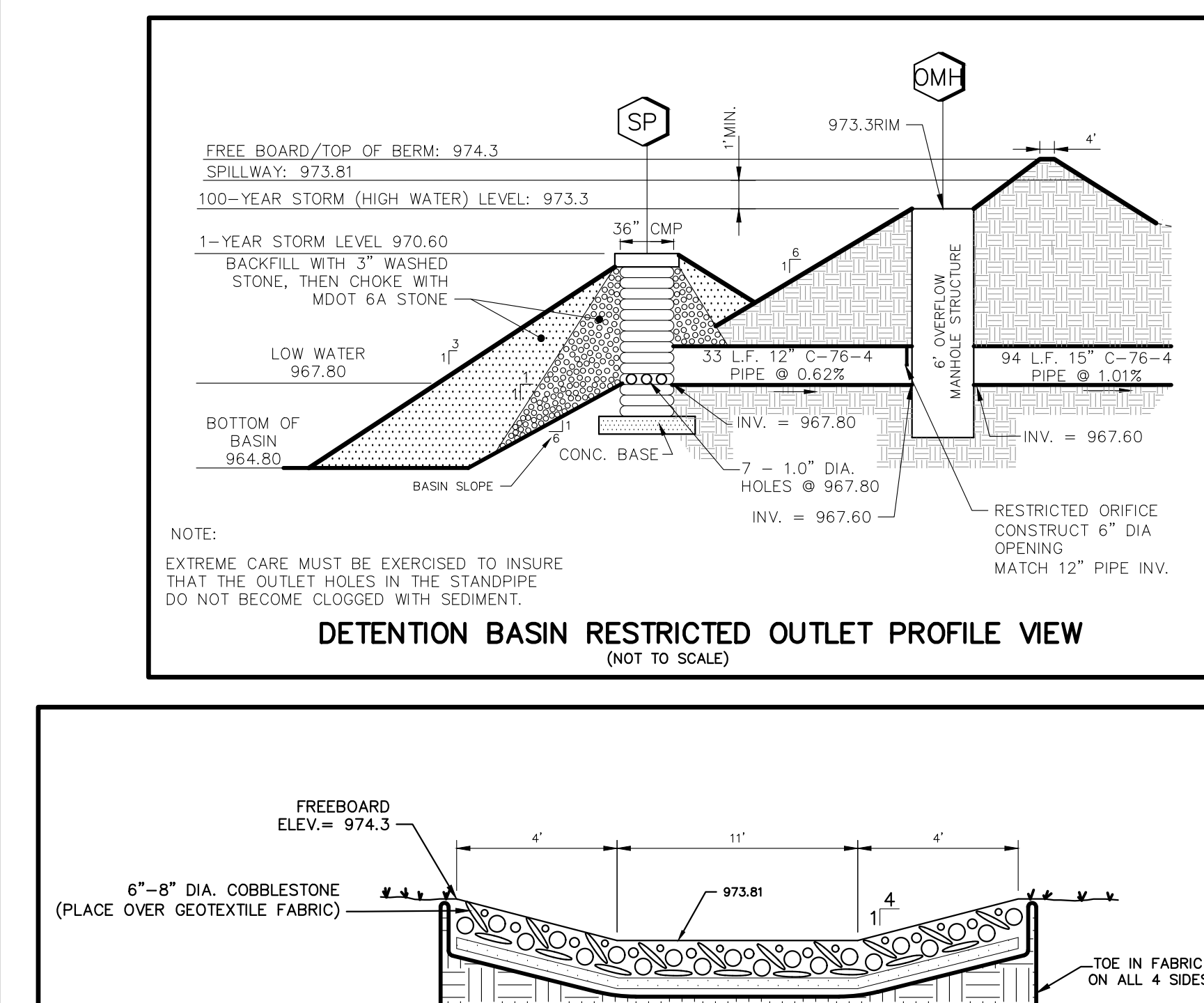
### DETENTION BASIN PLAN, CALCULATIONS AND PROFILE

**SKL SEIBER KEAST LEHNER ENGINEERING | SURVEYING**

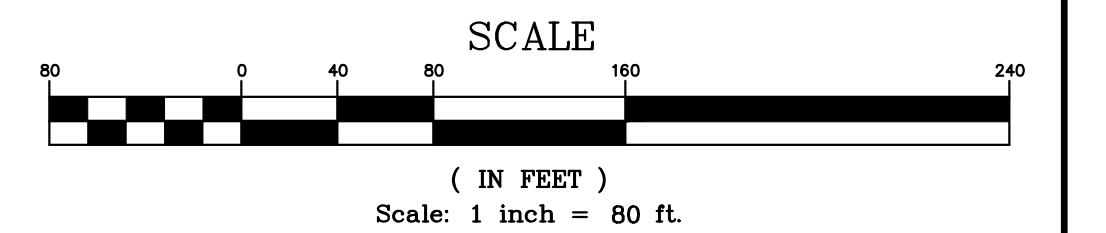
CLINTON TOWNSHIP OFFICE: 1700 NINETEEN MILE ROAD, SUITE 3 CLINTON TOWNSHIP, MI 48831 588.412.7060

FARMINGTON HILLS OFFICE: 38205 COUNTRY CLUB DRIVE, SUITE C8 FARMINGTON HILLS, MI 48331 248.308.3331

### OVERFLOW SPILLWAY



Lake Pointe WHITE LAKE TOWNSHIP STORM SEWER DESIGN											SEIBER, KEAST & ASSOC., INC. December 21, 2020 JOB NO. 19-039										
10.00	year design - 1 =	175	T+25	n = 0.013	C = 0.53																
MH-MH	A(s) acres	C	A(s)xC unit	A(s)xC cumul.	T min	I in/hr	Q cfs	Dia in	Hyd.Gr. %	Vel. ft/sec	Length ft	Tr Time min	Inv. upst.	Inv. dnst.	Gnd. upst.	HGL upst.	Pipe slope-%	RIM -HGL	Rim -inv	T/Pipe -RIM	T/Pipe -RIM
28-22	0.14	0.53	0.07	0.07	15.00	4.38	0.32	12	0.01	2.68	44	0.27	972.80	972.65	976.80	973.60	0.35	3.20	4.00	3.00	4.05
Downstream Data -																					
30-29	0.35	0.53	0.18	0.18	15.00	4.38	0.80	12	0.05	2.57	25	0.16	975.02	974.94	979.02	975.82	0.32	3.20	4.00	3.00	3.08
29-25	0.69	0.53	0.36	0.55	15.16	4.36	2.38	12	0.45	5.27	116	0.37	974.94	973.37	979.02	975.74	1.35	3.28	4.08	3.08	3.03
Downstream Data -																					
27-26	0.40	0.53	0.21	0.21	15.00	4.38	0.92	12	0.07	2.57	48	0.31	975.21	975.06	979.70	976.01	0.32	3.69	4.49	3.49	5.04
26-25	0.00	0.53	0.00	0.21	15.31	4.34	0.91	12	0.07	4.97	139	0.47	974.96	973.29	981.10	975.76	1.20	5.34	6.14	5.14	3.11
25-24	0.26	0.53	0.14	0.35																	
+ flow 29																					
24-23	0.20	0.53	0.10	1.00	16.27	4.24	4.22	15	0.43	3.44	144	0.70	971.98	971.40	976.30	973.46	0.40	2.84	4.32	3.07	2.95
23-22	0.25	0.53	0.13	1.13	16.97	4.17	4.70	15	0.53	3.83	174	0.76	971.30	970.89	975.60	972.84	0.24	2.76	4.30	3.05	5.56
22-21	0.00	0.53	0.00	1.13																	
+ flow 28																					
21-2	0.14	0.53	0.08	1.28	17.86	4.08	5.21	18	0.25	2.95	55	0.31	970.51	970.40	977.00	971.73	0.20	5.27	6.49	4.99	4.62
Downstream Data -																					
20A-20	0.10	0.53	0.05	0.05	15.00	4.38	0.24	12	0.00	2.57	57	0.37	972.05	971.87	976.05	974.44	0.32	1.61	4.00	3.00	4.18
20-16	0.12	0.53	0.06	0.12	15.37	4.33	0.51	12	0.02	2.57	72	0.47	971.87	971.64	977.05	974.44	0.32	2.61	5.18	4.18	6.36
Downstream Data -																					
19-18	0.38	0.53	0.20	0.20	15.00	4.38	0.88	12	0.06	4.54	115	0.42	978.30	977.15	982.30	979.10	1.00	3.20	4.00	3.00	3.25
18-17	0.19	0.53	0.10	0.30	15.42	4.33	1.30	12	0.13	5.74	113	0.33	977.15	975.34	981.40	977.95	1.60	3.45	4.25	3.25	3.06
17-16	0.18	0.53	0.10	0.40	15.75	4.29	1.71	12	0.23	2.57	111	0.72	975.34	974.99	979.40	976.14	0.32	3.26	4.06	3.06	3.01
16-15	1.06	0.53	0.56	0.96																	
+ flow 20																					
15-4	0.78	0.53	0.41	1.48	16.75	4.19	6.22	15	0.93	5.07	25	0.08	971.02	970.94	977.35	972.84	0.32	4.51	6.33	5.08	5.25
Downstream Data -																					
32-11	0.39	0.53	0.20	0.20	15.00	4.38	0.89	12	0.06	2.57	162	1.05	978.80	978.28	982.80	979.60	0.32	3.20	4.00	3.00	3.02
Downstream Data -																					
31-7	0.48	0.53	0.25	0.25	15.00	4.38	1.11	12	0.10	3.80	113	0.50	973.20	972.41	977.20	974.31	0.70	2.78	4.00	3.00	3.09
Downstream Data -																					
14-13	0.32	0.53	0.17	0.17	15.00	4.38	0.74	12	0.04	2.57	185	1.20	976.90	976.31	980.90	977.70	0.32	3.20	4.00	3.00	5.49
13-12	0.27	0.53	0.14	0.31	16.20	4.25	1.32	12	0.14	2.57	169	1.10	976.31	975.77	982.80	977.11	0.32	5.69	6.49	5.49	5.53
12-11	0.41	0.53	0.22	0.53	17.30	4.14	2.19	12	0.38	2.78	142	0.85	975.77	975.31	982.30	976.78	0.32	5.52	6.53	5.53	5.99
11-10	0.22	0.53	0.12	0.64																	
+ flow 32																					
10-9	0.72	0.53	0.38	1.23	18.84	3.99	4.91	15	0.58	4.00	25	0.10	974.83	974.77	983.27	975.92	0.24	7.35	8.44	7.19	7.25
9-8	0.53	0.53	0.28	1.51	18.94	3.98	6.00	18	0.33	3.76	211	0.94	974.57	973.73	983.27	975.77	0.40	7.50	8.70	7.20	4.27
8-7	0.53	0.53	0.28	1.79	19.88	3.90	6.96	18	0.44	8.61	85	0.16	973.73	971.95	979.50	974.93	2.10	4.57	5.77	4.27	3.05
7-6	0.38	0.53	0.20	1.98																	
+ flow 31																					
6-5	0.07	0.53	0.04	2.27	20.38	3.86	8.77	18	0.70	4.96	45	0.15	971.75	971.66	977.80	973.63	0.20	4.17	6.05	4.55	3.84
5-4	0.12	0.53	0.06	2.34	20.53	3.84	8.99	18	0.73	5.09	97	0.32	971.66	971.46	977.00	973.32	0.20	3.68	5.34	3.84	4.48
4-3	0.70	0.53	0.37	2.71																	
+ flow 15																					
3-2	0.00	0.53	0.00	4.19	20.97	3.81	15.97	21	1.02	6.64	51	0.13	970.45	970.37	977.90	972.12	0.16	5.78	7.45	5.70	4.40
2-1	0.57	0.53	0.30	4.50																	
+ flow 21																					
1-CS	0.94	0.53	0.49	6.27	21.14	3.79	23.76	24	1.10	7.56	20	0.04	967.88	967.85	976.52	969.92	0.14	6.60	8.64	6.64	5.15
CS-ES	0.00	0.53	0.00	6.27	21.19	3.79	23.74	24	1.10	7.56	27	0.06	967.85	967.80	975.00	969.70	0.18	5.30	7.15	5.15	(2.00)
Downstream Data -																					



UNION LAKE STORM SEWER																							
MH-MH																							
					Q	Dia	Hyd.Gr.	Vel.	Length	Tr Time	Inv.	Inv.	Gnd.	HGL	Pipe	RIM	Rim	T/Pipe	T/Pipe				
					cfs	in	%	ft/sec	ft	min	upst.	dnst.	upst.	upst.	slope-%	-HGL	-inv	-RIM	-RIM				
SP-OMH	(Q actual from Detention Basin Calculations)				2.26	12	0.40	3.57	33	0.15	967.80	967.60	970.50	971.89	0.62	(1.39)	2.70	1.70	4.70				
OMH-34D	(Q exp from Detention Basin Calculations)				11.50	15	3.17	9.37	94	0.17	967.60	966.65	973.30	971.76	1.01	1.54	5.70	4.45	2.10				
34D-34C					11.50	21	0.53	4.78	250	0.87	966.25	965.30	970.00	968.78	0.38	1.22	3.75	2.00	9.45				
34C-STUB					11.50	21	0.53	4.78	169	0.59	965.30	964.65	976.50	967.46	0.38	9.04	11.20	9.45					
Downstream Data -																							

Note: At Strucutue SP, the HGL is lower than the Detention Basin Highwater Elevation. OK.  
Note: At OMH, the HGL is lower than the Detention Basin Highwater / Rim elevations. OK.

### LAKE POINTE

SECTION 36, TOWN 3 NORTH, RANGE 8 EAST  
WHITE LAKE TWP., OAKLAND COUNTY, MICHIGAN

REVISIONS	UTILITY WARNING																								
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><th>NO.</th><th>ITEM</th><th>DATE</th></tr> <tr><td>1.</td><td>REVISE PER OWNER</td><td>6-3-20</td></tr> <tr><td>2.</td><td>REVISE GRADES ON UNITS 2 AND 6</td><td>11-9-20</td></tr> <tr><td>3.</td><td>REV PER 11-20-20 WL TWP LETTER</td><td>02-02-21</td></tr> <tr><td>4.</td><td>REVISE PER WHITE LAKE TWP</td><td>03-03-21</td></tr> <tr><td>6.</td><td>REVISED PER TOWNSHIP</td><td>04-25-23</td></tr> <tr><td>7.</td><td>REVISED PER TOWNSHIP</td><td>7-27-23</td></tr> <tr><td>8.</td><td>REVISED PER AGENCIES</td><td>02-13-24</td></tr> </table>	NO.	ITEM	DATE	1.	REVISE PER OWNER	6-3-20	2.	REVISE GRADES ON UNITS 2 AND 6	11-9-20	3.	REV PER 11-20-20 WL TWP LETTER	02-02-21	4.	REVISE PER WHITE LAKE TWP	03-03-21	6.	REVISED PER TOWNSHIP	04-25-23	7.	REVISED PER TOWNSHIP	7-27-23	8.	REVISED PER AGENCIES	02-13-24	<p>UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.</p> <p style="font-size: 24px; font-weight: bold; text-align: center;">811</p> <p style="text-align: center;"><b>Know what's below. Call before you dig.</b></p> <p>THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF AND/OR RELOCATION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION.</p>
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DATE: 04-08-2020    DESIGNED BY: A.A.    JOB NUMBER: 19-039  
CHECKED BY: J.E.    DRAWING FILE: 19039DD.dwg

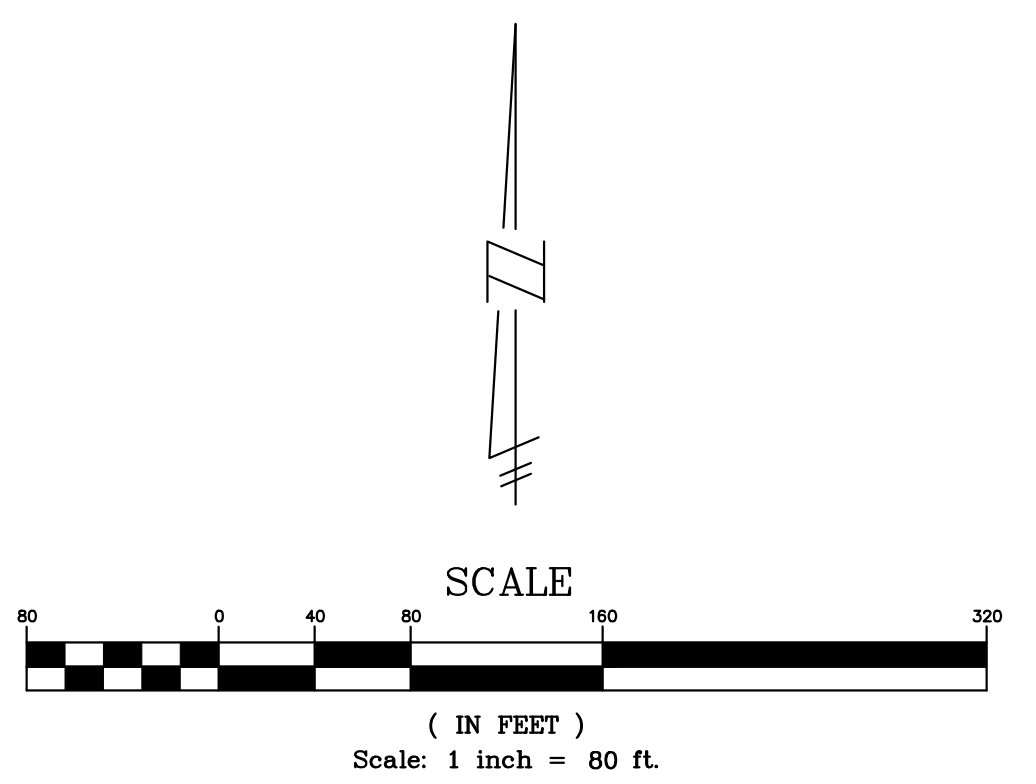
### DRAINAGE DISTRIBUTION PLAN & STORM SEWER CALCULATIONS

SEIBER KEAST LEHNER  
ENGINEERING | SURVEYING

CLINTON TOWNSHIP OFFICE:  
1700 NINETEEN MILE ROAD, SUITE 3  
CLINTON TOWNSHIP, MI 48808  
586.412.7050

PARRINGTON HILLS OFFICE:  
38206 COUNTRY CLUB DRIVE, SUITE C8  
PARRINGTON HILLS, MI 48831  
248.308.3331

SHEET 16



**LEGEND**

EXISTING	PROPOSED	DESCRIPTION
[Hatched Box]	[Hatched Box]	PAVEMENT (ASPHALT)
[Hatched Box]	[Hatched Box]	SIDE WALK (CONCRETE)
[Hatched Box]	[Hatched Box]	CONCRETE CURB AND GUTTER
[Dashed Line]	[Dashed Line]	STORM SEWER
[Dashed Line]	[Dashed Line]	SANITARY SEWER
[Dashed Line]	[Dashed Line]	WATER MAIN
[Circle]	[Circle]	MANHOLE
[Circle]	[Circle]	CATCH BASIN W/INLET FILTER (ST-38)
[Circle]	[Circle]	CURB INLET W/SILT SAC (ST-4A)
[Circle]	[Circle]	END SECTION W/RIP-RAP
[Circle]	[Circle]	GATE VALVE
[Circle]	[Circle]	HYDRANT
[Line]	[Line]	FLOOD PLAIN
[Line]	[Line]	CONTOURS
[Line]	[Line]	SPOT ELEVATION
[Line]	[Line]	1000.00
[Line]	[Line]	1000.00
[Line]	[Line]	1/2"
[Line]	[Line]	SURFACE DRAINAGE
[Line]	[Line]	OVERFLOW ROUTE
[Line]	[Line]	TREE FENCE
[Line]	[Line]	SILT FENCE
[Line]	[Line]	PROPOSED DRIVEWAY LOCATION
[Line]	[Line]	LIMIT OF DISTURBANCE

**LAKE POINTE**  
SECTION 36, TOWN 3 NORTH, RANGE 8 EAST  
WHITE LAKE TWP., OAKLAND COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING
NO.	ITEM	DATE
1.	REVISED PER OWNER	6-3-20
2.	REVISED GRADES ON UNITS 2 AND 6	11-9-20
3.	REV PER 11-20-20 WL TWP LETTER	02-02-21
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7.	REVISED PER TOWNSHIP	7-27-23
8.	REVISED PER AGENCIES	02-13-24

UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.

**811** Know what's below.  
Call before you dig.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF AND/OR RELOCATION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION.

DATE: 04-08-2020 DESIGNED BY: A.A. JOB NUMBER: 19-039  
CHECKED BY: J.E. DRAWING FILE: 19039 GA-STORM WATER

**OVERALL STORM WATER MANAGEMENT SYSTEM  
"WEST VALLEY & LAKE POINTE"**

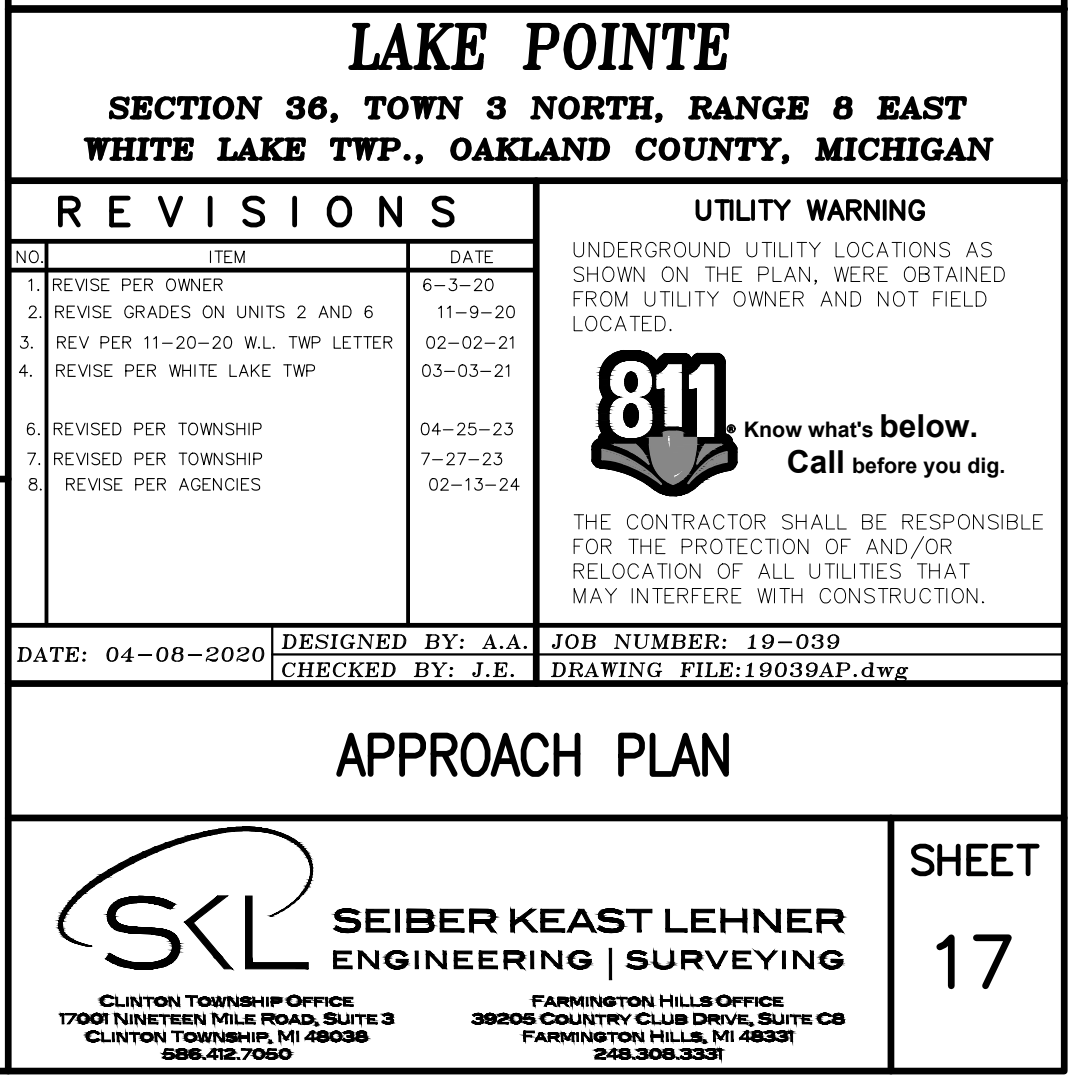
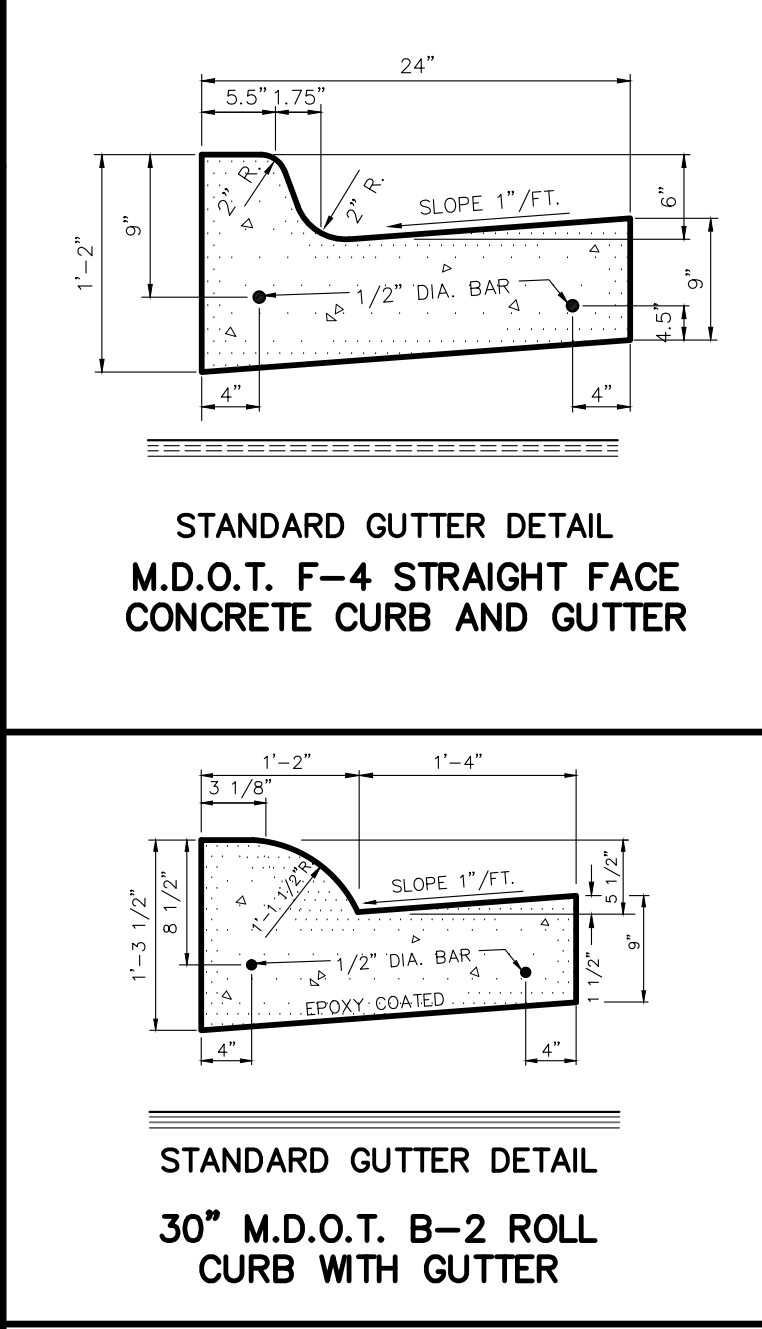
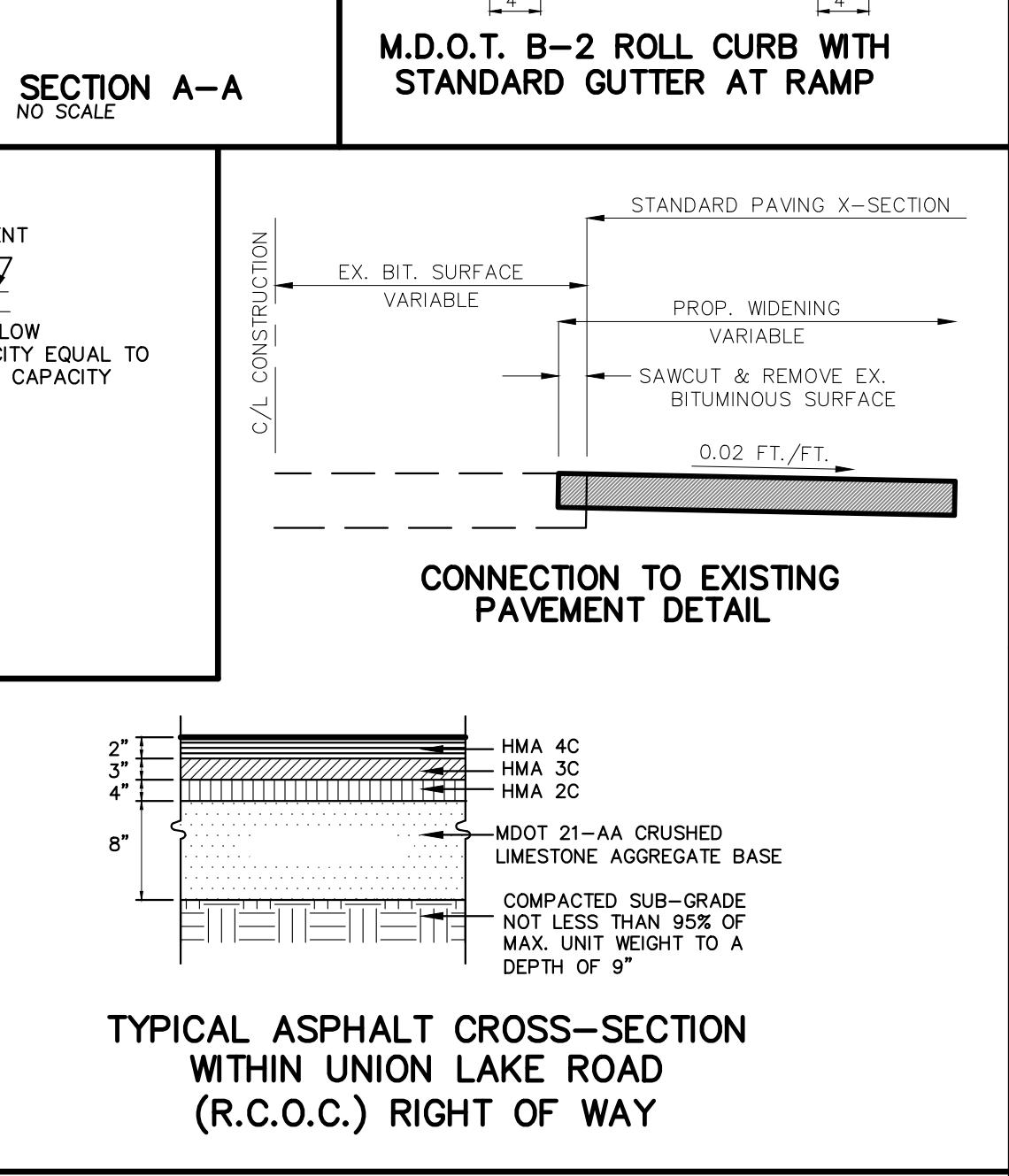
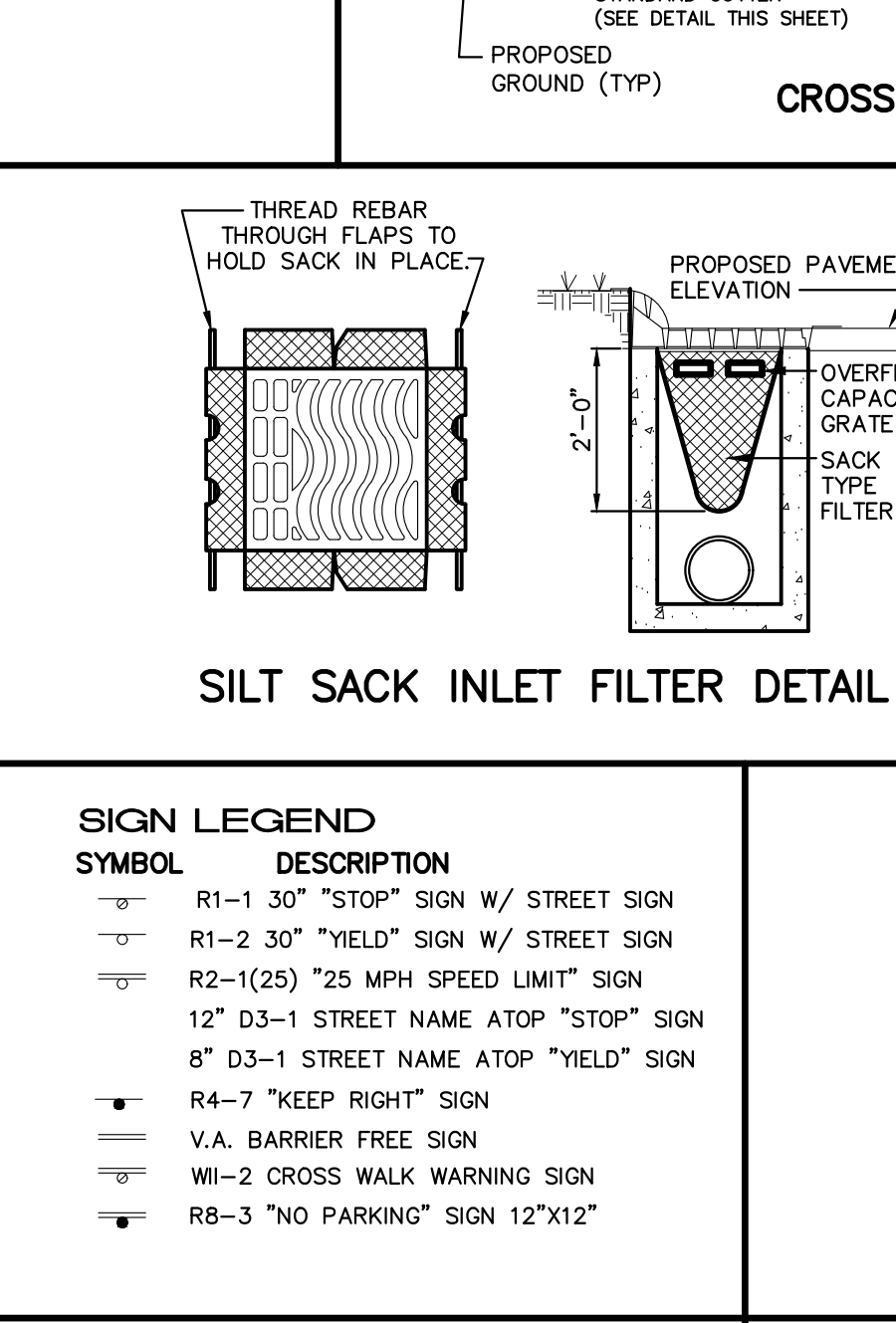
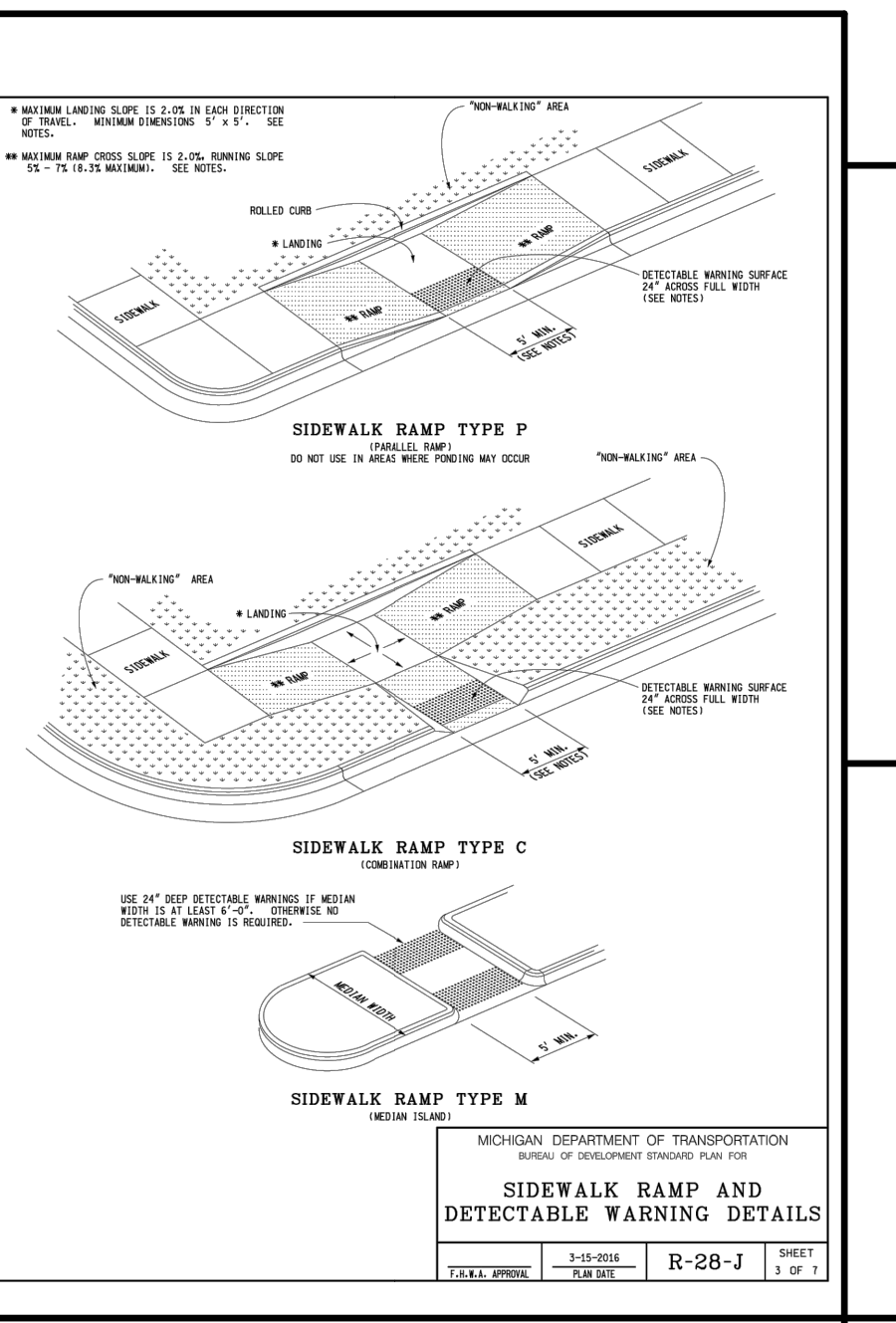
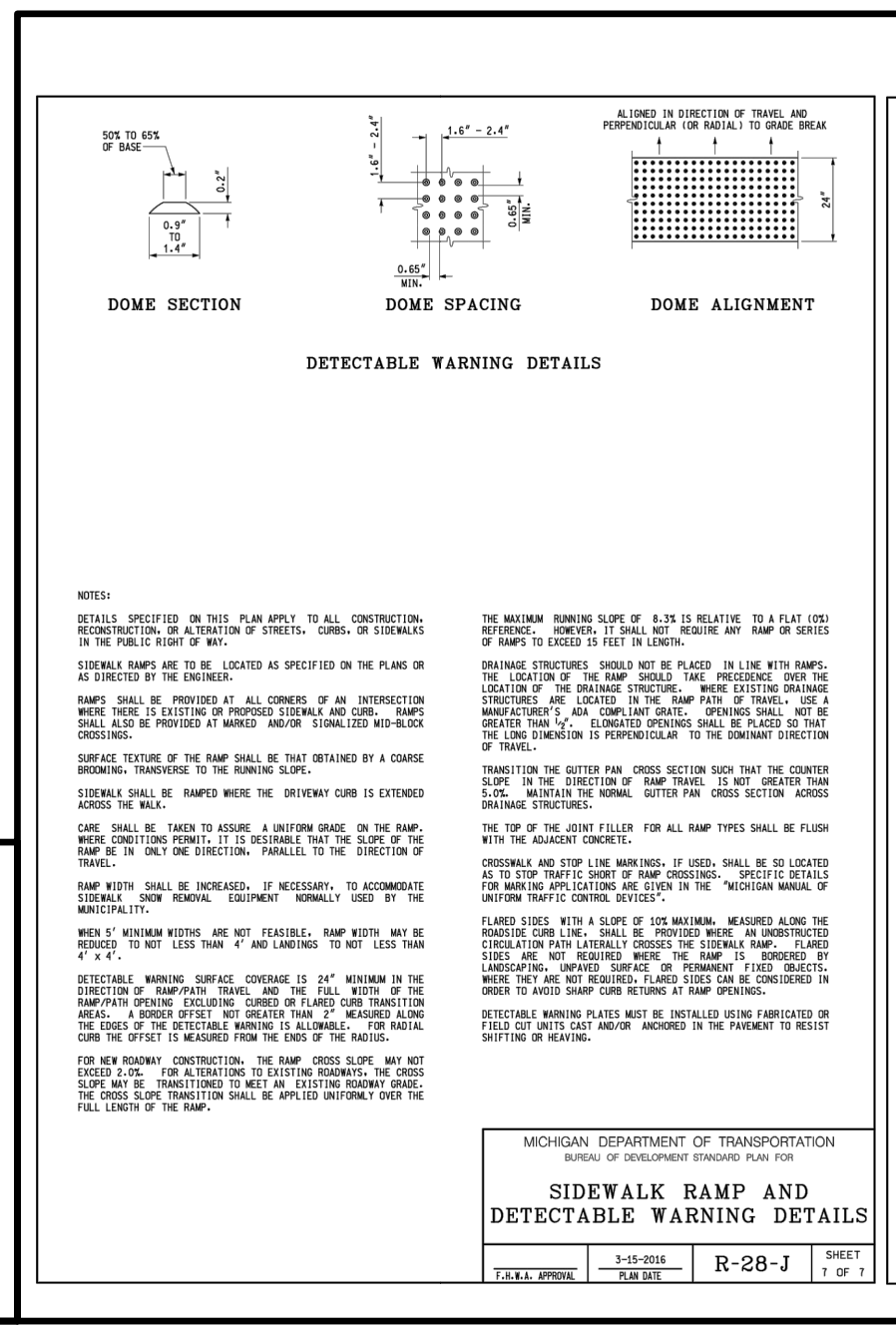
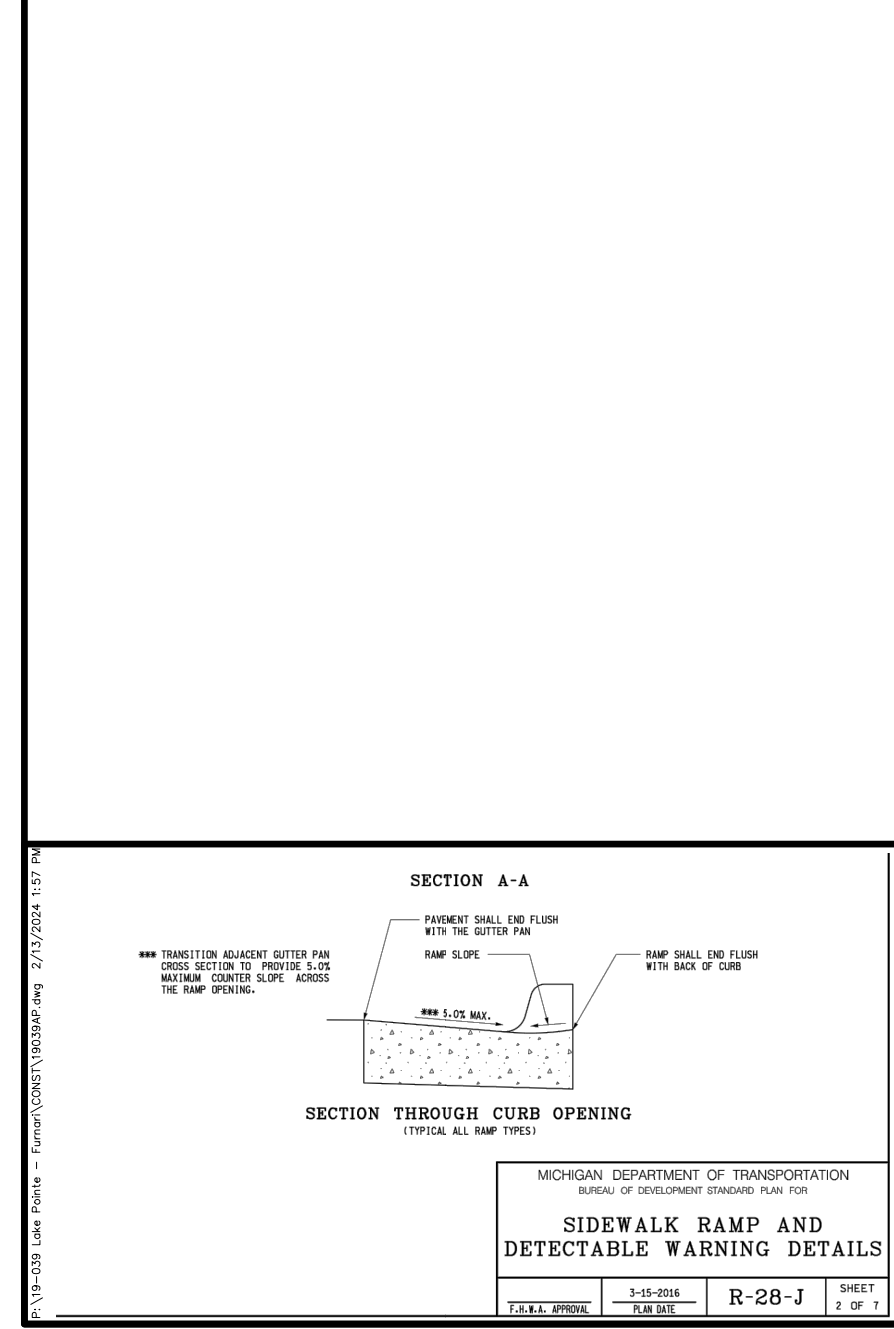
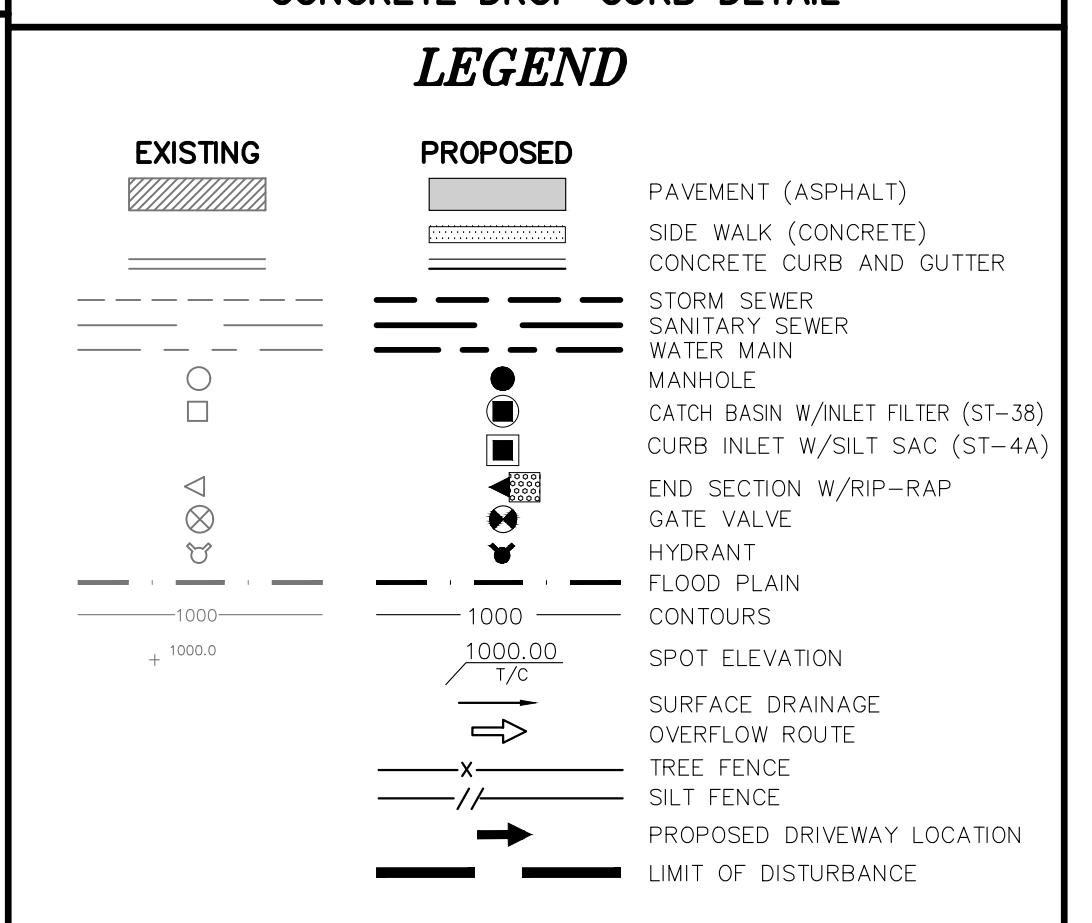
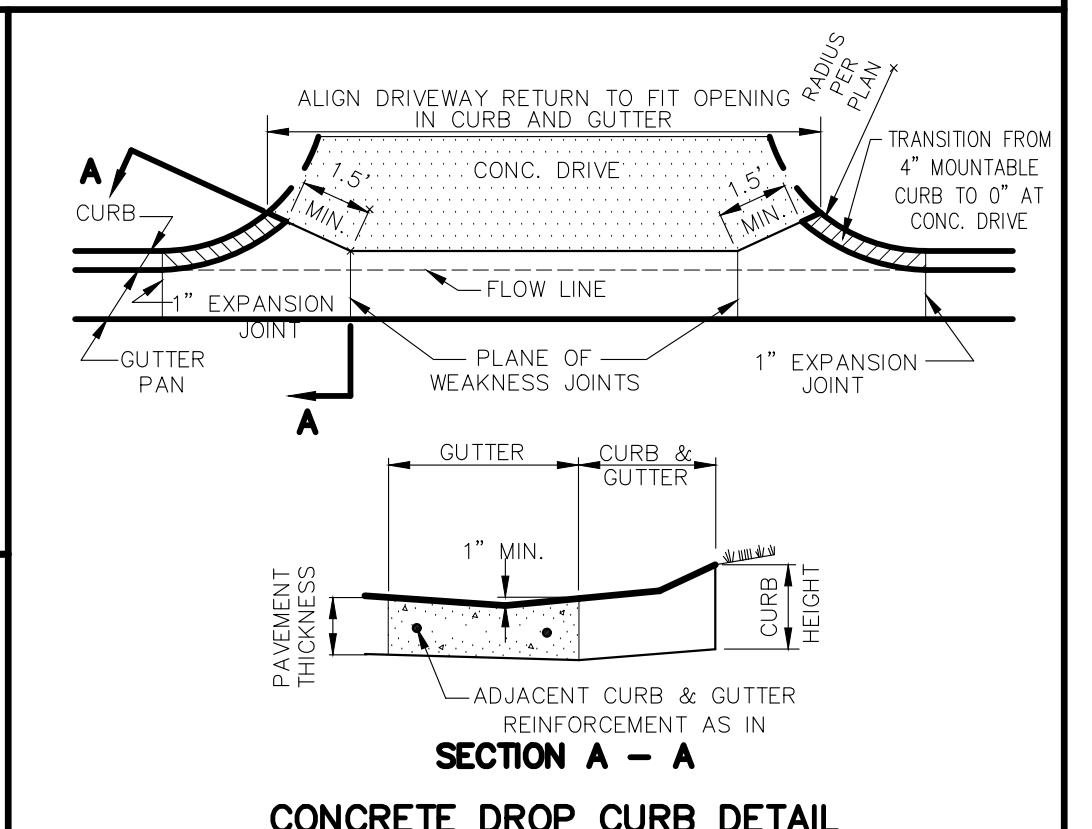
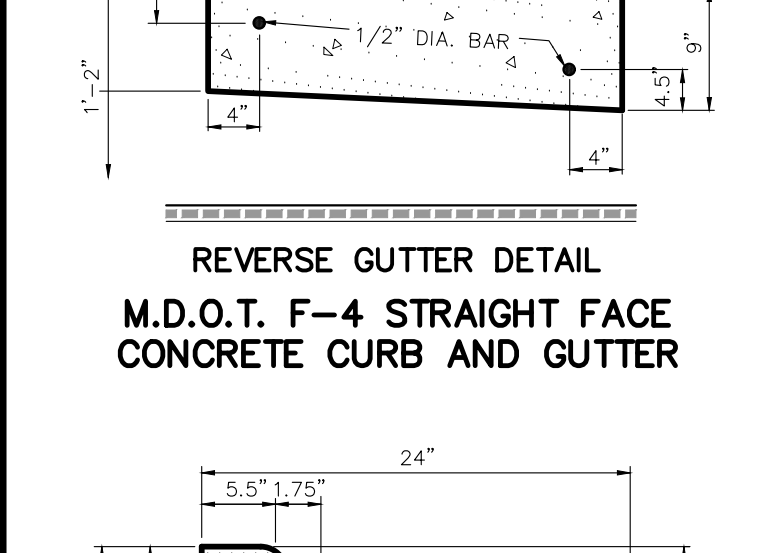
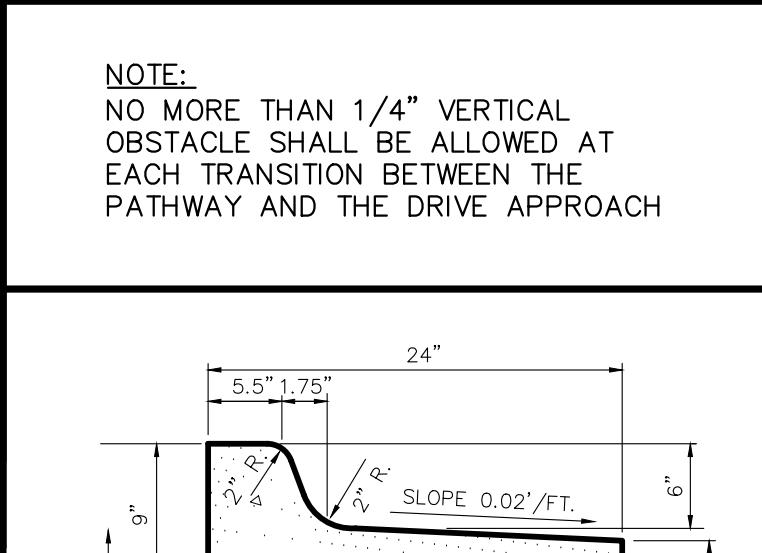
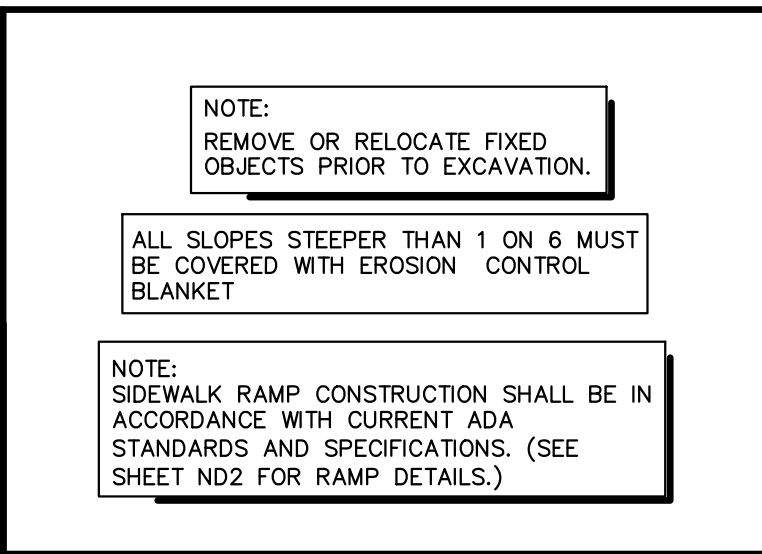
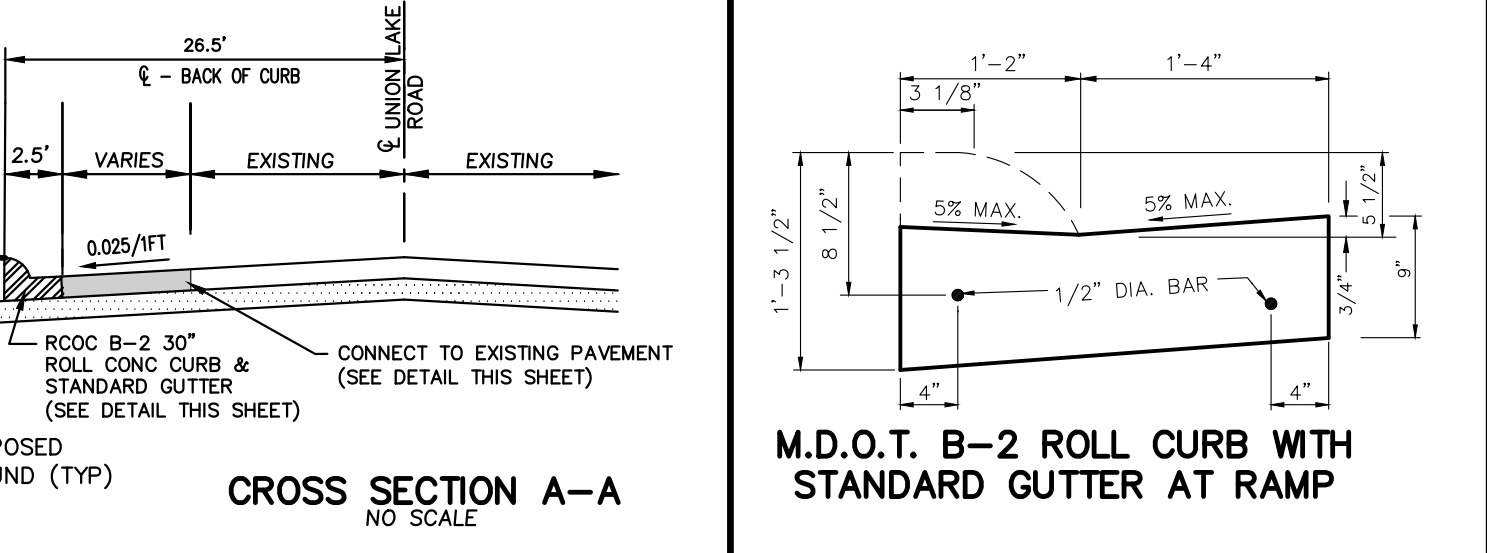
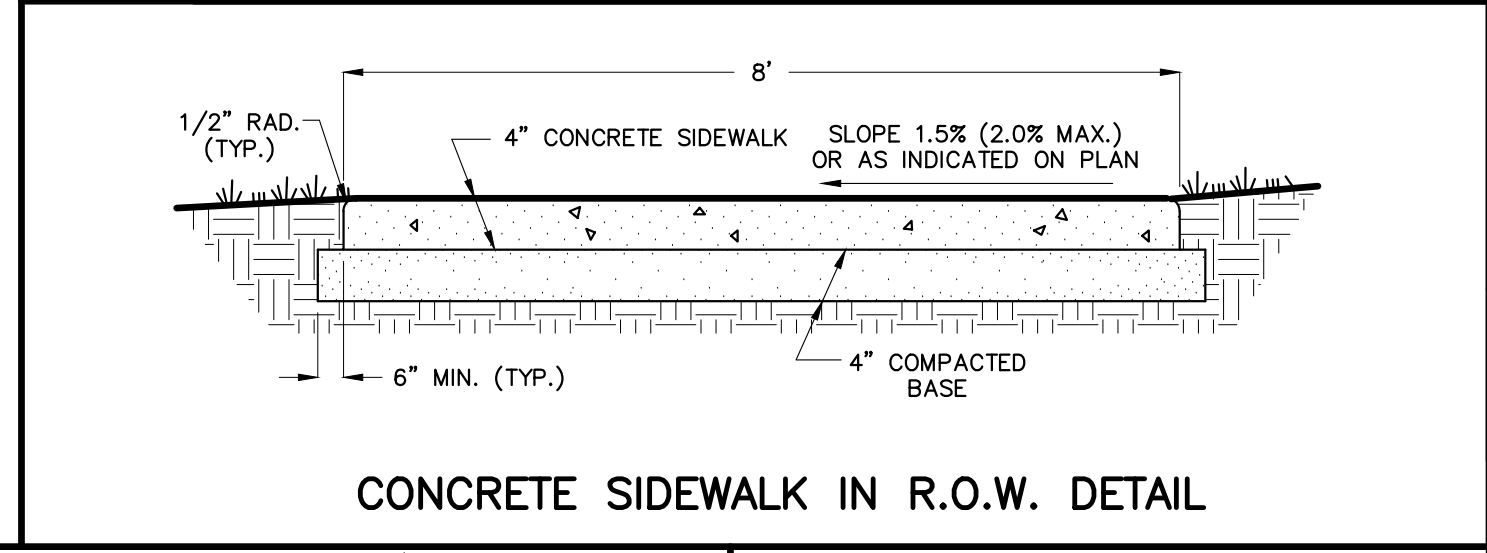
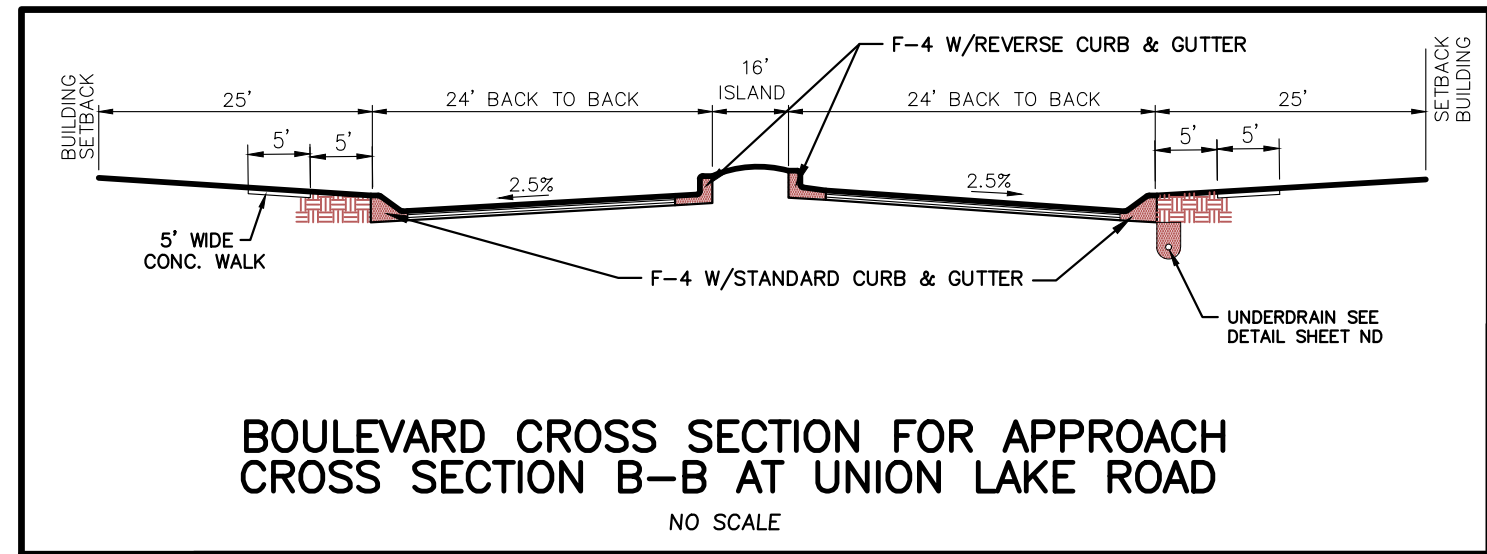
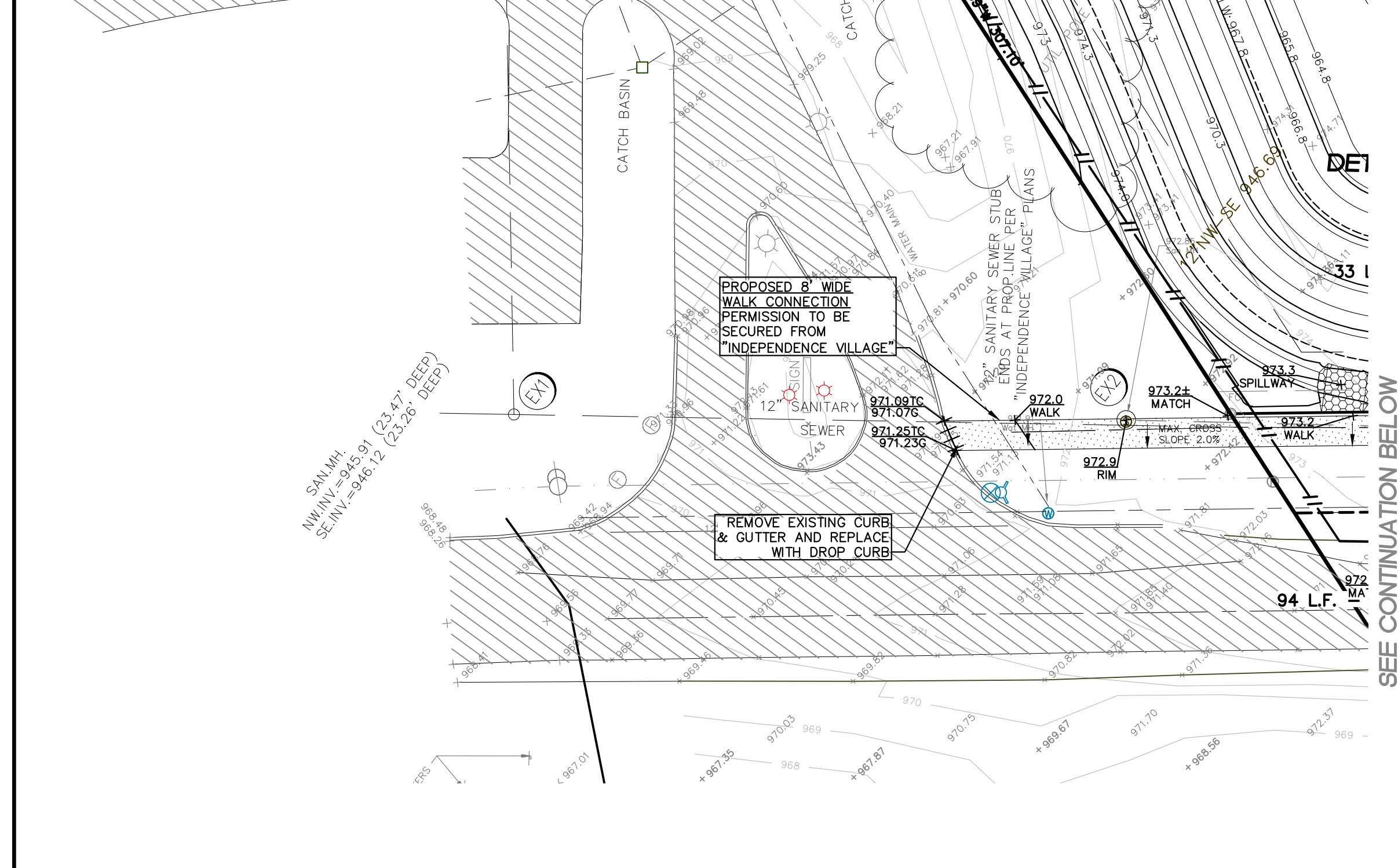
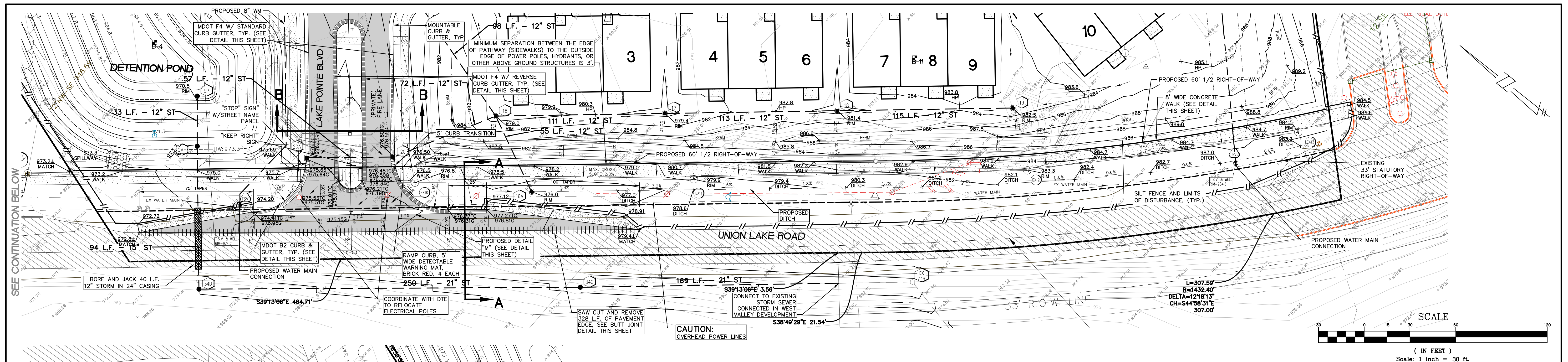
**SKL SEIBER KEAST LEHNER  
ENGINEERING | SURVEYING**

CLINTON TOWNSHIP OFFICE: 1700 NINETEEN MILE ROAD, SUITE 3 CLINTON TOWNSHIP, MI 48036 588.412.7060  
FARMINGTON HILLS OFFICE: 38006 COUNTRY CLUB DRIVE, SUITE C8 FARMINGTON HILLS, MI 48331 248.308.3331

SHEET  
16A

P:\2024\19039 GA-STORM WATER\19039 GA-STORM WATER.dwg

"COOLEY BEACH SUB-DIVISION"  
L: 24 PLATS, P. 2



**SOIL EROSION CONTROL NOTES**

- SACK TYPE FILTERS SHALL BE INSTALLED ON ALL CATCH BASINS AND INLETS.
- DEWATERING OF ANY KIND MUST BE FILTERED THROUGH VEGETATION, STONE OR "FILTER BAG".
- IT IS THE DEVELOPER'S RESPONSIBILITY TO INSURE THE PROJECT STREETS AND ADJACENT ROADS ARE CLEAN & SWEEP THROUGHOUT THE ENTIRE CONSTRUCTION PERIOD.
- IT IS THE DEVELOPER'S RESPONSIBILITY TO GRADE AND STABILIZE DISTURBANCES DUE TO INSTALLATION OF PUBLIC UTILITIES (I.E. PHONE, GAS, ELECTRIC, CABLE, ETC.)
- THE DEVELOPER IS RESPONSIBLE FOR DUST CONTROL THROUGHOUT ALL PERIODS OF CONSTRUCTION. WATERING TANKS WILL BE AVAILABLE AT ALL TIMES TO BE USED ON ANY AREA WHERE DUST BECOMES A PROBLEM.
- PARKING OF VEHICLES, EQUIPMENT, OR STOCKPIILING OF MATERIALS IS STRICTLY PROHIBITED ALONG OR WITHIN THE UNION LAKE ROAD RIGHT OF WAY AREA.
- ALL CULVERT END SECTIONS MUST CONTAIN GROUTED RIP-RAP IN ACCORDANCE WITH ORDINANCE SPECIFICATIONS.
- THE SOIL EROSION CONTROLS WILL BE MAINTAINED WEEKLY AND AFTER EVERY STORM EVENT BY THE DEVELOPER.

**S.E.S.C. SEQUENCE OF CONSTRUCTION**

- INSTALL ALL SOIL EROSION AND TREE PROTECTION FENCING AS PER APPROVED PLANS. CLEAR ONLY WHAT IS NECESSARY TO INSTALL FENCING.
- STRIP AND STOCKPILE TOPSOIL IN A LOCATION APPROVED BY THE OWNER/ENGINEER. PLACEMENT OF ADDITIONAL CONTROL MEASURES MUST BE INSTALLED ON AND AROUND THE STOCKPILE.
- CONSTRUCT DETENTION BASIN ALONG WITH APPLICABLE STORM SEWER (END-SECTIONS, SHORT STORM SEWER LENGTHS, STANDPIPE OUTLET FILTER). GRADE TO FINAL ELEVATIONS, DISTRIBUTE TOPSOIL, SEED AND STAKE STRAW MULCH BLANKETS ON THE SLOPES OF THE BASIN.
- INSTALL UTILITIES (WATER MAIN, STORM SEWER, SANITARY SEWER) COMPLETE.
- INSTALL, AS PER APPROVED PLANS, THE CATCH BASIN INLET FILTERS. INSPECT AND MAINTAIN FILTERS AS DIRECTED TO PREVENT CLOGGING AND UNNECESSARY FLOODING.
- GRADE ROADWAY LIMITS AND INSTALL PAVEMENT COMPLETE.
- BEGIN BUILDING CONSTRUCTION
- INSTALL ALL PUBLIC UTILITIES (GAS, ELECTRIC, TELEPHONE, CABLE) COMPLETE.
- STABILIZE TEMPORARILY OR PERMANENTLY ALL DISTURBED AREAS WITHIN FIVE (5) DAYS OF FINAL GRADE.
- INSPECT AND MAINTAIN ALL SOIL EROSION AND SEDIMENTATION CONTROL MEASURES WEEKLY AND AFTER EVERY STORM EVENT THROUGHOUT THE CONSTRUCTION OF THE PROJECT. REMOVAL OF CONTROL MEASURES MAY ONLY TAKE PLACE ONCE THE ENTIRE SITE IS FULLY STABILIZED. UPON FULL STABILIZATION IS COMPLETE, REMOVE THE STAND PIPE AND GRAVEL FILTER. THE DEVELOPER IS RESPONSIBLE FOR ALL SOIL EROSION CONTROL MEASURES.
- VEGETATION MUST BE ACCEPTABLY ESTABLISHED PRIOR TO FINAL RELEASE OF THE CONSTRUCTION DEPOSIT BY THE ROAD COMMISSION FOR UNION LAKE ROAD.

**SOIL EROSION CONTROL VIOLATIONS/CITATIONS**

- ROUTINE INSPECTIONS WILL BE PERFORMED BY THE OAKLAND COUNTY WATER RESOURCE COMMISSION (O.C.W.R.C.) OR ITS AGENT ONCE A WEEK.
- UPON COMPLETION OF INSPECTION, IF THE SITE IS FOUND NOT TO BE IN COMPLIANCE WITH O.C.W.R.C.'S SOIL EROSION AND SEDIMENTATION CONTROL ORDINANCE, THEN THE PERMIT HOLDER/SIGNER WILL BE ISSUED, BY HAND, MAIL OR EMAIL, A "NOTICE OF EROSION CONTROL DEFICIENCY" LETTER, THAT WILL INCLUDE ALL CURRENT AND PERTINENT NON-COMPLIANCE ITEMS. THE SITE AND/OR DEVELOPMENT WILL HAVE A PRE-DETERMINED AMOUNT OF TIME, FROM THE DATE OF THE "NOTICE" TO RECTIFY THESE ITEMS.
- IF ALL OF THE ITEMS HAVE NOT BEEN ADDRESSED AFTER THE ELAPSED TIME SPECIFIED, THE PERMIT HOLDER/SIGNER WILL RECEIVE A "NON-COMPLIANCE" LETTER, WHICH WILL INCLUDE A "NOTICE TO SHOW CAUSE".
- UPON RECEIPT OF THE "NON-COMPLIANCE" LETTER AND THE "NOTICE TO SHOW CAUSE", THE PERMIT HOLDER/SIGNER WILL ATTEND A SHOW CAUSE HEARING AS WELL AS PAY A RE-INSPECTION FEE IN THE AMOUNT OF \$250.00 TO THE O.C.W.R.C. FOR ADDITIONAL INSPECTIONS, HEARINGS AND REPORT FOLLOW UP. BEFORE MENTIONED ACTIVITIES MUST TAKE PLACE WITHIN 24 HOURS UPON RECEIPT OF THE LETTER. AFTER THE HEARING, THE PROJECT, DEVELOPMENT MAY BE ISSUED A "STOP WORK" ORDER.
- IF A CITATION IS ISSUED TO THE PERMIT HOLDER/SIGNER AFTER THE SHOW CAUSE HEARING, AN ADDITIONAL \$400.00 WILL BE PAID TO THEN O.C.W.R.C. FOR FOLLOW-UP INSPECTIONS, MEETINGS AND OTHER EXPENSES INCURRED.

**DETENTION BASIN MAINTENANCE SCHEDULE :**

- THE PROPERTY OWNER IS RESPONSIBLE FOR THE MAINTENANCE OF THE SEDIMENT STRUCTURES. MAINTENANCE SHOULD BE PERFORMED FOLLOWING ANY STORM AND SHOULD INCLUDE:
- CHECKING THE DEPTH OF SEDIMENT DEPOSIT TO ENSURE THE CAPACITY OF THE SEDIMENT STRUCTURES IS ADEQUATE FOR STORM WATER AND SEDIMENT DEPOSITION, AND FOR THE REMOVING OF SEDIMENT.
  - CHECKING THE BASIN FOR PIPING, SEEPAGE, OR OTHER MECHANICAL DAMAGE.
  - CHECKING FOR THE PRESENCE OF ANY SOIL CAKING, WHICH WOULD PREVENT PROPER DRAINAGE FROM THE BASIN.
  - ANY PROBLEM DISCOVERED DURING THE MAINTENANCE CHECKS SHOULD BE ADDRESSED IMMEDIATELY.
  - SEDIMENT REMOVED DURING CLEANING SHOULD BE PLACED AT AN UPLAND AREA AND STABILIZED SO THAT IT DOES NOT RE-ENTER THE DRAINAGE COURSE.

**GROUND WATER NOTES**

- IF THE STATIC GROUNDWATER LEVEL IS HIGHER THAN THE ELEVATION AT WHICH PROPOSED CONSTRUCTION WORK WILL TAKE PLACE, WHETHER DETERMINED BY INITIAL SOIL BORINGS OR DURING CONSTRUCTION, SO THAT IT WILL BE NECESSARY TO DEWATER AN AREA TO CONTINUE CONSTRUCTION, THEN THE WHITE LAKE TOWNSHIP WILL REQUIRE A WRITTEN DEWATERING PROCEDURE PROVIDED BY THE APPLICANT'S ENGINEER, PRIOR TO COMMENCEMENT OF THE DEWATERING OPERATION.
- IF GROUNDWATER IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR MUST CONTACT WHITE LAKE D.P.S IN WRITING SHOWING NEED TO DEWATER PRIOR TO ANY FURTHER CONSTRUCTION.
- IF PROCEDURES ARE NOT SUBMITTED OR, ONCE APPROVED, ARE NOT ADHERED TO, THEN WHITE LAKE TOWNSHIP MAY TAKE ACTION TO SUSPEND DEWATERING ACTIVITIES AT THE PROJECT TO REQUIRE THE ADHERENCE TO PROCEDURES.

**INSPECTION & MAINTENANCE SCHEDULE FOR SOIL EROSION CONTROL**

GRADE STABILIZATION STRUCTURES SUCH AS: DROP CONTROL STRUCTURES; SIDE DRAINS (ENCLOSED); DROP INLET SPILLWAYS; DROP PIPES; STRAIGHT PIPES; TOEWALLS; DROP BOXES; CHUTES OR FLUMES (DOP, ROCK CONCRETE); EARTH EMBANKMENT STRUCTURES; DOWNDRAINS; SPILLWAYS SHALL BE MAINTAINED AS FOLLOWS:

BECAUSE GRADE STABILIZATION STRUCTURES ARE SUBJECT TO HIGH FLOW CONDITIONS, PERIODIC INSPECTIONS SHOULD BE PERFORMED TO ENSURE THAT EROSION IS NOT OCCURRING, AND THAT VEGETATION IS ADEQUATELY ESTABLISHED. THESE STRUCTURES SHOULD ALSO BE INSPECTED AFTER STORM EVENTS WHICH EXCEED THE DESIGN STORM.

THE DETENTION BASIN SHOULD BE INVESTIGATED TO ENSURE THAT THE CONCENTRATED FLOWS ARE NOT CAUSING EROSION INTO THE BOTTOM OF THE BASIN AND BLOCKING INFILTRATION. CHECK THE EMERGENCY BYPASS/OVERFLOW FOR EROSION. CHECK THE STRUCTURES ITSELF FOR CRACKED CONCRETE. UNEVEN OR EXCESSIVE SETTLING, PIPING AND PROPER DRAIN FUNCTIONING. REPAIR OR REPLACE FAILING STRUCTURES IMMEDIATELY. ADDRESS VEGETATION AND EROSION PROBLEMS AS SOON AS WEATHER PERMITS. OPEN STRUCTURES SHOULD BE SIGNED OR MARKED TO ALERT PEOPLE IN THE VICINITY ABOUT POTENTIAL DANGERS.

**RIP-RAP**

INSPECTIONS SHOULD BE MADE OF ALL RIP-RAPPED SITES IMMEDIATELY AFTER THE FIRST RAINFALL FOLLOWING INSTALLATION. THIS IS PARTICULARLY IMPORTANT IN AREAS WHERE RIP-RAP THAT IS DISPLACED DURING THE STORM WOULD IMPACT CULVERTS. THEREFORE, RIP-RAP SITES SHOULD BE CHECKED FOLLOWING STORMS, ESPECIALLY THOSE WHICH ARE NEAR OR EXCEED STORM FREQUENCY USED IN THE DESIGN. DISPLACED RIP-RAP SHOULD BE REMOVED FROM ITS DOWNSTREAM LOCATION AND NEW RIP-RAP PLACED ACCORDING TO THE ENGINEERED SPECIFICATIONS.

**STORMWATER CONVEYANCE CHANNEL**

AT MINIMUM, CHECK ALL CONSTRUCTED CHANNELS AFTER EACH STORM WHICH MEETS OR EXCEEDS THE DESIGN STORM. ON RIP-RAP LINED WATERWAYS, CHECK FOR SCOURING BELOW THE RIP-RAP LAYER, AND BE SURE THE STONES HAVE NOT BEEN DISPLACED BY THE FLOW. PARTICULAR ATTENTION SHOULD BE PAID TO THE OUTLET OF THE CHANNEL. IF EROSION IS OCCURRING, APPROPRIATE ENERGY DISSIPATION MEASURES SHOULD BE TAKEN. SEDIMENT SHOULD BE REMOVED FROM RIP-RAP LINED CHANNELS IF IT REDUCES THE CAPACITY OF THE CHANNEL.

**SPOIL PILES**

WHEN VEGETATION STABILIZATION IS PROMPTLY AND EFFECTIVELY APPLIED, VERY LITTLE MAINTENANCE IS REQUIRED. THE GUIDELINES BELOW SHOULD BE FOLLOWED ON ALL SITES: (1) PERIODIC INSPECTIONS SHOULD BE DONE TO ENSURE EXCESSIVE EROSION HASN'T OCCURRED. IF RUN OFF OR WIND EROSION HAS OCCURRED, REDUCE THE SIDE OF SLOPES OF THE SPOIL PILE, OR STABILIZE THE SPOIL PILE WITH PIECES OF SOD LAID PERPENDICULAR TO THE SLOPE, AND STAKED. (2) WHEN FILTER FENCING IS USED AROUND A SPOIL PILE, PERIODIC CHECKS SHOULD BE MADE TO ENSURE THAT PIPING HAS NOT OCCURRED UNDER FENCING, AND TO ENSURE THE FENCE HAS NOT COLLAPSED DUE TO SOIL SLIPPING OR ACCESS BY CONSTRUCTION EQUIPMENT. REPAIR ANY DAMAGED FENCING IMMEDIATELY. (3) BERMS AT THE BASE OF THE SPOIL PILE WHICH BECOME DAMAGED SHOULD BE REPLACED.

**CATCH BASIN FILTERS**

EFFECTIVE FILTERS WILL COLLECT SEDIMENT, PARTICULARLY WHEN THE SOIL IS SANDY. THESE FILTERS MUST BE CLEANED PERIODICALLY, SO THEY DON'T BECOME CLOGGED AND CAUSE FLOODING CONDITIONS, PIPING, OR OVERTOPPING OF THE CONTROL STRUCTURES. MAINTENANCE OF THESE ITEMS REQUIRES INSPECTION WEEKLY OR AFTER EACH RAIN EVENT. ALSO, THESE ITEMS ARE REUSABLE IF MAINTAINED CORRECTLY. THEY CAN BE REMOVED, EMPTIED, CLEANED AND REPLACED WITHOUT PURCHASING NEW ONES.

**BUFFER/FILTER STRIPS**

(25' ENVIRONMENTAL SETBACKS)  
PERIODIC INSPECTIONS SHOULD BE DONE TO ENSURE THAT CONCENTRATED FLOWS HAVE NOT DEVELOPED, AND TO MAKE SURE THE VEGETATIVE COVER IS MAINTAINING ITS EFFECTIVENESS. IF THE INTEGRITY OF THE BUFFER/FILTER STRIP IS JEOPARDIZED BY UPLAND EROSION, OR IF CONCENTRATED FLOWS ARE CREATING RILLS OR GULLIES UP-SLOPE OF THE STRIP, ADDITIONAL BMP'S MAY NEED TO BE INSTALLED. IF THE BUFFER STRIP IS BEING JEOPARDIZED BY STREAM BANK EROSION, THEN THE CAUSE OF THE BANK EROSION NEEDS TO BE INVESTIGATED AND ACTIONS TAKEN TO ADDRESS THE CAUSES. DAMAGED STRIPS SHOULD BE REPAIRED AS SOON AS POSSIBLE. STRIPS DAMAGED DUE TO CONSTRUCTION UP-SLOPE OF THE BUFFER/FILTER SHOULD BE REPLANTED, AS NECESSARY, AFTER THE CAUSE OF THE DAMAGE IS ASSESSED AND ANY OTHER BMP'S ARE NEEDED ARE IMPLEMENTED.

**SILT FENCE**

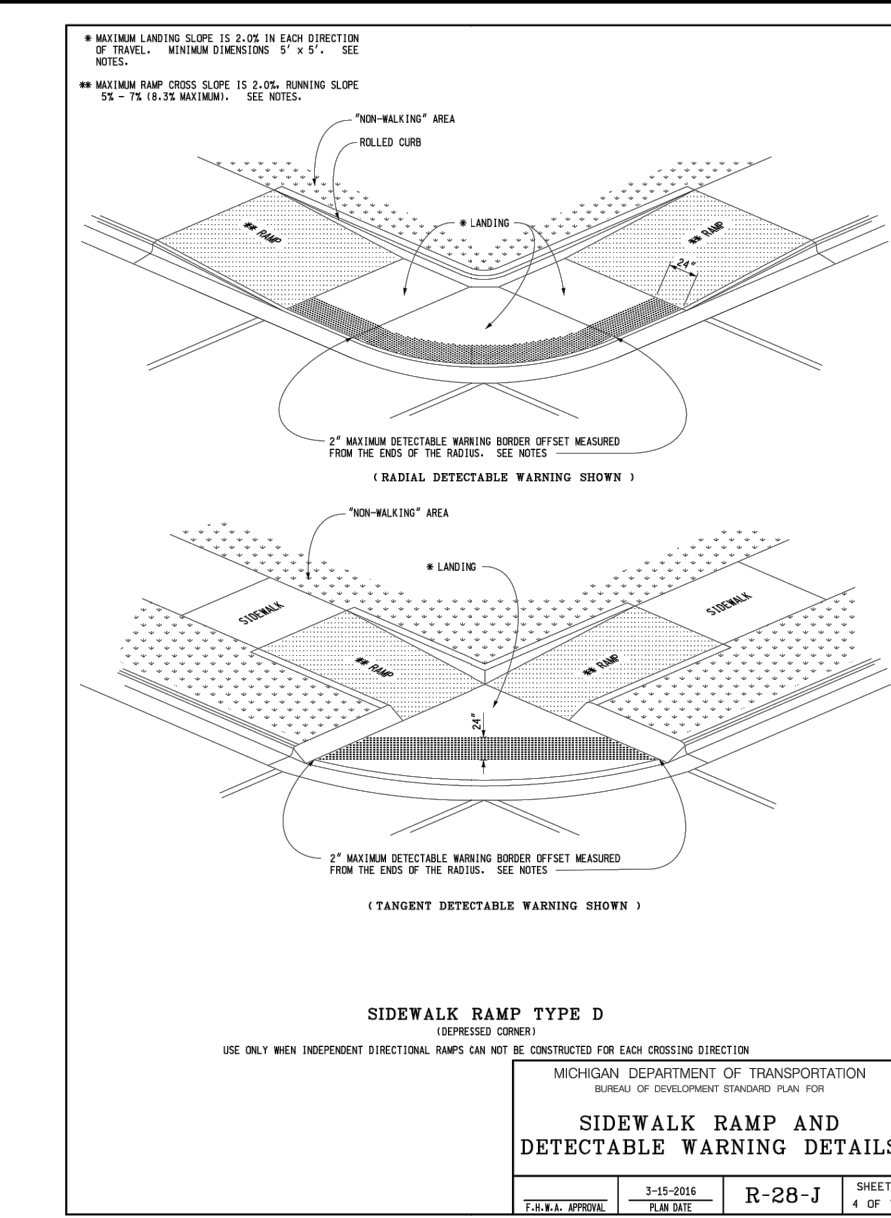
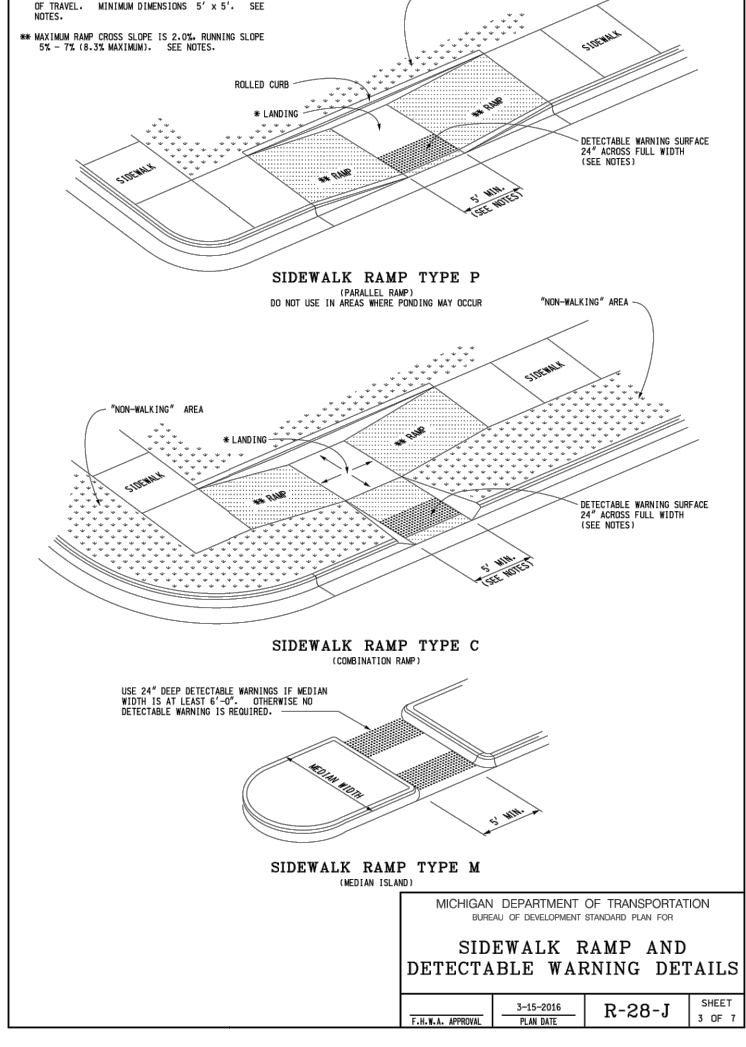
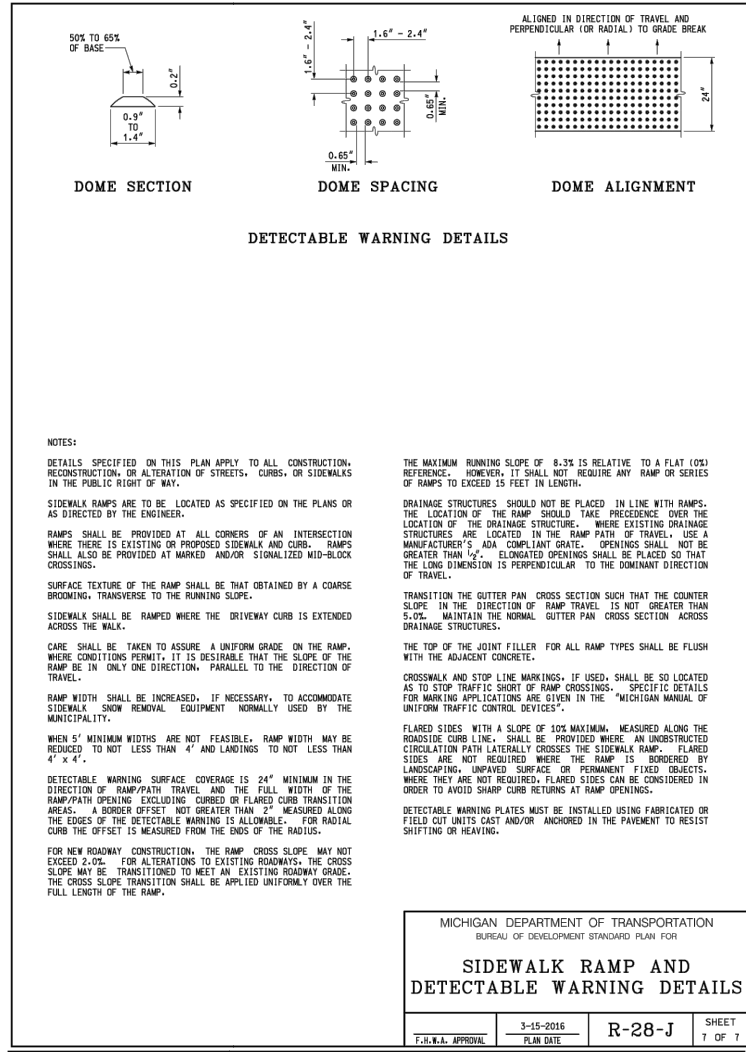
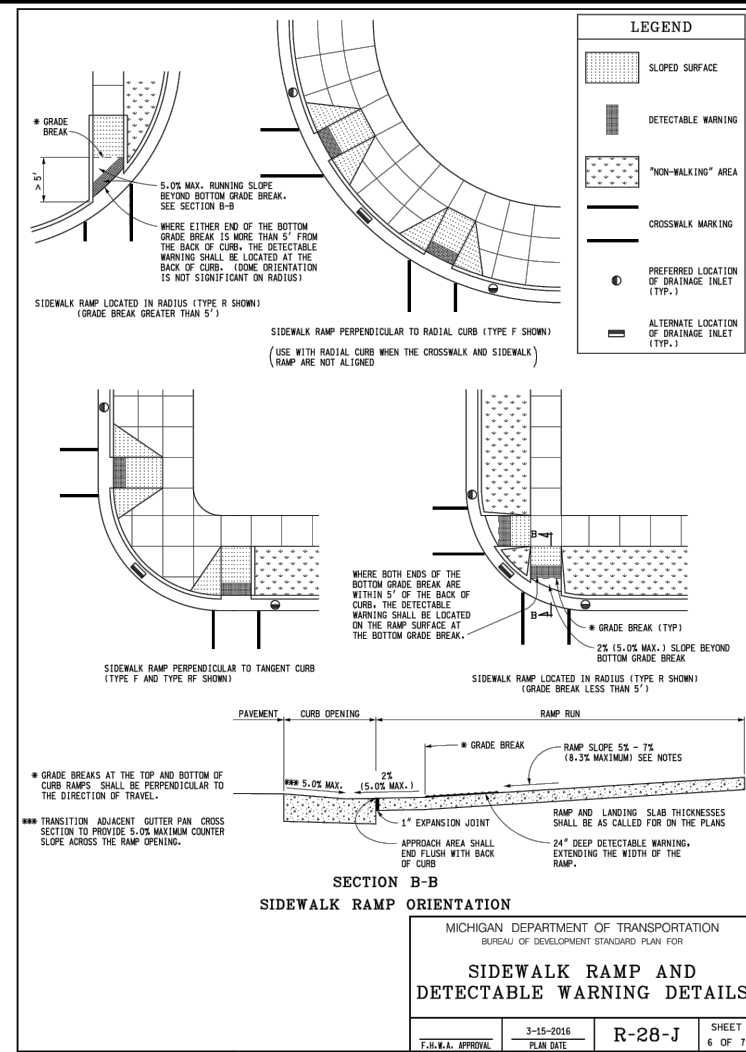
SILT FENCES SHOULD BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND SEVERAL TIMES DURING PROLONGED RAINFALLS. IF THE FENCE IS SAGGING OR THE SOIL HAS REACHED ONE HALF THE HEIGHT OF THE FABRIC, THE SOIL BEHIND THE FABRIC MUST BE REMOVED AND DISPOSED OF IN A STABLE UPLAND SITE. THE SOIL CAN BE ADDED TO THE SPOIL PILE. IF THE FABRIC IS BEING UNDERCUT (I.E. IF THE WATER IS SEEPING UNDER THE FENCE), THE FENCE SHOULD BE REMOVED AND REINSTALLED FOLLOWING THE GIVEN PROCEDURES. FABRIC WHICH DECOMPOSES OR OTHERWISE BECOMES INEFFECTIVE SHOULD BE REMOVED AND REPLACED WITH NEW FILTER FABRIC IMMEDIATELY. FILTER FENCES SHOULD BE REMOVED ONCE VEGETATION IS WELL ESTABLISHED AND THE UP-SLOPE AREA IS FULLY STABILIZED OR UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

**SEEDING, SODDING & MULCHING**

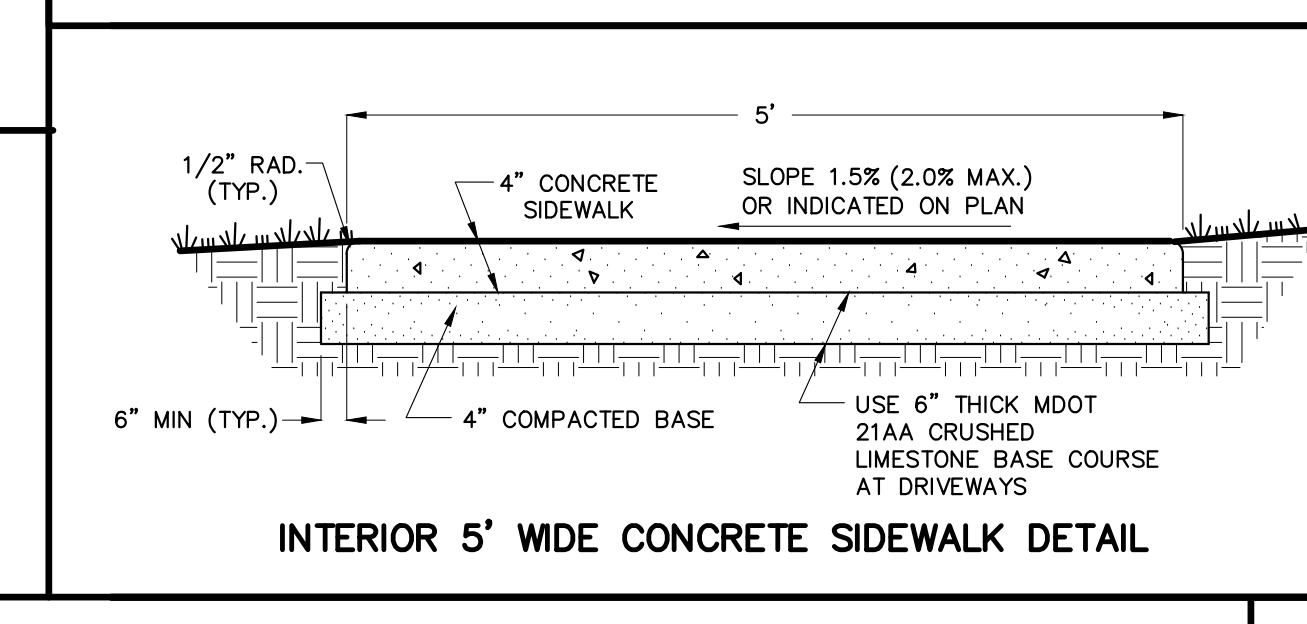
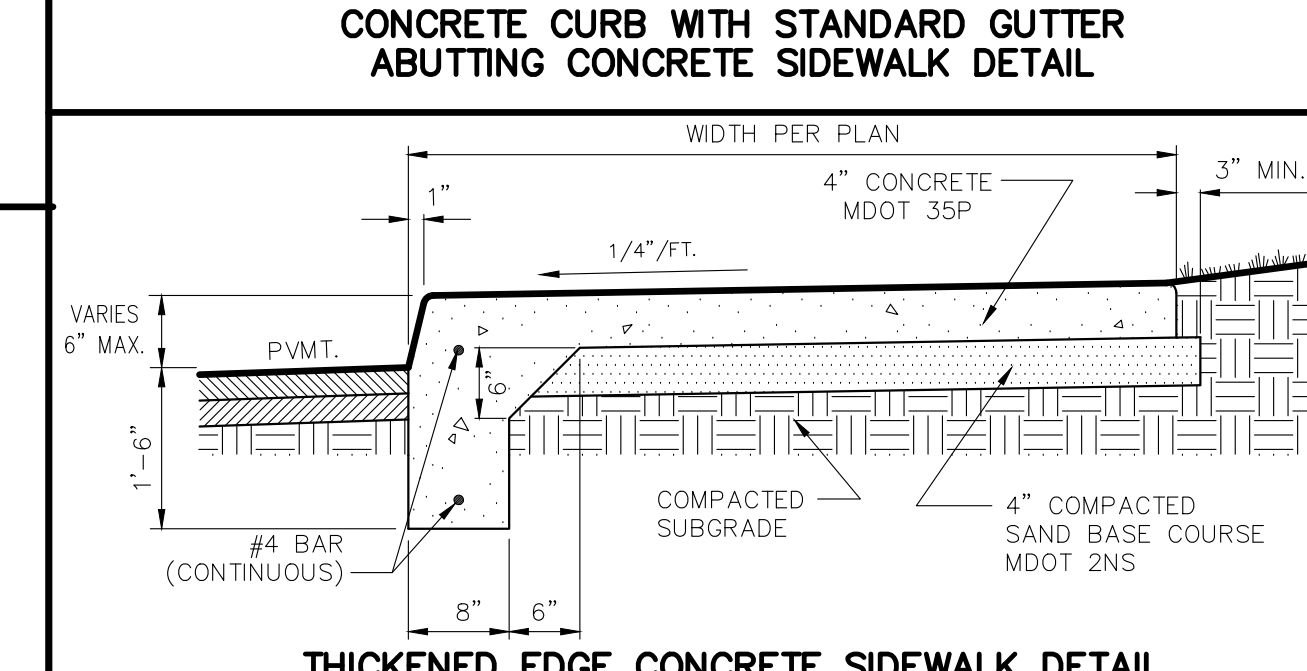
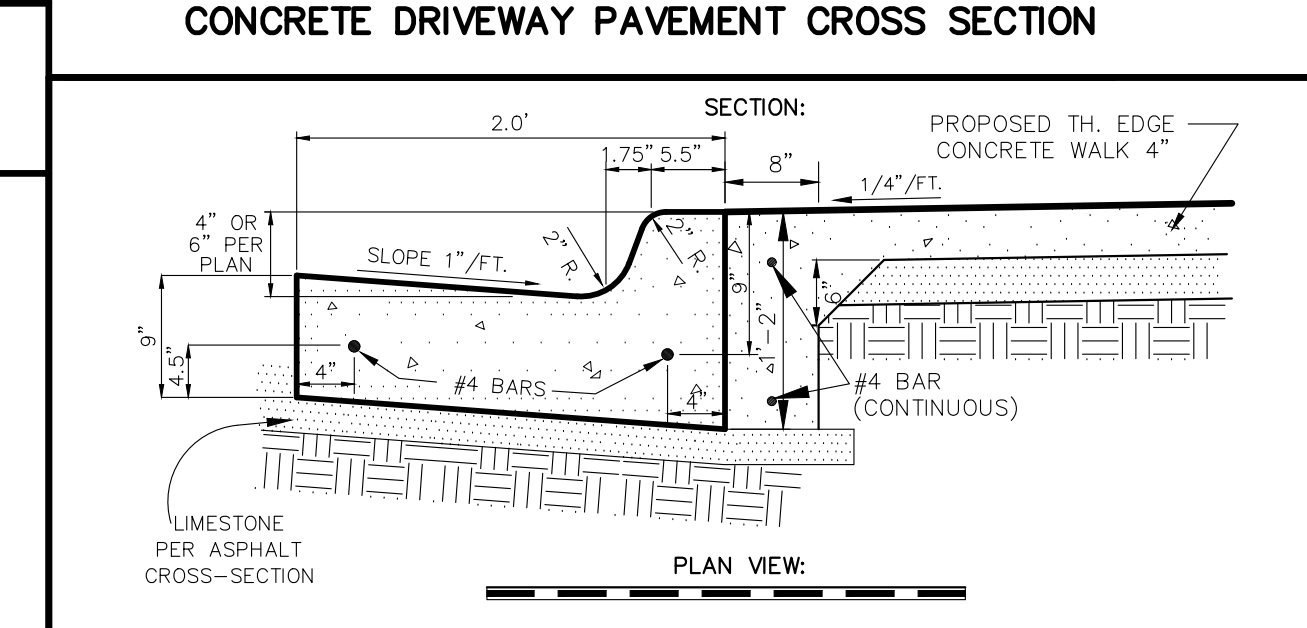
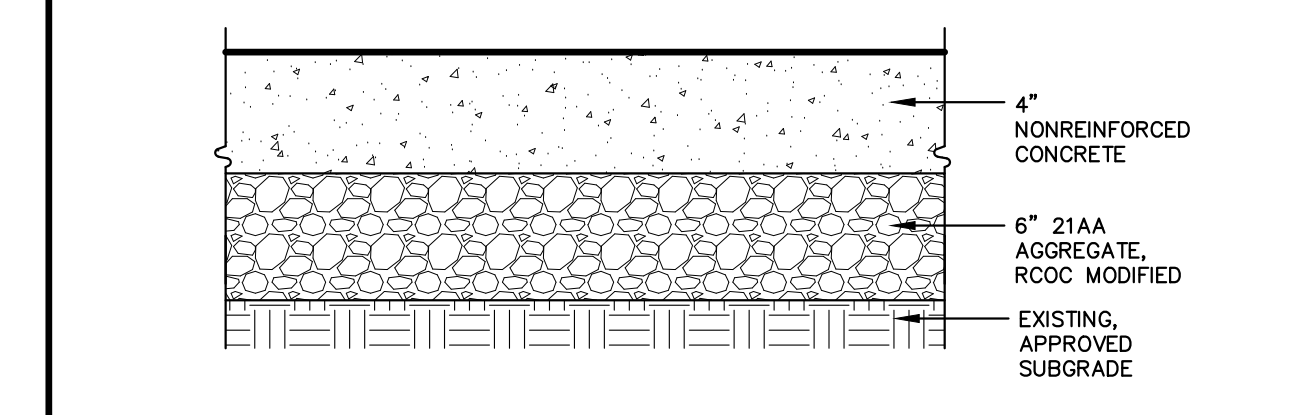
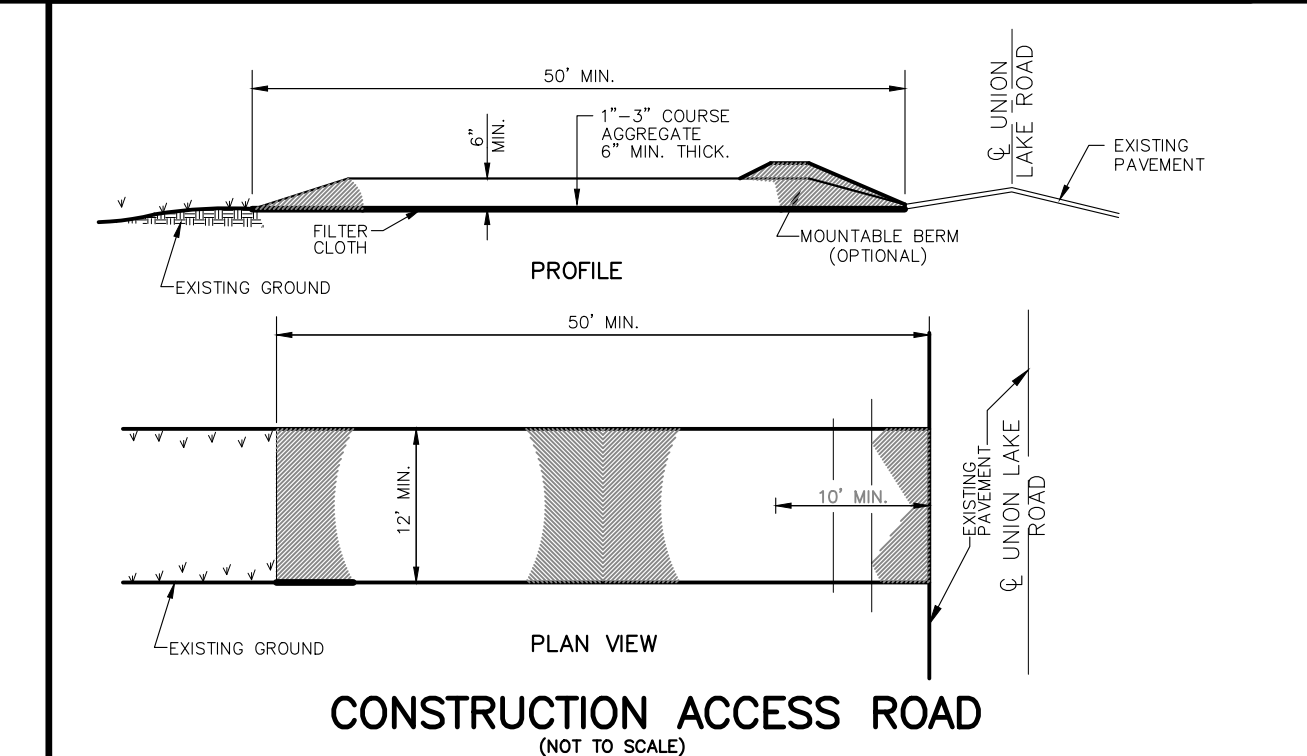
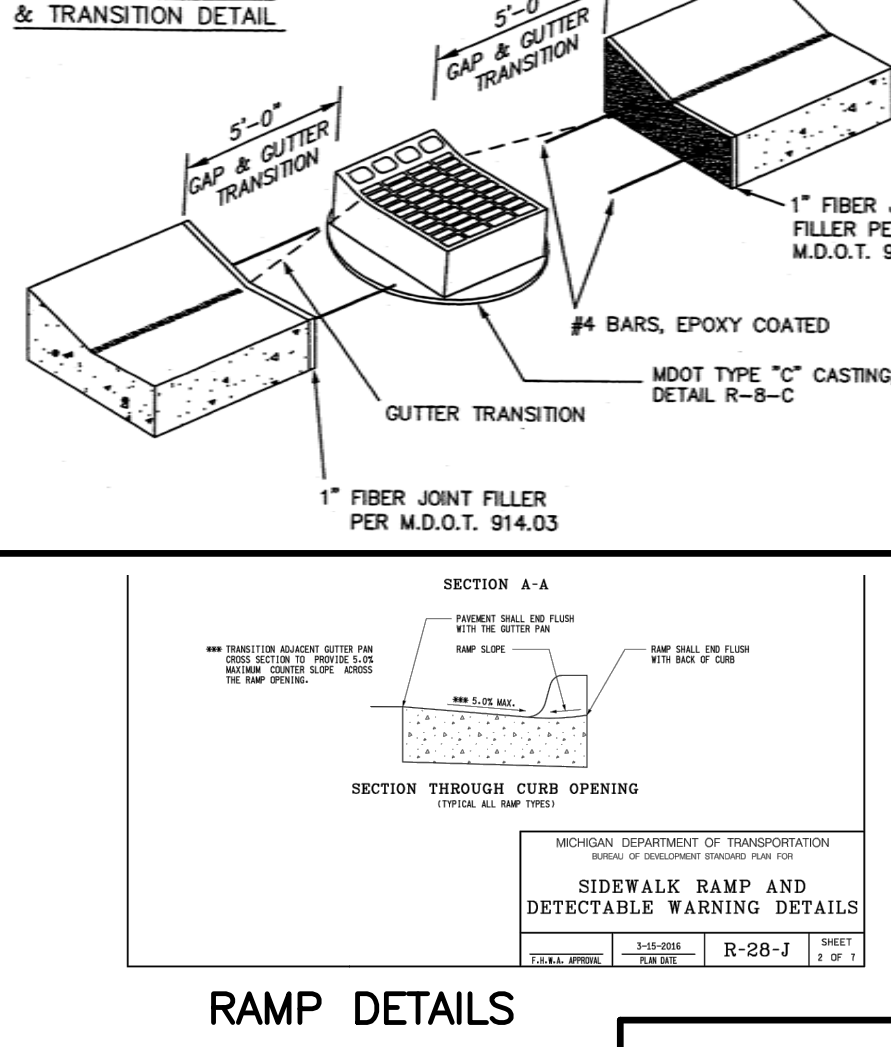
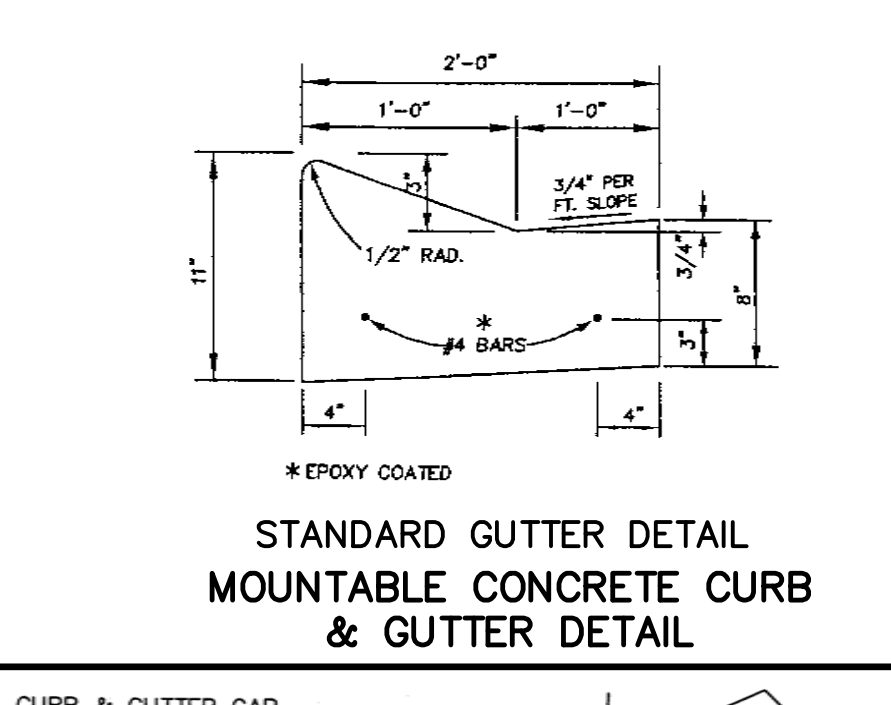
SEEDING, SODDED OR MULCHED AREAS SHOULD BE CHECKED FOLLOWING EACH RAIN TO ENSURE THE MATERIAL IS STAYING IN PLACE. ADDITIONAL TACKING MATERIALS OR NETTING MAY BE NEEDED TO BE APPLIED TO HOLD THE AFOREMENTIONED MATERIALS IN PLACE. MAINTENANCE PROCEDURES SHOULD ALSO BE FOLLOWED FOR THE BMP'S WHICH WERE IMPLEMENTED TO KEEP ERODED SOIL OR CONCENTRATED RUNOFF AWAY FROM THESE TARGET AREAS.

**ACCESS ROAD (UNION LAKE ROAD)**

PROPER MAINTENANCE INCLUDE ADDING ADDITIONAL LAYERS OF STONE WHEN THE ORIGINAL STONE BECOMES COVERED WITH MUD. AFTER EACH STORM EVENT, INSPECT THE ROAD FOR EROSION AND MAKE ANY NECESSARY REPAIRS. IT IS ALSO IMPORTANT TO CHECK AND MAINTAIN ANY BMP'S WHICH ARE USED IN CONJUNCTION WITH THIS BMP, ESPECIALLY THOSE FOR DRAINAGE. ALL SEDIMENT DROPPED OR ERODED ONTO PUBLIC RIGHT-OF-WAY SHOULD BE REMOVED IMMEDIATELY BY SWEEPING.



**NOTE:** DETECTABLE WARNING PLATES MUST BE CONCRETE-EMBEDDED DETECTABLE WARNING PLATES. STAMPED CONCRETE WILL NOT BE ACCEPTABLE.



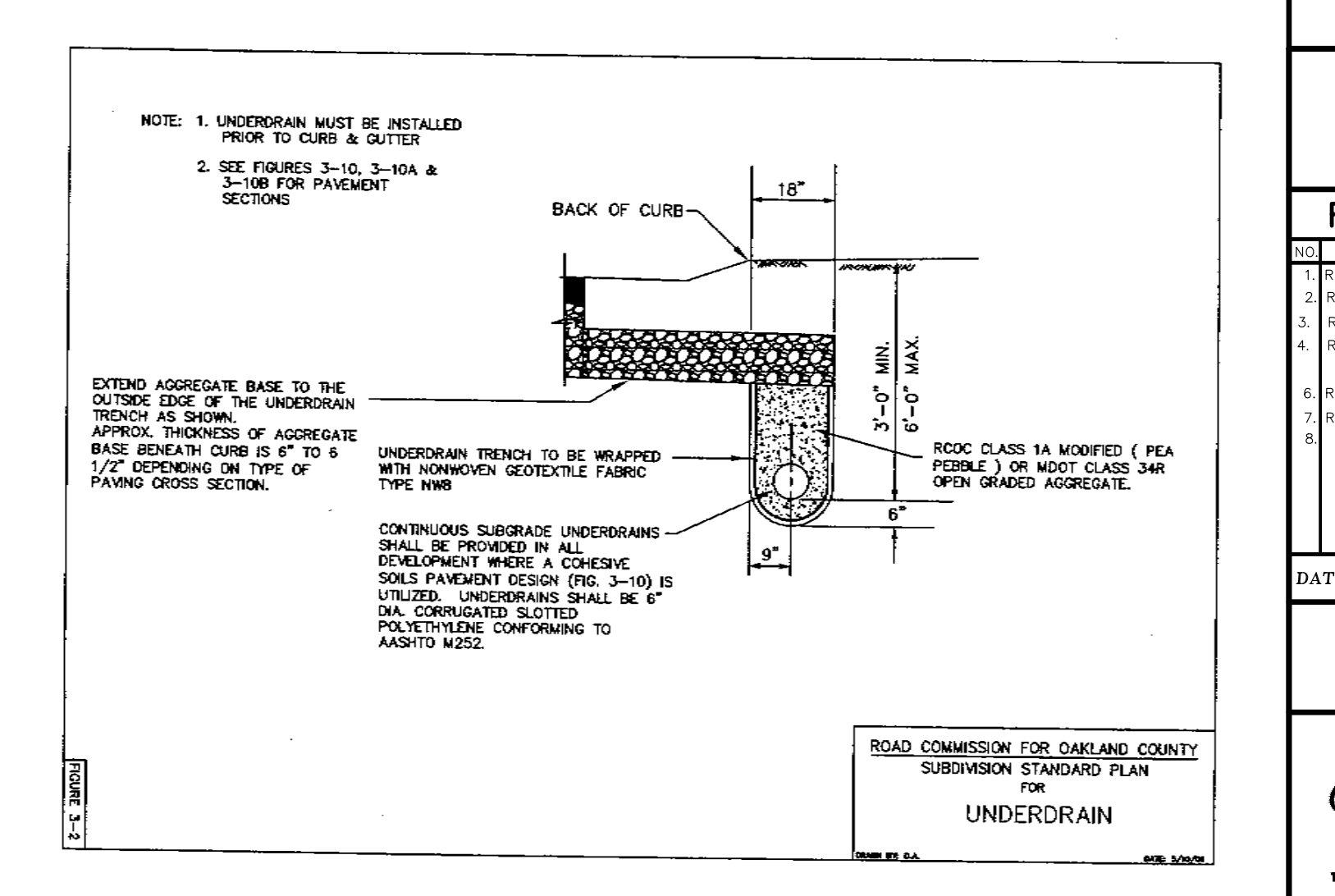
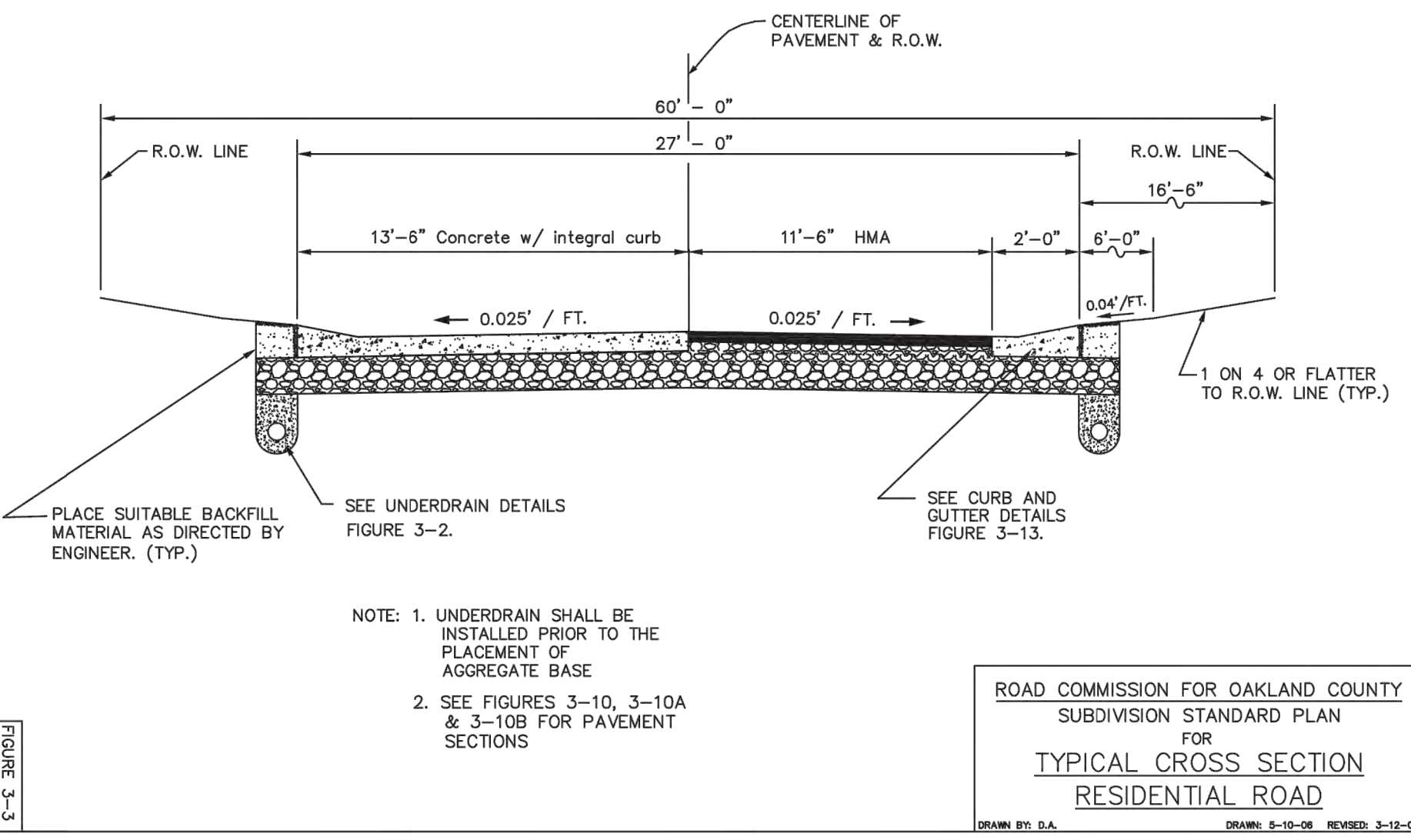
**SINGLE FAMILY RESIDENTIAL SUBDIVISIONS**

**INDUSTRIAL AND COMMERCIAL DEVELOPMENTS COLLECTOR STREETS**

CONCRETE: 1.5" HMA SE, 2" HMA 4E, 3" HMA 3E, 4" HMA 3E, 5" HMA 3E, 6" 21AA AGGREGATE, ROC MODIFIED, 6" (6" UNDER CURB), 6" (6" UNDER CURB), EXISTING APPROVED SUBGRADE.

HMA: 1.5" HMA SE, 2" HMA 4E, 3" HMA 3E, 4" HMA 3E, 5" HMA 3E, 6" 21AA AGGREGATE, ROC MODIFIED, 6" (6" UNDER CURB), 6" (6" UNDER CURB), EXISTING APPROVED SUBGRADE.

ROAD COMMISSION FOR OAKLAND COUNTY  
SUBDIVISION STANDARD PLAN FOR STREET PAVEMENT  
FIGURE 3-5



**LAKE POINTE**  
SECTION 36, TOWN 3 NORTH, RANGE 8 EAST  
WHITE LAKE TWP., OAKLAND COUNTY, MICHIGAN

**REVISIONS**

NO.	ITEM	DATE
1.	REVISED PER OWNER	6-3-20
2.	REVISE GRADES ON UNITS 2 AND 6	11-9-20
3.	REV PER 11-20-20 W/L TWP LETTER	02-02-21
4.	REVISE PER WHITE LAKE TWP	03-03-21
5.	REVISED PER TOWNSHIP	04-25-23
6.	REVISED PER TOWNSHIP	7-27-23
7.	REVISED PER AGENCIES	02-13-24

UTILITY WARNING  
UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.

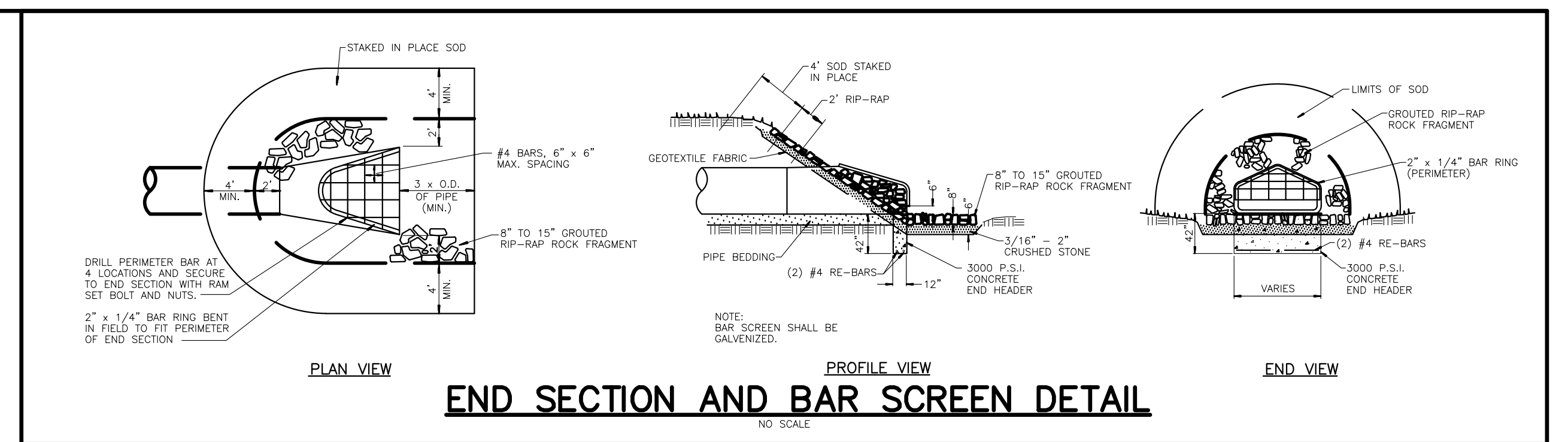
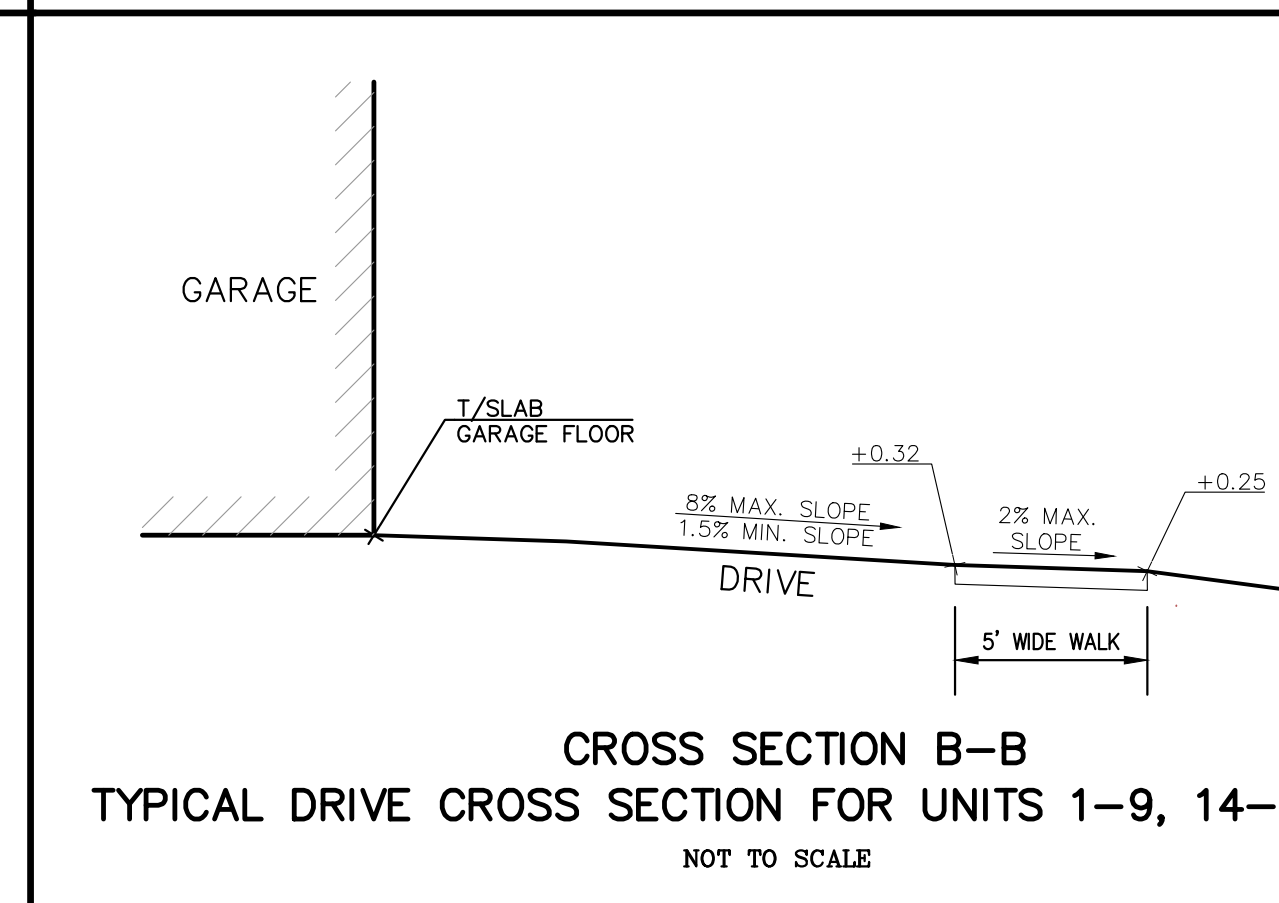
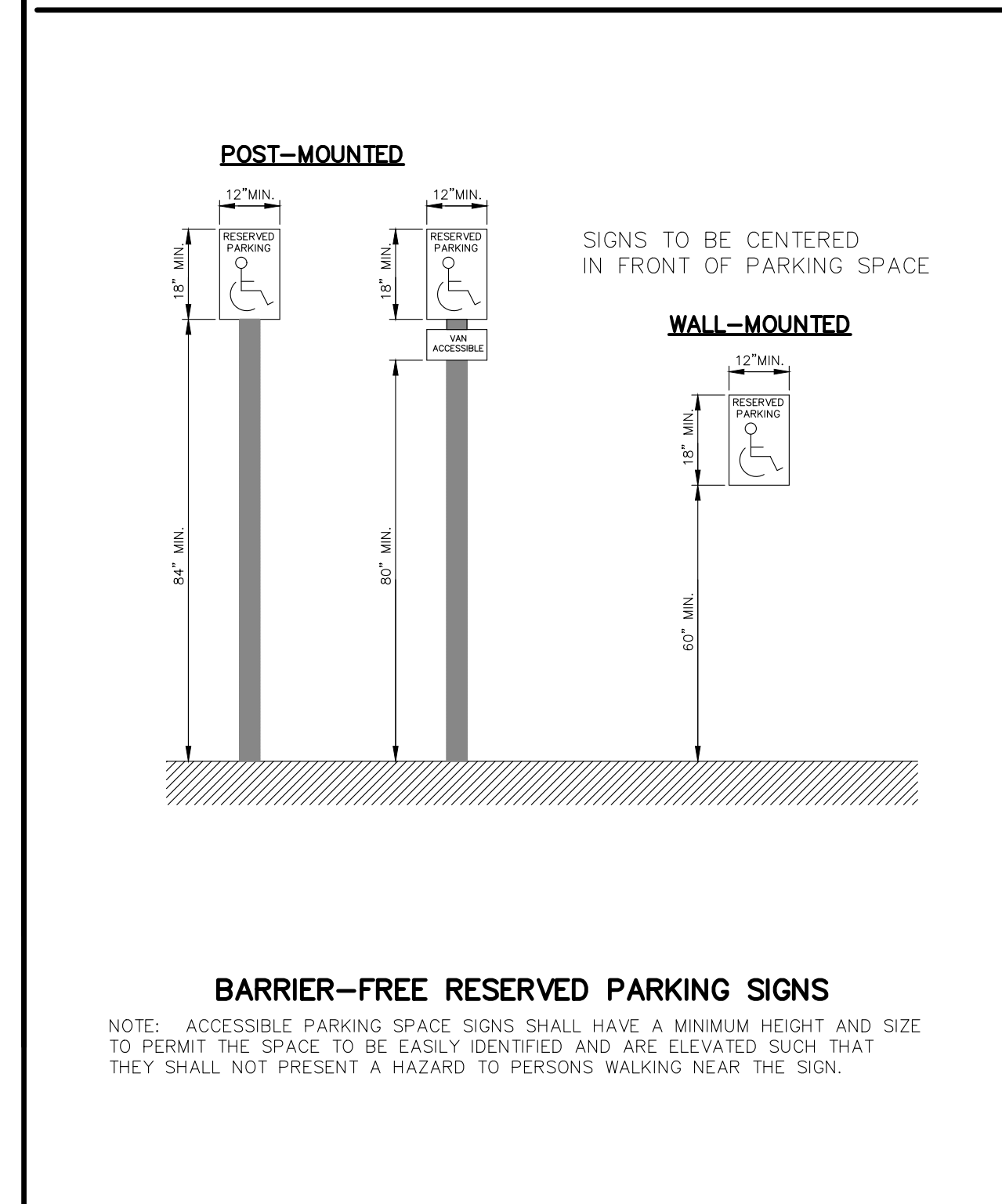
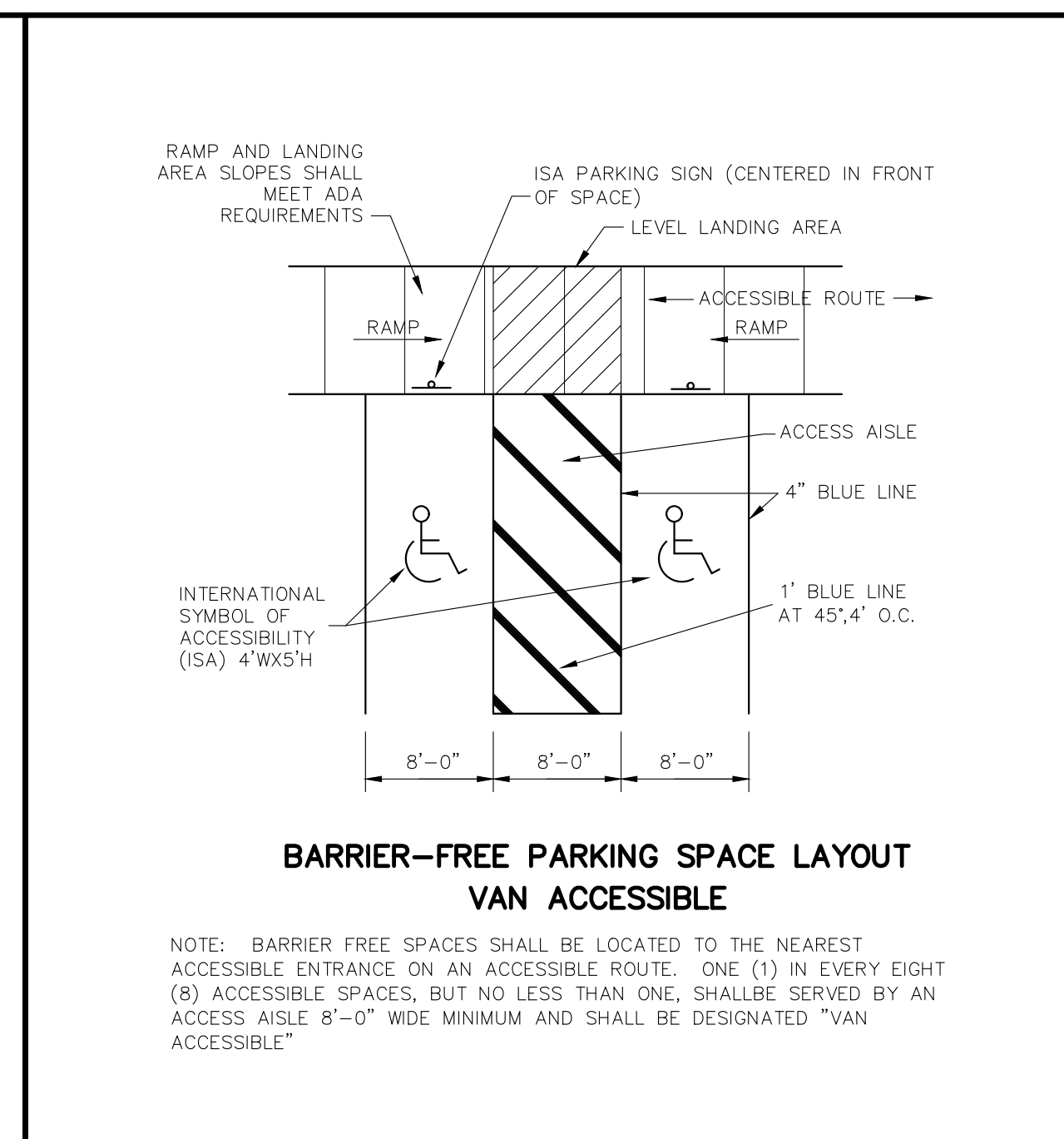
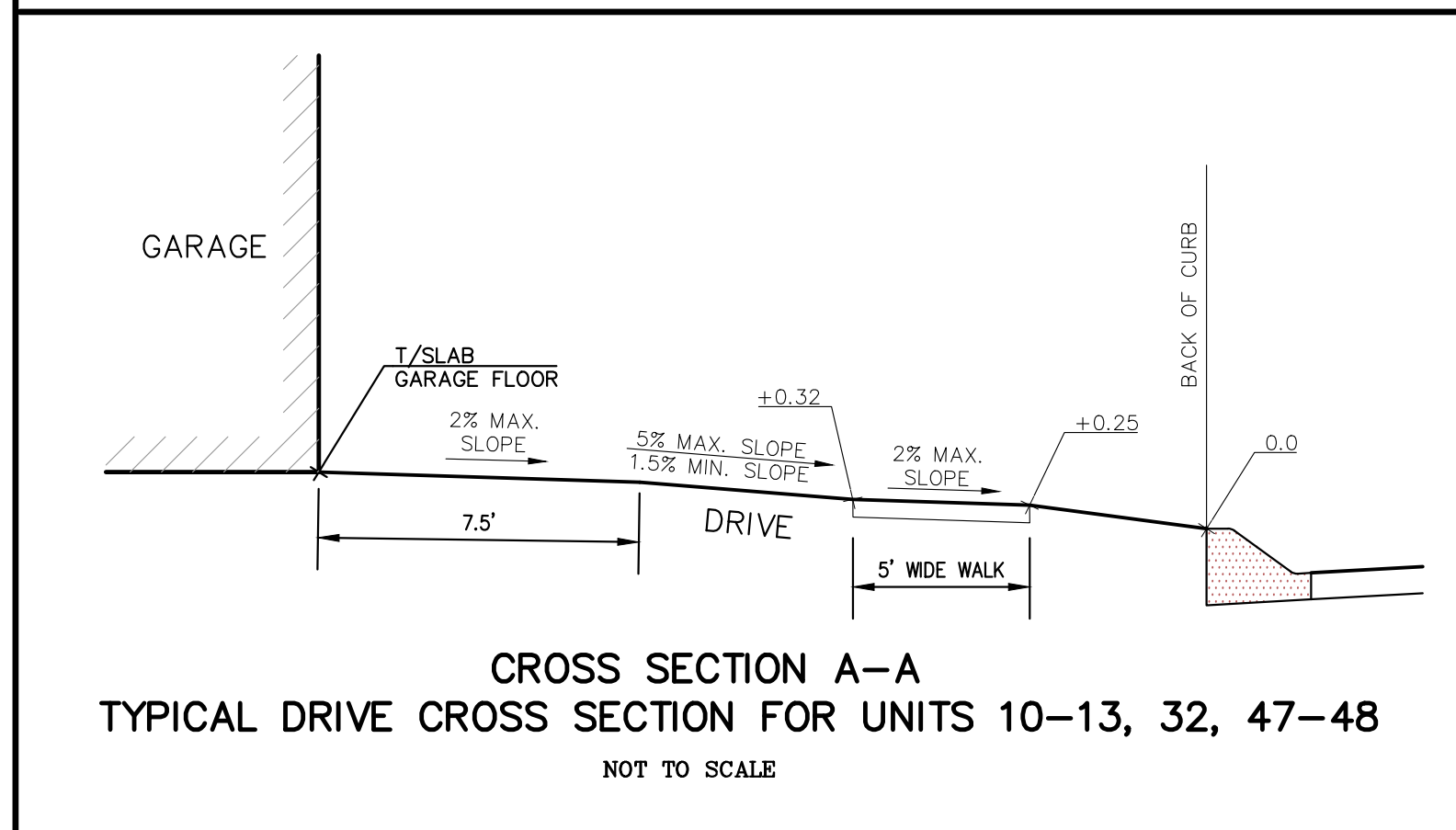
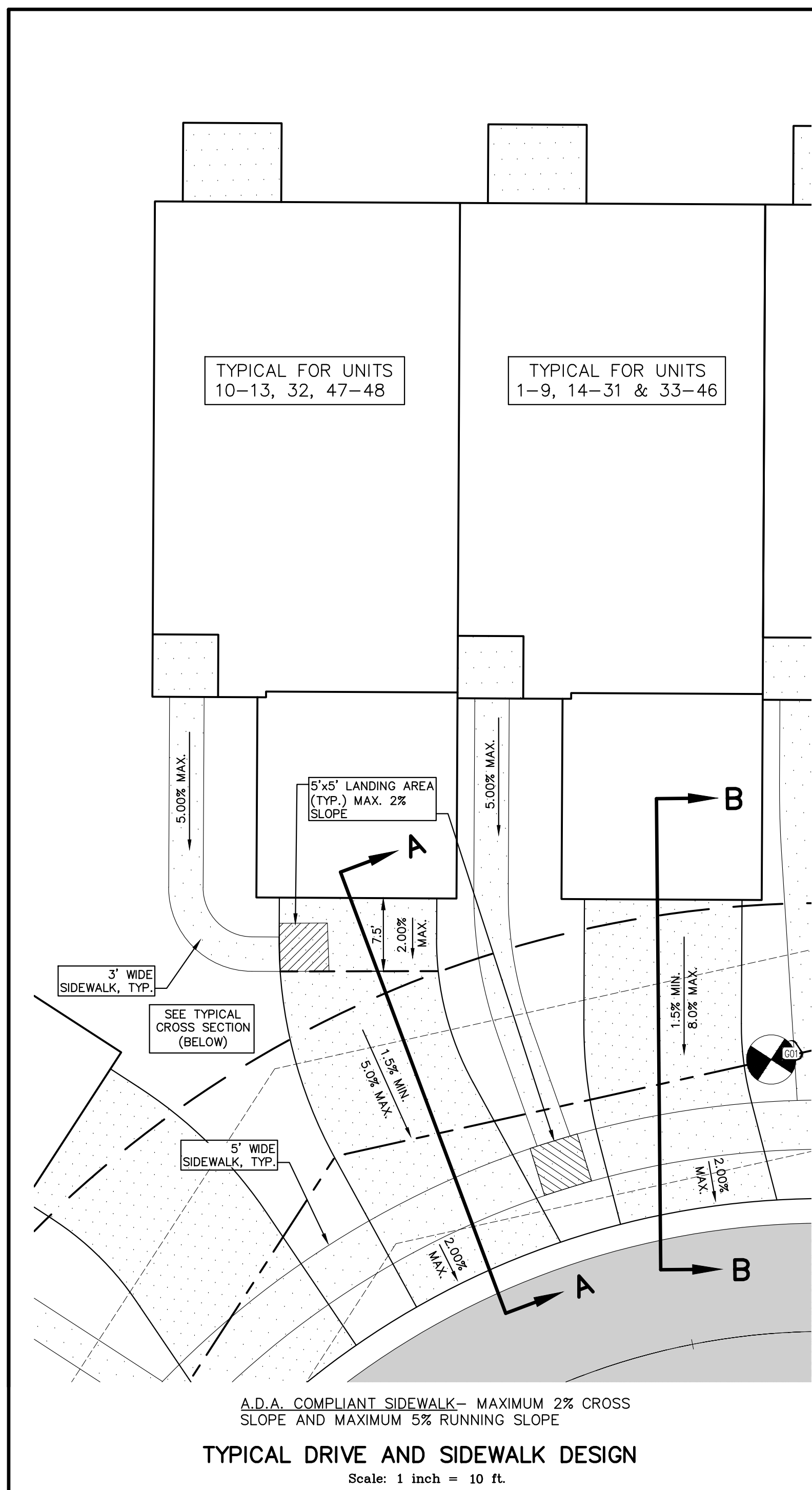
**811** Know what's below. Call before you dig.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF AND/OR RELOCATION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION.

DATE: 04-08-2020 DESIGNED BY: A.A. JOB NUMBER: 19-039  
CHECKED BY: J.E. DRAWING FILE: 19039D.dwg

**NOTES AND DETAILS**


ROAD COMMISSION FOR OAKLAND COUNTY  
SUBDIVISION STANDARD PLAN FOR UNDERDRAIN  
DRAWN BY S.A. DATE: 3-10-20



**LAKE POINTE**


**SECTION 36, TOWN 3 NORTH, RANGE 8 EAST**

**WHITE LAKE TWP., OAKLAND COUNTY, MICHIGAN**

REVISIONS			UTILITY WARNING
NO.	ITEM	DATE	
1.	REVISE PER OWNER	6-3-20	UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.   <b>811</b> Know what's below. Call before you dig.  THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF AND/OR RELOCATION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION.
2.	REVISE GRADES ON UNITS 2 AND 6	11-9-20	
3.	REV PER 11-20-20 WL TWP LETTER	02-02-21	
4.	REVISE PER WHITE LAKE TWP	03-03-21	
6.	REVISED PER TOWNSHIP	04-25-23	
7.	REVISED PER TOWNSHIP	7-27-23	
8.	REVISED PER AGENCIES	02-13-24	

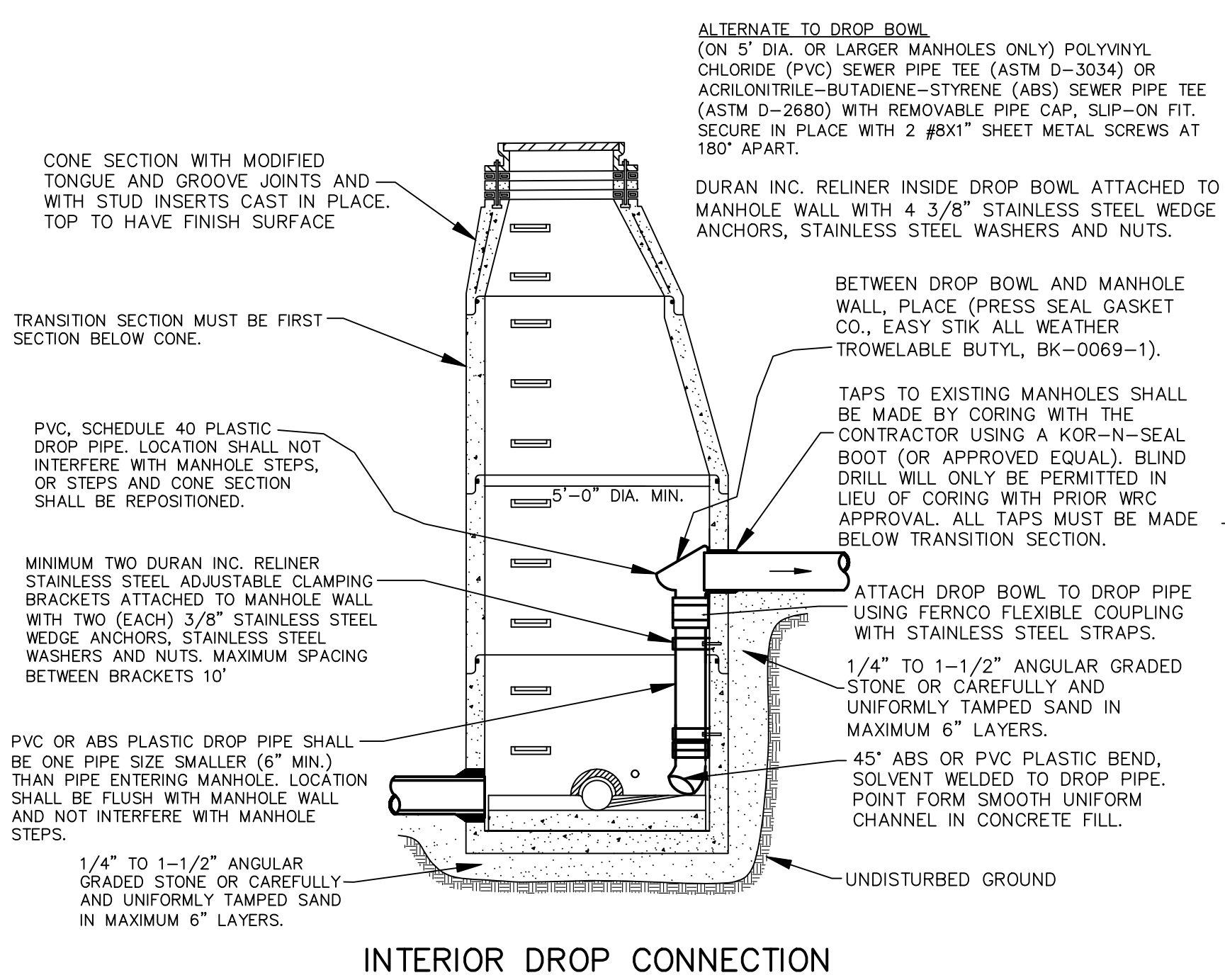
DATE: 04-08-2020    DESIGNED BY: A.A.    JOB NUMBER: 19-030  
 CHECKED BY: J.E.    DRAWING FILE: 19030ND.dwg

**NOTES AND DETAILS**

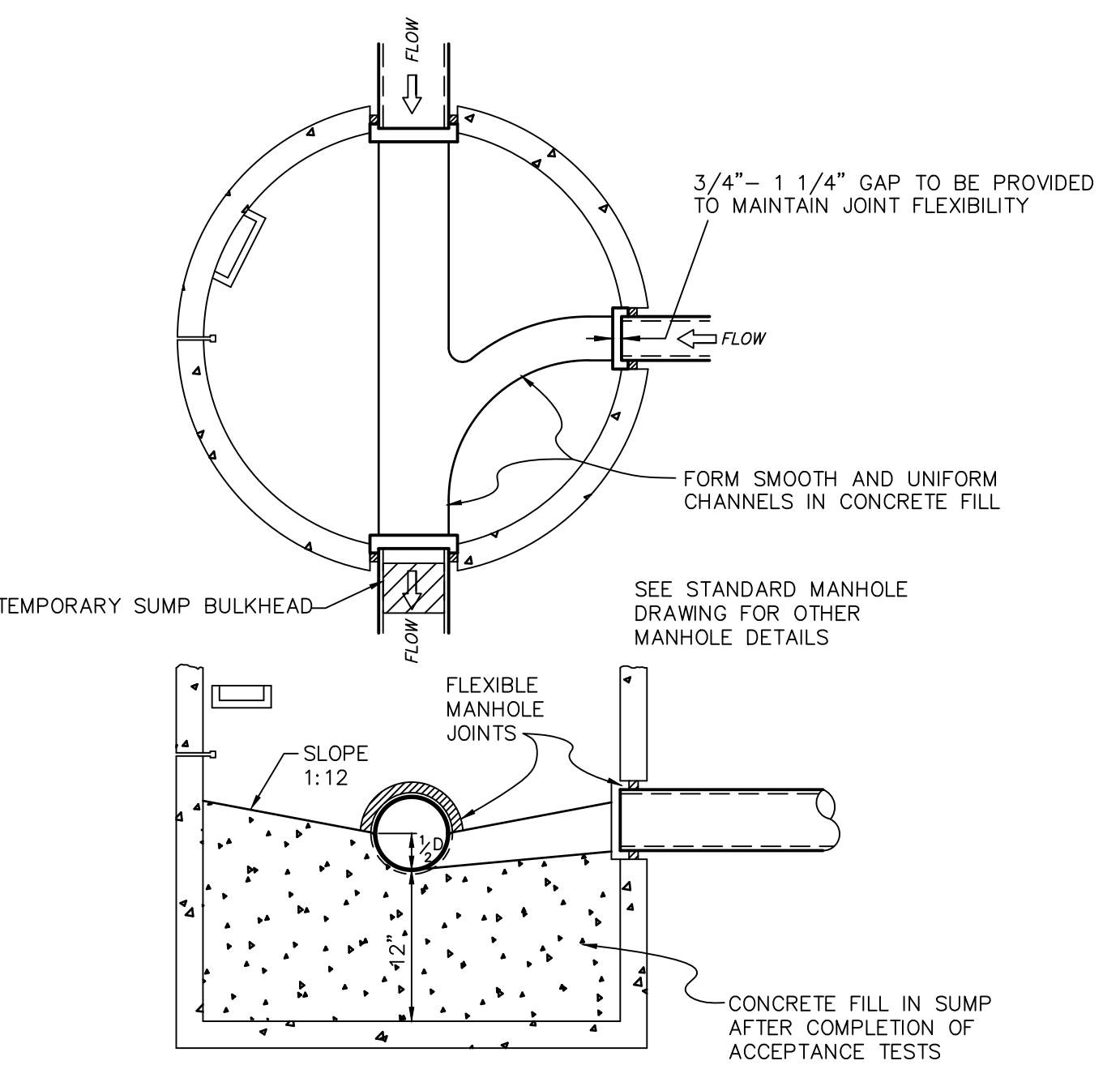
 <b>SEIBER KEAST LEHNER</b> ENGINEERING   SURVEYING <small>CLINTON TOWNSHIP OFFICE: 1700 NINETEEN MILE ROAD, SUITE 3 CLINTON TOWNSHIP, MI 48036 588.412.7060</small> <small>FARMINGTON HILLS OFFICE: 38205 COUNTRY CLUB DRIVE, SUITE C8 FARMINGTON HILLS, MI 48331 248.308.3331</small>	<b>SHEET</b>
	<b>ND2</b>



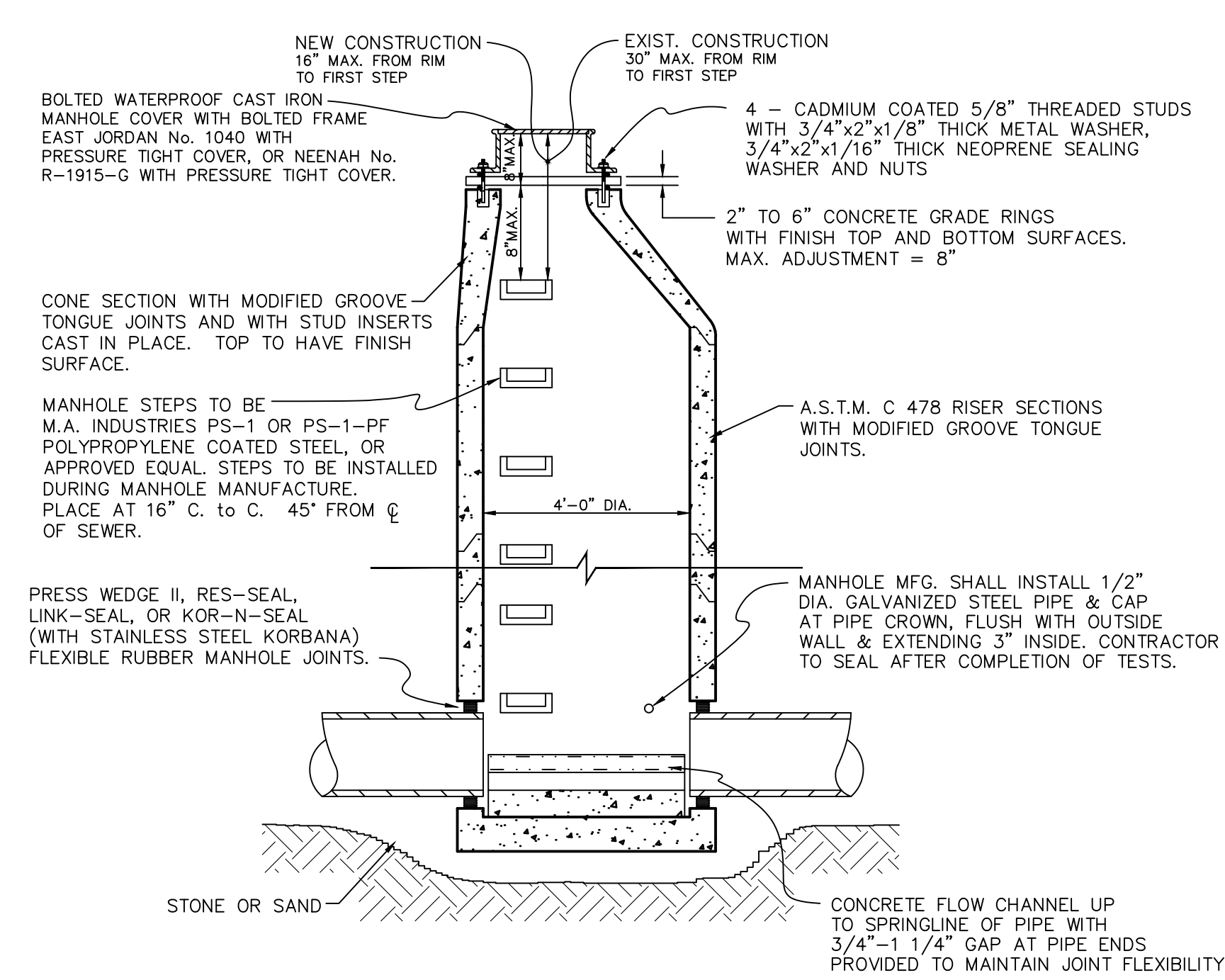
- All construction shall conform to the current standards and specifications of the local unit of government and the Oakland County Water Resources Commissioner (OCWRC). All sanitary sewer construction shall have full time inspection supervised by a professional engineer provided by or caused to be provided by the local unit of government.
- At all connections to Oakland County Water Resources Commissioner's sewers or extensions, and before start of construction, the Contractor must obtain a Sewer Inspection Permit issued by the OCWRC. Gravity sewer permit charges are \$250.00 for each connection plus \$25.00 for each manhole constructed. Pressure sewer permit charges are \$250.00 per 2460 L.F. of force main with a minimum permit fee of \$250.00. Failure to pass any test segment will result in an additional charge to the Contractor for each retest, in accordance with the above price schedule. The Contractor shall also have posted with the OCWRC a \$5,000.00 surety bond and \$500.00 cash deposit. The Contractor shall notify the local unit of government and the OCWRC (248-858-1110) 24 hours prior to the beginning of any construction. Final acceptance tests must be witnessed by County personnel and must be scheduled by Municipality or its consultant in advance with 24 hour notice at 248-858-1110.
- No sewer installation shall have an infiltration or exfiltration exceeding 100 gallons per inch diameter per mile of pipe in a 24 hour period, and no single run of sewer between manholes shall exceed 100 gallons per inch diameter per mile. Air tests in lieu of infiltration tests shall be as specified in the OCWRC "Acceptance Tests", dated September, 1972. Only pipe and pipe joints approved by the Oakland County Water Resources Commissioner may be used for sanitary sewer construction.
- Located in the first manhole upstream from the point of all connections to an existing OCWRC sewer, or extension thereto, a temporary 12-inch deep sump shall be provided in the first manhole above the connection which will be filled in after such successful completion of any acceptance test up to the standard fill provided for the flow channel. A watertight bulkhead shall be provided on the downstream of the sump manhole.
- All building leads and risers shall be 6-inch S.D.R. 23.5 ABS OR PVC pipe with chemically fused joints, or an approved equal pipe and joint. Sewer pipe wye shall contain factory installed premium joint material of an approved type compatible with that of the building lead pipe used. Building leads to be furnished with removable air tight and water-tight stoppers.
- All rigid sewer pipe shall be installed in Class "B" bedding or better. All flexible, semi-flexible or composite sewer pipe shall be installed in conformance to the Oakland County Water Resources Commissioner specifications.
- All new manholes shall have Oakland County Water Resources Commissioner approved flexible, water-tight seals where pipes pass through walls. Manholes shall be of precast sections with modified groove tongue and rubber gasket type joints. Precast manhole cone sections shall be Oakland County Water Resources Commissioner approved modified eccentric cone type. All manholes shall be provided with bolted, water-tight covers.
- At all connections to manholes on Oakland County Water Resources Commissioner's sewers or extensions thereto drop connections will be required when the difference in invert elevations exceeds 18-inches. Outside drop connections only will be approved.
- Taps to existing manholes shall be made by coring. The Contractor shall place a KOR-N-SEAL boot (or OCWRC approved equal) after coring is completed. Blind drilling will not be permitted in lieu of coring.
- New manholes constructed directly on Oakland County Water Resources Commissioner's sewers shall be provided with covers reading "Oakland County - Sanitary" in raised letters. New manholes built over an existing sanitary sewer shall have monolithic poured bottoms.
- No ground water, storm water, construction water, downspout drainage or weep tile drainage shall be allowed to enter any sanitary sewer installation.
- Prior to excavation, the Contractor shall telephone MISS DIG (647-7344) for the location of underground pipeline and cable facilities, and shall also notify representatives of other utilities located in the vicinity of the work.
- 18" minimum vertical separation and 10' minimum horizontal separation must be maintained between sanitary sewer and water main.
- Manhole frame and cover shall be as follows: East Jordan heavy manhole cover, base flange type #1040 or Neenah Foundry heavy duty #R-1642 manhole frame. Solid lid cover shall be non-rocking and marked "WHITE LAKE TOWNSHIP SEWER DEPARTMENT."



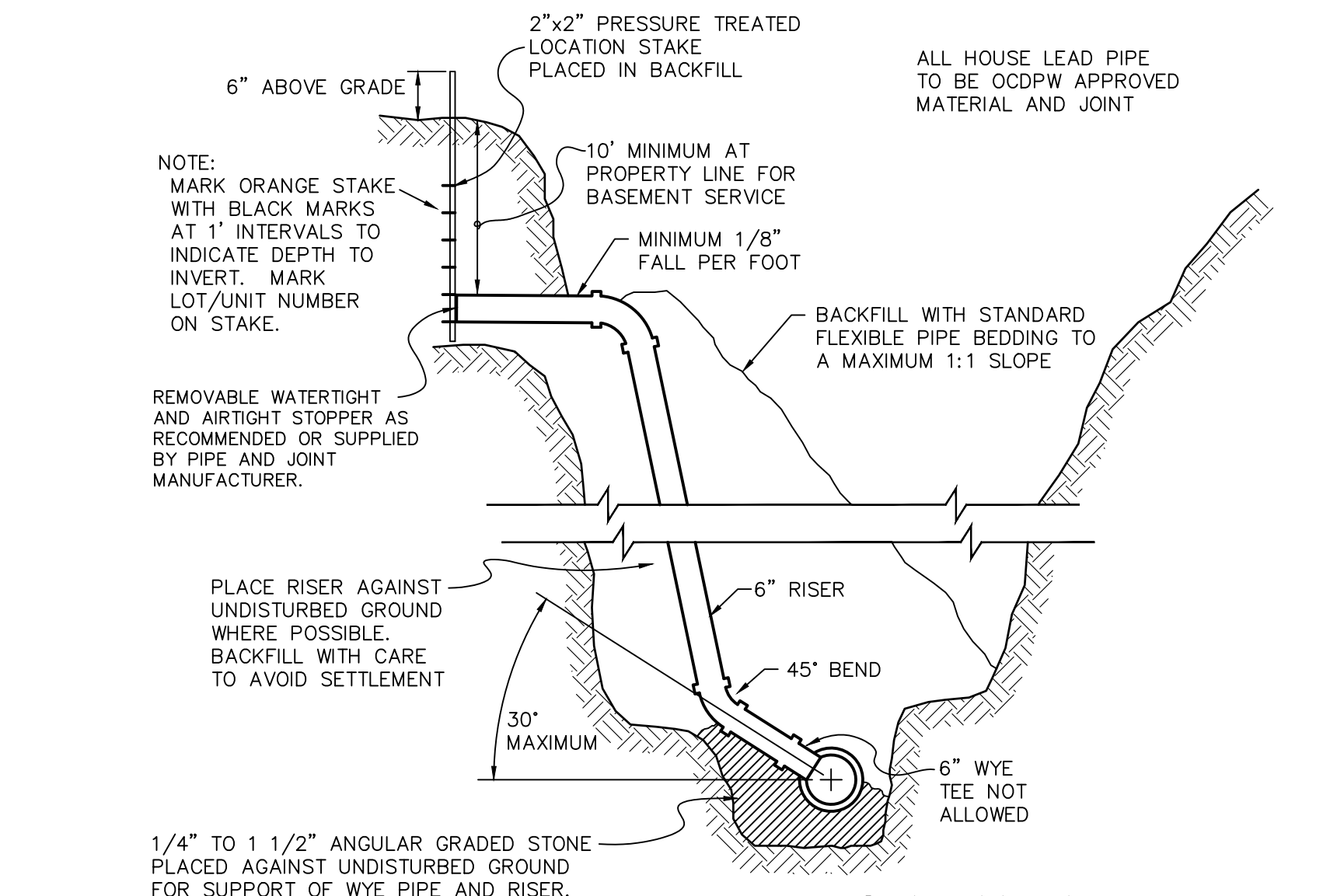
INTERIOR DROP CONNECTION



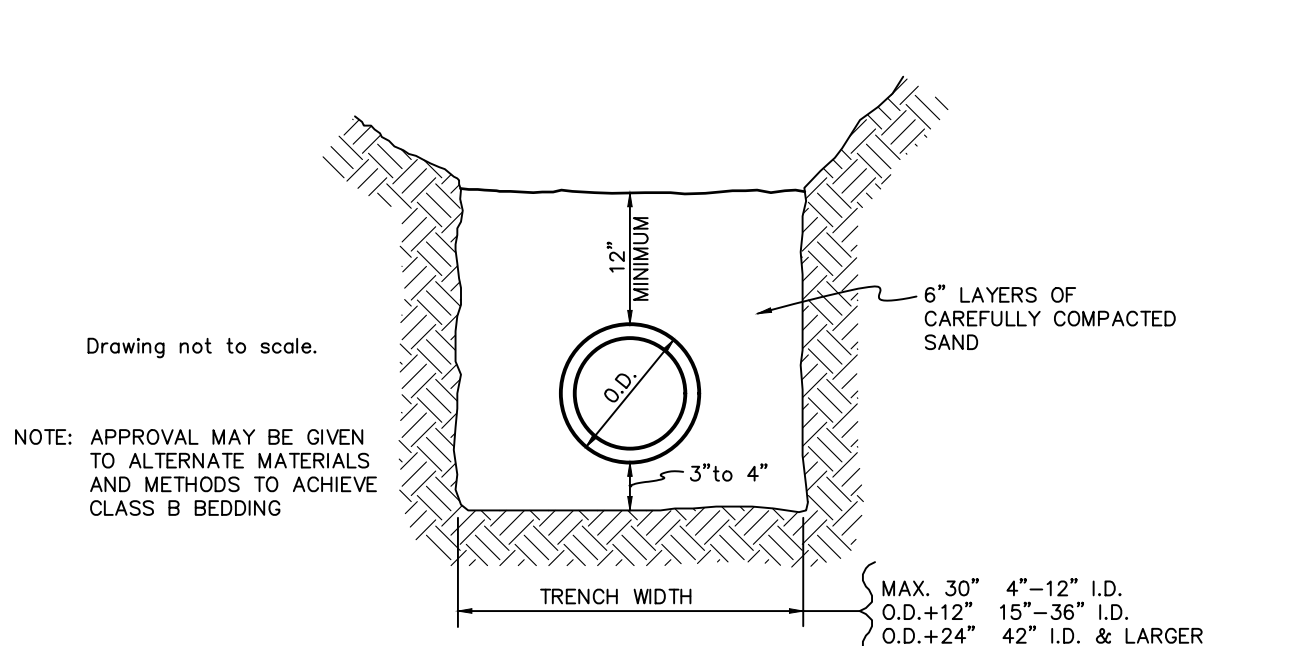
SUMP MANHOLE FOR TESTING, CLEANING, AND DEWATERING



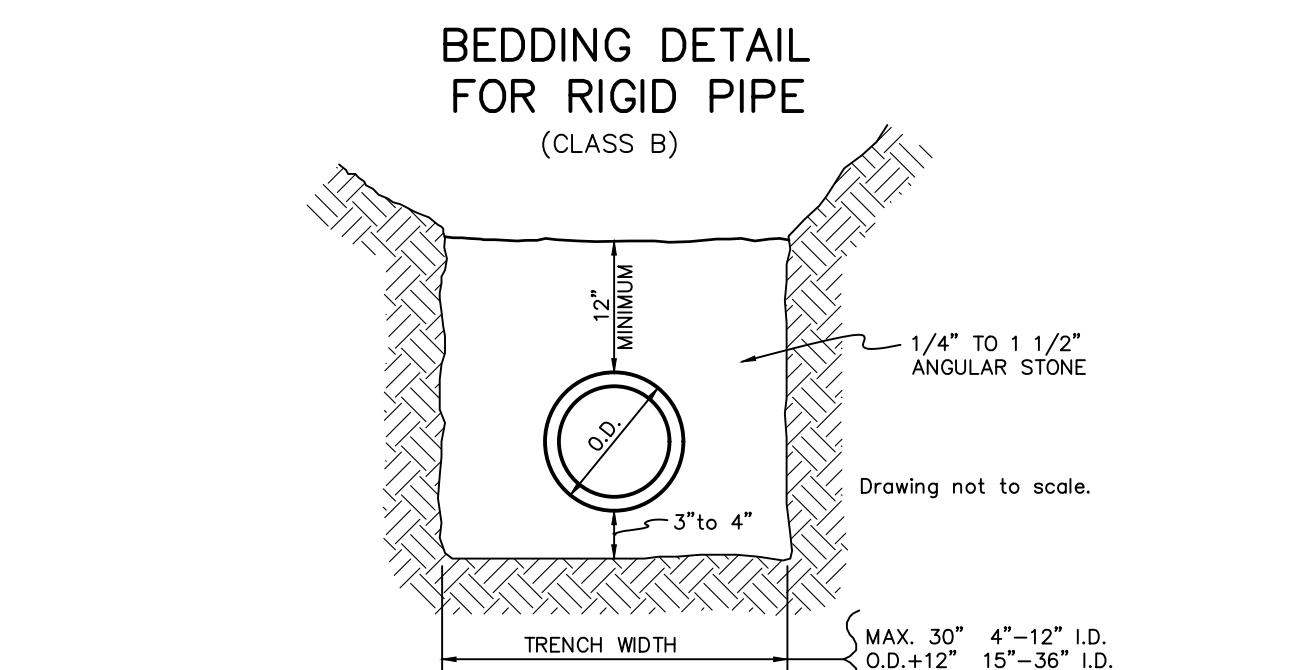
STANDARD MANHOLE ON 8" THROUGH 24" DIAMETER SEWERS



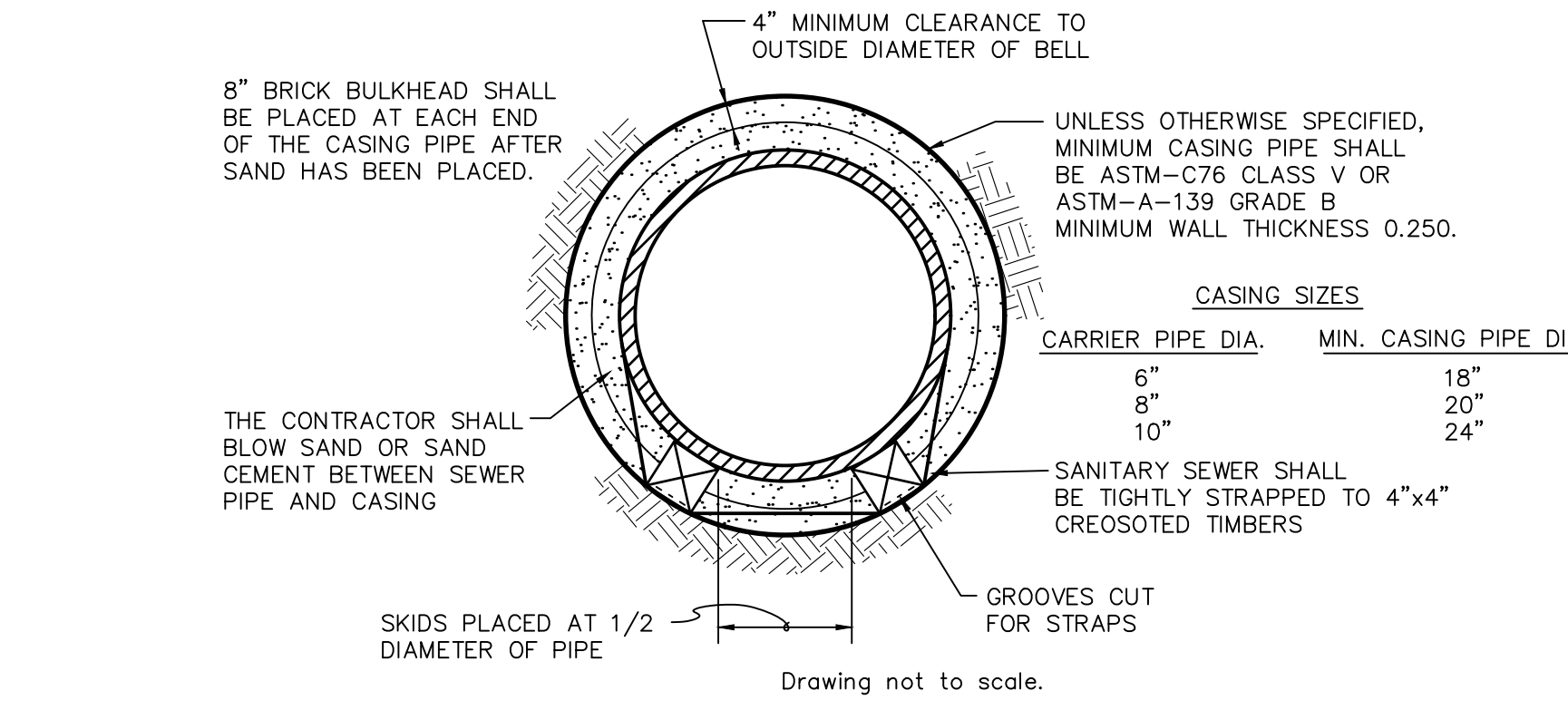
HOUSE/BUILDING LEAD DETAIL



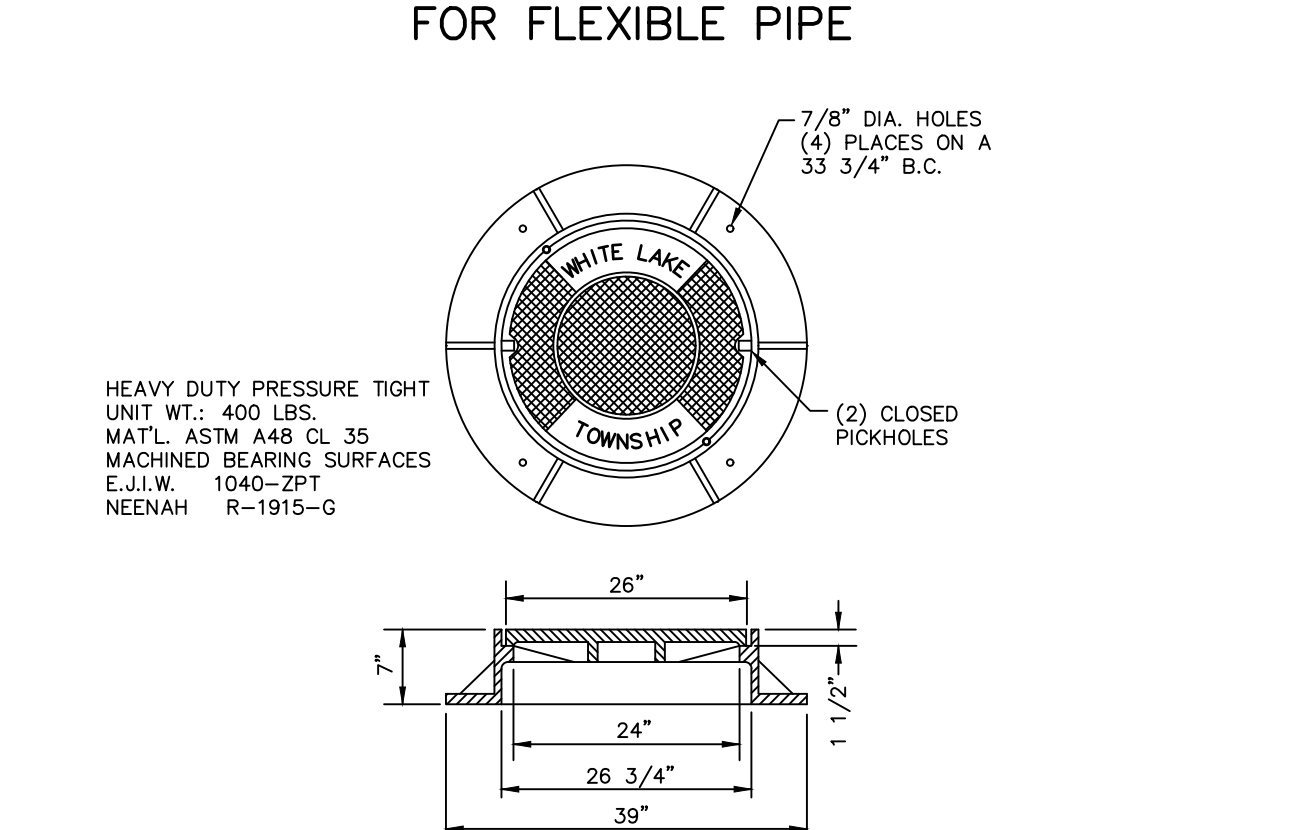
BEDDING DETAIL FOR RIGID PIPE (CLASS B)



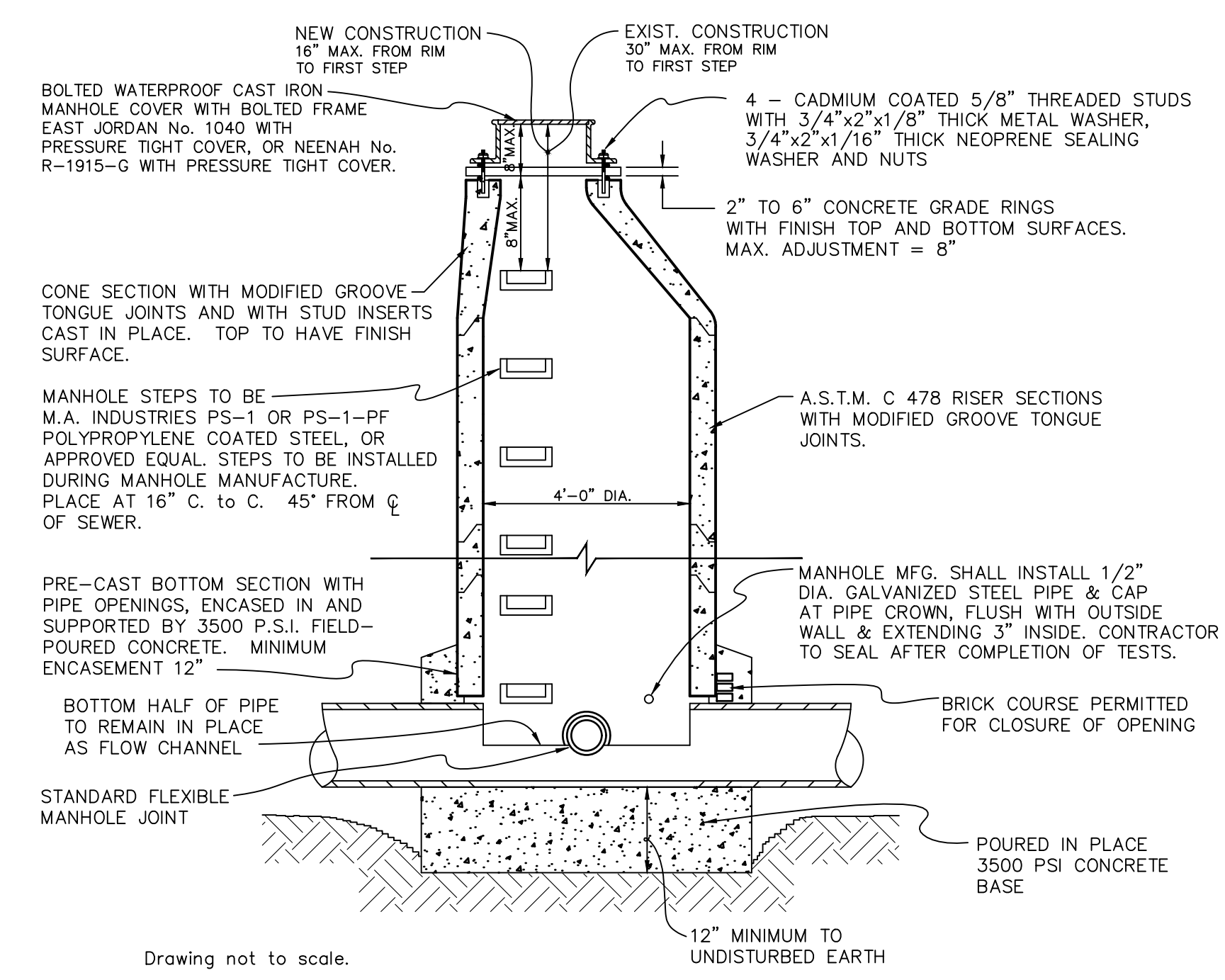
BEDDING DETAIL FOR FLEXIBLE PIPE



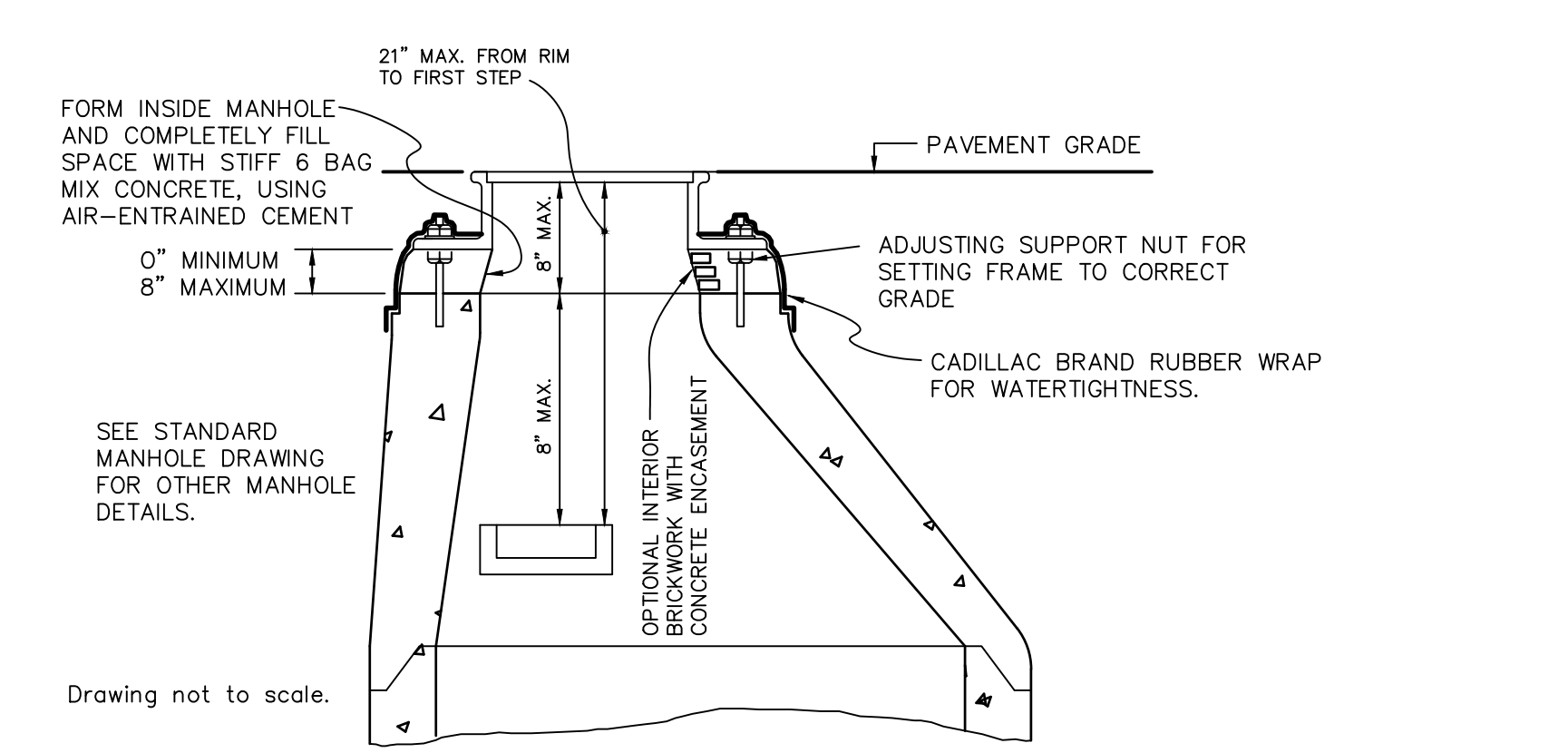
PIPE BARREL SUPPORT FOR SEWER



MANHOLE COVER & FRAME



SKETCH OF MINIMUM MANHOLE REQUIREMENTS ON MANHOLES CONSTRUCTED OVER EXISTING SEWERS



OPTIONAL CONSTRUCTION DETAILS

DRAWN: CAD  
DESIGN: OA  
CHECKED: --

SCALE: VERT. -  
HORZ. AS NOTED

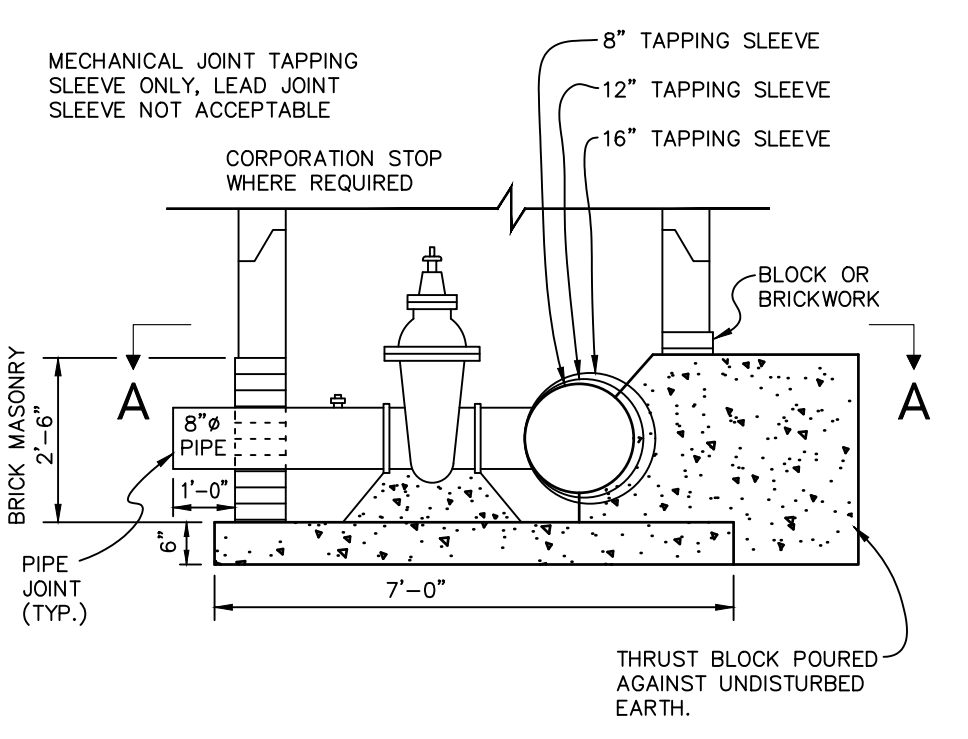
REVISIONS	MARK	ADDENDUM/CHANGE ORDER	DATE	MARK	ADDENDUM/CHANGE ORDER	DATE	MARK	ADDENDUM/CHANGE ORDER	DATE
		FIRST ISSUE	09/11/97		OCWRC COMMENTS	11/06/15			
		UPDATED TITLE BLOCK	04/30/13						
		UPDATED NOTES	02/17/15						

**Johnson & Anderson**  
 4494 Elizabeth Lake Road Waterford, Michigan 48328 tel (248) 681-7800 fax (248) 681-2660  
 1060 W. Norton Avenue, Suite 7 Muskegon, Michigan 49441 tel (231) 780-3100 fax (231) 780-3115  
 2291 Water Street, Suite 6 Port Huron, Michigan 48060 tel (810) 987-7820 fax (810) 987-7895

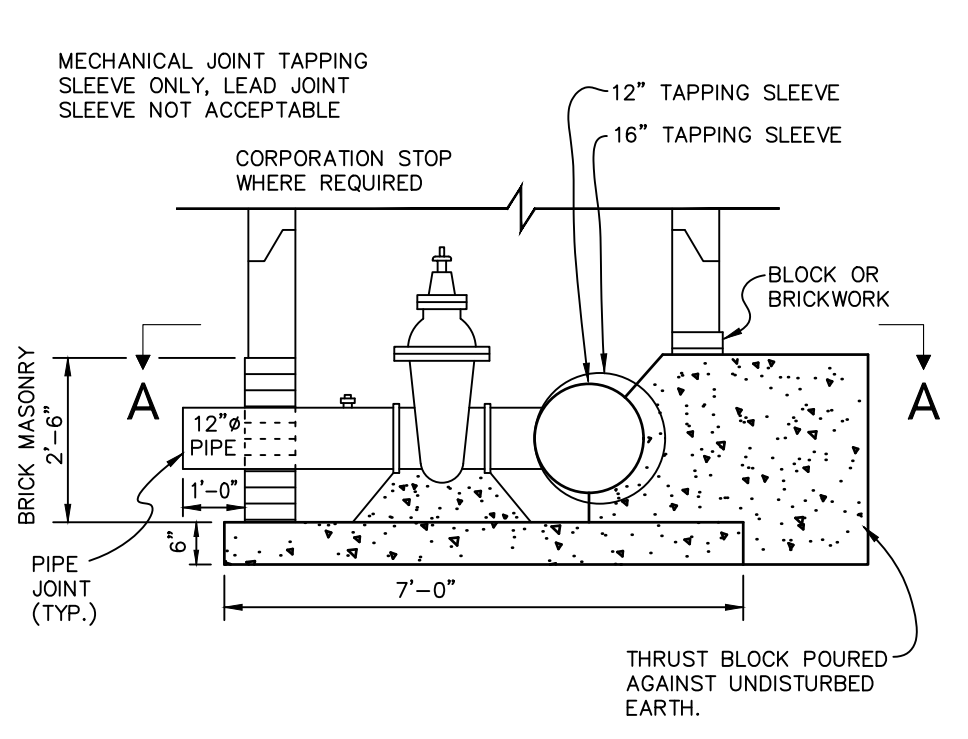
**White Lake Township**  
 7525 Highland Road (M-59)  
 White Lake, Michigan 48383  
 248-698-3300

**SANITARY SEWER STANDARD DETAILS**

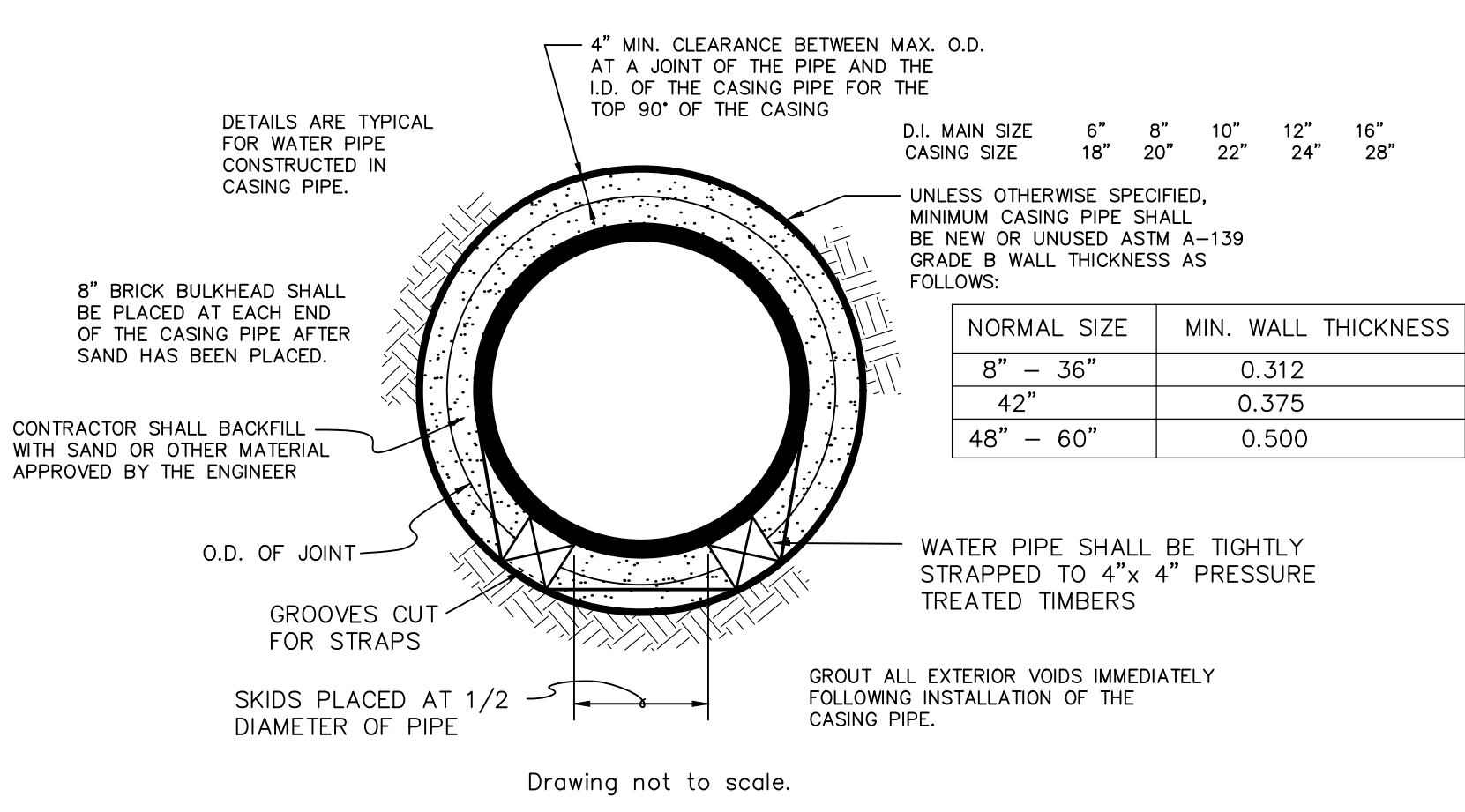
JOB NO. \_\_\_\_\_  
 DATE ISSUED 09/11/97  
 SHEET NO. \_\_\_\_\_



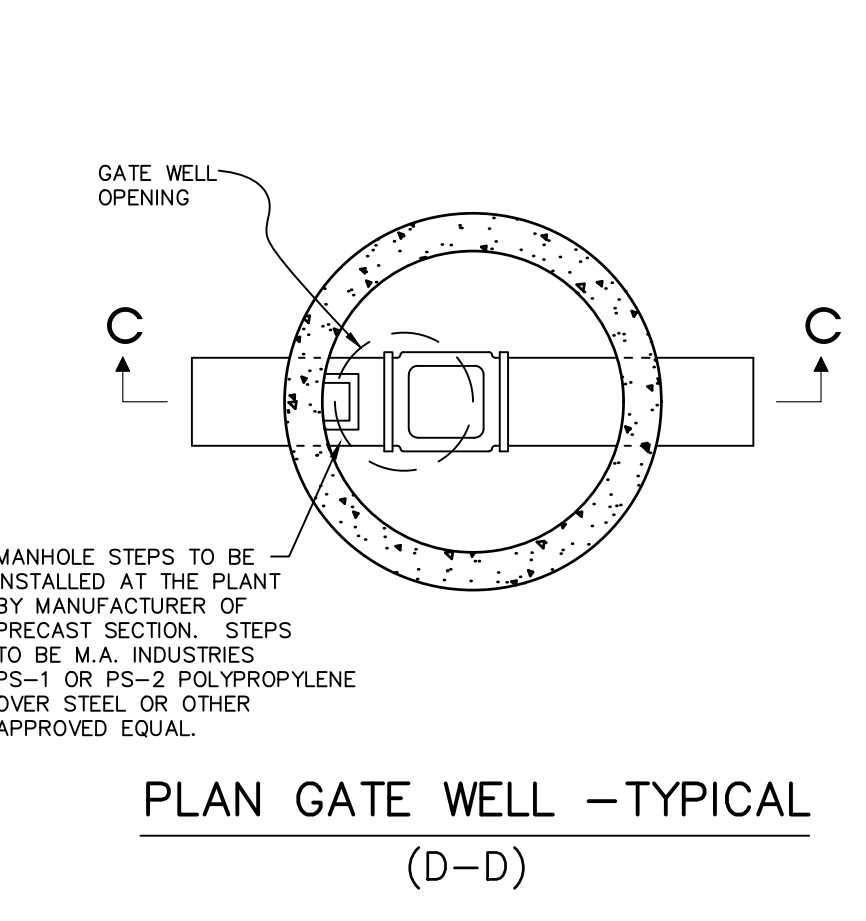
16" X 8", 12" X 8", 8" X 8" TAPPING SLEEVE, VALVE & WELL (B-B)



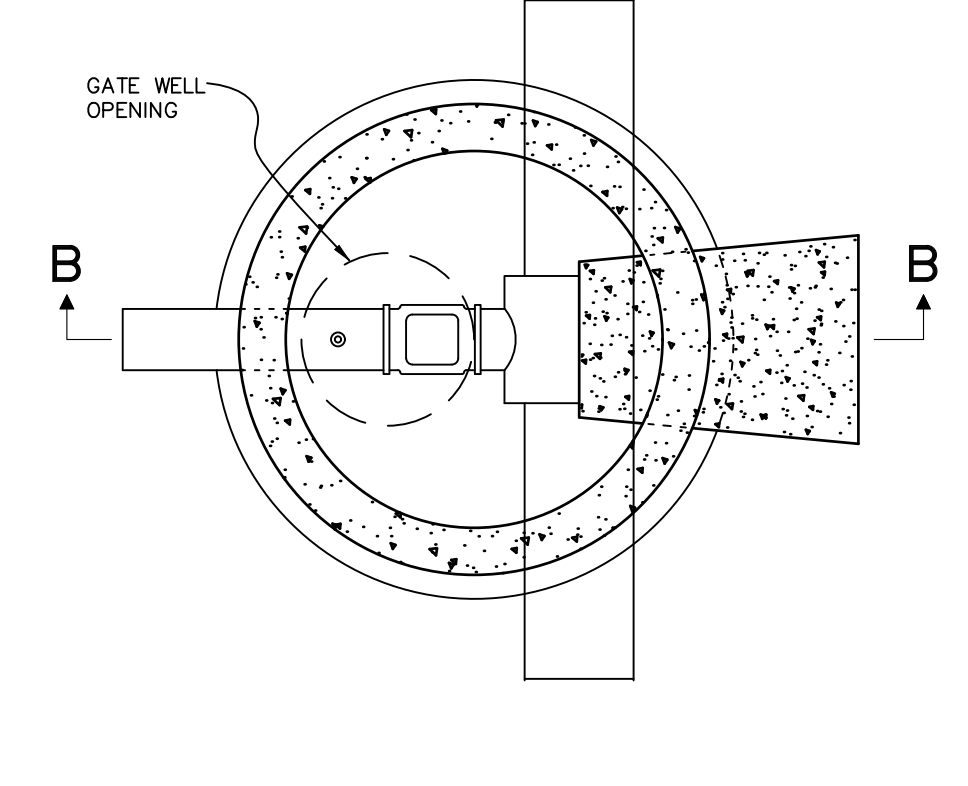
16" X 12", 12" X 12" TAPPING SLEEVE, VALVE & WELL (B-B)



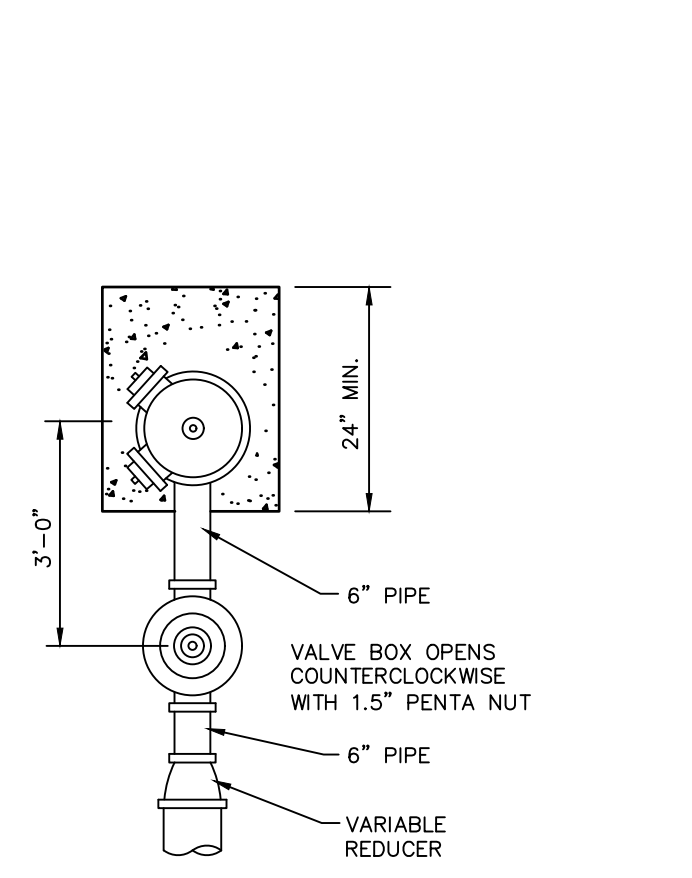
PIPE BARREL SUPPORT FOR WATER MAIN CONSTRUCTED IN CASING



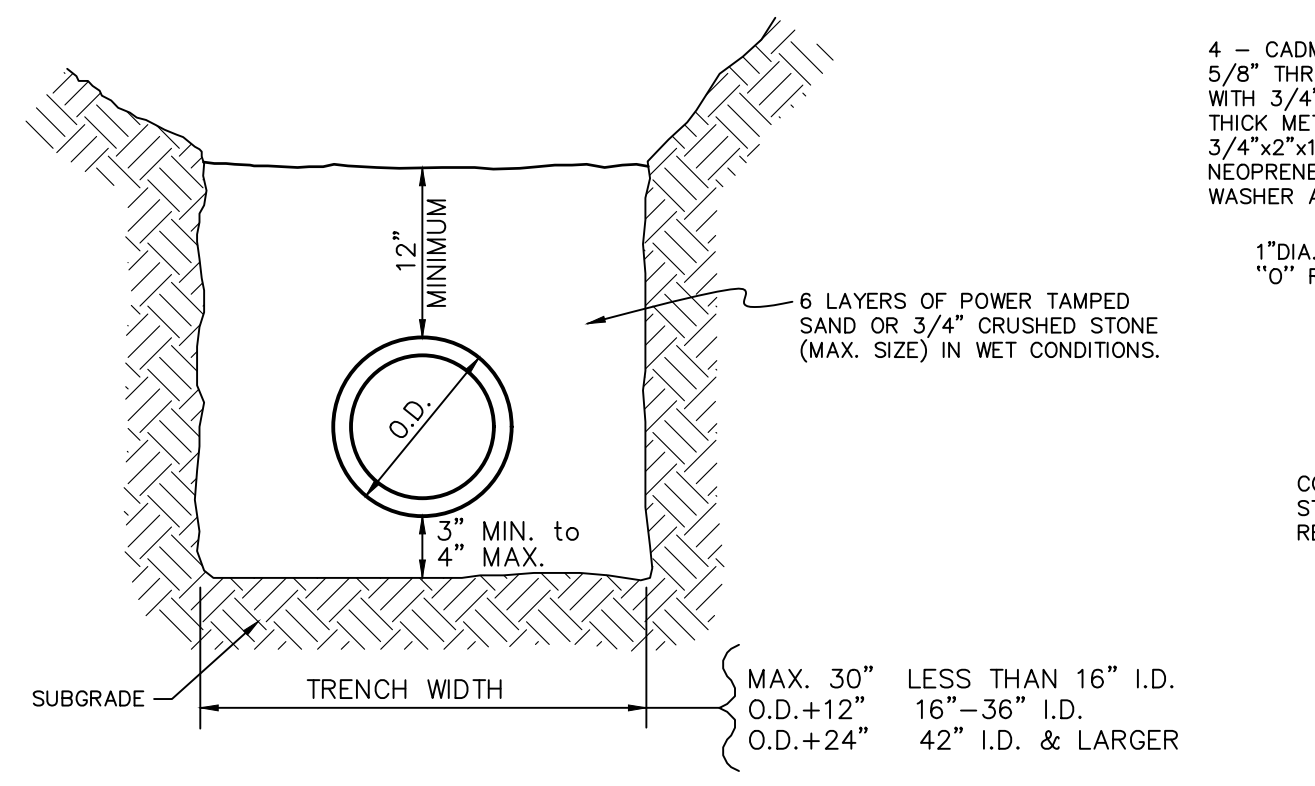
PLAN GATE WELL - TYPICAL (D-D)



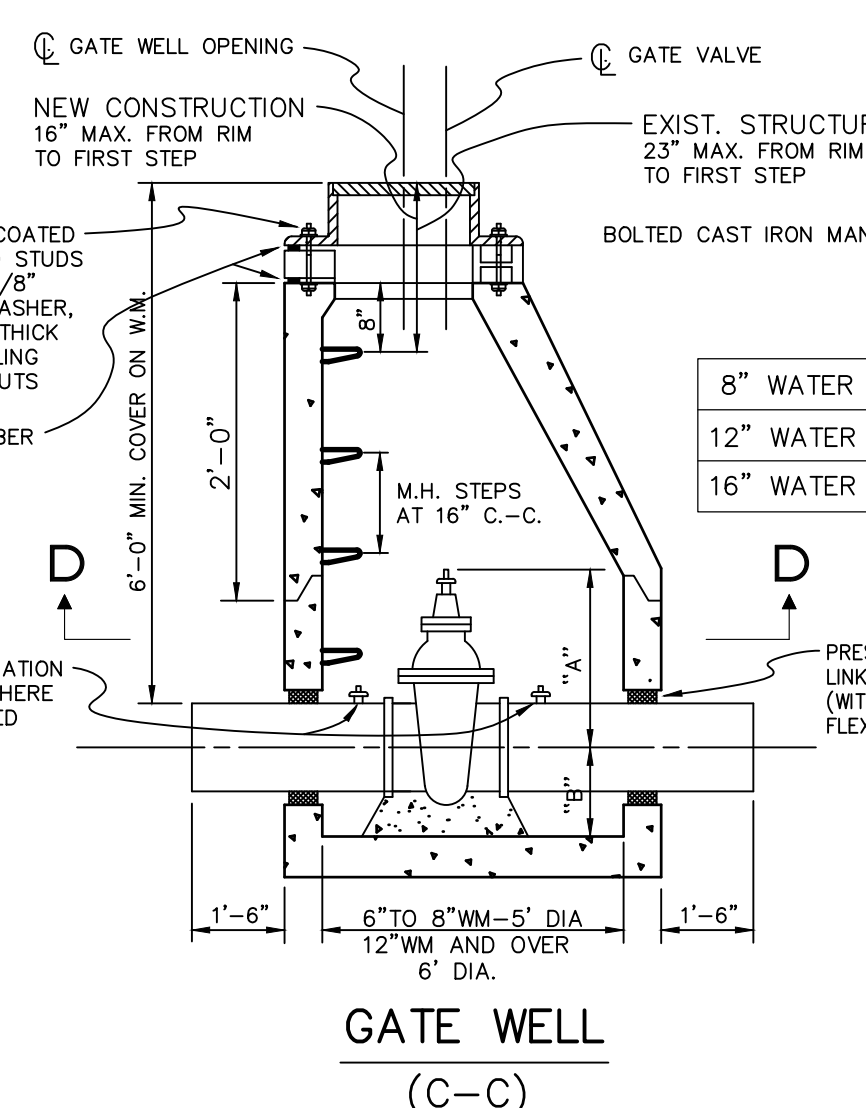
PLAN TAPPING SLEEVE, VALVE & WELL - TYPICAL (A-A)



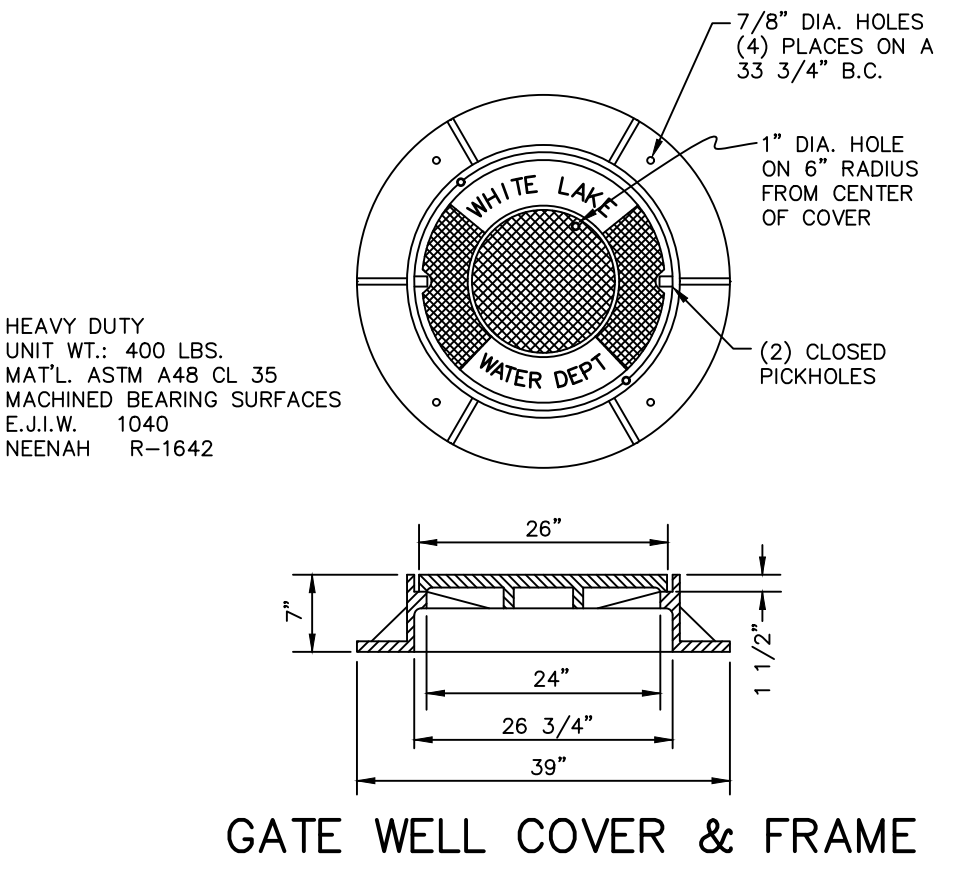
STANDARD BEDDING FOR WATER PIPE



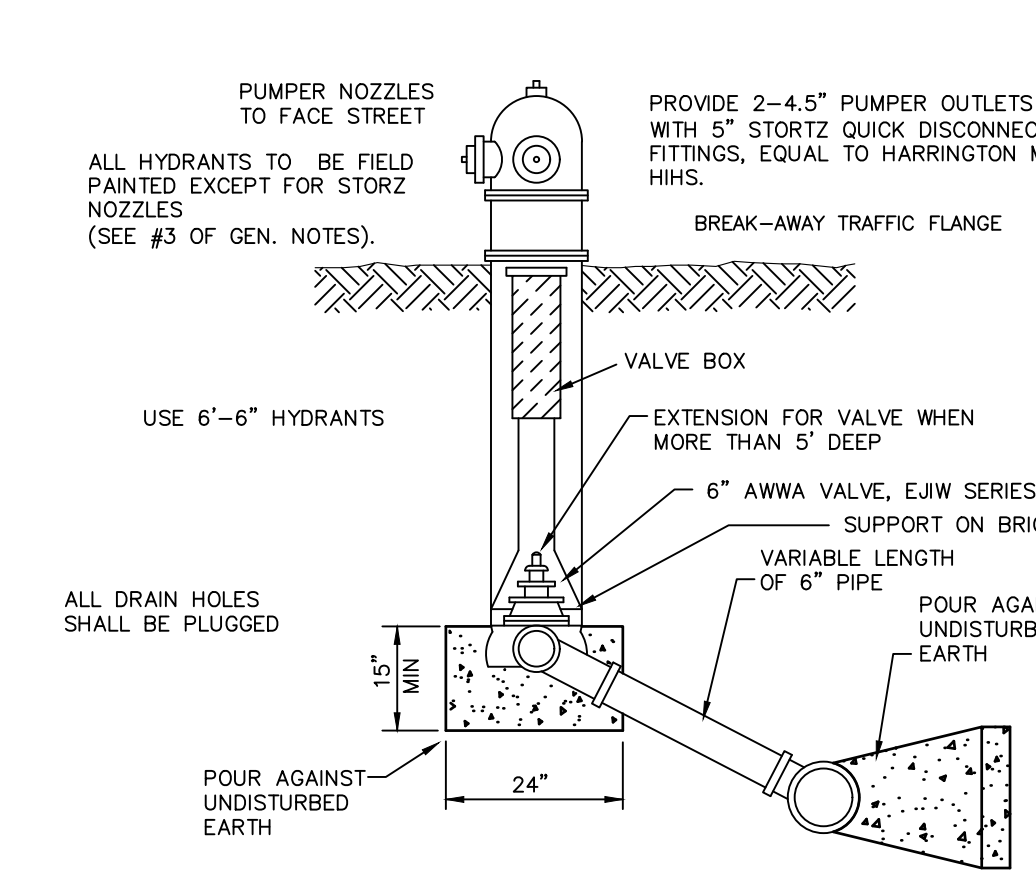
BACKFILL IN THE AREA OF STREETS, ALLEYS, SIDEWALKS, DRIVES & PARKING AREAS



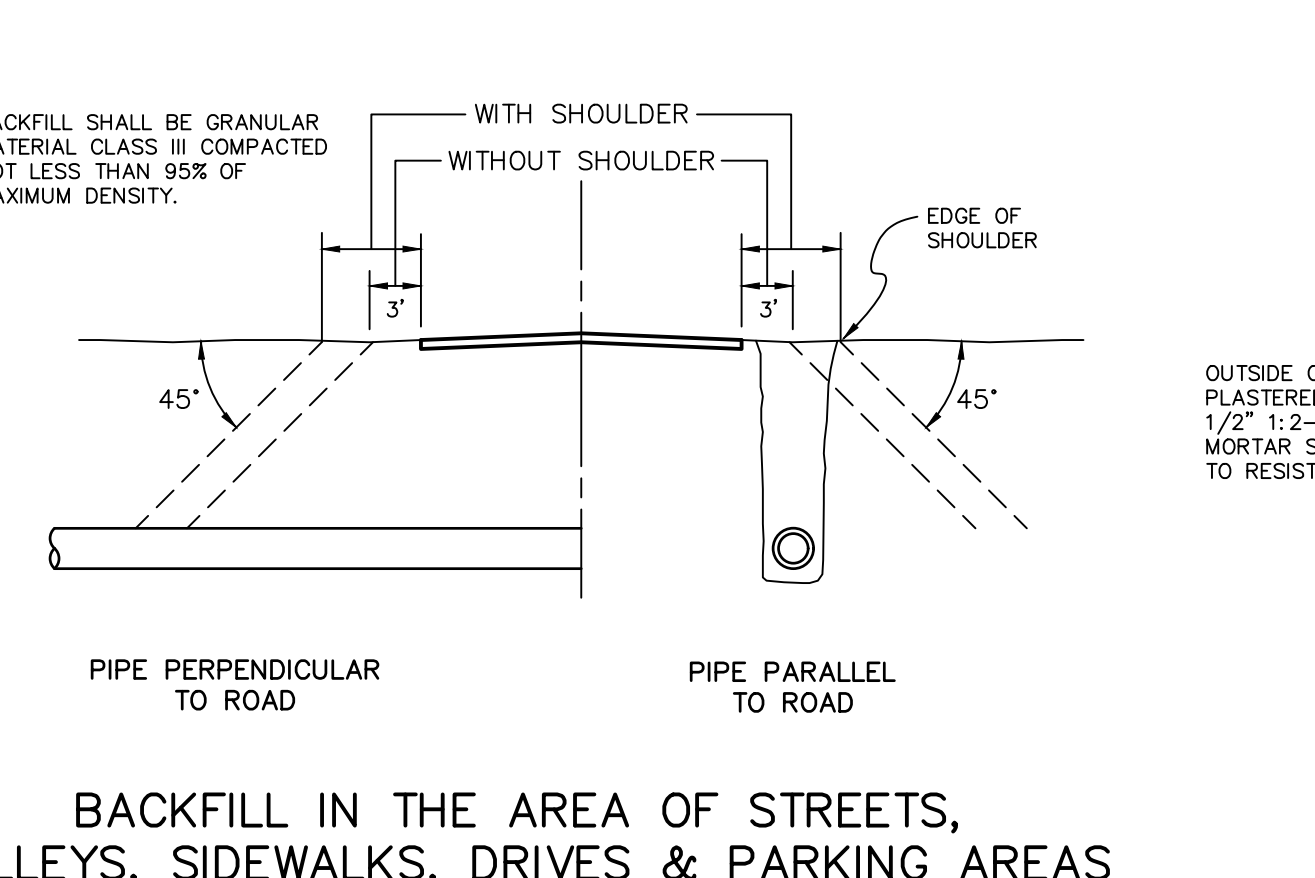
GATE WELL (C-C)



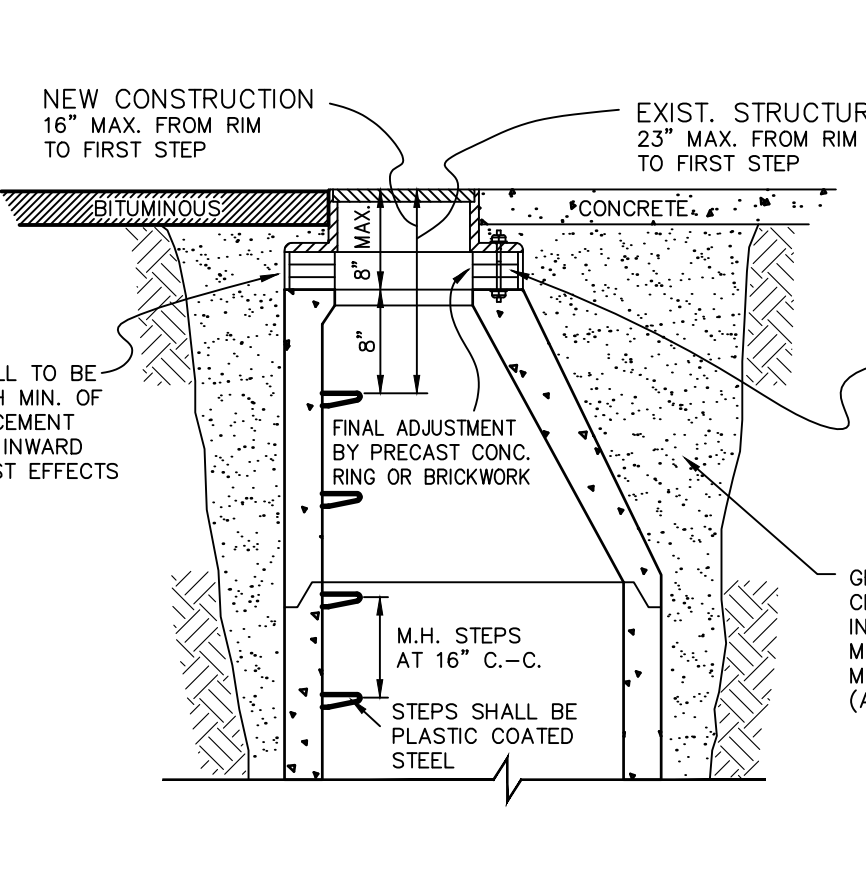
GATE WELL COVER & FRAME



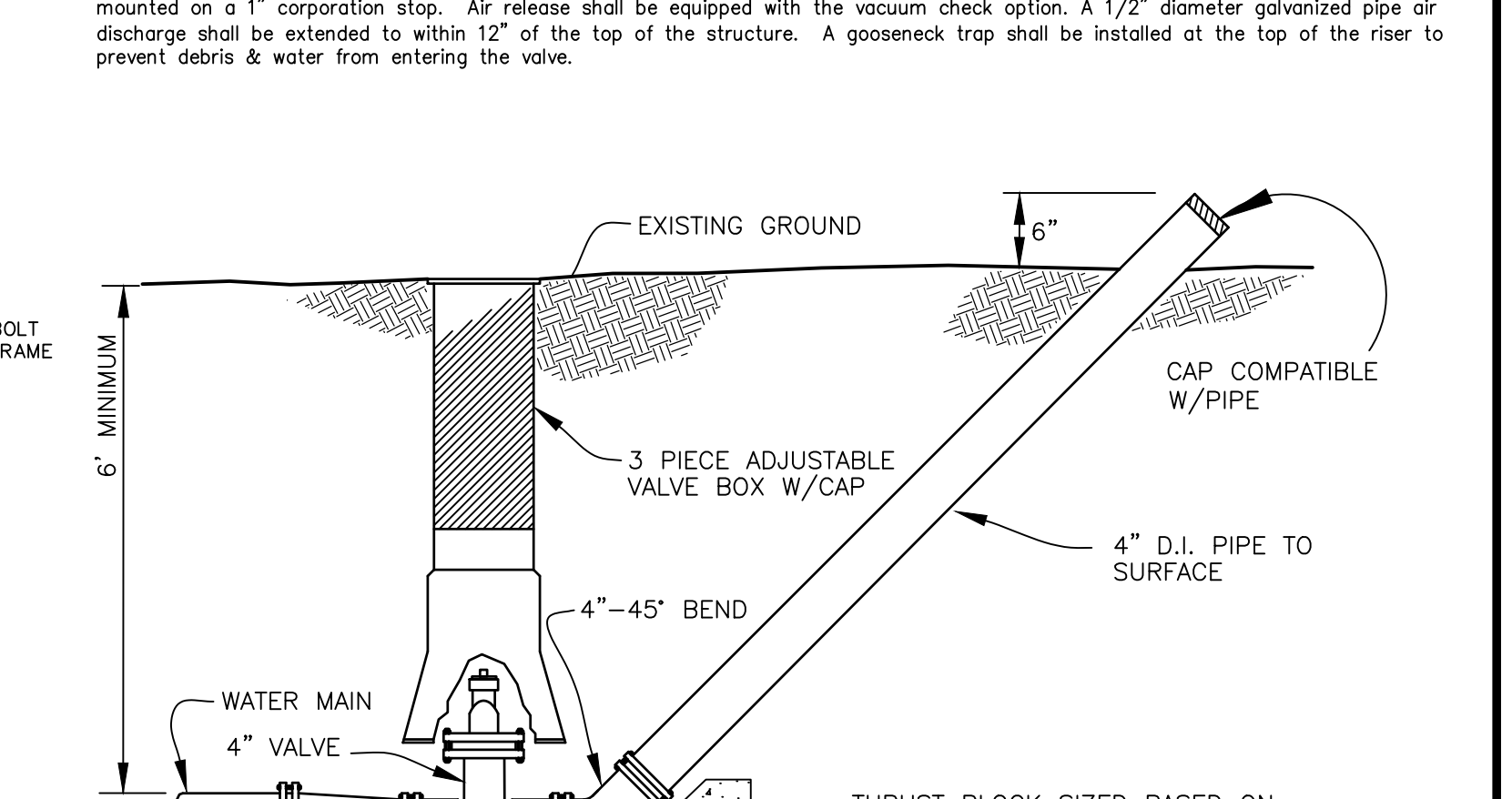
DETAIL OF HYDRANT SETTINGS



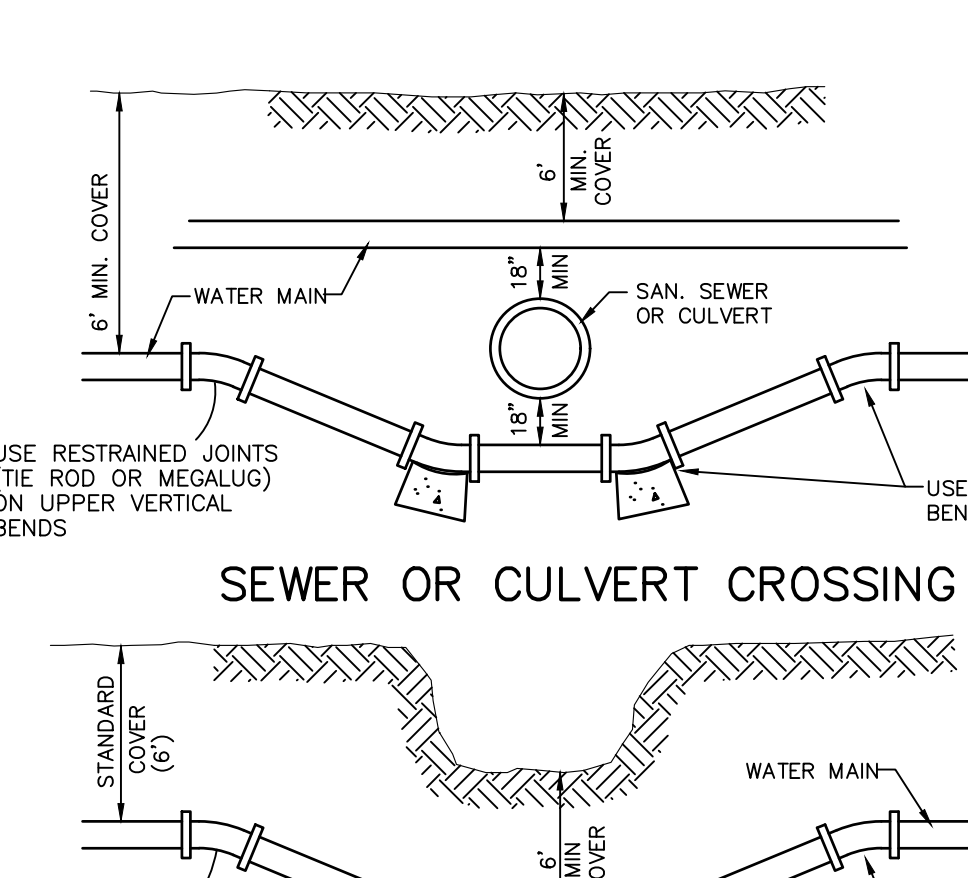
THRUST BLOCK DETAILS



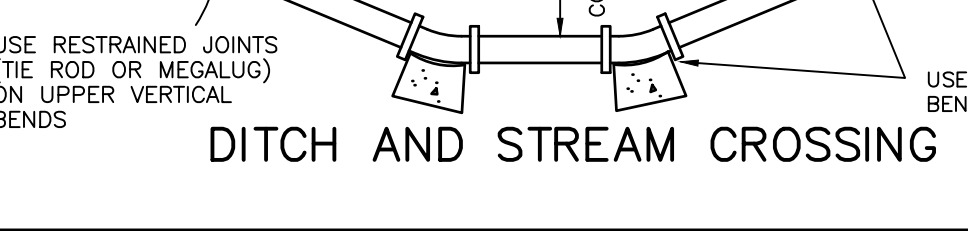
GATE WELL TOPS WITHIN PAVEMENT AREAS



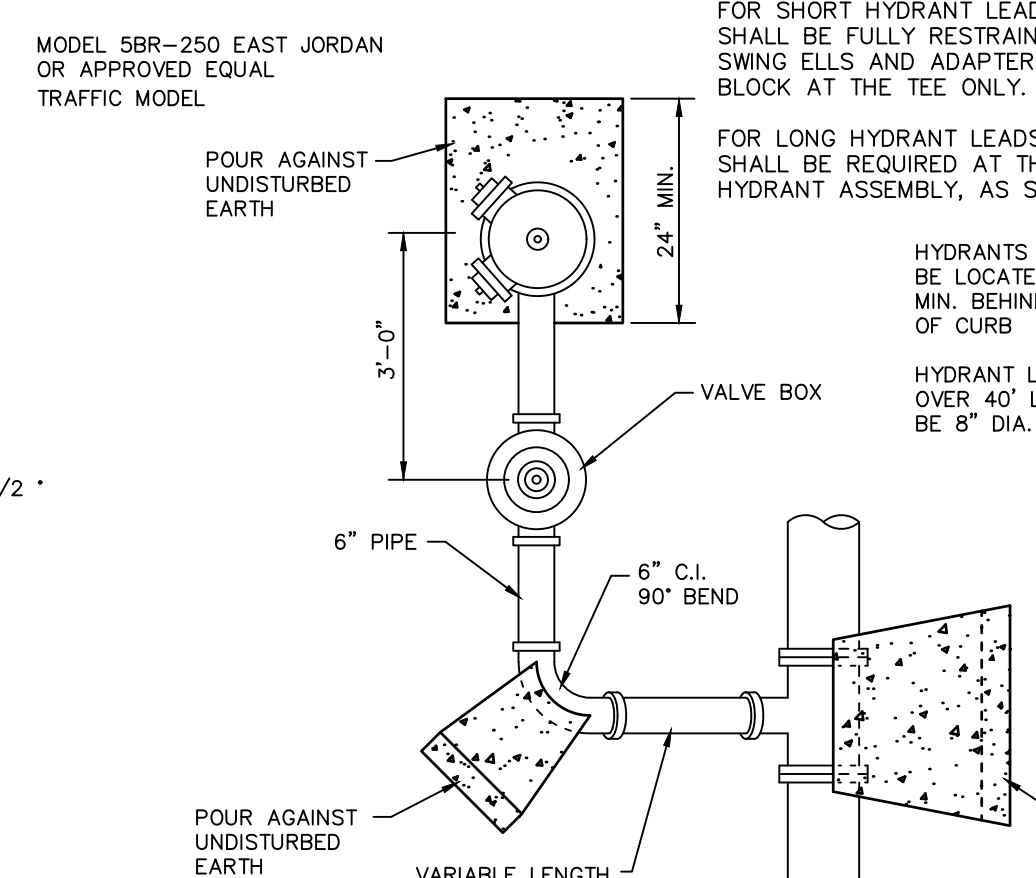
TEMPORARY BLOWOFF ASS'Y



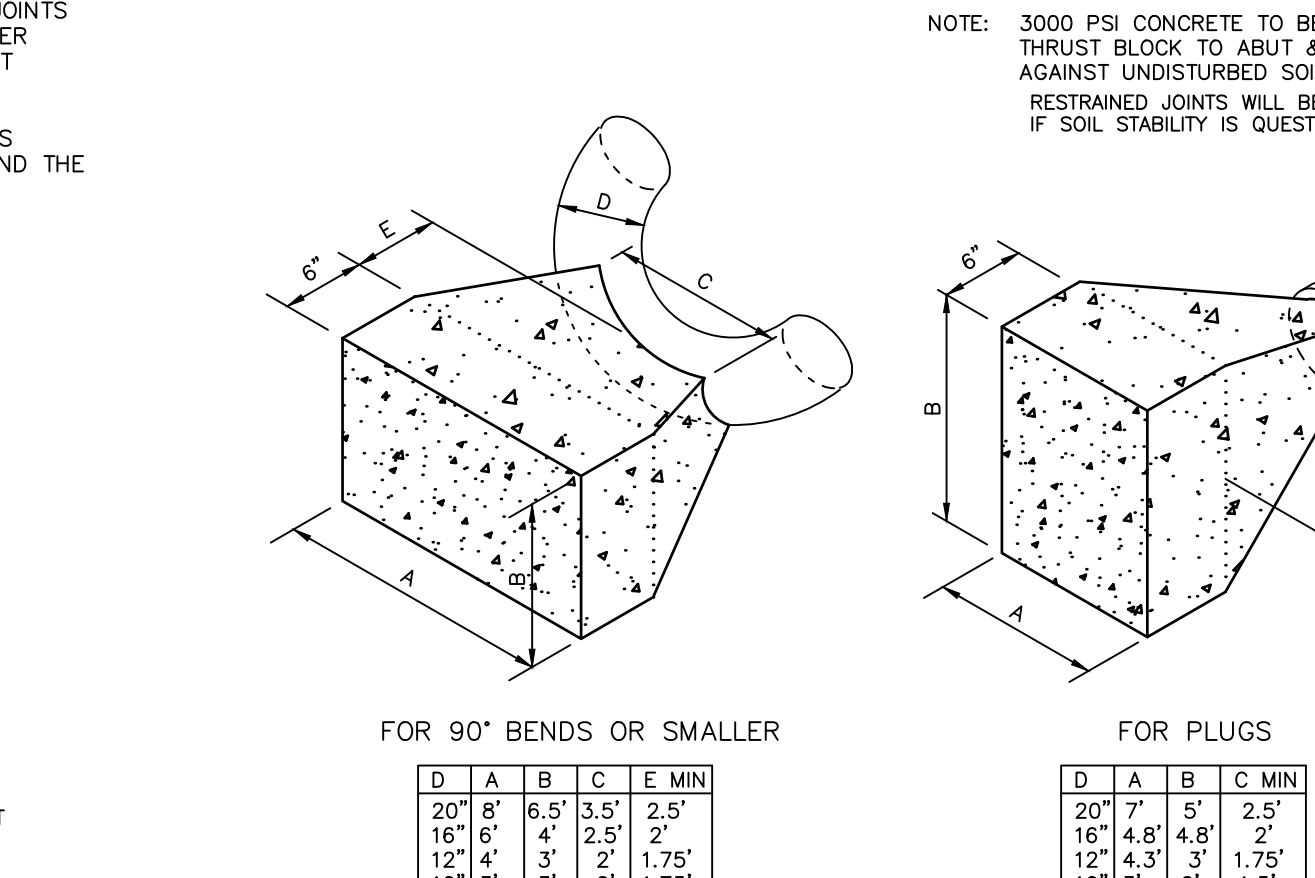
SEWER OR CULVERT CROSSING



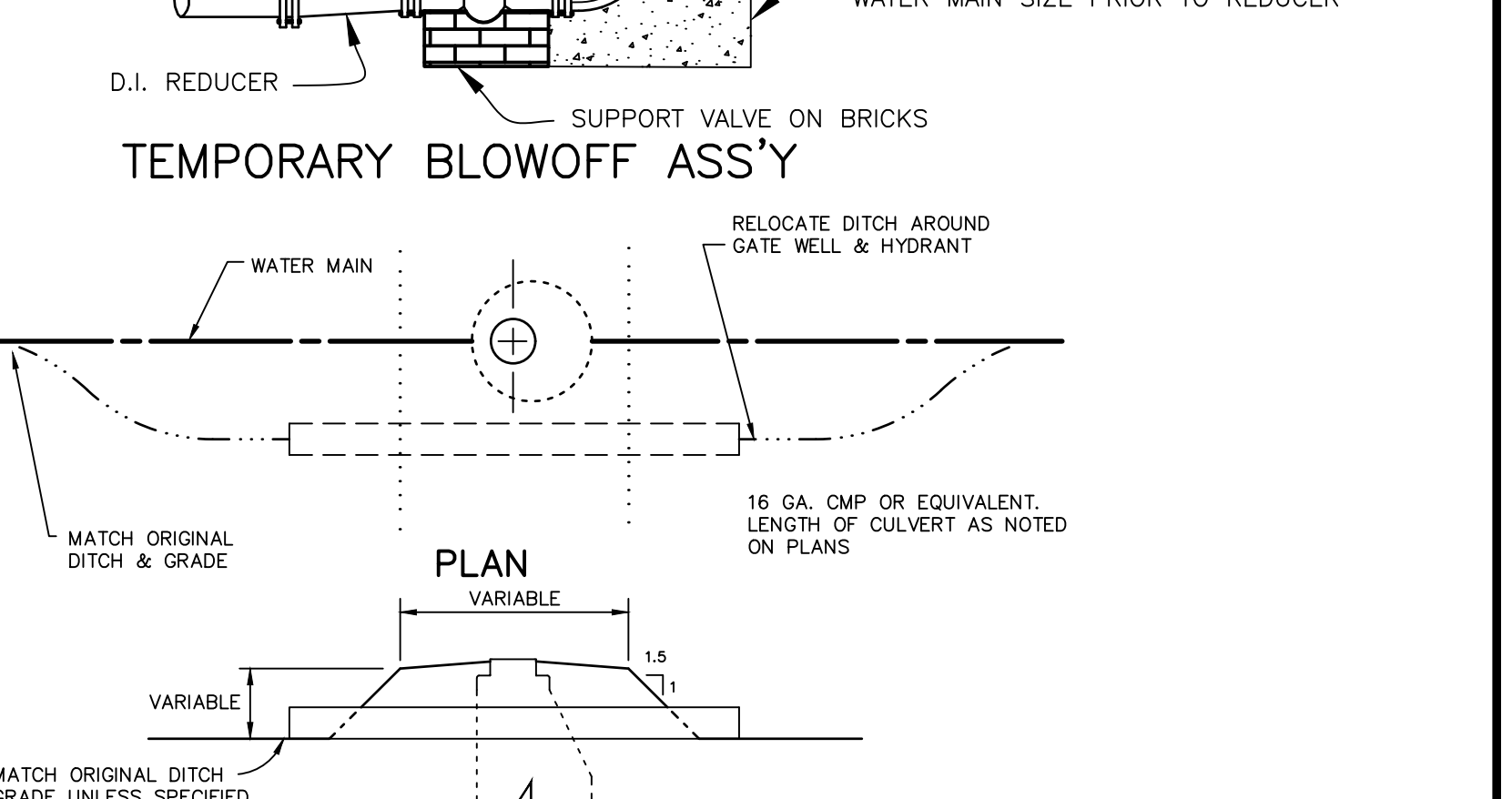
DITCH AND STREAM CROSSING



DETAIL OF HYDRANT SETTINGS



THRUST BLOCK DETAILS



DITCH ENCLOSURE AT GATE WELL

- WATER MAIN NOTES**
- All construction procedures and materials used on this project shall conform to White Lake Township current standards and specifications.
  - All hydrants shall be East Jordan Iron Works 5BR-250 traffic model. Self-draining hydrants shall not be used. Valve shall have 1-1/2" pentagon nut and shall open counter-clockwise. Provide two 4.5" Storz quick connect nozzles (Harrington Integral Hydrant Storz, Model HHS) as manufactured by Harrington, Inc. of Erie, PA.
  - All hydrants shall be field painted with a heavy coat of bright safety red polyurethane or alkyd glass enamel, except for the Storz fittings and caps, which shall be left unpainted.
  - Johnson and Anderson, Inc. field personnel will affix to the fixed collar of each Storz connection 1" wide 3M Scotch reflective tape, color coded per NFPA 291 guidelines flow capacity.
  - All water mains shall be ductile iron pipe Class 54, cement lined with push on joints. Mechanical joints allowed only for tapping sleeves, hydrants & hydrant valves. Only Cor-Blue bolts shall be used for assembling mechanical joints. All bands, tees, valves and hydrant tees shall have a poured concrete thrust block as detailed on this sheet. Joints which have thrust blocks bearing on soil of questionable stability shall be fully restrained utilizing Tyler swivel ells and adapters or a system approved by the Township Engineer. HDPE pipe for directional boring, if approved by the Township Engineer, shall meet all of the requirements of the MDEQ and shall be DR9 (200 psi), and shall have two #8 tracer wires, terminated in the nearest gate well at the highest step.
  - Tapping sleeve shall be mechanical joint or approved equal. Ductile iron or Stainless steel are allowed.
  - Specifications shall include direction of operation of all valves. All valves shall be counter clockwise open.
  - All necessary easements shall be provided in the name of White Lake Township before acceptance of the water distribution system.
  - The design engineer shall furnish White Lake Township with one reproducible set of "As-Built" water main plans or an AutoCAD file upon completion of the job.
  - All required cross-connection devices shall be installed as required by the local plumbing inspector and in accordance with the standards of the Michigan Department of Public Health.
  - Gate well frame and cover shall be as follows: East Jordan heavy manhole cover, base flange type #1040 or Neenah Foundry heavy duty #1642 Manhole frame, solid lid cover shall be non-racking and marked "White Lake Water Department"
  - Gate valves shall be AWWA approved and of a double disc or resilient wedge design with push on joints, 16" gate valves may be mechanical joint provided Cor-Blue bolts are used. All gate valves with operating nuts greater than 5" below ground surface shall be provided with an extension stem. The length of the extension shall be such that it will be within 5" of the ground surface when an extension is used it shall be held in place by an extension stem guide suitably fastened to the wall of the gate well.
  - 1" corporation stops are to be placed on the main at each side of each main line gate valve and at such other locations as may be required by the engineer.
  - All pipe and fittings shall be subjected to a hydro-static pressure test of 150 PSI for a 2 hour duration; Township Engineer must be present. Maximum segment 2000 feet except that longer segments may be tested with allowable leakage based on 2000 feet.
  - 2 consecutive safe bacteria samples shall be taken from the water system approx. 24 hours apart at points established by the Township Engineer. Samples shall be taken by the Township Engineer.
  - Filling, flushing and sampling of water main can only be performed with a "Jumper" Line, the jumper shall be equipped with an approved RPZ type of backflow preventer.
  - Adjustments on gate wells shall be limited to 23" maximum from top of rim to first step in accordance with MIOSHA Rule 341.
  - All new water service lines shall have a minimum nominal size of 1". Services from 1" to 2" may be type K copper tubing or plastic DR-9 (200 PSI rated) meeting ASTM D2237-03 (Standard Specification for Polyethylene (PE) plastic tubing). ASTM Designation and pressure rating shall be stamped on the pipe by the manufacturer. Plastic pipe shall also meet AWWA C-301 Specifications. All sizes shall relate to the copper tubing outside diameter standard size (CTS). Copper pipe joints shall be flared. Fittings shall adapt to the plastic pipe with compression to iron pipe thread adapter. Plastic pipes shall be either compression style with a steel insert or may be fusion welded in the larger sizes.
- Plastic water service pipes shall be traced with two #10 copper tracer wires or two #12 copper coated steel or stainless steel wires insulated with a minimum of 30 mils of polyethylene insulation. The tracer wires shall be terminated to supply line so as to be locatable at the building and the curb box without digging.
- Water services sizes 3" and greater shall be Class 54 cement lined ductile iron with push on joints or HDPE DR-9 (200 PSI rated) with fusion welded joints and fittings, DIPS (Ductile Iron Pipe Size).
- A stop box shall be installed at the property or easement line and shall be equivalent to an A.Y. McDonald Mfg. 6100 flare regular pattern ball valve. The curb box shall have a 1" riser pipe with an Erie 2-hole pattern cover equivalent to A.Y. McDonald Mfg. 5601L. Stop box shall be protected with a 2'x4' painted blue extending 4 feet above ground.
- Standard pipe cover shall be 6'-0".
  - Air release manholes shall consist of a standard 5' diameter gate well style structure with a ValMatic Model 25C air release valve mounted on a 1" corporation stop. Air release shall be equipped with the vacuum check option. A 1/2" diameter galvanized pipe air discharge shall be extended to within 12" of the top of the structure. A goose-neck trap shall be installed at the top of the riser to prevent debris & water from entering the valve.

DRAWN: CAD DESIGN: OA CHECKED: - SCALE: VERT. - HORZ. AS NOTED

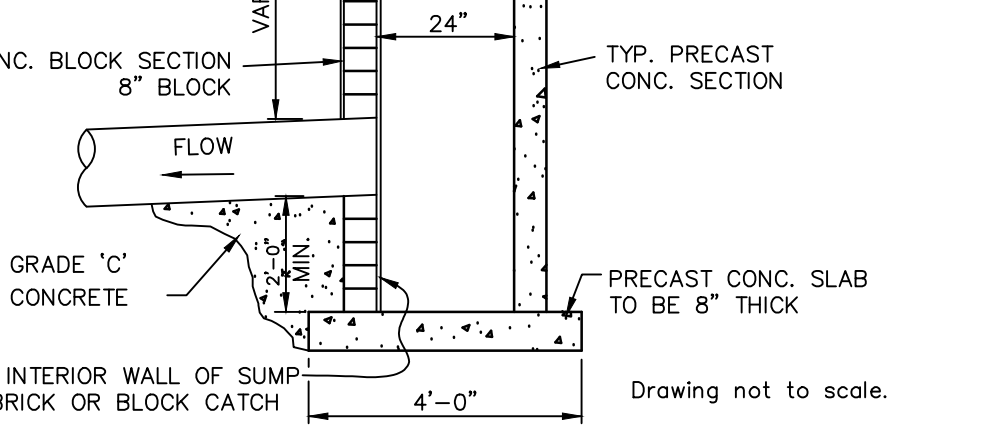
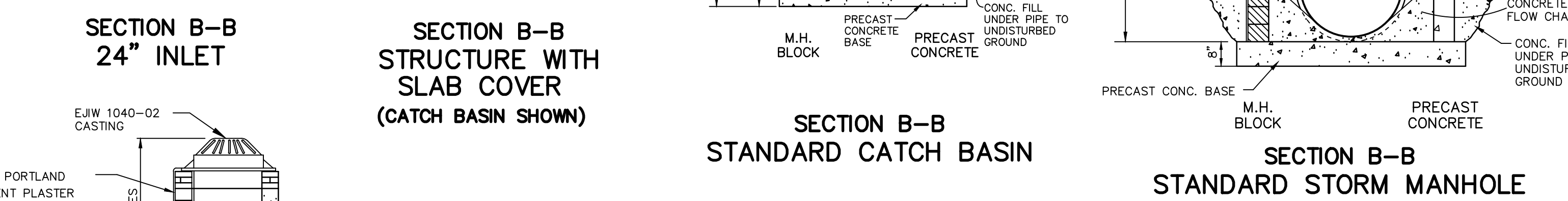
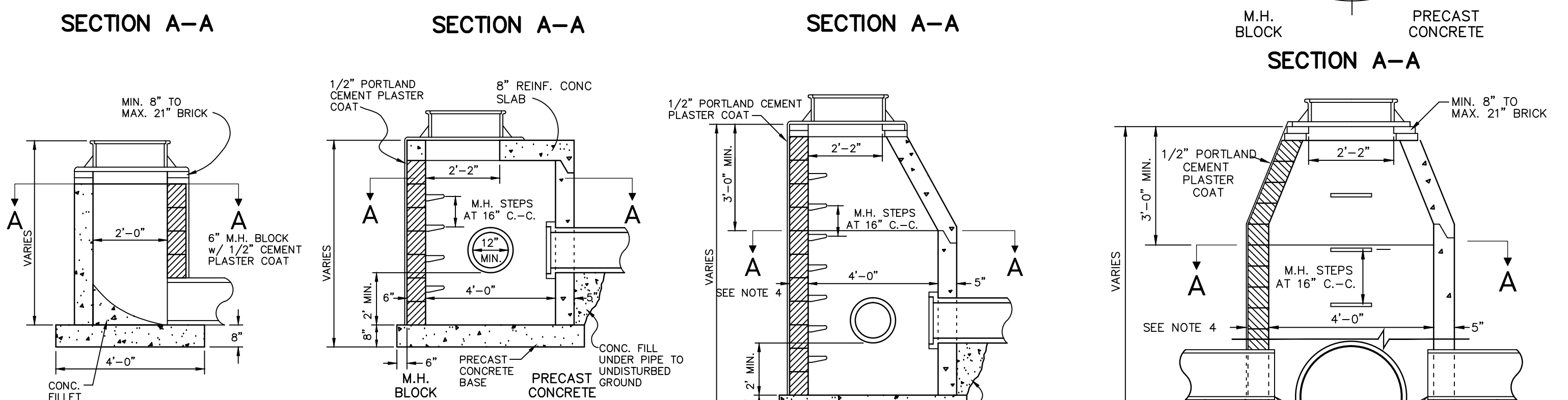
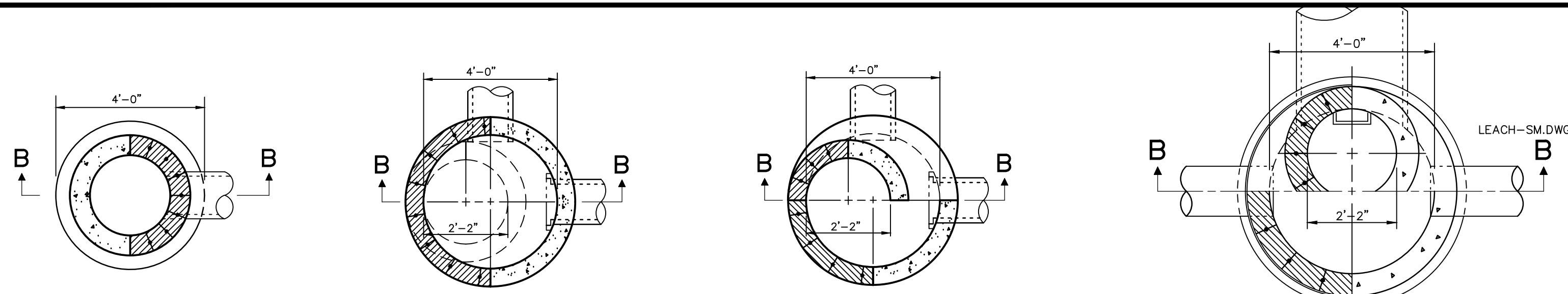
REVISIONS	MARK	ADDENDUM/CHANGE ORDER	DATE	MARK	ADDENDUM/CHANGE ORDER	DATE	MARK	ADDENDUM/CHANGE ORDER	DATE
	GENERAL	REVISION TO CAD	12/29/95	GW & NUT SIZE	07/23/98	CLARIFY HYD. SPEC	02/07/01	REV. HYD. THRUST, AIR REL.	03/29/04
	ADD NOTE	17	11/04/97	PIPE COVER & FLANGE TAPE	05/12/99	5-BR HYD, WS STAKE	02/27/02	HDPE, HYD, VALVES	07/18/05
	REVISE	HYD. & THRUSTING	05/18/98	ADD BLOWOFF	07/06/99	ADD NOTE 19	07/23/03	UPDATED TITLE BLOCK	04/30/13

**Johnson & Anderson**  
 4494 Elizabeth Lake Road Waterford, Michigan 48328  
 1060 W. Norton Avenue, Suite 7 Muskegon, Michigan 49441  
 2291 Water Street, Suite 6 Port Huron, Michigan 48060  
 tel (248) 881-7800 fax (248) 881-2680 tel (231) 780-3100 fax (231) 780-3115 tel (810) 987-7820 fax (810) 987-7895

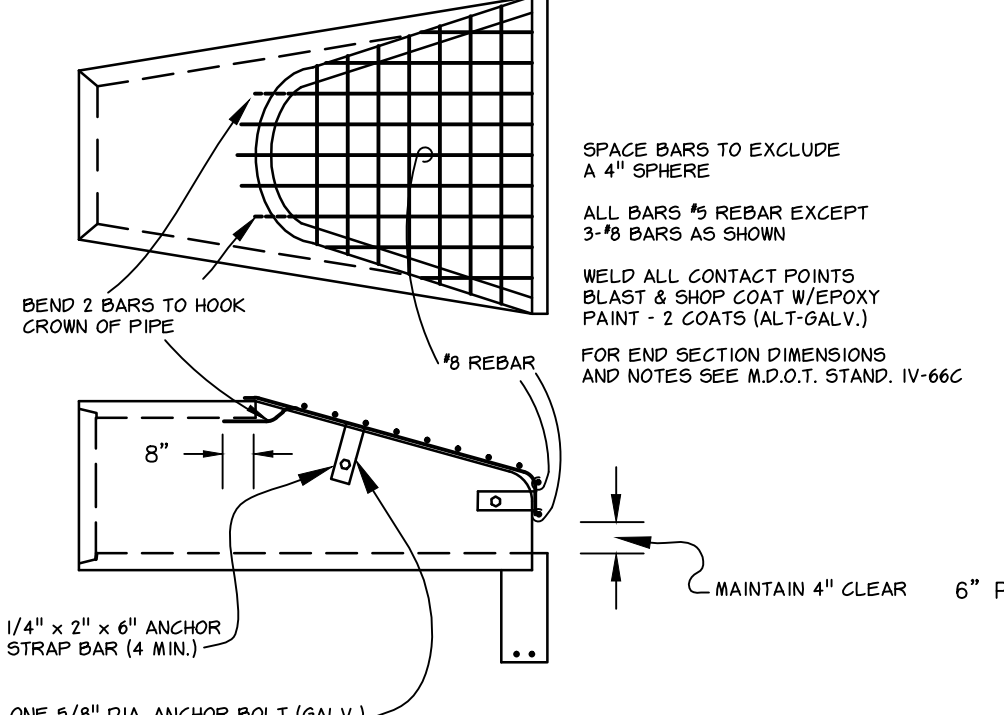
**White Lake Township**  
 7525 Highland Road (M-59)  
 White Lake, Michigan 48383  
 248-698-3300

**WATER MAIN STANDARD DETAILS**

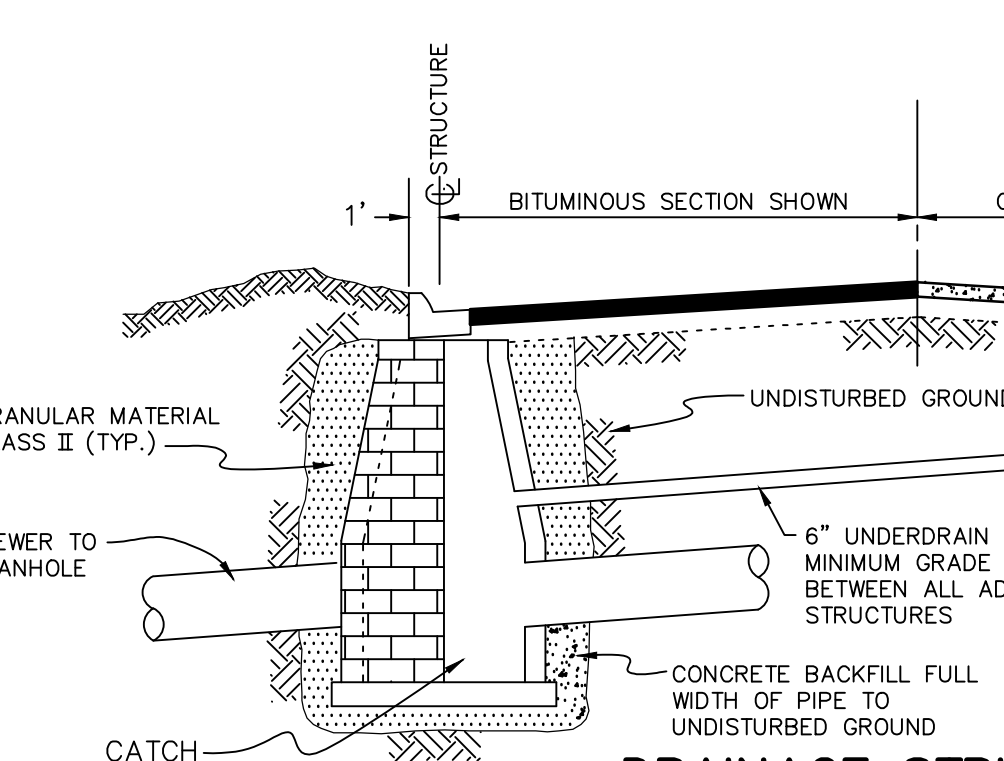
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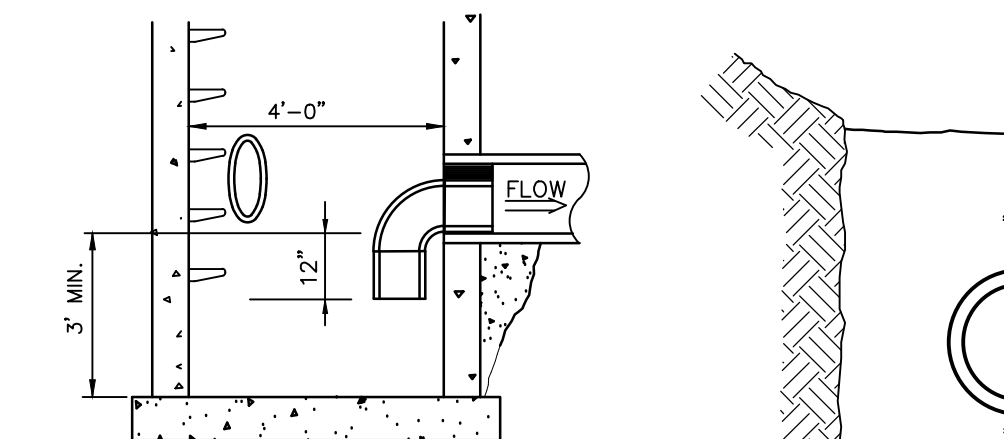
STANDARD REAR YARD CATCH BASIN



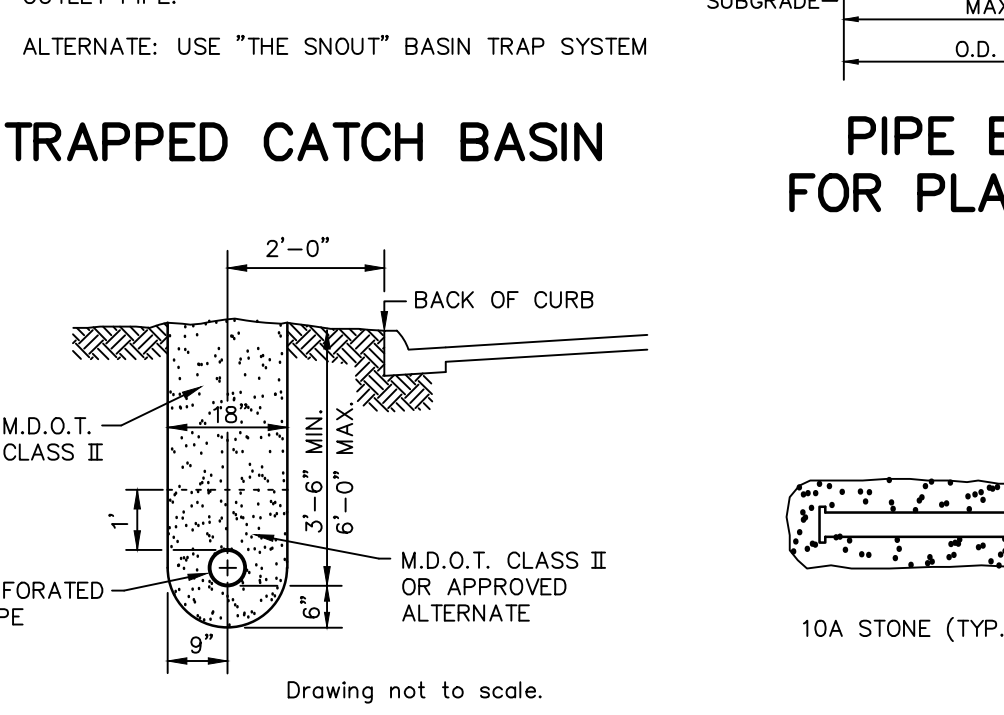
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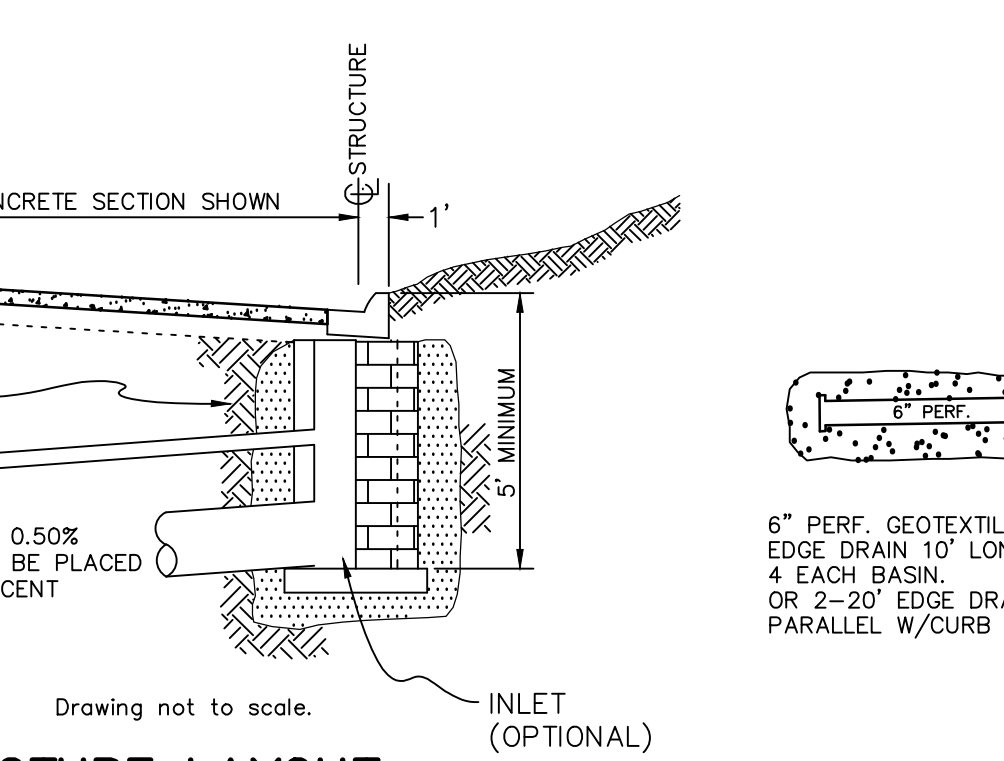
BAR SCREEN DETAIL



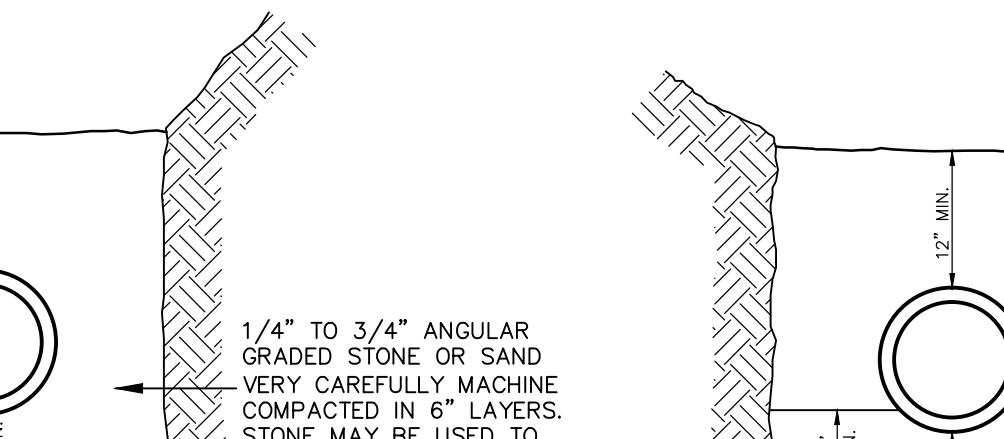
EDGE DRAIN DETAIL



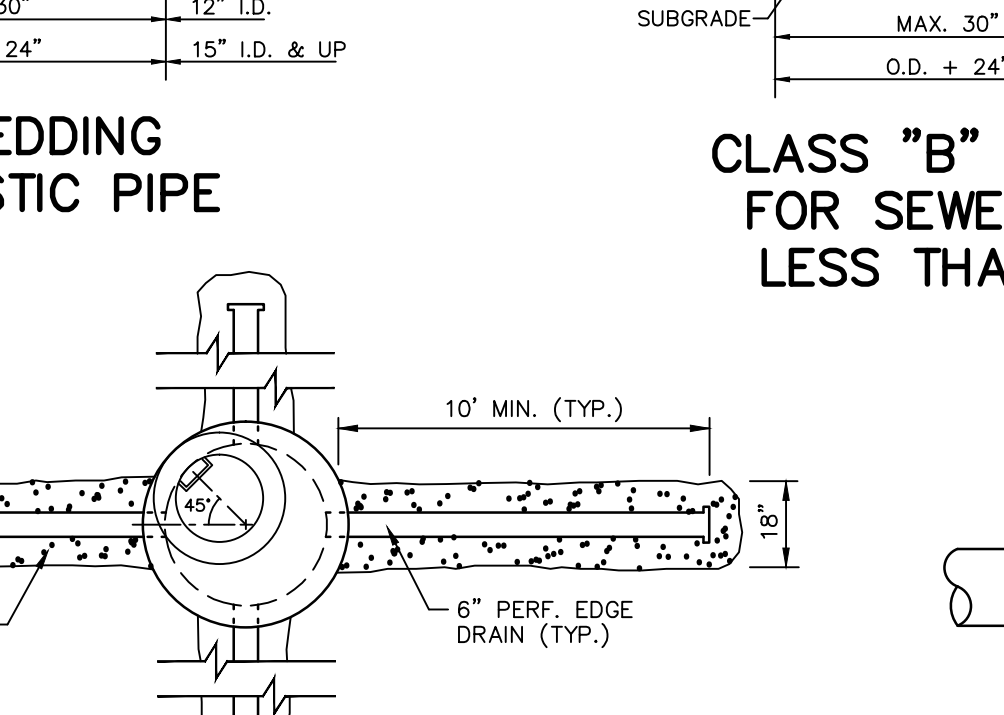
PIPE BEDDING FOR PLASTIC PIPE



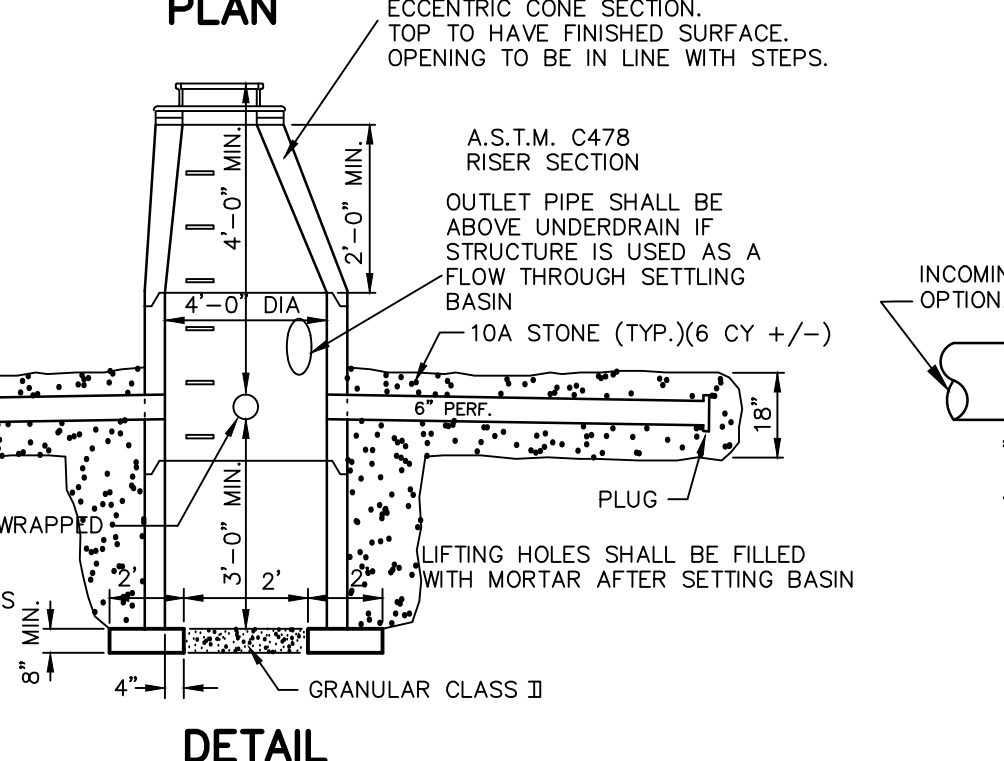
CLASS "B" BEDDING FOR SEWER PIPE LESS THAN 48"



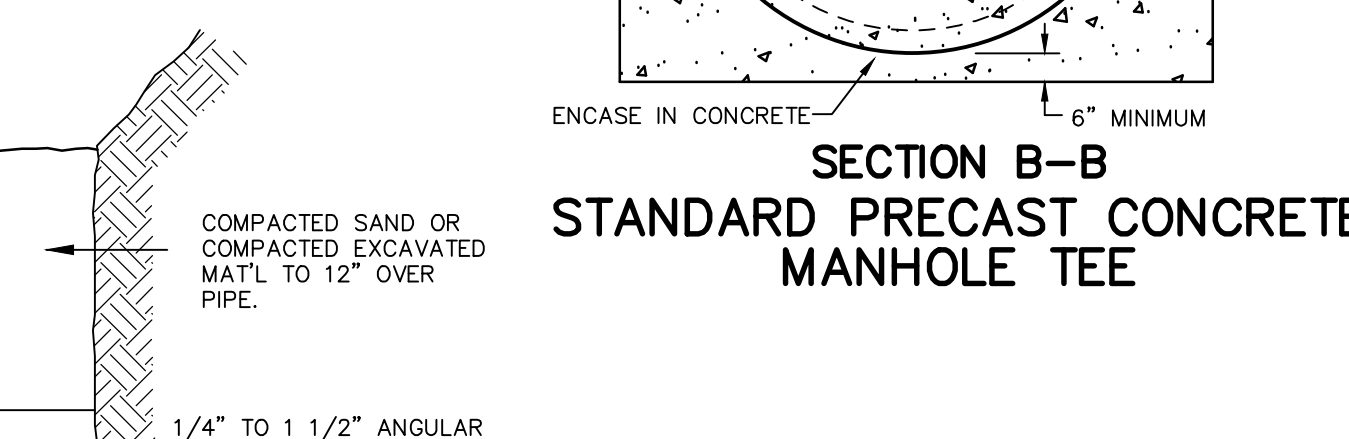
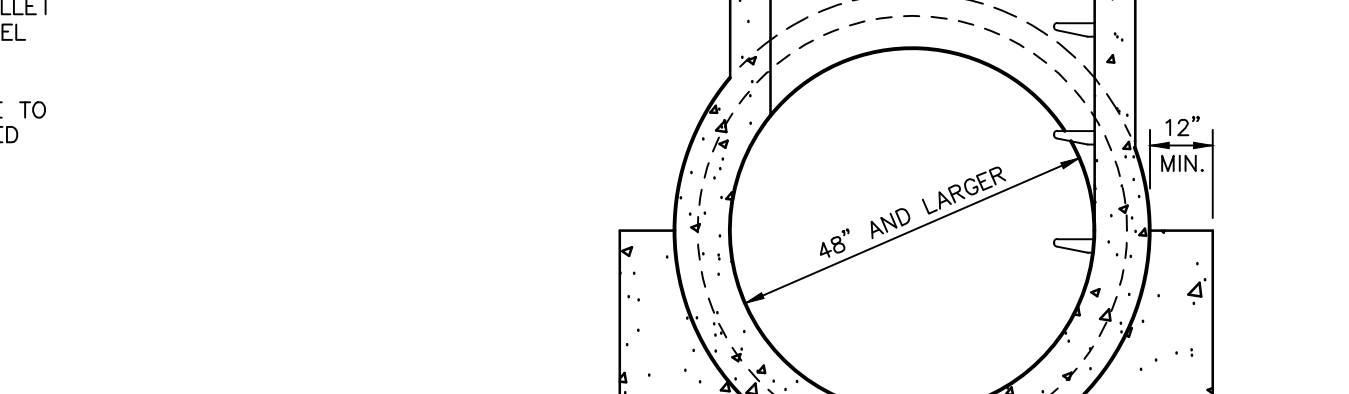
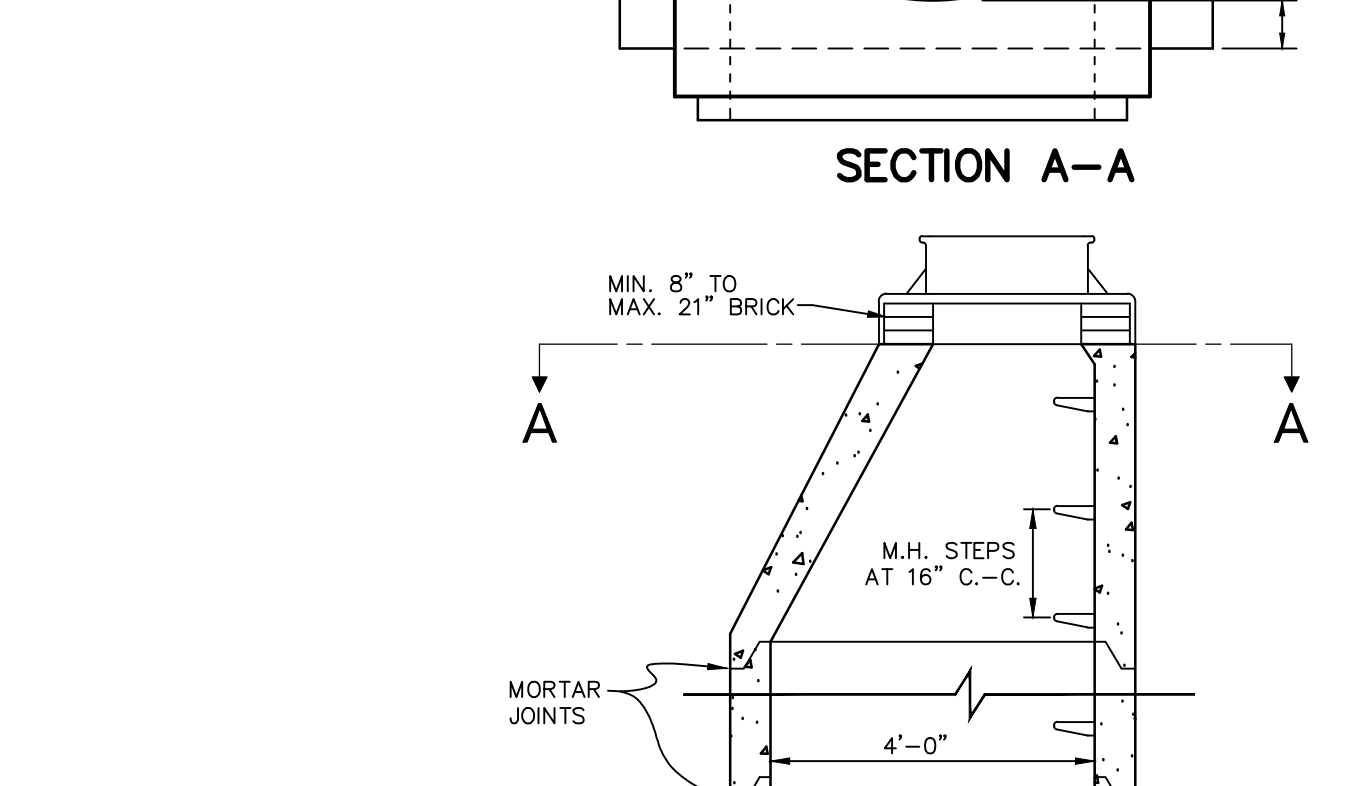
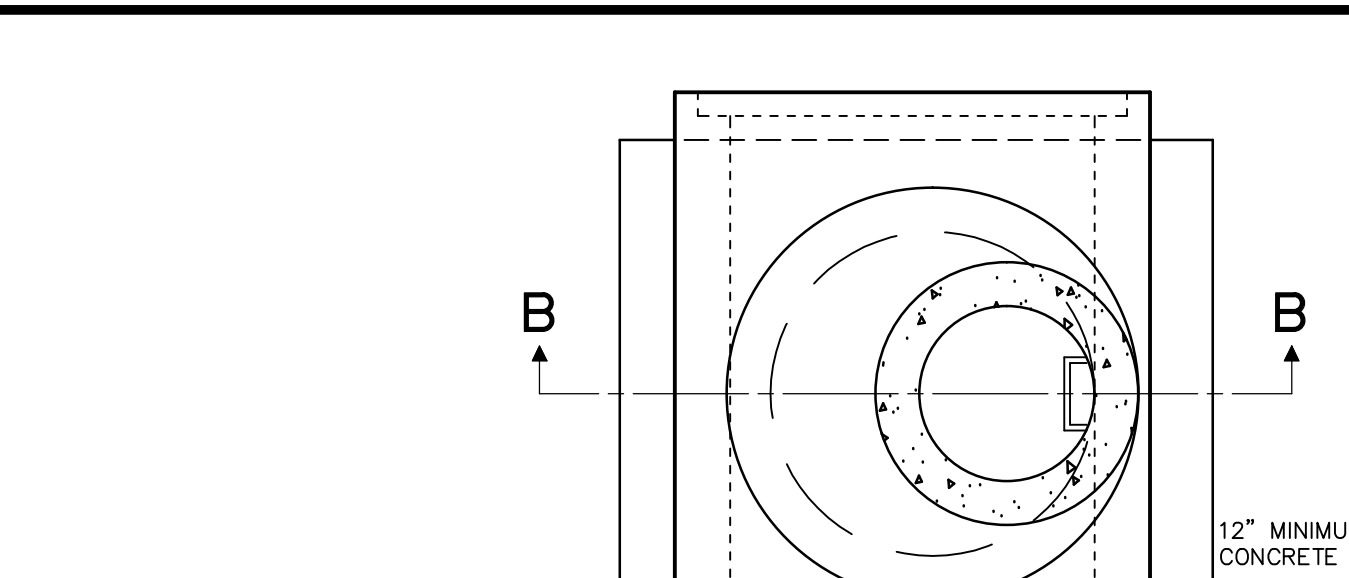
STANDARD PRECAST CONCRETE MANHOLE TEE



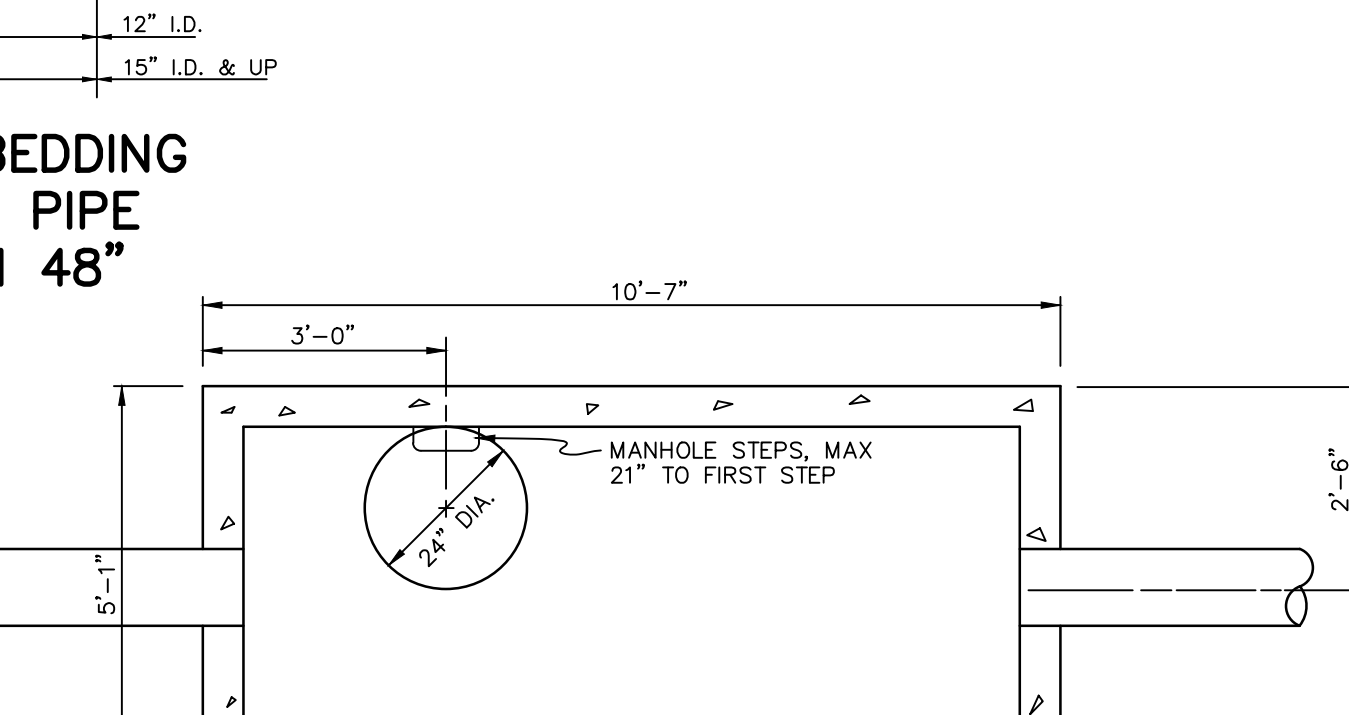
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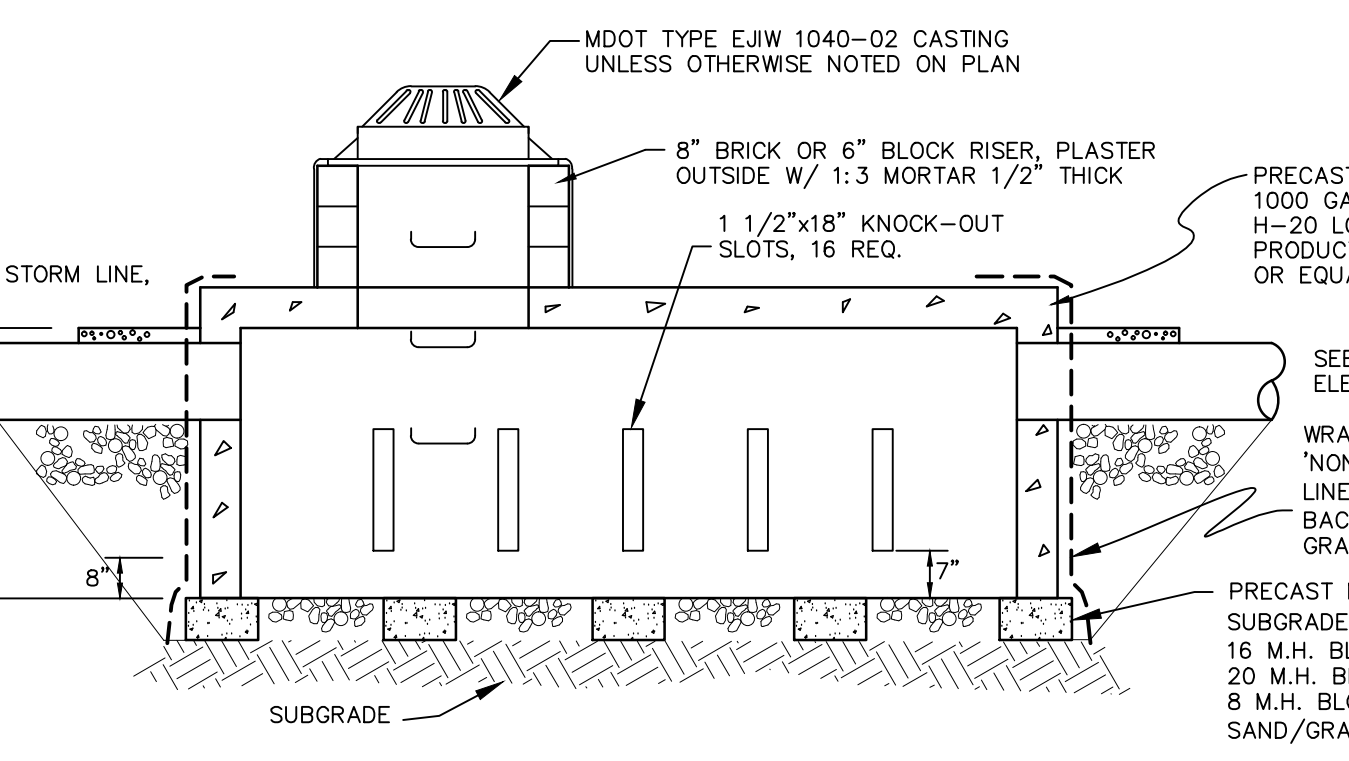
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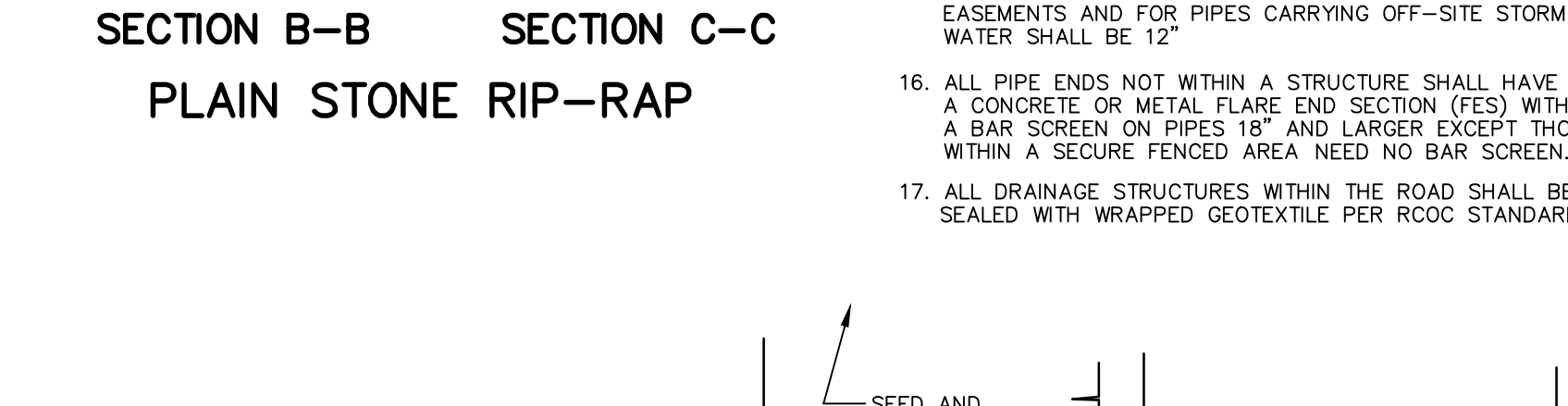
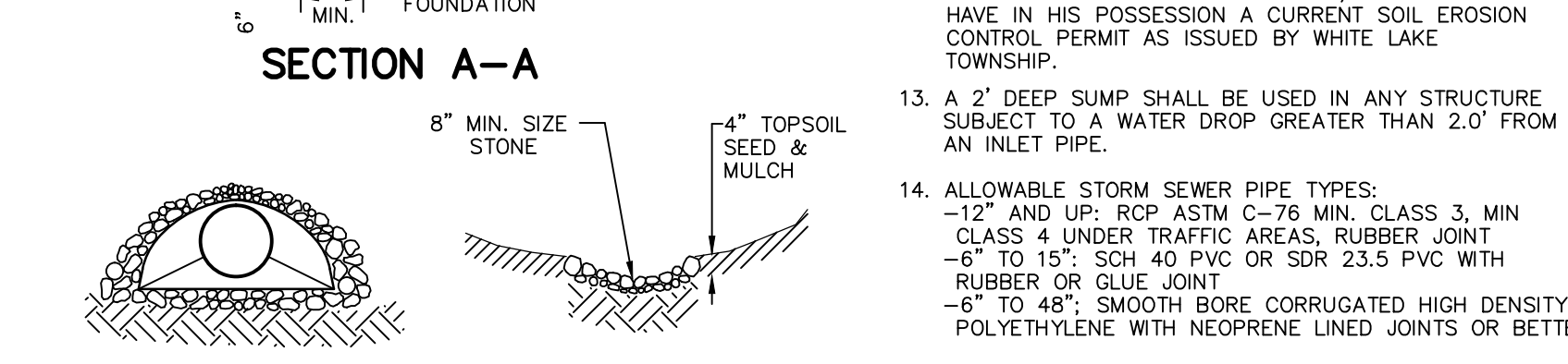
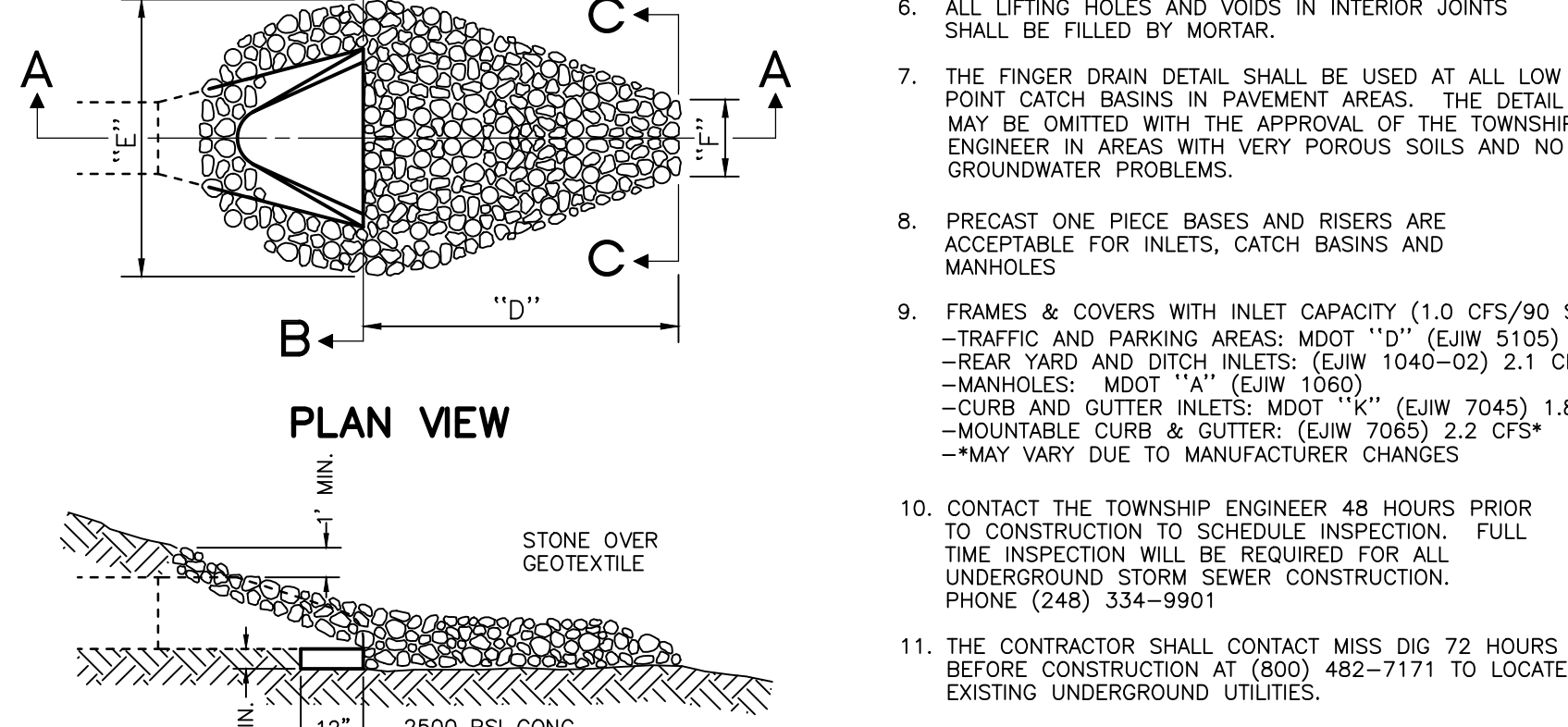
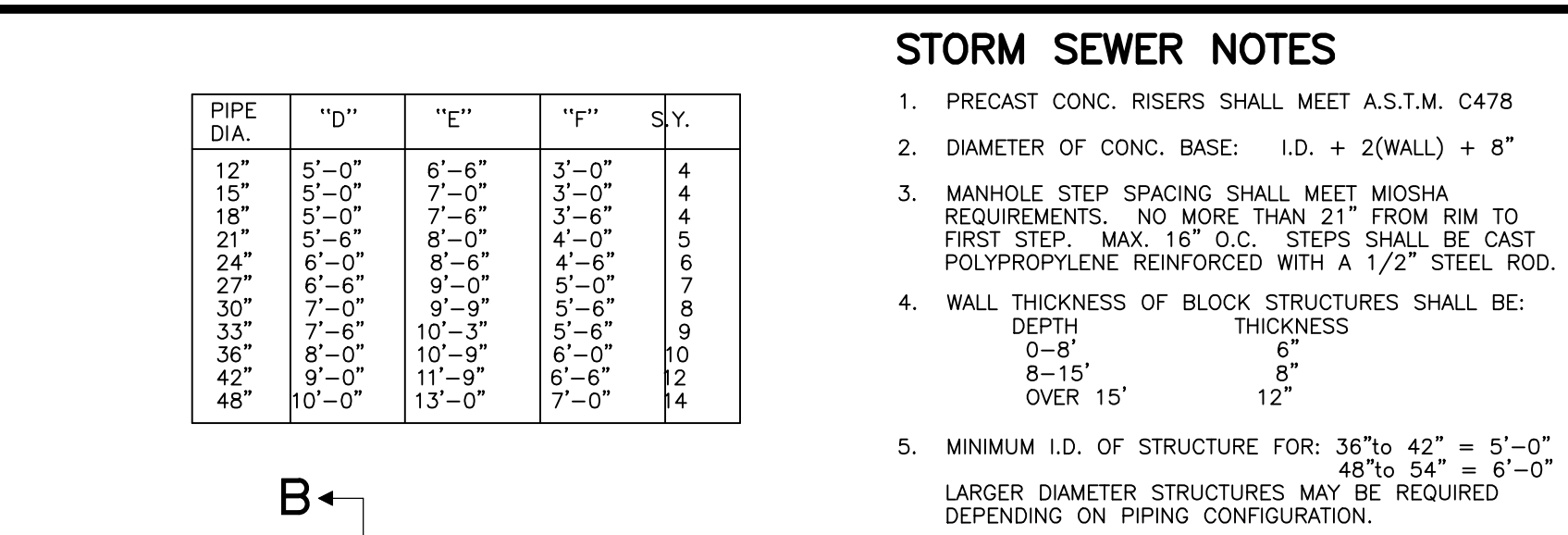
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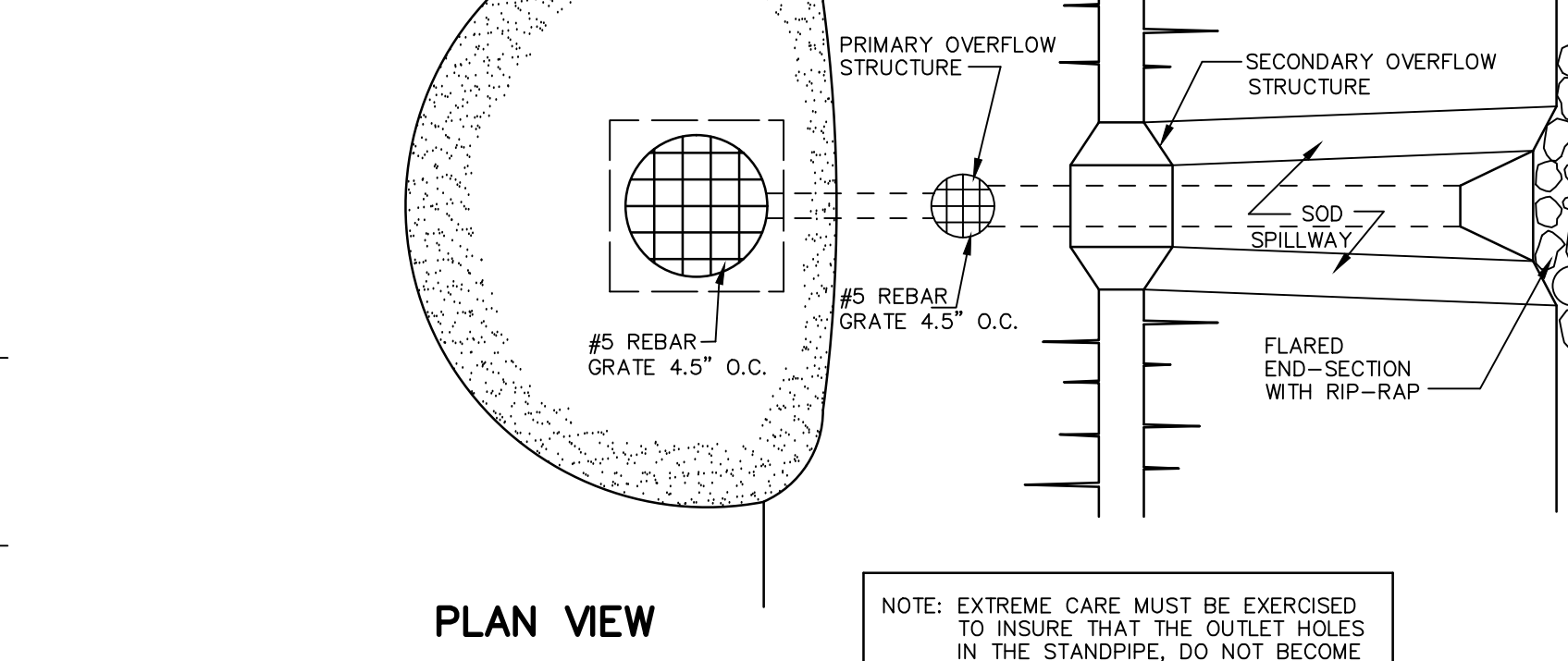
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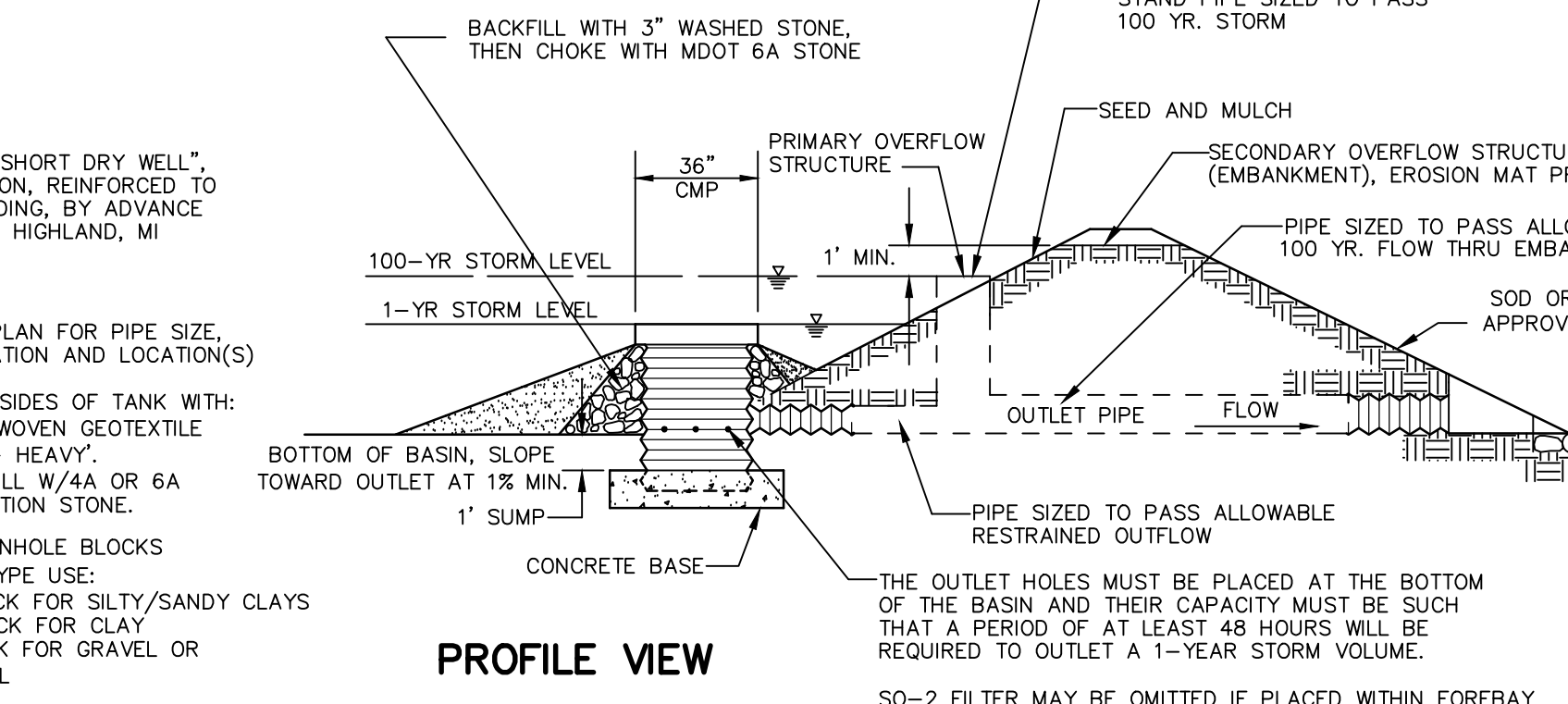
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SO-2 DETENTION BASIN OUTLET FILTER (CMP)



SO-2 DETENTION BASIN OUTLET FILTER (CMP)

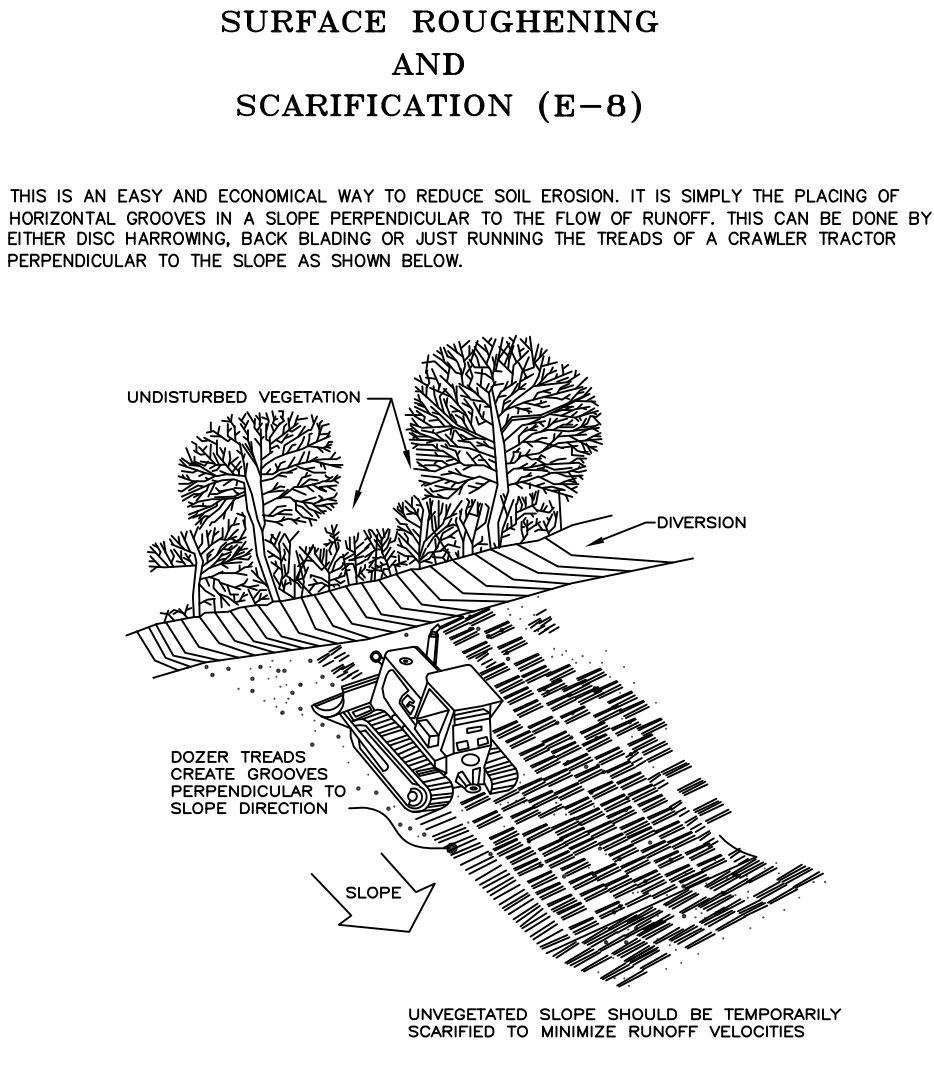
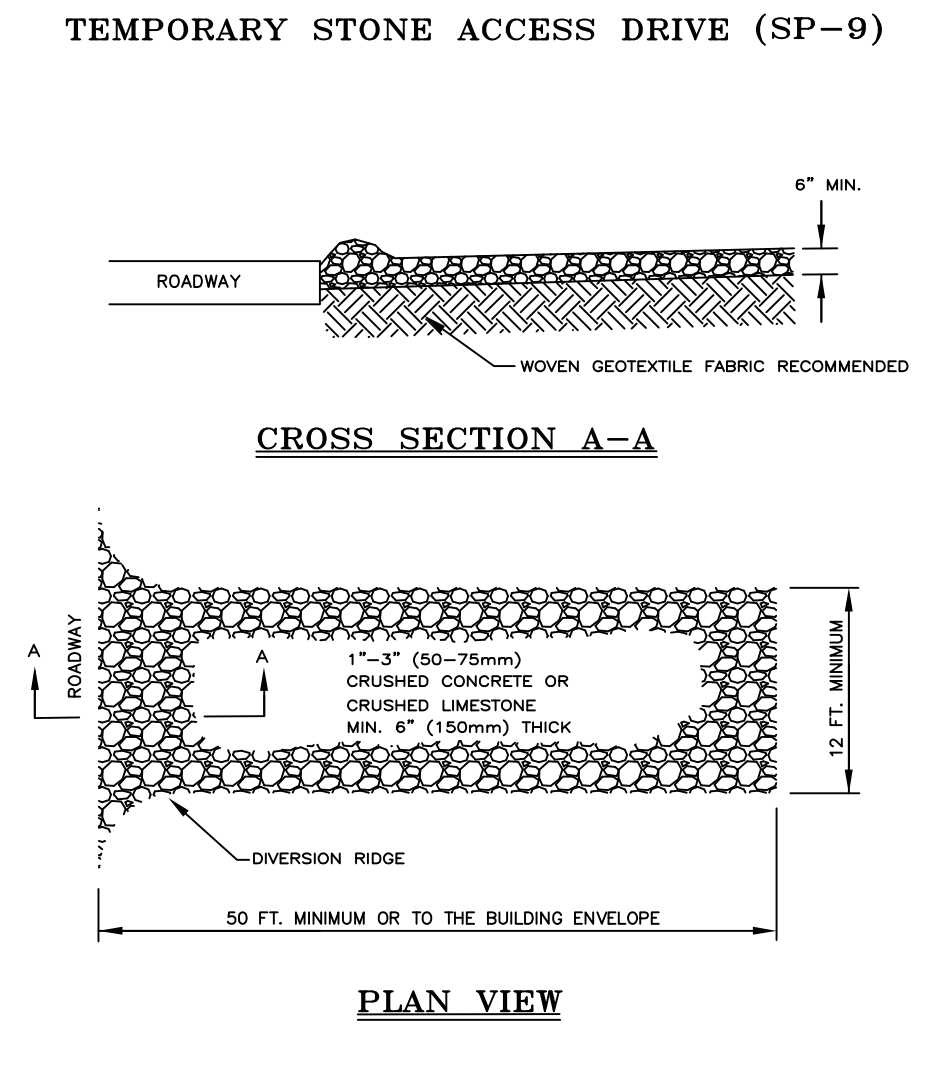
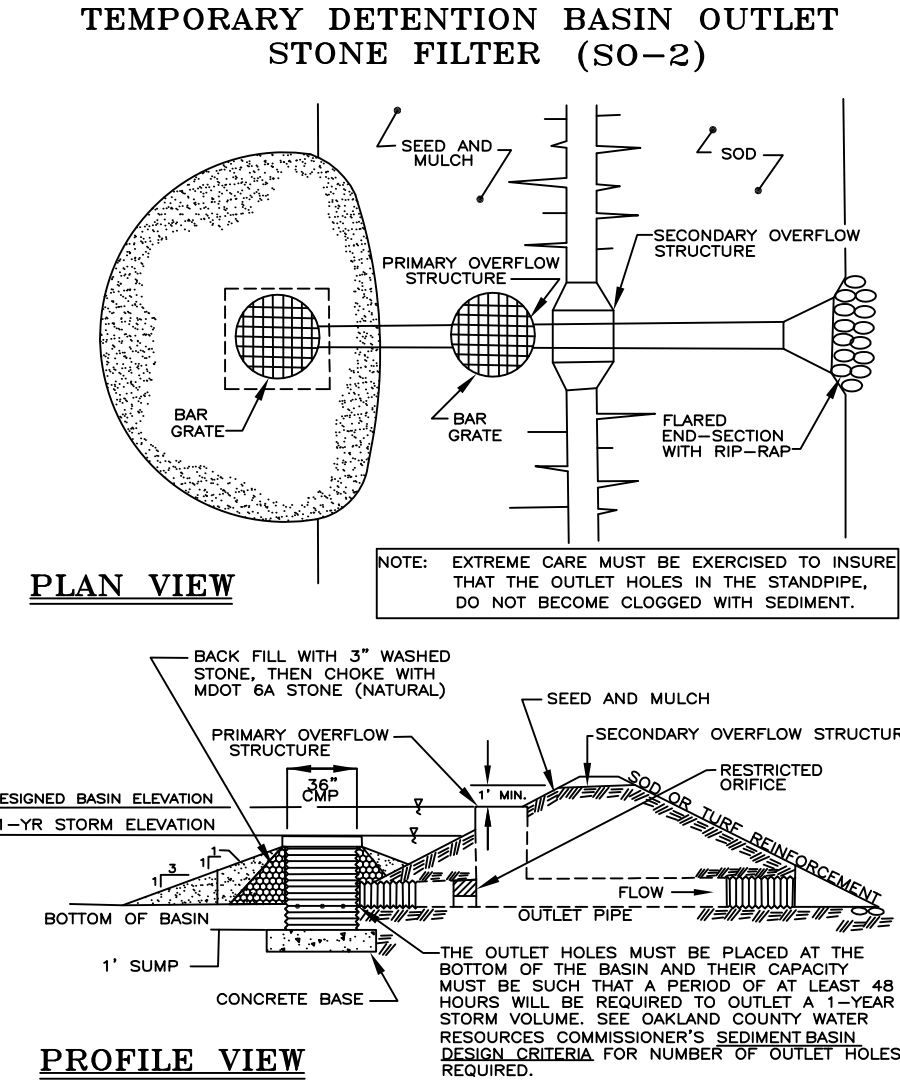
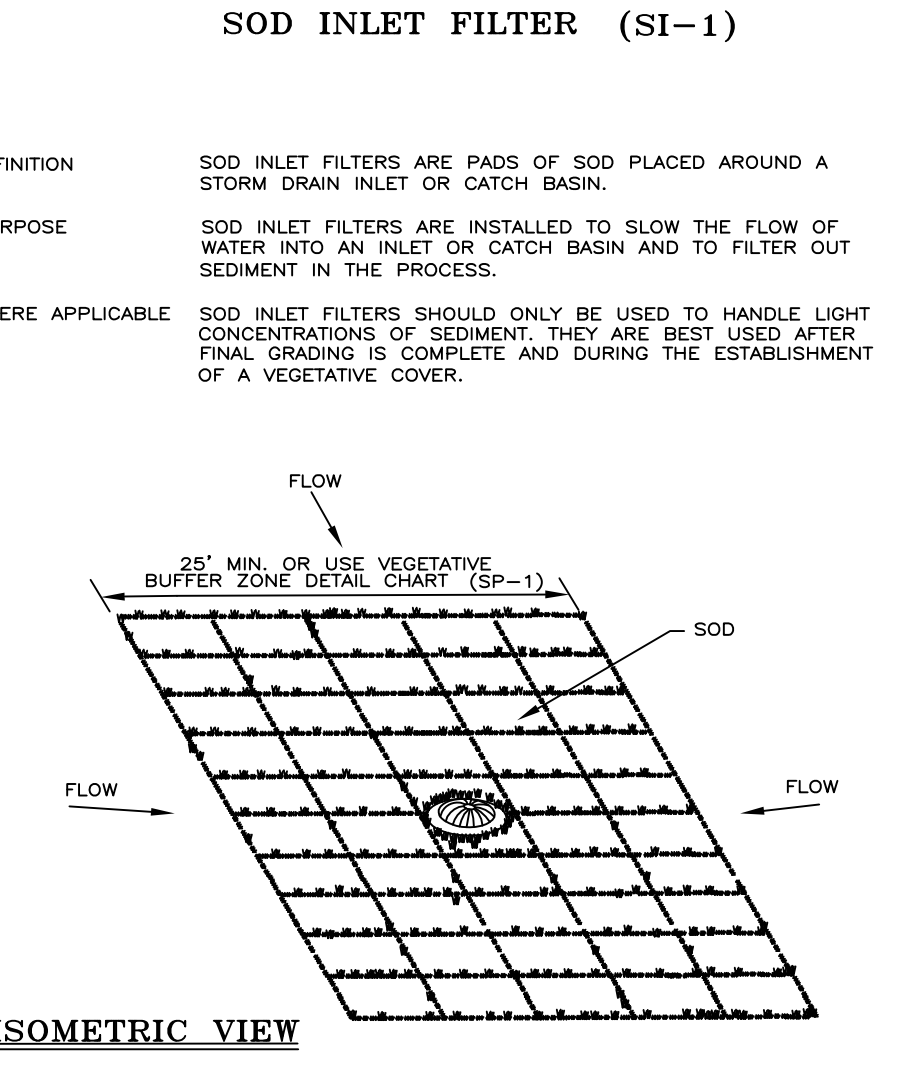
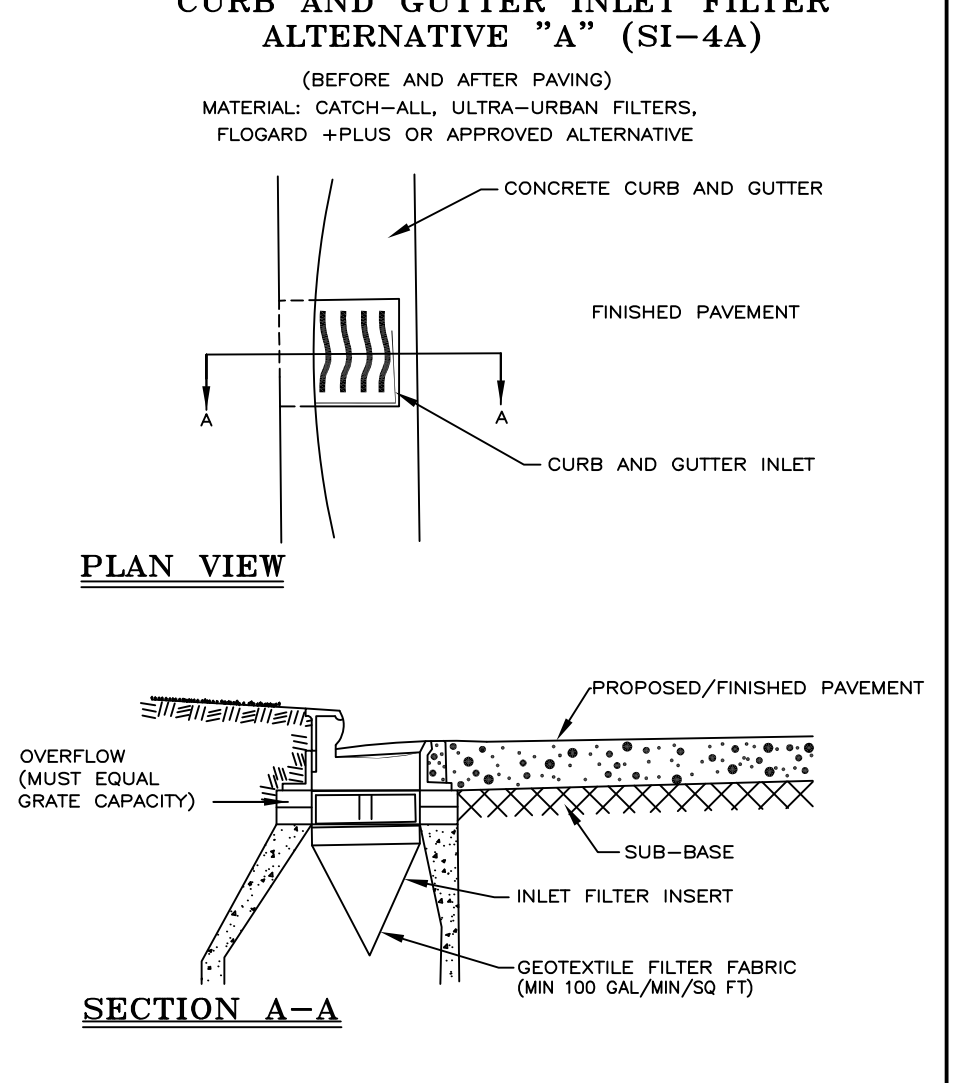
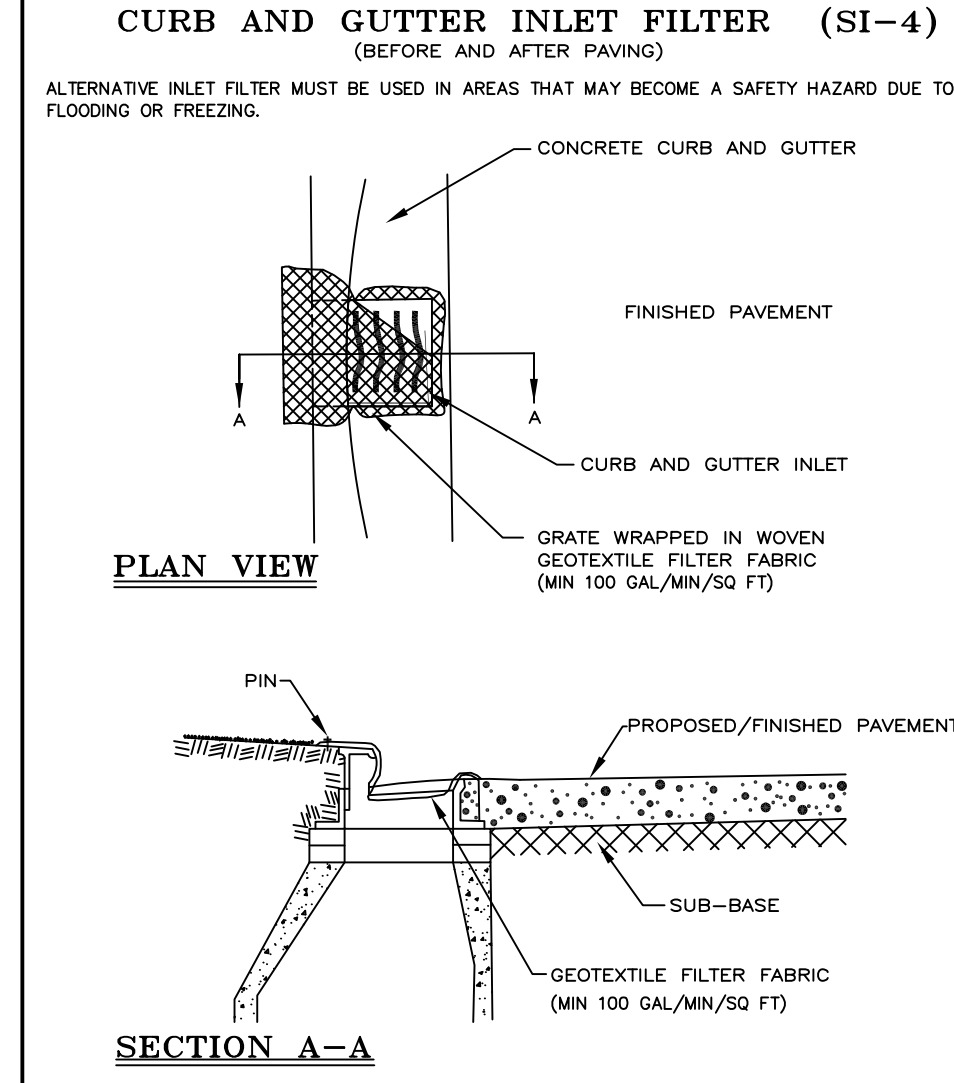
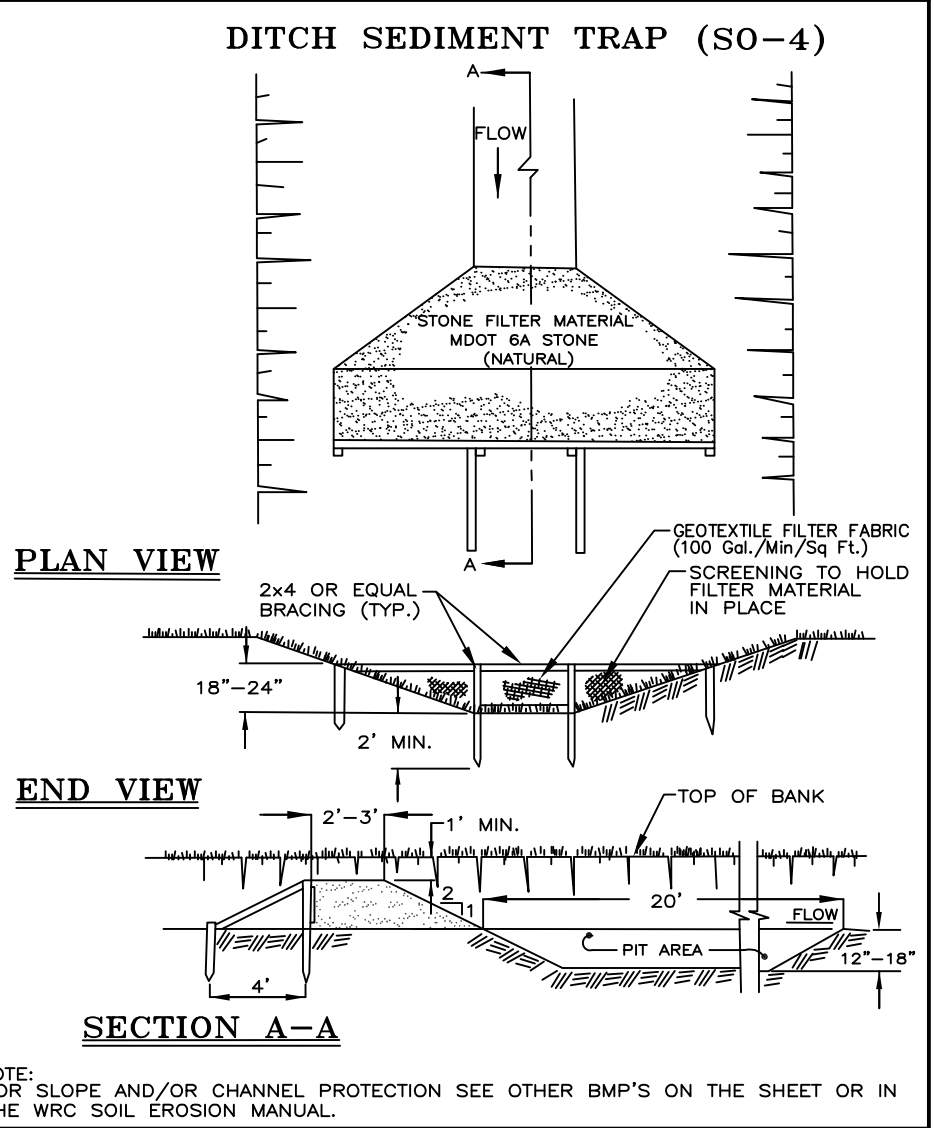
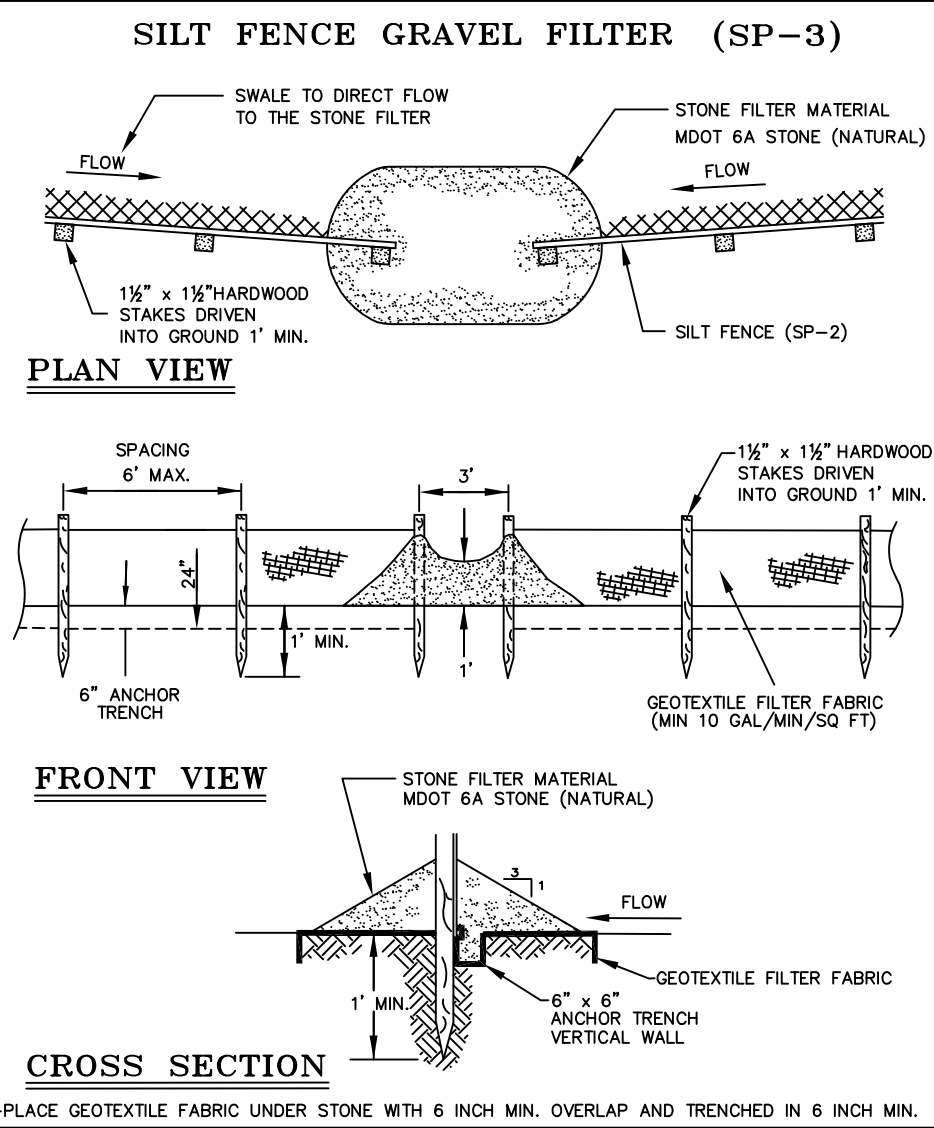
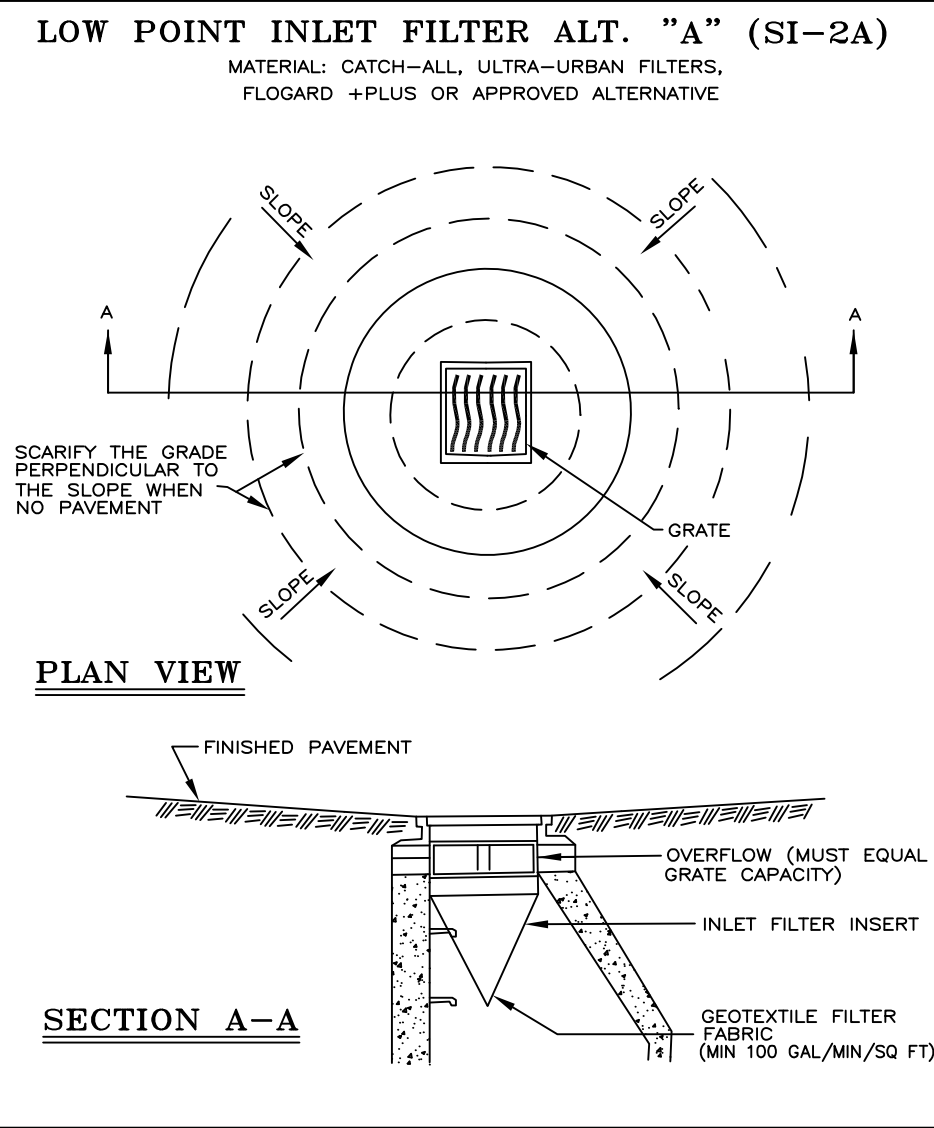
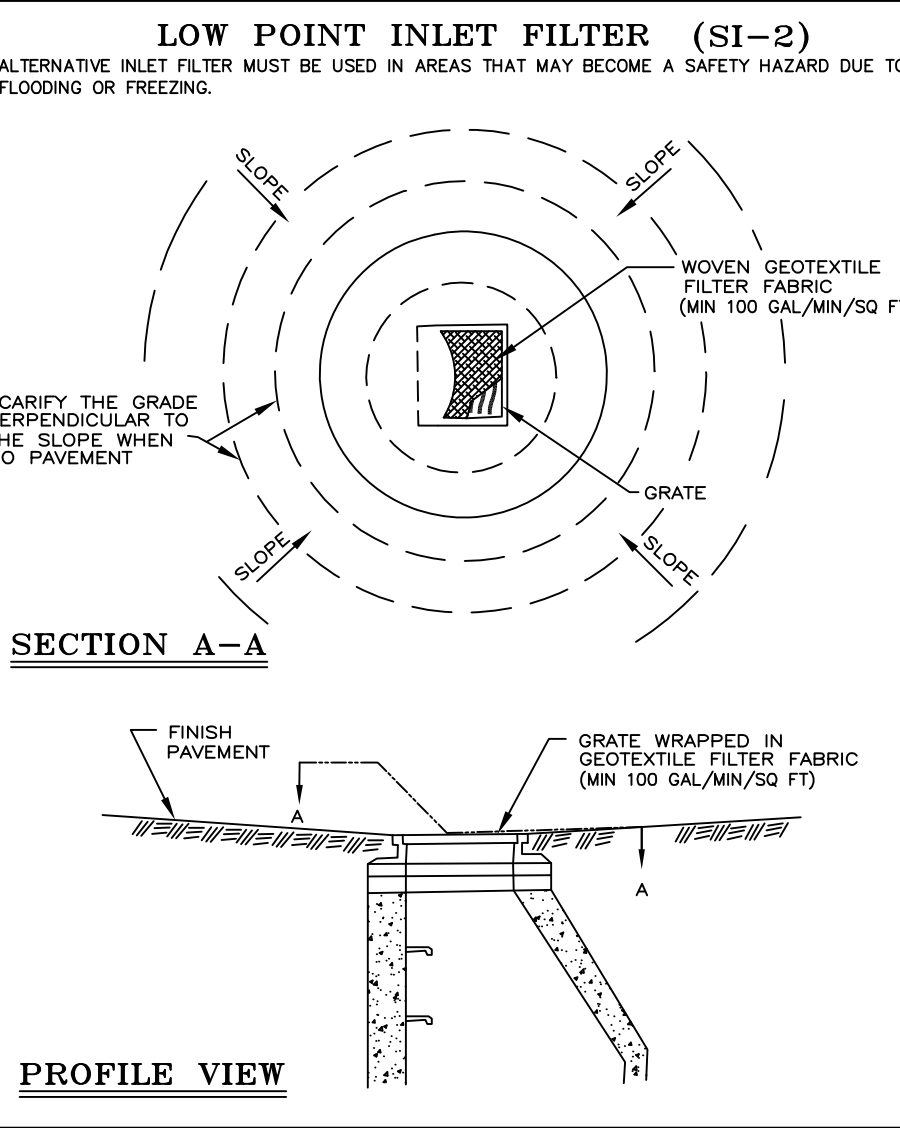
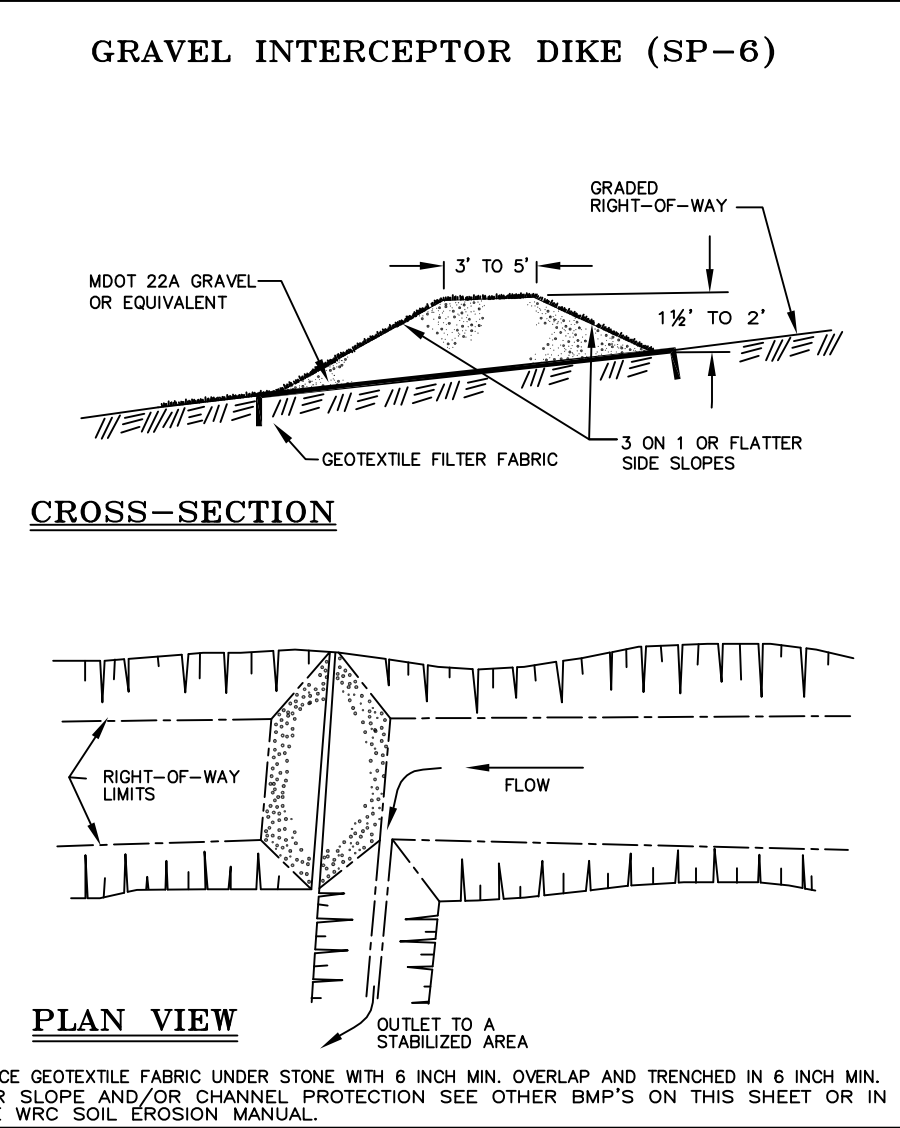
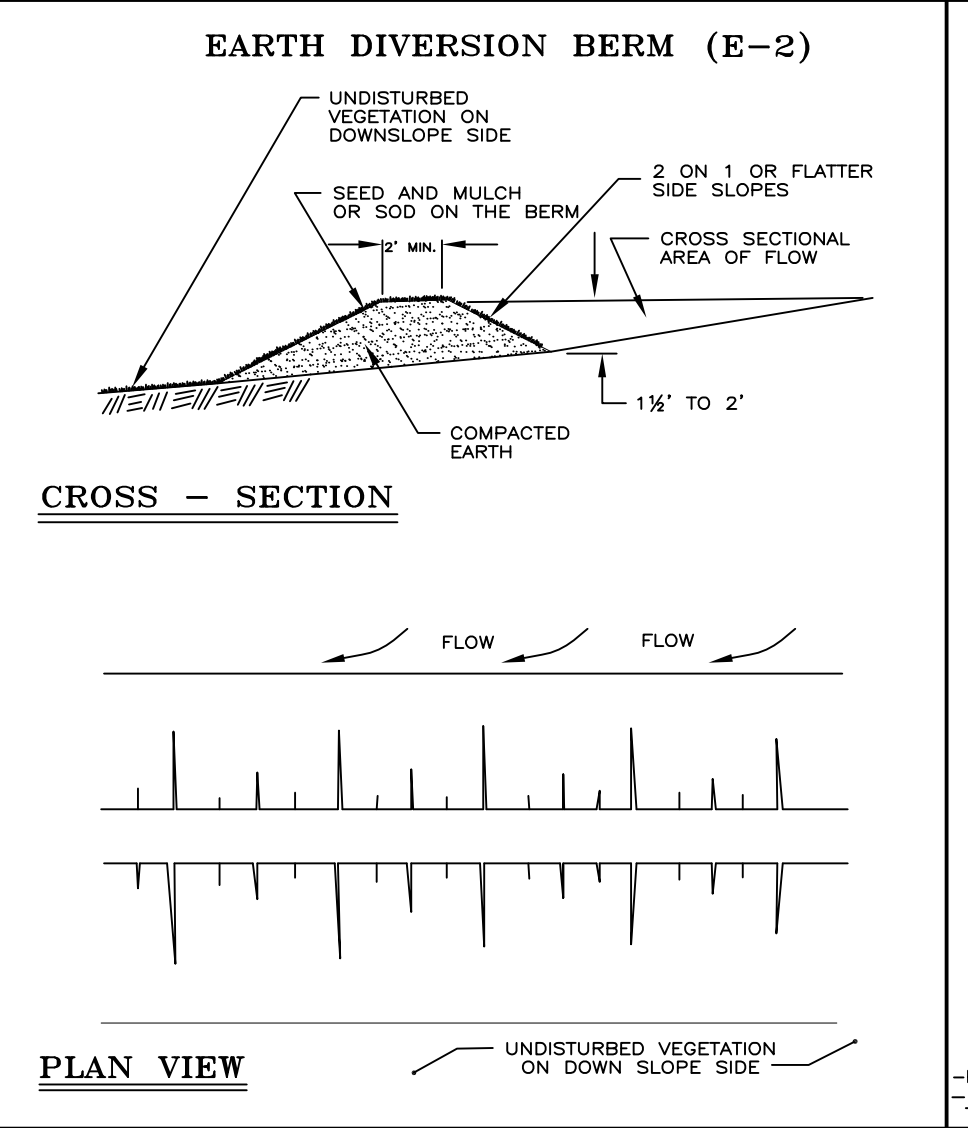
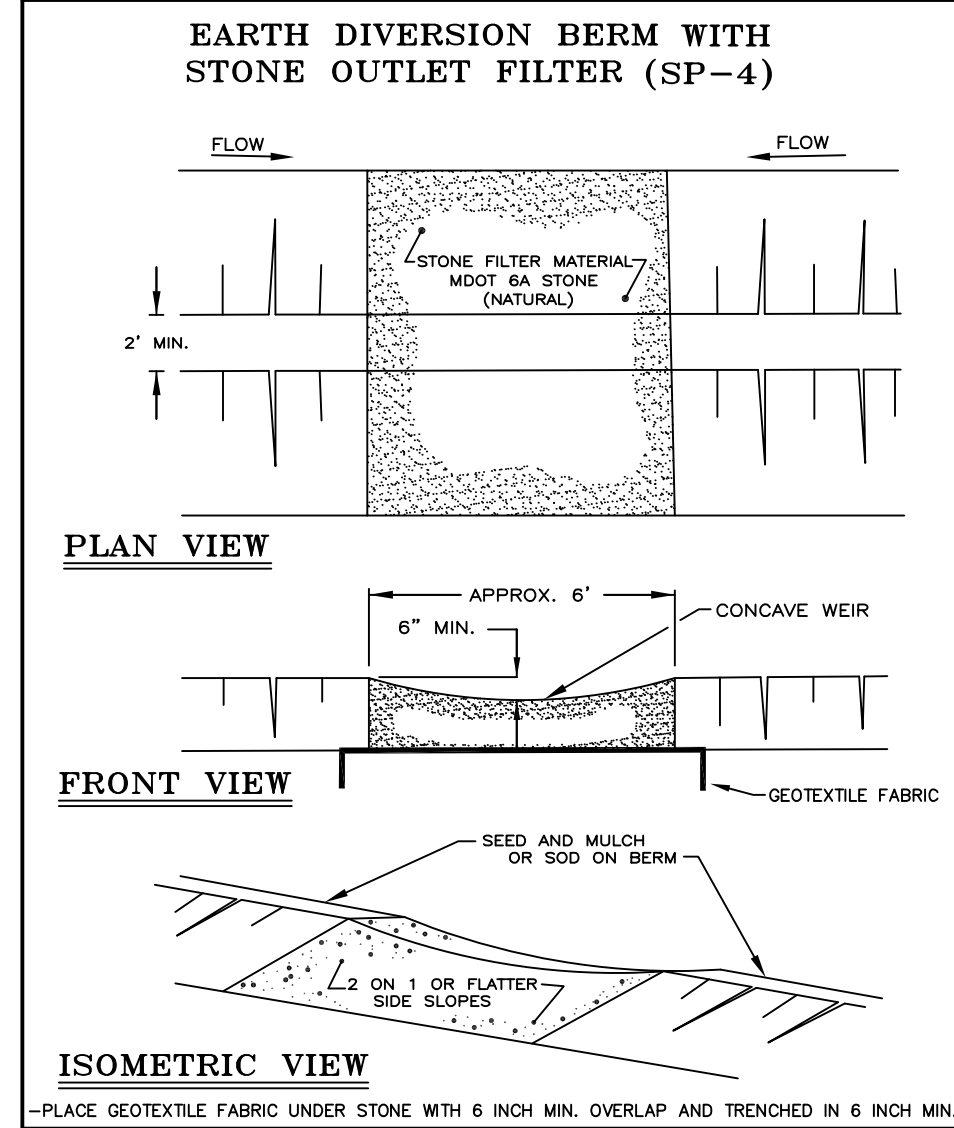
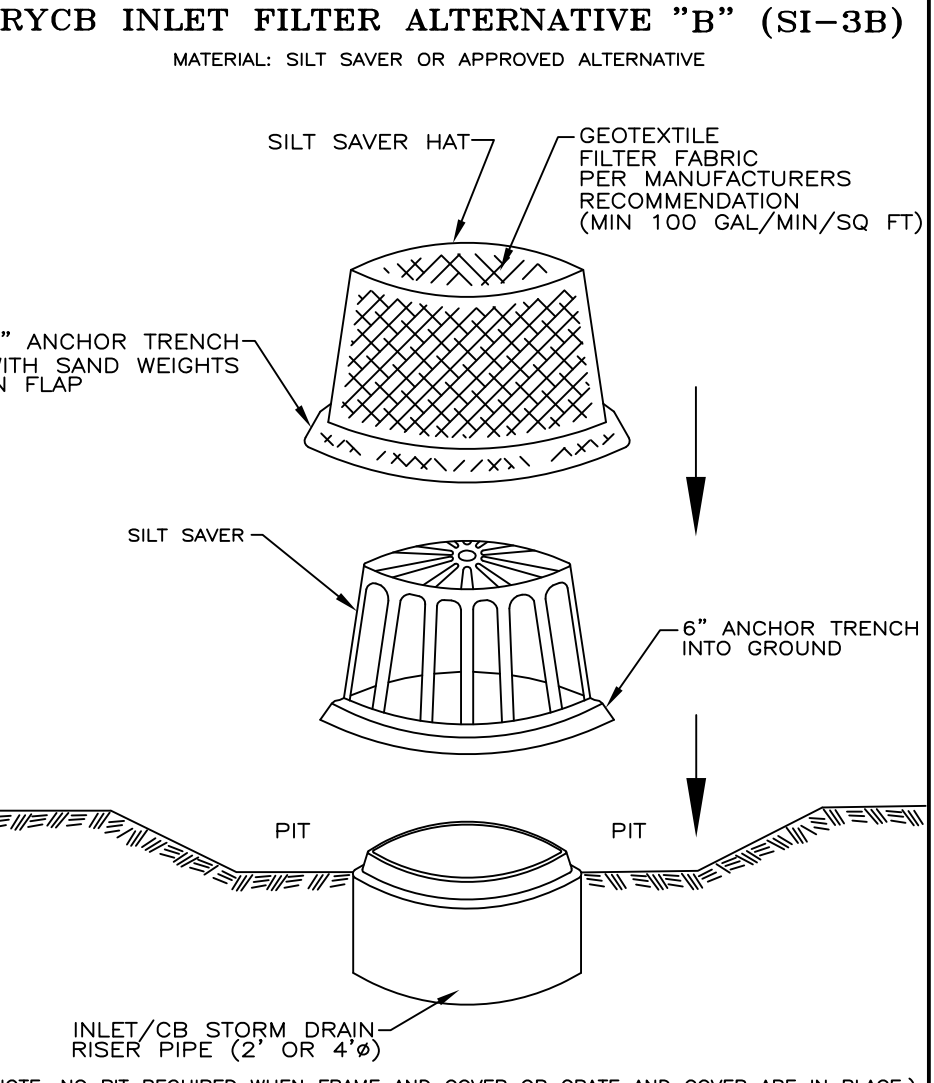
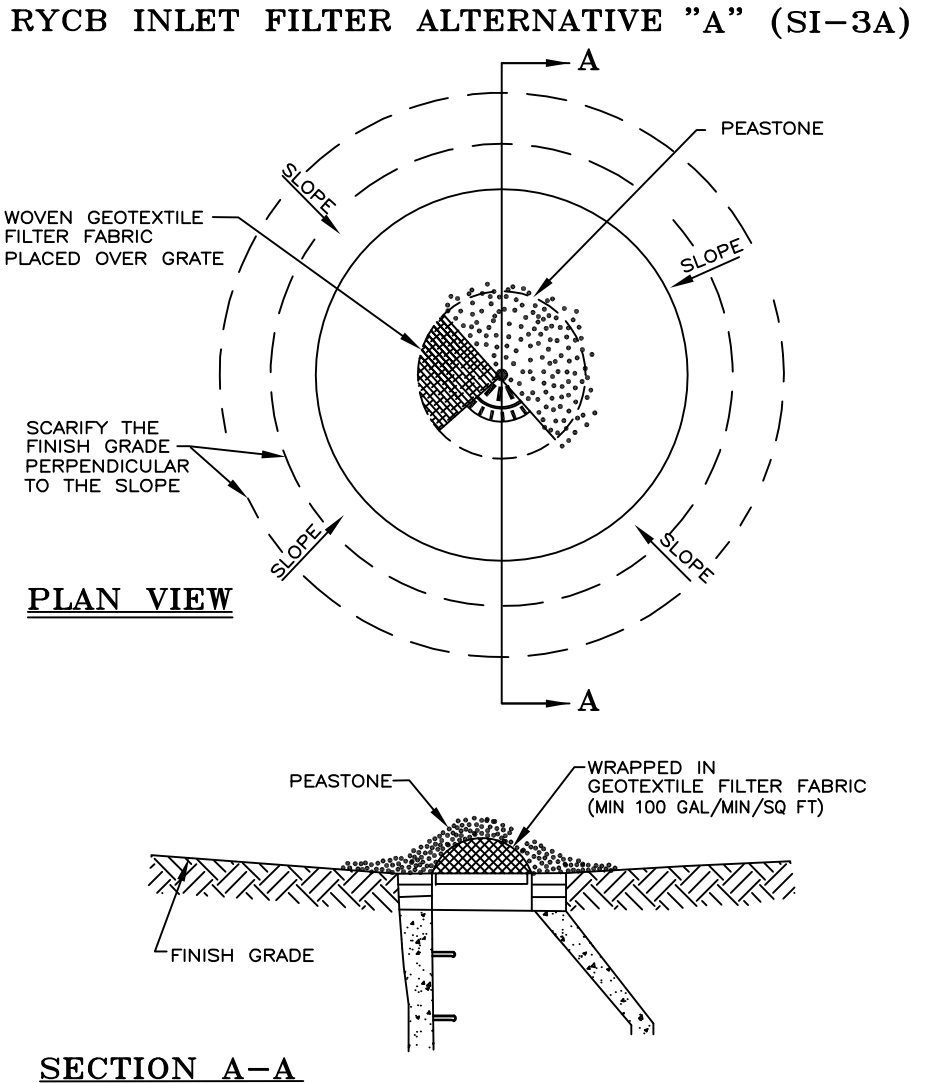
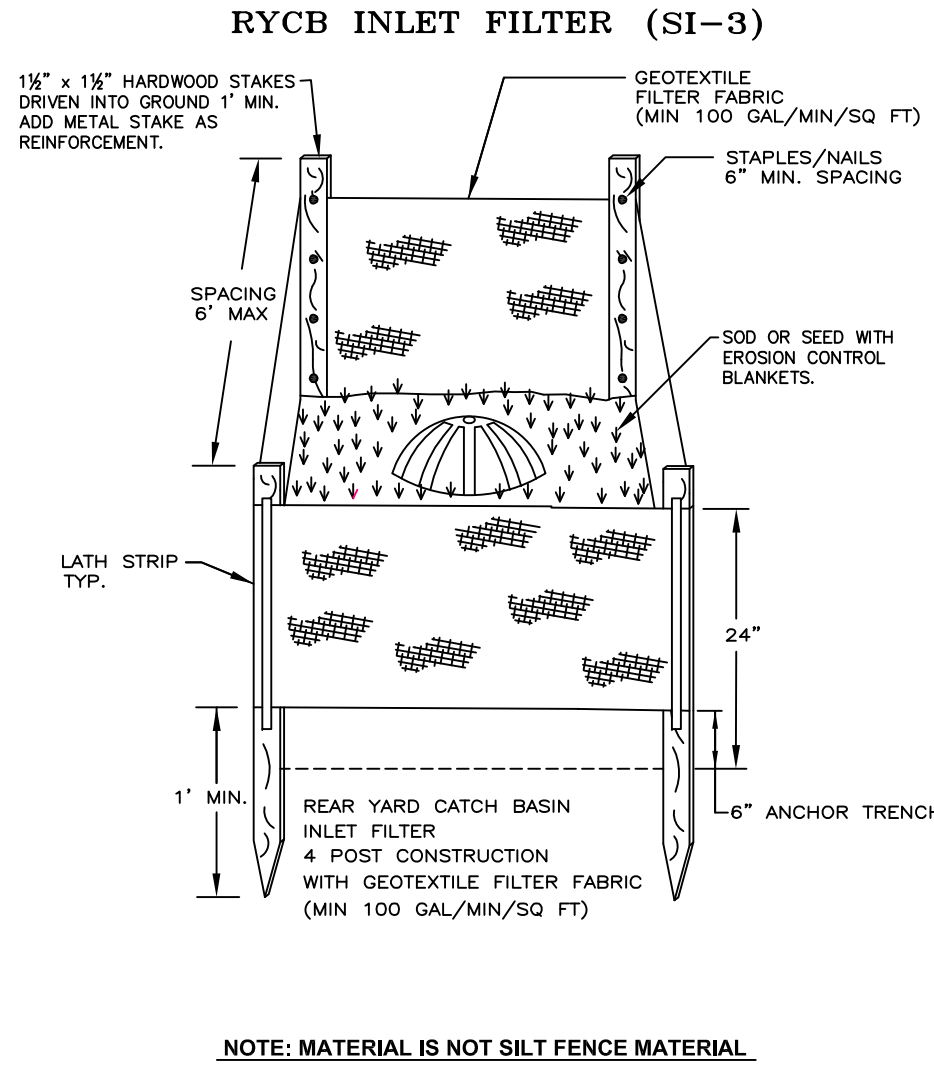
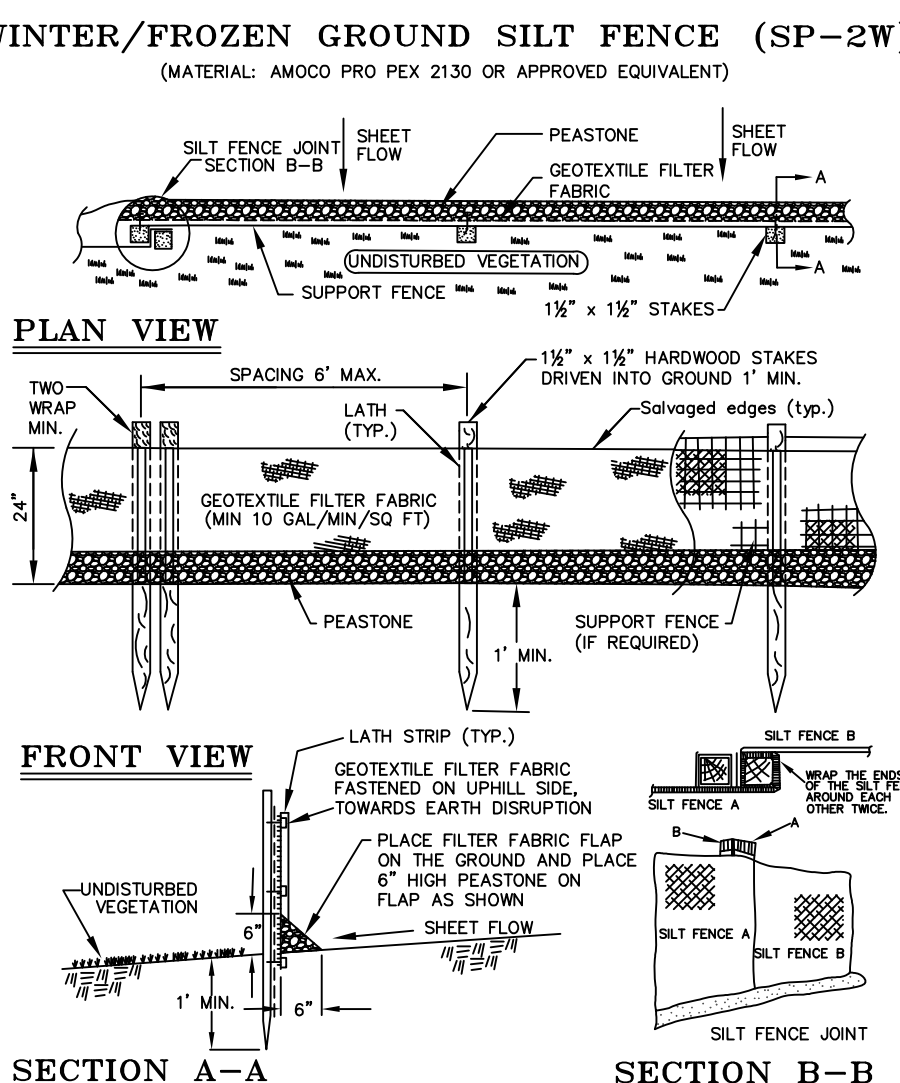
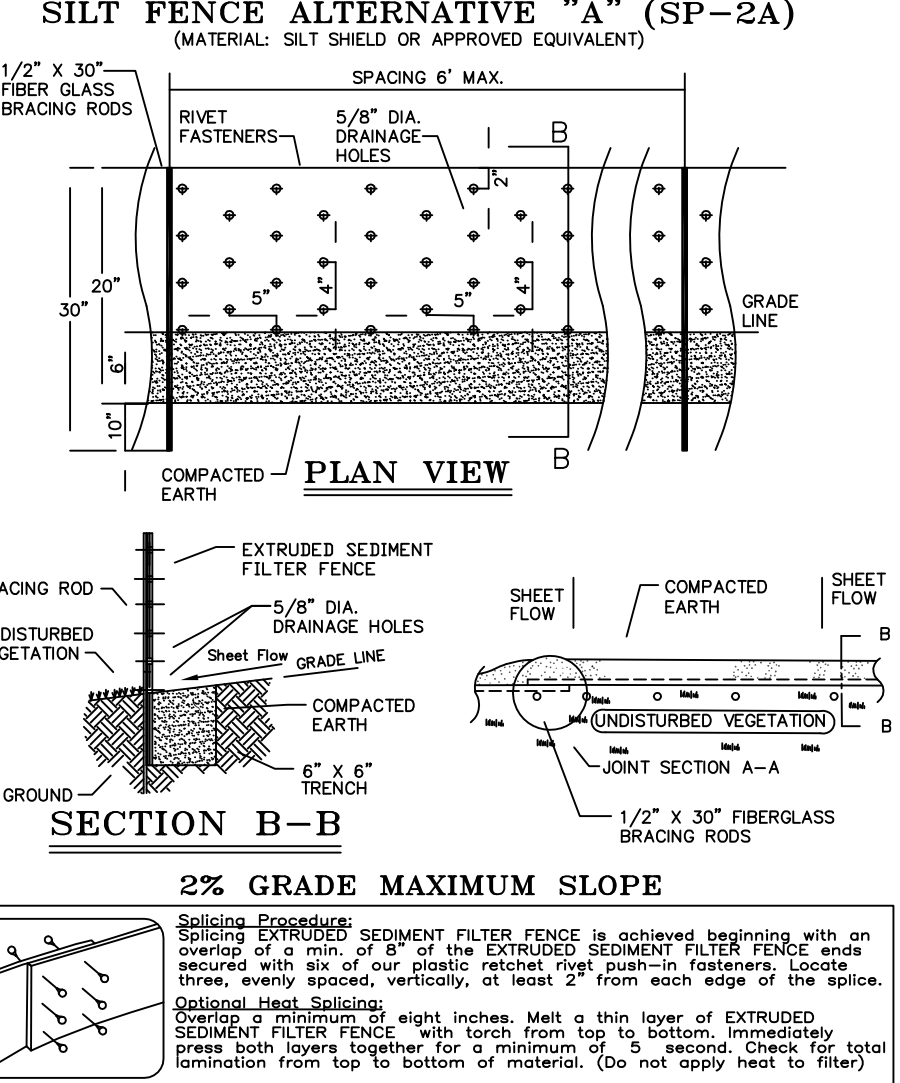
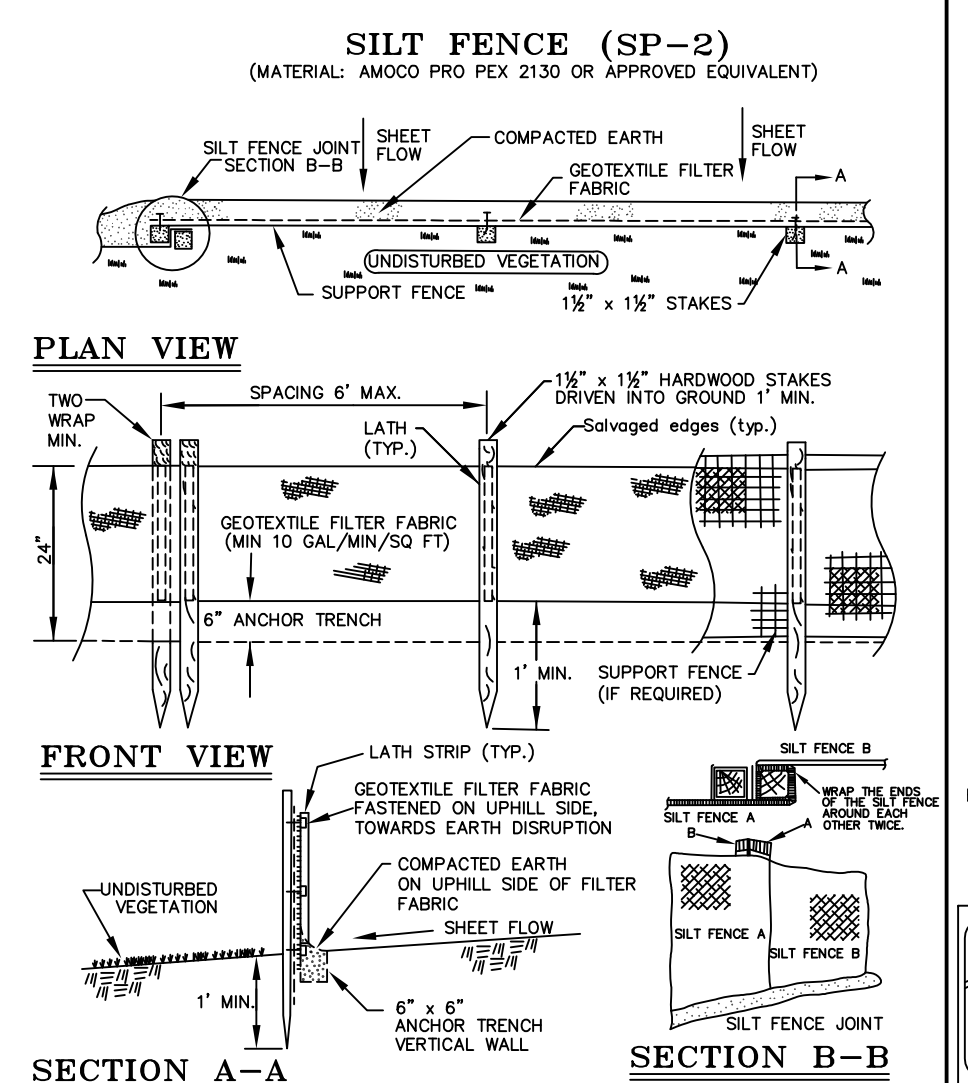
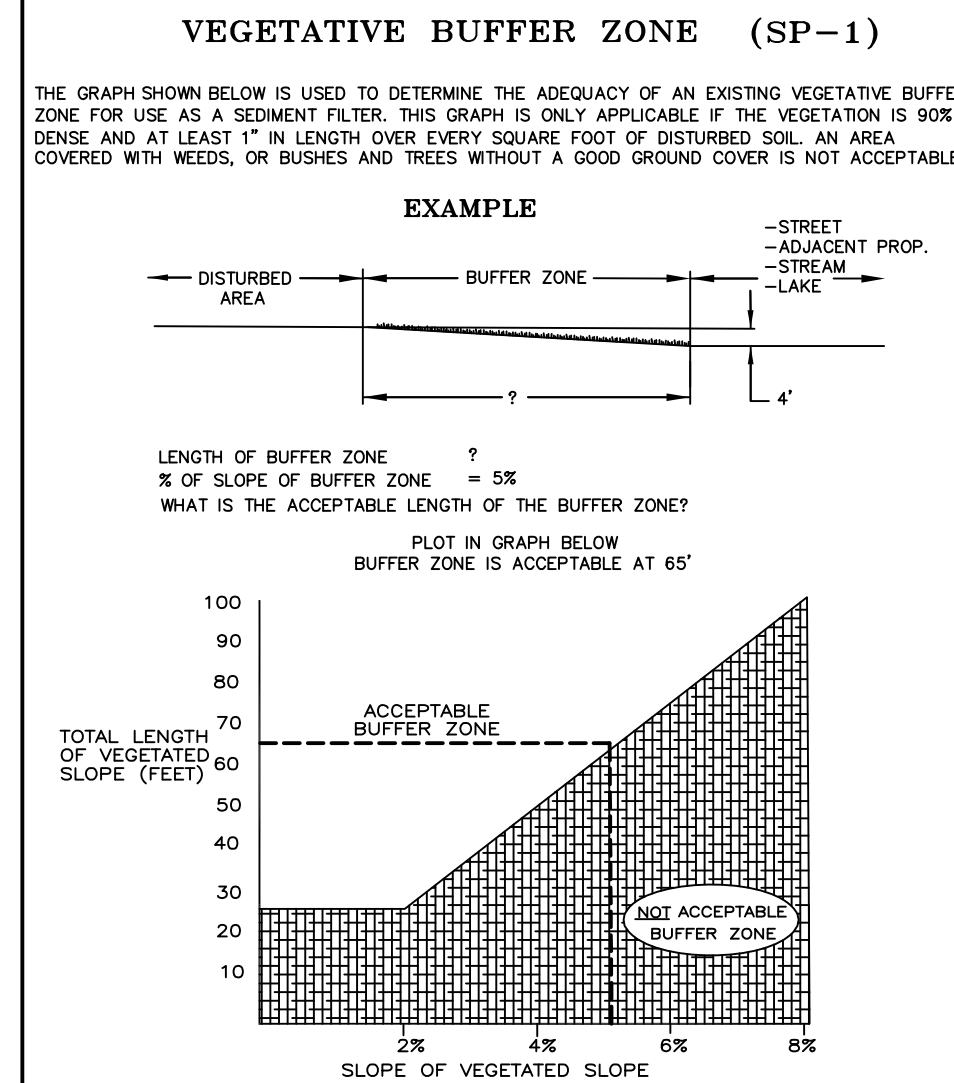
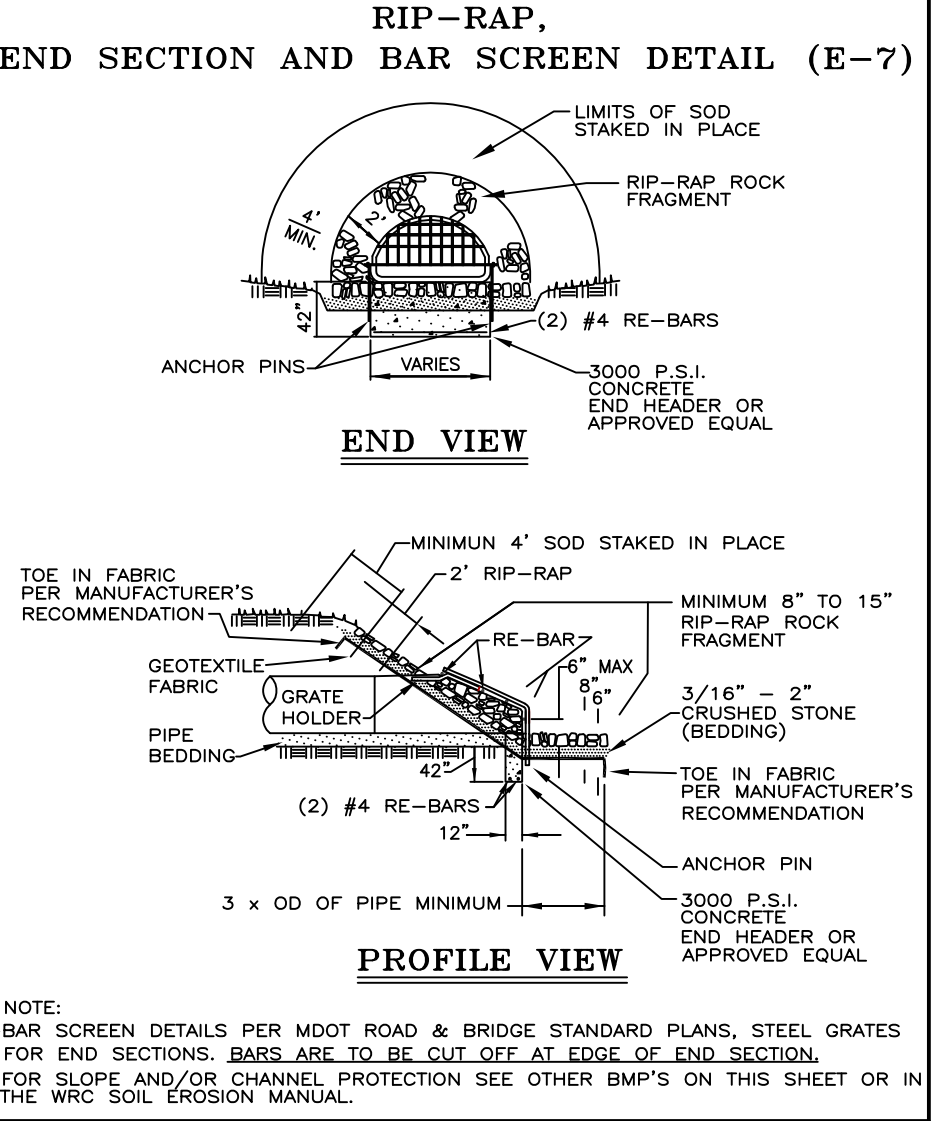
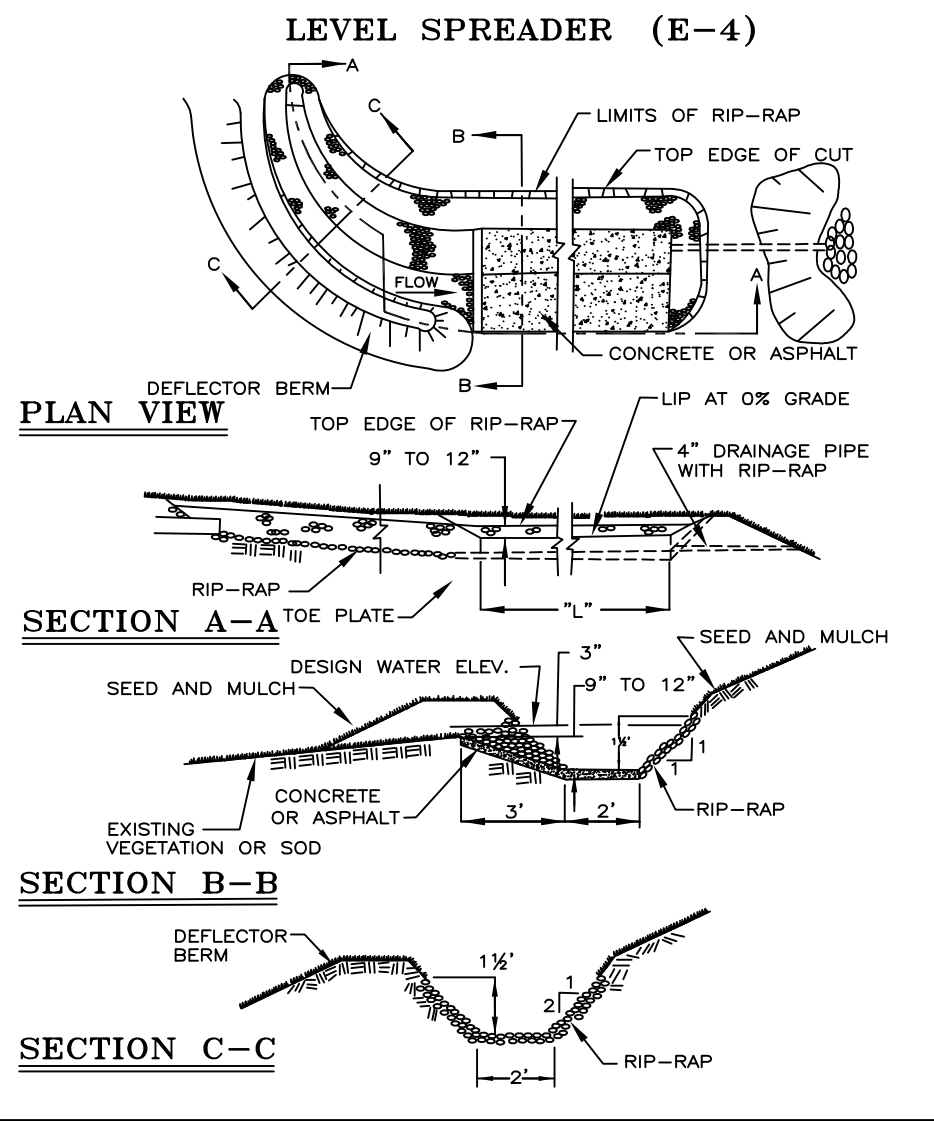
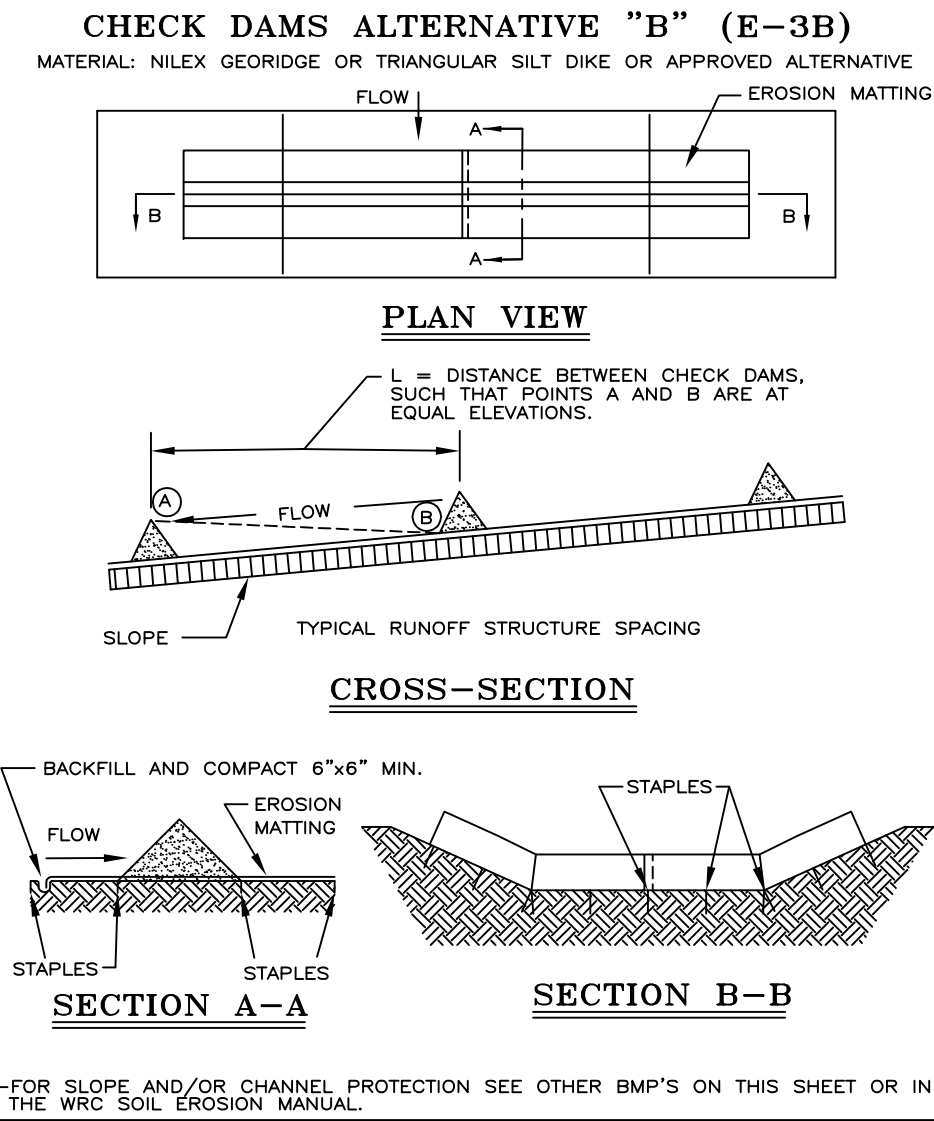
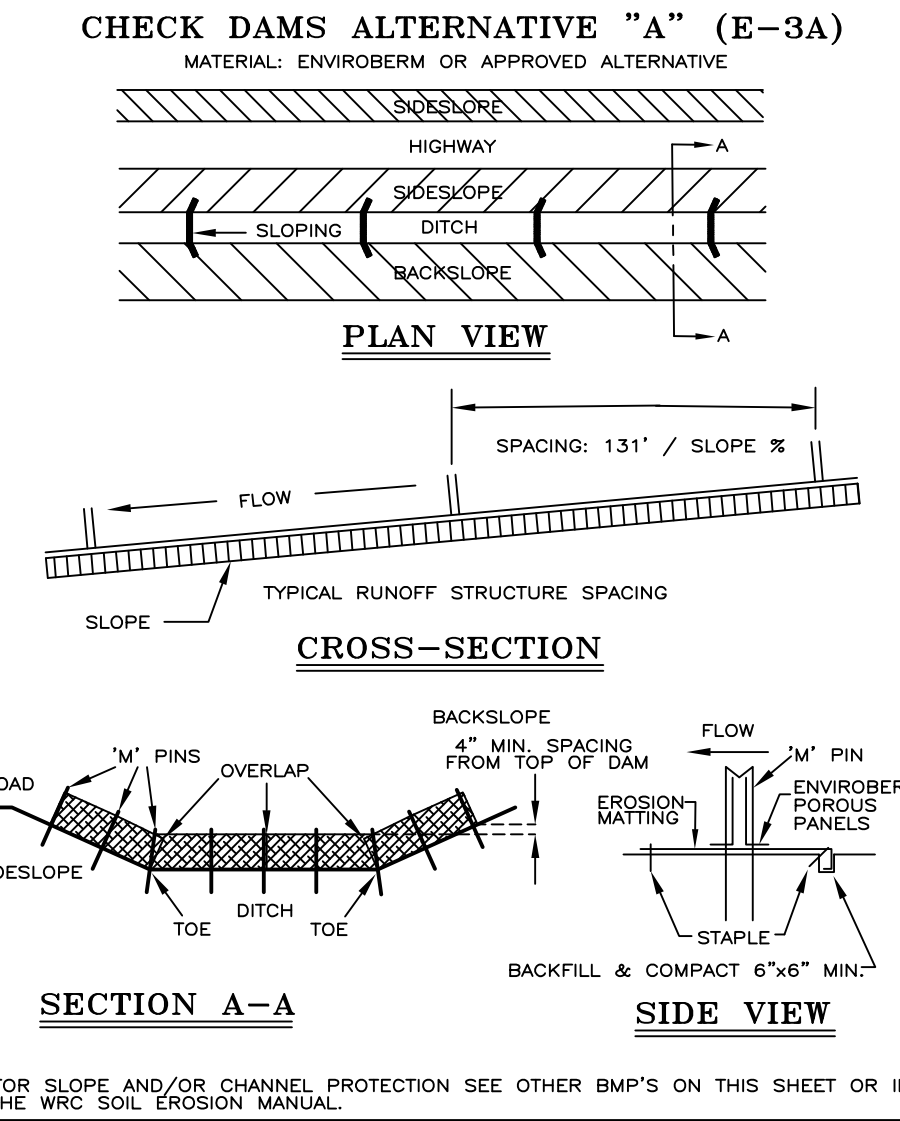
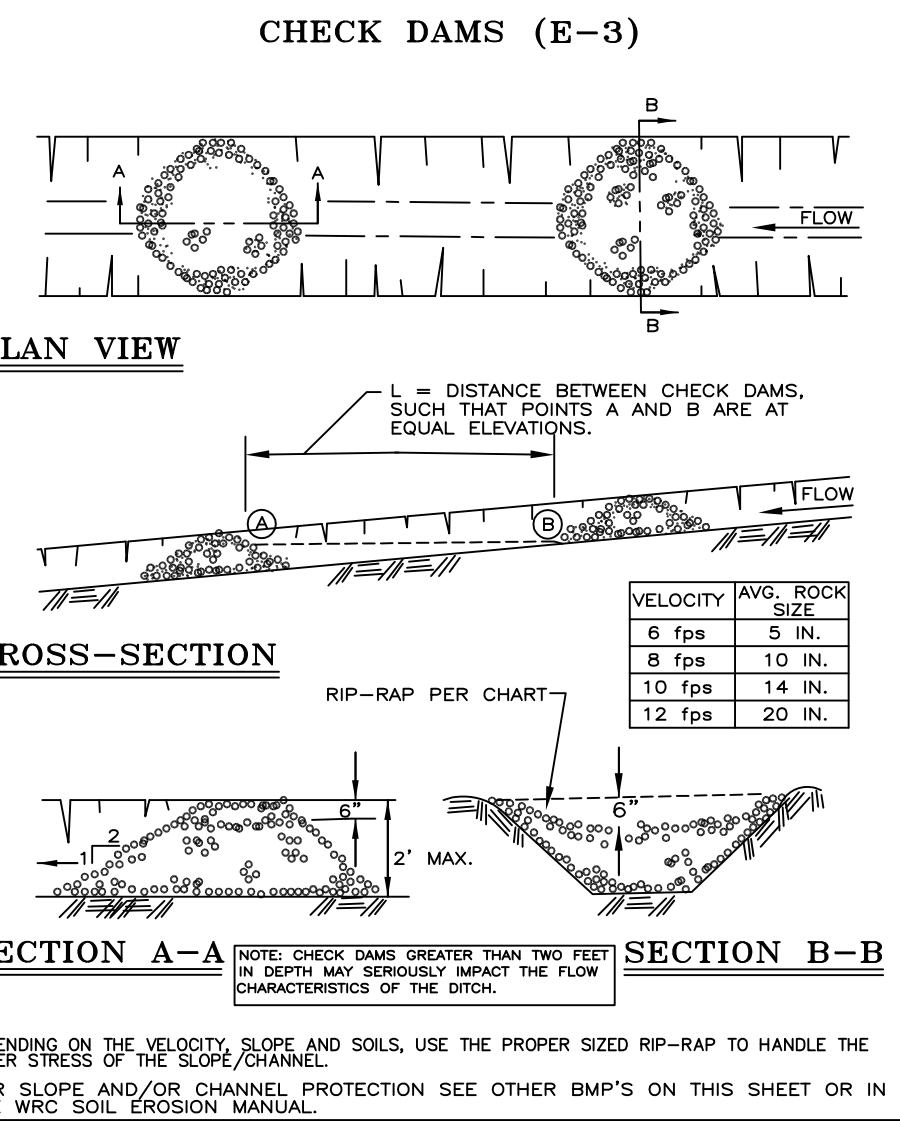
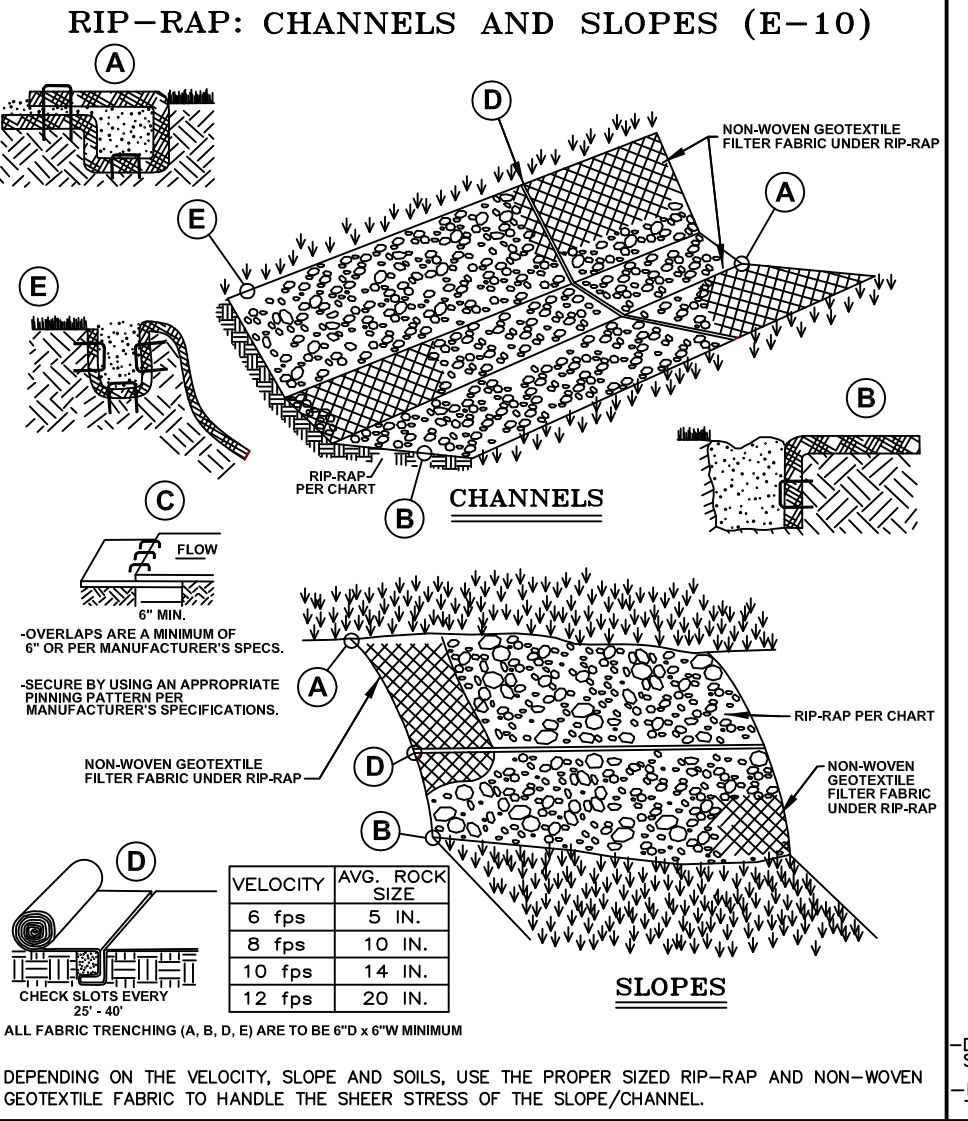
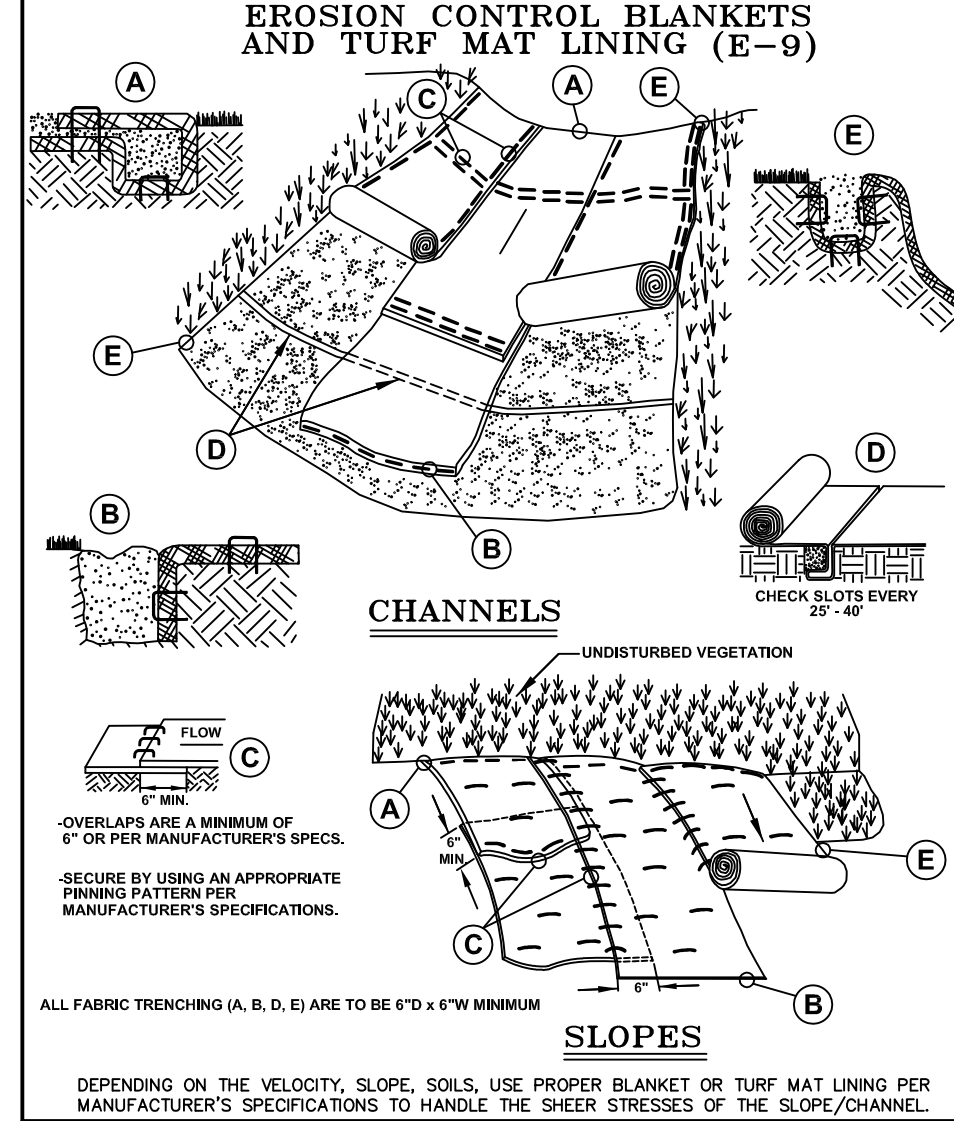


SO-2 DETENTION BASIN OUTLET FILTER (CMP)

PIPE DIA.	"D"	"E"	"F"	S.Y.
12"	5'-0"	6'-6"	3'-0"	4
15"	5'-0"	7'-0"	3'-0"	4
18"	5'-0"	7'-6"	3'-0"	4
21"	5'-6"	8'-0"	4'-0"	5
24"	6'-0"	8'-6"	4'-6"	6
27"	6'-6"	9'-0"	5'-0"	7
30"	7'-0"	9'-6"	5'-6"	8
33"	7'-6"	10'-3"	5'-6"	9
36"	8'-0"	10'-9"	6'-0"	10
42"	9'-0"	11'-9"	6'-6"	12
48"	10'-0"	13'-0"	7'-0"	14

- STORM SEWER NOTES**
- PRECAST CONC. RISERS SHALL MEET A.S.T.M. C478
  - DIAMETER OF CONC. BASE: I.D. + 2(WALL) + 8"
  - MANHOLE STEP SPACING SHALL MEET MIOSHA REQUIREMENTS. NO MORE THAN 21" FROM RIM TO FIRST STEP. MAX. 16" O.C. STEPS SHALL BE CAST POLYPROPYLENE REINFORCED WITH A 1/2" STEEL ROD.
  - WALL THICKNESS OF BLOCK STRUCTURES SHALL BE:  
DEPTH THICKNESS  
0-8' 8"  
8-15' 8"  
OVER 15' 12"
  - MINIMUM I.D. OF STRUCTURE FOR: 36" to 42" = 5'-0"  
48" to 54" = 6'-0"  
LARGER DIAMETER STRUCTURES MAY BE REQUIRED DEPENDING ON PIPING CONFIGURATION.
  - ALL LIFTING HOLES AND VOIDS IN INTERIOR JOINTS SHALL BE FILLED BY MORTAR.
  - THE FINGER DRAIN DETAIL SHALL BE USED AT ALL LOW POINT CATCH BASINS IN PAVEMENT AREAS. THE DETAIL MAY BE OMITTED WITH THE APPROVAL OF THE TOWNSHIP ENGINEER IN AREAS WITH VERY POROUS SOILS AND NO GROUNDWATER PROBLEMS.
  - PRECAST ONE PIECE BASES AND RISERS ARE ACCEPTABLE FOR INLETS, CATCH BASINS AND MANHOLES
  - FRAMES & COVERS WITH INLET CAPACITY (1.0 CFS/90 SQ IN) -TRAFFIC AND PARKING AREAS: MDOT "D" (EJW 5105) 1.9 CFS\* -REAR YARD AND DITCH INLETS: (EJW 1040-02) 2.1 CFS\* -MANHOLES: MDOT "A" (EJW 1060) -CURB AND GUTTER INLETS: MDOT "K" (EJW 7045) 1.8 CFS\* -MOUNTABLE CURB & GUTTER: (EJW 7065) 2.2 CFS\* \*MAY VARY DUE TO MANUFACTURER CHANGES
  - CONTACT THE TOWNSHIP ENGINEER 48 HOURS PRIOR TO CONSTRUCTION TO SCHEDULE INSPECTION. FULL TIME INSPECTION WILL BE REQUIRED FOR ALL UNDERGROUND STORM SEWER CONSTRUCTION. PHONE: (248) 334-9901
  - THE CONTRACTOR SHALL CONTACT MISS DG 72 HOURS BEFORE CONSTRUCTION AT (800) 482-7171 TO LOCATE EXISTING UNDERGROUND UTILITIES.
  - PRIOR TO START OF CONSTRUCTION, CONTRACTOR SHALL HAVE IN HIS POSSESSION A CURRENT SOIL EROSION CONTROL PERMIT AS ISSUED BY WHITE LAKE TOWNSHIP.
  - A 2' DEEP SUMP SHALL BE USED IN ANY STRUCTURE SUBJECT TO A WATER DROP GREATER THAN 2.0' FROM AN INLET PIPE.
  - ALLOWABLE STORM SEWER PIPE TYPES:  
-12" AND UP: RCP ASTM C-76 MIN CLASS 3, MIN CLASS 4 UNDER TRAFFIC AREAS, RUBBER JOINT  
-6" TO 15": SCH 40 PVC OR SDR 23.5 PVC WITH RUBBER OR GLUE JOINT  
-6" TO 48": SMOOTH BORE CORRUGATED HIGH DENSITY POLYETHYLENE WITH NEOPRENE LINED JOINTS OR BETTER
  - THE MINIMUM PIPE SIZE IN PUBLIC RIGHT-OF-WAY OR EASEMENTS AND FOR PIPES CARRYING OFF-SITE STORM WATER SHALL BE 12"
  - ALL PIPE ENDS NOT WITHIN A STRUCTURE SHALL HAVE A CONCRETE OR METAL FLARE END SECTION (FES) WITH A BAR SCREEN ON PIPES 18" AND LARGER EXCEPT THOSE WITHIN A SECURE FENCED AREA NEED NO BAR SCREEN.
  - ALL DRAINAGE STRUCTURES WITHIN THE ROAD SHALL BE SEALED WITH WRAPPED GEOTEXTILE PER ROC STANDARD

<p>REVISIONS</p> <table border="1"> <thead> <tr> <th>MARK</th> <th>ADDENDUM/CHANGE ORDER</th> <th>DATE</th> <th>MARK</th> <th>ADDENDUM/CHANGE ORDER</th> <th>DATE</th> <th>MARK</th> <th>ADDENDUM/CHANGE ORDER</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td></td> <td>FIRST ISSUE</td> <td>08/16/95</td> <td></td> <td>REVISE</td> <td>10-03-02</td> <td></td> <td>REVISE</td> <td>06-01-07</td> </tr> <tr> <td></td> <td>ADD SO-1</td> <td>06-17-96</td> <td></td> <td>REVISE</td> <td>12-17-03</td> <td></td> <td>UPDATED TITLE BLOCK</td> <td>04/30/13</td> </tr> <tr> <td></td> <td>NEW BAR GRATE</td> <td>11-03-97</td> <td></td> <td>SEC REFERENCE</td> <td>05-17-05</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	MARK	ADDENDUM/CHANGE ORDER	DATE	MARK	ADDENDUM/CHANGE ORDER	DATE	MARK	ADDENDUM/CHANGE ORDER	DATE		FIRST ISSUE	08/16/95		REVISE	10-03-02		REVISE	06-01-07		ADD SO-1	06-17-96		REVISE	12-17-03		UPDATED TITLE BLOCK	04/30/13		NEW BAR GRATE	11-03-97		SEC REFERENCE	05-17-05				<p><b>Johnson &amp; Anderson</b></p> <p>4494 Elizabeth Lake Road Waterford, Michigan 48328 tel (248) 681-7800 fax (248) 681-2660</p> <p>1060 W. Norton Avenue, Suite 7 Muskegon, Michigan 49441 tel (231) 780-3100 fax (231) 780-3115</p> <p>3910 Lapeer Road Port Huron, Michigan 48060 tel (810) 987-7820 fax (810) 987-7895</p>	<p>White Lake Township 7525 Highland Road (M-59) White Lake, Michigan 48383 248-698-3300</p>		<p><b>STORM SEWER STANDARD DETAILS</b></p>	<p>JOB NO. DATE ISSUED SHEET NO.</p>
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NOTE: WHILE PERFORMING WORK INVOLVING GROUNDS MAINTENANCE AND/OR THE CONSTRUCTION/MAINTENANCE OF ANY INFRASTRUCTURE, INCLUDING ROADS, WATER MAINS, SANITARY SEWERS, STORM DRAINS AND STORM WATER BEST MANAGEMENT PRACTICES (BMPs), CONTRACTORS SHALL MINIMIZE POLLUTION FROM STORM WATER RUNOFF THAT CAN AFFECT WATER QUALITY RELATED TO WORK ACTIVITIES. POLLUTANTS THAT COULD IMPAIR WATER QUALITY MAY INCLUDE FUEL, GREASE AND OIL, NUTRIENTS, BACTERIA AND PATHOGENS, LITTER AND DEBRIS, AND SOIL EROSION AND SEDIMENTATION. APPLICABLE BMPs SHALL BE IMPLEMENTED BY THE CONTRACTOR TO THE MAXIMUM EXTENT PRACTICABLE TO PROTECT WATER QUALITY AND WILDLIFE HABITAT.

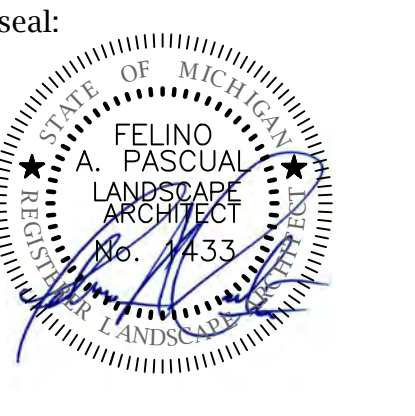
**SOIL EROSION AND SEDIMENTATION CONTROL DETAILS**

Rev.	By	Date	Description
1	WRC	01/01/01	ISSUED FOR APPROVAL
2	WRC	01/01/01	ISSUED FOR APPROVAL
3	WRC	01/01/01	ISSUED FOR APPROVAL
4	WRC	01/01/01	ISSUED FOR APPROVAL
5	WRC	01/01/01	ISSUED FOR APPROVAL
6	WRC	01/01/01	ISSUED FOR APPROVAL
7	WRC	01/01/01	ISSUED FOR APPROVAL
8	WRC	01/01/01	ISSUED FOR APPROVAL
9	WRC	01/01/01	ISSUED FOR APPROVAL
10	WRC	01/01/01	ISSUED FOR APPROVAL
11	WRC	01/01/01	ISSUED FOR APPROVAL
12	WRC	01/01/01	ISSUED FOR APPROVAL
13	WRC	01/01/01	ISSUED FOR APPROVAL
14	WRC	01/01/01	ISSUED FOR APPROVAL
15	WRC	01/01/01	ISSUED FOR APPROVAL
16	WRC	01/01/01	ISSUED FOR APPROVAL
17	WRC	01/01/01	ISSUED FOR APPROVAL
18	WRC	01/01/01	ISSUED FOR APPROVAL
19	WRC	01/01/01	ISSUED FOR APPROVAL
20	WRC	01/01/01	ISSUED FOR APPROVAL

ORIG. DATE: 01/01/01  
SCALE: NONE  
DESIGNED BY: WRC  
DRAWN BY: Mapping

ONE PUBLIC WORKS DRIVE, BLDG 95 WEST  
WATERFORD, MICHIGAN  
48320-1907

SHEET NO.: 1 of 1



client:  
**JMF WHITE LAKE, LLC.**  
 1700 W. BIG BEAVER ROAD SUITE 120  
 TROY, MI 48084

project:  
**LAKE POINTE**

project location:  
 White Lake Twp., Michigan

sheet title:  
**OVERALL LANDSCAPE PLAN VIEW**

job no./issue/revision date:

LS19.124.11	TWP.	11-12-2019
LS19.124.12	TWP.	12-27-2019
LS20.089.10	TWP.	10-14-2020
LS21.009.01	SPA	1-18-2021
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drawn by:  
**JP, DK**  
 checked by:  
**FP**  
 date:  
**1-30-2024**

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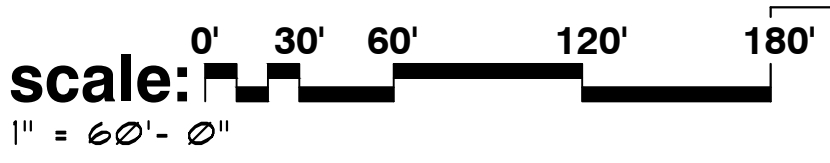
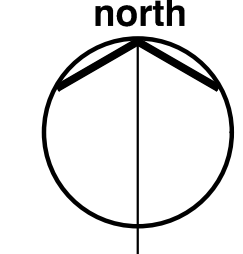
The location and elevations of existing underground utilities as shown on this drawing are only approximate. No guarantee is either expressed or implied as to the completeness of accuracy; contractor shall be exclusively responsible for determining the exact location and elevation prior to the start of construction.

project no:  
**LS24.026.02**

sheet no:  
**LS-1 of 7**

overall view landscape plan for:  
**Lake Pointe**  
 a multi-family residential community  
 White Lake Township, Michigan

**note:**  
 conceptual landscape plan for graphic presentation purposes only and in no way a construction document or approved for record.



**general landscape notes:**

- LANDSCAPE CONTRACTOR SHALL VISIT THE SITE, INSPECT EXISTING CONDITIONS, REVIEW PROPOSED PLANTINGS AND RELATED WORK. CONTACT THE OWNER AND/OR LANDSCAPE ARCHITECT WITH ANY CONCERNS OR DISCREPANCY BETWEEN THE PLAN, PLANT MATERIAL LIST, AND/OR SITE CONDITIONS.
- PRIOR TO BEGINNING OF CONSTRUCTION ON ANY WORK, CONTRACTORS SHALL VERIFY LOCATIONS OF ALL ON SITE UTILITIES, GAS, ELECTRIC, TELEPHONE, CABLE TO BE LOCATED BY CONTACTING MISS DIG 1-800-482-7171. ANY DAMAGE OR INTERRUPTION OF SERVICES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. COORDINATE ALL RELATED WORK ACTIVITIES WITH OTHER TRADES AND REPORT ANY UNACCEPTABLE JOB CONDITIONS TO OWNER PRIOR TO COMMENCING.
- NUMERICAL VALUE ON THE LANDSCAPE QUANTITIES SPECIFIED ON THE PLAN TAKE PRECEDENCE OVER GRAPHIC REPRESENTATION. VERIFY ANY CONCERN DISCREPANCY WITH LANDSCAPE ARCHITECT.
- ALL CONSTRUCTION AND PLANT MATERIAL LOCATION TO BE ADJUSTED ON SITE IF NECESSARY.
- ALL SUBSTITUTIONS OR DEVIATIONS FROM THE LANDSCAPE PLAN MUST BE APPROVED BY WHITE LAKE TOWNSHIP AND LANDSCAPE ARCHITECT.
- ALL LARGE TREES AND EVERGREENS TO BE STAKED, GUYED AND WRAPPED AS DETAILED, SHOWN ON PLAN.
- PLANT BEDS TO BE DRESSED WITH MIN. 4" OF FINELY DOUBLE SHREDDED HARBARK MULCH.
- DIG SHRUB PITS 1' LARGER THAN SHRUB ROOT BALLS AND TREE PITS 2' LARGER THAN ROOT BALL. BACK FILL WITH ONE PART TOP SOIL AND ONE PART SOIL FROM EXCAVATED PLANTING HOLE.
- NATURAL COLOR, FINELY SHREDDED HARDWOOD BARK MULCH REQUIRED FOR ALL PLANTINGS.
- REMOVE ALL TWINE, WIRE AND BURLAP FROM TREE AND SHRUB EARTH BALLS, AND FROM TREE TRUNKS. 4" THICK BARK MULCH FOR TREES IN 4" DIA. CIRCLE WITH 3" PULLED AWAY FROM TRUNK. 4" THICK BARK MULCH FOR SHRUBS AND 4" THICK BARK MULCH FOR PERENNIALS.
- PLANT MATERIAL QUALITY & INSTALLATION SHALL BE IN ACCORDANCE WITH THE CURRENT AMERICAN ASSOCIATION OF NURSERYMEN LANDSCAPE STANDARDS.
- PROVIDE FEAT SOD FOR ALL NEW AND DISTURBED LAWN AREAS UNLESS NOTED OTHERWISE.
- ALL PLANTING AREAS TO BE PREPARED WITH APPROPRIATE SOIL MIXTURES AND FERTILIZER BEFORE PLANT INSTALLATION.
- PLANT TREES AND SHRUBS GENERALLY NO CLOSER THAN THE FOLLOWING DISTANCES FROM SIDEWALKS, CURBS AND PARKING STALLS:
  - SHADE TREES \_\_\_\_\_ 5 FT.
  - ORNAMENTAL AND EVERGREEN TREES (CRAB, PINE, SPRUCE, ETC.) \_\_\_\_\_ 10 FT.
  - SHRUBS THAT ARE LESS THAN 1 FOOT TALL AND WIDE AT MATURITY \_\_\_\_\_ 2 FT.
- NO TREES OR EVERGREENS TO BE INSTALLED OVER AND/OR WITHIN 5' TO 6' OF ANY PROPOSED OR EXISTING UTILITY LINES AS SHOWN ON THE OVERALL LANDSCAPE PLAN. SEE ENGINEERING PLANS FOR LOCATION AND DETAILS.
- ALL LAWN AREAS AND LANDSCAPE BEDS TO BE FULLY IRRIGATED WITH AN AUTOMATIC UNDERGROUND SYSTEM. IRRIGATION SYSTEM TO HAVE SEPARATE ZONES FOR LAWN AREAS, PARKING ISLANDS, AND SHRUB BEDS WITH DIFFERENT CONTROL MOISTURE LEVEL ADJUSTMENT PER ZONE AS REQUIRED.
- UNLESS NOTED OTHERWISE, LANDSCAPE BEDS ADJACENT TO LAWN TO RECEIVE EDGING. EDGING SHALL BE 4" X 1/8" METAL (FINISH BLACK OR GREEN) OR APPROVED EQUAL AND TO BE INSTALLED WITH HORIZONTAL METAL STAKES AT 32" O.C. OR PER MANUFACTURER'S SPECIFICATION.
- LANDSCAPE BEDS ADJACENT AND NEXT TO BUILDING SHALL BE EXCAVATED OF ALL BUILDING MATERIALS AND POOR SOILS A MIN. OF 12" DEPTH. BACK FILL WITH GOOD, MEDIUM TEXTURED PLANTING SOILS. ADD A MIN. 4" OF TOPSOIL OVERFILL TO FINISH GRADE. PROVIDE POSITIVE DRAINAGE.
- WATERING OF ALL PLANTS AND TREES TO BE PROVIDED IMMEDIATELY AND MULCHING WITHIN 24 HOURS AFTER INSTALLATION.
- ALL TREE PITS TO BE TESTED FOR PROPER DRAINAGE PRIOR TO TREE PLANTING. PROVIDE APPROPRIATE DRAINAGE SYSTEM AS REQUIRED IF THE TREE PIT DOES NOT DRAIN SUFFICIENTLY.
- THE LANDSCAPE CONTRACTOR SHALL GUARANTEE ALL LANDSCAPE PLANT MATERIALS AND IRRIGATION INSTALLATION FOR A PERIOD OF TWO YEAR BEGINNING AFTER THE COMPLETION OF LANDSCAPE INSTALLATION DATE APPROVED BY THE TWP. OR LANDSCAPE ARCHITECT. THE CONTRACTOR SHALL REPLACE DURING AND AT THE END OF THE GUARANTEE PERIOD, ANY DEAD OR UNACCEPTABLE PLANTS, AS DETERMINED BY THE TOWNSHIP OR LANDSCAPE ARCHITECT, WITHOUT COST TO THE OWNER.
- TREES SHALL NOT BE PLANTED CLOSER THAN (4') FOUR FEET TO A PROPERTY LINE.

**sheet index**

- LS-1 OVERALL LANDSCAPE PLAN VIEW
- LS-2 GENERAL PLANTING DETAIL
- LS-3 PLANT MATERIAL LIST & PLANTING DETAILS
- LS-4 BUILDING FOUNDATION, CLUBHOUSE & ENTRY PLANTING DETAILS
- LS-5 SITE AMENITY, PERGOLA & ENTRY SIGN DETAILS
- LS-6 POOL DECK PLAN
- LS-7 POOL PERGOLA \ TRELLIS ELEVATIONS & DETAILS

**residential landscape requirements:**

greenbelt	REQUIRED	PROVIDED
TOTAL LN.FT. OF GREENBELT FRONTAGE	825±	
ONE (1) DECIDUOUS OR EVERGREEN TREE PER 30 LN.FT. (825' LN.FT. / 30 LN.FT. = 27.5 TREES)	28	28
EIGHT (8) SHRUB PER 30 LN.FT. (825' LN.FT. / 30 LN.FT. = 27.5 X 8 = 220 SHRUBS)	190	255 (A)

interior landscape	REQUIRED	PROVIDED
TOTAL ACRES OF SITE	19.32 AC±	
ACRES OF 60' R.O.M. AREA	56 AC±	
ACRES OF INTERNAL ROAD AREA	1.31 AC±	
TOTAL ACRES OF SITE NET AREA	11.45 AC± (498,762 SQ.FT.)	
TOTAL SQ.FT. OF INTERIOR LANDSCAPING AREA (15% OF 11.45 AC± (498,762 SQ.FT.) = 74,814.3±)	74,814.3 SQ.FT.	
ONE (1) DECIDUOUS, ORNAMENTAL OR EVERGREEN TREE PER 300 SQ.FT. (74,814.3 SQ.FT. / 300 SQ.FT. = 249.4 TREES)	250	265 (B)
FIVE (5) SHRUB PER 300 SQ.FT. (74,814.3 SQ.FT. / 300 SQ.FT. = 249.4 X 5 = 1,247 SHRUBS)	1,247	478 ± (C)

residential buffer	REQUIRED	PROVIDED
TOTAL LN.FT. OF EAST PROPERTY LINE	475±	
ONE (1) DECIDUOUS OR EVERGREEN TREE PER 15 LN.FT. (475 LN.FT. / 15 LN.FT. = 31.7 TREES)	32	32
FOUR (4) SHRUB PER 15 LN.FT. (475 LN.FT. / 15 LN.FT. = 31.7 X 4 = 126.7 SHRUBS)	127	167 (B)

**note:**  
 'A' - 65 SUPPLEMENTAL SHRUB PLANTINGS TO BE CREDITED TOWARDS INTERIOR LANDSCAPE PLANTING REQUIREMENTS  
 'B' - 40 SUPPLEMENTAL SHRUB PLANTINGS TO BE CREDITED TOWARDS INTERIOR LANDSCAPE PLANTING REQUIREMENTS  
 'C' - SUPPLEMENTAL PERENNIAL PLANTINGS TO BE CREDITED TOWARDS INTERIOR SHRUB LANDSCAPE PLANTING REQUIREMENTS  
 620- PERENNIALS AND GRASSES  
 2500- GROUND COVERS



LAWN AREAS TO RECEIVE IRRIGATION & SOD ON FINISH GRADES. PROVIDE POSITIVE DRAINAGE.  
 HATCHING DENOTES EXISTING TREES AND VEGETATION

PROPOSED PERGOLA FEATURE

DETENTION BASIN - SEE ENGINEERING PLANS FOR LOCATION, SIZE, SIDE SLOPES, WATER ELEVATION, TOP OF BANK AND DETAILS.

10' (33' 47" DEEP) 12' (33' 30" DEEP)

PROPOSED CLUBHOUSE FACILITY AND POOL

PROPOSED ENTRY SIGN LOCATION

25' VEHICULAR CLEARVIEW LINE

LAWN AREAS TO RECEIVE IRRIGATION & SOD ON FINISH GRADES. PROVIDE POSITIVE DRAINAGE. SEE ENGINEERING PLANS FOR GRADES.

5' WIDE MEANDERING PEDESTRIAN WALK.

PROPOSED RETAINING WALL. SEE ENGINEERING PLANS FOR DETAILS

PROPOSED RESIDENTIAL UNITS SEE ENGINEERING & ARCHITECTURAL PLANS FOR SITE PLAN, UTILITY LAYOUT, BUILDING ARCHITECTURE & DETAILS.

5' WIDE INTERIOR COLLECTOR WALK, TYP.

TREES SHALL NOT BE PLANTED CLOSER THAN 4 FEET FROM THE PROPERTY LINE

HATCHING DENOTES EXISTING EVERGREEN TREES ON ADJACENT PROPERTY

PROPOSED RETAINING WALL. SEE ENGINEERING PLANS FOR DETAILS

LAWN AREAS TO RECEIVE IRRIGATION & SOD ON FINISH GRADES. PROVIDE POSITIVE DRAINAGE. SEE ENGINEERING PLANS FOR GRADES.

HATCHING DENOTES EXISTING TREES

**tree cluster/grouping planting notes:**

- typical 3 to 4 evergreen or canopy tree cluster grouping per same species
- maximum of 8 evergreen tree cluster grouping per same species provided
- maximum of 5 canopy tree cluster grouping per same species provided



client:  
**JMF WHITE LAKE, LLC.**  
 1700 W. BIG BEAVER  
 ROAD SUITE 120  
 TROY, MI 48084

project:  
**LAKE  
 POINTE**

project location:  
 White Lake Twp.,  
 Michigan

Union Lake Road  
 sheet title:

**GENERAL  
 LANDSCAPE  
 PLANTING DETAIL**

job no./issue/revision date:

LS19.124.11	TWP.	11-12-2019
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drawn by:  
**JP, DK**  
 checked by:  
**FP**  
 date:  
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project no:  
**LS24.026.02**

sheet no:  
**LS-2 of 7**



PROPOSED ADJACENT CLUBHOUSE  
 FACILITY LANDSCAPE PLANTINGS.  
 SEE SHEET L6-4 FOR DETAILS

DETENTION POND - SEE SHEET L6-3  
 FOR PROPOSED PLANTINGS AND  
 POND SEED MIX DETAILS

HATCHING DENOTES EXISTING  
 WOODS AND VEGETATION ON  
 ADJACENT PROPERTY TO  
 REMAIN

HATCHING DENOTES  
 EXISTING TREES AND  
 VEGETATION ON ADJACENT  
 PROPERTY TO REMAIN

PROPOSED BUILDING  
 FOUNDATION PLANTINGS. SEE  
 SHT. L6-4 FOR DETAILS

REAR YARD AREAS TO  
 RECEIVE HYDROSEED ON  
 FINISH GRADES. PROVIDE  
 POSITIVE DRAINAGE.

HATCHING DENOTES  
 EXISTING EVERGREEN TREES  
 ON ADJACENT PROPERTY

PROPOSED RETAINING  
 WALL. SEE ENGINEERING  
 PLANS FOR DETAILS

FRONT AND SIDES LAWN  
 AREAS TO RECEIVE  
 IRRIGATION AND SOD ON  
 FINISH GRADES. PROVIDE  
 POSITIVE DRAINAGE

**tree cluster/grouping planting notes:**

1. typical 3 to 4 evergreen or canopy tree cluster grouping per same species
2. maximum of 8-evergreen tree cluster grouping per same species provided
3. maximum of 5-canopy tree cluster grouping per same species provided

**2A landscape planting details**  
 SCALE: 1"=40'-0"

**landscape legend**

- deciduous trees**  
 (Maples, Celtis occidentalis,  
 Zeikova serrata, Oaks, Lindens,  
 Nyssa sylvatica, etc...)
- ornamental trees**  
 (Eastern Redbud, Crabs, Hawthorn,  
 Serviceberry, etc...)
- evergreen trees**  
 (White Pine, Austrian Pine, Spruces)
- deciduous shrubs**  
 (viburnum, forsythia, burning  
 bush, cotoneaster dogwood, etc.)
- evergreen shrubs**  
 (Junipers, yews, hollies, arborvitae,  
 boxwood, etc.)
- perennials and/or seasonal flowers**  
 (Daylily, Sedum, Ornamental Grasses,  
 Black Eyed Susan, etc...)

PROPOSED UNDERGROUND  
 UTILITIES-SEE ENGINEERING PLAN  
 FOR FINAL LOCATIONS, SIZES,  
 TYPES, ELEVATIONS AND DETAILS.

PROPOSED BUILDING FOUNDATION  
 PLANTINGS. SEE SHT. L6-4 FOR  
 DETAILS

8' WIDE CONC. PUBLIC  
 WALK, TYP.

25' VEHICULAR CLEARVIEW LINE

CROWN CUL-DE-SAC ISLAND 18" AT  
 CENTER LAWN AREAS TO RECEIVE  
 IRRIGATION AND SOD ON FINISH  
 GRADES. PROVIDE POSITIVE  
 DRAINAGE.

SEE ENTRY SIGN MONUMENT  
 ON SEE SHEET L6-5 FOR  
 DETAILS

PROPOSED ADJACENT  
 ENTRANCE LANDSCAPE  
 PLANTINGS. SEE SHEET L6-4  
 FOR DETAILS

OPEN SPACE LAWN AREAS TO  
 RECEIVE IRRIGATION AND  
 SOD ON FINISH GRADES.  
 PROVIDE POSITIVE DRAINAGE



**FELINO A. PASCUAL**  
and ASSOCIATES  
Community Land Planner and  
registered Landscape Architect  
24333 Orchard Lake Rd, Suite G  
Farmington Hills, MI 48336  
ph. (248) 557-5588  
fax. (248) 557-5416

client:  
**JMF WHITE LAKE, LLC.**  
1700 W. BIG BEAVER ROAD SUITE 120  
TROY, MI 48084

project:  
**LAKE POINTE**

project location:  
White Lake Twp., Michigan  
Union Lake Road

sheet title:  
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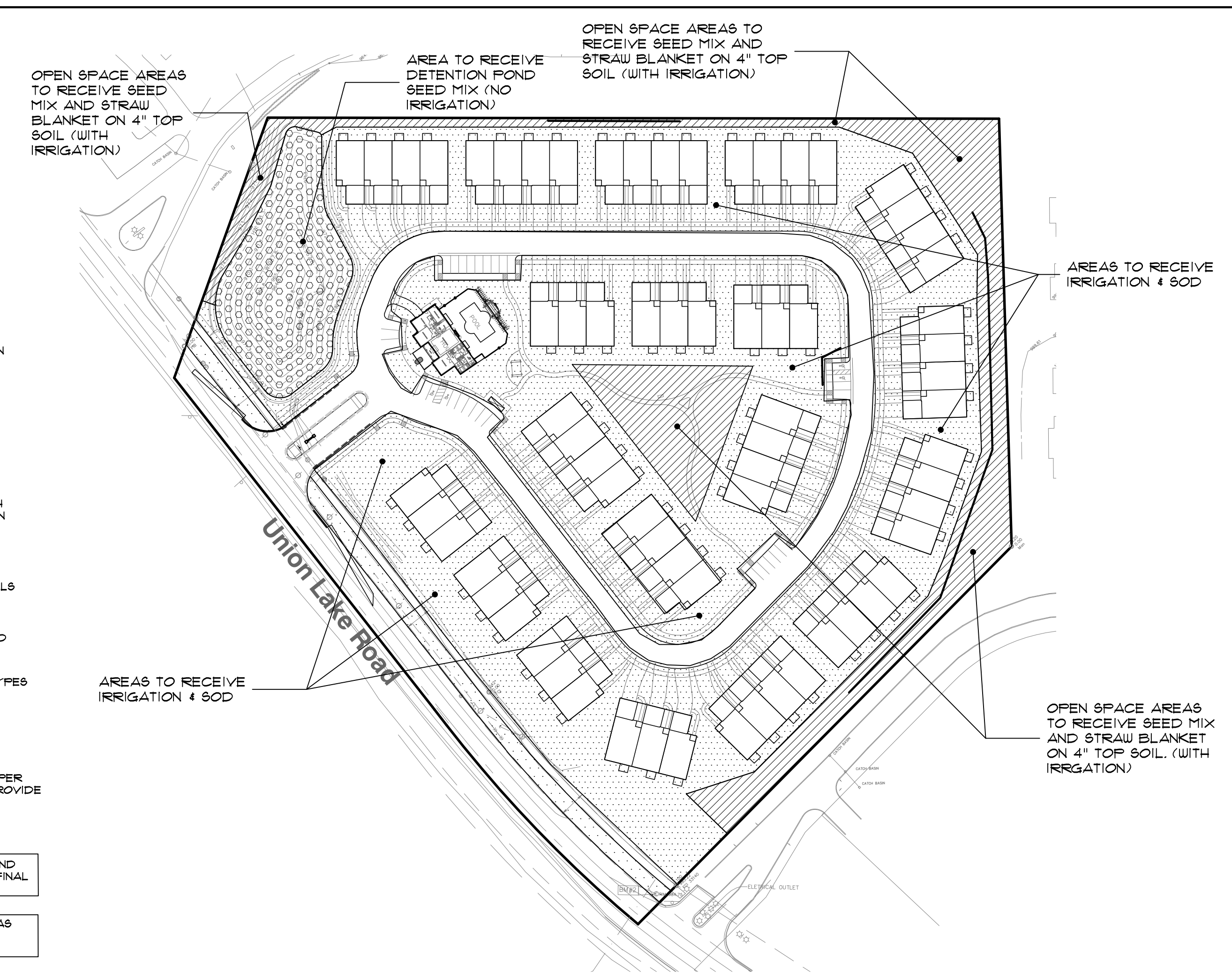
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For free location of public utility lines.

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**Landscape maintenance notes:**

LANDSCAPE MAINTENANCE PROCEDURES AND FREQUENCIES TO BE FOLLOWED SHALL BE SPECIFIED ON THE LANDSCAPE PLAN, ALONG WITH THE MANNER IN WHICH THE EFFECTIVENESS, HEALTH AND INTENDED FUNCTIONS OF THE VARIOUS LANDSCAPE AREAS ON THE SITE WILL BE ENSURED.

- LANDSCAPING SHALL BE KEPT IN A NEAT, ORDERLY AND HEALTHY GROWING CONDITION, FREE FROM DEBRIS AND REFUSE.
- PRUNING SHALL BE MINIMAL AT THE TIME OF INSTALLATION, ONLY TO REMOVE DEAD OR DISEASED BRANCHES. SUBSEQUENT PRUNING SHALL ASSURE PROPER MATURATION OF PLANTS TO ACHIEVE THEIR APPROVED PURPOSE.
- ALL DEAD OR DISEASED PLANT MATERIAL SHALL BE REMOVED AND REPLACED WITHIN SIX (6) MONTHS AFTER IT DIES OR IN THE NEXT PLANTING SEASON, WHICHEVER OCCURS FIRST. THE PLANTING SEASON FOR DECIDUOUS PLANTS SHALL BE BETWEEN MARCH 15 AND NOVEMBER 15 OR UNTIL THE PREPARED SOIL BECOMES FROZEN. THE PLANTING SEASON FOR EVERGREEN PLANTS SHALL BE BETWEEN MARCH 1 AND JUNE 1. PLANT MATERIAL INSTALLED TO REPLACE DEAD OR DISEASED MATERIAL SHALL BE AS CLOSE AS PRACTICAL TO THE SIZE OF THE MATERIAL IT IS INTENDED TO REPLACE.

**Planting landscape notes:**

GENERAL NOTES:  
1) PLANT MATERIALS TO BE INSTALLED ACCORDING TO THE WHITE LAKE TOWNSHIP, AND CURRENT AMERICAN ASSOCIATION OF NURSERYMEN'S STANDARDS.  
2) PLANT MATERIALS TO BE GUARANTEED FOR 2 YEARS. REPLACE FALLING MATERIAL WITHIN 1 YEAR, OR THE NEXT APPROPRIATE PLANTING PERIOD.  
3) PLANT MATERIALS TO BE OF PREMIUM QUALITY, NO. 1 GRADE NORTHERN NURSERY GROWN, IN HEALTHY CONDITION, FREE OF PESTS AND DISEASES.  
4) MULCH IS TO BE NATURAL COLORED, DOUBLE SHREDDED HARDWOOD BARK OF 4" THICK BARK MULCH FOR TREES IN 4" DIA. CIRCLE W/3" PULLED AWAY FROM TRUNK, 3" THICK BARK MULCH FOR SHRUBS AND 2" THICK BARK MULCH FOR PERENNIALS.  
5) CALL MISS DIG AT 1-800-482-7171 PRIOR TO ANY CONSTRUCTION.

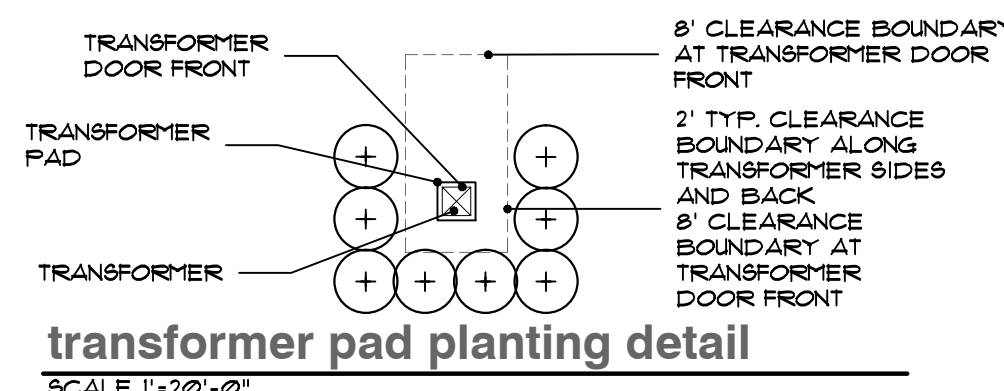
DECIDUOUS 4 EVERGREEN TREE:  
1) TREE SHALL BE INSTALLED SAME RELATIONSHIP TO FINISH GRADE AS IT BORE ORIGINALLY OR SLIGHTLY HIGHER THAN FINISH GRADE UP TO 6" ABOVE GRADE, IF DIRECTED BY LANDSCAPE ARCHITECT FOR HEAVY CLAY SOIL AREAS.  
2) DO NOT PRUNE TERMINAL LEADER, PRUNE ONLY DEAD OR BROKEN BRANCHES.  
3) REMOVE ALL TAGS, STRING, PLASTICS AND OTHER MATERIALS THAT ARE UNSIGHTLY AND COULD CAUSE GIRDLING.  
4) REMOVE TREE STAKES, GUY WIRES AND TREE WRAP AFTER ONE WINTER SEASON.

SHRUB:  
1) SHRUB SHALL BE INSTALLED SAME RELATIONSHIP TO FINISH GRADE AS IT BORE ORIGINALLY OR SLIGHTLY HIGHER THAN FINISH GRADE UP TO 4" ABOVE GRADE, IF DIRECTED BY LANDSCAPE ARCHITECT FOR HEAVY CLAY SOIL AREAS.  
2) DO NOT PRUNE TERMINAL LEADER, PRUNE ONLY DEAD OR BROKEN BRANCHES.  
3) REMOVE ALL TAGS, STRING, PLASTICS AND OTHER MATERIALS THAT ARE UNSIGHTLY AND COULD CAUSE GIRDLING.

LAWN:  
1) SOD LAWN AREAS SHALL BE KENTUCKY BLUE GRASS BLEND GRASS IN A SOD NURSERY ON LOAM SOIL, SOD TO BE INSTALLED ON MINIMUM 2" TOPSOIL.  
2) SEEDED LAWN AREAS SHALL CONSIST OF THE FOLLOWING TYPES AND PROPORTIONS:  
5% PERENNIAL RYE GRASS  
10% RED FESCUE  
25% CHEWING FESCUE  
60% KENTUCKY BLUE GRASS

SEED MIX SHALL BE APPLIED AT A RATE OF 200 POUNDS PER ACRE AND WEED CONTENT SHALL NOT EXCEED 1%. SEED, PROVIDE A MINIMUM 4" TOP SOIL ON ALL SEEDED LAWN AREA.

OPEN SPACE AREAS TO RECEIVE SEED MIX AND STRAW BLANKET ON 4" TOP SOIL (WITH IRRIGATION)



**transformer pad planting detail**  
SCALE 1" = 2'-0"

A MINIMUM OF 2' SEPARATION BETWEEN TRANSFORMER AND FULL GROWN SHRUBS AND TREES. GROUND COVERS ALLOWED UP TO TRANSFORMER PAD IF MAINTAINED BELOW 4" FULL GROWTH. IF TRANSFORMER FACES TOWARDS THE HOUSE, THEN THE SAME CONDITIONS EXIST. NO FULL GROWTH IN FRONT OF THE TRANSFORMER FOR AT LEAST A MINIMUM OF 8'. THERE ARE NO WAIVERS GRANTED TO THE ABOVE CONDITION. DETAIL FROM THE DETROIT EDISON COMPANY - SERVICE PLANNING DEPARTMENT (3-11-98)

SEE ENGINEERING PLANS FOR PROPOSED LOCATIONS, TOTAL NUMBER OF TRANSFORMERS AND FINAL LOCATION PER DETROIT EDISON REQUIREMENTS.

**plant material list**

key	quant. LS-2	botanical name	common name	size	comments
<b>LARGE AND SMALL DECIDUOUS TREES</b>					
GT	8	GLEDTISIA TRI. INERMIS 'SKYCOLE'	SKYLINE LOCUST	2 1/2" BB	
TC	8	TILIA CORDATA 'GREENSPIRE'	GREENSPIRE LINDEN	2 1/2" BB	
L6	7	LIQUIDAMBAR SYRACIFLUA	AMERICAN SWEETGUM	2 1/2" BB	
Z6	12	ZELKOVA SERRATE 'VILLAGE GREEN'	VILLAGE GREEN ZELKOVA	2 1/2" BB	
AR	11	ACER R. 'FRANKSRED'	RED SUNSET RED MAPLE	2 1/2" BB	
CO	10	CELTIS OCCIDENTALIS	HACKBERRY	2 1/2" BB	
LT	10	LIRIODENDRON TULIPIFERA	TULIPTREE	2 1/2" BB	
QB	12	QUERCUS 'BICOLOR'	SWAMP WHITE OAK	2 1/2" BB	
AF	18	ACER X FREEMANII 'JEFFERED'	AUTUMN BLAZE RED MAPLE	2 1/2" BB	
APC	3	ACER P. 'CRIMSON KING'	CRIMSON KING NORWAY MAPLE	2 1/2" BB	
AS	2	ACER SACCHARUM	SUGAR MAPLE	2 1/2" BB	
OY	9	OSTRYA VIRGINIANA	AMERICAN HOPHORNBEAM	2 1/2" BB	
CJ	2	CERCIDIPHYLLUM JAPONICUM	KATSURATREE	2 1/2" BB	
CB	6	CARPINUS BETULUS 'FASTIGIATA'	PYRAMIDAL EUROPEAN HORNBEAN	2 1/2" BB	
9R	2	SYRINGA RETICULATA 'IVORY SILK'	IVORY SILK JAPANESE TREE LILAC	2 1/2" BB	
CC	7	CERCIS CANADENSIS	EASTERN REDBUD (MULTI-STEM)	8' BB	(MULTI-STEM)
AC	6	AMELANCHIER CANADENSIS	SHADBLOW SERVICEBERRY	8' BB	(MULTI-STEM)
CK	5	CORNUS KOUSA	KOUSA DOGWOOD	2" BB	
CP	1	CRATAEGUS PHAENOPYRUM	WASHINGTON HAUHORN	2" BB	
M6	6	MALUS 'SNOWDRIFT'	SNOWDRIFT CRABAPPLE	2" BB	
MF	7	MALUS FLORIBUNDA	JAPANESE FLOWERING CRABAPPLE	2" BB	
MJ	7	MAGNOLIA LILIFLORA 'JANE'	JANE MAGNOLIA	8' BB	(MULTI-STEM)
MIR	4	MALUS 'RED BARRON'	RED BARRON CRABAPPLE	2" BB	
AP	2	ACER P. 'BLOODGOOD'	BLOODGOOD LACE LEAF JAPANESE MAPLE	11" CONT. T. HIGH	
<b>LARGE AND SMALL EVERGREENS</b>					
AW	36	ABIES CONCOLOR	CONCOLOR WHITE FIR	8' BB	
AWL	18	ABIES CONCOLOR	CONCOLOR WHITE FIR	10' BB O	
PA	34	PICEA ABIES	NORWAY SPRUCE	8' BB	
PAL	20	PICEA ABIES	NORWAY SPRUCE	10' BB O	
PD	32	PICEA GLAUCA 'DENSATA'	BLACK HILL SPRUCE	8' BB	
PDL	20	PICEA GLAUCA 'DENSATA'	BLACK HILL SPRUCE	10' BB O	
<b>SHRUBS</b>					
YD	26	VIBURNUM DENTATUM 'CHICAGO LUSTRE'	CHICAGO LUSTRE ARROWWOOD VIBURNUM	3' BB	60" SPACING O.C.
FI	50	FORSYTHIA X INTERMEDIA	BORDER FORSYTHIA	3" BB	60" SPACING O.C.
CS	28	CORNUS STOLONIFERA	REDTIG DOGWOOD	3' BB	60" SPACING O.C.
YMK	43	VIBURNUM X B. 'MOHAUK'	MOHAUK VIBURNUM	3' BB	60" SPACING O.C.
RAG	11	RHUS AROMATICA 'GRO-LOW'	GRO-LOW FRAGRANT BUMAC	24" CONT	48" SPACING O.C.
EF	55	ELONYMUS FORTUNEI 'MOONSHADOW'	MOONSHADOW ELONYMUS	24" CONT	48" SPACING O.C.

**detention basin seed mix:**

**Sedge Meadow Mix: (Edge Zone)**  
A mix of sedges, grasses and wildflowers recommended for soils that are saturated during most of the growing season. Use just above the normal waterline in the capillary zone in our Lake Edge Enhancement System.

**Sedge Meadow Mix oz/acre**  
1. Carex comosa (Bristly Sedge)  
2. Carex cristatella (Crested Sedge)  
3. Carex frankii (Frank's Sedge)  
4. Carex hystericina (Porcupine Sedge)  
5. Carex lurida (Lurid Sedge)  
6. Carex stipata (Aw-Fruited Sedge)  
7. Carex intubulosa (Pinnated Oval Sedge)  
8. Carex vulpinoidea (Fox Sedge)  
9. Elymus virginicus (Virginia Wild Rye)  
10. Glycyria striata (Fowl Manna Grass)  
11. Leersia oryzoides (Rice Cut Grass)  
12. Panicum virgatum (Switchgrass)  
13. Scirpus atrovirens (Dark Green Bulrush)

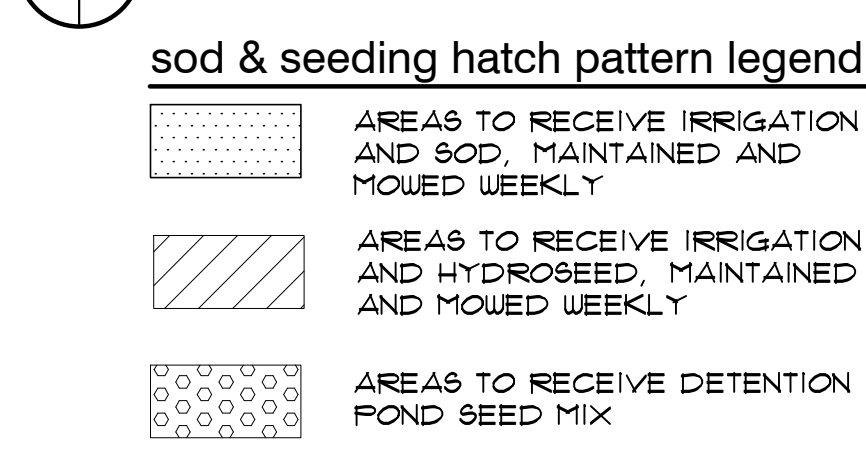
**Forbs oz/acre**  
1. Alisma subcordatum (Water plantain)  
2. Angelica atropurpurea (Angelica)  
3. Aster novae-angliae (New England Aster)

**Components per acre**  
8 lbs grasses and sedges, 3 lbs forbs

**annual cover: (Edge, Upland & Dry Upland Zones)**  
50% Temporary Grasses: will contain two of the following species.  
Seed Oats: Avena sativa  
Annual Rye: Lolium multiflorum  
Winter Wheat: Triticum aestivum  
American Slough Grass: Beckmannia syzigachne

**SOURCE: NATIVESCAPE LLC**  
P.O. BOX 122  
MANCHESTER, MICHIGAN 48058  
ph: 517.456.9696  
www.nativescape.net

**sod & seeding area reference location map**  
SCALE: 1" = 100'-0"

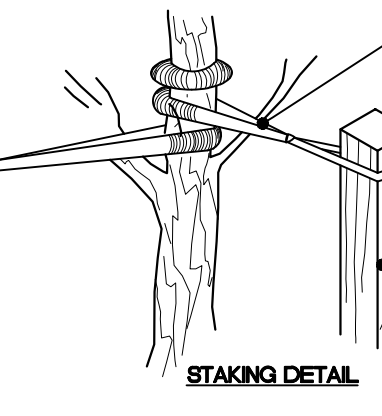


ALL REQUIRED SITE IRRIGATION SYSTEMS SHALL INCLUDE A RAIN SENSOR OR SIMILAR MEASURE TO ENSURE IRRIGATION DUES NOT OCCUR DURING OR SHORTLY AFTER PRECIPITATION EVENTS.

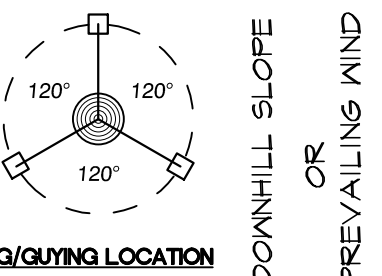
ALL REQUIRED LANDSCAPE AREAS IN EXCESS OF 200 SQUARE FEET SHALL BE IRRIGATED TO ASSIST IN MAINTAINING A HEALTHY CONDITION FOR ALL PLANTINGS AND LAWN AREAS.



2-3" WIDE BELT-LIKE NYLON OR PLASTIC STRAPS  
STAKE TREES - JUST BELOW FIRST BRANCH USING 2 - 3" WIDE BELT-LIKE NYLON. CONNECT FROM TREE TO STAKE OPPOSITE. ALLOW FOR SOME FLEXING OF THE TREE. REMOVE AFTER ONE (1) YEAR.

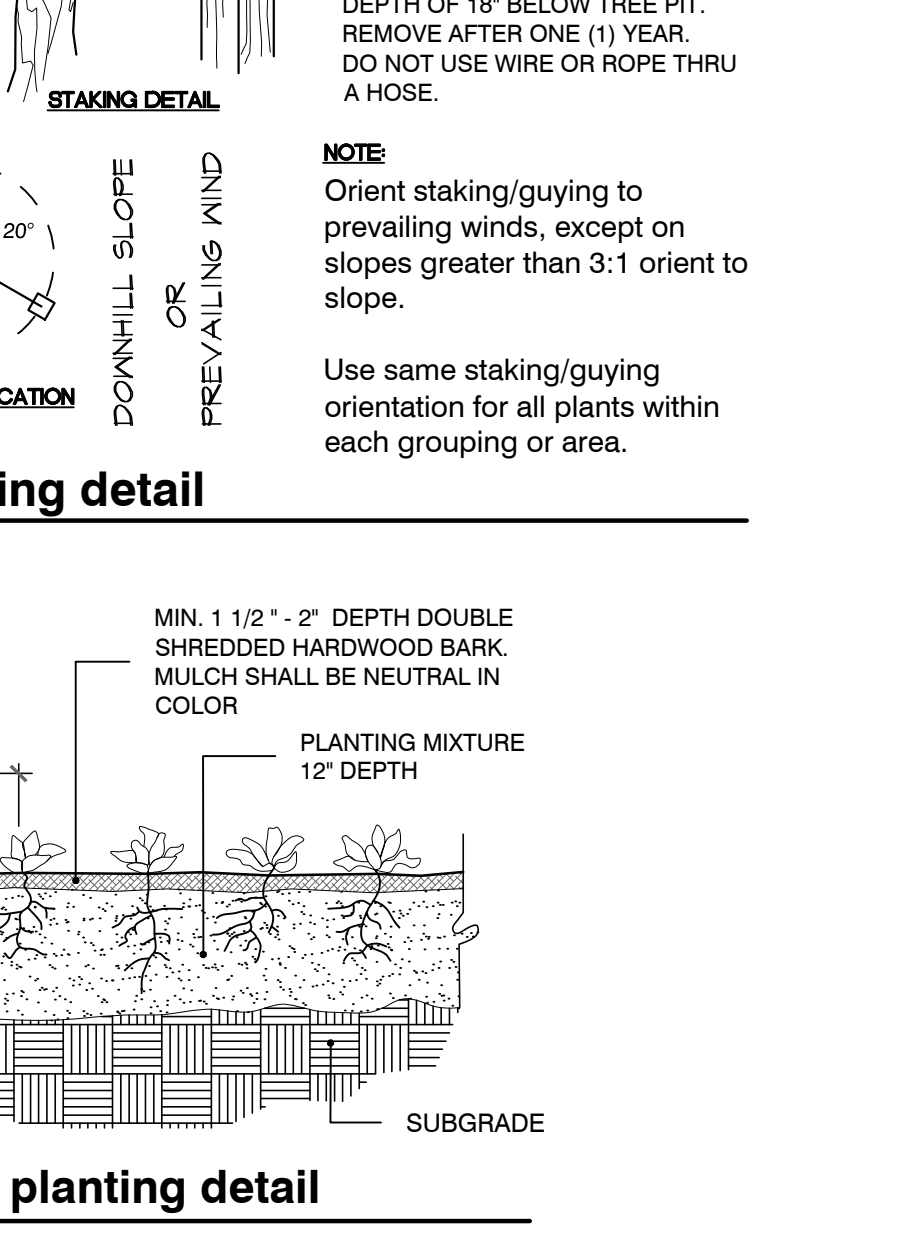
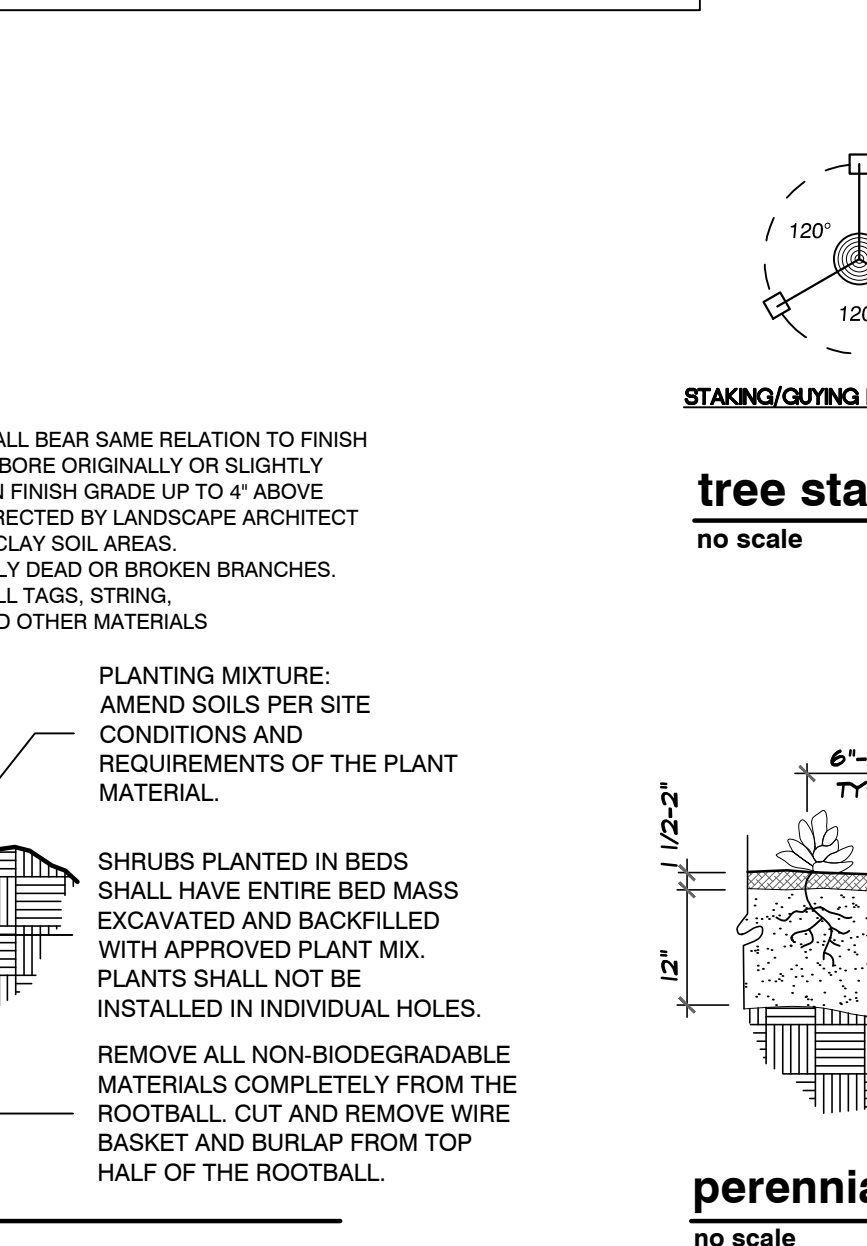
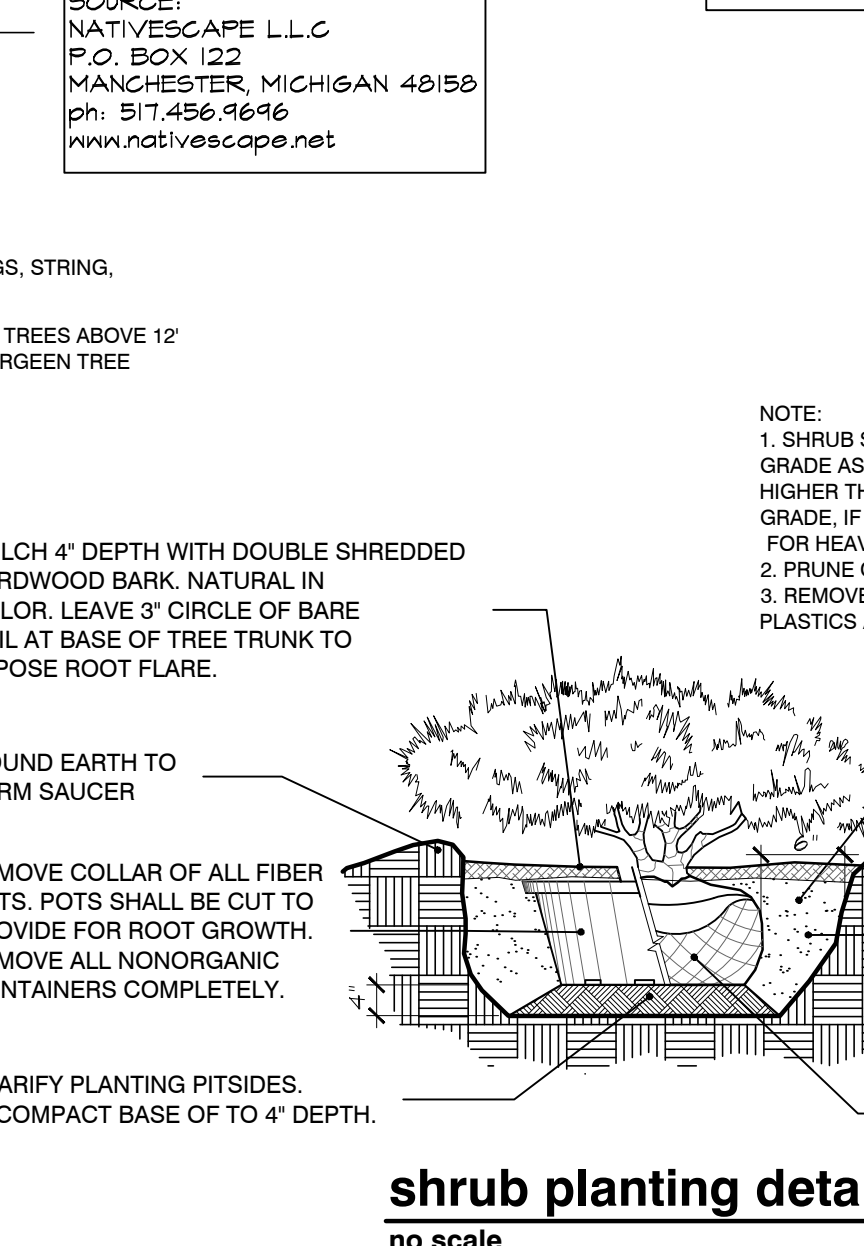
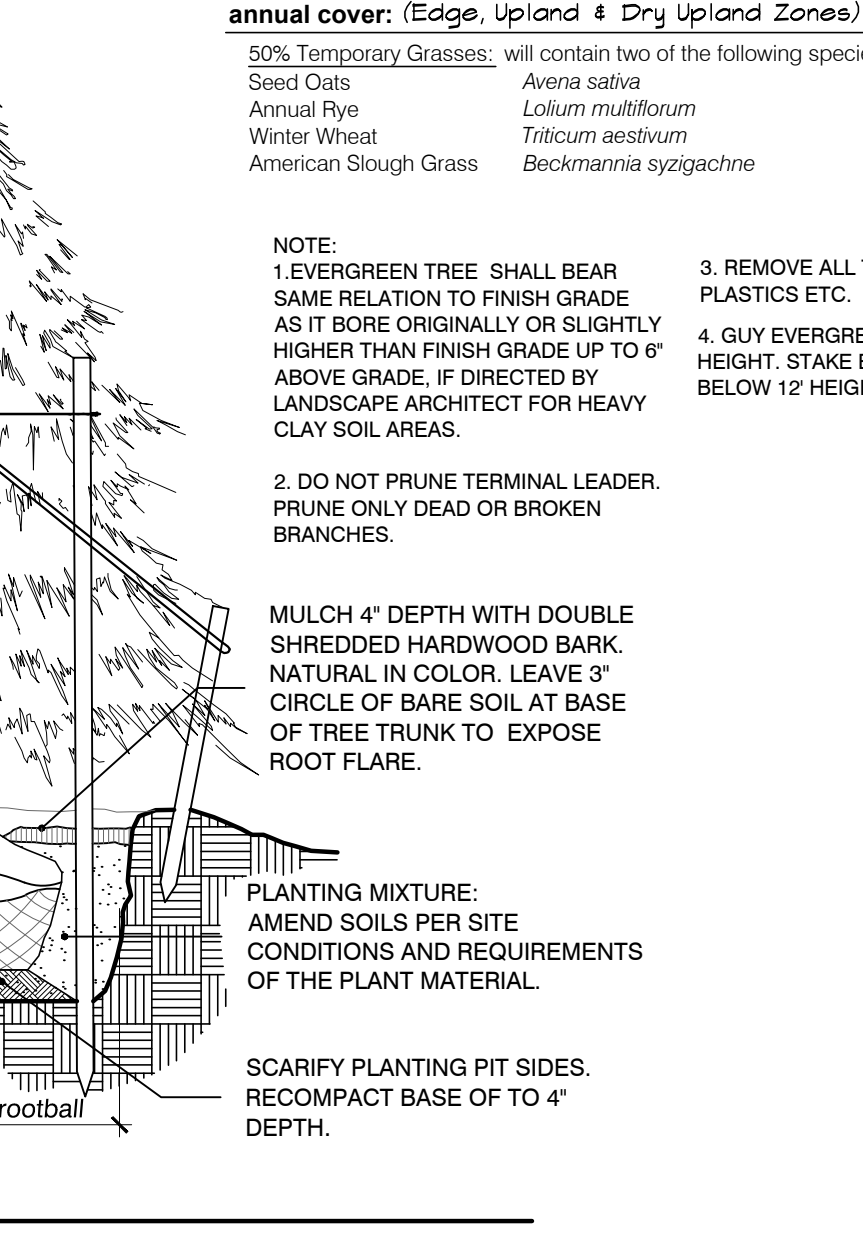
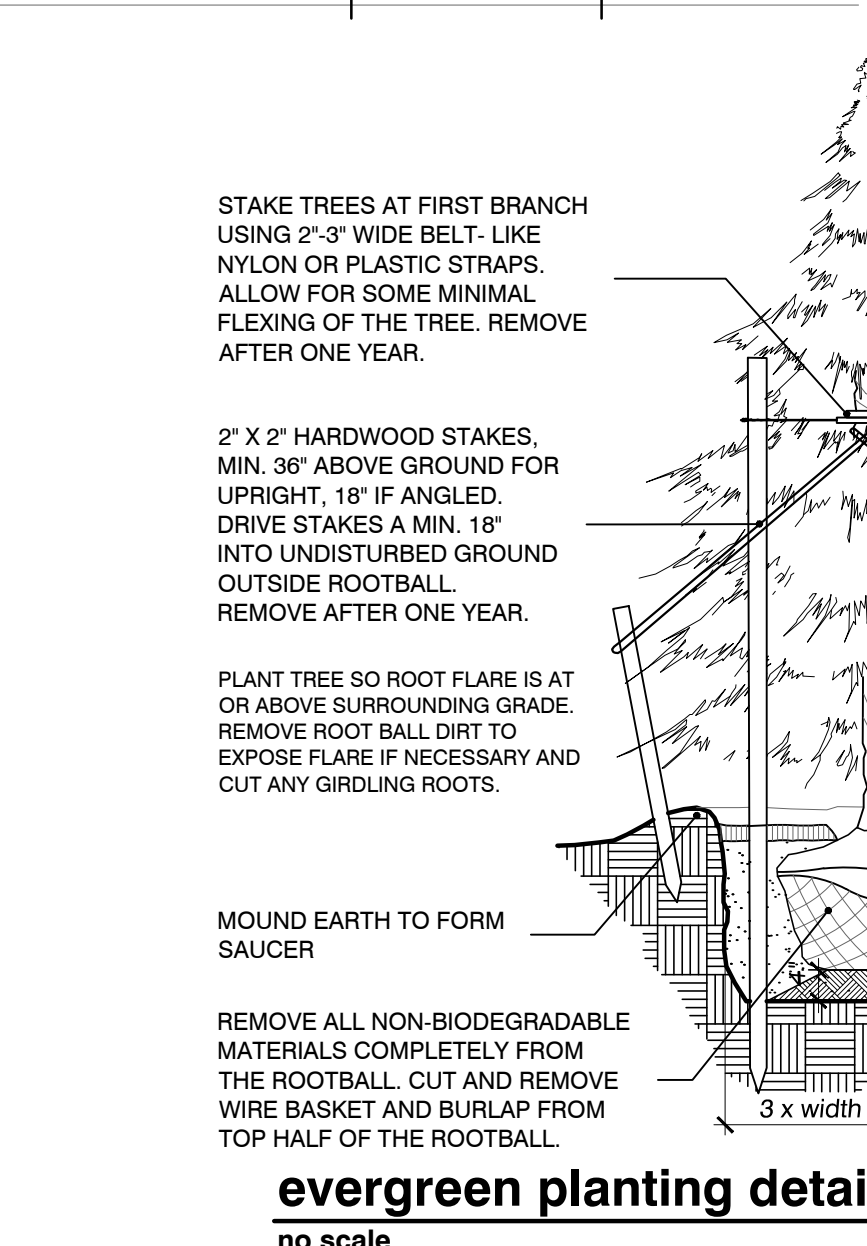
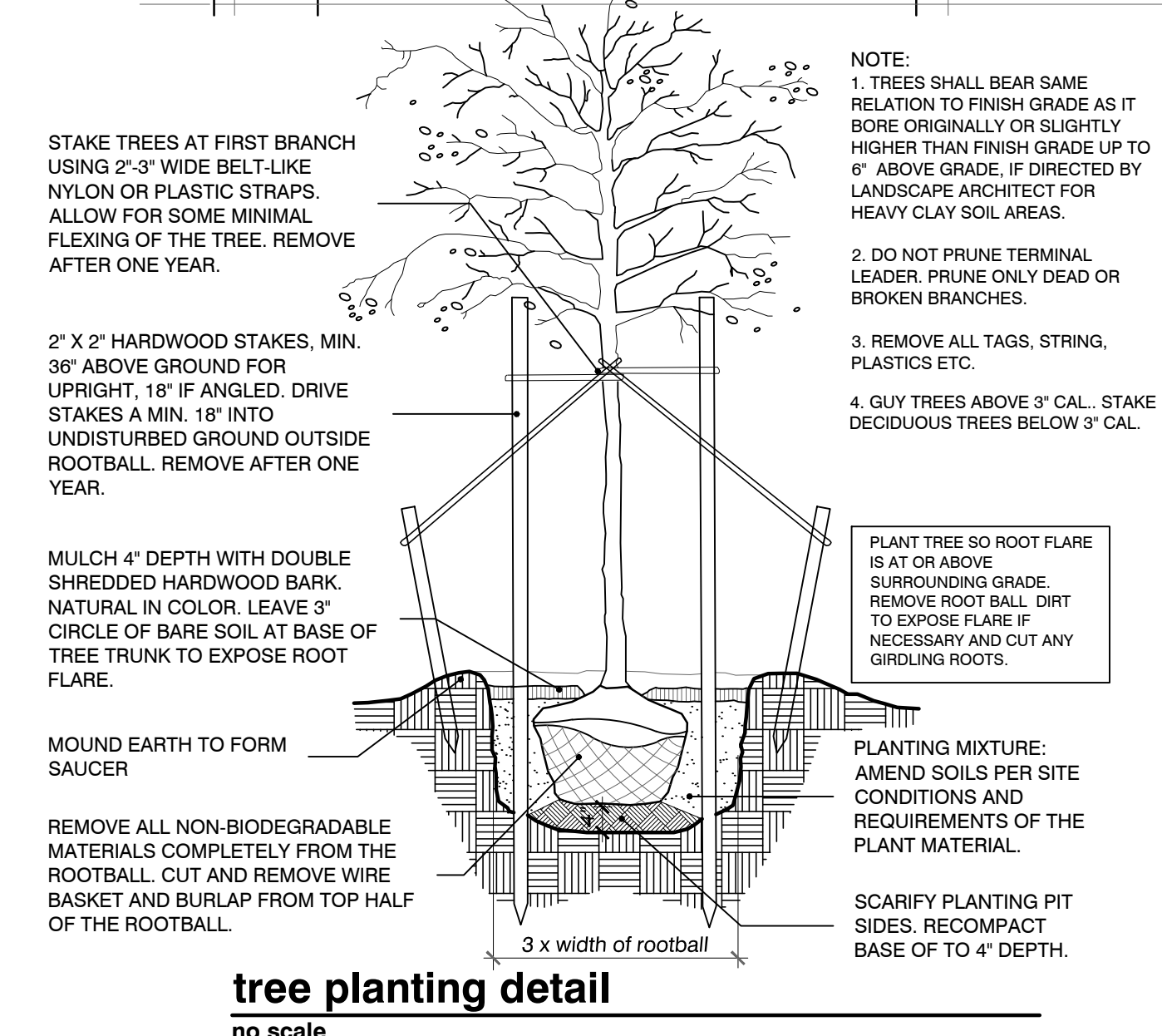


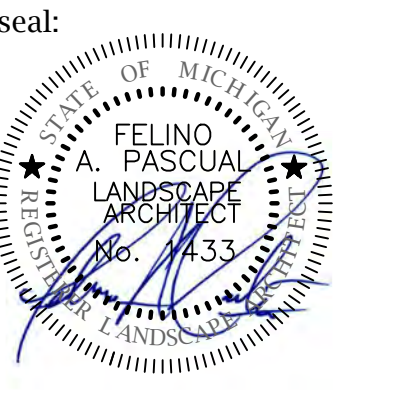
USE 3 HARDWOOD STAKES PER TREE. 2" X 2" X 8' STAKES. DRIVE STAKES INTO UNDISTURBED SOIL 6"-8" OUTSIDE OF ROOTBALL TO A DEPTH OF 18" BELOW TREE PIT. REMOVE AFTER ONE (1) YEAR. DO NOT USE WIRE OR ROPE THRU A HOSE.



NOTE:  
Orient staking/guying to prevailing winds, except on slopes greater than 3:1 orient to slope.  
Use same staking/guying orientation for all plants within each grouping or area.

**tree staking detail**  
no scale





client:  
**JMF WHITE LAKE, LLC.**  
 1700 W. BIG BEAVER ROAD SUITE 120  
 TROY, MI 48084

project:  
**LAKE POINTE**

project location:  
 White Lake Twp., Michigan

Union Lake Road  
 sheet title:  
**BLDG. FOUNDATION, CLUBHOUSE AND ENTRY PLANTINGS**

job no./issue/revision date:

LS19.124.11	TWP.	11-12-2019
LS19.124.12	TWP.	12-27-2019
LS20.089.10	TWP.	10-14-2020
LS21.009.01	SPA	1-18-2021
LS21.009.01	SPA	2-02-2021
LS21.009.03	SPA	3-22-2021
LS23.081.08	ENG. UPDATED	8-1-2023
LS23.081.12	COMMENTS	12-3-2023
LS24.026.02	COMMENTS	2-7-2024

drawn by:  
**JP, DK**  
 checked by:  
**FP**  
 date:  
**1-30-2024**

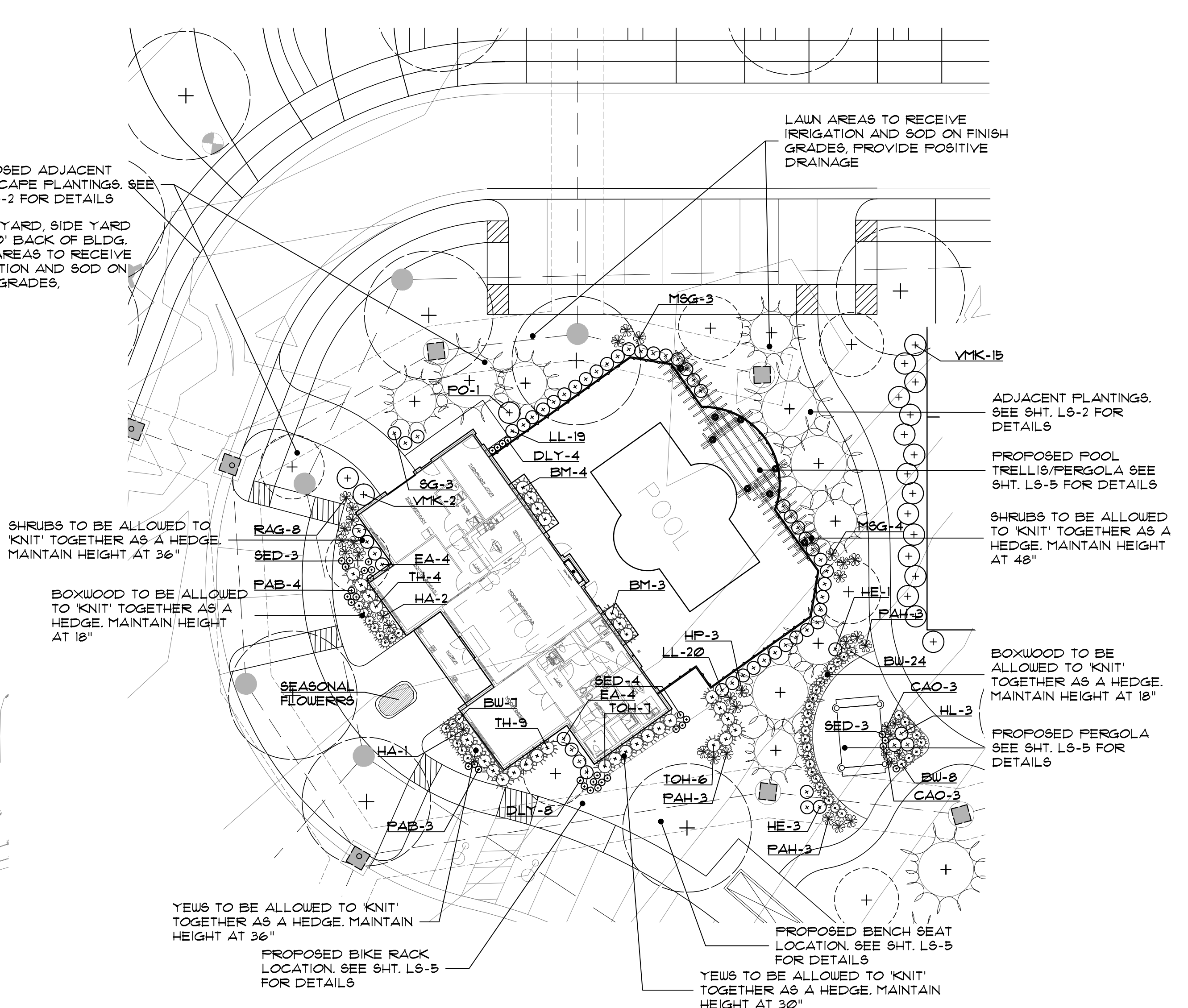
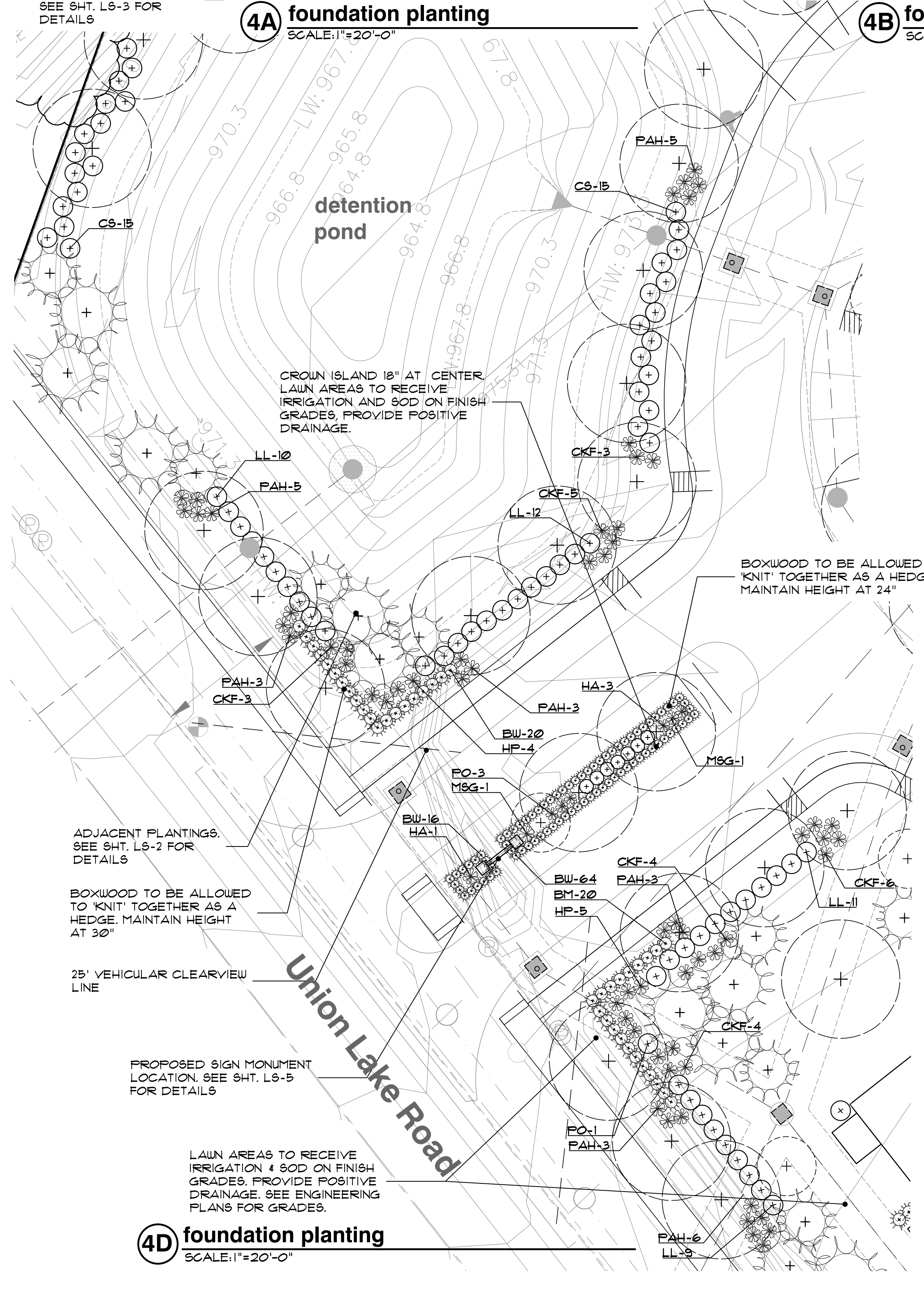
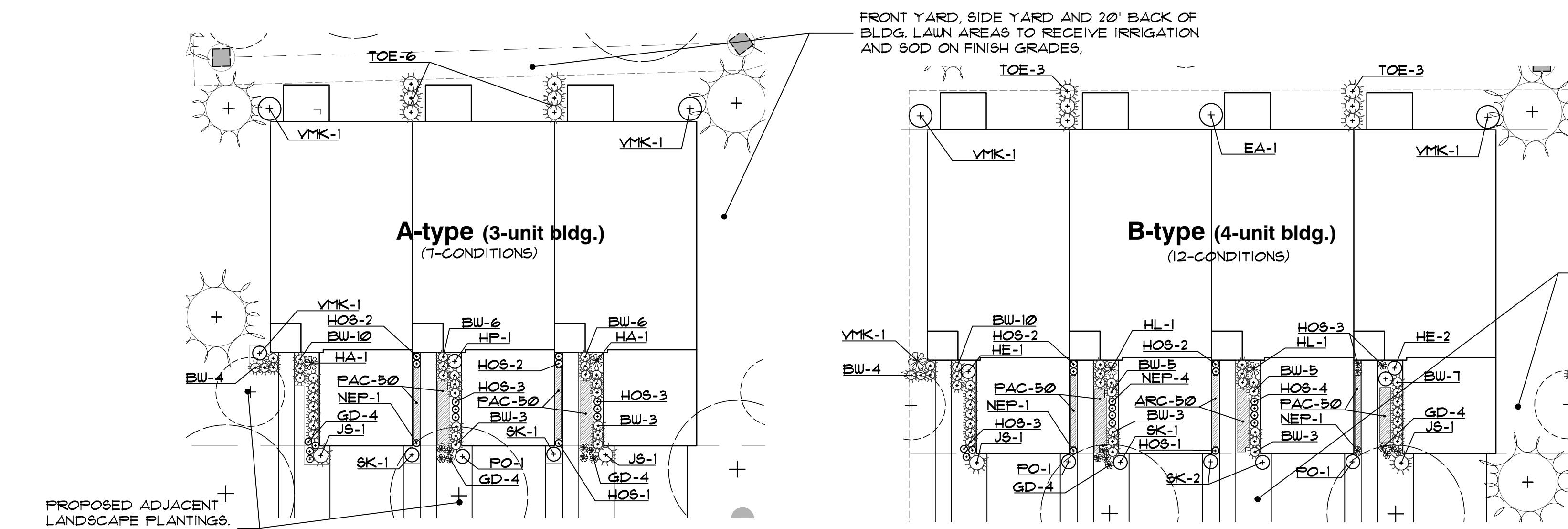
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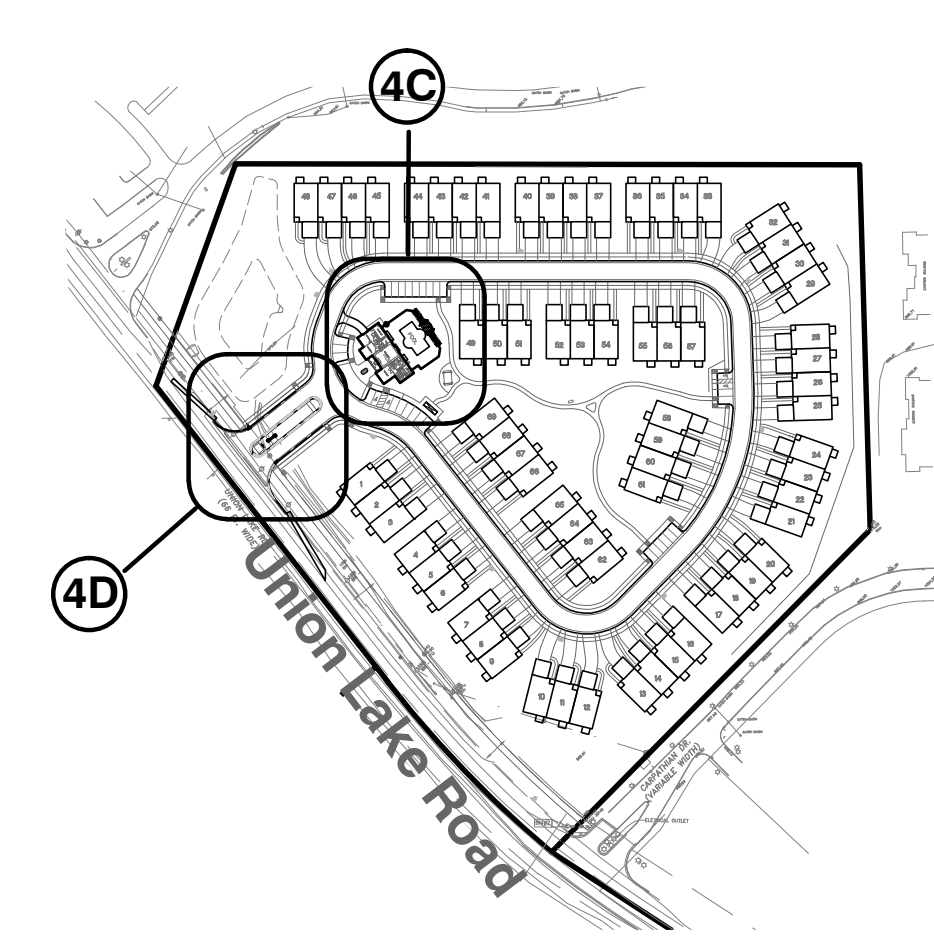
project no:  
**LS24.026.02**

sheet no:  
**LS-4 of 7**

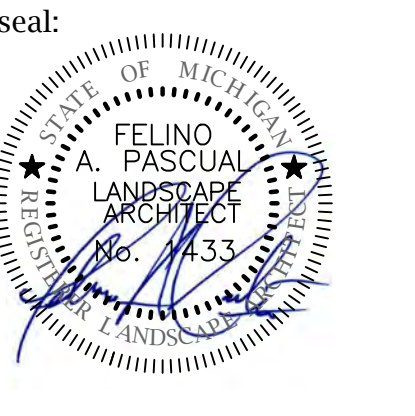


**plant material list**

key	quant. 4A	quant. 4B	quant. 4C	quant. 4D	botanical name	common name	size	comments
<b>SHRUBS</b>								
SK	14	36	-	-	SYRINGA PATULA 'MISS KIM'	MISS KIM DWARF LILAC	3' BB.	
HP	1	-	3	9	HYDRANGEA PANICLE 'BOBO'	BOBO HYDRANGEA	9" CONT.	
HA	14	-	3	4	HYDRANGEA 'ANNABELLE'	ANNABELLE HYDRANGEA	9" CONT.	
HL	-	24	3	-	HYDRANGEA 'LINDSEY ANN'	LA DREAMIN HYDRANGEA	9" CONT.	
HE	-	36	4	-	HYDRANGEA M. 'GLOWING EMBERS'	GLOWING EMBERS HYDRANGEA	9" CONT.	
PO	1	24	1	4	PHYSCOCARPUS OPULIFOLIUS 'SEWARD'	SUMMER WINE NINEBARK	9" CONT.	
SG	-	-	3	-	SPIRAEA X.B. 'BUMALDA 'GOLDFLAME'	GOLDFLAME SPIREA	9" CONT.	
VMK	21	36	11	-	VIBURNUM X.B. 'MOHAUK'	MOHAUK VIBURNUM	3' BB	
LL	-	-	39	42	LIGUSTRUM X. VICARYI	GOLDEN VICARY PRIVET	9" CONT.	60" O.C. SPACING
EA	-	12	8	-	BUONYMUS ALATUS 'COMPACTA'	DWARF WINGED BURNING BUSH	3' BB	60" O.C. SPACING
RAG	-	-	8	-	RHUS AROMATICA 'GRO-LOW'	GRO-LOW FRAGRANT SUMAC	9" CONT.	
BW	224	444	39	100	BUXUS M. 'GREEN VELVET'	GREEN VELVET BOXWOOD	18" HIGH BB	24" O.C. SPACING
BM	-	-	1	20	BUXUS M. 'GREEN MOUNTAIN'	GREEN MOUNTAIN BOXWOOD	30" HIGH BB	32" O.C. SPACING
TH	-	-	19	-	TAXUS 'HICKSII'	HICK YEWUS	30" BB	36" O.C. SPACING
TOE	42	12	-	-	THUJA OCCIDENTALIS 'SHARADG'	EMERALD GREEN ARBORVITAE	5' BB.	36" O.C. SPACING
TOH	-	-	13	-	THUJA OCCIDENTALIS 'HELTZ'	HELTZ ARBORVITAE	9" CONT.	36" O.C. SPACING
CS	-	-	-	30	CORNUS STOLONIFERA	REDTWIG DOGWOOD	9" CONT.	60" O.C. SPACING
JS	14	24	-	-	JUNIPERUS SKYROCKET	SKYROCKET JUNIFER	5' BB	60" O.C. SPACING
<b>PERENNIALS AND GRASSES</b>								
NEP	1	12	-	-	NEPETA X FAASSENII 'WALKER'S LOW'	WALKER'S LOW NEPETA	4" CONT.	24" O.C. SPACING
GD	84	36	-	-	GERANIUM X. 'ROZANNE'	ROZANNE GERANIUM	32 / FLAT	12" O.C. SPACING
PAC	100	1200	-	-	FACHYSANDRA TERMINALIS	JAPANESE FACHYSANDRA	32 / FLAT	12" O.C. SPACING
DLY	-	-	12	-	HEMEROCALLIS 'HAPPY RETURNS'	HAPPY RETURNS DAY'LILY	4" CONT.	24" O.C. SPACING
SED	-	-	10	-	SEDUM X. 'NEON'	NEON SEDUM	4" CONT.	12" O.C. SPACING
HOS	11	180	-	-	HOSTA 'PATRIOT'	PATRIOT HOSTA	4" CONT.	24" O.C. SPACING
PAH	-	-	9	28	FENNISETUM ALOPECUROIDES 'HAMELN'	DWARF FOUNTAIN GRASS	9" CONT.	36" O.C. SPACING
CKF	-	-	-	25	CALAMAGROSTIS X.A. 'KARL FOERSTER'	KARL FOERSTER FEATHER REED GRASS	9" CONT.	36" O.C. SPACING
ARC	-	600	-	-	AUGA REPTAN 'CATLIN'S GAINT'	CATLIN'S GAINT AUGA	32 / FLAT	12" O.C. SPACING
M8G	-	-	1	2	MISCANTHUS SINENSIS 'MORNING LIGHT'	MORNING LIGHT JAPANESE SILVER GRASS	9" CONT.	
PAB	-	-	1	-	FENNISETUM ALOPECUROIDES 'LITTLE BUNNY'	LITTLE BUNNY FOUNTAIN GRASS	9" CONT.	36" O.C. SPACING
CAO	-	-	6	-	CALAMAGROSTIS X. ACUTIFLORA 'KARL FOERSTER'	KARL FOERSTER'S FEATHER REED GRASS	9" CONT.	36" O.C. SPACING







client:  
**JMF WHITE LAKE, LLC.**  
 1700 W. BIG BEAVER ROAD SUITE 120  
 TROY, MI 48084

project:  
**LAKE POINTE**  
 project location:  
 White Lake Twp., Michigan

Union Lake Road  
 sheet title:  
**SITE AMENITY, PERGOLA AND ENTRY SIGN DETAILS**  
 job no./issue/revision date:  
 LS19.124.11 TWP. 11-12-2019  
 LS19.124.12 TWP. 12-27-2019  
 LS20.089.10 TWP. 10-14-2020  
 LS21.009.01 SPA 1-18-2021  
 LS21.009.01 SPA 2-02-2021  
 LS21.009.03 SPA 3-22-2021  
 LS23.081.08 ENG. UPDATED 8-1-2023  
 LS23.081.12 TWP. COMMENTS 12-3-2023  
 LS24.026.02 COMMENTS 2-7-2024

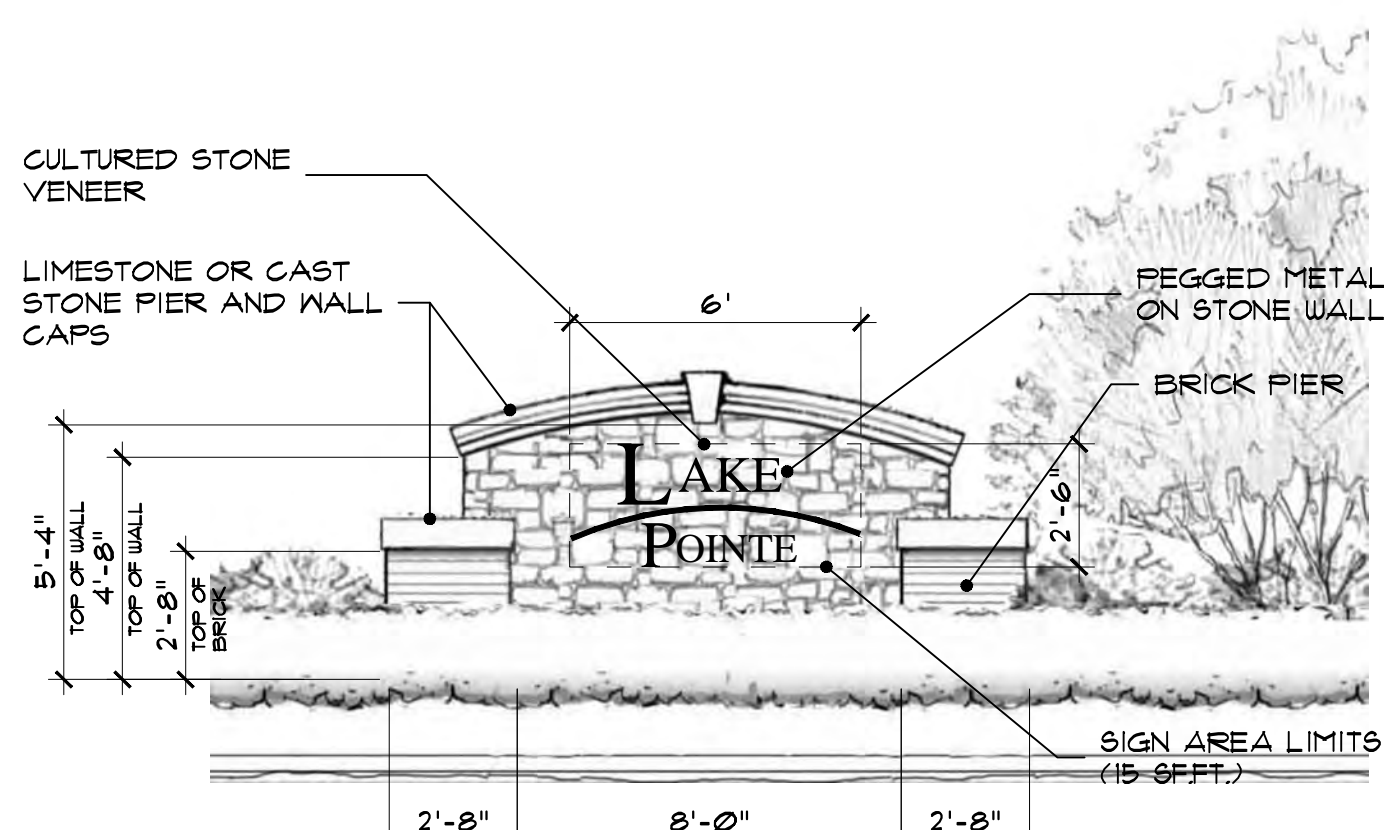
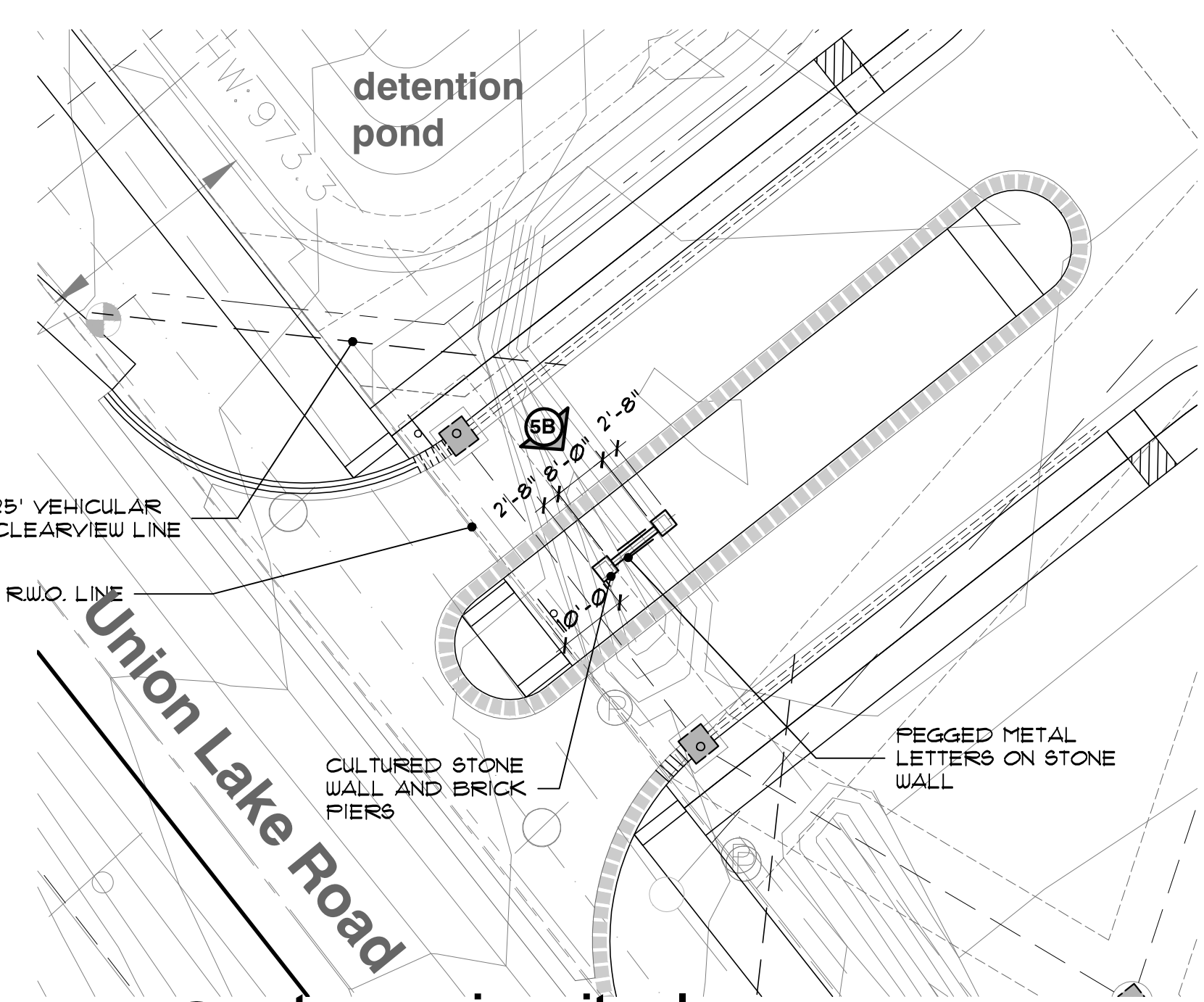
drawn by:  
**JP, DK**  
 checked by:  
**FP**  
 date:  
**1-30-2024**  
 notice:  
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project no:  
**LS24.026.02**

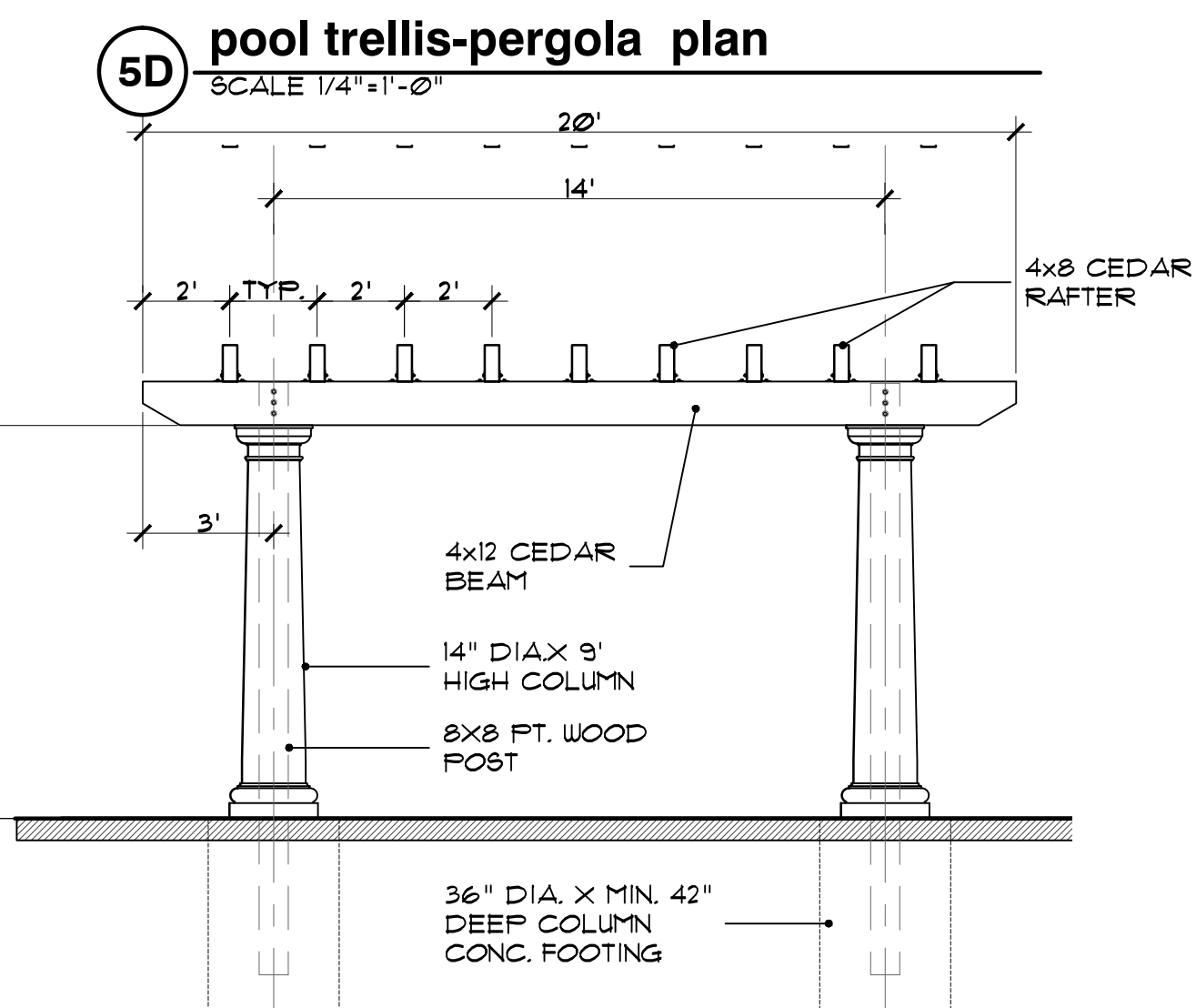
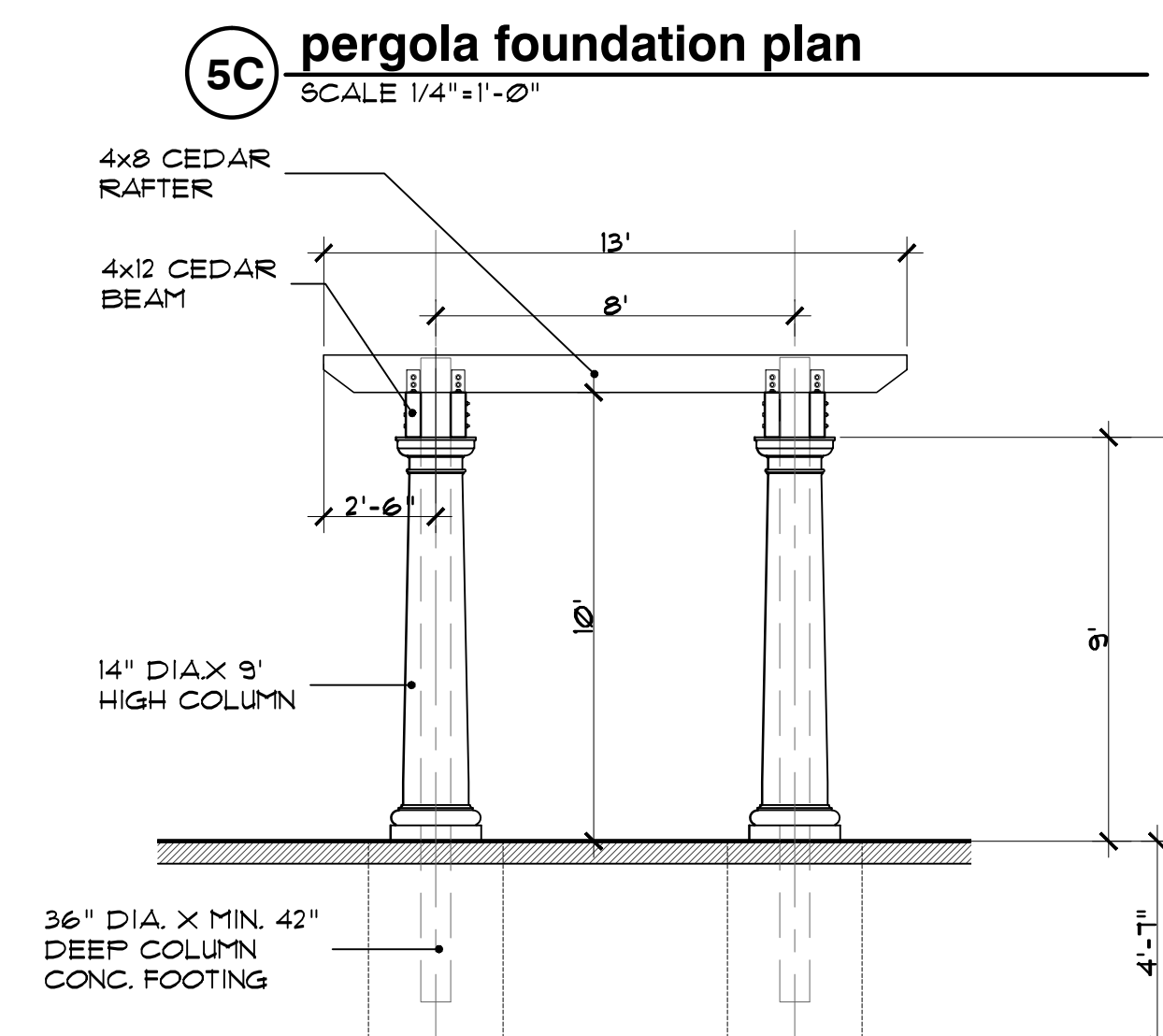
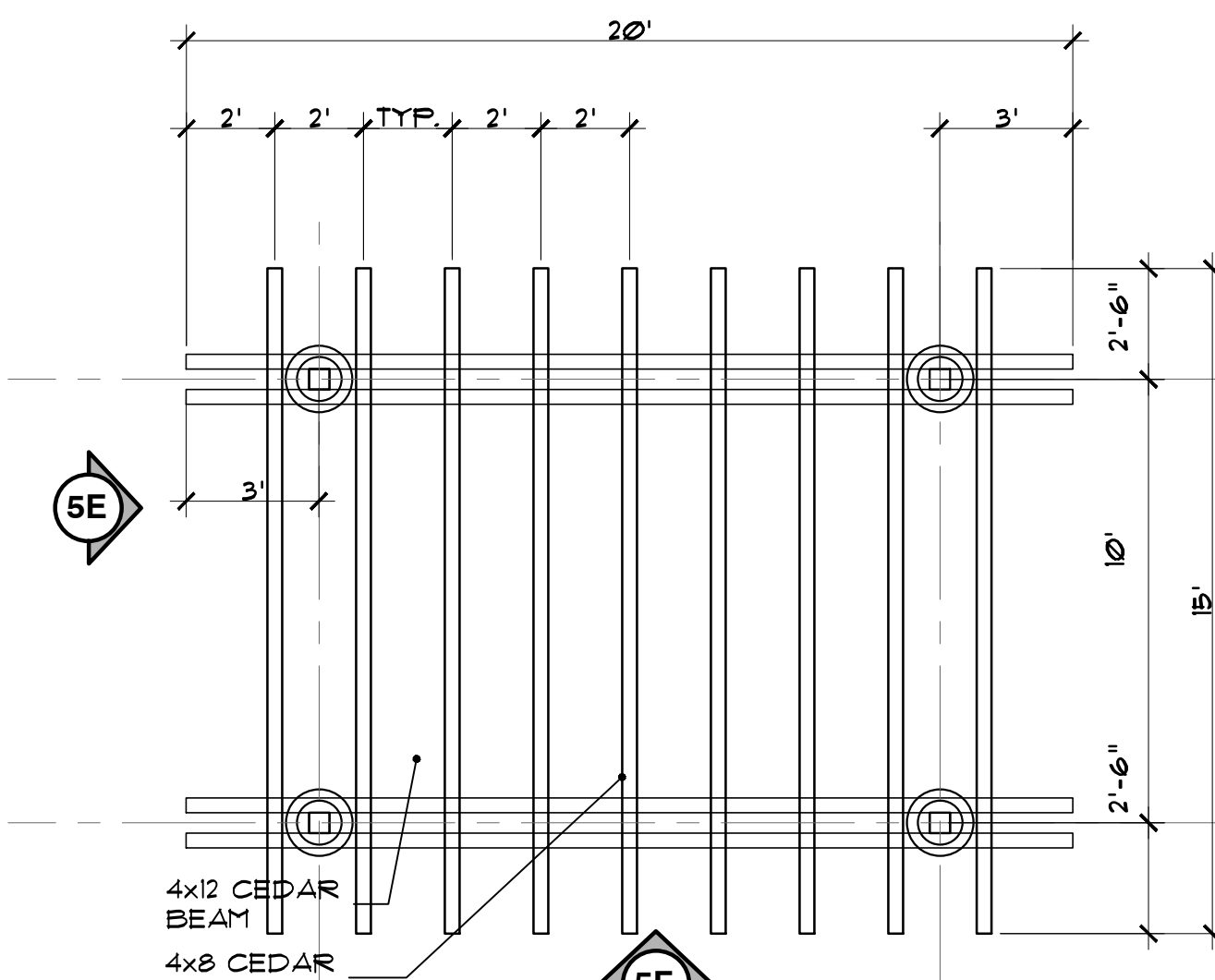
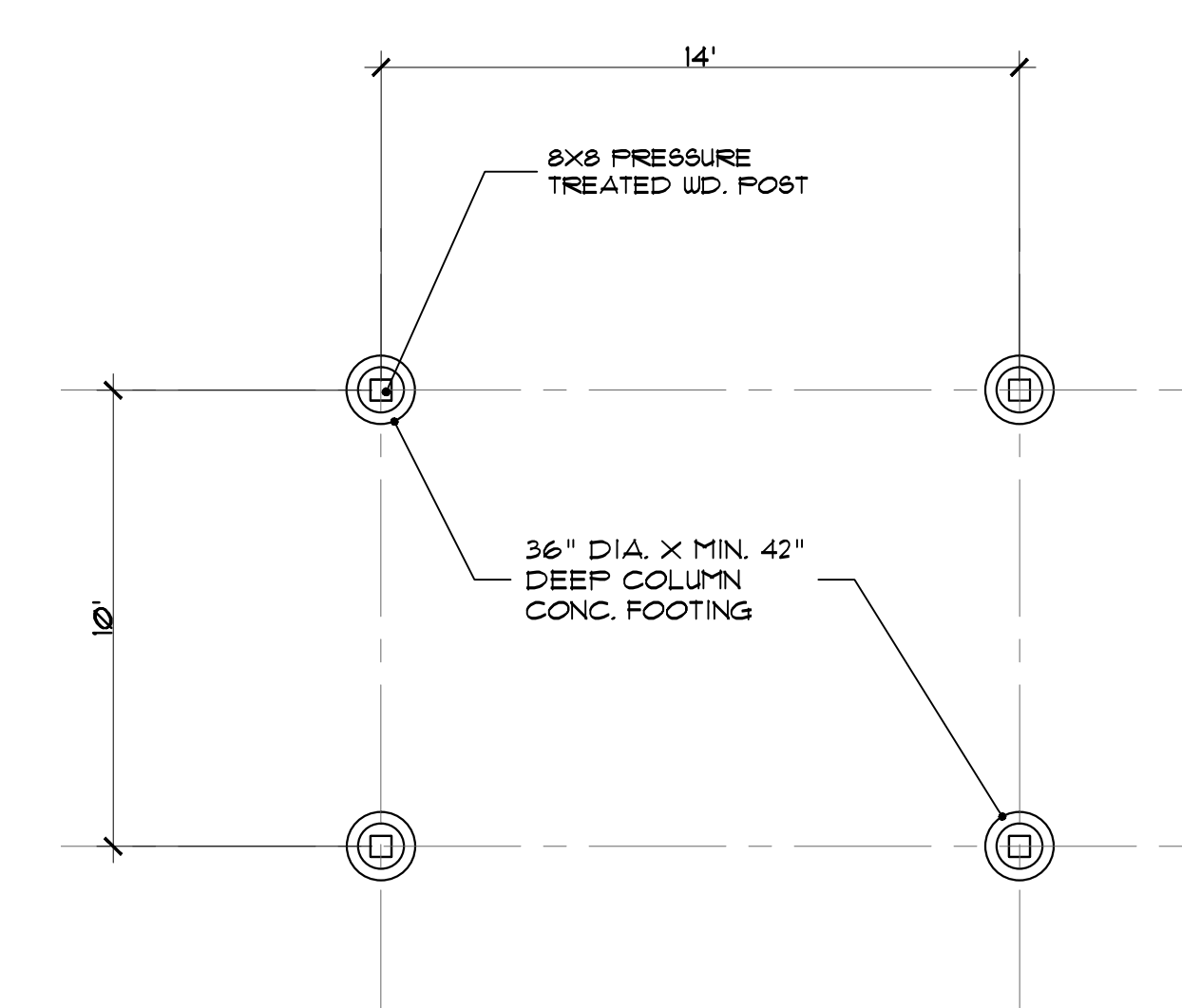
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**LS-5 of 7**



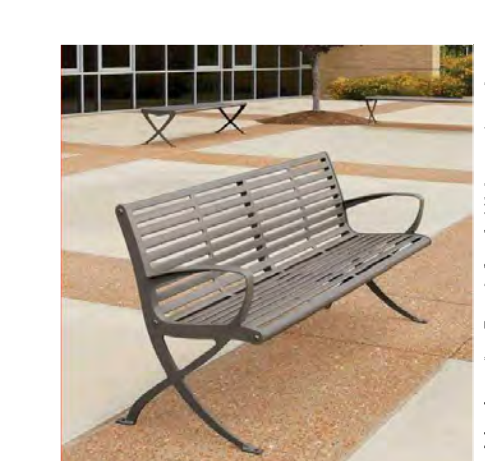
**5B entrance sign elevation**  
 SCALE 1"=4'-0"

**signage monument notes:**

- LOCATE AND STAKE ALL EXISTING AND PROPOSED UTILITIES PRIOR TO CONSTRUCTION. COORDINATE ANY ADJUSTMENTS WITH ARCHITECT.
- ALL INFORMATION CONTAINED HEREIN IS SUBJECT TO APPROVAL, AND PERMITS PERMITS TO BE OBTAINED PRIOR TO CONSTRUCTION.
- SEE LANDSCAPE PLAN FOR PROPOSED PLANTINGS ADJACENT TO PROPOSED ENTRY SIGN MONUMENTS
- VERIFY SOIL BEARING CAPACITY PRIOR TO ENTRY SIGN MONUMENT & PIER CONSTRUCTION. IF SOIL BEARING CAPACITY FALLS BELOW STANDARD REQUIREMENTS, CONSULT STRUCTURAL ENGINEER FOR RECOMMENDATION OF FINAL ENTRY MONUMENT & PIER FOOTING DESIGN.



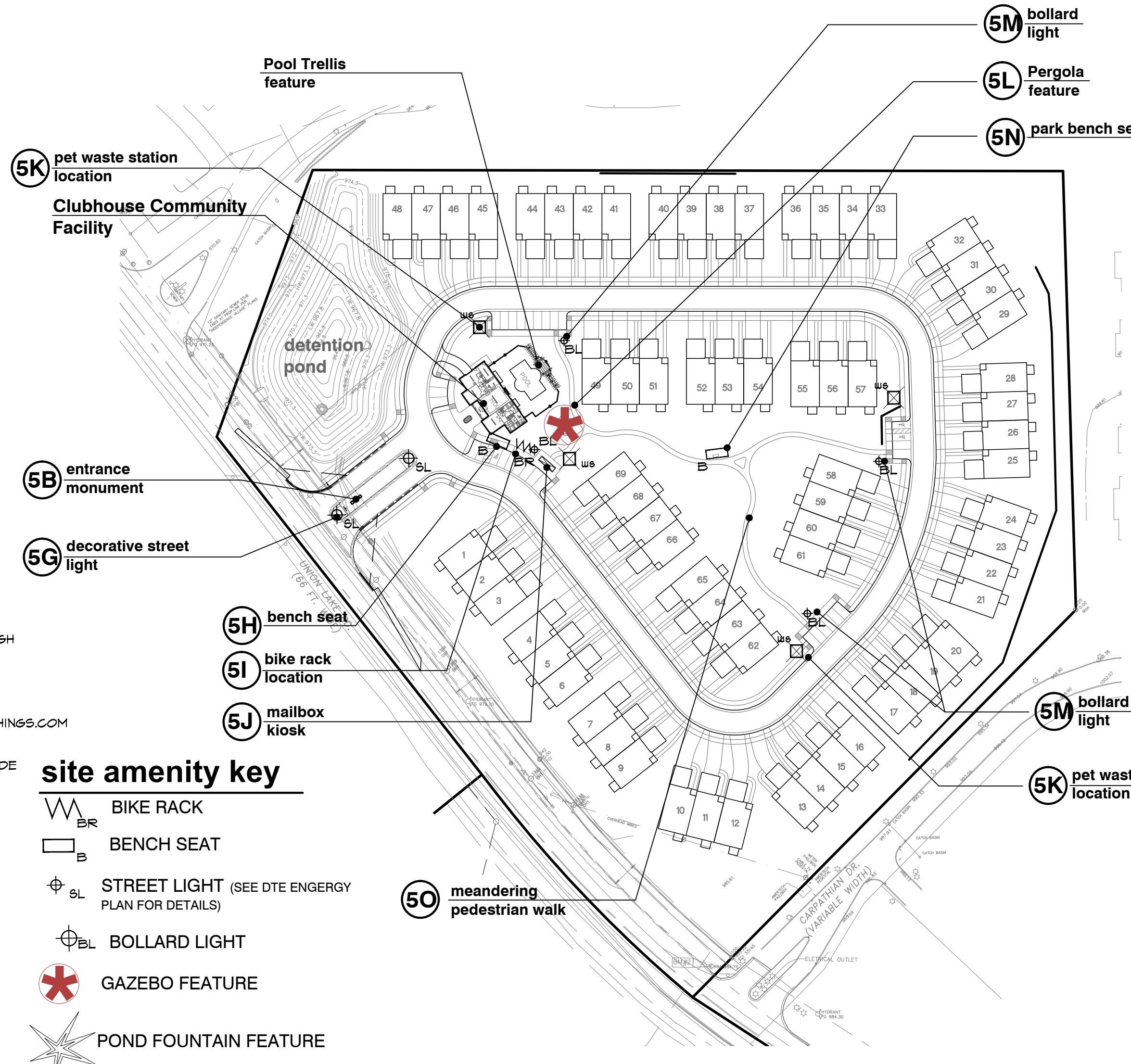
**5G decorative pole & light**  
 (1-CONDITION)  
 DTE OUTDOOR LIGHTING ACORN SERIES - 60 WATTS, LED, 4000K OR EQUAL



**5H bench seat**  
 (1-CONDITION)  
 MANUFACTURED BY ANOVA, INC.  
 211 NORTH LINDBERGH BLVD. SUITE 200 ST. LOUIS, MISSOURI 63141-1804  
 TOLL FREE NO. (800)231-1827 WWW.ANOVAFURNISHINGS.COM  
 MODEL NO. LENC6 DESCRIPTION: 6' WIDE CONTOUR BENCH FINISH: Black



**5I bicycle rack**  
 (1-CONDITION)  
 BIKE RACK BY DUMOR INC. MODEL NO. 130-20 (8-2 SURFACE PLATE MOUNT) 2 3/8" O.D. BLACK POWDER-COATED LOOP OR EQUAL



**site amenity key**

- BIKE RACK
- BENCH SEAT
- STREET LIGHT (SEE DTE ENERGY PLAN FOR DETAILS)
- BOLLARD LIGHT
- GAZEBO FEATURE
- POND FOUNTAIN FEATURE

**site amenity reference location map**  
 SCALE 100' = 1'-0"



**5J mailbox kiosk**  
 (1-LOCATIONS)



**5L pergola feature**  
 (1-CONDITION)  
 STICK BUILT OR KIT FORM. TO BE BUILT BY MANUFACTURER STANDARDS



**5N park bench seating**  
 (1-CONDITIONS)  
 6' WIDE PARK BENCH SEAT BY DUMOR, INC. MODEL NO. 34-60D (8-1) SUPPORT: 8-1 EMBEDMENT FINISH: BLACK POWDER-COATED



**5K pet waste station**  
 (4-CONDITIONS)  
 TOTAL OF 4-CONDITIONS BY ZERO WASTE USA 12316 WORLD TRADE DRIVE #102 SAN DIEGO, CA. 92128 PH. 800-784-2568 WWW.ZEROWASTEUSA.COM  
 MODEL NO. JJB006-BLACK DESCRIPTION: ENTRY DOG WASTE STATION (73"H X 13"W) FINISH: BLACK



**5M bollard light**  
 (4-CONDITIONS)  
 BY LITHONIA LIGHTS OR EQUAL MODEL: DSXB LED (D-SERIES LED BOLLARD 8" DIA X 42" HGT.) OR EQUAL.  
 ASYMMETRIC (12LED) 22 WATTS, 4000K



**5O meandering pedestrian walk**  
 5' WIDE MEANDERING WALK

**lighting note:**  
 ALL FRONT PORCH LIGHTS AND COACH LIGHTS WILL UTILIZE 75 WATT BULBS.



client:  
**JMF WHITE LAKE, LLC.**  
 1700 W. BIG BEAVER ROAD SUITE 120  
 TROY, MI 48084

project:  
**LAKE POINTE**

project location:  
 White Lake Twp., Michigan

Union Lake Road  
 sheet title:  
**POOL DECK PLAN**

job no./issue/revision date:
LS19.124.11 TWP. 11-12-2019
LS19.124.12 TWP. 12-27-2019
LS20.089.10 TWP. 10-14-2020
LS21.009.01 SPA 1-18-2021
LS21.009.01 SPA 2-02-2021
LS21.009.03 SPA 3-22-2021
LS23.081.08 ENG. 8-1-2023
LS23.081.12 TYP. COMMENTS 12-3-2023
LS24.026.02 TYP. COMMENTS 2-7-2024

drawn by:  
**JP, DK**  
 checked by:  
**FP**  
 date:  
**1-30-2024**

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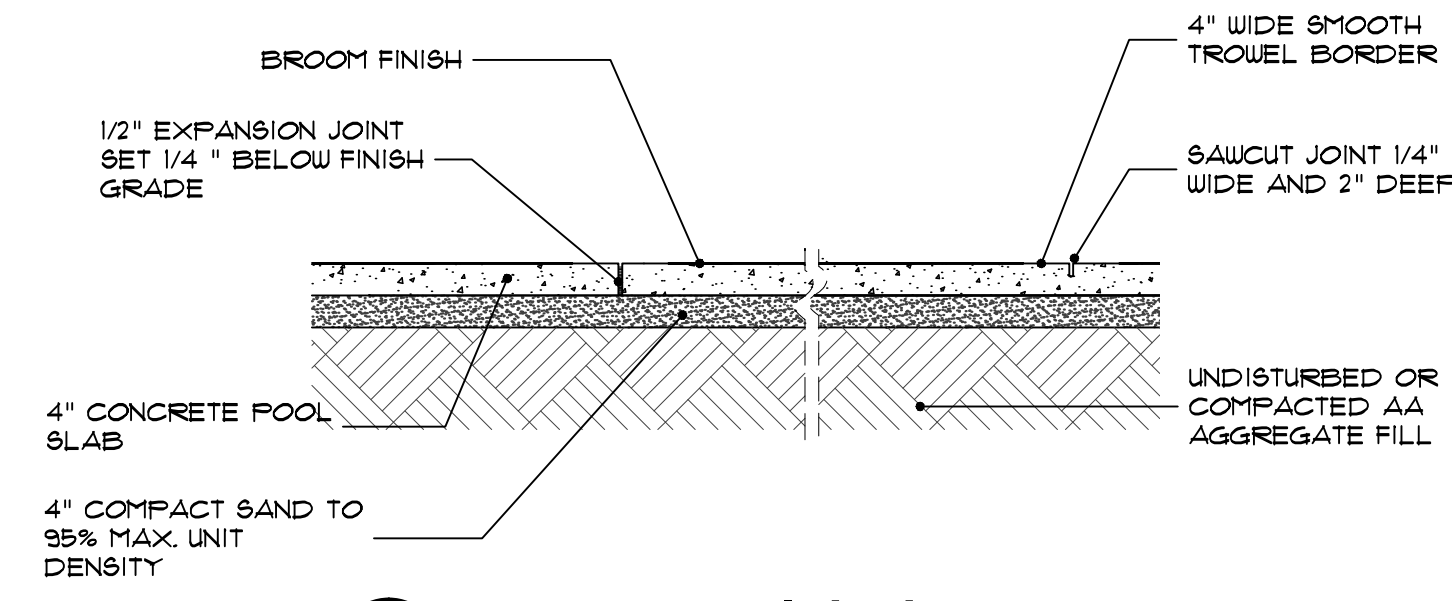
project no:  
**LS24.026.02**  
 sheet no:  
**LS-6 of 7**

**swimming pool notes**

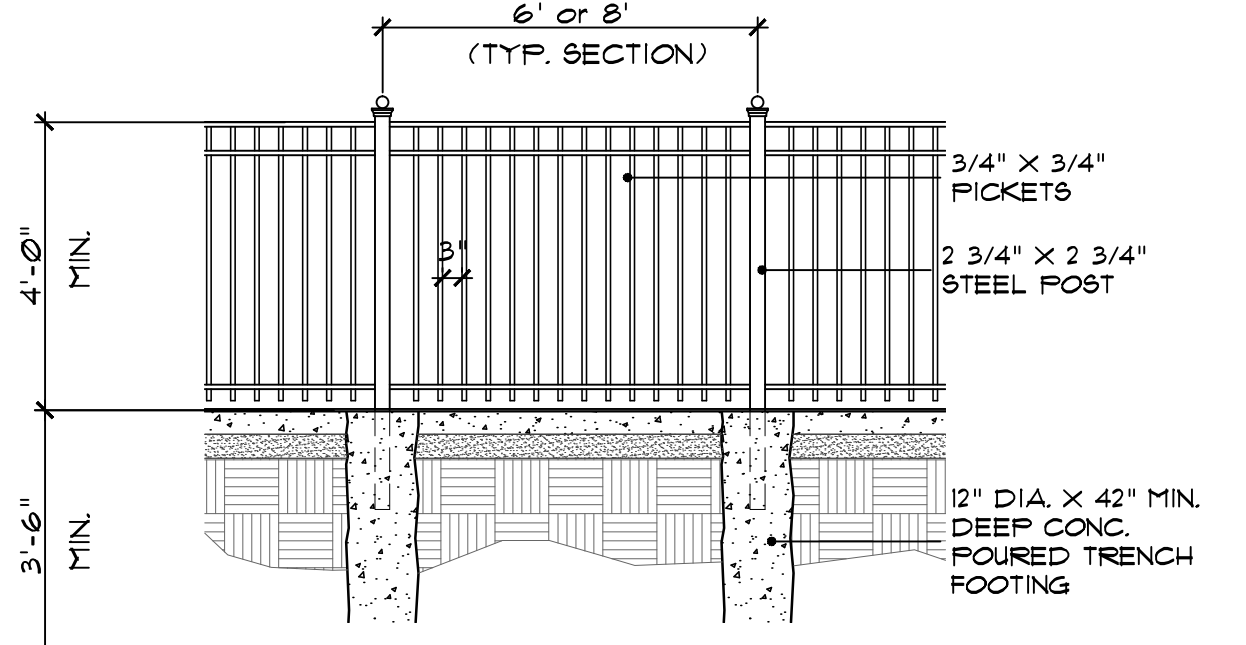
- THIS DRAWING ONLY PROVIDES THE LOCATION AND SHAPE OF THE PROPOSED SWIMMING POOL, DECK, AND / OR SPA. ALL STRUCTURAL AND ELECTRICAL REQUIREMENTS, CONSTRUCTION DETAILS, MATERIAL DETAILS, FINAL POOL FENCE LOCATION, AND OTHER RELATED INFORMATION ARE THE RESPONSIBILITY OF THE DESIGN BUILD FIRM OR CONTRACTOR.
- THE DESIGN BUILD FIRM / CONTRACTOR SHALL PREPARE DETAILED PLANS, DRAWINGS AND SPECIFICATIONS TO BE SUBMITTED TO THE OWNER FOR REVIEW AND APPROVAL. THE DESIGN BUILD FIRM / POOL CONTRACTOR SHALL BE RESPONSIBLE TO MAKE APPLICATION TO AND OBTAIN POOL CONSTRUCTION PERMITS AND APPROVALS FROM LOCAL GOVERNING MUNICIPALITIES AND THE STATE.
- CONSTRUCTION SUPERVISION AND SITE SAFETY SHALL BE THE FULL RESPONSIBILITY OF THE CONTRACTOR AND SHALL MEET ALL MUNICIPAL AND STATE REQUIREMENTS AND REGULATIONS.

THIS DRAWING IS NOT FOR CONSTRUCTION PURPOSES, SEE ABOVE.

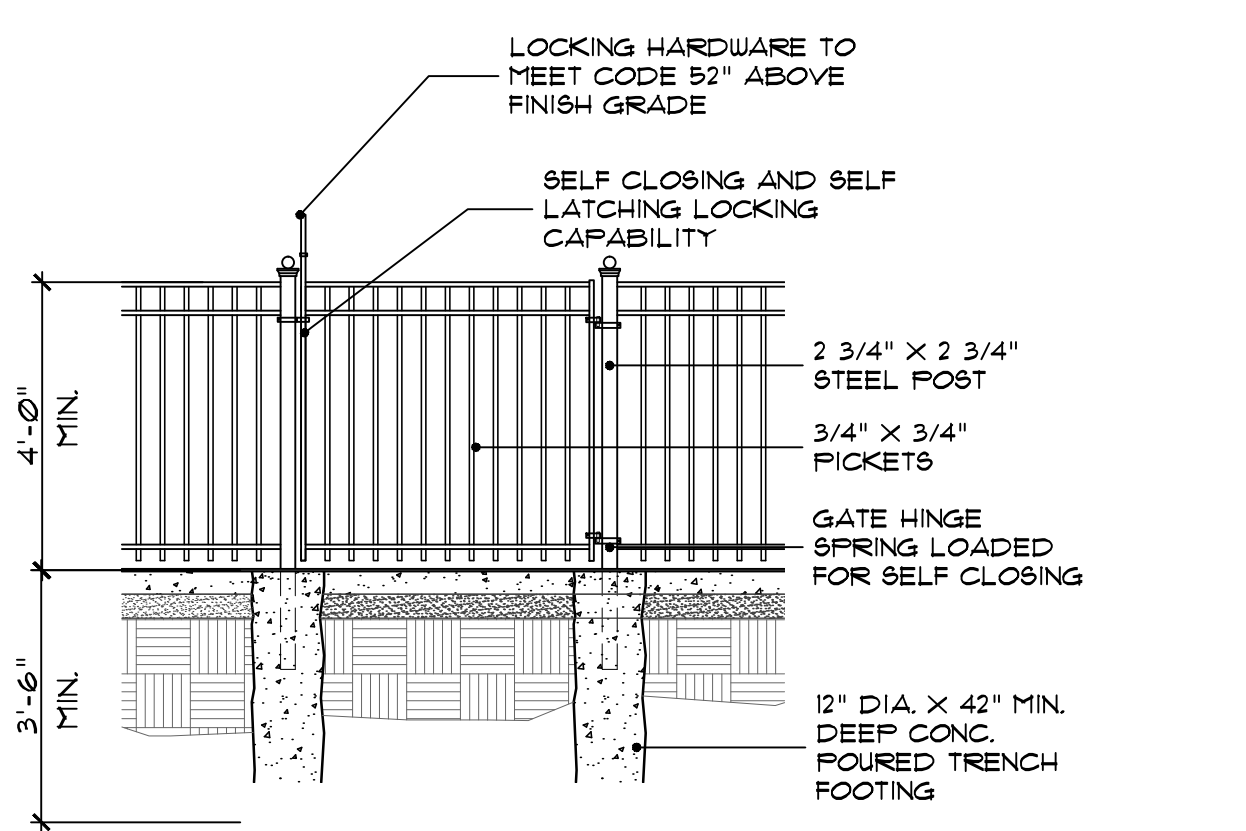
- POOL DECK TO PITCH AWAY FROM POOL AND WALLS WITH NO PUDDLING TO OCCUR



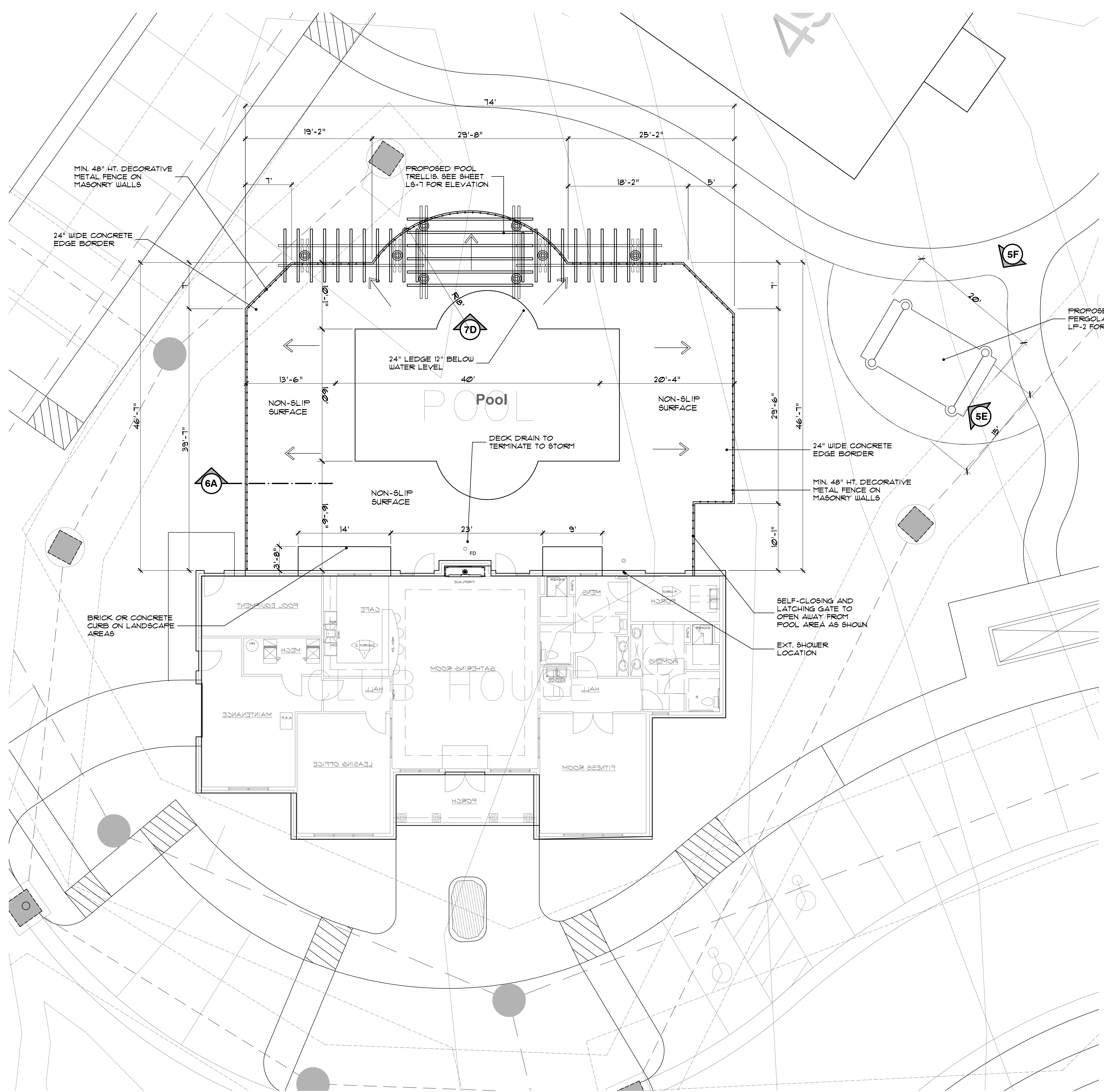
**6A concrete pool deck**  
 SCALE: 1/2"=1'-0"



**6B pool fence detail**  
 SCALE: 3/8"=1'-0"

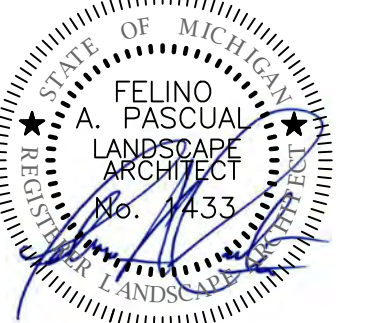


**6C pool fence gate detail**  
 SCALE: 3/8"=1'-0"



**6D pool deck plan**  
 SCALE: 1/8"=1'-0"

seal:



client:

**JMF WHITE LAKE,  
LLC.**

1700 W. BIG BEAVER  
ROAD SUITE 120  
TROY, MI 48084

project:

**LAKE  
POINTE**

project location:

White Lake Twp.,  
Michigan

Union Lake Road

sheet title:

**POOL PERGOLA  
TRELLIS ELEVATIONS  
& DETAILS**

job no./issue/revision date:

LS19.124.11	TWP.	11-12-2019
LS19.124.12	TWP.	12-27-2019
LS20.089.10	TWP.	10-14-2020
LS21.009.01	SPA	1-18-2021
LS21.009.01	SPA	2-02-2021
LS21.009.03	SPA	3-22-2021
LS23.081.08	ENG. UPDATED	8-1-2023
LS23.081.12	TWP. COMMENTS	12-3-2023
LS24.026.02	TWP. COMMENTS	2-7-2024

drawn by:

JP, DK

checked by:

FP

date:

1-30-2024

notice:

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project no:

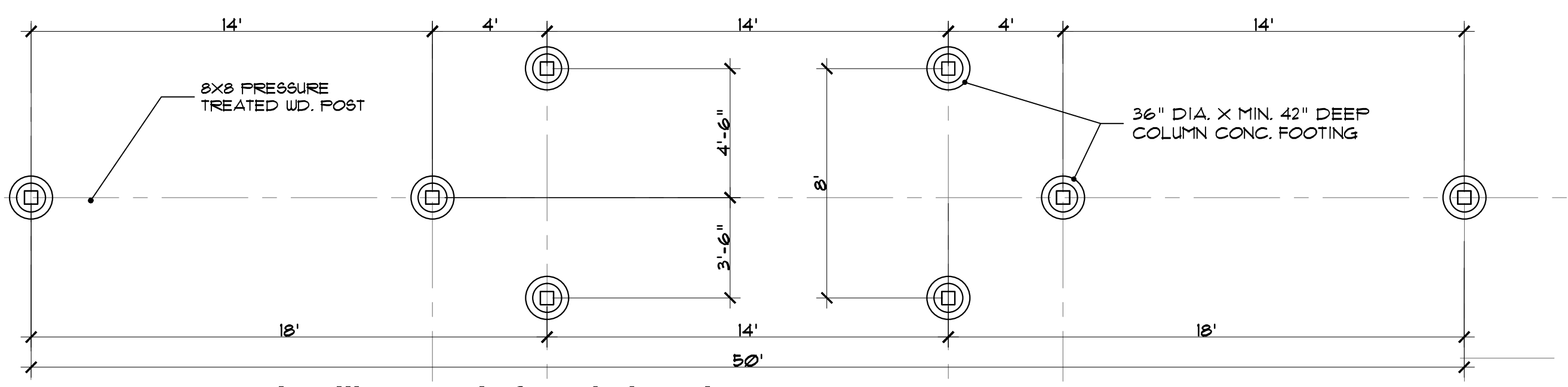
LS24.026.02

sheet no:

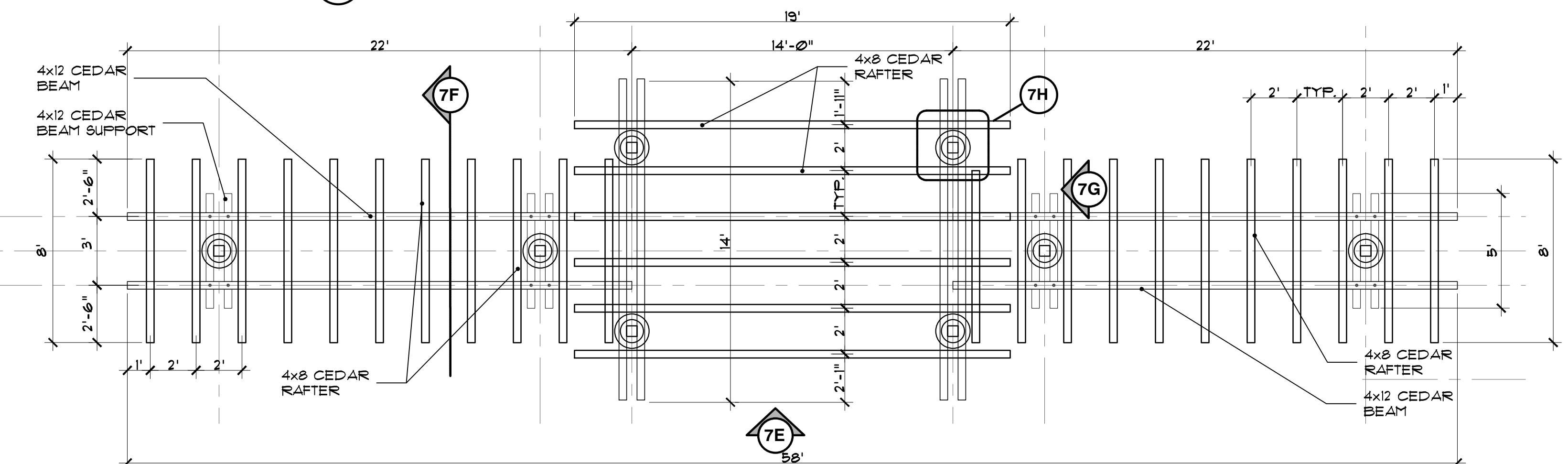
LS-7 of 7

**general notes:**

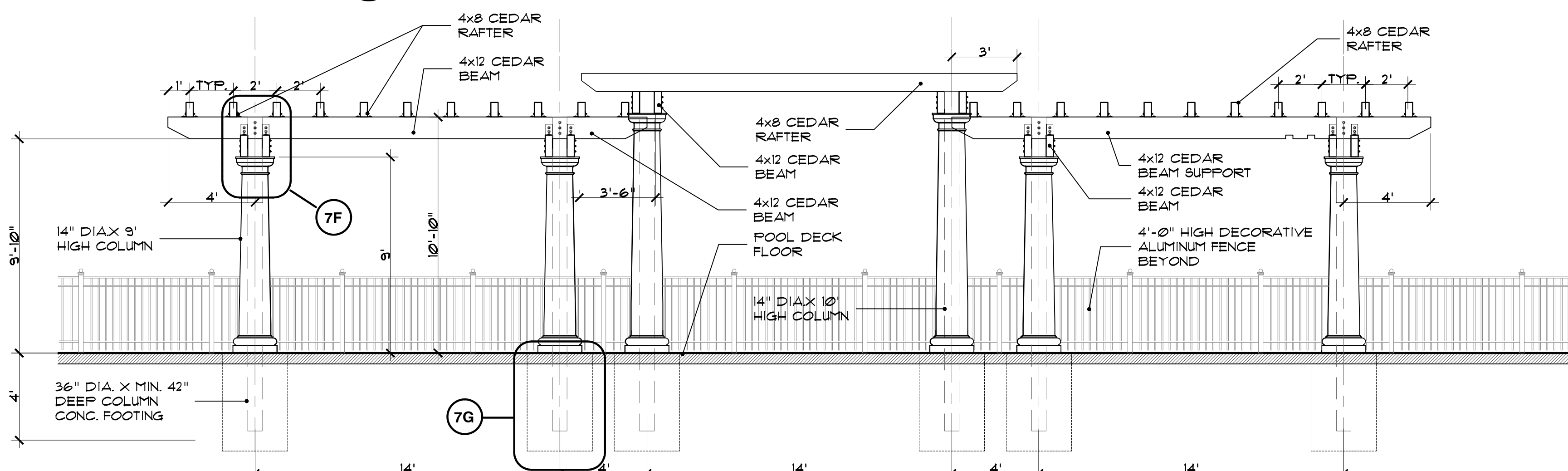
- ALL INFORMATION CONTAINED HEREIN IS SUBJECT TO APPROVAL, AND PERMITS TO BE OBTAINED PRIOR TO CONSTRUCTION FROM ALL NECESSARY AGENCIES.
- CONTRACTOR SHALL VISIT THE SITE, INSPECT EXISTING CONDITIONS, REVIEW PROPOSED PLANS AND RELATED WORK. CONTACT THE OWNER WITH ANY CONCERNS OR DISCREPANCY BETWEEN THE PLANS AND/OR SITE CONDITIONS.
- PRIOR TO BEGINNING OF CONSTRUCTION ON ANY WORK, CONTRACTORS SHALL VERIFY LOCATIONS OF ALL ON SITE UTILITIES, GAS, ELECTRIC, TELEPHONE, CABLE. ANY DAMAGE OR INTERRUPTION OF SERVICES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. COORDINATE ALL RELATED WORK ACTIVITIES WITH OTHER TRADES AND REPORT ANY UNACCEPTABLE JOB CONDITIONS TO OWNER PRIOR TO COMMENCING. CONTACT MISS DIG AT 811 OR 800-482-7171 BEFORE YOU DIG
- DO NOT SCALE DRAWINGS. USE FIGURED DIMENSIONS ONLY
- VERIFY SOIL BEARING CAPACITY PRIOR TO ANY POST FOOTING CONSTRUCTION. IF SOIL BEARING CAPACITY FALLS BELOW STANDARD REQUIREMENTS, CONSULT STRUCTURAL ENGINEER FOR RECOMMENDATION OF FINAL POST FOOTING DESIGN.
- ALL EXPOSED SAW CUT AREAS OF CEDAR WOOD LUMBER TO BE SEALED WITH WOOD PRESERVATIVE AS REQUIRED INCLUDING TRIMMED ENDS PER DRAWINGS.
- ALL BRACKETS, FASTENERS, COMPOSITE SCREWS, NAILS, BOLTS, SHALL BE GALVANIZED OR ZINC COATED WITH ACQ AND CBA RATED FORMULATIONS.
- GRADES BY OTHERS. FINAL GRADES TO PROVIDE POSITIVE DRAINAGE
- CONSTRUCTION SUPERVISION AND SITE SAFETY SHALL BE THE FULL RESPONSIBILITY OF THE CONTRACTOR AND SHALL MEET ALL MUNICIPAL AND STATE REQUIREMENTS AND REGULATIONS.
- FOOTINGS SHALL BEAR ON FIRM, UNDISTURBED SOIL WITH AN ASSUMED SAFE BEARING CAPACITY OF 2000 P.S.I. IF SOIL OF THIS CAPACITY IS NOT FOUND AT THE ELEVATIONS INDICATED, FOOTINGS SHALL BE ENLARGED OR LOWERED AT THE DIRECTION OF THE STRUCTURAL ENGINEER. VERIFY FOUNDATION SOIL BEARING PRESSURE IN FIELD BY SOILS ENGINEER
- PROVIDE NECESSARY SHEETING SHORING BRACING, ETC. AS REQUIRED DURING EXCAVATIONS TO PROTECT SIDES OF EXCAVATIONS.
- MINIMUM CONCRETE STRENGTH TO BE 3000 P.S.I. @ 28 DAYS. U.O.N. ± SLABS SHALL BE 3500 P.S.I. MIN. U.O.N. ± EXPOSED CONCRETE SHALL BE 4000 P.S.I. WITH 6% ± 1% ENTRAINED AIR U.O.N.
- ALL CONCRETE WORK AND PLACEMENT SHALL CONFORM TO THE LATEST RECOMMENDATIONS OF A.C.I.
- PROVIDE MINIMUM 3" CONCRETE COVER FOR REINFORCEMENT BARS BELOW GRADE AND MINIMUM 2" CONCRETE COVER FOR REINFORCEMENT BARS ABOVE GRADE.



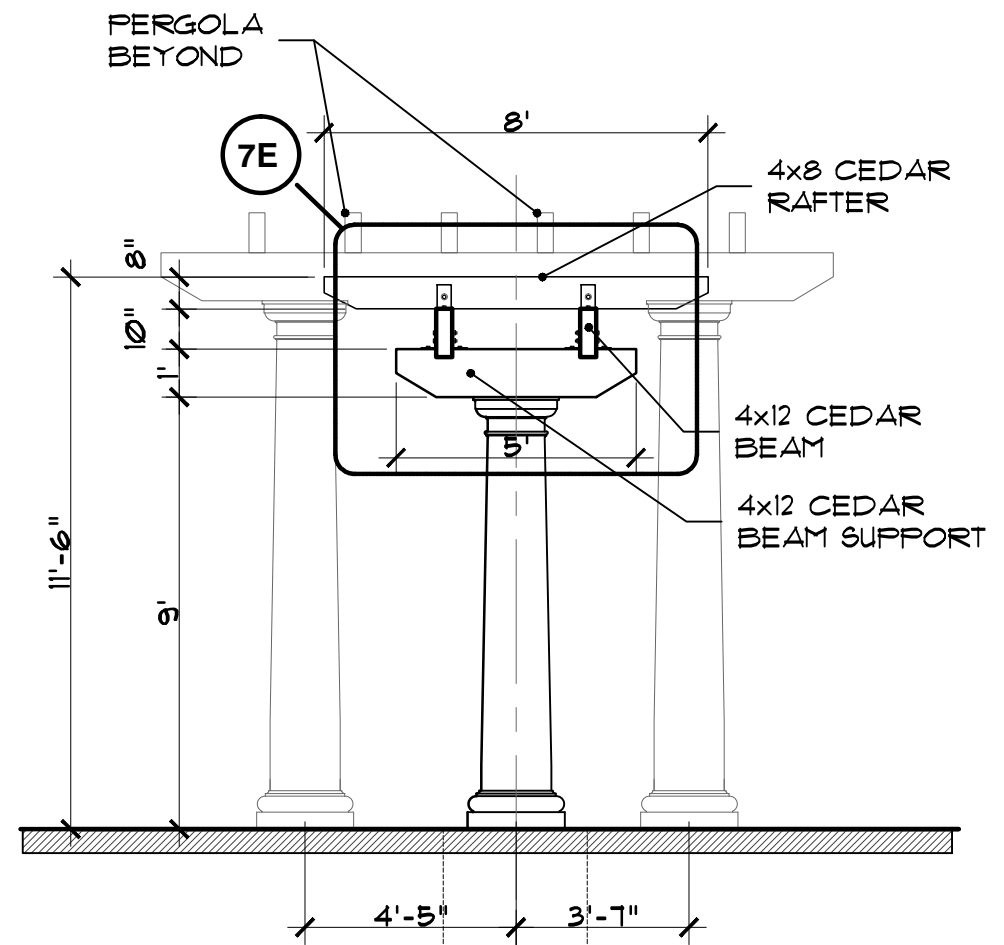
**7A pool trellis-pergola foundation plan**  
SCALE 1/4" = 1'-0"



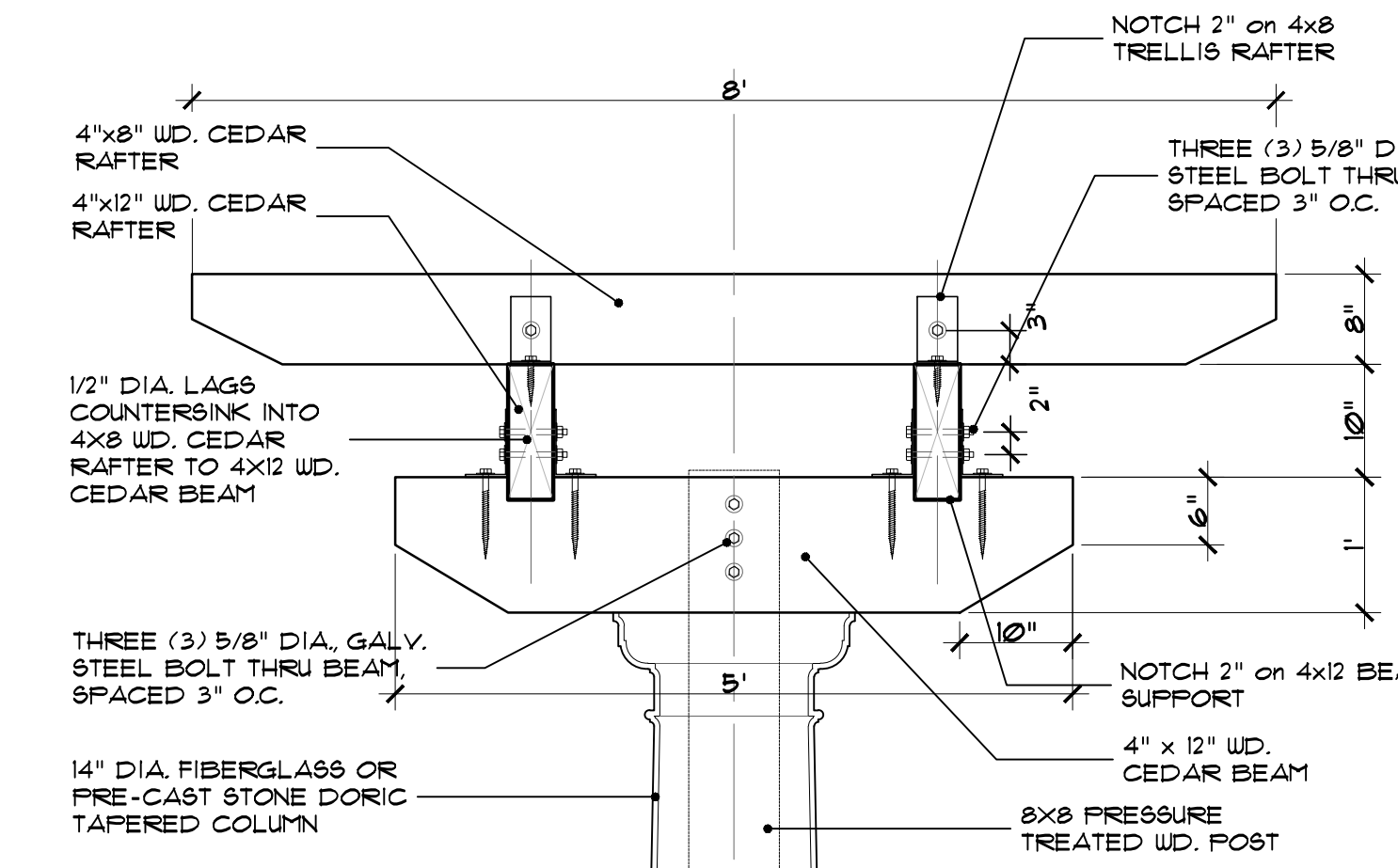
**7B pool trellis-pergola plan**  
SCALE 1/4" = 1'-0"



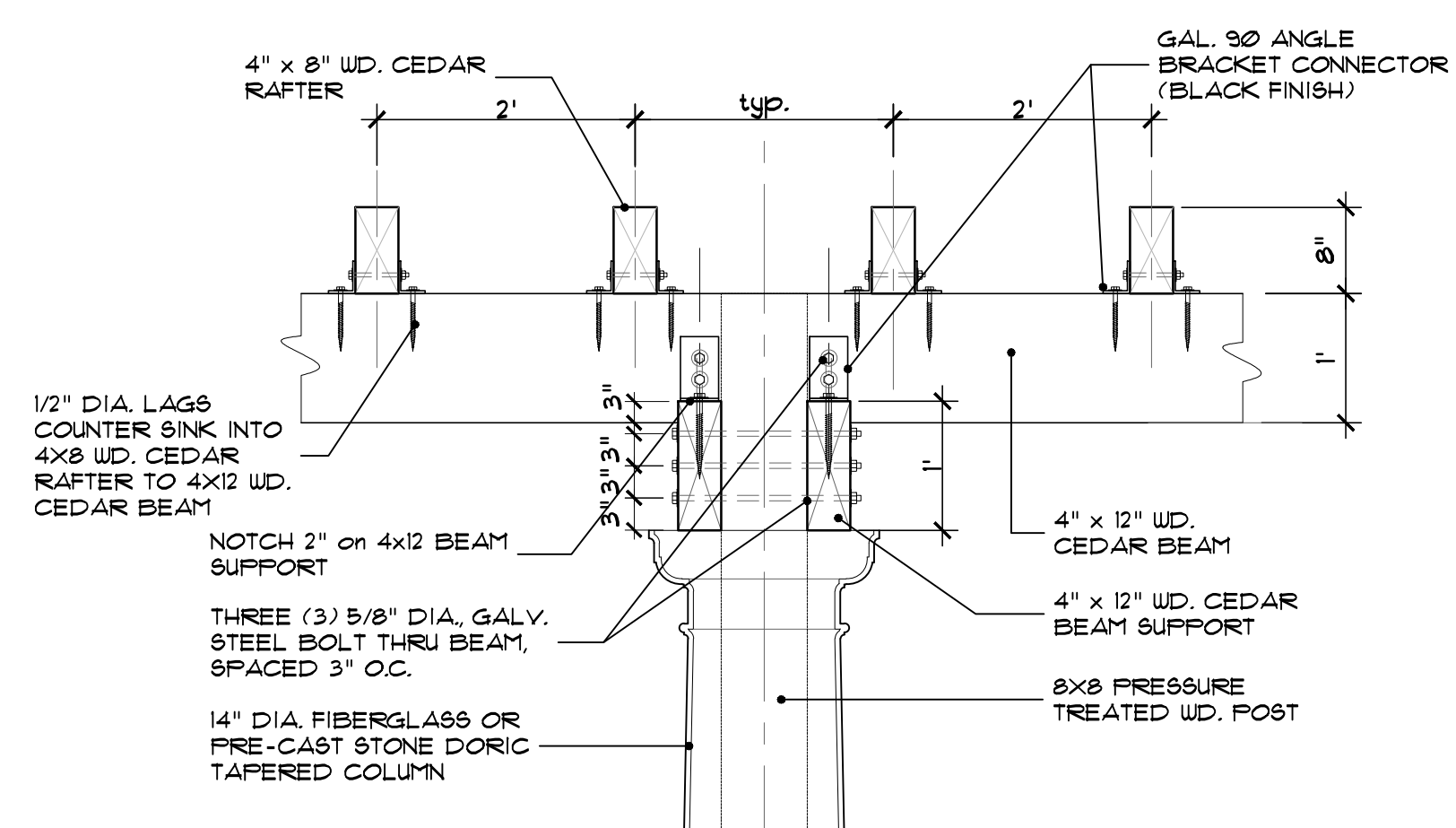
**7C pool trellis-pergola elevation view**  
SCALE 1/4" = 1'-0"



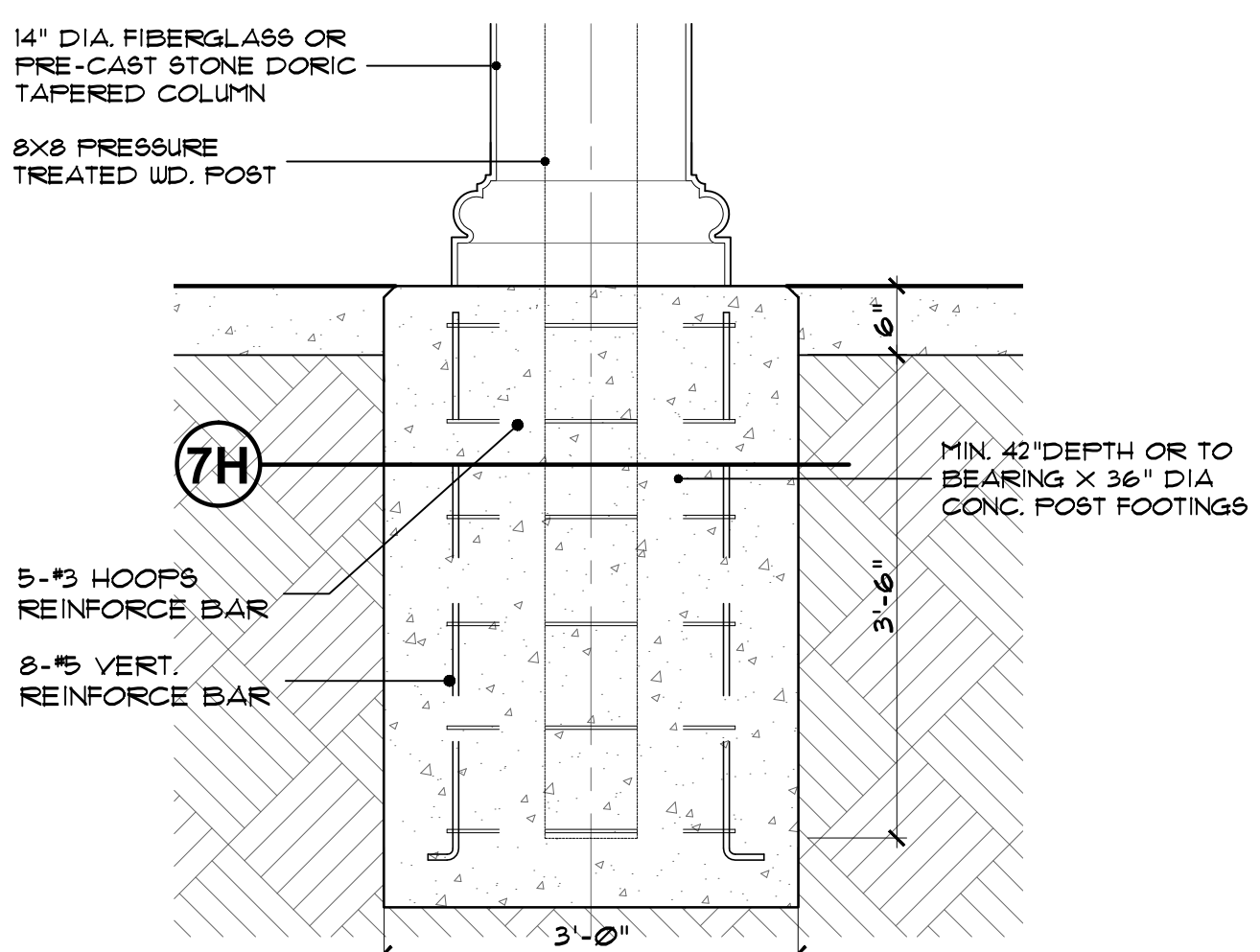
**7D pool trellis-pergola elevation view**  
SCALE 1/4" = 1'-0"



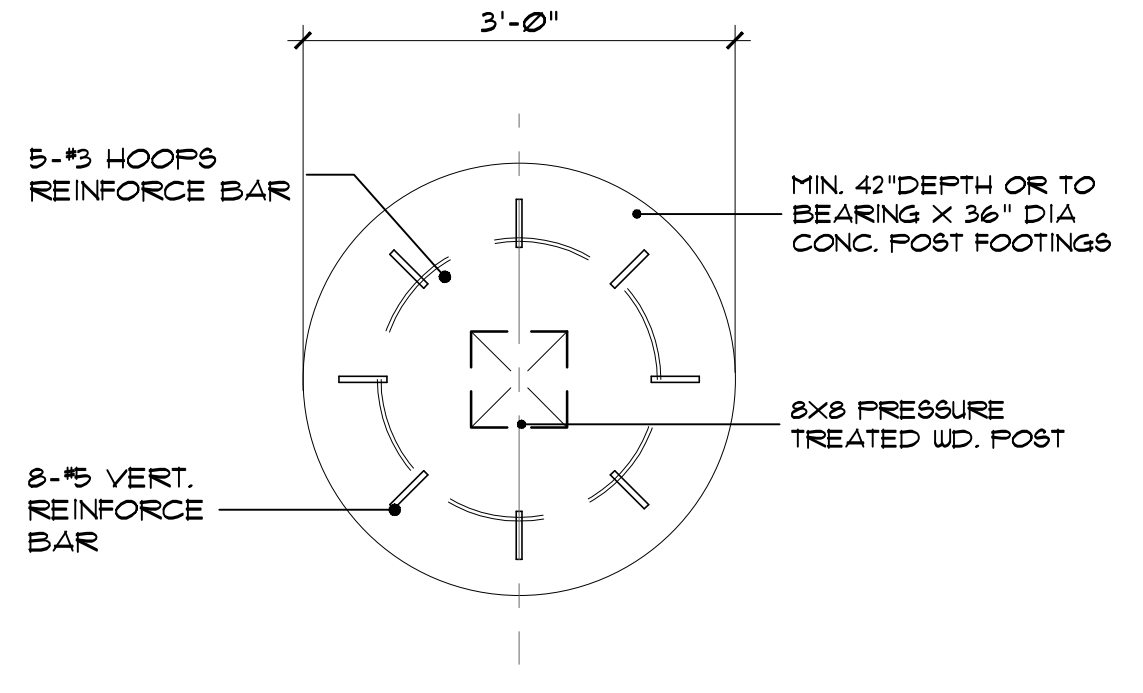
**7E trellis connection detail**  
SCALE: 3/4" = 1'-0"



**7F pergola connection detail**  
SCALE: 3/4" = 1'-0"



**7G pergola footing detail**  
SCALE: 3/4" = 1'-0"



**7H pergola footing detail**  
SCALE: 3/4" = 1'-0"

seal:  
 client:  
**JMF WHITE LAKE, LLC.**  
 1700 W. BIG BEAVER ROAD SUITE 120  
 TROY, MI 48084

project:  
**LAKE POINTE**  
 project location:  
 White Lake Twp., Michigan

Union Lake Road  
 sheet title:  
**IRRIGATION PLAN**

job no./issue/revision date:  
 LS24.026.02 2-7-2024  
 LS24.026.02 irrigation 2-21-2024

drawn by:  
**JP, DK, PH**  
 checked by:  
**FP**  
 date:  
**2-3-2024**

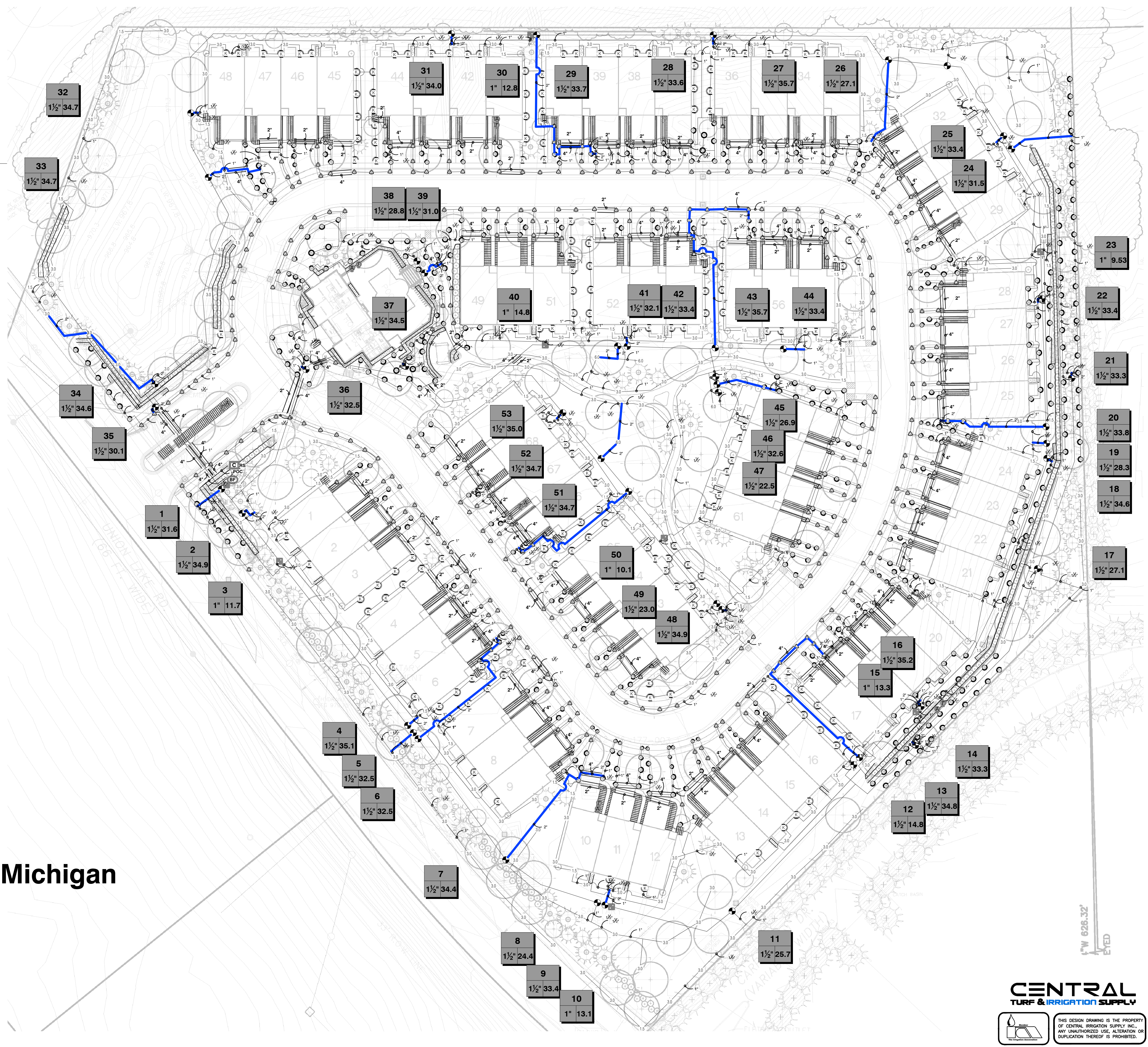
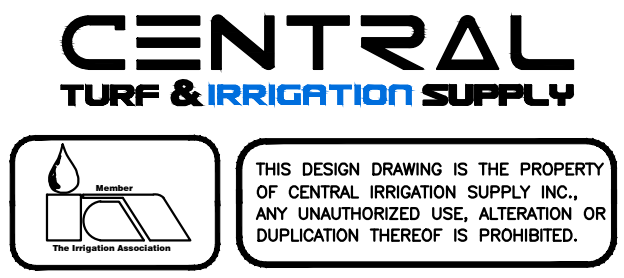
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project no:  
**LS24.032.02**

sheet no:  
**IRR-1 of 4**

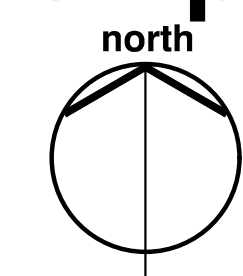
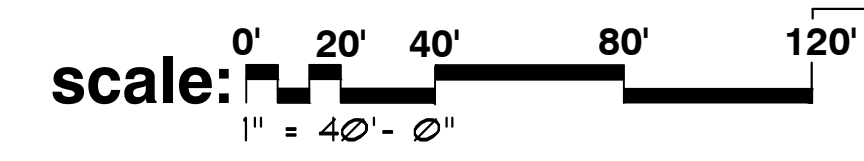


**IRRIGATION SCHEDULE**

SYMBOL	MANUFACTURER/MODEL	QTY
	Rain Bird 1804 15 Strip Series	371
	Rain Bird 1804 8 Series MPR	58
	Rain Bird 1804 10 Series MPR	193
	Rain Bird 1804 12 Series MPR	25
	Rain Bird 1804 15 Series MPR	227
	Rain Bird 1804 ADJ	4
	Hunter MP2000 PROS-04-PRS40-CV	181
SYMBOL	MANUFACTURER/MODEL	QTY
1.5	Rain Bird 5004-PC 1.5	59
3.0	Rain Bird 5004-PC 3.0	184
6.0	Rain Bird 5004-PC 6.0	4
SYMBOL	MANUFACTURER/MODEL	QTY
	Rain Bird XCZ-100-IVMO 1"	7
	Flush Valve	7
	Drip Air Relief Valve	7
	Area to Receive Dripline	8,245 I.F.
	Rain Bird XFD-06-18	4,284 I.F.
SYMBOL	MANUFACTURER/MODEL	QTY
	Rain Bird IVM-PGA Globe 1-1/2"	46
	Rain Bird 44-RC 1"	1
	Febco 765 2"	1
	Rain Bird ESPLXIVM	1
	Rain Bird WR2-RC	1
	Point of Connection	1
	Irrigation Lateral Line: Polyethylene Pipe 100 PSI 1"	23,698 I.F.
	Irrigation Lateral Line: Polyethylene Pipe 100 PSI 1 1/2"	4,756 I.F.
	Irrigation Lateral Line: PVC Class 160 SDR 26 2"	1,688 I.F.
	Irrigation Mainline: PVC Class 160 SDR 26 2 1/2"	4,030 I.F.
	Pipe Sleeve: PVC Class 160 SDR 26 2"	724.4 I.F.
	Pipe Sleeve: PVC Class 160 SDR 26 4"	1,086 I.F.
	Valve Callout	
#	Valve Number	
# #	Valve Flow	
# #	Valve Size	

irrigation plan for:  
**Lakepointe**  
**White Lake Township, Michigan**

**note:**  
 unless noted otherwise, numerical value on landscape quantities specified on plan take precedence over graphic representation.



seal:

client:  
**JMF WHITE LAKE, LLC.**  
 1700 W. BIG BEAVER  
 ROAD SUITE 120  
 TROY, MI 48084

project:  
**LAKE  
 POINTE**

project location:  
 White Lake Twp.,  
 Michigan

Union Lake Road  
 sheet title:  
**IRRIGATION PLAN**

job no./issue/revision date:  
 LS24.026.02  
 LS24.026.02  
 LS24.026.02

drawn by:  
**JP, DK, PH**  
 checked by:  
**FP**  
 date:  
**2-3-2024**

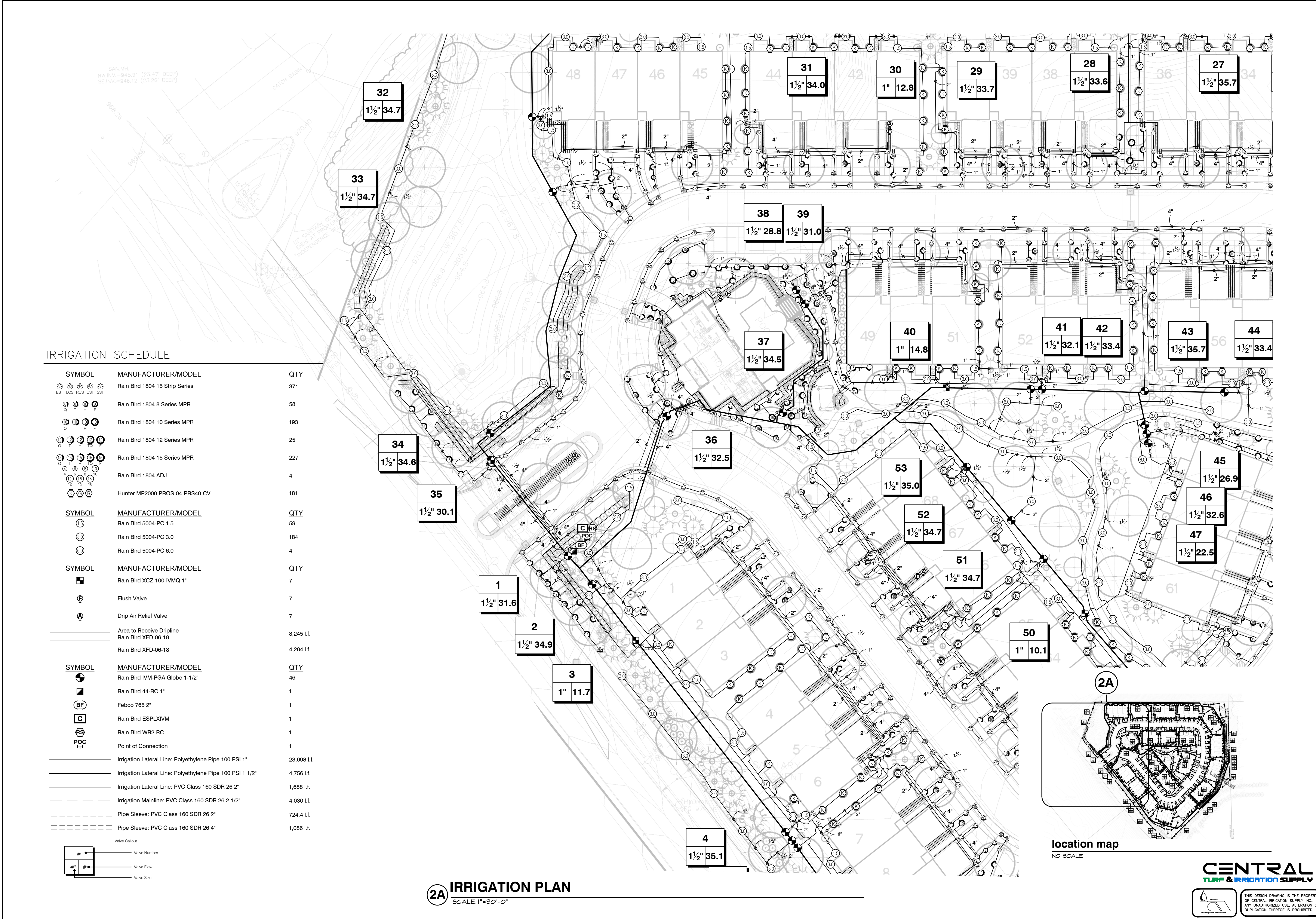
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 1-800-482-7171  
 For free location of public utility lines

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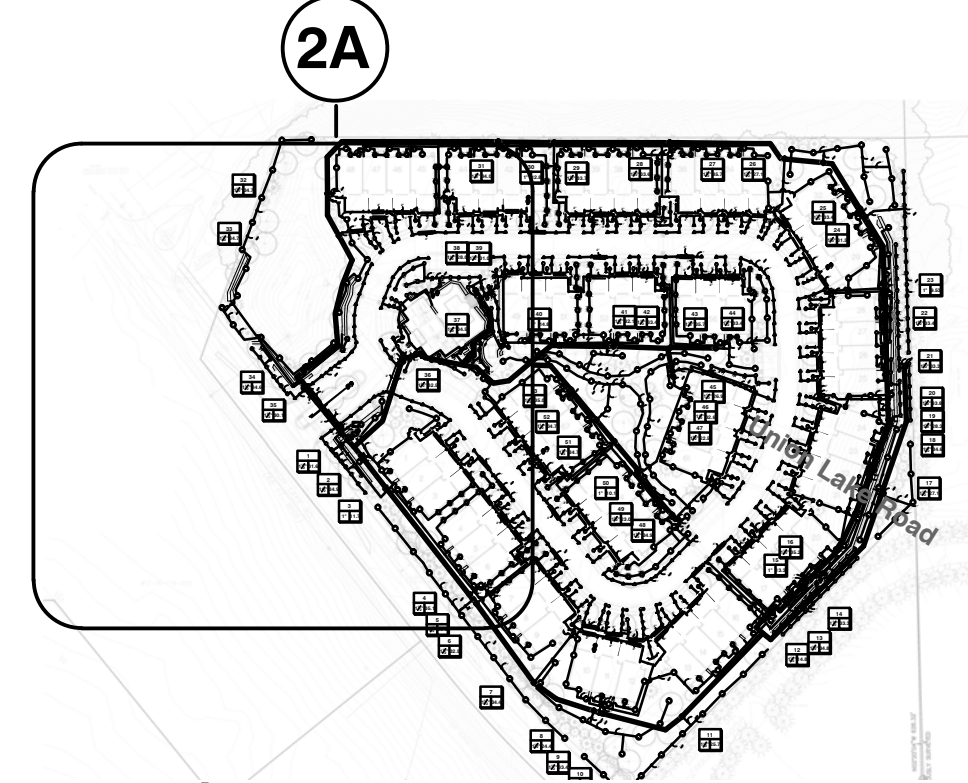
project no:  
**LS24.032.02**  
 sheet no:  
**IRR-2 of 4**



**IRRIGATION SCHEDULE**

SYMBOL	MANUFACTURER/MODEL	QTY
▲	Rain Bird 1804 15 Strip Series	371
○	Rain Bird 1804 8 Series MPR	58
○	Rain Bird 1804 10 Series MPR	193
○	Rain Bird 1804 12 Series MPR	25
○	Rain Bird 1804 15 Series MPR	227
○	Rain Bird 1804 ADJ	4
○	Hunter MP2000 PROS-04-PRS40-CV	181
SYMBOL	MANUFACTURER/MODEL	QTY
○	Rain Bird 5004-PC 1.5	59
○	Rain Bird 5004-PC 3.0	184
○	Rain Bird 5004-PC 6.0	4
SYMBOL	MANUFACTURER/MODEL	QTY
■	Rain Bird XCZ-100-IVMQ 1"	7
⊕	Flush Valve	7
⊕	Drip Air Relief Valve	7
≡≡≡	Area to Receive Dripline	8,245 l.f.
≡≡≡	Rain Bird XFD-06-18	4,284 l.f.
SYMBOL	MANUFACTURER/MODEL	QTY
⊙	Rain Bird IVM-PGA Globe 1-1/2"	46
⊙	Rain Bird 44-RC 1"	1
⊙	Febco 765 2"	1
⊙	Rain Bird ESPLXIVM	1
⊙	Rain Bird WR2-RC	1
⊙	Point of Connection	1
—	Irrigation Lateral Line: Polyethylene Pipe 100 PSI 1"	23,698 l.f.
—	Irrigation Lateral Line: Polyethylene Pipe 100 PSI 1 1/2"	4,756 l.f.
—	Irrigation Lateral Line: PVC Class 160 SDR 26 2"	1,688 l.f.
—	Irrigation Mainline: PVC Class 160 SDR 26 2 1/2"	4,030 l.f.
—	Pipe Sleeve: PVC Class 160 SDR 26 2"	724.4 l.f.
—	Pipe Sleeve: PVC Class 160 SDR 26 4"	1,086 l.f.
○	Valve Callout	
○	Valve Number	
○	Valve Flow	
○	Valve Size	

**2A IRRIGATION PLAN**  
 SCALE: 1"=30'-0"



location map  
 NO SCALE

**CENTRAL**  
 TURF & IRRIGATION SUPPLY

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seal:

client:  
**JMF WHITE LAKE, LLC.**  
 1700 W. BIG BEAVER  
 ROAD SUITE 120  
 TROY, MI 48084

project:  
**LAKE  
 POINTE**

project location:  
 White Lake Twp. ,  
 Michigan

Union Lake Road  
 sheet title:  
**IRRIGATION PLAN**

job no./issue/revision date:  
 LS24.026.02 <sup>UPDATES</sup> COMMENTS 2-7-2024  
 LS24.026.02 irrigation 2-21-2024

drawn by:  
**JP, DK, PH**  
 checked by:  
**FP**  
 date:  
**2-3-2024**

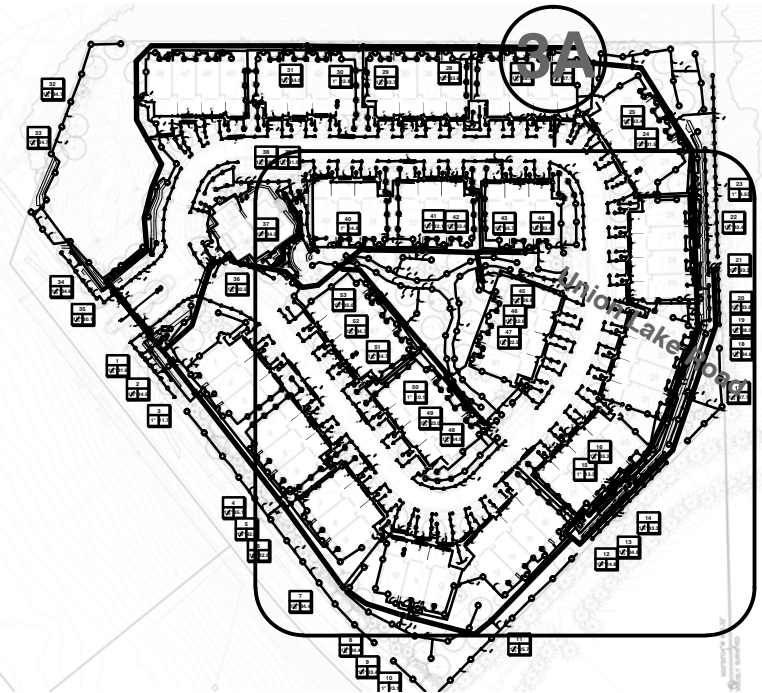
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 of construction

project no:  
**LS24.032.02**

sheet no:  
**IRR-3 of 4**

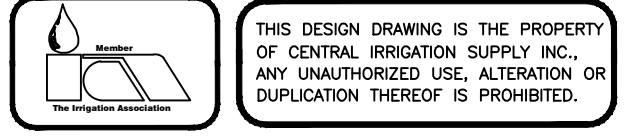


location map  
 NO SCALE



**3A IRRIGATION PLAN**  
 SCALE: 1"=30'-0"

**CENTRAL**  
 TURF & IRRIGATION SUPPLY



seal:

client:

**JMF WHITE LAKE, LLC.**  
 1700 W. BIG BEAVER  
 ROAD SUITE 120  
 TROY, MI 48084

project:

**LAKE  
 POINTE**

project location:

White Lake Twp. ,  
 Michigan

Union Lake Road

sheet title:

**IRRIGATION  
 NOTES & DETAILS**

job no./issue/revision date:

LS24.026.02 <sup>UPDATES</sup> COMMENTS 2-7-2024  
 LS24.026.02 irrigation 2-21-2024

drawn by:

**JP, DK, PH**

checked by:

**FP**

date:

**2-3-2024**

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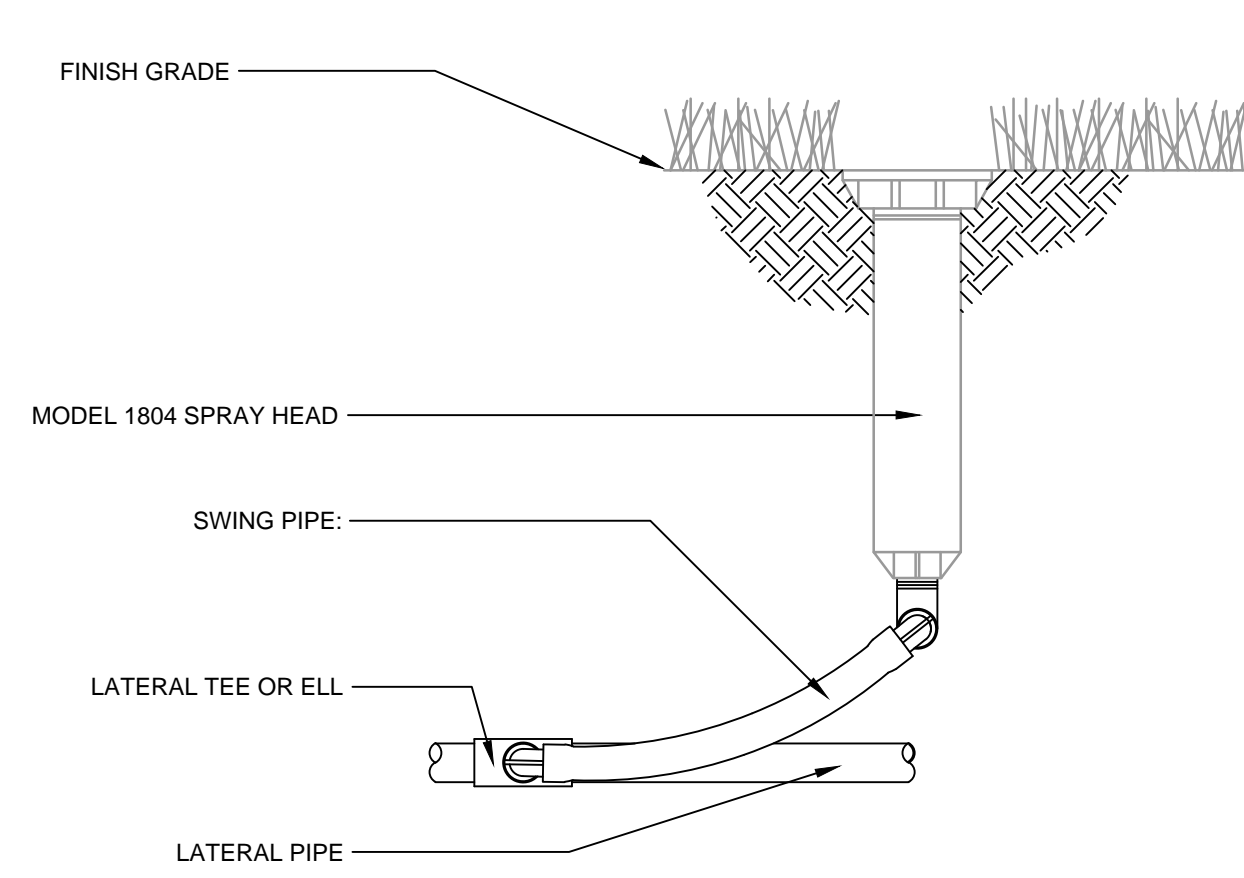
project no:

LS24.032.02

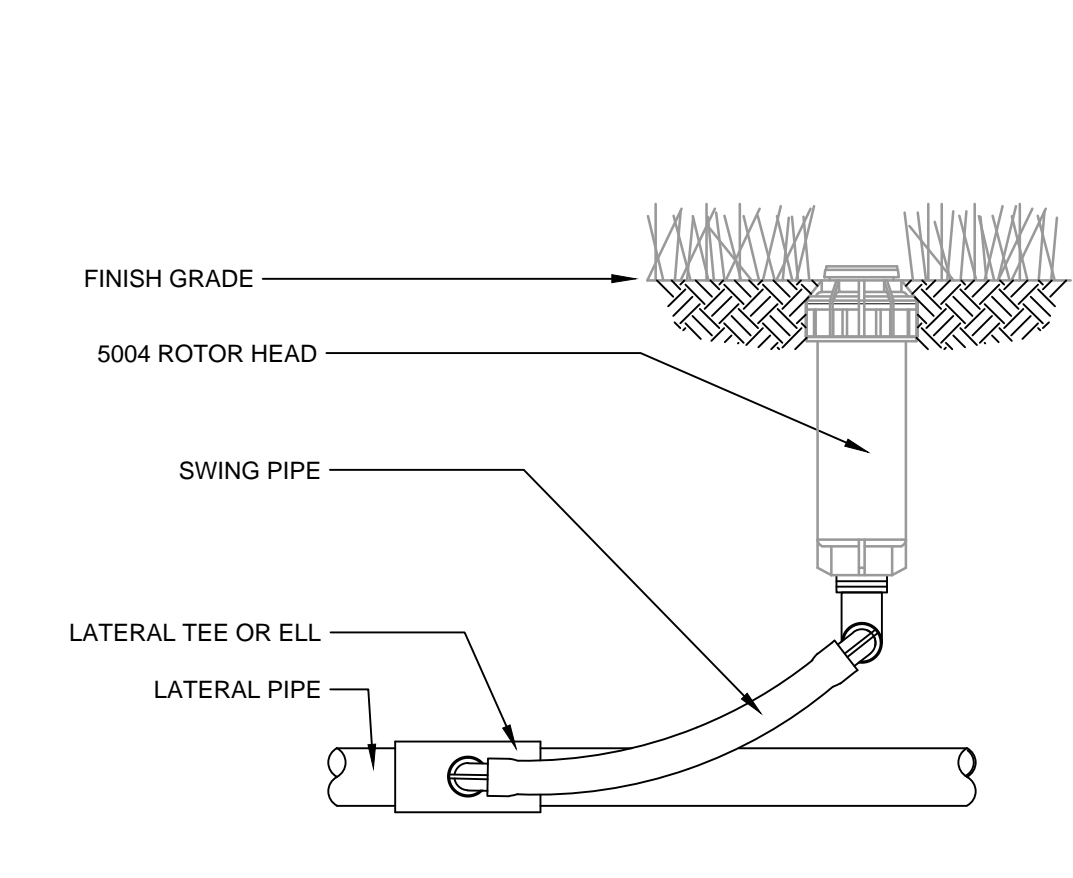
sheet no:

**IRR-4** of 4

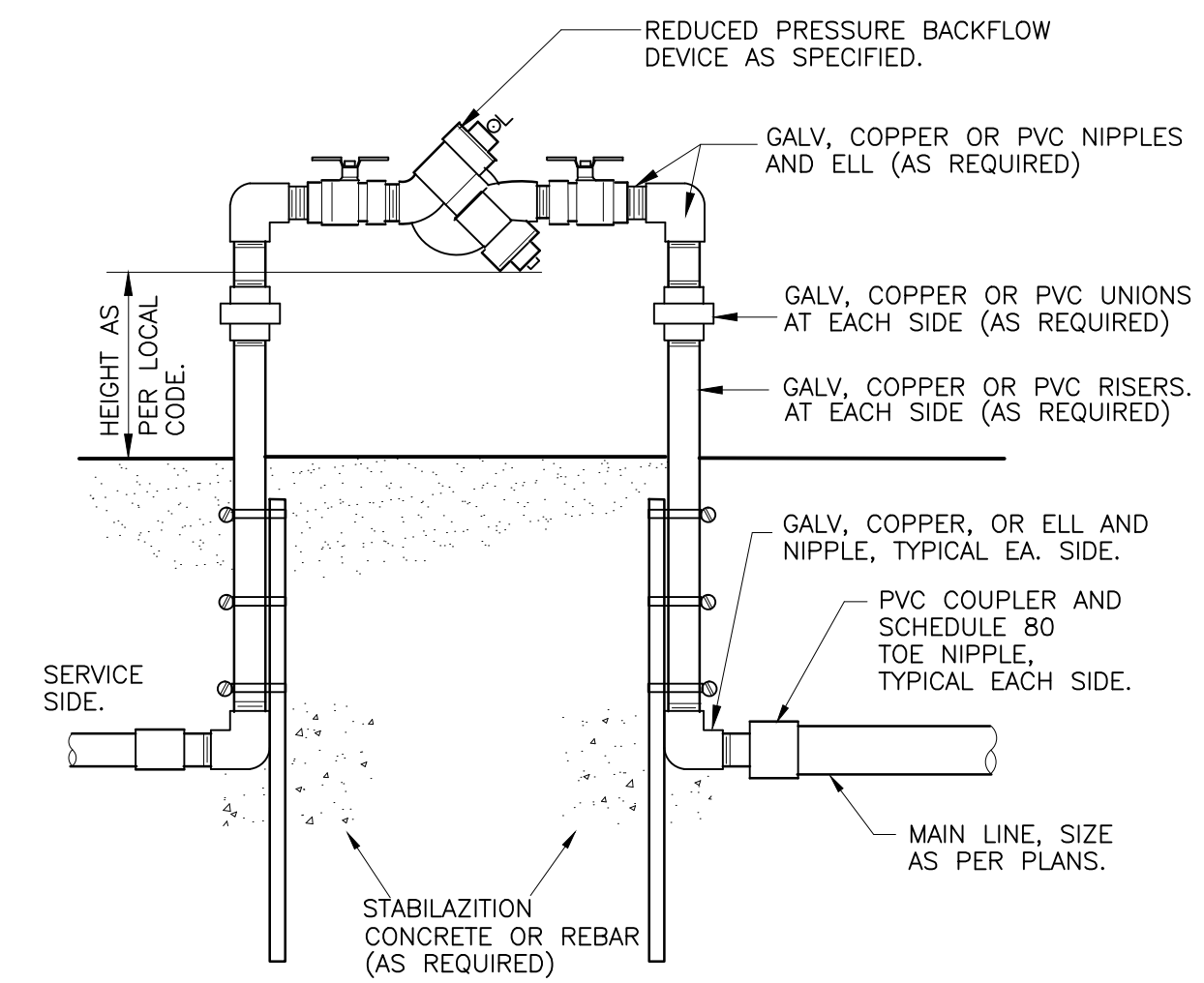
INSTALLATION MAY DIFFER PER LOCAL CODE



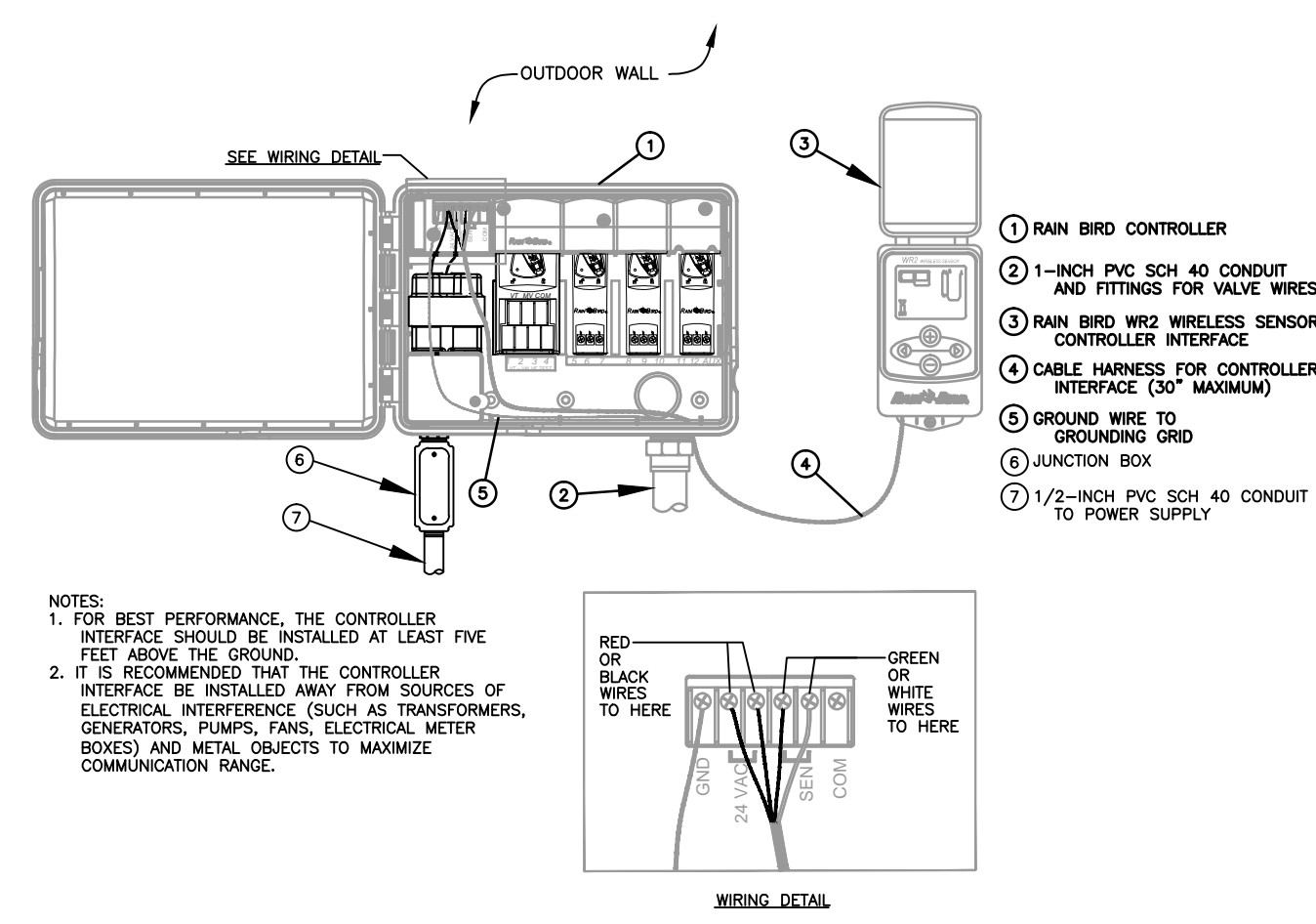
**1** 1804 SPRAY HEAD WITH SWING PIPE  
 S1-SP-RAI-01



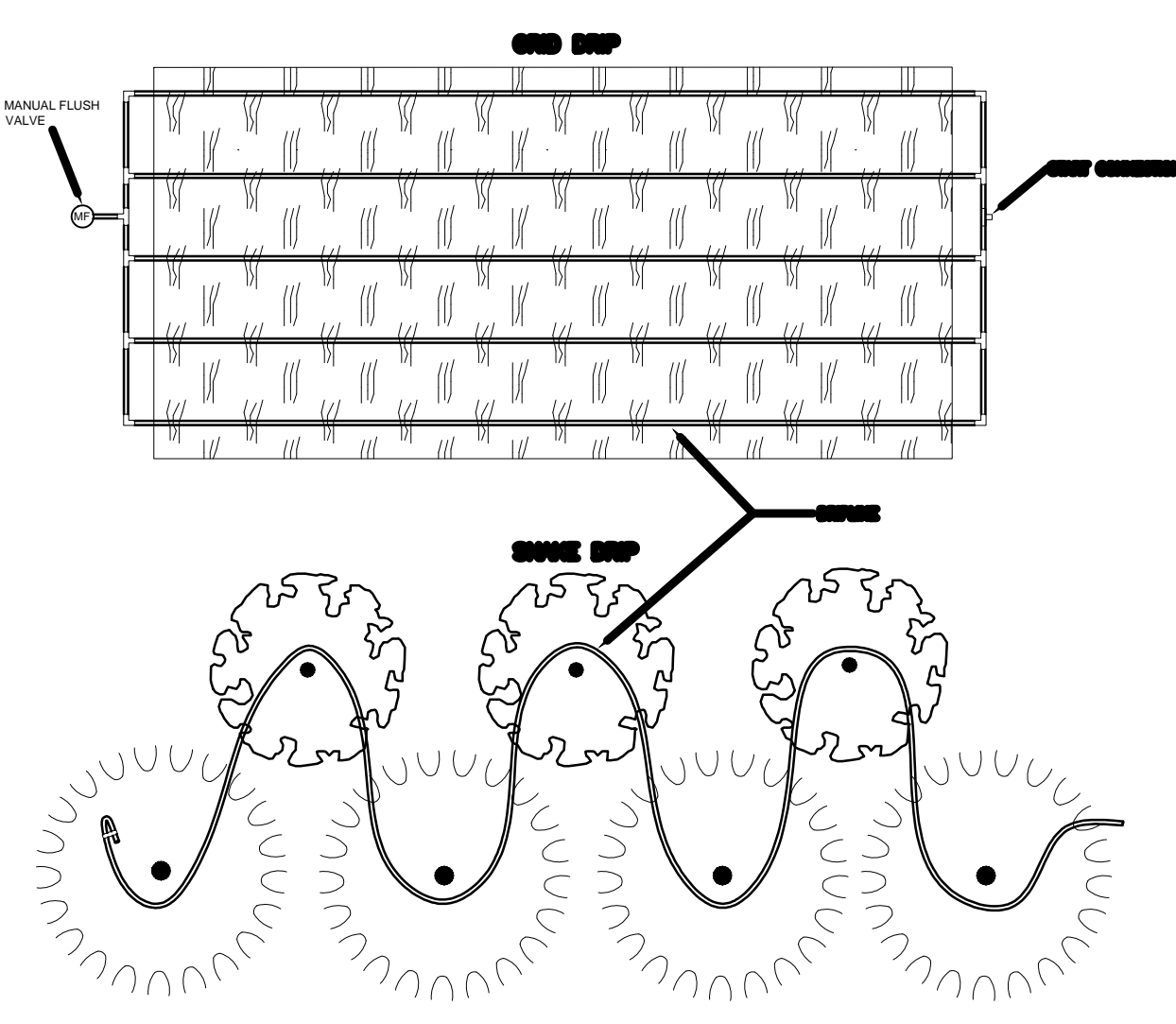
**2** 5004 ROTOR HEAD WITH SWING PIPE  
 NTS S1-RO-RAI-01



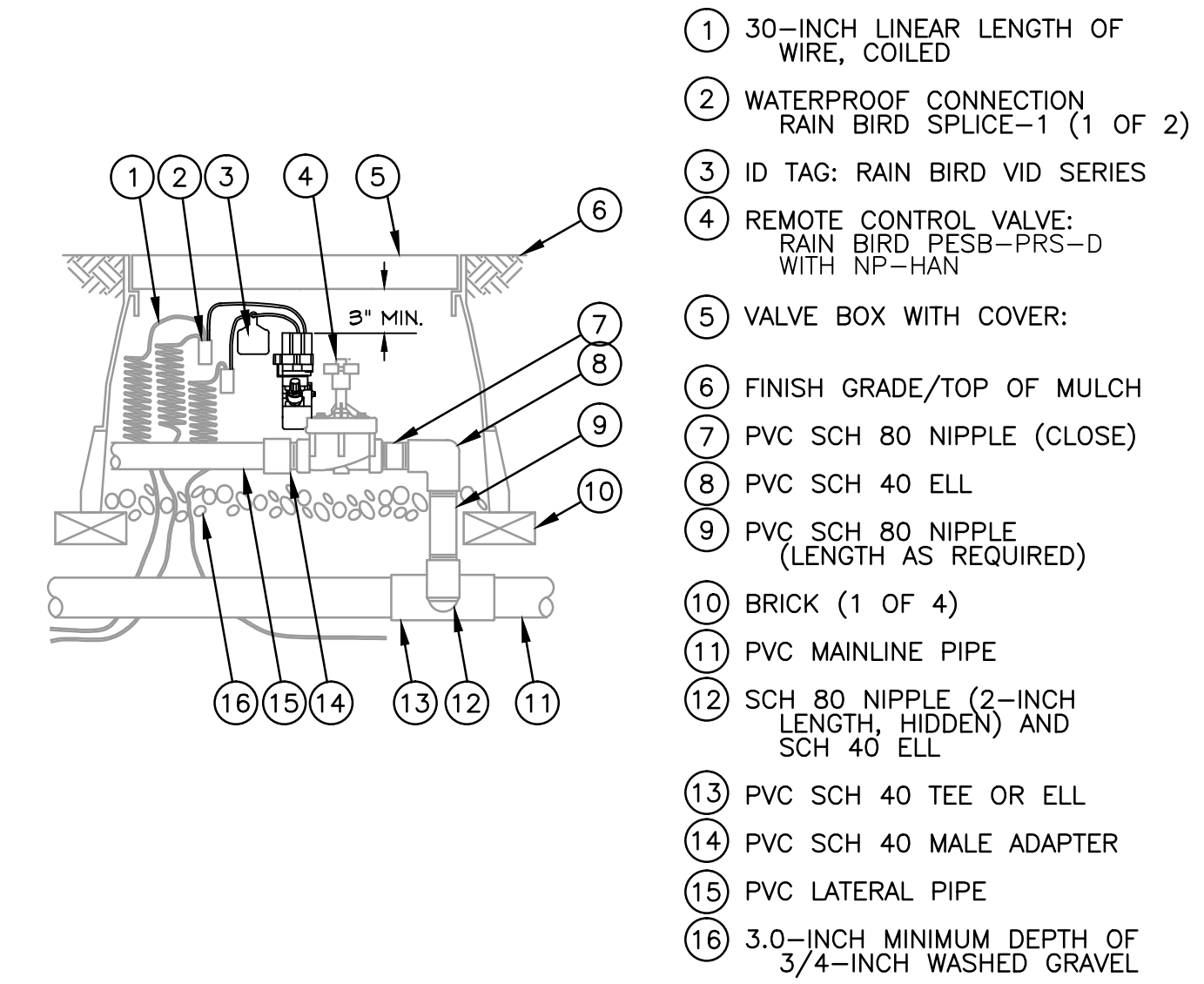
**3** REDUCED PRESSURE BACKFLOW DEVICE STANDARD  
 S1-BA-01



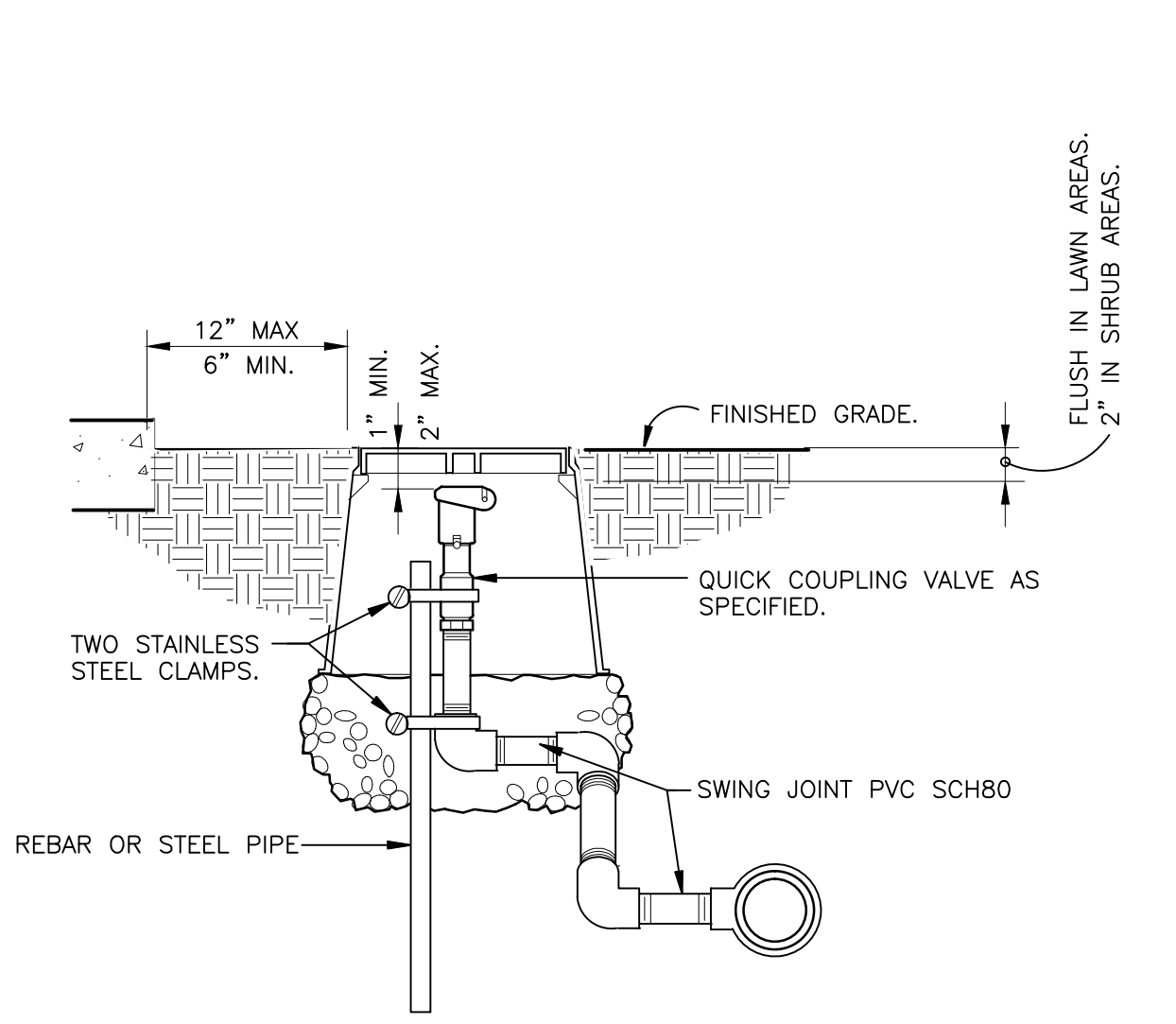
**00** WR2 WIRELESS RAIN SENSOR  
 NTS



**5** TYPICAL DRIP TUBING LAYOUT  
 NTS

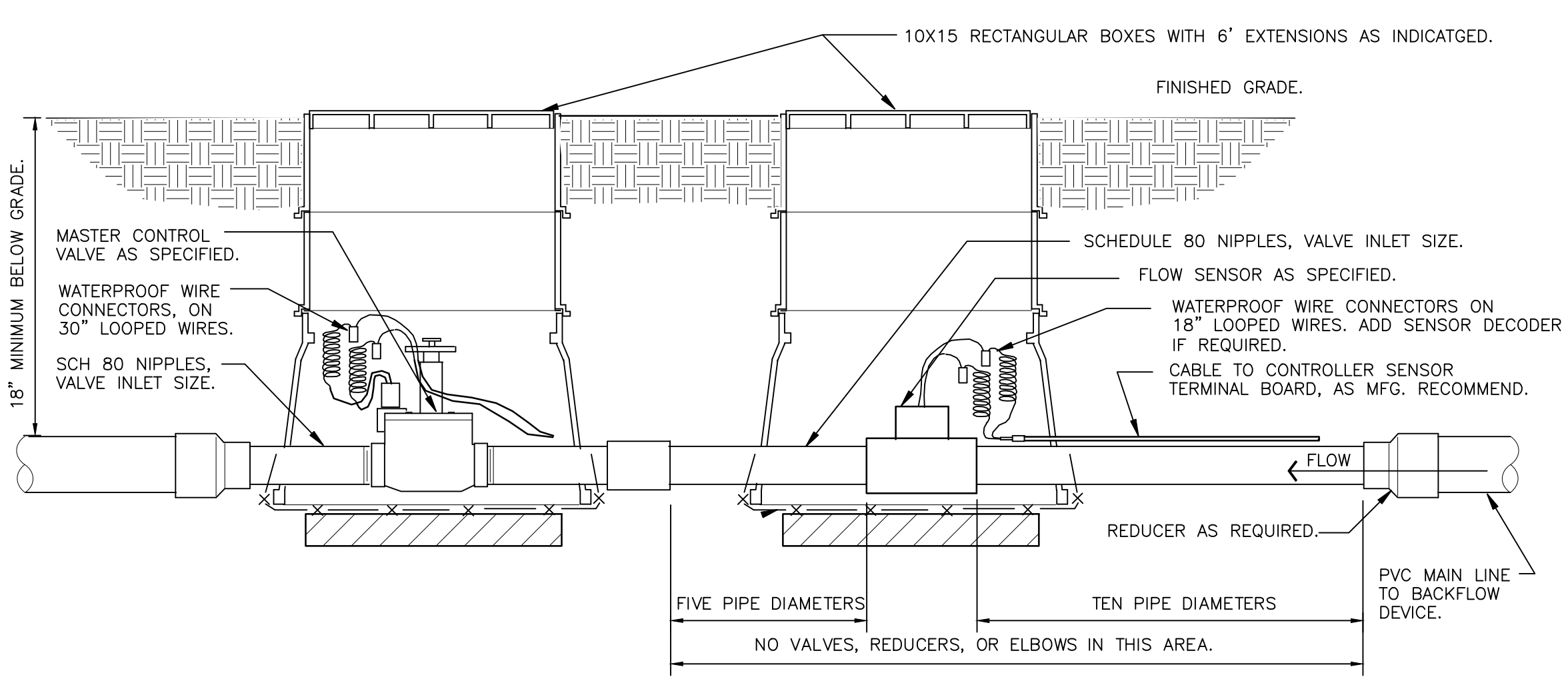


**6** PEB SERIES ELECTRIC VALVE  
 S1-VA-RAI-03

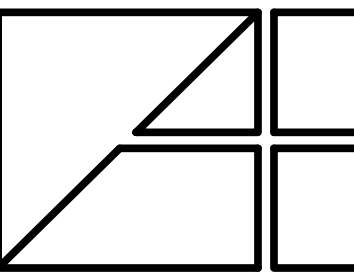


**8** QUICK COUPLING VALVE IN BOX  
 S1-QU-01

- IRRIGATION SPECIFICATIONS**
- IRRIGATION SYSTEM DESIGN BASED ON 75 GPM AT 69 PSI.
  - IRRIGATION DESIGN IS FROM THE POINT OF CONNECTION(POC) ONLY. THE DESIGN IS BASED ON GALLONS PER MINUTE(GPM)AND POUNDS PER SQUARE INCH(Psi)FURNISHED BY OTHERS.
  - IRRIGATION CONTRACTOR IS TO VERIFY POINT OF CONNECTION IN THE FIELD. INSTALLER IS TO CONFIRM THE MINIMUM DISCHARGE REQUIREMENTS OF THE POINT OF CONNECTION AS INDICATED ON THE LEGEND PRIOR TO INSTALLATION.
  - THE PRESSURE REQUIREMENT AT THE POINT OF CONNECTION IS BASED ON NO MORE THAN 5 FEET OF ELEVATION CHANGE IN THE AREAS OF IRRIGATION.
  - ALL PRODUCTS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND ACCORDING TO LOCAL BUILDING, ELECTRICAL, AND PLUMBING CODES.
  - IRRIGATION CONTRACTOR WILL ARRANGE INSPECTIONS REQUIRED BY LOCAL AGENCIES AND ORDINANCES DURING THE COURSE OF CONSTRUCTION AS REQUIRED. ALL WIRING TO BE PER LOCAL CODE. BACKFLOW PREVENTION TO BE PER LOCAL CODE.
  - LOCATION OF IRRIGATION COMPONENTS SHOWN ON DRAWING IS APPROXIMATE. ACTUAL PLACEMENT MAY VARY SLIGHTLY AS REQUIRED TO ACHIEVE FULL, EVEN COVERAGE.
  - ALL SPRINKLER HEADS SHALL BE INSTALLED PERPENDICULAR TO FINISH GRADES. EXCEPT AS OTHERWISE INDICATED.
  - INSTALL IRRIGATION MAINS WITH A MINIMUM 18" OF COVER BASED ON FINISH GRADES. INSTALL IRRIGATION LATERALS WITH MINIMUM 12" OF COVER BASED ON FINISH GRADES.
  - PIPE LOCATIONS ARE DIAGRAMMATIC. VALVES AND MAINLINE SHOWN IN PAVED AREAS ARE FOR GRAPHIC CLARITY ONLY.
  - THE IRRIGATION CONTRACTOR SHALL COMPLY WITH PIPE SIZES AS INDICATED.
  - ALL WIRE SPLICES OR CONNECTIONS SHALL BE MADE WITH APPROVED WATERPROOF WIRE CONNECTIONS AND BE IN A VALVE OR SPLICE BOX.
  - ALL CONTROL WIRING DOWNSTREAM OF THE CONTROLLER IS TO BE 2 WIRE, UL APPROVED DIRECT BURY.
  - THE DESIGN IS BASED ON THE SITE INFORMATION AND/OR DRAWING SUPPLIED WITH THE DESIGN CRITERIA BEING SET (AREA TO BE IRRIGATED, EQUIPMENT MANUFACTURER AND MODEL TO BE USED, WATER SOURCE INFORMATION, ELECTRICAL POWER AVAILABILITY, ETC...). SITEONE LANDSCAPE SUPPLY BEARS NO RESPONSIBILITY OR LIABILITY FOR ANY ERRORS IN DESIGN OR INSTALLATION THAT ARISE DUE TO INACCURACIES IN THE ABOVE REFERENCED INFORMATION SUPPLIED TO SITEONE LANDSCAPE SUPPLY LANDSCAPES IN RELATION TO THIS PROJECT, UNLESS OTHERWISE NOTED.



**9** MASTER VALVE/FLOW SENSOR ASSEMBLY  
 S1-MI-03



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 Bloomfield Hills, MI 48302  
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**TYPICAL UNIT PLANS**

**LAKE POINTE**  
 MULTIFAMILY COMMUNITY  
 WHITE LAKE, MICHIGAN

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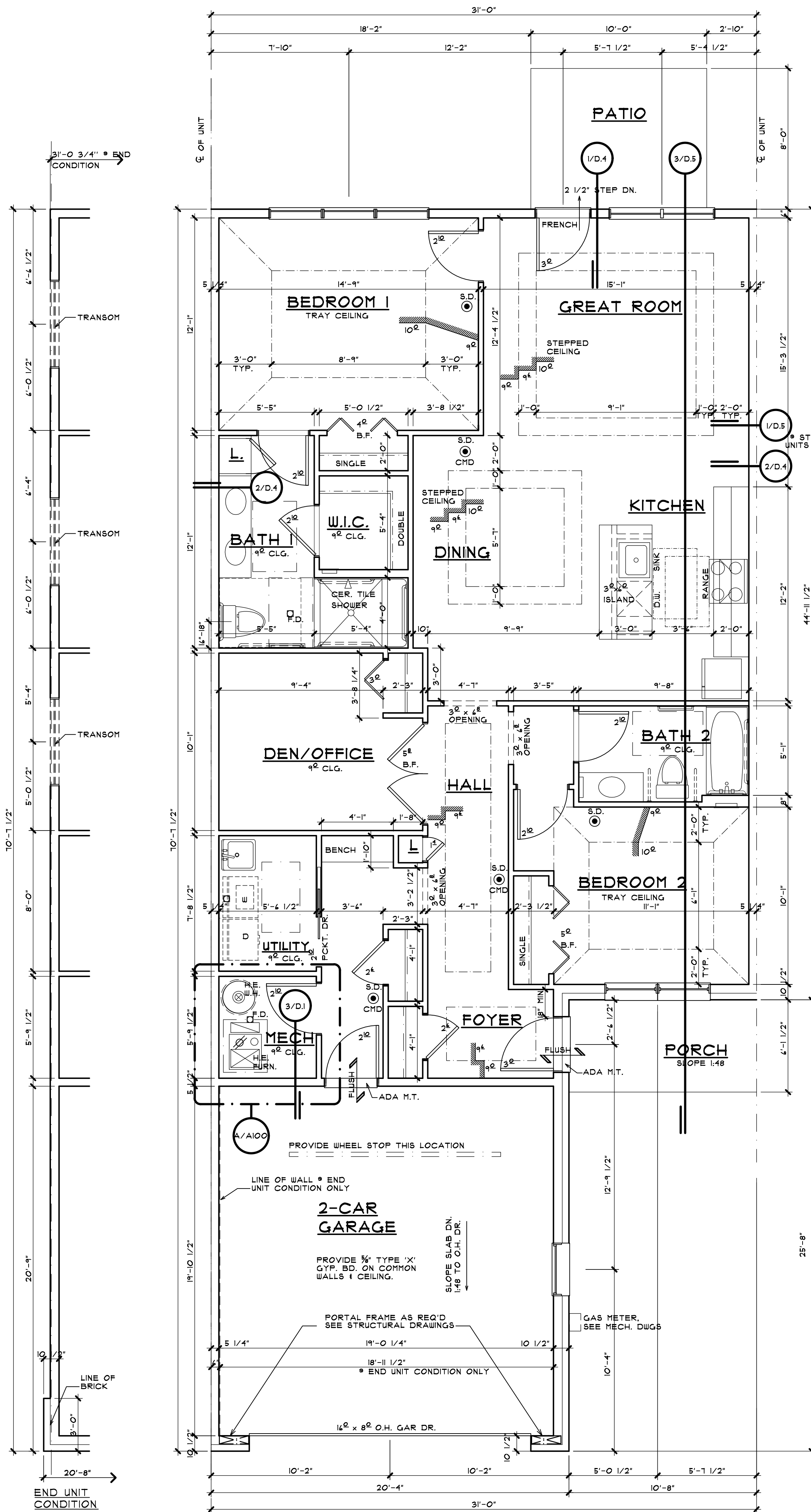
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 PERMITS 06-16-21  
 CONSTRUCTION

REVISIONS  
 22-10-18 OWNER COMMENT RESPONSE  
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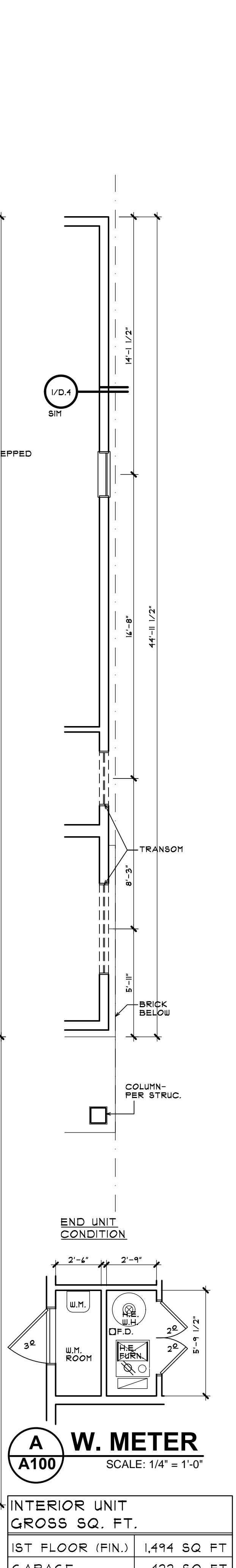
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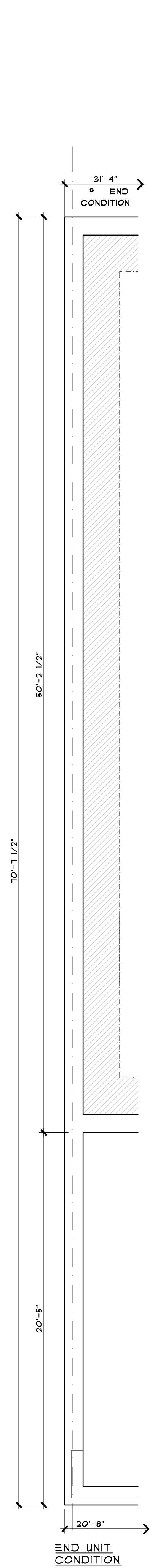
SHEET NUMBER  
**A100**



**2 TYP. UNIT FIRST FLOOR PLAN**  
**A100 SINGLE STORY DWELLING UNIT - TYPE 'B'**



**A W. METER**  
 SCALE: 1/4" = 1'-0"



**1 TYP. UNIT FOUNDATION PLAN**  
**A100 SINGLE STORY DWELLING UNIT - TYPE 'B'**

- NOTES**
- ALL EXTERIOR TRIM TO BE ALUMINUM UNWRAPPED OR VINYL. VERIFY EXACT LOCATIONS FOR EACH MATERIAL WITH OWNER PRIOR TO CONSTRUCTION.
  - PROVIDE PEEP HOLES AND DEAD BOLTS AT ALL FRONT ENTRY DOORS. SEE BUILDER FOR SPECIFICATIONS.
  - ALL DRYWALL TO BE PREPPED & READY TO BE PAINTED INCLUDING THE GARAGE.
  - BRICK ROWLOCK SILLS MAY BE REPLACED WITH PRECAST STONE OR CONCRETE. VERIFY WITH BUILDER PRIOR TO CONSTRUCTION.
  - NOTE: FUTURE GRAB BARS SHOWN AT WATER CLOSETS, TUBS & SHOWERS. PROVIDE BLOCKING ONLY AT TIME OF OCCUPANCY.
  - NOTE: ALL GYP. BOARD INSTALLED IN ROUGH BY ROUGH CARPENTERS MUST BE MOISTURE RESISTANT TYPE APPROVED FOR INSTALLATION DURING THE ROUGH FRAMING PROCESS.
  - NOTE: ROUGH CARPENTER TO VERIFY ALL TUB AND SHOWER SIZES PRIOR TO ROUGH IN.
  - NOTE: SEE STRUCTURAL ENGINEERING PLANS (BY OTHERS) FOR ALL STRUCTURAL INFORMATION. ALL FOUNDATION INFORMATION REGARDING BEARING CAPACITY OF SOIL CAN VARY ON A BUILDING BY BUILDING BASIS.

ALL INTERIOR PARTITION DIMENSIONS ARE 3/16" UNLESS NOTED OTHERWISE.

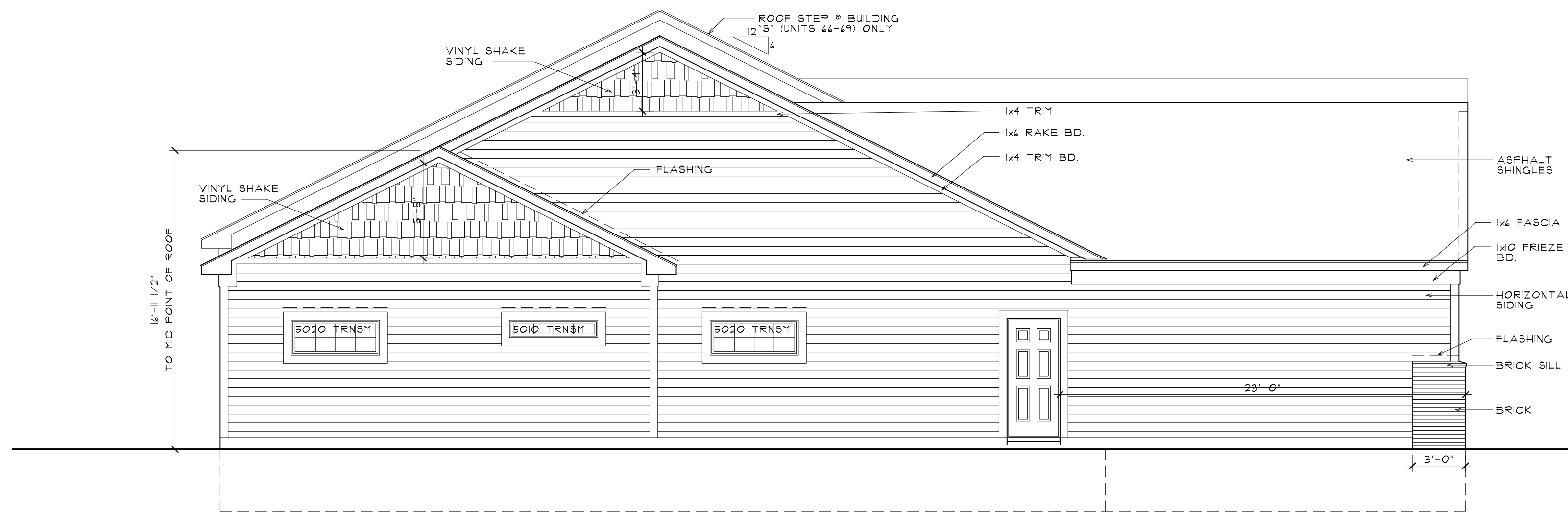
BEFORE CONSTRUCTION OBTAIN WINDOW & DOOR ROUGH OPENING SIZES FROM WINDOW/DOOR SUPPLIER.

SEE SHEETS N-1 - N-4 FOR ADDITIONAL NOTES REGARDING DRAWINGS & CONSTRUCTION.

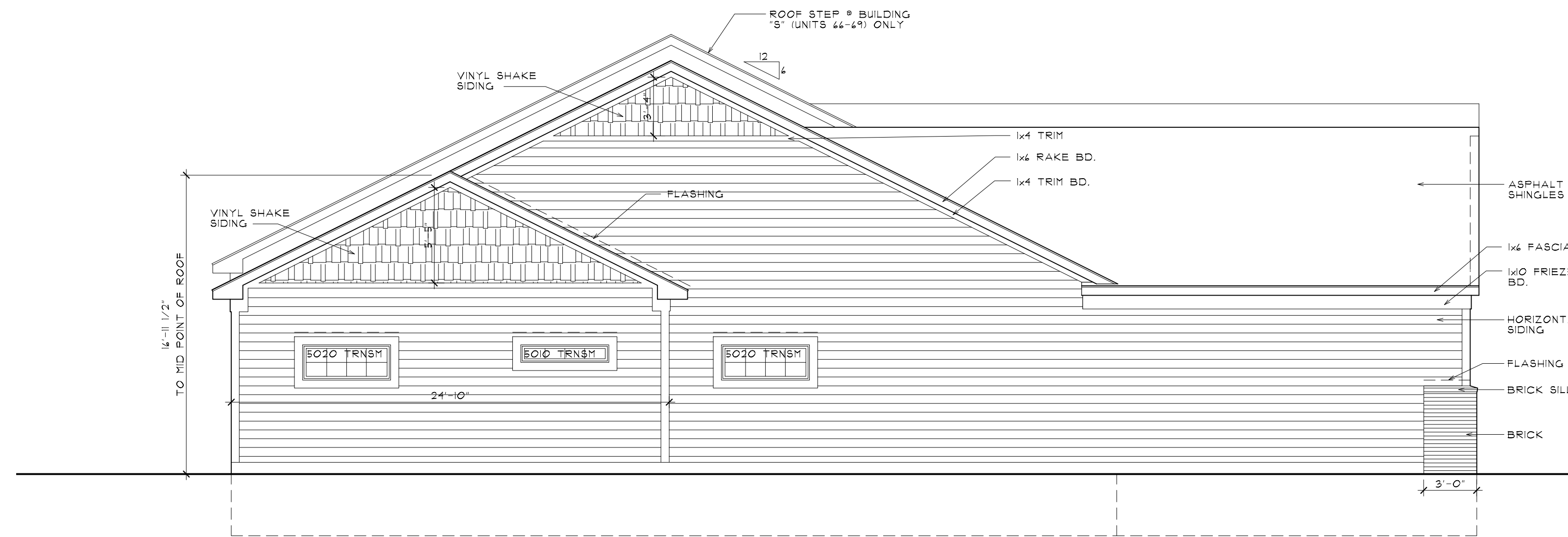
SEE SHEETS D-1 - D-4 FOR ADDITIONAL DETAILS REGARDING DRAWINGS & CONSTRUCTION.

DO NOT SCALE THESE DRAWINGS. USE CALCULATED DIMENSIONS. IF VARIATIONS OCCUR CONTACT ARCHITECT FOR CLARIFICATION.

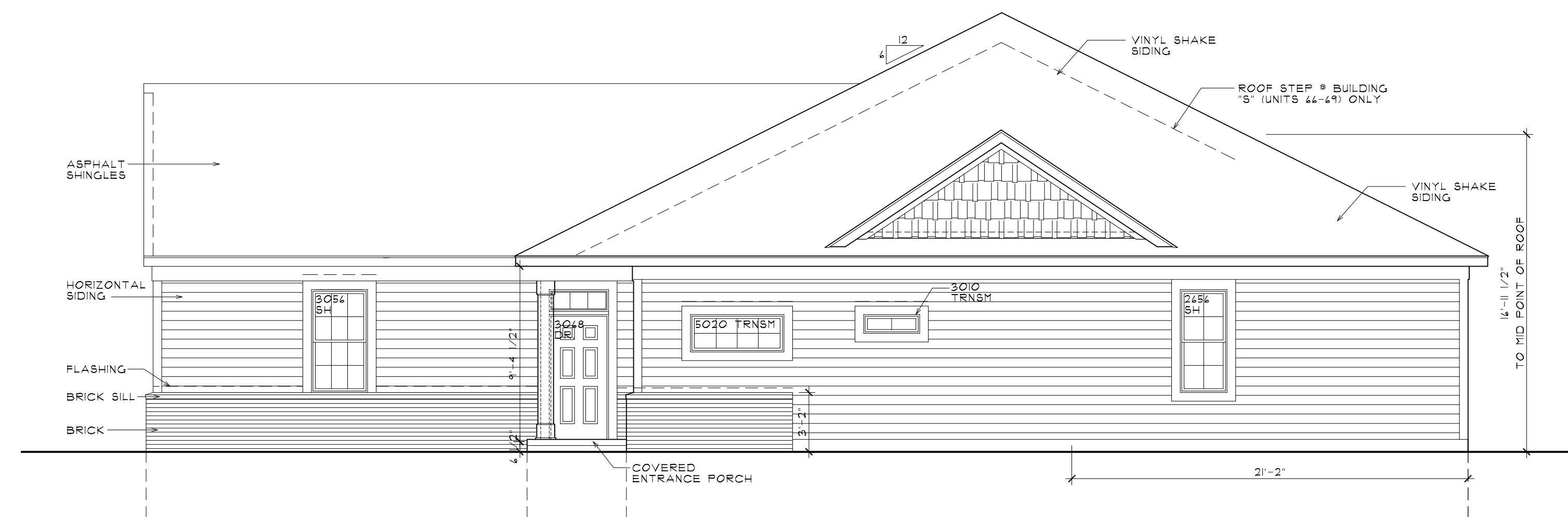




**4 TYP. LEFT SIDE ELEVATION**  
**A101** WITH METER ROOM SCALE: 3/16" = 1'-0"



**4 TYP. LEFT SIDE ELEVATION**  
**A101** SINGLE STORY DWELLING UNIT - TYPE 'B' SCALE: 3/16" = 1'-0"



**3 TYP. RIGHT SIDE ELEVATION**  
**A101** SINGLE STORY DWELLING UNIT - TYPE 'B' SCALE: 3/16" = 1'-0"

**WINDOW SILLS**

IN DWELLING UNITS, WHERE THE OPENING OF AN OPERABLE WINDOW IS LOCATED MORE THAN 12" ABOVE FINISHED GRADE OR SURFACE BELOW, THE LOWEST PART OF THE CLEAR OPENING OF THE WINDOW SHALL BE A MINIMUM OF 24 INCHES ABOVE THE FINISHED FLOOR OF THE ROOM IN WHICH THE WINDOW IS LOCATED. GLAZING BETWEEN THE FLOOR AND 24" SHALL BE FIXED OR HAVE OPENINGS THROUGH WHICH A 4 INCH DIAMETER SPHERE CANNOT PASS.

EXCEPTIONS:  
 1. WINDOWS WHOSE OPENINGS WILL NOT ALLOW A 4" DIA. SPHERE TO PASS THROUGH THE OPENING WHERE THE OPENING IS IN ITS LARGEST OPENED POSITION.  
 2. OPENINGS THAT ARE PROVIDED WITH WINDOW GUARDS THAT COMPLY WITH ASTM F2090.

SEE 1/4" SCALE PLANS FOR SIDE ELEVATION SHEET A 101

**PROPOSED VENT AREA: REQUIRED PER EACH UNIT**

VENT AREA RATIO 1:150  
 ATTIC AREA = 1488 SQ.FT. (1/150)  
 VENT AREA = 9.9 SQ.FT. x 144 = 1426 SQ.IN.  
 50% SOFFIT AND 50% RIDGE = 713 SQ.IN. EACH

**VENT AREA PROVIDED \* RIDGE**

CONTINUOUS SOFFIT TYPE \* 18 SQ.IN. PER FT. = X LIN.FT.  
 LOUVER AT RIDGE TYPE \* 54 SQ.IN. EA. = 14 UNITS  
 TOTAL VENTING AT RIDGE = 756 SQ.IN.

**VENT AREA PROVIDED \* SOFFIT**

CONTINUOUS SOFFIT TYPE \* 9 SQ.IN. PER FT. = X LIN.FT.  
 LOUVER TYPE 8"x 14" w/o BRICK \* 54 SQ.IN. EA. = 14 UNITS  
 TOTAL VENTING AT SOFFIT = 756 SQ.IN.

**NOTES**

ALL EXTERIOR TRIM TO BE ALUMINUM WRAPPED OR VINYL. VERIFY EXACT LOCATIONS FOR EACH MATERIAL WITH OWNER PRIOR TO CONSTRUCTION.

PROVIDE PREP HOLES AND DEAD BOLTS AT ALL FRONT ENTRY DOORS. SEE BUILDER FOR SPECIFICATIONS.

ALL DRYWALL TO BE READY TO BE PAINTED

BRICK ROWLOCK SILLS MAY BE REPLACED WITH PRECAST STONE OR CONCRETE. VERIFY WITH BUILDER PRIOR TO CONSTRUCTION.

FIXED GLASS WINDOWS IN GABLES TO HAVE OPAQUE FINISH ON INTERIOR OF GLASS SO FRAMING OF ROOF NOT VISIBLE FROM EXTERIOR.

PROVIDE RECESS LIGHT IN SOFFIT ABOVE DOOR ENTRY - CONNECT TO PHOTO CELL.

NOTE: VERIFY TYPE OF TRIM w/ OWNER PRIOR TO CONSTRUCTION. OWNER MAY CHOOSE 2x TRIM WRAPPED IN ALUMINUM OR VINYL TRIM BOARDS.

**OVERHANGS & DRAINAGE**

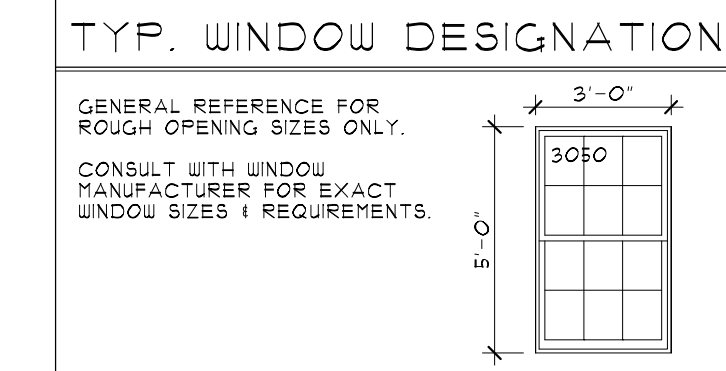
PROVIDE GUTTERS AND DOWNSPOUTS FOR DRAINAGE OF ROOF WATER. DOWNSPOUTS ARE TO BE CONNECTED TO THE STORM WATER COLLECTION SYSTEM. SEE CIVIL ENGINEERING DRAWINGS FOR CONNECTION DETAILS & LOCATIONS.

DOWNSPOUT LOCATIONS ARE T.B.D. BY BUILDER.

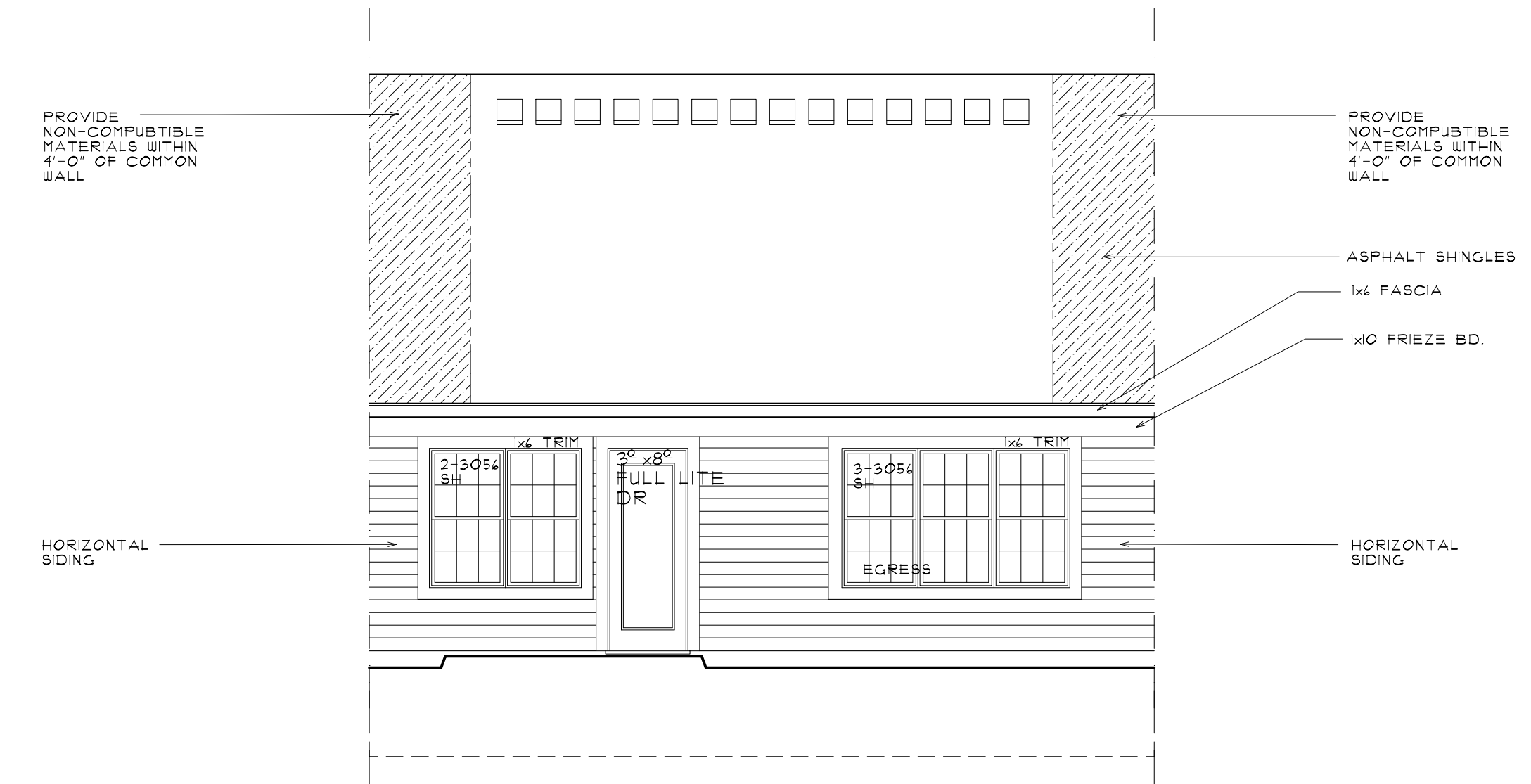
UNLESS NOTED OTHERWISE OVERHANG DIMENSIONS ARE 12" FROM FRAME. RAKE DIMENSIONS ARE 4" AT BRICK AND 1" AT SIDING.

**EGRESS WINDOW**

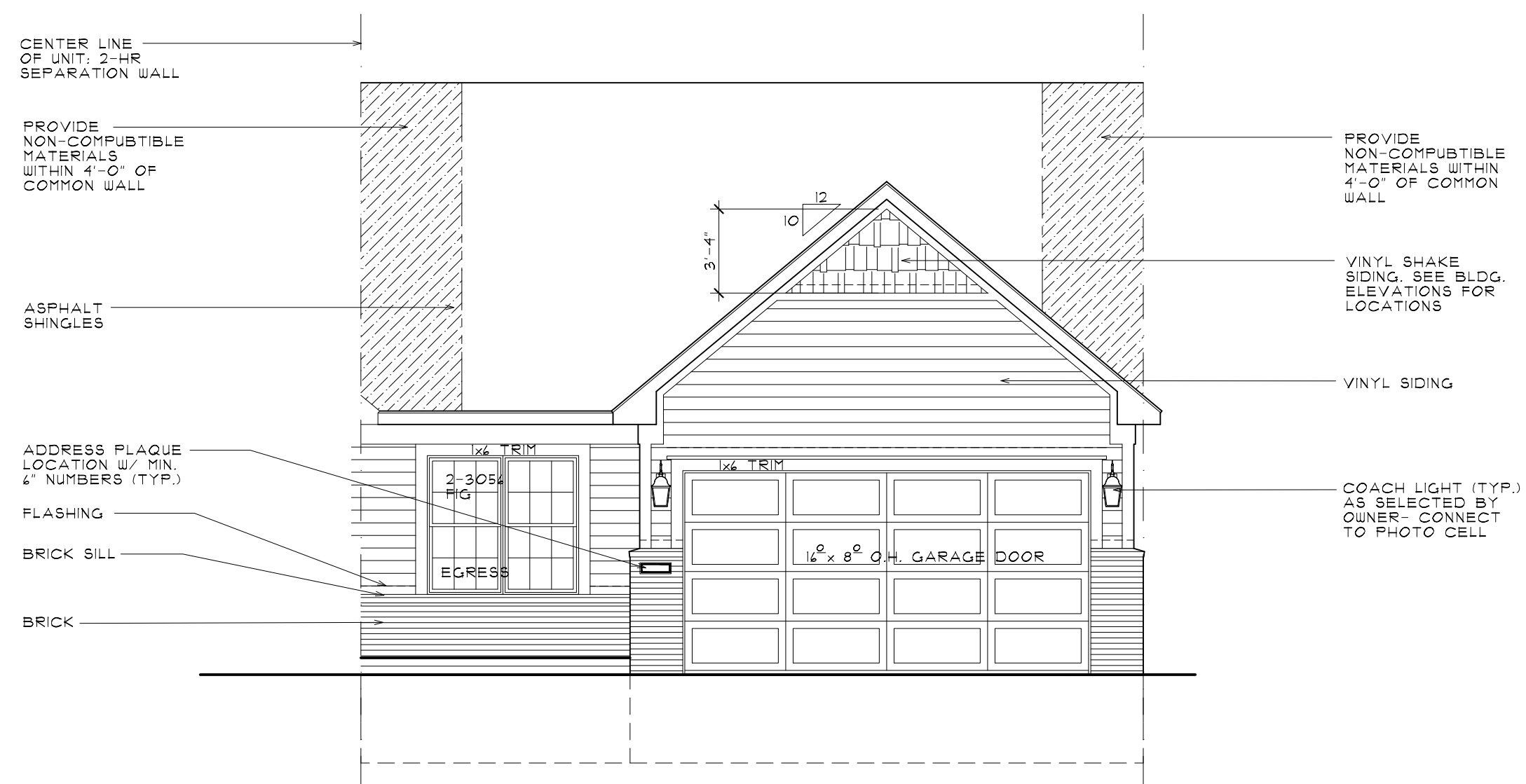
EVERY SLEEPING ROOM SHALL HAVE AT LEAST ONE OPERABLE WINDOW OR EXTERIOR DOOR APPROVED FOR EMERGENCY EGRESS OR RESCUE. THE UNIT(S) MUST BE OPERABLE FROM THE INSIDE TO A FULL CLEAR OPENING WITHOUT THE USE OF SEPARATE TOOLS. WHERE WINDOWS ARE PROVIDED AS A MEANS OF EGRESS OR RESCUE, THEY SHALL HAVE SILL HEIGHT OF NOT MORE THAN 44 INCHES ABOVE THE FLOOR. ALL EGRESS OR RESCUE WINDOWS FROM SLEEPING ROOMS MUST HAVE A MINIMUM NET CLEAR OPENING HEIGHT DIMENSION SHALL BE 24 INCHES AND WIDTH OF 20 INCHES.



NOTE: SEE A5-1 FOR INDIVIDUAL BUILDING COLOR SCHEME



**2 TYP. REAR ELEVATION**  
**A101** SINGLE STORY DWELLING UNIT - TYPE 'B' SCALE: 3/16" = 1'-0"



**1 TYP. FRONT ELEVATION**  
**A101** SINGLE STORY DWELLING UNIT - TYPE 'B' SCALE: 3/16" = 1'-0"

ALL INTERIOR PARTITION DIMENSIONS ARE 3 1/2" UNLESS NOTED OTHERWISE.

BEFORE CONSTRUCTION OBTAIN WINDOW & DOOR ROUGH OPENING SIZES FROM WINDOW/DOOR SUPPLIER.

SEE SHEETS N-1 - N-4 FOR ADDITIONAL DETAILS REGARDING DRAWINGS & CONSTRUCTION.

SEE SHEETS OJ-D-4 FOR ADDITIONAL NOTES REGARDING DRAWINGS & CONSTRUCTION.

DO NOT SCALE THESE DRAWINGS. USE CALCULATED DIMENSIONS. IF VARIATIONS OCCUR CONTACT ARCHITECT FOR CLARIFICATION.

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SHEET TITLE  
 UNIT ELEVATIONS

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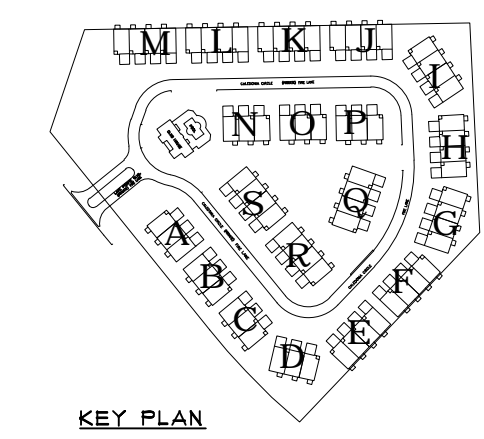
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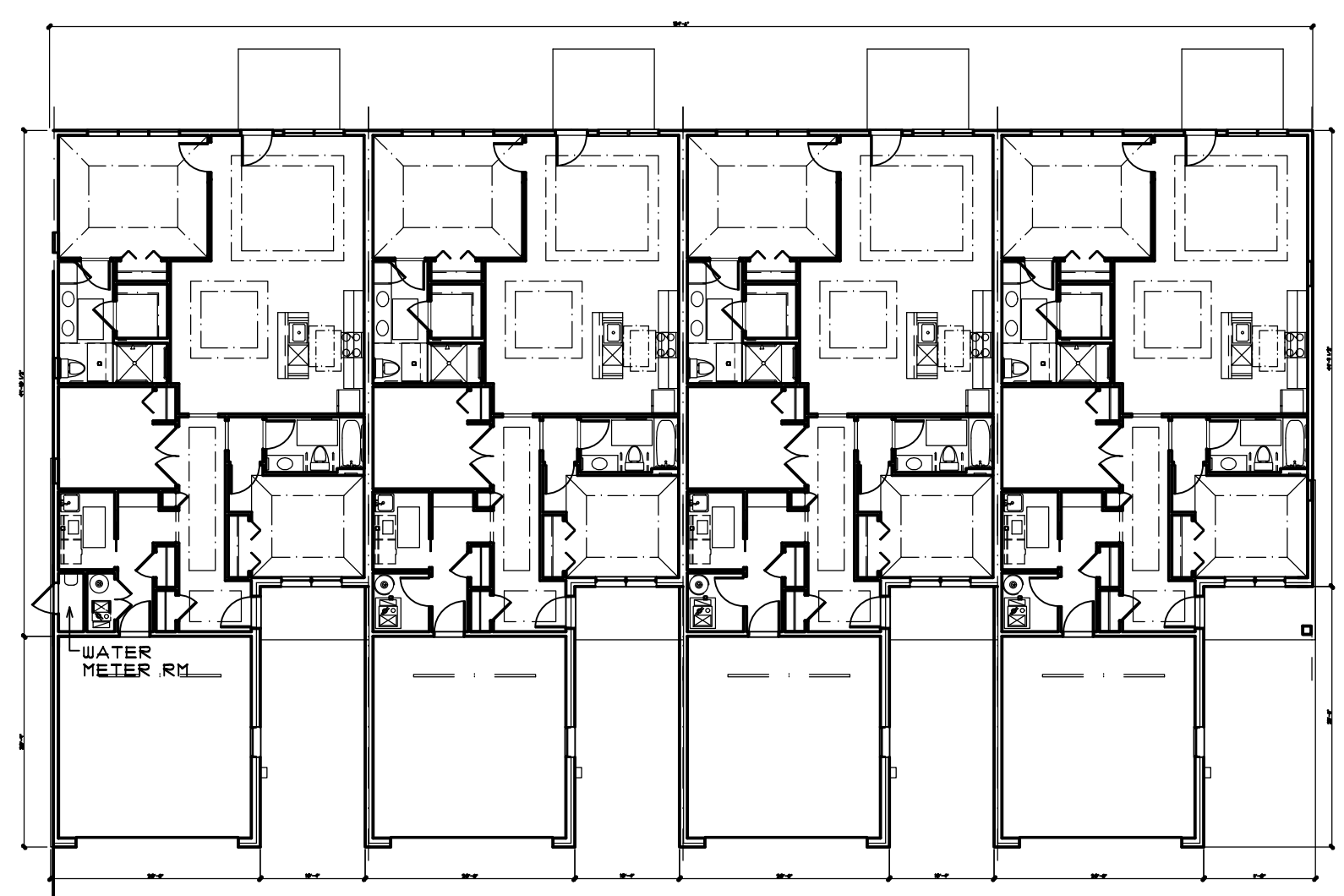
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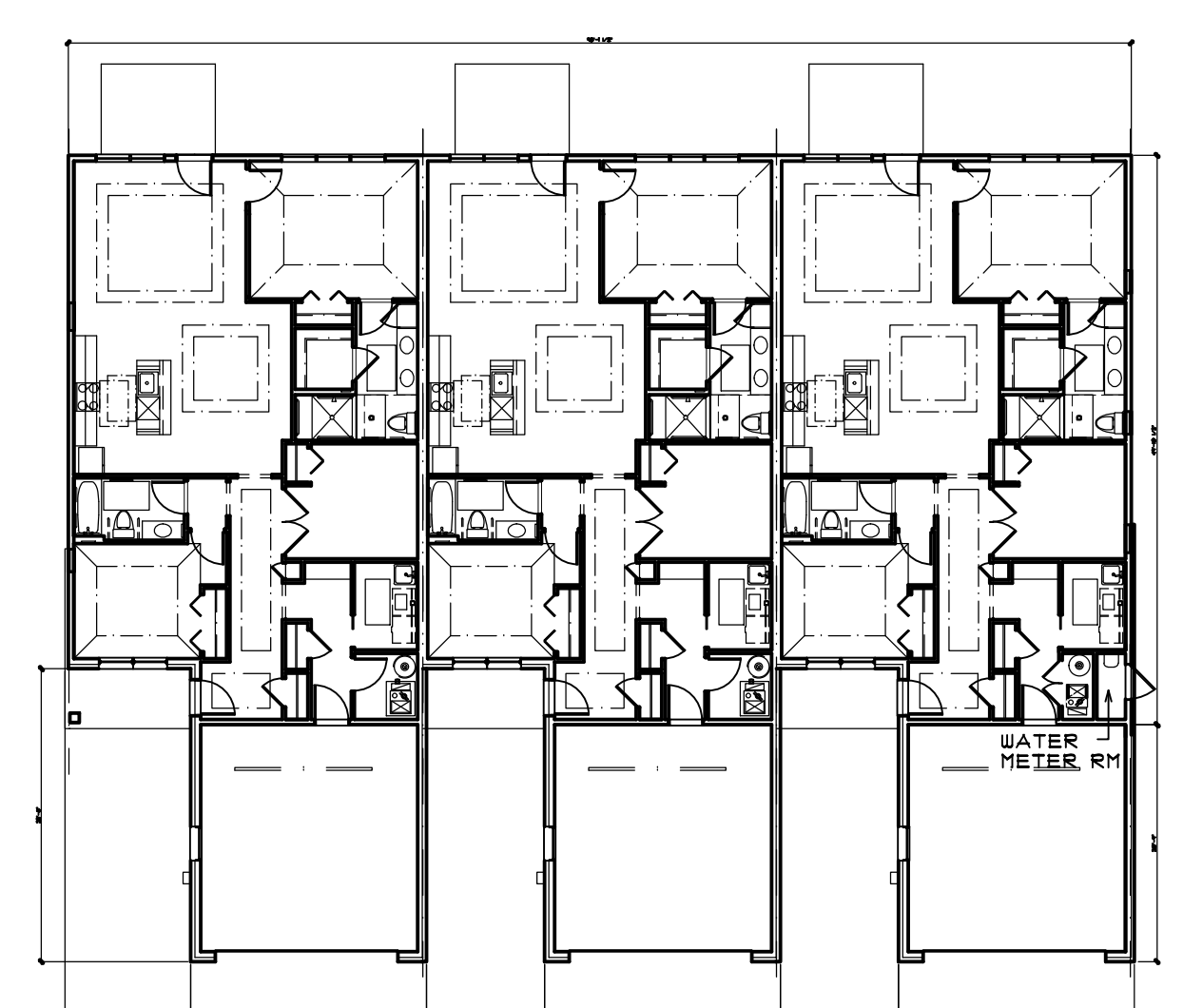
**NOTE:**

- REFER TO 1/4" SCALE UNIT PLANS FOR ALL NOTES, DIMENSIONS, DETAILS AND ALL ADDITIONAL INFORMATION NOT SHOWN.
- SEE STRUCTURAL ENGINEERING PLANS (BY OTHERS) FOR ALL STRUCTURAL INFORMATION. ALL FOUNDATION INFORMATION REGARDING BEARING CAPACITY OF SOIL CAN VARY ON A BUILDING BY BUILDING BASIS.
- REFER TO CIVIL ENGINEERING PLANS (BY OTHERS) FOR ADDITIONAL INFORMATION ON BUILDING STEPS & GRADING INFORMATION.

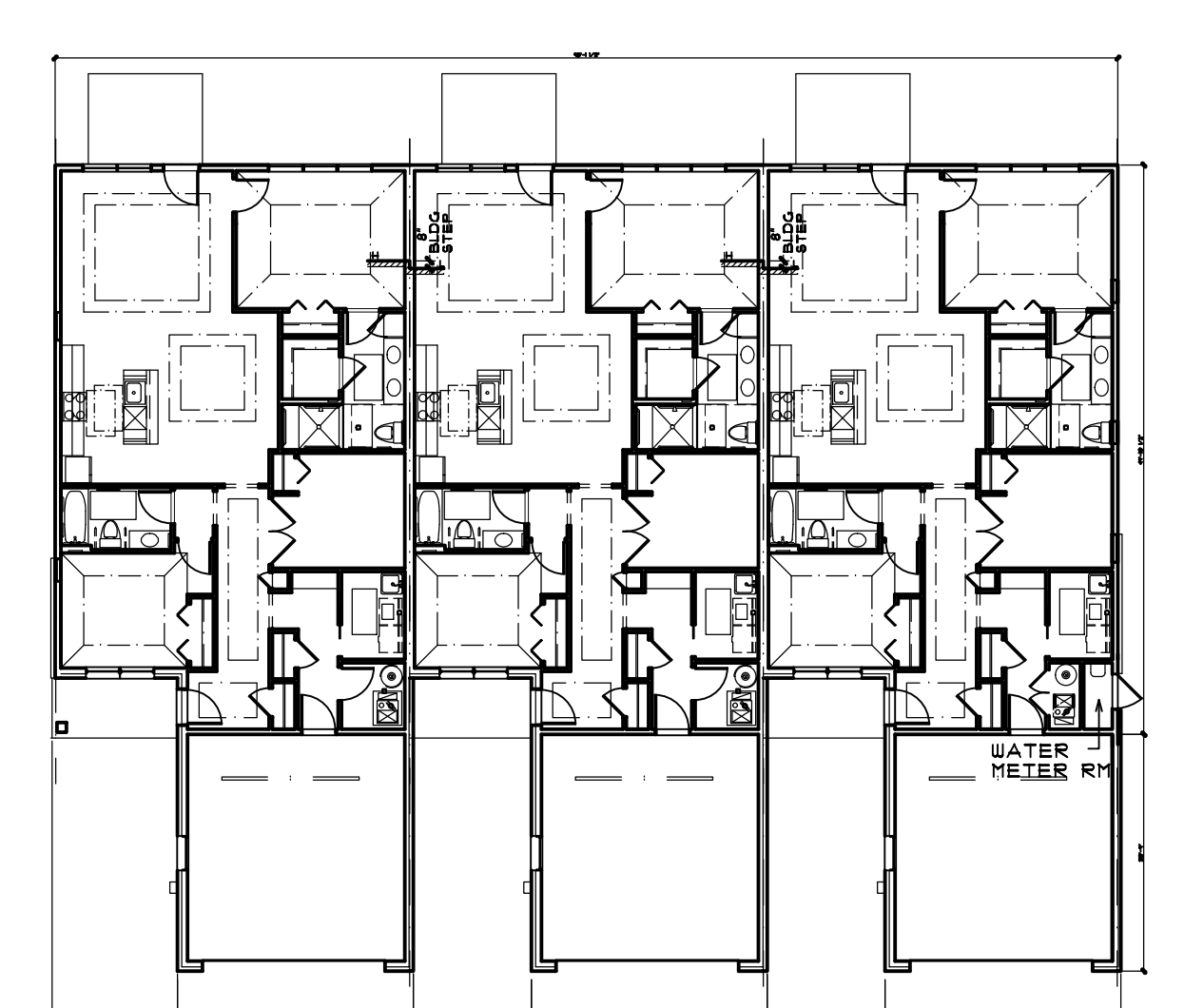
**NOTE: CONFIRM WATER METER ROOM LOCATION W/ CIVIL PRIOR TO CONSTRUCTION.**



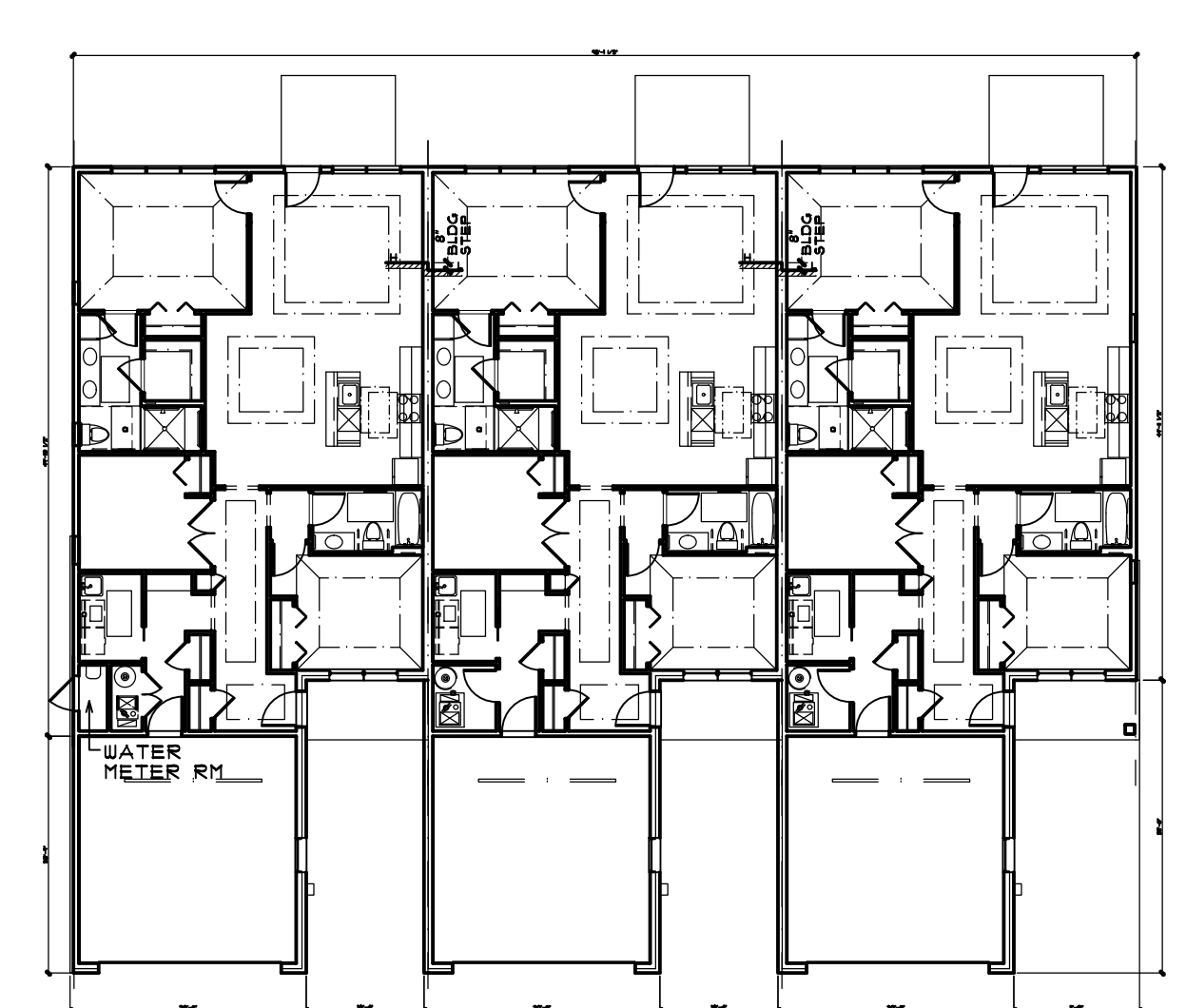
**8 BLDG E (UNITS 13-16)**  
**A200 FIRST FLOOR PLAN** SCALE: 1/16" = 1'-0"



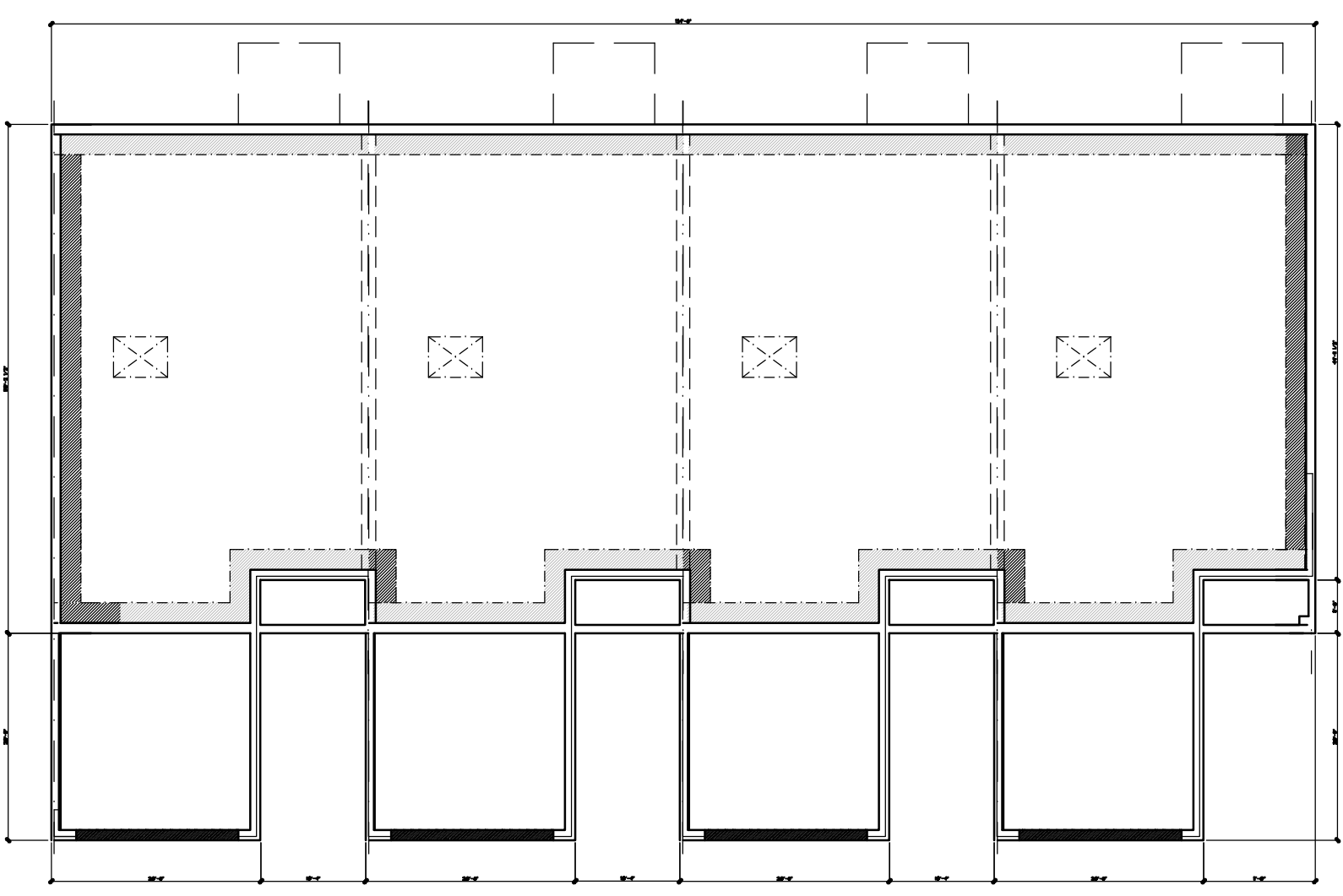
**6 BLDG C,D,N,O - FIRST FLOOR PLAN**  
**A200 (UNITS 7-9, 10-12, 49-51, 52-54)** SCALE: 1/16" = 1'-0"



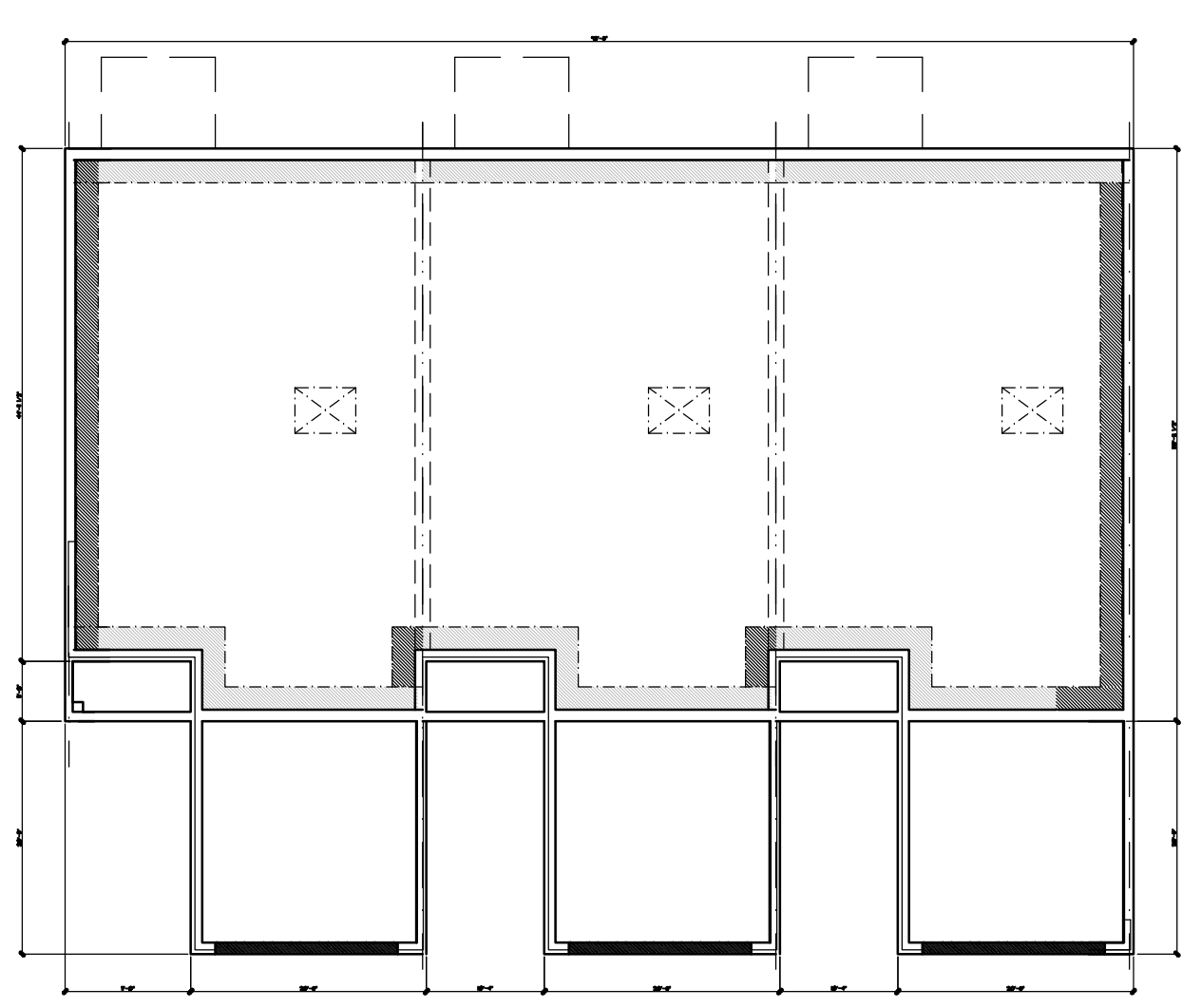
**4 BLDG B (UNITS 4-6)**  
**A200 FIRST FLOOR PLAN** SCALE: 1/16" = 1'-0"



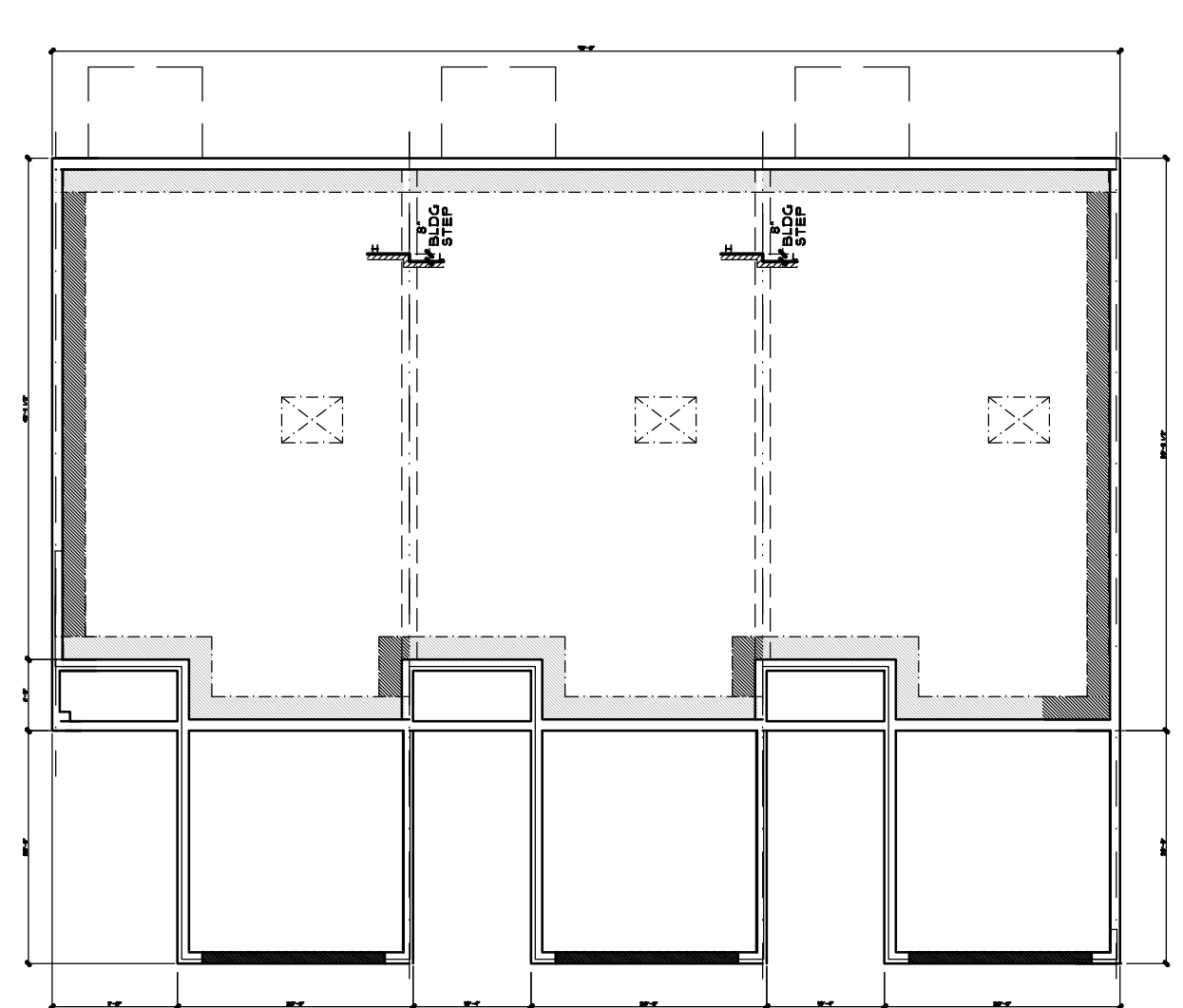
**2 BLDG A (UNITS 1-3)**  
**A200 FIRST FLOOR PLAN** SCALE: 1/16" = 1'-0"



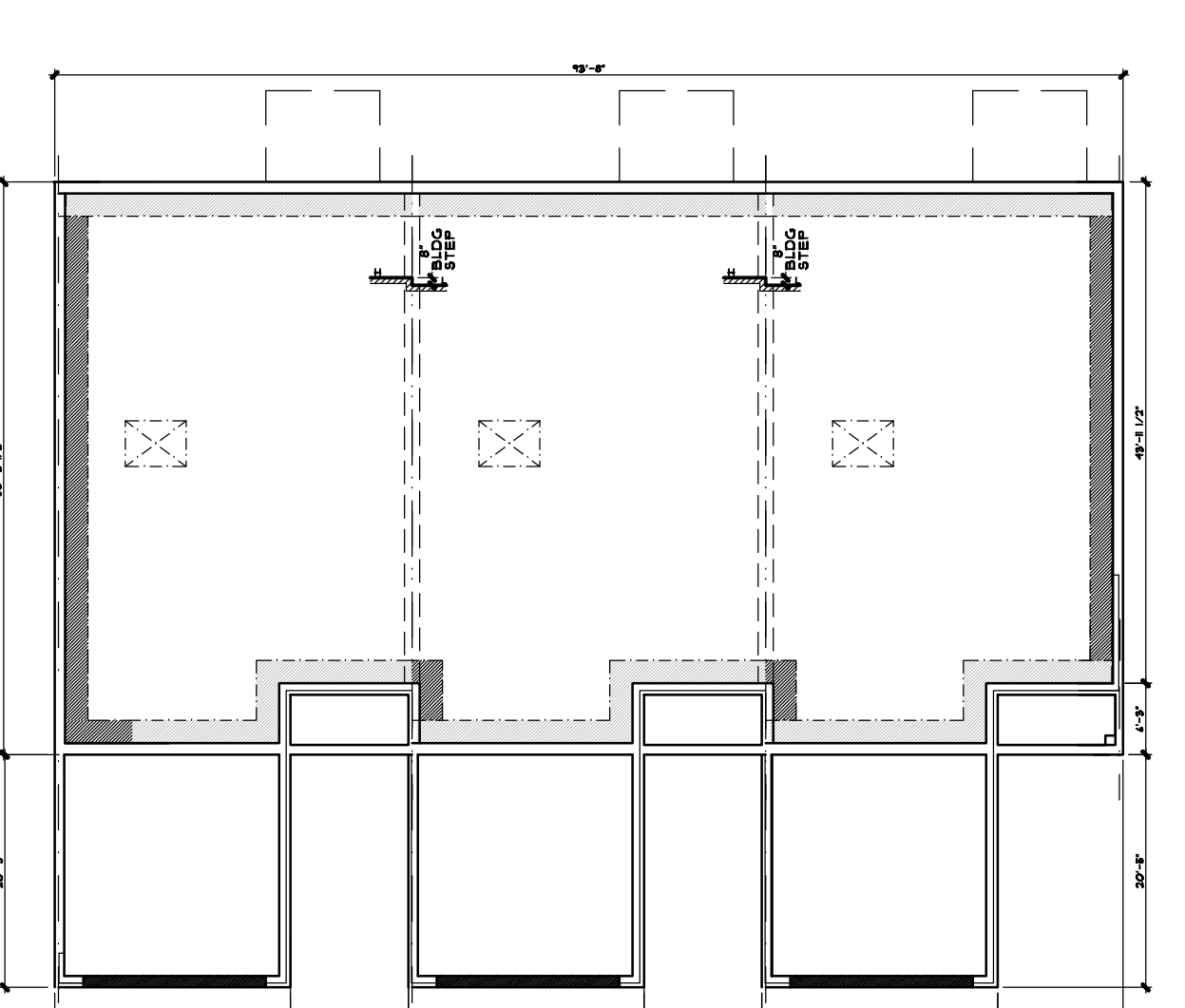
**7 BLDG E (UNITS 13-16)**  
**A200 FOUNDATION PLAN** SCALE: 1/16" = 1'-0"



**5 BLDG C,D,N,O - FOUNDATION PLAN**  
**A200 (UNITS 7-9, 10-12, 49-51, 52-54)** SCALE: 1/16" = 1'-0"



**3 BLDG B (UNITS 4-6)**  
**A200 FOUNDATION PLAN** SCALE: 1/16" = 1'-0"



**1 BLDG A (UNITS 1-3)**  
**A200 FOUNDATION PLAN** SCALE: 1/16" = 1'-0"

ALL INTERIOR PARTITION DIMENSIONS ARE 3 1/2" UNLESS NOTED OTHERWISE.

BEFORE CONSTRUCTION OBTAIN WINDOW & DOOR ROUGH OPENING SIZES FROM WINDOW/DOOR SUPPLIER.

SEE SHEETS N-1 - N-4 FOR ADDITIONAL NOTES REGARDING DRAWINGS & CONSTRUCTION.

SEE SHEETS D.J-D.4 FOR ADDITIONAL DETAILS REGARDING DRAWINGS & CONSTRUCTION.

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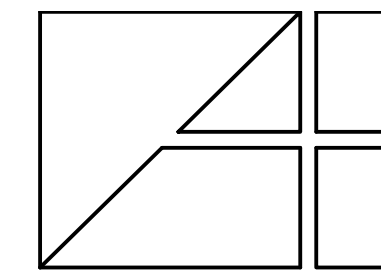
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**A200**

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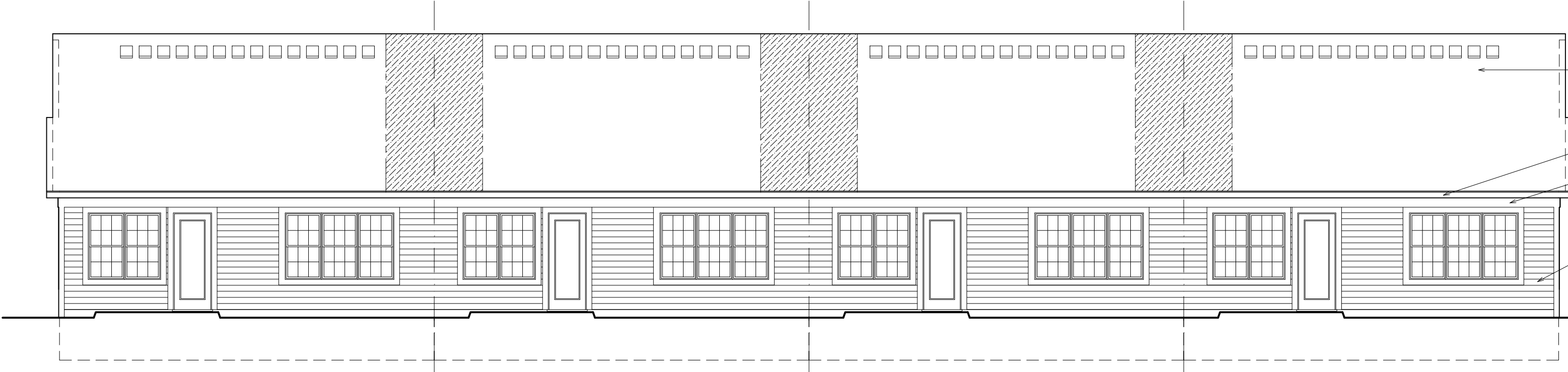
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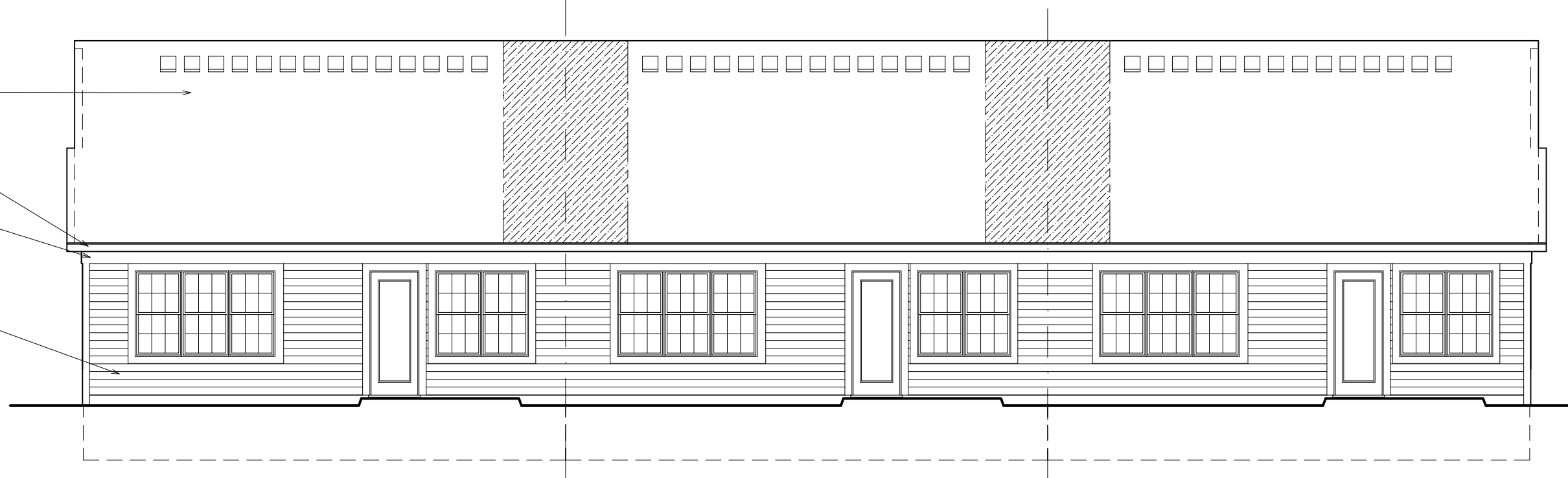
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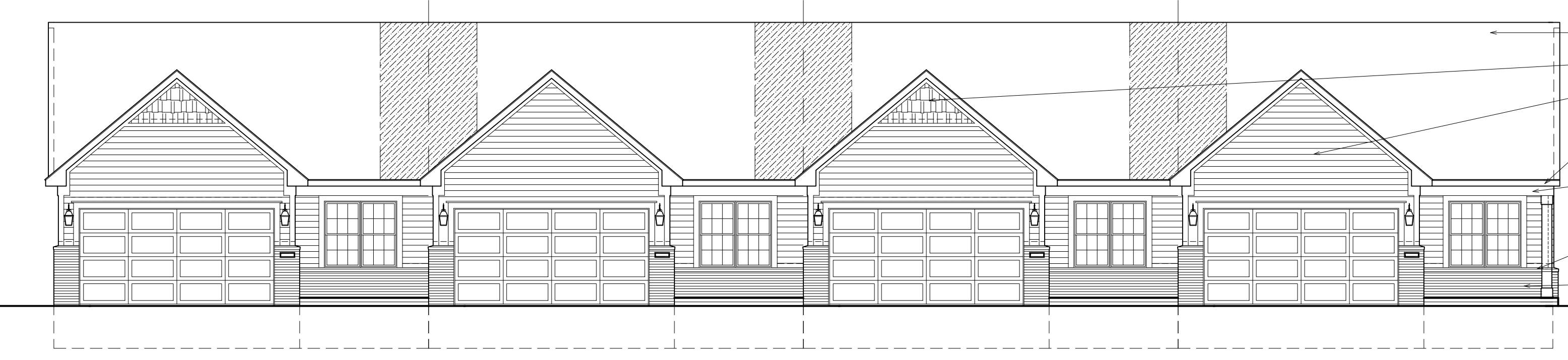
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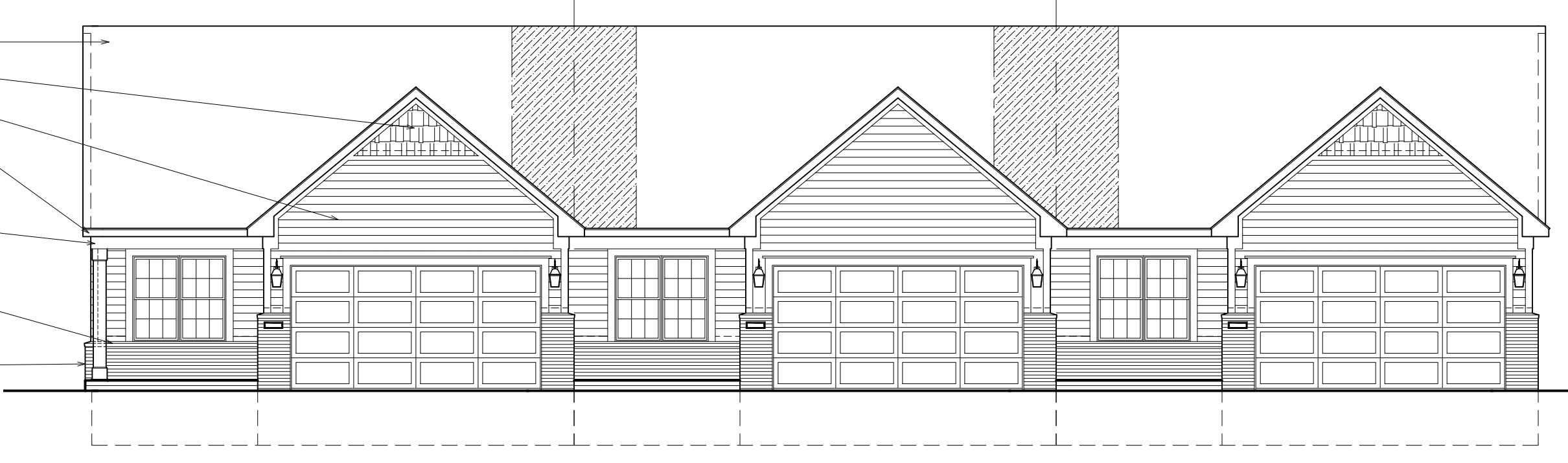
**8 BUILDING E (UNITS 13-16) - REAR ELEVATION**  
 A201 SINGLE STORY TYPE "B" SCALE: 1/8" = 1'-0"



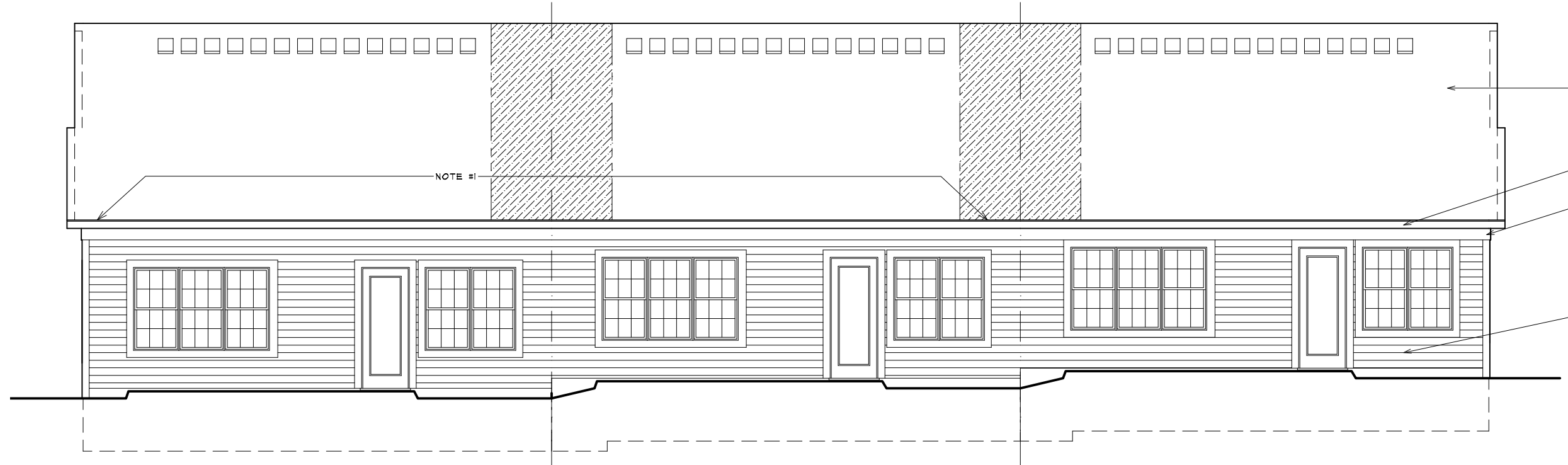
**6 BUILDINGS C,D,N,O - REAR ELEVATION**  
 A201 SINGLE STORY TYPE "B" - (UNITS 7-9, 10-12, 49-51, 52-54) SCALE: 1/8" = 1'-0"



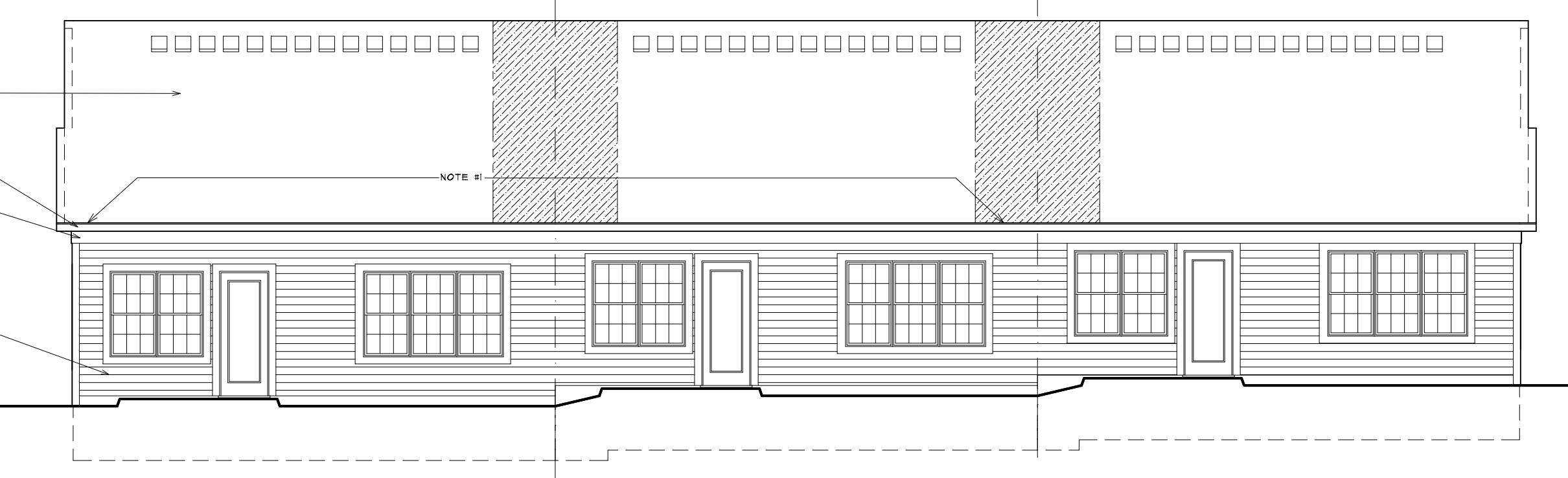
**7 BUILDING E (UNITS 13-16) - FRONT ELEVATION**  
 A201 SINGLE STORY TYPE "B" SCALE: 1/8" = 1'-0"



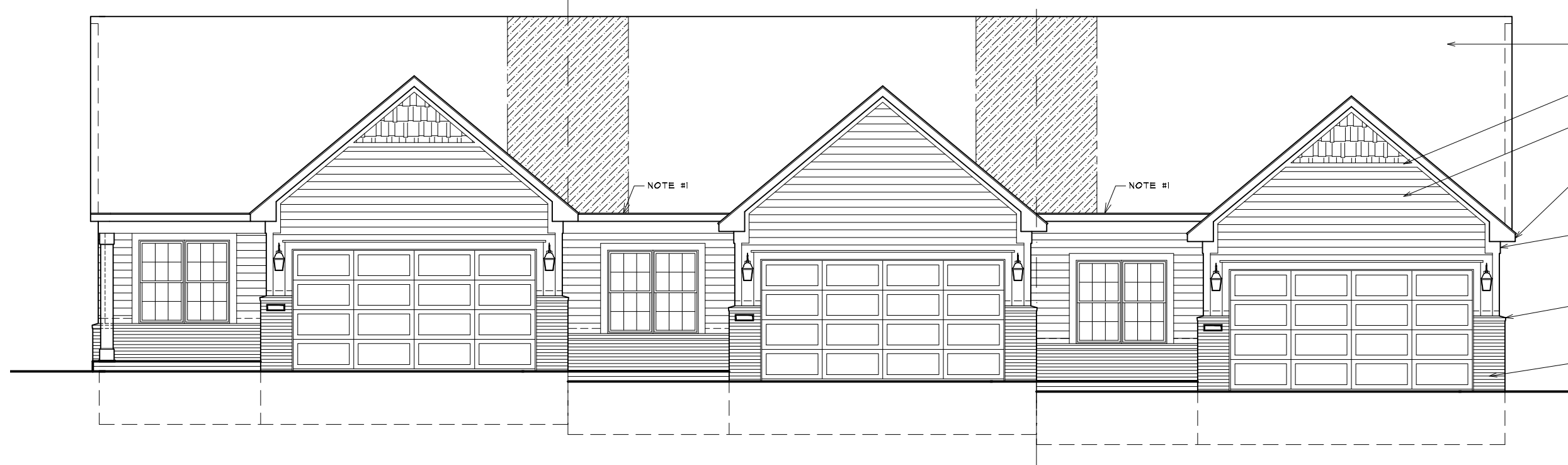
**5 BUILDINGS C,D,N,O - FRONT ELEVATION**  
 A201 SINGLE STORY TYPE "B" - (UNITS 7-9, 10-12, 49-51, 52-54) SCALE: 1/8" = 1'-0"



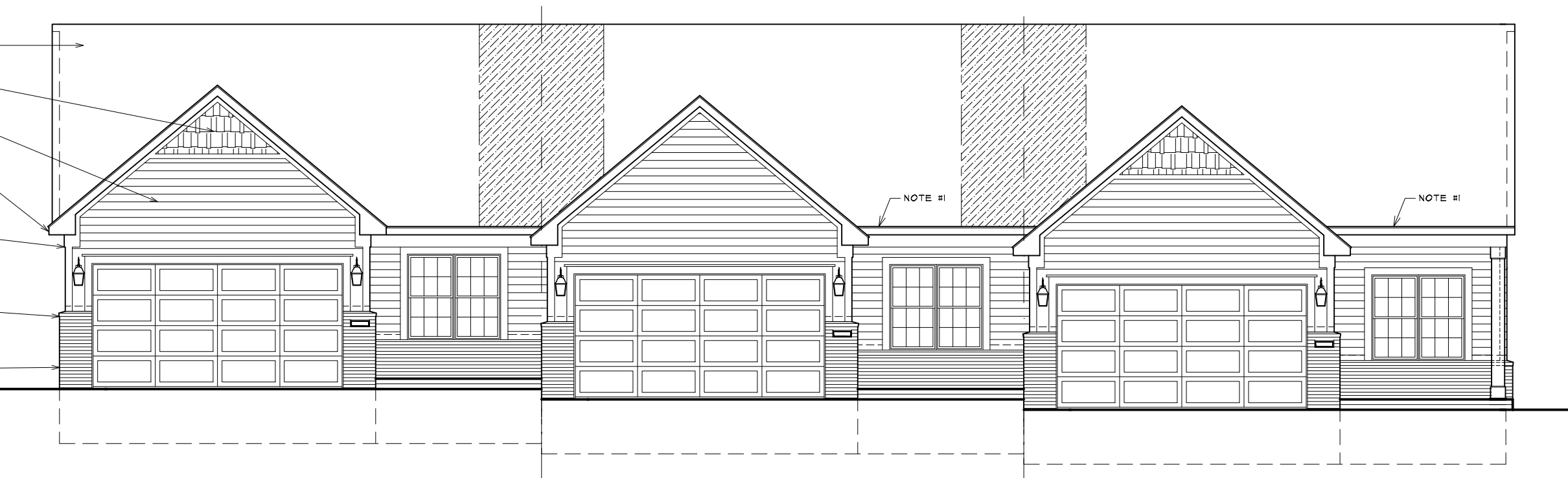
**4 BUILDING B (UNITS 4-6) - REAR ELEVATION**  
 A201 SINGLE STORY TYPE "B" SCALE: 1/8" = 1'-0"



**2 BUILDING A (UNITS 1-3) - REAR ELEVATION**  
 A201 SINGLE STORY TYPE "B" SCALE: 1/8" = 1'-0"



**3 BUILDING B (UNITS 4-6) - FRONT ELEVATION**  
 A201 SINGLE STORY TYPE "B" SCALE: 1/8" = 1'-0"



**1 BUILDING A (UNITS 1-3) - FRONT ELEVATION**  
 A201 SINGLE STORY TYPE "B" SCALE: 1/8" = 1'-0"

**NOTES**  
 ALL EXTERIOR TRIM TO BE ALUMINUM WRAPPED OR VINYL. VERIFY EXACT LOCATIONS FOR EACH MATERIAL WITH OWNER PRIOR TO CONSTRUCTION.  
 PROVIDE PEEP HOLES AND DEAD BOLTS AT ALL FRONT ENTRY DOORS. SEE BUILDER FOR SPECIFICATIONS.  
 ALL DRYWALL TO BE READY TO BE PAINTED  
 BRICK ROWLOCK SILLS MAY BE REPLACED WITH PRECAST STONE OR CONCRETE. VERIFY WITH BUILDER PRIOR TO CONSTRUCTION.  
 FIXED GLASS WINDOWS IN GABLES TO HAVE OPAQUE FINISH ON INTERIOR OF GLASS SO FRAMING OF ROOF NOT VISIBLE FROM EXTERIOR.  
 PROVIDE RECESS LIGHT IN SOFFIT ABOVE DOOR ENTRY - CONNECT TO PHOTO CELL.

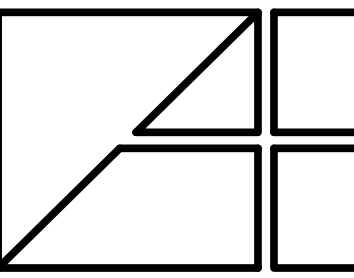
NOTE:  
 REFER TO 1/4" SCALE ELEVATIONS ON SHEET A103 FOR ADDITIONAL NOTES AND DIMENSIONS. SEE SHEET S-1 FOR COLOR SCHEME OF BUILDINGS.  
 NOTE #1:  
 RAISE HEELS AS NECESSARY TO ELIMINATE STEP IN THE ROOF.

SEE 1/4" SCALE PLANS FOR SIDE ELEVATION SHEET A 101

NOTE: SEE A5-1 FOR INDIVIDUAL BUILDING COLOR SCHEME

ALL INTERIOR PARTITION DIMENSIONS ARE 3 1/2" UNLESS NOTED OTHERWISE.  
 BEFORE CONSTRUCTION OBTAIN WINDOW & DOOR ROUGH OPENING SIZES FROM WINDOW/DOOR SUPPLIER.  
 SEE SHEETS N-1 - N-4 FOR ADDITIONAL DETAILS REGARDING DRAWINGS & CONSTRUCTION.  
 SEE SHEETS OJ-D-4 FOR ADDITIONAL NOTES REGARDING DRAWINGS & CONSTRUCTION.  
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BUILDING PLANS  
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 WHITE LAKE, MICHIGAN

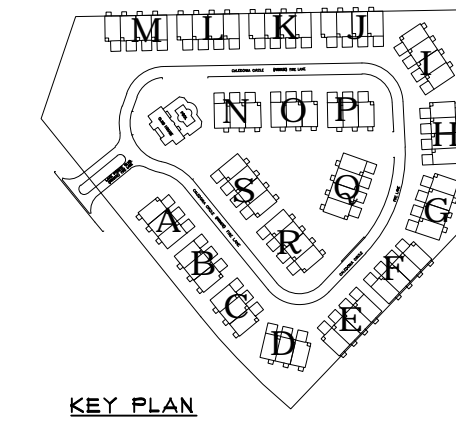
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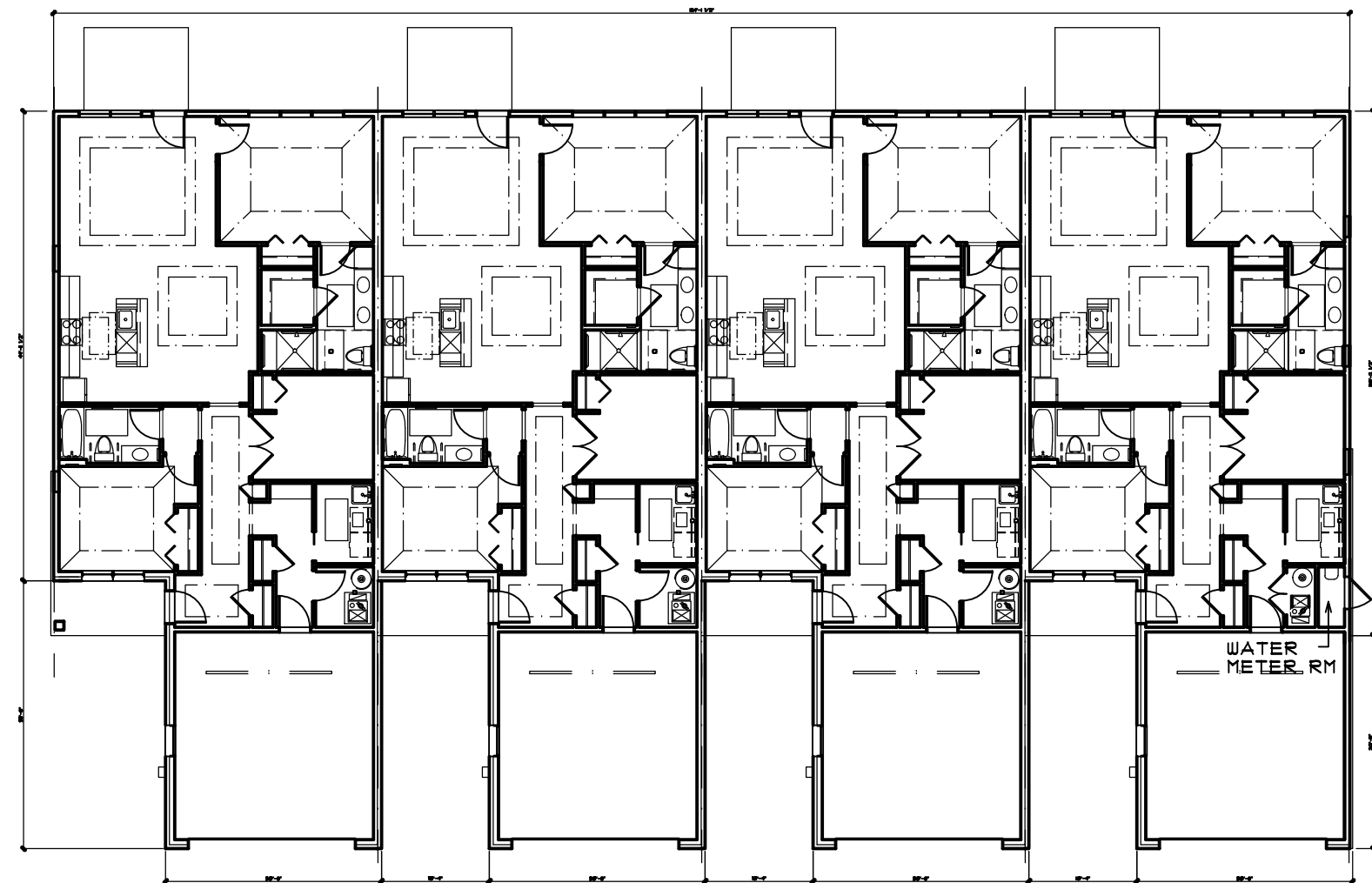
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A202

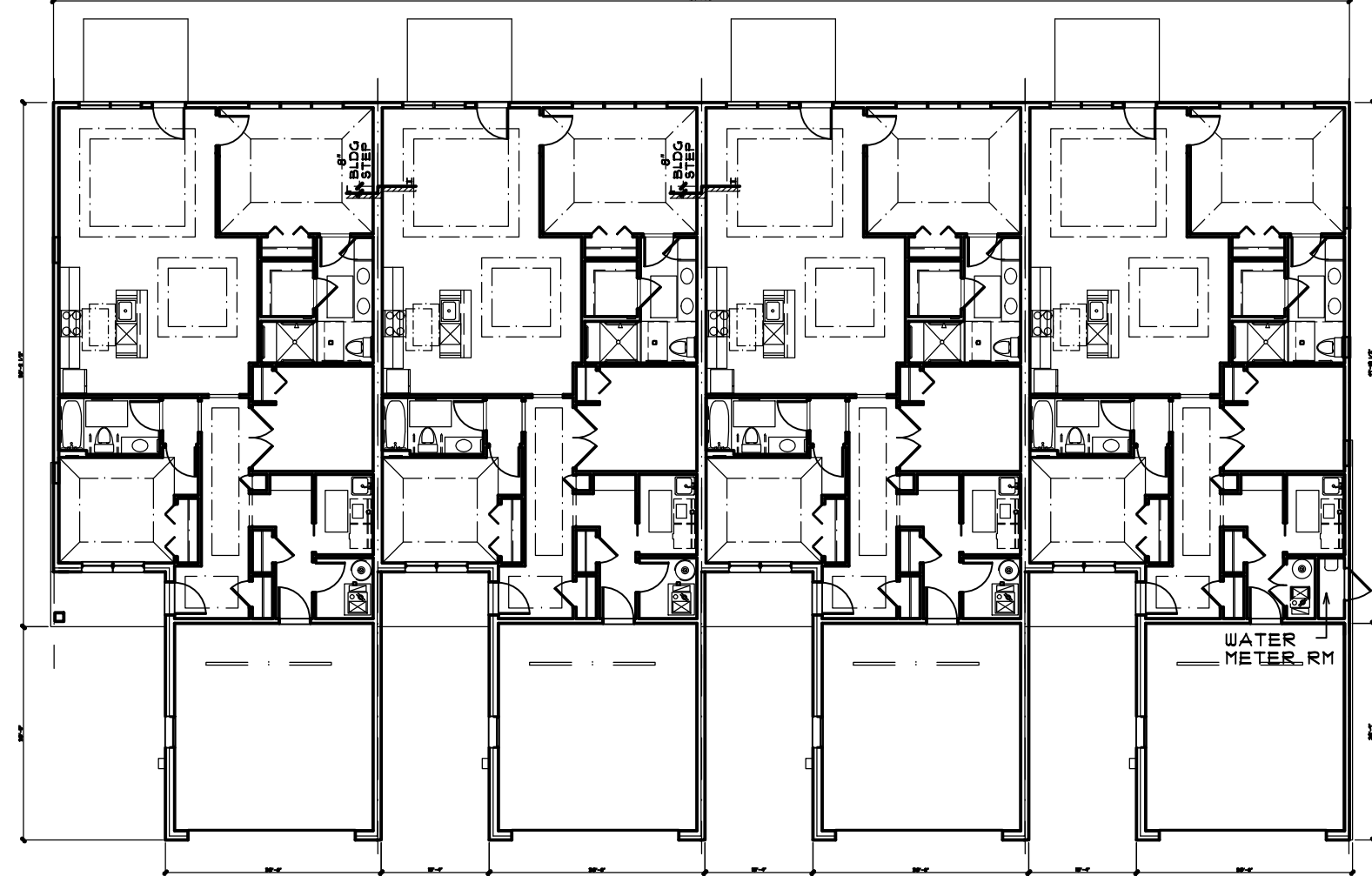


- NOTE:
- REFER TO 1/4" SCALE UNIT PLANS FOR ALL NOTES, DIMENSIONS, DETAILS AND ALL ADDITIONAL INFORMATION NOT SHOWN.
  - SEE STRUCTURAL ENGINEERING PLANS (BY OTHERS) FOR ALL STRUCTURAL INFORMATION. ALL FOUNDATION INFORMATION REGARDING BEARING CAPACITY OF SOIL CAN VARY ON A BUILDING BY BUILDING BASIS.
  - REFER TO CIVIL ENGINEERING PLANS (BY OTHERS) FOR ADDITIONAL INFORMATION ON BUILDING STEPS & GRADING INFORMATION.

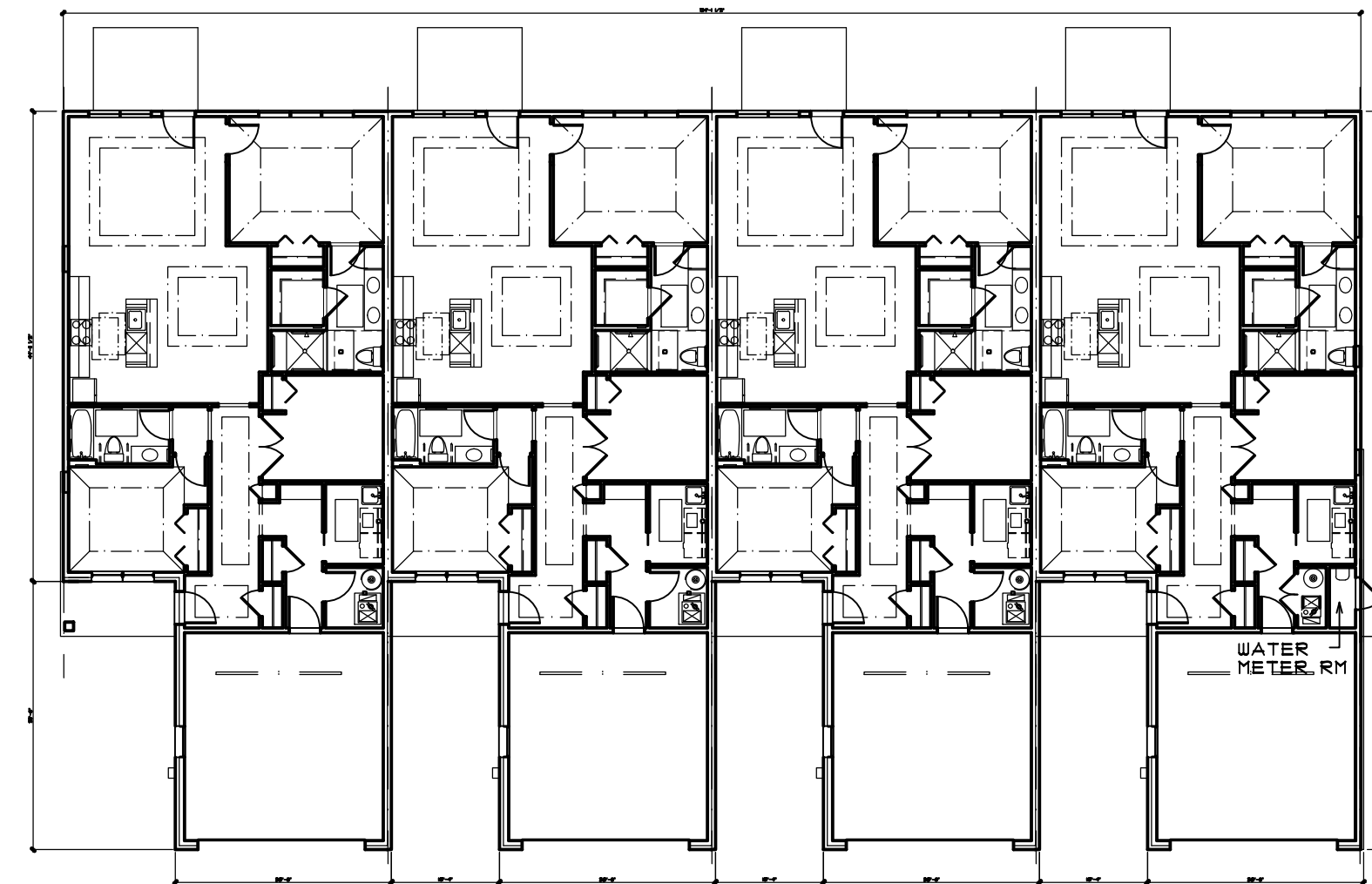
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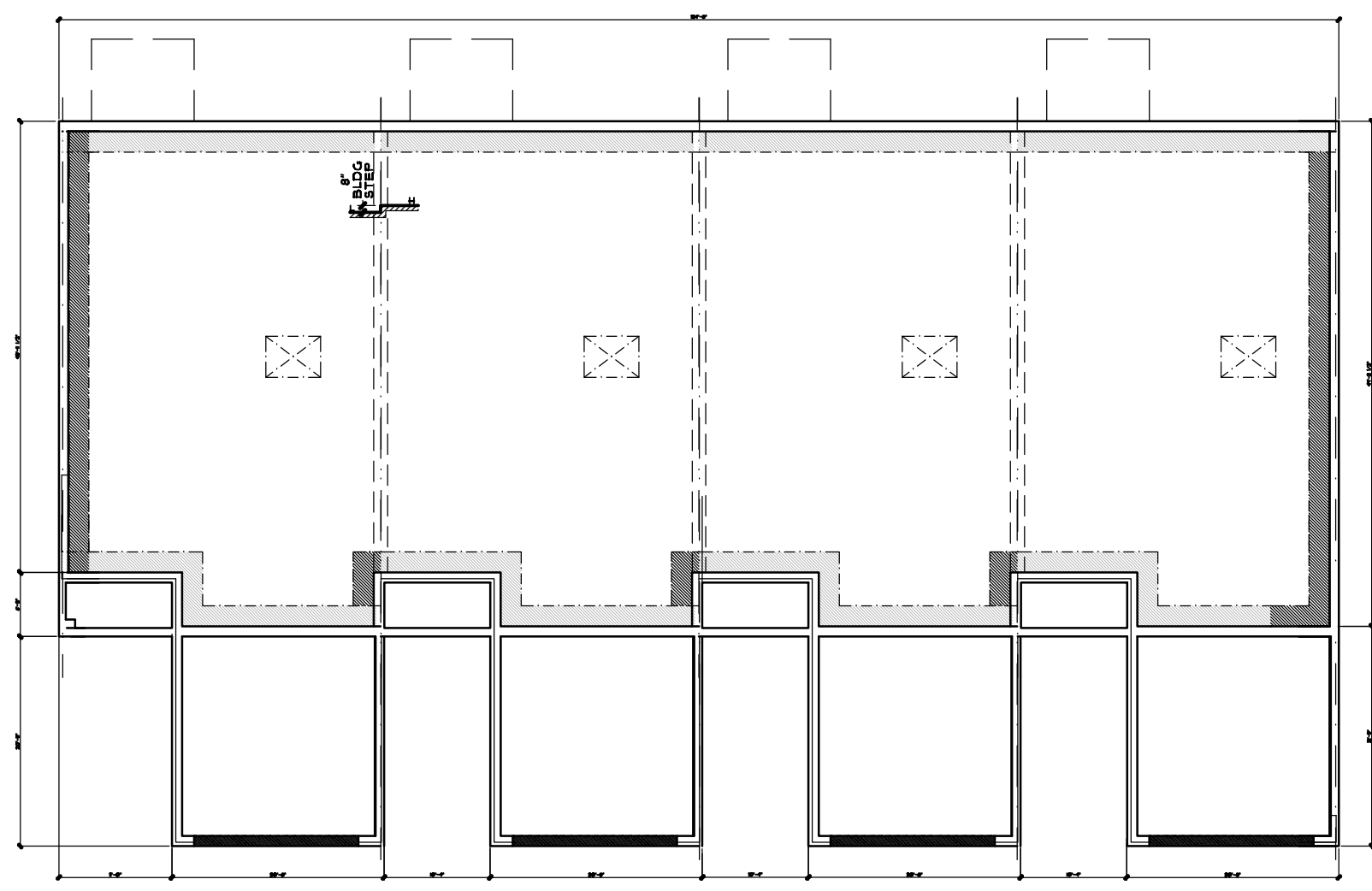
6 BLDG I - FIRST FLOOR PLAN  
 A202 UNITS (29-32) SCALE: 1/16" = 1'-0"



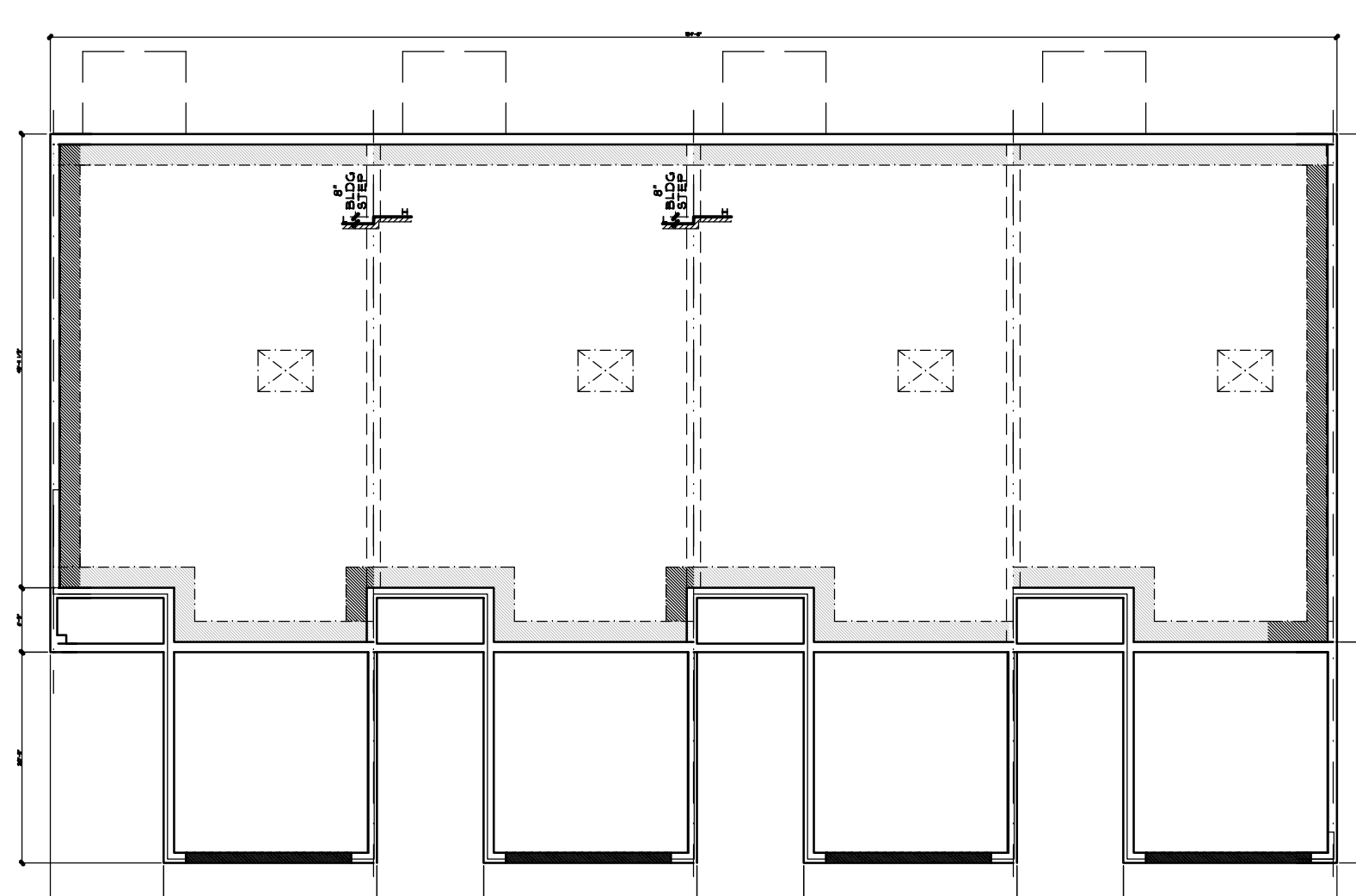
4 BLDG H - FIRST FLOOR PLAN  
 A202 UNITS (25-28) SCALE: 1/16" = 1'-0"



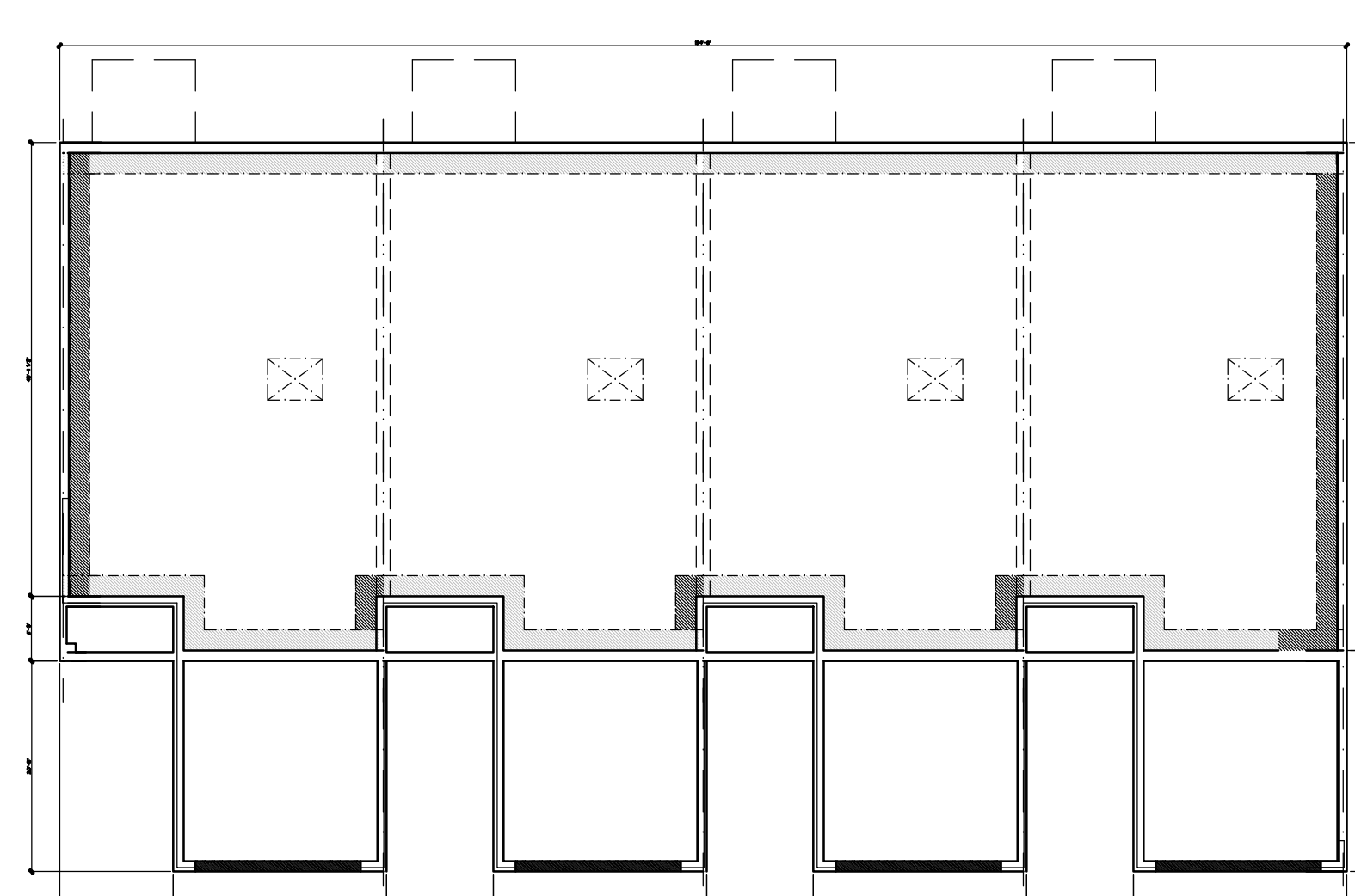
2 BLDGS F,G,K,L,M,Q - FIRST FLOOR PLAN  
 A202 UNITS (17-20, 21-24, 37-40, 41-44, 45-48, 58-61) SCALE: 1/16" = 1'-0"



5 BLDG I - FOUNDATION PLAN  
 A202 UNITS (29-32) SCALE: 1/16" = 1'-0"



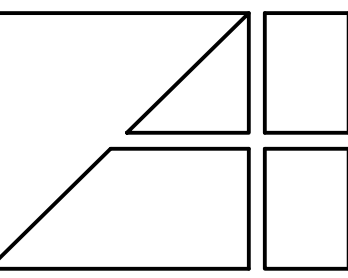
3 BLDG H - FOUNDATION PLAN  
 A202 UNITS (25-28) SCALE: 1/16" = 1'-0"



1 BLDGS F,G,K,L,M,Q - FOUNDATION PLAN  
 A202 UNITS (17-20, 21-24, 37-40, 41-44, 45-48, 58-61) SCALE: 1/16" = 1'-0"

ALL INTERIOR PARTITION DIMENSIONS ARE 3 1/2" UNLESS NOTED OTHERWISE.  
 BEFORE CONSTRUCTION OBTAIN WINDOW & DOOR ROUGH OPENING SIZES FROM WINDOW/DOOR SUPPLIER.  
 SEE SHEETS N-1 - N-4 FOR ADDITIONAL NOTES REGARDING DRAWINGS & CONSTRUCTION.  
 SEE SHEETS D1-D4 FOR ADDITIONAL DETAILS REGARDING DRAWINGS & CONSTRUCTION.  
 DO NOT SCALE THESE DRAWINGS. USE CALCULATED DIMENSIONS. IF VARIATIONS OCCUR CONTACT ARCHITECT FOR CLARIFICATION.

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SHEET TITLE  
 BUILDING ELEVATIONS

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**A203**

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NOTE:  
 REFER TO 1/4" SCALE ELEVATIONS ON SHEET A103 FOR ADDITIONAL NOTES AND DIMENSIONS. SEE SHEET S-1 FOR COLOR SCHEME OF BUILDINGS.

NOTE #1:  
 RAISE HEELS AS NECESSARY TO ELIMINATE STEP IN THE ROOF.

SEE  
 1" SCALE PLANS FOR SIDE ELEVATION SHEET A101

NOTE: SEE A5-1 FOR INDIVIDUAL BUILDING COLOR SCHEME

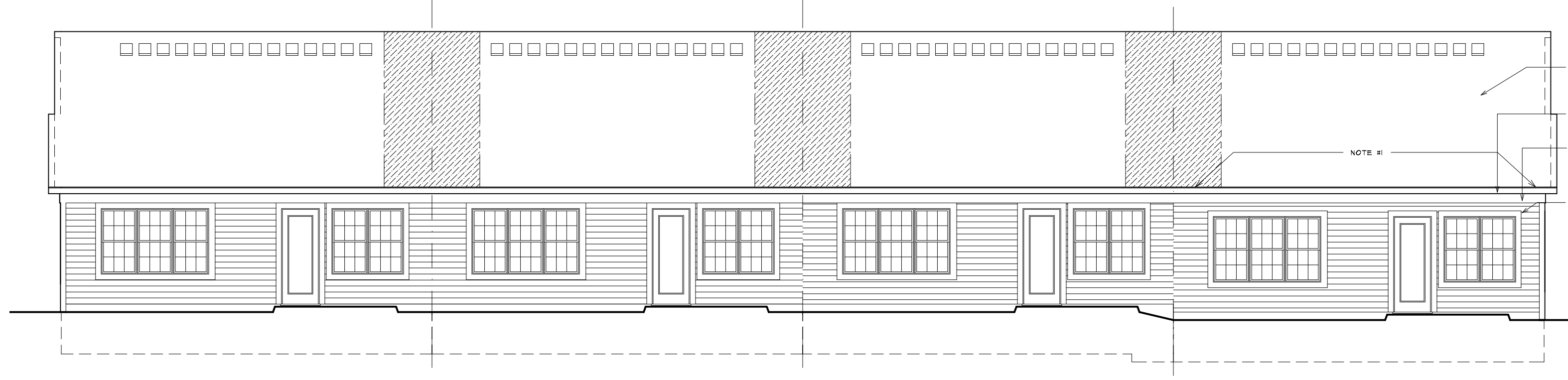
NOTES  
 ALL EXTERIOR TRIM TO BE ALUMINUM WRAPPED OR VINYL. VERIFY EXACT LOCATIONS FOR EACH MATERIAL WITH OWNER PRIOR TO CONSTRUCTION.

PROVIDE PEEP HOLES AND DEAD BOLTS AT ALL FRONT ENTRY DOORS. SEE BUILDER FOR SPECIFICATIONS.

ALL DRYWALL TO BE READY TO BE PAINTED. BRICK ROWLOCK SILLS MAY BE REPLACED WITH PRECAST STONE OR CONCRETE. VERIFY WITH BUILDER PRIOR TO CONSTRUCTION.

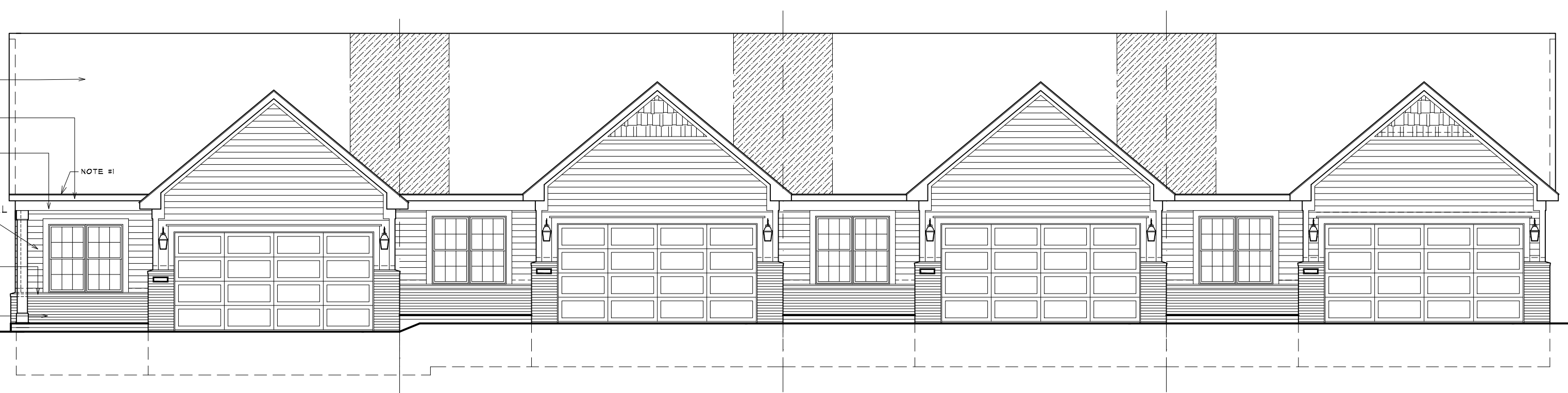
FIXED GLASS WINDOWS IN GABLES TO HAVE OPAQUE FINISH ON INTERIOR OF GLASS SO FRAMING OF ROOF NOT VISIBLE FROM EXTERIOR.

PROVIDE RECESS LIGHT IN SOFFIT ABOVE DOOR ENTRY - CONNECT TO PHOTO CELL.



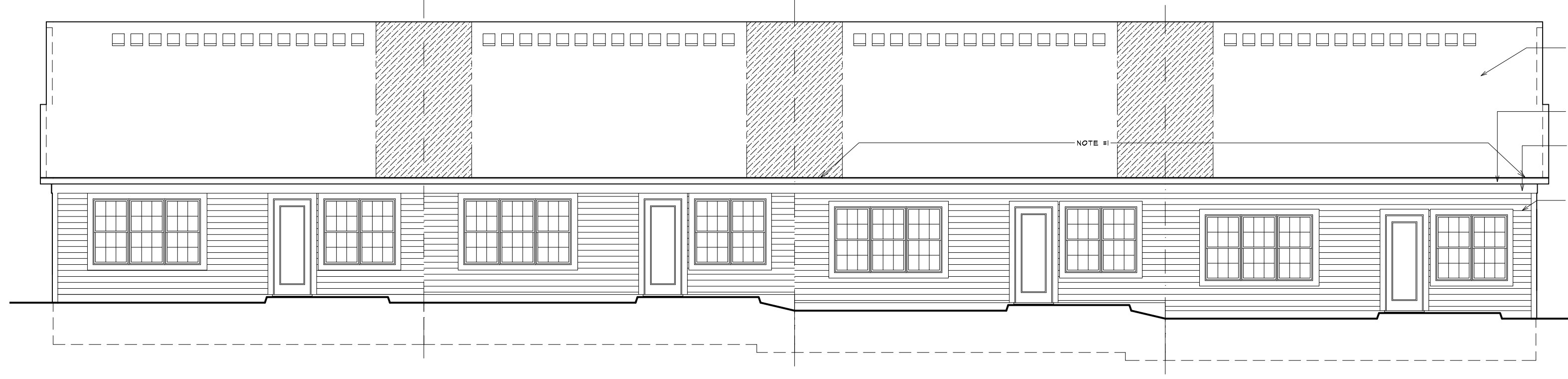
**6 BUILDINGS I - REAR ELEVATION**  
 A203 SINGLE STORY TYPE "B" - UNITS (29-32)

SCALE: 1/8" = 1'-0"



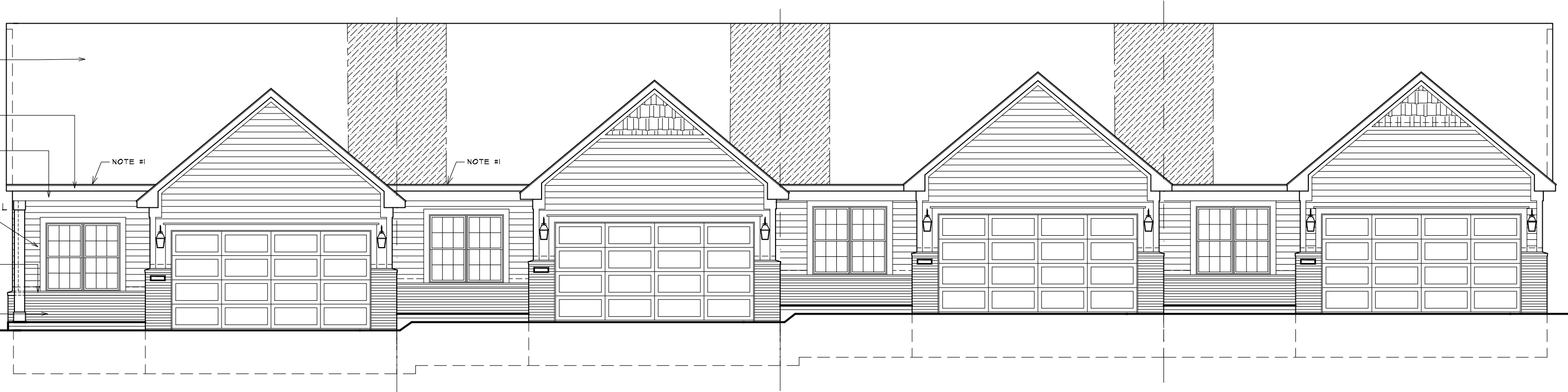
**5 BUILDINGS I - FRONT ELEVATION**  
 A203 SINGLE STORY TYPE "B" - UNITS (29-32)

SCALE: 1/8" = 1'-0"



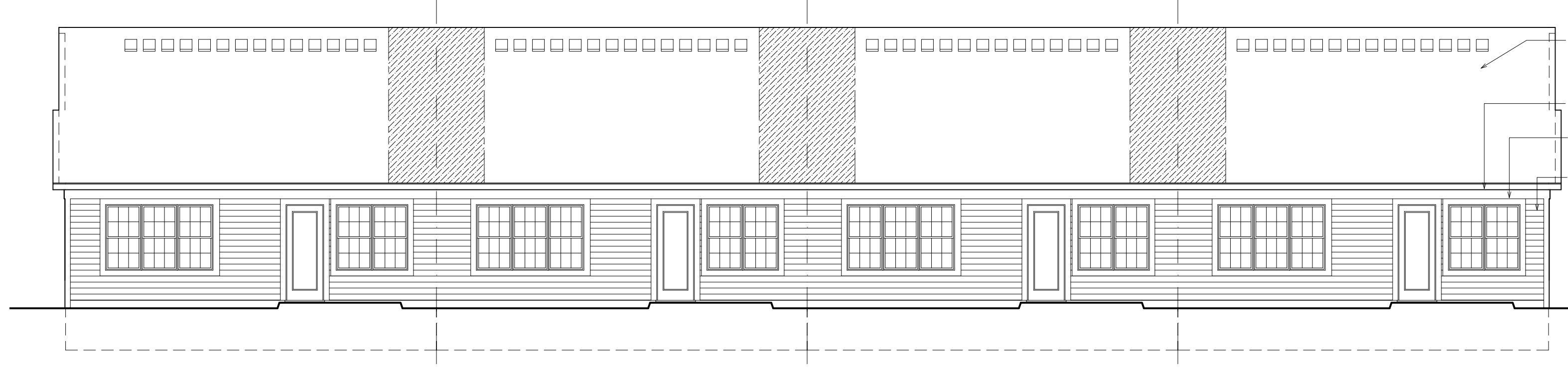
**4 BUILDING H - REAR ELEVATION**  
 A203 SINGLE STORY TYPE "B" - UNITS (25-28)

SCALE: 1/8" = 1'-0"



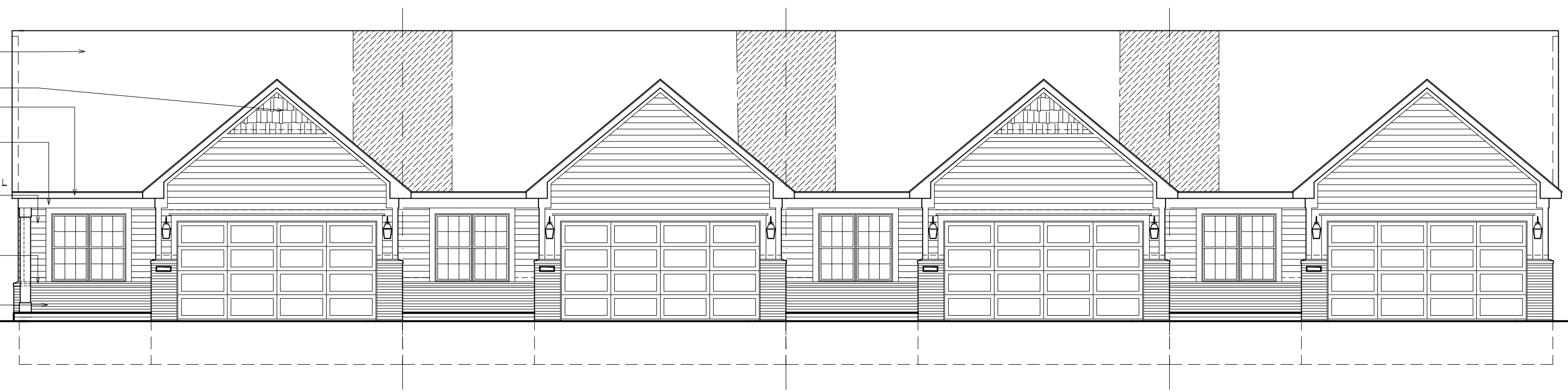
**3 BUILDING H - FRONT ELEVATION**  
 A203 SINGLE STORY TYPE "B" - UNITS (25-28)

SCALE: 1/8" = 1'-0"



**2 BUILDINGS F,G,K,L,M,Q - REAR ELEVATION**  
 A203 SINGLE STORY TYPE "B" - UNITS (17-20, 21-24, 37-40, 41-44, 45-48, 58-61)

SCALE: 1/8" = 1'-0"



**1 BUILDINGS F,G,K,L,M,Q - FRONT ELEVATION**  
 A203 SINGLE STORY TYPE "B" - UNITS (17-20, 21-24, 37-40, 41-44, 45-48, 58-61)

SCALE: 1/8" = 1'-0"

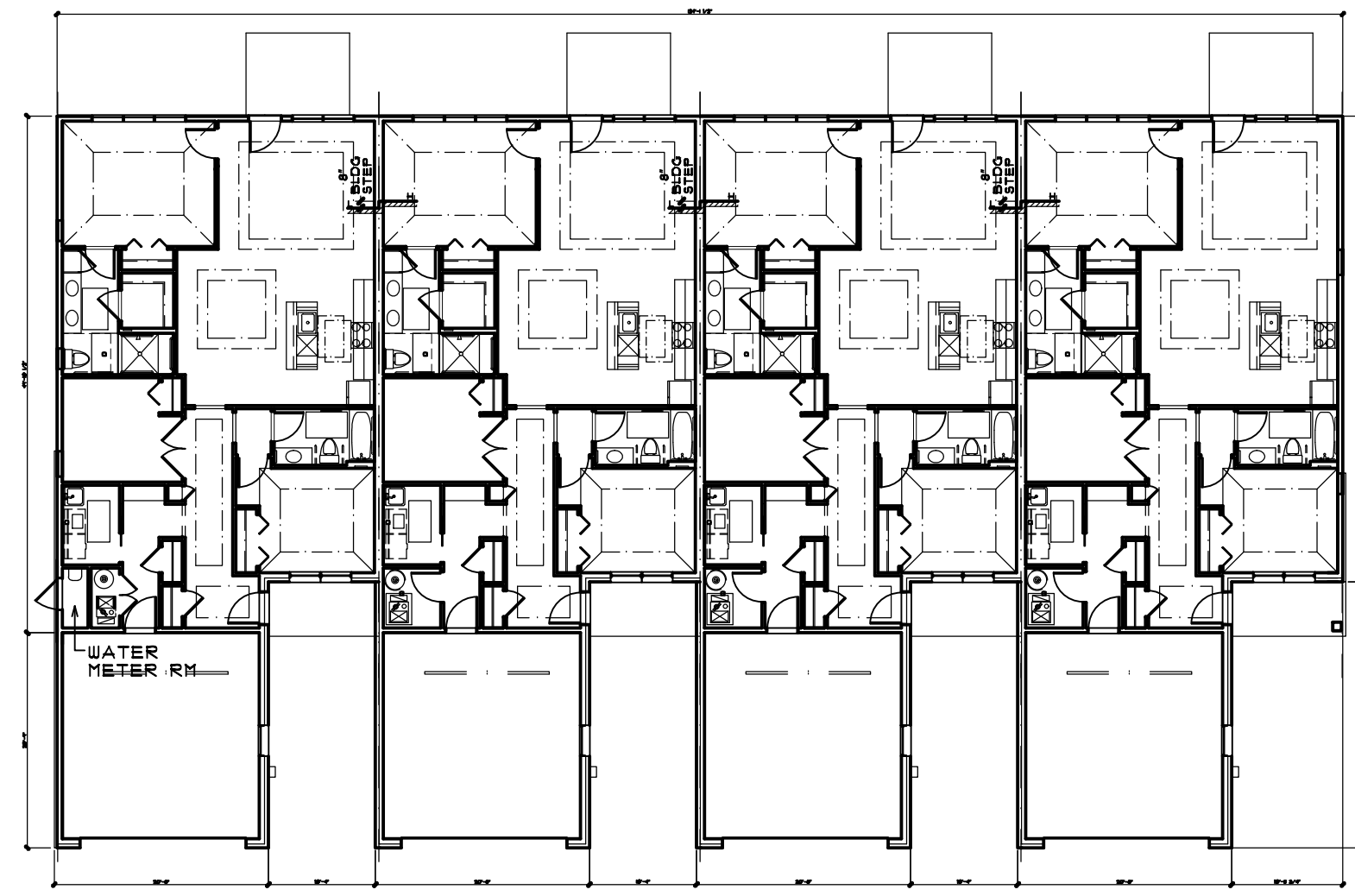
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BEFORE CONSTRUCTION OBTAIN WINDOW & DOOR ROUGH OPENING SIZES FROM WINDOW/DOOR SUPPLIER.

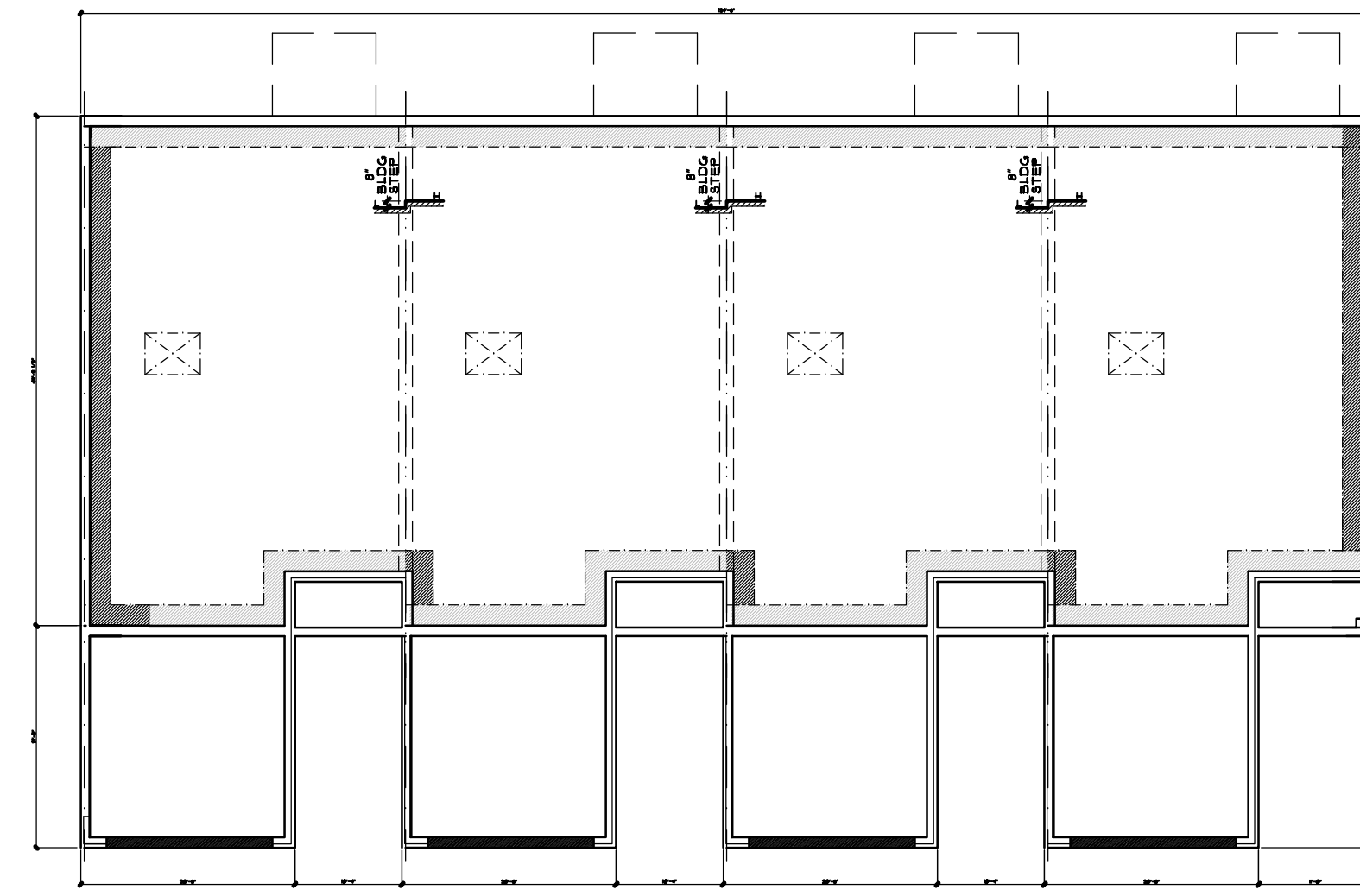
SEE SHEETS N-1 - N-4 FOR ADDITIONAL DETAILS REGARDING DRAWINGS & CONSTRUCTION.

SEE SHEETS D1-D4 FOR ADDITIONAL NOTES REGARDING DRAWINGS & CONSTRUCTION.

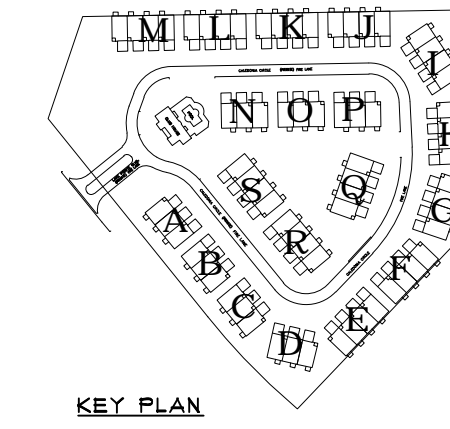
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**8 BLDG S - FIRST FLOOR PLAN**  
**A204 UNITS (66-69)** SCALE: 1/16" = 1'-0"



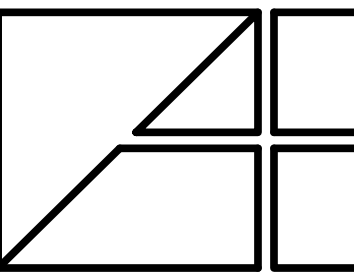
**7 BLDG S - FOUNDATION PLAN**  
**A204 UNITS (66-69)** SCALE: 1/16" = 1'-0"



**NOTE:**

- REFER TO 1/4" SCALE UNIT PLANS FOR ALL NOTES, DIMENSIONS, DETAILS AND ALL ADDITIONAL INFORMATION NOT SHOWN.
- SEE STRUCTURAL ENGINEERING PLANS (BY OTHERS) FOR ALL STRUCTURAL INFORMATION. ALL FOUNDATION INFORMATION REGARDING BEARING CAPACITY OF SOIL CAN VARY ON A BUILDING BY BUILDING BASIS.
- REFER TO CIVIL ENGINEERING PLANS (BY OTHERS) FOR ADDITIONAL INFORMATION ON BUILDING STEPS & GRADING INFORMATION.

**NOTE:** CONFIRM WATER METER ROOM LOCATION W/ CIVIL PRIOR TO CONSTRUCTION.



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 MULTIFAMILY COMMUNITY  
 WHITE LAKE, MICHIGAN

**SHEET TITLE:**  
 BUILDING PLANS

**SINGLE STORY TYPE "B" UNITS**

**CLIENT/PROJECT:**  
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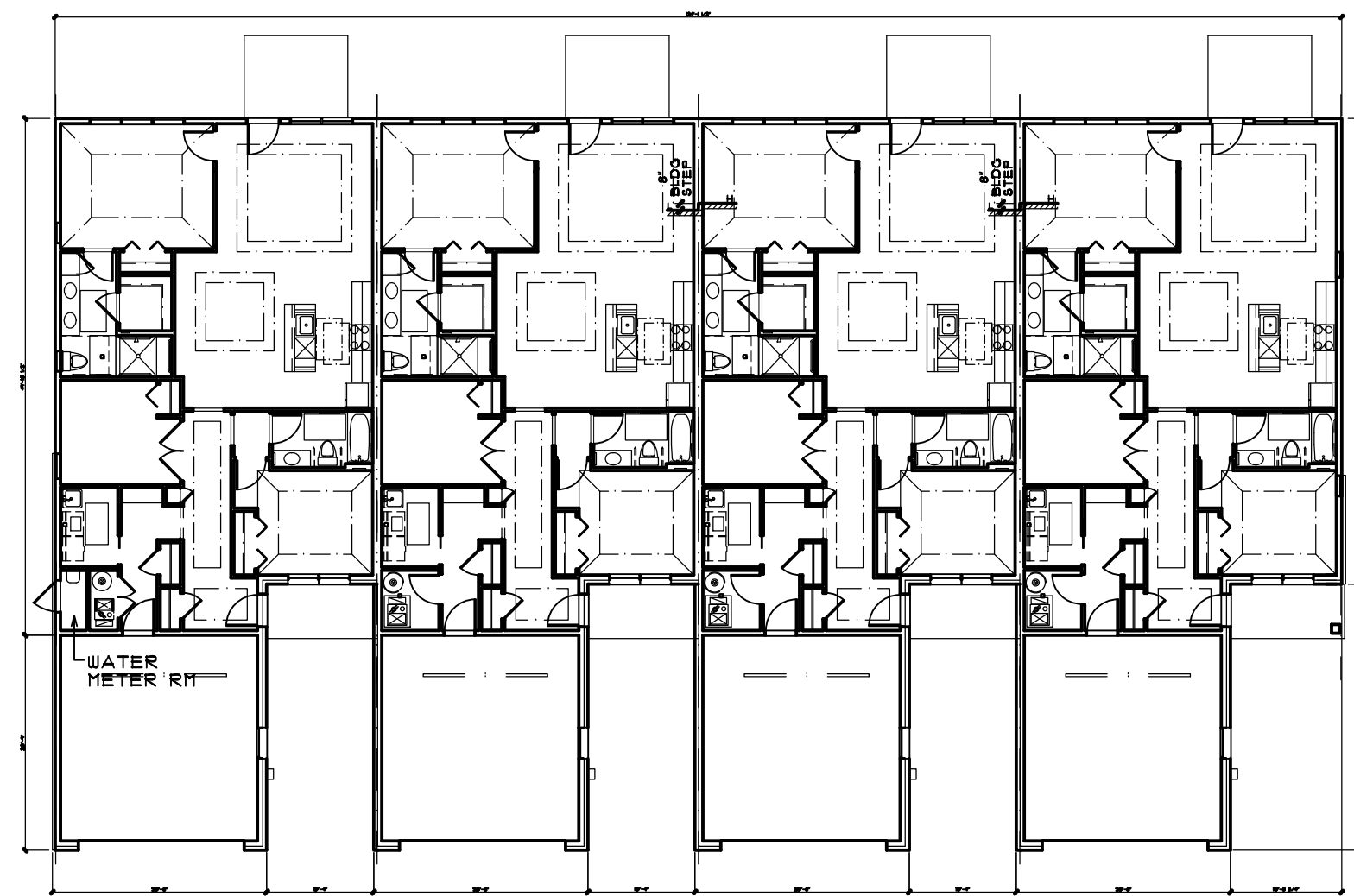
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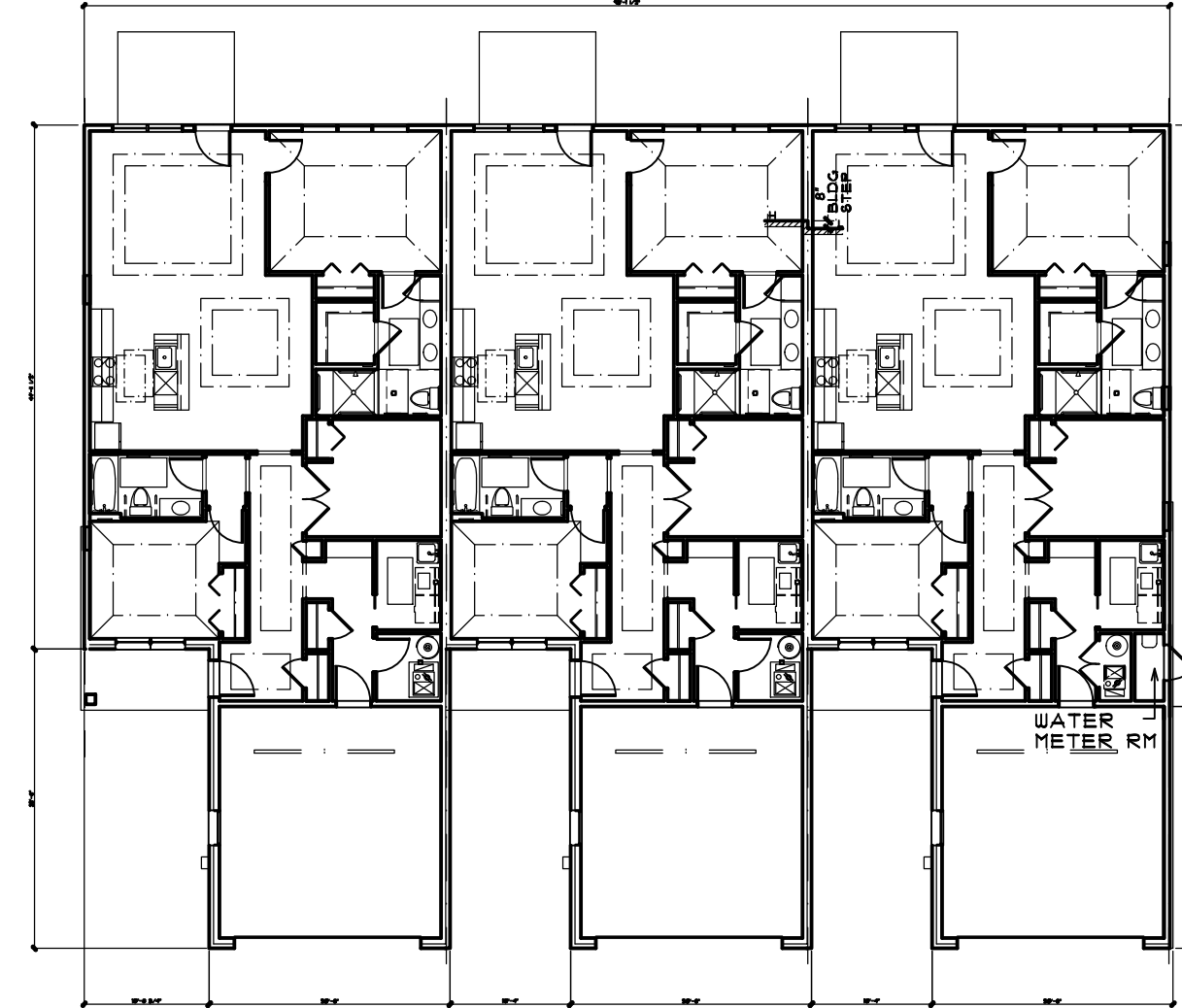
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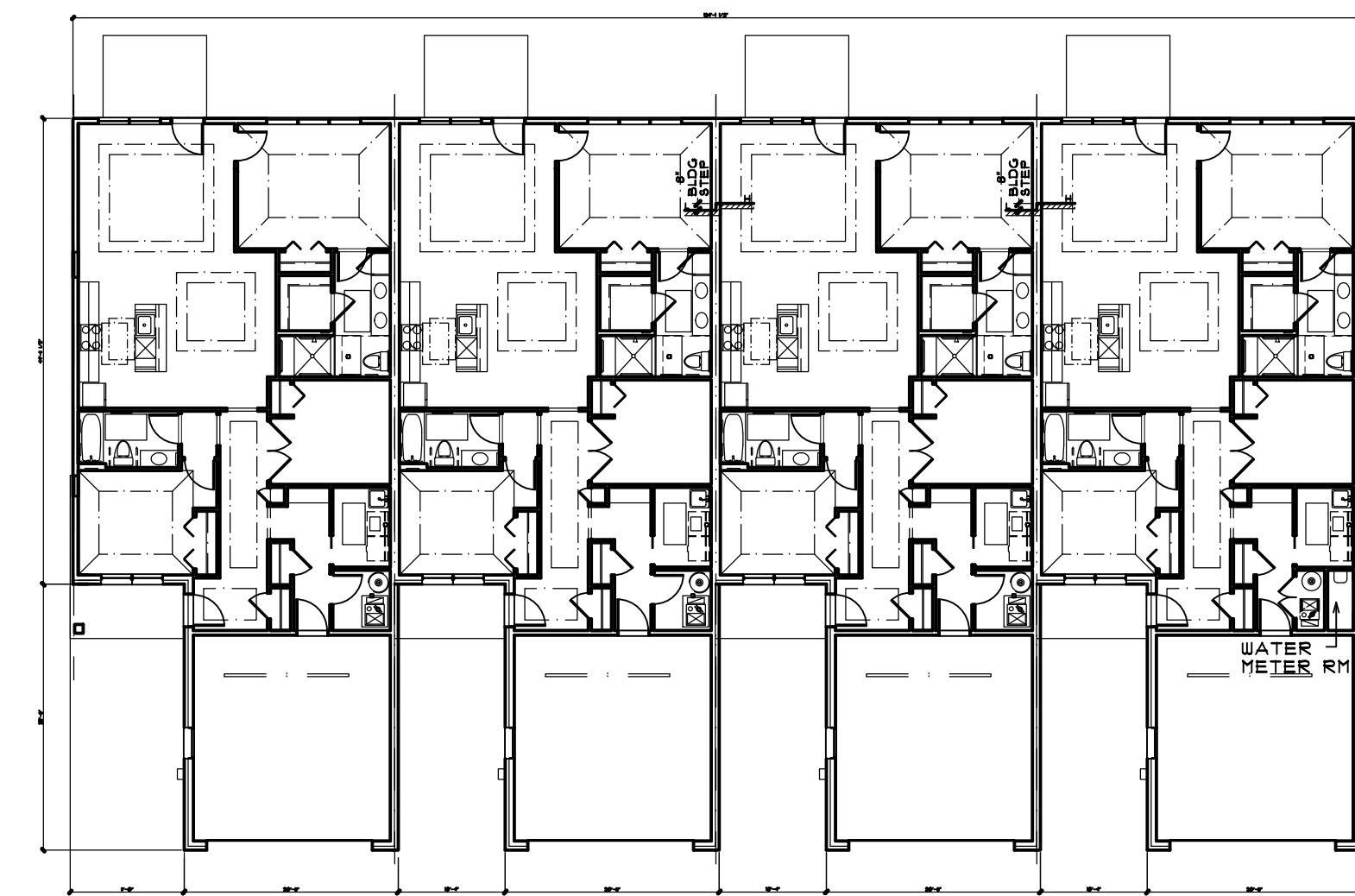
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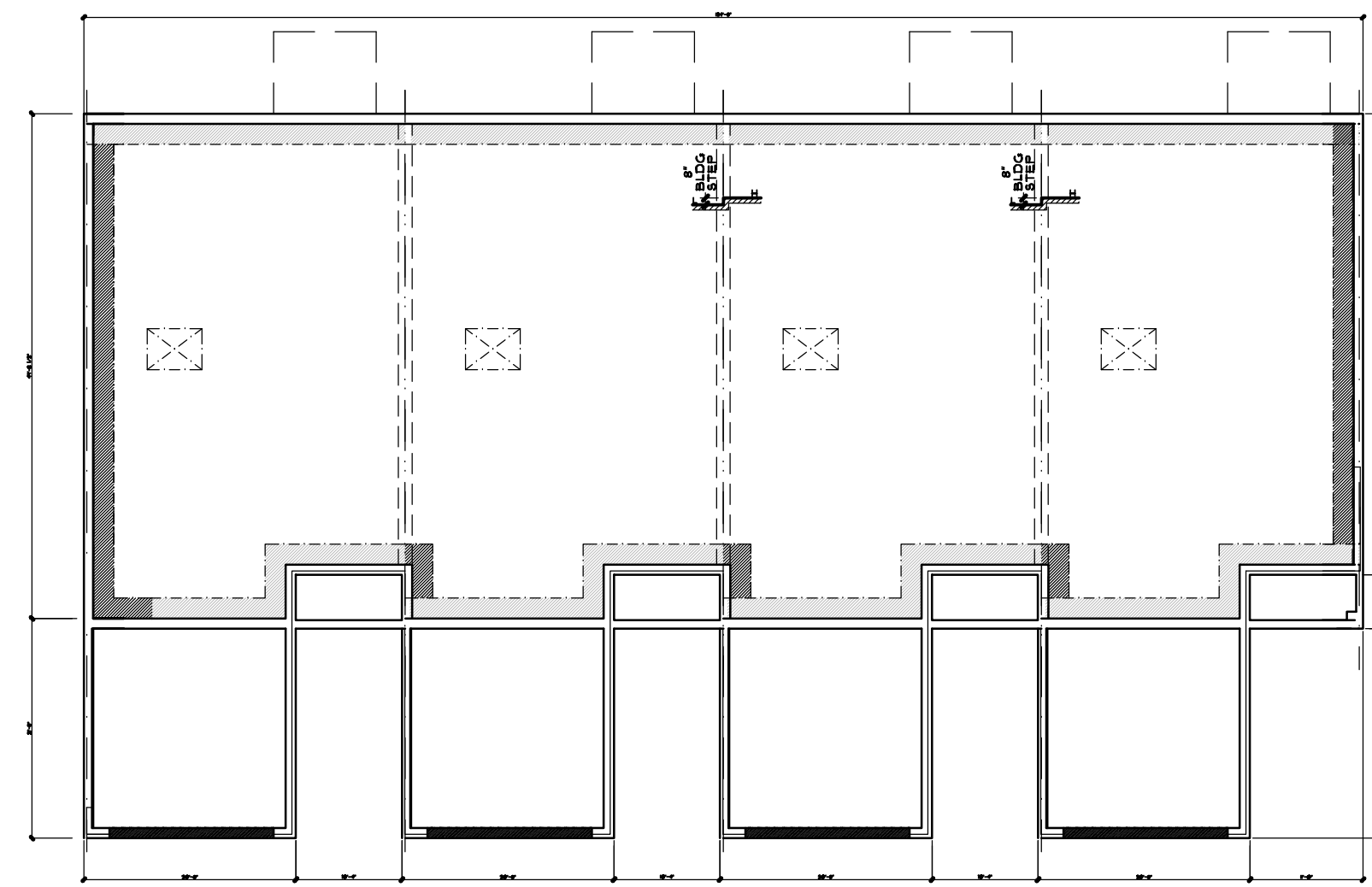
**6 BLDG R - FIRST FLOOR PLAN**  
**A204 UNITS (62-65)** SCALE: 1/16" = 1'-0"



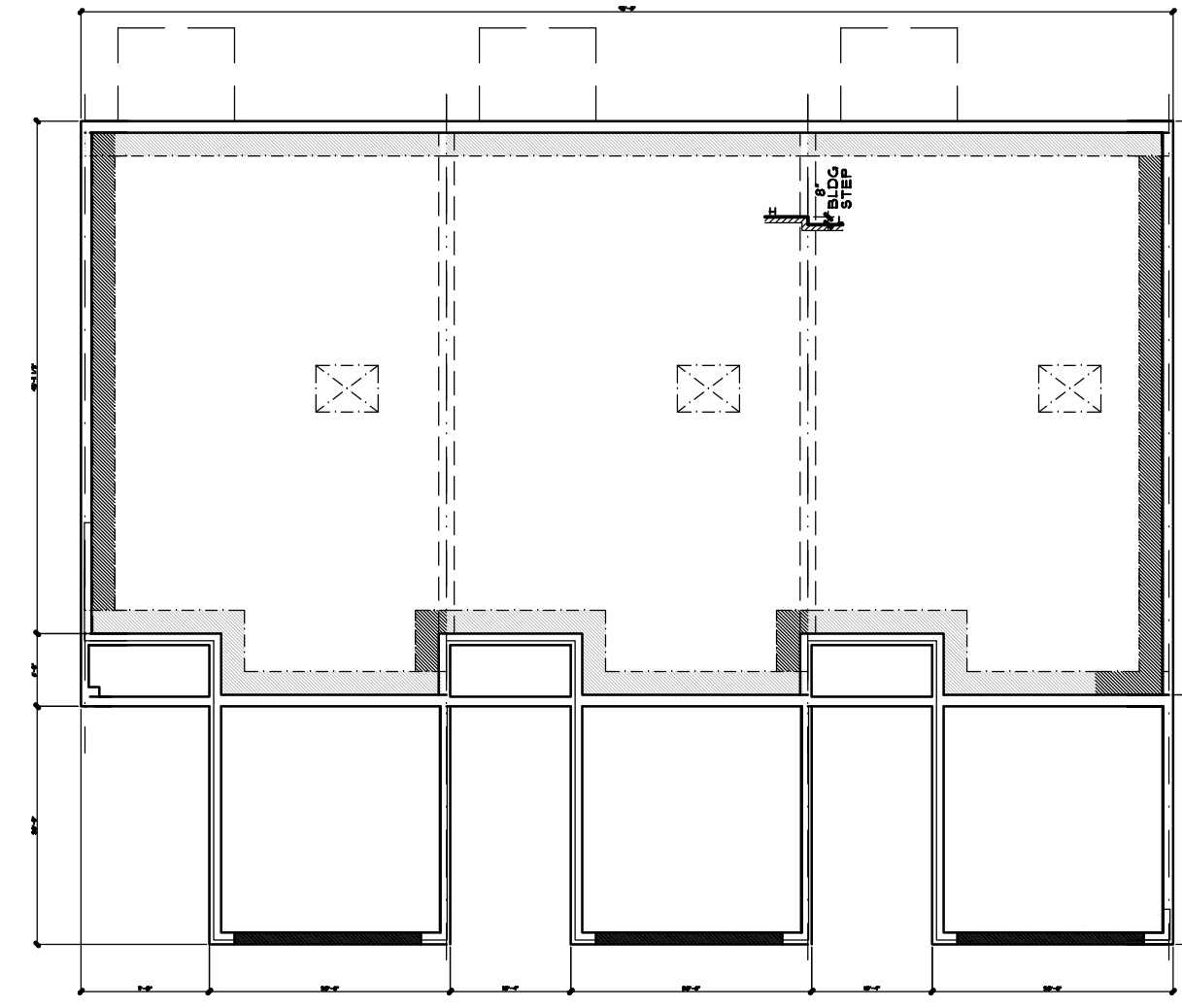
**4 BLDG P - FIRST FLOOR PLAN**  
**A204 UNITS (55-57)** SCALE: 1/16" = 1'-0"



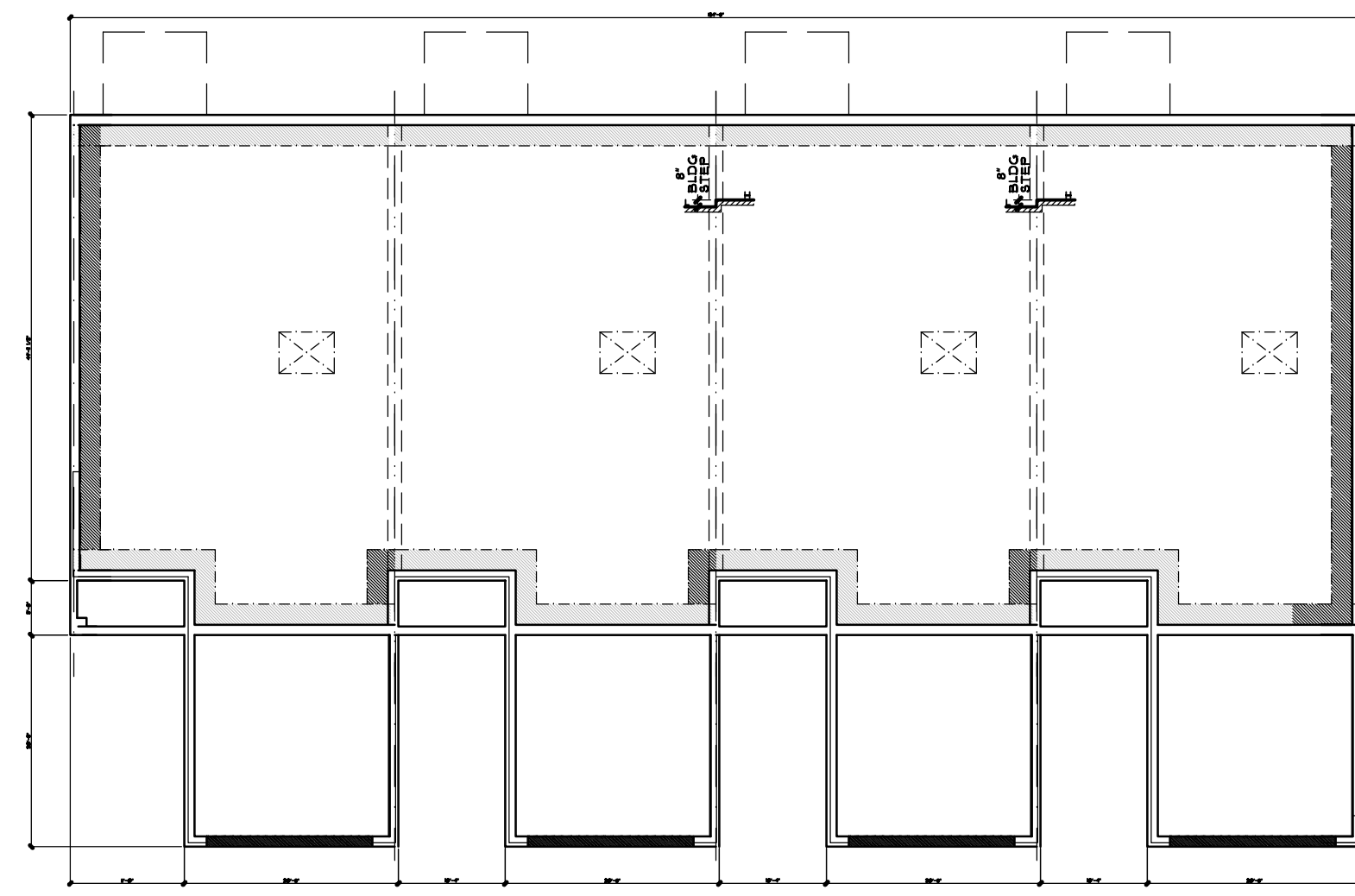
**2 BLDG J - FIRST FLOOR PLAN**  
**A204 UNITS (33-36)** SCALE: 1/16" = 1'-0"



**5 BLDG R - FOUNDATION PLAN**  
**A204 UNITS (62-65)** SCALE: 1/16" = 1'-0"



**3 BLDG P - FOUNDATION PLAN**  
**A204 UNITS (55-57)** SCALE: 1/16" = 1'-0"



**1 BLDG J - FOUNDATION PLAN**  
**A204 UNITS (33-36)** SCALE: 1/16" = 1'-0"

ALL INTERIOR PARTITION DIMENSIONS ARE 3/16" UNLESS NOTED OTHERWISE.

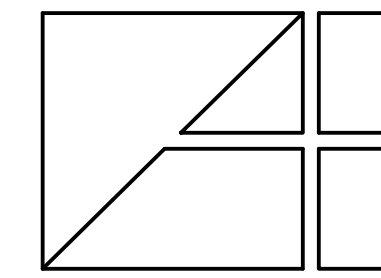
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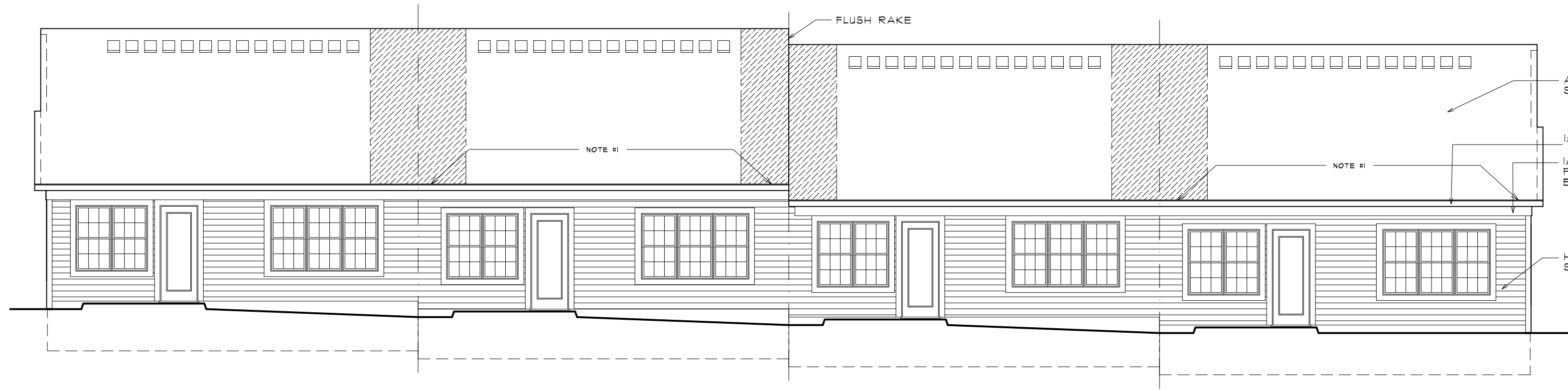
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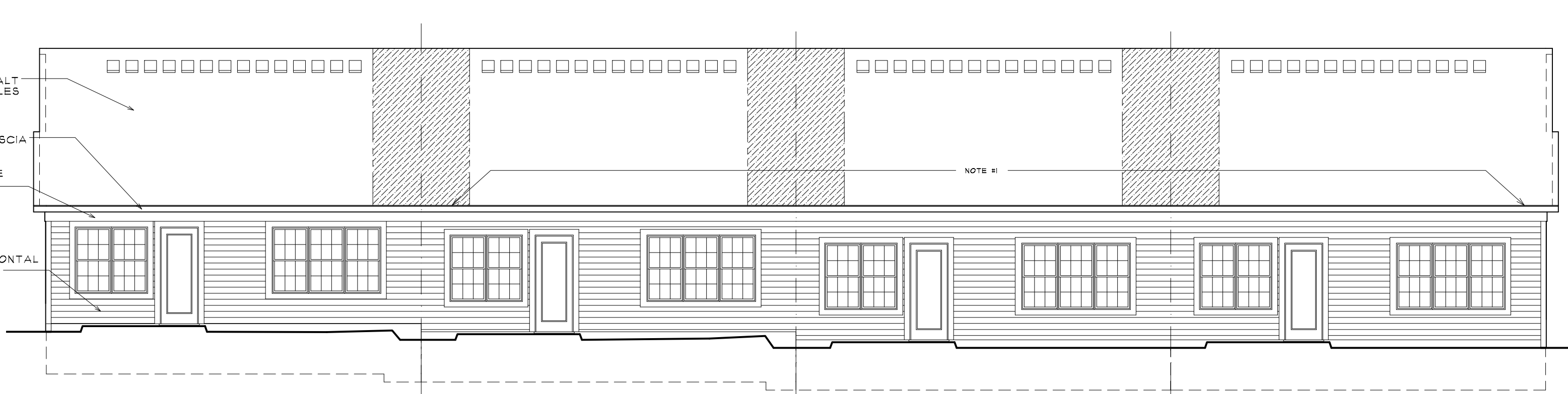
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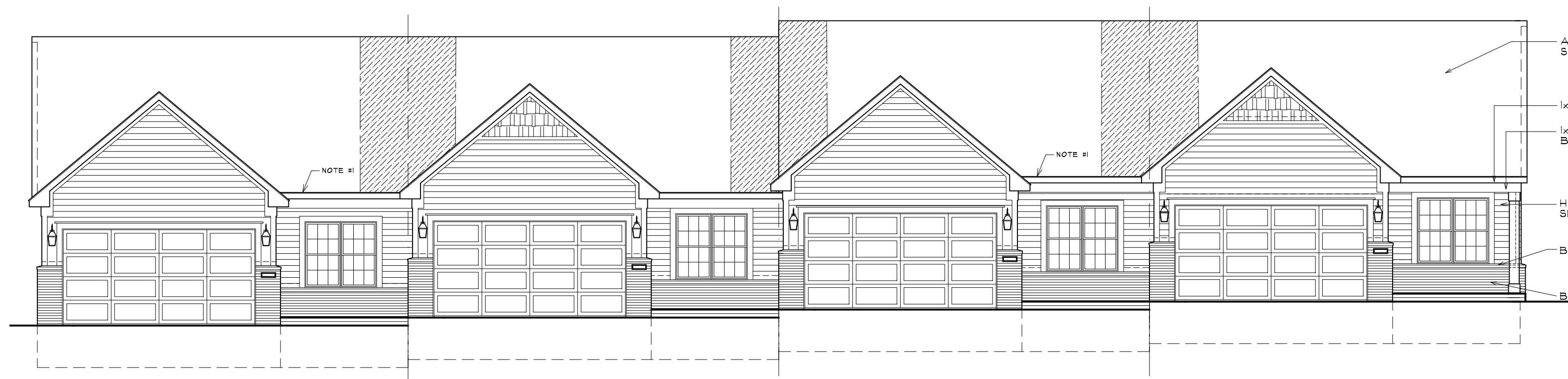
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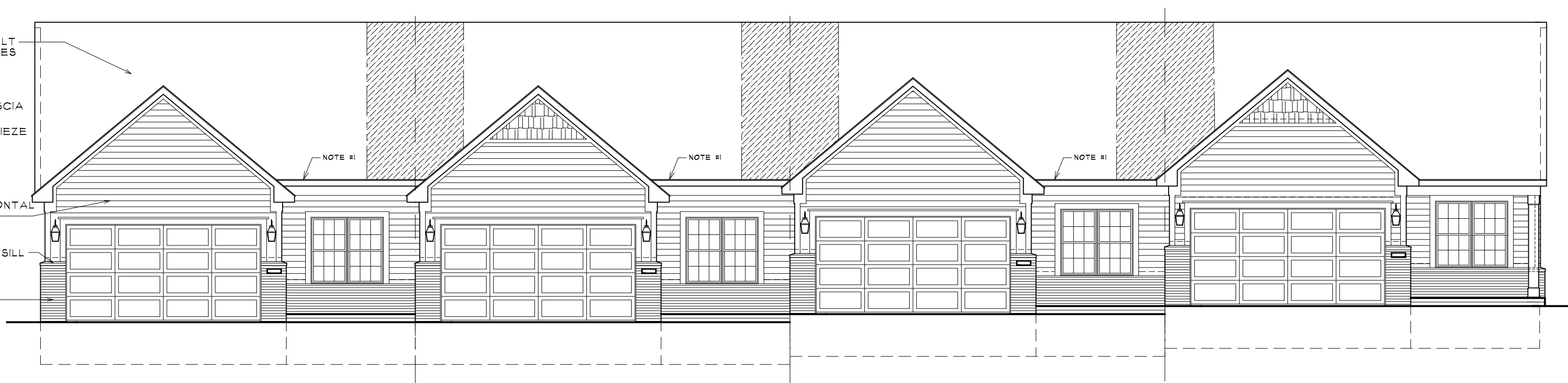
**8 BUILDING S (UNITS 66-69) - REAR ELEVATION**  
 A205 SINGLE STORY TYPE "B"  
 SCALE: 1/8" = 1'-0"



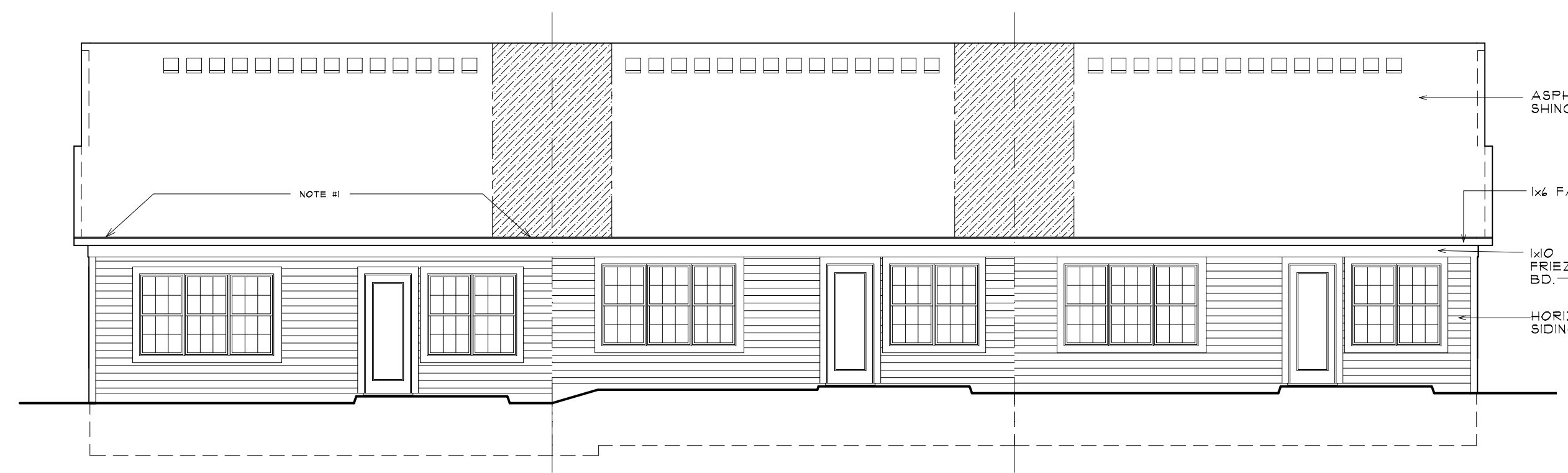
**6 BUILDING R (UNITS 62-65) - REAR ELEVATION**  
 A205 SINGLE STORY TYPE "B"  
 SCALE: 1/8" = 1'-0"



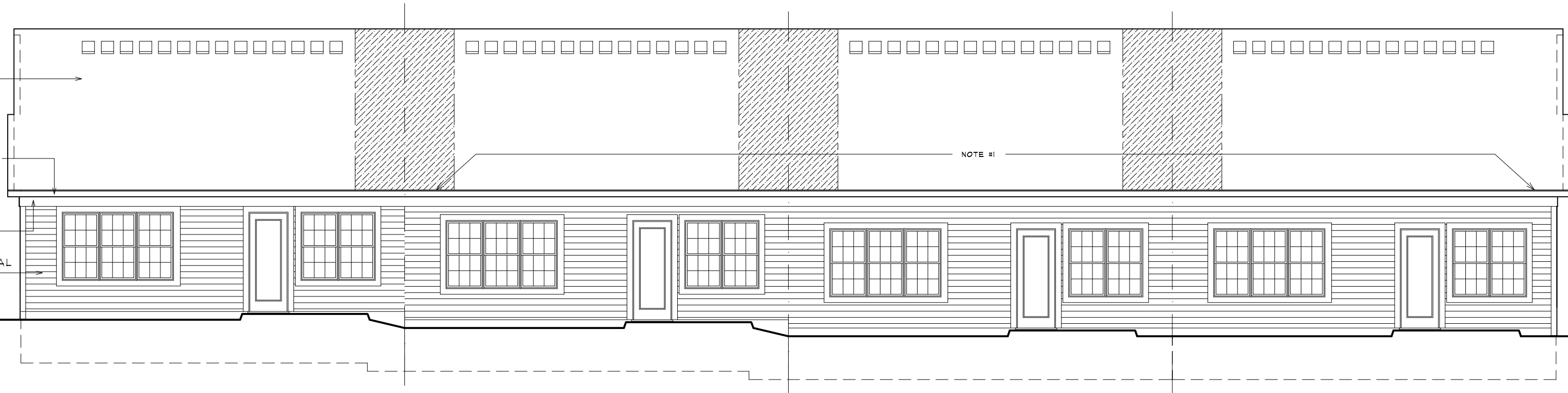
**7 BUILDING S (UNITS 66-69) - FRONT ELEVATION**  
 A205 SINGLE STORY TYPE "B"  
 SCALE: 1/8" = 1'-0"



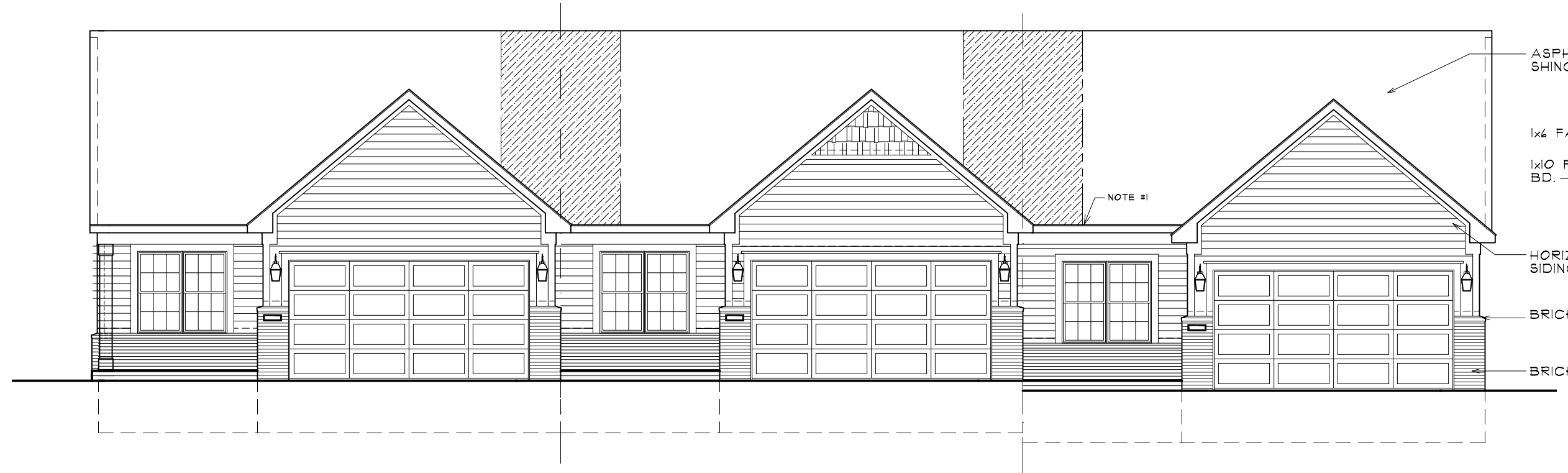
**5 BUILDING R (UNITS 62-65) - FRONT ELEVATION**  
 A205 SINGLE STORY TYPE "B"  
 SCALE: 1/8" = 1'-0"



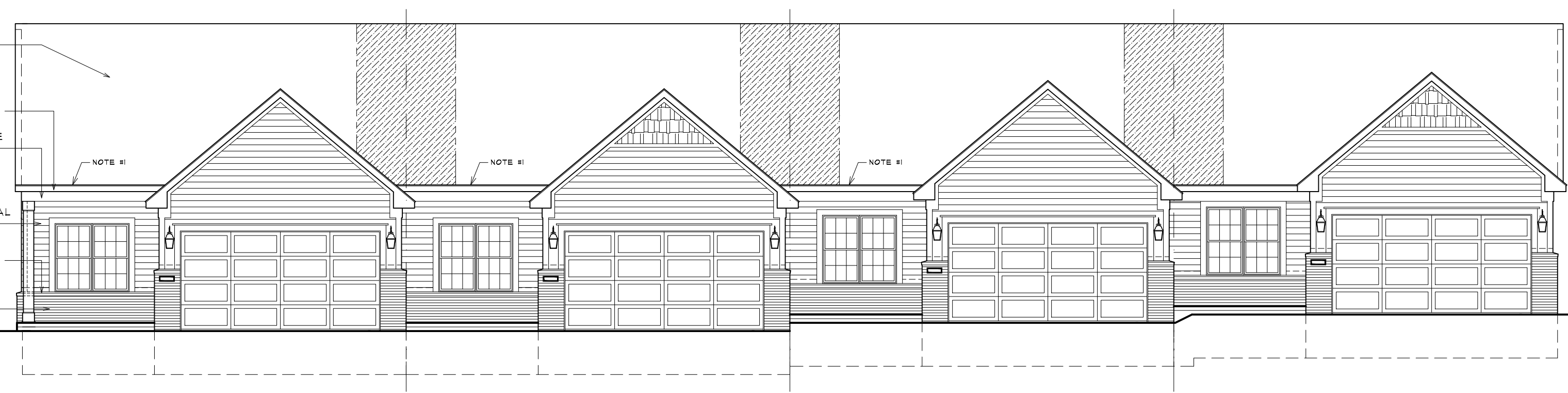
**4 BUILDING P (UNITS 55-57) - REAR ELEVATION**  
 A205 SINGLE STORY TYPE "B"  
 SCALE: 1/8" = 1'-0"



**2 BUILDING J (UNITS 33-36) - REAR ELEVATION**  
 A205 SINGLE STORY TYPE "B"  
 SCALE: 1/8" = 1'-0"



**3 BUILDING P (UNITS 55-57) - FRONT ELEVATION**  
 A205 SINGLE STORY TYPE "B"  
 SCALE: 1/8" = 1'-0"



**1 BUILDING J (UNITS 33-36) - FRONT ELEVATION**  
 A205 SINGLE STORY TYPE "B"  
 SCALE: 1/8" = 1'-0"

**NOTES**  
 ALL EXTERIOR TRIM TO BE ALUMINUM WRAPPED OR VINYL. VERIFY EXACT LOCATIONS FOR EACH MATERIAL WITH OWNER PRIOR TO CONSTRUCTION.  
 PROVIDE FEET HOLES AND DEAD BOLTS AT ALL FRONT ENTRY DOORS. SEE BUILDER FOR SPECIFICATIONS.  
 ALL DRYWALL TO BE READY TO BE PAINTED.  
 BRICK ROULOCK SILLS MAY BE REPLACED WITH PRECAST STONE OR CONCRETE. VERIFY WITH BUILDER PRIOR TO CONSTRUCTION.  
 FIXED GLASS WINDOWS IN GABLES TO HAVE OPAQUE FINISH ON INTERIOR OF GLASS SO FRAMING OF ROOF NOT VISIBLE FROM EXTERIOR.  
 PROVIDE RECESS LIGHT IN SOFFIT ABOVE DOOR ENTRY - CONNECT TO PHOTO CELL.

**NOTE:**  
 REFER TO 1/4" SCALE ELEVATIONS ON SHEET A103 FOR ADDITIONAL NOTES AND DIMENSIONS. SEE SHEET S-1 FOR COLOR SCHEME OF BUILDINGS.  
**NOTE #1:**  
 RAISE HEELS AS NECESSARY TO ELIMINATE STEP IN THE ROOF.

SEE 1/4" SCALE PLANS FOR SIDE ELEVATION SHEET A 101

NOTE: SEE A-1 FOR INDIVIDUAL BUILDING COLOR SCHEME

ALL INTERIOR PARTITION DIMENSIONS ARE 3 1/2" UNLESS NOTED OTHERWISE.

BEFORE CONSTRUCTION OBTAIN WINDOW & DOOR ROUGH OPENING SIZES FROM WINDOW/DOOR SUPPLIER.

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**FUNARI: LAKE POINTE**  
EXTERIOR MATERIALS AND FINISHES

Updated: 10-18-2022

**Scheme A**

Brampton Brick Crossroads Series "Whitestone", Queen Size

Variform American Herald: Board & Batten 5.5" x 1.5", Double 5" Horizontal Siding. Color: Rich Mocha

Vinyl Trim: Dover White

Variform Heritage Cedar Shake Siding: Double 5" exposure. Color: Wedgewood

Mid America Vinyl Shutters in Black #02

Front Entry Door Paint: Sandtone

Garage: Garage

**Scheme B**

Brampton Brick Crossroads Series "Crawford", Queen Size

Variform American Herald Board & Batten 5.5" x 1.5", Double 5" Horizontal Siding. Color: Sandy Tan

Vinyl Trim: Heritage Linen

Variform Heritage Cedar Triple 5" exposure. Color: Island Pearl

Mid America Vinyl Shutters in Midnight Blue #166

Front Entry Door Paint: Desert Tan

Garage Door: Desert Tan

**Scheme C**

Brampton Brick Crossroads Series "Greystone", Queen Size

Variform American Herald Board & Batten 5.5" x 1.5", Double 5" Horizontal Siding. Color: Mountain Clay

Vinyl Trim: Heritage Linen

Variform Heritage Cedar Triple 5" exposure. Color: Lakeshore Fern

Mid America Vinyl Shutters in White #01

Front Entry Door Paint: Desert Tan

Garage Door: Desert Tan

**All Schemes**

Roof Shingles: Certainteed "Landmark Series" Weathered Wood

Windows & Railings: Black

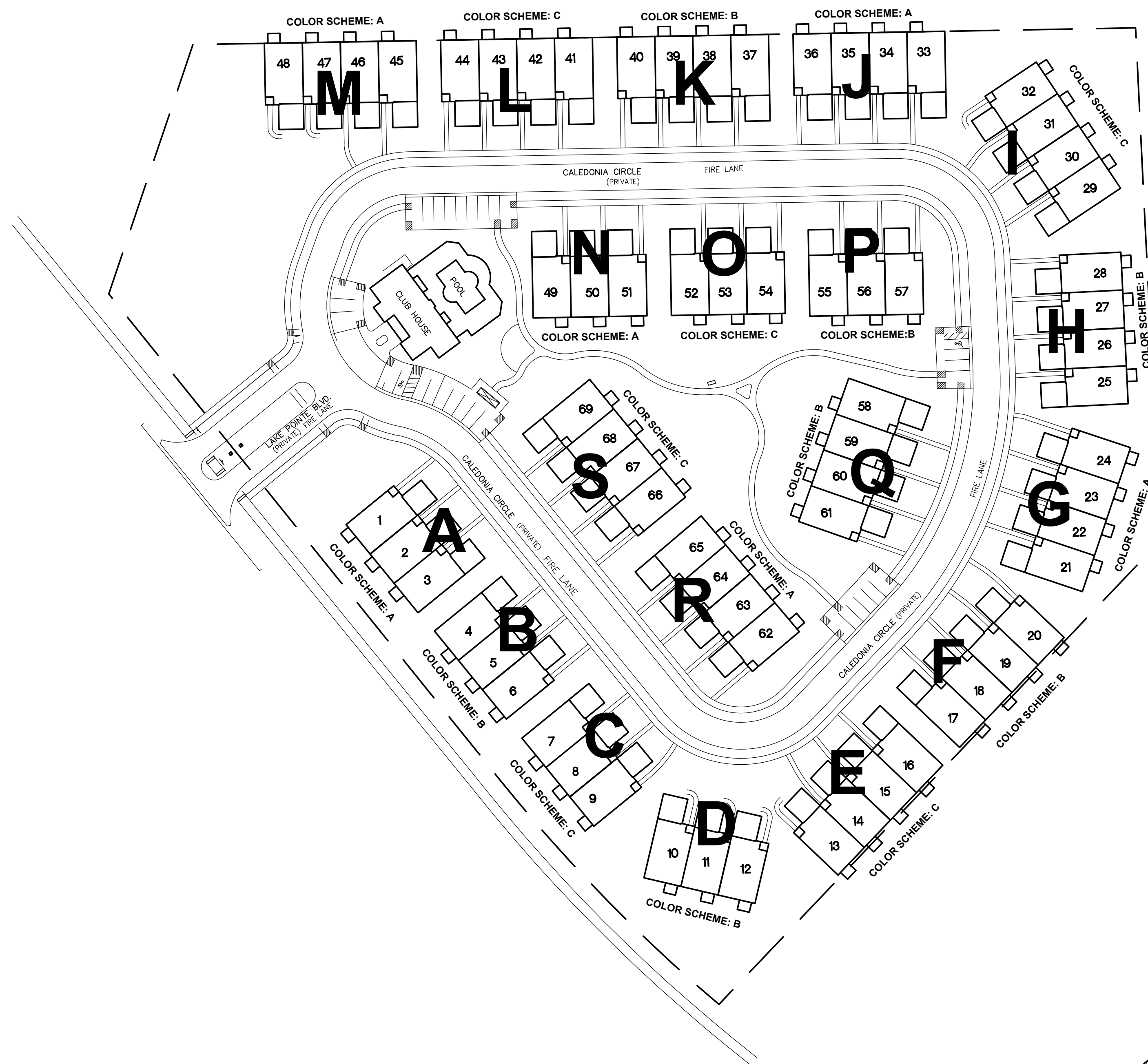
Trex Decking in Rocky Harbor. Scheme A

Trex Decking in Coastal Bluff. Scheme B & C

Note: Photos are a digital representation of specified materials. All Materials to be similar/equal. Refer to Architect's renderings and construction drawings for material locations.

**2 COLOR SCHEMES**

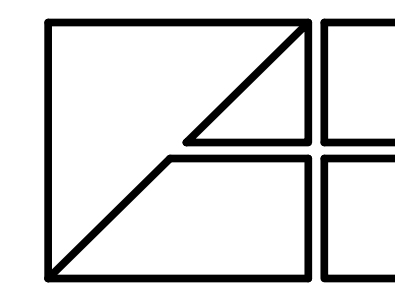
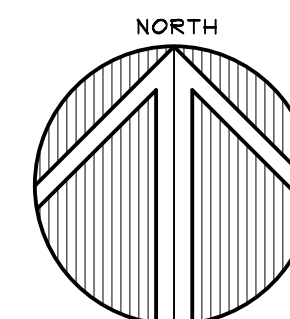
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**1 SITE PLAN**

NOTE: SITE PLAN SHOWN FOR REFERENCE ONLY. REFER TO CIVIL ENGINEERING DRAWINGS FOR ALL ADDITIONAL INFORMATION.

Scale: NONE



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SITE PLAN

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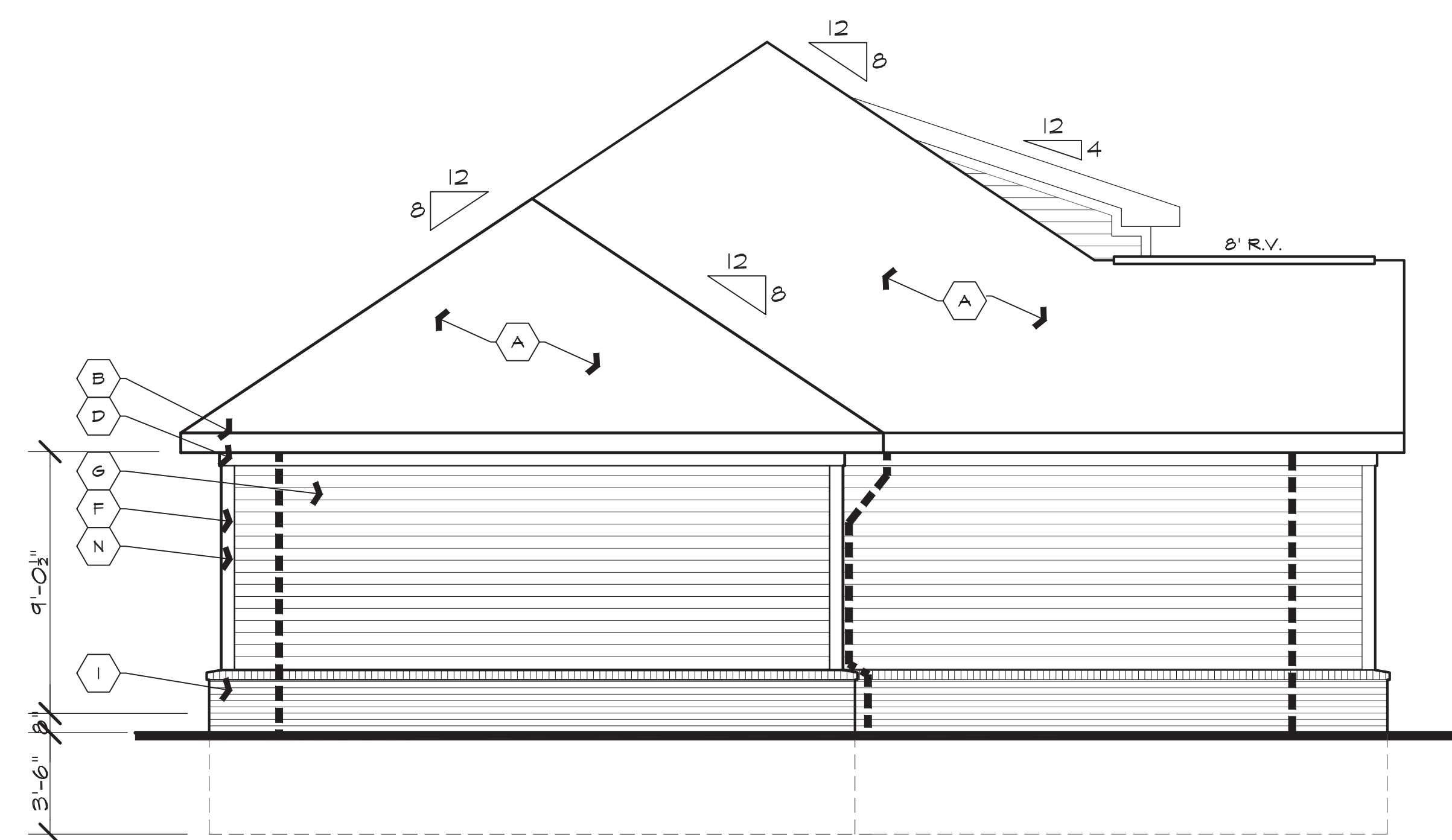
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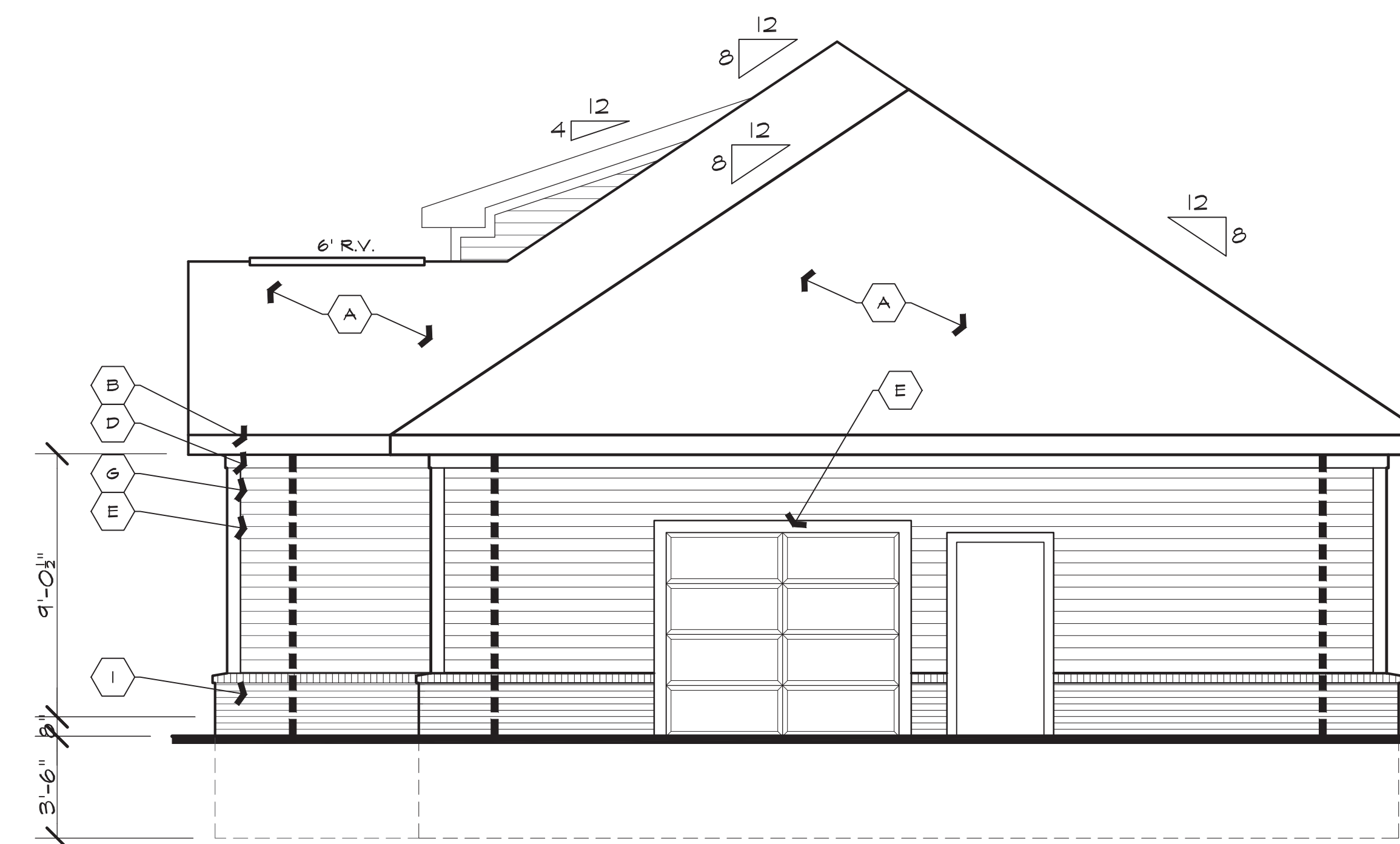
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2216  
DATE

SHEET NUMBER  
AS-1





**LEFT ELEVATION**  
 SCALE: 1/4"=1'-0"



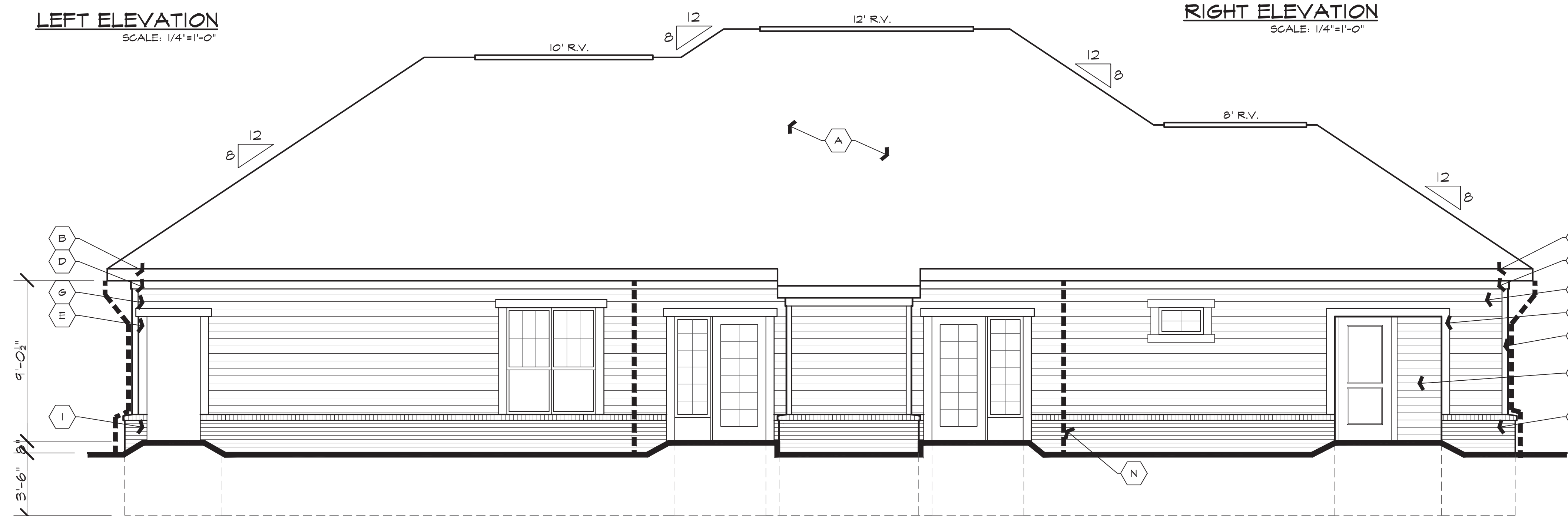
**RIGHT ELEVATION**  
 SCALE: 1/4"=1'-0"

**NOTE TO ALL CONTRACTORS :**

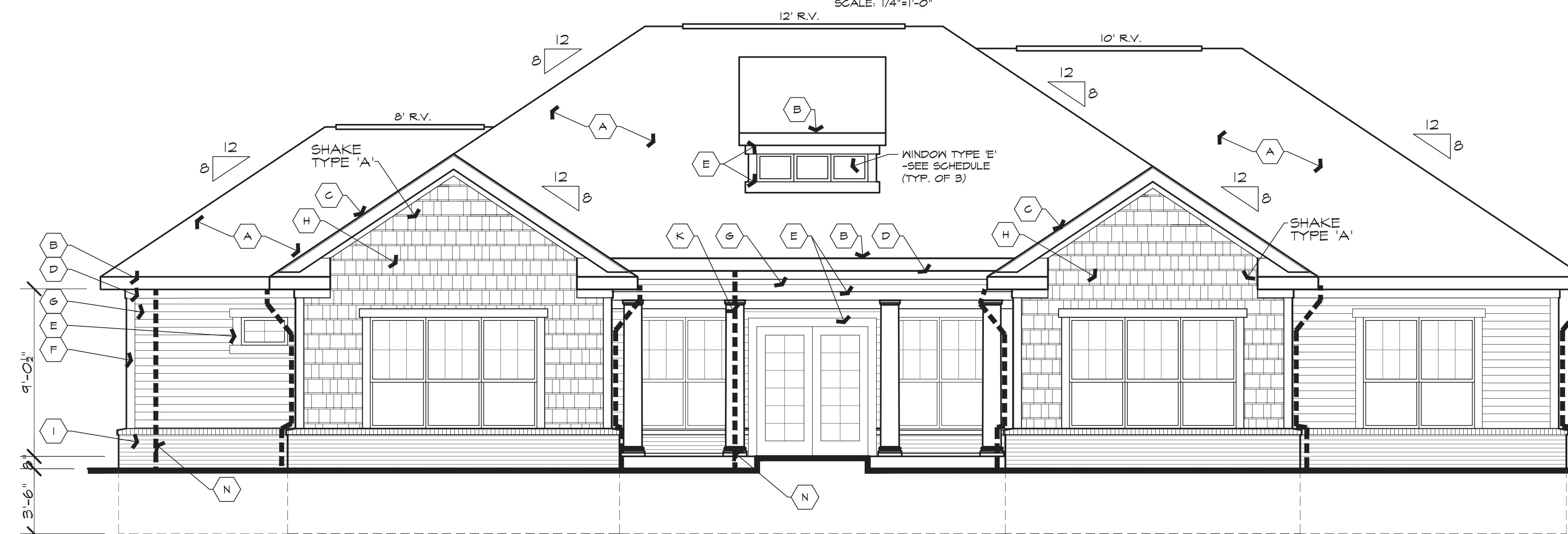
ALL CONTRACTORS SHALL VERIFY & COORDINATE ALL DIMENSIONS ON DRAWINGS, AS WELL AS REVIEW & COORDINATE PLANS W/ EXTERIOR BLDG. ELEVATIONS, SECTIONS, & DETAILS BEFORE COMMENCING WITH THE WORK. IF DIMENSIONAL ERRORS OR CONFLICTS OCCUR BETWEEN PLANS, BLDG. ELEVATIONS, SECTIONS & DETAILS IT SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT BEFORE PROCEEDING WITH THE WORK. CONTRACTORS WHO FAIL TO VERIFY, REVIEW, & COORDINATE THE WORK, & CONTRACTORS WHO SCALE DRAWINGS TO DETERMINE PLACEMENT OF PART(S) OF THE WORK, SHALL TAKE FULL RESPONSIBILITY SHOULD THAT PORTION OF THE WORK BE IMPROPERLY LOCATED OR CONSTRUCTED.

**MATERIAL LEGEND**

- A ASPHALT SHINGLES
- B MET. DRIP EDGE & GUTTER ON 2x8 WD. TRIM FASCIA (ALUM. CLAD)
- C MET. DRIP EDGE ON 2x8 WD. TRIM RAKE BD. (ALUM. CLAD)
- D 1x4 WD. TRIM SUB-RAKE BD. (ALUM. CLAD)
- E 1x6 FRIEZE BD W/ ALUM WRAP
- F 1x6 VINYL TRIM
- G VINYL CORNER TRIM
- H HORIZ. VINYL SIDING
- I VINYL SHAKE SIDING
- J BRICK W/ BRICK SILL
- K 12" RD COLUMN
- L MTL FLASHING
- M ROOF JACK
- N DOWNSPOUT



**REAR ELEVATION**  
 SCALE: 1/4"=1'-0"



**FRONT ELEVATION**  
 SCALE: 1/4"=1'-0"

Issued For:	
REVIEW	11.11.16
REVISED	7.10.17
REVISED PER COMMENTS	10.12.17
REVISED	12.4.17

Developer:  
**FAIRVIEW COMPANIES**  
 1700 W. Big Beaver, Suite 120  
 Troy, Michigan 48084

Project:  
**ENCORE**  
 at DEERHILL

Independence Township, Michigan  
 Sheet Title:  
**COMMUNITY BUILDING ELEVATIONS**

Project Number: 16-122  
 Drawn: RCC  
 Checked: DT  
 Date: 9.23.16  
 Sheet Number:

**CB4.0**



INNOVATIVE IDEAS  
EXCEPTIONAL DESIGN  
UNMATCHED CLIENT SERVICE

August 7, 2024

Sean O' Neil, Director  
Community Development Department  
Charter Township of White Lake  
7525 Highland Road  
White Lake, Michigan 48383

**RE: Lake Pointe Apartment Development – Planned Development Agreement – 6<sup>th</sup> Review**

DLZ Job No. 1745-0385-00

Dear Mr. O' Neil,

The applicant is proposing a 69 unit attached single family apartment development on a 13.32 acre parcel located off Union Lake Road. This is a review of the proposed PDA documents that were prepared for JMF White Lake, LLC. and were submitted to this office on July 29, 2024 via Dropbox.

The following items were submitted as part of this review:

- Draft PDA Agreement

Please note that comments from our June 27, 2024 review are in *italics*. Responses to those items are in **bold**. New comments are in standard font.

We offer the following comments for your consideration:

General

1. *We generally defer comment regarding document format and agreement language to the Township Attorney. **Comment remains.***
2. *We defer to the Township regarding item 2.4 and whether the Township does indeed waive the Traffic Impact Assessment, and Community Impact Statements. Comment partially addressed. A Traffic Impact Assessment was submitted and reviewed by Township staff and consultants. It is unknown whether a Community Impact Statement has been submitted and reviewed by the appropriate parties. Comment addressed. Design engineer has stated that a Community Impact Statement is not required by the Township. **The requirement for a Community Impact Statement***

**was waived at the White Lake Township Board meeting on May 18, 2021. Comment remains as a notation.**

3. *We defer to the Township with respect to whether there will be restrictions and by laws since this development is to be single family apartments. Our concern is the protection of surface drainage easements from encroachments so as surface drainage in these areas does not become impeded. Comment rescinded, design engineer has stated that this development consists only of rental properties and will thus be under the control of a single owner. **Comment remains as a notation.***
  4. *A Storm Maintenance Agreement and Lien are required as noted in our February 22, 2021 Final Engineering Review letter. The Storm Sewer and Detention Basin Easement documents were provided with this PDA review. The Maintenance Agreement will need to contain language referencing shared maintenance responsibility between Lake Pointe and West Valley as detention basin discharge from Lake Pointe will flow through West Valley’s storm sewer system. Comment remains as a notation; we recommend approval subject to preparation and approval of a joint maintenance agreement regarding the storm sewer. **Article IV Section 4.6 references the parties will enter into stormwater maintenance and easement agreements; we recommend this language be revised to match the Township standard form which is titled “storm water management facilities easement, maintenance agreement, and lien”. We also recommend the reference to item (c) be removed as the Comfort Care Senior Living facility has no connection to the Lake Pointe development.***
  5. *Item 4.11 of the agreement references the requirement to obtain an off-site easement from Independence Village in order to extend the proposed sidewalk fronting Union Lake Road. Per a Zoom meeting held with our office and the developer, as well as the developer’s engineer on May 30, 2024, the portion of sidewalk fronting Independence Village will not be done. The developer noted in this meeting that Independence Village is not willing to provide an easement document for the sidewalk extension. **We recommend this language (Article IV, Item 4.11 of Agreement) be removed from the agreement; however, we will defer to the Township Attorney regarding this item.***
-

**Recommendation-**

We recommend approval of the PDA subject to incorporation of the above referenced items. If you have any questions, please feel free to contact us.

Sincerely,

DLZ Michigan



Michael Leuffgen, P.E.  
Department Manager



Victoria Loemker, P. E.  
Senior Engineer

Cc: Andrew Littman, Community Development, *via email*  
Aaron Potter, DPS Director, *via email*  
Hannah Kennedy-Galley, Community Development, *via email*  
Lisa Hamameh, RSJA Law, *via email*

LISA J. HAMAMEH  
lhamameh@rsjalaw.com

27555 Executive Drive, Suite 250  
Farmington Hills, Michigan 48331  
P 248.489.4100 | F 248.489.1726  
rsjalaw.com



ROSATI | SCHULTZ  
JOPPICH | AMTSBUECHLER

July 30, 2024

*via email only: soneil@whitelaketwp.com*

Sean O'Neil  
Community Development Director  
White Lake Township  
7525 Highland Road  
White Lake, Michigan 48383

**RE: 6<sup>th</sup> Review of Planned Development Agreement  
Lake Pointe**

Dear Sean:

You asked that we review the proposed revised Planned Development Agreement for Lake Pointe ("Agreement") submitted by JMF White Lake, LLC ("Developer"). There were no Exhibits attached to this draft and, therefore, we defer to the Township Engineer regarding the Exhibits. Our comments regarding the Planned Development Agreement follow:

**General Comments**

1. As stated in previous correspondence, prior to the execution of the Agreement, the Developer must provide documentation evidencing ownership of the Property. Developer has provided an unrecorded Warranty Deed, dated March 26, 2021. The Township may want to verify it has been recorded at the Register of Deeds and there have been no ownership changes since that time by reviewing property documents or assessing records, or by requesting a title search. In addition, a company resolution authorizing the signer to execute the Agreement on behalf of the LLC is required.
2. As stated in previous correspondence, the Township should consider whether the development schedule provided in Paragraph 4.2 is acceptable. The Zoning Ordinance requires a development schedule, including any individual stages or phases, and the anticipated beginning and completion dates.
3. Paragraph 1.2 should be revised to move the last sentence after the first sentence so the events occur chronologically. Additionally, this Paragraph provides that the Final Site Plan expired on July 7, 2024. Has that been extended again?
4. Paragraph 1.5 should be revised to coincide with the Township's Zoning Ordinance, Section 6.7(E). For example, the second sentence defines "minor changes" to be limited to those provided in the ordinance, but also expands the definition to include Section

- 6.7(E)(ii and iii) which are not "minor changes" and may not be approved administratively. Additionally, Community Development Director should replace the term Planning Director.
5. While a provision was added to Paragraph 4.6 to address storm water maintenance easement in light of the shared facilities with West Valley and Comfort Care, additional discussion is needed. A meeting to discuss this issue is recommended
  6. While I recognize these are new requests, the Agreement should be revised to include the following provisions:
    - a. A breach provision to provide:
      1. Any breach of this Agreement shall constitute a nuisance *per se* which shall be abated. The parties therefore agree that, in the event of a breach of this Agreement by Developer, which is not cured in accordance with this Agreement, the Township, in addition to any other relief which it may be entitled to at law or in equity, shall be entitled under this Agreement for an order of a court of competent jurisdiction providing for relief in the form of injunctive relief or specific performance requiring abatement of the nuisance *per se*.
      2. In the event of a breach of this Agreement, the Township may notify Developer of the occurrence of the breach and issue a written notice requiring the breach be cured within thirty (30) days; provided, however, that if the breach, by its nature cannot be cured within thirty (30) days, Developer shall not be in breach hereunder if Developer commences the cure within the thirty (30) day period and diligently pursues the cure to completion.
    - b. a provision acknowledging that at the time of execution of the Agreement, the Owner will not have yet obtained engineering approvals for the Development and that additional conditions may be imposed, provided that no such conditions be inconsistent with the PD Plan or this Agreement and shall not change or eliminate any development right authorized thereby. Those conditions shall be incorporated into and made part of this Agreement automatically upon issuance of said conditions.

If you have any additional questions or would like to discuss this matter further, please call.

Very truly yours,

ROSATI SCHULTZ JOPPICH  
& AMTSBUECHLER PC



Lisa J. Hamameh

cc: M. Leuffgen  
V. Loekmker

**PLANNED DEVELOPMENT AGREEMENT**

**LAKE POINTE**

**Entered into between:**

**JMF Union Lake, LLC**

**A Michigan limited liability company**

**and**

**Charter Township of White Lake, a Michigan Charter Township**

**Dated: \_\_\_\_\_, 2024**

## **PLANNED DEVELOPMENT AGREEMENT**

(Lakepoint – White Lake Township)

This Planned Development Agreement ( the "Agreement") is entered into as of \_\_\_\_\_, 2024, by and among JMF Union Lake, LLC, a Michigan limited liability company, whose address is 1700 W. Big Beaver Road, Suite 120, Troy, Michigan 48084 (hereafter referred to as “Developer” or "Owner"), and Charter Township of White Lake, a Michigan Charter Township, whose address is 7525 Highland Road, White Lake, Michigan 48383 ("Township").

### **RECITALS**

- A. Developer owns certain real property consisting of approximately 13.32 acres located in the Township on the northeast side of Union Lake Road and northwest of Carpathian Drive, which is more particularly described on **Exhibit A** attached hereto (the "Property"). The Property is zoned PD, or Planned Development by the Township.
- B. Developer desires to develop the Property as multi-family, residential housing project consisting of 69 units as depicted in the Final Site Plan prepared by Seiber, Keast Engineering, L.L.C. (Job No. 19-039, revised February 13, 2024), attached hereto as **Exhibit B** (the “Final PD Plan”), for the proposed Lake Pointe residential development (the “Project”).
- C. At a meeting held by the Township Planning Commission on January 16, 2020, the Township Planning Commission recommended approval of Developer’s revised Preliminary Site Plan, subject to conditions.
- D. At a meeting held by the Township Board on January 21, 2020, the Township Board approved the revised Preliminary Site Plan, subject to conditions.
- E. At a meeting held by the Township Board on February 16, 2021, the Township Board approved a one-year extension of the revised Preliminary Site Plan for the Project.
- F. At a meeting held by the Township Planning Commission on May 6, 2021, the Planning Commission approved the Final Site Plan, subject to conditions, and



recommended approval of the Planned Development Agreement to the Township Board.

- G. At a meeting held by the Township Board on May 18, 2021, the Township Board approved the Planned Development Agreement and waived the requirement for a community impact statement.
- H. At a meeting held by the Township Planning Commission on February 1, 2024, the Planning Commission approved an extension of the Final Site Plan until July 7, 2024.
- I. By entering into this Agreement, Owner and the Township desire to set forth the parties' obligations with respect to the Planned Development for the Property and the Project and the terms and requirements under which the Property and the Project shall be developed.

**NOW, THEREFORE**, in consideration of the premises and the mutual covenants of the parties described in this Agreement, the parties agree as follows:

## ARTICLE I

### **DESCRIPTION OF THE PROJECT; PD AND PD PLANS**

- 1.1. **Description of Project.** The project ("Project") covers an area comprising approximately of 13.32 acres located on the northeast side of Union Lake Road and west of Williams Lake Road. The Project will consist of 69 attached residential rental housing units. Each residence will be ranch-style dwelling with a 2-car attached garage.
- 1.2. **PD Plan Approval; Exhibits.** The revised Preliminary Site Plan prepared by Sieber, Keast Engineering, L.L.C. was approved by the Township Board on January 21, 2020, and thereafter extended for one year by the Township Board at its meeting held on February 16, 2021. On May 18, 2021, the Township Board approved the original Planned Development Agreement, which thereafter expired, and then on August \_\_, 2024, approved this Agreement, which approval grants Developer the right to construct facilities as set forth in the Final PD Plan, subject to this Agreement and all applicable permits in the ordinary course, as the same may be modified and amended in accordance with the Township Zoning Ordinance from time to time. All exhibits attached hereto are incorporated herein and made a part hereof by reference. Thereafter, the Final Site Plan was extended by the Planning Commission to July 7, 2024.
- 1.3. **Performance Criteria.** Developer affirmatively submits that the proposed uses on the Property shall not exceed the performance criteria found in the Township Zoning Ordinance and the standards listed therein.
- 1.4. **Waivers and/or Modifications to Standard Zoning Requirements.** Except as otherwise provided in this Agreement and the Final PD Plan, Developer shall adhere to all applicable

Township ordinances, codes, rules, regulations and standards. Waivers from the Township Zoning Ordinance which the Township shall be deemed to have granted, and hereby grants, as well as modifications to standard zoning requirements which will be requested, if any, are as set forth on the Final PD Plan and this Agreement.

- 1.5. **Minor Modifications.** If, following the approval of the Final PD Plan, Developer proposes minor changes to the Final PD Plan, including changes required during final engineering review and required by other State and County regulatory agencies, such minor changes may be made subject only to "Administrative Approval". The term "Minor Changes" shall be those changes set forth in the Township Zoning Ordinance, Article 6, Section 6.7(E)(i-iii). For purposes of this Agreement, "Administrative Approval" shall mean the approval by the Planning Director of the Township, or his/her designee, or such other individual as may be designated by the Township Board, without the necessity of review by the Township Board or the Township Planning Commission or any amendment to this Agreement.
  
- 1.6. **Statement of Planning Objectives and Community Benefits to be Achieved by the Project.** The primary planning objectives of this development are to create alternative, high quality rental housing options that appeal to both active retirees and empty nesters who want to stay in place or be attracted to the White Lake community and to meet the needs and growing demand of younger working and professional millennials for high quality rental housing, consistent with the Master Plan objective to provide for a diversity of housing opportunities in the Township. The Project will provide more open space and less housing density than permitted under the applicable zoning ordinance and Master Plan. A substantially larger open space area is achievable because of the unique situation where the Developer also owns the West Valley development on the southwest side of Union Lake Road and can provide an integrated storm drainage system serving multiple properties. For the reasons described in paragraph 2.3 below, Developer also agreed to contribute \$15,000 for the installation of speed bumps in the neighboring Bocovina development. Developer will also contribute: (a) to the Township the sum of \$2,050 for the future installation of approximately 630 square feet of offsite concrete sidewalk along Union Lake Road to Independence Circle; and (b) the sum of \$7,500 to the Park Fund. While the density of the Project is consistent with the existing zoning, the contribution to the Park Fund will assist the Township in continuing to furnish public amenities that will serve the new residents of the Project. The Project also includes substantial on-site recreational amenities, including walking paths, seating areas and a swimming pool and clubhouse.

## ARTICLE II

### **REQUIREMENTS FOR DEVELOPMENT**

- 2.1. **Development Standards.** The Property shall be developed and improved in compliance with the following:

- (a) The Charter Township of White Lake Zoning Ordinance, as amended, and engineering design standards, except where modified by this Agreement and the Exhibits attached hereto;
  - (b) This Agreement;
  - (c) The Final PD Plan;
  - (d) The conditions set forth in Paragraph 2.3 below; and
  - (e) All applicable federal, state and county laws, rules and regulations.
- 2.2. **Effect of PD Approval.** To the extent that developing the Property in accordance with this Agreement and the PD Plan will deviate from the Zoning Ordinance or any other Township Ordinance or regulation, this Agreement and the Final PD Plan shall control. To the extent this Agreement and PD Plan attached hereto are silent on development issues, the Project shall comply with the Zoning Ordinance and other Township ordinances and regulations. All improvements constructed in accordance with this Agreement and the Final PD Plan shall be deemed to be conforming under the Zoning Ordinance and in compliance with all ordinances of the Township. The Project shall not be subject to any additional requirements contained in any amendments or additions to Zoning Ordinances adopted subsequent to the date of this Agreement which conflict with the provisions of this Agreement including the PD Plan and/or any plans which are approved pursuant to this Agreement.
- 2.3. **Conditions to Approval.** Prior to commencement of construction of the Project, Developer will: contribute the sum of up to \$15,000 to pay for speed bumps to be installed in the neighboring Bocovina residential development per a separate written agreement with the Bocovina’s homeowners association; and deliver the sum of \$2,050 to the Township for future installation of an off-site concrete sidewalk as described in paragraph 1.6 above. The purpose of the speedbumps is to both discourage cut-through traffic and reduce traffic speeds for safety of the residents. The off-site sidewalk contribution is intended to further the Township’s objective of achieving connectivity and non-motorized access throughout the Township. In addition, no bars shall be installed on the back of patios to interfere with access to the open space from the patios.
- 2.4. **Traffic Impact Assessment.** Revised traffic impact assessments dated December 2, 2019, and June 7, 2024, prepared by Fleis & Vandenbrink were received and reviewed by Township staff and consultants.

### **ARTICLE III**

#### **USES WITHIN THE PROJECT**

- 3.1. **Approved Uses for the Project.** The Project will consist of 69 ranch-style residential units (or a density at 5.41 units per acre) in 19 buildings. Each residence shall have two bedrooms and an attached 2-car garage and each building shall contain no more than 4-attached residential dwelling units.

- 3.2. **Project Amenities.** In order to provide on-site recreational amenities to serve the residents of the Project, Developer will install a clubhouse and pool as depicted in the Final PD Plan. An open space area consisting of approximately 8.42 acres will be maintained, with walking paths, seating, a pergola structure and dog waste stations as depicted in the Final PD Plan.

## ARTICLE IV

### **DEVELOPER'S RIGHTS AND OBLIGATIONS**

- 4.1. **Right to Develop.** Developer shall have the right to develop the Property in accordance with the PD Plan and this Agreement.
- 4.2. **Development Schedule.** Developer shall commence development of the Project within 12 months from the Township's approval of this Agreement. The intent is complete the development as a single phase once commenced. The foregoing development schedule may be modified by Developer as necessary or appropriate based on the timing of State and County agency approvals, market and other conditions, with the Township's consent, which shall not be unreasonably withheld or delayed.
- 4.3. **Internal Roads in the Project.** The internal roads within the Project will be private and constructed in accordance with Final PD Plan, Township Engineering Design Standards, approved Final Engineering Plan, and RCOC Approval.
- 4.4. **Landscape Plan.** The Landscape Plans, Sheets LS-1 through LS-7, which are part of the Final PD Plan attached hereto as Exhibit B, identify the landscaping to be installed within the Project.
- 4.5. **Utilities.**
- (a) **Sanitary Sewer System.** Sanitary sewers shall be extended by the Developer to serve the Project which must connect to the Township's sanitary sewer system. Connection to the sanitary sewer system shall require payment of all applicable fees, charges, and assessments, in accordance with the Township's Ordinance. The Final PD Plan identifies the sewer lines and related sanitary sewer easements to be dedicated to the Township as depicted in the Easement for Sanitary Sewer Exhibits.
  - (b) **Water System.** Water service shall be extended by the Developer to serve the Project which must connect to the Township's water system. Connection to the water system shall require payment of all applicable fees, charges, and assessments, in accordance with the Township Ordinance. The Final PD Plan identifies the water lines and related water easements to be dedicated to the Township as depicted in the Easement for Watermain Exhibits.
- 4.6. **Storm Water Detention.** Storm water shall be conveyed by a storm sewer system to a storm water detention basin located within the Project as shown in the Final PD Plan. All such storm water drainage facilities, including the detention basin and all related improvements shall be designed in accordance with all applicable ordinances and

engineering regulations and standards as depicted in the Easement for Storm Sewer Exhibits. Prior to commencement of construction, the parties ~~(and, to the extent applicable, third parties)~~ will enter into ~~the following a separate sStormwater mMaintenance and easement aAgreements utilizing standard Township agreement forms: (a) stormwater agreement for the Project; (b) stormwater agreement serving both the Project and the proposed adjacent West Valley development; and (c) a stormwater overflow easement for the Comfort Care Senior Living facility on nearby land. in a form to be mutually agreed upon by the parties in the exercise of reasonable discretion.~~

- 4.7. **Signs.** The entrance signage and other directional signage for the Project shall be as depicted in the Final PD Plan. Any additional signage or modification of signage proposed to be installed will have to be approved by the Township and Developer will comply with all the sign regulations in the Township's sign ordinance.
- 4.8. **Architectural and Site Design Guidelines.** The Project shall be developed in conformance with the following architectural and site minimum standards:
- (a) **Minimum Setbacks.** Setback requirements shall be in accordance with the approved final PD Plan.
  - (b) **Exterior Materials.** The building elevations and exterior materials shall be consistent with the elevations and materials set forth in the Final PD Plan and any modifications to same will be of equal or better quality and durability and shall be approved in accordance with the Township Zoning Ordinance.
  - (c) **Driveways and Sidewalks.** Curbs, gutters and sidewalks shall be constructed of concrete and shall be in accordance with the approved Final PD Plan and approved Final Engineering Plan. Driveways shall be constructed of concrete.
- 4.9 **Permits and Authorizations.** All state, county and federal permits required for completion of the project shall be approved prior to the scheduling of a pre-construction meeting with Developer and the Township staff and consultants.
- 4.10 **Improvements and Alternations.** Developer shall not engage in any improvements or alterations on the Property, including, without limitation, site grading work or installation of utilities, until completion of the pre-construction meeting.
- 4.11 **Offsite Pathway/Sidewalk Easement.** Developer agrees that it shall obtain a fully executed offsite pathway/sidewalk easement from the adjoining owner(s) of Independence Village in such form as is approved by the Township, prior to scheduling the pre-construction meeting.

## ARTICLE V

### MAINTENANCE OF OPEN SPACE

- 5.1. **Common Elements and Common Facilities.** The Developer shall have the responsibility for maintaining the open space and installed landscaping located within the Project.

## ARTICLE VI

### **TOWNSHIP'S RIGHTS AND OBLIGATIONS**

- 6.1. **Permits and Authorizations.** The Township shall grant to Developer and its contractors and subcontractors all Township permits and authorizations necessary to bring and/or construct all utilities necessary to service the Property and to otherwise develop and improve the Property in accordance with the Final PD Plan, provided the Developer has first made all requisite filings and submissions for permits, complied with the requirements for said permits or authorizations submittals, and paid all required fees in accordance with the Township's Ordinances. Any applications for permits or authorizations from the Township will be processed in the customary manner. The Township shall cooperate with Developer in connection with Developer's applications for any necessary county, state, federal or utility company approvals, permits or authorizations to the extent that such applications and or discussions are consistent with the Final PD Plan and this Agreement and provided that the Township shall not be required to initiate legal proceedings or assume any financial obligations of Developer, including without limitation the payment of any compensation, cost or fee. Once appropriate approvals are granted, Developer shall be entitled to obtain a grading permit from the Township and thereafter commence grading and clearing activities.
- 6.2. **Township Action For Failure to Maintain Property.** In the event the Developer defaults in its obligation to maintain the property in a reasonable condition, using reasonable standards, and consistent with and as required under the Final PD Plan and this Agreement, the Township may serve written notice upon Developer setting forth the manner in which Developer has failed to maintain the Property, and such notice shall include a demand that deficiencies be cured within a stated reasonable time period no less than thirty (30) days, and shall set forth the date, time and place of a hearing before the Township Board for the purpose of allowing Developer to be heard as to why the Township should not proceed to perform the maintenance which has not been undertaken. In that hearing, the time for curing such deficiencies, and the hearing itself, may be extended. If, following the hearing, the Township Board shall determine that the Developer has not cured such deficiency within the time specified at the hearing, then upon five (5) days written notice to Developer, the Township shall thereupon have the power and authority, but not the obligation, to enter upon the Property or cause its agents or contractors to enter upon the Property to cure such deficiency as reasonably found by the Township to be appropriate and/or necessary, in a manner so as to reasonably minimize any interference with the residential occupancy and use the Property and the cost and expense of such curative actions, including the cost of notices by the Township and reasonable legal, planning, and engineering fees and costs incurred by the Township shall be paid by the Developer. Such amount shall constitute a lien on the Property and the Township may require such costs and expenses to be paid prior to the commencement of work. If such costs and expenses have not been paid within sixty (60) days of a billing to the Developer, all unpaid amounts may be (a) placed on a delinquent tax roll of the Township as to the Property and shall accrue interest and penalties and shall be collected as and shall be deemed delinquent real property taxes in

the discretion of the Township; or (b) assessed against the Developer and collected as special assessment on the next annual Township tax roll; or (c) collected by use of the applicable provisions of Michigan law providing for foreclosure by advertisement, the Owner having specifically granted the Township the required power of sale to do so; or (d) collected by suit against Developer. If suit is initiated, the Developer shall pay all of the Township's reasonable legal fees and costs. The selection of remedy shall be at the sole option of the Township, and election of one remedy shall not waive the use of any other remedy.

## ARTICLE VII

### MISCELLANEOUS PROVISIONS

- 7.1. **Governing Law.** This Agreement shall be governed by and construed in accordance with the laws of the State of Michigan.
- 7.2. **Counterparts.** This Agreement may be executed in multiple counterparts, each of which shall be deemed an original and all of which shall constitute an agreement. The signature of any party to any counterpart shall be deemed to be a signature to, and may be appended to, any other counterpart.
- 7.3. **Successors and Assigns.** The terms, provisions and conditions of this Agreement are and shall be deemed to be of benefit to the Property and shall run with and bind the Property, and shall bind and inure to the benefit of the successors and assigns of the parties to this Agreement.
- 7.4. **Amendment.** This Agreement may only be modified by written agreement of the Township and Developer or any successor in title who assumes Developer's rights and obligations hereunder.
- 7.5. **Authority.** This Agreement has been duly authorized by all necessary action of Developer and the Township, through the approval of the members of the Developer and the Township Board at a meeting in accordance with the laws of the State of Michigan, and the ordinances of the Township. By the execution of this Agreement, the parties each warrant that they have the authority to execute this Agreement and bind the Property in its respective entities to its terms and conditions.
- 7.6. **Partial Invalidity.** Invalidation of any of the provisions contained in this Agreement or the application thereof to any persons by judgment or court order shall in no way affect any of the other provisions hereof or the application thereof to any other person and the same shall remain in full force and effect.
- 7.7. **No Partnership.** None of the terms or provisions contained in this Agreement shall be deemed to create a partnership or joint venture between Developer and the Township.
- 7.8. **Incorporation of Documents.** The recitals contained in this Agreement, the introductory paragraph, and all exhibits attached to this Agreement and referred to herein shall for all

purposes be deemed to be incorporated in this Agreement by this reference and made a part of this Agreement.

- 7.9. **Integration Clause.** This Agreement is intended as the complete integration of all understandings between the parties related to the subject matter herein. No prior contemporaneous addition, deletion, or other amendment shall have any force or effect whatsoever, unless referenced in this Agreement.
- 7.10. **Recording.** This Agreement shall be executed by the parties and recorded by the Township in the office of the Oakland County Register of Deeds. All recording fees shall be paid by the Developer.
- 7.11. **Waiver.** Failure of either party to insist upon strict performance of any of the terms, conditions or covenants hereof shall not be deemed to be a waiver of any rights or remedies that such party may have hereunder, at law or in equity, and shall not be deemed a waiver of any subsequent breach or default under this Agreement. No waiver by either party of any default under this Agreement shall be affecting or binding unless made in writing and no such waiver shall be implied from any omission by the party to take an action with respect to the default. No express written waiver of any default shall affect any other default or cover any other period of time, and one or more written waivers of any default shall not be deemed to be a waiver of any subsequent default in performance of the same or any other term or provision contained in this Agreement.
- 7.12. **Violations.** Violations of the provisions of this Agreement shall be deemed to be violations of the Township Zoning Ordinance and shall entitle the Township to all rights and remedies provided by the Zoning Ordinance or any other applicable law for such violation.
- 7.13. **Acknowledgments.** The parties negotiated the terms of the Agreement and the parties agree that its terms, conditions and requirements are lawful and consistent with the intent and provisions of local ordinances, state and federal law. Developer has offered and agreed to proceed with the undertakings and obligations as set forth in this Agreement in order to protect the public health, safety, and welfare and provide material advantages and development options for Developer, all of which undertakings and obligations the parties agree are necessary in order to ensure public health, safety, and welfare, to ensure compatibility with adjacent uses of land, to promote use of the Property in a socially, environmentally, and economically desirable manner, and to achieve other reasonable and legitimate objectives of the parties, as authorized under applicable Township ordinances and the Michigan Zoning Enabling Act, MCL 125.3101, *et seq.*, as amended. It is also agreed and acknowledged that the terms, conditions, obligations, and requirements of this Agreement are dearly and substantially related to the burdens to be created by the development and use of the Property under the approved PD, and are, without exception, clearly and substantially related to the Township's legitimate interests in protecting the public health, safety and general welfare. Furthermore, the parties fully accept and agree to the final terms, conditions, requirements and obligations of the Agreement and shall not be permitted in the future to claim that the effect of the Agreement results in an unreasonable limitation upon uses of all or any portion of the Property, or claim that enforcement of the



Agreement causes an inverse condemnation, other condemnation or taking of all or any portion of the Property.

*(Signatures and notarization are contained on the following pages)*

JMF UNION LAKE, LLC, a Michigan limited liability company

By: \_\_\_\_\_

Printed: Michael S. Furnari

Its: Sole Member and Manager

Dated:

STATE OF MICHIGAN            )  
  ) SS  
COUNTY OF OAKLAND        )

The foregoing Planned Development Agreement was acknowledged before me this \_\_\_\_ day of \_\_\_\_\_, 2024 by Michael S. Furnari, the Sole Member and Manager of JMF Union Lake, LLC, a Michigan limited liability company, on behalf of said company.

\_\_\_\_\_  
Notary Public  
Notary Public, State of Michigan, County of \_  
Acting in the County of \_  
My Commission Expires: \_

CHARTER TOWNSHIP OF WHITE LAKE, a  
Michigan Charter Township

By: \_\_\_\_\_

Printed: \_\_\_\_\_

Its: \_\_\_\_\_

Dated: \_\_\_\_\_

STATE OF MICHIGAN            )  
  ) SS  
COUNTY OF OAKLAND        )

The foregoing Planned Development Agreement was acknowledged before me this \_\_\_\_ day of \_\_\_\_\_, 2024 by \_\_\_\_\_, the \_\_\_\_\_ of Charter Township of White Lake, a Michigan Charter Township, on behalf of said Charter Township.

\_\_\_\_\_  
Notary Public  
Notary Public, State of Michigan, County of \_\_\_\_\_  
Acting in the County of \_\_\_\_\_  
My Commission Expires: \_\_\_\_

Prepared by:

Alan M. Greene, Esq.  
Dykema Gossett PLLC  
39577 Woodward Avenue, Suite 300  
Bloomfield Hills, MI 48304

When recorded, return to:

White Lake Township  
c/o Township Clerk  
7525 Highland Road  
White Lake, MI 48383

# **EXHIBIT A**

(Legal Description)

**EXHIBIT B**

(Final Site Plan)