

**AGENDA**  
**PLANNING COMMISSION PUBLIC HEARING/REGULAR MEETING**  
**CITY OF FARMINGTON HILLS**  
**APRIL 16, 2026 @ 7:30 P.M.**  
**FARMINGTON HILLS CITY HALL – CITY COUNCIL CHAMBER**  
**31555 W. ELEVEN MILE ROAD, FARMINGTON HILLS, MICHIGAN 48336**  
Cable TV: Spectrum – Channel 203; AT&T – Channel 99  
YouTube Channel: <https://www.youtube.com/user/FHChannel8>  
[www.fhgov.com](http://www.fhgov.com) (248) 871-2540

1. Call Meeting to Order
2. Roll Call
3. Approval of Agenda

4. Public Hearing

**A. CLUSTER SITE PLAN 59-4-2019**

LOCATION: 29150 Farmington Rd  
PARCEL I.D.: 22-23-10-101-002  
PROPOSAL: One-family cluster option subdivision (10 units) in RA-2, One-Family Residential District  
ACTION REQUESTED: Recommend to City Council  
APPLICANT: Cedar of Farmington, LLC (Ayman Rida)  
OWNER: Cedar of Farmington, LLC

**B. SPECIAL APPROVAL SA 51-3-2026**

LOCATION: 32130 Bonnet Hill Road  
PARCEL I.D.: 22-23-10-405-006  
PROPOSAL: Temporary staging area for Kendallwood 3 Subdivision Water Main Replacement Project within the RA-2: One Family Residential District  
ACTION REQUESTED: Special Land Use Approval  
APPLICANT: Murphy Pipeline Contractors  
OWNER: Farmington Public Schools

5. Approval of Minutes [March 19, 2026](#)

6. Public Comment
7. Commissioner/Staff Comments
8. Adjournment

Respectfully Submitted,

Tanji Grant, Planning Commission Secretary

Staff Contact:

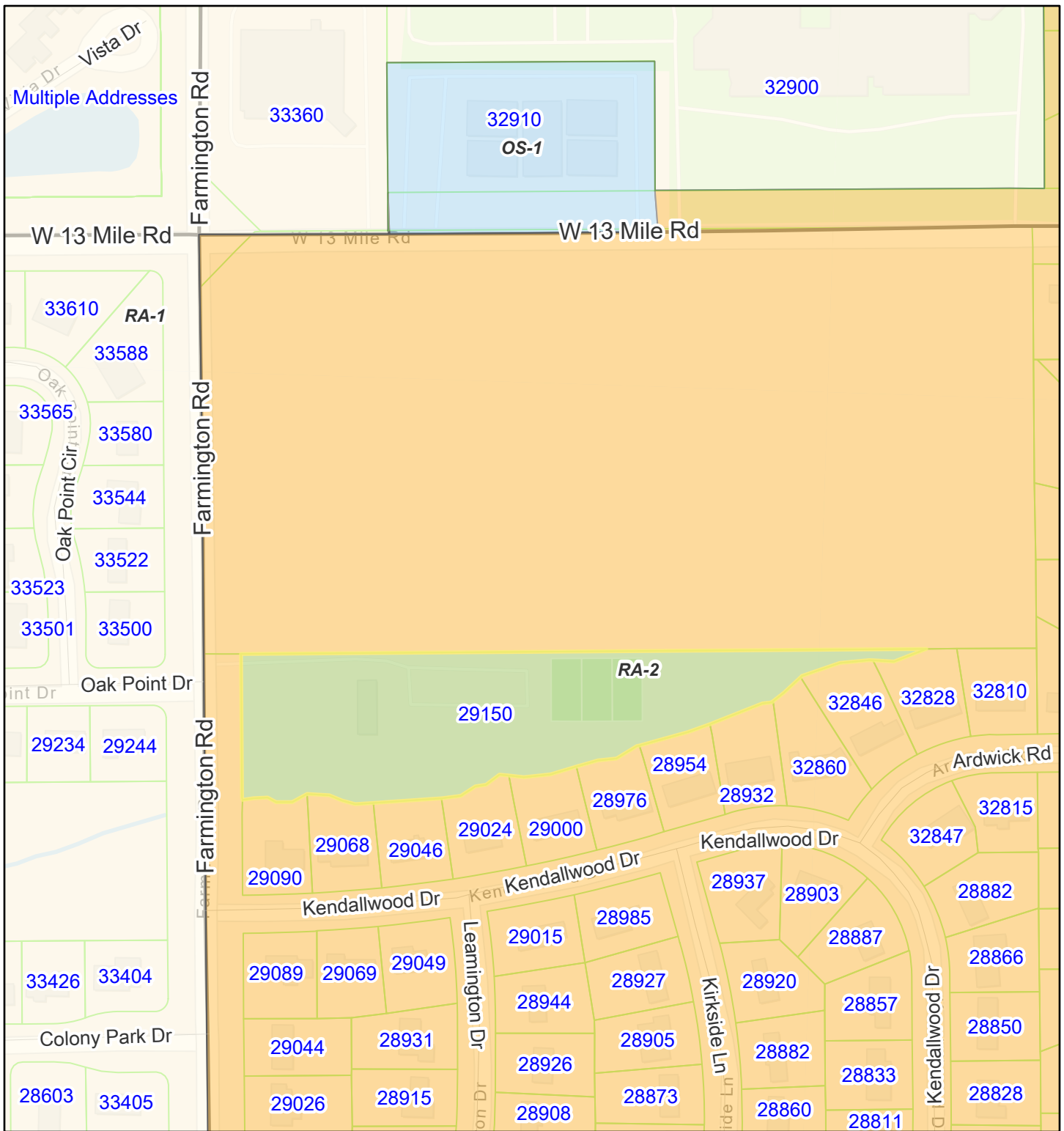
Diane Mulville-Friel  
City Planner  
Planning and Community Development Department  
(248) 871-2540  
[dmulville-friel@fhgov.com](mailto:dmulville-friel@fhgov.com)

NOTE: Anyone planning to attend the meeting who has need of special assistance under the Americans with Disabilities Act (ADA) is asked to contact the City Clerk's Office at (248) 871-2410 at least two (2) business days prior to the meeting, wherein arrangements/accommodations will be made. Thank you.

## **CLUSTER SITE PLAN 59-4-2019**

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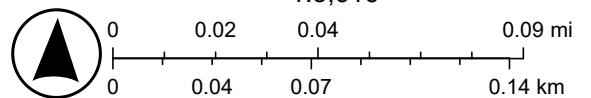
# Current Zoning - 29150 Farmington Rd



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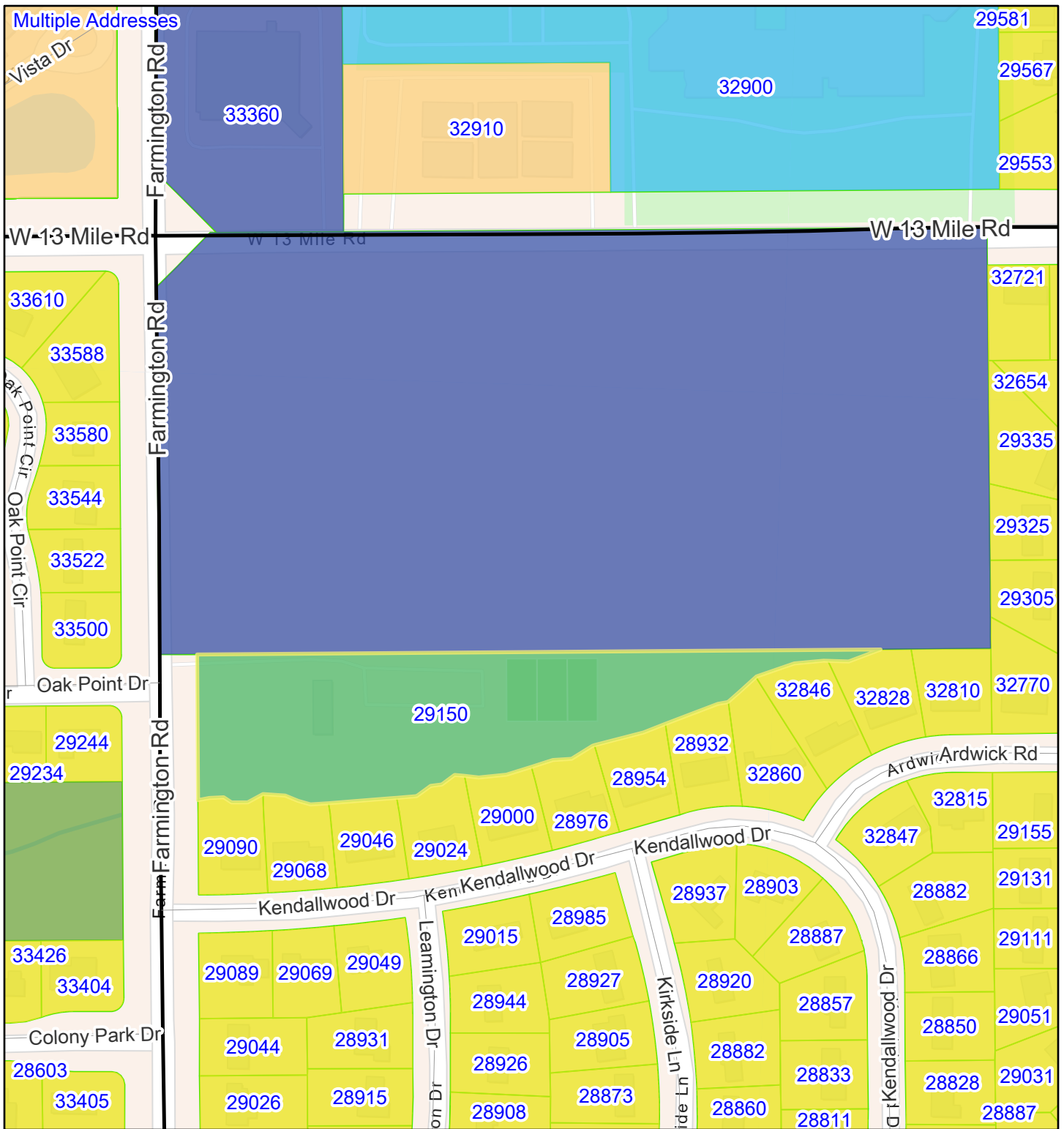
1:3,616

Zoning districts		Tax Parcels	
B-1	FRW-1	MH	RA-1
B-2	FRW-2	OS-1	RA-1A
B-3	FRW-3	OS-2	RA-1B
B-4	GR-1	OS-3	RA-2
ES	IRO	OS-4	RA-2B
	LI-1	P-1	RA-3
			RA-4
			RC-1
			RC-2
			RC-3
			RP-1
			RP-2
			SP-1
			SP-2
			SP-3
			SP-5
			Other
			Tax Parcels



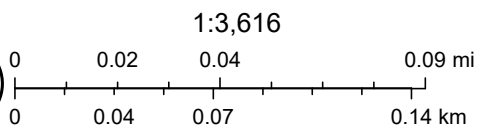
Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

# Future Land Use - 29150 Farmington Rd



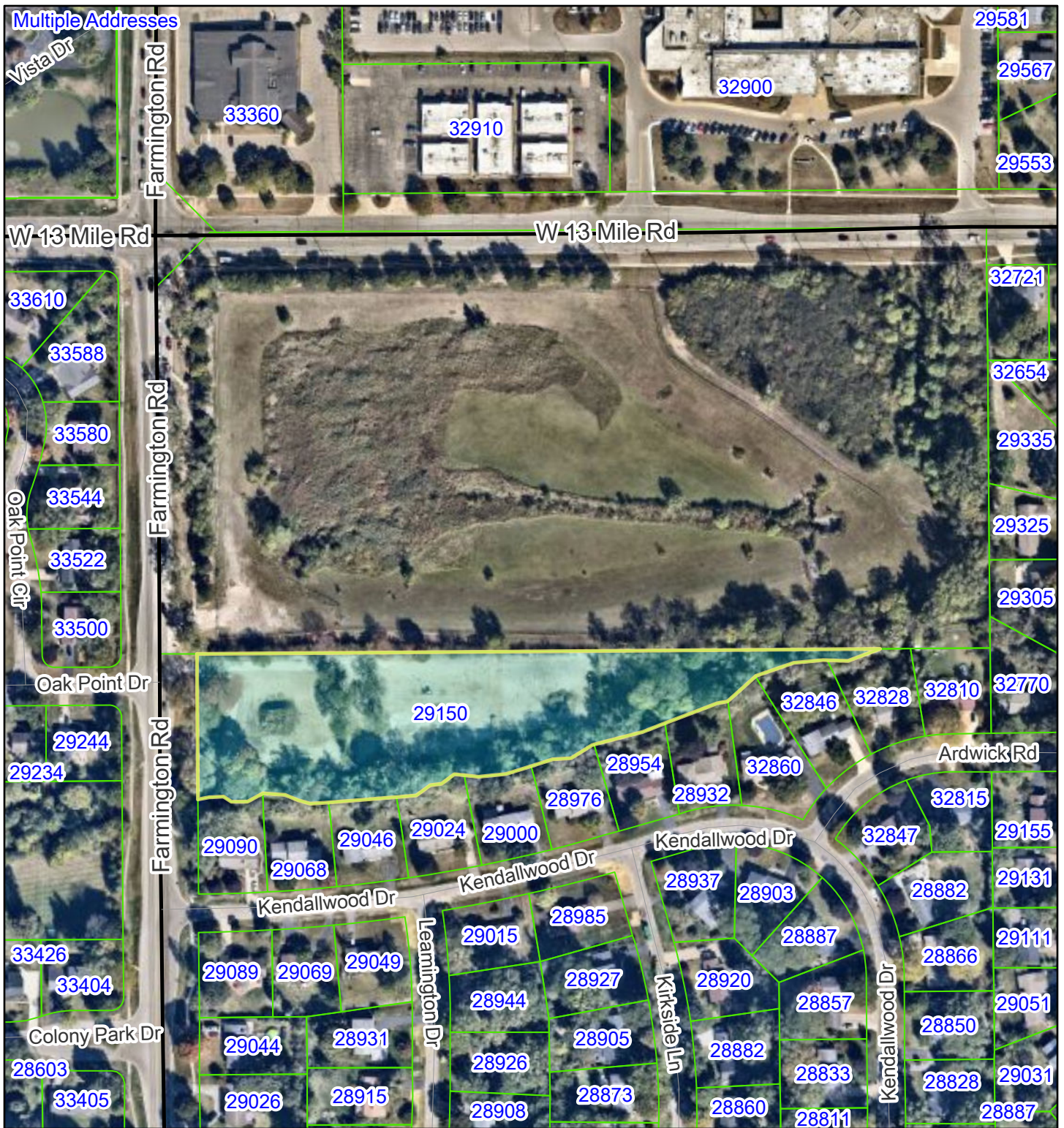
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- |                         |                          |                           |
|-------------------------|--------------------------|---------------------------|
| Master Plan (2024)      | Freeway Redevelopment    | Orchard Lake Rd Corridor  |
| 12 Mile Mixed Use       | Grand River Corridor     | Park                      |
| 14 Mile Mixed Use       | Industrial               | Private Recreation        |
| 8 Mile Industrial       | Industrial-Research      | School                    |
| Commercial              | Institutional            | Single-Family Cluster     |
| Expressway Service      | Large Office             | Single-Family Residential |
| Flex Overlay            | M-5                      | Small Office              |
| Flex Residential        | Multi-Family Residential | Tax Parcels               |
| Flex Residential/Office |                          |                           |



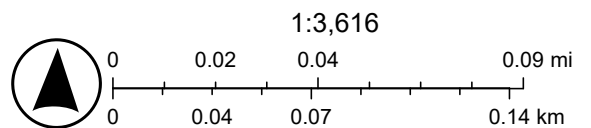
Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

# Location Map - 29150 Farmington Rd



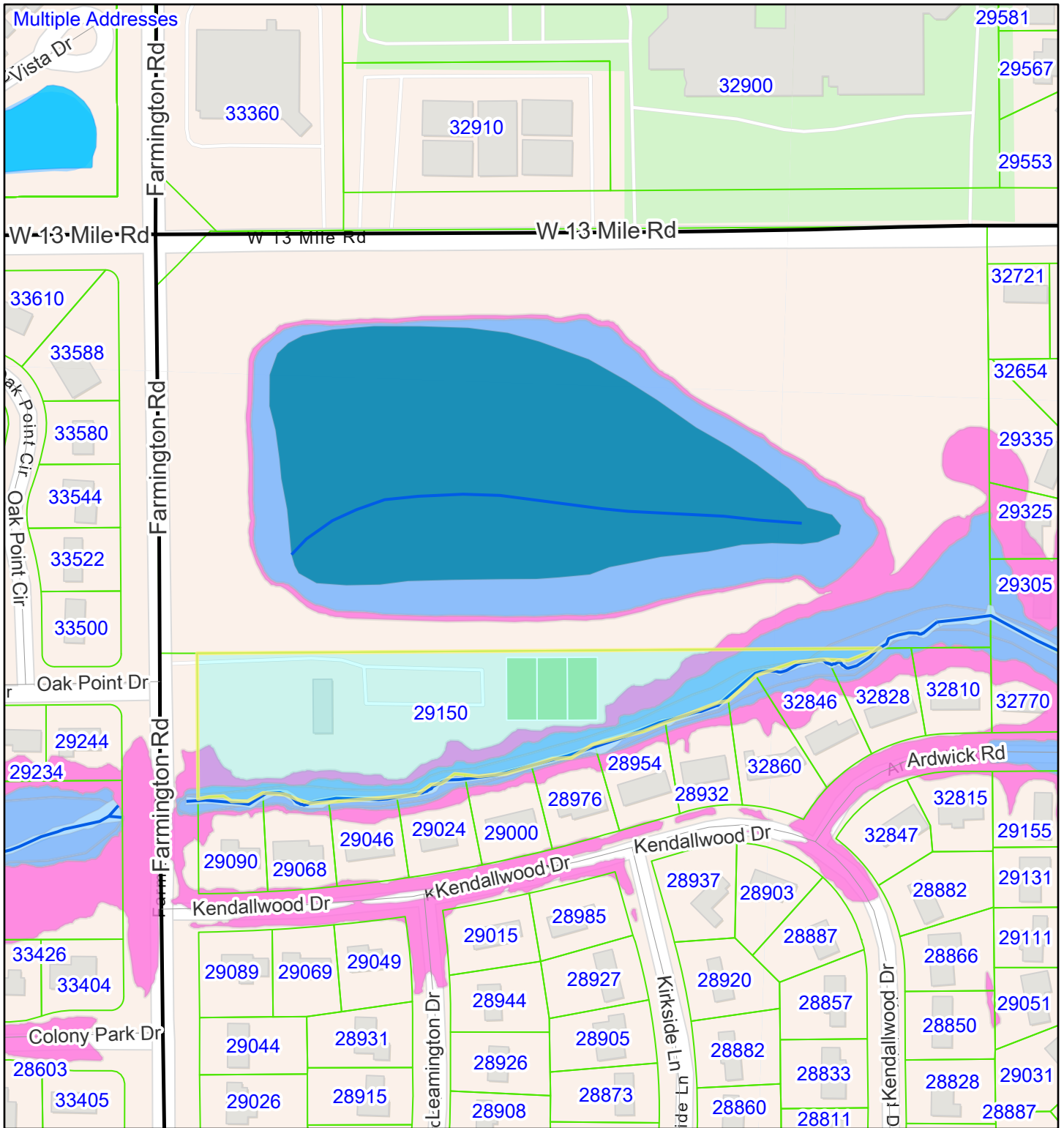
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 Tax Parcels



Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

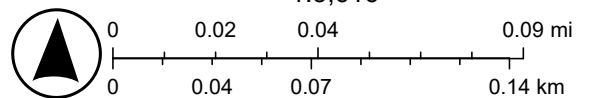
# Natural Features - 29150 Farmington Rd



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1:3,616

- |                 |                |                   |
|-----------------|----------------|-------------------|
| Drain open      | Retention pond | Tax Parcels       |
| Stream-river    | Lake-pond      | Flood Hazard Area |
| Channel         | Swamp-marsh    | A                 |
| Spillway        | Channel        | AE                |
| Drain waterbody | Stream-river   | 500 yr floodplain |
| Detention pond  |                | X                 |



Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community



**Carlisle | Wortman**  
ASSOCIATES, INC.

117 NORTH FIRST STREET SUITE 70 ANN ARBOR, MI 48104 734.662.2200 734.662.1935 FAX

Reviewer	Plan Date	Review Date
GW Review #1	4-10-2019	7-30-2019
CWA Review #2	2-18-2026	3-7-2026

## Cluster Site Plan for The City of Farmington Hills

**Case:** Amended CSP 59-4-2019 (Cluster Qualification 1, 2018)

**Project Name:** Cedars of Farmington

**Site:** 29150 Farmington Rd (Parcel 22-23-10-101-002) 3.83 acres

**Applicant:** Ayman Rida, Cedar of Farmington Road, LLC

**Application Date:** 2/18/2026

**Zoning:** RA-2 One-Family Residential District

We have completed a review of the application to amend a cluster site plan and open space plan and a summary of our findings is below.

### History:

The project was previously known as “McKenzie Green” and proceeded through the City’s normal One-Family Cluster Site and Open Space Plan process beginning in 2018. The last action was taken by City Council in November 11, 2019, when City Council approved a motion directing staff/attorneys to draft the development agreement.

Following that motion, the agreement was circulated between attorneys. City Planner Stec mailed and emailed a copy of the agreement to the applicant Yaldo Construction on April 28, 2020 requesting the applicant review the agreement and once they agreed it would be forwarded to City Council for final approval; however, the applicant never responded and the agreement was never returned to City Council for consideration or approval, and the associated site plan and development agreement were never

Benjamin R. Carlisle, *President* John L. Enos, *Vice President* Douglas J. Lewan, *Principal*  
David Scurto, *Principal* Sally M. Elmiger, *Principal* R. Donald Wortman, *Principal* Craig Strong, *Principal*  
Paul Montagno, *Principal* Megan Masson-Minock, *Principal* Laura Kreps, *Principal*  
Richard K. Carlisle, *Past President/Senior Principal*

finalized. No further action was requested by the applicant after that point, and staff concludes the process likely stalled due to COVID-era interruptions.

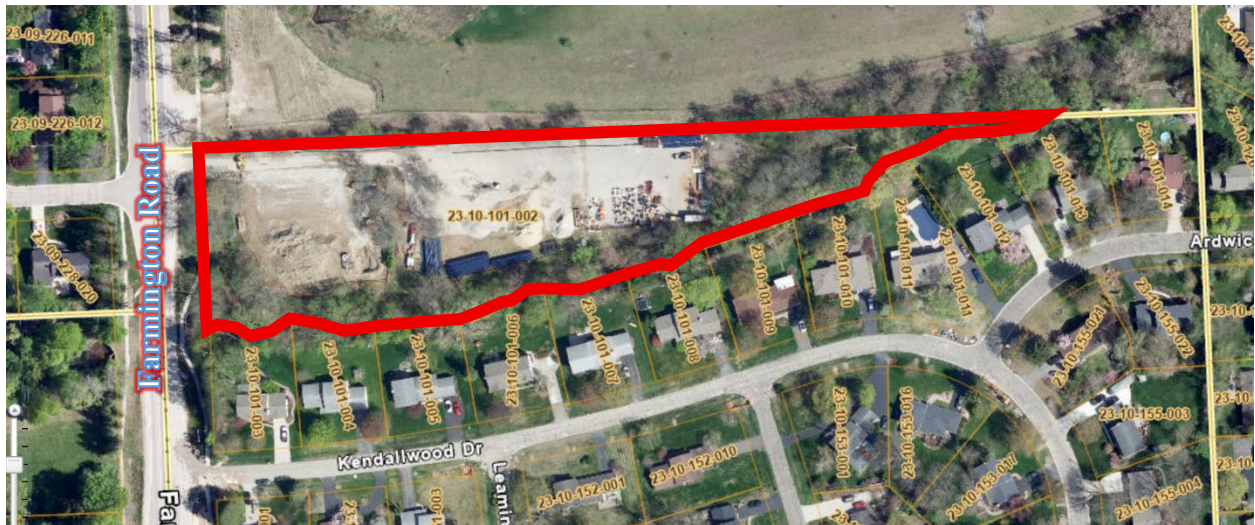
In mid-2025, plans were submitted to Engineering to restart construction activity. During that review, Planning noted that open space and lot configuration/lot sizes differed from the prior approved concept, which would require amendments to the development agreement and/or site plan approvals.

When the project was routed to Planning in early 2026, it was determined that the site plan would need to be updated and the development agreement amended. Staff discovered that no finalized and Council-approved agreement exists for the project. The project was sold to a new owner who was unaware of the project's status. The engineer who submitted plans to Engineering was also not aware that the development agreement had never been approved/executed.

At this time, Engineering plans are ready for Engineering approval, but Planning has outstanding issues related to (1) site plan changes from the prior concept and (2) the absence of an approved development agreement.

To be flexible while ensuring proper legal and planning compliance, staff are proposing to route the project through the public hearing process using the updated site plan in order to finalize both the site plan and the development agreement, rather than requiring the applicant to restart the process at the qualification stage.

**Subject Site:**



**2. Existing site.** The site is the former Kendallwood Swim Club. A pool, clubhouse, tennis courts, and parking lot are no longer present on the site. In early 2025 the site received special approval (SA 51-2-2025) as a staging area for a nearby watermain replacement . It is 3.83 acres (166,876 square feet) and fronts Farmington Rd, just south of 13 Mile Rd.

**3. Adjacent properties.**

Direction	Zoning	Land Use
North	RA-2	Regional stormwater detention basin
South	RA-2	Single Family Homes
East	RA-2	Single Family Homes
West	RA-1	Single Family Homes

**4. Site configuration and access.** The site is accessible from Farmington Road.

**Conceptual Plan**

**1. Summary of Plan.** The applicant proposes 10 cluster lots (a density of 2.61 units per acre), arranged along a short cul-de-sac street. The street, which is proposed to be a private road, is aligned with Oak Point Drive across Farmington Road. Approximately, 1.61 acres of the development (42.0%) is set aside as undisturbed and unprogrammed open space. All proposed units are detached. During the cluster qualification process in July 2018, the Planning Commission cited standards 34- 3.17.2.B.ii., iii, and vi. as conditions for approval with maximum density of 3.1 units per acre.

**2. Permitted Densities (Sec. 34-3.17.3).** The proposed density is 2.61 units per acre. The cluster development qualified under Sec. 34-3.1.17.2.A.ii therefore the maximum density allowed in RA-2 is 3.1 units per acre. The proposed amended site plan meets this standard.

**3. Dimensional Standards.** The cluster option allows the dimensional standards of the district to be waived. This table compares the proposal to district standards.

Standard	Required in RA-2	Proposed
Front Setback	35 ft	25 ft
Side Setback	8 ft / 20 ft total	7.5 ft each / 15 ft total typical
Rear Setback	35 ft	32.20 to 35 ft
Building Height	30 ft	elevations not provided
Min. Lot Size	15,000 sq/ft (avg 16,500 sq/ft)	Smallest 6,447 sq ft (avg 7,511 sq ft)
Min. Lot Width	90 ft	55.20 ft to 73.26 ft

**4. Separation Standards.** Per Section 34-3.17.4.B., “Spacing between groups of attached buildings or between groups of four (4) unattached buildings shall be equal to at least twenty (20) feet in an RA-2 district, measured between the nearest points of adjacent buildings.”

**5. Cluster Standards.** Cluster developments must meet the design standards of subsection 34-3.17.4.

- a. Garages must be set back 20 feet. All lots have a minimum front setback of 25 feet. This standard is met.

- b. The side of a cluster facing a major or secondary thoroughfare must be set back 25 feet. This standard is not met. It is 24.95 ft.
  - c. No building may be placed within 25 feet of any property line. This standard is not met. Unit 1 is 24.95 ft from the west property line.
  - d. 15% of the development must be set aside as open space. This standard is met with .47 acres designated as open space and 1.14 acres designated as undisturbed vegetation, resulting in 42% open space.
  - e. The buildable area of Lot 4 is impacted by encroachment of the 100 year (1% chance) flood hazard area. This should be addressed.
  - f. Floor plans and elevations of typical units have not been provided. These are required per Sec. 3.17.5.C.ii.a.
- 6. Lighting.** No general lighting of the site or street appears to be proposed. Applicant to confirm no lighting is proposed.
- 7. Cul-de-sac.** Per Section 27-57 of the Subdivision Ordinance, the “maximum length for residential cul-de-sac streets shall generally be six hundred (600) feet.” The length of the cul de sac street is less than 600 feet.
- 8. Superimposed aerial.** During cluster qualification, the Planning Commission cited standards 34-3.17.2.B.ii., iii, and vi. Per Section 34-3.17.5.C.iii, parcels qualifying under item vi are required to submit a sheet superimposing the plan on an aerial image. A superimposed aerial image has been provided.

**9. Tree Removal (5.18)**

Based on 2022 Tree Survey:

1. **Landmark Trees.** 4 landmark trees with a total dbh of 92 inches are proposed to be removed, requiring 23 inches of replacements.
2. **Other Regulated Trees.** 10 other regulated trees are proposed to be removed, requiring 10 replacements.
3. **Total Replacements Required.** 53 total inches of replacement trees are required. 53 total inches of replacement trees are provided.

The Landscape Tree Survey and Replacement calculations are dated from 2022. A new tree survey should be completed and updated calculations should be provided. An accurate tree survey is required per Sec. 3.17.5.C.ii.b.

**10. Landscaping**

1. **Street Trees.** 21 street trees are proposed. Street tree requirements are met.
2. **Buffering / Transition Area.** A buffer is required adjacent to one-family districts. Per the Zoning Ordinance, “in order to provide an orderly transition of density, where the parcel proposed for use as a cluster development abuts a one-family residential district, the planning commission shall determine that the abutting one-family district is effectively buffered by means of one of the following within the cluster development:
  - a. Single-family lots subject to the standards of Section 34-3.1 of this chapter;

- b. Detached buildings with setbacks as required by Section 34-3.1 of this chapter for the applicable residential district;
- c. Open or recreation space;
- d. Changes in topography which provide an effective buffer;
- e. A major or secondary thoroughfare;
- f. Some other similar means of providing a transition.

A buffer is required where the site abuts one-family residential districts. The property to the north is a regional detention basin / flood hazard area and does not require a buffer.

Along the southern property line, Minnow Pond Creek and existing vegetation provide a natural separation to the single-family neighborhood to the south. The applicant proposes a combination of open space and landscaping to satisfy the required buffer. Any buffer provided must comply with Section 34.5.14.6.

While the plan includes a proposed open space area, that area is not directly adjacent to the existing subdivision to the south. The cluster development is generally buffered on all sides by a combination of proposed plantings, existing vegetation, and Minnow Pond Creek along the southern edge. However, the southern “buffer” between the cluster development and the neighborhood to the south is shown largely within individual lots. Flood hazard areas are also located within lots.

Recent discussions among City staff have identified a recurring concern with buffers located within private lots: over time, trees and vegetation are often removed or altered by individual property owners, compromising the intended buffering function. Staff and City officials have expressed concern with ensuring the long-term integrity of the southern buffer so the spirit and intent of the ordinance is maintained. This may involve extending open space along Minnow Pond Creek to keep some or all of the buffer out of private lots, or otherwise revising the plan to achieve an equivalent outcome.

Potential options for Planning Commission discussion with the applicant include:

- Shift the road along the northern property line to increase open space/buffer area along Minnow Pond Creek and the southern property line; and/or
- Delineate limits of grading and tree removal to demonstrate that Minnow Pond Creek and the existing tree line can be preserved as a functional buffer. Depending on the extent of grading and tree removal, additional plantings may be required to meet Section 34.5.14.6.

## Summary

Planning Commission is asked to discuss the issue of buffering and transition along the southern property line, specifically:

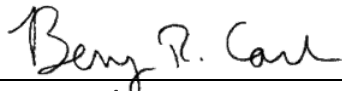
1. Shift the road along the northern property line to increase open space/buffer area along Minnow Pond Creek and the southern property line; and/or
2. Delineate limits of grading and tree removal to demonstrate that Minnow Pond Creek and the existing tree line can be preserved as a functional buffer. Depending on the extent of grading and tree removal, additional plantings may be required to meet Section 34.5.14.6.

If the Planning Commission does approve the Cluster Plan, we recommend that the following items be addressed:

- Provide updated tree survey and tree mitigation and replacement calculations
- Alter plans based on discussion of the Planning Commission
- Provide typical floor plans and elevations
- Revise plans to meet the design standards of subsection 34-3.17.4.

Based on the discussion with the applicant, these items may be reviewed and approved administratively.

Sincerely,



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**CARLISLE/WORTMAN ASSOC., INC.**  
**Benjamin R. Carlisle, AICP, LEED-AP**  
**President**



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**CARLISLE/WORTMAN ASSOC., INC.**  
**Mike Auerbach, AICP**  
**Senior Associate**



DEPARTMENT OF PUBLIC SERVICES  
JACOB RUSHLOW, P.E., DIRECTOR

INTEROFFICE CORRESPONDENCE

**DATE:** March 3, 2026

**TO:** Nora Brock, Secretary to the Director of Planning and Community Development

**FROM:** Mirandi Alexander, Civil Engineer II

**SUBJECT:** Cedars of Farmington – Revised Cluster Site Plan  
29150 Farmington Road  
#22-23-10-101-002

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This office has performed a preliminary review of the above referenced site plan submitted to the Planning Department on February 23, 2026. The engineering has no objection to approving the site plan as proposed.



# FIRE

## FARMINGTON HILLS



INTEROFFICE CORRESPONDENCE

Date: March 2, 2026  
To: Planning Commission  
From: Jason Baloga, Fire Marshal  
Subject: 2<sup>nd</sup> Revised CSP 59-4-2019 (Farmington-13 Mile)

The Fire Department has no objection to approval.

A handwritten signature in blue ink, appearing to read 'Jason Baloga'.

Jason Baloga, Fire Marshal

JB/ss

**PROPERTY DESCRIPTION:**

OUTLOT D, KENDALLWOOD NO 4, CITY OF FARMINGTON HILLS, OAKLAND COUNTY, MICHIGAN ACCORDING TO THE PLAT THEREOF AS RECORDED IN LIBER 96, PAGES 23 & 24, OAKLAND COUNTY RECORDS.

**CITY OF FARMINGTON HILLS STANDARD NOTES:**

NOTIFY THE CITY OF FARMINGTON HILLS ENGINEERING DIVISION 248-871-2560 A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION.

ALL CONSTRUCTION MUST BE CONFORMING TO THE CURRENT STANDARDS AND SPECIFICATIONS ADOPTED BY THE CITY OF FARMINGTON HILLS.

UTILITIES ARE TO BE UNDERGROUND.

CALL MISS DIG (1-800-647-7344 / 1-800-MISS DIG) A MINIMUM OF 72 HOURS PRIOR TO THE START OF CONSTRUCTION.

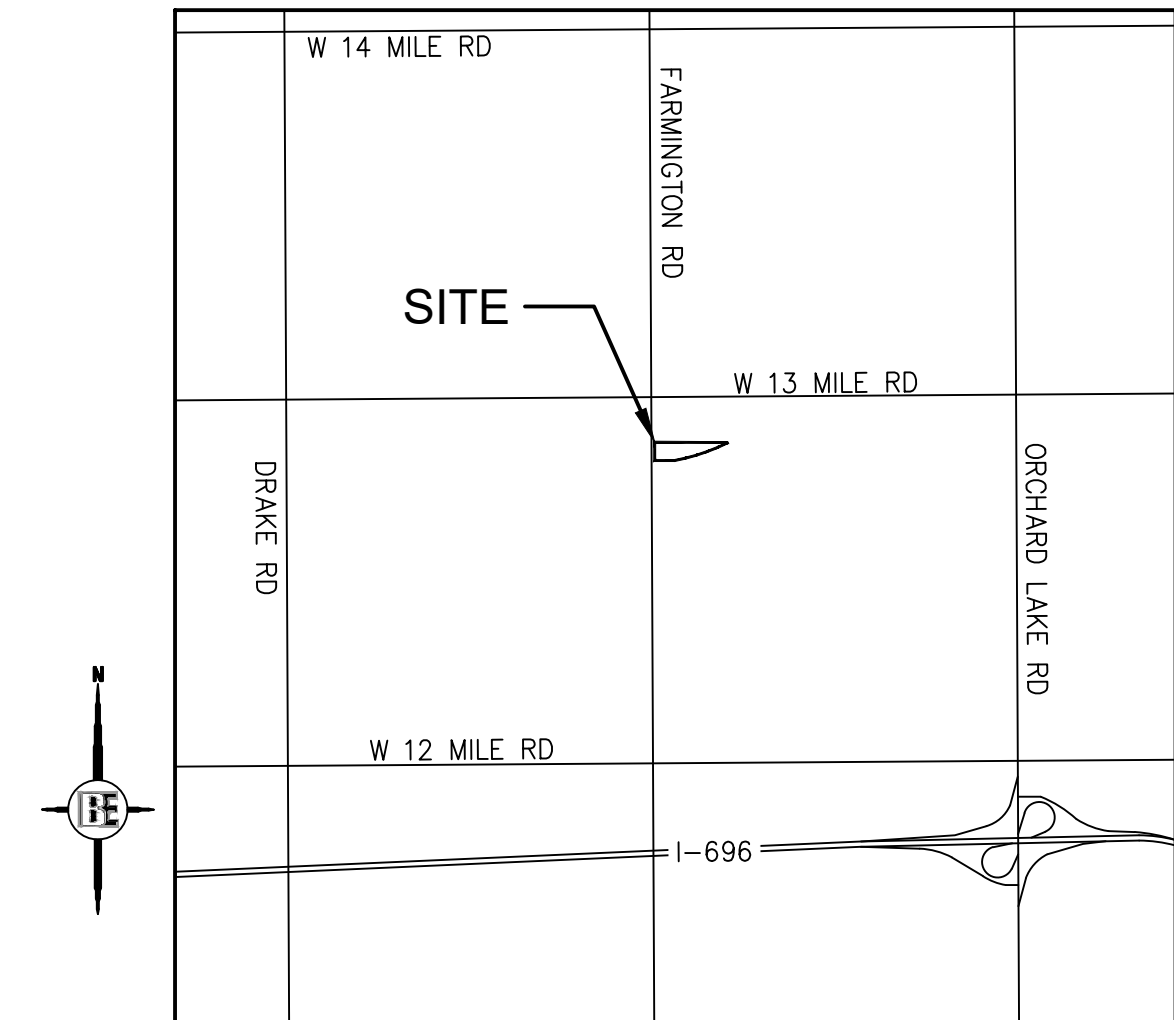
ALL SOIL EROSION AND SILT MUST BE CONTROLLED AND CONTAINED ON SITE.

ALL EXCAVATION UNDER OR WITHIN 3 FEET OF THE PUBLIC PAVEMENT, EXISTING OR PROPOSES, SHALL BE BACKFILLED AND COMPACTED WITH SAND (CLASS II MDOT).

THE CONTRACTOR IS RESPONSIBLE FOR ALL DAMAGE TO EXISTING UTILITIES.

PRIOR TO THE ISSUANCE OF AN OCCUPANCY PERMIT, ENGINEERING SITE INSPECTION IS REQUIRED.

# REVISED SITE PLAN/CONSTRUCTION PLAN FOR CEDARS OF FARMINGTON RESIDENTIAL DEVELOPMENT PART OF NW QUARTER, SECTION 10, T1N, R9E CITY OF FARMINGTON HILLS, OAKLAND COUNTY, MICHIGAN 48334

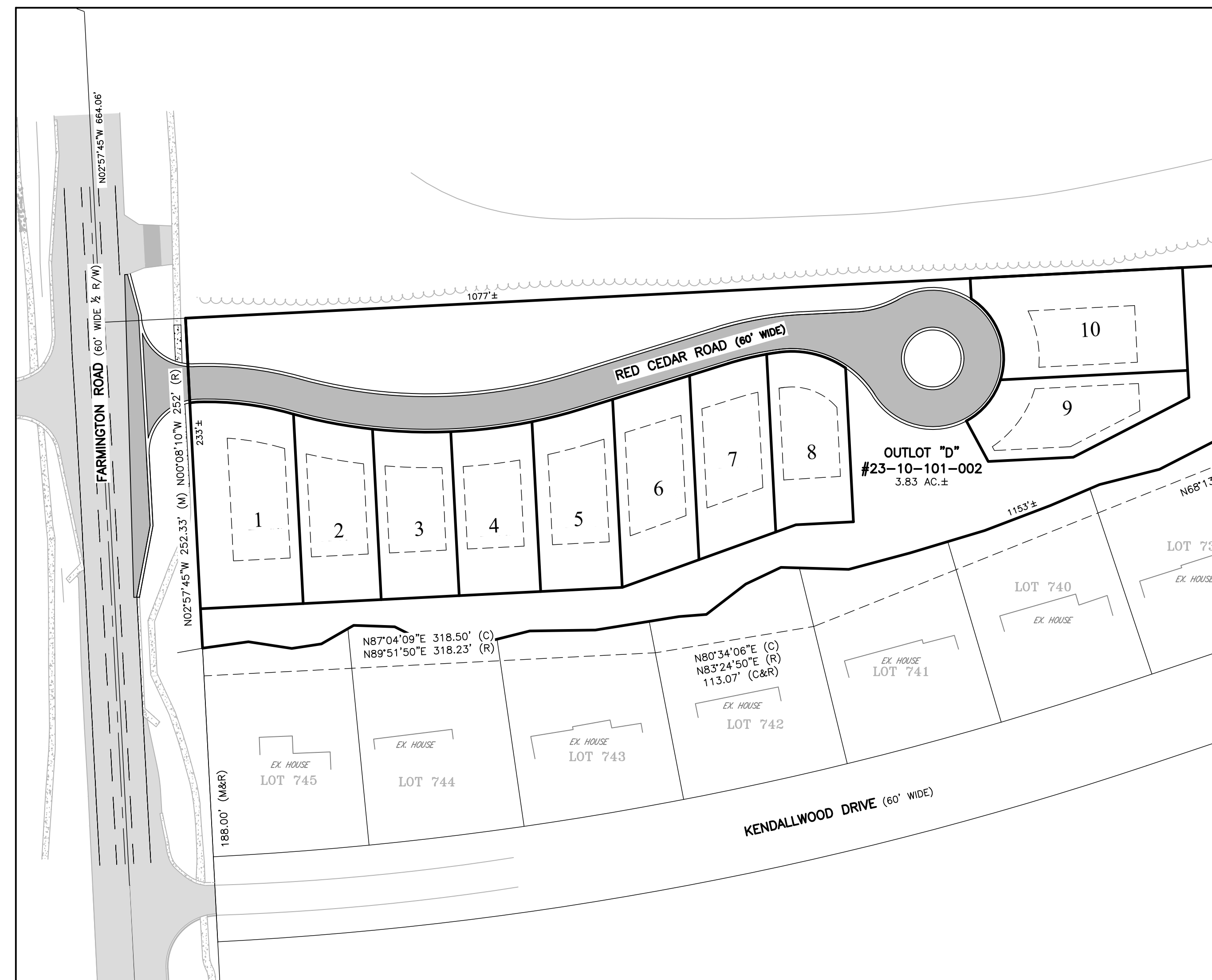


**LOCATION MAP**  
NO SCALE

ESTIMATED UTILITY QUANTITIES		
<b>SANITARY SEWER</b>		
4" Ø MANHOLE	4	EA
5" Ø MANHOLE	1	EA
8" PVC SDR 26	742	LF
6" PVC SDR 23.5	775	LF
<b>STORM SEWER</b>		
2' Ø REAR YARD CATCH BASIN W/ 2' SUMP	3	EA
4' Ø REAR YARD CATCH BASIN W/ 2' SUMP	2	EA
4' Ø CATCH BASIN	4	EA
6' Ø MANHOLE	1	EA
4" ADS N-12 SUMP LEAD PIPE	121	LF
12" ADS HP PIPE	921	LF
15" ADS HP PIPE	165	LF
15" FLARED END SECTION	1	EA
<b>WATERMAIN</b>		
STANDARD HYDRANT ASSEMBLY	3	EA
6" HYDRANT VALVE	3	EA
8"x6"x8" TEE	2	EA
8" BEND	4	EA
8"x6" REDUCER	1	EA
8" CL. 54 DI WATERMAIN	667	LF
6" CL. 54 DI WATERMAIN	16	LF
1" TYPE 'K' COPPER WATER SERVICE LEAD	185	LF
1" CURB STOP	10	EA

Land Use Summary		
Characteristic	Existing Conditions	Proposed Conditions
<b>Total Drainage Area (ac)</b>	2.24	2.24
<b>Impervious Area (ac)</b>	1.07	1.09
<b>Total Pervious Area (ac)</b>	1.17	1.15
<b>Pervious Area Breakdown by Cover Type</b>		
<b>Meadow/fallow/natural areas (non-cultivated)</b>	1.17ac	0.58ac
<b>Predominant NRCS Soil Type (A, B, C, or D)</b>	Soil Type A	Soil Type A
<b>Improved areas (turf grass, landscape, row crops)</b>	-	0.57ac
<b>Predominant NRCS Soil Type (A, B, C, or D)</b>	Soil Type A	Soil Type A
<b>Wooded Areas</b>		
<b>Predominant NRCS Soil Type (A, B, C, or D)</b>	Soil Type A	Soil Type A
CPVC Volume Calculated (cubic feet)		6025
CPVC Volume Provided (cubic feet)		0
CPRC Volume Provided (cubic feet)		8506

The Professional Engineer who signs and seals this site plan certifies that the values in this table reflect the WRC stormwater calculations required for this development and that geotechnical investigations were performed that provide conclusive documentation that demonstrates whether infiltration (i.e., CPVC Volume Control) is practicable.



**OVERALL SITE MAP**  
NO SCALE

PERMITS & APPROVALS		
AGENCY	DATE SUBMITTED	DATE APPROVED
• CITY ENGINEERING APPROVAL	04/23/25	-
• CITY PLANNING COMMISSION	02/18/26	-
• CITY - SESC	04/23/25	-
• OCWRC	04/23/25	-
• EGLE - ACT 399	01/29/26	-
• EGLE - PART 41	01/12/26	-
• EGLE - WETLAND	-	-
• GLWA	-	-

SHEET INDEX	
SHEET NO.	DESCRIPTION
1	COVER SHEET
2	GENERAL NOTES & LEGEND
3	EXISTING CONDITIONS & DEMOLITION PLAN
4	TREE SURVEY PLAN (PER NAGY & ASSOCIATES)
4A	TREE SURVEY SUPERIMPOSED ON SITE PLAN (PER NAGY & ASSOCIATES)
5	SITE PLAN
6	SITE AERIAL PLAN
7	GRADING & DRAINAGE PLAN
8	UTILITY PLAN
9	TRAFFIC CONTROL PLAN
10	LANDSCAPE PLAN & DETAILS
11	SOIL EROSION & SEDIMENTATION CONTROL PLAN
12	STORMWATER PROFILE
13	SANITARY SEWER PROFILE
14	WATERMAIN PROFILE
PLANS BY OTHERS (CITY & OCWRC DETAILS)	
1 OF 1	CITY OF FARMINGTON HILLS GENERAL DETAILS
1 OF 1	CITY OF FARMINGTON HILLS CONCRETE DETAILS
1 OF 1	CITY OF FARMINGTON HILLS STORM DETAILS
1 OF 1	CITY OF FARMINGTON HILLS SESC DETAILS
1 OF 1	OCWRC SESC DETAILS
1 OF 2	OCWRC SANITARY SEWER DETAILS
2 OF 2	OCWRC SANITARY SEWER DETAILS
1 OF 7	OCWRC WATERMAIN HYDRANT DETAILS
2 OF 7	OCWRC WATERMAIN GATE WELL DETAILS
3 OF 7	OCWRC WATERMAIN DUCTILE IRON DETAILS
4 OF 7	OCWRC WATERMAIN CROSSING DETAILS

PREPARED FOR:

CEDAR OF FARMINGTON ROAD, LLC  
1660 N. TELEGRAPH RD.  
DEARBORN, MI 48128  
AYMAN RIDA  
(888) 897.9792  
arida@netcoatm.com

PREPARED BY:

**BEBOSS**  
Engineering  
Engineers Surveyors Planners Landscape Architects  
3121 E. GRAND RIVER AVE.  
HOWELL, MI. 48843  
517.546.4836 FAX 517.548.1670  
CONTACT: JARED PRATHER  
EMAIL: jaredp@bosseng.com



**INDEMNIFICATION STATEMENT**

THE CONTRACTOR SHALL HOLD HARMLESS THE DESIGN PROFESSIONAL, MUNICIPALITY, COUNTY, STATE AND ALL OF ITS SUB CONSULTANTS, PUBLIC AND PRIVATE UTILITY COMPANIES, AND LANDOWNERS FOR DAMAGES TO INDIVIDUALS AND PROPERTY, REAL OR OTHERWISE, DUE TO THE OPERATIONS OF THE CONTRACTOR AND/OR THEIR SUBCONTRACTORS.

8	JP	DH	REVISION PER CITY RESUBMITTAL	02/18/26
7	JP	DH	REVISION PER EGLE COMMENTS	02/09/26
6	JP	DH	REVISION PER EGLE COMMENTS	02/02/26
5	JP	DH	REVISION PER CITY REVIEW	12/05/25
4	JP	DH	REVISION PER OCWRC & CITY REVIEW	10/17/25
3	JP	DH	REVISION PER FHFD REVIEW	08/27/25
2	JP	BL	REVISION PER CITY REVIEW	08/07/25
1	JP	DH	REVISION PER OCWRC & CITY REVIEW	07/22/25
NO	BY	CK	REVISION	DATE

**1**

**GENERAL NOTES**

1. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL REQUIRED TOWNSHIP, COUNTY, AND STATE OF MICHIGAN PERMITS.
2. A GRADING PERMIT FOR SOIL EROSION--SEDIMENTATION CONTROL SHALL BE OBTAINED FROM THE GOVERNING AGENCY PRIOR TO THE START OF CONSTRUCTION.
3. IF DUST PROBLEM OCCURS DURING CONSTRUCTION, CONTROL WILL BE PROVIDED BY AN APPLICATION OF WATER, EITHER BY SPRINKLER OR TANK TRUCK.
4. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH LOCAL MUNICIPAL STANDARDS AND SPECIFICATIONS.
5. PAVED SURFACES, WALKWAYS, SIGNS, LIGHTING AND OTHER STRUCTURES SHALL BE MAINTAINED IN A SAFE, ATTRACTIVE CONDITION AS ORIGINALLY DESIGNED AND CONSTRUCTED.
6. ALL BARRIER-FREE FEATURES SHALL BE CONSTRUCTED TO MEET ALL LOCAL, STATE AND A.D.A. REQUIREMENTS. WHERE EXISTING CONDITIONS AND/OR THE REQUIREMENTS OF THE PLANS WILL RESULT IN FINISHED CONDITIONS THAT DO NOT MEET ADA REQUIREMENTS, THE CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER PRIOR TO WORK COMMENCING.
7. ANY DISCREPANCY IN THIS PLAN AND ACTUAL FIELD CONDITIONS SHALL BE REPORTED TO THE DESIGN ENGINEER PRIOR TO THE START OF CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL SETBACKS, EASEMENTS AND DIMENSIONS SHOWN HEREON PRIOR TO BEGINNING CONSTRUCTION.
8. THE CONTRACTOR SHALL CONTACT ALL OWNERS OF EASEMENTS, UTILITIES AND RIGHT-OF-WAY, PUBLIC OR PRIVATE, PRIOR TO THE START OF CONSTRUCTION.
9. THE CONTRACTOR SHALL COORDINATE WITH ALL OWNERS TO DETERMINE THE LOCATION OF EXISTING LANDSCAPING, IRRIGATION LINES & PRIVATE UTILITY LINES. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO EXISTING LANDSCAPING, IRRIGATION LINES, AND PRIVATE UTILITY LINES.
10. THE CONTRACTOR SHALL REMOVE ALL TRASH AND DEBRIS FROM THE SITE UPON COMPLETION OF THE PROJECT.
11. THE CONTRACTOR SHALL MAINTAIN THE SITE IN A MANNER SO THAT WORKMEN AND PUBLIC SHALL BE PROTECTED FROM INJURY, AND ADJOINING PROPERTY PROTECTED FROM DAMAGE.
12. THE CONTRACTOR SHALL KEEP THE AREA OUTSIDE THE "CONSTRUCTION LIMITS" BROOM CLEAN AT ALL TIMES.
13. THE CONTRACTOR SHALL CALL MISS DIG A MINIMUM OF 72 HOURS PRIOR TO THE START OF CONSTRUCTION.
14. ALL PAVEMENT REPLACEMENT AND OTHER WORKS COVERED BY THESE PLANS SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE TOWNSHIP, INCLUDING THE LATEST MICHIGAN DEPARTMENT OF TRANSPORTATION (MDOT) SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.
15. THE CONTRACTOR IS RESPONSIBLE FOR ALL DAMAGE TO EXISTING UTILITIES.
16. NO ADDITIONAL COMPENSATION WILL BE PAID TO THE CONTRACTOR FOR ANY DELAY OR INCONVENIENCE DUE TO THE MATERIAL SHORTAGES OR RESPONSIBLE DELAYS DUE TO THE OPERATIONS OF SUCH OTHER PARTIES DOING WORK INDICATED OR SHOWN ON THE PLANS OR IN THE SPECIFICATION OR FOR ANY REASONABLE DELAYS IN CONSTRUCTION DUE TO THE ENCOUNTERING OR EXISTING UTILITIES THAT MAY OR MAY NOT BE SHOWN ON THE PLANS.
17. DURING THE CONSTRUCTION OPERATIONS, THE CONTRACTOR SHALL NOT PERFORM WORK BY PRIVATE AGREEMENT WITH PROPERTY OWNERS ADJACENT TO THE PROJECT.
18. IF WORK EXTENDS BEYOND NOVEMBER 15, NO COMPENSATION WILL BE DUE TO THE CONTRACTOR FOR ANY WINTER PROTECTION MEASURES THAT MAY BE REQUIRED BY THE ENGINEER.
19. NO TREES ARE TO BE REMOVED UNTIL MARKED IN THE FIELD BY THE ENGINEER.
20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO THE PROPERTY BEYOND THE CONSTRUCTION LIMITS INCLUDING BUT NOT LIMITED TO EXISTING FENCE, LAWN, TREES AND SHRUBBERY.
21. TRAFFIC SHALL BE MAINTAINED DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL SIGNS AND TRAFFIC CONTROL DEVICES. FLAG PERSONS SHALL BE PROVIDED BY THE CONTRACTOR IF DETERMINED NECESSARY BY THE ENGINEER. ALL SIGNS SHALL CONFORM TO THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES AT NO COST TO THE TOWNSHIP. NO WORK SHALL BE DONE UNLESS THE APPROPRIATE TRAFFIC CONTROL DEVICES ARE IN PLACE.
22. ALL DEMOLISHED MATERIALS AND SOIL SPOILS SHALL BE REMOVED FROM THE SITE AT NO ADDITIONAL COST, AND DISPOSED OF IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.
23. ANY EXISTING APPURTENANCES SUCH AS MANHOLES, GATE VALVES, ETC. SHALL BE ADJUSTED TO THE PROPOSED GRADE AND SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT.
24. ALL PERMANENT SIGNS AND PAVEMENT MARKINGS SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST REVISION OF THE MICHIGAN MUTCD MANUAL AND SHALL BE INCIDENTAL TO THE CONTRACT.
25. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT ALL ITEMS REQUIRED FOR CONSTRUCTION OF THE PROJECT ARE INCLUDED IN THE CONTRACT, ANY ITEMS NOT SPECIFICALLY DESIGNATED IN THE PLANS SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT.
26. THE CONTRACTOR IS RESPONSIBLE FOR HAVING A SET OF APPROVED CONSTRUCTION PLANS, WITH THE LATEST REVISION DATE, ON SITE PRIOR TO THE START OF CONSTRUCTION, IN THE EVENT OF ANY QUESTIONS PERTAINING TO THE INTENT OF THE CONSTRUCTION PLANS OR SPECIFICATIONS, THE CONTRACTOR SHALL CONTACT THE DESIGN ENGINEER FOR A FINAL DETERMINATION FROM THE DESIGN ENGINEER.
27. THE CONTRACTOR, NOT THE OWNER OR THE ENGINEER, ARE RESPONSIBLE FOR THE MEANS, METHODS, AND SEQUENCE OF CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR SAFE EXECUTION OF THE PROJECT SCOPE IN ACCORDANCE WITH THE APPROVED CONSTRUCTION PLANS.
28. THE CONTRACTOR IS RESPONSIBLE FOR PRESERVING CONSTRUCTION STAKING AS NECESSARY. CONTRACTOR TO NOTIFY CONSTRUCTION SURVEYOR OF REPLACEMENT STAKES NEEDED WHICH SHALL BE AT THE CONTRACTORS EXPENSE.
29. THE OWNER AND/OR CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING FRANCHISE UTILITY SERVICES (CABLE, ELECTRIC, GAS, ETC.) OWNER AND/OR CONTRACTOR SHALL WORK WITH UTILITY COMPANIES ON FURNISHING SITE UTILITY LAYOUTS AND PROVIDING CONDUIT CROSSINGS AS REQUIRED.
30. DAMAGE TO ANY EXISTING UTILITIES OR INFRASTRUCTURE (INCLUDING PAVEMENT, CURB, SIDEWALK, ETC.) SHALL PROMPTLY BE REPLACED IN KIND AND SHALL BE AT THE CONTRACTORS EXPENSE.
31. COORDINATION OF TESTING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND PER ALL CITY/TOWNSHIP/COUNTY REQUIREMENTS. COPIES OF ALL TEST REPORTS SHALL BE FURNISHED TO THE DESIGN ENGINEER.
32. PRIOR TO THE START OF CONSTRUCTION, PROTECTION FENCING SHALL BE ERECTED AROUND THE TREE DRIPLINE OF ANY TREES INDICATED TO BE SAVED WITHIN THE LIMITS OF DISTURBANCE.
33. THE CONTRACTOR SHALL MAINTAIN DRAINAGE OF THE PROJECT AREA AND ADJACENT AREAS. WHERE EXISTING DRAINAGE FACILITIES ARE IMPACTED/DISTURBED DUE TO CONSTRUCTION, THE CONTRACTOR SHALL PROVIDE ANY NECESSARY TEMPORARY DRAINAGE PROVISIONS.
34. SOIL BORING LOGS ARE REPRESENTATIVE OF SPECIFIC POINTS ON THE PROJECT SITE, AND IF PROVIDED TO THE CONTRACTOR ARE FOR INFORMATIONAL PURPOSES ONLY.
35. WHERE CITY/TOWNSHIP STANDARD CONSTRUCTION DETAILS/SPECIFICATIONS ARE PROVIDED AND ARE IN CONFLICT WITH NOTES AND SPECIFICATIONS HEREIN, THE CITY/TOWNSHIP STANDARD SHALL GOVERN.

**INDEMNIFICATION STATEMENT**

THE CONTRACTOR SHALL HOLD HARMLESS THE DESIGN PROFESSIONAL, MUNICIPALITY, COUNTY, STATE, AND ALL OF ITS SUB CONSULTANTS, PUBLIC AND PRIVATE UTILITY COMPANIES, AND LANDOWNERS FOR DAMAGES TO INDIVIDUALS AND PROPERTY, REAL OR OTHERWISE, DUE TO THE OPERATIONS OF THE CONTRACTOR AND/OR THEIR SUBCONTRACTORS.

**CONTRACTOR TO FOLLOW MANUFACTURER SPECS/RECOMMENDATIONS THAT SUPERCEDE PLANS**

**GENERAL GRADING & SESC NOTES**

1. THE CONTRACTOR SHALL HAVE IN PLACE ALL REQUIRED EROSION CONTROL METHODS AS INDICATED ON THE CONSTRUCTION PLANS AND AS REQUIRED BY GENERAL PRACTICE. SPECIFIC MEANS, METHODS AND SEQUENCES OF CONSTRUCTION MAY DICTATE ADDITIONAL SOIL EROSION CONTROL MEASURES BE NEEDED. THE CONTRACTOR SHALL COORDINATE WITH THE DESIGN ENGINEER ON THESE ANTICIPATED METHODS. ADDITIONAL SOIL EROSION CONTROL METHODS SHALL BE INCIDENTAL TO THE SCOPE OF WORK.
2. ACTUAL FIELD CONDITIONS MAY DICTATE ADDITIONAL OR ALTERNATE SOIL EROSION CONTROL MEASURES BE UTILIZED. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DEFICIENCIES OR FIELD CONDITIONS THAT WARRANT ADDITIONAL AND/OR ALTERNATIVE SESC MEASURES BE UTILIZED.
3. AT THE CLOSE OF EACH DAY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING ALL CONSTRUCTION OPERATIONS, MATERIALS, DEBRIS, ETC ARE CONTAINED ON-SITE.
4. AT THE CLOSE OF EACH WORKING DAY, ALL DRAINAGE STRUCTURES SHALL BE FREE OF DIRT AND DEBRIS AT THE FLOW LINE.
5. ALL SOIL EROSION CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE PER MDEGL REGULATIONS AND BEST PRACTICES. ALL SOIL EROSION CONTROL MEASURES SHALL BE MAINTAINED BY THE CONTRACTOR.
6. THE SOIL EROSION CONTROL MEASURES SHALL BE KEPT IN PLACE UNTIL SUCH A TIME THAT THE SITE IS DETERMINED TO BE ESTABLISHED WITH ACCEPTABLE AMOUNT OF VEGETATIVE GROUND COVER.
7. ALL AREAS DISTURBED BY THE CONTRACTOR BEYOND THE NORMAL CONSTRUCTION LIMITS OF THE PROJECT SHALL BE SODDED OR SEEDED AS SPECIFIED OR DIRECTED BY THE ENGINEER.
8. AFTER REMOVAL OF TOPSOIL, THE SUBGRADE SHALL BE COMPACTED TO 95% OF ITS UNIT WEIGHT.
9. ALL GRADING IN THE PLANS SHALL BE DONE AS PART OF THIS CONTRACT. ALL DELETERIOUS MATERIAL SHALL BE REMOVED FROM THE SUBGRADE PRIOR TO COMPACTING.
10. ALL ROOTS, STUMPS AND OTHER OBJECTIONABLE MATERIALS SHALL BE REMOVED AND THE HOLE BACKFILLED WITH SUITABLE MATERIAL. WHERE GRADE CORRECTION IS REQUIRED, THE SUBGRADE SHALL BE CUT TO CONFORM TO THE CROSS-SECTION AS SHOWN IN THE PLANS.
11. ALL EXCAVATION UNDER OR WITHIN 3 FEET OF PUBLIC PAVEMENT, EXISTING OR PROPOSED SHALL BE BACKFILLED AND COMPACTED WITH SAND (MDOT CLASS II).

**GENERAL LANDSCAPE NOTES**

1. ALL PLANT MATERIAL SHALL CONFORM TO THE REQUIREMENTS AND SPECIFICATIONS OF THE GOVERNING MUNICIPALITY. ALL STOCK SHALL BE NURSERY GROWN, CONFORMING TO ANSI Z60.2-2025 "AMERICAN STANDARD FOR NURSERY STOCK", AND IN ACCORDANCE WITH GOOD HORTICULTURAL PRACTICE. STOCK SHALL EXHIBIT NORMAL GROWTH HABIT AND BE FREE OF DISEASE, INSECTS, EGGS, LARVAE, & DEFECTS SUCH AS KNOTS, SUN-SCALD, INJURIES, ABRASIONS, OR DISFIGUREMENT. ALL PLANT MATERIAL SHALL BE SUBJECT TO THE APPROVAL OF THE LANDSCAPE ARCHITECT.
2. ALL PLANT MATERIALS SHALL BE BALLED AND BURLAPPED OR CONTAINER STOCK. NO BARE ROOT STOCK IS PERMITTED. ALL PLANT BALLS SHALL BE FIRM, INTACT, AND SECURELY WRAPPED AND BOUND.
3. ALL PLANT BED MATERIALS SHALL BE EXCAVATED OF ALL BUILDING MATERIALS, OTHER EXTRANEANEOUS OBJECTS, AND POOR SOILS TO A MINIMUM DEPTH OF 12-INCHES AND BACKFILLED TO GRADE WITH SPECIFIED PLANTING MIX (SEE BELOW).
4. PLANTING MIXTURE SHALL CONSIST OF 5 PARTS TOPSOIL FROM ON-SITE (AS APPROVED), 4 PARTS COARSE SAND, 1 PART SPHAGNUM PEAT MOSS (OR APPROVED COMPOST), AND 5 LBS OF SUPERPHOSPHATE FERTILIZER PER CU. YD. OF MIX. INGREDIENTS SHALL BE THOROUGHLY BLENDED FOR UNIFORM CONSISTENCY.
5. ALL PLANT BEDS AND INDIVIDUAL PLANTS, NOT OTHERWISE NOTED SHALL BE MULCHED WITH A 4-INCH LAYER OF SHREDED BARK MULCH. EDGE OF MULCH BEDS AS SHOWN. DECIDUOUS TREES IN LAWN AREAS SHALL RECEIVE A 5-FT DIAMETER CIRCLE OF MULCH AND CONIFER TREES 8-FT (PLANTED CROWN OF TREE) UNLESS OTHERWISE NOTED.
6. LANDSCAPE STONE SHALL BE INSTALLED WHERE NOTED OR INDICATED (HATCHED). STONE SHALL BE 3/4"-1-1/4" WASHED RIVER GRAVEL OR AS SELECTED AND SHALL BE INSTALLED TO A MINIMUM DEPTH OF 3-INCHES.
7. ALL LANDSCAPE BEDS, UNLESS OTHERWISE NOTED SHALL BE INSTALLED OVER WEED BARRIER FABRIC - WATER PERMEABLE FILTRATION FABRIC OF NON-WOVEN POLYPROPYLENE OR POLYESTER FABRIC. FABRIC SHALL BE OF SUITABLE THICKNESS FOR APPLICATION.
8. ALL PLANTS AND PLANT BEDS SHALL BE THOROUGHLY WATERED UPON COMPLETION OF PLANTING AND STAKING OPERATIONS.
9. THE CONTRACTOR SHALL GUARANTEE ALL PLANT MATERIALS FOR A PERIOD OF 1 YEAR FROM THE DATE THE WORK IS ACCEPTED, IN WRITING, BY THE LANDSCAPE ARCHITECT. THE CONTRACTOR SHALL REPLACE, WITHOUT COST TO THE OWNER, WITHIN A SPECIFIED PERIOD OF TIME, ALL DEAD PLANTS, AND ALL PLANTS NOT IN A VIGOROUS, THRIVING CONDITION, AS DETERMINED BY THE LANDSCAPE ARCHITECT, DURING AND AT THE END OF THE GUARANTEE PERIOD. REPLACEMENT STOCK SHALL CONFORM TO THE ORIGINAL SPECIFICATIONS.
10. EDGING SHALL BE PROVIDED FOR ALL LANDSCAPE BEDS NOT ADJACENT TO CONCRETE PAVEMENT. EDGING SHALL BE BLACK ALUMINUM EDGING, 3/16-INCH X 4-INCH. INSTALL PER MANUFACTURER'S INSTRUCTIONS, ALL EDGING SHALL BE INSTALLED IN STRAIGHT LINES OR SMOOTH CURVES WITHOUT IRREGULARITIES.
11. SOD SHALL BE DENSE, WELL ROOTED TURF, FREE OF WEEDS. IT SHALL BE COMPRISED OF A BLEND OF AT LEAST TWO KENTUCKY BLUE GRASSES AND ONE FESCUE. IT SHALL HAVE A UNIFORM THICKNESS OF 3/4-INCH AT TIME OF PLANTING, AND CUT IN UNIFORM STRIPS NOT LESS THAN 10-INCHES BY 18-INCHES. SOD SHALL BE KEPT MOIST AND LAID WITHIN 36-HOURS AFTER CUTTING.

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ESTABLISH A DENSE LAWN OF PERMANENT GRASSES, FREE OF LUMPS AND DEPRESSIONS. ALL SODDED AREAS THAT BROWN-OUT OR HAVE NOT FIRMLY KNITTED TO THE SOIL BASE WITHIN A PERIOD OF 1 MONTH SHALL BE REPLACED BY THE CONTRACTOR, AT NO COST TO THE OWNER.

12. ALL AREAS OF THE SITE THAT BECOME DISTURBED DURING CONSTRUCTION AND ARE NOT TO BE PAVED, STONED, LANDSCAPED, OR SODDED SHALL BE SEEDED AND MULCHED.  
 SEED MIXTURE SHALL BE AS FOLLOWS:  
 KENTUCKY BLUEGRASS (CHOOSE 3 VARIETIES - ADLPHI, RUGBY, GLADE, OR PARADE) 30%  
 RUBY RED OR DAWSON RED FINE FESCUE 30%  
 ATLANTA RED FESCUE 20%  
 PENNINE PERENNIAL RYE 20%

THE ABOVE SEED MIXTURE SHALL BE SOWN AT A RATE OF 250 LBS PER ACRE. PRIOR TO SEEDING, THE TOPSOIL SHALL BE FERTILIZED WITH A COMMERCIAL FERTILIZER WITH A 10-0-10 ANALYSIS:

- 10% NITROGEN - MIN 25% FROM A UREA FORMALDEHYDE SOURCE
- 0 % PHOSPHATE
- 10% POTASH - SOURCE POTASSIUM SULFATE OR POTASSIUM NITRATE

THE FIRST FERTILIZER APPLICATION SHALL BE AT A RATE OF 10 LBS PER 1000 SQ FT OF BULK FERTILIZER.

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ESTABLISH A DENSE LAWN OF PERMANENT GRASSES, FREE OF LUMPS AND DEPRESSIONS. ANY PART OF THE AREA THAT FAILS TO SHOW A UNIFORM GERMINATION SHALL BE RE-SEEDED AND SUCH RE-SEEDED SHALL CONTINUE UNTIL A DENSE LAWN IS ESTABLISHED. DAMAGE TO SEEDED AREAS RESULTING FROM EROSION SHALL BE REPAIRED BY THE CONTRACTOR.

13. ALL AREAS OF THE SITE SCHEDULED FOR SEEDING OR SODDING SHALL FIRST RECEIVE A 6-INCH LAYER OF CLEAN, FRIABLE TOPSOIL. THE SOIL SHALL BE DISCED AND SHALL BE GRADED IN CONFORMANCE WITH THE GRADING PLAN.

14. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION OF ALL UTILITIES AND TO INFORM THE LANDSCAPE ARCHITECT OF ANY CONFLICTS PRIOR TO COMMENCING LANDSCAPING.

**GENERAL UTILITY NOTES**

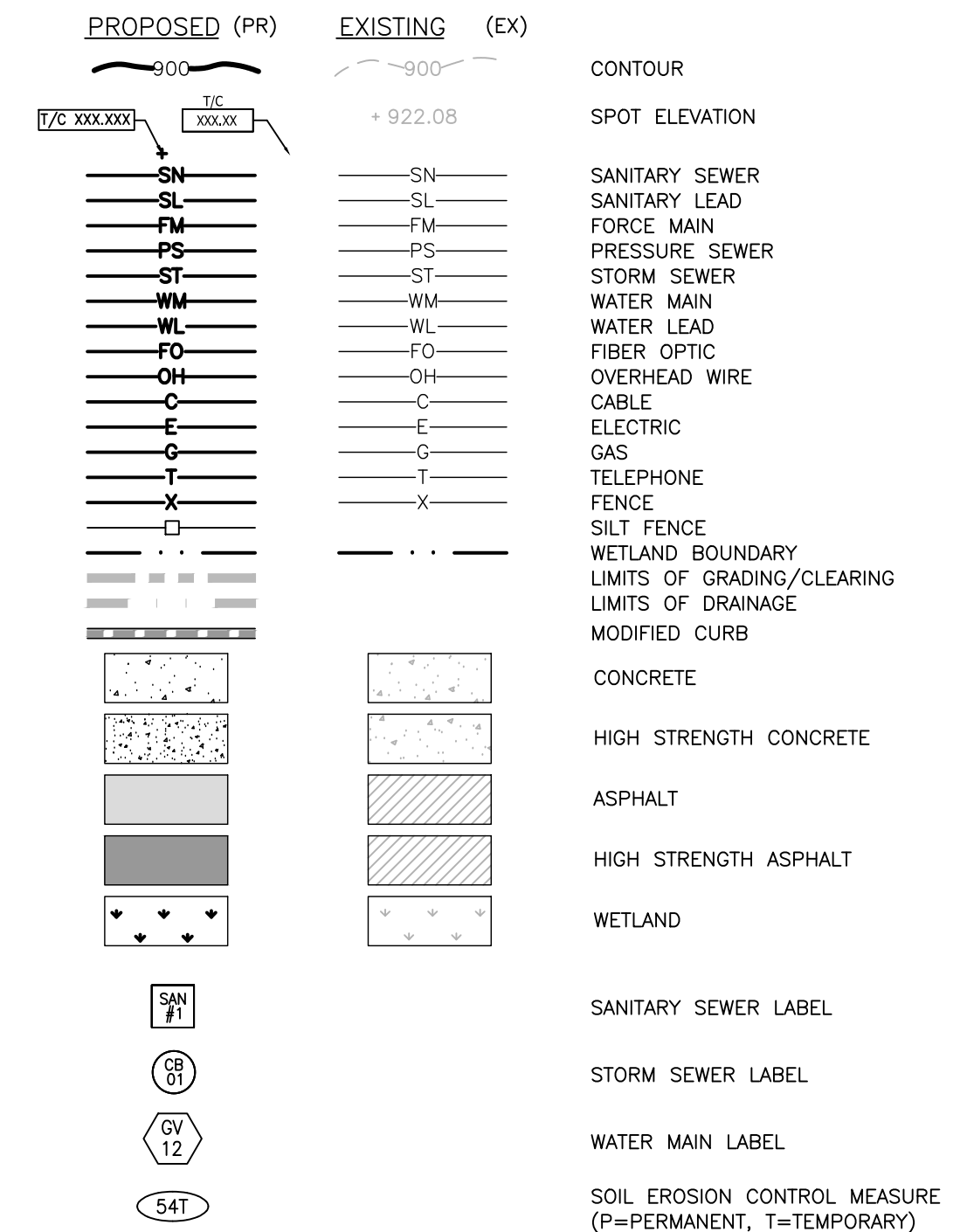
1. BEDDING SHALL EXTEND A MINIMUM OF 4" BELOW THE PIPE. UNLESS OTHERWISE NOTED ON THE PLANS, BEDDING SHALL BE OF UNIFORM GRADATION MDOT 68A STONE OR MDOT CLASS II GRANULAR MATERIAL FOR SANITARY AND STORM PIPE AND MDOT CLASS II GRANULAR MATERIAL ONLY FOR WATERMAIN.
2. WHERE UNSTABLE GROUND CONDITIONS ARE ENCOUNTERED, STONE BEDDING SHALL BE USED AS DIRECTED BY THE ENGINEER.
3. BACKFILL SHALL BE OF A SUITABLE MATERIAL AND SHALL BE FREE OF ANY ORGANIC MATERIALS AND ROCKS.
4. BACKFILL ABOVE THE PIPE SHALL BE OF GRANULAR MATERIAL MDOT CLASS II TO A POINT 12" ABOVE THE TOP OF THE PIPE. WHERE THE TRENCH IS NOT WITHIN THE INFLUENCE OF THE ROOT SUITABLE SITE MATERIAL MAY BE COMPACTED AND UTILIZED FROM A POINT 12" ABOVE THE PIPE TO GRADE. WHERE THE TRENCH IS WITHIN A 1:1 INFLUENCE OF THE ROAD, GRANULAR MATERIAL, MDOT CLASS II OR III, IS TO BE PLACED AND COMPACTED IN LAYERS NOT EXCEEDING 12" IN THICKNESS. COMPACTION SHALL BE 95% AS DETERMINED BY AASHTO T99.
5. 18" MINIMUM VERTICAL SEPARATION AND 10' HORIZONTAL SEPARATION IS TO BE MAINTAINED BETWEEN WATERMAIN AND SANITARY/STORM SEWER TO THE MAXIMUM EXTENT POSSIBLE.

**GENERAL STORM NOTES**

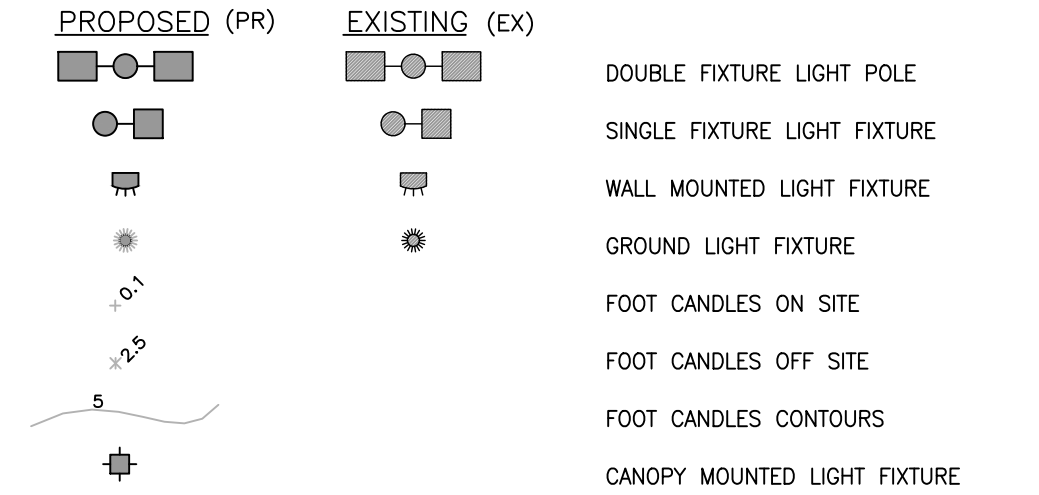
1. ALL STORM PIPE LENGTHS ARE SHOWN FROM C/L TO C/L OF STRUCTURE OR FROM C/L OF STRUCTURE TO DISCHARGE END OF FLARED END SECTION.
2. STORM PIPE MATERIALS SHALL BE AS FOLLOWS:  
 2.1. RCP(REINFORCED CONCRETE PIPE); SHALL MEET THE REQUIREMENTS OF ASTM C76 WITH MODIFIED GROOVED TONGUE AND RUBBER GASKETS MEETING THE REQUIREMENTS OF ASTM C443. RCP TO BE EITHER CLASS IV OR V AS CALLED OUT ON THE PLANS.
3. STORM PIPE JOINTS SHALL MEET THE REQUIREMENTS OF ASTM D3212. HDPE AND PP PIPE GASKETS SHALL MEET THE REQUIREMENTS OF ASTM F477.
4. ALL STORM PIPE TO HAVE WATERTIGHT PREMIUM JOINTS, UNLESS OTHERWISE NOTED ON THE PLANS.
5. STORM DRAINAGE STRUCTURES SHALL BE FURNISHED WITH STEPS WHICH SHALL BE STEEL ENCASED WITH POLYPROPYLENE PLASTIC OR EQUIVALENT. STEPS SHALL BE SET AT 16" CENTER TO CENTER.
6. FLARED END SECTIONS DISCHARGING STORM WATER SHALL RECEIVE A MINIMUM OF 10 SQ YDS OF PLAIN COBBLESTONE RIP RAP WITH A MINIMUM STONE SIZE OF 6" AND SHALL BE PLACED ON A GEOTEXTILE FABRIC WRAP.
7. ALL CATCH BASINS WITHIN THE ROADWAY SHALL INCLUDE INSTALLATION OF 6" DIAMETER PERFORATED PIPE SUBDRAIN.
8. STORM DRAINAGE STRUCTURE COVERS SHALL BE OF THE FOLLOWING (OR APPROVED EQUAL):
 

COVER	USE	FRAME	GRATE/BACK
'A'	MANHOLE	1040	TYPE 'B'
'E'	LAWN	1040	TYPE 'O2' GRATE
'K'	TYPE C & F CURB	7045	TYPE 'M1' GRATE/7050 TYPE 'T1' BACK

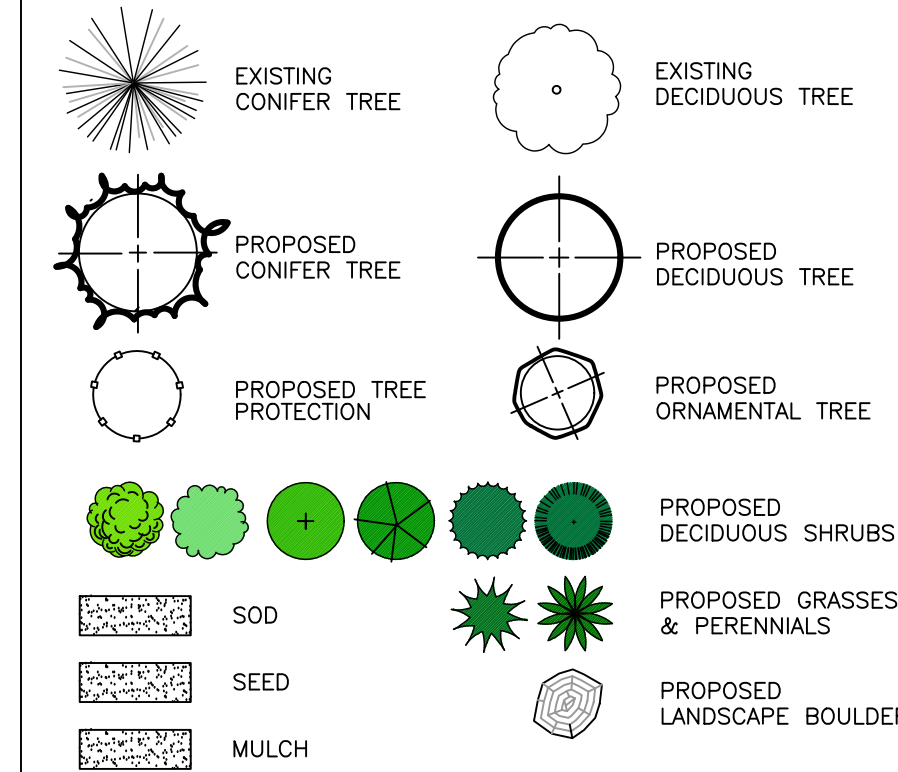
**LINES & HATCHES LEGEND**



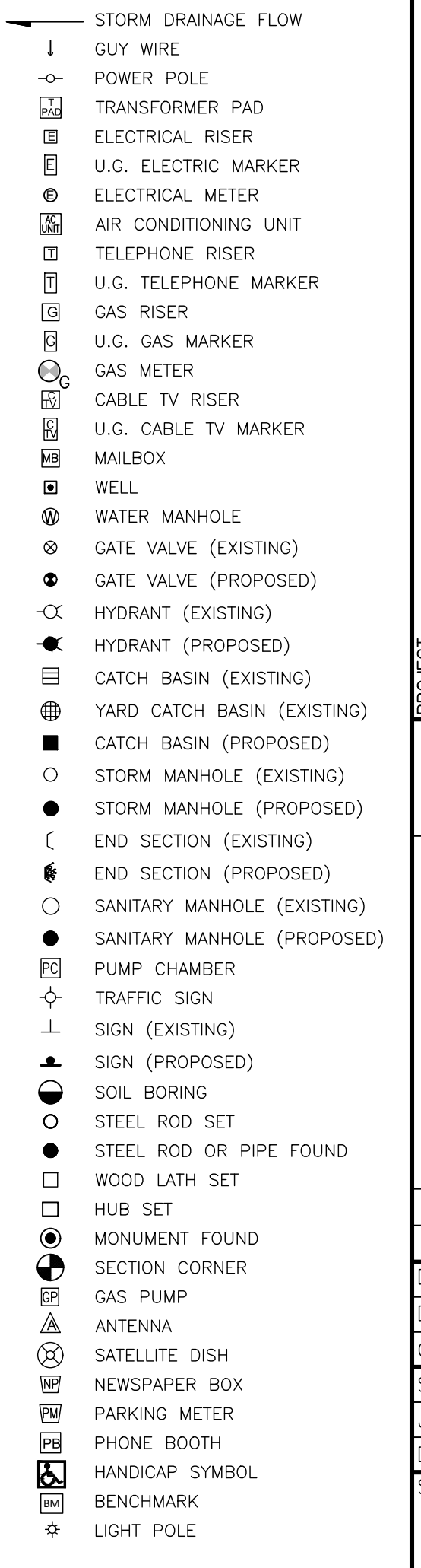
**LIGHTING LEGEND**



**LANDSCAPE LEGEND**



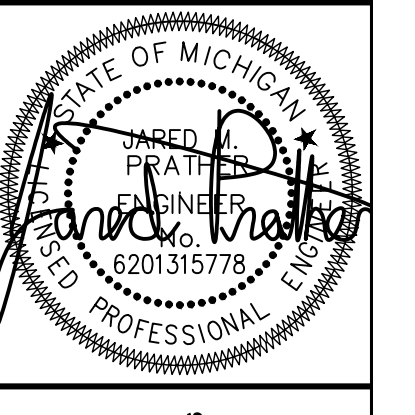
**SYMBOL LEGEND**



**ABBREVIATIONS**

- FFE FINISHED FLOOR ELEVATION
- BFE BASEMENT FLOOR ELEVATION
- GFE GARAGE FLOOR ELEVATION
- FG FINISHED GRADE
- T/A TOP OF ASPHALT
- T/C TOP OF CURB
- T/CO TOP OF CONCRETE
- T/W TOP OF WALK
- T/P TOP OF PIPE
- B/P/B BOTTOM OF PIPE
- F/L FLOW LINE
- RIM RIM ELEVATION (AT FLOW LINE)
- INV INVERT ELEVATION
- MH MANHOLE
- CB CATCH BASIN
- RY REAR YARD
- YD YARD DRAIN
- RD ROOF DRAIN
- FES FLARED END SECTION
- CMP CORRUGATED METAL PIPE
- CPP CORRUGATED PLASTIC PIPE
- RCP REINFORCED CONCRETE PIPE
- HDPE HIGH DENSITY POLYETHYLENE
- PVC POLYVINYL CHLORIDE
- DIP DUCTILE IRON PIPE
- GV GATE VALVE
- GW GATE VALVE IN WELL
- GVW GATE VALVE IN BOX
- HYD HYDRANT
- FDC FIRE DEPARTMENT CONNECTION
- UP UTILITY POLE
- NFV NOT FIELD VERIFIED
- TBR TO BE REMOVED
- L LIBER
- PAGE
- L.C.R. LIVINGSTON COUNTY RECORDS
- (M&R) MEASURED AND RECORD
- L.O.B. POINT OF BEGINNING

THE LOCATION AND ELEVATION OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THESE DRAWINGS ARE ONLY APPROXIMATE. NO ASSURANCE IS MADE AS TO THE ACCURACY OF THESE UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FROM THE LOCAL, STATE AND FEDERAL AGENCIES PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FROM THE LOCAL, STATE AND FEDERAL AGENCIES PRIOR TO THE START OF CONSTRUCTION.



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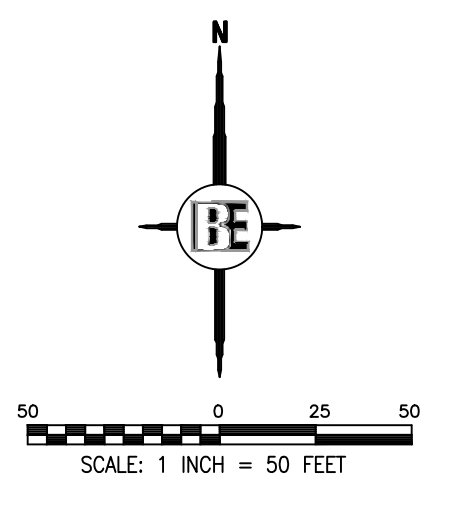
REVISION	PER	CITY	RESUBMITAL	DATE
1	BY			02/18/26
2	BY			02/09/26
3	BY			02/02/26
4	BY			12/09/25
5	BY			10/17/25
6	BY			09/27/25
7	BY			08/07/25
8	BY			07/22/25
9	BY			
10	BY			

DESIGNED BY: DH  
 DRAWN BY: JP  
 CHECKED BY:  
 SCALE: NO SCALE  
 JOB NO: 24-410  
 DATE: 04/23/25  
 SHEET NO. **2**

SEE SHEET 2 FOR GENERAL NOTES AND LEGEND

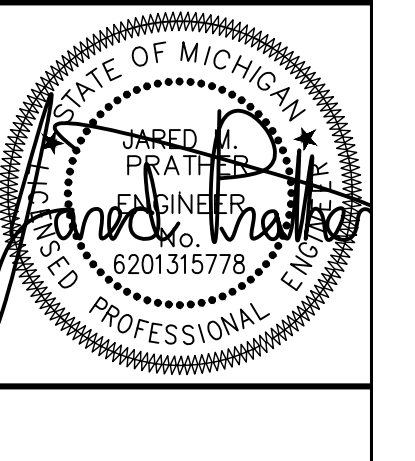
GENERAL SURVEY NOTES:

1. BEARINGS ARE BASED ON MICHIGAN STATE PLANE COORDINATE SYSTEM, SOUTH ZONE.
2. SUBSURFACE UTILITIES NOT LOCATED FOR THIS SURVEY MAY EXIST. IT IS THE RESPONSIBILITY OF THE OWNER OF THE RESPECTIVE UTILITY TO ACCURATELY LOCATE SUCH UTILITIES.
3. EASEMENTS OR RESTRICTIONS OF RECORD NOT DEPICTED ON THIS DRAWING MAY EXIST.
4. ELEVATIONS WERE ESTABLISHED WITH GPS USING OPUS GPS POST-PROCESSING. (NAVD88 DATUM)
5. CONTOURS ARE SHOWN AT 1 FOOT INTERVALS.
6. THE LOCATIONS OF UNDERGROUND UTILITIES, AS SHOWN ON THIS DRAWING ARE APPROXIMATE. THE LOCATIONS ARE BASED ON PHYSICAL FIELD LOCATIONS OF STRUCTURES ALONG WITH MISS DIG MARKINGS AND CAD DRAWING PREPARED BY SUJAK ENGINEERING PLC, JOB NO. 19-027, PAGE 4/09/2020.
7. PART OF SUBJECT PROPERTY IS LOCATED WITHIN THE 100 YEAR FLOODPLAIN, ZONE AE, WITH A BASE FLOOD ELEVATION OF 856.7, ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), FLOOD INSURANCE RATE MAP (FIRM), FOR THE CITY OF FARMINGTON HILLS, OAKLAND COUNTY, MICHIGAN, MAP NUMBER 26125C0494F, WITH AN EFFECTIVE DATE OF 9/29/2006 ALONG WITH THE OAKLAND COUNTY FLOOD INSURANCE STUDY. THE APPROXIMATE LOCATION OF CROSS SECTIONS AI AND AH ARE SHOWN ON THIS SURVEY, AS DEPICTED ON THE FEMA MAP. (ELEVATIONS ARE IN FEET IN NAVD88 DATUM). CROSS SECTION AH SHOWS THE 1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION OF 855.9 WITHOUT FLOODWAY AND 856.0 WITH FLOODWAY. CROSS SECTION AI SHOWS THE 1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION OF 856.7 WITH AND WITHOUT FLOODWAY.
8. ALL WORK SHALL BE IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE MUNICIPALITY, THE COUNTY, AND THE STATE OF MICHIGAN.
9. ALLOW THREE WORKING DAYS BEFORE YOU DIG, CALL MISS DIG TOLL FREE 1-800-482-7171.
10. THERE WAS SNOW ON THE GROUND AT THE TIME OF FIELDWORK FOR THIS SURVEY.



- BENCHMARKS:
- BENCHMARK #200 = MAG NAIL WITH BOSS BM TAG SET S/S 12" ELM 860.92
  - BENCHMARK #201 = MAG NAIL WITH BOSS BM TAG SET N/S 30" ELM 857.81
  - BENCHMARK #203 = BM "X" ON N/S SAN MH RIM 860.62

ALL WORK SHALL BE IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE MUNICIPALITY, THE COUNTY, AND THE STATE OF MICHIGAN. THE LOCATIONS OF UNDERGROUND UTILITIES, AS SHOWN ON THIS DRAWING ARE APPROXIMATE. THE LOCATIONS ARE BASED ON PHYSICAL FIELD LOCATIONS OF STRUCTURES ALONG WITH MISS DIG MARKINGS AND CAD DRAWING PREPARED BY SUJAK ENGINEERING PLC, JOB NO. 19-027, PAGE 4/09/2020.



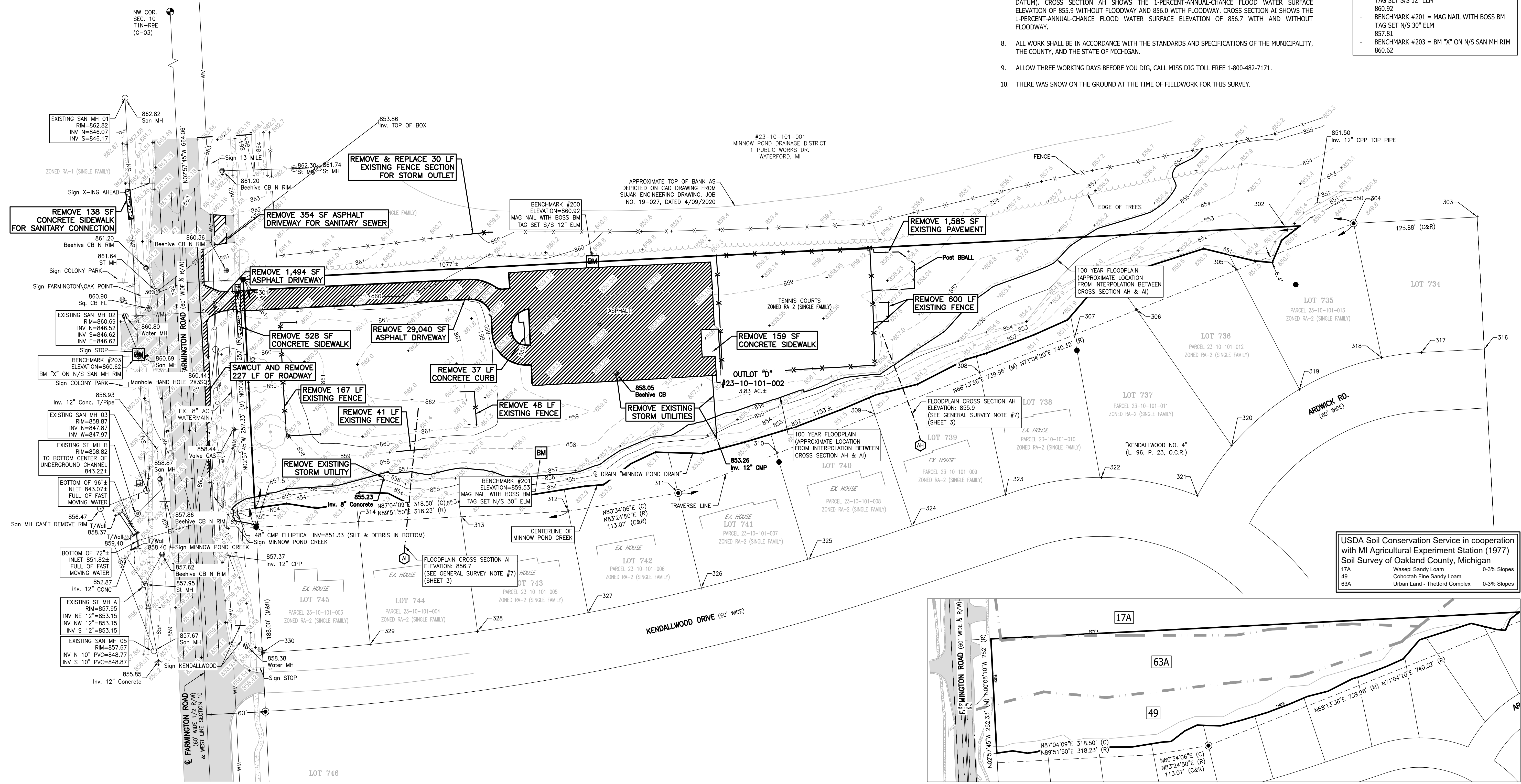
**BEBOSS Engineering**  
 Engineers Surveyors Planners Landscape Architects  
 3121 E. GRAND RIVER AVE.  
 HOWELL, MI 48843  
 517.546.4836 FAX 517.548.1670

PROJECT: CEDARS OF FARMINGTON  
 PREPARED FOR: CEDARS OF FARMINGTON ROAD, LLC  
 1660 N TELEGRAPH RD  
 DEARBORN, MI 48128  
 888-897-9792

FOR: EXISTING CONDITIONS & DEMOLITION PLAN

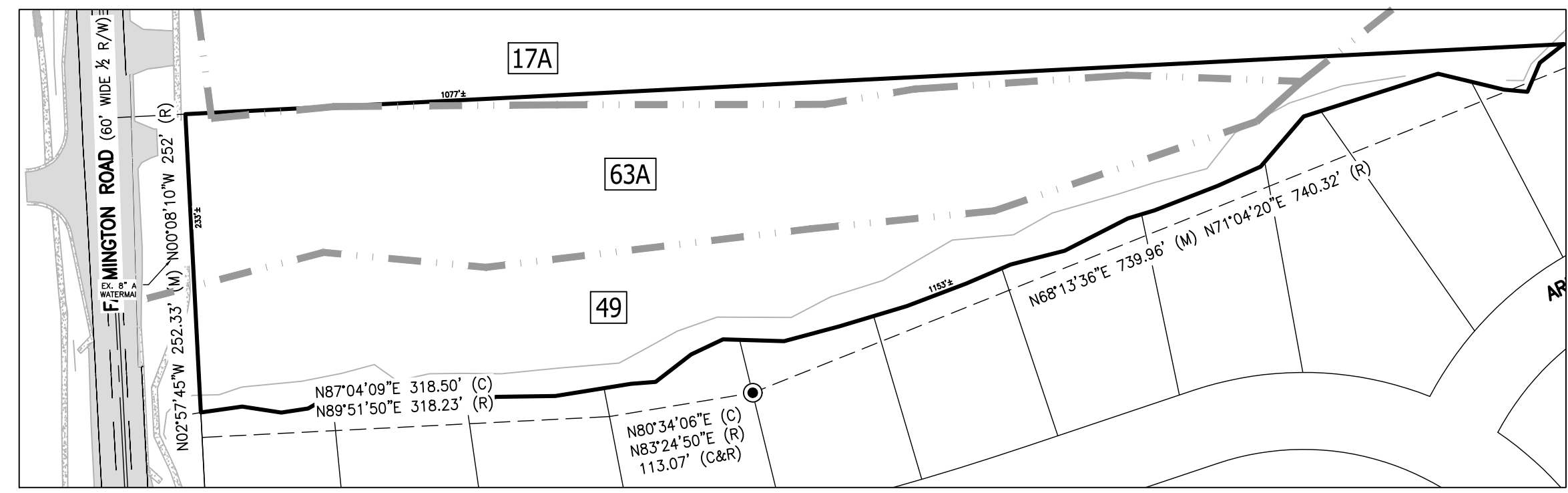
NO	BY	DATE	REVISION PER
6	JP	02/18/25	REVISION PER CITY RESUBMITAL
7	JP	02/19/25	REVISION PER EGLE COMMENTS
8	JP	02/20/25	REVISION PER EGLE COMMENTS
9	JP	02/25/25	REVISION PER CITY REVIEW
10	JP	10/17/25	REVISION PER CITY REVIEW
11	JP	09/27/25	REVISION PER FHD REVIEW
12	JP	08/07/25	REVISION PER CITY REVIEW
13	JP	07/22/25	REVISION PER CITY REVIEW
14	JP	07/22/25	REVISION PER

DESIGNED BY: DH  
 DRAWN BY: JP  
 CHECKED BY:  
 SCALE: 1" = 50'  
 JOB NO. 24-410  
 DATE 04/18/25  
 SHEET NO. 3

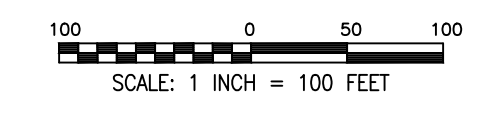


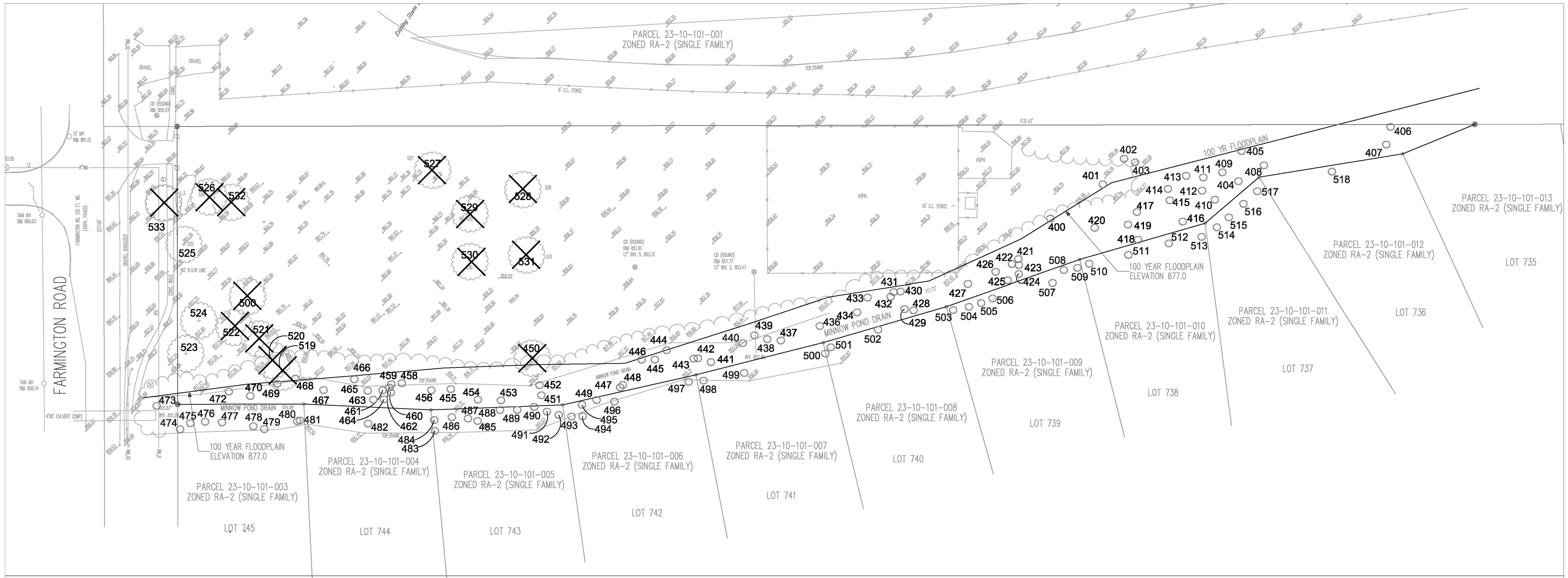
USDA Soil Conservation Service in cooperation with MI Agricultural Experiment Station (1977) Soil Survey of Oakland County, Michigan

17A	Wasopi Sandy Loam	0-3% Slopes
49	Cochoah Fine Sandy Loam	0-3% Slopes
63A	Urban Land - Thetford Complex	0-3% Slopes



SITE SOIL MAP  
 1" = 100'





TREE SURVEY PLAN

scale: 1" = 40'

TREE INVENTORY LIST

TAG#	SIZE	COMMON NAME	BOTANICAL NAME	CONDITION	TAG#	SIZE	COMMON NAME	BOTANICAL NAME	CONDITION	TAG#	SIZE	COMMON NAME	BOTANICAL NAME	CONDITION
400	25"	Honeylocust	<i>Gleditsia triacanthos</i>	Poor	451	27"	Cottonwood	<i>Populus deltoides</i>	Fair	501	16"	Red Oak	<i>Quercus rubra</i>	Fair
401	29"	Honeylocust	<i>Gleditsia triacanthos</i>	Fair	452	21", 23"	Willow	<i>Salix sp.</i>	Fair	502	35"	Spruce	<i>Picea sp.</i>	Fair
402	8"	Red Mulberry	<i>Morus rubra</i>	Poor	453	15"	American Elm	<i>Ulmus americana</i>	Dead	503	7"	Honeylocust	<i>Gleditsia triacanthos</i>	Poor
403	9"	Black Walnut	<i>Juglans nigra</i>	Fair	454	48"	Willow	<i>Salix sp.</i>	V. Poor	504	16"	Spruce	<i>Picea sp.</i>	Fair
404	7"	Box Elder	<i>Acer negundo</i>	Poor	455	10"	Crabapple	<i>Malus sp.</i>	V. Poor	505	15"	Spruce	<i>Picea sp.</i>	Fair
405	12"	Black Cherry	<i>Prunus serotina</i>	V. Poor	456	7"	Box Elder	<i>Acer negundo</i>	Poor	506	16"	Spruce	<i>Picea sp.</i>	Fair
406	25", 32"	Willow	<i>Salix sp.</i>	V. Poor	457	15"	Red Mulberry	<i>Morus rubra</i>	V. Poor	507	17"	Spruce	<i>Picea sp.</i>	Fair
407	33"	Willow	<i>Salix sp.</i>	V. Poor	458	9", 13"	Willow	<i>Salix sp.</i>	Fair	508	13"	Norway Maple	<i>Acer platanoides</i>	Fair
408	10", 13"	Box Elder	<i>Acer negundo</i>	V. Poor	459	7"	Box Elder	<i>Acer negundo</i>	Fair	509	12"	Norway Maple	<i>Acer platanoides</i>	Fair
409	9"	Box Elder	<i>Acer negundo</i>	Poor	460	14"	Box Elder	<i>Acer negundo</i>	Poor	510	10"	Eastern Redcedar	<i>Juniperus virginiana</i>	Fair
410	10"	Box Elder	<i>Acer negundo</i>	V. Poor	461	10"	Box Elder	<i>Acer negundo</i>	Poor	511	25"	Box Elder	<i>Acer negundo</i>	Poor
411	10"	Box Elder	<i>Acer negundo</i>	Poor	462	9"	Box Elder	<i>Acer negundo</i>	Poor	512	22"	Red Mulberry	<i>Morus rubra</i>	Poor
412	7"	Box Elder	<i>Acer negundo</i>	Poor	463	6"	American Elm	<i>Ulmus americana</i>	Poor	513	19"	Willow	<i>Salix sp.</i>	Fair
413	55"	Willow	<i>Salix sp.</i>	Poor	464	M.S. 16"	Willow	<i>Salix sp.</i>	Poor	514	32"	Cottonwood	<i>Populus deltoides</i>	Fair
414	8"	Box Elder	<i>Acer negundo</i>	Poor	465	6"	Box Elder	<i>Acer negundo</i>	Poor	515	36"	Cottonwood	<i>Populus deltoides</i>	V. Poor
415	11"	Box Elder	<i>Acer negundo</i>	V. Poor	466	10"	Box Elder	<i>Acer negundo</i>	Poor	516	11"	Red Mulberry	<i>Morus rubra</i>	Poor
416	26"	American Elm	<i>Ulmus americana</i>	Fair	467	12", 18"	Box Elder	<i>Acer negundo</i>	V. Poor	517	39"	Willow	<i>Salix sp.</i>	Fair
417	8"	Box Elder	<i>Acer negundo</i>	V. Poor	468	9"	Red Mulberry	<i>Morus rubra</i>	V. Poor	518	26", 31"	Willow	<i>Salix sp.</i>	Poor
418	9"	Box Elder	<i>Acer negundo</i>	V. Poor	469	21"	American Elm	<i>Ulmus americana</i>	Fair	519	0"	American Elm	<i>Ulmus americana</i>	Fair
419	8"	Box Elder	<i>Acer negundo</i>	Poor	470	16", 20", 28"	Willow	<i>Salix sp.</i>	V. Poor	520	26"	Norway Maple	<i>Acer platanoides</i>	Fair
420	11"	Red Mulberry	<i>Morus rubra</i>	Poor	471	9"	Box Elder	<i>Acer negundo</i>	V. Poor	521	17"	Norway Maple	<i>Acer platanoides</i>	Good
421	13"	Red Mulberry	<i>Morus rubra</i>	Fair	472	7", 11"	Box Elder	<i>Acer negundo</i>	V. Poor	522	21"	Scots Pine	<i>Pinus sylvestris</i>	Fair
422	9"	American Elm	<i>Ulmus americana</i>	Fair	473	14"	Red Mulberry	<i>Morus rubra</i>	Poor	523	29"	Honeylocust	<i>Gleditsia triacanthos</i>	Good
423	45"	Willow	<i>Salix sp.</i>	V. Poor	474	12"	Sugar Maple	<i>Acer saccharinum</i>	Fair	524	18"	Scots Pine	<i>Pinus sylvestris</i>	Fair
424	21", 24"	Willow	<i>Salix sp.</i>	Poor	475	16", 18", 19"	Willow	<i>Salix sp.</i>	Dead	525	31"	Honeylocust	<i>Gleditsia triacanthos</i>	Fair
425	8"	American Elm	<i>Ulmus americana</i>	Fair	476	14", 15"	Willow	<i>Salix sp.</i>	Dead	526	19"	Norway Maple	<i>Acer platanoides</i>	Fair
426	53"	Willow	<i>Salix sp.</i>	Poor	477	11", 15"	Willow	<i>Salix sp.</i>	Dead	527	15"	Honeylocust	<i>Gleditsia triacanthos</i>	Fair
427	10"	Black Cherry	<i>Prunus serotina</i>	Fair	478	7"	Red Mulberry	<i>Morus rubra</i>	Poor	528	14"	Honeylocust	<i>Gleditsia triacanthos</i>	Fair
428	22", 28", 40"	Willow	<i>Salix sp.</i>	Poor	479	4", 8"	Box Elder	<i>Acer negundo</i>	Poor	529	16"	Honeylocust	<i>Gleditsia triacanthos</i>	Fair
429	16"	American Elm	<i>Ulmus americana</i>	V. Poor	480	10"	Red Mulberry	<i>Morus rubra</i>	Poor	530	17"	Honeylocust	<i>Gleditsia triacanthos</i>	Poor
430	30"	American Elm	<i>Ulmus americana</i>	Poor	481	9"	Red Mulberry	<i>Morus rubra</i>	Fair	531	18"	Honeylocust	<i>Gleditsia triacanthos</i>	Fair
431	7"	Red Mulberry	<i>Morus rubra</i>	Poor	482	4", 6", 7"	American Elm	<i>Ulmus americana</i>	Poor	532	12"	Honeylocust	<i>Gleditsia triacanthos</i>	Fair
432	6"	Red Mulberry	<i>Morus rubra</i>	Fair	483	5", 12"	Red Mulberry	<i>Morus rubra</i>	V. Poor	533	24"	Honeylocust	<i>Gleditsia triacanthos</i>	Fair
433	13"	Red Mulberry	<i>Morus rubra</i>	V. Poor	484	10"	Box Elder	<i>Acer negundo</i>	Poor	534	10"	Box Elder	<i>Acer negundo</i>	V. Poor
434	10"	Red Mulberry	<i>Morus rubra</i>	Poor	485	10", 13"	Box Elder	<i>Acer negundo</i>	V. Poor	535	10"	Box Elder	<i>Acer negundo</i>	Poor
435	10"	Red Mulberry	<i>Morus rubra</i>	V. Poor	486	9"	Box Elder	<i>Acer negundo</i>	Poor	536	11", 16"	Box Elder	<i>Acer negundo</i>	V. Poor
436	8", 11", 13"	Red Mulberry	<i>Morus rubra</i>	Poor	487	11", 16"	Box Elder	<i>Acer negundo</i>	V. Poor	537	13", 16"	Box Elder	<i>Acer negundo</i>	V. Poor
437	11"	Box Elder	<i>Acer negundo</i>	V. Poor	488	8", 13", 16"	Box Elder	<i>Acer negundo</i>	V. Poor	538	10"	Silver Maple	<i>Acer saccharinum</i>	Fair
438	9"	Box Elder	<i>Acer negundo</i>	Poor	489	10"	Silver Maple	<i>Acer saccharinum</i>	Fair	539	13"	Red Mulberry	<i>Morus rubra</i>	Poor
439	5", 7"	Red Mulberry	<i>Morus rubra</i>	V. Poor	490	13"	Red Mulberry	<i>Morus rubra</i>	Poor	540	3", 3", 6"	Silver Maple	<i>Acer saccharinum</i>	Poor
440	23"	Willow	<i>Salix sp.</i>	V. Poor	491	3", 3", 6"	Silver Maple	<i>Acer saccharinum</i>	Poor	492	3", 4", 8"	Silver Maple	<i>Acer saccharinum</i>	Fair
441	13"	Red Mulberry	<i>Morus rubra</i>	Poor	493	14"	American Elm	<i>Ulmus americana</i>	Fair	494	33"	Cottonwood	<i>Populus deltoides</i>	Fair
442	4", 7"	Box Elder	<i>Acer negundo</i>	V. Poor	495	14", 20"	Willow	<i>Salix sp.</i>	Fair	495	12"	Red Mulberry	<i>Morus rubra</i>	Poor
443	9"	Red Mulberry	<i>Morus rubra</i>	Fair	496	12"	Red Mulberry	<i>Morus rubra</i>	Poor	497	14"	Box Elder	<i>Acer negundo</i>	Poor
444	12"	Red Mulberry	<i>Morus rubra</i>	Poor	497	14"	Box Elder	<i>Acer negundo</i>	Poor	498	22", 35"	Willow	<i>Salix sp.</i>	Fair
445	5", 12", 14"	Red Mulberry	<i>Morus rubra</i>	Poor	498	22", 35"	Willow	<i>Salix sp.</i>	Fair	499	30"	American Elm	<i>Ulmus americana</i>	Fair
446	7"	American Elm	<i>Ulmus americana</i>	Fair	499	30"	American Elm	<i>Ulmus americana</i>	Fair	500	0"	Honeylocust	<i>Gleditsia triacanthos</i>	Fair
447	26"	Willow	<i>Salix sp.</i>	V. Poor	500	0"	Honeylocust	<i>Gleditsia triacanthos</i>	Fair					
448	15", 18"	Willow	<i>Salix sp.</i>	V. Poor										
449	14", 18", 19"	Willow	<i>Salix sp.</i>	V. Poor										
450	29"	Sugar Maple	<i>Acer saccharinum</i>	Good										
Totals:		Trees Surveyed:	51		Totals:		Trees Surveyed:	50						

DEFINITION OF RATINGS:

- \* GOOD: The tree appears to be in a healthy and satisfactory condition with an overall sound stem structure and with a full and balanced crown; the growth habit appears normal; there is no indication of pests or diseases present; and the life expectancy is judged to be greater than twenty-five (25) years. The rating based on the health / condition chart ranges from 30 to 24.
- \* FAIR: The tree appears to be in a healthy and satisfactory condition with a minimum of structural problems and with minor crown imbalance or thin crown; the growth habit appears normal; there is no indication of pests or diseases present; and the life expectancy is judged to be greater than twenty (20) years. The rating based on the health / condition chart ranges from 23 to 16.
- \* POOR: The tree appears to be in an unhealthy condition with structural problems and with major crown imbalance, dead or dying limbs, or growth only in the top quarter of the tree; the growth habit is misshapen and askew; there is evidence of pests or diseases present; and the life expectancy is judged to be less than ten (10) years. The rating based on the health / condition chart ranges from 15 to 7.
- \* VERY POOR (V. POOR): The tree appears to be in an unhealthy condition with major structural problems and with major crown imbalance or several dead limbs and/or peeling bark; the growth habit is severely misshapen and askew; there is evidence of pests or diseases present; and the life expectancy is judged to be less than five (5) years. The rating based on the health / condition chart ranges from 6 to 1.
- \* DEAD: The tree has no live branches, is topped, or fallen.

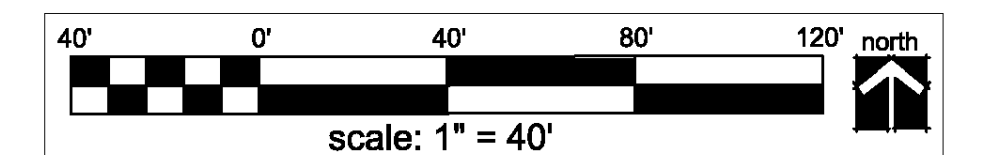
TREE HEALTH / CONDITION FACTORS & RATINGS

Values	Best	5	4	3	2	1	Worst
1	Trunk	Sound & solid	Sections of bark missing	Extensive decay & hollow			
2	Growth Rate	> 6 inch twig elongation	2 inch - 6 inch twig elongation	< 2 inch twig elongation			
3	Structure	Sound	One major or several minor limbs dead	Two or more major limbs dead			
4	Insects & Diseases	No pests present	One pest present	Two or more pests present			
5	Crown	Full & balanced	Full but unbalanced	Unbalanced and lacking a full crown			
6	Life Expectancy	> 30 years	15 years to 20 years	< 5 years			

NOTES:

- \* See Sheet TSS - 1: TREE SURVEY SUPERIMPOSED ON THE SITE PLAN for action to be taken for existing trees with associated list.
- \* See Sheet LP - 1: LANDSCAPE PLAN for proposed plantings, landscape calculations, cost estimate, and plant list.
- \* See Sheet LP - 2: LANDSCAPE NOTES & DETAILS for landscape development notes, landscape planting details, tree protection detail, and tree pruning detail.

date: April 18, 2019  
 revision:  
 07-18-2019  
 09-18-2019  
 02-12-2020  
 05-20-2020  
 03-21-2021  
 11-08-2022



LANDSCAPE PLAN FOR:  
 Yaldo Construction  
 31000 Northwestern Hwy.  
 Suite 110  
 Farmington Hills, Michigan  
 48334  
 (248) 521-0978

PROJECT LOCATION:  
 McKenzie Green  
 29150 Farmington Road  
 Farmington Hills,  
 Michigan  
 48334

LANDSCAPE PLAN BY:  
 Nagy Devlin Land Design  
 31736 West Chicago Ave  
 Livonia, Michigan 48150  
 (734) 634-9208

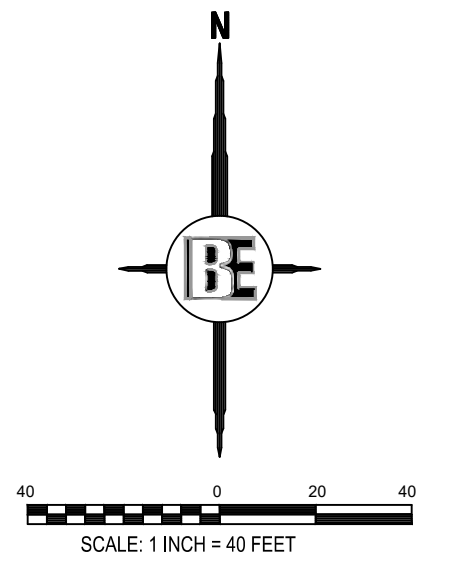


TS - 1: TREE SURVEY

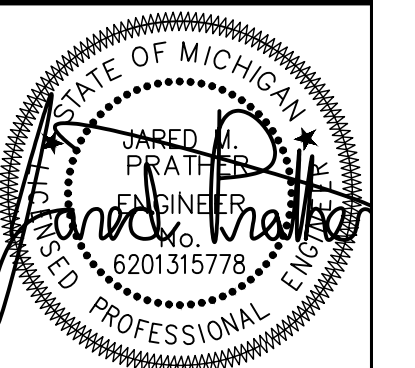
\* Base data provided by Sujak Engineering, P.L.C.



SEE SHEET 2 FOR GENERAL NOTES AND LEGEND



THE LOCATION AND ELEVATION OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THESE DRAWINGS ARE ONLY APPROXIMATE. NO CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION, DEPTH, OR ELEVATION OF ANY UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FROM THE CITY OF FARMINGTON HILLS AND THE STATE OF MICHIGAN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FROM THE CITY OF FARMINGTON HILLS AND THE STATE OF MICHIGAN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FROM THE CITY OF FARMINGTON HILLS AND THE STATE OF MICHIGAN.



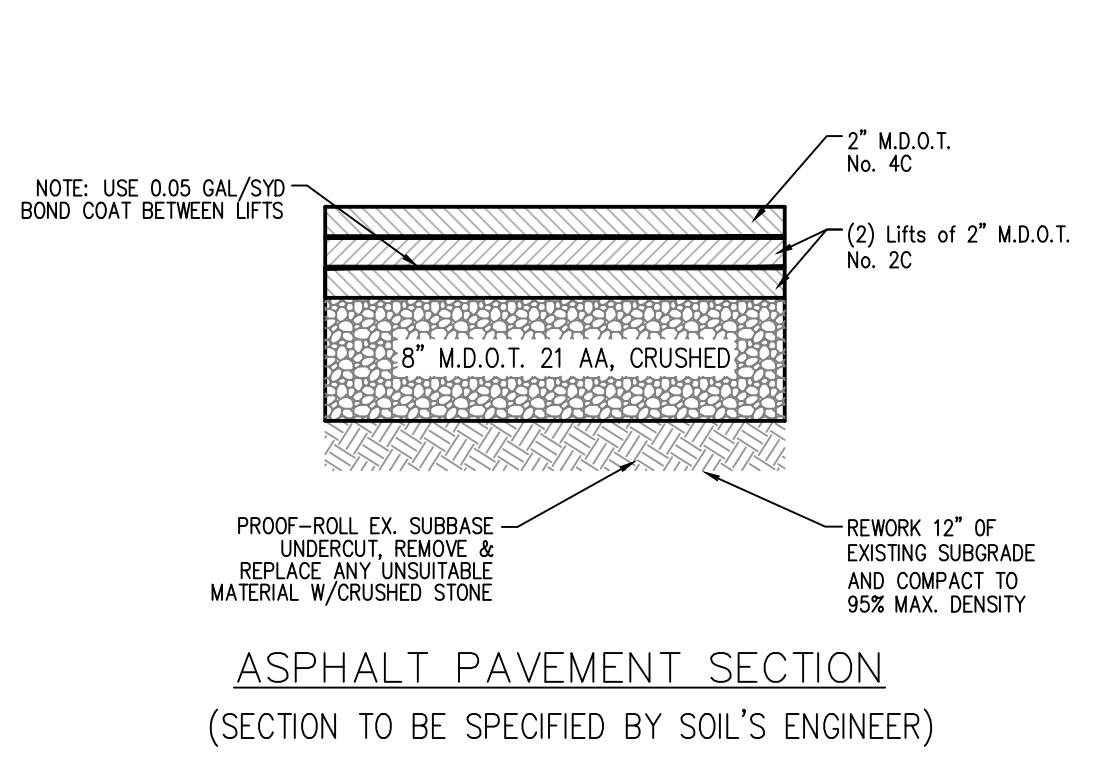
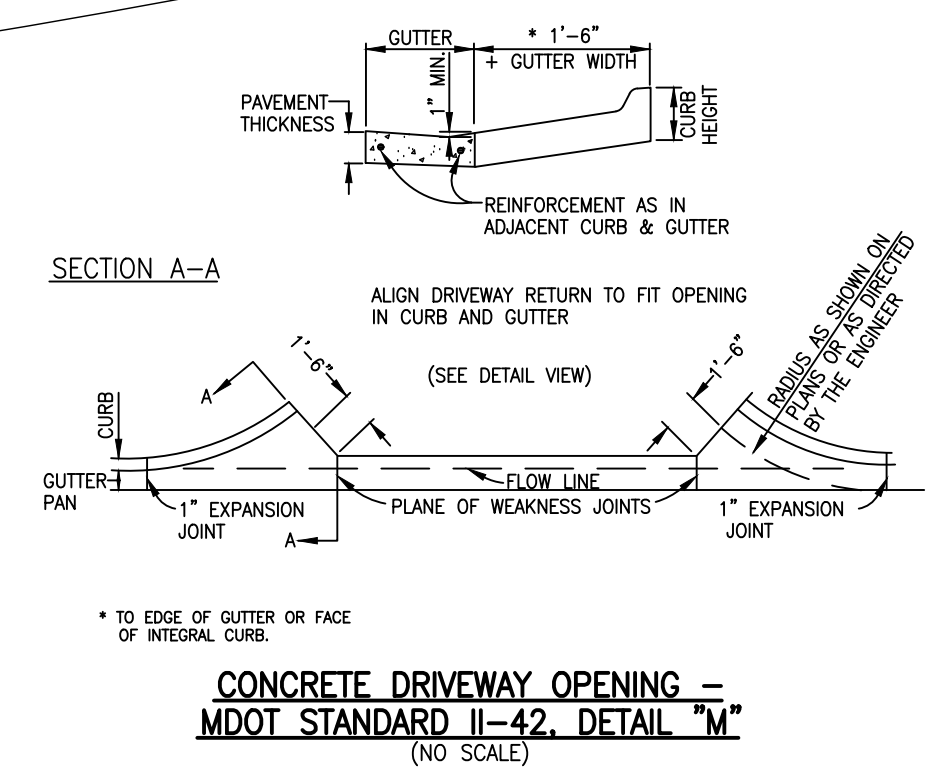
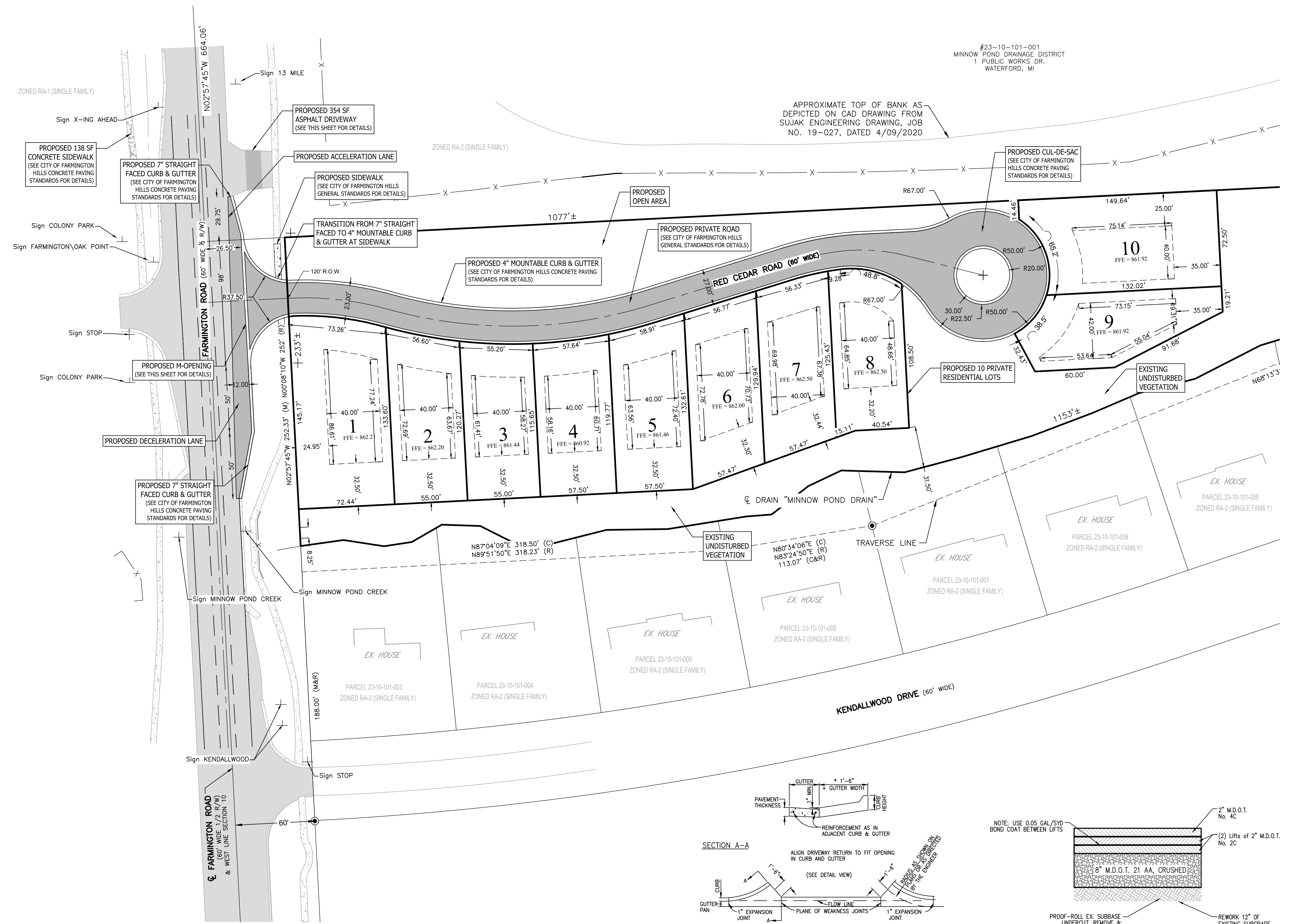
**BEBOSS**  
Engineering  
Engineers Surveyors Planners Landscape Architects  
3121 E. GRAND RIVER AVE.  
HOWELL, MI. 48843  
517.546.4836 FAX 517.548.1670

**CEDARS OF FARMINGTON**  
CEDARS OF FARMINGTON ROAD, LLC  
1650 N TELEGRAPH RD  
DEARBORN, MI 48128  
888.897.9792

PROJECT: CEDARS OF FARMINGTON  
PREPARED FOR: CEDARS OF FARMINGTON ROAD, LLC  
TITLE: SITE PLAN

REVISION	PER CITY	RESUBMITTAL	DATE
1	UP	02/18/26	
2	UP	02/09/26	
3	UP	02/02/26	
4	UP	12/05/25	
5	UP	10/17/25	
6	UP	09/27/25	
7	UP	08/07/25	
8	UP	07/22/25	

DESIGNED BY: DH  
DRAWN BY: JP  
CHECKED BY:  
SCALE: 1" = 40'  
JOB NO: 24-410  
DATE: 04/23/25



**SITE DATA:**

CITY OF FARMINGTON HILLS  
PARCEL #23-10-101-002  
29150 FARMINGTON ROAD, FARMINGTON HILLS, MI 48334  
3.83 AC ±

ZONING: ONE FAMILY RESIDENTIAL DISTRICT (RA-2)  
SCHOOL DISTRICT: FARMINGTON PUBLIC SCHOOLS

EXISTING SITE USE: FORMERLY KENDALLWOOD SWIM CLUB  
PROPOSED USE: ONE FAMILY CLUSTER PER SECTION 34-3.17 A-i, ii, B-ii, v, & vi

MAX. LOT COVERAGE: 35.0% BLDG  
EXISTING LOT COVERAGE: 0.00% BLDG, 28.7% IMPERVIOUS  
PROPOSED LOT COVERAGE: 16.4% BLDG, 28.6% IMPERVIOUS

EX. LOT AREA: 3.83 AC ± (166,876 SF)  
MIN. LOT AREA REQUIRED FOR ZONING: 16,500 SF (PER SUBDIVISION)  
MIN. LOT WIDTH: 90 FT    AVG. LOT WIDTH: 55 FT

**PROPOSED CONDITIONS:**

PERVIOUS AREAS =	AREA (SF)	AREA (AC)
EXISTING UNDISTURBED VEGETATION	49,665	1.14
PROPOSED OPEN SPACE	20,568	0.47
PROPOSED LAWN/VEGETATION	48,957	1.13
<b>SUBTOTAL:</b>	<b>119,190</b>	<b>2.74</b>

IMPERVIOUS AREAS =	AREA (SF)	AREA (AC)
PROPOSED ASPHALT DRIVEWAY	17,533	0.40
PROPOSED ASPHALT DRIVEWAY-OFFSITE	3,353	0.08
PROPOSED CONCRETE CURB	2,749	0.06
PROPOSED CONCRETE CURB-OFFSITE	629	0.02
PROPOSED BUILDINGS	27,404	0.63
<b>SUBTOTAL:</b>	<b>47,668</b>	<b>1.09</b>

TOTAL SITE AREAS =	TOTAL: 166,876 SF (3.83 AC)
SETBACKS: FRONT: 35', REAR: 35', SIDE: 8'/12', SIDE: 20' TOTAL	AREA (SF): AREA (AC):
UNIT 1: 25' x 32.50' x 24.95'/7.5' x 32.45'	10,267 0.24
UNIT 2: 25' x 32.50' x 7.5'/7.5' x 15'	6,940 0.16
UNIT 3: 25' x 32.50' x 7.5'/7.5' x 15'	6,447 0.15
UNIT 4: 25' x 32.50' x 7.5'/10' x 15'	6,722 0.15
UNIT 5: 25' x 32.50' x 10'/7.5' x 17.5'	7,225 0.17
UNIT 6: 25' x 32.30' x 7.5'/7.5' x 15'	7,220 0.17
UNIT 7: 25' x 32.44' x 7.5'/7.5' x 15'	7,057 0.16
UNIT 8: 25' x 32.20' x 7.5'/7.5' x 15'	6,568 0.15
UNIT 9: 25' x 35' x 7.5'/7.5' x 15'	6,747 0.15
UNIT 10: 25' x 35' x 7.5'/25' x 32.50'	9,914 0.23
OPEN SPACE NORTH:	20,568 0.47
UNDISTURBED SPACE:	49,665 1.14
OPEN SPACE REQUIRED (15%): 3.83 AC * 0.15 = 0.57 AC	
TOTAL UNDISTURBED & OPEN SPACE: 0.47 AC + 1.14 AC = 1.61 AC	

MAXIMUM BLDG HEIGHT: 30'  
TOTAL FLOOR AREA MINIMUM PER UNIT: 930 SF  
GROUND FLOOR AREA MINIMUM PER UNIT: 600 SF

**SITE DEVELOPMENT NOTES:**

STORM WATER DETENTION SHALL BE PROVIDED IN THE EXISTING MINNOW POND DETENTION FACILITY TO THE NORTH.

ALL PROPOSED PUBLIC UTILITY LOCATIONS SHALL BE COORDINATED WITH CITY OF FARMINGTON HILLS ENGINEERING DEPARTMENT.

FIRE HYDRANT LOCATIONS SHALL BE COORDINATED WITH CITY OF FARMINGTON HILLS FIRE AND ENGINEERING DEPARTMENTS.

ALL PROPOSED BUILDINGS SHALL HAVE A FINISHED GRADE OF NO LESS THAN 12" ABOVE THE EXISTING 100 YEAR FLOODPLAIN.

**CITY OF FARMINGTON HILLS STANDARD NOTES:**

NOTIFY THE CITY OF FARMINGTON HILLS ENGINEERING DIVISION 248-871-2560 A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION.

ALL CONSTRUCTION MUST BE CONFORMING TO THE CURRENT STANDARDS AND SPECIFICATIONS ADOPTED BY THE CITY OF FARMINGTON HILLS.

UTILITIES ARE TO BE UNDERGROUND.

CALL MISS DIG (1-800-647-7344 / 1-800-MISS DIG) A MINIMUM OF 72 HOURS PRIOR TO THE START OF CONSTRUCTION.

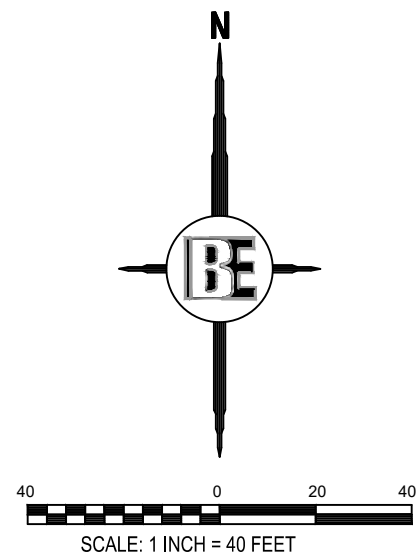
ALL SOIL EROSION AND SILT MUST BE CONTROLLED AND CONTAINED ON SITE.

ALL EXCAVATION UNDER OR WITHIN 3 FEET OF THE PUBLIC PAVEMENT, EXISTING OR PROPOSED, SHALL BE BACKFILLED AND COMPACTED WITH SAND (CLASS II MDOT).

THE CONTRACTOR IS RESPONSIBLE FOR ALL DAMAGE TO EXISTING UTILITIES.

PRIOR TO THE ISSUANCE OF AN OCCUPANCY PERMIT, ENGINEERING SITE INSPECTION IS REQUIRED.

SEE SHEET 2 FOR GENERAL NOTES AND LEGEND



LEGAL DESCRIPTION:  
 OUTLOT D, KENDALLWOOD NO. 4, CITY OF FARMINGTON HILLS, OAKLAND COUNTY, MICHIGAN ACCORDING TO THE PLAT THEREOF AS RECORDED IN LIBER 96, PAGES 23 & 24, OAKLAND COUNTY RECORDS.

THE LOCATION AND ELEVATION OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THESE DRAWINGS ARE ONLY APPROXIMATE. NO CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION, DEPTH, OR ELEVATION OF ANY UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF UTILITIES PRIOR TO CONSTRUCTION.

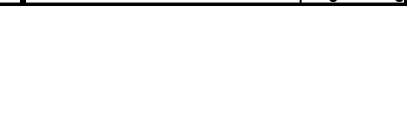


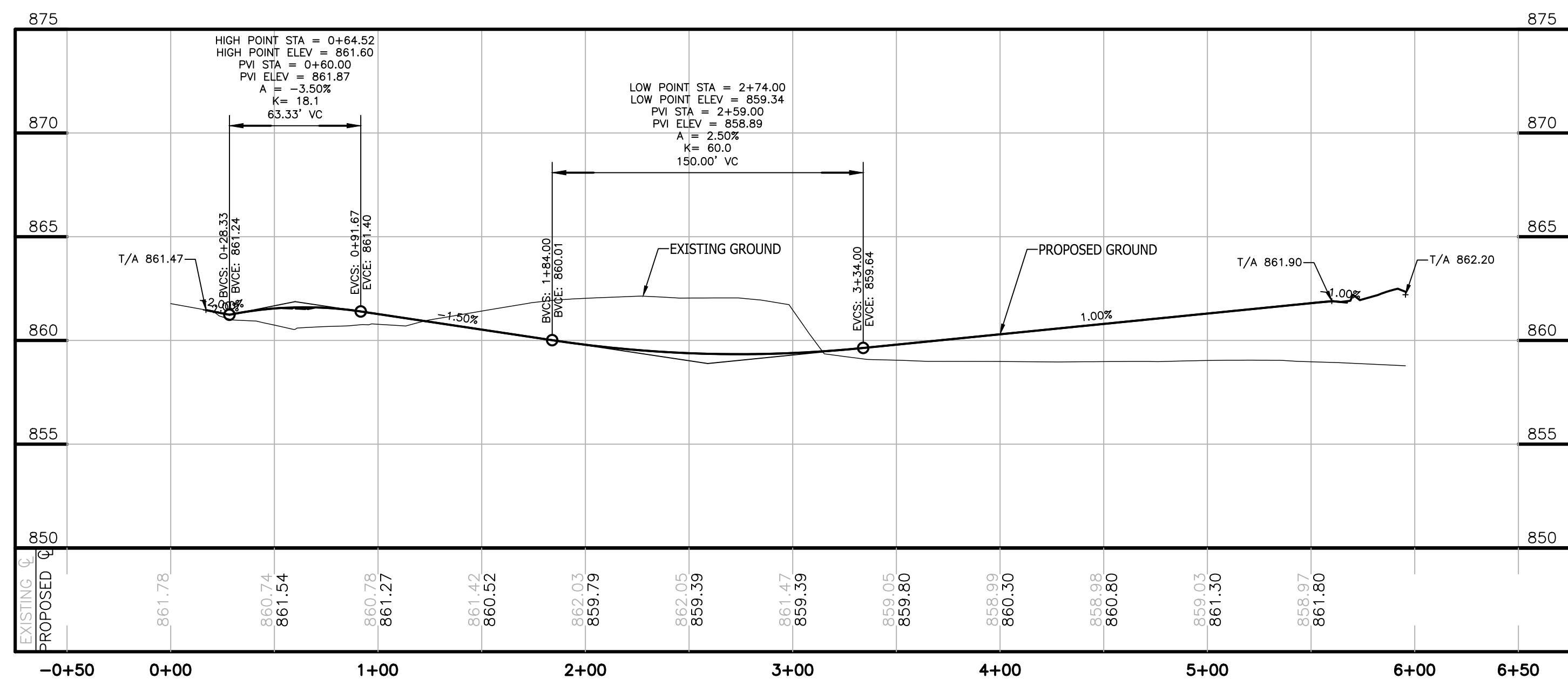
**BEBOSS**  
 Engineering  
 Engineers Surveyors Planners Landscape Architects  
 3121 E. GRAND RIVER AVE.  
 HOWELL, MI. 48843  
 517.546.4836 FAX 517.548.1670

PROJECT: CEDARS OF FARMINGTON  
 PREPARED FOR: CEDARS OF FARMINGTON ROAD, LLC  
 1650 N TELEGRAPH RD  
 DEARBORN, MI 48128  
 888.897.9792

NO.	BY	DATE	REVISION
1	JP	07/22/25	REVISION PER CITY REVIEW
2	JP	08/27/25	REVISION PER CITY REVIEW
3	JP	09/27/25	REVISION PER CITY REVIEW
4	JP	10/17/25	REVISION PER CITY REVIEW
5	JP	12/05/25	REVISION PER CITY REVIEW
6	JP	02/02/26	REVISION PER CITY REVIEW
7	JP	02/09/26	REVISION PER CITY REVIEW
8	JP	02/18/26	REVISION PER CITY REVIEW

DESIGNED BY: DH  
 DRAWN BY: JP  
 CHECKED BY:  
 SCALE: 1" = 40'  
 JOB NO: 24-410  
 DATE: 04/23/25  
 SHEET NO. 6





**PROPOSED ROADWAY VERTICAL ALIGNMENT**  
 HORIZ. (1" = 50')  
 VERT. (1" = 5')

**Table 13: MEP Tree Summary Table** (SEE SHT 10 FOR LOCATIONS)

COMMON TREE NAME	# TREES PLANTED	HOT AT MATURITY (FT)	RELATIVE TREE SIZE CATEGORY	MEP AREA / TREE (SQFT)	TOTAL MEP AREA (SQFT)	SOURCE
Red Maple	3	>40-ft	Large	500	1500	MDNR MI Native Trees IC 4212
Swamp White Oak	3	>40-ft	Large	500	1500	MDNR MI Native Trees IC 4212
American Elm	3	>40-ft	Large	500	1500	MDNR MI Native Trees IC 4212
White Spruce	3	>40-ft	Large	500	1500	MDNR MI Native Trees IC 4212
Ironwood / Hophornbeam	2	30-40-ft	Medium	300	600	MDNR MI Native Trees IC 4212
<b>TOTALS</b>	<b>14</b>				<b>6600</b>	

**Table 14: MEP Summary Table**

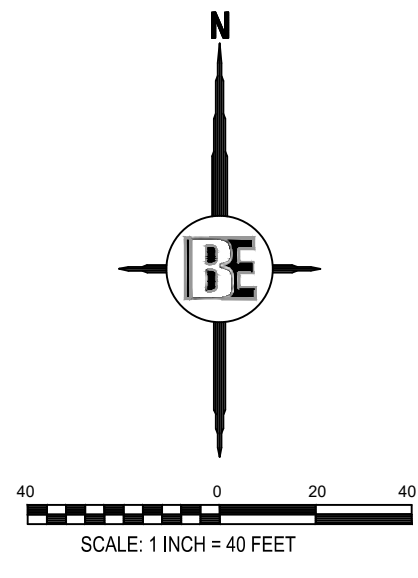
Total Development Area (sf)	166,876 sf (3.83 ac)
Site Impervious Area (sf)	41,302 sf (0.95 ac)
MEP Area Required (sf) Note: 15% Site Impervious Area	6,196 sf (0.14 ac)
Maximum Allowed Preservation Areas (sf) Note: 50% of the MEP Area	3,098 sf (0.07 ac)

**SMPs and their Associated MEP Area**

SMP	No. of Trees	Area of SMPs (sf)	Max Credit	Equivalent MEP Area (sf)
Trees:				
Small (100 sf per tree)			100%	-
Medium (300 sf per tree)	2	600	100%	600
Large (500 sf per tree)	12	6000	100%	6000
Tree Preservation			50%	-
Native Plantings			100%	-
Wetland Preservation Areas		0	50%	-
Woodland Preservation Areas			50%	-
Vegetated Roofs		0	100%	-
Natural Ponds		0	50%	-
<b>Total</b>				<b>6600</b>

SEE SHEET 2 FOR GENERAL NOTES AND LEGEND



**DRAINAGE AREA TABLE**

DRAINAGE AREA	TOTAL AREA (AC)	IMP. AREA (AC)	C VALUE	A <sup>1/4</sup>
1	0.00	-	0.00	0.00
2	0.00	-	0.00	0.00
3	0.51	0.16	0.43	0.22
4	0.71	0.36	0.59	0.42
5	0.15	0.07	0.57	0.08
6	0.11	0.07	0.63	0.07
7	0.14	0.07	0.58	0.08
8	0.18	0.10	0.63	0.11
9	0.06	0.05	0.83	0.05
10	0.22	0.13	0.65	0.15
11	0.15	0.07	0.57	0.09
<b>TOTALS</b>	<b>2.24</b>	<b>1.09</b>	<b>0.57</b>	<b>1.27</b>

**OAKLAND COUNTY DETENTION BASIN CALCULATIONS**

AREA (ACRES)	IMPERVIOUS FACTOR	ACRE
1.08	0.95	1.04
0.09	0.70	0.06
1.14	0.29	0.33

COMPOUND C TOTAL DRAINAGE AREA = 2.34 ACRES

**WATER QUALITY VOLUME V<sub>10</sub>**  
 V<sub>10</sub> = 2.000(A) = 4.680 FT<sup>3</sup>  
 V<sub>10</sub> = 1.5(V<sub>10</sub>) = 7.020 FT<sup>3</sup>

**WATER QUALITY RATE FOR MECHANICAL STRUCTURE**  
 C = MAX TIME OF CONCENTRATION = 11.27 MIN  
 Q<sub>10</sub> = (0.04(A)^(0.77))(C<sup>-0.17</sup>) = 3.36 CFS

**CHANNEL PROTECTION VOLUME CONTROL - REQUIRED**  
 V<sub>10</sub> = 4.719(CV<sub>10</sub>) = 6025 FT<sup>3</sup>

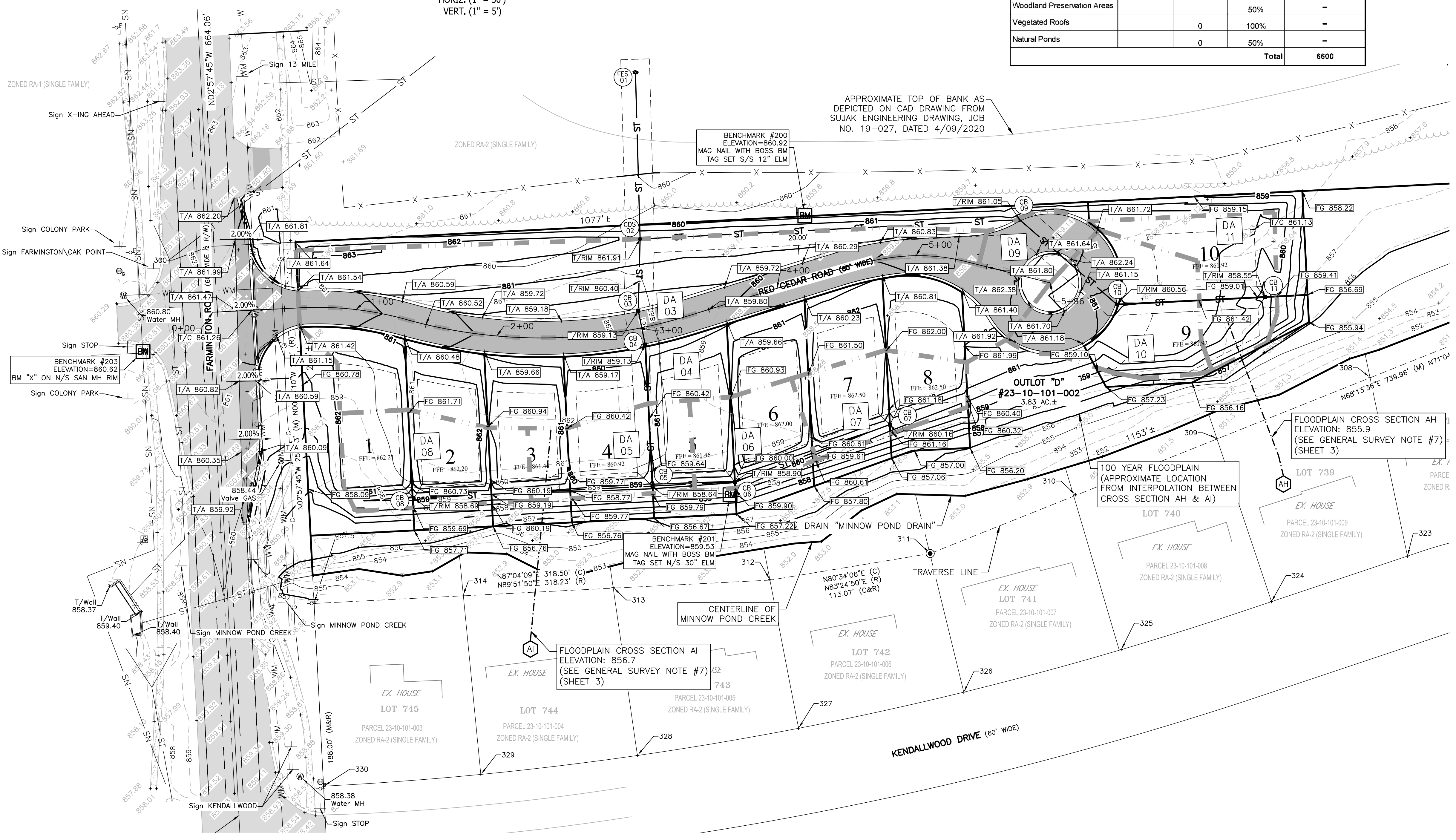
**CHANNEL PROTECTION VOLUME CONTROL - PROVIDED**  
 V<sub>10</sub> = 1.66 (N<sub>10</sub>) = 10.920 FT<sup>3</sup>

**CHANNEL PROTECTION RATE CONTROL (EXTENDED DETENTION VOLUME)**  
 V<sub>10</sub> = 6.807(CV<sub>10</sub>) = 8695 FT<sup>3</sup>

**EXTENDED DETENTION OUTLET RATE**  
 Q<sub>10</sub> = V<sub>10</sub>(A<sub>10</sub>) = 0.091 CFS  
 Q<sub>10</sub> = 1.056(2.288(A)) = 9.23 CFS  
 Q<sub>10</sub> = (LESSER OF Q<sub>10</sub> & Q<sub>10</sub>) = 0.448 CFS

**100-YEAR ALLOWABLE OUTLET RATE**  
 Q<sub>10</sub> = 0.2 (Q<sub>10</sub>) = 0.296 CFS  
 Q<sub>10</sub> = 1.056(2.288(A)) = 9.23 CFS  
 Q<sub>10</sub> = (LESSER OF Q<sub>10</sub> & Q<sub>10</sub>) = 0.448 CFS

**100-YEAR DETENTION VOLUME**  
 V<sub>10</sub> = 1.66(A) = 2420 FT<sup>3</sup>  
 V<sub>10</sub> = 1.056(2.288(A)) = 9.23 CFS  
 V<sub>10</sub> = 1.056(2.288(A)) = 9.23 CFS  
 V<sub>10</sub> = 1.056(2.288(A)) = 9.23 CFS



**STORMWATER DRAINAGE DESIGN NARRATIVE:**  
 THE CEDARS OF FARMINGTON IS A PROPOSED RESIDENTIAL DEVELOPMENT CONSISTING OF TEN SINGLE-FAMILY HOMES LOCATED AT 29150 FARMINGTON ROAD, FARMINGTON HILLS, MI 48334. THE EXISTING SITE IS GENERALLY FLAT, CONSISTING OF MAINLY SANDY LOAM SOILS AND URBAN LAND FORMERLY THE KENDALLWOOD SWIM CLUB, AND IS ABUTTED BY FARMINGTON ROAD TO THE WEST, THE MINNOW POND DRAIN TO THE SOUTH AND EAST, AND THE OAKLAND COUNTY DETENTION BASIN TO THE NORTH.

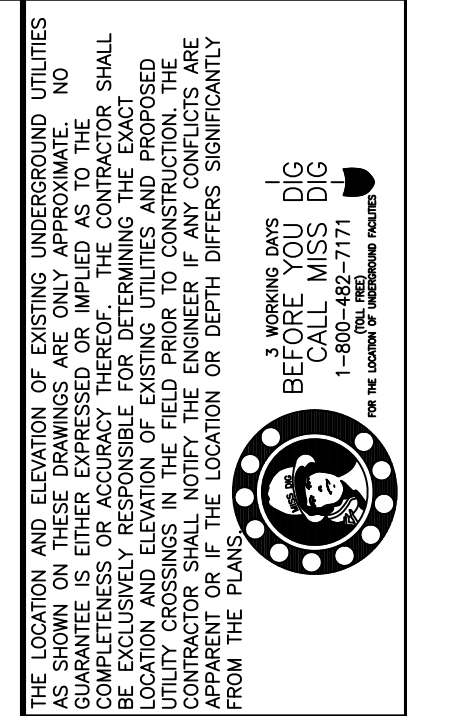
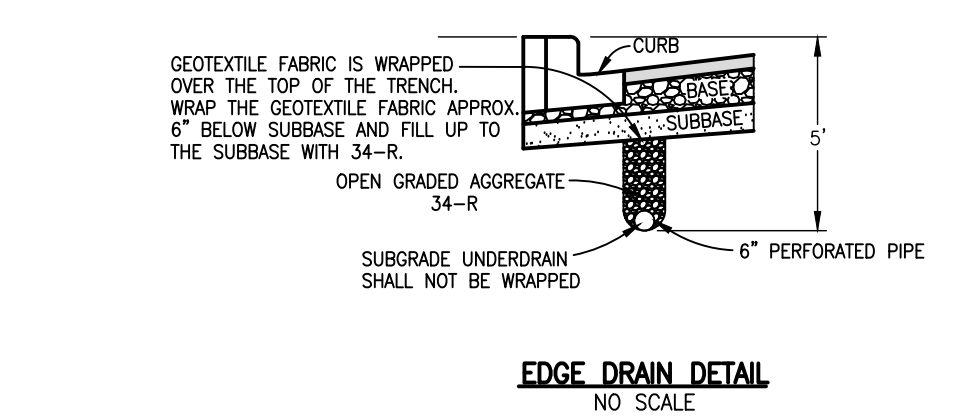
THE PROPOSED STORMWATER MANAGEMENT SYSTEM HAS BEEN DESIGNED TO CAPTURE RUNOFF FROM THE PROPOSED DRIVEWAY, CUL-DE-SAC, RESIDENTIAL HOUSES, AND OPEN AREA AND CHANNEL THE STORMWATER INTO THE EXISTING DETENTION BASIN OWNED AND OPERATED BY THE OAKLAND COUNTY WATER RESOURCE COMMISSION. THE STORMWATER DESIGN OUTLET LOCATION WILL BE APPROVED FOR USE BY THE OCWRV.

RUNOFF CAPTURED BY THE PROPOSED STORMWATER SYSTEM WILL BE TREATED WITH A PRETREATMENT MECHANICAL SEPARATOR, SEE SHEET 8, BEFORE OUTFLETTING INTO THE EXISTING DETENTION BASIN.

**DRAINAGE NOTE:**  
 THE 100-YEAR DETENTION AND EXTENDED DETENTION VOLUME REQUIREMENTS WILL BE MET BY THE ULTIMATE DRAINAGE OUTLET FOR THE SITE IN THE MINNOW POND DRAIN BASIN.

**BENCHMARKS:**

- BENCHMARK #200 = MAG NAIL WITH BOSS BM TAG SET S/S 12" ELM ELEV: 860.92
- BENCHMARK #201 = MAG NAIL WITH BOSS BM TAG SET N/S 30" ELM ELEV: 857.81
- BENCHMARK #203 = BM "X" ON N/S SAN MH RIM ELEV: 860.62



**BEBOSSE**  
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**CEDARS OF FARMINGTON**  
 CEDARS OF FARMINGTON ROAD, LLC  
 1650 N TELEGRAPH RD  
 DEARBORN, MI 48128  
 888.897.9792

**PROJECT PREPARED FOR**

REVISION	PER CITY	RESUBMITAL	DATE
1	UP	02/18/26	
2	UP	02/09/26	
3	UP	02/02/26	
4	UP	12/05/25	
5	UP	10/17/25	
6	UP	09/27/25	
7	UP	09/07/25	
8	UP	07/22/25	
9	UP	07/22/25	
10	UP	07/22/25	

DESIGNED BY: DH  
 DRAWN BY: JP  
 CHECKED BY:  
 SCALE: 1" = 40'  
 JOB NO: 24-410  
 DATE: 04/23/25  
 SHEET NO. **7**

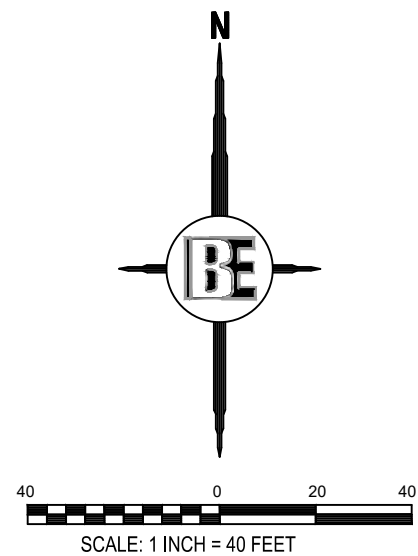
WATERMAIN LEAD DATA TABLE	
BLDG NO.	LEAD LENGTH (FT)
1	16
2	20
3	19
4	19
5	19
6	20
7	20
8	19
9	17
10	26

SANITARY LEAD DATA TABLE							
BLOG NO.	INV. AT MAIN	INV. AT WYE	WYE DISTANCE TO DOWNSTREAM (MH FT)	SLOPE (%)	LENGTH (FT)	RISER (FT)	
1	854.39	854.72	855.39	56	1.00%	67	0.00
2	854.63	854.97	855.79	111	1.00%	82	0.00
3	854.88	855.21	856.14	166	1.00%	92	0.00
4	855.13	855.46	856.40	221	1.00%	94	0.00
5	855.40	855.73	856.60	281	1.00%	87	0.00
6	855.65	855.98	856.72	336	1.00%	74	0.00
7	855.89	856.23	856.82	391	1.00%	60	0.00
8	856.04	856.37	857.09	0	1.00%	68	0.00
9	856.71	857.04	857.79	0	1.00%	75	0.00
10	856.71	857.04	857.79	0	1.00%	76	0.00

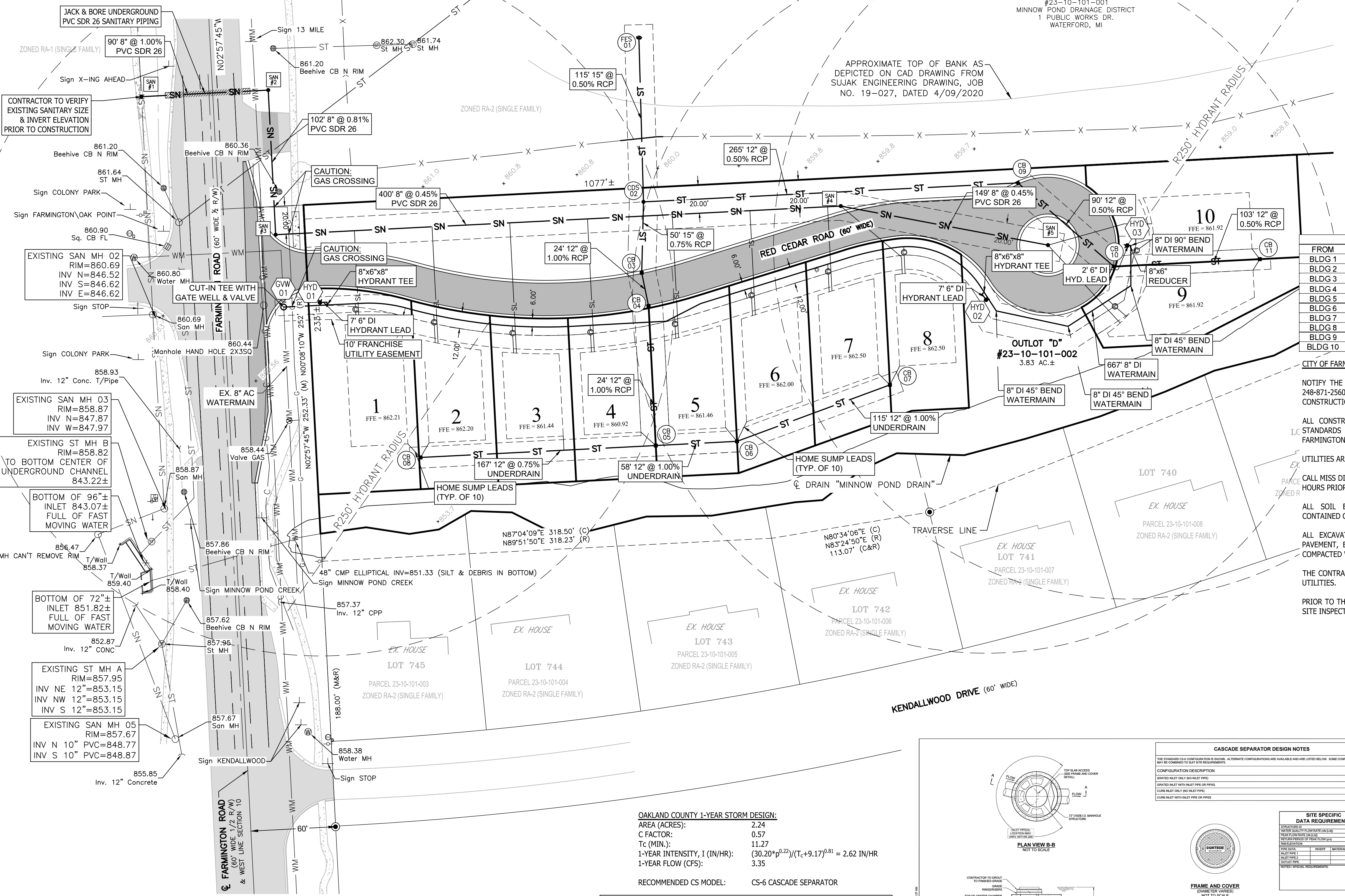
NOTE: INV. AT WYE 4" HIGHER THAN INV. AT MAIN TO ACCOUNT FOR WYE ELEVATION.

FROM	TO	DRAIN AREA	ACRES	RUNOFF COEFF	EQUIV. AREA A * C	INTENS. I	TIME OF CONC Tc	ADDL. RUNOFF Q	RUNOFF (CFS)	PIPE LENGTH (LF)	PIPE DIA (IN)	VELOCITY FLOWING FULL (FPS)	HYDRAULIC GRADIENT SLOPE %	ACTUAL SLOPE USED	MANNING COEFFICIENT	MANNING FLOW CAPACITY	MANNING'S VELOCITY (FT/SEC)	TIME (MIN)	HG ELEV UPPER END	HG ELEV LOWER END	RM ELEV UPPER END	RM ELEV LOWER END	INVERT UPPER END	INVERT LOWER END	DROP DISTANCE (FT)
7	6	7	0.14	0.58	0.08	4.58	10.00		0.37	115	12	2.50	0.30%	1.00%	0.013	3.57	4.55	0.42	856.79	855.64	858.90	858.64	855.99	854.84	
6	5	6	0.11	0.63	0.07	4.50	10.42		0.70	58	12	3.03	0.44%	1.00%	0.013	3.57	4.55	0.21	855.64	855.06	858.64	859.13	854.84	854.26	
5	4	5	0.15	0.57	0.08	4.46	10.63	0.53	1.60	99	12	3.79	0.69%	1.00%	0.013	3.57	4.55	0.36	855.06	854.24	859.13	859.13	854.26	853.27	
4	3	4	0.71	0.58	0.42	4.40	11.00		3.43	24	12	5.91	1.69%	1.00%	0.013	3.57	4.55	0.09	854.24	853.83	859.13	860.40	853.27	853.03	0.50
3	2	3	0.51	0.43	0.22	4.38	11.08		4.38	50	15	4.53	0.74%	0.75%	0.013	5.61	4.57	0.18	853.33	852.96	860.40	861.91	852.33	851.96	2.59
2	1	2	0.00	-	-	-	11.27	1.27	5.65	115	18	4.11	0.48%	0.50%	0.013	7.45	4.21	0.46	850.37	849.79	861.91	-	849.17	848.59	
8	5	8	0.18	0.63	0.11	4.58	10.00		0.53	167	12	2.36	0.27%	0.75%	0.013	3.09	3.94	0.71	856.89	855.64	858.69	859.13	856.09	854.84	
11	10	11	0.15	0.57	0.09	4.58	10.00		0.39	103	12	1.93	0.18%	0.50%	0.013	2.53	3.22	0.54	856.85	856.33	858.55	860.55	856.05	855.53	1.50
10	9	10	0.22	0.65	0.15	4.48	10.54		1.04	90	12	2.57	0.32%	0.50%	0.013	2.53	3.22	0.47	854.83	854.38	861.05	861.05	854.03	853.58	
9	2	9	0.06	0.83	0.05	4.40	11.00		1.27	265	12	2.81	0.38%	0.50%	0.013	2.53	3.22	1.37	854.38	853.06	861.05	861.91	853.58	852.26	2.69

SEE SHEET 2 FOR GENERAL NOTES AND LEGEND



THE LOCATION AND ELEVATION OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THESE DRAWINGS ARE ONLY APPROXIMATE. NO GUARANTEE IS MADE FOR THE ACCURACY OF THESE UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FROM THE CITY OF FARMINGTON PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FROM THE CITY OF FARMINGTON PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FROM THE CITY OF FARMINGTON PRIOR TO CONSTRUCTION.



STRUCTURE	STRUCTURE DETAILS
MH 01	4'0" COVER TYPE 'A'
MH 02	5'0" COVER TYPE 'A'
MH 03	4'0" COVER TYPE 'A'
MH 04	4'0" COVER TYPE 'A'
MH 05	4'0" COVER TYPE 'A'

STRUCTURE NAME	STRUCTURE DETAILS
CB03	4'0" COVER TYPE 'K' 2' SUMP
CB04	4'0" COVER TYPE 'K' 2' SUMP
CB05	4'0" COVER TYPE 'E' 2' SUMP
CB06	4'0" COVER TYPE 'E' 2' SUMP
CB07	2'0" COVER TYPE 'E' 2' SUMP
CB08	2'0" COVER TYPE 'E' 2' SUMP
CB09	4'0" COVER TYPE 'K' 2' SUMP
CB10	4'0" COVER TYPE 'K' 2' SUMP
CB11	2'0" COVER TYPE 'E' 2' SUMP
CB12	2'0" COVER TYPE 'E' 2' SUMP
CB13	6'0" COVER TYPE 'E' 5' SUMP
FES01	18" INV S = 848.59

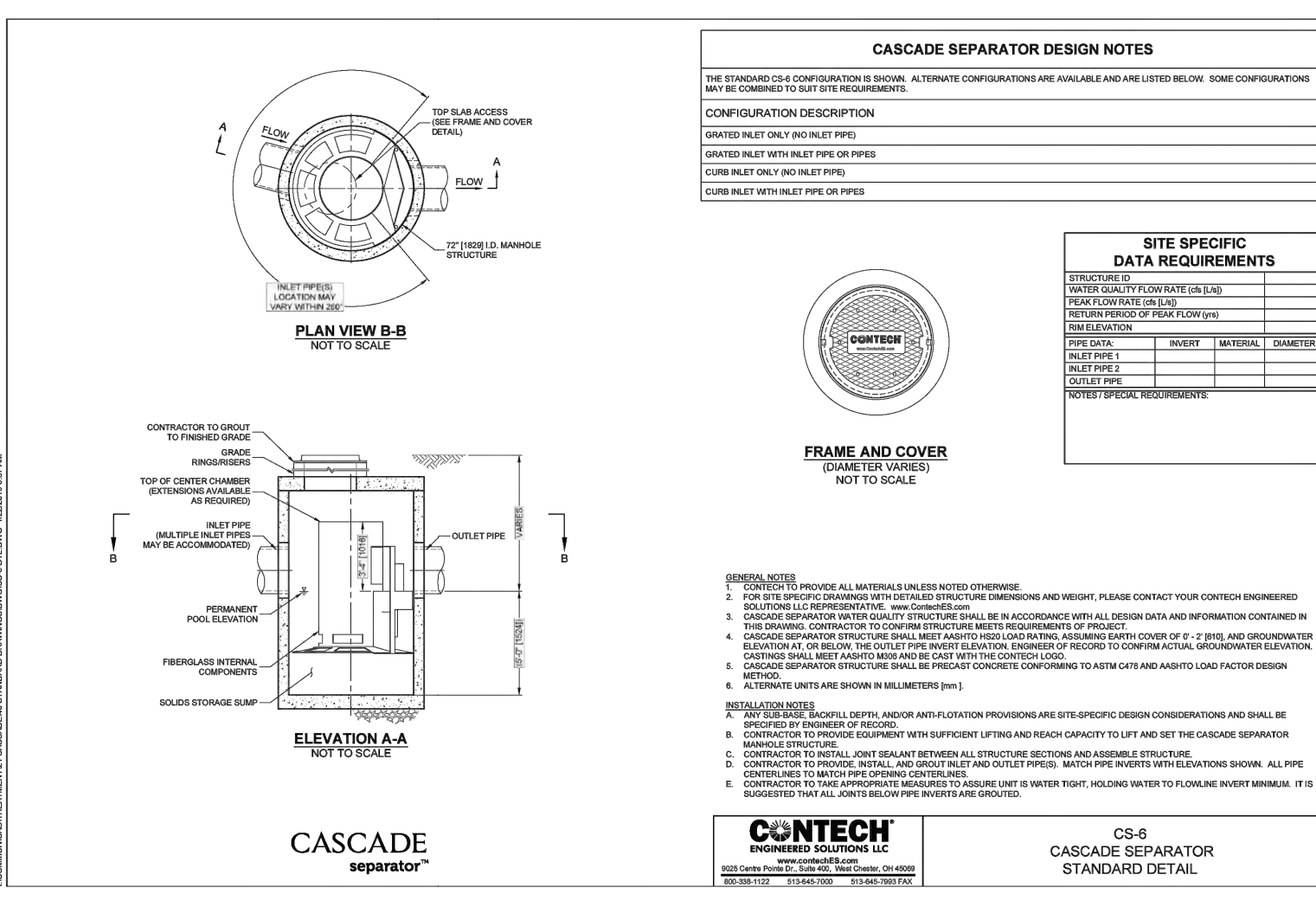
FROM	TO	MH	SIZE	LENGTH	SLOPE
BLDG 1	9	4"	13	1%	
BLDG 2	9	4"	12	1%	
BLDG 3	9-6	4"	10	1%	
BLDG 4	6	4"	14	1%	
BLDG 5	7	4"	13	1%	
BLDG 6	7	4"	15	1%	
BLDG 7	8	4"	11	1%	
BLDG 8	8	4"	15	1%	
BLDG 9	12	4"	9	1%	
BLDG 10	12	4"	9	1%	

**CITY OF FARMINGTON STANDARD NOTES:**  
 NOTIFY THE CITY OF FARMINGTON HILLS ENGINEERING DIVISION 248-871-2560 A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION.  
 ALL CONSTRUCTION MUST BE CONFORMING TO THE CURRENT STANDARDS AND SPECIFICATIONS ADOPTED BY THE CITY OF FARMINGTON HILLS.  
 UTILITIES ARE TO BE UNDERGROUND.  
 CALL MISS DIG (1-800-647-7344 / 1-800-MISS DIG) A MINIMUM OF 72 HOURS PRIOR TO THE START OF CONSTRUCTION.  
 ALL SOIL EROSION AND SILT MUST BE CONTROLLED AND CONTAINED ON SITE.  
 ALL EXCAVATION UNDER OR WITHIN 3 FEET OF THE PUBLIC PAVEMENT, EXISTING OR PROPOSED, SHALL BE BACKFILLED AND COMPACTED WITH SAND (CLASS II MDT).  
 THE CONTRACTOR IS RESPONSIBLE FOR ALL DAMAGE TO EXISTING UTILITIES.  
 PRIOR TO THE ISSUANCE OF AN OCCUPANCY PERMIT, ENGINEERING SITE INSPECTION IS REQUIRED.

**SANITARY BASIS OF DESIGN:**  
 SINGLE FAMILY REU FACTOR: 1.0/UNIT  
 NUMBER OF SINGLE FAMILY UNITS: 10  
 REQUIRED REUS: 10 UNITS x 1.0 REU/UNIT = 10 REU  
 NUMBER OF PEOPLE: 10 REU x (3.2 PEOPLE/REU) = 32 PEOPLE (USE 32 PEOPLE)  
 AVERAGE FLOW: = 32 PEOPLE x (100 GAL/DAY/PERSON) = 3,200 GALLONS/DAY  
 PEAK FLOW: = [(18 + SQRT(0.032)) / (4 + SQRT(0.032))] x (0.0050) = 0.0218 CFS  
 6" SAN LEAD @ 1.00% CAPACITY: 0.81 CFS  
 8" SAN SEWER @ 0.45% CAPACITY: 1.17 CFS

**OAKLAND COUNTY 1-YEAR STORM DESIGN:**  
 AREA (ACRES): 2.24  
 C FACTOR: 0.57  
 Tc (MIN.): 11.27  
 1-YEAR INTENSITY, I (IN/HR): (30.20 \* P<sup>0.22</sup>) / (Tc + 9.17)<sup>0.81</sup> = 2.62 IN/HR  
 1-YEAR FLOW (CFS): 3.35

Model	Manhole Diameter (ft)	MTFR (cfs)	50% Maximum Sediment Storage Area Volume (ft <sup>3</sup> )
CS-3	3	1.02	5.3
CS-4	4	1.80	9.4
CS-5	5	2.81	14.7
CS-6	6	4.05	21.2
CS-8	8	7.20	37.7
CS-10	10	11.3	58.9
CS-12	12	16.2	84.8



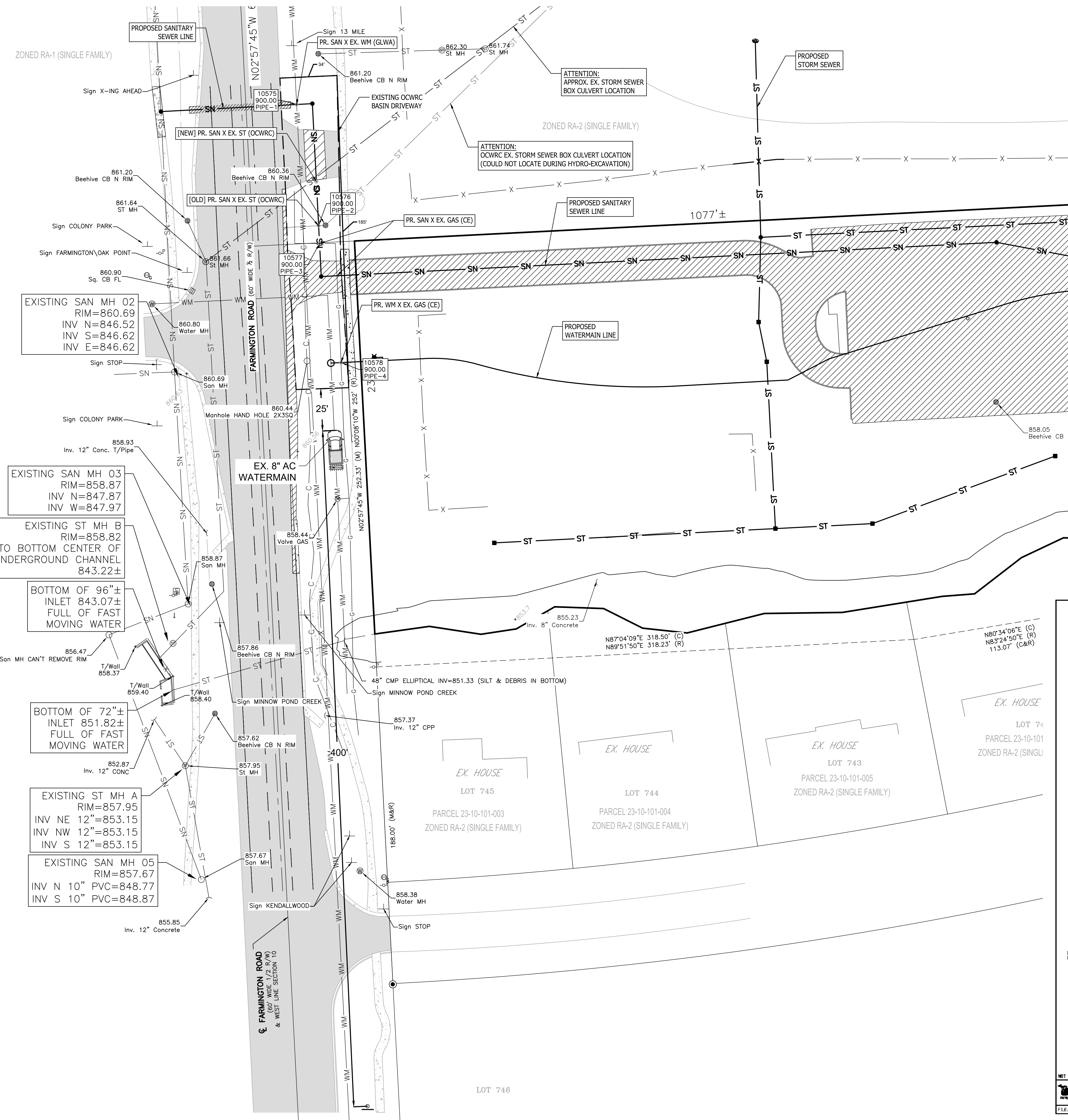
**STORMWATER MANAGEMENT SYSTEM LONG-TERM MAINTENANCE SCHEDULE**

Maintenance Activities	System Components			Frequency
	Storm Collection System (Inlets, Catch Basins, Manholes, Sumps, Sewers)	Framed End Section & Outlet Pipes	Concrete Mechanical Separator Unit	
<b>Monitoring / Inspection</b>				
Inspect for Sediment Accumulation	X	X	X	Annually
Inspect for Floatables, Dead Vegetation and Debris	X	X	X	Annually & After Major Events
Inspect for Erosion and Integrity of Banks & Berms	X	X	X	Annually & After Major Events
Monitor Plantings/Vegetation	X			2 Times per Year
Inspect All Components during Wet Weather & Compare to As-Built Plans	X	X	X	Annually
Ensure Maintenance Access Remain Open/Clear	X	X	X	2 Times per Year
<b>Preventative Maintenance</b>				
Mowing	X			As Needed, Select Areas Only
Remove Accumulated Sediment	X	X	X	As Needed
Remove Floatables, Debris, Invasive and Dead Vegetation	X	X	X	As Needed
Sweeping of Paved Surfaces, Clean Oil Spills Immediately	X	X	X	As Needed
<b>Remedial Actions</b>				
Repair/Stabilize Areas of Erosion	X	X	X	As Needed
Replace Dead Plantings and Trees, Reseed Bare Areas	X			As Needed
Structural Repairs	X	X	X	As Needed
Make Adjustments/Repairs to Ensure Proper Functioning	X	X	X	As Needed

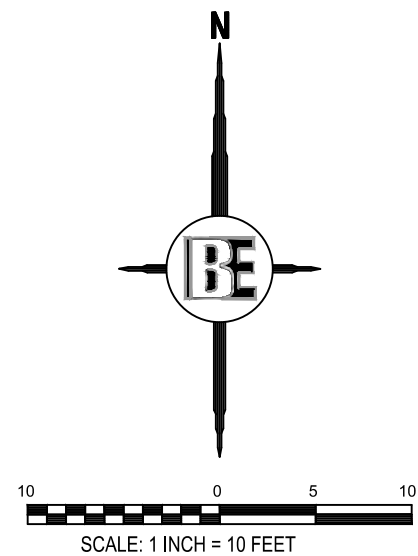
**BEBOSS Engineering**  
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**CEDARS OF FARMINGTON**  
 CEDARS OF FARMINGTON ROAD, LLC  
 1650 N TELEGRAPH RD  
 DEARBORN, MI 48128  
 888.897.9792

PROJECT: UTILITY PLAN  
 PREPARED FOR: CEDARS OF FARMINGTON ROAD, LLC  
 TITLE: UTILITY PLAN  
 REVISION PER CITY RESUBMITAL: 02/18/26  
 REVISION PER ESE COMMENTS: 02/09/26  
 REVISION PER CITY REVIEW: 12/05/25  
 REVISION PER OHWC & CITY REVIEW: 10/17/25  
 REVISION PER FHD REVIEW: 09/27/25  
 REVISION PER CITY REVIEW: 08/07/25  
 REVISION PER OHWC & CITY REVIEW: 07/22/25  
 DESIGNED BY: DH  
 DRAWN BY: JP  
 CHECKED BY:  
 SCALE: 1" = 40'  
 JOB NO: 24-410  
 DATE: 04/23/25  
 SHEET NO: 8



SEE SHEET 2 FOR GENERAL NOTES AND LEGEND

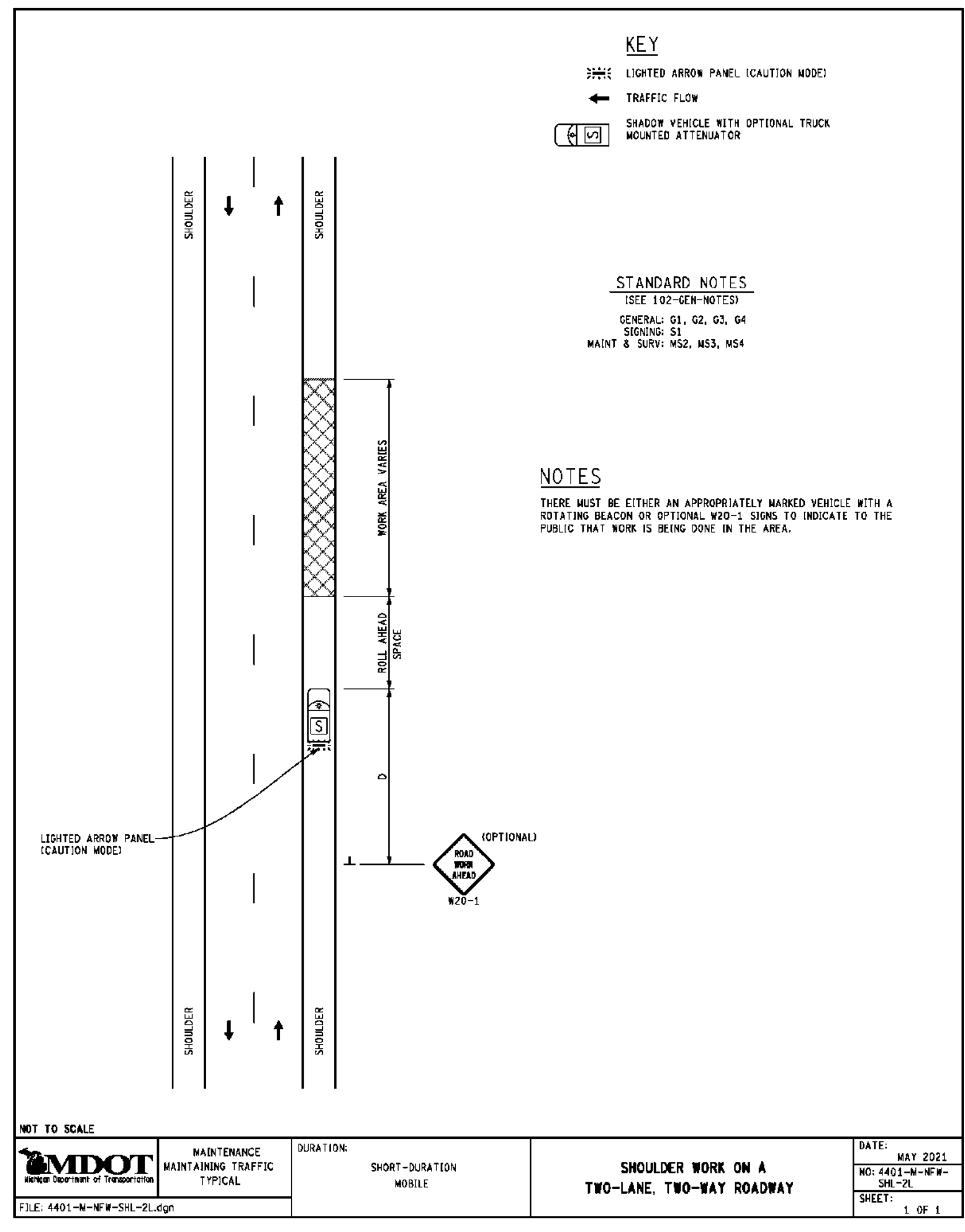


- LEGEND:**
- LIGHTED ARROW PANEL
  - TEMPORARY TRAFFIC SIGN
  - WORK AREA
  - MARKED TRAFFIC CONTROL VEHICLE



**TRAFFIC CONTROL NOTES:**

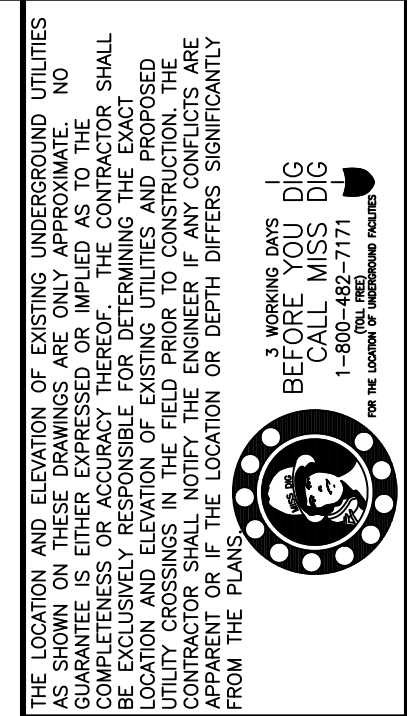
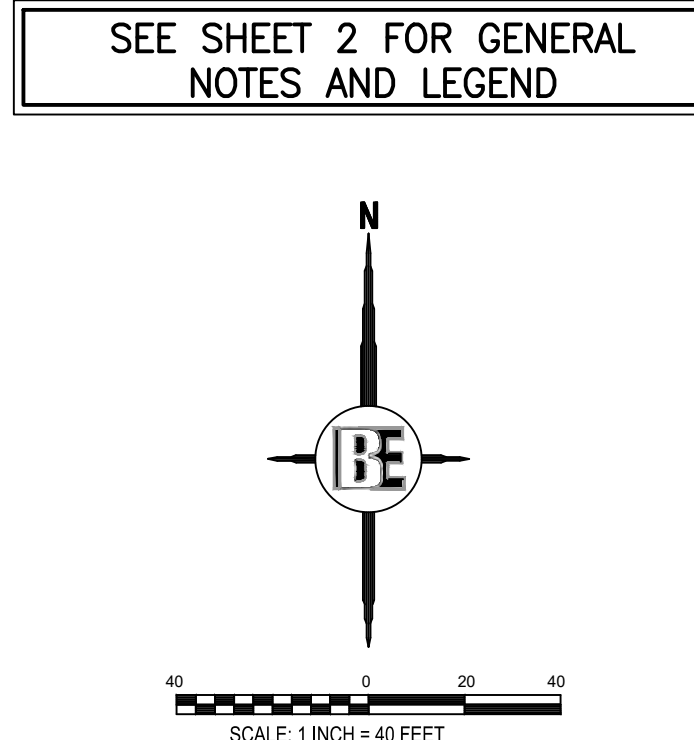
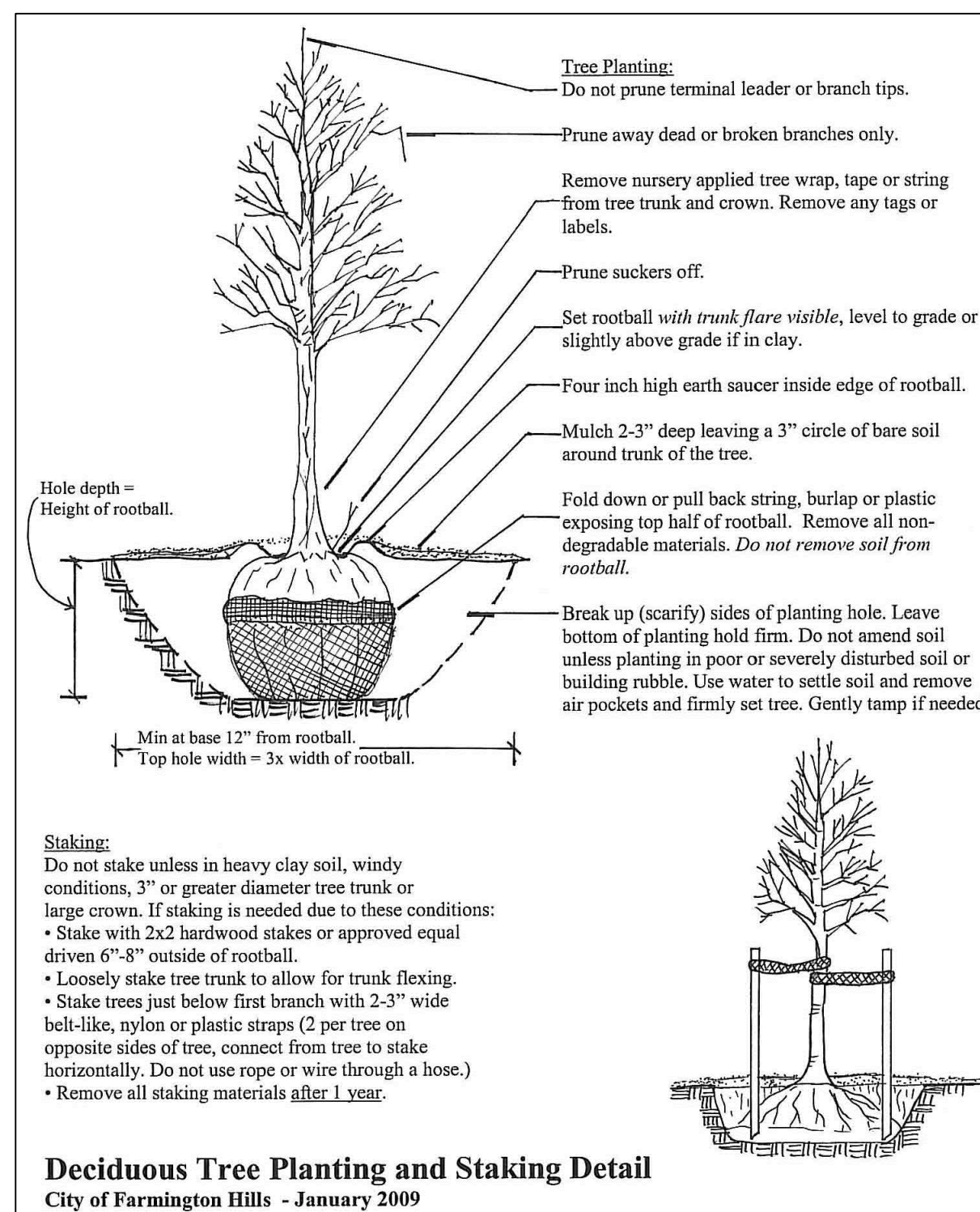
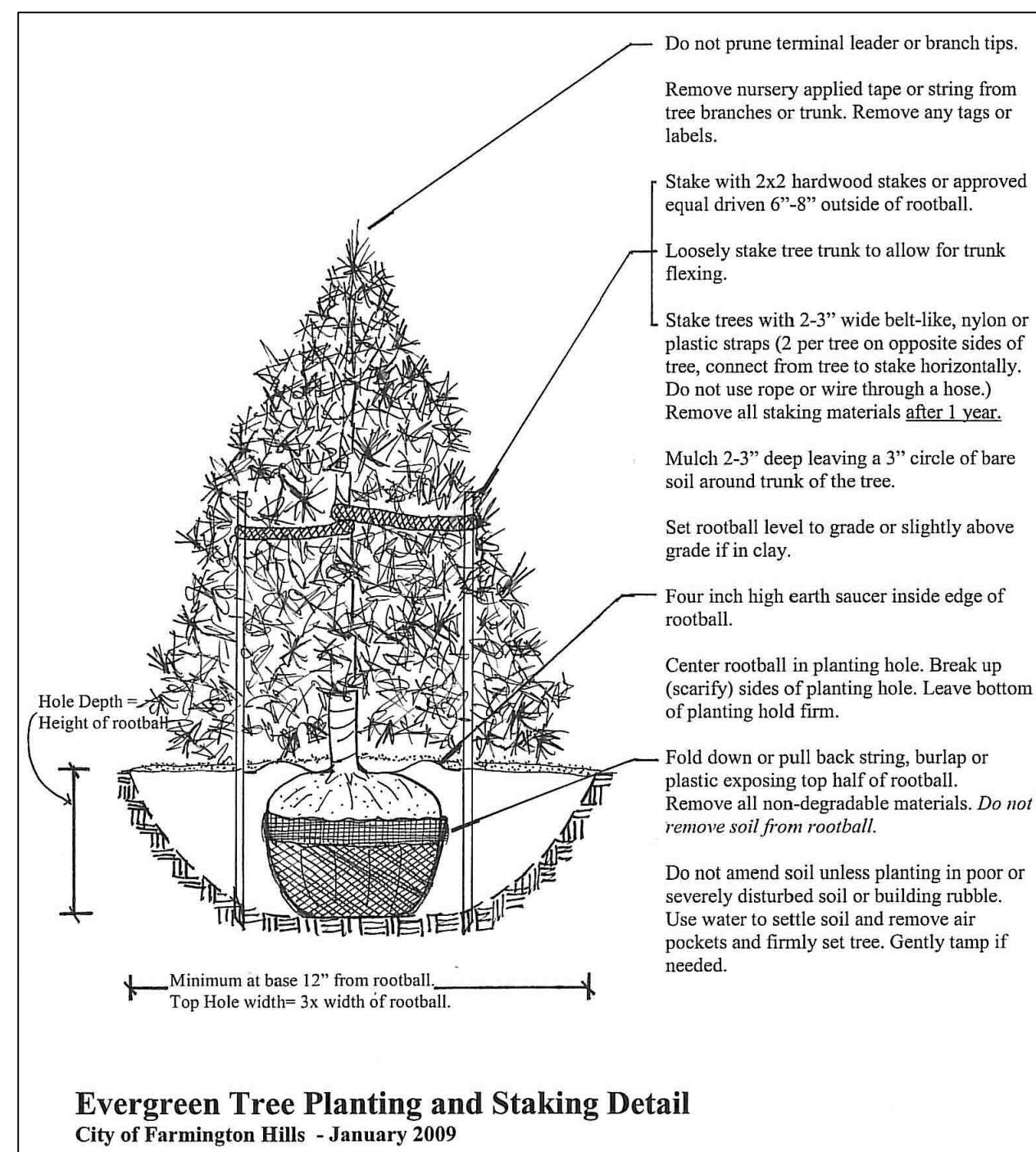
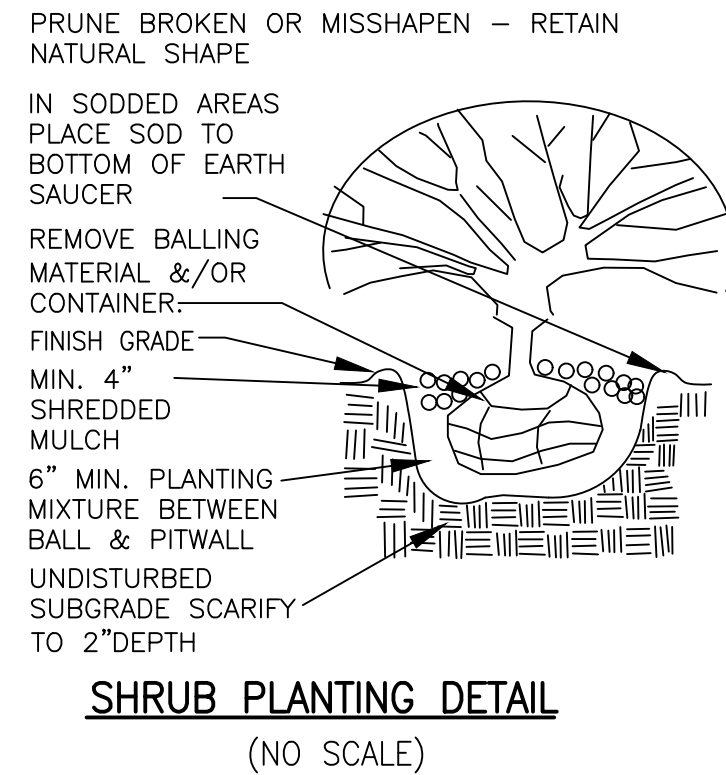
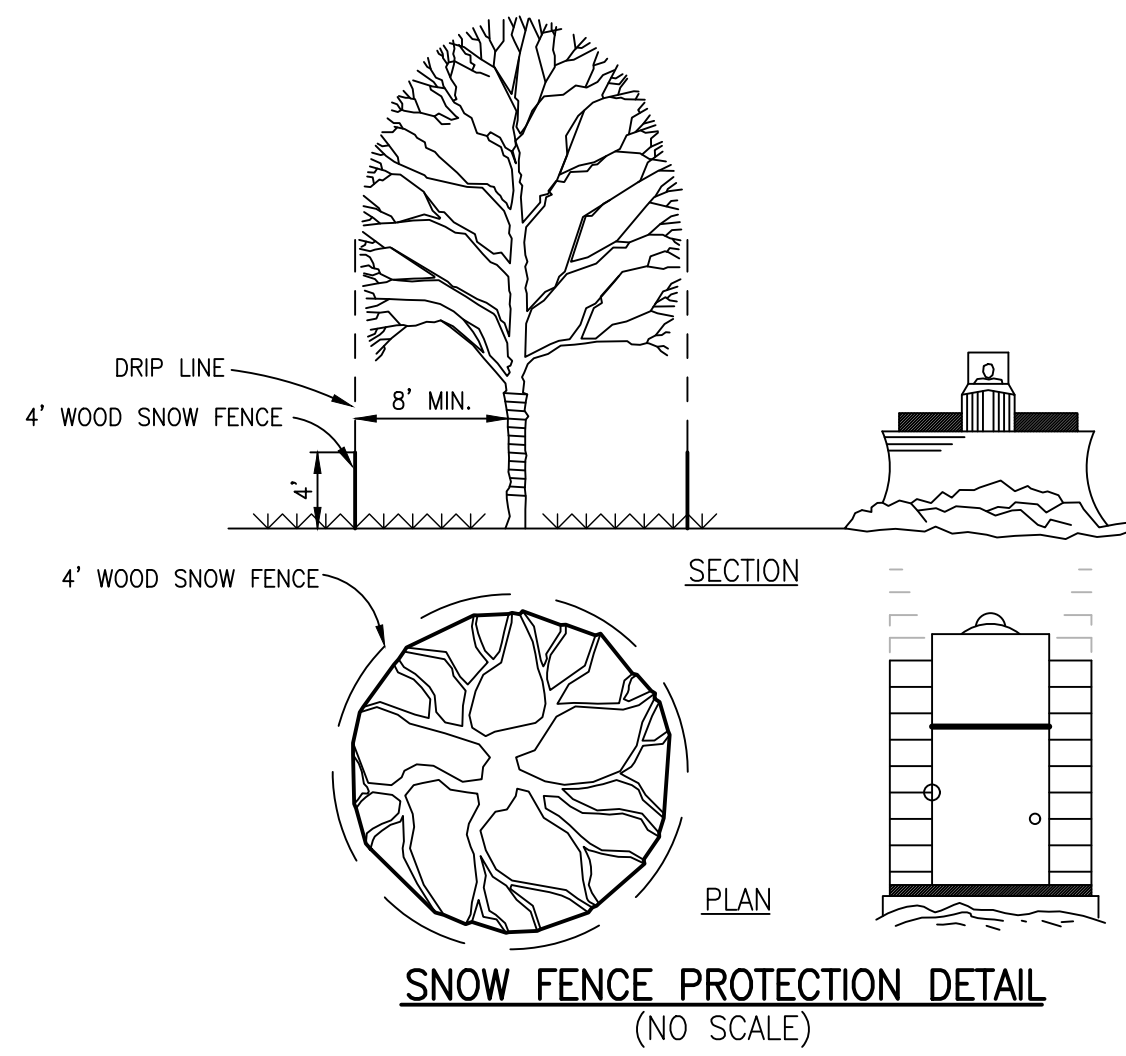
1. THERE MUST BE EITHER AN APPROPRIATELY MARKED VEHICLE WITH A ROTATING BEACON OR OPTIONAL W20-1 SIGNS TO INDICATE TO THE PUBLIC THAT WORK IS BEING DONE IN THE AREA.
2. "ROLL AHEAD SPACE" DISTANCE FOR 5.5 TON STATIONARY VEHICLES IN 40MPH ZONES IS 25 FT.



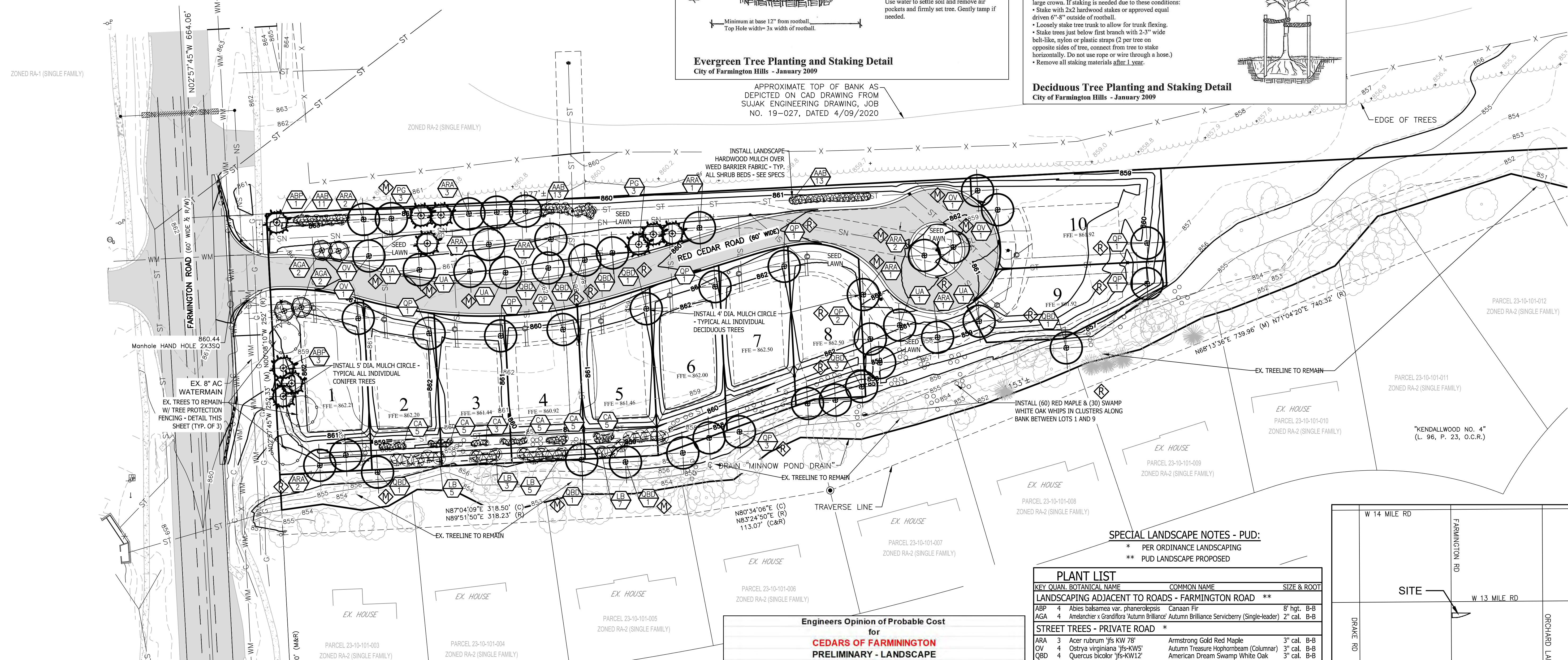
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**BEBOSS Engineering**  
 Engineers Surveyors Planners Landscape Architects  
 3121 E. GRAND RIVER AVE.  
 HOWELL, MI. 48843  
 517.546.4836 FAX 517.548.1670

PROJECT		CEDARS OF FARMINGTON	
PREPARED FOR		CEDARS OF FARMINGTON ROAD, LLC	
DATE		02/18/26	02/18/26
REVISION PER CITY RESUBMITTAL		02/18/26	02/18/26
REVISION PER ESE COMMENTS		02/09/25	02/09/25
REVISION PER ESE COMMENTS		02/02/25	02/02/25
REVISION PER CITY REVIEW		12/05/25	12/05/25
REVISION PER CITY REVIEW		10/17/25	10/17/25
REVISION PER CITY REVIEW		09/27/25	09/27/25
REVISION PER CITY REVIEW		08/07/25	08/07/25
REVISION PER CITY REVIEW		07/22/25	07/22/25
REVISION PER CITY REVIEW		07/22/25	07/22/25
DESIGNED BY:		DH	
DRAWN BY:		JP	
CHECKED BY:			
SCALE:		1" = 30'	
JOB NO:		24-410	
DATE:		04/23/25	
SHEET NO.		9	



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**SUPPLEMENTAL LANDSCAPE NOTES - FARMINGTON HILLS:**

- A TREE PERMIT MUST BE OBTAINED FROM THE PLANNING OFFICE PRIOR TO ALL TREE REMOVAL ACTIVITY INVOLVING TREES 6-INCHES DBH OR MORE IN ACCORDANCE WITH THE CITY OF FARMINGTON HILLS ZONING CHAPTER 34-559.
- TREES SHALL BE PLANTED NO CLOSER THAN 6-FEET FROM PUBLIC UTILITIES.
- ALL REQUIRED LANDSCAPE MATERIAL INDICATED ON APPROVED PLANS WILL BE REQUIRED THROUGH THE LIFE OF THE PROJECT AND MUST BE REPLACED IF REMOVED OR DEAD.
- 4-FOOT HIGH WOOD SNOW FENCING OR OTHER RIGID MATERIAL IS TO BE ERRECTED AROUND THE DRIP LINE OF ALL TREES TO BE SAVED IN ACCORDANCE WITH CITY OF FARMINGTON HILLS ZONING ORDINANCE CHAPTER 34-559.
- REQUIRED LANDSCAPE MATERIAL SHALL SATISFY AMERICAN HORT 260.2-2025 'AMERICAN STANDARD FOR NURSERY STOCK' - AND:
  - NURSERY GROWN
  - MI STATE DEPT OF AGRICULTURE INSPECTED
  - PLANTED PER CITY OF FARMINGTON HILLS DETAILS AND SPECIFICATIONS AND IN ACCORDANCE WITH ZONING ORDINANCE CHAPTER 34-553.
  - INCLUDE 1-YEAR WARRANTY
  - REPLACEMENT TREES SHALL HAVE SHADE POTENTIAL AND OTHER CHARACTERISTICS COMPARABLE TO THE PROPOSED FOR REMOVAL.

**Table 13: MEP Tree Summary Table**

COMMON TREE NAME	# TREES PLANTED	HGT AT MATURITY (FT)	RELATIVE TREE SIZE CATEGORY	MEP AREA / TREE (SQFT)	TOTAL MEP AREA (SQFT)	SOURCE
Red Maple	3	>40-ft	Large	500	1500	MDNR MI Native Trees IC 4212
Swamp White Oak	3	>40-ft	Large	500	1500	MDNR MI Native Trees IC 4212
American Elm	3	>40-ft	Large	500	1500	MDNR MI Native Trees IC 4212
White Spruce	3	>40-ft	Large	500	1500	MDNR MI Native Trees IC 4212
Ironwood / Hophornbeam	2	30-40-ft	Medium	300	600	MDNR MI Native Trees IC 4212
<b>TOTALS</b>	<b>14</b>				<b>6600</b>	

SEE SHEET 7 FOR TABLE 14 SUMMARY TABLE

**Engineers Opinion of Probable Cost**  
for  
**CEDARS OF FARMINGTON**  
**PRELIMINARY - LANDSCAPE**  
15-Apr-25

Landscaping (installed)	UNIT	QUANTITY	UNIT PRICE	TOTAL
1 Deciduous tree, 3" cal. B&B	EA	46	\$ 675.00	\$31,050.00
2 Conifer tree, 8-4 hgt. B&B	EA	10	\$ 550.00	\$5,500.00
3 Deciduous tree (ornamental), 2" cal. B&B	EA	4	\$ 400.00	\$1,600.00
4 Deciduous shrubs (30" / 5 gal. container)	EA	84	\$ 65.00	\$5,460.00
5 Deciduous sapling trees (3-4" whips)	EA	90	\$ 30.00	\$2,700.00
6 Grass seed & mulch	SQYD	9,000	\$ 1.00	\$9,000.00
7 Shredded hardwood mulch	CYD	33	\$ 45.00	\$1,485.00
8 Weed barrier fabric	SQYD	280	\$ 2.00	\$560.00
			SUB TOTAL	\$57,355.00

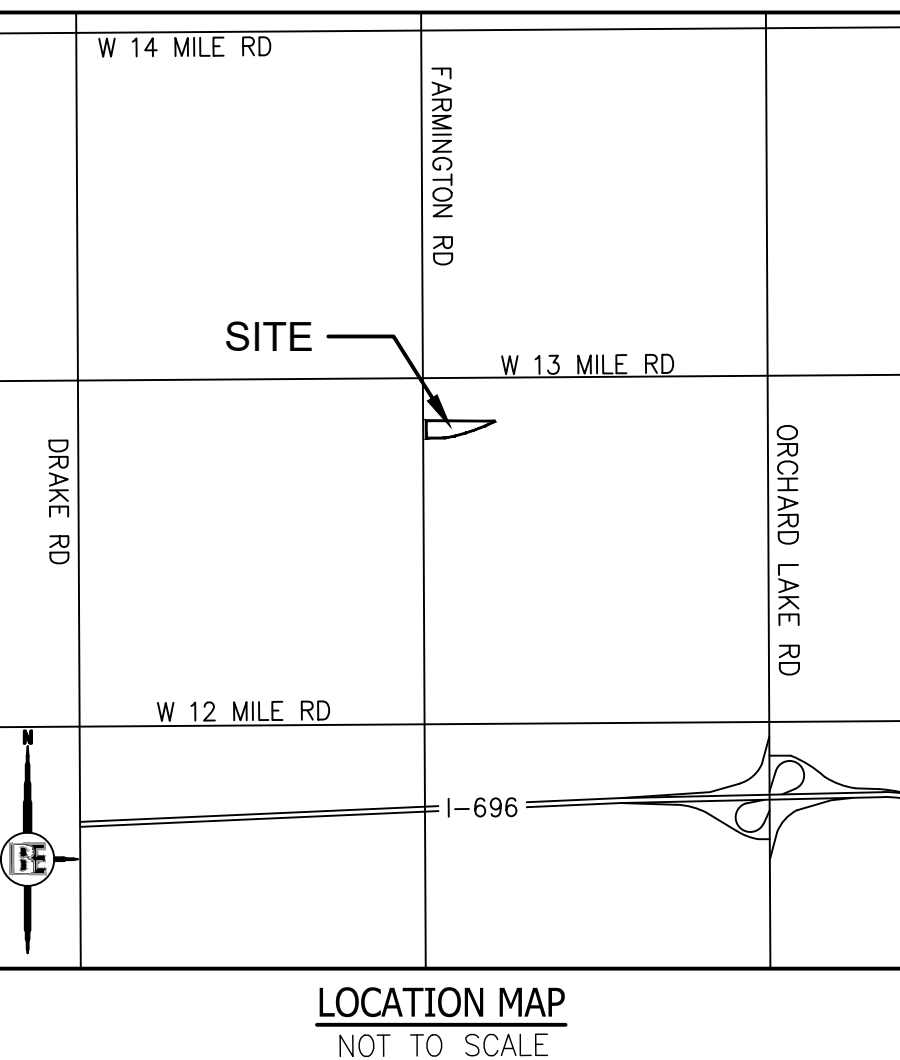
**TREE REPLACEMENT CALCULATIONS:**

TOTAL NUMBER OF TREES ON-SITE: 89  
 TOTAL NUMBER OF TREES TO BE REMOVED: 14  
 TOTAL NUMBER OF REPLACEMENT TREES TO BE PLANTED ON SITE: 75  
 NURSERY STOCK TREES (3" CAL.): 17  
 WHIP SAPLINGS: 90

**SPECIAL LANDSCAPE NOTES - PUD:**  
\* PER ORDINANCE LANDSCAPING  
\*\* PUD LANDSCAPE PROPOSED

**PLANT LIST**

KEY QUAN.	BOTANICAL NAME	COMMON NAME	SIZE & ROOT
<b>LANDSCAPING ADJACENT TO ROADS - FARMINGTON ROAD **</b>			
ABP 4	Abies balsamea var. phanerolepis	Canaan Fir	8' hgt. B-B
AGA 4	Amelanchier x Grandiflora 'Autumn Brilliance'	Autumn Brilliance Serviceberry (Single-leader)	2" cal. B-B
<b>STREET TREES - PRIVATE ROAD *</b>			
ARA 3	Acer rubrum 'J's KW 78'	Armstrong Gold Red Maple	3" cal. B-B
OV 4	Cedrus virginiana 'J's-KW15'	Autumn Treasure Hophornbeam (Columnar)	3" cal. B-B
QBD 4	Quercus bicolor 'J's-KW12'	Armstrong Gold Red Maple	3" cal. B-B
QP 5	Quercus palustris	Pin Oak	3" cal. B-B
UA 5	Ulmus americana 'JFS-Prince II'	Colonial Spirit American Elm	3" cal. B-B
<b>OPEN SPACE PLANTINGS **</b>			
AAB 36	Aronia arbutifolia 'Brilliantissima'	Brilliantissima Red Chokeberry	30" 5-gal. cont.
ARA 8	Acer rubrum 'J's KW 78'	Armstrong Gold Red Maple	3" cal. B-B
PG 6	Picea glauca	White Spruce	8' hgt. B-B
<b>DRAINAGE SWALE PLANTINGS **</b>			
CA 28	Clethra alnifolia 'Ruby Spice'	Ruby Spice Summersweet	30" 5-gal. cont.
LB 20	Lindera benzoin	Spicebush	5-gal. cont.
<b>REPLACEMENT TREES * (R)</b>			
ARA 3	Acer rubrum 'J's KW 78'	Armstrong Gold Red Maple	3" cal. B-B
QP 7	Quercus palustris	Pin Oak	3" cal. B-B
QBD 7	Quercus bicolor 'J's-KW12'	American Dream Swamp White Oak	3" cal. B-B
<b>ADDITIONAL REPLACEMENT PLANTINGS * (R)</b>			
AR 60	Acer rubrum	Red Maple	3-4" hgt. whip
QB 30	Quercus bicolor	Swamp White Oak	3-4" hgt. whip



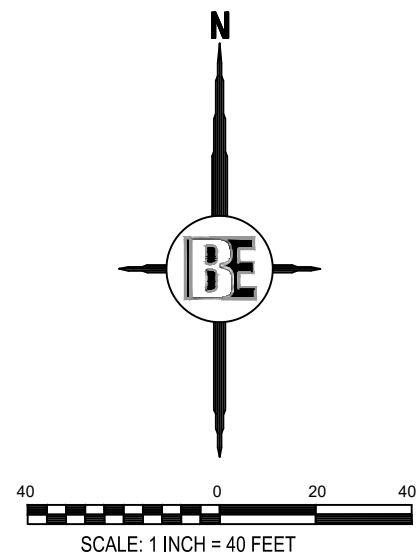
**CEDARS OF FARMINGTON**  
CEDARS OF FARMINGTON ROAD, LLC  
1600 N TELEGRAPH RD  
DEARBORN, MI 48128  
888.897.9792

**LANDSCAPE PLAN & DETAILS**

NO.	REVISION PER CITY RESUBMITTAL	DATE	BY
6	REVISION PER CITY RESUBMITTAL	02/18/26	PC
7	REVISION PER ESE COMMENTS	02/09/26	PC
8	REVISION PER ESE COMMENTS	02/02/26	PC
9	REVISION PER CITY REVIEW	12/09/25	PC
4	REVISION PER CMWRC & CITY REVIEW	10/17/25	PC
3	REVISION PER FHD REVIEW	08/27/25	PC
2	REVISION PER CITY REVIEW	08/07/25	PC
1	REVISION PER CMWRC & CITY REVIEW	07/22/25	PC

DESIGNED BY: PC  
 DRAWN BY: PC  
 CHECKED BY:  
 SCALE: 1" = 40'  
 JOB NO: 24-410  
 DATE: 04/23/25  
 SHEET NO. 10

SEE SHEET 2 FOR GENERAL NOTES AND LEGEND

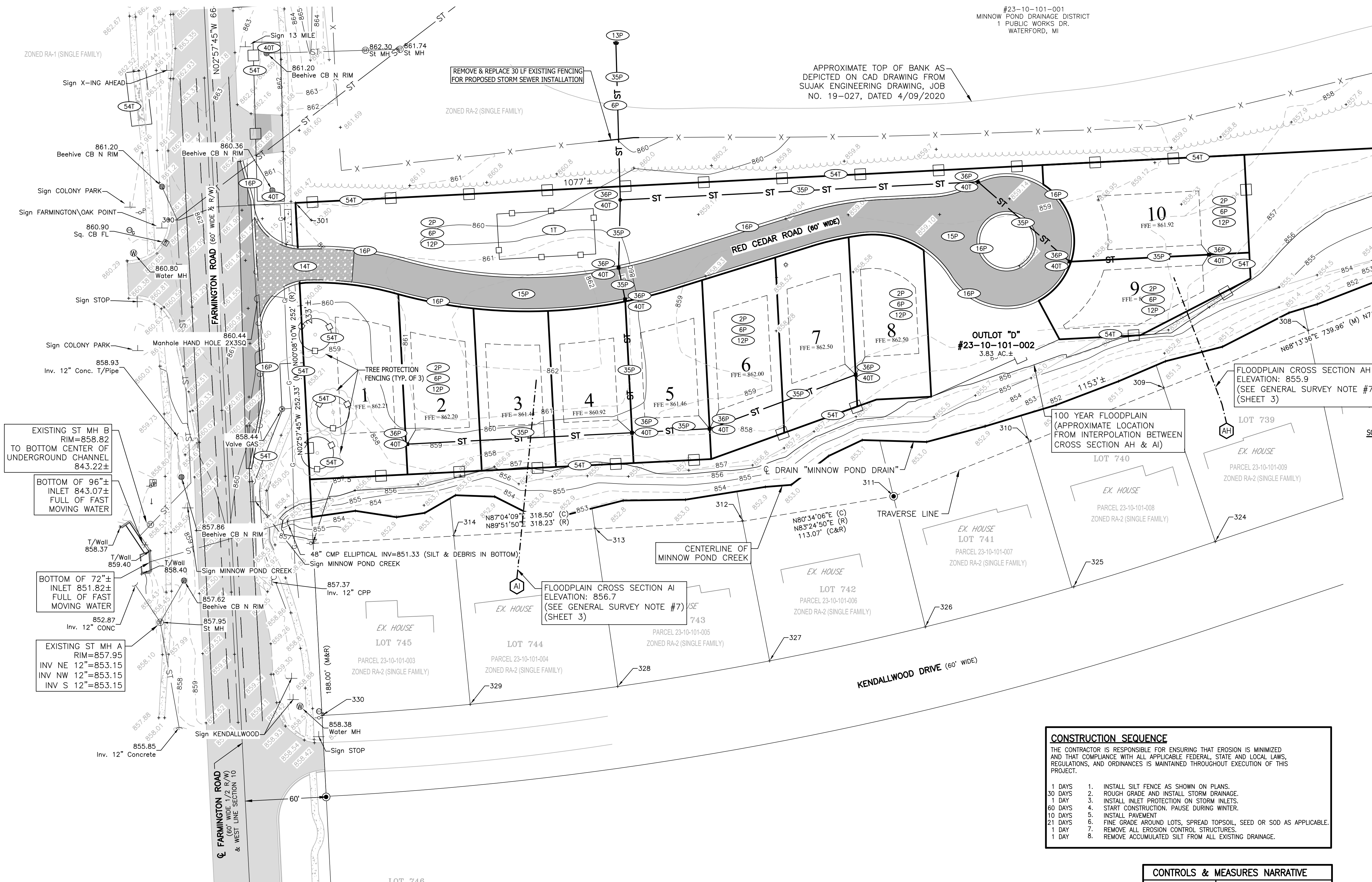


USDA Soil Conservation Service in cooperation with MI Agricultural Experiment Station (1977) Soil Survey of Oakland County, Michigan  
 17A Wasepi Sandy Loam 0-3% Slopes  
 49 Cohoctah Fine Sandy Loam  
 63A Urban Land - Thetford Complex 0-3% Slopes

ESTIMATED SESC QUANTITY MEASURES  
 SILT FENCE: 2,566 LF  
 TEMP STONE ACCESS DRIVE: 1 EA  
 INLET FILTERS: 12 EA

SURFACE WATER & COUNTY DRAINS  
 BASINS - APPROXIMATELY 230 FT NORTH TO COUNTY BASIN  
 DRAINS - ONSITE SOUTH TO MINNOW POND DRAIN

#23-10-101-001  
 MINNOW POND DRAINAGE DISTRICT  
 1 PUBLIC WORKS DR.  
 WATERFORD, MI



SOIL EROSION CONTROL MEASURES

1		TOPSOIL MAY BE STOCKPILED ABOVE BORROW AREAS TO ACT AS A DIVERSION. STOCKPILE SHOULD BE TEMPORARILY SEED.
2		WATER CAN BE DIVERTED TO MINIMIZE EROSION. FLATTER SLOPES EASE EROSION PROBLEMS.
6		VEGETATIVE ESTABLISHMENT OF VEGETATIVE COVER EFFECTIVE FOR GRASSLANDS WITH LOW VELOCITY. EROSION PROBLEMS IN SMALL QUANTITIES BY INDEPENDENT PERSONNEL. RESULTS INCLUDE PREPARED TOPSOIL SEE.
12		HELPS HOLD SOIL IN PLACE, MAKING EXPOSED AREAS LESS VULNERABLE TO EROSION.
13		USED WHERE VEGETATION IS NOT EASILY ESTABLISHED. EFFECTIVE FOR HIGH VELOCITIES OR HIGH CONCENTRATIONS. PROMPTS RUNOFF TO MAINTAIN SOIL. DISAPPEARS ENERGY FLOW AT SYSTEM OUTLETS.
14		STABILIZES SOIL SURFACE, THUS MINIMIZING EROSION. PERMITS CONSTRUCTION TRAFFIC IN ADVERSE WEATHER. MAY BE USED AS PART OF PERMANENT BASE CONSTRUCTION OF PAVED AREAS.
15		PROTECTS AREAS WHICH CANNOT OTHERWISE BE PROTECTED, BUT INCREASES RUNOFF VELOCITY. IRREGULAR SURFACE WILL HELP SLOW VELOCITY.
16		KEEPS HIGH VELOCITY RUNOFF ON PAVED AREAS FROM LEAVING PAVED SURFACE. COLLECTS AND CONDUCTS RUNOFF TO ENCLOSED DRAINAGE SYSTEM OR PREPARED DRAINAGE.
35		SYSTEM REMOVES COLLECTED RUNOFF FROM SITE, PARTICULARLY FROM PAVED AREAS. CAN ACCEPT LARGE CONCENTRATIONS OF RUNOFF. CONDUCTS RUNOFF TO MANHOLE, SEWER SYSTEM OR STABILIZED OUTFALL LOCATION. USE LOCAL SOILS TO COLLECT SEDIMENT.
36		COLLECTS HIGH VELOCITY CONCENTRATED RUNOFF. MAY USE FILTER CLOTH OVER INLET.
40		EASY TO SHAKE. COLLECTS SEDIMENT. MAY BE CLEANED AND EXPANDED AS NEEDED.
54		USES GEOTEXTILE FABRIC AND POST OR POLES. EASY TO CONSTRUCT AND LOCATE AS NECESSARY. (SEE DETAIL THIS SHEET)

T = TEMPORARY, P = PERMANENT  
 TOTAL DISTURBED AREA = 2.62 AC.

SOIL EROSION & MAINTENANCE CONTROL NOTES:

- ALL SOIL EROSION AND SEDIMENT CONTROL WORK SHALL CONFORM TO EGLE, CITY, & WRC CURRENT STANDARDS AND SPECIFICATIONS.
- THE PROPOSED WORK SHALL BE CARRIED OUT IN ACCORDANCE WITH THE APPROVED PLANS AND IN COMPLIANCE WITH ALL THE REQUIREMENTS OF THE PERMIT, ACT 347 OF THE PUBLIC ACT OF 1972, AND RULES PROMULGATED THEREUNDER.
- THE CONTRACTOR SHALL BE HELD SOLELY RESPONSIBLE FOR IMPLEMENTING THE APPROVED SOIL EROSION CONTROL MEASURES. THE CONTRACTOR SHALL MAINTAIN, REPAIR, AND REPLACE THE DAMAGED SOIL EROSION CONTROL MEASURES AT NO ADDITIONAL COST TO THE OWNER.
- ALL SOIL, MISCELLANEOUS DEBRIS, OR OTHER MATERIALS SPILLED, DUMPED, OR OTHERWISE DEPOSITED ON PUBLIC STREETS, HIGHWAYS, SIDEWALK, OR OTHER PUBLIC THOROUGHFARES DURING TRANSIT TO OR FROM THE SITE SHALL BE REMOVED PROMPTLY.
- ALL SOIL EROSION SHALL BE CONTAINED ONSITE.
- THE OWNER SHALL CAUSE TO HAVE PERIODIC REMOVAL OF DEBRIS AND SEDIMENT BUILDUP FROM EROSION CONTROL MEASURES DURING CONSTRUCTION.
- ANY EROSION CONTROL MEASURES DAMAGED BY THE CONTRACTORS OPERATION SHALL BE REPLACED THE SAME WORKING DAY.
- THE OWNER SHALL OBTAIN OR CAUSE HIS CONTRACTOR TO OBTAIN ALL REQUIRED PERMITS, PAY ALL PERMIT FEES AND POST ALL BONDS TO EACH AND ALL GOVERNMENTAL AGENCIES HAVING JURISDICTION OVER EROSION CONTROL MEASURES ON THIS PROJECT.
- UNTIL ALL DISTURBED AREAS HAVE BEEN RE-ESTABLISHED WITH VEGETATION, THE DEVELOPER IS RESPONSIBLE FOR INSPECTING, AFTER EACH HEAVY RAIN, ALL SEDIMENT TRAPS AND FILTERS. IF INSPECTION INDICATES THAT THE SEDIMENT HAS ACCUMULATED TO WITHIN 1 OR 2 INCHES OF THE INVERT OF THE OUTLET PIPE, THE STRUCTURE IS TO BE COMPLETELY CLEANED OF SEDIMENT.
- FILTER BARRIERS AND LOW POINT INLET FILTERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
- UPON COMPLETION OF EACH CATCH BASIN AND INLET, THE CONTRACTOR SHALL INSTALL THE REQUIRED SEDIMENT CONTROL DEVICE AS SHOWN ON THE PLAN. ALL GRATES SHALL BE WRAPPED WITH BURLAP PRIOR TO PLACEMENT. THESE MEASURES SHALL REMAIN UNTIL FINAL PAVEMENT OR FINAL GRADING IS COMPLETED. CONTRACTOR IS RESPONSIBLE FOR CLEANING OUT STRUCTURES UPON COMPLETION OF PROJECT.
- IF THE FABRIC DECOMPOSES OR BECOMES INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USEABLE LIFE, AND THE BARRIER IS STILL REQUIRED, THE FABRIC SHALL BE REPLACED PROMPTLY.
- ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE OF FILTER BARRIER IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM WITH THE EXISTING GRADE, PREPARED, AND SEED.
- FILTER FENCING WHICH SAGS, FALLS OVER, OR IS NOT STAKED IN, SHOULD BE PROMPTLY REPAIRED OR REPLACED.
- 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.

**CONSTRUCTION SEQUENCE**  
 THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT EROSION IS MINIMIZED AND THAT COMPLIANCE WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL LAWS, REGULATIONS, AND ORDINANCES IS MAINTAINED THROUGHOUT EXECUTION OF THIS PROJECT.

1 DAY	1. INSTALL SILT FENCE AS SHOWN ON PLANS.
30 DAYS	2. ROUGH GRADE AND INSTALL STORM DRAINAGE.
1 DAY	3. INSTALL INLET PROTECTION ON STORM INLETS.
60 DAYS	4. START CONSTRUCTION. PAUSE DURING WINTER.
10 DAYS	5. INSTALL PAVEMENT.
21 DAYS	6. FINE GRADE AROUND LOTS. SPREAD TOPSOIL. SEED OR SOD AS APPLICABLE.
1 DAY	7. REMOVE ALL EROSION CONTROL STRUCTURES.
1 DAY	8. REMOVE ACCUMULATED SILT FROM ALL EXISTING DRAINAGE.

**CONTROLS & MEASURES POST CONSTRUCTION SEQUENCE**

ACTIVITY	WEEKLY	MONTHLY	AS REQUIRED
MAINTAIN LANDSCAPING. REPLACE MULCH	X	X	X
CLEAN INLETS		X	X
COLLECT LITTER	X		X
SWEEP PARKING LOT		X	X

**CONTROLS & MEASURES NARRATIVE**

ACTIVITY	DESCRIPTION
MAINTAIN LANDSCAPING. REPLACE MULCH	COLLECT GRASS, TREE, AND SHRUB CLIPPINGS. DISPOSE IN APPROVED CONTAINER. REPLACE DEAD SOD, TREES AND SHRUBS.
CLEAN INLETS	REMOVE LITTER, SEDIMENT, AND DEBRIS. DISPOSE OF IN APPROVED LANDFILL.
COLLECT LITTER	DISPOSE OF WITH INLET DEBRIS.
SWEEP PARKING LOT	REMOVE MUD, DIRT, GREASE AND OIL WITH PERIODIC SWEEPING.
DUST CONTROL	SPRINKLE WATER AS NEEDED.

PROPOSED CONST. SCHEDULE FOR THE YEAR 2026 - 2027

ACTIVITY	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR
DEMO & CLEAR										
MASS GRADING										
UNDERGROUND UTILITY										
FINAL GRADING										
SEED & MULCH										

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BEBOSS ENGINEERING  
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PROJECT: CEDARS OF FARMINGTON  
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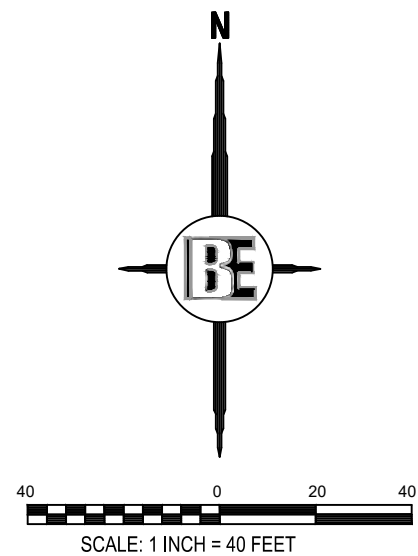
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NO.	REVISION	PER CITY RESUBMITAL	DATE
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15	REVISION PER CITY REVIEW		07/22/25

DESIGNED BY: DH  
 DRAWN BY: JP  
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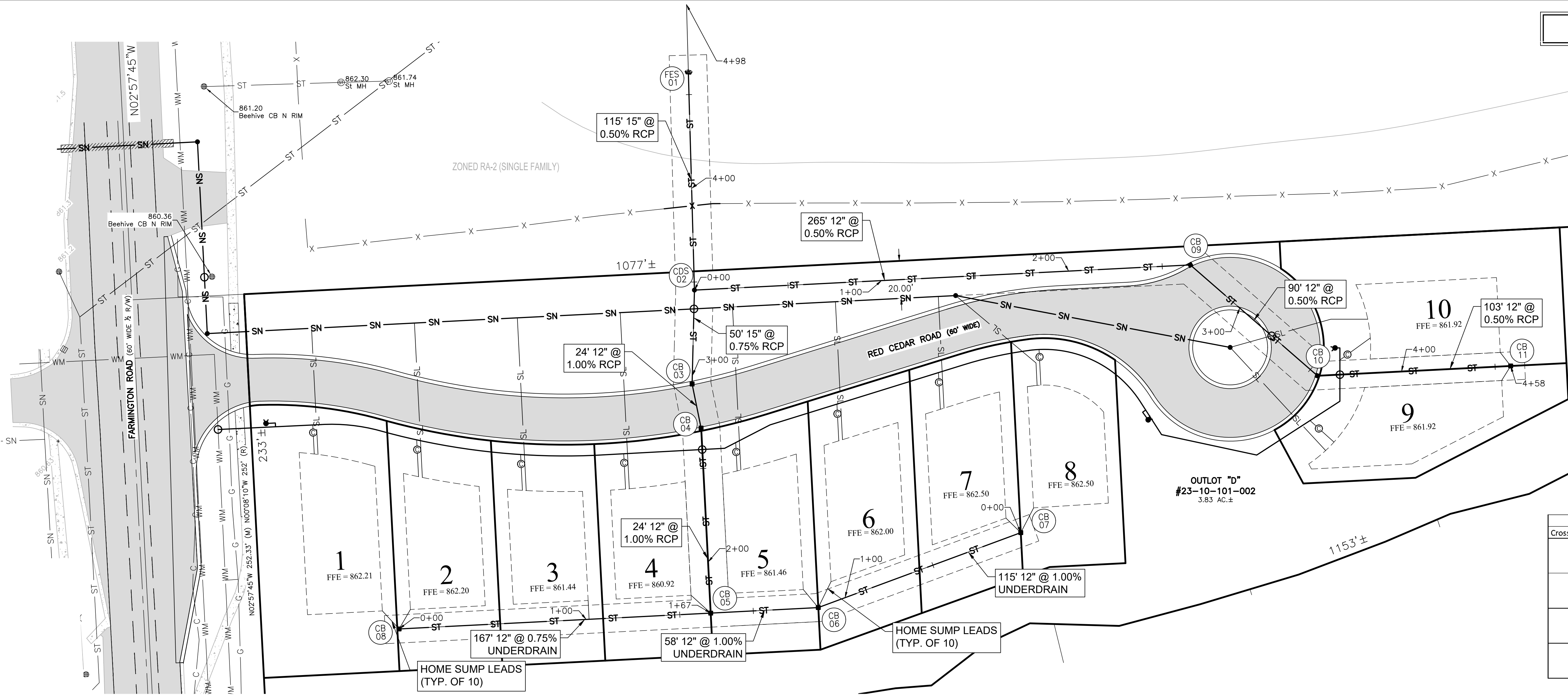
SEE SHEET 2 FOR GENERAL NOTES AND LEGEND



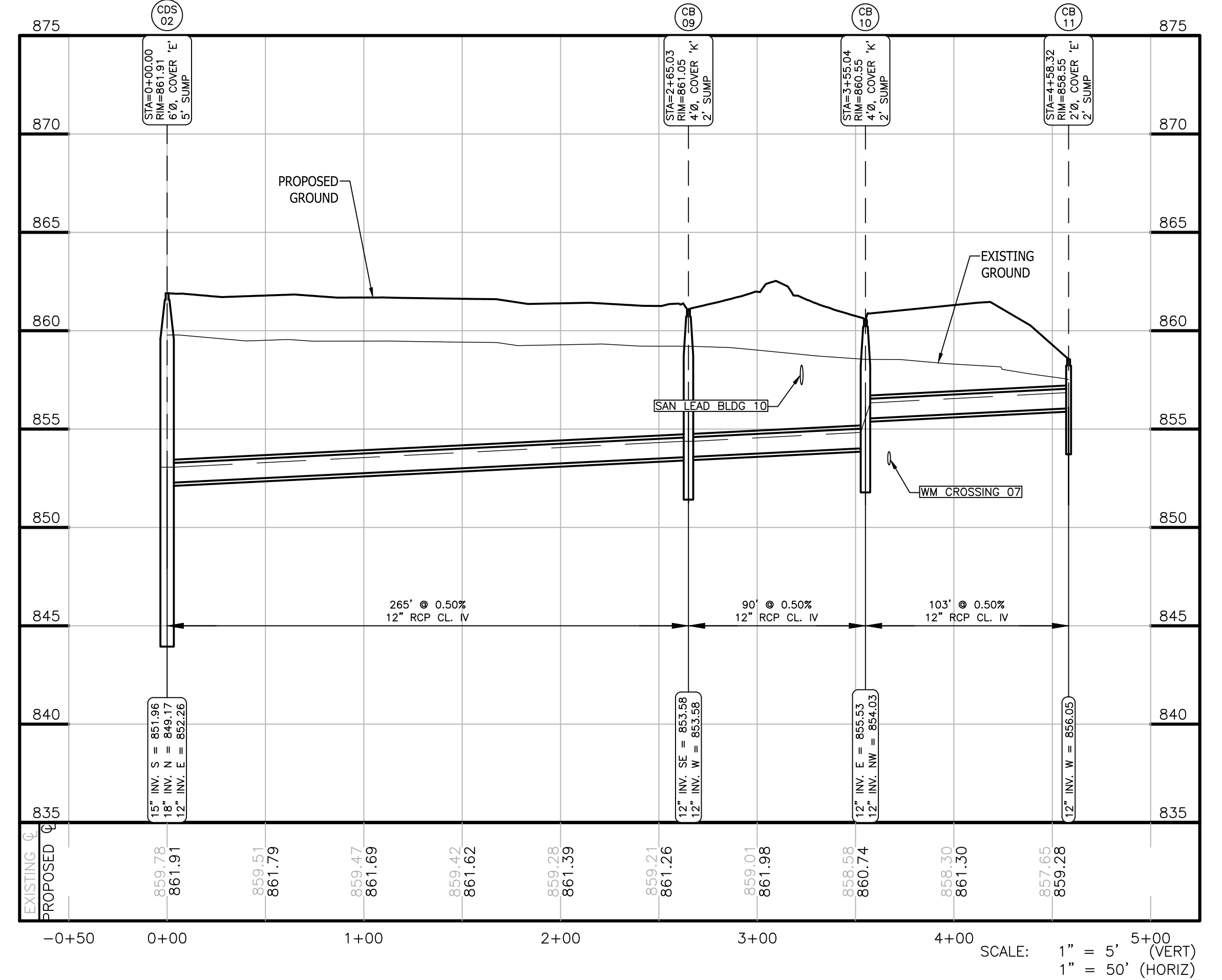
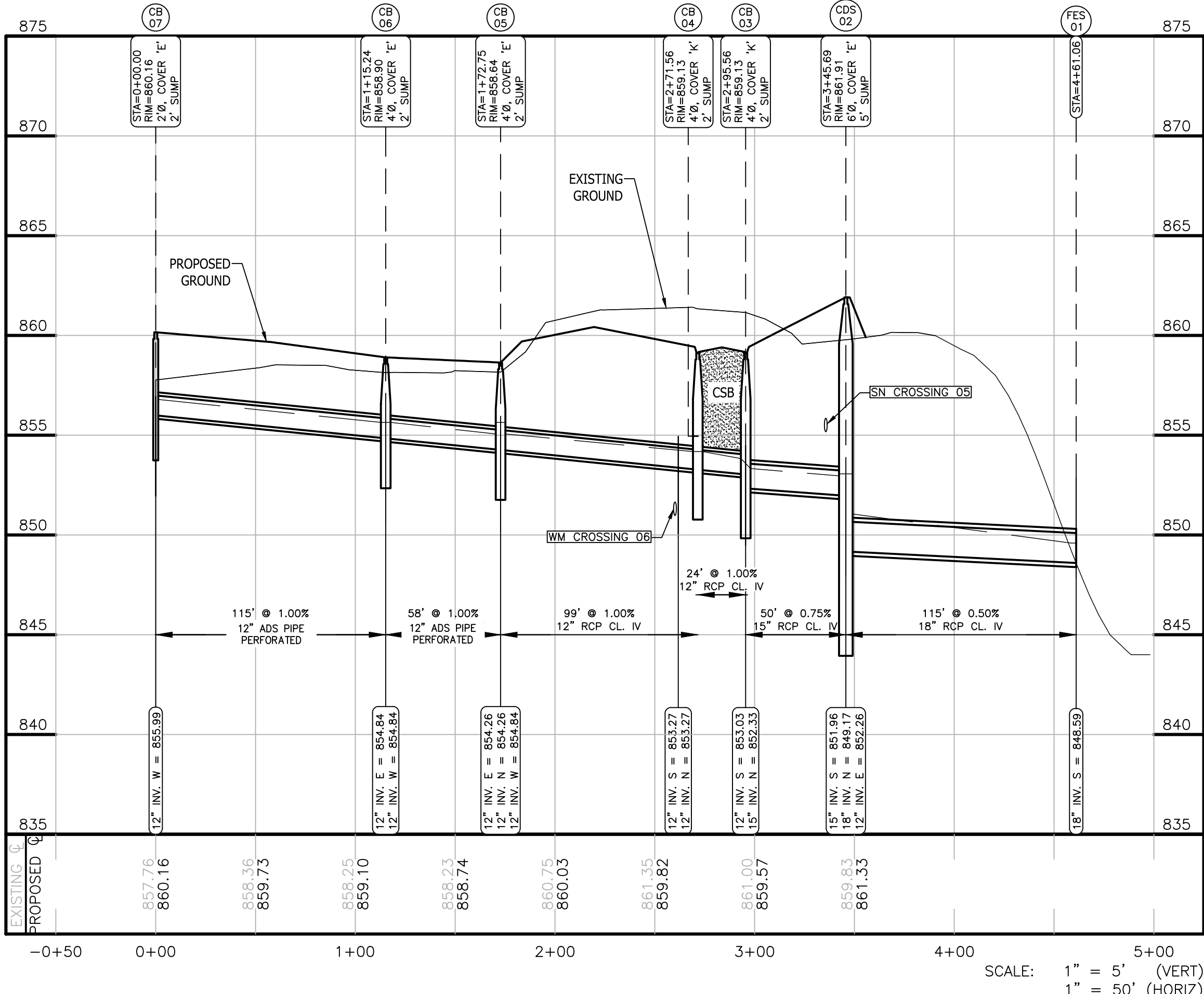
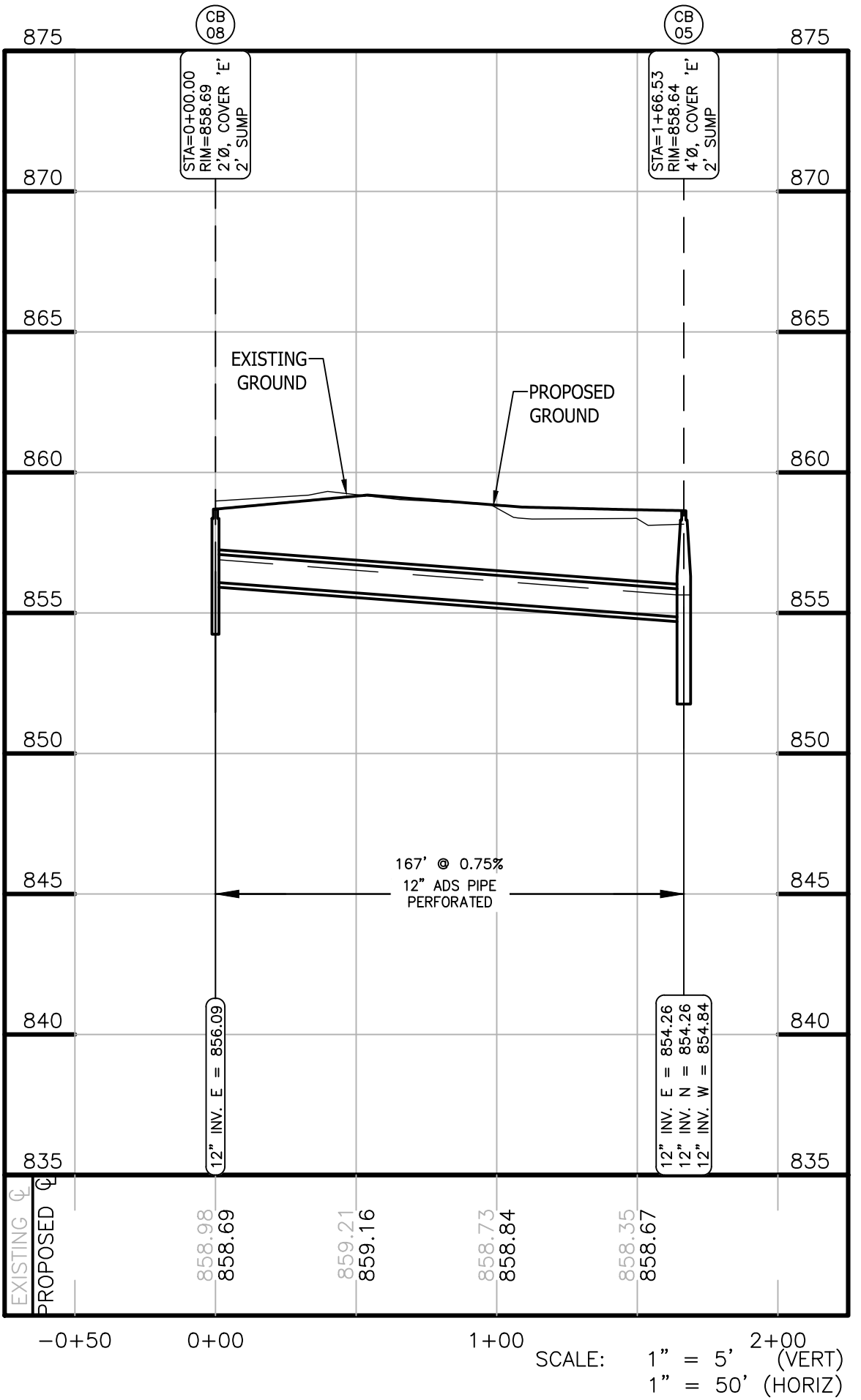
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ST Crossing Data Table		
Crossing Number	Crossing Information	
5	BP	855.16
	TP	853.47
	CLEARANCE	1.69 FEET
6	BP	853.22
	TP	851.65
	CLEARANCE	1.56 FEET
7	BP	855.42
	TP	853.85
	CLEARANCE	1.57 FEET
BLDG 10	BP	857.25
	TP	855.04
	CLEARANCE	2.21 FEET

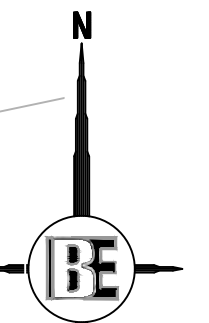


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 SHEET NO. 12

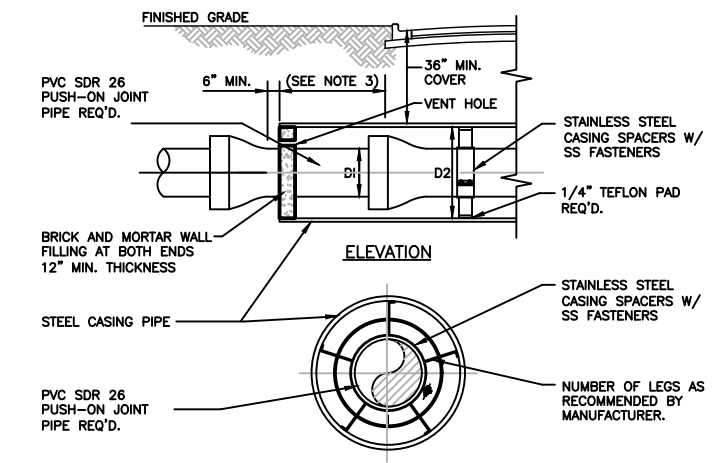
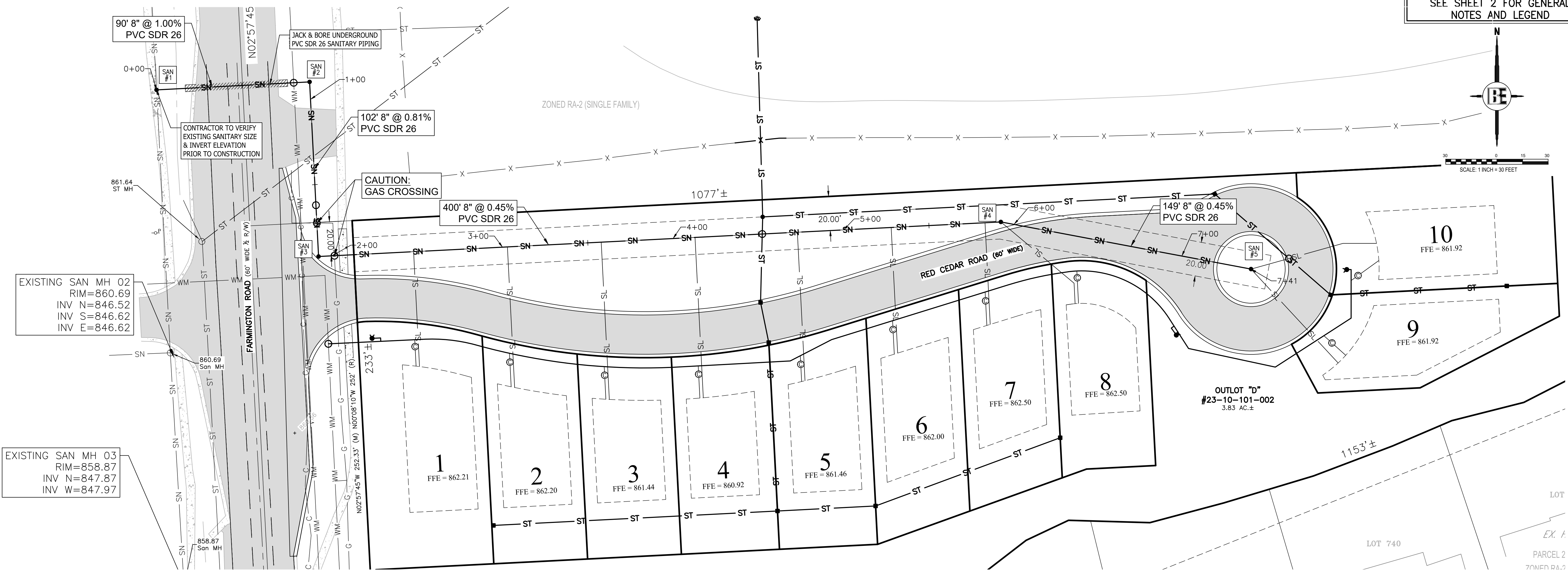
SEE SHEET 2 FOR GENERAL NOTES AND LEGEND



THE LOCATION AND ELEVATION OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THESE DRAWINGS ARE ONLY APPROXIMATE. NO CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION AND DEPTH OF EXISTING UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF EXISTING UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF EXISTING UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.



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 517.546.4836 FAX 517.548.1670



**CARRIER PIPE AND CASING PIPE SIZES (MIN.)**

CARRIER PIPE NOM. DIA. (IN.)	1	2	3	4	5	6	8	10	12	14	16	20	24
CASING PIPE NOM. DIA. (IN.)	6	14	18	18	22	24	30	30	36	36	48		
WALL THICKNESS (IN.)	0.250	0.250	0.250	0.250	0.250	0.312	0.312	0.375	0.500	0.500	0.562	0.625	0.688
MIN. THICKNESS (IN.)	0.250	0.250	0.250	0.312	0.375	0.375	0.500	0.500	0.562	0.562	0.625	0.688	0.750

- NOTES:**
- WHEN CONSTRUCTION IS WITHIN MOST OR RAILROAD JURISDICTION, ADDITIONAL REQUIREMENTS OF EACH AGENCY SHALL BE MET.
  - STAINLESS STEEL CASING SPACERS ARE REQUIRED AS SHOWN.
  - WHERE PRACTICAL, CASING SHALL SETTING A MIN. 10' BEYOND EDGE OF PAVEMENT OR LONGER AS REQUIRED BY LOCAL PERMITTING AGENCIES.
  - A MINIMUM OF 3 CASING SPACERS PER 20' LINEAR FEET OF INSTALLED CARRIER PIPE SHALL BE PROVIDED.

**JACK AND BORE DETAIL**  
(NO SCALE)

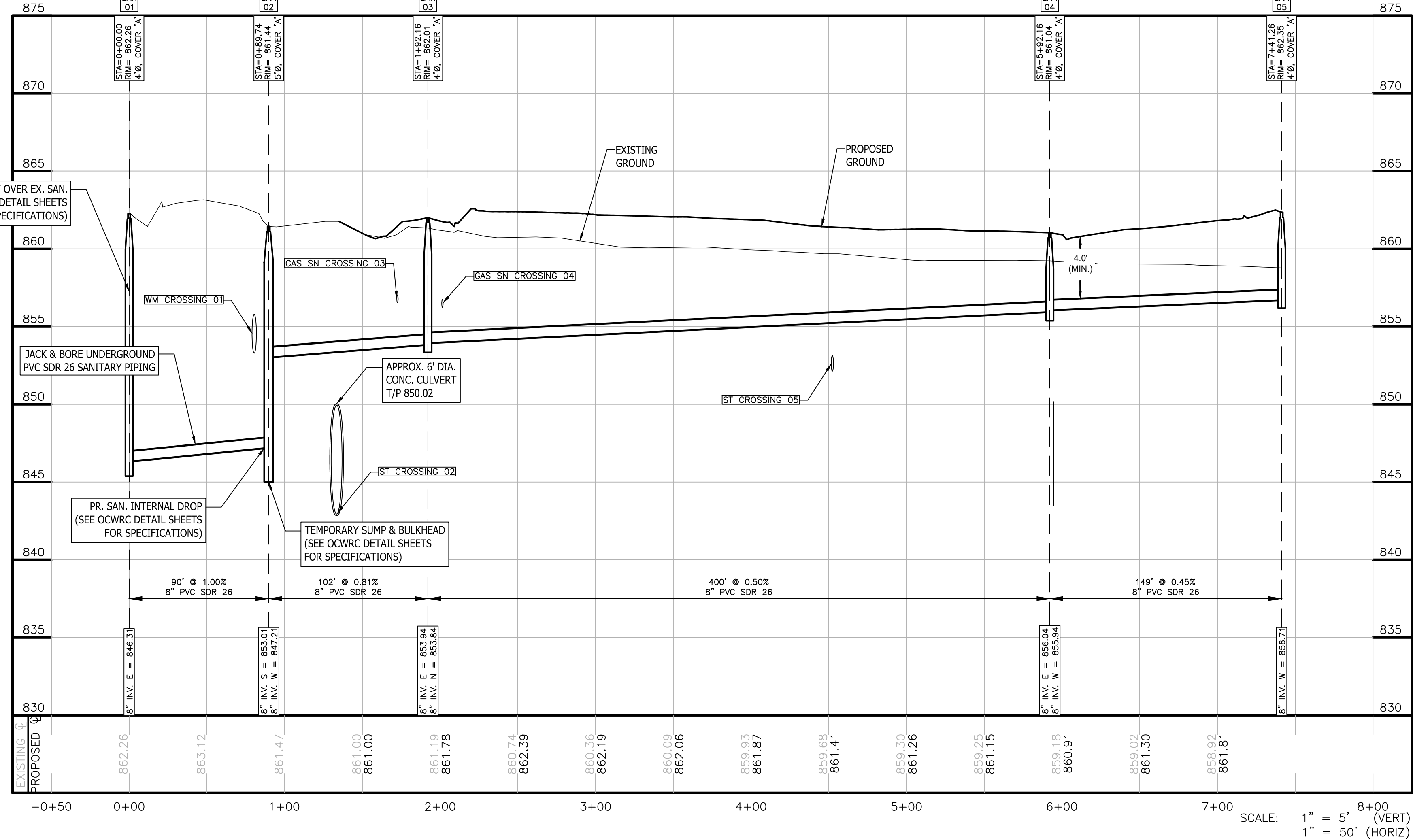
**SAN Crossing Data Table**

Crossing Number	Crossing Information
1	BP 853.13 WM
	TP 847.81 SAN
2	BP 853.71 SAN
	TP 850.02 ST
3	BP 856.53 GAS
	TP 854.53 SAN
4	BP 856.67 GAS
	TP 854.87 SAN
5	BP 855.16 SAN
	TP 853.47 ST

**SANITARY LEAD DATA TABLE**

BLDG NO.	INV. AT MAIN	INV. AT WYE	INV. AT STUB	WYE DISTANCE TO DOWNS TREAM MH (FT)	SLOPE (%)	LENGTH (FT)	RISER (FT)
1	854.39	854.72	855.39	56	1.00%	67	0.00
2	854.63	854.97	855.79	111	1.00%	82	0.00
3	854.88	855.21	856.14	166	1.00%	92	0.00
4	855.13	855.46	856.40	221	1.00%	94	0.00
5	855.40	855.73	856.60	281	1.00%	87	0.00
6	855.65	855.98	856.72	336	1.00%	74	0.00
7	855.89	856.23	856.82	391	1.00%	60	0.00
8	856.04	856.37	857.09	0	1.00%	68	0.00
9	856.71	857.04	857.79	0	1.00%	75	0.00
10	856.71	857.04	857.79	0	1.00%	76	0.00

NOTE: INV. AT WYE 4" HIGHER THAN INV. AT MAIN TO ACCOUNT FOR WYE ELEVATION.



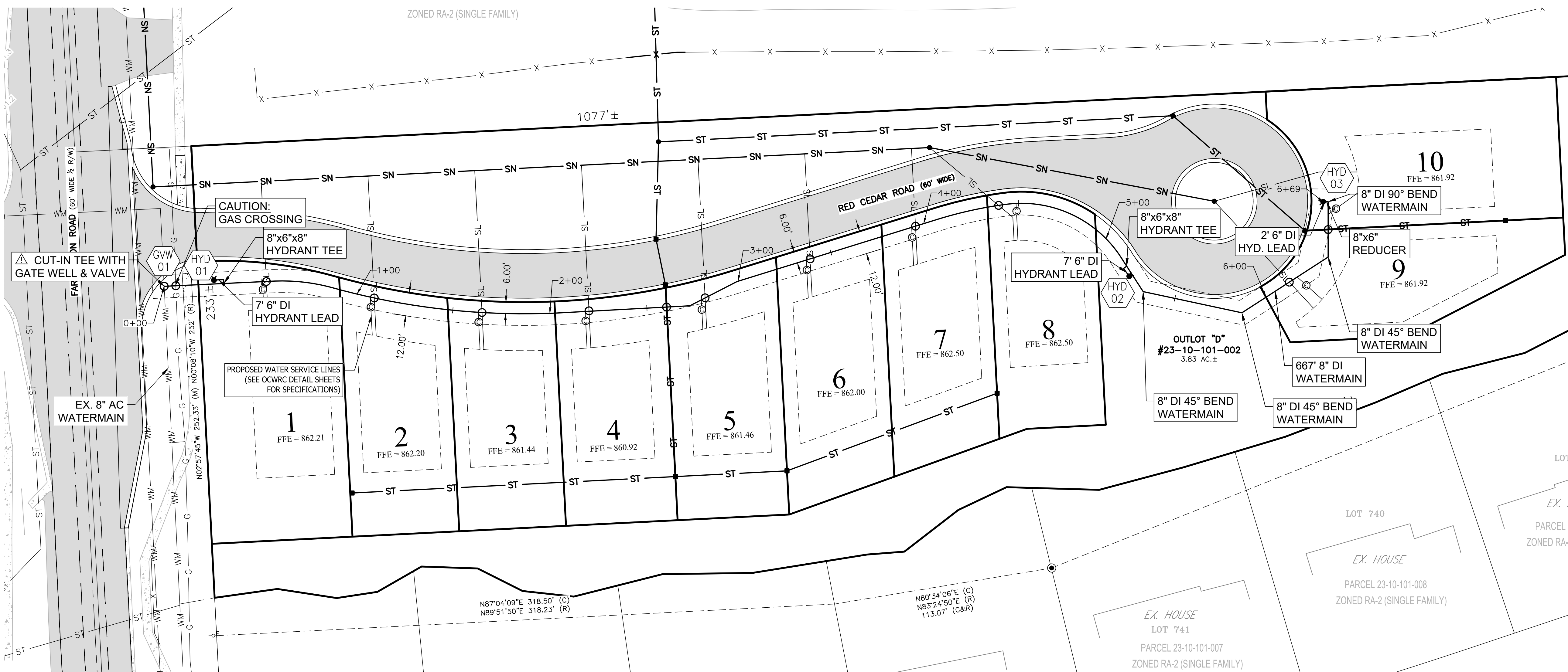
SCALE: 1" = 5' (VERT)  
 1" = 50' (HORIZ)

PROJECT: CEDARS OF FARMINGTON  
 PREPARED FOR: CEDARS OF FARMINGTON ROAD, LLC  
 1650 N TELEGRAPH RD  
 DEARBORN, MI 48128  
 888.897.9792

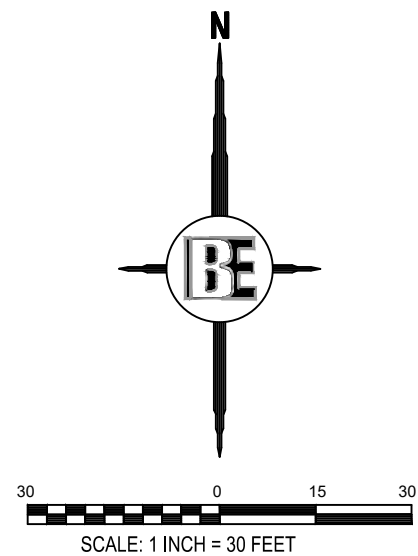
TITLE: SANITARY SEWER PROFILE

NO.	BY	DATE	REVISION PER
1	JP	02/18/26	REVISION PER CITY RESUBMITAL
2	JP	02/09/26	REVISION PER ESE COMMENTS
3	JP	02/02/26	REVISION PER ESE COMMENTS
4	JP	12/09/25	REVISION PER CITY REVIEW
5	JP	10/17/25	REVISION PER OCWRC & CITY REVIEW
6	JP	09/27/25	REVISION PER FHD REVIEW
7	JP	08/07/25	REVISION PER CITY REVIEW
8	JP	07/22/25	REVISION PER OCWRC & CITY REVIEW

DESIGNED BY: DH  
 DRAWN BY: JP  
 CHECKED BY:  
 SCALE: 1" = 30'  
 JOB NO: 24-410  
 DATE: 04/23/25  
 SHEET NO. 13



SEE SHEET 2 FOR GENERAL NOTES AND LEGEND

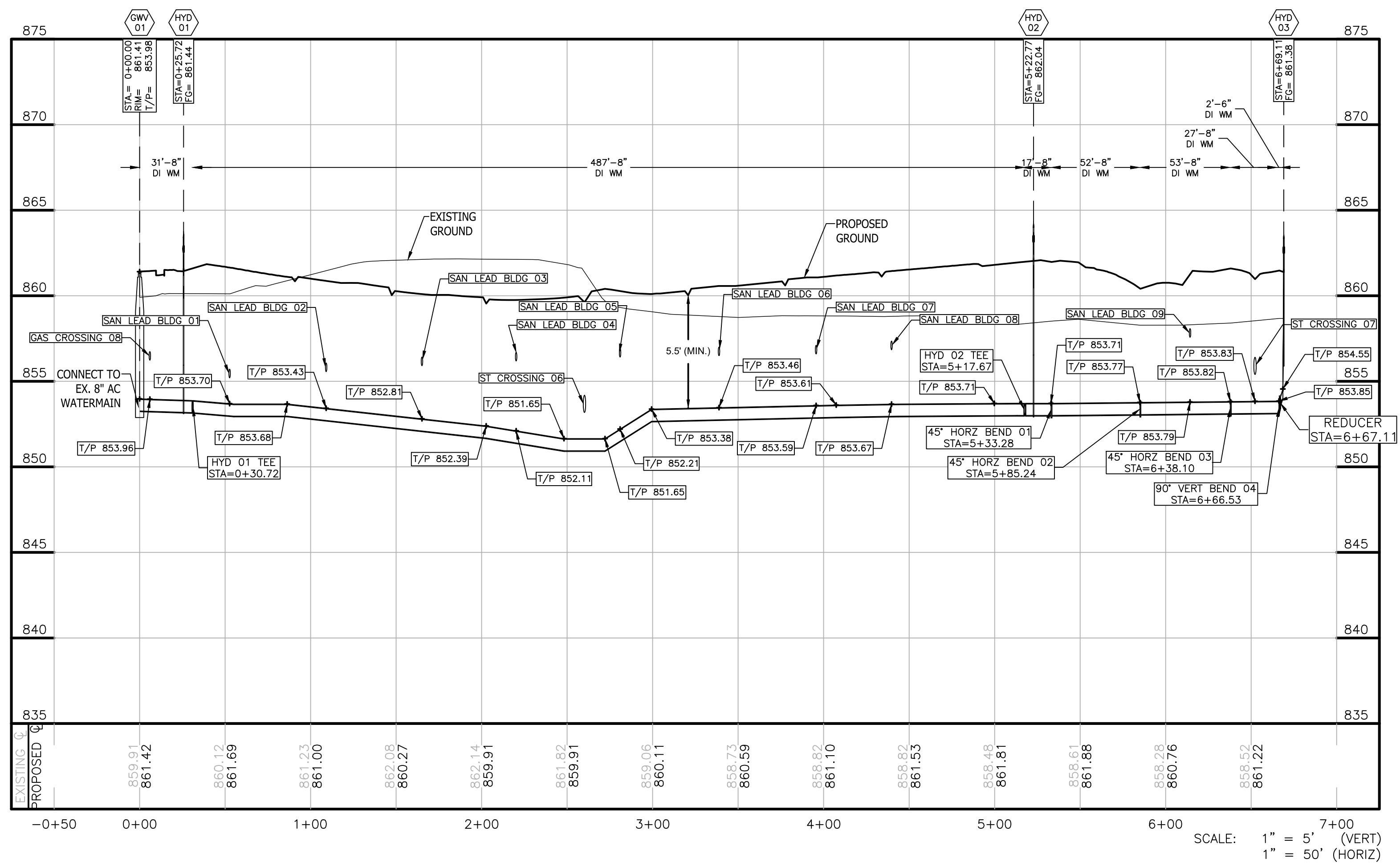


WM Crossing Data Table		
Crossing Number	Crossing Information	
6	BP	853.22 ST
	TP	851.65 WM
	CLEARANCE	1.56 FEET
7	BP	855.42 ST
	TP	853.85 WM
	CLEARANCE	1.57 FEET
8	BP	856.24 GA5
	TP	853.96 WM
	CLEARANCE	2.28 FEET
BLDG 1	BP	855.21 SL
	TP	853.70 WM
	CLEARANCE	1.51 FEET
BLDG 2	BP	855.57 SL
	TP	853.43 WM
	CLEARANCE	2.14 FEET
BLDG 3	BP	855.92 SL
	TP	852.81 WM
	CLEARANCE	3.11 FEET
BLDG 4	BP	856.19 SL
	TP	852.11 WM
	CLEARANCE	4.08 FEET
BLDG 5	BP	856.42 SL
	TP	852.21 WM
	CLEARANCE	4.21 FEET
BLDG 6	BP	856.50 SL
	TP	853.46 WM
	CLEARANCE	3.04 FEET
BLDG 7	BP	856.60 SL
	TP	853.59 WM
	CLEARANCE	3.01 FEET
BLDG 8	BP	856.85 SL
	TP	853.67 WM
	CLEARANCE	3.17 FEET
BLDG 9	BP	857.58 SL
	TP	853.79 WM
	CLEARANCE	3.79 FEET

**WATERMAIN NOTES:**

- EXISTING ASBESTOS CEMENT WATERMAIN MUST BE WETTED PRIOR TO PROPOSED WATERMAIN CONNECTION WORK.
- ENSURE CONTRACTORS FOLLOW OSHA REQUIREMENTS AND PROPERLY DISPOSE OF ASBESTOS CEMENT PIPE FRAGMENTS IN ACCORDANCE WITH REGULATIONS.
- THOROUGHLY FLUSH THE MAIN AFTER TAPPING TO REMOVE ANY ASBESTOS CEMENT FIBERS THAT MAY HAVE BEEN RELEASED DURING CONNECTION WORK.
- MINIMUM FLOW VELOCITY OF 2.5 FT/SEC SHALL BE USED TO SCOUR THE PIPE AT THE ASBESTOS PIPE TAPPING LOCATION.

WATERMAIN LEAD DATA TABLE	
BLDG NO.	LEAD LENGTH 1'
1	16
2	20
3	19
4	19
5	15
6	20
7	20
8	19
9	17
10	20



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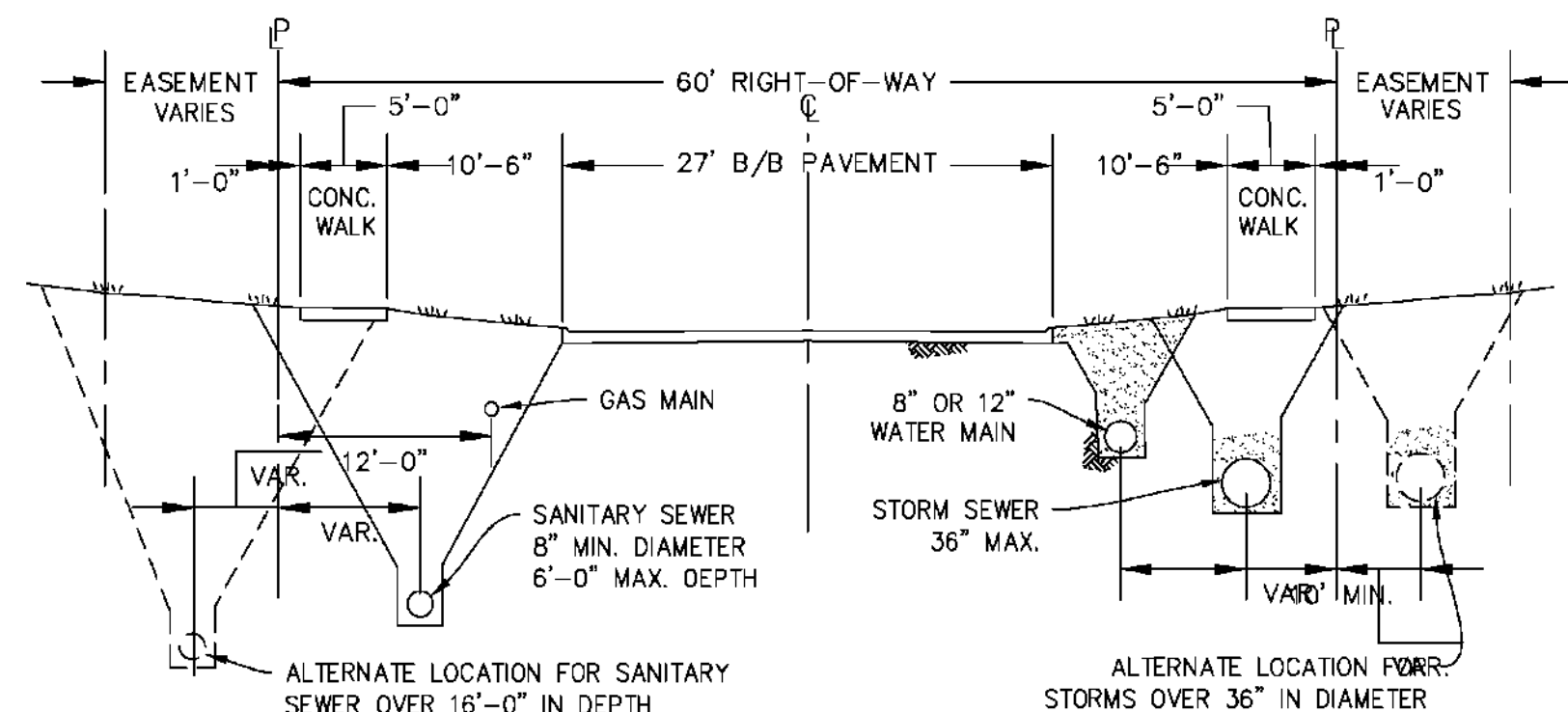


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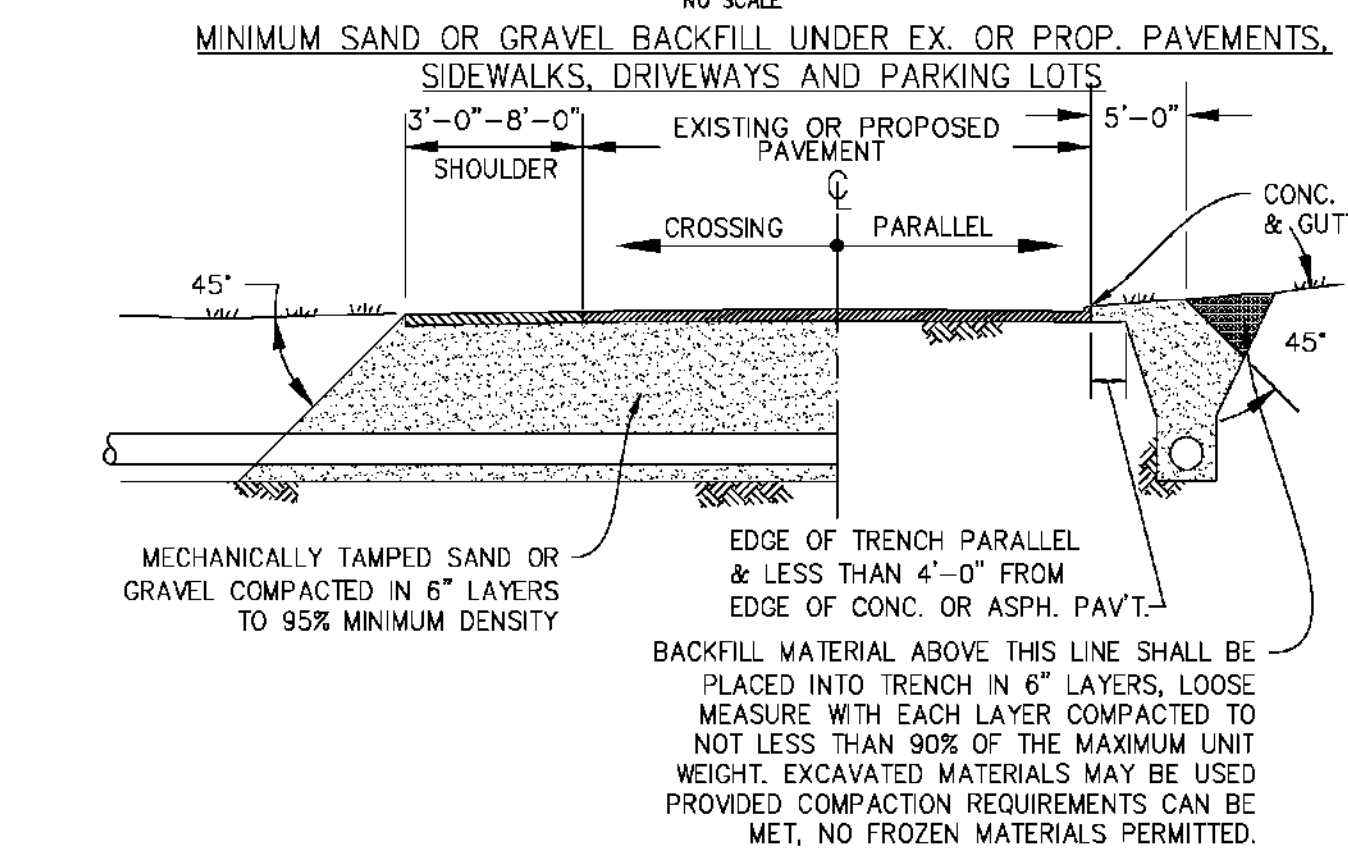
PROJECT: CEDARS OF FARMINGTON  
 PREPARED FOR: CEDARS OF FARMINGTON ROAD, LLC  
 1660 N TELEGRAPH RD  
 DEARBORN, MI 48128  
 888.897.9792

NO.	BY	DATE	REVISION PER
6	UP	02/18/26	REVISION PER CITY RESUBMITTAL
7	UP	02/09/26	REVISION PER ESE COMMENTS
8	UP	02/02/26	REVISION PER ESE COMMENTS
9	UP	12/05/25	REVISION PER CITY REVIEW
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11	UP	09/27/25	REVISION PER FHD REVIEW
12	UP	08/07/25	REVISION PER CITY REVIEW
13	UP	07/22/25	REVISION PER CITY REVIEW
14	UP	07/22/25	REVISION PER CITY REVIEW
15	UP	07/22/25	REVISION PER CITY REVIEW
16	UP	07/22/25	REVISION PER CITY REVIEW
17	UP	07/22/25	REVISION PER CITY REVIEW
18	UP	07/22/25	REVISION PER CITY REVIEW
19	UP	07/22/25	REVISION PER CITY REVIEW
20	UP	07/22/25	REVISION PER CITY REVIEW

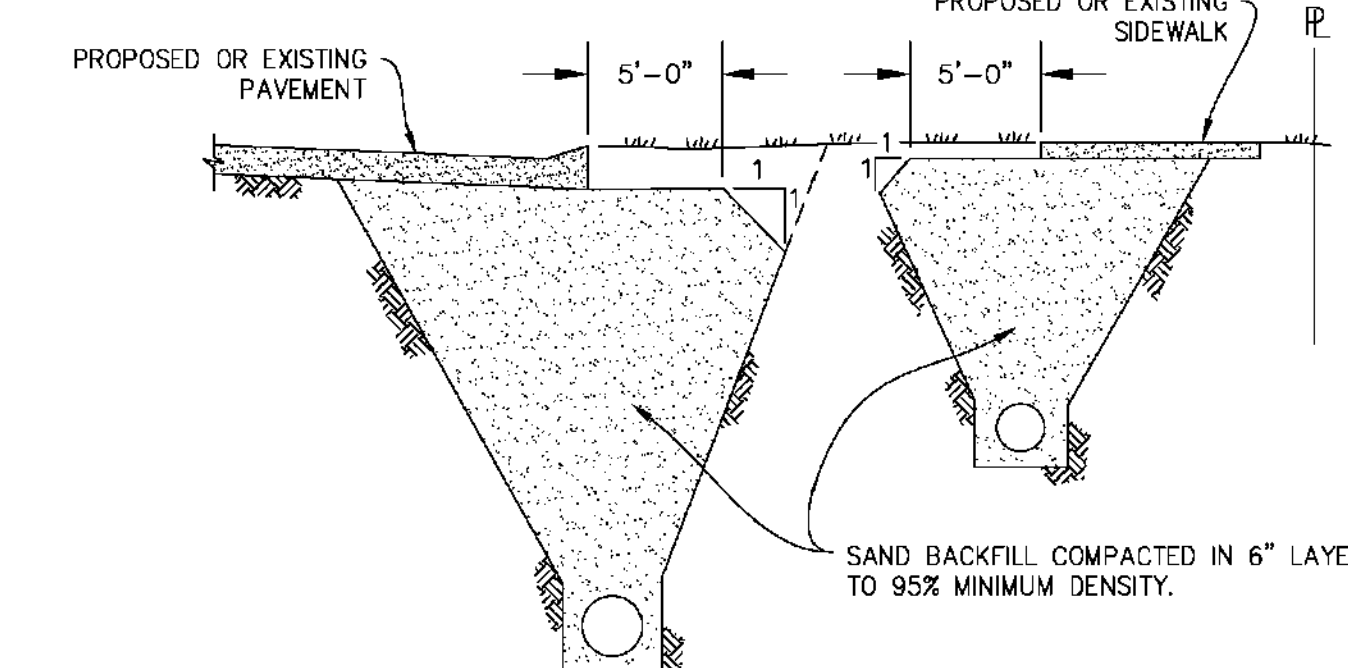
DESIGNED BY: DH  
 DRAWN BY: JP  
 CHECKED BY:  
 SCALE: 1" = 30'  
 JOB NO: 24-410  
 DATE: 04/23/25  
 SHEET NO: 14



**TYPICAL SECTION FOR SUBDIVISION LOCAL ROAD R.O.W.**  
NO SCALE

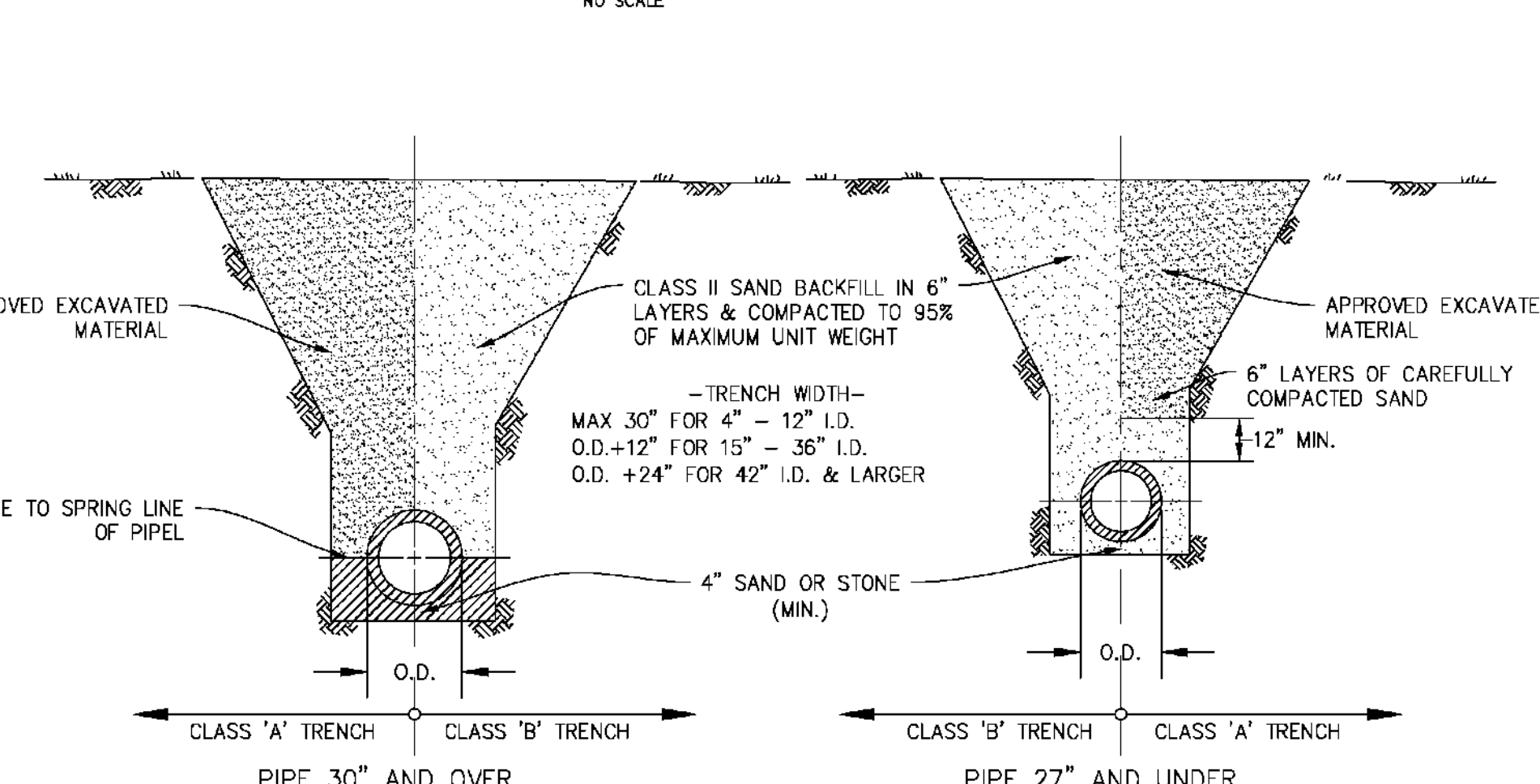


**SAND BACKFILL DETAIL**  
NO SCALE

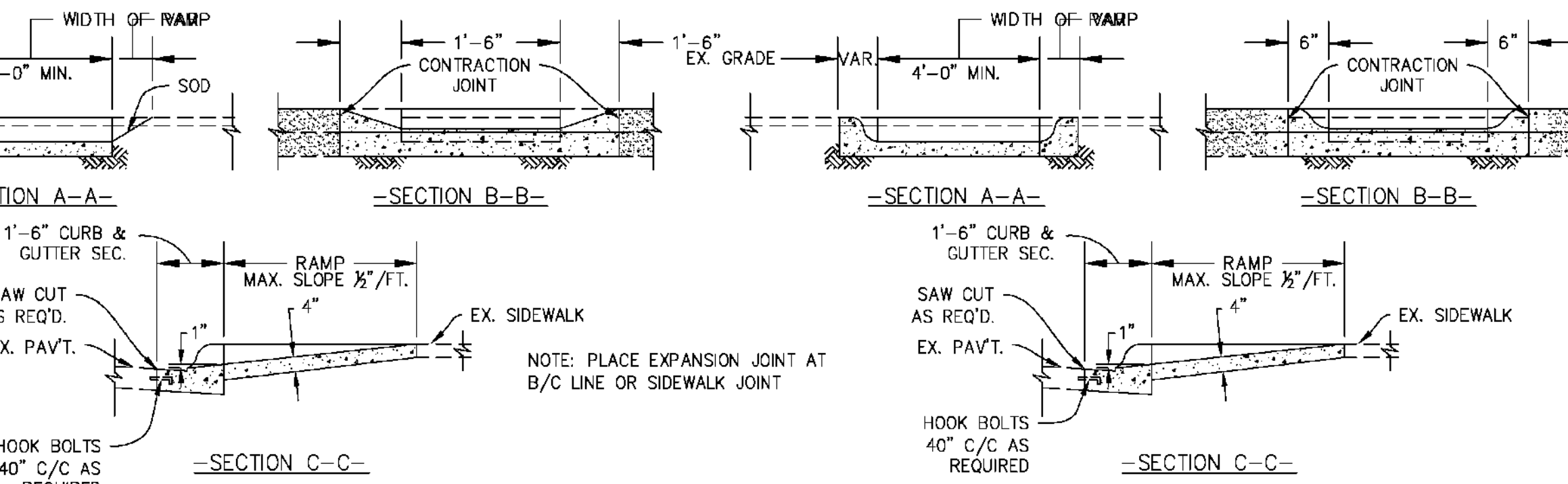
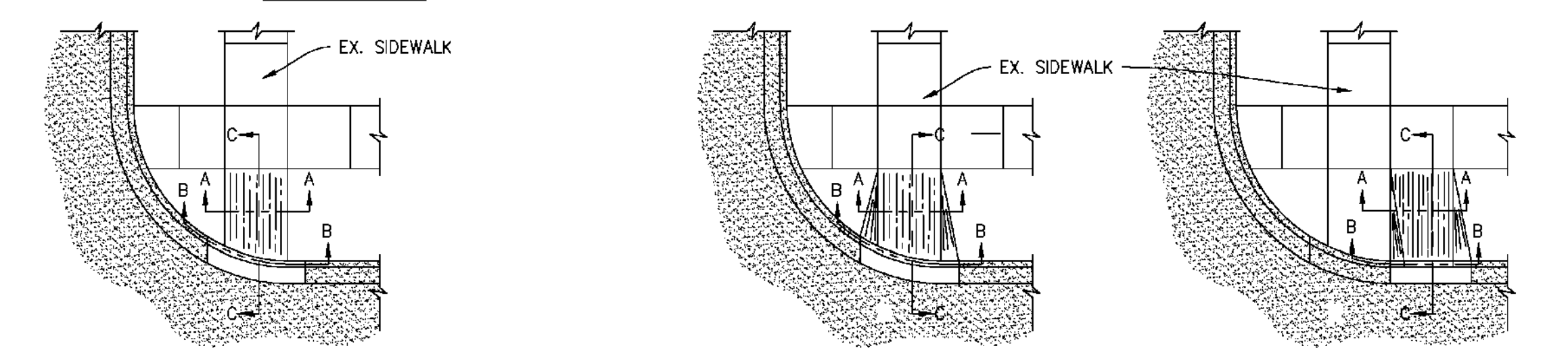
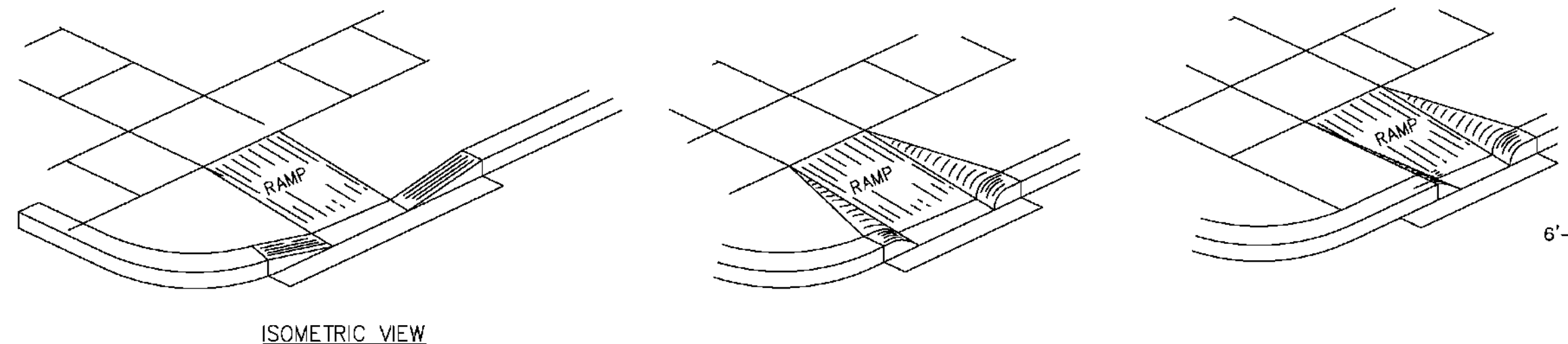


-NOTE:- SAND BACKFILL REQUIRED UNDER ALL PROPOSED OR EXISTING PAVED AREAS AND EXTENDING 5'-0" BEYOND THE EDGE OF THE SLAB THAN TAPERING AT 1 ON 1 SLOPE TO ORIGINAL GROUND.

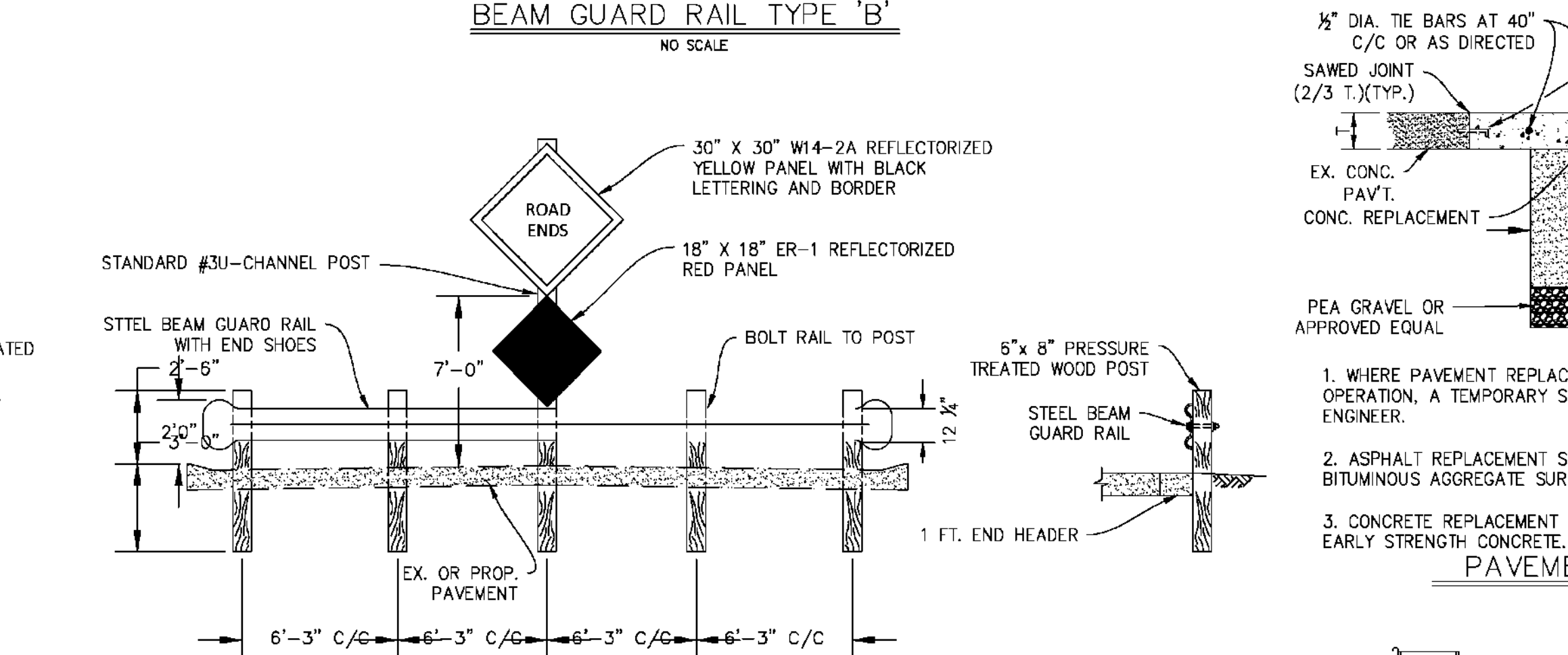
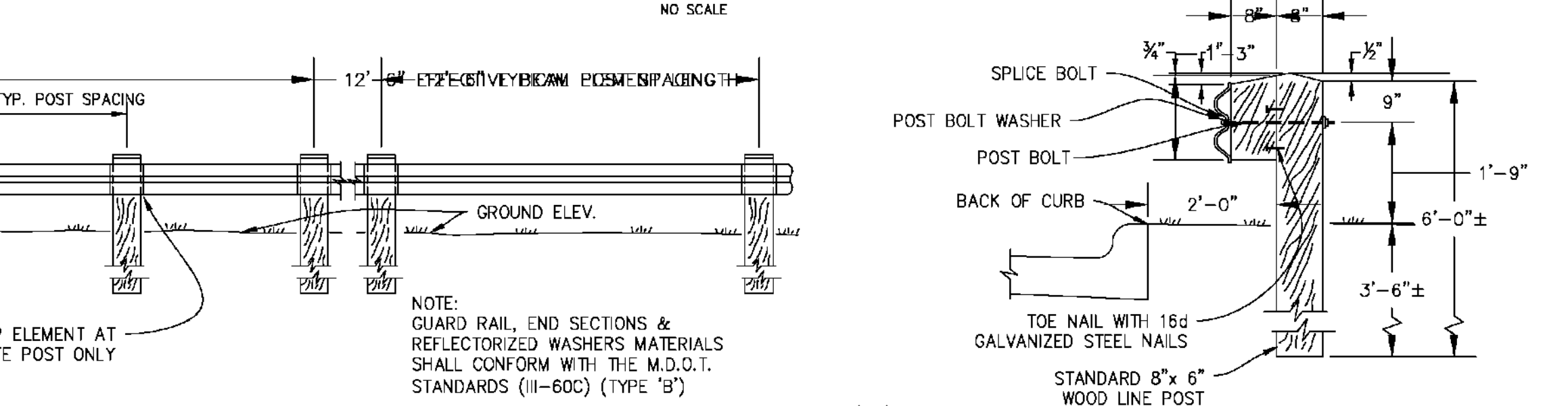
**SAND BACKFILL UNDER PAVED AREAS**  
NO SCALE



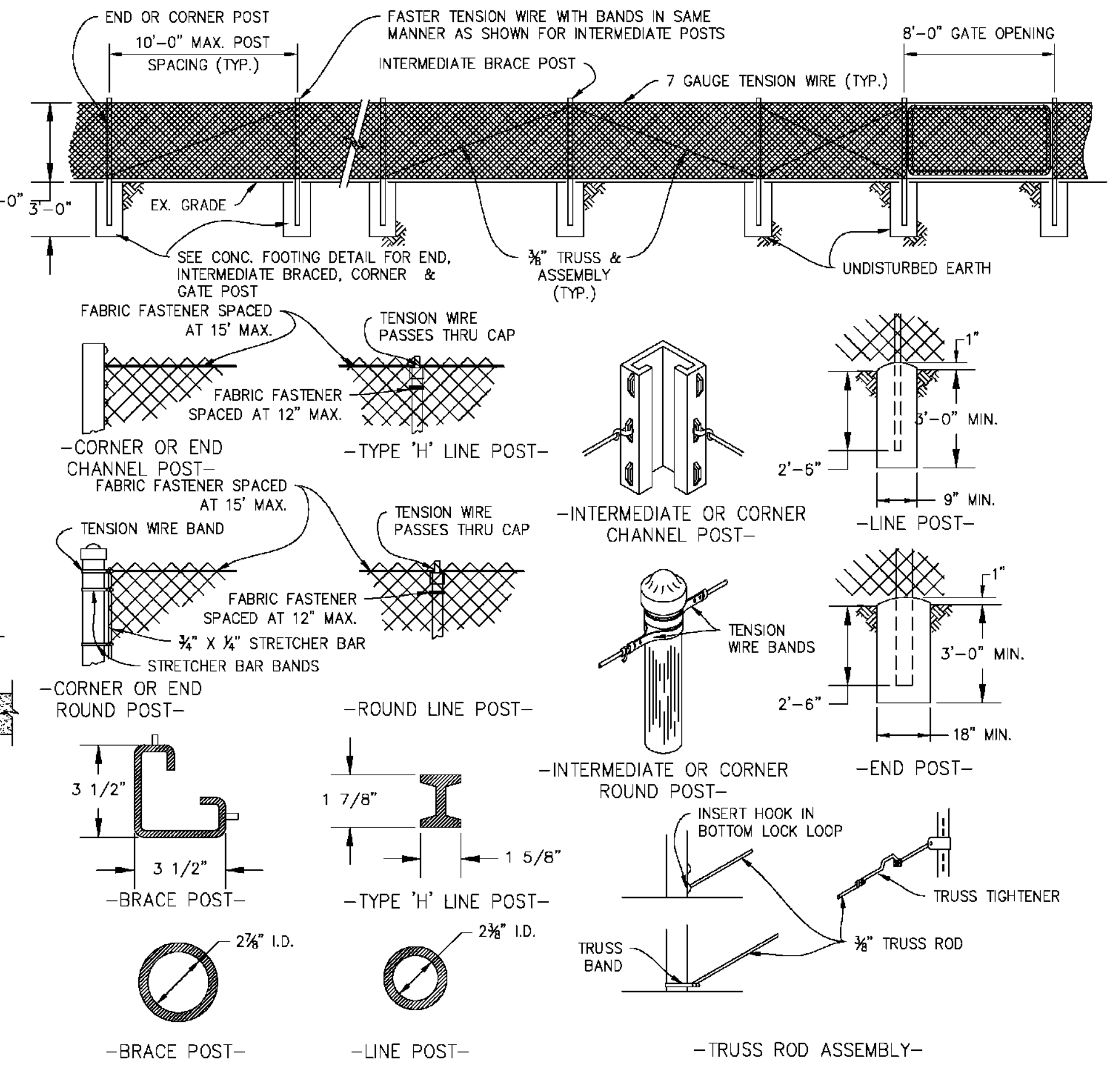
**SEWER PIPE TRENCH DETAILS**  
NO SCALE



**SIDEWALK RAMPS**  
NO SCALE

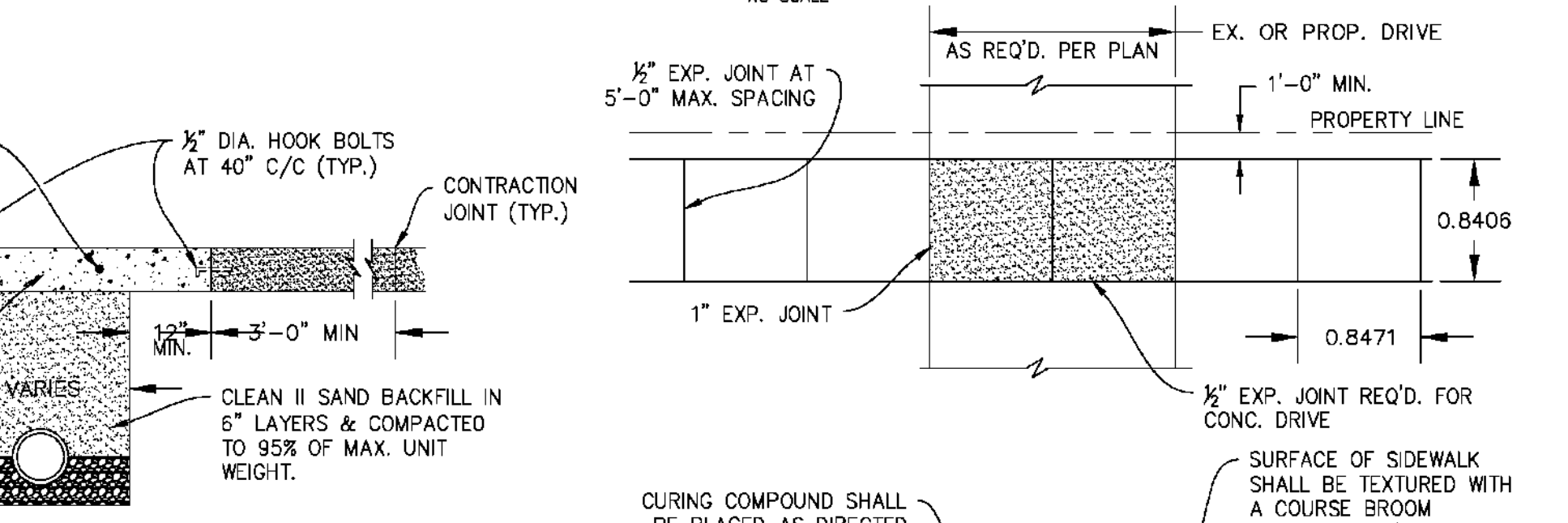


**ROAD END STEEL BEAM GUARD RAIL & SIGNING**  
NO SCALE



- NOTES:**
- INTERMEDIATE BRACED POSTS SHALL BE PLACED AT 660 FT. INTERVALS OR MIDWAY BETWEEN END AND CORNER POSTS, WHEN THE DISTANCE IS LESS THAN 1320 FT. AND MORE THAN 660 FT.
  - TENSION WIRE WILL BE STRETCHED TAUT.
  - TOP & BOTTOM SELVAGES OF FENCE FABRIC SHALL HAVE A KNUCKLED FINISH.
  - ALTERNATE MATERIALS MAY BE USED WITH THE APPROVAL OF THE CITY ENGINEER.
- FENCE FABRIC SHALL BE FASTENED TO TOP TENSION WIRE AND TO EACH POST.
  - IF HOG RINGS ARE USED, THEY SHALL BE 12 GAUGE IF TIGHTLY CRIMPED ABOUT BOTH THE TENSION WIRE AND THE FABRIC WIRE, OR 11 GAUGE IF UNCRIMPED.
  - TENSION WIRE WILL BE 7 GAUGE.

**CHAIN LINK FENCE AND POST CONSTRUCTION**  
NO SCALE

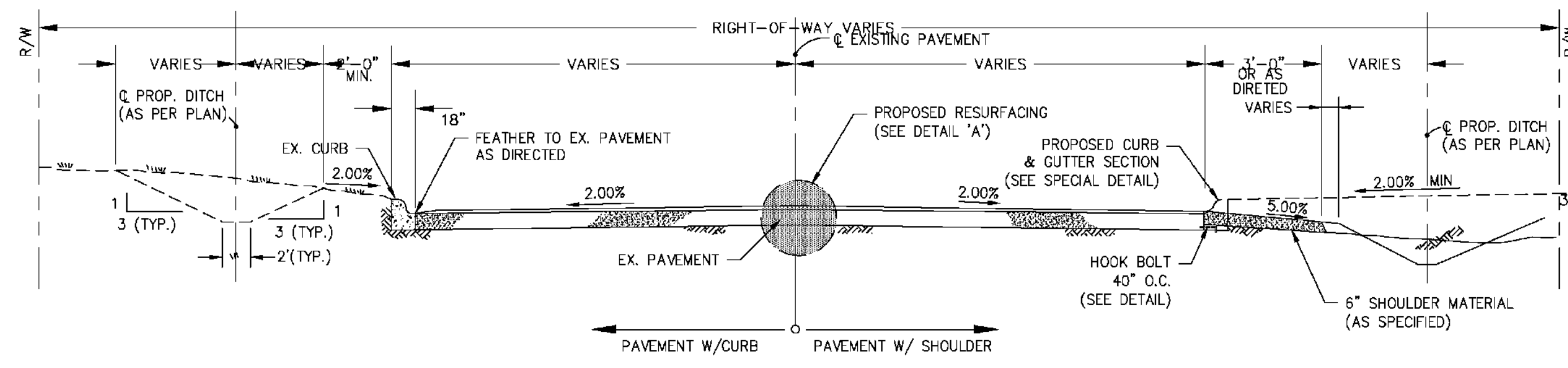


**PAVEMENT REPLACEMENT**  
NO SCALE

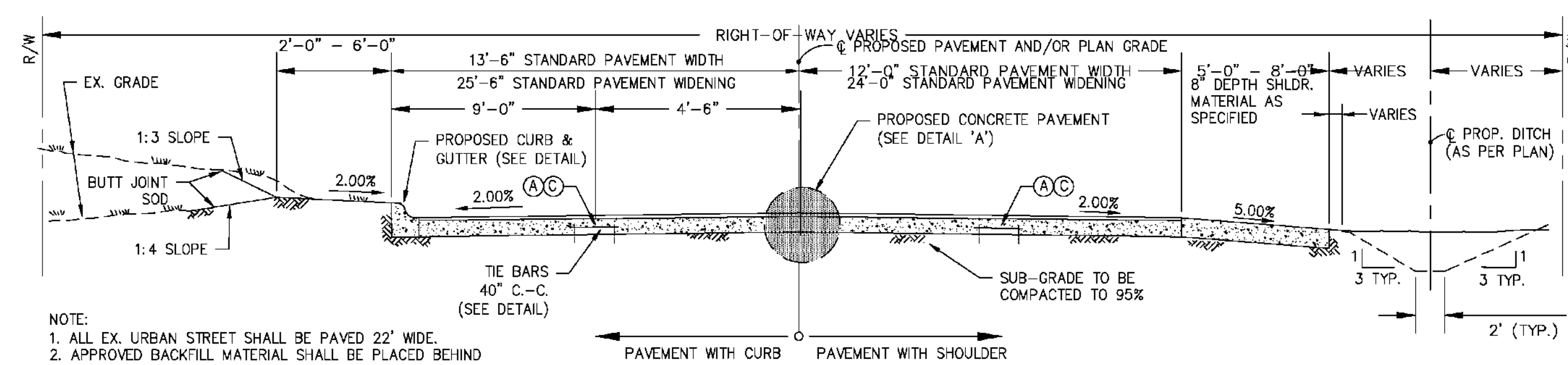


**MAIL BOX LOCATION**  
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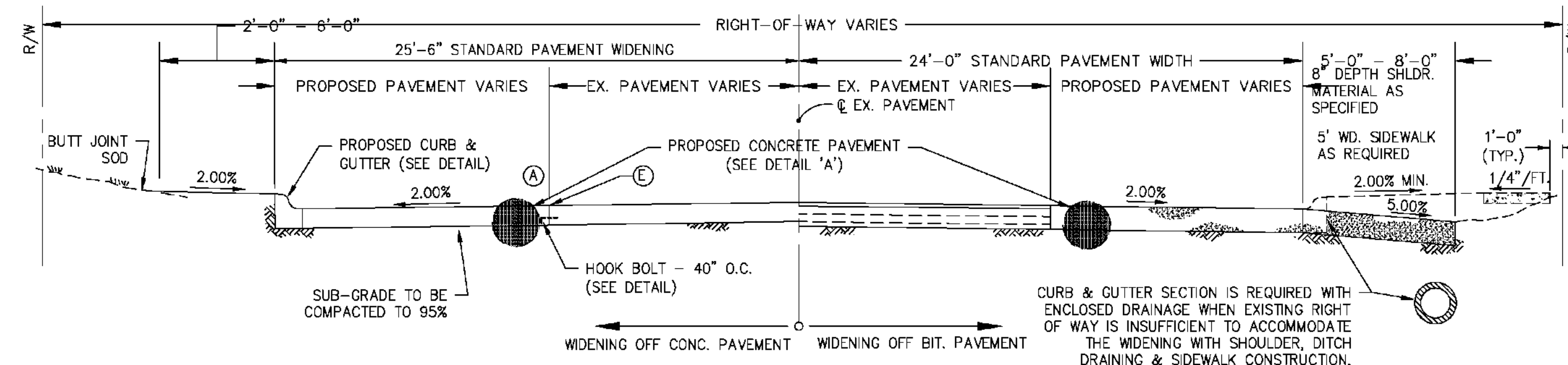
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STANDARD DETAIL DRAWINGS		JOB NO.	
GENERAL STANDARDS		SCALE: HORIZ. NA	VERT. NA
SHEET 1 OF 1		DESIGNED BY: FH	DATE: 7/1/13
		REVISIONS BY: LJC	DATE: 2/28/14
		APPROVED BY:	DATE:
		DIRECTOR, PUBLIC SERVICES DEPT.	



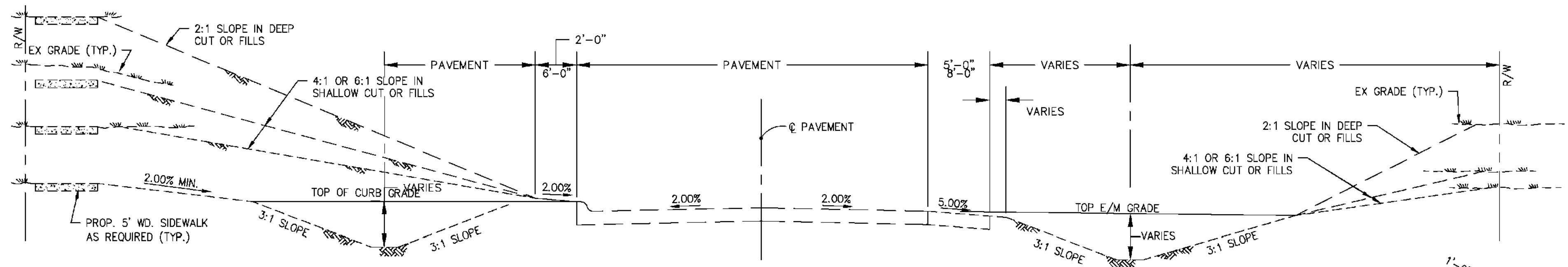
PAVEMENT RESURFACING SECTION NO. 1  
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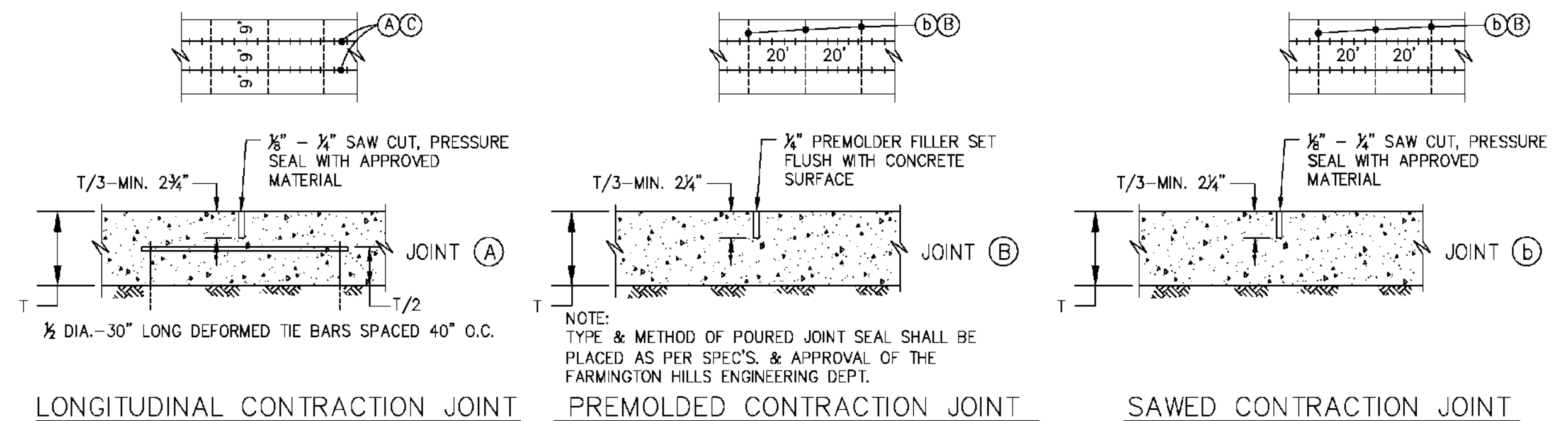
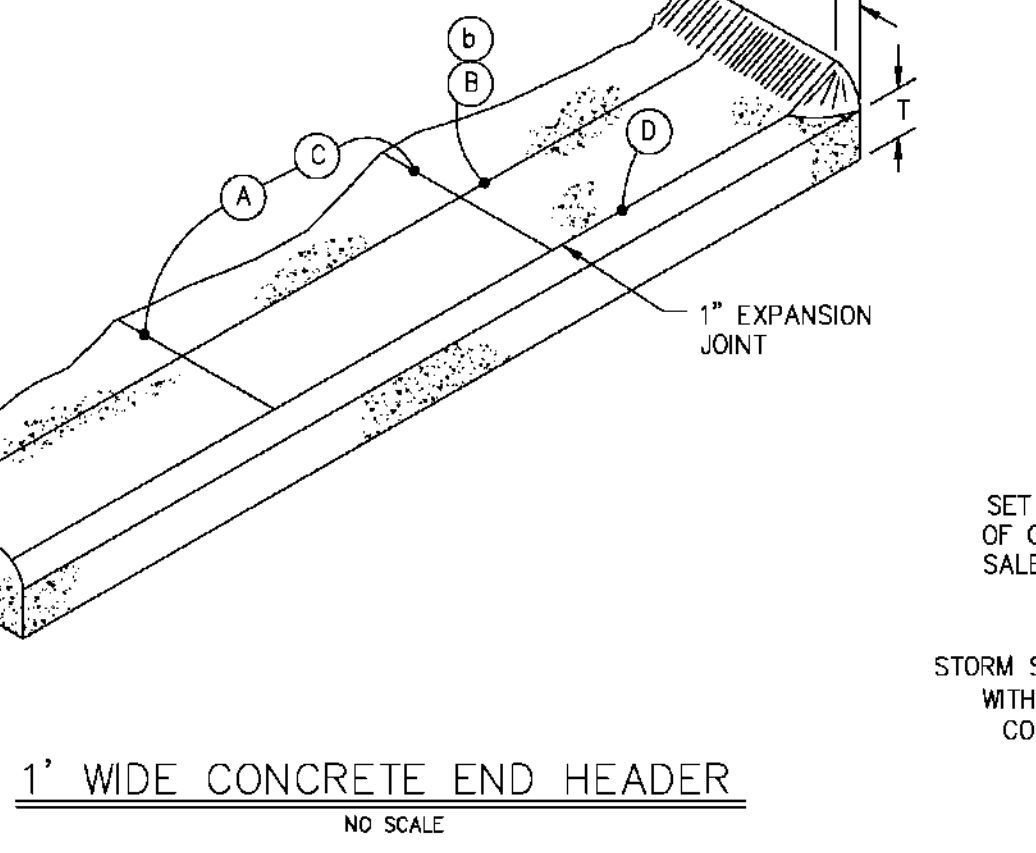
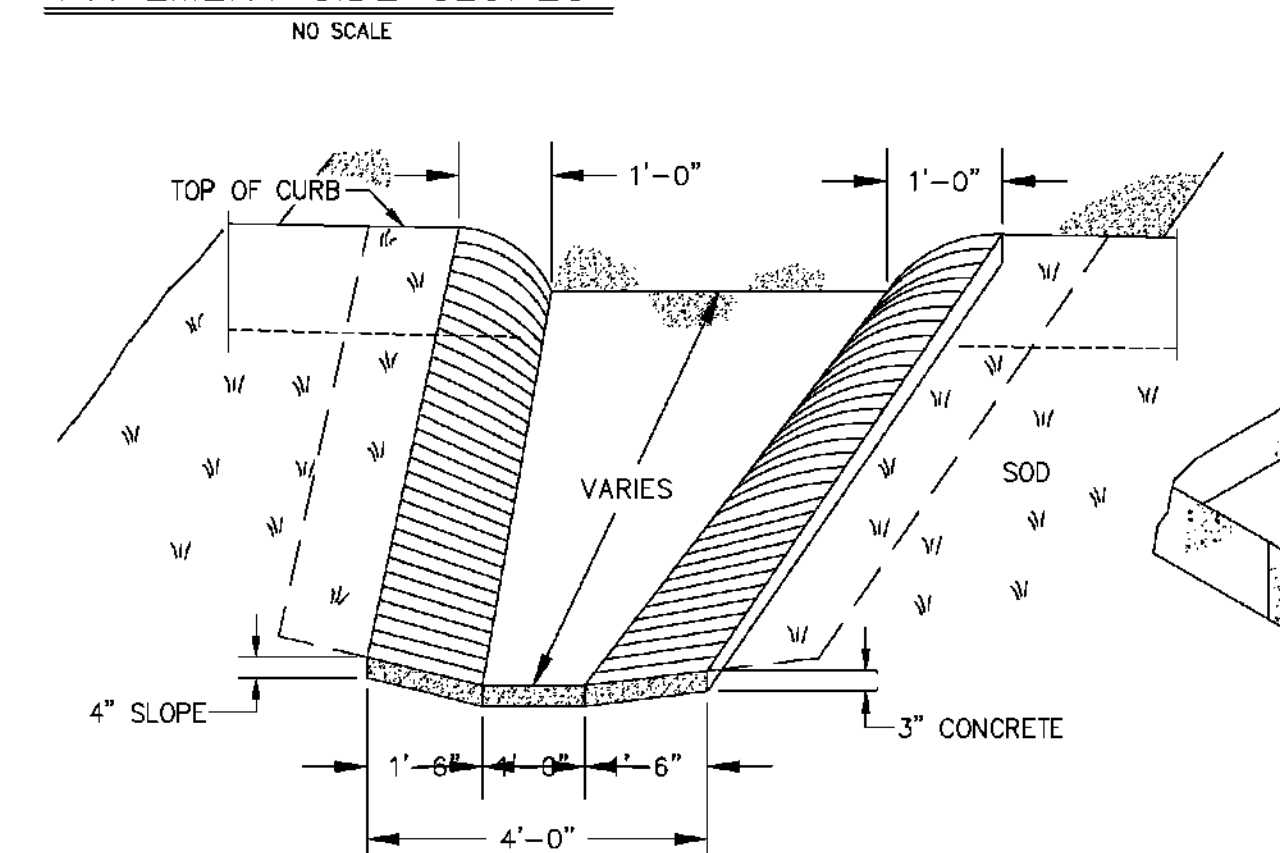
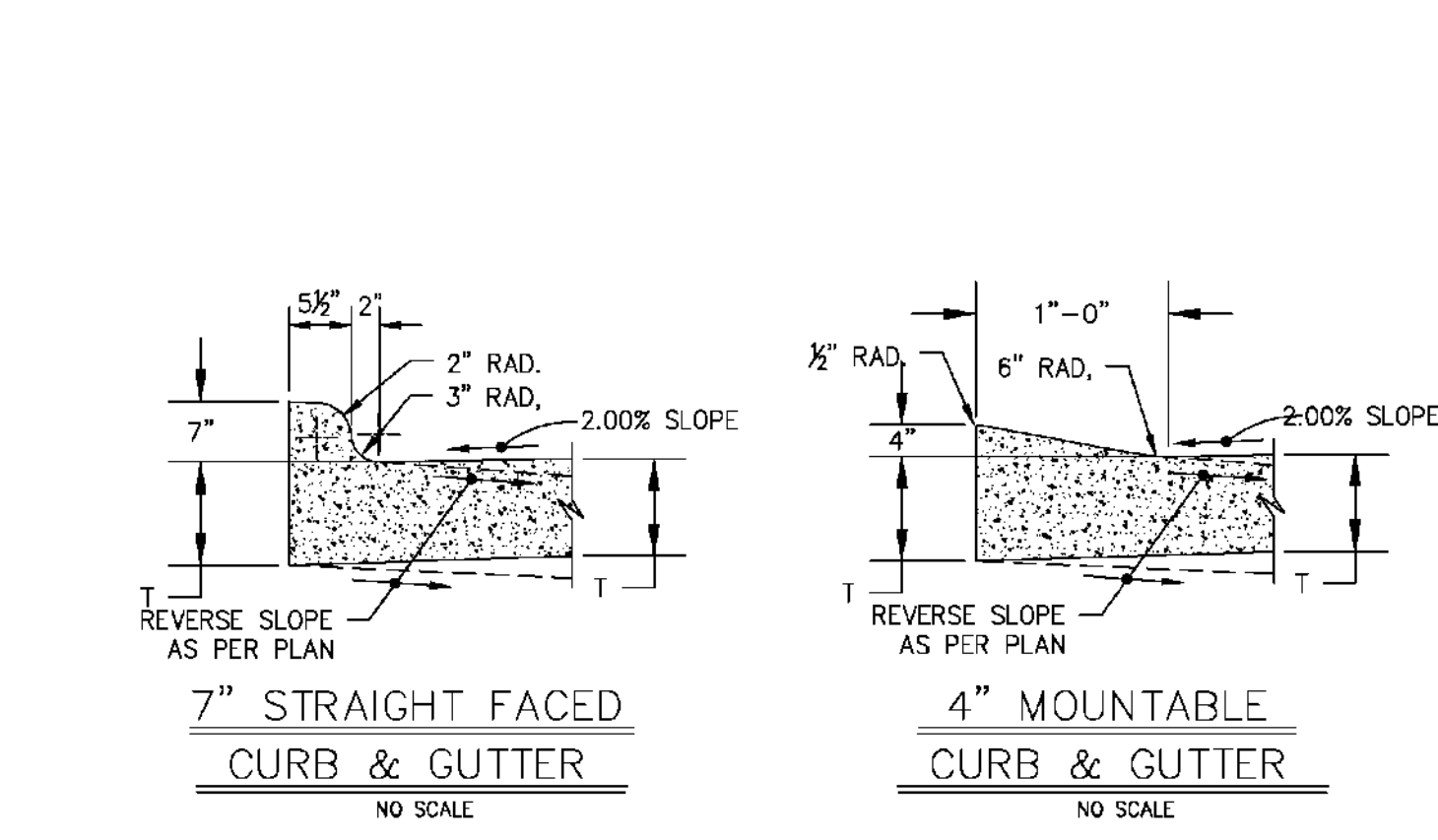
CONCRETE PAVEMENT SECTION NO. 2  
NO SCALE



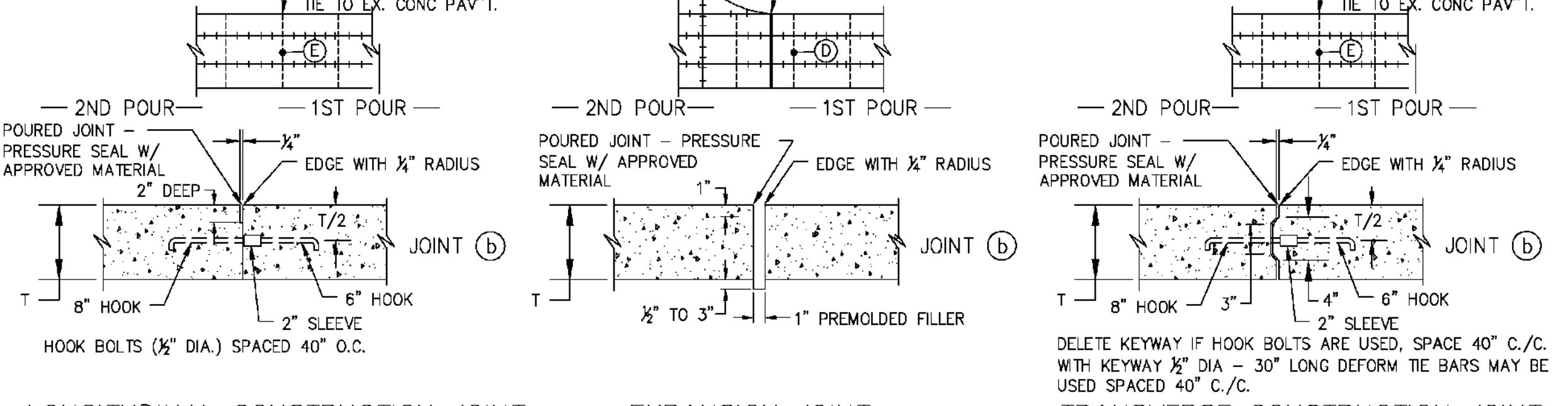
CONCRETE WIDENING SECTION NO. 3  
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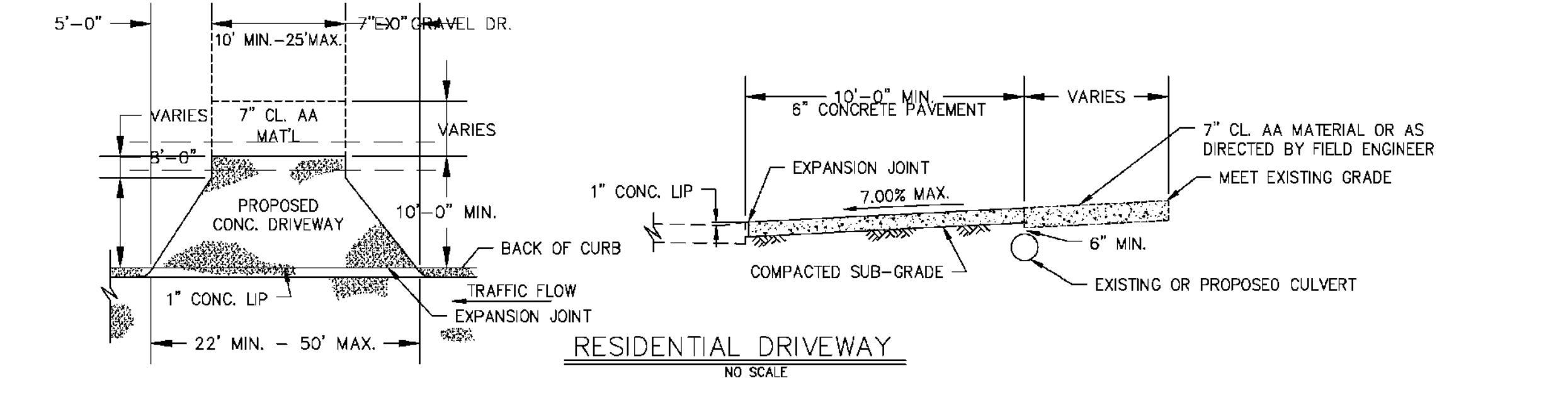
PAVEMENT SIDE SLOPES  
NO SCALE



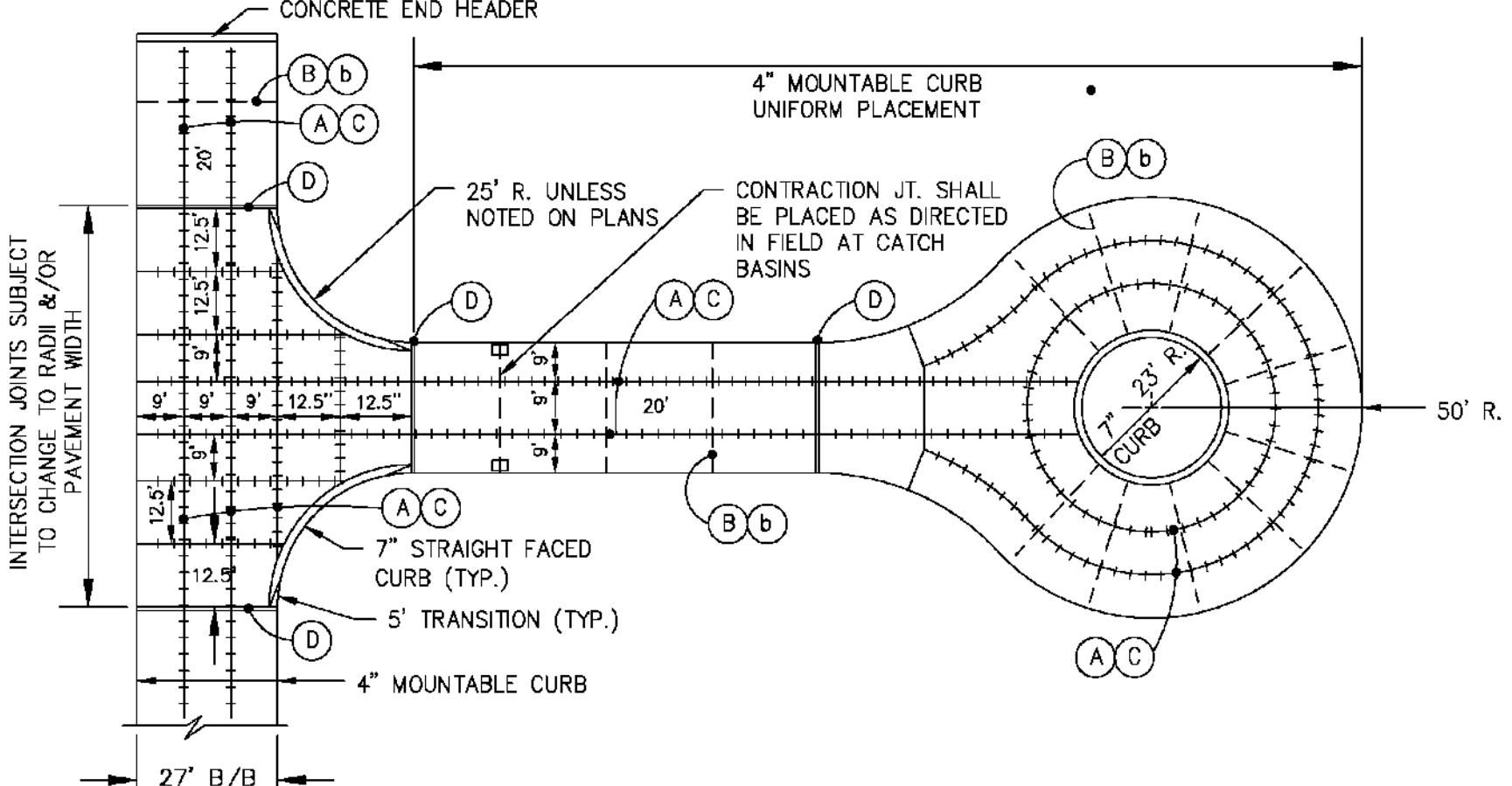
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PREMOLDED CONTRACTION JOINT  
SAWED CONTRACTION JOINT  
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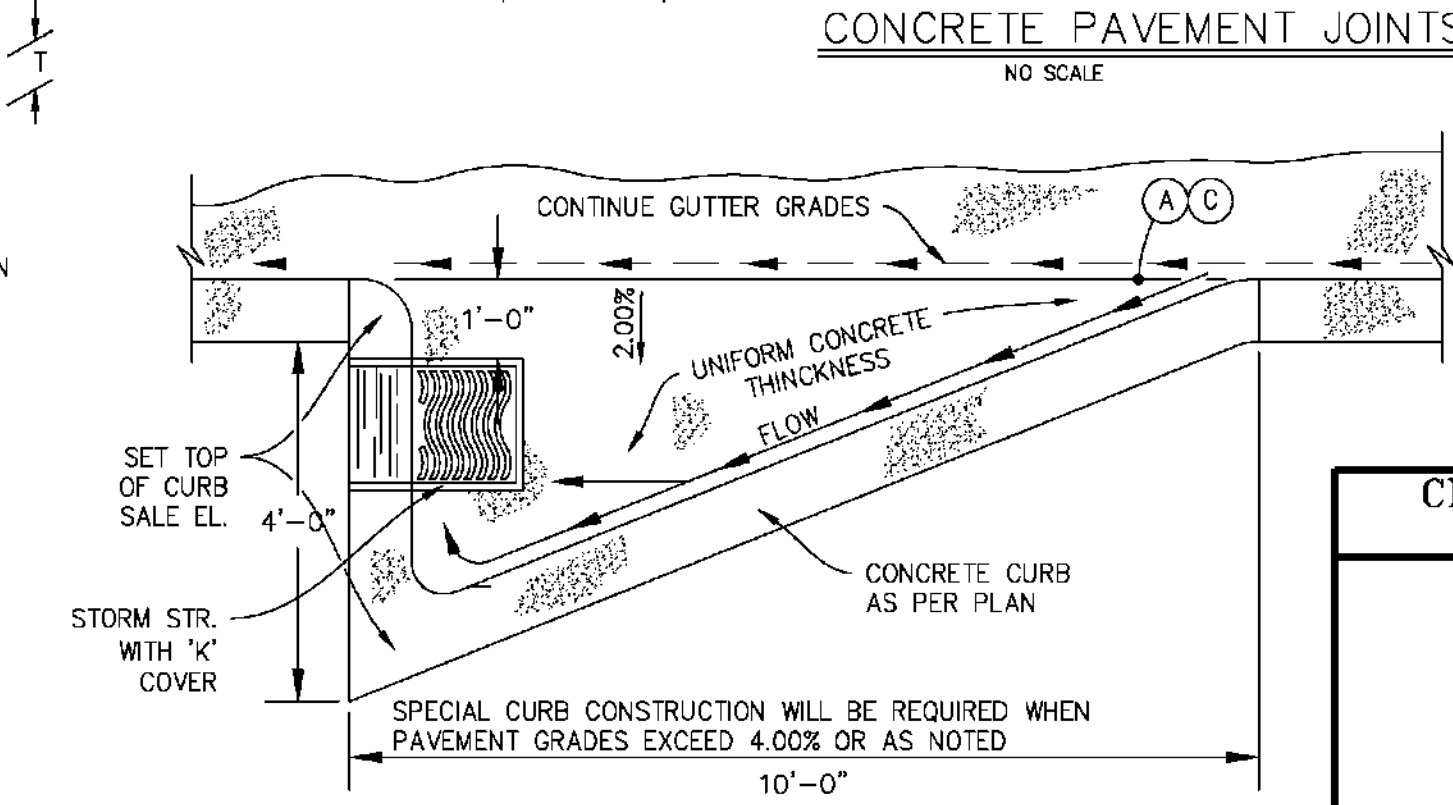
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EXPANSION JOINT  
TRANSVERSE CONSTRUCTION JOINT  
NO SCALE



RESIDENTIAL DRIVEWAY  
NO SCALE



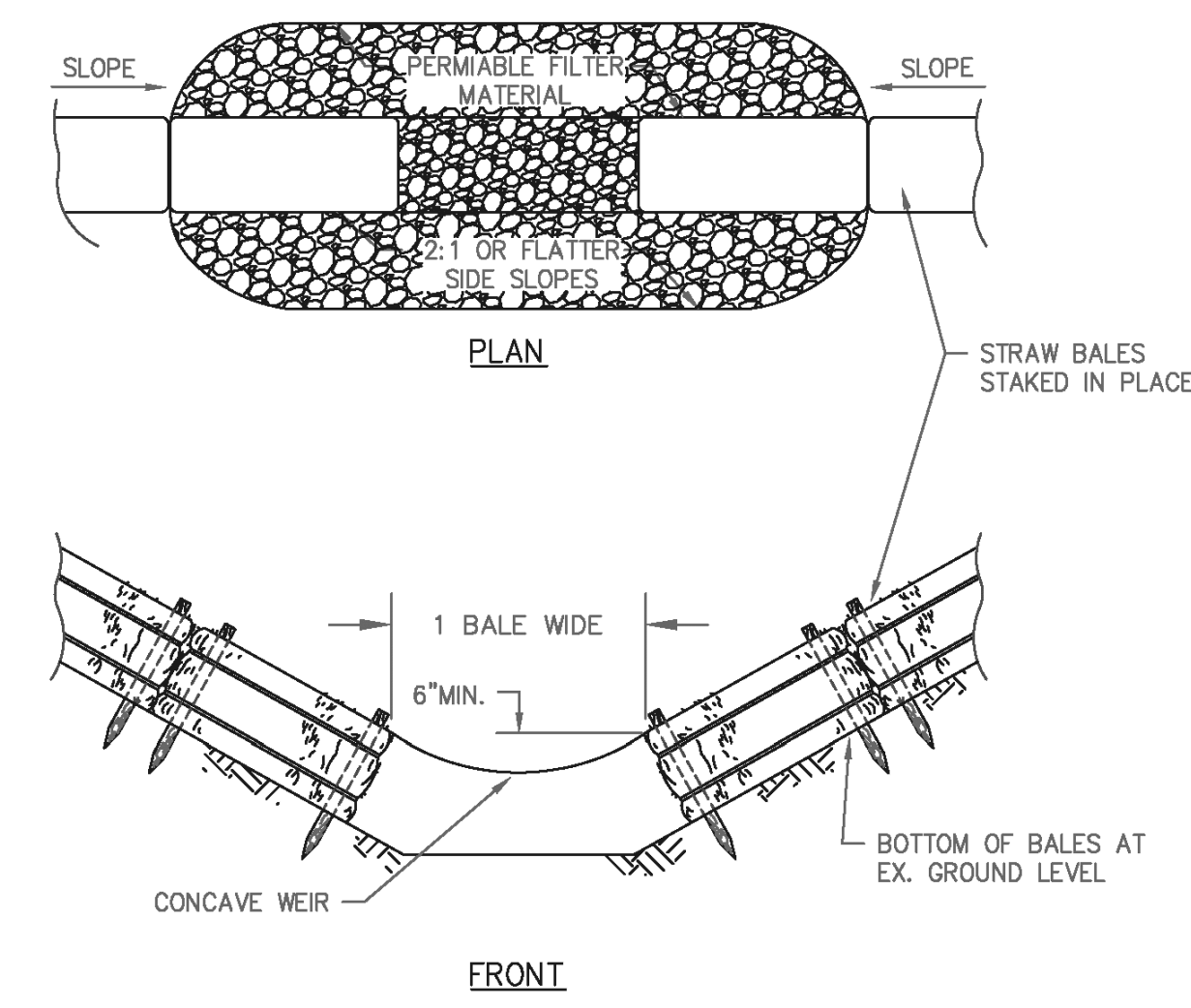
CONCRETE PAVEMENT JOINTS  
NO SCALE



SPECIAL CURB SECTION 'A'  
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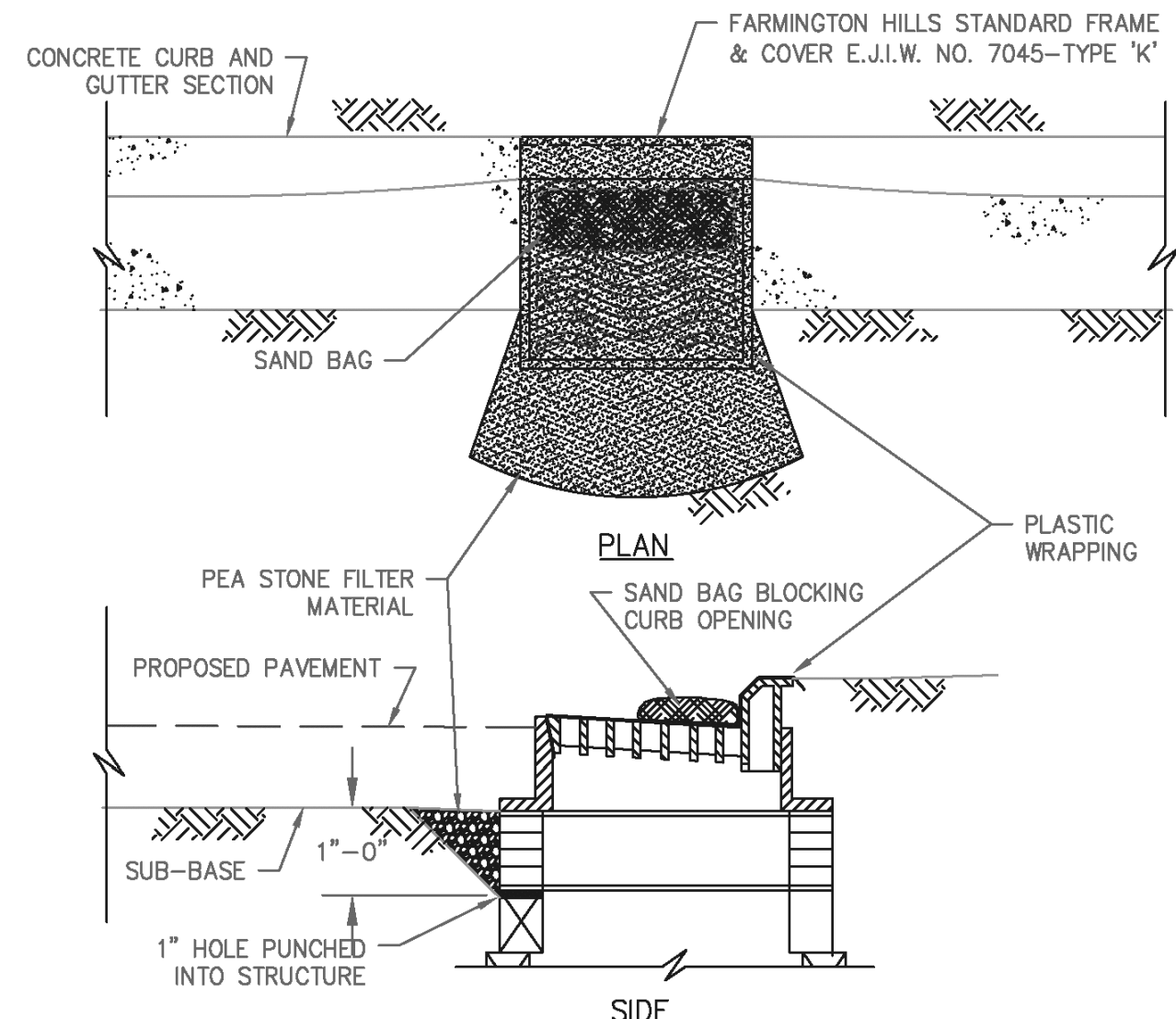
CITY OF FARMINGTON HILLS OAKLAND COUNTY, MI		ENGINEERING DIVISION	
STANDARD DETAIL DRAWINGS		JOB NO.	
SCALE: HORIZ. NA		VERT. NA	
DRAWN: CADATOMIC		DATE: 7/1/13	
DESIGNED BY: FH		DATE: 7/1/13	
CHECKED BY:		DATE:	
APPROVED BY:		DATE:	
SHEET 1 OF 1		DIRECTOR, PUBLIC SERVICES DEPT.	





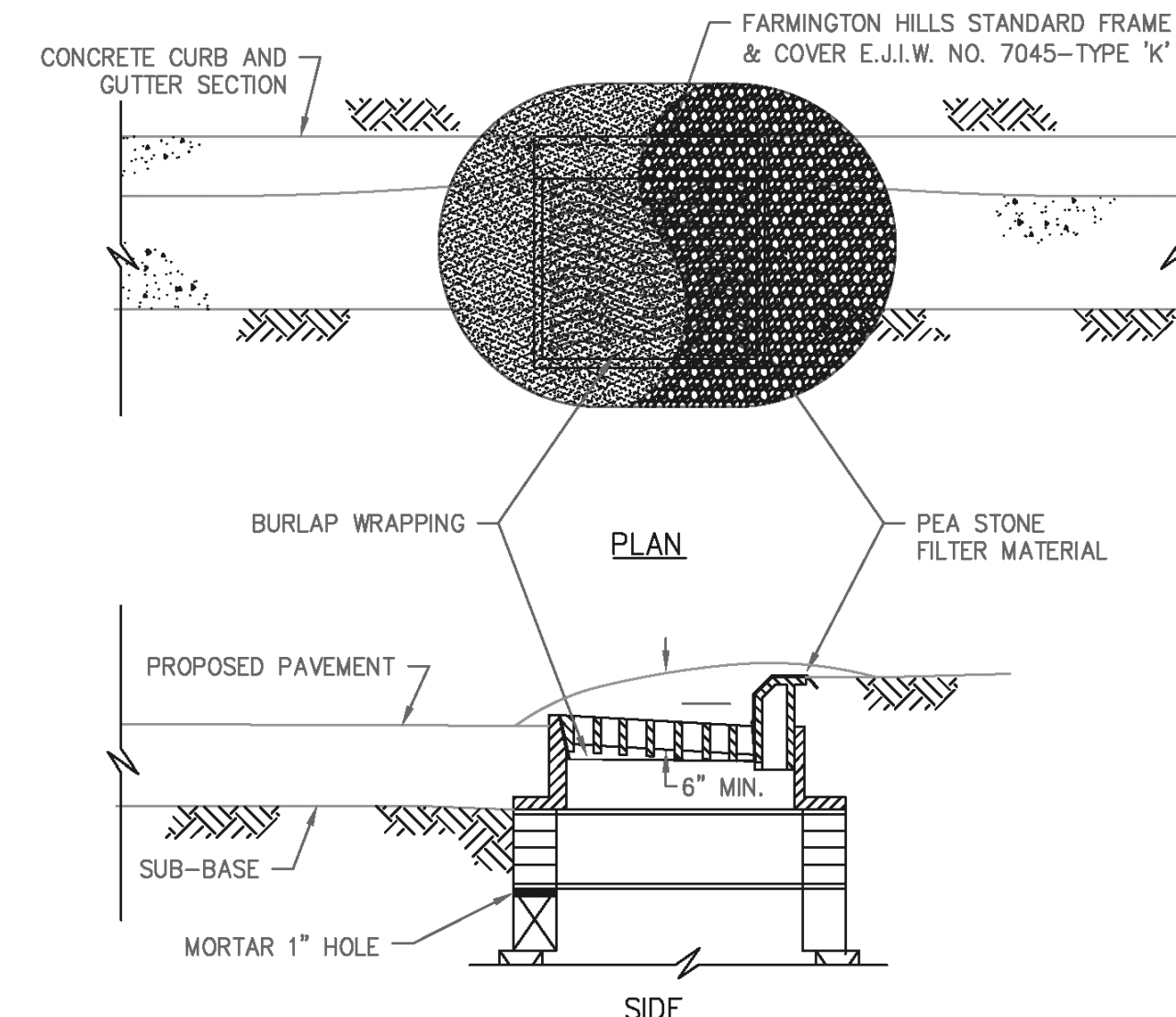
**STONE OUTLET FILTER WITHIN A STRAW BALE FILTER**

NO SCALE



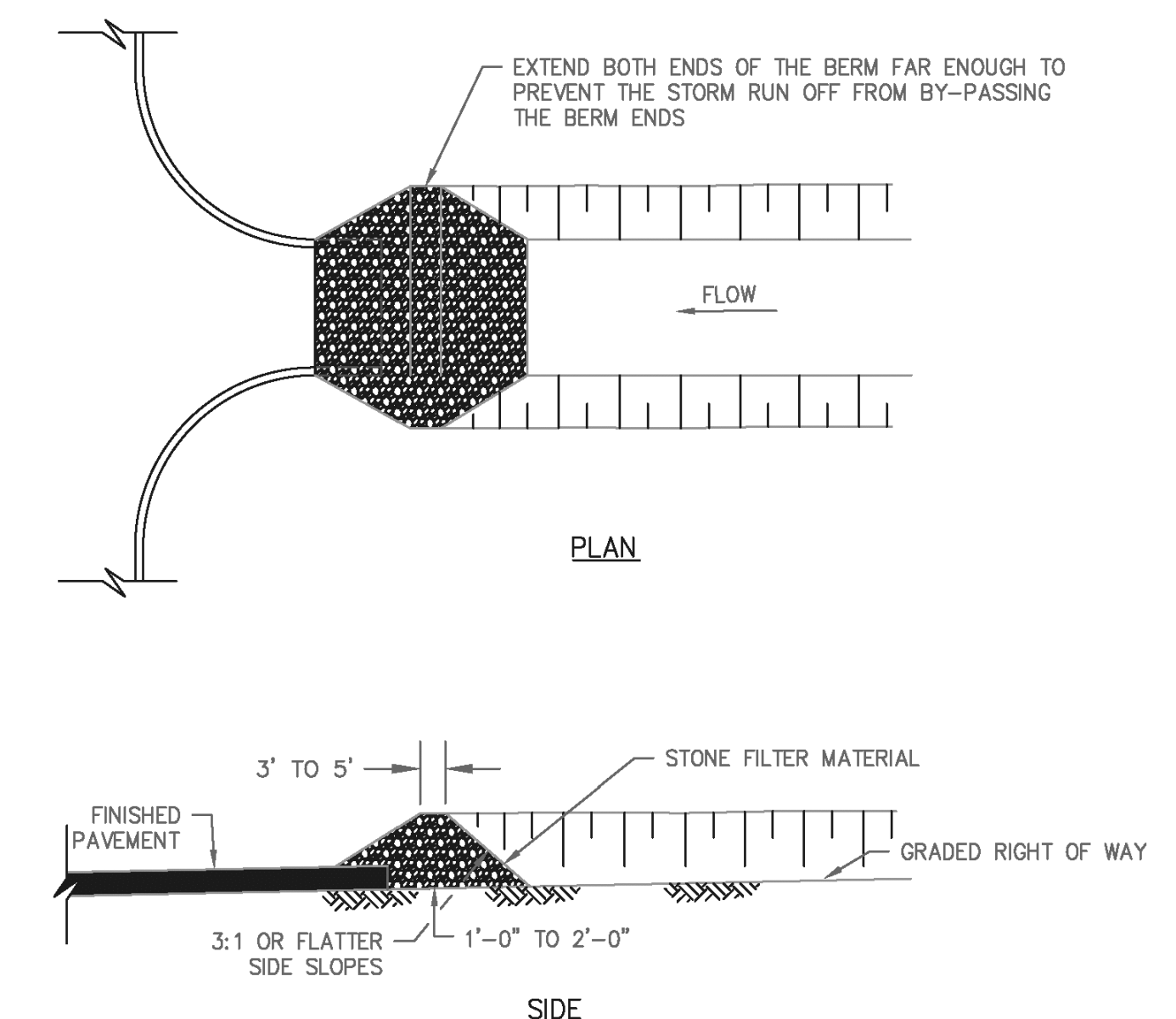
**CURB AND GUTTER INLET FILTER BEFORE PAVING**

NO SCALE



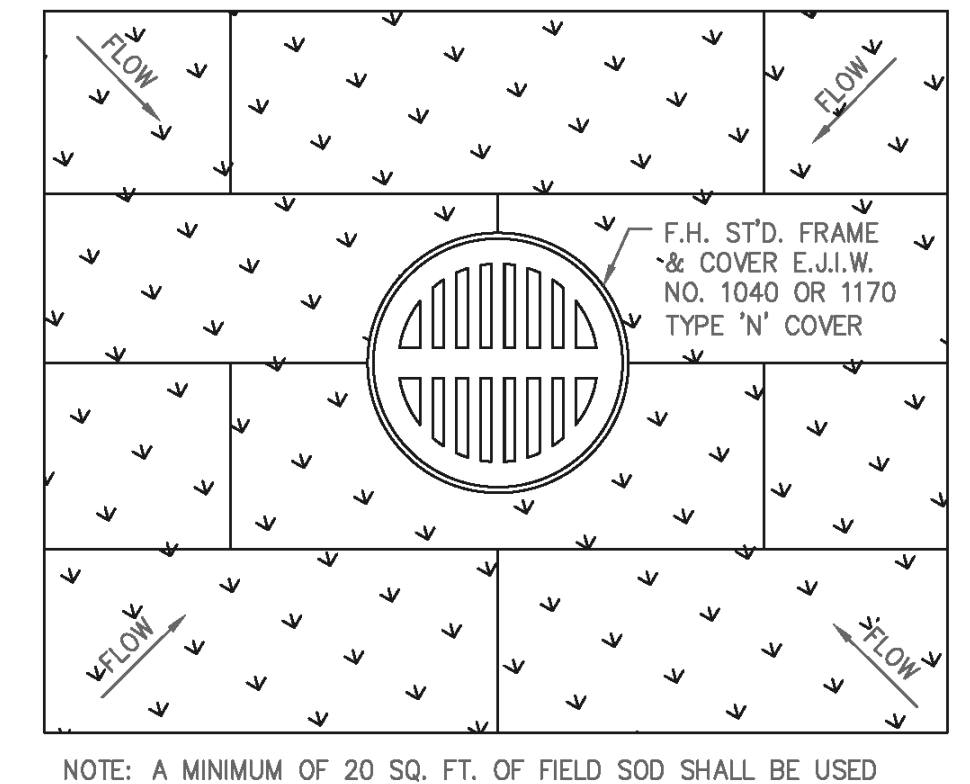
**CURB AND GUTTER INLET FILTER AFTER PAVING**

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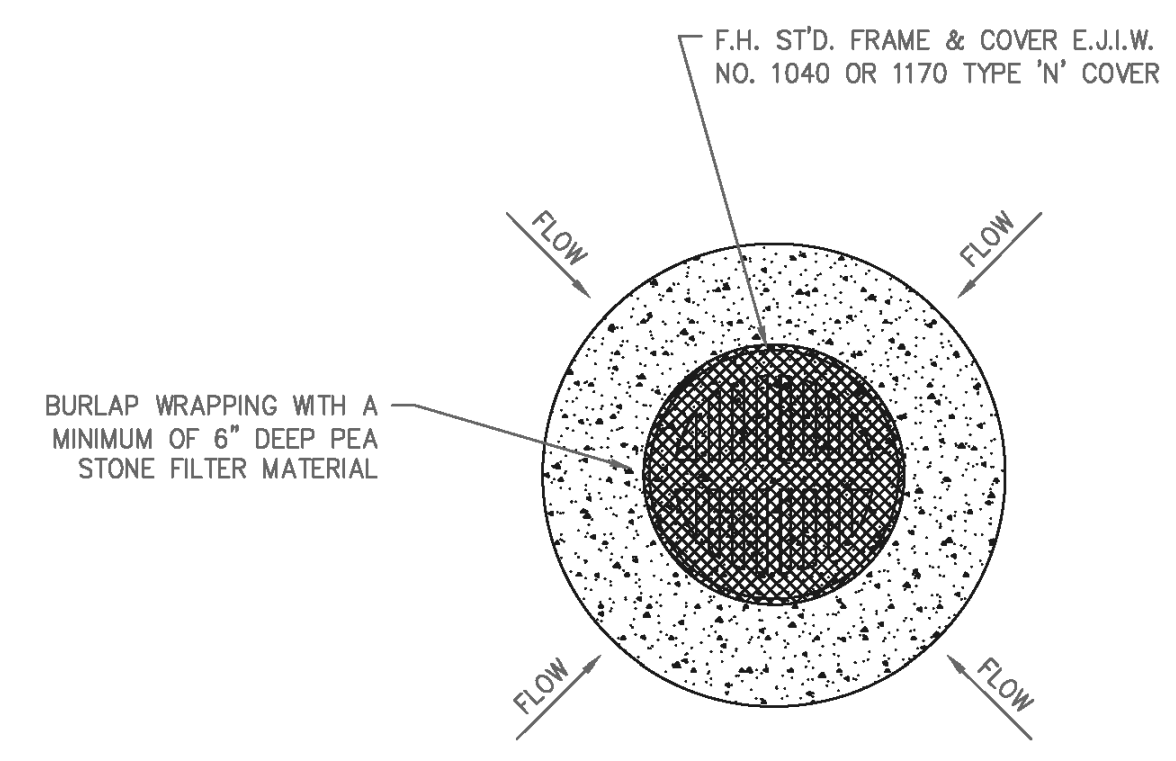


**STONE FILTER BERM**

NO SCALE

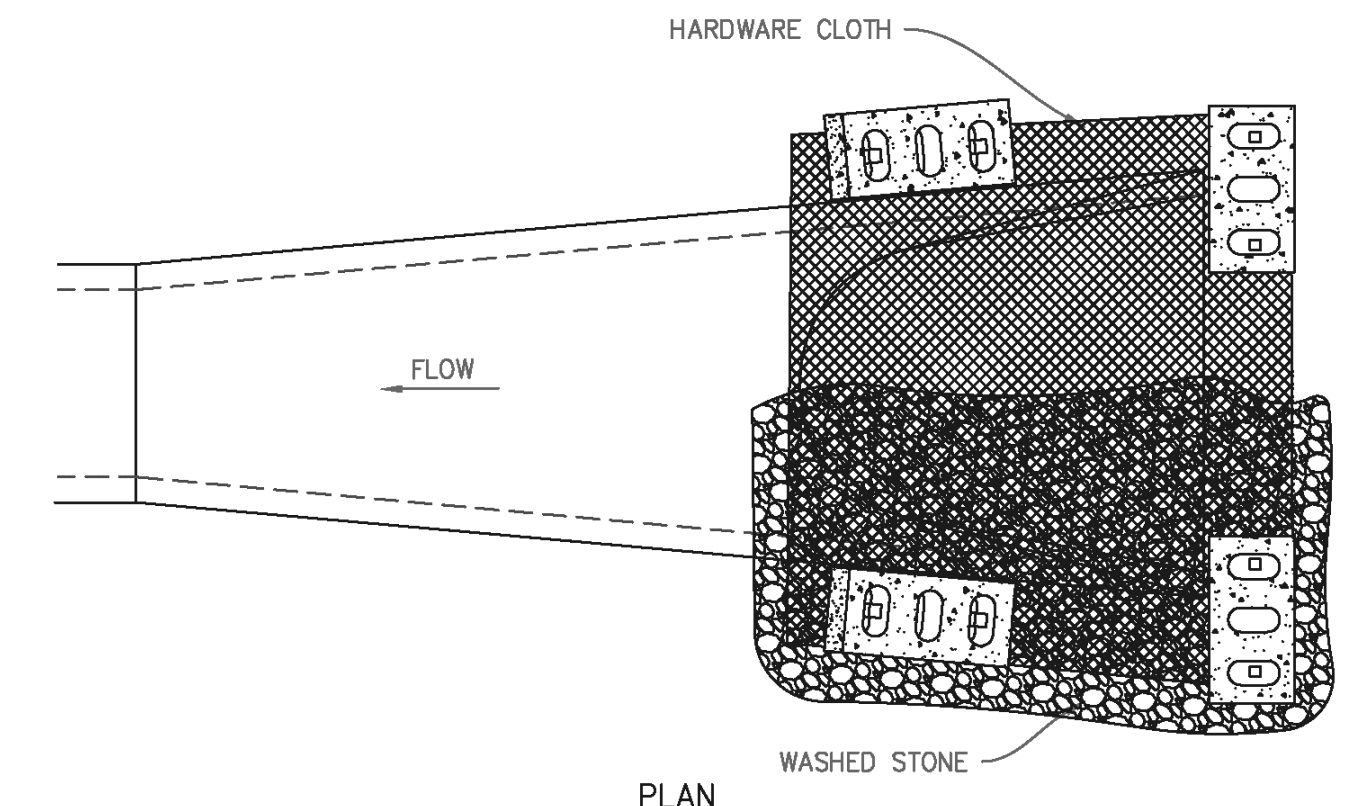


NOTE: A MINIMUM OF 20 SQ. FT. OF FIELD SOD SHALL BE USED



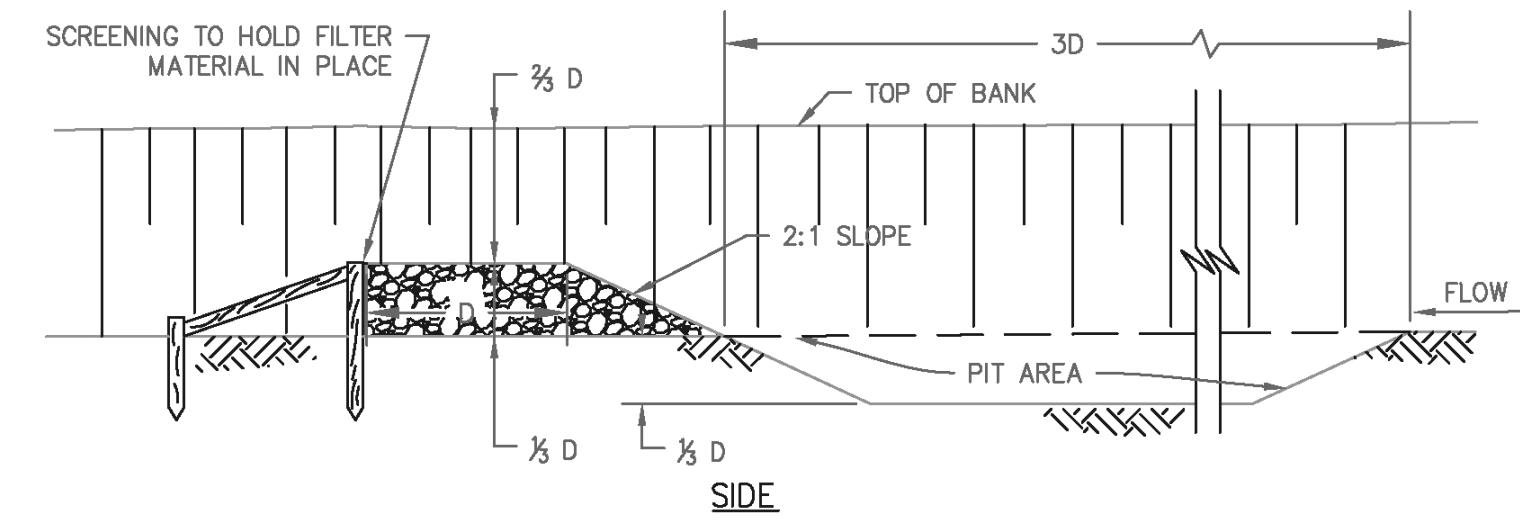
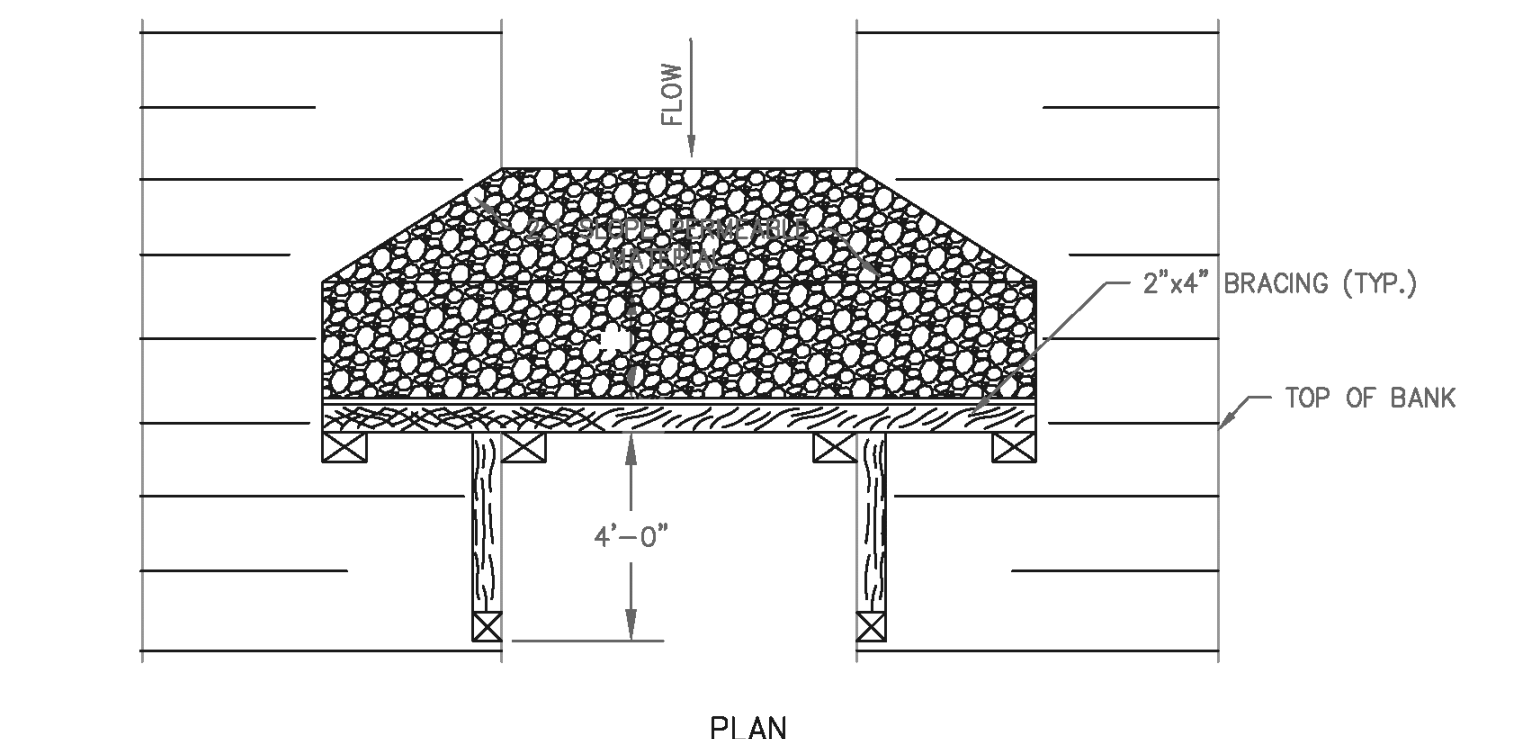
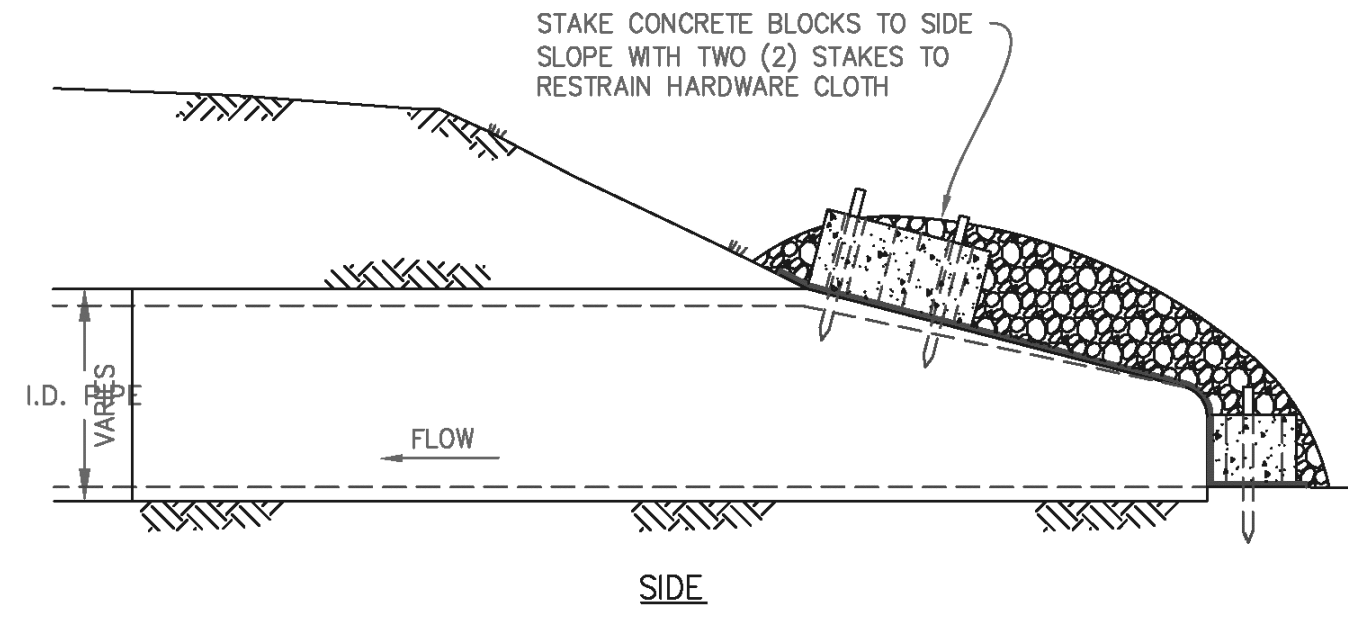
**SOD AND STONE REAR YARD INLET FILTER**

NO SCALE



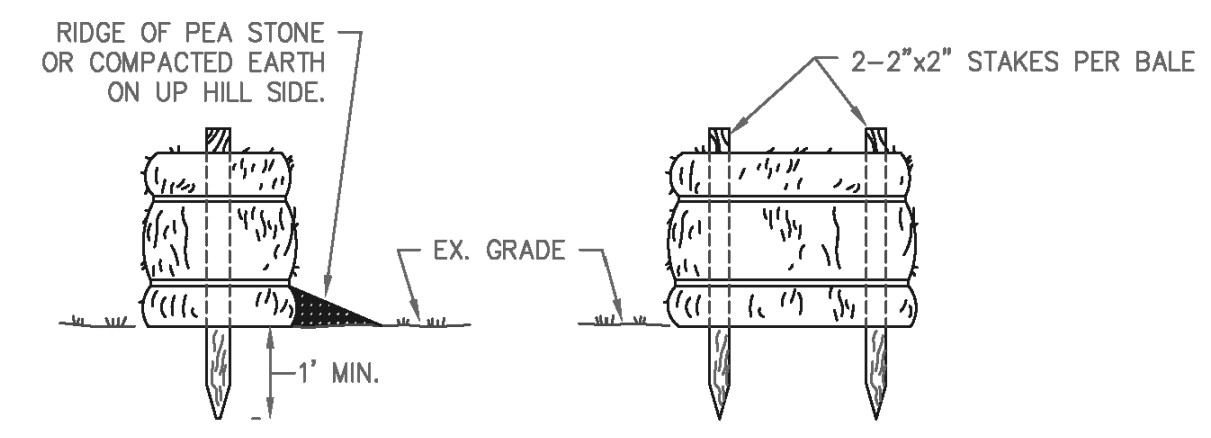
**PIPE END SECTION SEDIMENT FILTER**

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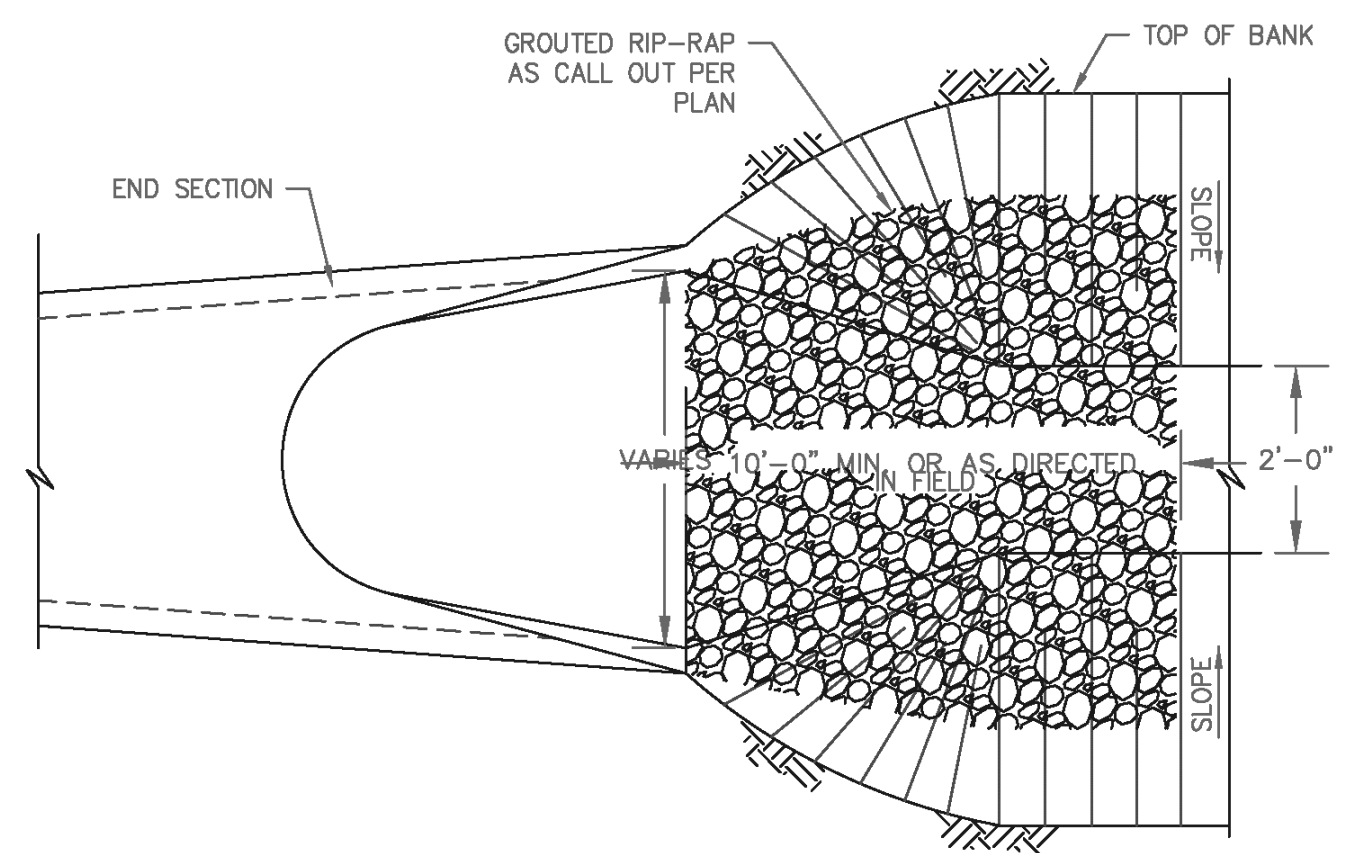
**DITCH SEDIMENT TRAP**

NO SCALE



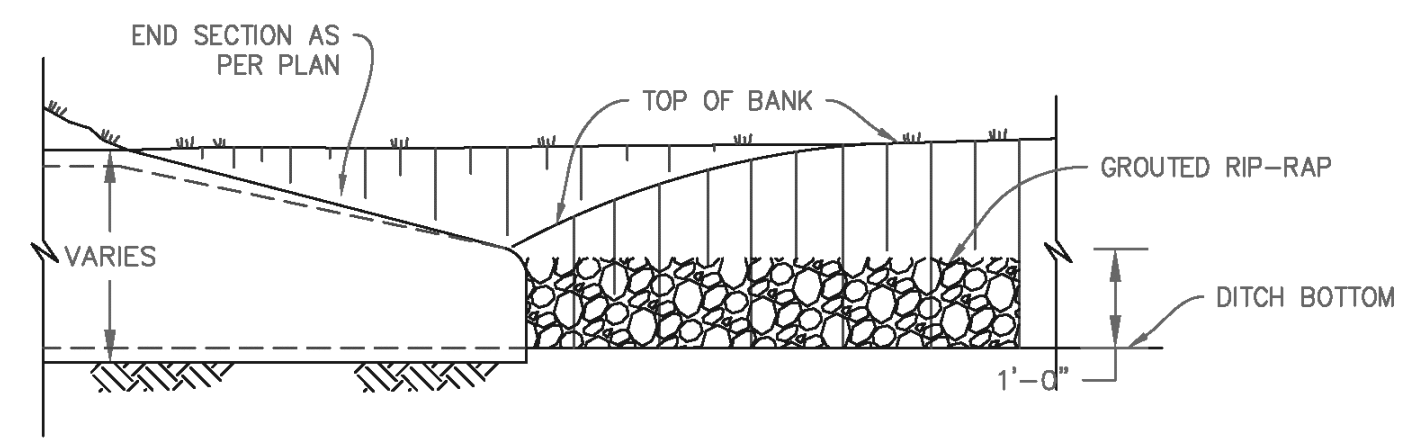
**STRAW BALE FILTER**

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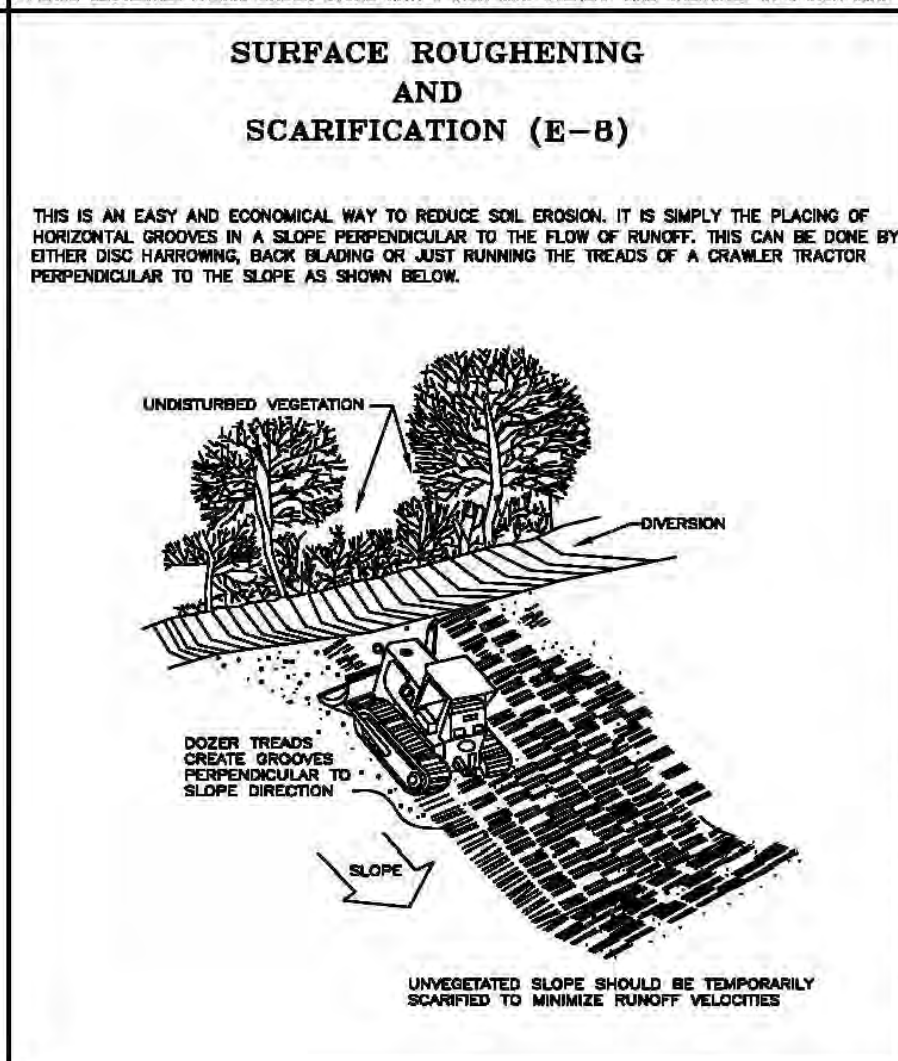
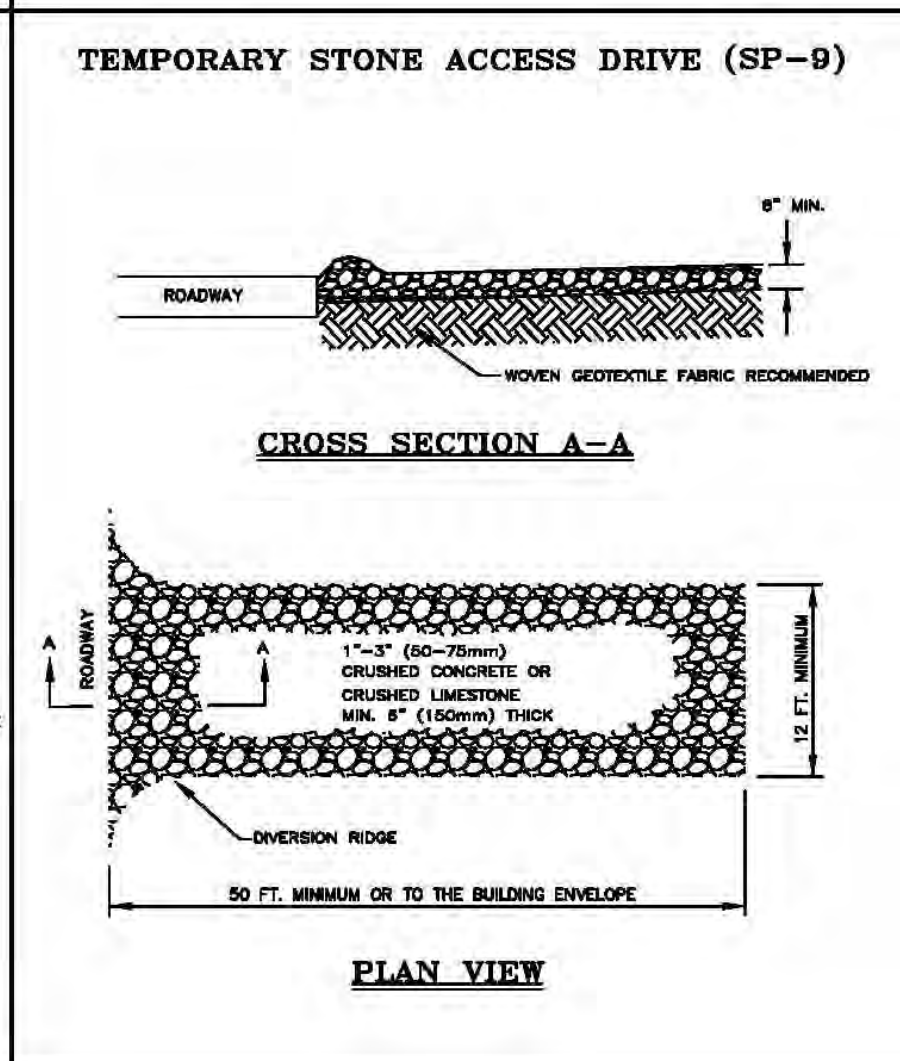
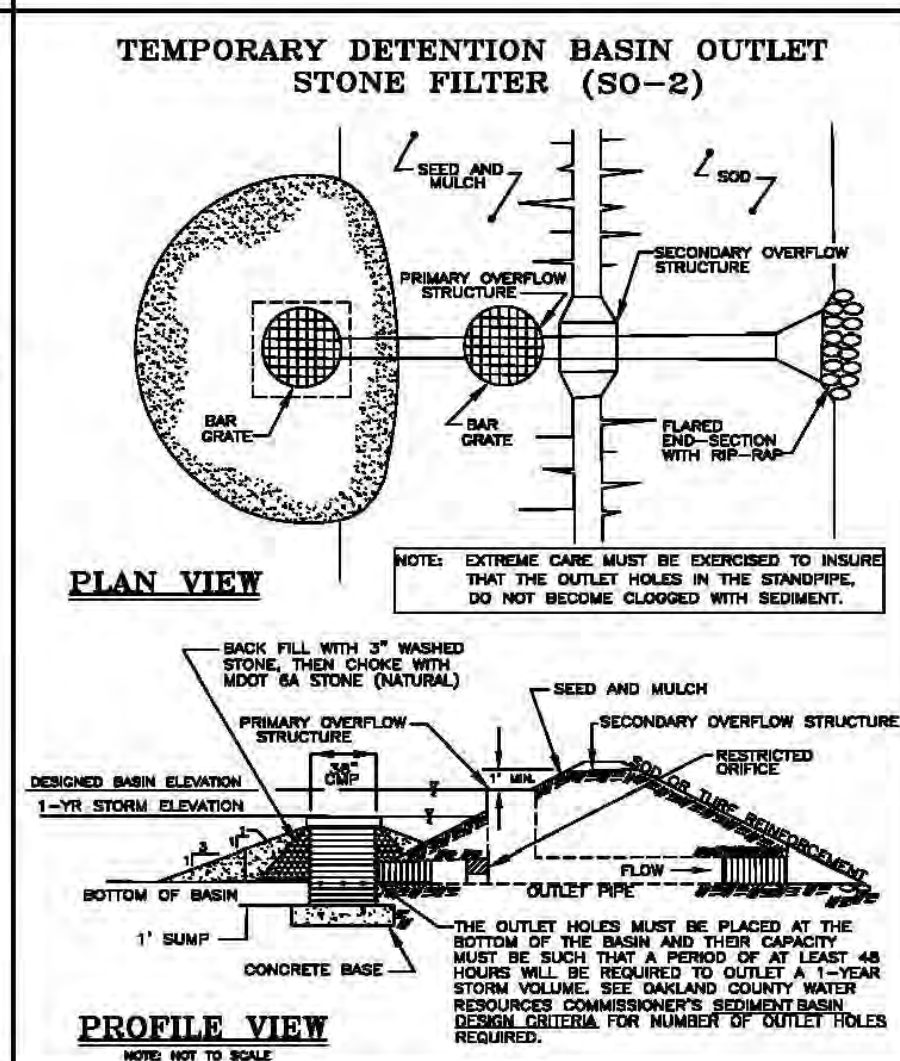
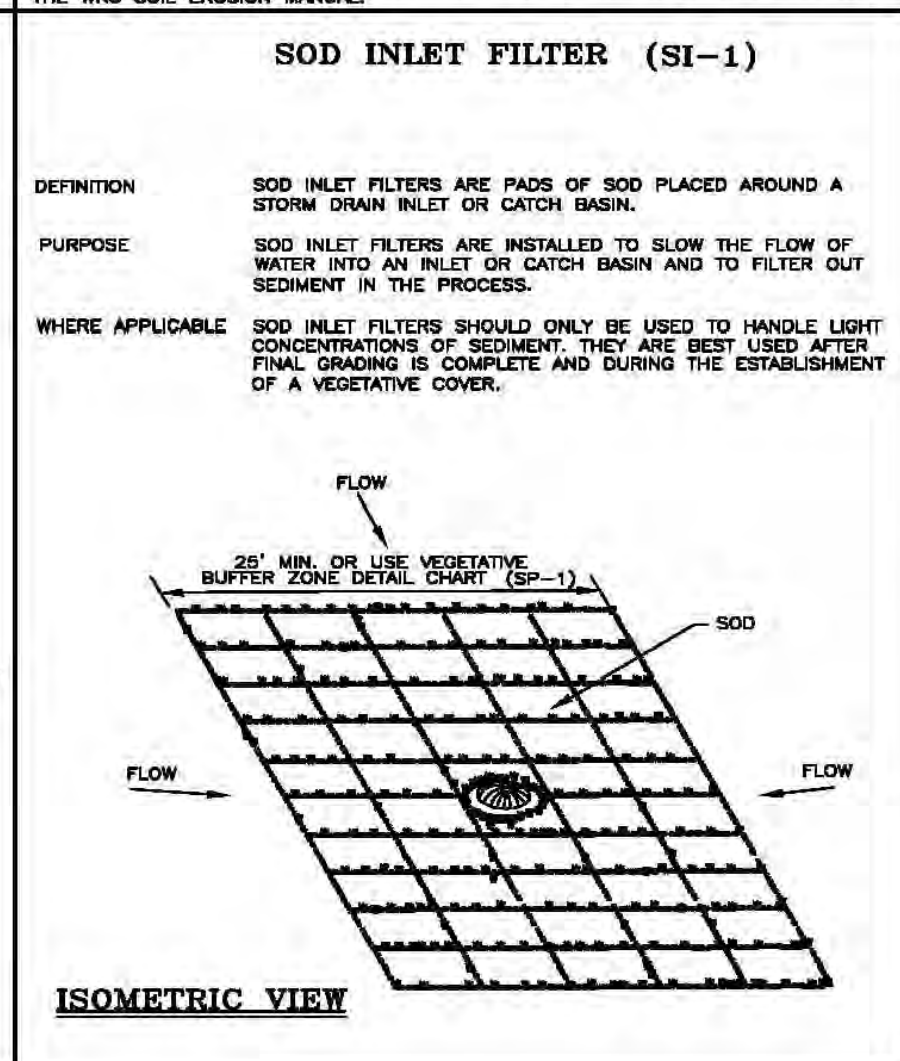
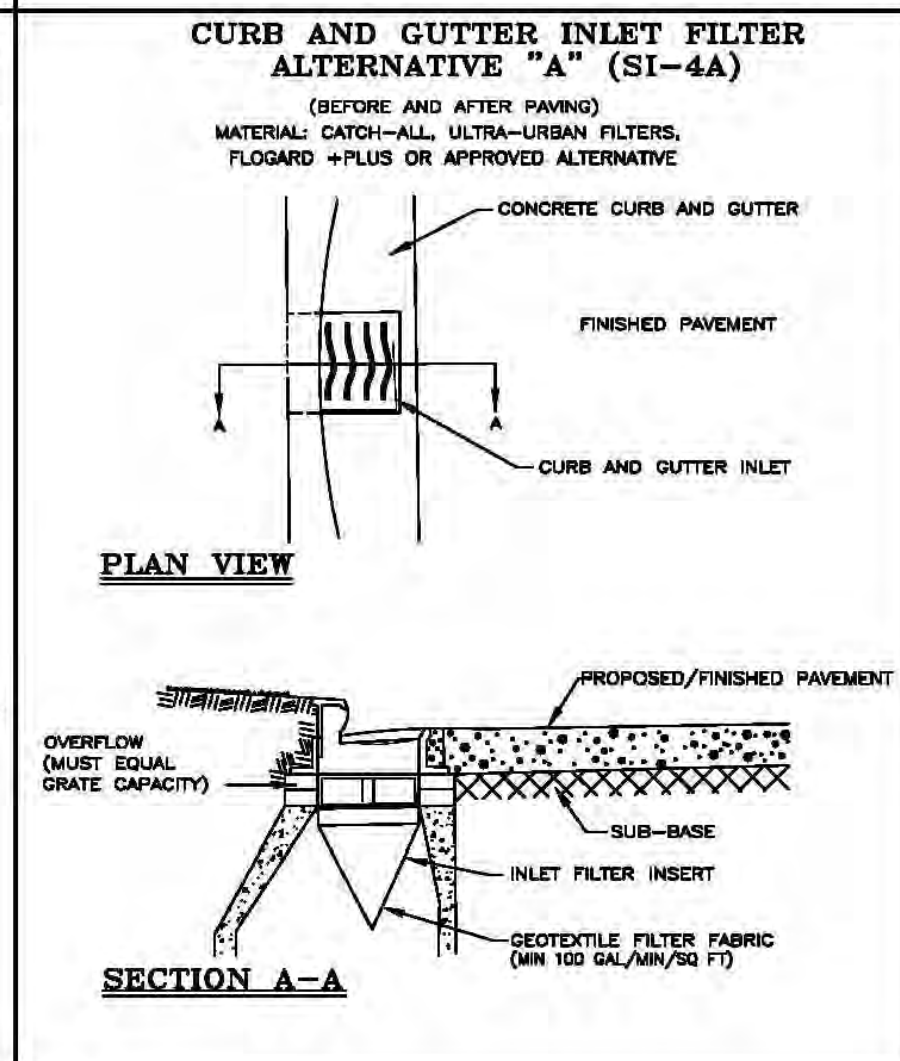
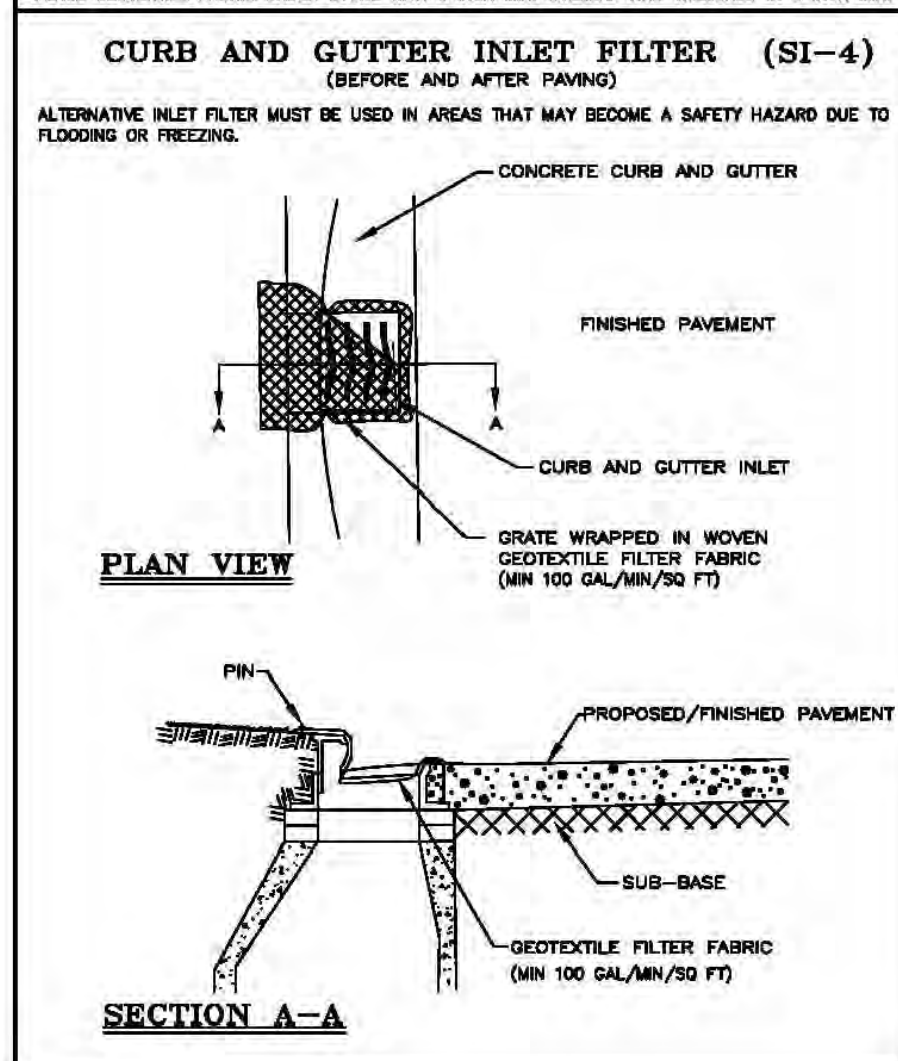
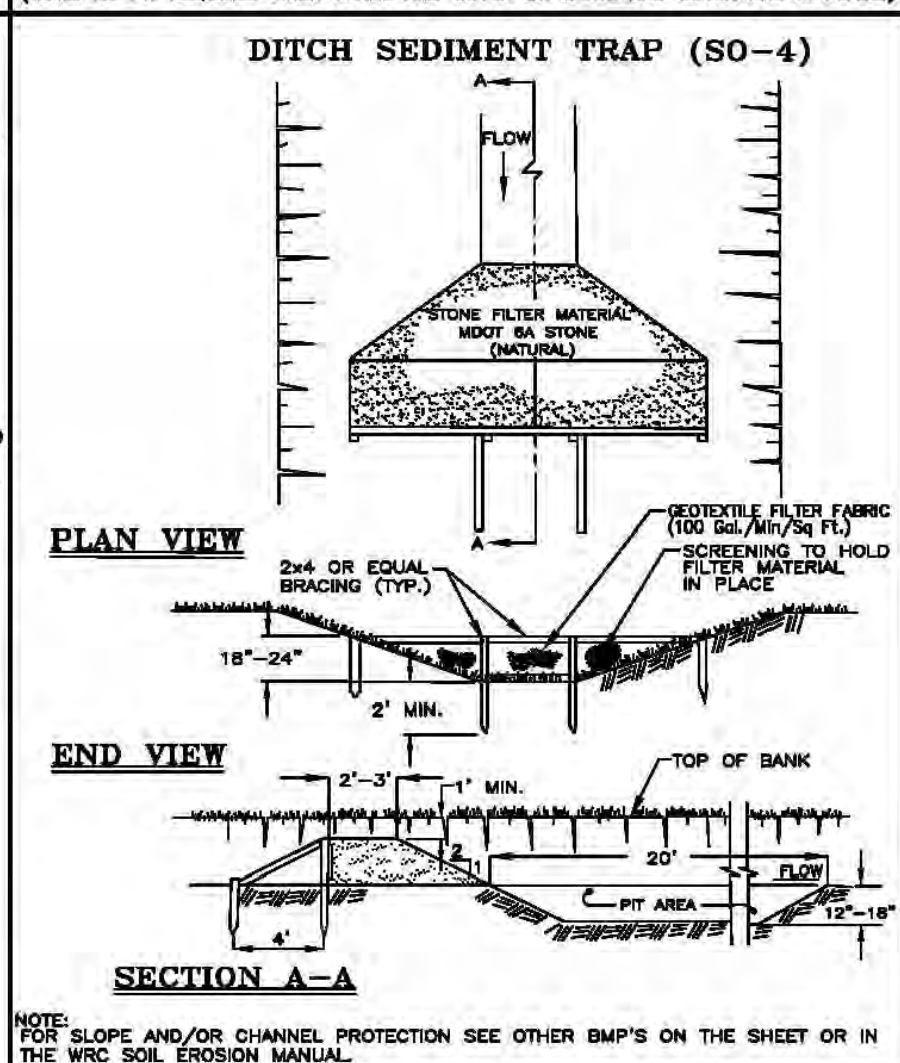
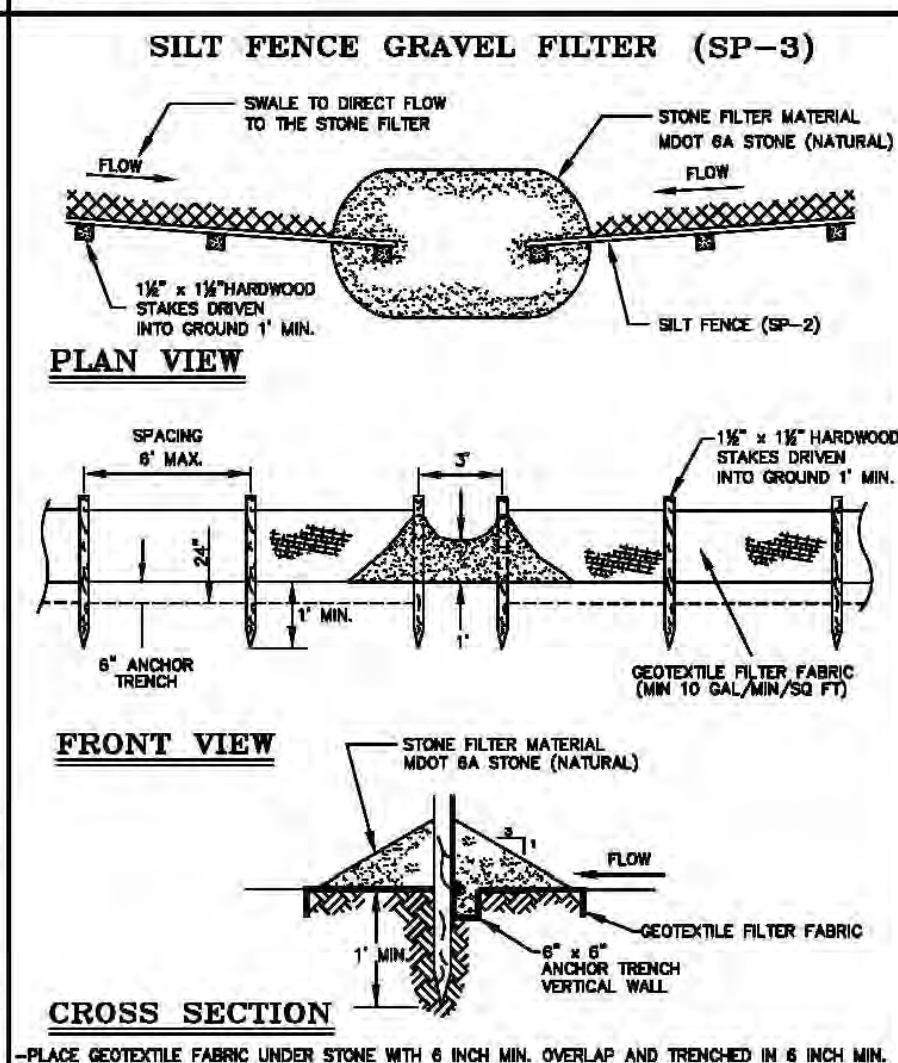
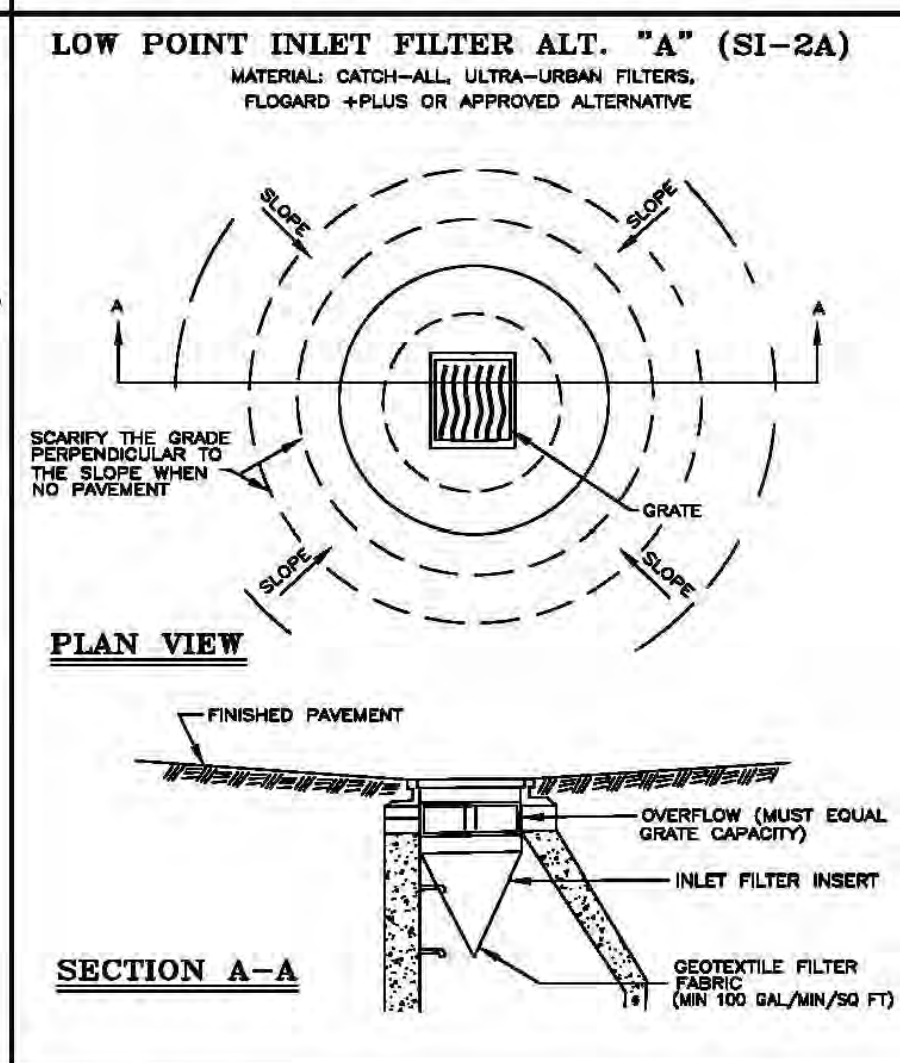
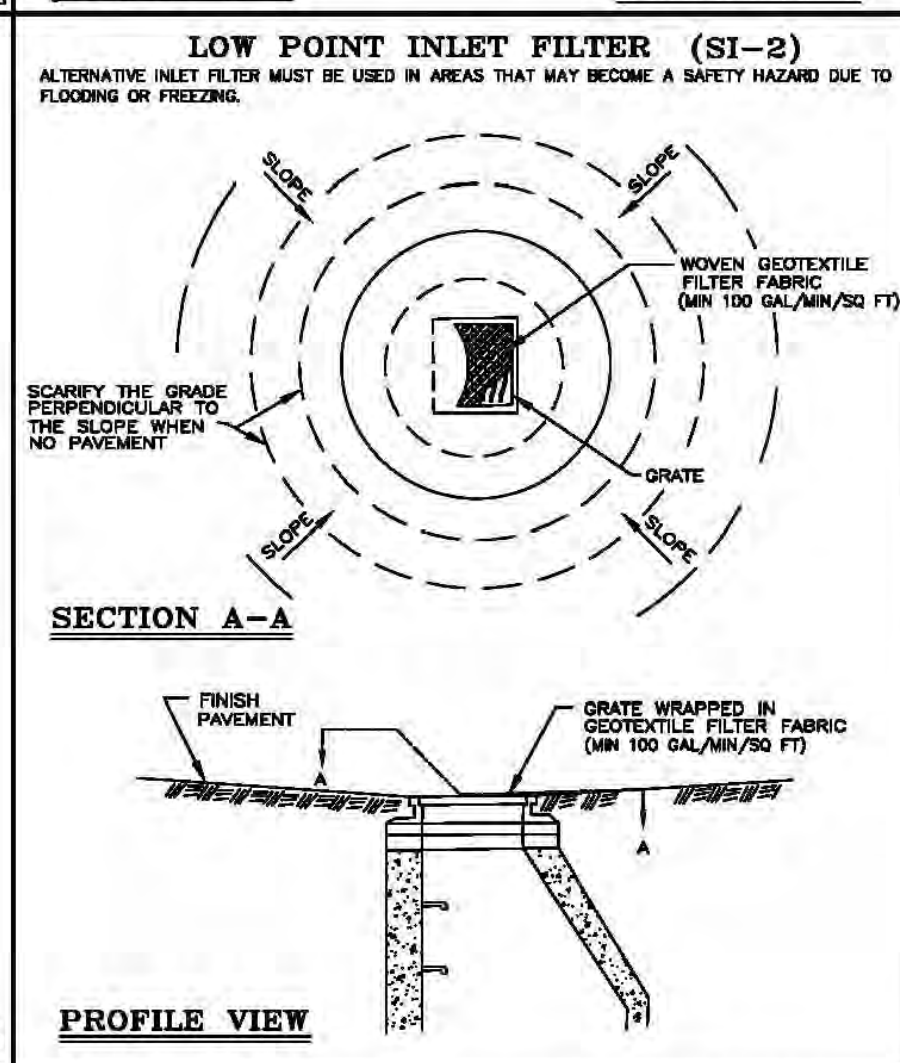
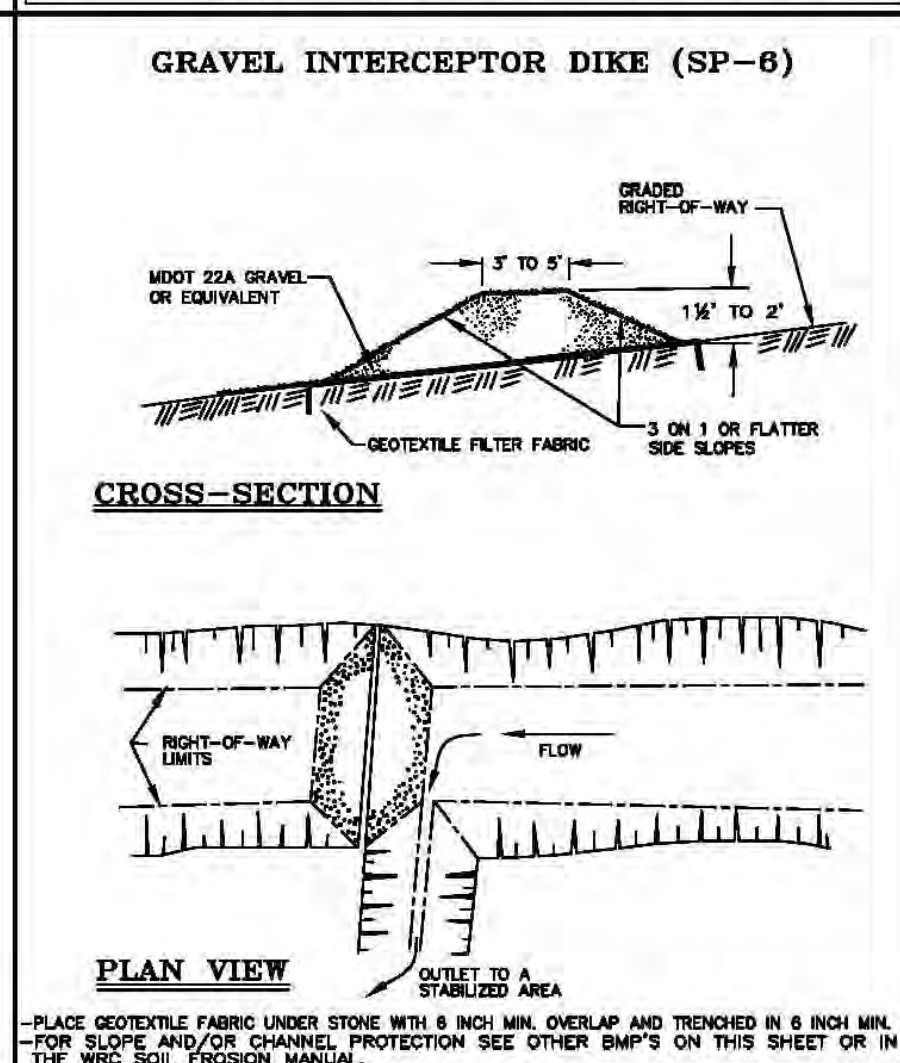
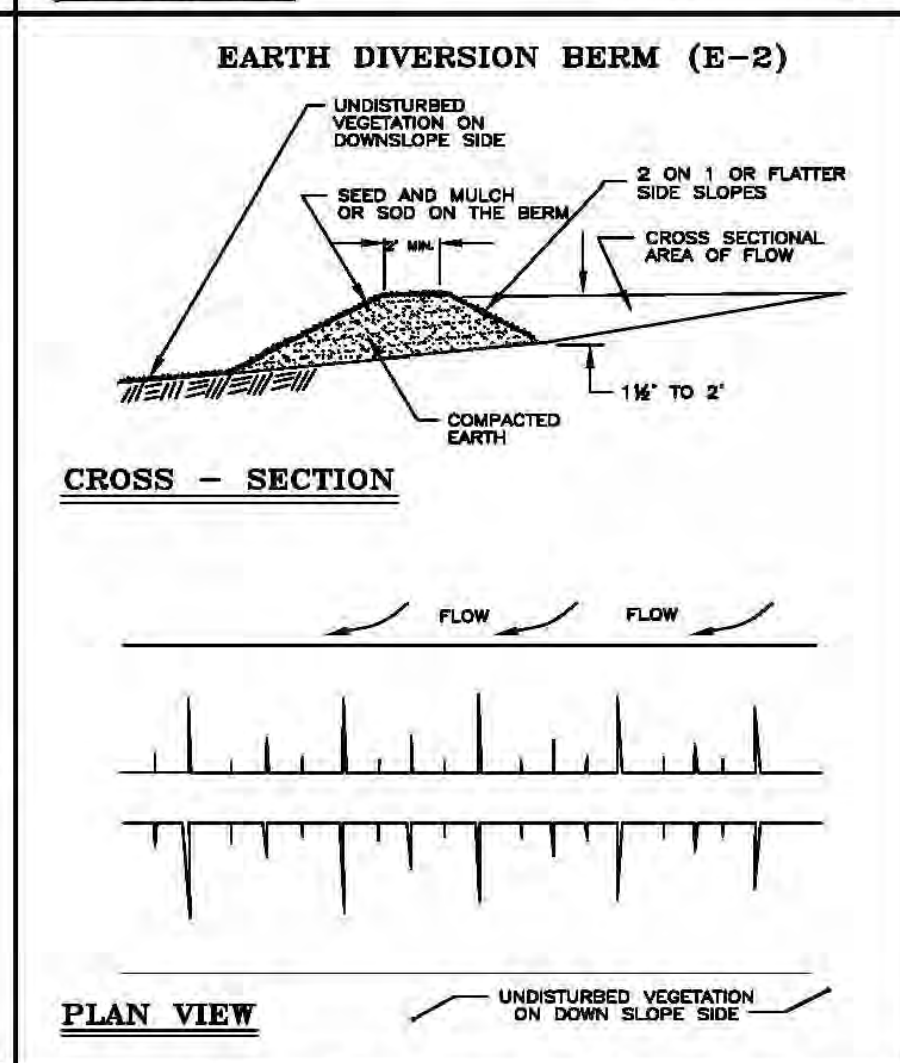
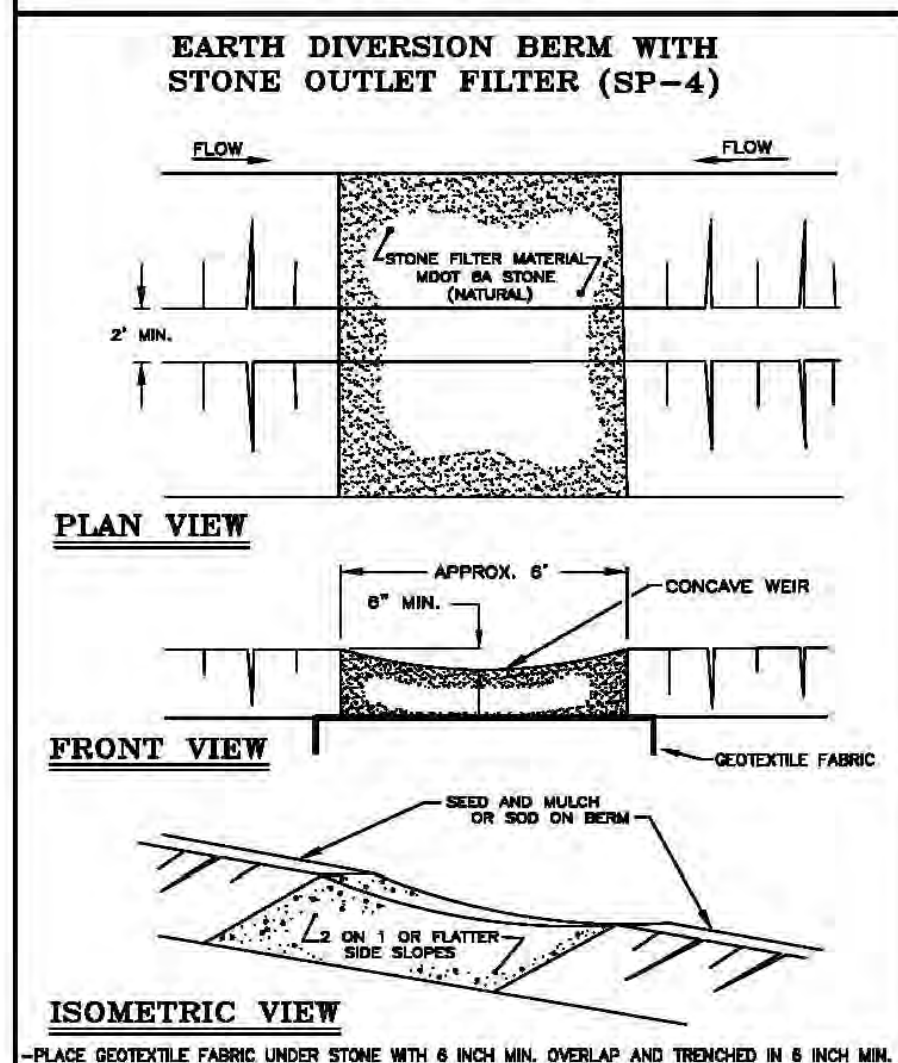
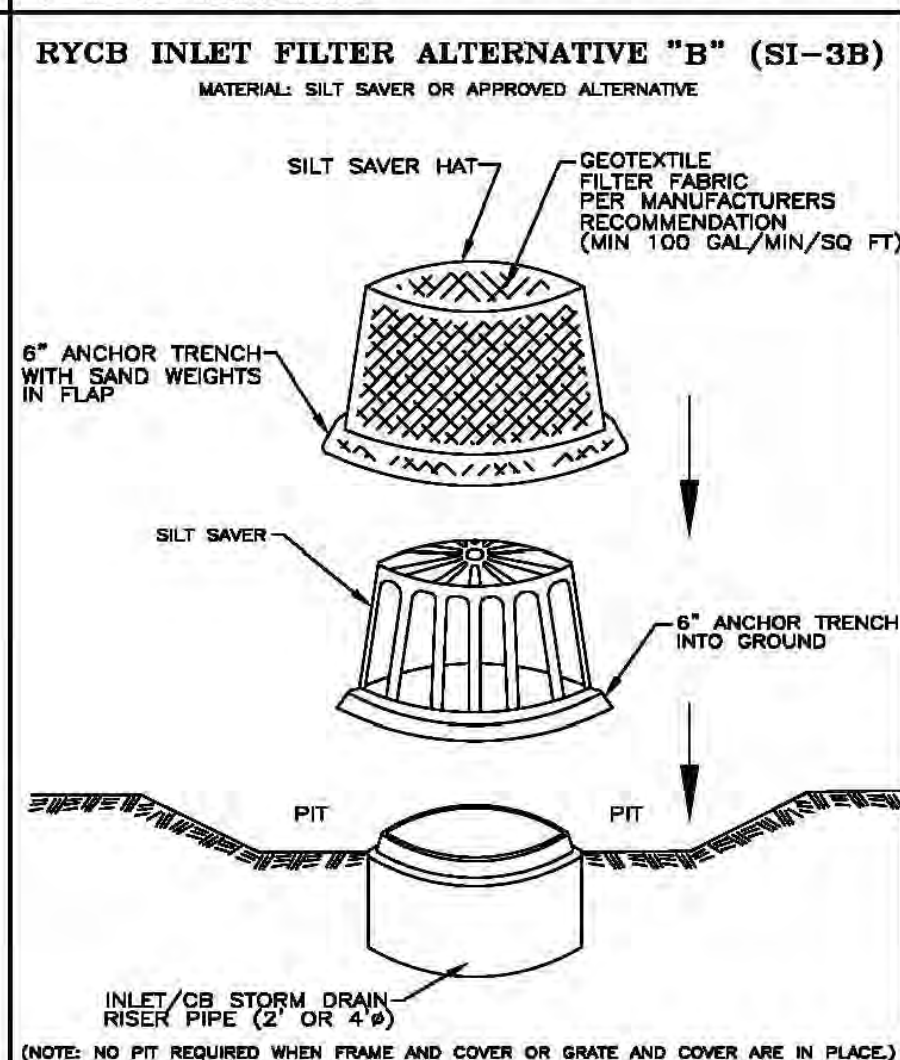
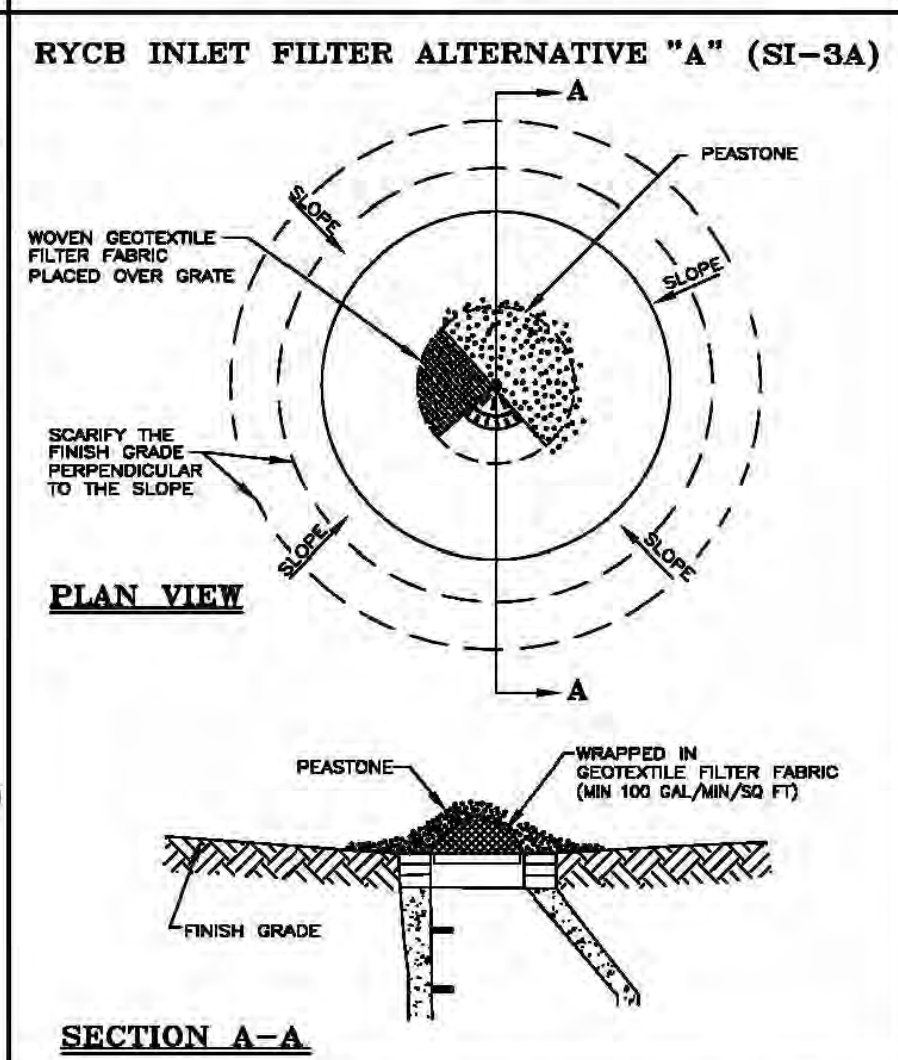
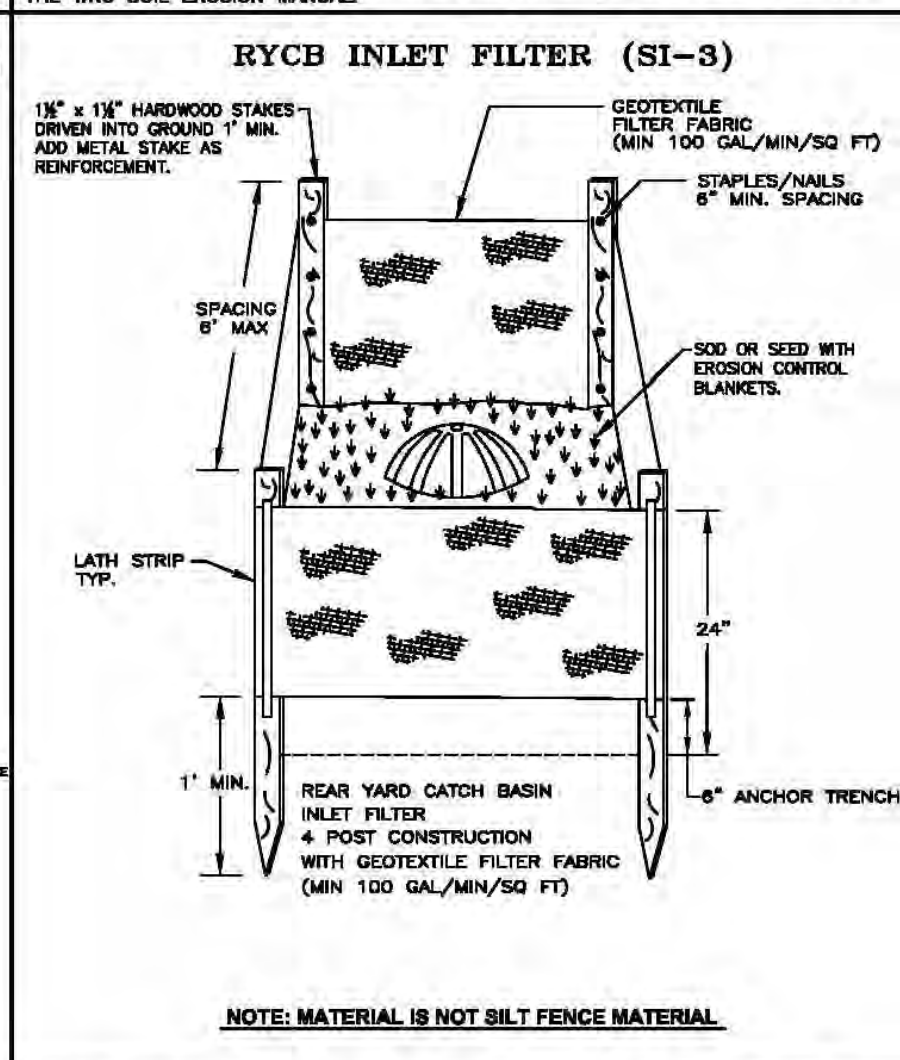
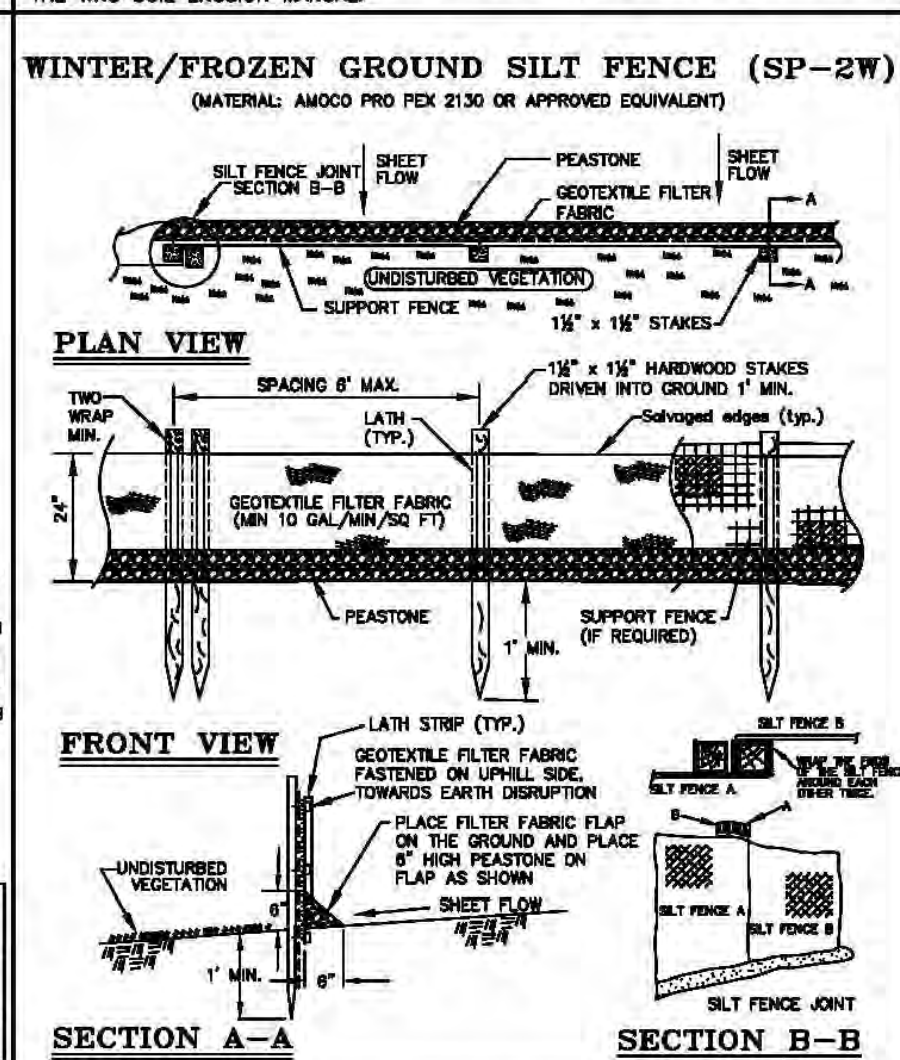
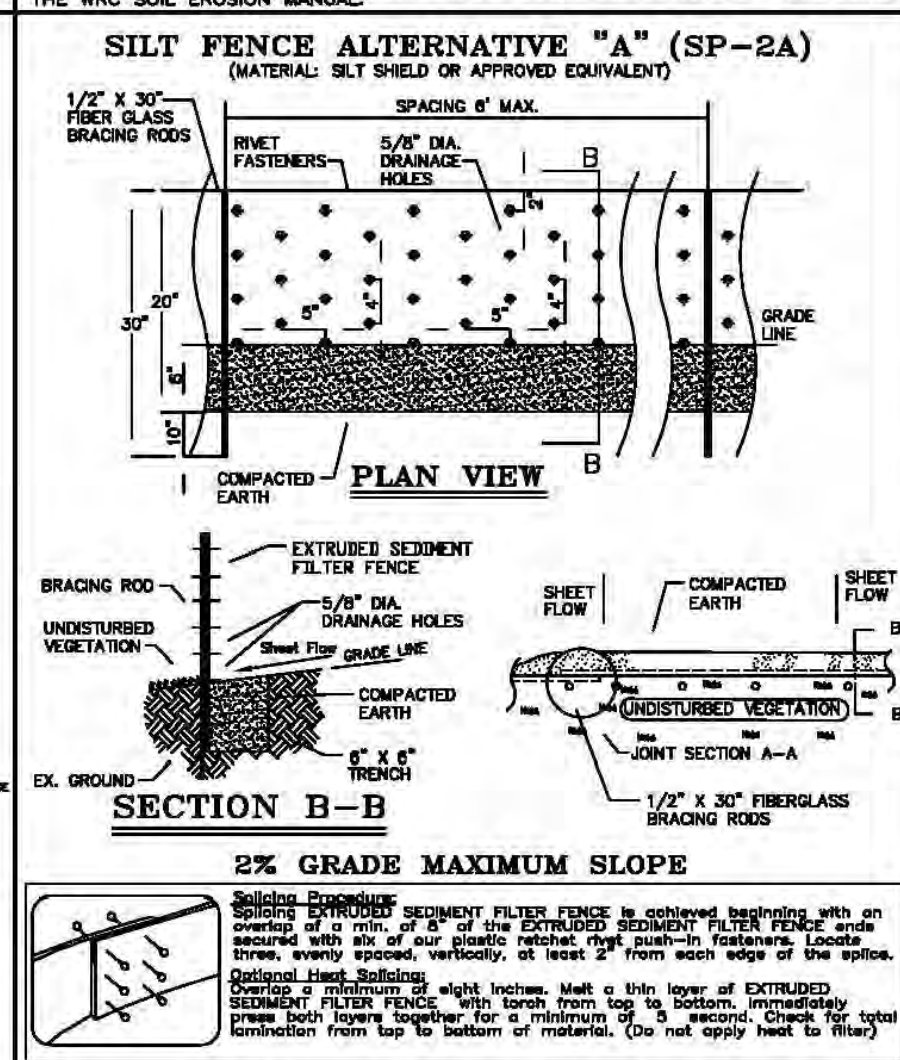
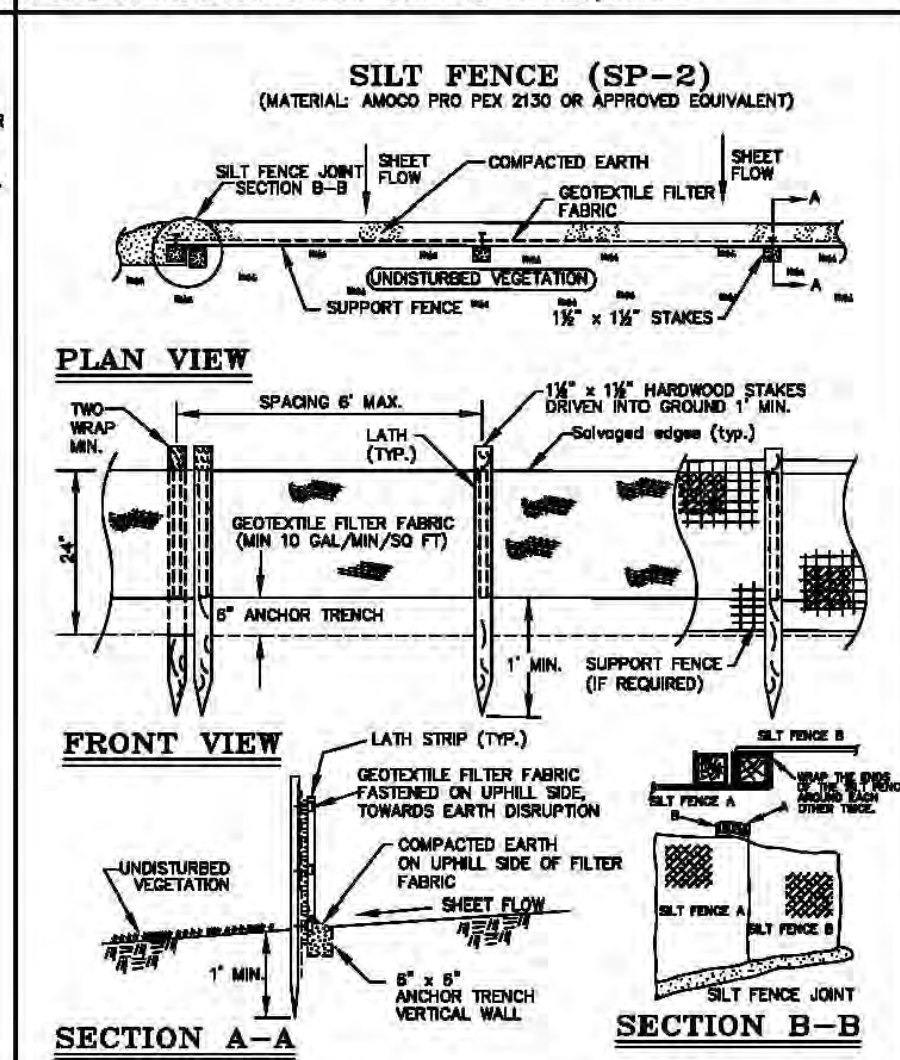
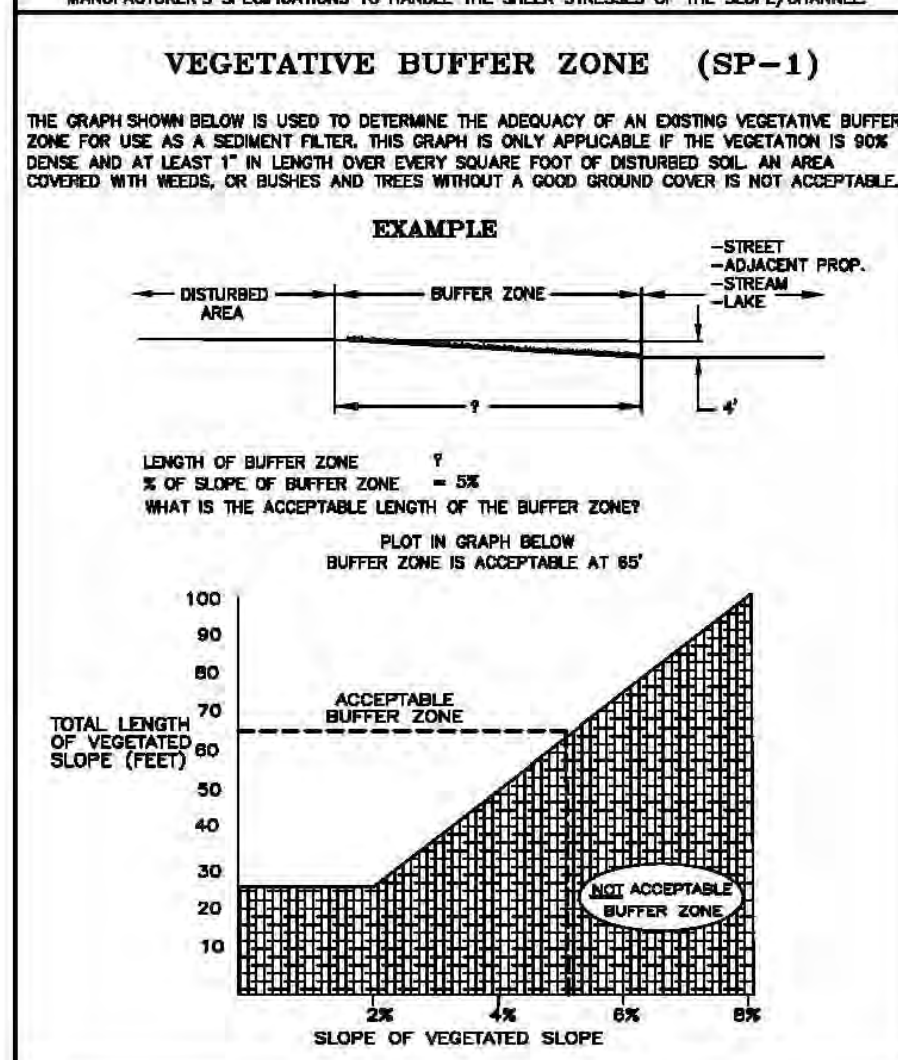
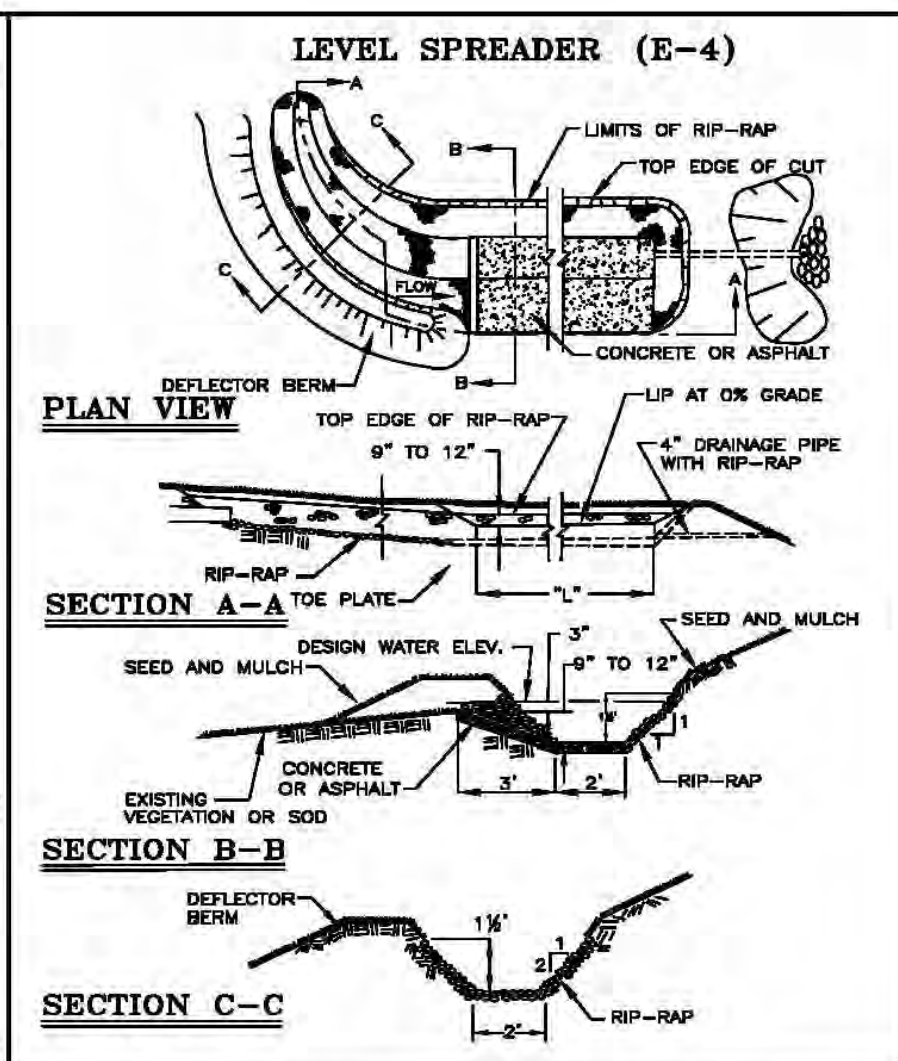
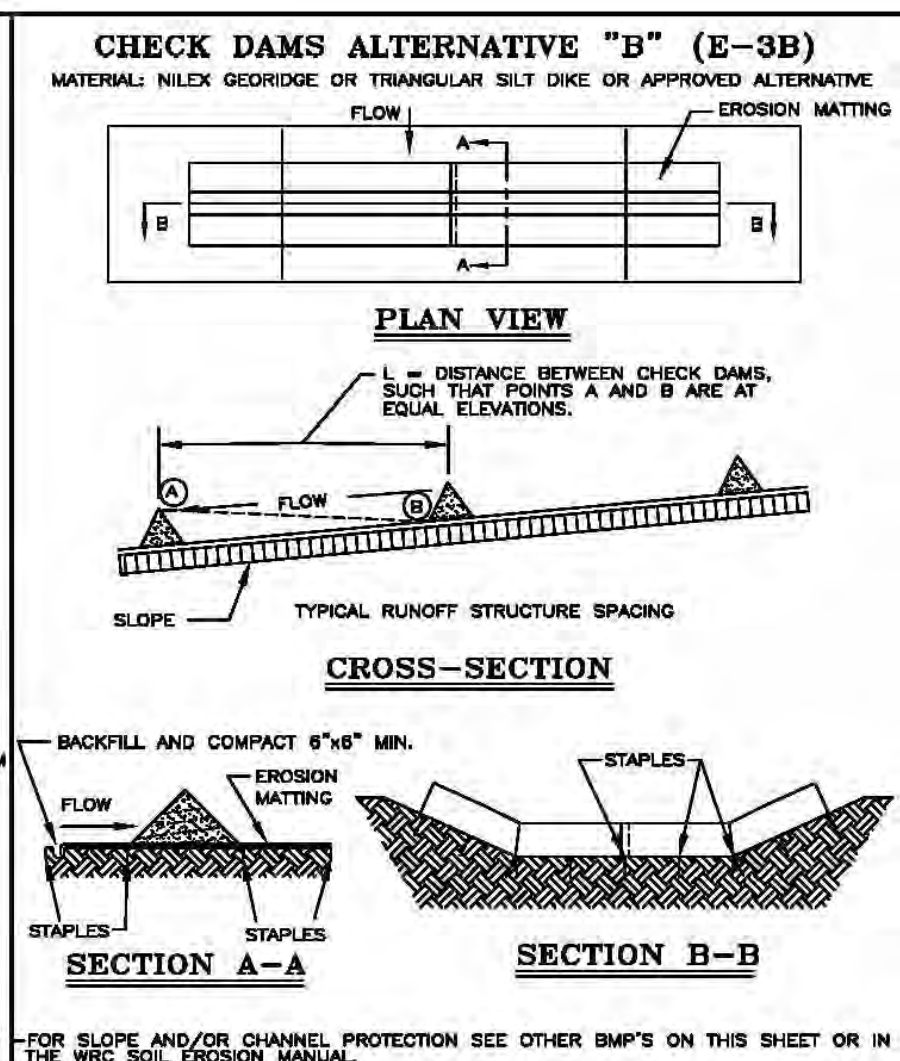
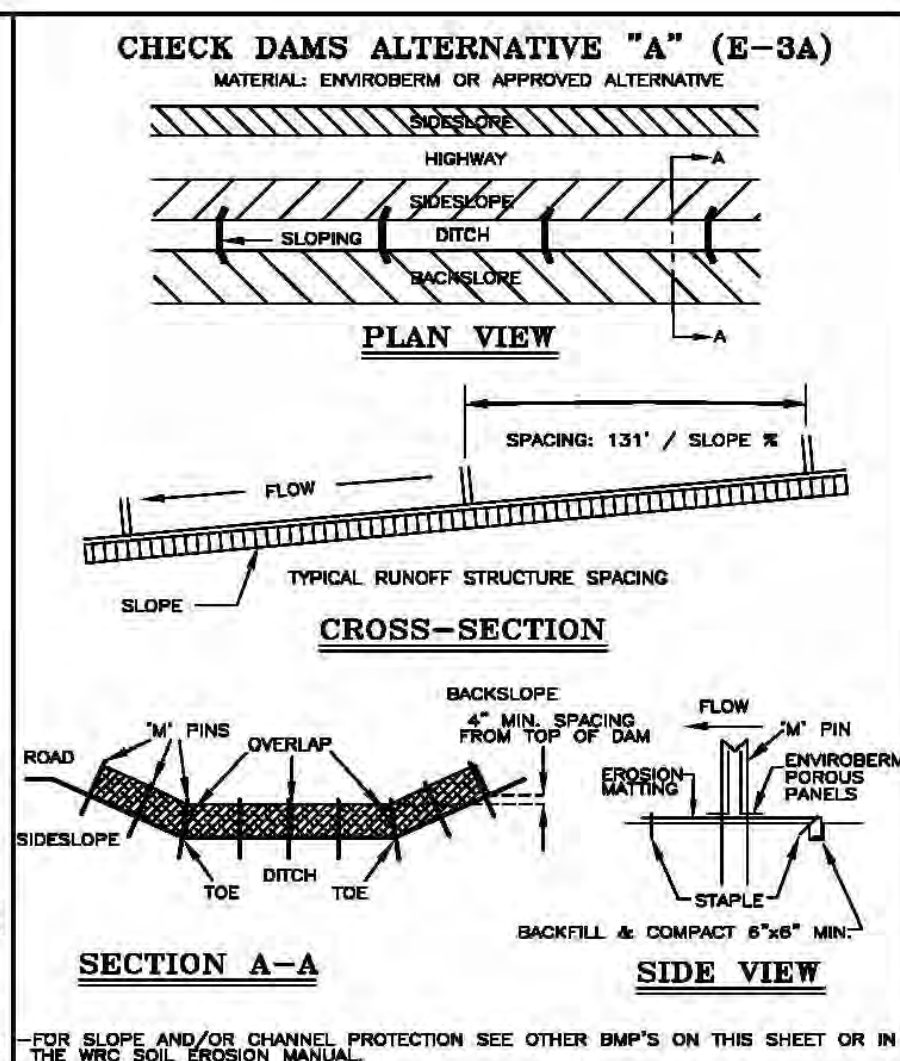
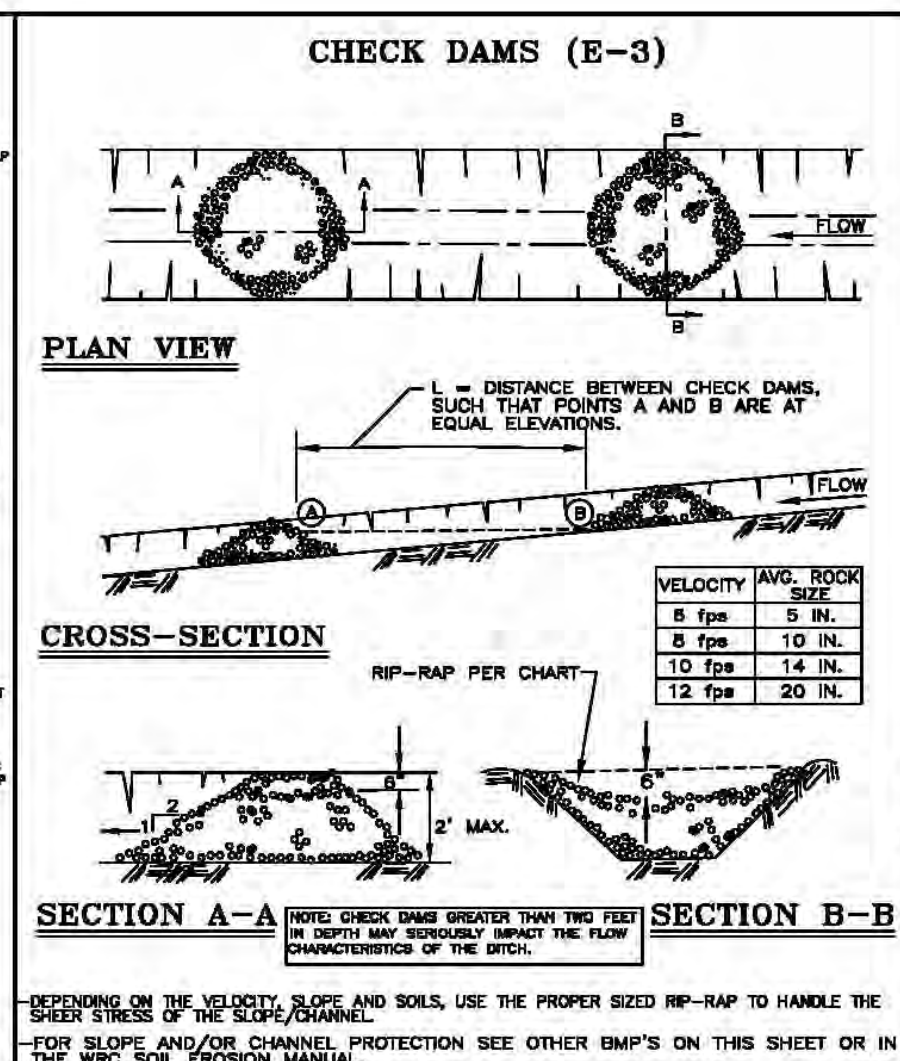
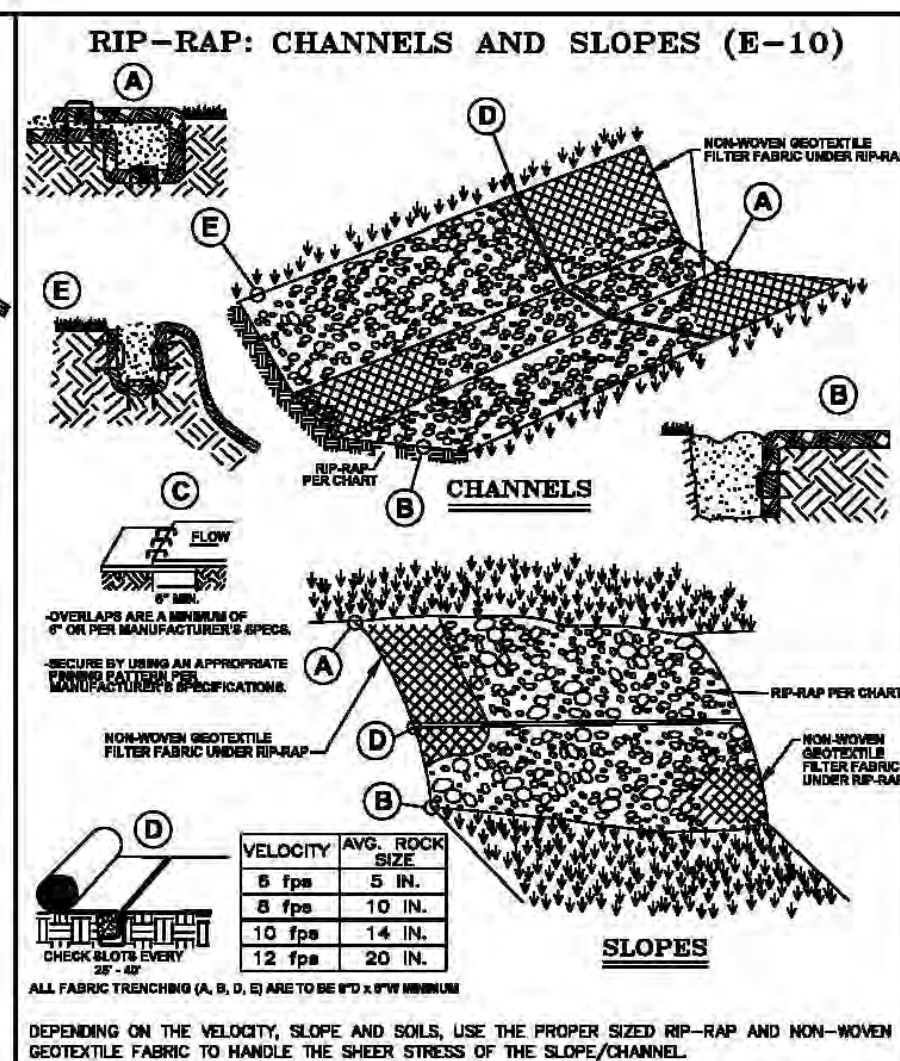
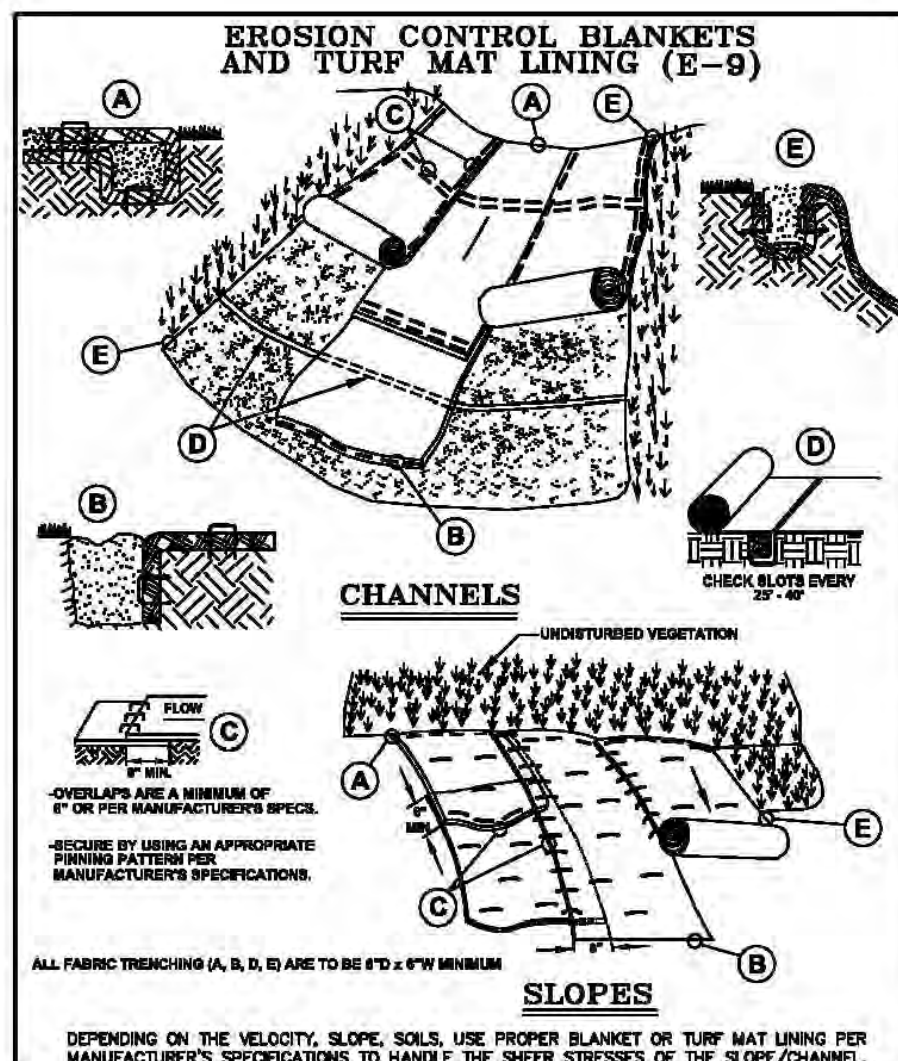


**PERMANENT GROUDED RIP-RAP DETAIL**

NO SCALE



CITY OF FARMINGTON HILLS OAKLAND COUNTY, MI		ENGINEERING DIVISION	
STANDARD DETAIL DRAWINGS		JOB NO.	
SOIL EROSION STANDARDS		SCALE: HORIZ. NA	VERT. NA
		DRAWN: CADATOMIC	DATE: 7/1/13
		DESIGNED BY: FH	DATE: 7/1/13
		CHECKED BY:	DATE:
SHEET 1 OF 1		APPROVED BY:	DATE:
		DIRECTOR, PUBLIC SERVICES DEPT.	



### SOIL EROSION AND SEDIMENTATION CONTROL DETAILS

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.

**REVISION BLOCK**

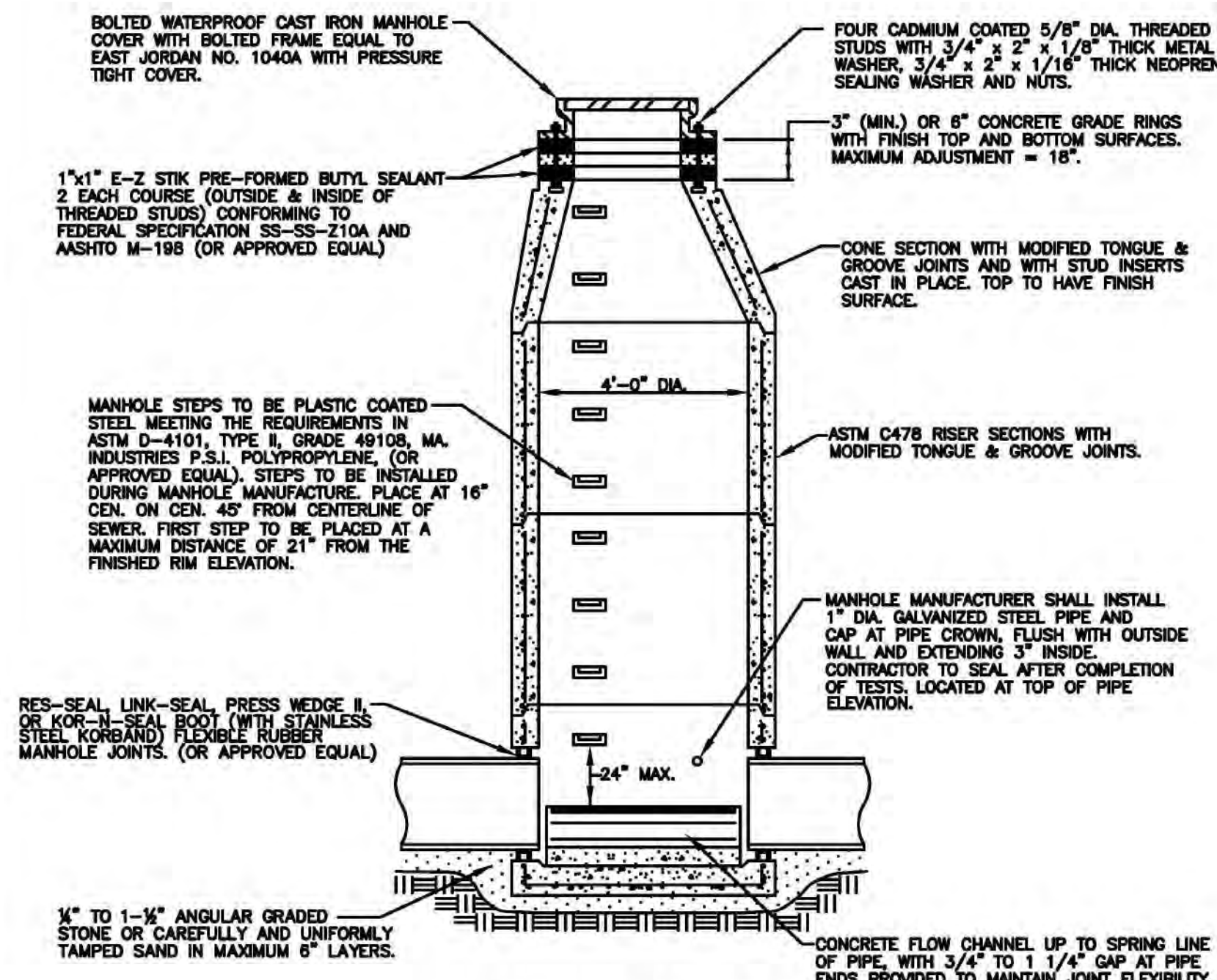
No.	Date	Description
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2	01/10/01	ISSUED FOR BIDDING
3	01/10/01	ISSUED FOR BIDDING
4	01/10/01	ISSUED FOR BIDDING
5	01/10/01	ISSUED FOR BIDDING

ORIG. DATE: 01/10/01  
SCALE: NONE  
DESIGNED BY: WRC  
DRAWN BY: Mapping

ONE PUBLIC WORKS DRIVE, BLOOMINGDALE, ILLINOIS 60110  
WATER RESOURCES COMMISSION  
SHEET NO.: 1 of 1

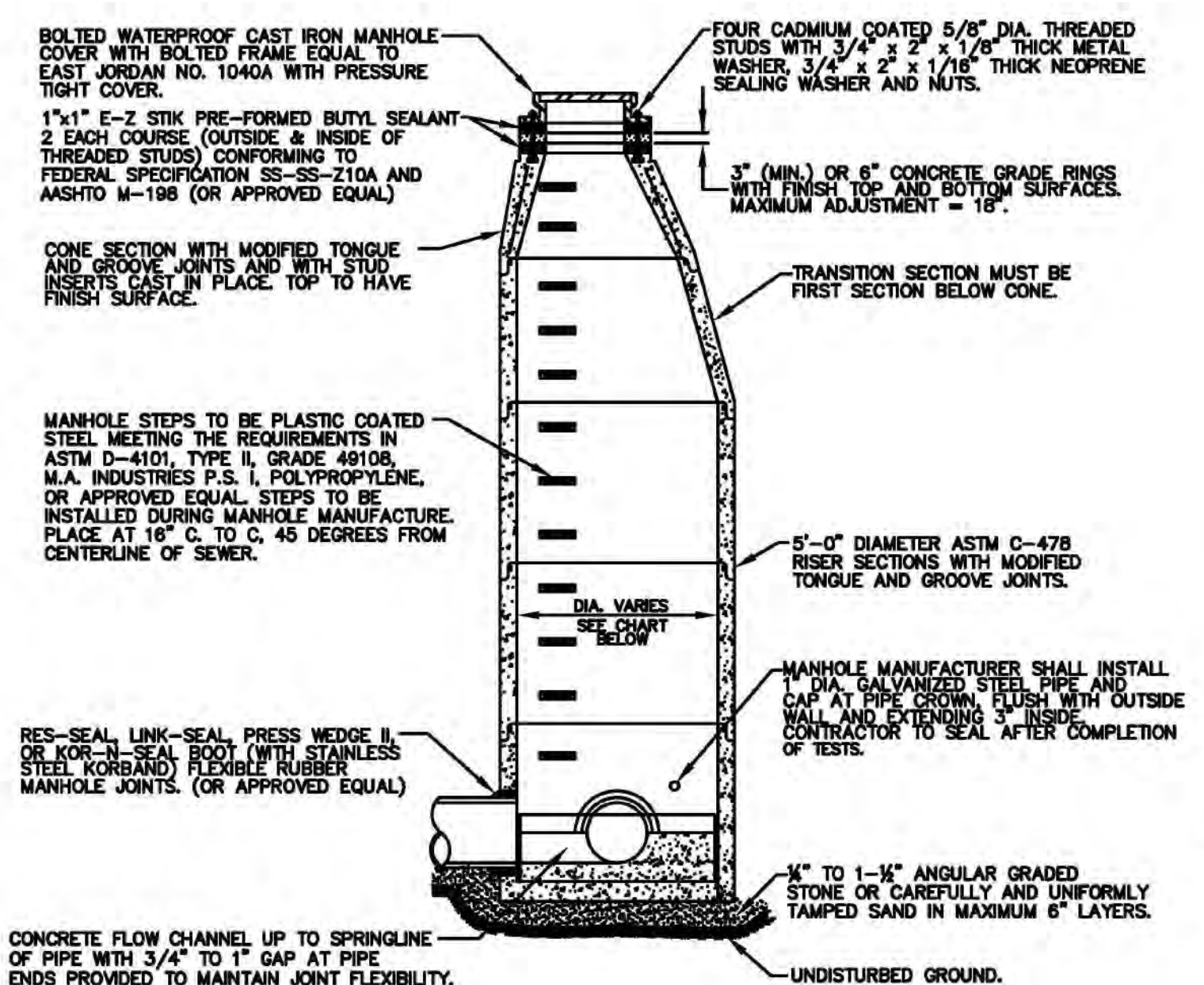
**SANITARY SEWER CONSTRUCTION NOTES**

- ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS OF THE LOCAL UNIT OF GOVERNMENT AND THE WATER RESOURCES COMMISSIONER (WRC). ALL SANITARY SEWER CONSTRUCTION SHALL HAVE FULL-TIME INSPECTION SUPERVISED BY A STATE OF MICHIGAN LICENSED PROFESSIONAL ENGINEER PROVIDED BY, OR CAUSED TO BE PROVIDED BY, THE LOCAL UNIT OF GOVERNMENT.
- AT ALL CONNECTIONS TO WRC SEWERS OF EXTENSIONS, AND BEFORE START OF CONSTRUCTION, THE CONTRACTOR MUST OBTAIN A SEWER INSPECTION PERMIT ISSUED BY WRC. GRAVITY SEWER PERMIT CHARGES ARE \$250 FOR EACH CONNECTION PLUS \$25 FOR EACH MANHOLE CONSTRUCTED. PRESSURE SEWER PERMIT CHARGES ARE \$250 PER 2,480 LF. OF FORCE MAIN WITH A MINIMUM PERMIT FEE OF \$250. 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 WRC A \$5,000 SURETY BOND AND \$500 CASH DEPOSIT. THE CONTRACTOR SHALL NOTIFY THE LOCAL UNIT OF GOVERNMENT AND WRC (248-858-1105) 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 248-858-1105.
- NO SEWER INSTALLATION SHALL HAVE AN INFILTRATION 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 WATER RESOURCES COMMISSIONER STANDARDS. ONLY PIPE AND PIPE JOINTS APPROVED BY WRC MAY BE USED FOR SANITARY SEWER CONSTRUCTION.
- LOCATED IN THE FIRST MANHOLE UPSTREAM FROM THE POINT OF ALL CONNECTIONS TO AN EXISTING WRC 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 SUCCESSFUL COMPLETION OF ANY ACCEPTANCE TEST UP TO THE STANDARD FILLET PROVIDED FOR THE FLOW CHANNEL. A WATERIGHT BULKHEAD SHALL BE PROVIDED ON THE DOWNSTREAM SIDE OF THE SUMP MANHOLE.
- AT ALL TIMES WHEN LAYING OF NEW PIPE IS NOT ACTUALLY IN PROGRESS, THE UPSTREAM OPEN END OF THE PIPE SHALL BE CLOSED BY TEMPORARY WATERIGHT PLUGS OR BY OTHER APPROVED MEANS. IF WATER IS IN THE TRENCH WHEN WORK IS RESUMED, THE PLUGS SHALL NOT BE REMOVED UNTIL THE DANGER OF WATER ENTERING THE PIPE HAS PASSED.
- ALL BUILDING LEADS AND RISERS SHALL BE SIX INCH SDR 23.5 ABS PIPE WITH CHEMICALLY FUSED JOINTS OR AN APPROVED EQUAL PIPE AND JOINT. BUILDING LEADS TO BE FURNISHED WITH REMOVABLE AIRTIGHT AND WATERIGHT 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 WRC SPECIFICATIONS.
- ALL NEW MANHOLES SHALL HAVE WRC APPROVED FLEXIBLE, WATERIGHT SEALS WHERE PIPES PASS THROUGH WALLS. MANHOLES SHALL BE OF PRE CAST SECTIONS WITH MODIFIED GROOVE TONGUE AND RUBBER GASKET TYPE JOINTS. PRE CAST MANHOLE CONE SECTIONS SHALL BE WRC APPROVED MODIFIED EOCENTRIC CONE TYPE. ALL MANHOLES SHALL BE PROVIDED WITH BOLTED, WATERIGHT COVERS.
- AT ALL CONNECTIONS TO MANHOLES ON WRC SEWERS, OR EXTENSIONS THERETO, DROP CONNECTIONS WILL BE REQUIRED WHEN THE DIFFERENCE IN INVERT ELEVATIONS EXCEEDS 18 INCHES.
- TAPS TO EXISTING MANHOLES SHALL BE MADE BY CORING. THE CONTRACTOR SHALL PLACE A KOR-N-SEAL BOOT (OR WRC APPROVED EQUAL) AFTER CORING IS COMPLETED. BLIND DRILLING WILL ONLY BE PERMITTED IN LIEU OF CORING WITH PRIOR WRC APPROVAL.
- MANHOLES CONSTRUCTED DIRECTLY ON WRC SEWERS SHALL BE PROVIDED WITH COVERS READING "WATER RESOURCES COMMISSIONER-SANITARY" IN RAISED LETTERS.
- NO GROUND WATER, STORM WATER, CONSTRUCTION WATER, DOWN SPOUT DRAINAGE OR WEEP TILE DRAINAGE SHALL BE ALLOWED TO ENTER ANY SANITARY SEWER INSTALLATION.
- PRIOR TO ANY EXCAVATION, THE CONTRACTOR SHALL TELEPHONE MISS DIG (800-482-7171) FOR THE LOCATION OF UNDERGROUND PIPELINE AND CABLE FACILITIES AND SHALL ALSO NOTIFY REPRESENTATIVES OF OTHER UTILITIES LOCATED IN THE VICINITY OF THE WORK.
- AN 18 INCH MINIMUM VERTICAL SEPARATION AND A 10 FOOT MINIMUM HORIZONTAL SEPARATION MUST BE MAINTAINED BETWEEN SANITARY SEWER AND WATER MAIN.
- NEW MANHOLES BUILT OVER AN EXISTING SANITARY SEWER SHALL HAVE MONOLITHIC POURED BOTTOMS.
- IF THE STRUCTURE FALLS WITHIN THE ROADBED OF A GRAVEL ROAD OR WITHIN THE UNPAVED SHOULDER OF A PAVED ROAD, THE COVER SHALL BE SIX (6") INCHES BELOW THE FINISHED GRAVEL SURFACE.



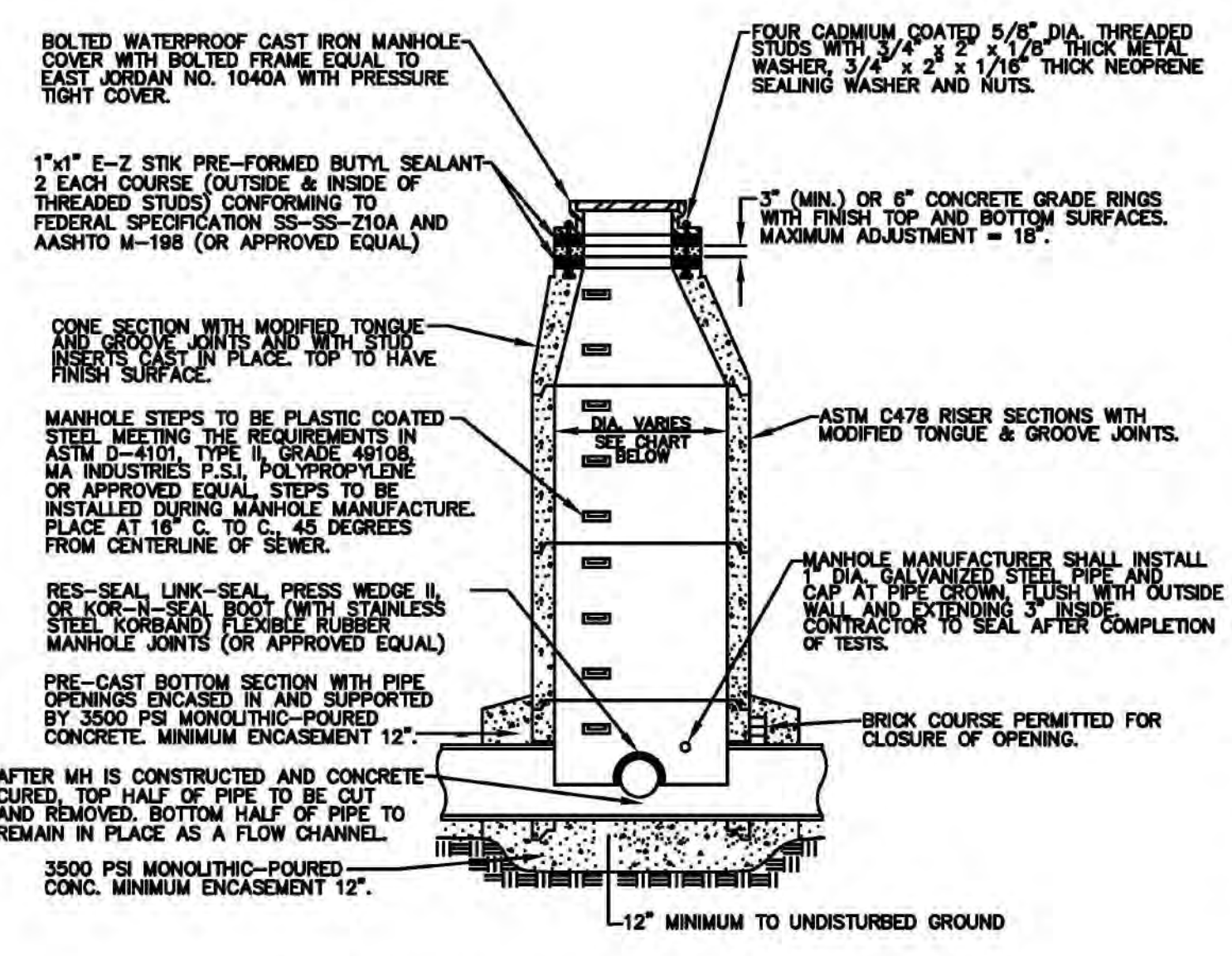
**STANDARD MANHOLE**

MAX. PIPE SIZE FOR STRAIGHT THRU INSTALLATION	MAX. PIPE SIZE FOR RIGHT ANGLE INSTALLATION
24"	18"



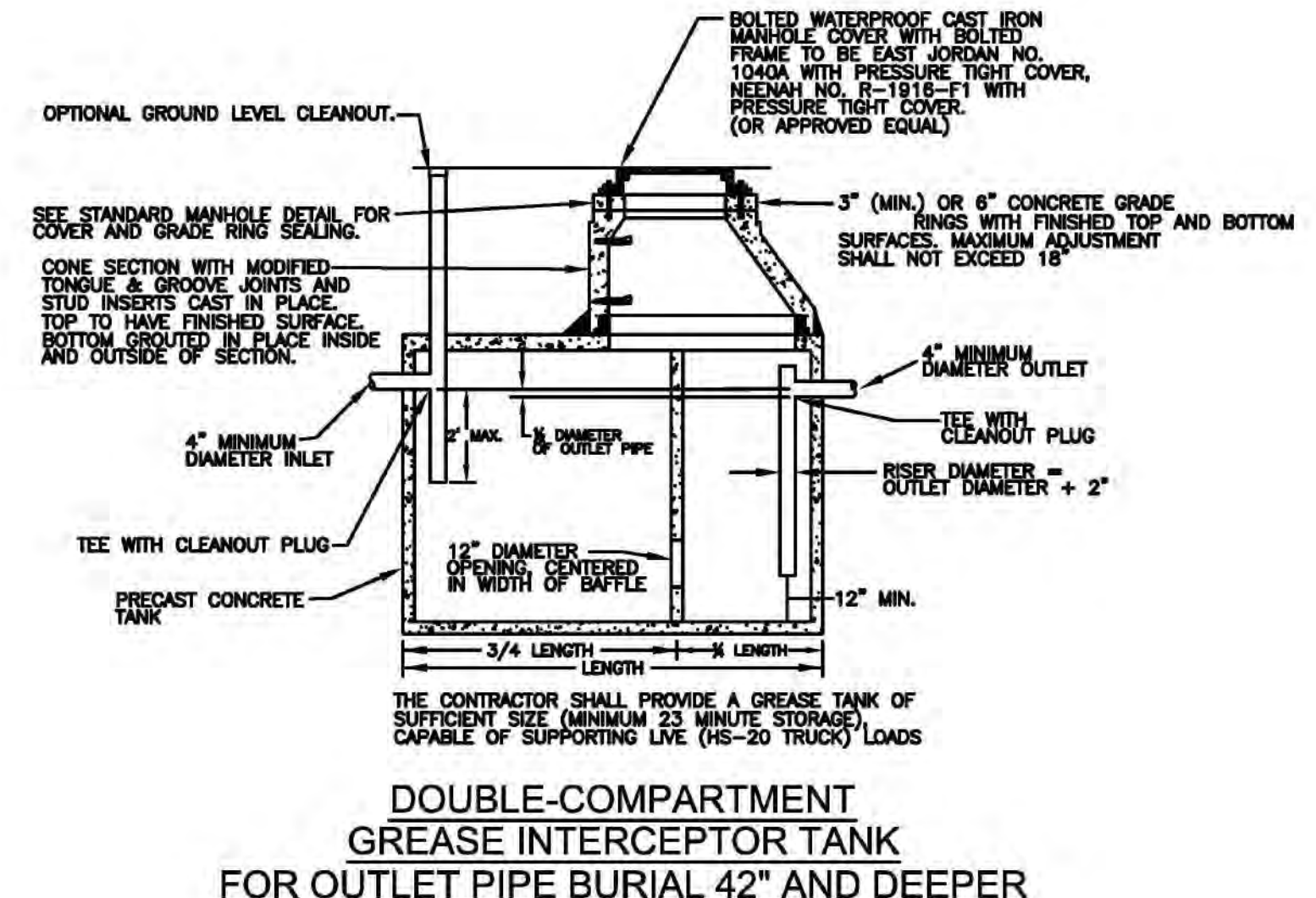
**STANDARD OVERSIZED MANHOLE**

MANHOLE SIZING CHART		
MANHOLE DIAMETER	MAX. PIPE SIZE FOR STRAIGHT THRU INST.	MAX. PIPE SIZE FOR RIGHT ANGLE INST.
5'	36"	24"
6'	42"	36"
7'	60"	42"

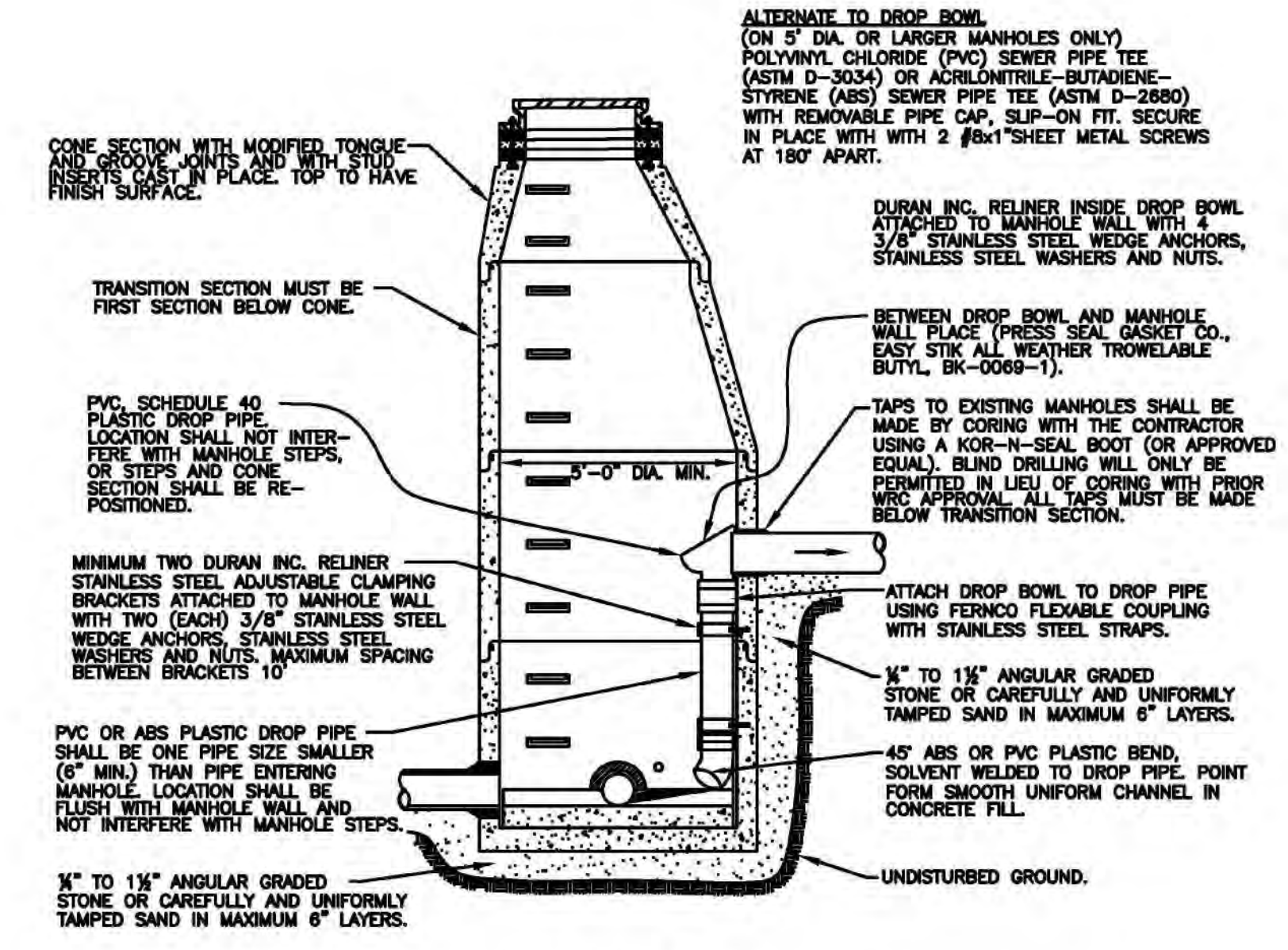


**MANHOLE CONSTRUCTED OVER EXISTING SEWER**

MANHOLE SIZING CHART	
MANHOLE DIAMETER	MAX. PIPE SIZE FOR STRAIGHT THRU INST.
4'	24"
5'	36"
6'	42"
7'	60"



**DOUBLE-COMPARTMENT GREASE INTERCEPTOR TANK FOR OUTLET PIPE BURIAL 42\"/>**



**INTERIOR DROP CONNECTION**

**REVISION BLOCK**

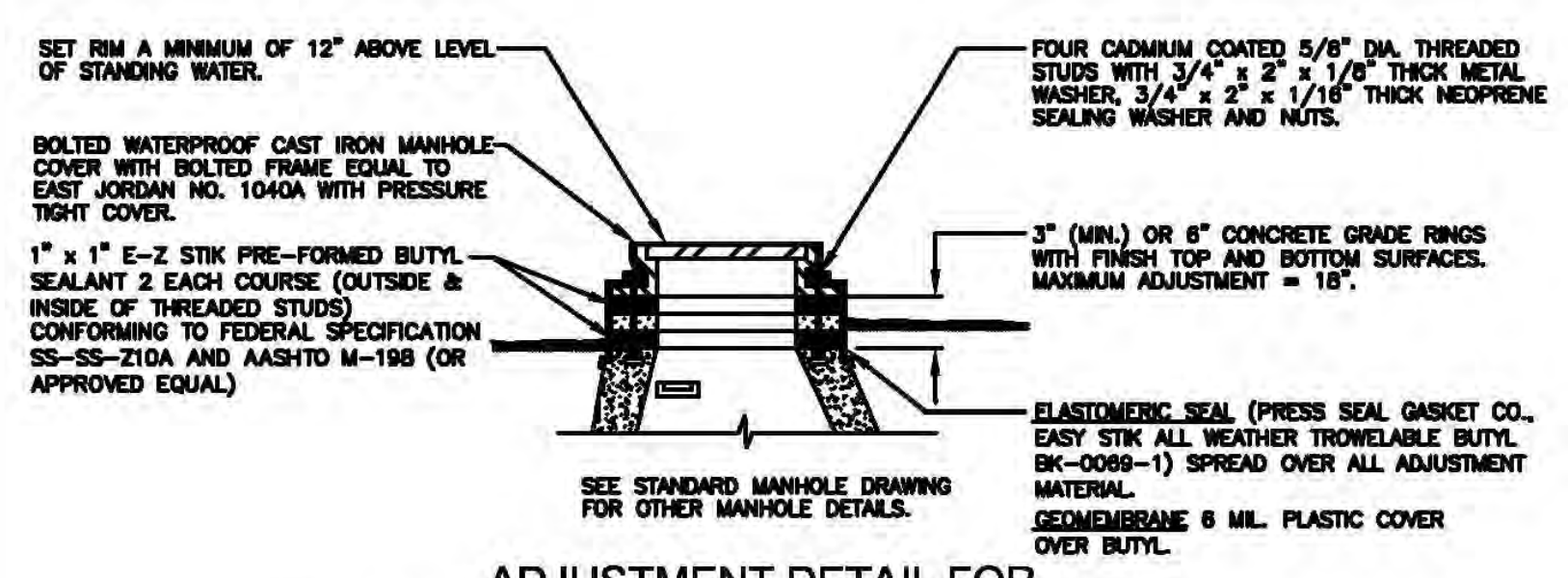
Rev.	By	Date	Description
1	DS	3-23-11	REMOVED STANDARD MONITORING MANHOLE
2	KB	6-21-16	ADDED NOTE "REQUIRES ADVANCED APPROVAL BY WRC" AND UPDATE PHONE # IN NOTE #2
3	KB	7-22-20	UPDATED MH STEPS TO ASTM D-4101
4	KB	9-27-23	REMOVED EXTERIOR DROP CONNECTION DETAIL

**SANITARY SEWER DETAILS AND NOTES**

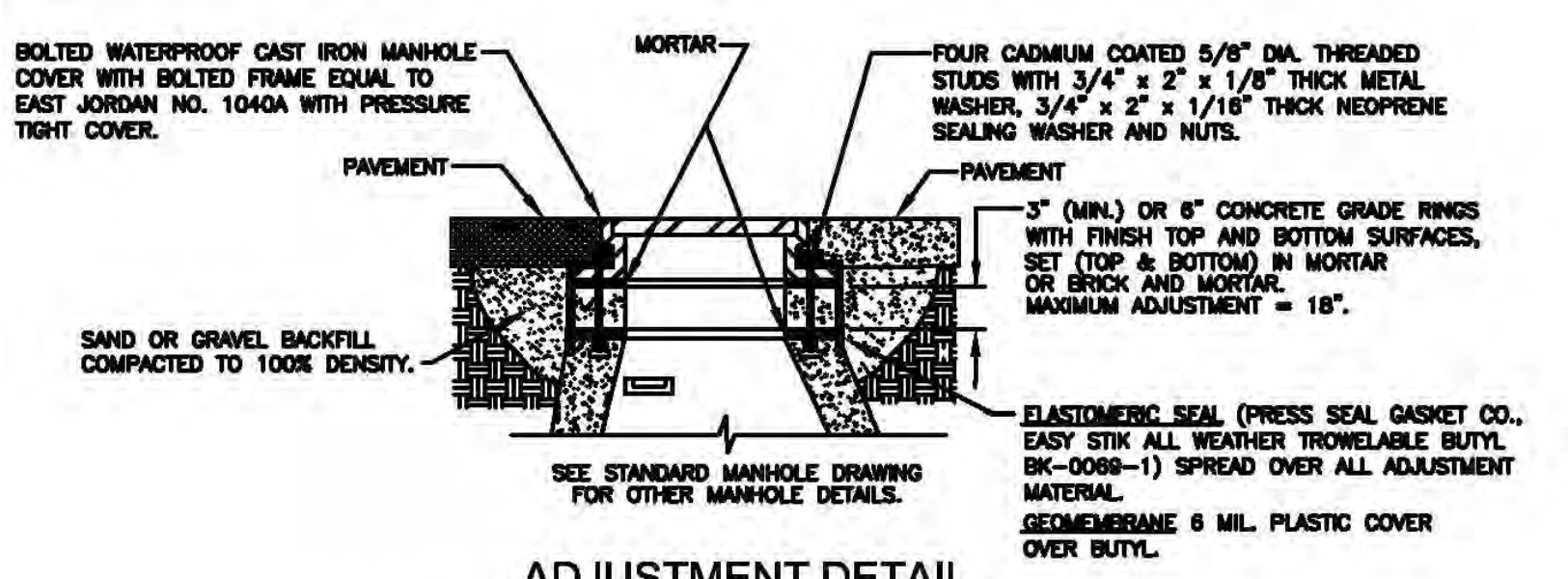
ORIG. DATE:	08/21/02		ONE PUBLIC WORKS DRIVE, BLDG 95 WEST WATERFORD, MICHIGAN 48328-1907
SCALE:	NO SCALE		
DESIGNED BY:	WRC	WATER RESOURCES COMMISSIONER <i>Jim Nash</i>	SHEET NO.:
DRAWN BY:	WRC Mapping		

**MANHOLE RIM ADJUSTMENT CHART**

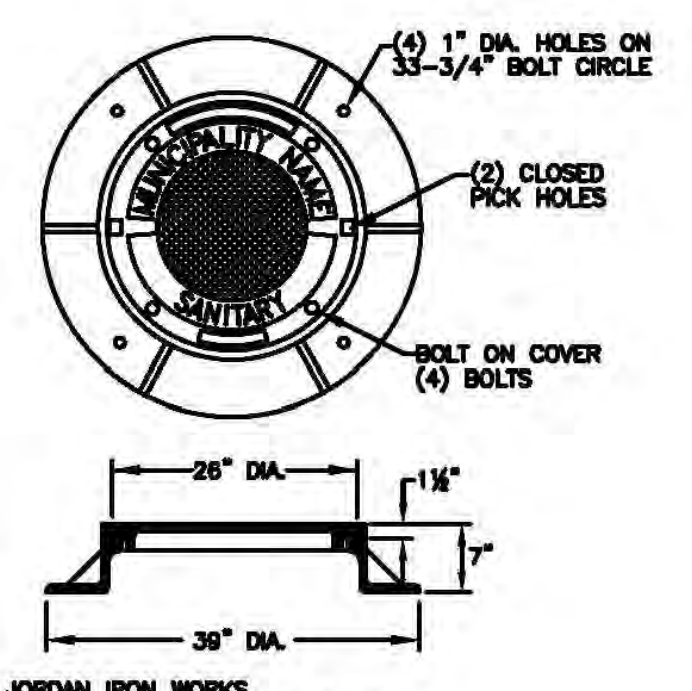
MANHOLE LOCATION	1ST RIM ELEVATION
FINISH GRADE	1 1/2" ABOVE FINISH GRADE
FLOOD PLAIN	1 1/2" ABOVE STANDING WATER
GRAVEL ROAD / SHOULDER	6" BELOW FINISH GRADE
PAVEMENT / GREENBELT	FLUSH WITH FINISH GRADE



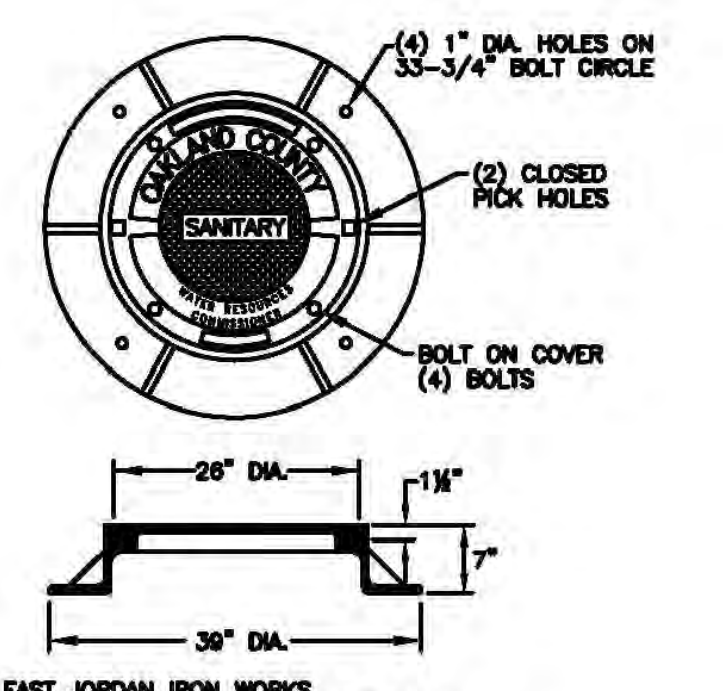
**ADJUSTMENT DETAIL FOR MANHOLE TOPS WITHIN FLOOD PRONE AREAS**



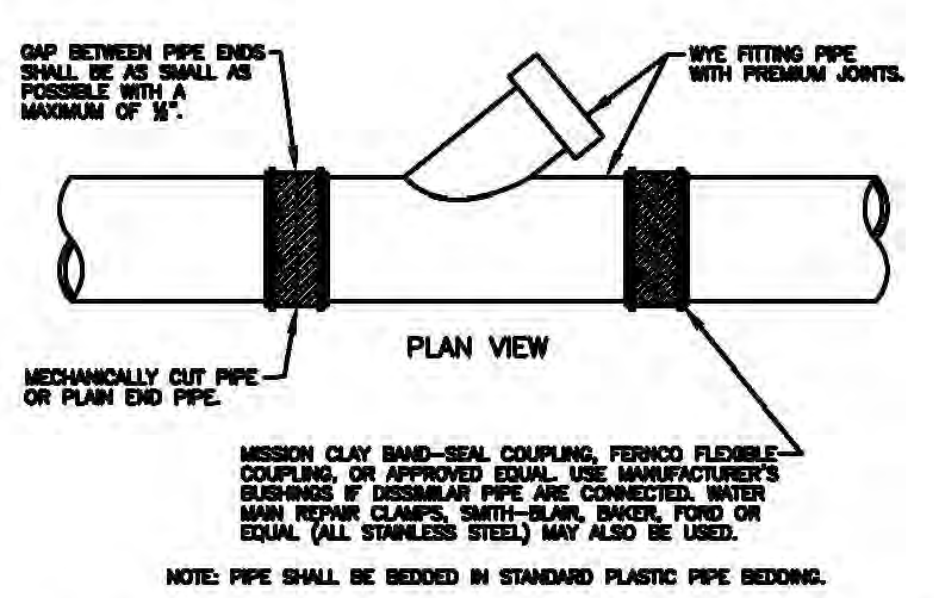
**ADJUSTMENT DETAIL MANHOLE TOPS WITHIN PAVEMENT AREAS**



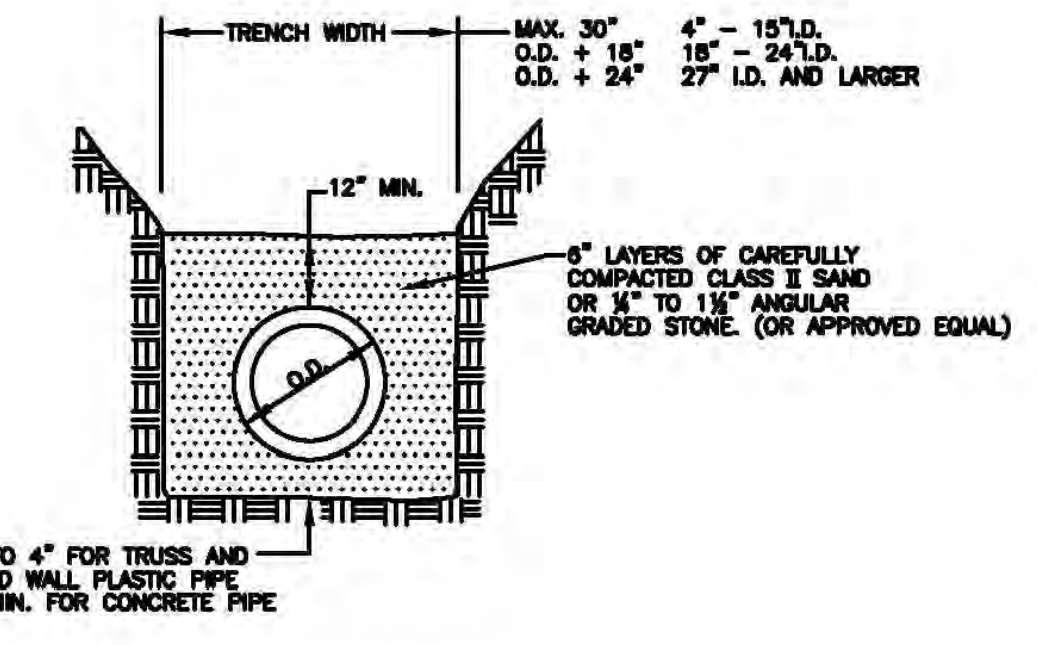
**LOCAL MUNICIPALITIES MANHOLE COVER**



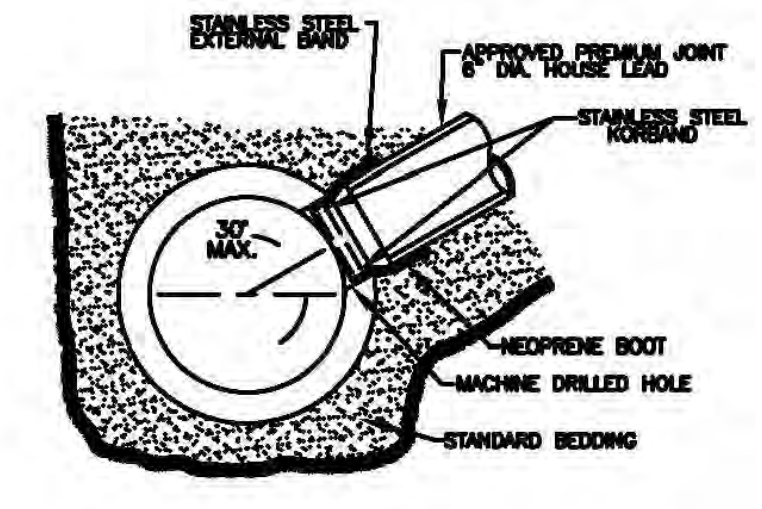
**W.R.C. LETTERED MANHOLE COVER**



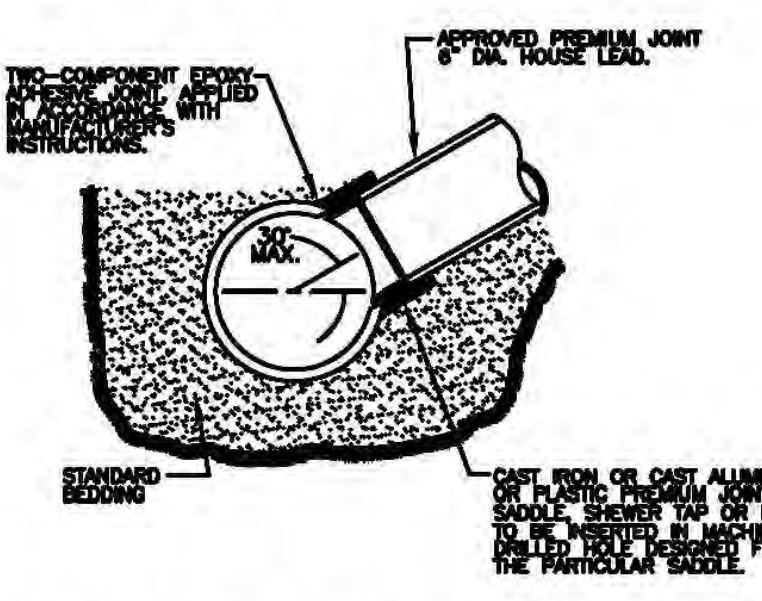
**WYE PIPE INSERTION WITH FLEXIBLE COUPLINGS (RIGID PIPE)**



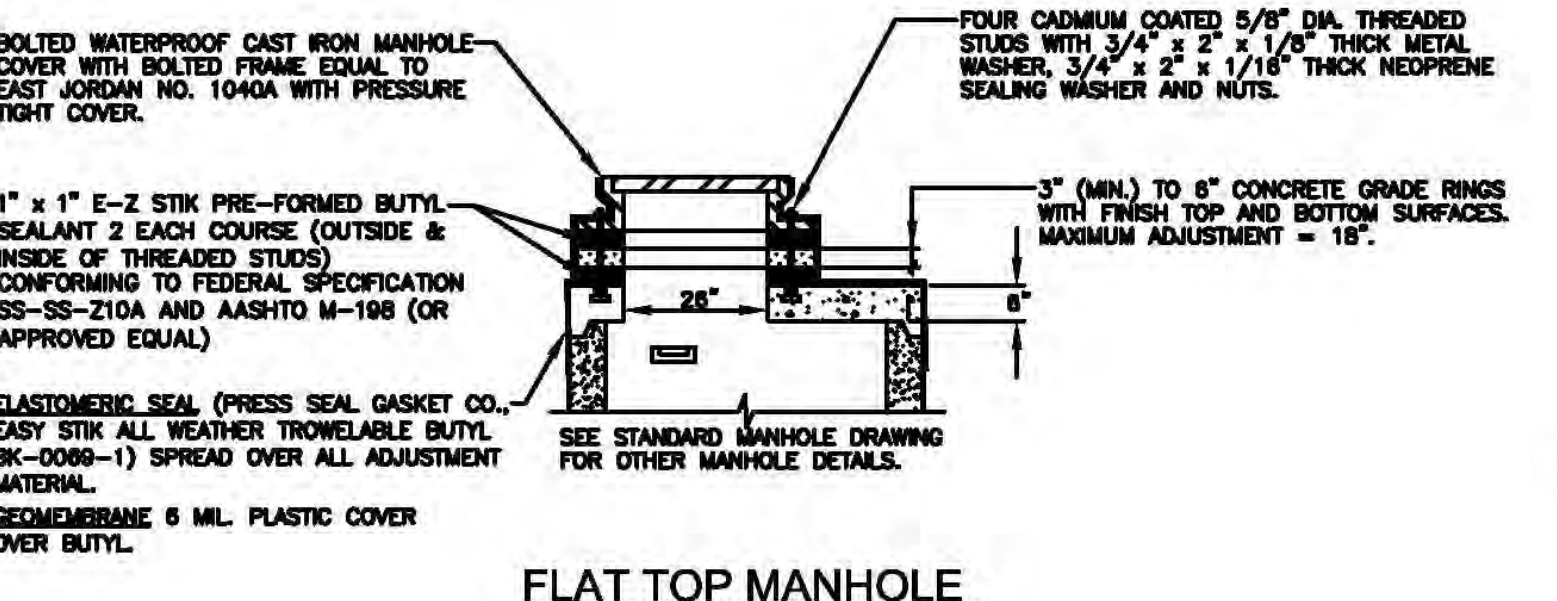
**STANDARD BEDDING (CLASS B)**



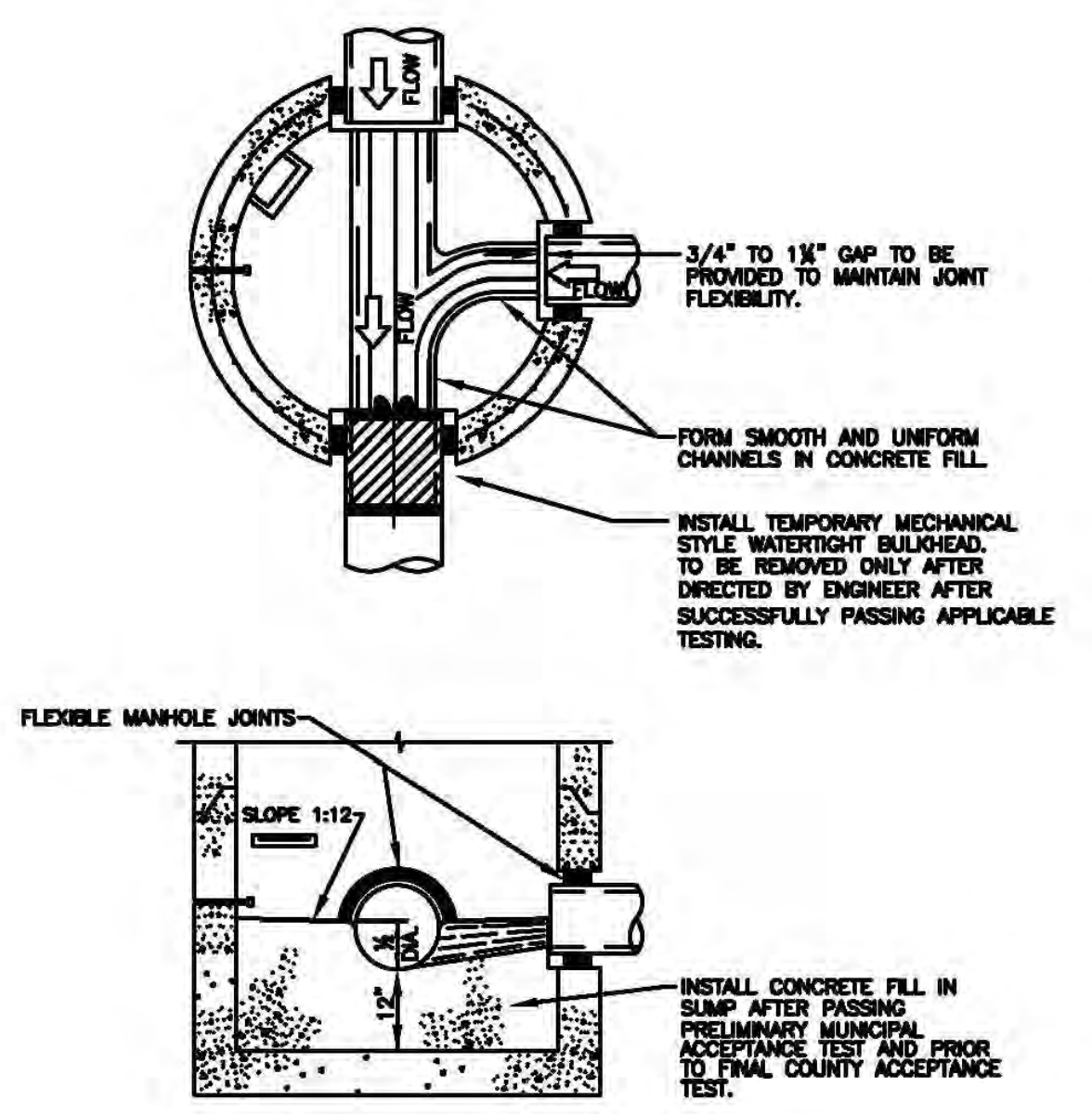
**KOR-N-TEE TAP FOR CONCRETE PIPE**



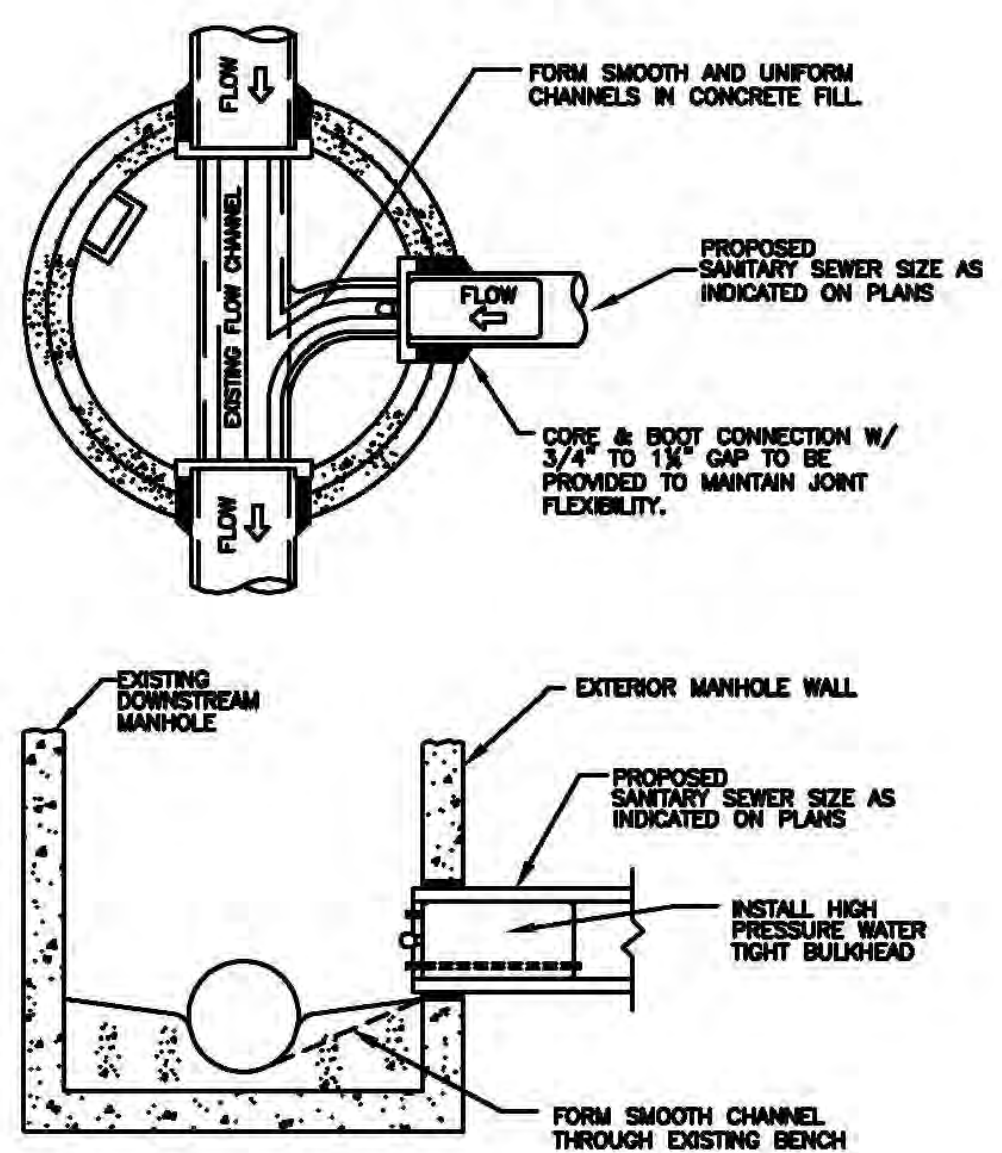
**SEWER TAP-ALL SIZES OF MAIN SEWER PIPES VITRIFIED CLAY**



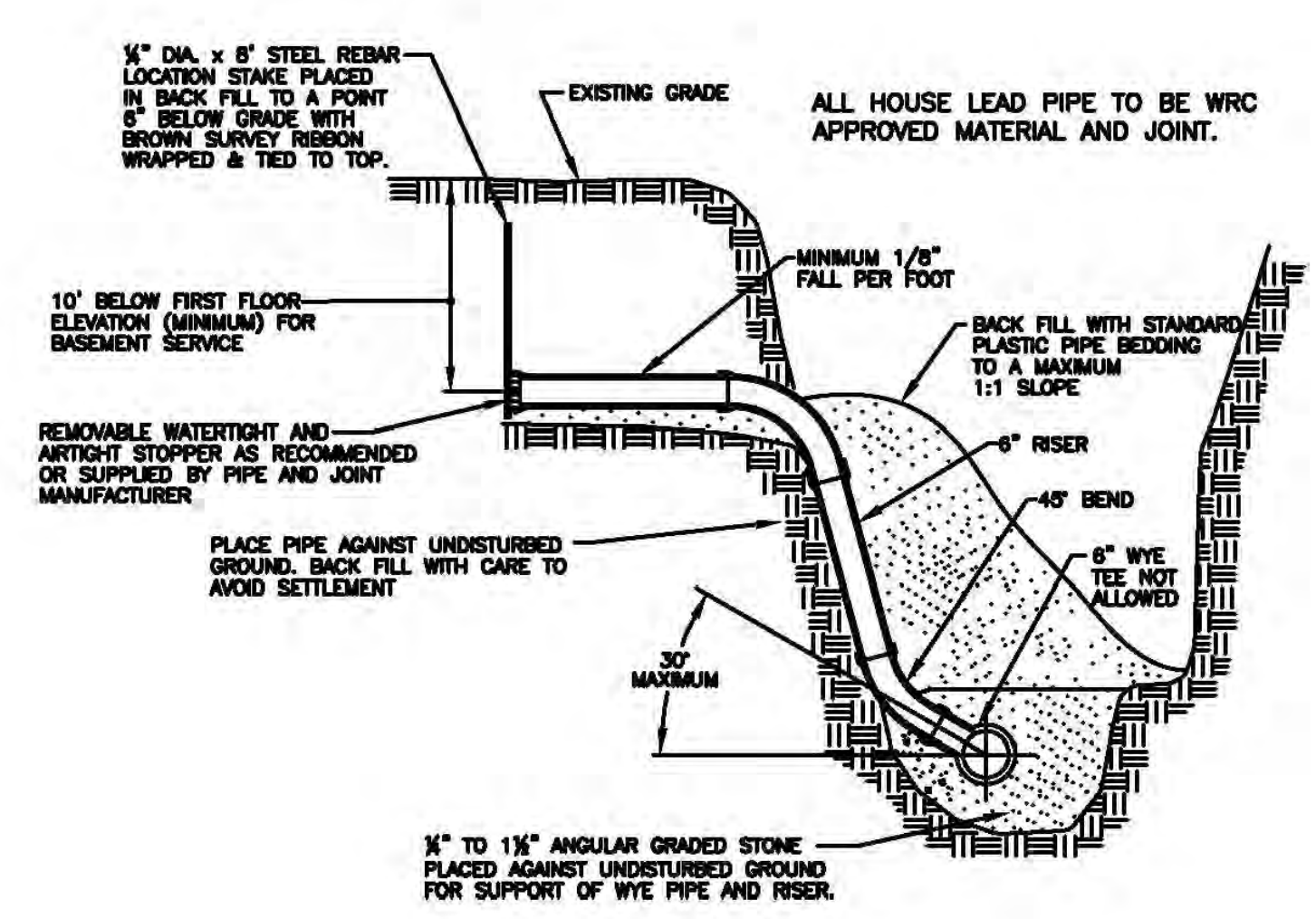
**FLAT TOP MANHOLE**



**SUMP MANHOLE FOR TESTING, CLEANING AND DEWATERING**



**TESTING BULKHEAD WITH PIPE TAP**



**HOUSE LEAD DETAIL**

**REVISION BLOCK**

Person Base / Source Data:	NA	
Rev. No.	Rev. Date	Description
1	06/29/06	ADDED TESTING BULKHEAD WITH PIPE TAP DETAIL
2	06/29/09	MOVED DETAILS FROM SHEET 1 ONTO SHEET 2
3	07/14/09	STANDARD'S COMMITTEE APPROVAL FOR DETAIL CHANGES
4	02/05/14	REPLACE/UPDATE CCDC WITH WRC FOR THE MANHOLE COVER DETAIL

**SANITARY SEWER DETAILS AND NOTES**

ORIG. DATE:	05-09-03		ONE PUBLIC WORKS DRIVE, BLDG 95 WEST WATERFORD, MICHIGAN 48328-1907
SCALE:	NO SCALE		
DESIGNED BY:	MWD	WATER RESOURCES COMMISSIONER <i>Jim Nash</i>	SHEET NO.:
DRAWN BY:	Mapping Staff		

**GENERAL NOTES**

- ALL CONSTRUCTION PROCEDURES AND MATERIALS SHALL CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS OF THE WATER RESOURCES COMMISSIONER'S OFFICE AND/OR THE LOCAL MUNICIPALITY.
- THE CONTRACTOR SHALL OBTAIN A WATER RESOURCES COMMISSIONER'S OFFICE WATER INSPECTION PERMIT PRIOR TO THE START OF CONSTRUCTION. SEE CORRESPONDING WATER MAIN CONSTRUCTION PERMIT REQUEST LETTER FOR COST OF THE PERMIT.
- A PRE-CONSTRUCTION MEETING SHALL BE HELD PRIOR TO THE START OF CONSTRUCTION AND SHALL BE SCHEDULED BY THE LOCAL MUNICIPAL ENGINEER. THOSE IN ATTENDANCE SHALL INCLUDE 1) LOCAL MUNICIPAL ENGINEER, 2) DESIGN ENGINEER, 3) OWNER/DEVELOPER, 4) ROAD COMMISSIONER FOR OKLAHOMA COUNTY, 5) OKLAHOMA COUNTY WATER RESOURCES COMMISSIONER'S OFFICE (WATER, SEWER AND STORM DIVISIONS) AND 6) ALL UTILITY COMPANIES. CONTRACTOR SHALL PROVIDE MATERIALS LISTING FOR APPROVAL BY MUNICIPAL ENGINEER AND OCWR.
- CONTRACTOR MUST CONTACT MISS DIG (1-800-482-7171) THREE WORKING DAYS BEFORE THE START OF CONSTRUCTION FOR UNDERGROUND UTILITY LOCATIONS. ALL UTILITIES SHALL BE STAKED BEFORE CONSTRUCTION STARTS.
- ALL NECESSARY EASEMENTS FOR WATER MAINS SHALL BE PROVIDED IN THE NAME OF THE OWNER OF THE WATER MAIN PRIOR TO CONSTRUCTION AND ACCEPTANCE OF THE WATER DISTRIBUTION SYSTEM FOR OPERATION.
- ALL WATER MAINS SHALL BE CONSTRUCTED WITH A MINIMUM COVER OF FIVE AND ONE-HALF (5-1/2) FEET BELOW FINISHED GRADES INCLUDING OPEN DRAINAGE COURSES.
- ALL TRENCHES UNDER OR WITHIN A 1:1 RATIO OF EXISTING OR PROPOSED PAVEMENT OR DRIVEWAYS SHALL BE BACKFILLED WITH THOROUGHLY COMPACTED CLASS II SAND TO GRADE AT NOT LESS THAN 95% OF THE MAXIMUM UNIT WEIGHT
- WHERE TWO UTILITIES CROSS, PROVIDE CLASS II BACKFILL MATERIAL IN TWELVE (12) INCH COMPACTED LAYERS TO THE UNDERSIDE OF THE HIGHER UTILITY.
- WHERE WATER MAINS MUST DIP TO PASS UNDER OTHER UTILITIES, THE SECTIONS WHICH ARE DEEPER THAN NORMAL SHALL BE KEPT TO A MINIMUM LENGTH AND SHALL BE CONSTRUCTED WITH ELEVEN AND ONE-QUARTER (11-1/4) DEGREE VERTICAL BENDS, PROPERLY ANCHORED. BENDS GREATER THAN 11-1/4 MUST HAVE ROD RESTRAINTS.
- ALL PRECAST CONCRETE GATE WELL SECTIONS SHALL BE MANUFACTURED TO CONFORM WITH A.S.T.M. C478. STANDARD SPECIFICATIONS FOR PRECAST REINFORCED CONCRETE MANHOLE SECTIONS, EXCEPT WALL THICKNESS SHALL BE AS SHOWN ON THESE DETAILS. ALL JOINTS FOR PRECAST CONCRETE GATE WELL SECTIONS SHALL BE "MODIFIED GROOVE TONGUE" WITH GASKET MANUFACTURED TO CONFORM WITH A.S.T.M. C 443, STANDARD SPECIFICATION FOR JOINTS FOR CIRCULAR CONCRETE SEWER AND CULVERT PIPE USING RUBBER GASKETS.
- CONTRACTOR SHALL INSTALL VALVES, TAPPING SLEEVES AND GATE WELL STRUCTURES IN STRICT COMPLIANCE WITH MEASUREMENTS PROVIDED ON SHEET 2 (i.e. 2'-0" BETWEEN GATE WELL WALL & CENTERLINE OF OPERATING NUT) TO ALLOW PROPER OPERATION OF VALVE THROUGH GATEWELL OPENING. FAILURE TO DO SO WILL REQUIRE CONTRACTOR TO CORRECT AT HIS EXPENSE.
- ALL CROSS-CONNECTION CONTROL DEVICES SHALL BE INSTALLED AS REQUIRED BY THE LOCAL PLUMBING INSPECTOR AND IN ACCORDANCE WITH THE STANDARDS OF THE WATER RESOURCES COMMISSIONER'S OFFICE OPERATION AND MAINTENANCE DIVISION AND THE MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES AND ENERGY, DIVISION OF DRINKING WATER AND ENVIRONMENTAL HEALTH DIVISION
- ALL WATER SERVICE CONNECTIONS TWO (2) INCHES AND SMALLER SHALL BE MADE BY THE WATER RESOURCES COMMISSIONER'S OFFICE, OPERATIONS AND MAINTENANCE DIVISION AFTER WATER MAIN ACCEPTANCE AND APPLICABLE TAP PERMITS ARE OBTAINED.
- ALL FITTINGS AND BENDS SHOULD BE BLOCKED IN ACCORDANCE WITH THRUST BLOCK DETAILS, UNLESS ALTERNATE THRUST RESTRAINT SYSTEM, AS INDICATED IN PLANS AND SPECIFICATIONS, IS APPROVED BY WATER RESOURCES COMMISSIONER'S OFFICE AND THE LOCAL MUNICIPALITY.
- ALL STEEL AND IRON MATERIAL AND PRODUCTS FOR PERMANENT INCORPORATION INTO THE WORK SHALL MEET BUY AMERICA REQUIREMENT, FEDERAL CODE OF REGULATIONS SECTION 635.410

**WATER MAIN MATERIALS NOTES**

- WATER SUPPLY SYSTEM PIPING (3-INCH & LARGER) SHALL BE DUCTILE IRON OR HIGH DENSITY POLYETHYLENE (HDPE) UNLESS OTHERWISE APPROVED BY THE LOCAL COMMUNITY.
- DUCTILE IRON PIPE SHALL BE CLASS 54 FOR SIZES THREE (3) INCH THROUGH EIGHTEEN (18) INCH, CLASS 55 FOR TWENTY (20) INCH, AND CLASS 56 FOR TWENTY-FOUR (24) INCH AND LARGER. (ABBREVIATED "D.I." IN DETAILS AND ON THIS SHEET).
- PIPES OF SIZES LARGER THAN TWENTY-FOUR (24) INCHES IN NOMINAL DIAMETER SHALL MEET ALL THE REQUIREMENTS OF THE CURRENT AWWA C100 FOR DUCTILE IRON WATER PIPE.
- THE DUCTILE IRON PIPE TO BE FURNISHED AND DELIVERED UNDER THIS SPECIFICATION SHALL MEET ALL THE REQUIREMENTS OF THE CURRENT AWWA C151 (ANSI A21.5), EXCEPT AS OTHERWISE SPECIFIED HEREIN. PIPE SHALL BE DOUBLE CEMENT-LINED AND SEAL COATED WITH AN APPROVED BITUMINOUS SEAL COAT IN ACCORDANCE WITH AWWA C104 (ANSI A21.4).
- REFER TO SHEET 5 FOR HDPE MATERIAL REQUIREMENTS.
- MECHANICAL AND SLIP-ON JOINTS FOR DUCTILE IRON WATER MAIN SHALL BE IN ACCORDANCE WITH AWWA C111 (ANSI A21.11).
- FLANGE JOINTS FOR DUCTILE IRON WATER MAIN SHALL BE IN ACCORDANCE WITH AWWA C110 (ANSI A21.10).
- FITTINGS FOR DUCTILE IRON PIPE SHALL BE DUCTILE IRON OR CAST IRON AND SHALL MEET REQUIREMENTS OF AWWA C110 (ANSI A21.10) OR AWWA C153 (ANSI A21.53). DUCTILE IRON FITTINGS SHALL BE RATED FOR 350 PSI, PIPE SIZES TWENTY-FOUR (24) INCH DIAMETER AND LESS AND 250 PSI FOR PIPE SIZES OVER TWENTY-FOUR (24) INCH DIAMETER. DUCTILE IRON FLANGE FITTINGS SHALL BE RATED FOR 250 PSI FOR ALL PIPE DIAMETERS.
- INSTALL BRASS WEDGES AT ALL PUSH ON JOINTS IN DUCTILE IRON PIPE INSTALLATIONS. TWO (2) WEDGES PER JOINT FOR PIPES 12 INCH IN DIAMETER AND LESS, FOUR WEDGES PER JOINT FOR PIPES GREATER THAN 12 INCHES IN DIAMETER.
- ALL WATER MAINS SHALL BE DESIGNED FOR 150 PSI MINIMUM WORKING PRESSURE.
- ALL BURIED BOLTS, NUTS, AND WASHERS SHALL BE AWWA C111 LOW ALLOY STEEL COATED WITH A MINIMUM OF TWO (2) COATS OF FLUOROPOLYMER EPOXY COATING AND HEAT CURED (COR-BLUE OR APPROVED EQUAL) AND POLY-WRAPPED WHEN SPECIFIED.
- ALL BURIED BOLTS, NUTS, AND WASHERS FOR ALL FLANGED CONNECTIONS SHALL BE STAINLESS STEEL (ASTM A320, GRADE BBM) AND HAVE A NEVER SEIZE TYPE COMPOUND APPLIED TO THE THREADS PRIOR TO INSTALLATION.
- CORPORATION STOPS USED FOR INSERTION INTO MAINS SHALL BE MUELLER TYPE H-15000, FORD METER BOX FB-1000-X-0-NL OR FORD METER BOX FB1000-4-Q-NL. ALL STOPS SHALL HAVE BRONZE CAST BODIES, KEYS, STEM WASHERS AND NUTS. INLET THREADS SHALL CONFORM TO THE LATEST VERSION OF AWWA C800.
- TEMPORARY CONNECTIONS, WHICH MAY BE MADE FOR CHLORINATING AND FLUSHING PURPOSES, SHALL INCLUDE A TESTABLE REDUCE PRESSURE ZONE (RPZ) VALVE WITH CURRENT CERTIFICATION.

**VALVE AND SLEEVE NOTES**

- GATE VALVES, SIZES THREE (3) INCH THROUGH SIXTEEN (16) INCH AND TAPPING VALVES SHALL MEET LOCAL MUNICIPAL STANDARD AS DETAILED WITH NON-RISING STEM.
- ALL IN LINE GATE VALVES THREE (3) INCH AND LARGER SHALL BE IN WELLS AS DETAILED. SPECIFICATIONS SHALL INCLUDE THE DIRECTION OF OPERATION OF ALL VALVES.
- ALL GATE WELL COVERS SHALL BE LOCAL MUNICIPAL STANDARD AS DETAILED.
- ALL GATE VALVES WITH OPERATING NUTS AT A DISTANCE GREATER THAN FIVE (5) FEET BELOW GROUND SURFACE SHALL BE PROVIDED WITH A STAINLESS STEEL EXTENSION STEM. THE LENGTH OF THE EXTENSION STEM SHALL REACH WITHIN FIVE (5) FEET FROM THE GROUND SURFACE. WHEN AN EXTENSION STEM IS USED, IT SHALL BE HELD IN PLACE BY A STAINLESS STEEL EXTENSION STEM GUIDE SUITABLY FASTENED TO THE WALL OF THE GATE WELL. THE EXTENSION STEM SHALL BE MECHANICALLY ATTACHED TO THE OPERATING NUT. DETAILS OF THE EXTENSION SYSTEM AND THE METHOD OF INSTALLATION SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.
- TAPPING VALVES SHALL BE AWWA C515 FL X MJ AS MANUFACTURED BY EJ WITH RESILIENT SEATED GATE VALVES AS APPROVED BY LOCAL MUNICIPALITY.
- TAPPING SLEEVES SHALL BE ALL STAINLESS STEEL (BODY, FLANGE AND HARDWARE), MANUFACTURED BY ROMAC INDUSTRIES SST; JCM 432; SMITH-BLAR 663/665 OR APPROVED EQUAL BY THE WATER RESOURCES COMMISSIONER'S OFFICE.

**HYDRANT REQUIREMENTS**

- ALL HYDRANTS SHALL BE CONSTRUCTED WITH A SIX (6) INCH COMPANION GATE VALVE IN A THREE (3) PIECE, ADJUSTABLE DUCTILE IRON VALVE BOX, WHICH SHALL INCLUDE A FIVE AND ONE-QUARTER (5-1/4) INCH SCREW SHAFT. VALVE BOXES SHALL BE SERIES 6860 AS MANUFACTURED BY TYLER PIPE, EJ VALVE BOX NO. 8660 OR APPROVED EQUAL.
- ALL HYDRANTS SHALL BE EJ 5BR250 TRAFFIC MODEL, OR APPROVED EQUAL WITH A MINIMUM OF 6'-0" DEPTH OF BURY UNLESS OTHERWISE INDICATED. SELF-DRAINING HYDRANTS SHALL NOT BE USED. ALL HYDRANTS SHALL BE LOCAL MUNICIPAL STANDARD AS DETAILED. HYDRANTS SHALL HAVE BREAKAWAY FLANGE.
- ALL HYDRANTS SHALL BE PAINTED RED ABOVE GROUND AND BLACK BELOW GROUND WITH A FINISH COAT OF GLAMORTEX 501 EMAMEL, COLOR 314 VERMILLION OR APPROVED EQUAL. HYDRANT CAP SHALL BE PAINTED SAME COLOR AS THE HYDRANT. FOR PONTIAC: YELLOW RUST-OLEUM #7543 SAFETY YELLOW.

**ACCEPTANCE OF NEW WATER MAINS**

- PRIOR TO WATER MAIN ACCEPTANCE THE FOLLOWING CONDITIONS MUST BE MET:
  - PRESSURE TESTING AND BACTERIA TESTING MUST BE COMPLETED IN ACCORDANCE WITH THE WATER RESOURCES COMMISSIONER'S OFFICE REQUIREMENTS
  - ALL EASEMENT AND RIGHT-OF-WAY ACQUISITION MUST BE ACCEPTED BY THE WATER RESOURCES COMMISSIONER'S OFFICE, RIGHT-OF-WAY DIVISION
  - THE LOCAL MUNICIPALITY MUST BE PROVIDED WITH THE BILL OF SALE
  - ALL "RECORD DRAWINGS" MUST BE ACCEPTED AND APPROVED BY THE WATER RESOURCES COMMISSIONER'S OFFICE, OPERATIONS AND MAINTENANCE DIVISION. THE WATER RESOURCES COMMISSIONER'S OFFICE AND LOCAL ENGINEER MUST WITNESS THE CONNECTION OF THE WATER MAIN TO THE EXISTING WATER MAIN, AFTER WHICH RESIDENTIAL AND COMMERCIAL TAPS WILL BE ALLOWED.
- THE CONTRACTOR SHALL NOTIFY THE WATER RESOURCES COMMISSIONER'S OFFICE, OPERATIONS AND MAINTENANCE DIVISION THROUGH THE LOCAL ENGINEER FOR NEW CONSTRUCTION TAP, PRESSURE TESTING, BACTERIOLOGICAL SAMPLING, CONNECTIONS TO EXISTING WATER MAIN AND FINAL FIELD REVIEW. A SEVENTY-TWO (72) HOUR ADVANCE NOTICE IS REQUIRED.
- THE CONTRACTOR SHALL DISINFECT AND PRESSURE TEST ALL NEW WATER MAIN CONSTRUCTION PURSUANT TO THE CURRENT STANDARDS SPECIFIED BY THE WATER RESOURCES COMMISSIONER'S OFFICE.
- HYDROSTATIC TESTING FOR DUCTILE IRON WATER MAIN SHALL BE COMPLETED IN ACCORDANCE WITH ANSI/AWWA C800, SEC 5.2. THE SPECIFIED TEST PRESSURE IS 150 PSI OR 1.5 TIMES THE MAXIMUM ALLOWABLE OPERATING PRESSURE (MAOP) OF THE TEST SECTION, WHICHEVER IS GREATER. THE TEST METHOD IS GENERALLY SUMMARIZED AS FOLLOWS:
  - SLOWLY FILL PIPELINE WITH WATER, VENTING ENTRAPPED AIR AS NECESSARY.
  - REPAIR ANY VISIBLE LEAKS THAT OCCUR DURING FILLING OR AT ANY POINT DURING THE TEST.
  - GRADUALLY APPLY PRESSURE UP TO THE SPECIFIED WORKING PRESSURE USING A SUITABLE PUMP CONNECTED TO THE PIPELINE, BLEEDING TRAPPED AIR, AND ADDING WATER AS NECESSARY UNTIL A STABLE PRESSURE IS HELD.
  - HYDROSTATIC TEST BEGINS AFTER THE PIPELINE IS STABILIZED AT THE WORKING PRESSURE BY INCREASING THE PRESSURE UP TO THE SPECIFIED TEST PRESSURE AND HOLD IT WITHIN PLUS/MINUS 5 PSI FOR THE DURATION OF THE TEST, OR A MINIMUM OF TWO HOURS.
  - CAREFULLY RECORD THE AMOUNT OF MAKEUP WATER ADDED DURING THE TEST. THE HYDROSTATIC TEST PASSES IF THE AMOUNT OF MAKEUP WATER DOES NOT EXCEED THE TESTING ALLOWANCE.
  - IF THE TESTING ALLOWANCE IS EXCEEDED, LOCATE AND REPAIR ANY LEAKS AND REPEAT TEST.
- REFER TO SHEET 5 FOR HYDROSTATIC TESTING REQUIREMENTS FOR HDPE PIPE.
- PRESSURE TESTING AGAINST VALVES PHYSICALLY CONNECTED TO AN EXISTING WATER SUPPLY SYSTEM IS STRICTLY PROHIBITED.
- WHERE CONTRACTOR SUPPLIED GALUGES ARE REQUIRED, MINIMUM SIZE SHALL BE 3/4" DIAMETER OR LARGER GRADUATED IN ONE (1) OR TWO (2) POUND INCREMENTS FROM 1 TO 160 P.S.I. OR HIGHER.
- PRESSURE TESTING AND BACTERIA TESTING MUST BE SUCCESSFULLY COMPLETED PRIOR TO CONNECTING TO THE EXISTING WATER SUPPLY SYSTEM.

**WATER RESOURCES COMMISSIONER WATER SYSTEM STANDARDS – GATE VALVES**

COMMUNITY	DIRECTION TO OPEN	VALVE TYPE	
		STD. GATE VALVE	TAPPING VALVE
BINGHAM FARMS	RIGHT	C515	C515
BLOOMFIELD HILLS	RIGHT	C515	C515
COMMERCE TOWNSHIP	LEFT	C515	C515
FARMINGTON HILLS	RIGHT	C515	C515
HIGHLAND TOWNSHIP	LEFT	C515	C515
KEEOG HARBOR	RIGHT	C515	C515
OKLAND TOWNSHIP	LEFT	C515	C515
ORCHARD LAKE VILLAGE	LEFT	C515	C515
OXFORD TOWNSHIP	LEFT	C515	C515
PLEASANT RIDGE	RIGHT	C515	C515
PONTIAC	LEFT	C515	C515
ROYAL OAK TOWNSHIP	RIGHT	C515	C515
SPRINGFIELD TOWNSHIP	LEFT	C515	C515
SYLVAN LAKE	RIGHT	C515	C515
WALLED LAKE	LEFT	C515	C515

1) C515 RESILIENT SEATED GATE VALVE – MANUFACTURED BY U.S. PIPE, MUELLER, EAST JORDAN IRON WORKS, AMERICAN FLOW CONTROL OR APPROVED EQUAL.

**FIRE HYDRANT NOZZLE SIZE AND THREAD SPECIFICATIONS**

CVT	PUMPER NOZZLE	HOSE NOZZLE	OPERATING NUT	DEPTH OF BURY	STYLE	MODEL #
BINGHAM FARMS	(1) - 4"-STORZ	(2) - 2-1/2"-DFD	1-1/2"	5'-6"	5BR250	54831D
BLOOMFIELD HILLS	(1) - 3-3/4"-DFD	(2) - 2-1/2"-DFD	1-1/8"	6'-0"	5BR250	55825D
COMMERCE TWP/WOLVERINE LAKE	(1) - 5"-STORZ	(2) - 2-1/2"-NST	1-1/2"	5'-6"	5BR250	54913D
FARMINGTON HILLS	(1) - 3-3/4"-DFD	(2) - 2-1/2"-NST	1-1/8"	5'-6"	5BR250	54329D
HIGHLAND TWP	(1) - 5"-STORZ	(2) - 2-1/2"-NST	1-1/2"	5'-6"	5BR250	54913D
KEEOG HARBOR	(1) - 3-3/4"-DFD	(2) - 2-1/2"-DFD	1-1/8"	5'-6"	5BR250	54828D
OKLAND TWP	(1) - 4"-STORZ	(2) - 2-1/2"-DFD	1-1/2"	5'-6"	5BR250	54831D
ORCHARD LAKE	(1) - 3-3/4"-DFD	(2) - 2-1/2"-DFD	1-1/8"	6'-0"	5BR250	55825D
OXFORD TWP	(1) - 5"-STORZ (1) - 4-1/2"-NST		1-1/2"	6'-0"	5BR250	55601D
PLEASANT RIDGE	(1) - 3-3/4"-DFD (1) - 5"-STORZ		1-1/8"	5'-6"	5BR250	54949D
PONTIAC	(1) - 3-3/4"-DFD	(2) - 2-1/2"-DFD	1-1/2"	6'-0"	5BR250	55822D
ROYAL OAK TWP	(1) - 3-3/4"-DFD	(2) - 2-1/2"-DFD	1-1/8"	5'-6"	5BR250	54828D
SPRINGFIELD TWP	(1) - 5"-STORZ	(2) - 2-1/2"-NST	1-1/2"	5'-6"	5BR250	54913D
SYLVAN LAKE	(1) - 3-3/4"-DFD	(2) - 2-1/2"-NST	1-1/2"	6'-0"	5BR250	55827D
WALLED LAKE	(1) - 4-1/2"-NST	(2) - 2-1/2"-NST	1-1/8"	5'-6"	5BR250	54534D

- D.F.D. – DETROIT FIRE DEPARTMENT THREAD
- N.S.T. – NATIONAL STANDARD THREAD
- STORZ NOZZLES SHALL BE COMPATIBLE WITH STORZ COUPLED LARGE DIAMETER FIRE HOSE. NOZZLES SHOULD BE MADE OF LEAD FREE BRASS OR ALUMINUM AS APPROVED BY LOCAL CITY, VILLAGE OR TOWNSHIP. THE NOZZLE SHALL BE AN INTEGRAL PART OF THE HYDRANT, RESISTANT TO TAMPER AND REMOVAL. ENGAGEMENT LUGS SHALL BE ON THE NOZZLE AND CAP TO PREVENT FAILURE UNDER HIGH PRESSURE. NOZZLE AND CAP SHALL MEET AWWA C502 SPECIFICATIONS. NOZZLE SHALL BE COMPATIBLE WITH HOSE LOCK TO PREVENT HOSE FROM DISCONNECTING WHILE IN USE.

**WATER RESOURCES COMMISSIONER'S OFFICE WATER SYSTEMS OPERATIONS AND MAINTENANCE DIVISION RECORD DRAWING SPECIFICATIONS**

IN AREAS WHERE WATER SYSTEMS ARE OPERATED AND MAINTAINED BY THE WATER RESOURCES COMMISSIONER'S OFFICE, OPERATIONS AND MAINTENANCE DIVISION, FINAL ACCEPTANCE OF THE WATER SYSTEM MUST BE RENDERED BY THE WATER RESOURCES COMMISSIONER'S OFFICE, OPERATIONS AND MAINTENANCE DIVISION, BEFORE THE SYSTEM CAN BE USED FOR THE SERVICE INTENDED.

ONE ITEM REQUIRED FOR FINAL ACCEPTANCE SHALL BE THE SUBMISSION OF RECORD DRAWINGS TO THE WATER RESOURCES COMMISSIONER, OPERATIONS AND MAINTENANCE DIVISION, BY THE DESIGN ENGINEER. RECORD DRAWINGS SHALL BE DEFINED AS AND CONTAIN THE FOLLOWING INFORMATION:

- THE DESIGN ENGINEER SHALL FURNISH "RECORD DRAWINGS" WATER MAIN PLANS UPON JOB COMPLETION. "RECORD DRAWINGS" SHALL BE FORWARDED TO THE WATER RESOURCES COMMISSIONER BY THE LOCAL MUNICIPAL ENGINEER AFTER THEIR REVIEW AND APPROVAL.
- THE COVER SHEET SHALL BE SIGNED AND SEALED BY THE PROJECT DESIGN ENGINEER AND INCLUDE THE FOLLOWING CERTIFICATION STATEMENT:

I HEREBY CERTIFY THAT OUR FIRM HAS PREPARED THESE RECORD DRAWINGS OF THE IMPROVEMENTS AS CONSTRUCTED, AND THAT TO THE BEST OF MY KNOWLEDGE THOSE IMPROVEMENTS NOTED AS "RECORD DRAWINGS" WERE CONSTRUCTED IN SUBSTANTIAL CONFORMANCE WITH THE APPROVED CONSTRUCTION PLANS; AND ALSO THAT THE WATER MAIN AND STRUCTURES, AS CONSTRUCTED, LIE WITHIN THE EASEMENT DESCRIPTIONS REQUIRED BY THE WATER RESOURCES COMMISSIONER'S OFFICE.

\_\_\_\_\_  
(COMPANY NAME)

\_\_\_\_\_  
(ENGINEER'S SIGNATURE)

PROFESSIONAL ENGINEER NO. \_\_\_\_\_

\_\_\_\_\_  
ENGINEER SEAL

- THE MINIMUM SCALE SHALL BE ONE (1) INCH EQUALS FIFTY (50) FEET.
- THE SIZE, LENGTH, CLASS AND MANUFACTURER OF PIPE INSTALLED SHALL BE INDICATED.
- THE SIZE, BRAND AND MODEL NUMBERS OF ALL VALVES AND HYDRANTS INSTALLED SHALL BE INDICATED.
- A TOTAL RECORD DRAWING QUANTITY LIST SHALL BE INCLUDED, AS WELL AS A RECORD DRAWING QUANTITY LIST ON EACH INDIVIDUAL SHEET.
- THE LOCATIONS SHALL BE SHOWN ON THE PLANS WITH AN ACCURACY OF ONE (1) FOOT.
- THE OFFSET OF THE WATER MAIN FROM PROPERTY LINES SHALL BE INDICATED.
- ALL GATE VALVE WELLS, HYDRANTS AND ALL WATER SYSTEM APPURTENANCES SHALL BE LOCATED FROM THE NEAREST PROPERTY CORNER.
- ALL UNDERGROUND APPURTENANCES, SUCH AS GATE VALVE WELLS, METER PITS, PRESSURE REDUCING VALVE PITS, ETC. SHALL BE LOCATED FROM THE NEAREST HYDRANT THAT IS CONNECTED TO THE SAME WATER MAIN AS THE APPURTENANCE.
- THE LOCATION, SIZE, BRAND AND MODEL NUMBER OF EVERY RESTRAINED JOINT SHALL BE NOTED.
- THE ACCURATE LOCATION OF ALL UTILITY CROSSINGS WHERE THE RECOMMENDED SEPARATION, VERTICALLY OR HORIZONTALLY, IS LESS THAN THE TEN STATE STANDARDS SHALL BE NOTED.
- WATER MAINS 12" AND LARGER IN DIAMETER SHALL BE DRAWN IN PROFILE VIEW IN ADDITION TO PLAN VIEW ON THE CONSTRUCTION PLANS.

**WATER MAIN STANDARD DETAILS**

REVISION BLOCK

No.	Rev.	Date	Description
1	1	08/15/09	GENERAL UPDATE
2	1	08/02/09	ADD PRELIMINARY INFO TO TABLE
3	1	08/02/09	UPDATE BVA HYDRANT SPEC
4	1	07/10/04	UPDATE BVA HYDRANT SPEC

ORIG. DATE: 01/01/01

SCALE: NONE

DESIGNED BY: WRC

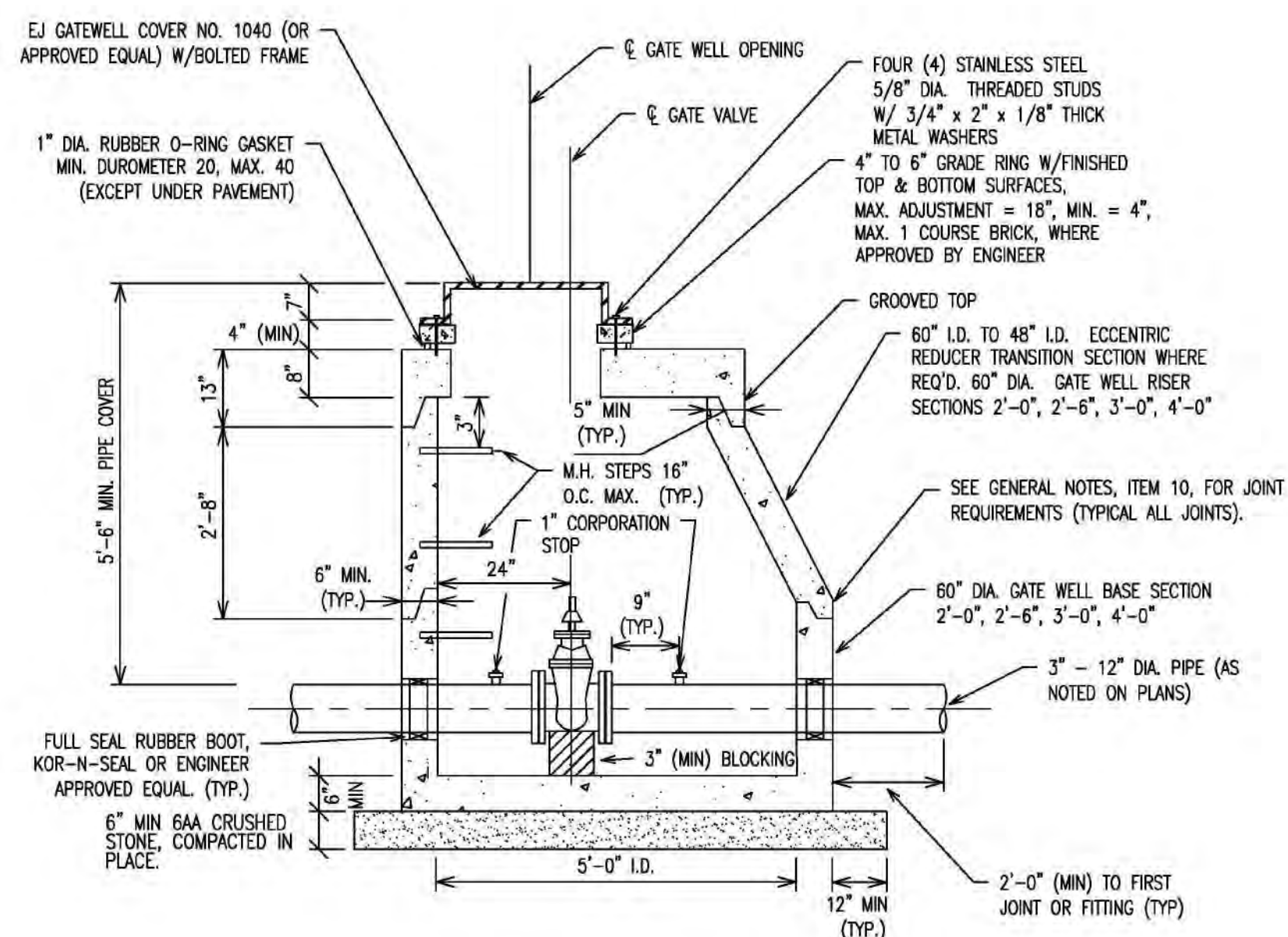
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ONE PUBLIC WORKS DRIVE, BLDG 95 WEST WATERLOO, MICHIGAN 48096-1907

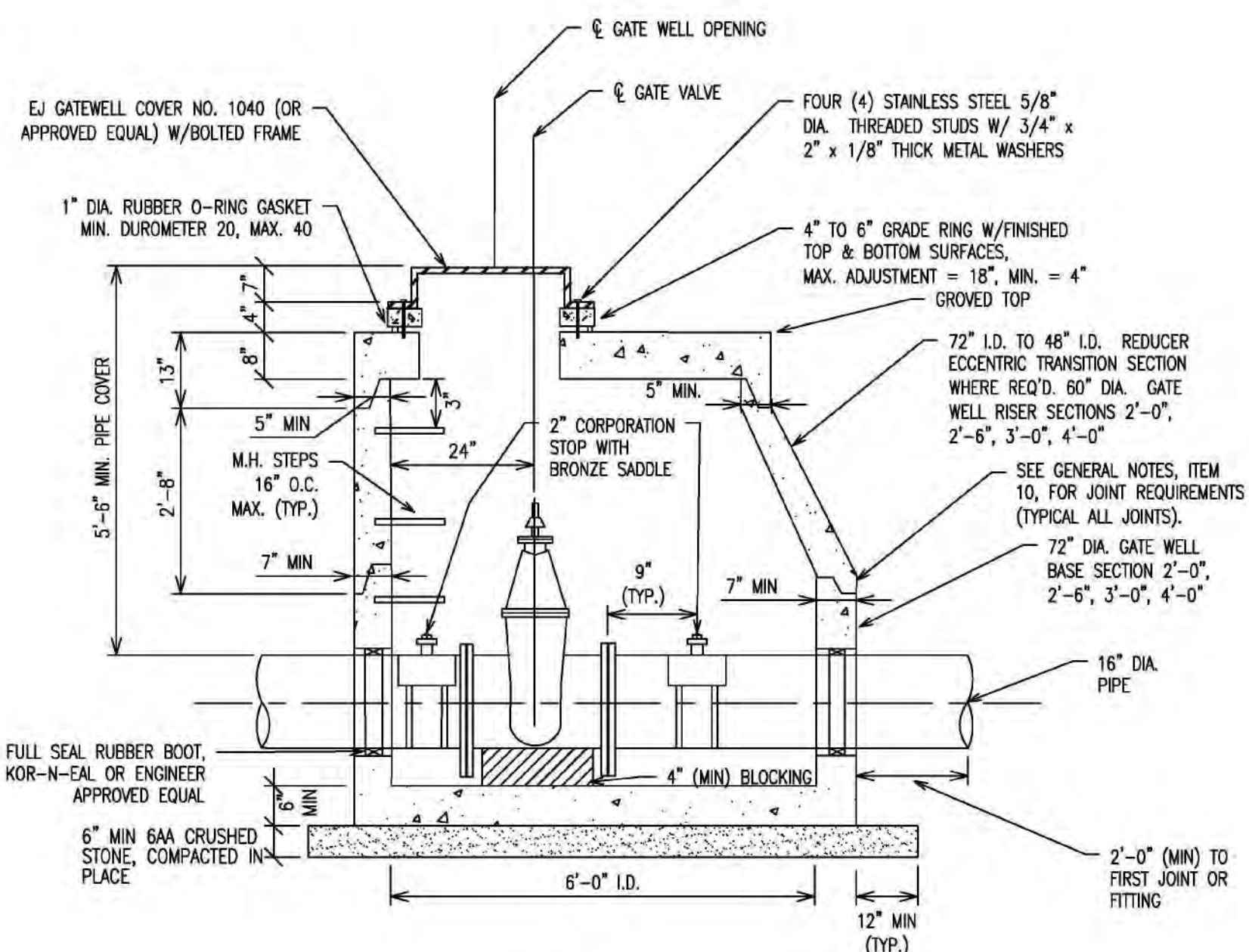
WATER RESOURCES COMMISSIONER  
Jim Nix

SHEET NO.: 1 of 7

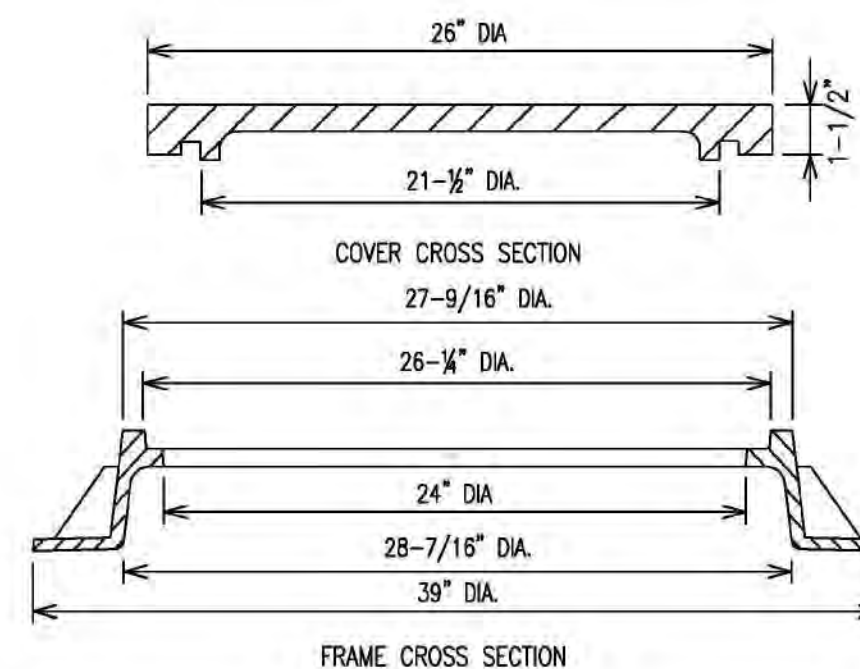
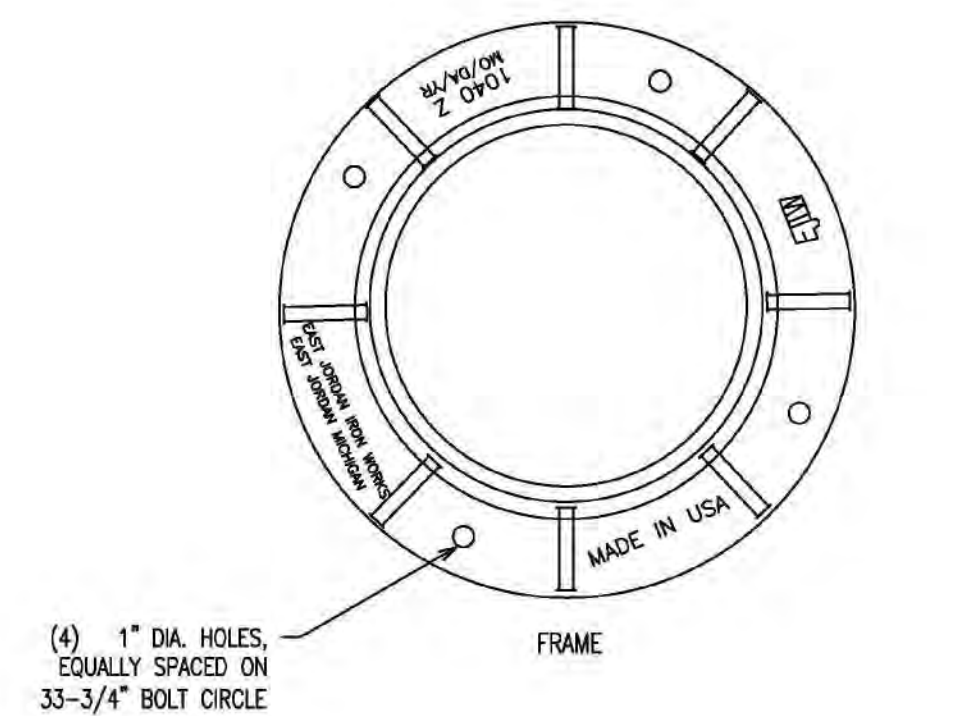
## GATE VALVE & WELL DETAILS



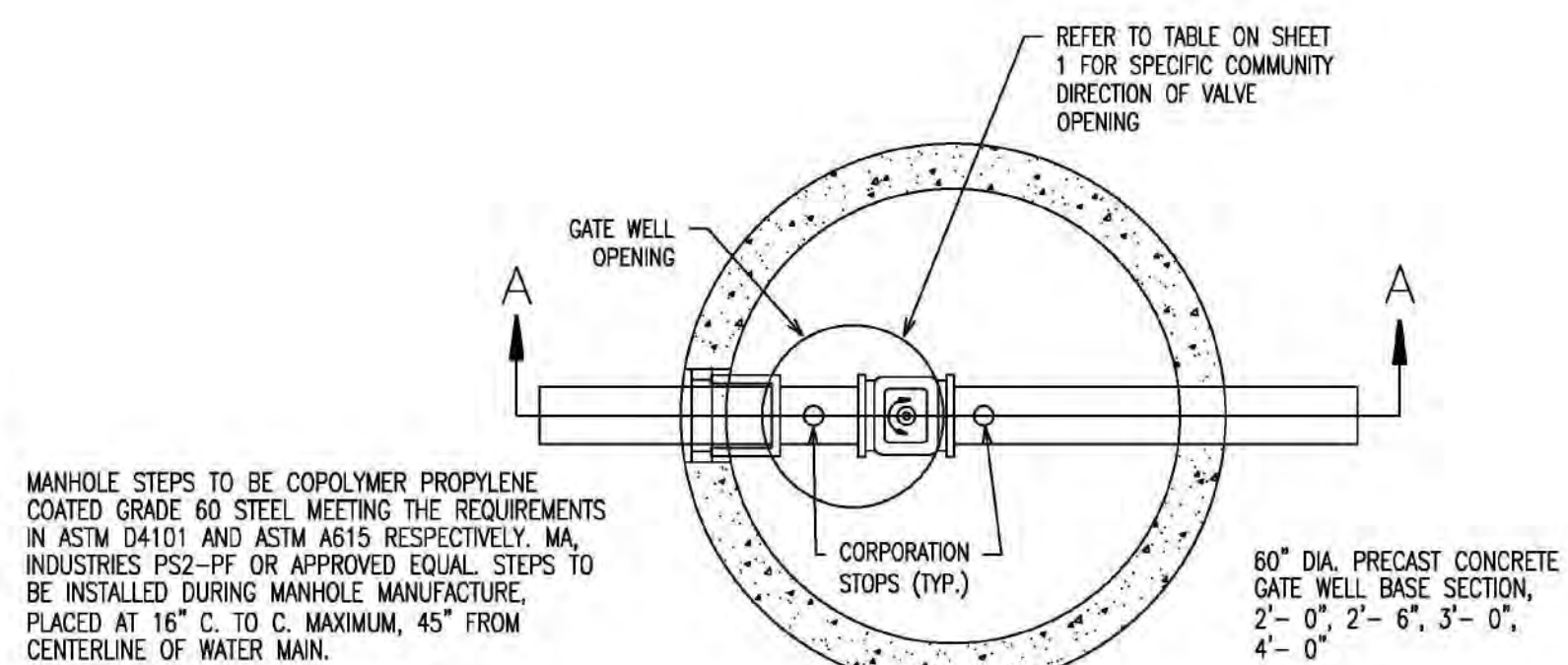
**3" THRU 12" GATE WELL**



**16" GATE WELL**



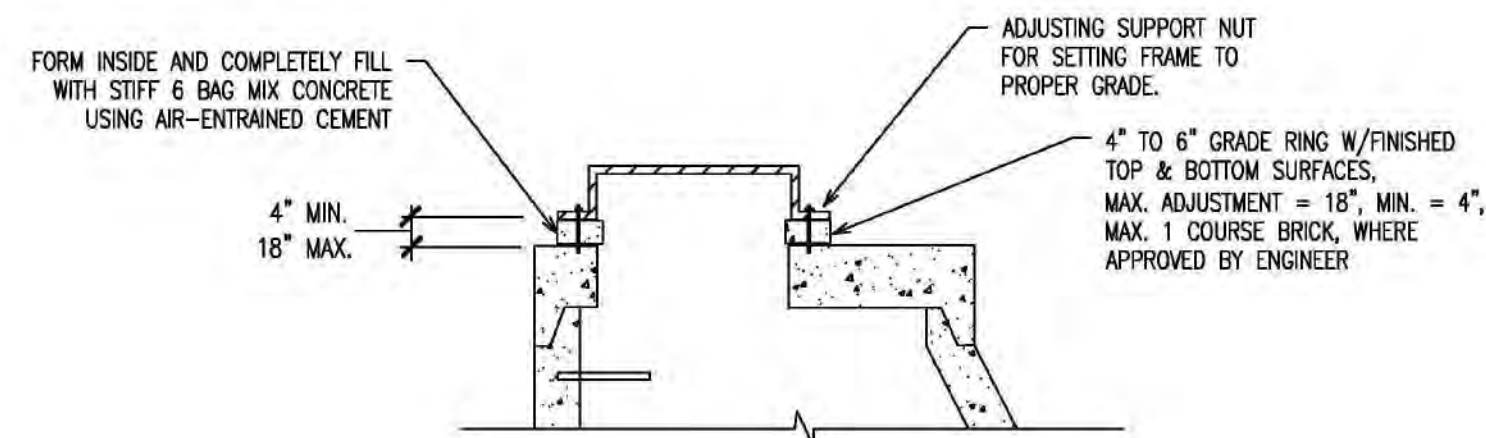
**FRAME**



**PLAN GATE WELL TYPICAL**

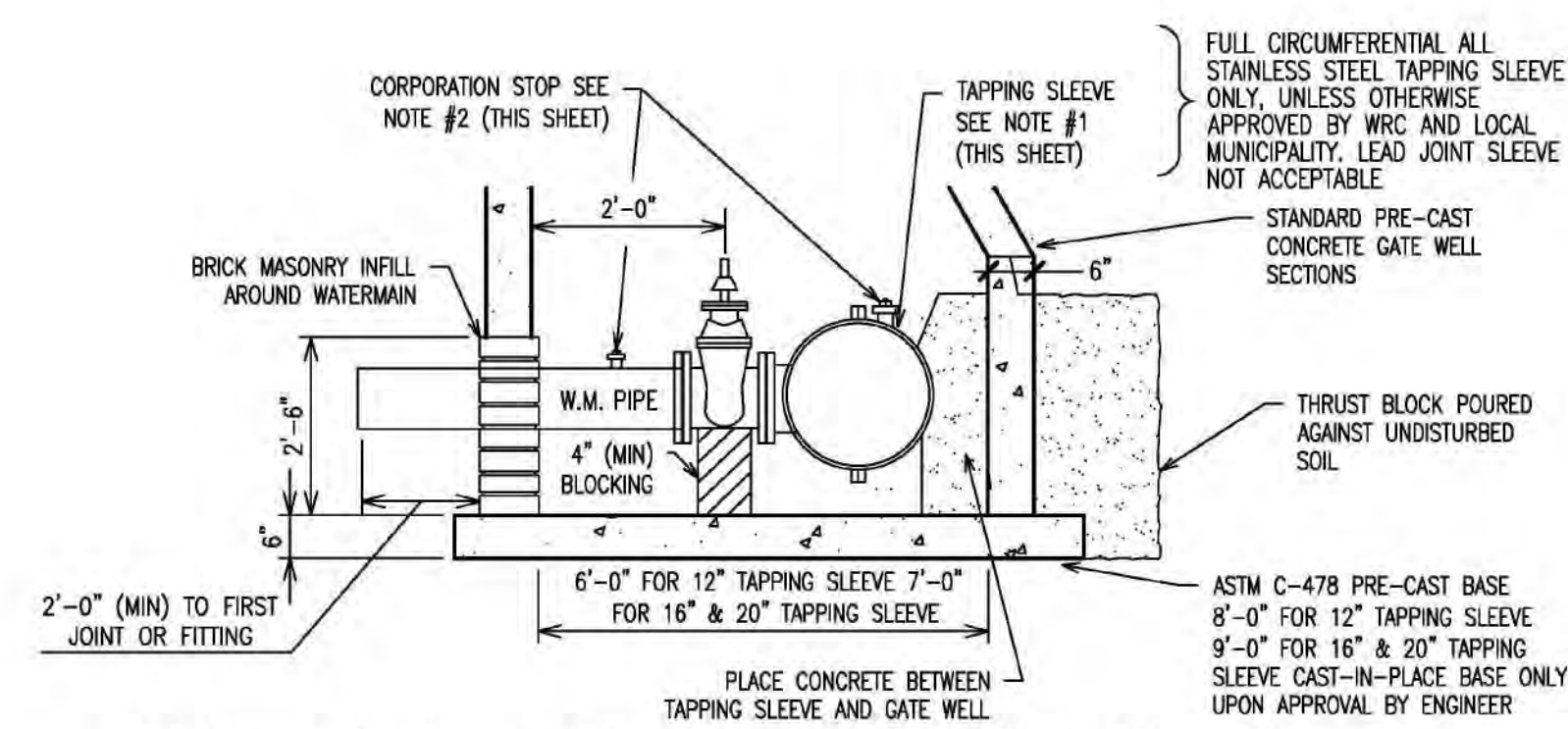
MANHOLE STEPS TO BE COPOLYMER PROPYLENE COATED GRADE 60 STEEL MEETING THE REQUIREMENTS IN ASTM D4101 AND ASTM A615 RESPECTIVELY. MA INDUSTRIES PS2-PF OR APPROVED EQUAL STEPS TO BE INSTALLED DURING MANHOLE MANUFACTURE. PLACED AT 16" C. TO C. MAXIMUM, 45" FROM CENTERLINE OF WATER MAIN.

60" DIA. PRECAST CONCRETE GATE WELL BASE SECTION, 2'-0", 2'-6", 3'-0", 4'-0"



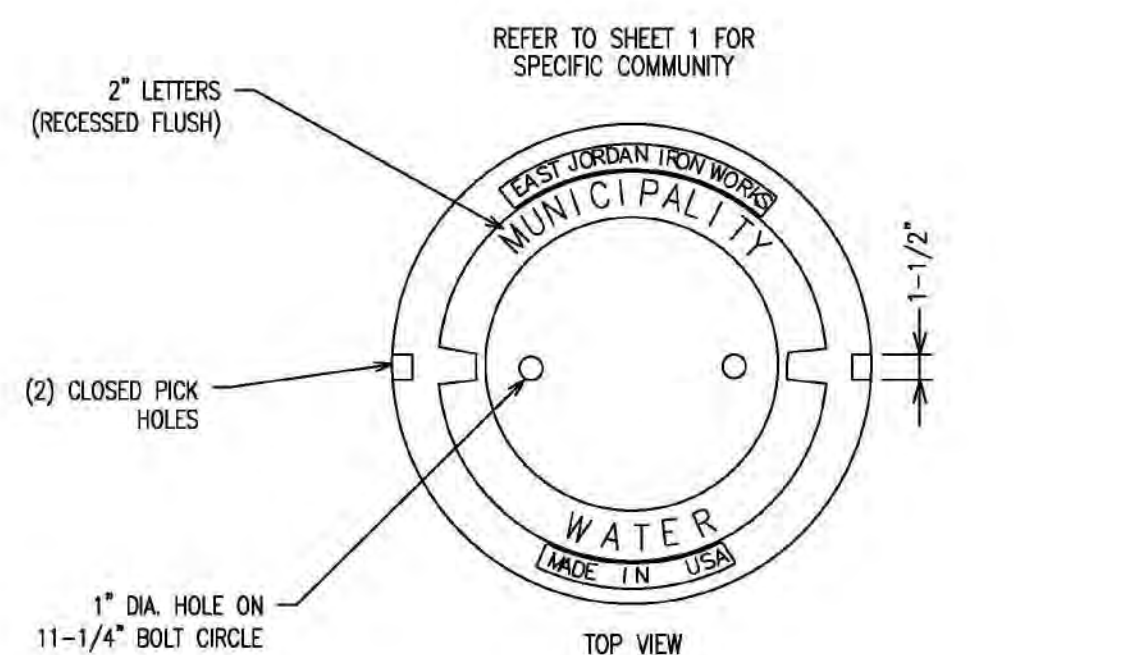
**GATE WELL TOPS WITHIN PAVEMENT AREAS**

RUBBER O'RINGS SHALL NOT BE USED IN PAVEMENT

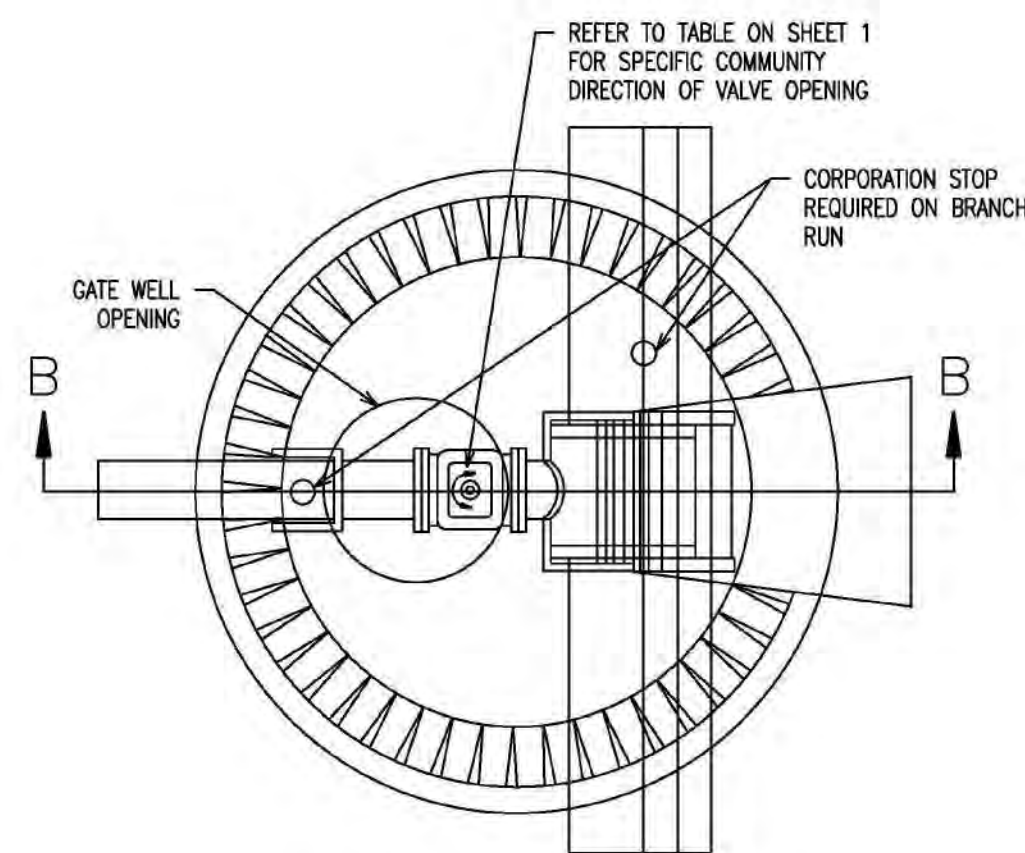


**20" x 12", 20" x 8", 16" x 12", 16" x 8", 12" x 8" TAPPING SLEEVE, VALVE & WELL**

- NOTES:
- REFER TO NOTE 7 OF "VALVE AND SLEEVE NOTES" ON SHEET 1.
  - FOR PIPE SMALLER THAN 16" USE 1" CORPORATION STOP, FOR 16" PIPE OR LARGER USE 2" CORPORATION STOP WITH BRONZE SADDLE.
  - WRC DOES NOT RECOMMEND SIZE ON SIZE TAPPING.



**LETTERING LAYOUT FOR GATEWELL COVERS**

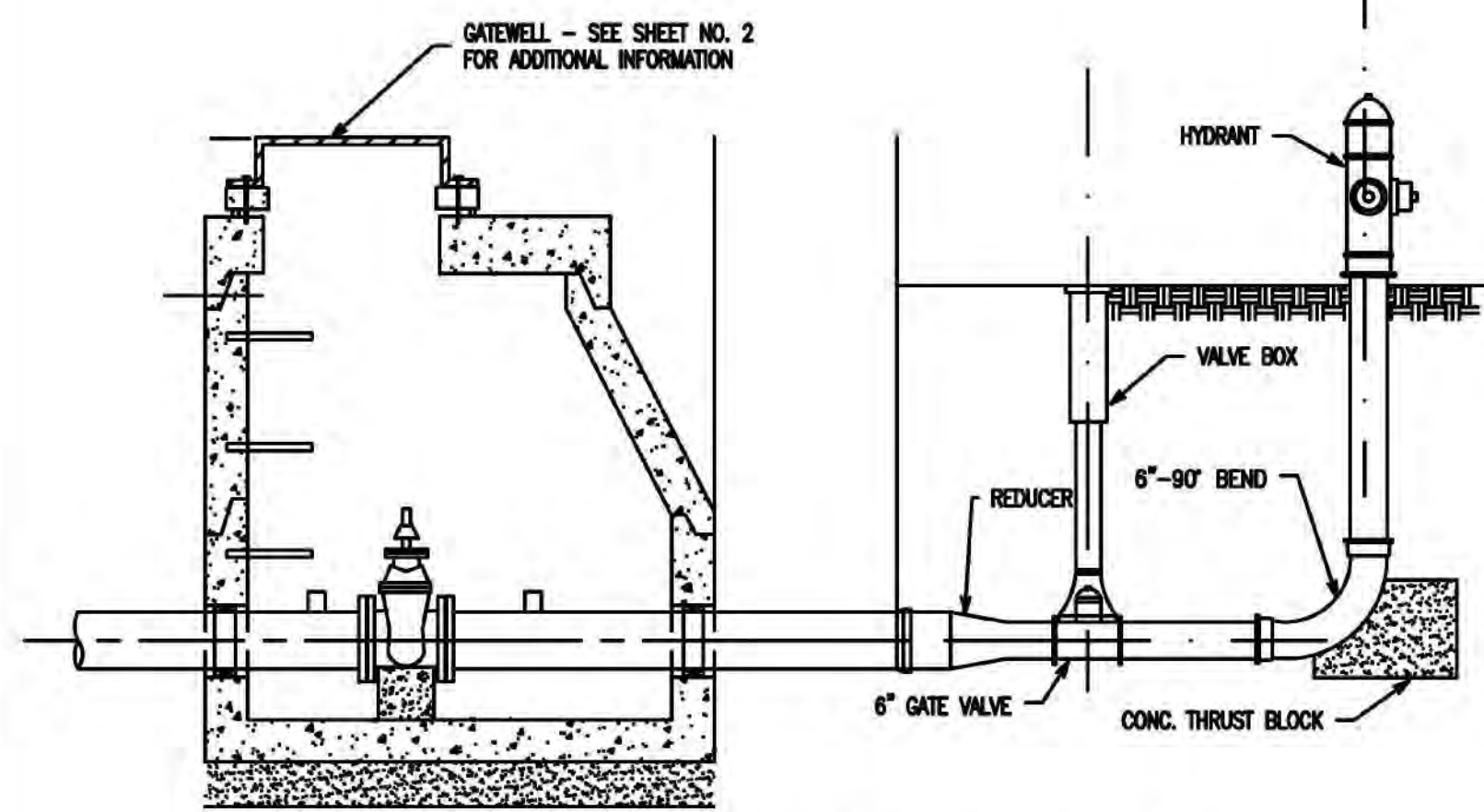


**PLAN TAPPING SLEEVE VALVE & WELL (TYPICAL)**

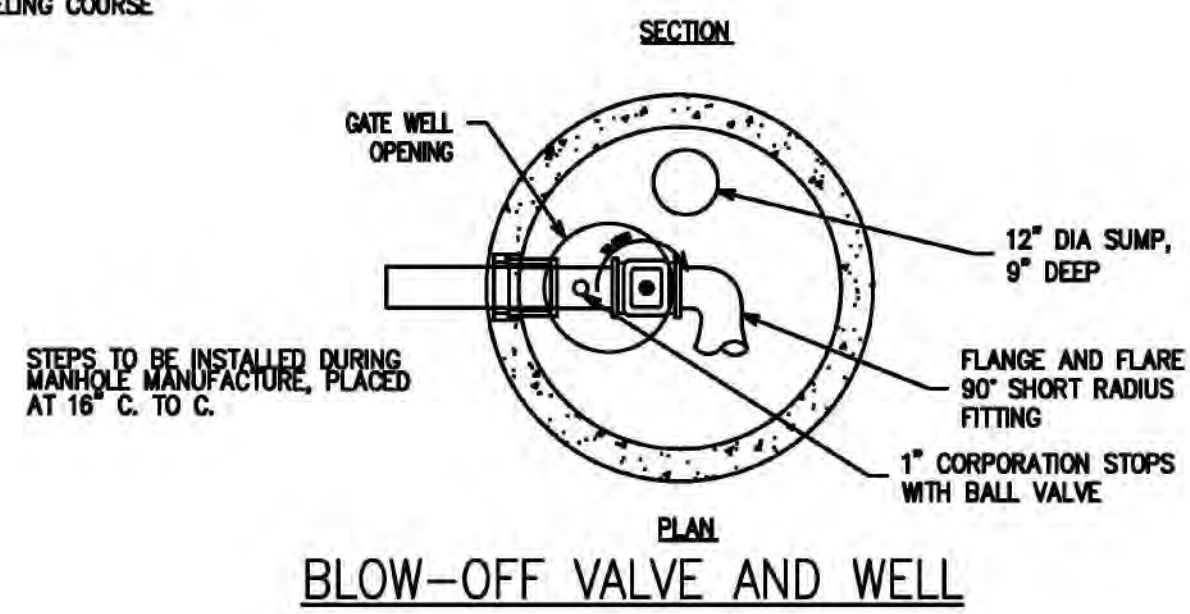
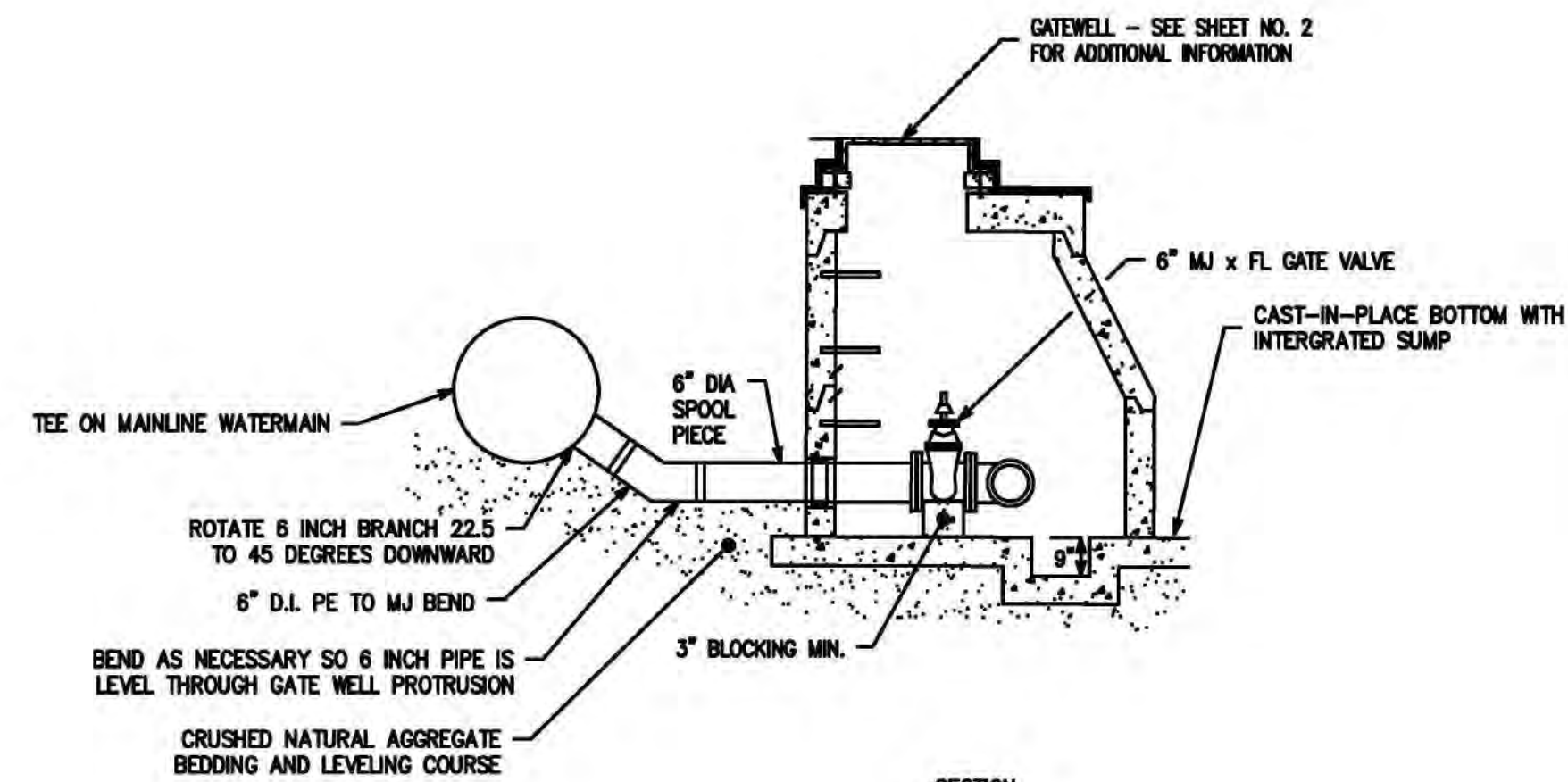
### WATER MAIN STANDARD DETAILS

REVISION BLOCK		Date Source / Source Date: NA	
Rev. No.	Rev. Date	Rev. No.	Rev. Date
1	03/20/15	1	03/20/15
2	04/28/17	2	04/28/17
3	03/14/18	3	03/14/18
4	08/21/20	4	08/21/20

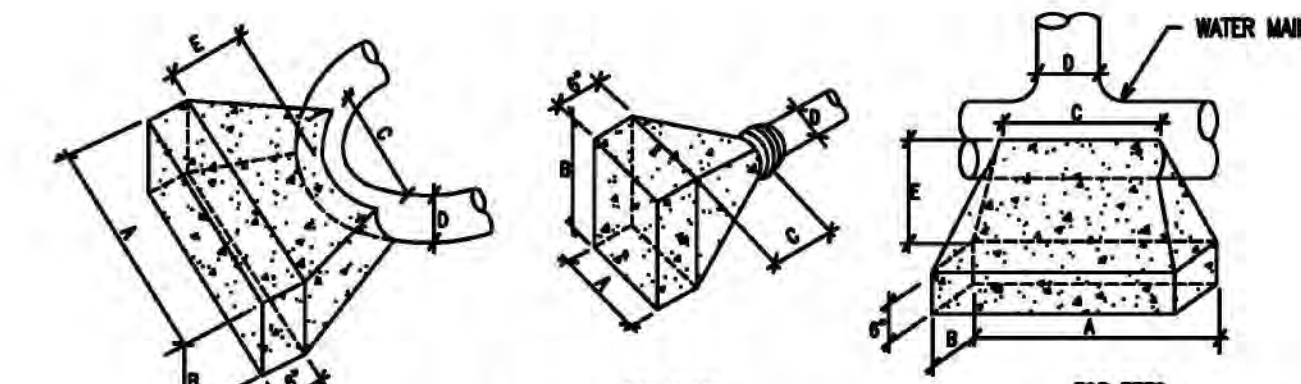
ORIG. DATE:	01/01/01		ONE PUBLIC WORKS DRIVE, BLDG 95 WEST WATERFORD, MICHIGAN 48396-1907
SCALE:	NONE		
DESIGNED BY:	WRC	WATER RESOURCES COMMISSIONER <i>Jim Nash</i>	SHEET NO.:
DRAWN BY:	WRC Mapping		2 of 7



DEAD END BLOWOFF CONNECTION



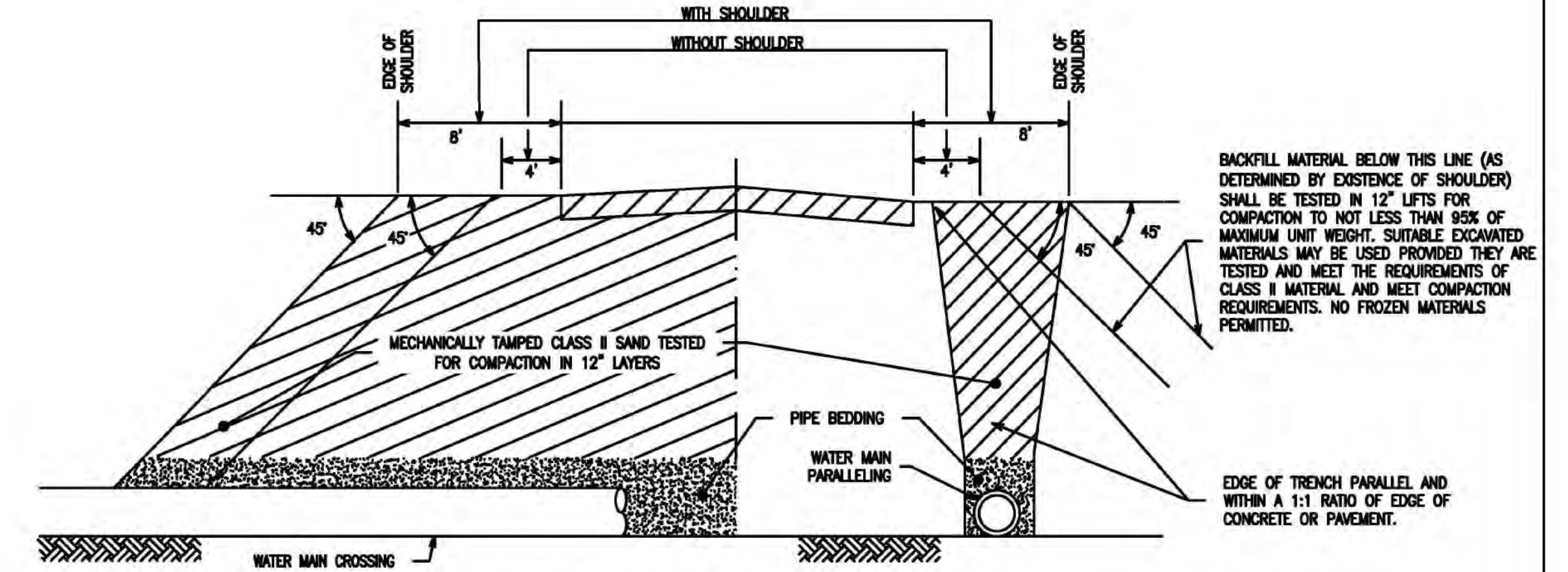
BLOW-OFF VALVE AND WELL



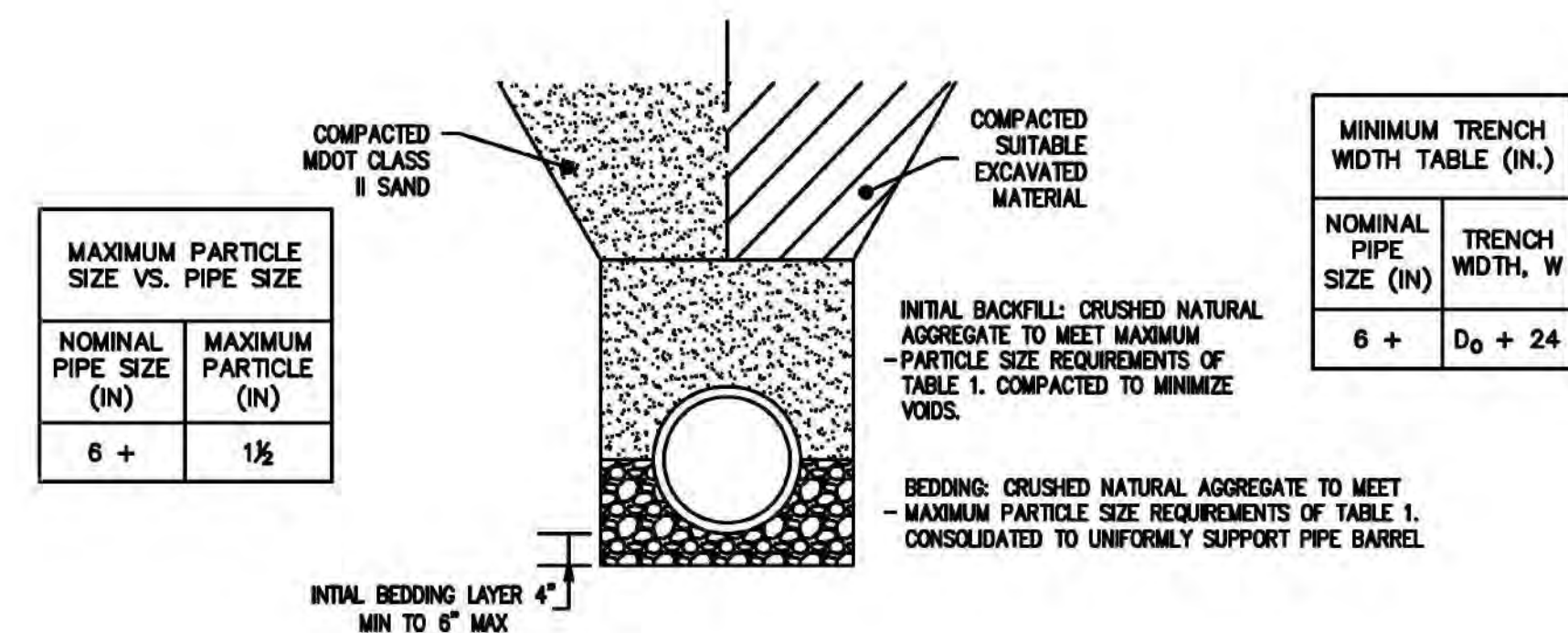
FOR 90° BENDS OR SMALLER					FOR PLUGS				FOR TEES				
D	A	B	C	E MIN.	D	A	B	C MIN.	D	A	B	C	E MIN.
20"	8"	6.5"	3.5"	2.5"	20"	7"	5"	2.5"	20"	6.5"	4.5"	3.5"	3"
16"	6"	4"	2.5"	2"	16"	4"-10"	4"-10"	2"	16"	4"-8"	4"-8"	2.5"	2.75"
12"	4"	3"	2"	1.75"	12"	4"-4"	3"	1"-9"	12"	4"	3"	2.5"	2.5"
10"	3"	3"	2"	1.75"	10"	3"	2"	1"-6"	10"	3"	2"	2"	2.25"
8"	3"	2"	2"	1.5"	8"	2"-10"	2"-6"	1"-6"	8"	2"-6"	2"	2"	2.25"
6"	2"	1.5"	2"	1.25"	6"	1"-6"	1"-6"	3"	6"	2"	2"	2"	2.25"

THRUST BLOCK DETAILS

NOTE: 3000 PSI CONCRETE TO BE USED. THRUST BLOCK TO ABUT & REST AGAINST UNDISTURBED SOIL OR EARTH COMPACTED TO 95% MODIFIED PROCTER.



MINIMUM BACKFILL UNDER OR NEAR PAVEMENT

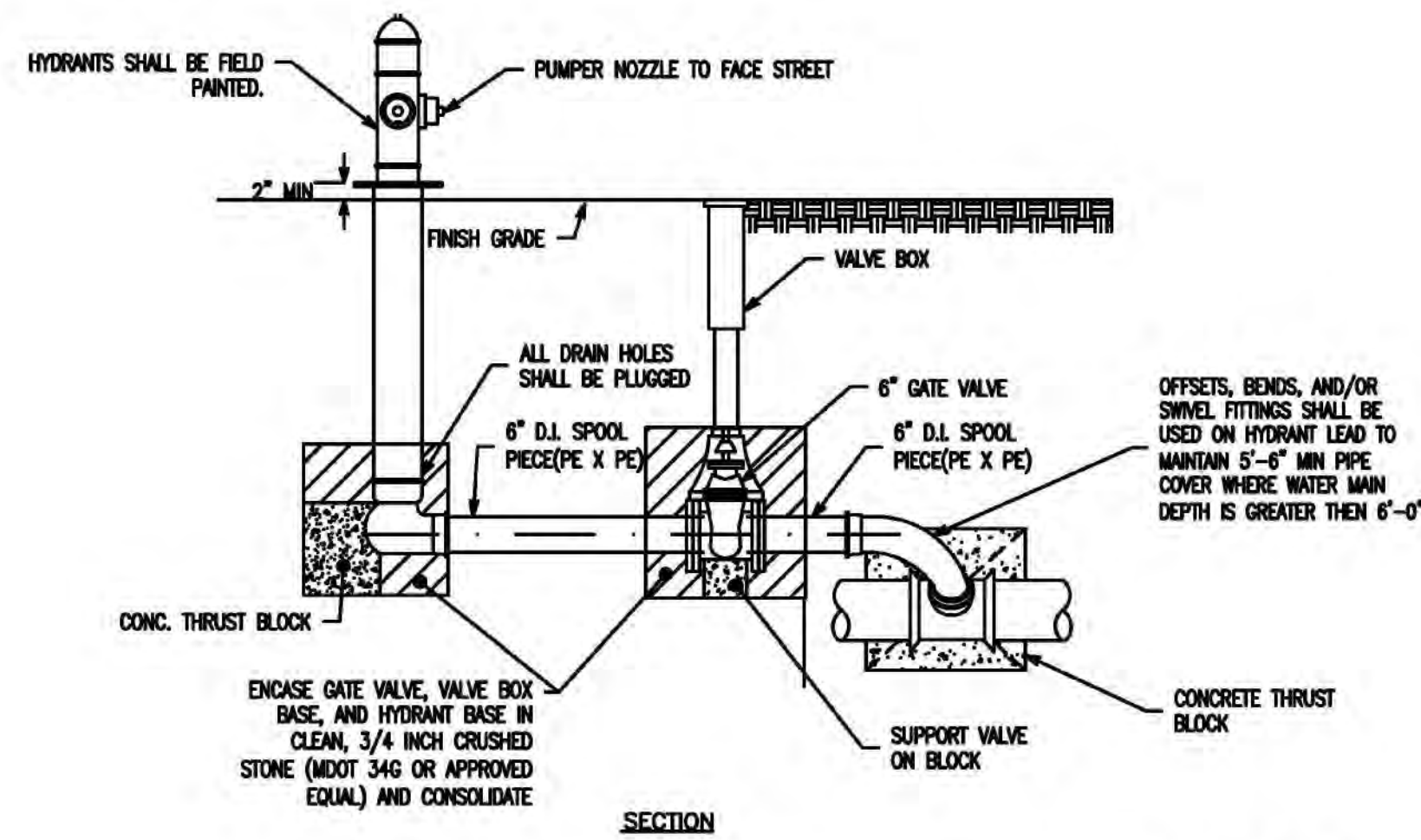


MAXIMUM PARTICLE SIZE VS. PIPE SIZE	
NOMINAL PIPE SIZE (IN)	MAXIMUM PARTICLE SIZE (IN)
6 +	1 1/2

MINIMUM TRENCH WIDTH TABLE (IN.)	
NOMINAL PIPE SIZE (IN)	TRENCH WIDTH, W
6 +	D <sub>0</sub> + 24

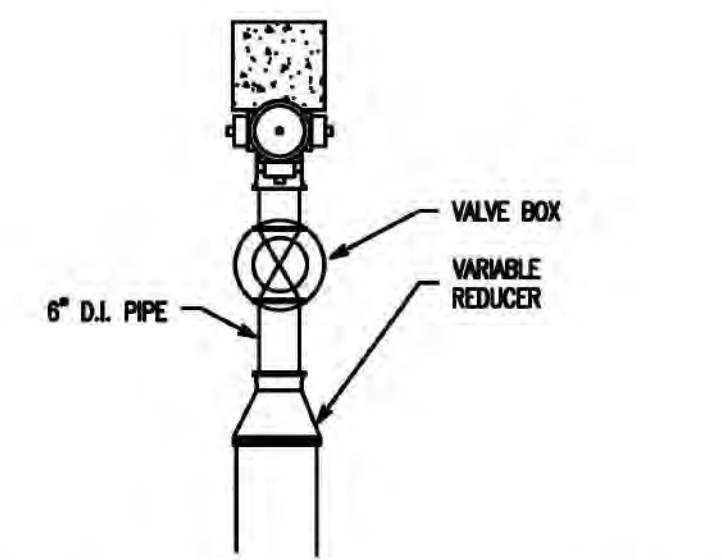
DUCTILE IRON PIPE TRENCH DETAIL

- NOTES:
- DUCTILE IRON PIPE IS CONSIDERED A FLEXIBLE PIPE THAT WHEN INSTALLED UNDERGROUND IS DESIGNED TO DEFLECT UNDER LOAD.
  - DO NOT COMPACT INNER BEDDING OF INITIAL BEDDING LAYER.
  - CAREFULLY EXCAVATE BELL OR COUPLING HOLES FROM THE INITIAL BEDDING LAYER.
  - SHOVEL SLICE BEDDING MATERIAL IN THE HAUNCH AREA ALONG THE BOTTOM CIRCUMFERENCE OF THE PIPE TO CONSOLIDATE BEDDING AND UNIFORMLY SUPPORT THE PIPE BARREL.
  - COMPACT INITIAL BACKFILL MATERIALS IN LIFTS NOT EXCEEDING 6 INCHES BY HAND TAMPING AROUND AND DIRECTLY ABOVE PIPE TO MINIMIZE VOIDS.
  - DO NOT USE MECHANICAL COMPACTION EQUIPMENT DURING INITIAL BACKFILL OPERATIONS UNTIL MATERIAL HAS BEEN BROUGHT TO 12 INCHES ABOVE THE TOP OF PIPE BARREL.
  - COMPACT SAND BACKFILL AND STANDARD TRENCHES OUTSIDE OF PIPE ZONE TO NOT LESS THAN 95% OF THE MAXIMUM UNIT WEIGHT IN LIFTS NOT EXCEEDING 12 INCHES.
  - FOR MINIMUM TRENCH WIDTHS, REFER TO TABLE 2, MAXIMUM TRENCH WIDTH = D<sub>0</sub> + 20<sub>0</sub> UNLESS MINIMUM TRENCH WIDTH IS GREATER.
  - IF THE PIPE IS LOCATED BENEATH THE GROUND WATER TABLE, THE PIPE ZONE SHALL BE WRAPPED IN A GEOTEXTILE SEPARATOR TO MINIMIZE MIGRATION OF SOIL INTO THE PIPE ZONE.

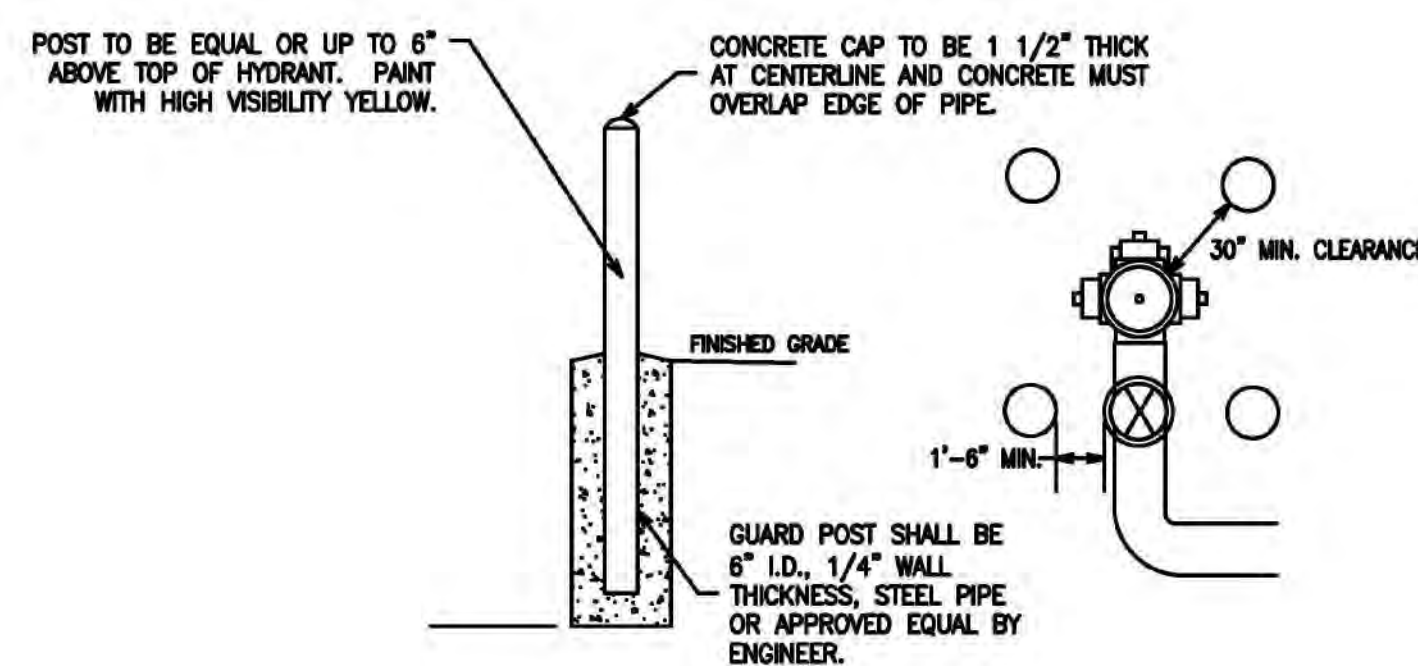


6" HYDRANT SIDE OUTLET

- NOTES:
- HYDRANT EXTENSIONS BETWEEN THE STANDPIPE LOWER SECTION & STANDPIPE UPPER ARE LIMITED TO 18 INCHES
  - ALL HYDRANTS COMPANION VALVES, BENDS, AND TEES TO BE FULLY RESTRAINED BY MECHANICAL JOINT RESTRAINT SYSTEM FITTINGS (MEGA-LUG OR APPROVED EQUAL).
  - THRUST BLOCKS ARE REQUIRED AT ALL TEES, BENDS AND ENDS.
  - ALL HARDWARE (BOLTS, NUTS, WASHERS, ETC.) FOR HYDRANT ASSEMBLIES SHALL BE COR-BLUE OR APPROVED EQUAL.



PLAN 6" HYDRANT WATER MAIN END



GUARD POST

- NOTES:
- GUARD POST SHALL NOT INTERFERE WITH HYDRANT OPERATION
  - TO BE INSTALLED IN ALL PAVED AREAS PARKING LOTS, PARKS, PLAZAS, ETC. (NOT RIGHT-OF-WAYS) SPACE WHERE VEHICLE EQUIPMENT DAMAGE TO HYDRANT IS POSSIBLE.

WATER MAIN STANDARD DETAILS

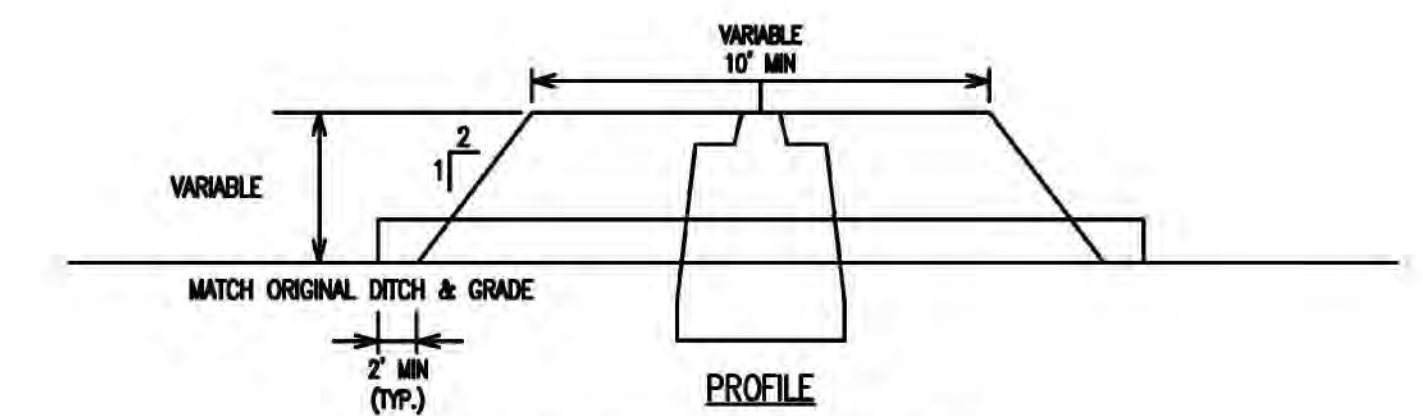
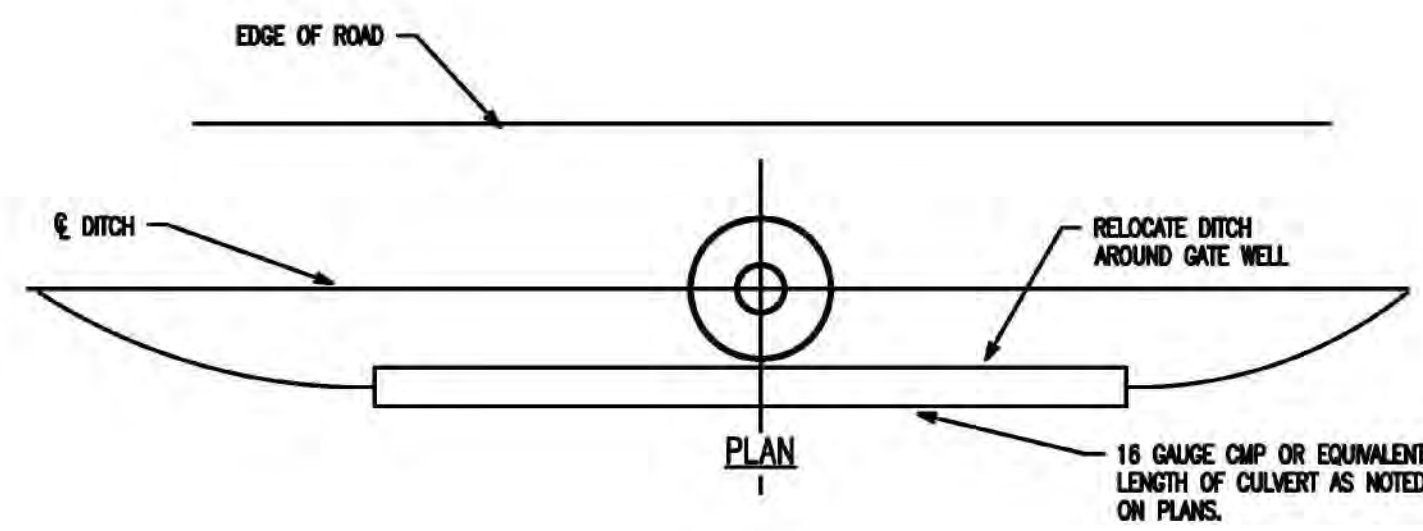
REVISION BLOCK		
Rev.	By	Date
1	CS	11/01/14
2	DL	09/29/14
3	MS	02/14/16
4	MS	08/12/20

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

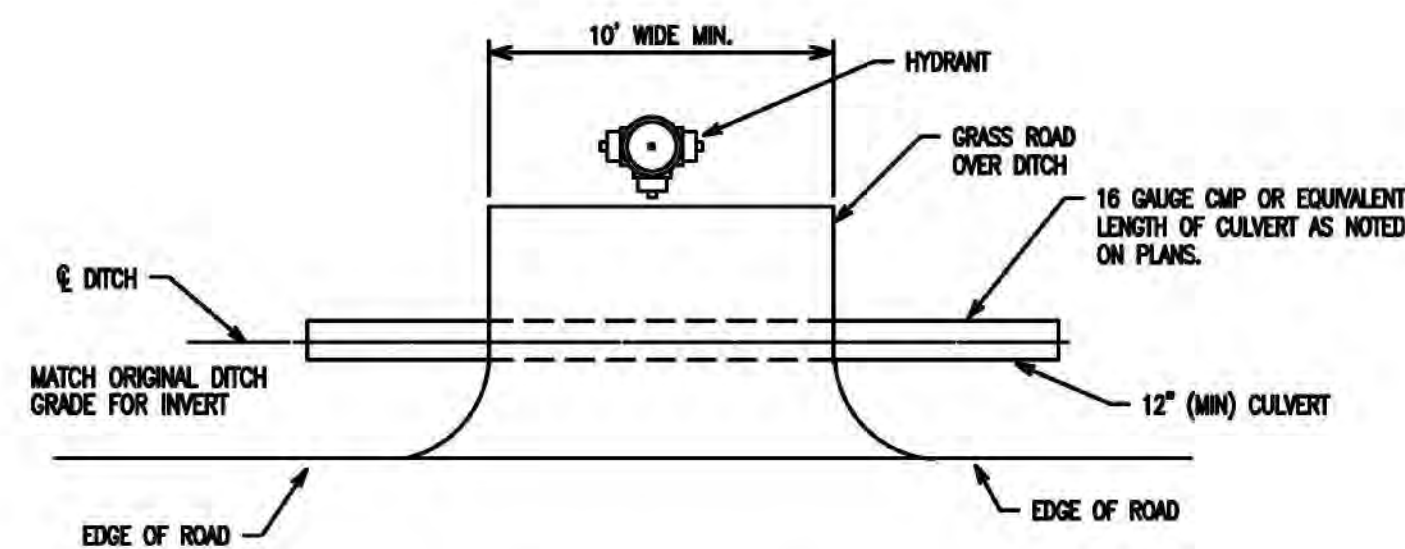
ONE PUBLIC WORKS DRIVE, BLDG 95 WEST  
 WATERFORD, MICHIGAN  
 48328-1907

WRC  
 WATER RESOURCES COMMISSIONER  
 Jim Nash

SHEET NO.: 3 of 7

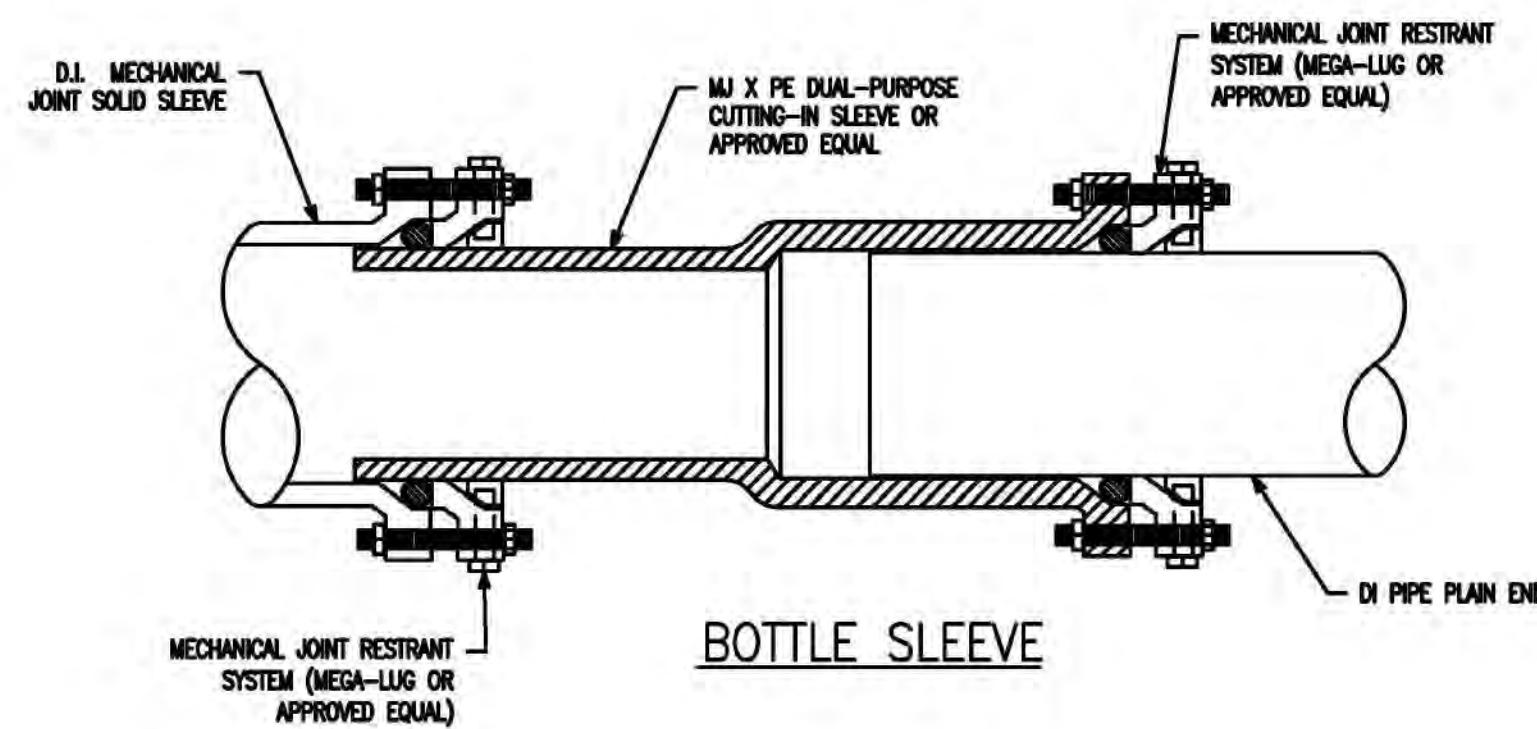


DITCH ENCLOSURE AT GATE WELL

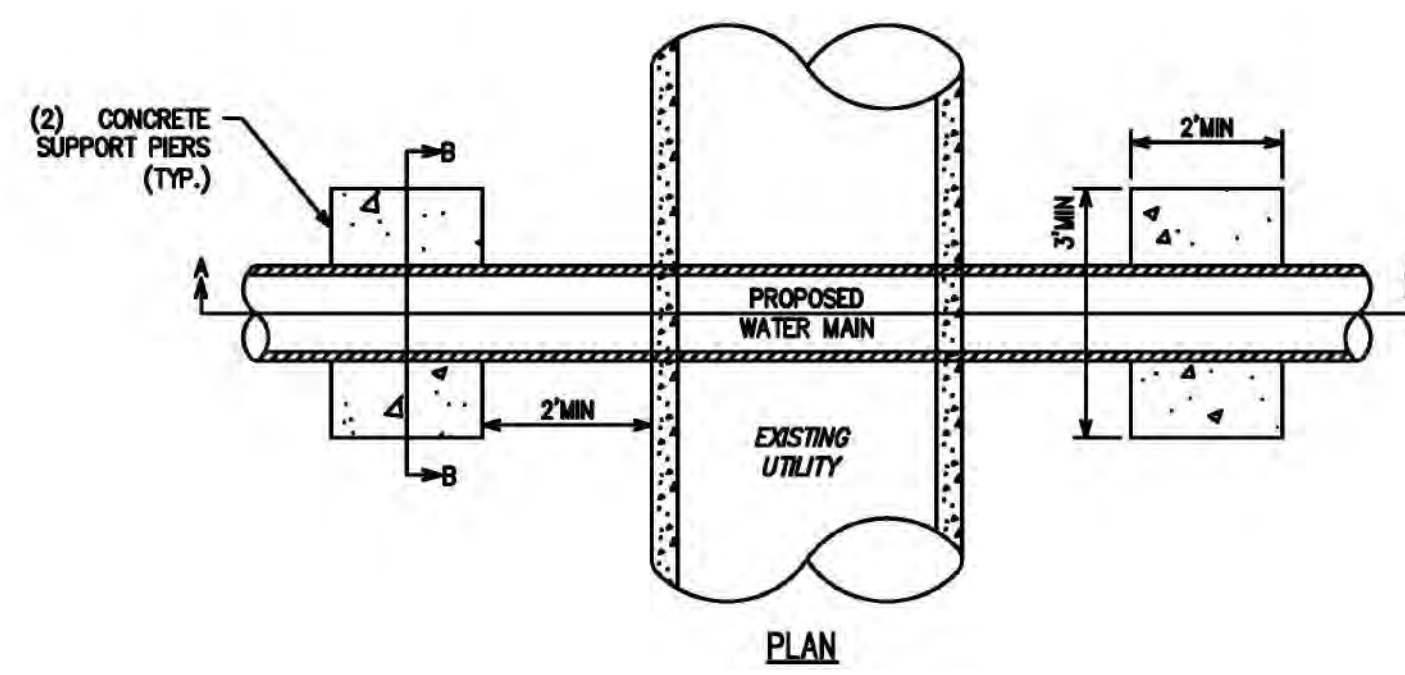


DITCH ENCLOSURE AT HYDRANT

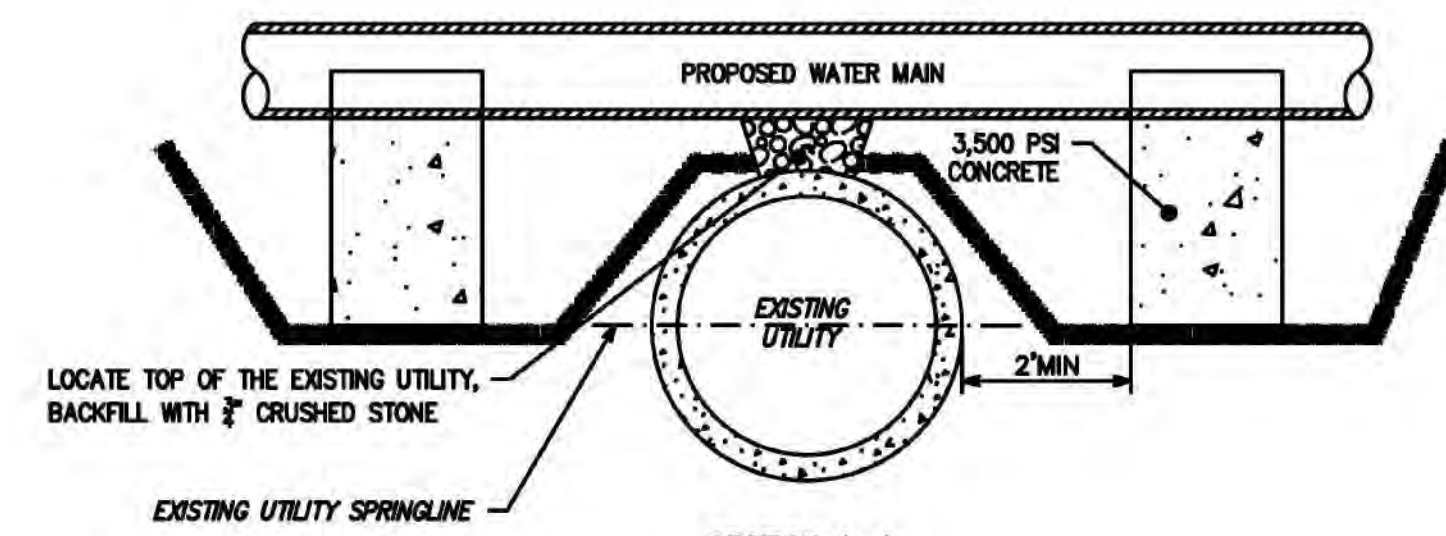
- NOTES:
- 1) REQUIRED FOR DITCHES GREATER THAN 18 INCHES IN DEPTH.
  - 2) CULVERT SHALL BE SIZED BASED ON THE EXISTING CARRY CAPACITY OF THE DITCH OR AS REQUIRED BY THE PERMITTING AUTHORITY FOR THE LOCAL ROAD AGENCY. STAMPED ENGINEERING CALCULATIONS ARE REQUIRED FOR ALL CULVERT INSTALLATION.
  - 3) MINIMUM DEPTH OF COVER FOR CULVERT PIPE IS 12 INCHES UNLESS OTHERWISE AUTHORIZED BY CULVERT MANUFACTURER.
  - 4) END SECTIONS ON CULVERTS GREATER THAN 12 INCHES IN DIAMETER.



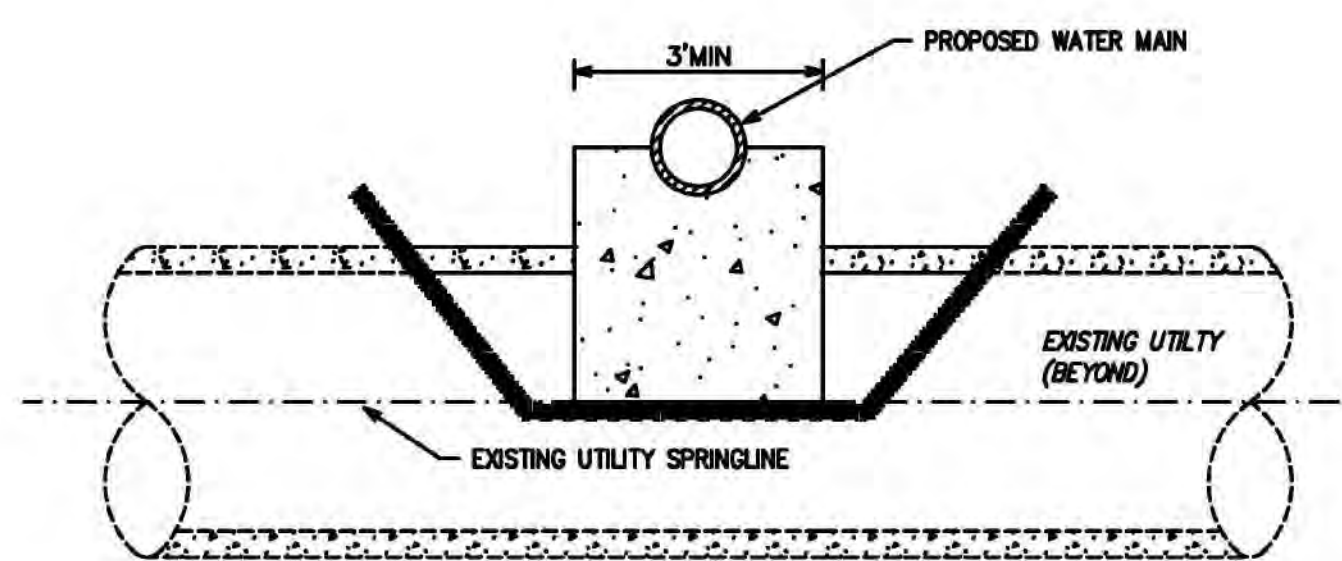
BOTTLE SLEEVE



PLAN



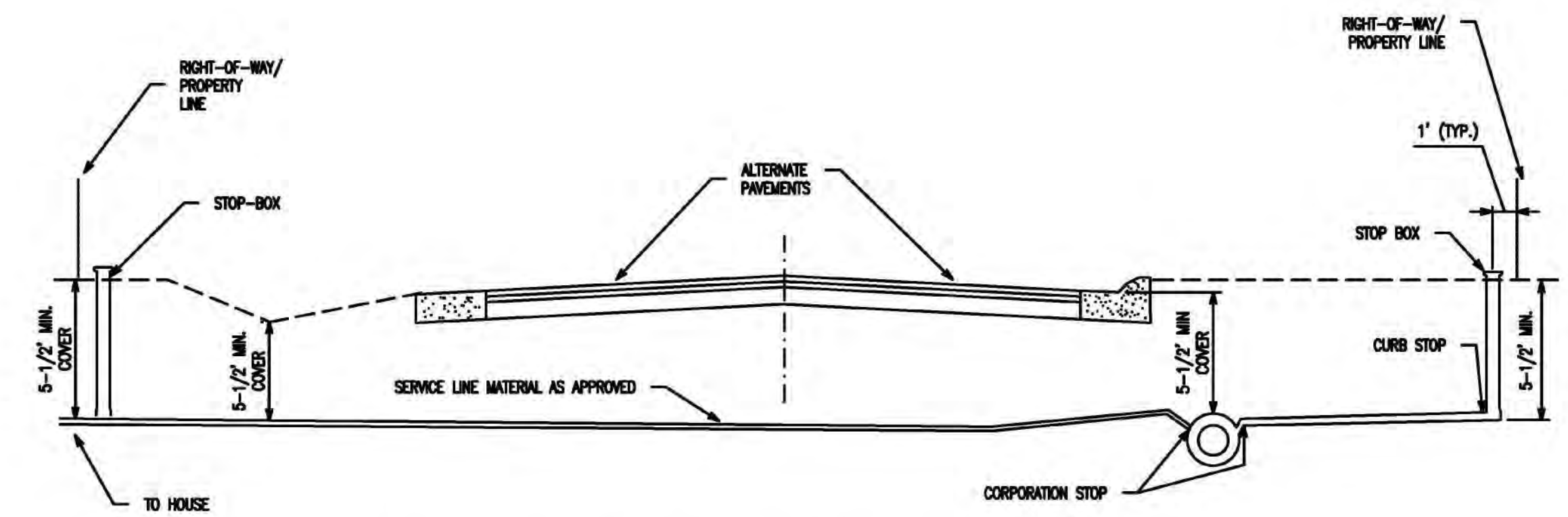
SECTION A-A



SECTION B-B

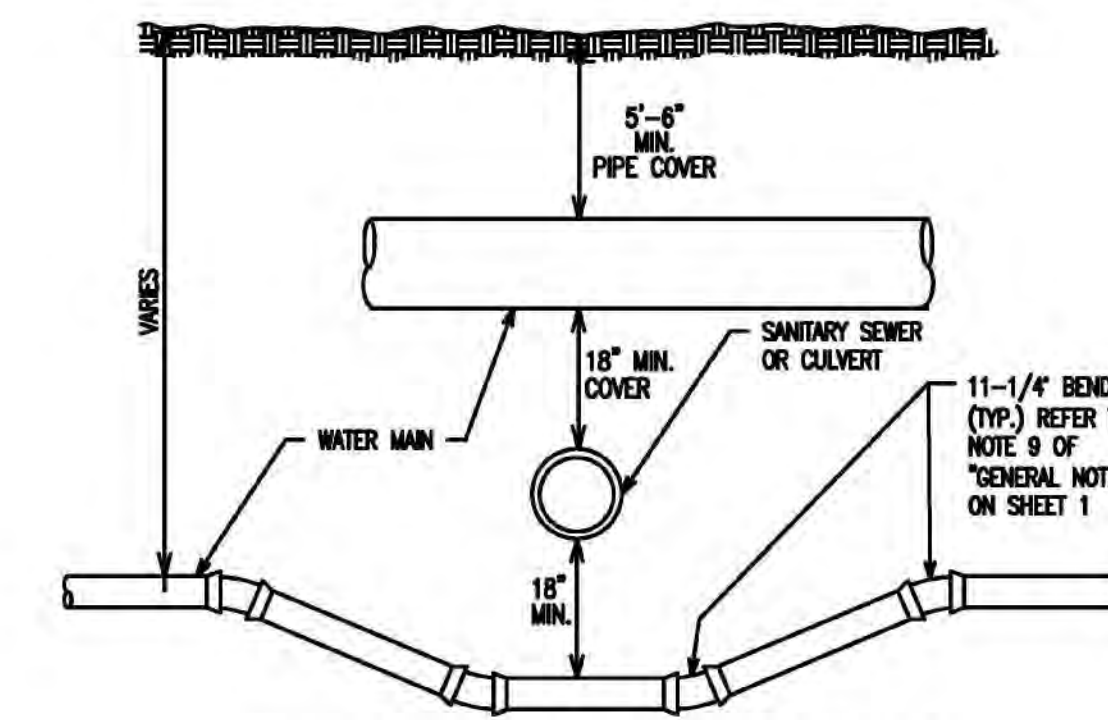
WATER MAIN CROSSING BRIDGE

- NOTES:
1. CROSSING BRIDGE IS REQUIRED WHEN 18 INCHES OF CLEARANCE OR GREATER ABOVE (WITHIN A 1:1 INFLUENCE OF THE SPRING LINE) AN EXISTING UTILITY CANNOT BE MAINTAINED.
  2. WATER MAIN PIPE SPANNING THE EXISTING UTILITY MUST BE CENTERED BETWEEN JOINTS OVER THE EXISTING UTILITY.
  3. ALL WORK NECESSARY TO INSTALL THE WATER MAIN CROSSING BRIDGE AS SHOWN SHALL BE CONSIDERED INCLUDED IN THE COST OF THE PROJECT UNLESS OTHERWISE NOTED.
  4. CROSSING FOR PROPOSED WATER MAIN 16-INCH AND LARGER SHALL BE DESIGNED BY A LICENSED PROFESSIONAL ENGINEER.



TYPICAL PUBLIC ROAD WATER SERVICE CONNECTION

- NOTES:
1. WATER SERVICE CURB STOP TO BE PLACED ONE (1) FOOT OFF THE PROPERTY LINE.
  2. LATERAL LOCATION SHALL BE AS REQUESTED BY THE ABUTTING PROPERTY OWNER.
  3. SERVICE TAP LOCATION TO BE AT CLOCK POSITION 10:30 OR 1:30 UNLESS OTHERWISE INDICATED.



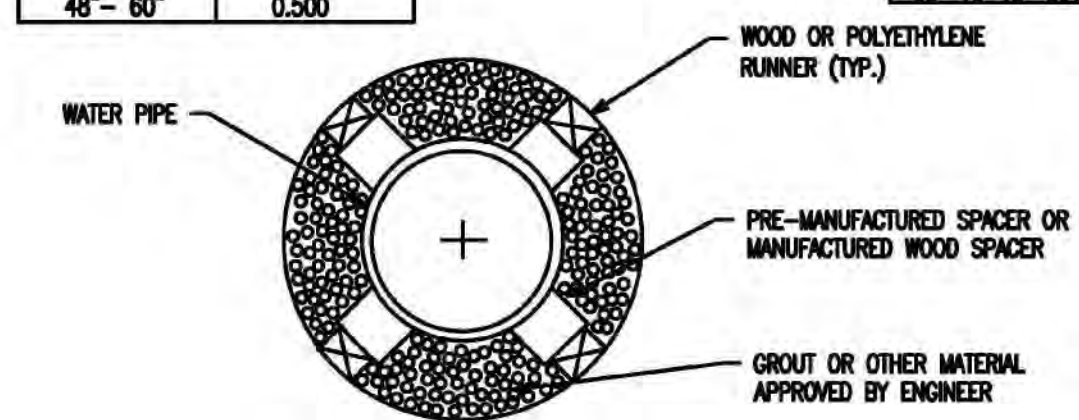
SEWER OR CULVERT CROSSING

UNLESS OTHERWISE SPECIFIED, MINIMUM CASING PIPE SHALL BE ASTM A-139 GRADE B, WALL THICKNESS AS FOLLOWS:

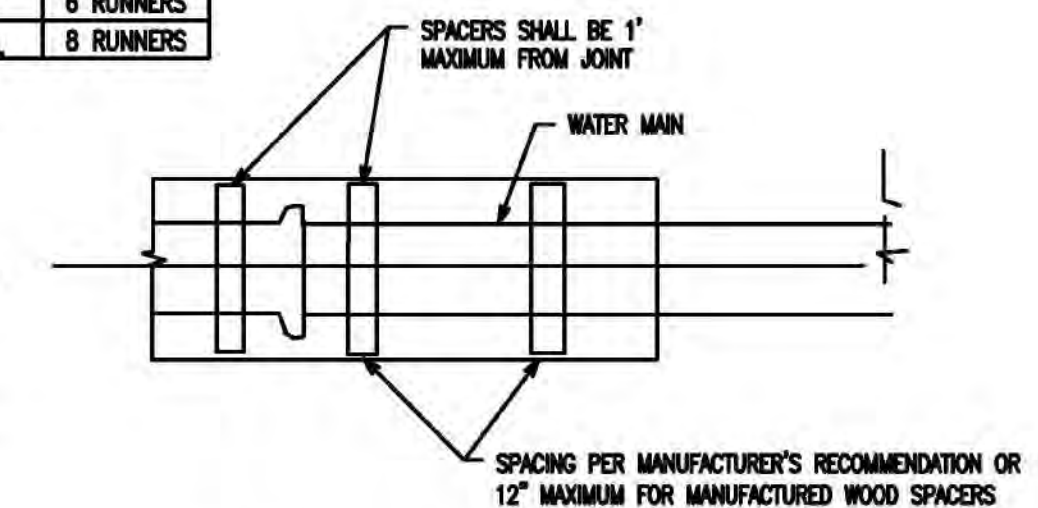
NOMINAL SIZE	MINIMUM WALL THICKNESS
8" - 42"	0.375
48" - 60"	0.500

REQUIRED QUANTITY OF RUNNERS IN ACCORDANCE WITH SIZE:

TO 14" DIA.	4 RUNNERS
16" TO 36" DIA.	6 RUNNERS
38" TO 48" DIA.	8 RUNNERS



SUPPORT FOR WATER MAIN CONSTRUCTED IN CASING PIPE



WATER MAIN IN CASING SECTION

WATER MAIN IN CASING DETAILS

**WATER MAIN SPECIAL DETAILS**

REVISION BLOCK			
Rev.	Date	By	Description
1	08/19/13		MANUFACTURE PER O. APPEL
2	10/01/13		GENERAL UPDATE
3			
4			

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

**WRC**  
 WATER RESOURCES COMMISSIONER  
 Jim Nash

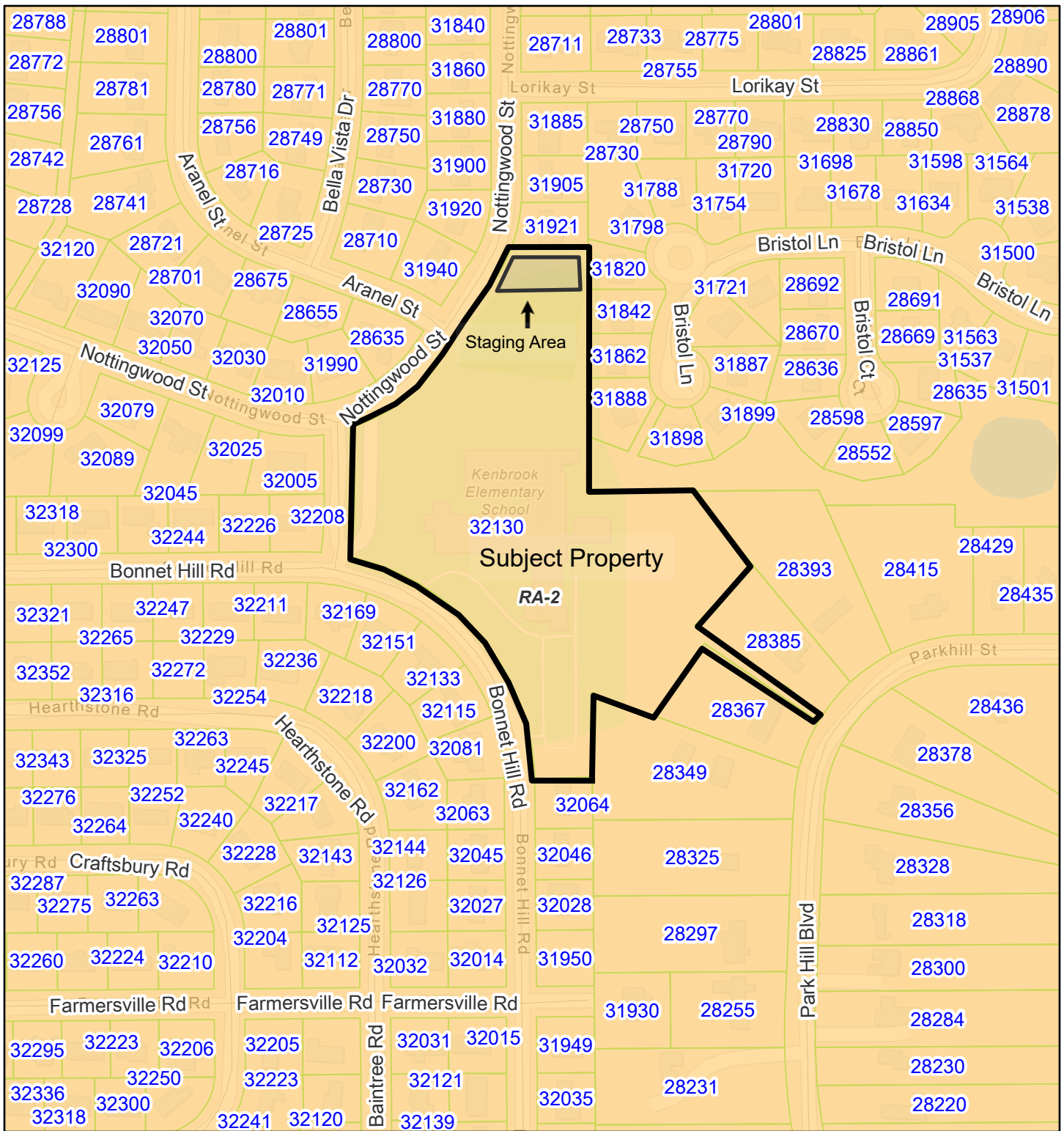
ONE PUBLIC WORKS DRIVE, BLDG 56 WEST  
 WATERFORD, MICHIGAN  
 48328-1807

SHEET NO.: 4 OF 7

## **SPECIAL APPROVAL 51-3-2026**



LOCATION: 32130 Bonnet Hill Road  
PARCEL I.D.: 22-23-10-405-006  
PROPOSAL: Temporary staging area for Kendallwood 3  
Subdivision Water Main Replacement  
Project within the RA-2: One Family  
Residential District  
ACTION REQUESTED: Special Land Use Approval  
APPLICANT: Murphy Pipeline Contractors  
OWNER: Farmington Public Schools

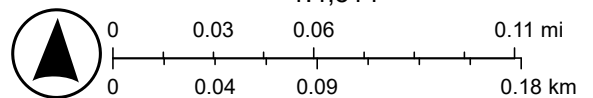
# Current Zoning - 32130 Bonnet Hill Rd



4/10/2026, 9:28:01 AM

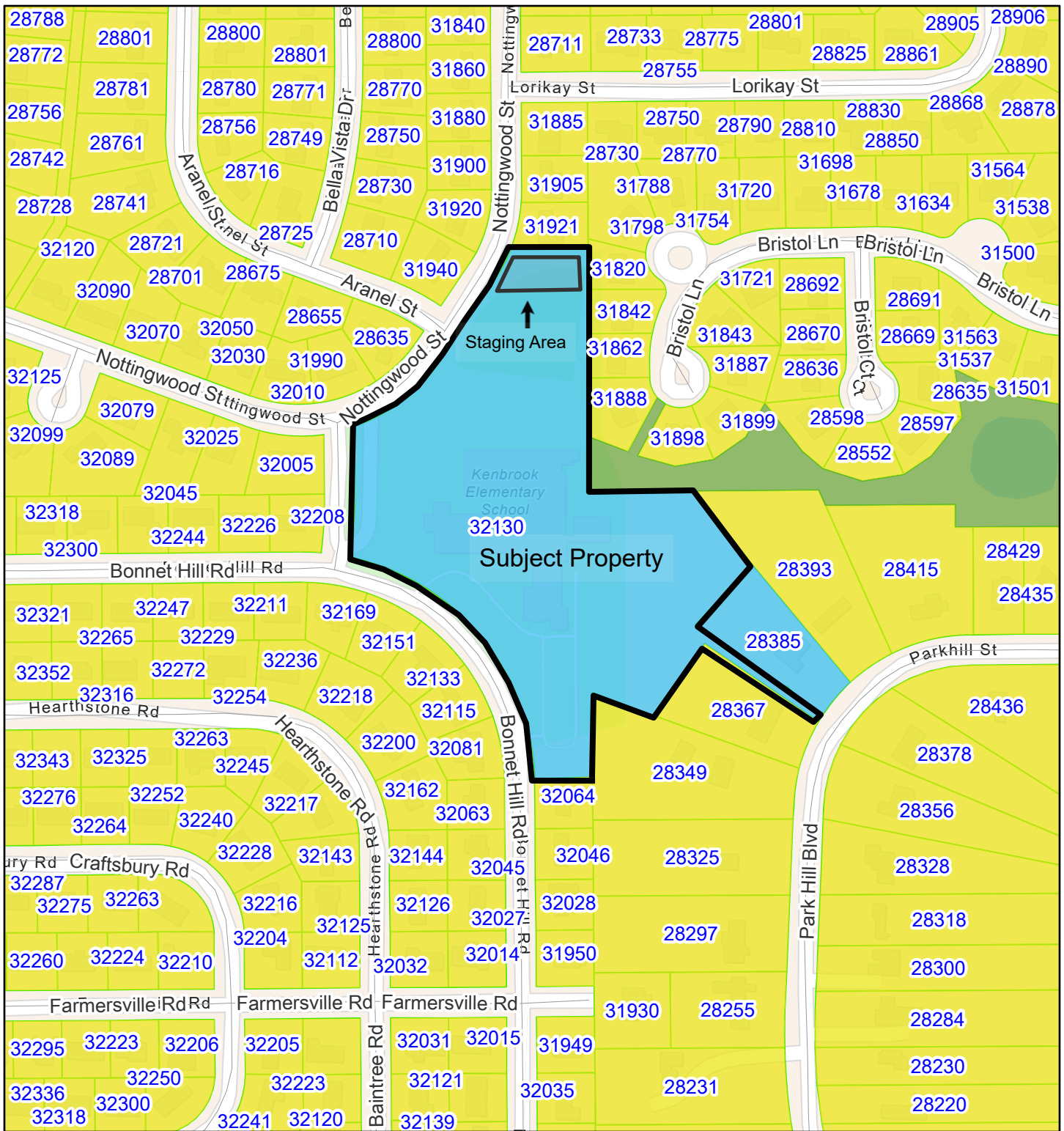
## Zoning districts

-  RA-2
-  Tax Parcels



Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

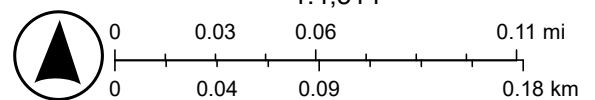
# Future Land Use - 32130 Bonnet Hill Rd



4/10/2026, 9:29:23 AM

Master Plan (2024)

- Private Recreation
- School
- Single-Family Residential
- Tax Parcels



Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

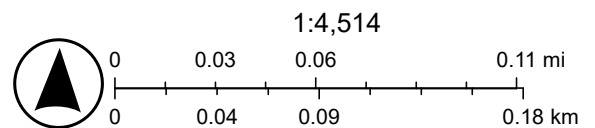
City of Farmington Hills, MI

(c) City of Farmington Hills. DISCLAIMER: Map is for reference use only and not a recorded survey. The City of Farmington Hills assumes no liability for any claims arising from use of this map.

# Aerial Location Map - 32130 Bonnet Hill Rd

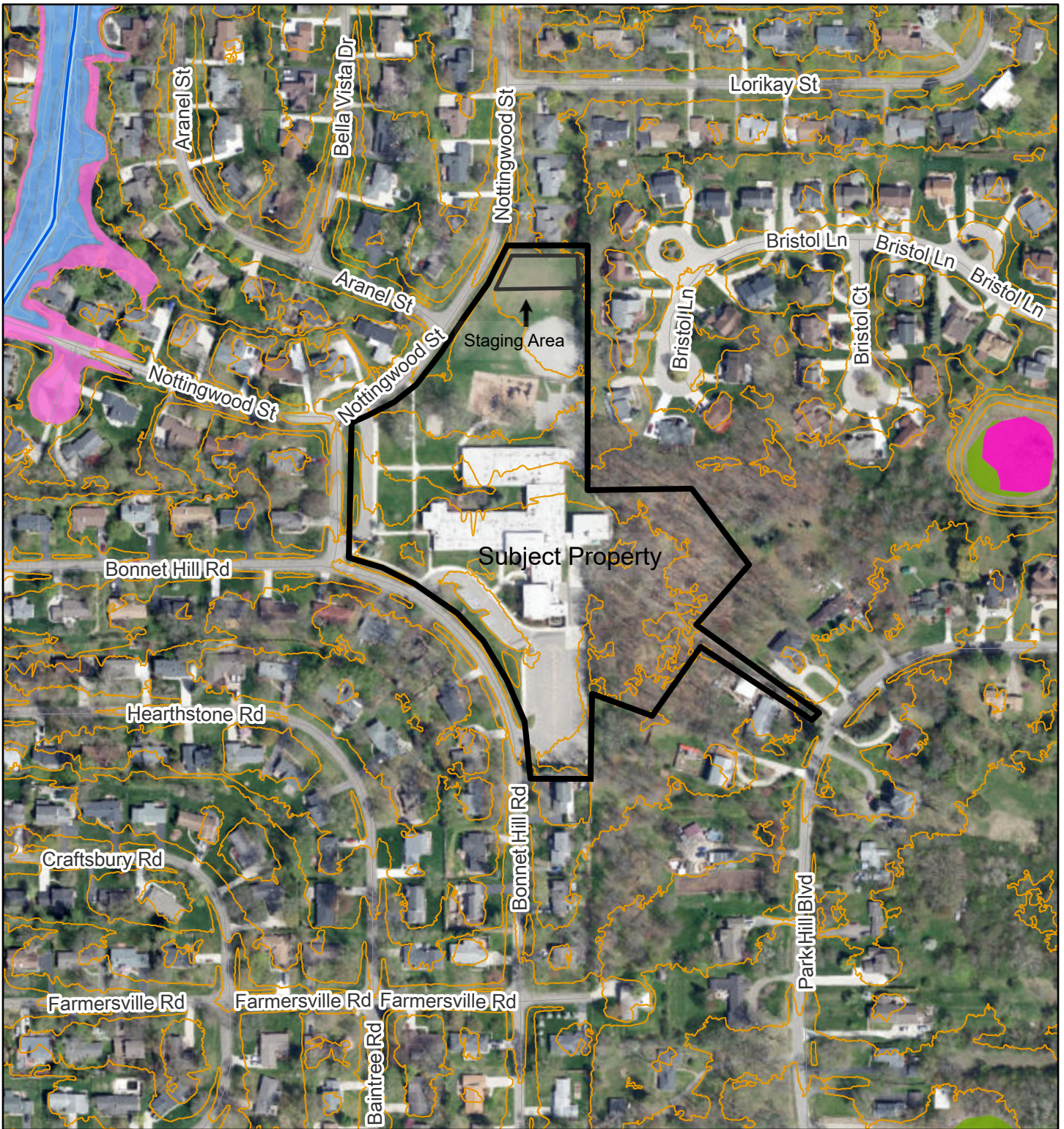


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








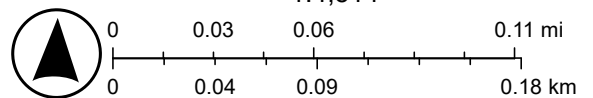
Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

# Natural Features - 32130 Bonnet Hill Rd



4/10/2026, 9:40:07 AM

- |                                                                                    |                                                                                     |                   |
|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------|
| Drain open                                                                         |  | Channel           |
|  |                                                                                     | Flood Hazard Area |
| Drain waterbody                                                                    |  | AE                |
|  |  | 500 yr floodplain |
|  |  | 2-foot contours   |
|                                                                                    |                                                                                     | Swamp-marsh       |



Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community



# Carlisle | Wortman ASSOCIATES, INC.

117 NORTH FIRST STREET SUITE 70 ANN ARBOR, MI 48104 734.662.2200 734.662.1935 FAX

Review Date	Plan Date
April 10, 2026	N/A

## Special Land Use Site Plan Review for The City of Farmington Hills

**Case:** SA 51-3-2026 - Temporary Staging Area - Kenbrook Elementary School

**Site:** 32130 Bonnet Hill Road (23-10-405-006)

**Applicant:** Murphy Pipeline Contractors

**Application Date:** March 16, 2026

**Zoning:** RA-2 One Family Residential District

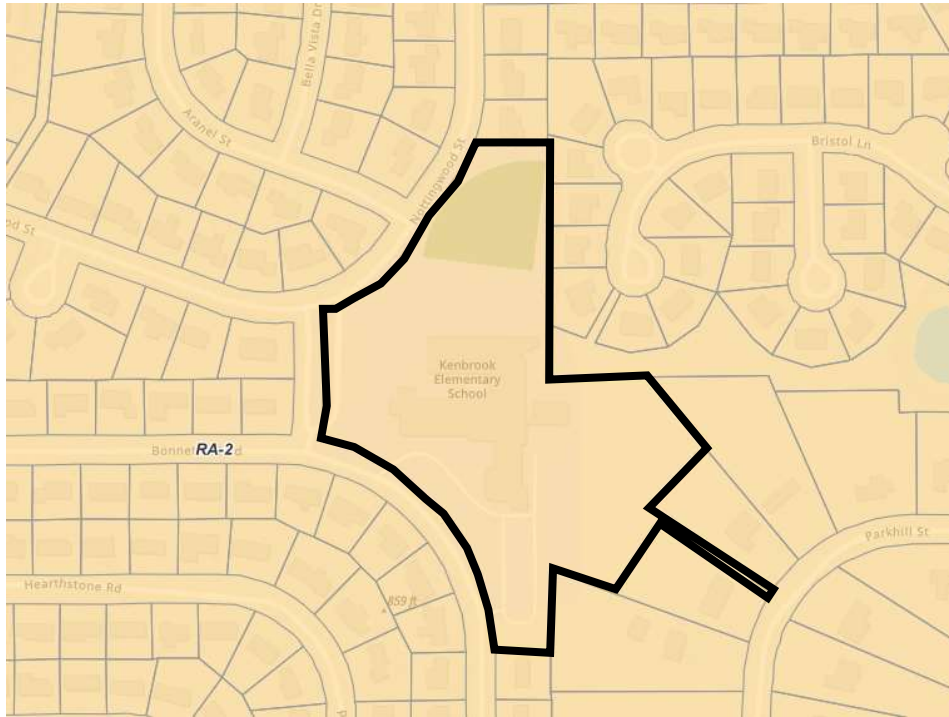
**Action Requested:** Special land use site plan approval.

### *Arial Photo of Subject Site*



Benjamin R. Carlisle, *President* John L. Enos, *Vice President* Douglas J. Lewan, *Principal*  
 David Scurto, *Principal* Sally M. Elmiger, *Principal* R. Donald Wortman, *Principal* Craig Strong, *Principal*  
 Paul Montagno, *Principal* Megan Masson-Minock, *Principal* Laura Kreps, *Principal*  
 Richard K. Carlisle, *Past President/Senior Principal*

**Zoning of Subject Site**



**SUMMARY OF FINDINGS**

**Existing Conditions**

1. **Zoning.** RA-2 One Family Residential District
2. **Existing Site.** The subject site is approximately 9.5 acres in area, and is currently in use as a school (Kenbrook Elementary School).
3. **Adjacent Properties.**

Direction	Zoning	Use
North	RA-2 One Family Residential District	Single family residential, Westbrook Manor 1/Orchard West subdivisions.
South	RA-2 One Family Residential District	Single family residential, Park Hill/Kendallwood 3 subdivisions.
East	RA-2 One Family Residential District	Single family residential, Orchard West/Park Hill subdivisions.
West	RA-2 One Family Residential District	Single family residential, Westbrook Manor 1/Kendallwood 3 subdivisions.

4. **Site Configuration and Access.** The school building is located in the approximate center of the subject site, and is accessible from Bonnet Hill Road via two (2) driveways to the building's south.

A parking lot and pickup lanes are also to the south of the building. A playground and open lawn area is located to the north of the building.

**Site Plan**

- 1. Proposed Use.** The applicants are proposing a temporary construction staging area in the lawn located on the northern-most portion of the subject site. The staging area will be used to store materials associated with the Kendallwood 3 water main replacement project along Nottingwood Street. The location was selected in consultation with Farmington Public Schools (FPS). The applicants have indicated that FPS have agreed to its use as proposed. A temporary chain link fence will be installed along the south side of the staging area to provide a clear separation between construction operations and areas accessible to students. A snow fence will be installed around the remainder of the staging area. Access will be provided via a stone approach from Nottingwood Street with a culvert to maintain drainage.

The staging area will be in use from April 2026 through the end of October 2026. The construction materials to be stored in the staging area include dirt, stone, and pipe fittings. The applicants have indicated that material stockpiles will not exceed seven (7) feet in height.

**2. Dimensional Requirements.**

<b>RA-2 District Requirements (Section 34-3.1.5.E)</b>			
<b>Standard</b>	<b>Required</b>	<b>Existing</b>	<b>Proposed</b>
Min. lot size	15,000 sf./16,500 sf.min. avg. per subdivision.	9.5 acres	Staging area proposed in north portion of property. Total area not provided.
Min. lot width	90 ft.	N/A	N/A
Min. front setback	35 ft.	N/A	N/A
Min. side setback	8 ft. one side/20 ft. total	N/A	N/A
Min. rear setback	35 ft.	N/A	N/A
Lot coverage	35%	N/A	N/A
Max. building height	30 ft.	N/A	N/A

- 3. Parking Requirements.** The application documents do not indicate that the staging area will be used for parking. The applicants must confirm where vehicles will park when the project is underway.
- 4. Circulation.** The staging area will be accessible via a stone access road from Nottingwood Street with a culvert to maintain drainage. The layout sketch indicates that construction vehicles will access the project area from the south via Aranel Street.
- 5. Landscape Development.** Not applicable.
- 6. Exterior Lighting.** No exterior lighting was proposed; however, this must be confirmed.

## SPECIAL USE STANDARDS

1. **Special Land Uses (34-4.20).** According to Section 34-4.20.4.C., Temporary construction uses not directly accessory to any existing use of the zoning lot, but necessary for the use or improvement of some other property or properties within the City for a permitted purpose are permitted as a Special Land Use if the Planning Commission determines that standards established in Section 34-4.20.4.C are met. Those standards, and our comments on the proposal according to those standards, are listed below.

- i. The planning commission shall examine the proposed use and determine that the petitioner has adequately explored alternative locations and that the location proposed is the most reasonable.

**CWA Comments:** *The applicants have indicated that they selected the proposed location in coordination with FPS in order to minimize the impact on school operations. They have also indicated that they considered alternatives, but no feasible locations are available.*

- ii. The planning commission shall examine the location of structures on the site and determine that they are the most appropriate, may require reasonable temporary screening of the activity proposed, may suggest the location of vehicular access to the site and make other recommendations which will assist in the protection of nearby uses during the time the construction use is in operation.

**CWA Comments:** *The staging area will be accessed via a stone approach from Nottingwood Street with a culvert to maintain drainage. A chain link fence is proposed along the south side of the staging area, and a snow fence is proposed around the remaining perimeter. Existing vegetation provides screening along the north and east sides of the staging area.*

*The Planning Commission should determine if the entire staging area should be enclosed by a chain link fence for improved security. The Planning Commission should also determine if additional visual screening is necessary along the west and south boundaries of the staging area.*

- iii. All setbacks, land coverage, off-street parking, lighting and other requirements for protecting the public health, safety, peace, morals, comfort, convenience and general welfare of the inhabitants of the city shall be determined by the planning commission as being appropriate to the site and surrounding area.

**CWA Comments:** *While the proposed location encroaches into required setbacks, it minimizes conflicts with school operations. We do note that the staging area will be in close proximity to several adjacent dwellings, but it is not clear that feasible alternatives are available. The Planning Commission should determine whether other measures, such as a more secure enclosure or visual screening, are required to ensure the proposed staging area is appropriate to the site and surrounding area.*

- iv. The act of granting approval of a use not otherwise permitted in a district shall in no way be construed as a change in the basic uses permitted in the district nor on the property wherein the use is permitted.

**CWA Comments:** *The proposed activity will not change the current use of the property.*

- v. The granting of permission for the use shall be made in writing stipulating all conditions as to length of time, nature of developed permitted and arrangements for removing the use at the termination of the period of time granted.

**CWA Comments:** *We recommend that the Planning Commission specify these items in the form of a motion to be reflected in the meeting minutes. We defer to the City Attorney as to whether an alternative or additional written document is necessary.*

2. **Special Land Use and Special Approval Use Standards (34-6.3)** According to Section 34-4.20.1.A, the uses listed under Section 34-4.20 may be permitted subject to the special land use/special approval use standards listed under Section 34-6.3. Those standards, and our comments on the proposal according to those standards, are listed below.

1. Taking into consideration the size, location and character of the proposed land use, viewed within the context of surrounding land uses and land use planning for such area, the proposed use shall not be incompatible nor inharmonious, as determined by the application of generally accepted planning standards and/ or principles, with:

- A. The surrounding uses; and/or
- B. The orderly development of the surrounding neighborhood and/or vicinity.

**CWA Comments:** *As previously discussed, the proposed location appears to minimize the impact on school operations. The Planning Commission should determine whether there are alternatives that would add greater separation between the staging area and adjacent dwellings without impacting the school.*

2. The proposed use shall be of a nature that will make vehicular and pedestrian traffic no more hazardous than is normal for the district involved, taking into consideration vehicular turning movements in relation to routes of traffic flow, proximity and relationship to intersections, adequacy of sight distances, location and access of off-street parking and provisions for pedestrian traffic, with particular attention to minimizing pedestrian-vehicle interfacing.

**CWA Comments:** *To control traffic, the applicants are proposing to close a lane along Nottingwood Street with traffic control measures use flaggers as-needed during pipe fusing operation. Two-way traffic to be maintained during all other times. We defer to the City Engineer as to whether alternative or additional traffic control measures should be implemented.*

3. The proposed use shall not unreasonably impact upon surrounding property in terms of noise, dust, fumes, smoke, air, water, odor, light and/or vibration, and shall not unreasonably impact upon a person perceiving the operation in terms of aesthetics. Where such concerns can be remedied by way of design, construction and/or use, the proposed use shall be designed, constructed and used so as to eliminate the effects of the use which would otherwise substantiate denial thereof, taking into consideration the location, size, intensity, layout and periods of operation of such use.

**CWA Comments:** *In general, we expect that the staging area minimizes the project's impacts on adjacent properties to the extent possible. The applicants have indicated that they will use water as needed for dust control and that no lighting is proposed. The Planning Commission should confirm that no lighting is proposed and how the 7-foot high dirt piles will be contained within the staging area. The Planning Commission should determine whether any other measures are required to mitigate impacts on surrounding properties such as additional dust and soil erosion control measures or, as previously mentioned, installation of temporary screening along the west and south boundaries of the staging area.*

*The provided project narrative indicates that the temporary staging area will be used for seven (7) months (April through October of 2026) and that work will be performed during normal working hours. The applicants must confirm the times and days of the week that work will be performed.*

4. The proposed use shall be such that the proposed location and height of buildings or structures and the proposed location, nature and height of walls, fences and landscaping will not interfere with or discourage the appropriate development and use of adjacent land and buildings or unreasonably affect their value.

**CWA Comments:** *The proposal is for a temporary activity associated with public infrastructure improvements. We do not anticipate any long-term negative impacts on the value of adjacent properties.*

5. The proposed use shall relate harmoniously with the physical and economic aspects of adjacent land uses as regards prevailing shopping habits, convenience of access by prospective patrons, continuity of development, and need for particular services and facilities in specific areas of the City.

**CWA Comments:** *The staging area will enable an infrastructure project that will improve the provision of public services in the area.*

6. The proposed use is so designed, located, planned and to be operated so that the public health, safety and welfare will be protected.

**CWA Comments:** *Provided that any concerns identified by FPS and the City Engineer are addressed, the Planning Commission should determine whether any other measures are needed to project public health, safety, and welfare.*

7. The proposed use shall not cause substantial injury to the value of other property in the neighborhood in which it is to be located and will not be detrimental to existing and/or other permitted land uses in the zoning district.

**CWA Comments:** *The applicants have indicated the location will be remediated when the project is complete. If the special land use is approved, the Planning Commission may include a condition that any impact on adjacent properties will be mitigated as well.*

8. The proposed use shall not result in an impairment, pollution and/or destruction of the air, water, natural resources and/or public trust therein.

**CWA Comments:** *The applicants appear to be taking the necessary precautions to minimize any potential pollution.*

9. The proposed use shall not unreasonably burden the capacity of public services and/or facilities.

**CWA Comments:** *The proposal will facilitate an improvement to public infrastructure.*

10. The proposed use shall have appropriate physical, visual and spatial characteristics based upon compatible design and architectural elements that relate harmoniously to the design characteristics of area development.

**CWA Comments:** *Not applicable.*

## SUMMARY

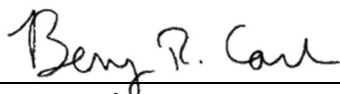
Prior to taking action on the proposal, the following items must be addressed to the Commission's satisfaction:

1. *The applicants must confirm where vehicles will park when the project is underway.*
2. *The applicants must confirm that no exterior lighting is proposed.*
3. *The applicants must confirm the times and days of the week that work will be performed.*
4. *The applicants must confirm that dirt piles will be adequately contained within the staging area.*
5. *Any items identified by the City Attorney, City Engineer, and Fire Department must be addressed.*

In addition, we recommend that the Commission make the following determinations:

1. *Whether a chain link fence should be provided around the entire staging area for improved security.*
2. *Whether alternative locations would be more appropriate, or whether additional screening is necessary to minimize impacts on adjacent property. While the Commission could discuss options with the applicants, it is not clear that feasible alternative locations are available.*
3. *Whether to include a condition of approval that all impacts from construction activity on the subject property and adjacent property must be remediated to pre-construction conditions.*

We also recommend that the Commission specify findings according to the criteria listed in Section 34-4.20.4.C and Section 34-6.3 as part of its motion to approve, approve with conditions, or deny the proposal.



CARLISLE/WORTMAN ASSOC., INC.  
Benjamin R. Carlisle, AICP, LEED-AP  
President



CARLISLE/WORTMAN ASSOC., INC.  
Mike Auerbach, AICP  
Senior Associate



DEPARTMENT OF PUBLIC SERVICES  
JACOB RUSHLOW, P.E., DIRECTOR

## INTEROFFICE CORRESPONDENCE

**DATE:** April 9, 2026

**TO:** Nora Brock, Secretary to the Director of  
Planning and Community Development

**FROM:** Dayton Emerson, Civil Engineer I

**SUBJECT:** Review for Special Approval Plan 51-3-2026 – 32130 Bonnet Hill Road  
Staging Area Kendallwood 3 Water Main Project, Murphy Pipeline Contractors  
PID: 22-23-10-405-006

---

This office has performed a review of the above referenced site plan submitted to the Planning Department on March 24, 2026. Our preliminary comments are as follows:

1. Dust and soil erosion control must meet City standards and the conditions of the Soil Erosion and Sedimentation Control permit. Street sweeping of the roads between the construction site and the staging area will also be required as determined by the City Engineering Division.
2. We note that construction working hours are limited from 7am to 7pm, Monday to Saturday. Any noise, traffic, or unauthorized construction activity issues must be addressed as per the requirements of the City Code and City Engineering Division.



# FIRE

## FARMINGTON HILLS



### INTEROFFICE CORRESPONDENCE

Date: April 9, 2026  
To: Planning Commission  
From: Jason Baloga, Fire Marshal  
Subject: SA 51-3-2026 (32130 Bonnet Hill Road), #22-23-10-405-006, Staging area Kendallwood 3 water main project, Murphy Pipeline Contractors.

The Fire Department has no objection to approval contingent upon compliance with the following.

1. Fire Department shall be contacted for any flammable or combustible liquid above ground tank placement.

A handwritten signature in blue ink, appearing to read 'Jason Baloga'.

Jason Baloga, Fire Marshal

JB/ss

March 11, 2026

City of Farmington Hills  
31555 West Eleven Mile Rd  
Farmington Hills, MI 48336

Re: Kenbrook Elementary School Green Space Use

To Whom It May Concern,

Murphy Pipeline Contractors would like to request the temporary use of a section of green space located at Kenbrook Elementary School, 32130 Bonnet Hill Road, for use as a construction staging area associated with the ongoing infrastructure work in the area. The proposed duration of use will be from April 2026 through the end of October 2026.

The proposed staging area location has been coordinated and agreed upon with Farmington Public Schools. We have been in contact with the school's facilities management team and have executed the necessary waiver for the temporary use of this space.

Material stockpiles within the staging area will be organized and maintained so they do not exceed 7 feet in height. The existing vegetative buffer along the property line will remain in place and will continue to provide screening for neighboring residences.

For safety purposes, particularly due to the proximity of Kenbrook Elementary School, a temporary chain link fence will be installed along the south side of the staging area to provide a clear separation between construction operations and areas accessible to students. Access to the staging area will be controlled and limited to authorized personnel only.

Murphy Pipeline Contractors will also implement standard construction management practices to minimize impacts to the surrounding area. These measures include controlling dust through water applications when necessary, maintaining orderly material storage, limiting idling of equipment where possible, and maintaining equipment in proper working condition to reduce unnecessary noise. Work activities at the staging area will occur during normal construction working hours.

Due to the location and logistics of the project, there are no other suitable alternative staging areas available within close proximity that would allow the work to be performed efficiently while minimizing additional transportation and traffic impacts to the surrounding community.

At the conclusion of the project, the area will be restored to its existing condition. Any temporary improvements, fencing, or materials associated with the staging area will be removed, and the green space will be returned to its original use.

Murphy Pipeline Contractors appreciates your consideration of this request and looks forward to continuing coordination with all parties involved to ensure the project is completed safely and with minimal disruption to the surrounding community.



Michigan Office  
5700 Sheldon Rd South  
Canton, MI 48188

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Sincerely,  
Troy Moran  
Project Manager  
Murphy Pipeline Contractors

Note: Single lane closure along Nottingwood Street with traffic control measures and flaggers to be utilized as-needed during pipe fusing operation. Two-way traffic to be maintained during all other times.

Stone access road with culvert to maintain drainage

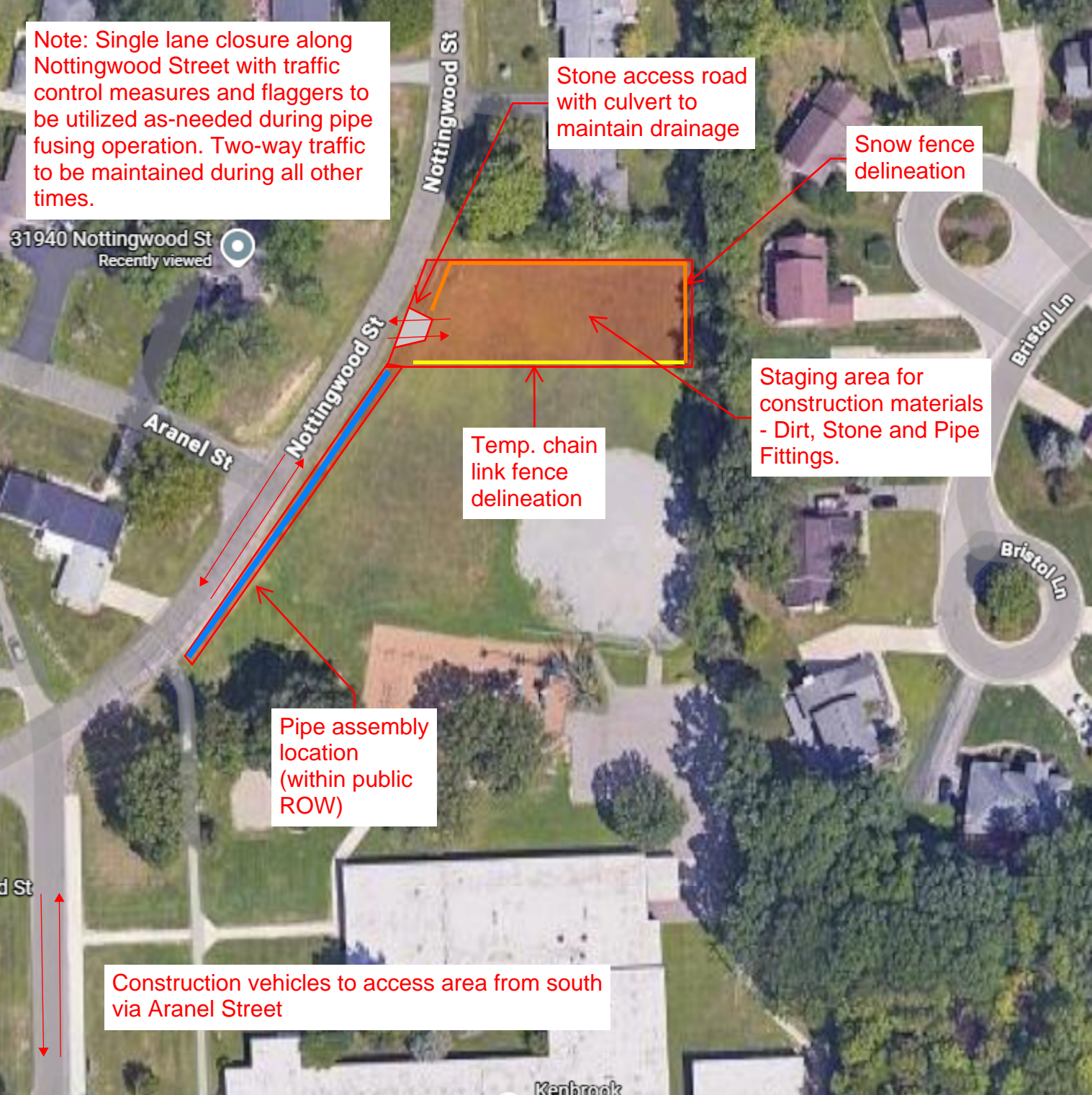
Snow fence delineation

Staging area for construction materials - Dirt, Stone and Pipe Fittings.

Temp. chain link fence delineation

Pipe assembly location (within public ROW)

Construction vehicles to access area from south via Aranel Street



# Farmington Public Schools Release and Waiver of Liability Form

School: Kenbrook Elementary

In signing this form, I understand and agree to the following terms and conditions related to parking my personal vehicle on property owned by Farmington Public Schools (FPS).

1. **Waiver and Release.** I hereby release, waive, forever discharge and covenant not to sue FPS, its successors and assigns, officers, employees and agents, from any and all liability, claims and demands of whatever kind or nature, either in law or in equity, which arise or may hereafter arise during the parking of my personal property on District owned property.
2. I understand and acknowledge that this Release discharges FPS from any liability or claim that I may have against FPS with respect to bodily injury, personal injury, illness, death, or property damage that may result from my parking on the property of FPS or occurring while my personal vehicle is on District property.
3. I hereby covenant and agree to indemnify and save harmless, FPS its officers, employees and agents, from any and all claims and demands, for all loss, injury, death or damage, that any person or entity may have or make, in any manner, arising out of any occurrence related to my use of the District's property for the parking of my personal vehicle.
4. **Medical Treatment.** I hereby release and forever discharge FPS from any claim whatsoever which arises or may hereafter arise on account of any first-aid treatment or other medical services rendered in connection with an emergency or incident during my use and access to District property with FPS. I understand that I may not be entitled to workers' compensation.
5. **Insurance.** I understand that FPS does not assume any responsibility for or obligation to provide me with financial or other assistance, including but not limited to medical, health or disability benefits or vehicle insurance of any nature in the event of my injury, illness, death or damage to my property. I expressly waive any such claim for compensation or liability on the part of FPS beyond what may be offered freely by FPS in the event of such injury or medical expenses incurred by me.
6. **Assumption of Risk.** I understand that my use of District property for parking of my personal vehicle, I assume the risk of injury, damages or harm and I choose to do and release FPS from all liability for injury, illness, death, or property damage occurring from my use of District property.
7. **Discrimination laws.** I agree to follow FPS' policy, along with state and federal laws that forbid discrimination and harassment in employment, education, housing, public accommodation, law enforcement or public service based on a person's religion, race, color, national origin, age, sex, marital status, height, weight, or disability.
8. **Other.** I agree that this release is intended to be as broad and inclusive as permitted by the laws of Michigan and that this release is governed by and will be interpreted according to the laws of Michigan. I understand that should any part of this release be ruled invalid by a court, the other parts will remain valid and continue to be in effect. By signing below, I express my understanding and intent to enter into this Release and Waiver of Liability willingly and voluntarily.

Troy Moran

Digitally signed by Troy Moran  
DN: c=US, email=troy.moran@murphycorp.com,  
o=Paris, OU=Murphy Pipeline Contractors,  
ou=Troy Moran  
Date: 2026.03.05 08:28:51 -0500

Signature

Murphy Pipeline Contractors

Group/Organization/Affiliation

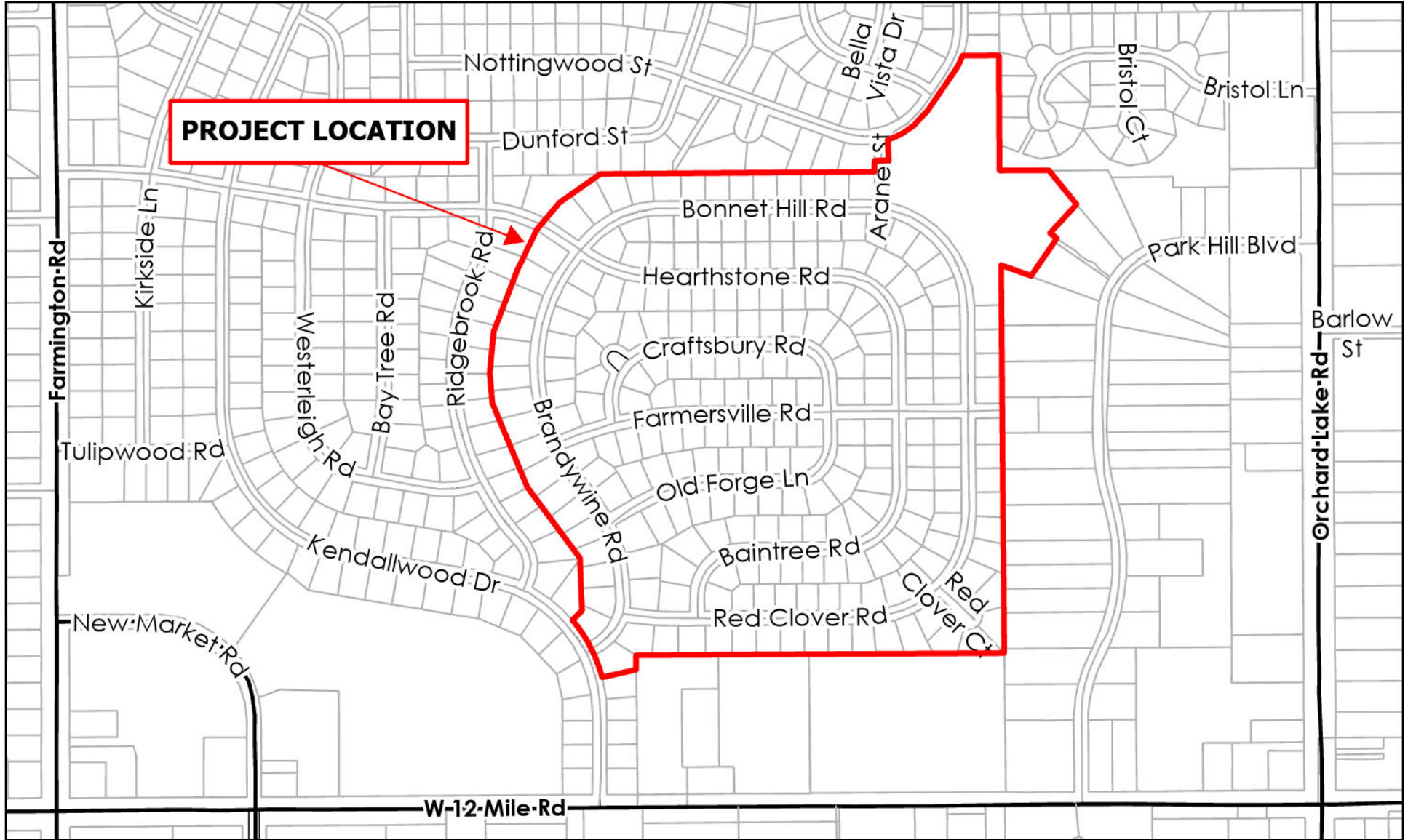
03/05/2026

Date



# City of Farmington Hills

## Kendallwood No.3 Subdivision Water Main Replacement



**CITY OF FARMINGTON HILLS  
PLANNING COMMISSION MEETING  
31555 W ELEVEN MILE ROAD  
FARMINGTON HILLS, MICHIGAN  
MARCH 19, 2026, 7:30 P.M.**

**CALL MEETING TO ORDER**

The Planning Commission Regular Meeting was called to order by Chair Trafelet at 7:30 p.m.

**ROLL CALL**

Commissioners present: Brickner, Countegan, Grant, Lindquist, Mantey, Stimson, Trafelet, Ware

Commissioners Absent: None

Others Present: City Planner Mulville-Friel, Staff Planner Mellem, Staff Engineer Alexander, City Attorney Schultz, Planning Consultant Auerbach (Carlisle Wortman)

**APPROVAL OF AGENDA**

**MOTION by Ware, support by Brickner, to approve the agenda as published.**

**Motion passed unanimously by voice vote.**

**PUBLIC HEARING**

**A. SPECIAL APPROVAL 53-3-2025**

LOCATION: 29372 Grand River Avenue  
PARCEL I.D.: 22-23-36-301-002  
PROPOSAL: Renovate and expand existing gas station with convenience store within the B-3: General Business District  
ACTION REQUESTED: Special Approval Use  
APPLICANT: Hatem Hannawa  
OWNER: Grand Fuel Property LLC

**Planning Consultant review**

Referencing the 03-07-2026 Carlisle Wortman memorandum, Planning Consultant Auerbach provided the background and detailed review for this request for a special approval use, in order to renovate and expand an existing gas station with convenience store within the B-3 General District, located at 29372 Grand River Avenue.

A gas station is permitted as a special approval use in the B-3 district provided that the site is used as a gas station as of 12/31/2024, and is subject to the standards of Section 4.28.

The applicant proposes to expand the existing 990sf convenience store and gas station with a 1,175sf addition. In addition, the applicant proposes to add a pump canopy. The current gas station has nine fueling pump islands and no full canopy (there is a small canopy between the pumps). The plan would reduce this to six pump islands under a canopy. Other site improvements include landscaping, lighting, new curbing, circulation and access improvements, and vehicular and pedestrian striping.

Land uses surrounding the site include single-family residential to the north, the fire station to the east, a restaurant across Middlebelt Road, and commercial property across Grand River Avenue to the south.

There are currently three access drives to the site. The applicant proposes to close the westernmost drive on the south side near the intersection and narrow the eastern drive, thus improving site access and safety.

Outstanding issues included:

Missing or incorrect information

- Lighting plan calculations and details
- The canopy and setback dimensions shown on Sheet SP100 and Sheet C-3 are not consistent.
- Missing canopy dimensions to Middlebelt
- Corner clearance dimensions

Non-conformities

- Front yard open space will be made less noncompliant, but not fully compliant
- Minimum parking setback and circulation encroaches into 10-foot minimum parking setback
- Landscape area abutting Grand River is less than 10 feet in depth

Variances

The dimensions shown on the engineering site plan (Sheet C-3) are inconsistent with the dimension on the architectural site plan (Sheet SP100). Sheet C-3 dimensions were used for review purposes. Actual dimensions need confirmation.

The Plan needs the following variances:

- Building Rear setback: 20 feet required, 0.37 feet proposed (dimensions need to be confirmed).
- Building Side Setback: 10 feet required, 1.18 feet proposed) (dimensions need to be confirmed)
- Canopy: 25 feet required: 12-feet from Grand River and 5-feet from future Middlebelt ROW (dimensions need to be confirmed)
- Transparency: 60% required, 19.8% on Grand River and 19.3% along Middlebelt
- Parking: parking is within Middlebelt future ROW
- The existing dumpster enclosure is located in the front yard. The applicant is improving with masonry screening; however, a variance is required to allow the dumpster in this location.
- Deficient by one canopy tree in parking lot

Public Art requirement

The site is located within a special planning area under the Master Plan and may be subject to the public art requirement if the value of site improvements is \$2 million or greater.

**Applicant presentation**

Haytem Hannawa and Jeff Yono appeared on behalf of the application.

In response to questions, Mr. Hannawa provided the following information:

- The project would cost less than \$2 million.
- The applicants had reviewed the planner's report. They would be able to address all of the deficiencies.

Mr. Hannawa explained that the current 990sf building was too small to support a retail operation. The proposed design was shaped by existing conditions on the site, including underground fuel tanks to the west and the canopy area to the south, which limited where expansion could occur. The proposal would improve the site along Middlebelt Road by reducing the amount of driveway area, adding landscaping, and creating a more attractive streetscape with a mix of shrubs, plants, and trees. They had worked with the Engineering Department to address drainage issues where water currently drains into the road; the revised plan includes catch basins along the sidewalk and a quality control structure tied into the storm system. They had worked hard to make modifications that would beautify the site and improve its quality.

In response to additional questions from the Commission, Mr. Hannawa provided the following further information:

- Regarding fuel deliveries, the plans showed a tanker truck turning path, with the truck entering from Grand River Avenue, traveling through the site, and exiting onto Middlebelt Road. Path simulations were also prepared for dumpster service.
- The new building includes a small kitchen area, allowing them to offer limited food items such as pizza.
- Regarding the 60% transparency requirement, the elevations had been revised to include additional glass. The project would still not meet the 60% requirement, with the revised design providing approximately 25% transparency. The reduced transparency was due in part to the building's small size and the need to place coolers and liquor shelving along the walls.
- Portions of the façade would use spandrel glass to maintain the appearance of glazing, while clear glass would be used above the coolers to allow natural light into the building.
- The project budget was approximately \$450,000.
- Responding to a question regarding the canopy's ability to withstand strong winds, Mr. Hanawa explained that canopy failures generally occur when the structure is not properly attached. On his projects, third-party inspections are used in addition to standard inspections to review footings, welding, bolting, and bolt torque. These additional inspections are intended to ensure the canopy is safely constructed and secure. City Planner Mulville-Friel noted that the canopy material was a required material consideration under the special approval review.

### **Public hearing**

Chair Trafelet opened the public hearing. As no members of the public came forward to speak, Chair Trafelet closed the public hearing and returned the matter to the Commission.

### **Commission discussion and action**

Commissioner Mantey pointed out that the property abuts a uniquely shaped City-owned parcel containing both a fire station and a community center. Did the City have any comments on this request? City Planner Mulville-Friel responded that City departments, including the Fire Department, had reviewed the proposal and had raised no objections.

Commissioner Mantey noted that the 60% transparency requirement on street-facing facades serves an urban planning purpose by encouraging pedestrian-friendly development and avoiding long stretches of blank wall. However, the adjacent City-owned building may itself not meet the 60% standard, and the building's small size could be a factor in considering the request.

City Planner Mulville-Friel clarified that the 60% transparency requirement does not come from the general design standards, but from the gas station use standard specifically. The Planning Commission does not have authority to waive that requirement and a variance from the Zoning Board of Appeals would be required.

**MOTION by Countegan, support by Mantey, that the application for Special Approval Site Plan 53-3-2025, dated February 10, 2026, submitted by Hatem Hannawa, BE APPROVED, because it meets the standards for Special Approval Uses set forth in Section 34-6.3:**

- a) **The proposed use is compatible and harmonious to surrounding land uses and and/or the orderly development of the surrounding neighborhood, because the use is compatible, an improvement to the area, and represents positive economic development in the area and neighborhood.**
- b) **The proposed use will not make vehicular and pedestrian traffic more hazardous than is normal for the district, because the proposal eliminates a curb cut, thereby improving circulation off of Grand River to Middlebelt.**
- c) **The proposed use will not unreasonably impact surrounding property in terms of noise, dust, fumes, smoke, air, water, odor, light and/or vibration and aesthetics, because there has been no demonstration of a negative impact in plan review or in public comment. With the site improvements there may be improvement in aesthetics and other components listed.**
- d) **The proposed location and height of buildings, structures, walls, fences, and landscaping will not interfere with or discourage the use of adjacent land and buildings or unreasonably affect their value, because the project will be an improvement of an existing use in the B-3 District, and may encourage more redevelopment and improvement in the area.**
- e) **The proposed use is harmonious with the physical and economic aspects of adjacent land uses, because the approximately half million dollar investment in the site will serve as an example to other property owners and encourage them to also invest in their properties, resulting in physical and economic improvement in the area.**
- f) **The proposed use is designed, located, and planned to be operated so that the public health, safety and welfare will be protected, for all the reasons already stated. The health, safety, and welfare will be protected with the proposed development.**
- g) **The proposed use will not cause substantial injury to the value of other property in the neighborhood and will not be detrimental to existing and/or other permitted land uses in the zoning district, for all the reasons already stated. The enhancements, economic development, and investment in the site will serve as a positive example and will encourage development in the area.**
- h) **The proposed use will not impair, pollute and/or destruct air, water, and/or other natural resources, because no such negative impact was indicated in tonight's presentation or the public hearing, and there was no anticipation of any kind of such negative impacts to the site. City standards will be met per site plan development review by the building department and the engineering department.**

- i) The proposed use will not unreasonably burden the capacity of public services and/or facilities, because after review by Police, Fire, Engineering and other departments within the city, no negative impact or undue demand on city services has been noted.**
- j) The proposed use is designed with architectural elements that are harmonious to the design characteristics of area development, because Planning Commissioners have reviewed the elevations attached to this proposal and do not find them to be objectionable.**

**This approval is subject to the following conditions and determinations:**

- 1) All outstanding issues identified in Carlisle Wortman Associates March 7, 2026, review shall be addressed to the reasonable satisfaction of the City Planner;**
- 2) All outstanding issues identified in the City Engineer's March 6, 2026, interoffice correspondence shall be addressed to the reasonable satisfaction of the City Engineer; and**
- 3) All outstanding issues identified in the Fire Marshal's March 2, 2026, interoffice correspondence shall be addressed to the reasonable satisfaction of the Fire Marshal.**
- 4) The Commission permits the following existing non-conformities to remain:**
  - a. Front yard open space may be less than 50%.**
  - b. Parking spaces and circulation encroach into 10-foot minimum parking setback.**
  - c. Landscape area abutting Grand River is less than 10 feet in depth.**
- 5) The following variances are required from the Zoning Board of Appeals. The applicant must confirm all proposed dimensions to determine actual variances required.**
  - a. Building - rear setback: 20 feet required, 0.37 feet proposed.**
  - b. Building - side setback: 10 feet required, 1.18 feet proposed.**
  - c. Canopy – front setback: 25 feet required from Grand River right-of-way, 12-feet proposed.**
  - d. Canopy – side street setback: 25 feet required from Middlebelt Road future right-of-way, 5-feet proposed.**
  - e. Building transparency: 60% required, 19.8% proposed on Grand River and 19.3% proposed on Middlebelt.**
  - f. Parking and circulation areas: 10 feet required from Middlebelt Road future right-of-way, 27-foot encroachment proposed**
  - g. Dumpster enclosure: placement in rear or interior side yard required, proposed in front yard.**
  - h. Off-street loading space: required to be placed in rear or interior side yard, proposed in front yard.**
- 6) Three (3) large deciduous type canopy trees are required to be planted and two (2) are proposed. The applicant must address the deficiency or provide money into the public tree fund for deficient trees.**
- 7) The Commission deems that the canopy constructed of fabricated steel without architectural embellishments is architecturally consistent with the principal building.**
- 8) Site is in the Grand River Corridor/M-5 Interchange Special Planning Area and public art is required if the renovation project construction cost \$2 mil or more. The applicant indicated during tonight's hearing that the construction cost will be approximately one half million dollars, so no public art is required.**
- 9) Signs are not approved with site plan and are subject to standards in Section 34-5.5 (SIGNS) of the Zoning Ordinance.**

**Motion passed unanimously by voice vote.**

**B. SPECIAL APPROVAL 67-10-2025**

LOCATION: 27900 Orchard Lake Rd  
PARCEL I.D.: 22-23-11-351-013  
PROPOSAL: Construct new fast food restaurant with drive-through within the B-3:  
General Business District.  
ACTION REQUESTED: Special Approval Use  
APPLICANT: Brewtopia Michigan, LLC  
OWNER: Farmington Hills Beef Company

**Planning Consultant Review**

Referencing the 03-07-2026 Carlise Wortman memorandum, Planning Consultant Auerbach gave the background and detailed review for this application for a special approval use in order to construct a new fast food restaurant with drive-through within the B-3 General Business District, at 27900 Orchard Lake Road.

Planning Consultant Auerbach highlighted the following:

- The Planning Commission reviewed this proposal in December 2025 and did not grant approval at that time because the zoning ordinance requires a drive-through restaurant use to include an indoor dining area of at least 1,100 square feet. The applicant subsequently obtained a variance from the Zoning Board of Appeals to allow the restaurant without indoor seating, subject to conditions that limited the approval to the specific restaurant proposed, required Planning Commission review and compliance with all ordinances, and required that the structure be built in the location and configuration shown on the approved plans.
- The applicant proposes to demolish an existing 2,769sf commercial building (previously occupied by Arby's) and construct a new 510sf coffee drive-through business, with an additional 335sf building to house the cooler. The parking lot is proposed to be redesigned in a manner that accommodates two drive-through lanes with bypass and six parking spaces.
- The property is zoned B-3, with surrounding zoning and land uses as follows: OS-2 and a medical office to the north, a multi-tenant retail establishment to the south, the Orchard 12 Plaza shopping center and nearby B-3 and B-4 zoning to the west, and B-3 zoning with a parking lot use to the east.
- The proposed drive-through building would be located near the center of the site, with the detached cooler nearby. The site would include two drive-through lanes, an escape lane, and an interior circulation lane along the south side providing access to parking spaces.

Outstanding issues:

- Although the applicant had received a variance for no indoor seating, required outdoor seating was not provided. The Planning Commission has discretion to waive the outdoor seating requirement under Section 34-4.35.C, and the applicant had submitted a narrative stating that outdoor seating would be impractical and inconsistent with the business model.
- Required off-street parking and drive-through parking had been provided, but the plan was deficient in required loading space. A loading area of 157sf would be required based on building frontage. While loading is ordinarily required in a rear yard, the Planning Commission could allow it in a side yard if satisfied with the applicant's explanation of delivery vehicle operations and site circulation.

- Eight parking lot trees were required. Three large deciduous trees were provided around the parking lot perimeter. The applicant has also counted 5 existing trees towards the minimum tree requirement, but they are evergreen trees. The Planning Commission shall determine whether these trees may be used to satisfy this requirement where it would be in the best interest of the city and would not interfere with visual clearance. It should be noted that the existing trees are grouped in the rear of the parking area and not distributed throughout the paved area.

The Planning Commission therefore should discuss the following:

1. Outdoor Seating Waiver: The Planning Commission should review the plan to determine if outdoor seating should be provided or if a waiver is granted.
2. Loading Space:
  - a. Size and location on Site Plan: Location not indicated on plans and confirm if size is sufficient.
  - b. Waiver: Planning Commission may allow in interior side yard if screened from view from any public street. If located in side yard, it shall be screened accordingly.
3. Landscaping:
  - a. Existing Landscaping: Planning Commission shall determine whether evergreen trees may be used to satisfy the required onsite tree requirements.
  - b. Landscape Location: Planning Commission should determine if additional landscaping should be added south of the pedestrian sidewalk.
4. Special Use Standards. Planning Commission shall consider if the development is compliant with Special Use Standards set forth in Section 34-6.3.

The public art requirement applies to this site if the anticipated cost of construction is \$2 million or greater. The applicant should provide the cost estimate during the meeting.

### **Applicant presentation**

Reid Cooksey, Stonefield Engineering and Design, Birmingham, was present on behalf of this application for special approval use.

Mr. Cooksey highlighted the following:

- The proposal was for a 510sf 7 Brew coffee kiosk. The business model was a fast, modern, beverage-only operation with no indoor customers, no menu boards, and ordering conducted either through the app or by employees using iPads outside.
- Since this item was before the Commission in December, the applicant had addressed Commission and staff comments, particularly those related to traffic. The traffic study had been revised, and the proposal now eliminates left turns out onto Orchard Lake Road, which had been a primary concern. The site has access to 12 Mile Road through a rear access easement, which would help circulation in the congested area.
- The loading space requirement is approximately 150 square feet, which is smaller than a standard parking space. Deliveries would be made by small vehicles rather than semis or box trucks and would typically occur during off-peak hours. Delivery vehicles could either pull into a parking space or stop near the trash enclosure, from which goods would be walked directly to the cooler.
- With respect to landscaping, the applicant proposed to count the existing evergreen trees, which are in good health, toward the landscaping requirement. Landscaping was not proposed in part of the frontage area because a water main and an existing storm drain run through that portion of the

site, and an easement is being placed there in consultation with City staff. Most parking is located to the rear and screened by landscaping along Orchard Lake Road.

- Regarding outdoor seating, pedestrians can walk up to the building and order coffee, but the business model is overwhelmingly vehicle-oriented, and customers generally do not remain on site. Approximately 95% or more of customers are expected to be served by car. Outdoor seating is not practical for the operation.

### **Commission Questions**

In response to questions, Mr. Cooksey gave the following further information:

- The building would be a prefabricated structure that would be delivered largely complete, with many interior furnishings pre-installed, allowing for rapid construction. The total project cost would be approximately \$1 million, below the threshold that would trigger the public art requirement. The exterior would include thin brick siding and metal materials, and the building would meet ordinance requirements. The front glazing exceeds 60% and the calculation could be added to the plans.
- Walk-up and bicycle customers would not enter the building. Such customers would order and receive their drinks outside the building.
- Regarding traffic flow, the revised plan restricts left turns onto Orchard Lake Road and adds a “pork chop” island to physically prevent that movement. Signage internal to the site could be added to direct motorists toward 12 Mile Road. On-site signage already shown on the plans would restrict left-out movements.
- The existing Arby’s building is approximately 2,300sf. The proposed 7 Brew building would be about 500sf, or roughly 25% of the size of the current structure. The new building would be moved closer to Orchard Lake Road than the current building in order to create better stacking and internal circulation
- The six parking spaces are intended for employees only and not for customer use.
- The business’s average throughput time is less than three minutes from order to delivery. The site is designed with 21 stacking spaces, although peak demand is expected to require only 15 spaces. The two-lane system and the ability to deliver drinks directly to cars allows vehicles to leave quickly and prevents backup, particularly because the business does not serve food.
- Business hours would be 5:00 a.m. to 10:00 p.m.

Commissioner Mantey stated that, given the presence of two hotels across the street, he believed even minimal outdoor seating such as a picnic table could be useful. Mr. Cooksey responded that the applicant is generally hesitant to include outdoor seating because the use is so heavily vehicle-oriented that walk-up customers typically do not want to remain outside while cars are circulating through the drive-through lanes.

Commissioner Mantey’s larger concern remained whether the Commission could make the finding required for special approval that the use would not make vehicular or pedestrian traffic more hazardous than is normal for the district. He recalled prior concerns that commuters traveling south on Orchard Lake Road in the morning might need to cross traffic and then circle back toward the freeway.

Commissioner Grant was concerned that prohibiting left turns out of the site might prompt motorists to turn right onto Orchard Lake Road and then immediately attempt other turning movements in an already congested morning traffic pattern in order to reach the expressway. Mr. Cooksey acknowledged that illegal turning movements are always a concern, but the site’s rear access to 12 Mile Road provides

an alternative route. Motorists would be able to exit through the rear access, turn right onto 12 Mile Road, and proceed to the traffic signal.

Commissioner Grant requested the applicant walk the Commission through how vehicles would circulate from the drive-through to the 12 Mile Road access. Mr. Cooksey explained that the site would operate in a normal counterclockwise drive-through pattern. Customers would receive their drinks at the stop bars in either of the two lanes, then recirculate to the east side of the site and exit through the eastern curb cut. The stacking plan allows vehicles to bypass the service points and continue circulating without blockage. The expected queue would remain within the two designated lanes.

Commissioner Lindquist noted that vehicles exiting east would have the option to turn onto 12 Mile Road. He asked whether motorists would still be able to access the site with a left turn in from Orchard Lake Road despite the addition of the “pork chop” median. Mr. Cooksey explained that left turns into the site from southbound Orchard Lake Road would still be permitted. The traffic study found those movements acceptable because existing signal gaps allow the movement without materially affecting the level of service on Orchard Lake Road. The “pork chop” feature would only restrict the left-out movement from the site.

Commissioner Lindquist asked if left-turn traffic onto 12 Mile Road from the rear exit had been included in the traffic study. Mr. Cooksey responded that all traffic patterns were analyzed. The rear entrance is an existing access point associated with the gas station property and the applicant does not have substantial control over turn restrictions at that location.

Commissioner Countegan asked for clarification regarding the loading and unloading requirement. Mr. Cooksey reiterated that deliveries would be made by small vehicles during off-peak hours. They would typically stop near the trash enclosure or in a parking space, unload boxes, and carry them directly to the cooler. Planning Consultant Auerbach clarified that the required loading area would still need to be shown on the plans. The Planning Commission could permit loading in a side yard through the special approval process.

### **Traffic Study Review**

Commissioner Stimson asked whether the City had reviewed the traffic study. Staff Engineer Alexander responded that the study had been reviewed and that the primary issue identified was the left egress movement on Orchard Lake Road. The proposed “pork chop” treatment addressed that concern and satisfied the study.

Commissioner Grant asked what would happen if the project were approved based on the traffic study, but traffic problems later developed and site circulation did not function as anticipated. Planning Consultant Auerbach responded that, in some communities, a condition of approval could be imposed stating that the finding regarding traffic impacts was based on the submitted study and that, if traffic volumes later exceeded what had been projected, the City could require an additional traffic study, mitigation measures, and potentially revocation of the special use permit.

Commissioner Ware pointed out that revoking an approval after the business had already opened would be a poor way to treat a business operator. Consultant Auerbach acknowledged that such an approach would not be ideal, but stated that special land uses give municipalities greater discretion to impose and enforce conditions to ensure compatibility with surrounding uses.

City Attorney Schultz noted that, while the planning consultant's description was technically accurate in the right circumstance, the City had not previously used that type of approval condition. He suggested that if the Commission was not comfortable with the information presented, postponement for more information would be preferable to approving the project while reserving a right to revoke it later.

Commissioner Stimson remained concerned about the traffic aspects of the proposal. Motorists exiting toward 12 Mile Road would still face difficulty crossing traffic to reach the left-turn lane, which is often backed up, and this remained a concern. On the other hand, it may be that south traveling drivers would simply use the Starbucks across the street.

Commissioner Countegan stated that the market would ultimately determine where customers choose to buy coffee. The Commission had previously expressed circulation concerns, referred the issue to consultants and the Engineering Department, and received what he viewed as a reasonable solution. He was comfortable relying on that review and noted that another commercial use on the site might have generated left-turn traffic without receiving the same level of scrutiny.

Commissioner Brickner said that the site had functioned for many years as an Arby's with the same driveway arrangement, with vehicles entering and exiting the site, including access toward 12 Mile Road. He questioned why the proposal now raised so much concern. Commissioner Mantey responded that the distinction was the expected morning rush associated with a coffee use, which differs from a fast-food restaurant focused on other times of day. Commissioner Grant added that the stacked two-lane concept suggested a larger volume of vehicles than the prior use.

Commissioner Countegan stated that it was the specific site concept and volume of stacking shown on the plan that caused the Commission to ask for more detailed analysis. It was reasonable to more closely examine circulation for a different kind of drive-through operation, and he felt the applicant had returned with a workable response.

Commissioner Mantey recalled the December 2025 discussion involved a very high anticipated customer turnover during rush hour. Had these concerns been resolved either in the traffic report or engineering review?

Staff Engineer Alexander stated that the Engineering Department had reviewed the traffic study, had provided comments, had received updated materials from the applicant the previous week, and was satisfied with the revisions and was comfortable with the traffic analysis.

Commissioner Grant asked how many cars the applicant expected to have lined up in the two drive-through lanes. Mr. Cooksey stated that 7 Brew has studied operations at more than 500 locations nationwide and that the highest queue observed on the busiest days is about 15 cars total, or approximately seven to eight vehicles in each lane. On a normal day the site would typically have three or four cars in each lane during the morning rush and one or two cars in the afternoon.

### **Public Hearing**

Chair Trafelet opened the public hearing.

David Elkus, Baron's Wholesale Clothiers, and Abe Bazzi, Abe's Fine Tailoring, Gateway Building, 27888 Orchard Lake Road, pointed out that the City's planning direction was against drive-through uses that focused on vehicles and do not contribute to community interaction. Regarding traffic, if left turns out of the site were prohibited, customers would likely attempt alternative maneuvers that could create traffic conflicts. He expressed concern that customers could cut through his parking lot to access a left turn onto Orchard Lake Road, increasing vehicle conflicts and making it more dangerous for pedestrians moving between parked cars and storefronts. Unlike the former Arby's, this proposal was specifically designed as a high-volume drive-through business and therefore could create a substantially different traffic impact.

In response, Mr. Cooksey said that he did not see a rational reason for customers from either the gas station or the proposed 7 Brew site to cut through the neighboring business parking lot, because both sites already have dedicated access to Orchard Lake Road and the 12 Mile Road entrance.

In a side bar conversation, Commissioner Ware suggested the Commission discuss traffic patterns in the City in a future study session. Commissioner Countegan thought such a session could be useful if it explained the legal and practical criteria used to evaluate site access, traffic safety, and development review, including what Planning Commissioners should consider when reviewing site-specific traffic studies and access proposals.

Commissioner Countegan asked for clarification regarding ownership and access of the Gateway Building.

Mr. Elkus explained that he owns the Gateway building and the parking spaces, but not the driveway area behind the property. There is a cross-easement allowing all of the parties to travel through the rear drive area. His concern was that customers leaving the proposed 7 Brew site could turn right, then enter his property, cut through his parking lot or the shared easement, and use his Orchard Lake Road access point to make a left turn or otherwise avoid the intended circulation route.

Chair Trafelet closed the public hearing and brought the matter back to the Commission.

**MOTION by Countegan, support by Ware, that the application for Special Approval Site Plan 67-10-2025, dated January 22, 2026, submitted by Brewtopia Michigan, LLC, BE APPROVED, because it meets the standards for Special Approval Uses set forth in Section 34-6.3:**

- a) **The proposed use is compatible and harmonious to surrounding land uses and and/or the orderly development of the surrounding neighborhood, because the use is similar to surrounding uses in that zoning district.**
- b) **The proposed use will not make vehicular and pedestrian traffic more hazardous than is normal for the district, because after the planning commission had a concern, the proposal was referred back to staff and a traffic study was done, with subsequent alterations made to the site to address the concerns of the planning commission. There is no safety hazard that can be anticipated per the information received.**
- c) **The proposed use will not unreasonably impact surrounding property in terms of noise, dust, fumes,**

**smoke, air, water, odor, light and/or vibration and aesthetics, because this use is for a 500 square foot building that will not unreasonably impact surrounding property.**

- d) The proposed location and height of buildings, structures, walls, fences, and landscaping will not interfere with or discourage the use of adjacent land and buildings or unreasonably affect their value, because there is no height or screening issue, and the location of buildings and landscaping will not have a harmful effect on other property and property owners.**
- e) The proposed use is harmonious with the physical and economic aspects of adjacent land uses. This proposal represents an investment in a very active area, and the City encourages development and investment in the community.**
- f) The proposed use is designed, located, and planned to be operated so that the public health, safety and welfare will be protected, because the project has provided provisions to ensure public safety and welfare.**
- g) The proposed use will not cause substantial injury to the value of other property in the neighborhood and will not be detrimental to existing and/or other permitted land uses in the zoning district, because with the modifications discussed at this meeting the development will fit in with surrounding uses.**
- h) The proposed use will not impair, pollute and/or destruct air, water, and/or other natural resources.**
- i) The proposed use will not unreasonably burden the capacity of public services and/or facilities. The Planning Commission took special interest in this proposal as it relates to traffic and circulation, and has determined that based on best advice after further study by the engineering division and planning staff of the traffic study, that traffic elements of this plan will be compatible for the area.**
- j) The proposed use is designed with architectural elements that are harmonious to the design characteristics of area development, because what is proposed results in an attractive building fitting in with the area, with acceptable materials and design.**

**This approval is subject to the following conditions and determinations:**

- 1) All outstanding issues identified in Carlisle Wortman Associates March 7, 2026, review shall be addressed to the reasonable satisfaction of the City Planner;**
- 2) All outstanding issues identified in the City Engineer's March 3, 202[6], interoffice correspondence shall be addressed to the reasonable satisfaction of the City Engineer; and**
- 3) All outstanding issues identified in the Fire Marshal's March 2, 2026, interoffice correspondence shall be addressed to the reasonable satisfaction of the Fire Marshal.**
- 4) Minimum indoor seating requirements under Section 34-4.35.1.B have not been met; however, on February 10, 2026, the Zoning Board of Appeals granted the use variance from Section 34-4.35.1.B to permit a zoning lot in a B-3 General Business Zoning District to be occupied by a drive-through restaurant where the proposed restaurant does not have a minimum 1,100-square-foot area with indoor seating for at least twenty (20) people, as otherwise required by the Zoning Ordinance, because the petitioner did demonstrate that an unnecessary hardship exists in this case.**
- 5) An outdoor space for seating accessory to the drive-in restaurant comprised of at least six (6) seats**

shall be provided per Section 34-4.35.1.C. The Commission waives this requirement entirely finding that the location makes outdoor seating unlikely or difficult to be utilized, and unique circumstances make providing the seating undesirable. Given the business model of this use, providing outdoor seating does not make sense.

- 6) Loading space must be shown on the plans and be sufficient to meet the needs of the business. The loading space shall be provided in the rear yard or interior side yard if screened from view of any public street.
- 7) Signs are not approved with site plan and are subject to standards in Section 34-5.5 (SIGNS) of the Zoning Ordinance.
- 8) Eight (8) large deciduous type canopy trees are required to be planted in and around paved areas serving motor vehicles on this site. The Commission determines that it would be in the best interests of the city to permit five (5) existing evergreen trees to count towards the minimum number of canopy trees required and that such existing evergreen trees do not interfere with clear vision of sight distances.
- 9) The parking lot south and east of the pedestrian pathway is sufficiently screened from public thoroughfare as required per Section 34-5.14.5.
- 10) The six (6) parking spaces provided are adequate for the use proposed.
- 11) Principal and accessory buildings meet commercial design standards in Section 34-5.20.
- 12) Site is in the Orchard Lake Road (12 Mile to 13 ½ Mile) Corridor Special Planning Area and public art is required if the renovation project construction cost \$2 million or more. The developers indicated that construction would be approximately \$1 million so this requirement does not apply.

**Roll call vote:**

**Ayes – Brickner, Countegan, Grant, Lindquist, Stimson, Trafelet, Ware**

**Nays – Mantey**

**Motion passed 7-1**

**REGULAR MEETING**

**A. CLUSTER SITE PLAN 59-4-2019**

LOCATION:	29150 Farmington Rd
PARCEL I.D.:	22-23-10-101-002
PROPOSAL:	One-family cluster option subdivision (10 units) in RA-2, One-Family Residential District
ACTION REQUESTED:	Set item for Public Hearing
APPLICANT:	Cedar of Farmington, LLC (Ayman Rida)
OWNER:	Cedar of Farmington, LLC

**Planning Consultant Review**

Referencing the 03-07-2026 Carlisle Wortman memorandum, Planning Consultant Auerbach gave the background and detailed review for this request to set Cluster Site Plan 59-4-2019 for public hearing, in order to construct a one-family cluster option subdivision (10 units) in an RA-2, One-Family Residential District, at 29150 Farmington Road. The site was south of 12 Mile Road on the east side of Farmington Road at the former Kendallwood Swim Club site. The former swim club structures are no longer present, and the site is currently rough graded.

Planning Consultant Auerbach explained that the proposal was formerly known as “McKenzie Green” and had been reviewed and approved in 2019 with conditions, but had never been developed, and the Planning Commission approval expired. During the prior review, the Planning Commission found the development qualified for cluster development, and the project did not need to requalify. The developer has since changed, but the project remains largely the same, and the request before the Commission was to set a public hearing on the preliminary site plan for a future meeting.

Planning Consultant Auerbach highlighted the following:

- The applicant proposes 10 cluster lots (a density of 2.61 units per acre), arranged along a short cul-de-sac street. The street, which is proposed to be a private road, is aligned with Oak Point Drive across Farmington Road. Approximately, 1.61 acres of the development (42.0%) is set aside as undisturbed and unprogrammed open space. All proposed units are detached. During the cluster qualification process in July 2018, the Planning Commission cited standards 34- 3.17.2.B.ii., iii, and vi. as conditions for approval with maximum density of 3.1 units per acre. The current proposal is 2.61 units per acre.
- The site configuration meets applicable dimensional requirements, including front, side, and rear setbacks. However, elevations for the typical building designs had not been included with the submission; these should be provided, including a general material palette and maximum building height.
- The site contains landmark trees, defined as desirable species with a trunk diameter of six inches or greater. The total diameter at breast height of trees to be removed is 53 inches and the replacement trees proposed would provide an equivalent total diameter.
- The tree replacement analysis is based on a 2022 tree survey, and the Commission may wish to direct the applicant to prepare a new survey because of the time that has passed and because an accurate tree survey is required for a cluster development.
- The majority of the vegetation is located along the south side of the site, where it serves as a buffer to adjacent single-family homes. No buffer is required to the north adjacent to the detention basin; utility conflicts exist there.
- A small portion of several lots, though not the building footprints, extends into the floodplain area along the south side.
- The Commission could consider directing the applicant either to provide additional plantings or additional confirmation that the existing vegetation provides an adequate southern buffer, or, alternatively, to shift the road slightly north to create more separation from the southern property line, although that would be a more intensive revision because the road has already been engineered.

Planning Consultant Auerbach summarized that the action requested was only whether to schedule a public hearing for a future meeting to consider the preliminary site plan. The primary topic for Commission discussion was whether the existing vegetation along the southern lot line provides an adequate buffer. Other outstanding detail items, including building elevations, could be addressed through an updated submittal.

#### **Commission questions and discussion**

Commissioner Mantey asked about a statement in the staff report indicating that the buildable area of Lot 4 was impacted by the 100-year flood plain. Based on the presentation, he understood the

floodplain encroachment to affect only the southern end of the lot and not the actual buildable area. He noted that even if the buildable area were affected, construction could still occur if the lot were filled or elevated to one foot above the 100-year floodplain, which the Building Department would address if necessary.

Planning Consultant Auerbach acknowledged that if the report stated the floodplain encroached into the buildable area, that was likely inaccurate. The floodplain appears to overlap only with the southern portion of the lot line rather than the building area.

In response to comments, Staff Engineer Alexander confirmed that staff had already completed engineering review and that EGLE permits had been obtained. The earlier road layout was very similar to the current plan.

**MOTION by Stimson, support by Ware, that the application to amend Cluster Site Plan Approval 59-4-2019, dated February 18, 2026, as revised, submitted by Cedar of Farmington Road LLC, BE SET FOR PUBLIC HEARING for the Planning Commission's next available regular meeting agenda.**

Commissioners discussed whether to require a new tree survey. Jared Prather and Patrick Cleary of Boss Engineering, Howell, Michigan, addressed the landscaping and tree survey questions.

Mr. Cleary explained that Boss Engineering had not prepared the original tree survey, but only 14 trees are proposed to be removed under the current plan. The remaining trees, estimated at roughly 70 to 80 along the southern property line, would remain undisturbed. Resurveying the entire site might not provide substantial benefit. He proposed instead that only the 14 trees within the work area be reevaluated. If any of those trees had grown enough over the last several years to change their caliper totals, that could result in the need for one additional replacement tree or similar minor adjustment.

Commissioner Mantey suggesting adding an extra replacement tree rather than require a new survey. Commissioner Countegan stated that, if the area of encroachment had not changed and the same 14 trees were still being removed, he did not see the need for a full new survey.

Commissioner Stimson pointed out that the site could have changed significantly because of extensive construction activity and storm events in the area over the last few years.

Mr. Cleary responded that, from his understanding, prior demolition activity had been limited to already paved or previously developed areas and he was not aware of significant changes to the southern screening vegetation. He did not believe another survey was necessary outside the limits of disturbance.

City Planner Mulville-Friel stated that tree loss from storms and general die off in recent years could affect whether there is still adequate buffering between Lots 4 and 5 and the residential properties to the south.

Mr. Cleary responded that the prior plan included not only standard landscape materials but also approximately 90 seedling trees, or "whips," to be planted along the south boundary to strengthen the buffer. This feature had been retained in the current proposal. Those plantings would be interspersed

among the existing trees and brush in the floodplain area south of the lots and outside the grading area, and they would serve as a contingency to reinforce and improve the southern buffer over time.

The Commission reached consensus not to require a new tree survey.

**Motion passed unanimously by voice vote.**

**B. SITE PLAN APPROVAL 52-2-2026**

LOCATION:	31130 Orchard Lake Rd
PARCEL I.D.:	22-23-02-103-025
PROPOSAL:	Expansion of existing building and parking lot for restaurant use within the B-3: General Business Zoning District and P1: Vehicular Parking District
ACTION REQUESTED:	Site Plan Approval
APPLICANT:	Bret Hart, Priority Engineering LLC
OWNER:	Hannawa-Lahser Road Development LLC

**Planning Consultant review**

Referencing the 03-11-2026 Carlise Wortman memorandum, Planning Consultant Auerbach gave the background and detailed review for this application for site plan approval, in order to expand an existing building and parking lot for restaurant use within the B-3 and P1 District. The applicants propose an approximately 1,400sf addition to the existing building, two outdoor seating areas, expansion of the parking lot to the east, relocation of the dumpster, installation of an underground stormwater detention structure, and other related site improvements.

Planning Consultant Auerbach highlighted the following:

- The existing building contains approximately 7,700sf and was formerly occupied by a pet supply store, but has been vacant for several years. The building appears to be a one-story structure, although it includes what looks like an ornamental second story element at the southwest corner, and City records suggest the building may previously have had a second story.
- The western portion of the site is zoned B-3, and the eastern portion is zoned P1 Vehicular Parking District. The parcel is bordered by RA-4 residential zoning to the north, office zoning and commercial uses to the east, parking and retail uses to the south, and the Orchard Place shopping center to the west.
- One outdoor seating area is proposed along the Orchard Lake Road frontage on the west side of the building, and a second outdoor seating area is proposed on the north side of the building. The addition is proposed on the east side of the building, the dumpster enclosure would be shifted east onto a new concrete pad, the parking lot would be expanded to the far east, and the underground detention structure would be located in the southeast portion of the site. The two existing access drives would remain.

Several variances would be required for the project because of the existing site configuration.

- The proposed building addition encroaches into the required 20-foot setback and would leave an approximately two-foot gap between the addition and an existing masonry screening wall near the north lot line. Staff recommends the applicants reconfigure that area to avoid creating a narrow space likely to collect debris and create maintenance issues.

- The relocated dumpster would require a variance because it would remain within 20 feet of a residential lot line. Because the applicants propose to reuse the existing dumpster enclosure material, staff recommends a condition requiring inspection by City staff to ensure that adequate screening is maintained.
- A variance would be required for the parking lot expansion because the proposed new parking area would be approximately 8 feet from Mulfordton Street, where a minimum setback of 10 feet is required from any right-of-way.
- With respect to the outdoor seating areas, the northern seating area would require a variance because outdoor seating may not be located within 200 feet of residential property unless it is separated by a building or otherwise meets ordinance exceptions. The west seating area along Orchard Lake Road could be considered allowable in relation to the residential separation requirement because the building separates it from the homes to the north, but it would still require a variance because it eliminates required frontage open space.

The Commission would need to make several determinations as part of site plan review:

- The ordinance requires 113 parking spaces based on the floor area and outdoor seating areas, while only 73 spaces are proposed. The Planning Commission has authority to approve a reduction in parking based on factors such as walk-up customer activity, transit availability, or unique operational characteristics, but the Commission could also require a parking demand estimate or traffic study if not comfortable making that determination.
- A loading space has not been shown on the plan and will need to be identified on an updated submittal. If the loading area is located in a side yard, it would require Planning Commission approval.
- A pedestrian walkway connection from the public sidewalk to the principal building has not been shown, although such a connection is normally required. The Commission could waive that requirement based on practicality and the way the building will function.

Further outstanding issues:

- Shrubs and trees are proposed around the west, south, and east edges of the site, but the ornamental grasses proposed south of the building would need to be replaced with shrubs to meet ordinance requirements. The applicants would also need to identify clear vision areas on the plan because trees near the Orchard Lake Road drive may obstruct visibility.
- With respect to lighting, the photometric requirements appear to be met, and the proposed pole-mounted lights and wall pack fixtures are shown as fully shielded. However, the locations of the wall lights are not shown on the plans or elevations. The applicants need to provide that information. Outdoor fixtures must include reflective shields, and the applicants need to confirm whether the selected fixtures provide that feature.
- The elevations identify the proposed exterior materials but do not provide percentage calculations. Facades facing public rights-of-way are required to contain at least 60% approved material types, such as masonry, timber, fiber cement, or glass. The upper portions of the Orchard Lake Road facade appear to use EIFS, and the south elevation likely also contains predominantly EIFS, which may not satisfy the material coverage standard. The Planning Commission may approve deviations from these material requirements if the alternative materials serve a specific architectural design purpose and are compatible with surrounding buildings.
- The ordinance contains minimum window transparency requirements for facades facing major thoroughfares, including 60% at the ground floor and 35% for upper portions. The Orchard Lake

Road facade does not appear to meet the upper-level percentage, and the south elevation likely does not meet either requirement. The Commission may waive those fenestration requirements if there is an architectural design reason, surrounding-building compatibility, or a practical difficulty in providing additional windows.

- The public art requirement may also apply to the project, depending on the total construction cost; this would need to be clarified by the applicant.

A full list of necessary Planning Commission determinations and site plan outstanding issues were included on pages 19-22 of the Carlisle Wortman memorandum.

Planning Consultant Auerbach summarized that the Commission would need to consider several waivers, including reduction in parking, whether a pedestrian connection should be required, possible deviations from material standards, and possible deviations from fenestration standards. The public art question also remained open. If the Commission was otherwise comfortable with the proposal, several outstanding detail items could be addressed administratively by staff.

#### **Commission questions and discussion**

Commissioner Mantey commented that it seemed inconsistent to potentially reduce the parking requirement on the basis that the site might attract pedestrians while also considering a waiver of the pedestrian access requirement. He also noted that the ordinance-required parking count appeared very high, but he would need more information about the restaurant's seating and operations before reaching a conclusion on parking demand. He pointed out that based on prior master plan discussions and the substantial residential development approved nearby, the City is hoping to encourage more walkability in the area, which made him inclined to support pedestrian access to the site.

Planning Consultant Auerbach stated that staff has already raised broader questions about reducing parking requirements and noted that, in his experience, the current ordinance standard of one parking space per 85 square feet of floor area is somewhat high compared to other communities.

Commissioner Stimson asked whether parking lot islands and internal parking lot landscaping were required. The site appeared to have a sizeable parking field without islands or trees. Planning Consultant Auerbach responded that if islands are provided and planted, minimum size requirements apply, but he did not believe the ordinance requires parking lot islands or breaks in parking rows.

#### **Applicant Presentation**

Members of the development team present this evening included:

- Bret Hart and Teon Sujak, Priority Engineering, LLC, 49494 Galeno Court, Macomb, Michigan,
- John Janviriya, Bloomfield Hills, builder/designer
- Nick Hannawa, owner

Mr. Hart addressed the question of internal landscape islands. The existing parking count had been maximized due to ordinance requirements, but if the Commission were willing to permit some leniency in parking, the applicant would be willing to add internal landscape islands for aesthetic purposes. Additional landscape islands could help offset the encroachment into the 10-foot buffer requirement on the east P1 parcel.

Commissioner Countegan asked how many parking spaces the restaurant would actually need. Mr. Janviriyia believed the realistic parking demand would be closer to 60 spaces, because customers would generally arrive in groups averaging approximately two and a half persons per vehicle. The proposed restaurant would be a fine dining, family-oriented establishment.

Commissioner Ware asked how many people the building would accommodate. Mr. Janviriyia said that the restaurant would accommodate approximately 200 people, with a variety of table sizes, including tables for six, larger combined tables for eight or ten, and a banquet room for parties and events.

Commissioner Countegan commented that the applicant's own assessment of parking demand could help the Commission evaluate whether fewer parking spaces, more green space, and potentially internal landscape islands would be more appropriate than a larger paved area.

Mr. Hannawa said that the Orchard Lake corridor between 12 Mile Road and 14 Mile Road has lost many sit-down restaurants and he wanted to offer a family-oriented dining use. He is working with the owner of Zarzoor restaurant in Sterling Heights to establish a new restaurant at this site called Zarzoor Prime, which would be a casual but higher-end family restaurant with a beer and wine liquor license, a private room for small events, and a concept intended to serve families and gatherings. He stated that customers from Farmington Hills, West Bloomfield, Novi, and surrounding communities already travel to the existing Zarzoor restaurant and have expressed interest in seeing a west-side location.

Mr. Hannawa stated that he had been carrying this vacant property for several years, and had resisted pressure to sell it for other uses that he did not believe would benefit the community. The proposed restaurant would be a positive use for the site and a benefit to the area. He acknowledged that the project would require numerous variances, and requested the Commission's support. He pointed out that his family owns the adjacent Taco Bros restaurant that could potentially provide additional parking if needed.

Mr. Hannawa said that he was proud to bring the restaurant concept to Farmington Hills and believed it would be an asset to the community.

Commissioner Grant asked about the size of the banquet room. Mr. Hannawa stated that the banquet room would accommodate approximately 70 people.

Commissioner Ware asked whether the building was two stories and whether any second-floor seating was planned. Mr. Hannawa responded that the building is not two stories and that no upper-floor seating is proposed. The upper architectural element is a remnant from the former Pier 1 building, where it functioned as a display mezzanine.

Commissioner Countegan asked whether the Sterling Heights restaurant has 200 seats and how many parking spaces it has. Mr. Hannawa responded that the Sterling Heights location did have about 200 seats, with fewer than 60 parking spaces. That restaurant uses valet service to help manage parking demand.

Commissioner Ware observed that valet service does not eliminate the number of cars coming to the site. She asked where the overflow vehicles would go if valet service were needed at this location. Mr.

Hannawa responded that the valet operator would need to arrange any off-site parking through a lease or agreement with adjacent property owners. His family owns nearby property, and additional spaces might be available if needed.

Commissioner Countegan said that the proposed parking should be adequate for the intended operation because many patrons will arrive in groups rather than each person arriving in a separate car.

Commissioner Stimson initiated a discussion regarding the exterior building materials. Planning Consultant Auerbach noted that exterior material changes trigger compliance with current building design standards.

Commissioner Stimson asked the development team to clarify the proposed exterior materials. Referencing the elevation drawings, Mr. Sujak explained that the vertical piers on the front west elevation would be clad in porcelain slabs designed to resemble stone, and that the infill areas would be EIFS. He pointed out that the upper window area could not extend much higher because the joists are located at approximately 12 feet and raising the windows further would conflict with the roof structure.

Commissioner Mantey observed that the lower portion of the front elevation appeared to provide substantial glass at the pedestrian level, which he considered most important from a streetscape perspective. Mr. Sujak estimated that the lower portion would be approximately 75% glass.

Commissioner Brickner said that the City had previously tightened material standards related to EIFS use, because EIFS is vulnerable to damage. Mr. Sujak responded that on the south elevation the lower portion would be face brick, with fiberboard used in the vertical design elements and EIFS used above that level. The EIFS would be elevated sufficiently so that it would not be exposed to the typical damage concerns associated with impacts near ground level.

Commissioner Brickner reiterated that his concern was avoiding putting EIFS too low on the building because of maintenance and damage issues. Mr. Sujak stated that, if necessary, the brick base could be extended higher.

Commissioner Lindquist asked whether the elevated architectural element on the Orchard Lake Road elevation would be usable space. Mr. Cleary explained that the front had been squared off to enlarge and regularize the appearance of the facade, but the upper portion was not intended as usable or display space. He stated that the purpose of the feature was to create curb appeal and a greater visual presence.

**MOTION by Countegan, support by Mantey, that the application for Site Plan Approval 52-2-2026, 31330 Orchard Lake Road, dated January 23, 2026, submitted by Bret Hart, Priority Engineering, LLC, BE APPROVED, because it meets all applicable requirements of the Zoning Chapter. The APPROVAL is SUBJECT TO THE FOLLOWING CONDITIONS and DETERMINATIONS:**

- 1) All outstanding issues identified in Carlisle Wortman Associates March 11, 2026, review shall be addressed to the reasonable satisfaction of the City Planner;**
- 2) All outstanding issues identified in the City Engineer's February 24, 2026, interoffice correspondence shall be addressed to the reasonable satisfaction of the City Engineer; and**

- 3) All outstanding issues identified in the Fire Marshal's February 20, 2026, interoffice correspondence shall be addressed to the reasonable satisfaction of the Fire Marshal.
- 4) The Commission permits the following existing non-conformities to remain:
  - a. Minimum parking space setback: 10 feet required, 4.6 feet proposed for existing parking area abutting Mulfordton Street.
  - b. Landscape yard abutting a street: 10 feet required, 4.6 feet proposed for existing parking area abutting Mulfordton Street.
  - c. Maneuvering Land Width: 20 feet required, 17.7 ft. proposed for existing lane width from Orchard Lake Road.
- 5) The following variances may be required from the Zoning Board of Appeals. The applicant must confirm all proposed dimensions to determine actual variances required.
  - a. Building - side setback (north) adjacent to residential: 20 feet required, 2.09 feet proposed.
  - b. Front yard open space: 50% required, unknown % proposed.
  - c. Off-street loading space: 660 sf. required to be placed in rear or interior side yard, no loading space proposed.
  - d. Landscape yard abutting a street: 10 feet required, 8.05 feet proposed for new parking area abutting Mulfordton Street.
  - e. Outdoor space near residential: 200 feet of separation required, approximately 10 feet proposed.
  - f. Floor area of outdoor space: maximum allowed 50% of useable floor area (3,675 sf.), unknown proposed.
  - g. Outdoor use in required setbacks: allowed if no permanent structures and not in required open space or landscape areas, outdoor seating with canopy structure proposed in the setback areas.
  - h. Dumpster setback from residential: 20 feet required, 12 feet proposed.
- 6) A pedestrian connection between the building entrance and Orchard Lake Road is required.
- 7) The applicants must modify the layout to eliminate the 2.09 foot gap between the proposed addition and adjacent screening wall.
- 8) Site is in the 14 Mile/Northwestern/Orchard Lake Road Special Planning Area and public art is required if the renovation project construction cost \$2 million or more. The developers indicated that construction would be over \$2 million so this requirement will apply.
- 9) Exterior modifications are proposed, and ~~so~~ the building must be brought into compliance with the City's design standards included in Section 34-5.20.4. The Commission grants a waiver from the building material requirements and finds that the following apply:
  - i. The waiver will achieve a specific architectural objective or purpose.
  - ii. The proposed building materials are compatible with surrounding development.
- 10) Exterior modifications are proposed, and ~~so~~ the building must be brought into compliance with the City's design standards included in Section 34-5.20.7. The Commission grants a waiver from the ~~building material~~ fenestration requirements and finds that the following apply:
  - i. The waiver will achieve a specific architectural objective or purpose.
  - ii. The proposed building materials are compatible with surrounding development.
  - iii. Compliance with the standard will result in a practical difficulty.
- 11) Signs are not approved with site plan and are subject to standards in Section 34-5.5 (SIGNS) of the Zoning Ordinance.
- 12) 113 parking spaces are required; 73 are proposed. The Planning Commission determines that the 73 proposed parking spaces are acceptable because the restaurant will have walk-up (foot traffic) customers.

**Motion approved unanimously by voice vote.**

**DISCUSSION**

The Commission discussed the Legislative Analysis provided by the Michigan House Fiscal Agency relative to proposed Zoning and Land Division Amendments. City Attorney Schultz will provide further written information on this matter.

**ELECTION OF OFFICERS**

**MOTION by Trafelet, support by Countegan, to nominate and elect Erik Lindquist as Chair, Danielle Ware as Vice Chair, and Tanji Grant as Secretary.**

**Roll call vote:**

**Ayes – Brickner, Countegan, Grant, Lindquist, Mantey, Stimson, Ware, Trafelet**

**Nays – None**

**Motion passed 8-0.**

**APPROVAL OF MINUTES**

Planning Commission Special Meeting, February 19, 2026

Planning Commission Regular Meeting, February 19, 2026

**MOTION by Countegan, support by Stimson, to approve the February 19, 2026 Special and Regular meeting minutes as submitted.**

**Motion passed unanimously by voice vote.**

**PUBLIC COMMENT**

None

**COMMISSIONER/STAFF COMMENTS**

Commissioner Mantey thanked Chair Trafelet for his service.

Commissioner Brickner reported that he and Commissioner Lindquist had met with Planning Consultant Ben Carlisle earlier today; the conversation was worthwhile and the time was well spent. Planning staff was arranging these meetings.

Commissioner Lindquist expressed interest in learning more about the development in the Northwestern/Orchard Lake area.

**ADJOURNMENT**

**MOTION by Grant, support by Stimson, to adjourn the meeting.**

**Motion passed unanimously by voice vote.**

The meeting ended at 10:50pm.

