Charter Township of Windsor – Eaton County Michigan

Resolution Number 26-004

Act 188 Resolution 1 of 4

At a regular meeting of the Township Board of Windsor Township, Eaton County, Michigan, held at the Windsor Charter Township Emergency Services Building on the 10th day of March, 2026, at 7:00 p.m.

PRESENT: Shaw, Rumsey, Barnhart-Smith, Myers, Slucter, Gardner and Pray

ABSENT: None

The following resolution was offered by Slucter

and supported by Rumsey:

WHEREAS, pursuant to Act 188, Public Acts of Michigan of 1954, as amended ("Act 188"), the Township Board may proceed to initiate and carry out improvements to, among other things, the construction of water systems, including but not limited to replacing an existing groundwater source and water main in the Grand Pointe Subdivision located in Windsor Charter Township, Eaton County, Michigan (hereinafter referred to as the "Grand Pointe Subdivision Improvements"). See MCL 41.722(1)(b); and

WHEREAS, the Township Board tentatively determines that there is a need for the proposed Grand Pointe Subdivision Improvements described in **Exhibit B** to serve the properties within the proposed district described in the attached **Exhibit A**; and

WHEREAS, the Township Board desires to proceed with the proposed Grand Pointe Subdivision Improvements to benefit the properties within the proposed district described in the attached **Exhibit B**.

NOW, THEREFORE, BE IT RESOLVED by the Township Board of Windsor Charter Township, Eaton County, Michigan, as follows:

1. The Township Board tentatively declares its intent to make the proposed Grand Pointe Subdivision Improvements in the attached **Exhibit B**, together with the necessary work incidental thereto, within the proposed district described in the attached **Exhibit A**.

2. The Township Board tentatively designates the special assessment district against which the costs of the proposed Grand Pointe Subdivision Improvements are to be assessed as the proposed Grand Pointe Subdivision Improvements Special Assessment District, which shall include the lands and premises more particularly described in the attached **Exhibit A**.

3. The completed plans and estimates of costs for the proposed Grand Pointe Subdivision Improvements shall be retained by the Township Clerk and shall remain available for public examination during ordinary business hours and at the public hearing. The Township Board accepts the documents in **Exhibit B** as the proposed estimated costs and plans of the Grand Pointe Subdivision Improvements but directs finalization of the plans for the Grand Pointe Subdivision Improvements in order to determine set costs for the project.

4. The Township Board shall conduct a public hearing to hear any objections to the proposed Grand Pointe Subdivision Improvements, to the estimate of costs, and to the special assessment district proposed to be established for the assessment of the costs of such improvements, on March 25, 2026, at 7:00 p.m., at the Windsor Charter Township Emergency Services Building. Notice of the public hearing shall be substantially in the form attached as **Exhibit C** (with parcel numbers inserted) and shall be provided by first class mail (at least ten days before the public hearing) to all properties (sent to record owners on tax records) within the proposed special assessment district and by publication (twice in a newspaper that circulates within the Township, with the first publication occurring ten days before the public hearing) as required by Act 188 and other applicable laws. See MCL 41.724a(2).

5. All prior resolutions and parts of prior resolutions insofar as they conflict with the provisions of this resolution are hereby rescinded.

Yeas: Myers, Gardner, Barnhart-Smith, Shaw, Rumsey, Pray and Slucter

Nays: None

RESOLUTION DECLARED ADOPTED.

CERTIFICATION

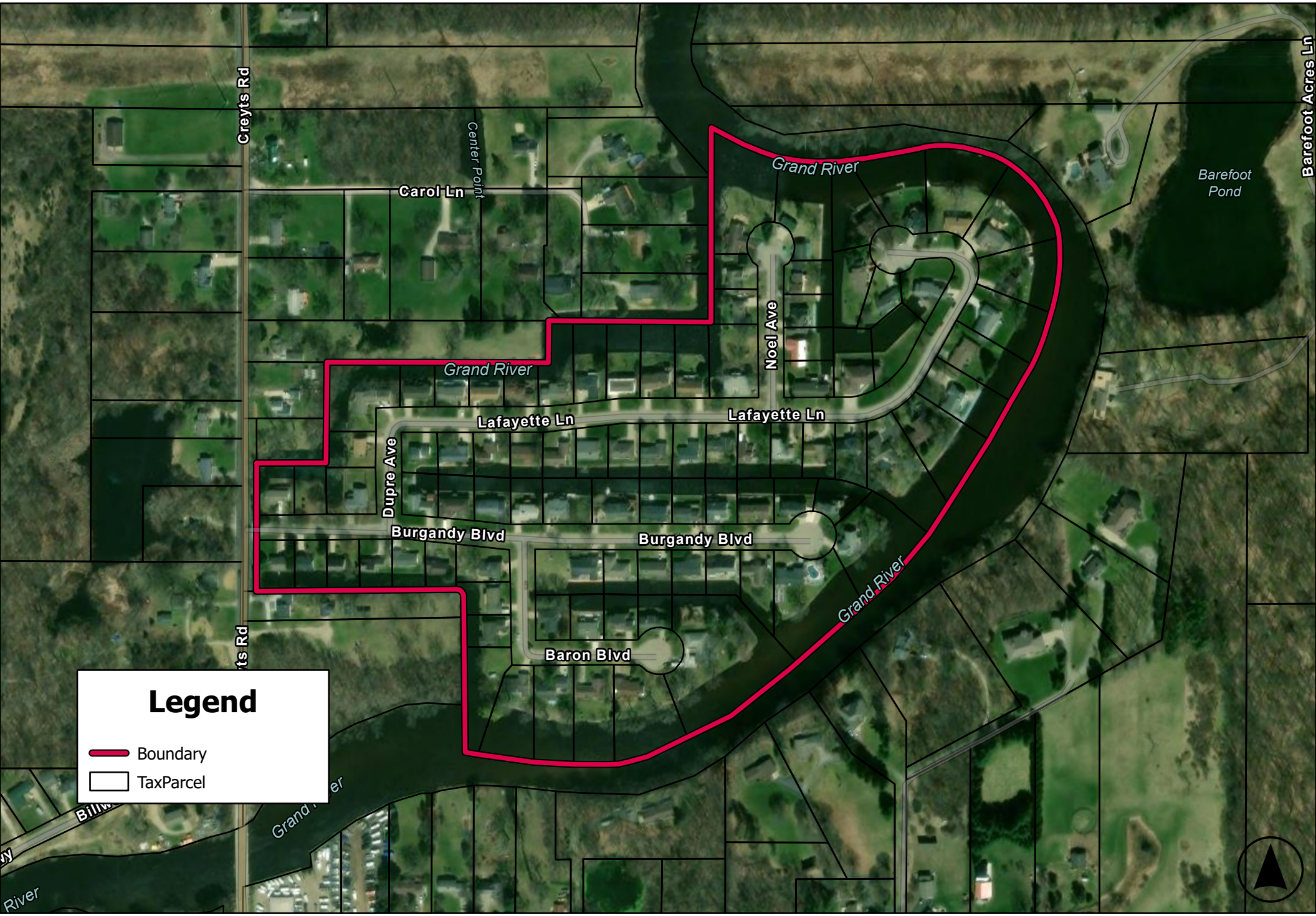
STATE OF MICHIGAN)
) ss
COUNTY OF EATON)

I, the undersigned, the duly qualified and acting Clerk for Windsor Charter Township, Eaton County, Michigan, DO HEREBY CERTIFY that the foregoing is a true and complete copy of certain proceedings taken by the Windsor Charter Township Board at a meeting held on the 10th day of March, 2026, and further certify that the above Resolution was adopted at said meeting.

_____
Meredith Barnhart-Smith,
Windsor Charter Township Clerk

Exhibit A

Grand Pointe Sub-Division Special Assessment District



Current Date: 3/10/2026 3:30 PM

Exhibit B

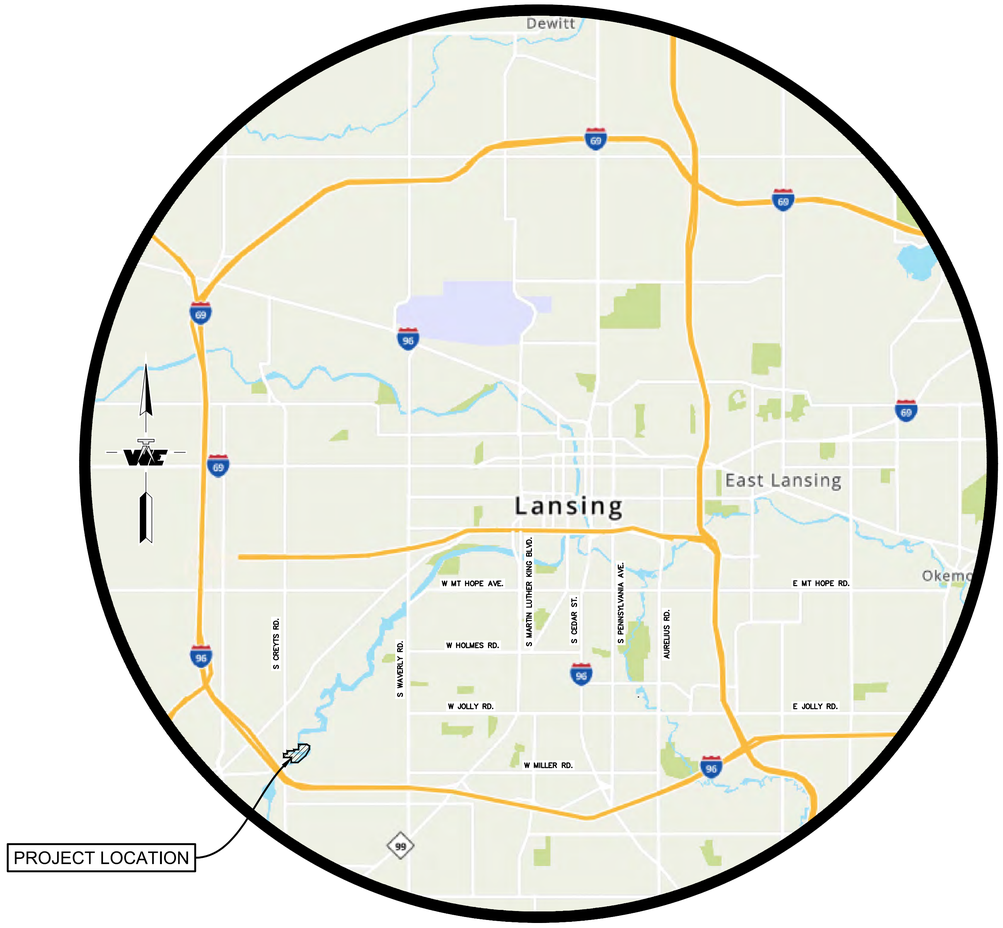
Grand Pointe Subdivision
Watermain Improvements
March 4, 2026

ITEM	EST. QTY.	UNIT	DESCRIPTION	UNIT PRICE	TOTAL
Grand Pointe Subdivision					
1	640	Lft	Sawcut Existing Bituminous	$4.00	$2,560.00
2	960	Lft	Sawcut Existing Concrete	$6.00	$5,760.00
3	17,400	Syd	Bituminous Pavement Removal	$4.50	$78,300.00
4	450	Sft	Concrete Removal	$18.00	$8,100.00
5	4,050	Sft	6-inch concrete walk/driveway	$13.00	$52,650.00
6	4,100	Cyd	8-inch (CIP) 21AA Aggregate Road Bed	$60.00	$246,000.00
7	2,515	Ton	MDOT HMA 13A @ 275#/syd (2-1/2")	$99.00	$248,985.00
8	1,525	Ton	MDOT HMA 13A @ 165#/syd (1-1/2")	$107.00	$163,175.00
9	10,050	Lft	Install Bituminous Curb	$7.00	$70,350.00
10	380	Lft	12" Storm Sewer Replacement (SDR-26)	$85.00	$32,300.00
11	30	Ea	Adjust Ex. Drainage Strucutre Castings	$700.00	$21,000.00
12	350	Cyd	Subgrade Undercut, Type II	$60.00	$21,000.00
13	2,005	Cyd	Earth Excavation to Subgrade	$17.00	$34,085.00
14	1	Ea	Live Tap 16-inch Water Main w/ 8" Tapping Valve and Sleeve	$10,000.00	$10,000.00
15	4,725	Lft	8-inch Ductile Iron Water Main	$150.00	$708,750.00
16	240	Ea	6-inch Ductile Iron Water Main	$150.00	$36,000.00
17	8	Ea	8-inch Gate Valve and Box	$3,300.00	$26,400.00
18	87	Ea	Water Service, 1-inch including tap, corp, curb stop and box	$1,400.00	$121,800.00
19	5,700	Lft	1-inch Copper Water Service	$68.00	$387,600.00
20	87	Ea	Water Service Connections to Existing Copper Service (at house or before)	$200.00	$17,400.00
21	8	Ea	2-inch Service Valves (at cul-de-sac loops)	$1,600.00	$12,800.00
22	820	Lft	2-inch Copper Loops (at cul-de-sac)	$105.00	$86,100.00
23	87	Ea	Connection of House Plumbing to Meter (Licensed Plumber)	$750.00	$65,250.00
24	10	Ea	6-inch Valved Hydrant Assembly	$7,500.00	$75,000.00
25	900	Lft	Remove Existing Pipe 12-inch or less	$15.00	$13,500.00
26	1	LS	Soil Erosion Control Measures	$60,000.00	$60,000.00
27	1	LS	Restoration inclduing Topsoil, Seeding, Fertilizer, and Mulch	$80,000.00	$80,000.00
28	1	LS	Final Project Cleanup	$10,000.00	$10,000.00
29	1	LS	Signing, Barricades & Traffic Control	$12,000.00	$12,000.00
			Total Estimated Construction Cost		**$2,706,865.00**
			Lansing BWL Engineering/Admin Fee		$40,000.00

GRAND POINTE SUBDIVISION - WATER MAIN REPLACEMENT

WINDSOR TWP

EATON COUNTY, MICHIGAN



LOCATION MAP

NOT TO SCALE

Sheet List Table

SHEET NUMBER	SHEET TITLE
C1.0	COVER
C2.0	ABBREVIATIONS GENERAL NOTES LEGEND
C3.0	LBWL DETAILS
C3.1	LBWL DETAILS
C3.2	LBWL AND CIVIL DETAILS
C4.0	EXISTING OVERALL PAVEMENT REMOVAL PLAN
C5.0	PROPOSED OVERALL SITE PLAN
C6.0	BURGUNDY PLAN AND PROFILE
C6.1	BURGUNDY PLAN AND PROFILE
C6.2	DUPRE AVE PLAN AND PROFILE
C6.3	LAFAYETTE LN PLAN AND PROFILE
C6.4	LAFAYETTE LN PLAN AND PROFILE
C6.5	LAFAYETTE LN PLAN AND PROFILE
C6.6	NOEL AVE PLAN AND PROFILE
C6.7	SARATOGA WAY PLAN AND PROFILE
C6.8	BARON BLVD PLAN AND PROFILE
C7.0	SESC PLAN
C7.1	SESC DETAILS

WOLVERINE
Engineers & Surveyors, Inc.
312 North Street
Mason, Michigan 48854
Ph: 517-676-9200
Fx: 517-676-9396
http://www.wolveng.com

LANSING BWL
Hometown People. Hometown Power.

PERMIT SET

WOLVERINE
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312 North Street
Mason, Michigan 48854
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GRAND POINTE SUBDIVISION - WATER MAIN REPLACEMENT 23-0086

ABBREVIATIONS

AB	AS-BUILT
BIT	BITUMINOUS
BLK	BULK HEAD
BM	BENCH MARK
BOC	BACK OF CURB
CB	CATCH BASIN
CI	CAST IRON
CIP	CAST IN PLACE
CL	CENTER LINE
CON	CONDUIT
CONC	CONCRETE
DI	DUCTILE IRON
DIA	DIAMETER
EGL	EXISTING GROUND LEVEL
EL	ELEVATION
EOP	EDGE OF PAVEMENT
EX	EXISTING
FF	FINISHED FLOOR
FOC	FACE ON CURB
HA	HYDRANT ASSEMBLY
HMA	HOT MIX ASPHALT
HYD	HYDRANT
LT	LEFT
O:	OFFSET
MH	MANHOLE
PAV	PAVEMENT
PR	PROPOSED
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
FM	FORCE MAIN
REC	RECORD
REL	RELOCATE
REM	REMOVE
RT	RIGHT
S:	STATION
SAN	SANITARY
STM	STORM
TOC	TOP OF CONCRETE
TOP	TOP OF PIPE OR TOP OF PAVEMENT
TOW	TOP OF WALL OR TOP OF WALK
WTR	WATER MAIN
TOPO	TOPOGRAPHIC SURVEY

EXISTING LEGEND

- CONTOUR – MJR
- CONTOUR – MNR
- SANITARY SEWER
- STORM SEWER
- WATER MAIN
- GAS MAIN
- OVERHEAD UTILITY
- COMMUICATION LINE
- CHAIN LINK FENCE
- WOOD FENCE
- VINYL FENCE
- CURB
- ROW
- PARCEL LINE
- GOVERNMENT LINE
- CENTERLINE
- TREE LINE
- STRUCTURE
- ASPHALT
- CONCRETE
- GRAVEL
- STONE
- SURFACE WATER
- WETLANDS
- DECIDUOUS TREE
- EVERGREEN TREE
- SHRUB
- STUMP
- SANITARY MANHOLE
- SANITARY CLEAN OUT
- SANITARY TRACE BOX
- STORM MANHOLE
- STORM CLEAN OUT
- STORM CATCH BASIN-CURB
- STORM CATCH BASIN-YARD
- STORM END SECTION
- STORM TRACE BOX
- HYDRANT
- WATER SERVICE VALVE
- WATER ISOLATION VALVE
- WATER MANHOLE
- WATER METER PIT
- WATER WELL
- WATER TRACE BOX
- LIGHT POLE
- UTILITY POLE
- GUY POLE
- GUY WIRE
- TELEPHONE RISER
- TELEPHONE MANHOLE
- GAS VALVE
- MAILBOX
- POST
- STREET SIGN
- SECTION CORNER
- FOUND PROPERTY IRON
- MONUMENT BOX
- SET PROPERTY IRON
- BENCHMARK
- SATELLITE DISH

REMOVALS LEGEND

- SAW CUT, INTERMEDIATE
- CURB AND GUTTER, REM
- PAVT, REM ASPHALT
- PAVT, REM CONCRETE
- REMOVAL
- ABANDON
- SAWCUT
- RELOCATE
- RELOCATE BY OTHERS
- PROTECT
- SILT FENCE
- EROSION CONTROL ITEM NUMBER (SEE STANDARD PLAN R-96 SERIES)
- SLOPE STAKE LINE

PROPOSED LEGEND

- SANITARY SEWER
- STORM SEWER
- WATER MAIN
- SANITARY MANHOLE
- SANITARY TRACE BOX
- STORM MANHOLE
- STORM CATCH BASIN CURB/YARD
- STORM OUTLET STRUCTURE
- STORM TRACE BOX
- STORM SEWER END SECTION
- STORM OR SANITARY CLEANOUT
- FIRE HYDRANT
- ISOLATION VALVE
- WATER SERVICE VALVE
- METER PIT
- WATER TRACE BOX
- ASPHALT
- CONCRETE
- CURB AND GUTTER
- CONTOUR – MJR
- CONTOUR – MNR
- WORKOUT STATION
- LIGHT POLE
- ELECTRIC LINE
- OVERHEAD ELECTRIC LINE
- CABLE LINE
- OVERHEAD CABLE LINE
- FIBER OPTIC LINE
- TELEPHONE LINE
- OVERHEAD TELEPHONE LINE

SURVEY NOTES:

COORDINATE SYSTEM:	STATE PLANE GRID
ZONE:	MICHIGAN SOUTH
HORIZONTAL DATUM:	NAD 83
VERTICAL DATUM:	NAVD 88
UNITS:	INTERNATIONAL FEET

GENERAL PLAN NOTES:

EXISTING WATER MAINS, SANITARY SEWERS, STORM SEWERS, COMBINED SEWERS, ETC.:

THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY DAMAGE TO THE EXISTING UTILITIES DURING ALL CONSTRUCTION ACTIVITIES. INSPECT ALL EXISTING SEWER PIPES ENCOUNTERED DURING CONSTRUCTION AND CONNECT TO APPROPRIATE SEWER AS DIRECTED BY THE ENGINEER.

MIOSHA:

PERFORM ALL WORK UNDER THIS CONTRACT IN ACCORDANCE WITH ALL APPLICABLE PROVISIONS, POLICIES, RULES, AND STANDARDS OF THE MICHIGAN OCCUPATIONAL SAFETY AND HEALTH ACT (MIOSHA).

DUST CONTROL:

PROVIDE DUST CONTROL AS DIRECTED BY THE ENGINEER.

TREE PROTECTION:

DO NOT CUT ROOTS OR LIMBS OF ANY TREES WITHIN THE PROJECT LIMITS NOT BEING REMOVED UNLESS APPROVED BY THE MUNICIPALITY'S ARBORIST. PROVIDE MUNICIPALITY WITH 72 HOURS WRITTEN NOTICE TO COORDINATE WITH ARBORIST. PROCEED WITH WORK AFTER 72 HOURS IF ARBORIST IS UNRESPONSIVE.

EXISTING UTILITY CONFLICTS:

RELOCATE EXISTING BURIED UTILITY LINES THAT CONFLICT WITH NEW CONSTRUCTION. COORDINATE WITH ENGINEER AND SERVICE PROVIDER. PAYMENT FOR RELOCATING EXISTING UTILITY LINES IS INCLUDED IN RELATED ITEMS OF WORK.

UNDERGROUND UTILITY ACCURACY:

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND FROM UTILITY COMPANY INFORMATION. THE ENGINEER MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE ENGINEER FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE ENGINEER HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.

SIDEWALK REMOVAL:

EXACT LOCATIONS OF CONCRETE SIDEWALK TO BE REMOVED WILL BE DETERMINED IN THE FILED BY THE ENGINEER.

SANITARY SEWER, STORM SEWER, AND WATER SERVICES:

THE LOCATION OF EXISTING SERVICES IS APPROXIMATE. FIELD VERIFY TO DETERMINE THE ACTUAL LOCATION DURING CONSTRUCTION. PAYMENT FOR FIELD LOCATING SERVICES IS INCLUDED IN RELATED ITEMS OF WORK.

LBWL GENERAL PLAN NOTES:

THE PROPOSED WATER MAIN INSTALLATIONS ARE NOT ON OR ADJACENT TO A SITE OF KNOWN OR SUSPECTED ENVIRONMENTAL CONTAMINATION.

MAINTAIN A MINIMUM OF 10FT HORIZONTAL AND 18 INCHES VERTICAL SEPARATION BETWEEN WATER AND SEWERS, AND A MINIMUM OF 5FT HORIZONTAL AND 12 INCHES VERTICAL SEPARATION BETWEEN WATER AND OTHER UTILITIES

IN THE EVENT A CONFLICT IS DISCOVERED IN THE FIELD, ADJUST EITHER THE WATER PIPING OR THE CONFLICTING UTILITY TO ACHIEVE THE REQUIRED MINIMUM SEPARATION

ALL WATER MAIN AND SERVICES TO BE INSTALLED IN ACCORDANCE WITH BWL STANDARDS AND SPECIFICATIONS

CONTRACTOR TO CONTACT THE BWL AT LEAST 72 HOURS PRIOR TO SCHEDULED SHUT OFFS TO COORDINATE SHUT DOWN AND TURN ON ACTIVITIES

ALL PUBLIC WATER OUTSIDE OF THE PUBLIC RIGHTS-OF-WAY SHALL BE WITHIN A 20' EASEMENT DEDICATED TO THE BWL

ALL DUCTILE IRON WATER MAIN SHALL BE PRESSURE CLASS 350. ALL COPPER PIPE SHALL BE TYPE K

ALL WORK ON THE BWL WATER DISTRIBUTION SYSTEM SHALL BE PERFORMED BY THE BWL OR A BWL APPROVED CONTRACTOR WITH A BWL INSPECTOR ON-SITE

A BWL WATER SERVICE AGREEMENT SHALL BE PUT IN PLACE PRIOR TO CONSTRUCTION OF ANY WATER RELATED ITEMS

A FULL STICK OF WATER PIPE SHALL BE CENTERED AT ALL SEWER CROSSINGS

REVISION	DATE	DRAWN	DESCRIPTION

WOLVERINE
Engineers & Surveyors, Inc.
312 North Street
Mason, Michigan 48854
Ph: 517 676 9200
Fx: 517 676 9396
http://www.wolveng.com

PROJECT: GRAND POINTE SUBDIVISION – WATER MAIN REPLACEMENT
TOWNSHIP OR MUNICIPALITY NAME
EATON COUNTY, MICHIGAN

SHEET TITLE: ABBREVIATIONS GENERAL NOTES LEGEND

APPROVED	DBH
CHECKED	DBH
DRAWN	PTS
JOB NO.	23-0086
DATE	2/5/2026
SCALE	NO SCALE
SHEET NO.	C2.0

2/2022 **W-02-0100**

WATER T&D Construction Standard

JOINT RESTRAINT CHART

APPLICATION: New ductile iron water mains & water services.

Joint Description	Joint Orientation	Minimum length of feet of pipe to be restrained per pipe diameter					
		4" Dia.	6" Dia.	8" Dia.	10" Dia.	12" Dia.	16" Dia.
22-1/2° Bend	Horizontal	3 ft	4 ft	5 ft	6 ft	7 ft	10 ft
45° Bend	Horizontal	6 ft	8 ft	11 ft	13 ft	15 ft	19 ft
45° Offset	Horizontal	6 ft	6 ft	12 ft	13 ft	19 ft	27 ft
45° Offset	Vertical	22 ft	30 ft	43 ft	51 ft	64 ft	85 ft
90° Bend	Horizontal	14 ft	20 ft	25 ft	31 ft	36 ft	46 ft
Reducer		-	6"x4" 25 ft	8"x6" 27 ft	10"x8" 27 ft	12"x10" 27 ft	16"x12" 50 ft
Tee Run		18 ft	18 ft	18 ft	18 ft	18 ft	18 ft
Tee Branch		33 ft	47 ft	63 ft	75 ft	89 ft	115 ft
Dead-End	Horizontal	34 ft	49 ft	63 ft	76 ft	90 ft	116 ft

Restrained chart W-02-0100 is based on the DIPRA Thrust Restraint Program. BWL restraint requirements specified in this standard are designed to be used on new construction assuming a type 3 laying condition, good sand & gravel backfill, 5 ft depth of cover, design pressure of 150 psi, polyethylene encasement and a safety factor of 2. If laying conditions vary in any way from these assumptions, contact BWL Engineer to determine restraint requirements.

Restraint requirements specified in this table shall begin at the joint of the fitting (which is always restrained).

For tee runs which are capped or plugged, the restraint through the run shall be equivalent to the length required for a dead-end.

Only BWL approved restrained joint gaskets and mechanical joint restraints shall be used for pipe restraint. Restraints must be verified. If restraints cannot be verified, refer to BWL Engineer for alternate restraint methods.

Alternate methods of restraint, such as thrust blocks and rodding, shall not be used unless approved by the BWL Engineer - **without exception.**

1 of 1

Manager, Water & Steam Distribution: Todd Russell Date: 3/15/2022

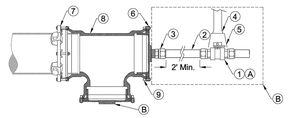
Director of Water Operations: Saugata Mangumdi Date: 3/15/2022

4/2021 **W-02-1050**

WATER T&D Construction Standard

DEAD-END MAIN FOR RESIDENTIAL CUL-DE-SACS

APPLICATION: Capping of ductile & cast iron water main dead-ends feeding residential cul-de-sacs.



INSTALLATION NOTES:

- The 2" curb stop will be used for the "ON/OFF" operation of the cul-de-sac 2" copper loop. Use only LBWL approved utility grade curb stops.
- Poly wrap past the end of the plug. Tape end so that ploy wrap is secure.
- Appropriate lengths of pipe shall be restrained ahead of the dead-end. Restraints up-stream of the dead-end must be verified. Refer to Water T&D Construction Standard W-02-0100 for approved restraint per pipe diameter and configuration. If up-stream restraints cannot be verified, refer to LBWL Engineer for alternate restraint methods.

(A) The curb stop and curb box shall be located between the curb and the sidewalk or within the utility easement. Curb stop shall not be installed in the sidewalk area or in a driveway.

(B) The same configuration must be installed on both branches of the tee.

MATERIALS REQUIRED FOR ALL SIZES

REF	ITEM NO.	QTY	DESCRIPTION
1	30-06801	2	CURB STOP, 2" CTS COMP, BOTH ENDS
2	30-45402	4FT	TUBE, COPPER TYPE K, 2"
3	30-26887	2	COUPLING, 2" CTS COMP X 2" M.I.P.
4	30-00320	2	CURB BOX, COMPLETE
5	30-00601	2	CURB BOX, ENLARGED BASE

MATERIALS 8"

REF	ITEM NO.	QTY	DESCRIPTION
6	36-25846	2	PLUG, 8" MJ WITH 2" TAP
7	36-23532 OR 36-23743	1	GLAND, RETAINER, WEDGE TYPE, 8" OR GLAND, RETAINER, WEDGE TYPE, 8" (OS)
8	36-50448	1	TEE, 8" X 8" MJ X MJ COMPACT
9	Non-Stock	2	GASKET & BOLT SET, 8" FLANGE

MATERIALS 6"

REF	ITEM NO.	QTY	DESCRIPTION
6	36-25804	2	PLUG, 6" MJ WITH 2" TAP
7	36-23529 OR 36-23730	1	GLAND, RETAINER, WEDGE TYPE, 6" OR GLAND, RETAINER, WEDGE TYPE, 6" (OS)
8	36-50406	1	TEE, 6" X 6" MJ X MJ COMPACT
9	30-35427	2	GASKET & BOLT SET, 6" FLANGE

MATERIALS 12"

REF	ITEM NO.	QTY	DESCRIPTION
6	36-25945	2	PLUG, 12" MJ WITH 2" TAP
7	36-23558 OR 36-23769	1	GLAND, RETAINER, WEDGE TYPE, 12" OR GLAND, RETAINER, WEDGE TYPE, 12" (OS)
8	36-50521	1	TEE, 12" X 12" MJ X MJ COMPACT
9	Non-Stock	2	GASKET & BOLT SET, 12" FLANGE

1 of 1

Manager, Water & Steam Distribution: Todd Russell Date: 2/9/2022

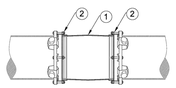
Director of Water Operations: Saugata Mangumdi Date: 2/10/2022

4/2021 **W-02-1660**

WATER T&D Construction Standard

SOLID SLEEVE ASSEMBLY 4" THROUGH 12"

APPLICATION: Installation of Solid Sleeve for a connection between an existing Iron Pipe and a new Ductile Iron Pipe.



INSTALLATION NOTES:

- For sleeve installation larger than 12" contact LBWL Engineer for restraint requirements.
- The new ductile iron pipe is to be restrained according to Water T&D Construction Standard W-02-0100.
- Completed assembly to be poly wrapped.

MATERIALS 4"

REF	ITEM NO.	QTY	DESCRIPTION
1	36-31708	1	SLEEVE, SOLID 4" MJ LONG, STANDARD
2	36-23516 OR 36-23727	2	GLAND, RETAINER, WEDGE, 04" OR GLAND, RETAINER, WEDGE, 4" OS

MATERIALS 6"

REF	ITEM NO.	QTY	DESCRIPTION
1	36-31708	1	SLEEVE, SOLID 6" MJ LONG, STANDARD
2	36-23529 OR 36-23730	2	GLAND, RETAINER, WEDGE, 06" OR GLAND, RETAINER, WEDGE, 6" OS

MATERIALS 8"

REF	ITEM NO.	QTY	DESCRIPTION
1	36-31708	1	SLEEVE, SOLID 8" MJ LONG, STANDARD
2	36-23532 OR 36-23743	2	GLAND, RETAINER, WEDGE, 08" OR GLAND, RETAINER, WEDGE, 8" OS

MATERIALS 12"

REF	ITEM NO.	QTY	DESCRIPTION
1	36-31708	1	SLEEVE, SOLID 12" MJ LONG, STANDARD
2	36-23558 OR 36-23769	2	GLAND, RETAINER, WEDGE, 12" OR GLAND, RETAINER, WEDGE, 12" OS

1 of 1

Manager, Water & Steam Distribution: Todd Russell Date: 2/9/2022

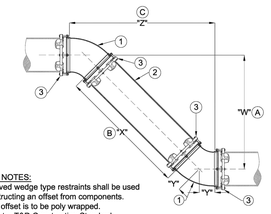
Director of Water Operations: Saugata Mangumdi Date: 2/10/2022

4/2021 **W-02-2080**

WATER T&D Construction Standard

8" ASSEMBLED OFFSETS

APPLICATION: Adjusting water main horz. or vert. to avoid existing utilities.



INSTALLATION NOTES:

- Only approved wedge type restraints shall be used when constructing an offset from components.
- Completed offset is to be poly wrapped.
- Refer to Water T&D Construction Standard W-02-0100 for restrained pipe lengths each side of the offset.
- Refer to Water T&D Construction Standard W-02-2500 for complete offsets under existing sewers and other utilities.

(A) This dimension equals the distance the main is to be offset.

(B) This dimension equals the cut length for the pipe.

(C) This dimension equals the lay length of the offset in the water main.

DIMENSIONS
** For offset lengths of 12" or less use cast offsets

"W"	"X"	"Y"	"Z"
18"	19"	3-1/2"	25"
24"	27"	3-1/2"	31"
30"	35"	3-1/2"	37"
36"	44"	3-1/2"	43"
42"	52"	3-1/2"	49"
48"	61"	3-1/2"	55"
54"	69"	3-1/2"	61"
60"	78"	3-1/2"	67"

MATERIALS PRECAST

REF	ITEM NO.	QTY	DESCRIPTION
**	36-24807	AS REQ'D.	OFFSET, 8" X 6" M.J. X M.J. FULL BODY
**	36-24881	AS REQ'D.	OFFSET, 8" X 12" M.J. X M.J. FULL BODY

MATERIALS

REF	ITEM NO.	QTY*	DESCRIPTION
1	36-02760	2	BEND, 8" MJ X MJ 45° COMPACT
2	37-11163	AS REQ'D.	PIPE, DUCTILE IRON, 8" SJ
3	36-23532	4	GLAND, RETAINER, WEDGE TYPE, 8"
4	37-00011	AS REQ'D.	PIPE, ENCASEMENT, 8-10" PIPE

* Required for making one offset.

1 of 1

Manager, Water & Steam Distribution: Todd Russell Date: 2/9/2022

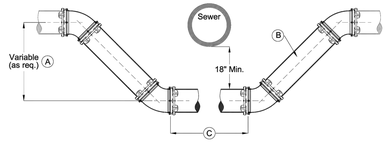
Director of Water Operations: Saugata Mangumdi Date: 2/10/2022

4/2021 **W-02-2500**

WATER T&D Construction Standard

OFFSETS UNDER SEWERS AND OTHER EXISTING UTILITIES

APPLICATION: Adjusting water main vertically to avoid existing utilities.



INSTALLATION NOTES:

- 18" vertical separation is required above or below sewer.
- Only approved wedge type restraints shall be used when constructing an offset from components.
- Completed offset is to be poly wrapped.
- Refer to Water T&D Construction Standard W-02-0100 for restrained pipe lengths each side of the offset.
- Refer to Water T&D Construction Standard W-10-0005 for proper compaction of backfill material.

(A) This dimension equals the distance the main is to be offset.

(B) For pipe size, length and dimensions refer to the appropriate Water T&D Construction Standard listed in the "Materials for Assembled Offsets" table.

(C) In accordance with the Recommended Standards for Water Works, published by Great Lakes - Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers, commonly known as the "Ten States Standards", one full stick of pipe shall be installed at all sewer crossings.

MATERIALS FOR ASSEMBLED OFFSETS

PIPE SIZE	WATER T&D CONSTRUCTION STANDARD
3"	W-02-2030
4"	W-02-2040
6"	W-02-2060
8"	W-02-2080
10"	W-02-2100
12'	W-02-2120
14"	W-02-2140
16"	W-02-2160

1 of 1

Manager, Water & Steam Distribution: Todd Russell Date: 2/9/2022

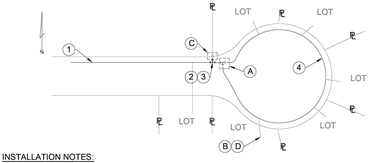
Director of Water Operations: Saugata Mangumdi Date: 2/10/2022

4/2021 **W-02-3008**

WATER T&D Construction Standard

WATER MAIN FOR RESIDENTIAL CUL-DE-SACS

APPLICATION: Water main and equipment installation and layout for cul-de-sac fed by D.I. main.



INSTALLATION NOTES:

- A maximum of 6 - 1" services can be tapped off the 2" CU main which cannot exceed 250' in total length unless otherwise approved by engineering.
- All associated construction standards must be referenced to develop a complete material list.
- Refer to Water T&D Construction Standard W-03-0025 for all curb box to building service line installation requirements.
- 2" curb stops are the "ON/OFF" valves for the cul-de-sac.

(A) See Water T&D Construction Standard W-02-1050 for "Dead-end Main for Residential Cul-De-Sacs".

(B) See Water T&D Construction Standard W-03-0015 for 1" service stub installation.

(C) See Water T&D Construction Standard W-05-0045 for typical fire hydrant installation, which includes hydrant leg.

(D) See Water T&D Construction Standard W-03-1800 for the 2" x 2" x 1" service tap and reference Water T&D Construction Standard W-03-0015 to complete the service stub installation. Locate curb box/curb stop no more than 24" behind curb or between sidewalk and curb when sidewalk has been installed. Secondary location for the 1" curb stop is within the utility easement.

MATERIALS 6"

REF	ITEM NO.	QTY	DESCRIPTION
1	37-11147	AS REQ'D	PIPE, DUCTILE IRON 6" SJ
2	36-50406	1	TEE, 6"X6" MJXMJ COMPACT
3	36-23529	2	GLAND, RETAINER, WEDGE, 6"
4	30-45402	AS REQ'D	TUBE, COPPER TYPE K, 2"

MATERIALS 8"

REF	ITEM NO.	QTY	DESCRIPTION
1	37-11163	AS REQ'D	PIPE, DUCTILE IRON 8" SJ
2	36-51643	1	TEE, 8"X6" MJXMJ COMPACT
3	36-23532	2	GLAND, RETAINER, WEDGE, 8"
4	30-45402	AS REQ'D	TUBE, COPPER TYPE K, 2"

1 of 1

Manager, Water & Steam Distribution: Todd Russell Date: 2/9/2022

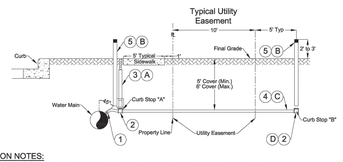
Director of Water Operations: Saugata Mangumdi Date: 2/10/2022

2/2022 **W-03-0015**

WATER T&D Construction Standard

STANDARD 1" SERVICE STUB INSTALLATION

APPLICATION: Typical residential subdivision service stub installation. For general reference and contract use.



INSTALLATION NOTES:

- Typical service stub is 1" Dia. copper. Other sizes may be specified when required.
- Curb stops shall not be installed within the area designated for the driveway.
- Curb stop "A" shall be installed at a bury depth of 5'.
- Service is to extend 5' beyond the utility easement.
- If no utility easement exists, curb stop "B" shall not be installed. Corp. stop & curb stop "A" are all that will be required.
- Service stub installation shall include all documentation described in Water T&D Construction Standard W-03-0005.
- "Service Stubs" installed by non-BWL personnel shall be inspected by the BWL prior to backfill. Any services not visible shall be exposed for inspection prior to BWL approval. BWL shall charge a nominal fee per inspection. Refer to BWL "Rules and Regulations for Water Service" for current inspection fee.

(A) After curb box is installed, raise curb box to final grade.

(B) Install a 4"x4" wood post next to each curb stop with the top extending 2' to 3' above final grade. The top of the stake must be painted blue.

(C) The copper stub between curb box "A" and curb box "B" must be pressurized to ensure that any damage to the stub will be recognized and repaired. Curb stop "A" will be left ON & curb stop "B" will be OFF until the service is extended.

MATERIALS FOR 1" SERVICE

REF	ITEM NO.	QTY	DESCRIPTION
1	30-03446	1	CORP STOP, 1" CC X 1" CTS COMP
2	30-06166	2	CURB STOP, 1" CTS COMP BOTH ENDS
3	30-00320	1	CURB BOX, COMPLETE
4	30-45345	AS REQ'D	TUBE, COPPER TYPE K, 1" X 60FT
5	Non-Stock	2	4" X 4" WOOD POST

1 of 1

Manager, Water & Steam Distribution: Todd Russell Date: 8/18/2022

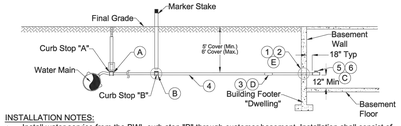
Director of Water Operations: Saugata Mangumdi Date: 8/19/2022

3/2022 **W-03-0025**

WATER T&D Construction Standard

STANDARD 1" SERVICE INSTALLATION CURB BOX TO BUILDING BASEMENT

APPLICATION: Completing service installations from existing service stubs.



INSTALLATION NOTES:

- Install water service from the BWL curb stop "B" through customer basement. Installation shall consist of a 1" copper tube water service.
- Depth of the service shall be 60" to 72" unless otherwise specified by BWL Engineer.
- Installation of curb box to building service shall include all documentation described in Water T&D Construction Standard W-03-0005.
- "Curb Box to Building" services installed by non-BWL personnel shall be inspected by the BWL prior to backfill. Any services not visible shall be exposed for inspection prior to BWL approval. A pressure test on the service line must be completed by the BWL inspector for the service lead into the customer's premises. BWL shall charge a nominal fee per inspection. Refer to the BWL "Rules and Regulations for Water Service" for current inspection fees. The installation of a meter set is the responsibility of the BWL inspector for all "Customer Choice" & other service installation work performed by non-BWL personnel. The meter set is to be installed on the incoming copper line with the building plumbing being fully connected and capped off near the meter set, prior to contacting BWL to install the water meter.

(A) Close/Shut off curb stop "A". *If the existing service stub is of non-standard construction, (i.e. improper depth or located in driveway) the stub shall be relocated in depth and/or location, to put the curb stop at 5' below final grade and/or out from under the driveway. Curb stops shall be relocated to the area between the curb and sidewalk or within the Right-Of-Way, without exception.*

(B) Locate curb stop "B" by excavating directly beneath the marker stake. Leave curb stop "B" in place in the open position. Do not place a curb box on curb stop "B".

(C) Install copper service tubing so that it protrudes from the wall approx. 18" to accommodate meter setting. Install elbow and coupling (if needed).

(D) An additional compression coupling may be necessary if tubing is not long enough.

(E) Penetrations through outside walls for service lines shall be filled inside and outside with an approved cement patching compound. Outside wall shall be sealed using an approved mastic compound.

MATERIALS FOR 1" SERVICE

REF	ITEM NO.	QTY	DESCRIPTION
1	49-02007	AS REQ'D	CEMENT, PATCH COMPOUND 50#PL
2	49-06401	AS REQ'D	COMPOUND, VAULT & SEWER SEAL
3	30-25851	1 OR 2	COUPLING, 1" CTS COMP BOTH ENDS
4	30-45345	AS REQ'D	TUBE, COPPER, TYPE K, 1" X 60FT
5	30-26290	1	ELBOW, 90 DEG 1" CTS COMP BOTH ENDS
6	30-25587	1	COUPLING, 1" CTS COMP X 1" MIP

1 of 1

Manager, Water & Steam Distribution: Todd Russell Date: 8/18/2022

Director of Water Operations: Saugata Mangumdi Date: 8/19/2022

DETAIL NOTE

THIS SHEET CONTAINS A FEW OF THE LANSING BOARD OF WATER AND LIGHT (LBWL) CONSTRUCTION DETAILS. FOR ADDITIONAL DETAILS AND REQUIREMENTS SEE THE LBWL WATER CONSTRUCTION STANDARDS.

REVISION	DATE	DRAWN	DESCRIPTION

WOLVERINE
Engineers & Surveyors, Inc.
312 North Street
Mason, Michigan 48854
Ph: 517.676.9200
Fx: 517.676.9396
http://www.wolveng.com

PROJECT: GRAND POINTE SUBDIVISION – WATER MAIN REPLACEMENT
TOWNSHIP OR MUNICIPALITY NAME
EATON COUNTY, MICHIGAN

SHEET TITLE: LBWL DETAILS

APPROVED: DBH

CHECKED: DBH

DRAWN: PTS

JOB NO.: 23-0086

DATE: 11/26/2025

SCALE: NO SCALE

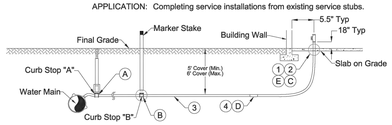
SHEET NO.: C3.0

3/2022 W-03-0035

WATER T&D Construction Standard

STANDARD 1" SERVICE INSTALLATION CURB BOX TO BUILDING SLAB

APPLICATION: Completing service installations from existing service stubs.



INSTALLATION NOTES:

- Install water service from the BWL curb stop "B" through customer slab. Installation shall consist of a 1" copper tube water service.
- Depth of the service shall be 60" to 72" unless otherwise specified by BWL Engineer.
- Installation of curb box to building service shall include all documentation described in Water T&D Construction Standard W-03-0005.
- "Curb Box to Building" services installed by non-BWL personnel shall be inspected by the BWL prior to backfill. Any services not visible shall be exposed for inspection prior to BWL approval. A pressure test on the service line must be completed by the BWL inspector for the service lead into the customer's premises. BWL shall charge a nominal fee per inspection. Refer to the BWL "Rules and Regulations for Water Service" for current inspection fees. The installation of a meter set is the responsibility of the BWL inspector for all "Customer Choice" & other service installation work performed by non-BWL personnel. The meter set is to be installed on the incoming copper line with the building plumbing being fully connected and capped off near the meter set, prior to contacting BWL to install the water meter.

(A) Close/Shut off curb stop "A". *If the existing service stub is of non-standard construction, (i.e. improper depth or located in driveway) the stub shall be relocated in depth and/or location, to put the curb stop at 5' below final grade and/or out from under the driveway. Curb stops shall be relocated to the area between the curb and sidewalk or within the Right-Of-Way, without exception.*

(B) Locate curb stop "B" by excavating directly beneath the marker stake. Leave curb stop "B" in place in the open position. Do not place a curb box on curb stop "B".

(C) Install copper service tubing so that it protrudes from the floor approx. 18" to accommodate meter setting.

(D) An additional compression coupling may be necessary if tubing is not long enough.

(E) Penetrations through slabs for service lines shall be filled inside and outside with an approved cement patching compound. Outside slab shall be sealed using an approved mastic compound.

MATERIALS FOR 1" SERVICE

REF	ITEM NO.	QTY	DESCRIPTION
1	49-02007	AS REQ'D	CEMENT, PATCH COMPOUND 50A/PL
2	49-00401	AS REQ'D	COMPOUND, VAULT & SEWER SEAL
3	30-45345	AS REQ'D	TUBE, COPPER, TYPE K, 1" X 60FT
4	30-20851	1 OR 2	COUPLING, 1" CTS COMP BOTH ENDS

1 of 1

Manager, Water & Steam Distribution: Todd Russell Date: 8/18/2022

Director of Water Operations: Saugata Mazumdar Date: 8/19/2022

4/2022 W-03-1075

WATER T&D Construction Standard

SERVICE CONNECTION - DIRECT TAP, 3/4" & 1", ON POLYETHYLENE ENCASED DUCTILE IRON WATER MAIN

APPLICATION: 3/4" and 1" service connections.

BWL requires the "preferred method" be used when making direct taps in ductile iron and gray-iron water main. As stated in AWWA C600, the "preferred method" of tapping polyethylene-encased ductile iron pipe consists of applying two or three wraps of polyethylene adhesive tape completely around the pipe to cover the area where the tapping machine and chain will be mounted. This method minimizes the possible damage to the polyethylene during the direct tapping procedure. After the tapping machine is mounted, the corporation stop is installed directly through the pipe and polyethylene encasement. After the direct tap is completed, the entire circumferential area shall be inspected for damage and repaired. Unrepaired damage to the polyethylene encasement, in the form of rips and tears, may result in accelerated corrosion of the water main.

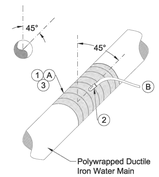
When tapping 3" or 4" ductile iron, only 3/4" direct taps are allowed. 1" taps on 3" or 4" ductile iron will require a saddle. Refer to BWL Engineer.

INSTALLATION NOTES:

- Typical service stub is 1" Dia. copper. Other sizes may be specified when required.

(A) Apply two to three layers of polyethylene adhesive tape around the pipe, directly over the polywrap. The width of the taped area should be several inches wider than the mounting area for the tapping machine chains. Setup the tapping machine directly over the taped off area being careful not to tear any of the surrounding polywrap. Adjust the tapping machine to an approximate angle of 45° (two o'clock or ten o'clock - approximately). Tap directly through the polywrap.

(B) Refer to Water T&D Construction Standard W-03-0015 for service stub installation.



MATERIALS

REF	ITEM NO.	QTY	DESCRIPTION
1	NON-STOCK	1 ROLL	TAPE, POLYETHYLENE
2	30-03123 OR 30-03446	AS REQ'D	CORP STOP, 3/4" CC X 3/4" CTS COMP OR CORP STOP, 1" CC X 1" CTS COMP
3	37-00___	AS REQ'D	PIPE, ENCASEMENT, __-__" PIPE

1 of 1

Manager, Water & Steam Distribution: Todd Russell Date: 8/18/2022

Director of Water Operations: Saugata Mazumdar Date: 8/19/2022

6/2022 W-03-6000

WATER T&D Construction Standard

ABANDONMENT OF EXISTING WATER SERVICE LINES

APPLICATION: Procedural issues for the abandonment of water services.

Abandonment of a service line is the physical disconnection of the service line at the corporation stop. This is typically achieved by cutting the service at the corporation stop. All service abandonments shall include a completed "Water Service Order." The "Water Service Order" shall be forwarded to the Water T&D Department no later than one week after completion of the work.

The "Water Service Order" shall include the order number, address associated to the service line, reason for action, Miss Dig #, and the date wanted. The crew supervisor or inspector must complete the "Water Service Order" by filling out the date that work was completed and detailed description of physical properties and location of the service line as indicated in the "Water Service Order" as shown below:

CORPORATION STOP:
54' N of Hyd.
NE Corner, Smith Rd. & Daly St.

The "NOTES" section of the service order shall be used for all additional information.

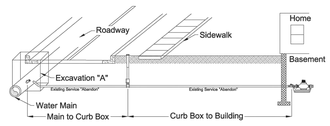
Service line abandonment may be documented as the "Main To Curb Box" section or the entire service line. Previous work may have removed the "Curb Box To Building" portion of the service line so only the "Main To Curb Box" section remains for the possibility of abandonment.

Excavation "A":

- There must be access to the corporation stop to abandon the service line. The corporation stop must be shut off before the abandoned service line is disconnected.
- After closing the corporation stop, visually inspect for leaks. Leaks from the discharge opening (end) of the corporation stop are not a significant concern. If the corporation stop leaks form the top or bottom of the operating valve, the corporation stop will require removal and a repair sleeve must be installed.
- Have a repair sleeve prepared and in place in case of corporation stop failure.

General Construction Notes:

- Never use a saw to cut lead service lines as dust particles created from sawing are a serious health concern when inhaled. Use only hook blade or bolt type cutters.



1 of 1

Manager, Water & Steam Distribution: Todd Russell Date: 8/18/2022

Director of Water Operations: Saugata Mazumdar Date: 8/19/2022

6/2022 W-03-9008

WATER T&D Construction Standard

PRESSURE TESTING PROCEDURE FOR NEW COPPER TUBE WATER SERVICE LINES

APPLICATION: Procedure for testing and acceptance of copper tube water service lines during initial installation.

Pressure testing shall be performed on all new service lines to check for leaks and to verify general service line integrity. Pressure testing shall only be performed on service lines that have been fully installed in it's permanent location, with the exception of back-filling.

Water Service Line Pressure Test and Visual Inspection:

- Upon completion of the service line testing, acceptance and meter set installation, documentation of installed services shall be completed per Water T&D Construction Standard W-03-0005.
- Refer to W-04 series Water T&D Construction Standards for meter set installations.
- Any drop in pressure indicates a leak in the service line and results in a failed test. If a leak is observed or suspected then locate the leak and correct it or replace the service line.
- Pressure testing must be completed by a BWL representative.

(A) Install pressure testing assembly on open end of the service line. Close valve to pressure gauge and open valve to the outlet hose. The hose is typically extended outside the basement.

(B) Flush a minimum of 1 minute per every 50' of service (rounded up to the next minute) or until water runs clear, whichever is greater. All services regardless of length must be flushed for a minimum of 1 minute.

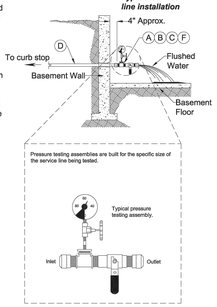
(C) After flushing line, turn off valve to outlet hose and open valve to pressure gauge. Note initial pressure reading. Pressure reading should remain steady for the duration of the inspection.

(D) With the curb stop "ON" and the outlet valve still closed (line is pressurized), walk the length of the service line to closely check for any leaks at any compression couplings, the curb stop and the corporation stop.

(E) Close the curb stop and watch for any pressure drop on the test gauge.

(F) If the water meter is not installed at the time of the service line pressure test and inspection, close/shut off the curb stop valve. Close meter set inlet valve and install a barrel lock.

Typical service line installation



1 of 1

Manager, Water & Steam Distribution: Todd Russell Date: 8/18/2022

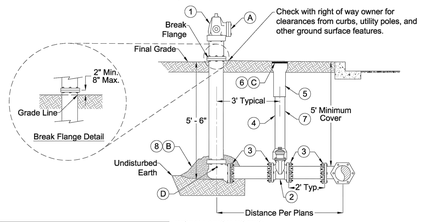
Director of Water Operations: Saugata Mazumdar Date: 8/19/2022

1/2023 W-05-0045

WATER T&D Construction Standard

TYPICAL FIRE HYDRANT INSTALLATION

APPLICATION: Hydrant taps off water mains.



MATERIALS

REF	ITEM NO.	QTY	DESCRIPTION
1	35-00073	1	HYDRANT, TRAFFIC, 5½" RED WITH 6" MJ INLET
2	38-02063	1	VALVE, GATE 6" MJ X MJ RESILIENT WEDGE
3	36-23529	4	GLAND, RETAINER, WEDGE TYPE, 06"
4	35-05406	1	VALVE BOX, BOTTOM SECT., 30" SCREW TYPE
5	36-05646	1	VALVE BOX, TOP SECT, 26" SCREW TYPE
6	36-05480	1	VALVE BOX, DROP LID, 5.25" MARKED WATER
7	36-05240	1	VALVE BOX, SCREW TYPE EXT, 14" MAX
8	NON-STOCK	AS REQ'D	WASH STONE, HYDRANT, 1-1/2" to 2"

INSTALLATION NOTES:

- Typical fire/traffic hydrant is installed directly on the side lot line. Other locations may be specified when required.
- All connections must be mechanical joint unless otherwise approved by the Engineer.
- Refer to BWL Engineering for alternate methods of restraint.
- Backfill around hydrant and valve shall be compacted per Water T&D Construction Standard W-10-0005.
- Secure the hydrant to keep barrel upright during installation.

(A) Pumper nozzle connection shall always face the street. A plumb bob, level or similar device shall be used to assure a vertical/upright hydrant installation.

(B) Drainage bed shall be located at least 10ft from both storm and sanitary sewers and sewer leads and shall consist of a minimum of 1/2-yard of 1-1/2" to 2" washed stone.

(C) Adjust valve box lid to be level with finish grade.

(D) Drain ports shall be plugged unless a competent person on-site determines they may remain open. Drain ports shall not be opened if the competent person observes or suspects seasonal or permanent high groundwater table or the presence of contamination in the area of the hydrant installation.

1 of 1

Manager, Water & Steam Distribution: Todd Russell Date: 1/12/2023

Director of Water Operations: Saugata Mazumdar Date: 1/12/2023

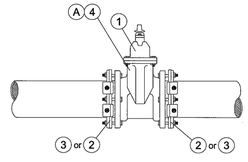
5/2006 W-06-0900

LANSING BOARD OF WATER & LIGHT

Water T&D Construction Standard

STANDARD WATER VALVE INSTALLATION

APPLICATION: Line valves in water mains.



INSTALLATION NOTES

- Typical new valve installation or replacement. Size and type of gland is dependent on the size and type of pipe.
- Refer to LBWL Water T&D Standard W-06-1000 for valve box installation.

(A) The pipe, valve and glands shall be wrapped in polyethylene encasement material. The polyethylene encasement material shall provent contact between the pipe, valve and the bedding material but is not intended to be a watertight enclosure. Polyethylene tape shall be used to close seams, secure to pipe, or hold overlaps.

MATERIALS

REF	ITEM NO.	QTY	DESCRIPTION
(1)	38-02021	1	Valve, Gate, 3" MJ x MJ
(1)	38-02047	1	Valve, Gate, 4" MJ x MJ
(1)	38-02063	1	Valve, Gate, 6" MJ x MJ
(1)	38-02089	1	Valve, Gate, 8" MJ x MJ
(1)	38-02104	1	Valve, Gate, 10" MJ x MJ
(1)	38-02120	1	Valve, Gate, 12" MJ x MJ
(1)	38-02175	1	Valve, Gate, 14" MJ x MJ
(1)	38-02146	1	Valve, Gate, 16" MJ x MJ

MATERIALS

REF	ITEM NO.	QTY	DESCRIPTION
(2)	36-23503	2	Gland, Retainer, Wedge 3"
(2)	36-23516	2	Gland, Retainer, Wedge 4"
(2)	36-23529	2	Gland, Retainer, Wedge 6"
(2)	36-23532	2	Gland, Retainer, Wedge 8"
(2)	36-23545	2	Gland, Retainer, Wedge 10"
(2)	36-23558	2	Gland, Retainer, Wedge 12"
(2)	36-23615	2	Gland, Retainer, Wedge 14"
(2)	36-23561	2	Gland, Retainer, Wedge 16"

20", 24" & 30" retainer glands are also stocked by LBWL

MATERIALS

REF	ITEM NO.	QTY	DESCRIPTION
(3)	36-23727	2	Gland, Retainer, Wedge 4" over size
(3)	36-23730	2	Gland, Retainer, Wedge 6" over size
(3)	36-23743	2	Gland, Retainer, Wedge 8" over size
(3)	36-23756	2	Gland, Retainer, Wedge 10" over size
(3)	36-23769	2	Gland, Retainer, Wedge 12" over size
(3)	36-23772	2	Gland, Retainer, Wedge 14" over size

MATERIALS

REF	ITEM NO.	QTY	DESCRIPTION
(4)	37-00008	as req.	Pipe encasement, 6"
(4)	37-00011	as req.	Pipe encasement, 8"
(4)	37-00024	as req.	Pipe encasement, 10"
(4)	37-00037	as req.	Pipe encasement, 12"
(4)	37-00040	as req.	Pipe encasement, 16"
(4)	37-00110	as req.	Pipe encasement, 30"

Page 1 of 1

Director of Engineering: [signature] Date: 5/31/06

Director of Delivery: [signature] Date: 6/12/06

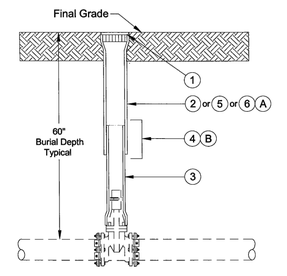
12/2003 W-06-1000

LANSING BOARD OF WATER & LIGHT

Water T&D Construction Standard

TYPICAL VALVE BOX ASSEMBLY

APPLICATION: Installation of typical valve box over water main & hydrant valves.



INSTALLATION NOTES

- Valve box shall be installed in plumb upright postion.

(A) Valve box tops in 10" & 16" lengths are typically used on large diameter watermains where the size of the valve brings the operating nut closer to the surface. Less frequent circumstances may require that the water main be installed at depths shallower than the 60" (minimum) standard.

(B) Valve box extensions are only used when the depth of bury is increased over nominal standards (60").

MATERIALS

REF	ITEM NO.	QTY	DESCRIPTION
(1)	36-05480	1*	Valve Box Lid marked "WATER"
(2)	36-05646	1*	Valve Box Top 26" Screw Type
(3)	36-05406	1*	Valve Box Bottom 30" Screw Type
(4)	36-05240	If Req.'d	Valve Box Extension 14" Screw Type
(5)	36-05563	As Req.'d	Valve Box Top 10" Screw Type
(6)	36-05604	As Req.'d	Valve Box Top 16" Screw Type

* Required for making one Valve Box Assembly

Page 1 of 1

Manager, System Integrity & Customer Projects: [signature] Date: 12/18/03

Manager, Water T&D Resource Center: [signature] Date: 12/19/03

DETAIL NOTE

THIS SHEET CONTAINS A FEW OF THE LANSING BOARD OF WATER AND LIGHT (LBWL) CONSTRUCTION DETAILS. FOR ADDITIONAL DETAILS AND REQUIREMENTS SEE THE LBWL WATER CONSTRUCTION STANDARDS.

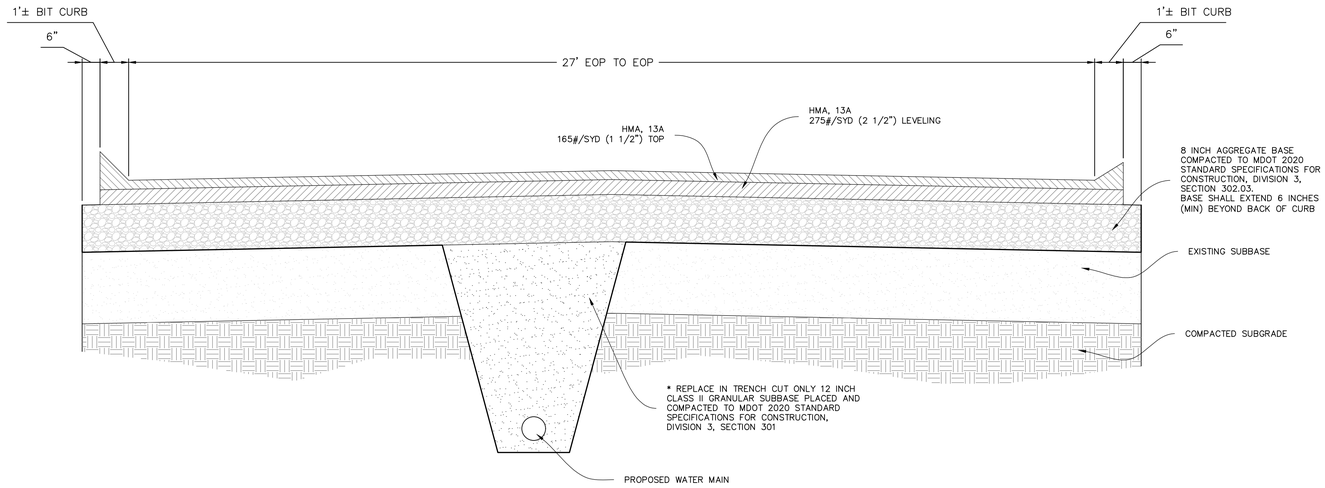
REVISION	DATE	DRAWN	DESCRIPTION

WOLVERINE Engineers & Surveyors, Inc.
312 North Street
Mason, Michigan 48854
Ph: 517.676.9200
Fx: 517.676.9396
http://www.wolveng.com

PROJECT: GRAND POINTE SUBDIVISION – WATER MAIN REPLACEMENT
TOWNSHIP OR MUNICIPALITY NAME
EATON COUNTY, MICHIGAN

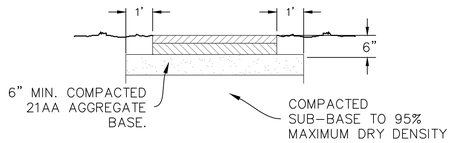
SHEET TITLE: LBWL DETAILS

APPROVED	DBH
CHECKED	DBH
DRAWN	PTS
JOB NO.	23–0086
DATE	11/26/2025
SCALE	NO SCALE
SHEET NO.	C3.1



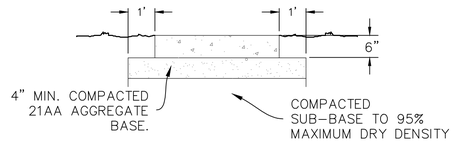
PAVEMENT REPLACEMENT SECTION

No Scale



4" BIT DRIVEWAY REPLACEMENT

No Scale



6" CONCRETE DRIVEWAY REPLACEMENT

No Scale

SERVICE CONNECTION NOTES

WATER SERVICES SHALL BE REPLACED PER THE DETAILS ON THESE DETAIL SHEETS.

WHERE DIRECTED BY THE ENGINEER, THE CONTRACTOR SHALL CONSTRUCT A NEW CORPORATION STOP. THE EXISTING CORPORATION STOP SHALL BE TURNED OFF, AND CAPPED. COST OF ABANDONING THE EXISTING CORPORATION SHALL BE INCLUDED IN THE COST OF THE NEW CORPORATION.

WHERE DIRECTED BY THE ENGINEER, THE CONTRACTOR SHALL CONSTRUCT A NEW CURB STOP. THE NEW CURB STOP SHALL BE LOCATED BETWEEN CURB AND FRONT OF WALK OR AS DIRECTED BY THE ENGINEER.

CURB STOP SHALL HAVE THE SAME DIAMETER AS MAIN SIDE PIPING AND CONNECT TO THE HOUSE SIDE PIPING WITH ADAPTER. IF CURB STOP IS TO REMAIN, CONNECT WITH SIDE PIPING TO CURB STOP WITH ADAPTER.

FOR COPPER SERVICE PIPING GREATER THAN 1" DIAMETER (I.E. STICK PIPE) CONSTRUCT CORPORATION IN LINE WITH PIPING.

ALL LEAD (Pb) SERVICE PIPE SHALL BE REMOVED OR ABANDONED IN ACCORDANCE WITH THE SPECIFICATIONS UNLESS DIRECTED OTHERWISE BY ENGINEER.

NI 1" OR SMALLER WATER FITTINGS SHALL BE INSTALLED BETWEEN THE MAIN AND CURB STOP FOR LOCATIONS THAT REQUIRE A NEW STUB FROM MAIN TO CURB BOX. IF SERVICES ARE TO BE COUPLED, CONTRACTOR SHALL INSTALL WATER SERVICE OF THE SAME DIAMETER AS THE EXISTING.

REVISION	DATE	DRAWN	DESCRIPTION

WOLVERINE
Engineers & Surveyors, Inc.
332 North Street
Mason, Michigan 48854
Ph: 517 676-9200
Fx: 517 676-9396
http://www.wolveng.com

PROJECT
GRAND POINTE SUBDIVISION – WATER MAIN REPLACEMENT
TOWNSHIP OR MUNICIPALITY NAME
EATON COUNTY, MICHIGAN

SHEET TITLE
LBWL AND CIVIL DETAILS

APPROVED
DBH

CHECKED
DBH

DRAWN
PTS

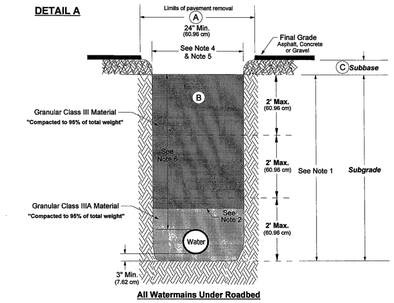
JOB NO.
23–0086

DATE
11/26/2025

SCALE
AS NOTED

SHEET NO.
C3.2

DETAIL A



All Watermains Under Roadbed

General installation notes; 1, 4, 5, & 6 apply to detail "A". Reference page 6 of 6 for descriptions.

INSTALLATION REQUIREMENTS

(A) The 24" limit is based on the backhoe's small bucket width. Limits of removal of pavement or concrete roads, within the jurisdiction of the City Of Lansing, shall comply with the requirements stated in the "City Of Lansing Public Service Department Utility Cut Policy". In all other instances, the appropriate jurisdictional agencies policies shall be adhered to.

(B) When watermain is placed in proposed roadbed area, it shall be backfilled with selected excavation material above future subgrade to existing ground line.

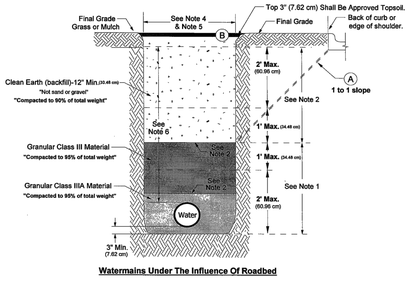
(C) Subbase shall be replaced as specified on engineering drawings (plans). If plans are not available, subbase shall be rebuilt to duplicate existing subbase.

Page 2 of 6

Manager, System Integrity & Customer Projects DKWood Date: 9/19/01

Manager, Water T&D Resource Center BJ McLeod Date: 10/1/01

DETAIL B



Watermains Under The Influence Of Roadbed

General Installation Notes; 1, 2, 4, 5, & 6 apply to Detail "B". Reference page 6 of 6 for descriptions.

INSTALLATION REQUIREMENTS

(A) 95 % compaction of the Class III granular material shall be maintained within a 1 to 1 slope to any curb or shoulder to prevent settling of the undisturbed soils within the influence of the roadway.

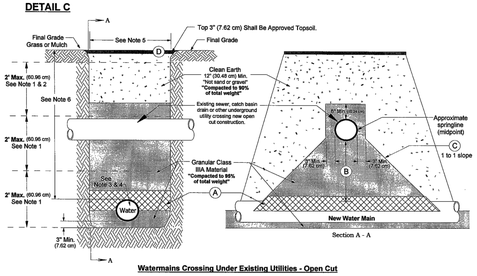
(B) 90% compaction required prior to application of 3" (7.62 cm) layer of topsoil.

Page 3 of 6

Manager, System Integrity & Customer Projects DKWood Date: 9/19/01

Manager, Water T&D Resource Center BJ McLeod Date: 10/1/01

DETAIL C



Watermains Crossing Under Existing Utilities - Open Cut

General Installation Notes; 1, 2, 3, 4, 5, & 6 apply to Detail "C". Reference page 6 of 6 for descriptions.

INSTALLATION REQUIREMENTS

(A) Backfill with a dry mix of one bag of cement per cubic meter (cubic feet divided by 35.3145) of Class II granular material.

(B) Minimum clearance between a water main and sewer system crossing shall be 18" (45.72 cm). Minimum clearance between all other utility crossings shall be 12" (30.48 cm) unless otherwise directed by the Engineer.

(C) Starting from the springline (midpoint) of the upper utility pipe, granular Class IIIA material shall follow a 1 to 1 slope (45° Angle) to the top of the watermain pipe. This material shall be compacted to 95%.

(D) Replace surface according to plans. If seed or sod restoration is to be performed, 90% compaction is required prior to application of 3" layer of topsoil. If asphalt or concrete restoration is to be performed, 95% compaction is required prior to re-surfacing.

Page 4 of 6

Manager, System Integrity & Customer Projects DKWood Date: 9/19/01

Manager, Water T&D Resource Center BJ McLeod Date: 10/1/01

GENERAL INSTALLATION NOTES:

1) Compaction shall be performed in two (2) foot increments using a backhoe operated power driven compactor unless otherwise specified and accepted by the LBWL Water T&D Resource Center. Class IIIA Class III & Class II materials shall be compacted to no less than 95% of the maximum weight unit. All compacting must be performed using the proper depth increments as necessary per the rating of the compacting equipment.

2) Excavated soils which contain rocks or trash shall not be used for backfill. Backfill must be clean and free of large debris and shall be compacted to 90% of its maximum unit weight. Clay shall not be used in any backfill situations as it is unsuitable for compaction. Do not change compaction materials within a given depth increment (lift). Compact the necessary material to the specified maximum weight unit before changing to a different class of material.

3) Per Michigan Department of Environmental Quality (MDEQ) and the "Recommended Standards For Water Works", also know as "The 10 State Standard"; Whenever it becomes necessary for the watermain to cross existing sewer lines the watermain shall have a minimum separation of 18" (45.72 cm) between the outside of the watermain pipe and the outside of the sewer line. When site conditions allow, it is preferred that watermains cross over the top of the sewer lines. Whenever it becomes necessary for the watermain to cross existing gas or electric, the watermain shall always be installed below the other utilites with a minimum separation of 12" (30.48 cm) between the top of the watermain and the bottom of the other utility.

4) When water main is placed in proposed roadbed area, it shall be backfilled with selected excavation material above future subgrade to existing ground line.

5) Sufficient trench width shall be provided to allow free working space and to permit compacting the backfill around the pipe. Refer to Table 1, on page 6 of 6, of this Standard. ***Table 1 is only applicable for Horizontal wall trenching requiring shoring. Does not apply for Slope wall trenching.***

6) Unless otherwise stated by the Engineer, top of watermain shall be a minimum of 5' (1.55 m), and a maximum of 6' (1.86 m), below grade.

Table 1

Trench Width Based On Pipe Inner Diameter

I.D. Pipe Size - Inches (cm)	12" or less (30.48 cm)	14" (35.56 cm)	16" (40.64 cm)	20" (50.80 cm)
"W" Trench Width - Inches (cm)	24" (60.96 cm)	28" (71.12 cm)	32" (81.28 cm)	40" (101.60 cm)

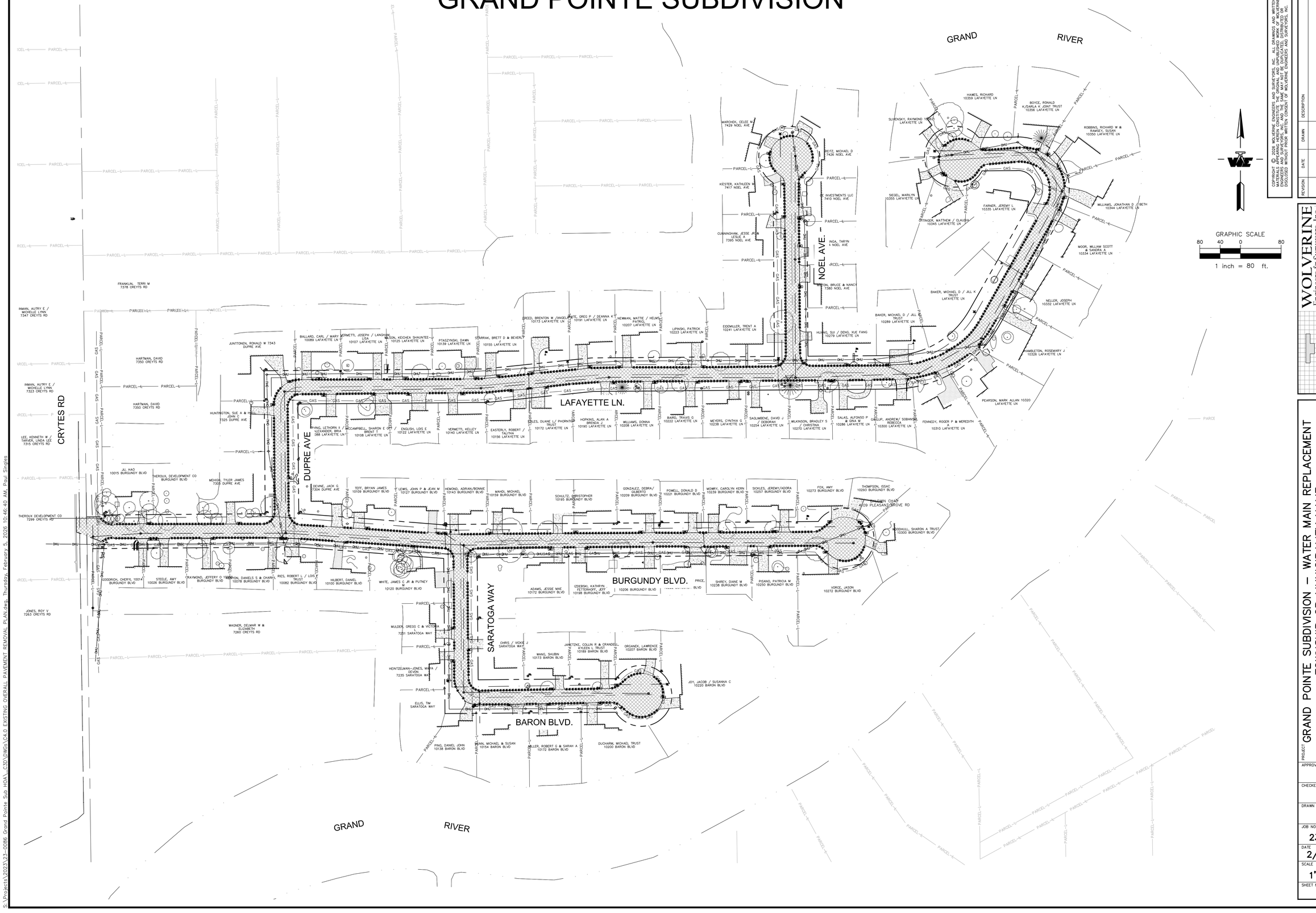
I.D. Pipe Size - Inches (cm)	24" (60.96 cm)	28" (66.04 cm)	30" (76.20 cm)	36" (91.44 cm)
"W" Trench Width - Inches (cm)	48" (121.92 cm)	56" (142.24 cm)	60" (152.4 cm)	72" (182.88 cm)

Page 6 of 6

Manager, System Integrity & Customer Projects DKWood Date: 9/19/01

Manager, Water T&D Resource Center BJ McLeod Date: 10/1/01

GRAND POINTE SUBDIVISION



REVISION	DATE	DRAWN	DESCRIPTION

WOLVERINE
Engineers & Surveyors, Inc.
317 North Street
Mason, Michigan 48854
Ph: 517.676.9200
Fx: 517.676.9396
http://www.wolveng.com

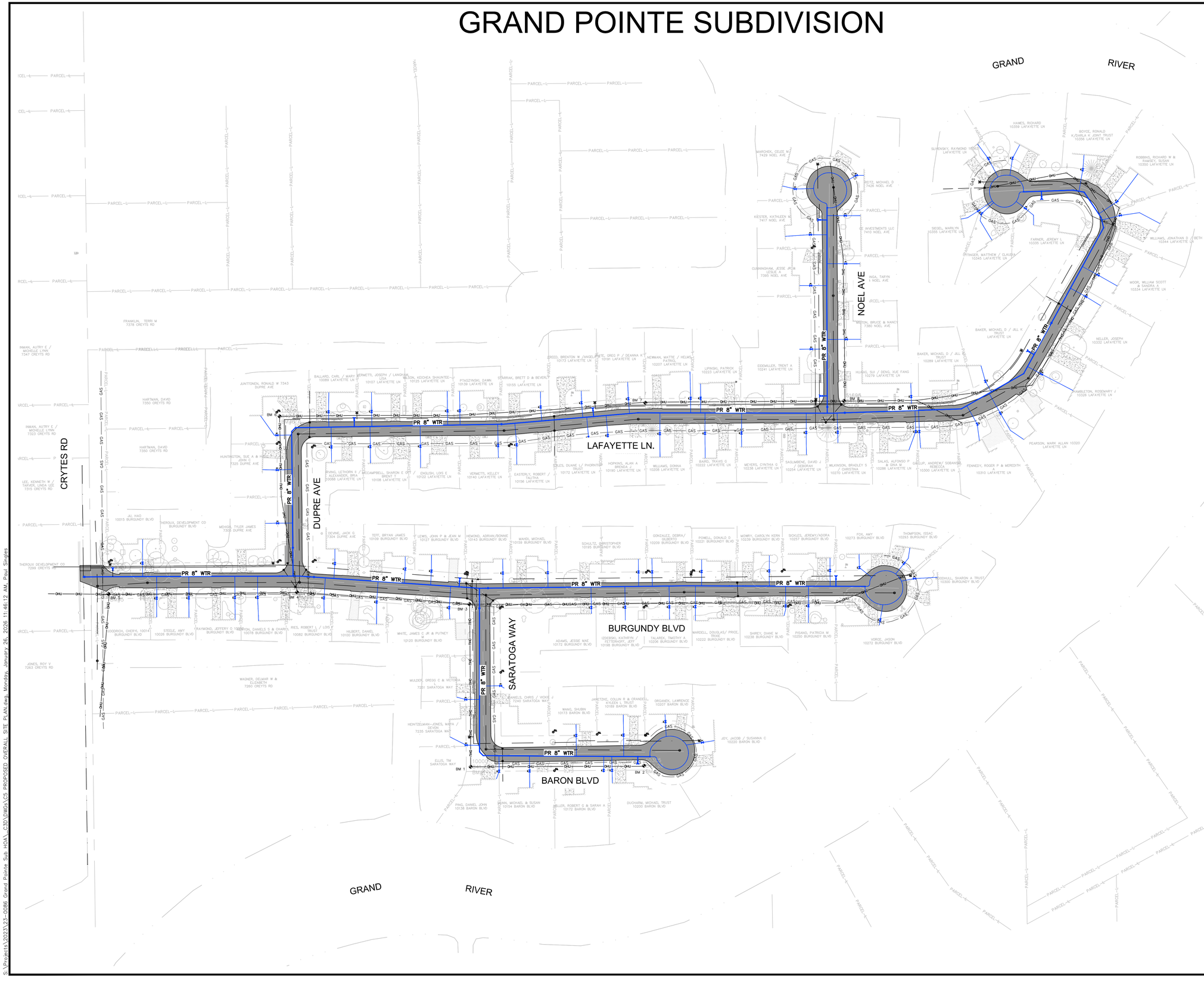
PROJECT: GRAND POINTE SUBDIVISION – WATER MAIN REPLACEMENT
TOWNSHIP OR MUNICIPALITY NAME
EATON COUNTY, MICHIGAN

SHEET TITLE: EXISTING OVERALL PAVEMENT REMOVAL PLAN

APPROVED	DBH
CHECKED	DBH
DRAWN	TAP
JOB NO.	23–0086
DATE	2/5/2026
SCALE	1" = 80'
SHEET NO.	C4.0

S:\Projects\2023\23-0086 Grand Pointe Sub HOA_C3D\DWGs\C4.0 EXISTING OVERALL PAVEMENT REMOVAL PLAN.dwg, Thursday, February 5, 2026 10:46:40 AM, Paul Singles

GRAND POINTE SUBDIVISION



REVISION	DATE	DRAWN	DESCRIPTION

WOLVERINE
Engineers & Surveyors, Inc.
312 North Street
Mason, Michigan 48854
Ph: 517-676-9200
Fx: 517-676-9396
http://www.wolveng.com

PROJECT
GRAND POINTE SUBDIVISION – WATER MAIN REPLACEMENT
TOWNSHIP OR MUNICIPALITY NAME
EATON COUNTY, MICHIGAN

SHEET TITLE
PROPOSED OVERALL SITE PLAN

APPROVED
DBH

CHECKED
DBH

DRAWN
TAP

JOB NO.
23–0086

DATE
1/26/2026

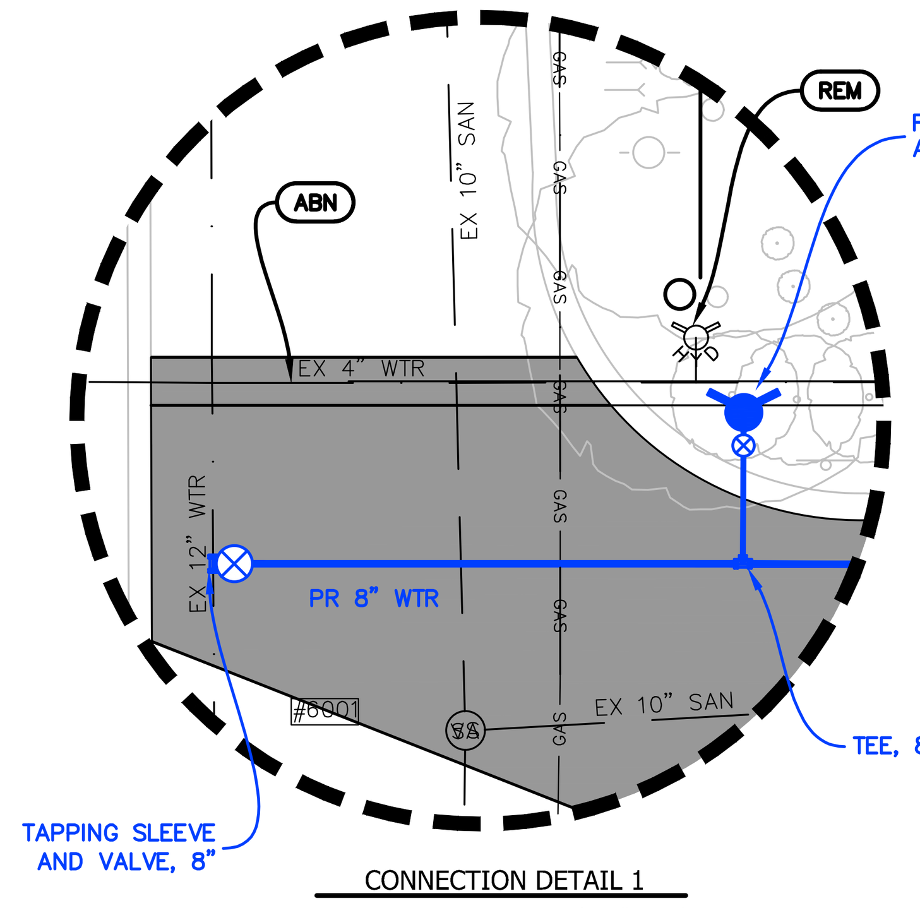
SCALE
1" = 80'

SHEET NO.
C5.0

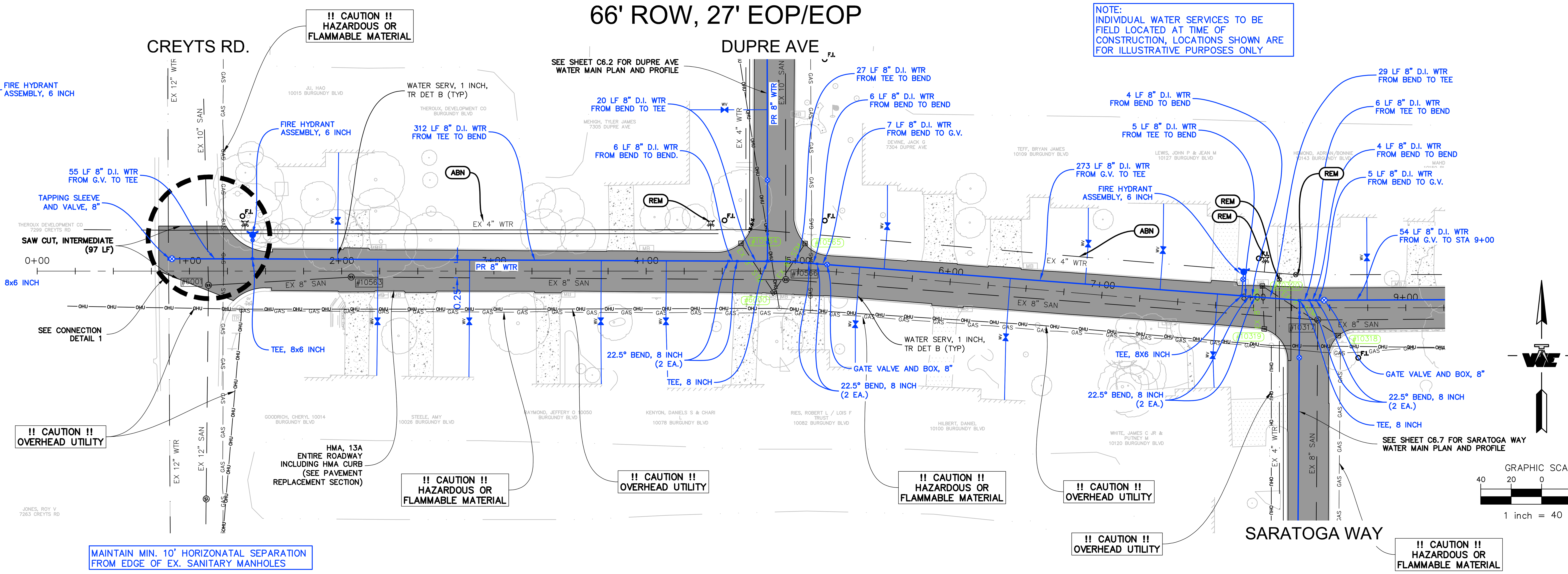
S:\Projects\2023\23–0086 Grand Pointe Sub HOA_C3D\DWGs\C5 PROPOSED OVERALL SITE PLAN.dwg, Monday, January 26, 2026 11:46:12 AM, Paul Singles

BURGUNDY BLVD

66' ROW, 27' EOP/EOP



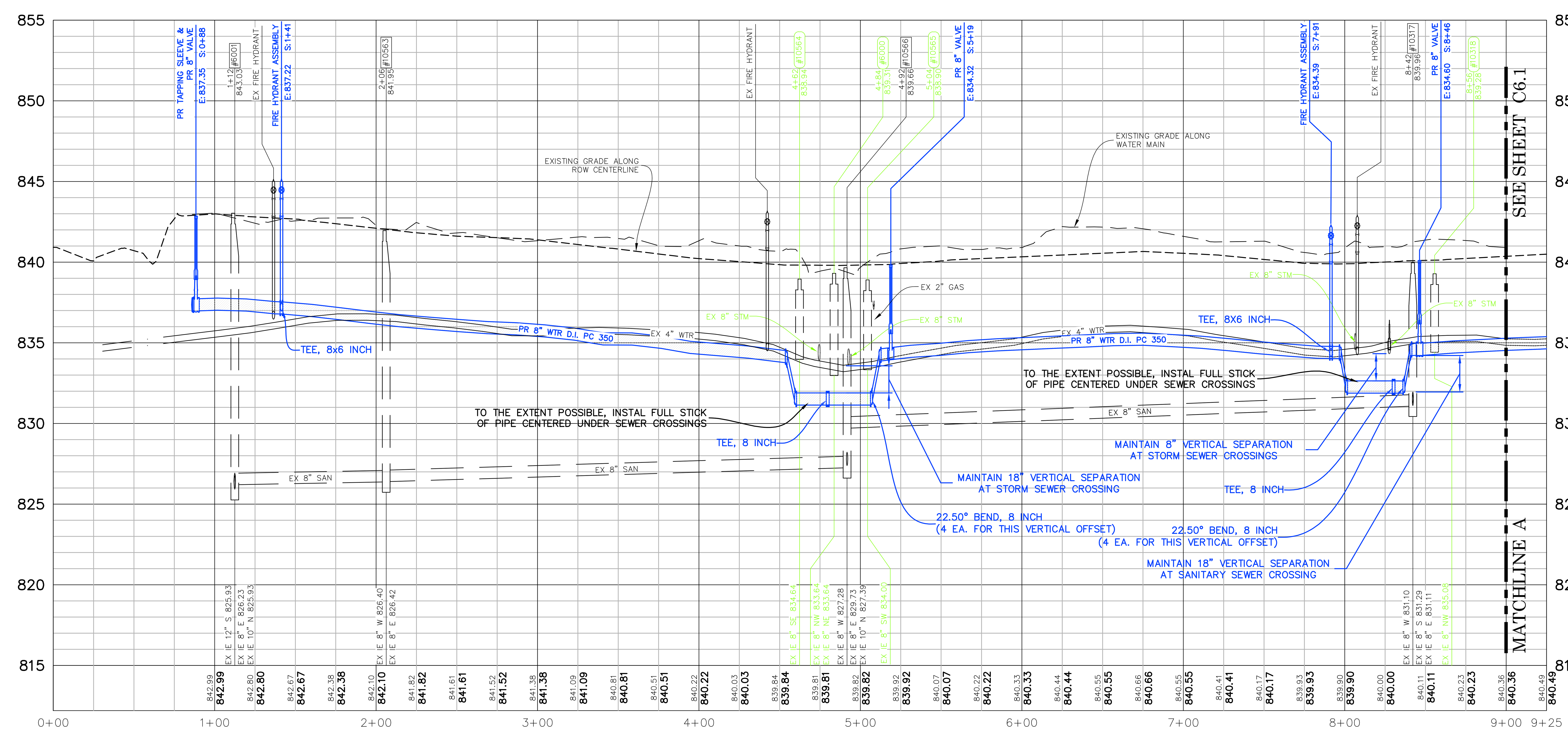
CONNECTION DETAIL 1
Scale: 1" = 20'



WATER MAIN QUANTITY TABLE		
ITEM DESCRIPTION	UNIT	QUANTITY
PC350 DI WATER MAIN, 8 INCH	LF	813
PC350 DI WATER MAIN, 6 INCH	LF	32
TAPPING SLEEVE AND VALVE, 8 INCH	EA	1
GATE VALVE AND BOX, 8 INCH	EA	2
GATE VALVE AND BOX, 6 INCH	EA	2
FIRE HYDRANT	EA	2
TEE, 8 INCH	EA	2
TEE, 8x6 INCH	EA	2
22.5° BEND, 8 INCH	EA	8
CURB BOX, 1 INCH	EA	12
COPPER SERVICE LINE, 1 INCH	LF	812

WATER MAIN ISOLATION CONFLICTS		
STATION	STRUCTURE	DISTANCE
8+06	STM CB 10320	5.0'

* REQUEST VARIANCE FOR HORIZONTAL SEPARATION



REVISION	DATE	DRAWN	DESCRIPTION

WOLVERINE
Engineers & Surveyors, Inc.
312 North Street
Mason, Michigan 48854
Ph: 517-676-9200
Fx: 517-676-9396
http://www.wolveng.com

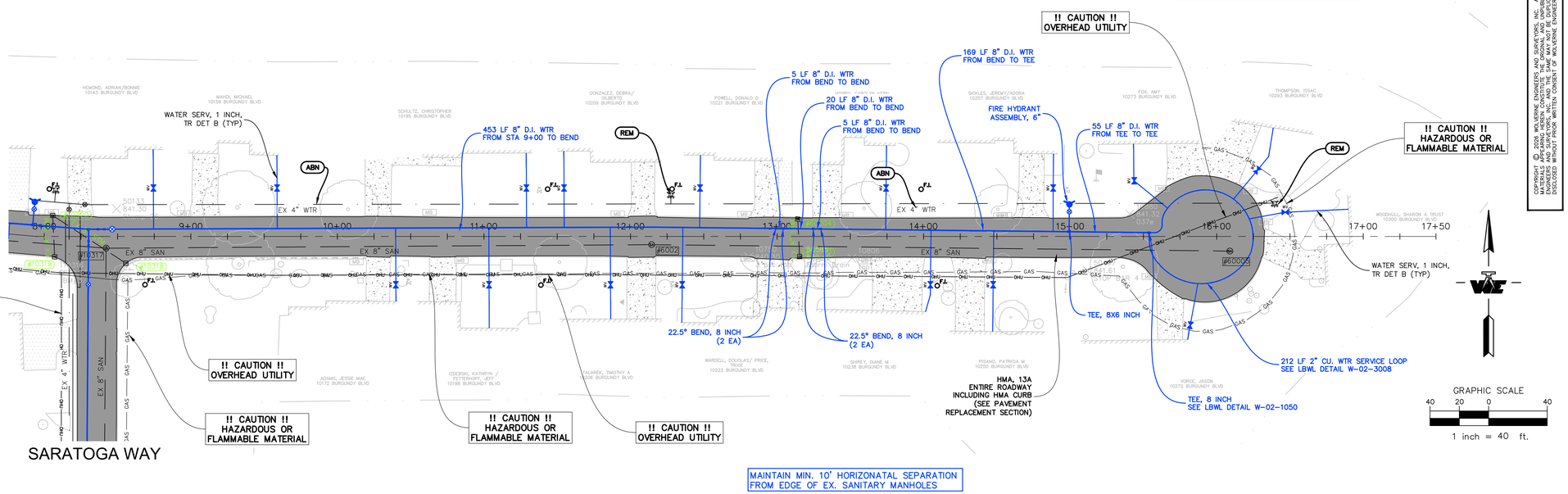
PROJECT: GRAND POINTE SUBDIVISION – WATER MAIN REPLACEMENT
TOWNSHIP OR MUNICIPALITY NAME
EATON COUNTY, MICHIGAN

SHEET TITLE: BURGUNDY PLAN AND PROFILE

APPROVED	DBH
CHECKED	DBH
DRAWN	PTS
JOB NO.	23-0086
DATE	2/9/2026
SCALE	1" = 4' 1" = 40'
SHEET NO.	C6.0

BURGUNDY BLVD
66' ROW, 27' EOP/EOP

NOTE:
INDIVIDUAL WATER SERVICES TO BE FIELD LOCATED AT TIME OF CONSTRUCTION, LOCATIONS SHOWN ARE FOR ILLUSTRATIVE PURPOSES ONLY



MAINTAIN MIN. 10' HORIZONATAL SEPARATION FROM EDGE OF EX. SANITARY MANHOLES

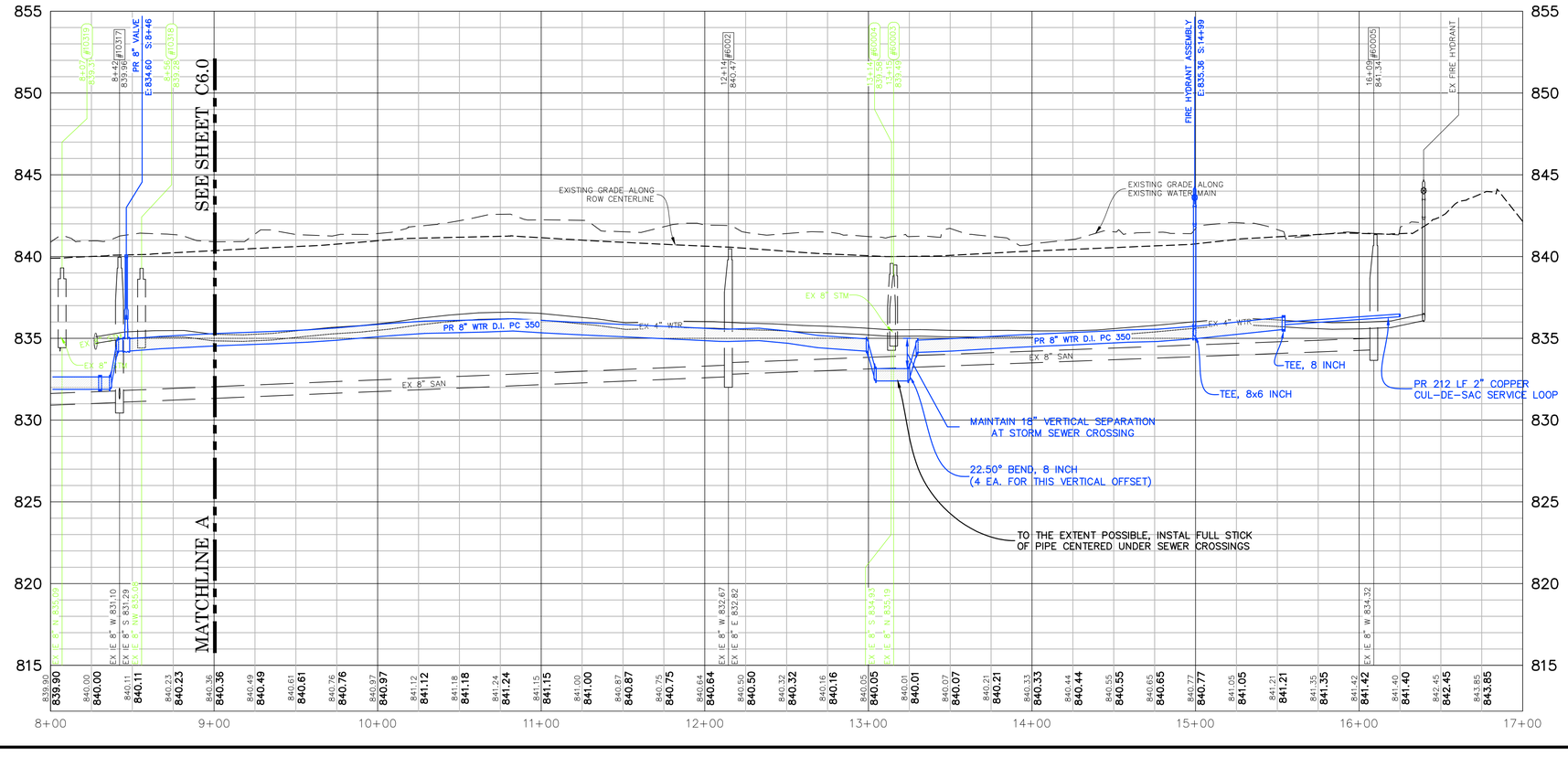
WATER MAIN QUANTITY TABLE

ITEM DESCRIPTION	UNIT	QUANTITY
PC350 DI WATER MAIN, 8 INCH	LF	655
PC350 DI WATER MAIN, 6 INCH	LF	19
GATE VALVE AND BOX, 6 INCH	EA	1
FIRE HYDRANT	EA	1
TEE, 8 INCH	EA	1
TEE, 8x6 INCH	EA	1
22.5° BEND, 8 INCH	EA	4
CURB BOX	EA	15
COPPER SERVICE LINE, 1 INCH	LF	903
COPPER SERVICE CUL-DE-SAC, 2 INCH	LF	212
SERVICE VALVE, 2 INCH	EA	2

WATER MAIN ISOLATION CONFLICTS

STATION	STRUCTURE	DISTANCE
13+14	STM CB 60004	5.0'

* REQUEST VARIANCE FOR HORIZONTAL SEPARATION



REVISION	DATE	DRAWN	DESCRIPTION

WOLVERINE
Engineers & Surveyors, Inc.
32 North Street
Mason, Michigan 48854
Ph: 517.676.9200
Fx: 517.676.9396
http://www.wolveng.com

PROJECT
GRAND POINTE SUBDIVISION – WATER MAIN REPLACEMENT
TOWNSHIP OR MUNICIPALITY NAME
EATON COUNTY, MICHIGAN

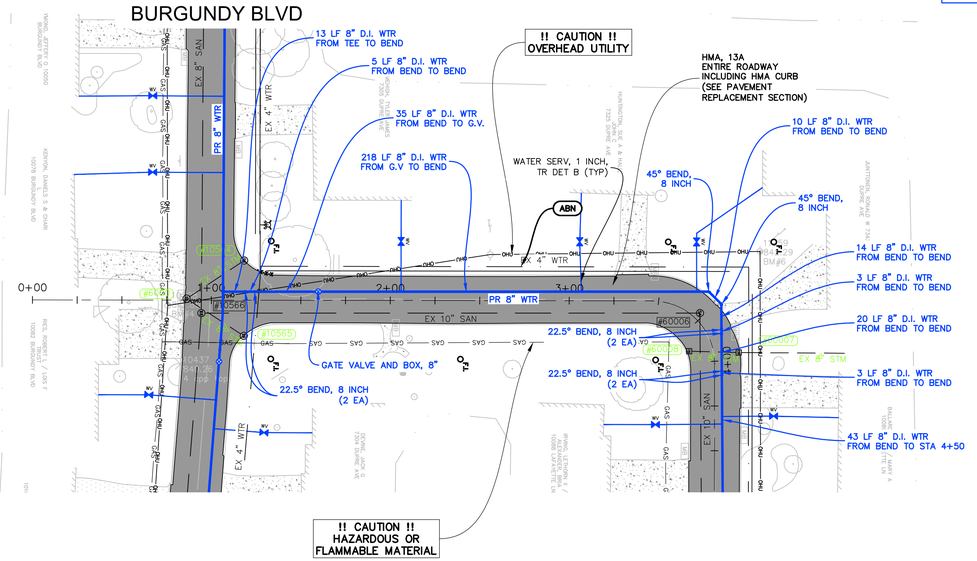
SHEET TITLE
BURGUNDY PLAN AND PROFILE

APPROVED	DBH
CHECKED	DBH
DRAWN	PTS
JOB NO.	23-0086
DATE	2/9/2026
SCALE	1" = 4' / 1" = 40'
SHEET NO.	C6.1

S:\Projects\2023\23-0086 Grand Pointe Sub HOA_C3D\DWGs\C6.0-C6.1 BURGUNDY PLAN AND PROFILE.dwg, Monday, February 9, 2026 4:39:56 PM, Paul Singles

DUPRE AVE
66' ROW, 27' EOP/EOP

NOTE:
INDIVIDUAL WATER SERVICES TO BE FIELD LOCATED AT TIME OF CONSTRUCTION, LOCATIONS SHOWN ARE FOR ILLUSTRATIVE PURPOSES ONLY

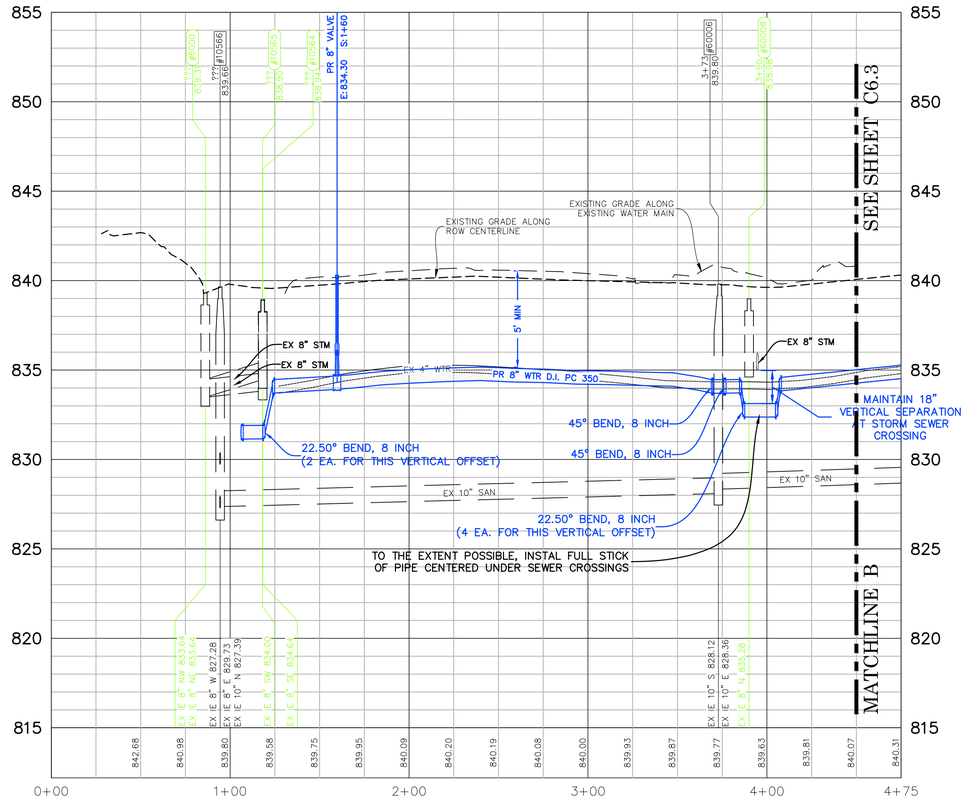


MAINTAIN MIN. 10' HORIZONATAL SEPARATION FROM EDGE OF EX. SANITARY MANHOLES

WATER MAIN QUANTITY TABLE		
ITEM DESCRIPTION	UNIT	QUANTITY
PC350 DI WATER MAIN, 8 INCH	LF	386
GATE VALVE AND BOX, 8 INCH	EA	1
45° BEND, 8 INCH	EA	2
22.5° BEND, 8 INCH	EA	6
CURB BOX	EA	5
COPPER SERVICE LINE, 1 INCH	LF	314

WATER MAIN ISOLATION CONFLICTS		
STATION	STRUCTURE	DISTANCE
3+97	STM CB 60007	8'

* REQUEST VARIANCE FOR HORIZONTAL SEPARATION



GRAPHIC SCALE
40 20 0 40
1 inch = 40 ft.

REVISION	DATE	DRAWN	DESCRIPTION

WOLVERINE
Engineers & Surveyors, Inc.
312 North Street
Mason, Michigan 48854
Ph: 517.676.9200
Fx: 517.676.9396
http://www.wolveng.com

PROJECT
GRAND POINTE SUBDIVISION – WATER MAIN REPLACEMENT
TOWNSHIP OR MUNICIPALITY NAME
EATON COUNTY, MICHIGAN

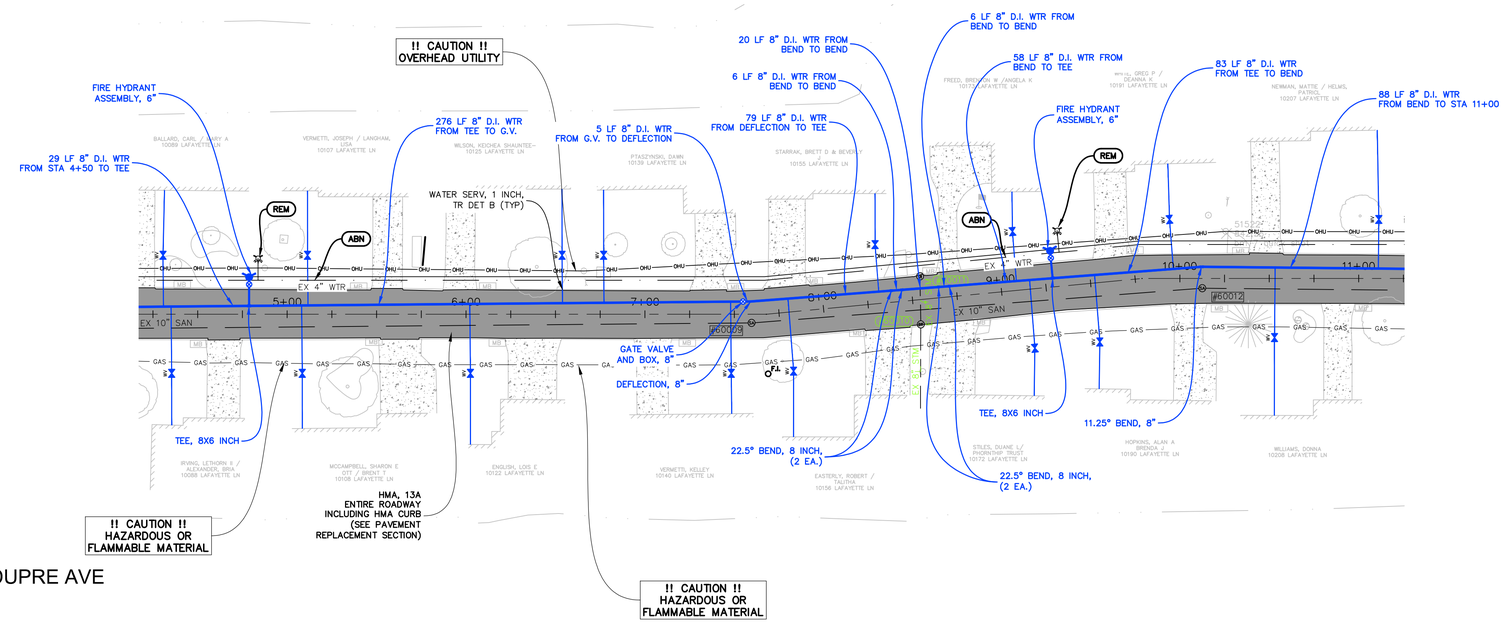
SHEET TITLE
DUPRE AVE PLAN AND PROFILE

APPROVED	DBH
CHECKED	DBH
DRAWN	PTS
JOB NO.	23-0086
DATE	2/9/2026
SCALE	1" = 4' 1" = 40'
SHEET NO.	C6.2

S:\Projects\2023\23-0086 Grand Pointe Sub HOA_C3D\DWGs\C6.2-C6.5 DUPRE-LAFAYETTE PLAN AND PROFILE.dwg, Monday, February 9, 2026 4:44:05 PM, Paul Singles

LAFAYETTE LN
66' ROW, 27' EOP/EOP

NOTE:
INDIVIDUAL WATER SERVICES TO BE FIELD LOCATED AT TIME OF CONSTRUCTION. LOCATIONS SHOWN ARE FOR ILLUSTRATIVE PURPOSES ONLY

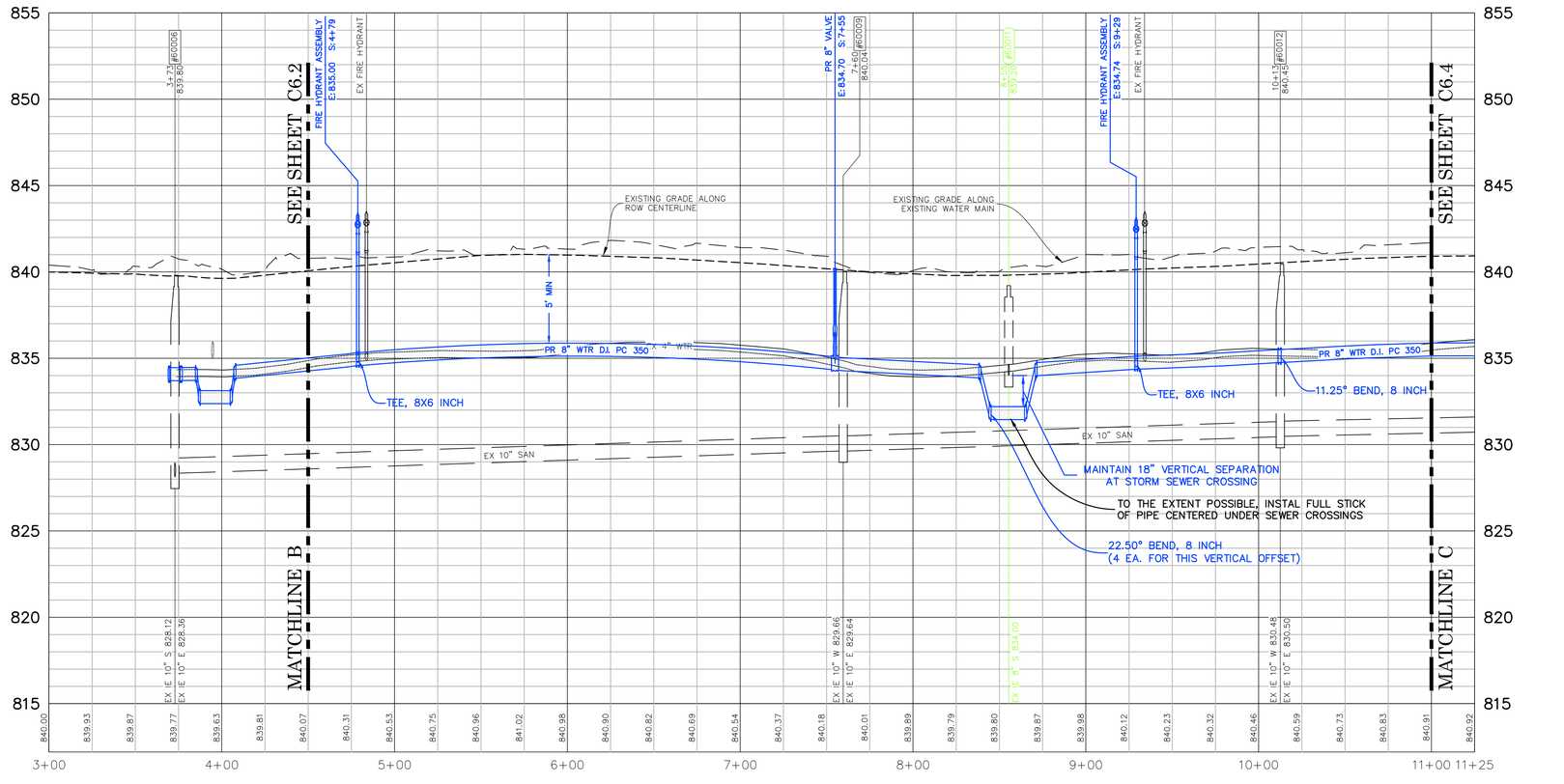


MAINTAIN MIN. 10' HORIZONATAL SEPARATION FROM EDGE OF EX. SANITARY MANHOLES

WATER MAIN QUANTITY TABLE		
ITEM DESCRIPTION	UNIT	QUANTITY
PC350 DI WATER MAIN, 8 INCH	LF	650
PC350 DI WATER MAIN, 6 INCH	LF	31
GATE VALVE AND BOX, 8"	EA	1
GATE VALVE AND BOX, 6"	EA	2
FIRE HYDRANT	EA	2
TEE, 8x6 INCH	EA	2
22.5° BEND, 8 INCH	EA	4
11.25° BEND, 8 INCH	EA	1
CURB BOX	EA	13
COPPER SERVICE LINE, 1 INCH	LF	855

WATER MAIN ISOLATION CONFLICTS		
STATION	STRUCTURE	DISTANCE
8+55	STM CB 60011	4.5'

* REQUEST VARIANCE FOR HORIZONTAL SEPARATION



REVISION	DATE	DRAWN	DESCRIPTION

GRAPHIC SCALE
40 20 0 40
1 inch = 40 ft.

WOLVERINE
Engineers & Surveyors, Inc.
312 North Street
Mason, Michigan 48854
Ph: 517.676.9200
Fx: 517.676.9396
http://www.wolveng.com

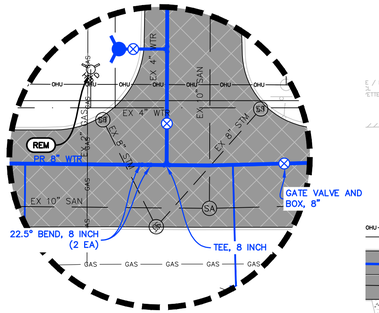
PROJECT: GRAND POINTE SUBDIVISION – WATER MAIN REPLACEMENT
TOWNSHIP OR MUNICIPALITY NAME
EATON COUNTY, MICHIGAN

SHEET TITLE: LAFAYETTE LN PLAN AND PROFILE

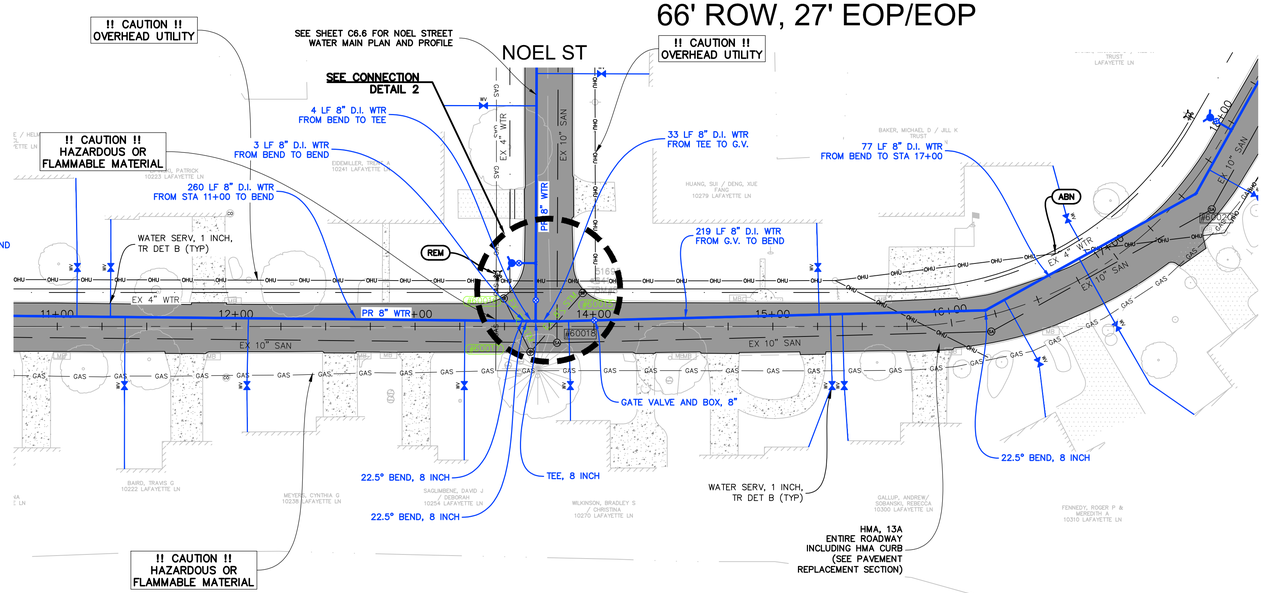
APPROVED	DBH
CHECKED	DBH
DRAWN	PTS
JOB NO.	23-0086
DATE	2/9/2026
SCALE	1" = 4' 1" = 40'
SHEET NO.	C6.3

S:\Projects\2023\23-0086 Grand Pointe Sub HOA_C3D\DWGs\C6.2-C6.5 DUPRE-LAFAYETTE PLAN AND PROFILE.dwg, Monday, February 9, 2026 4:46:18 PM, Paul Singles

LAFAYETTE LN
66' ROW, 27' EOP/EOP



CONNECTION DETAIL 2
Scale: 1" = 20'



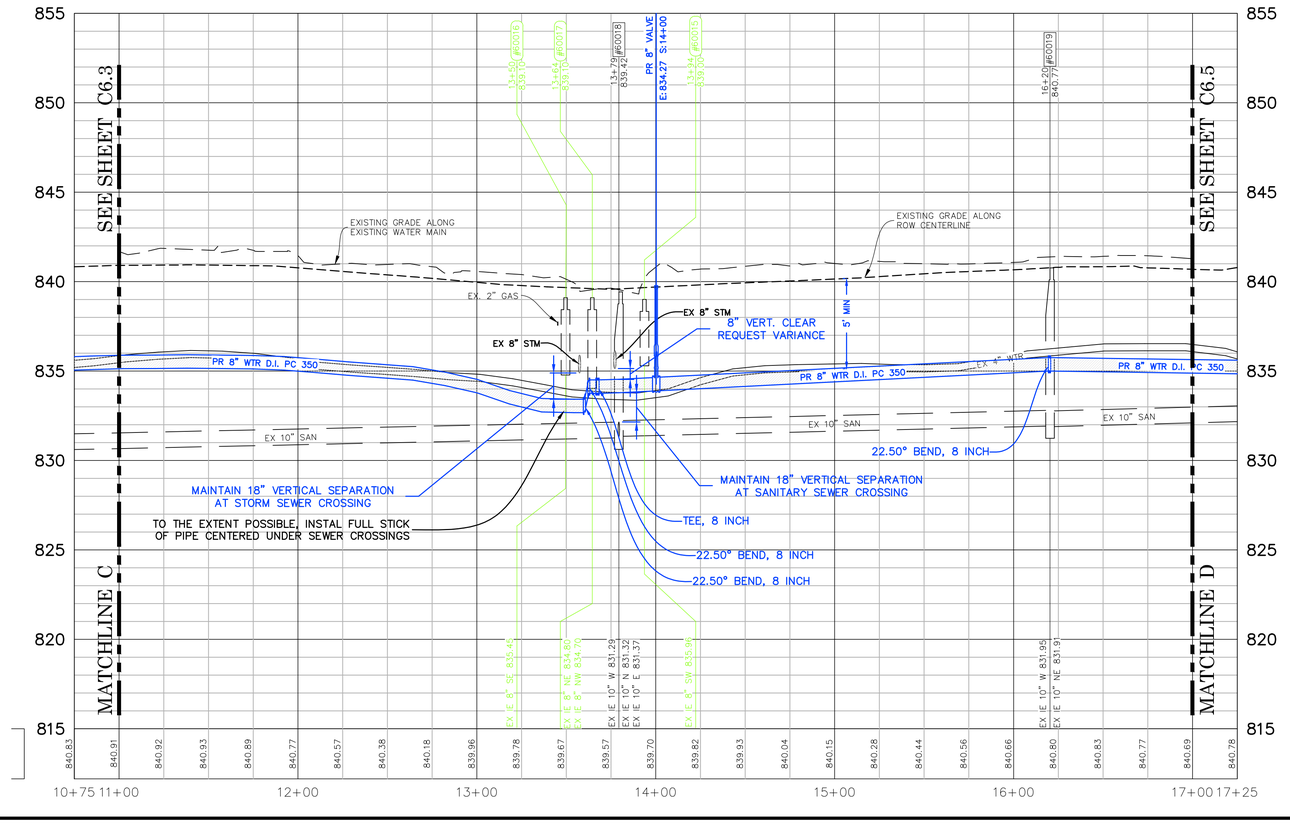
NOTE:
INDIVIDUAL WATER SERVICES TO BE FIELD LOCATED AT TIME OF CONSTRUCTION, LOCATIONS SHOWN ARE FOR ILLUSTRATIVE PURPOSES ONLY

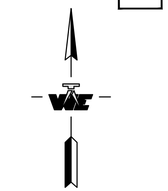
MAINTAIN MIN. 10' HORIZONATAL SEPARATION FROM EDGE OF EX. SANITARY MANHOLES

WATER MAIN QUANTITY TABLE		
ITEM DESCRIPTION	UNIT	QUANTITY
PC350 DI WATER MAIN, 8 INCH	LF	599
GATE VALVE AND BOX, 8 INCH	EA	1
TEE, 8 INCH	EA	1
22.5° BEND, 8 INCH	EA	3
CURB BOX	EA	12
COPPER SERVICE LINE, 1 INCH	LF	848

WATER MAIN ISOLATION CONFLICTS		
STATION	STRUCTURE	DISTANCE
13+77	8" STM SEWER	8" VERT. CLEAR

* REQUEST VARIANCE FOR VERTICAL SEPARATION





REVISION	DATE	DRAWN	DESCRIPTION

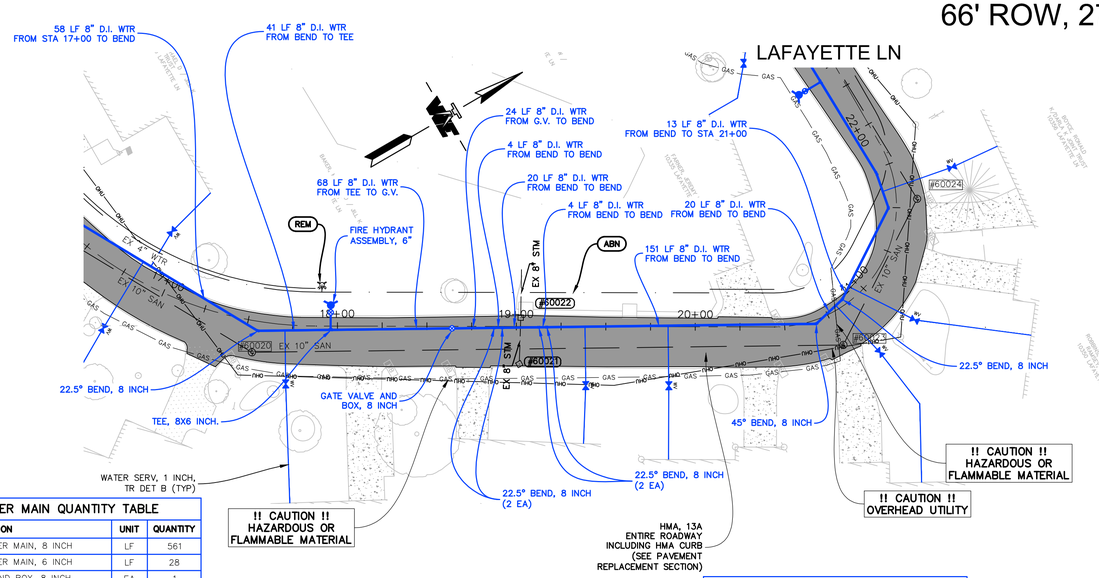
WOLVERINE
Engineers & Surveyors, Inc.
312 North Street
Mason, Michigan 48854
Ph: 517.676.9200
Fx: 517.676.9396
http://www.wolveng.com

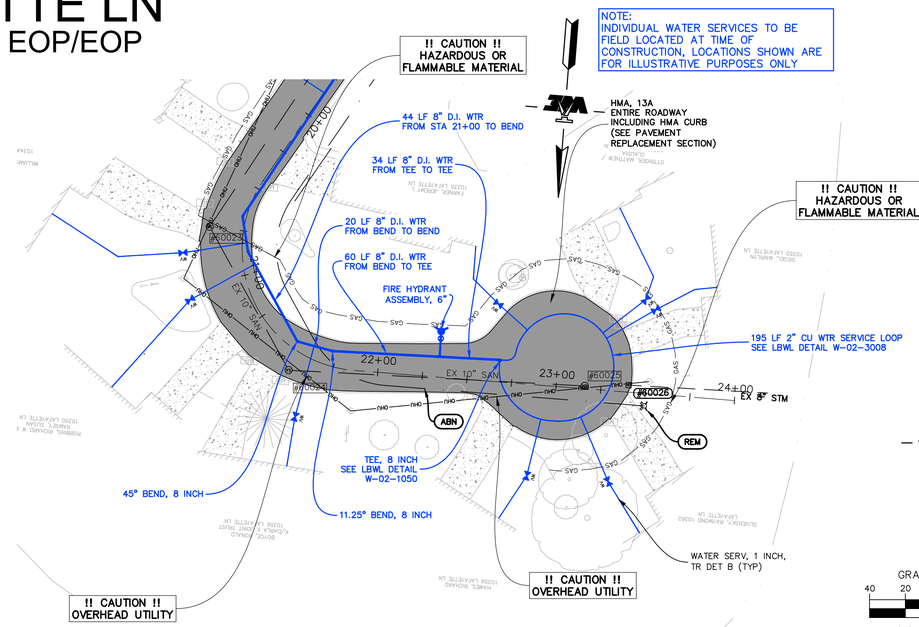
PROJECT: GRAND POINTE SUBDIVISION – WATER MAIN REPLACEMENT
TOWNSHIP OR MUNICIPALITY NAME
EATON COUNTY, MICHIGAN

SHEET TITLE: LAFAYETTE LN PLAN AND PROFILE

APPROVED	DBH
CHECKED	DBH
DRAWN	PTS
JOB NO.	23-0086
DATE	2/9/2026
SCALE	1" = 4' 1" = 40'
SHEET NO.	C6.4

LAFAYETTE LN
66' ROW, 27' EOP/EOP





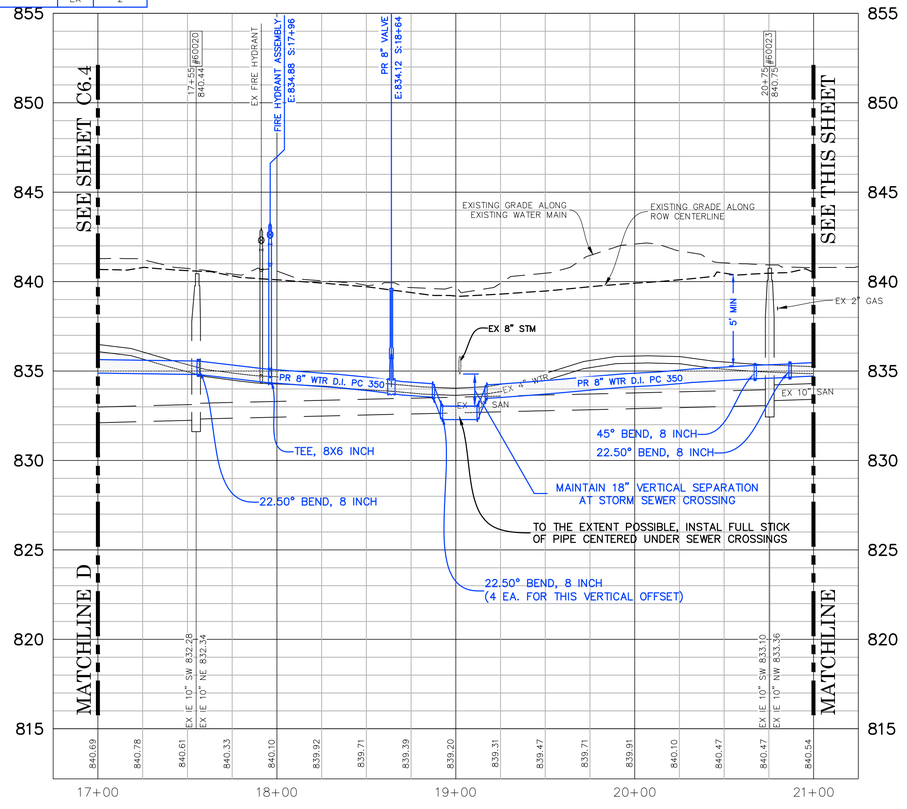
GRAPHIC SCALE
40 20 0 40
1 inch = 40 ft.

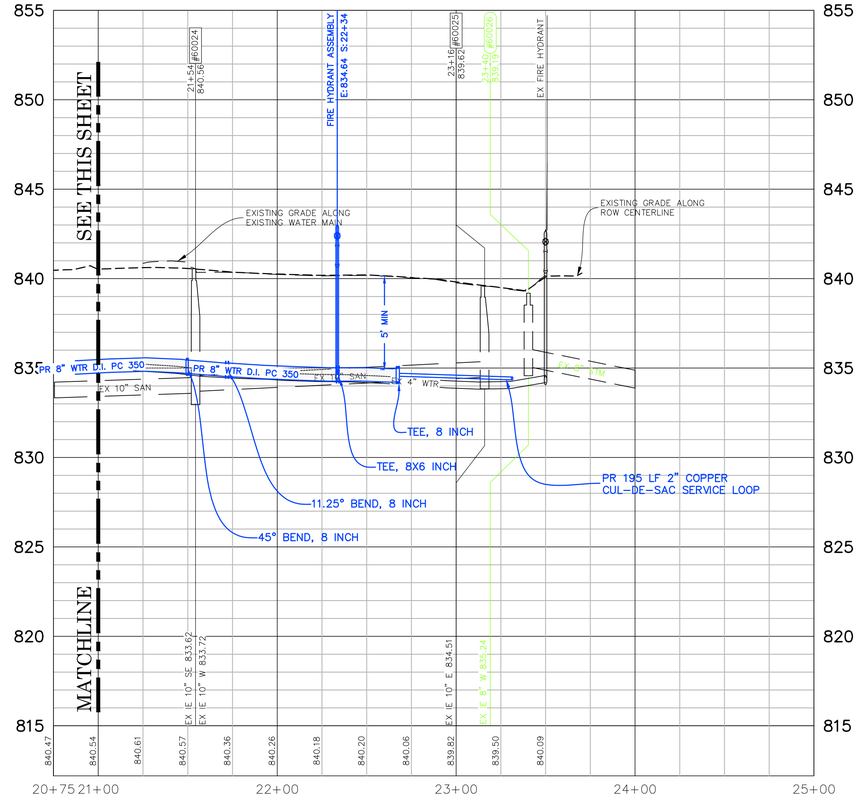
WATER MAIN QUANTITY TABLE		
ITEM DESCRIPTION	UNIT	QUANTITY
PC350 DI WATER MAIN, 8 INCH	LF	561
PC350 DI WATER MAIN, 6 INCH	LF	28
GATE VALVE AND BOX, 8 INCH	EA	1
GATE VALVE AND BOX, 6 INCH	EA	2
FIRE HYDRANT	EA	2
TEE, 8 INCH	EA	1
TEE, 8x6 INCH	EA	2
45° BEND, 8 INCH	EA	2
22.5° BEND, 8 INCH	EA	6
11.25° BEND, 8 INCH	EA	1
CURB BOX	EA	11
COPPER SERVICE LINE, 1 INCH	LF	879
COPPER SERVICE CUL-DE-SAC, 2 INCH	LF	195
SERVICE VALVE, 2 INCH	EA	2

MAINTAIN MIN. 10' HORIZONATAL SEPARATION FROM EDGE OF EX. SANITARY MANHOLES

WATER MAIN ISOLATION CONFLICTS		
STATION	STRUCTURE	DISTANCE
19+02	STM CB 60022	3.75'

* REQUEST VARIANCE FOR HORIZONTAL SEPARATION





REVISION	DATE	DRAWN	DESCRIPTION

WOLVERINE
Engineers & Surveyors, Inc.
337 North Street
Mason, Michigan 48854
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Fx: 517.676.9396
http://www.wolveng.com

PROJECT
GRAND POINTE SUBDIVISION – WATER MAIN REPLACEMENT
TOWNSHIP OR MUNICIPALITY NAME
EATON COUNTY, MICHIGAN

SHEET TITLE
LAFAYETTE LN PLAN AND PROFILE

APPROVED	DBH
CHECKED	DBH
DRAWN	PTS
JOB NO.	23-0086
DATE	2/9/2026
SCALE	1" = 4' 1" = 40'
SHEET NO.	C6.5

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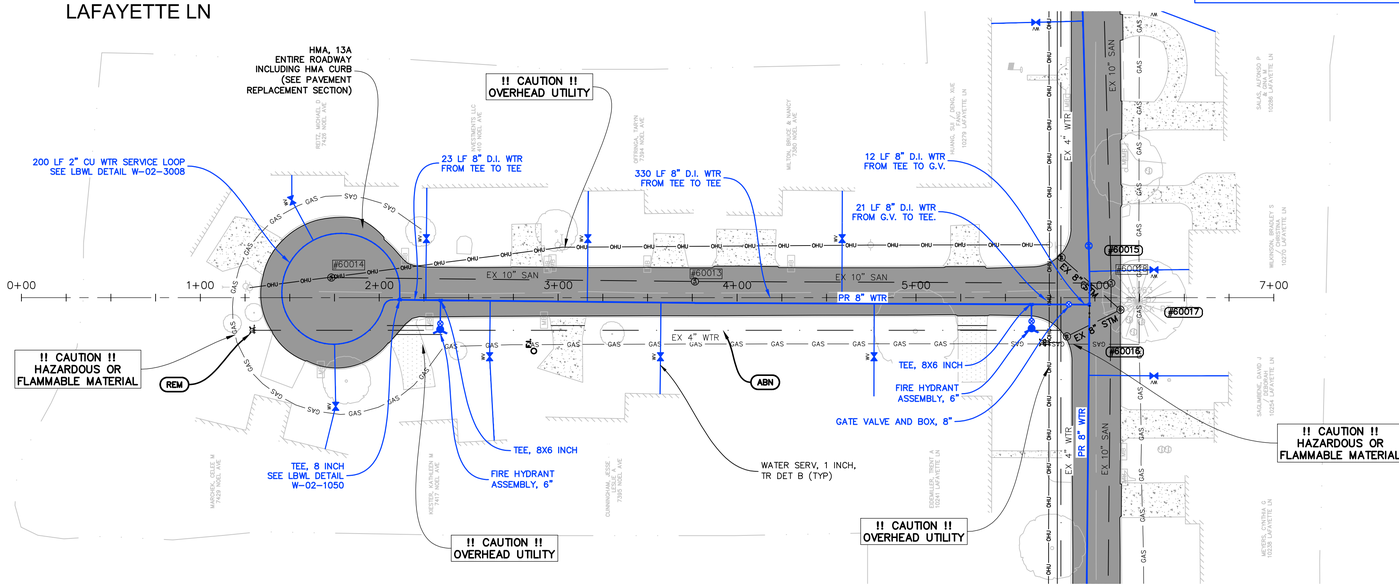
NOEL AVE
66' ROW, 27' EOP/EOP

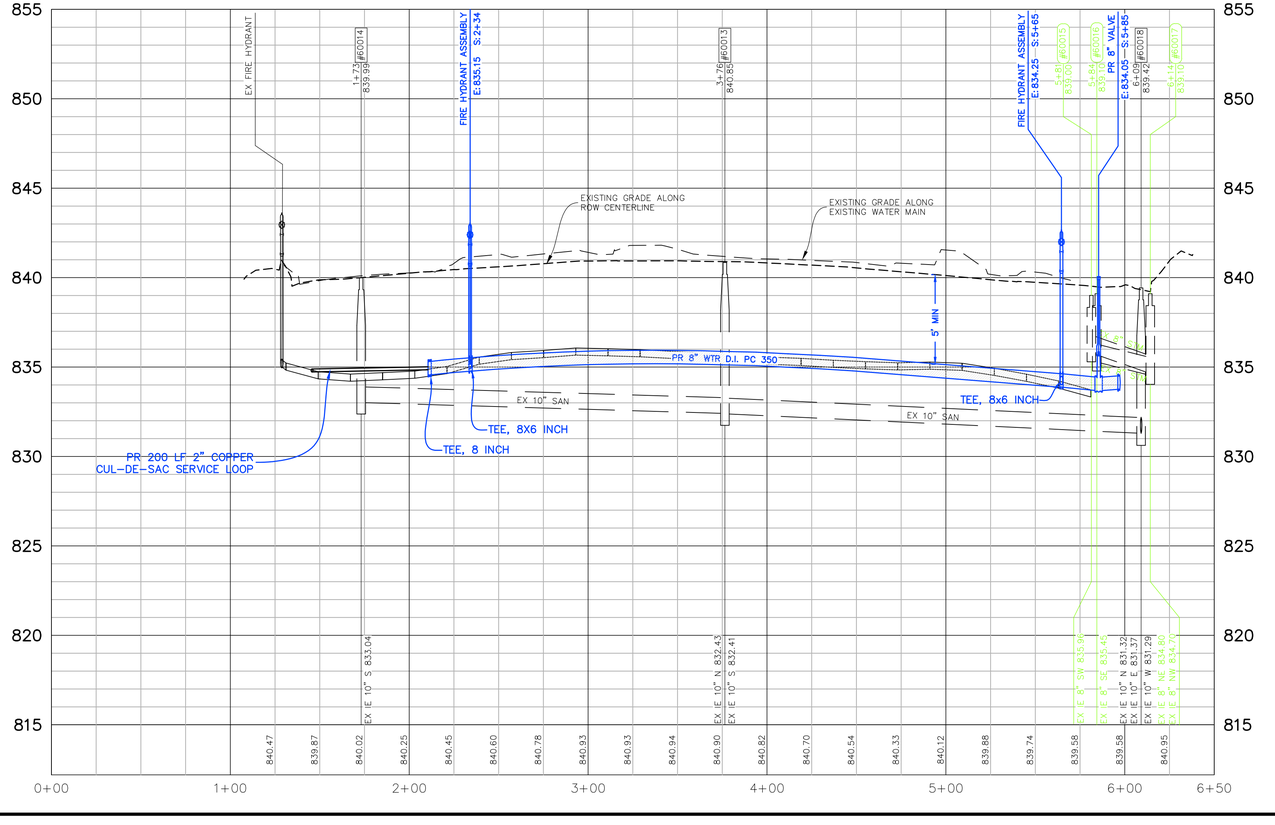
LAFAYETTE LN



NOTE:
INDIVIDUAL WATER SERVICES TO BE FIELD LOCATED AT TIME OF CONSTRUCTION. LOCATIONS SHOWN ARE FOR ILLUSTRATIVE PURPOSES ONLY

MAINTAIN MIN. 10' HORIZONATAL SEPARATION FROM EDGE OF EX. SANITARY MANHOLES

WATER MAIN QUANTITY TABLE		
ITEM DESCRIPTION	UNIT	QUANTITY
PC350 DI WATER MAIN, 8 INCH	LF	386
PC350 DI WATER MAIN, 6 INCH	LF	30
GATE VALVE AND BOX, 8 INCH	EA	1
GATE VALVE AND BOX, 6 INCH	EA	2
FIRE HYDRANT	EA	2
TEE, 8x6 INCH	EA	2
CURB BOX	EA	8
COPPER SERVICE LINE, 1 INCH	LF	458
COPPER SERVICE CUL-DE-SAC, 2 INCH	LF	200
SERVICE VALVE, 2 INCH	EA	2



REVISION	DATE	DRAWN	DESCRIPTION

WOLVERINE
Engineers & Surveyors, Inc.
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Mason, Michigan 48854
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Fx: 517.676.9396
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GRAPHIC SCALE
40 20 0 40
1 inch = 40 ft.

PROJECT: GRAND POINTE SUBDIVISION – WATER MAIN REPLACEMENT
TOWNSHIP OR MUNICIPALITY NAME
EATON COUNTY, MICHIGAN

SHEET TITLE: NOEL AVE PLAN AND PROFILE

APPROVED	DBH
CHECKED	DBH
DRAWN	PTS
JOB NO.	23-0086
DATE	2/9/2026
SCALE	1" = 4' 1" = 40'
SHEET NO.	C6.6

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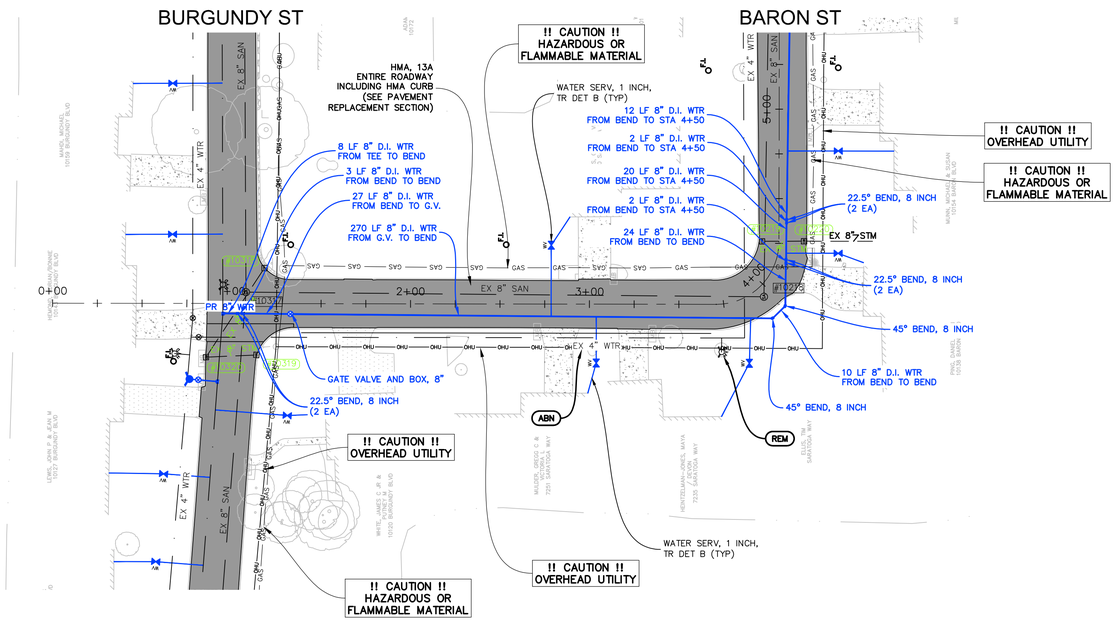
SARATOGA WAY
66' ROW, 27' EOP/EOP

NOTE:
INDIVIDUAL WATER SERVICES TO BE FIELD LOCATED AT TIME OF CONSTRUCTION. LOCATIONS SHOWN ARE FOR ILLUSTRATIVE PURPOSES ONLY

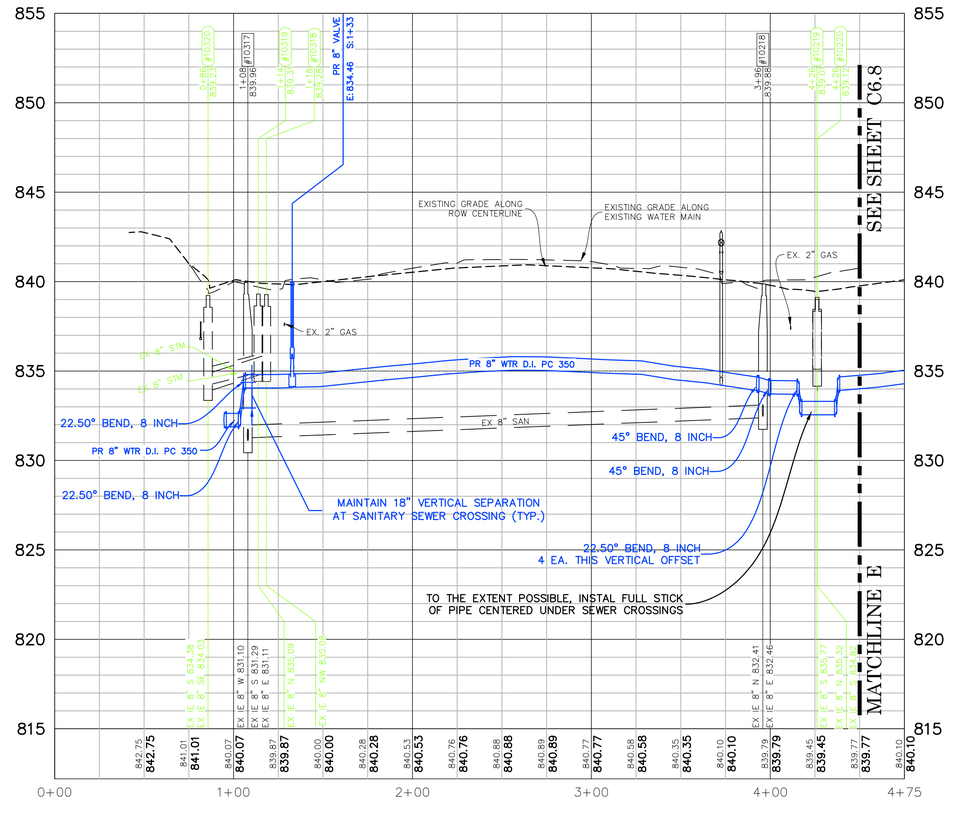


MAINTAIN MIN. 10' HORIZONATAL SEPARATION FROM EDGE OF EX. SANITARY MANHOLES

WATER MAIN QUANTITY TABLE		
ITEM DESCRIPTION	UNIT	QUANTITY
PC350 DI WATER MAIN, 8 INCH	LF	378
GATE VALVE AND BOX, 8 INCH	EA	1
45° BEND, 8 INCH	EA	2
22.5° BEND, 8 INCH	EA	6
CURB BOX	EA	4
COPPER SERVICE LINE, 1 INCH	LF	205

WATER MAIN ISOLATION CONFLICTS		
STATION	STRUCTURE	DISTANCE
4+26	STM CB 10220	8.25'

* REQUEST VARIANCE FOR HORIZONTAL SEPARATION



REVISION	DATE	DRAWN	DESCRIPTION

GRAPHIC SCALE
40 20 0 40
1 inch = 40 ft.

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PROJECT: GRAND POINTE SUBDIVISION – WATER MAIN REPLACEMENT
TOWNSHIP OR MUNICIPALITY NAME
EATON COUNTY, MICHIGAN

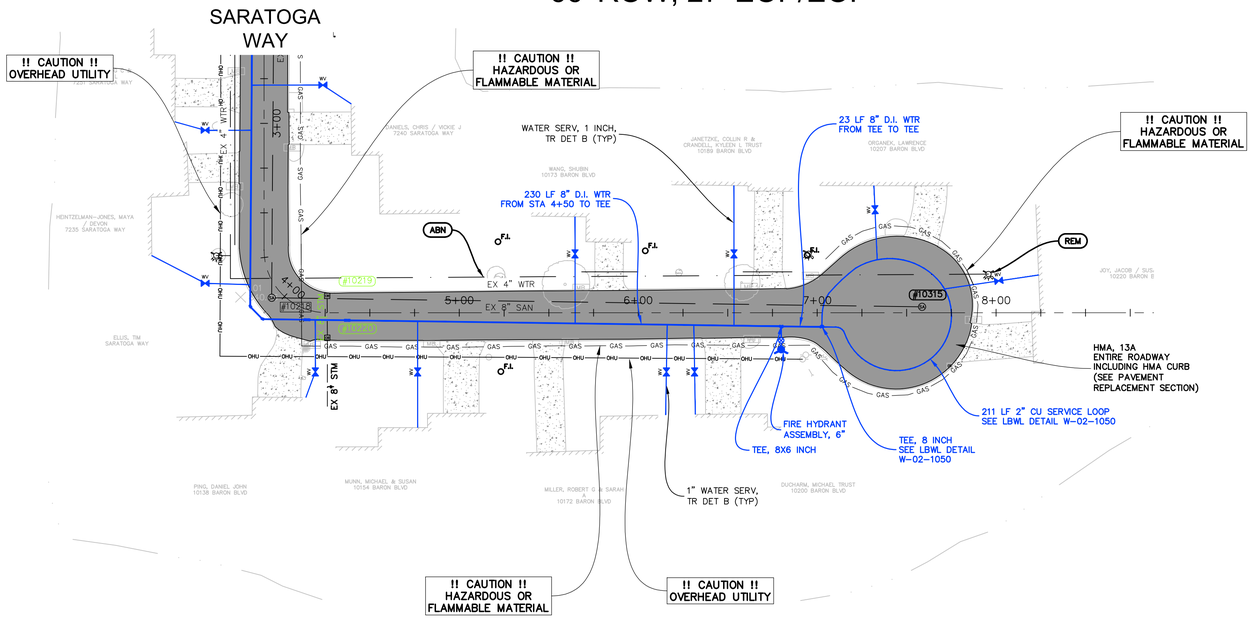
SHEET TITLE: SARATOGA WAY PLAN AND PROFILE

APPROVED	DBH
CHECKED	DBH
DRAWN	PTS
JOB NO.	23-0086
DATE	2/9/2026
SCALE	1" = 4' 1" = 40'
SHEET NO.	C6.7

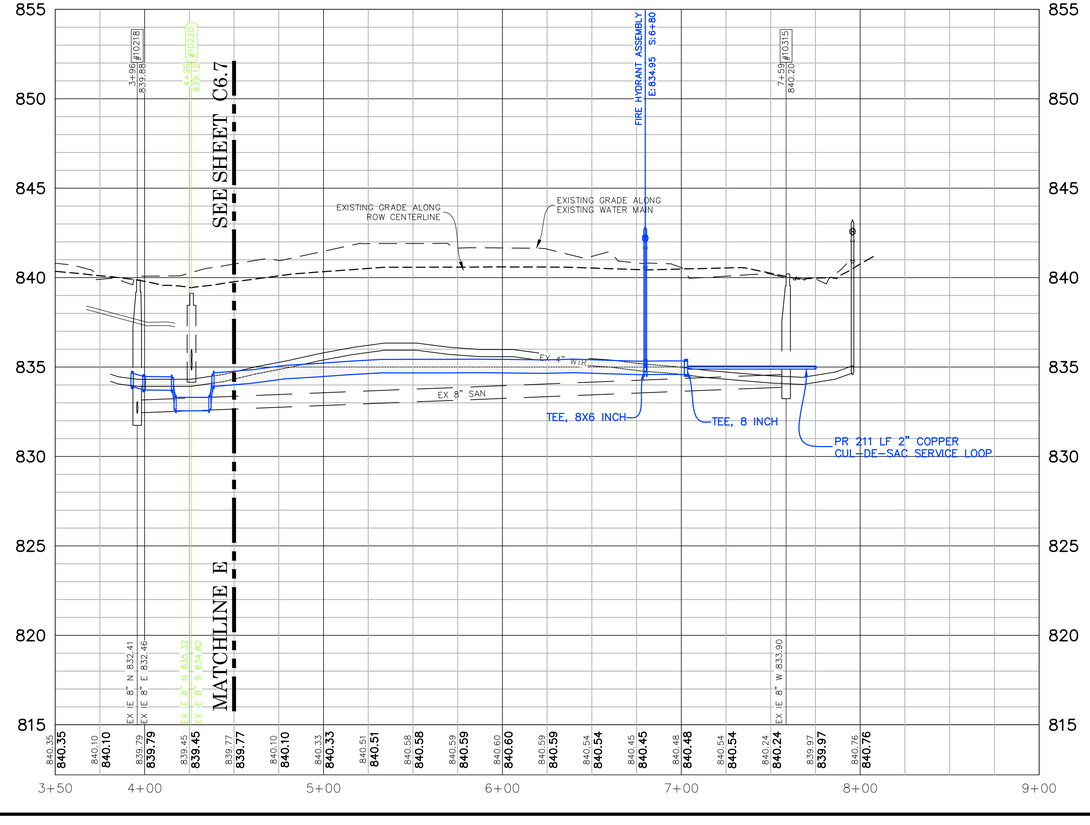
S:\Projects\2023\23-0086 Grand Pointe Sub HOA_C3D\DWGs\C6.7-C6.8 SARATOGA-BARON PLAN AND PROFILE.dwg, Monday, February 9, 2026 5:03:55 PM, Paul Singles

BARON BLVD
66' ROW, 27' EOP/EOP

NOTE:
INDIVIDUAL WATER SERVICES TO BE FIELD LOCATED AT TIME OF CONSTRUCTION. LOCATIONS SHOWN ARE FOR ILLUSTRATIVE PURPOSES ONLY



WATER MAIN QUANTITY TABLE		
ITEM DESCRIPTION	UNIT	QUANTITY
PC350 DI WATER MAIN, 8 INCH	LF	257
PC350 DI WATER MAIN, 6 INCH	LF	13
GATE VALVE AND BOX, 6 INCH	EA	1
FIRE HYDRANT	EA	1
TEE, 8 INCH	EA	1
TEE, 8X6 INCH	EA	1
CURB BOX	EA	7
COPPER SERVICE LINE, 1 INCH	LF	391
SERVICE VALVE, 2 INCH	EA	2
COPPER SERVICE CUL-DE-SAC, 2 INCH	LF	211



REVISION	DATE	DRAWN	DESCRIPTION

GRAPHIC SCALE
40 20 0 40
1 inch = 40 ft.

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Mason, Michigan 48854
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PROJECT
GRAND POINTE SUBDIVISION – WATER MAIN REPLACEMENT
TOWNSHIP OR MUNICIPALITY NAME
EATON COUNTY, MICHIGAN

SHEET TITLE
BARON BLVD PLAN AND PROFILE

APPROVED	DBH
CHECKED	DBH
DRAWN	PTS
JOB NO.	23-0086
DATE	2/9/2026
SCALE	1" = 4' 1" = 40'
SHEET NO.	C6.8

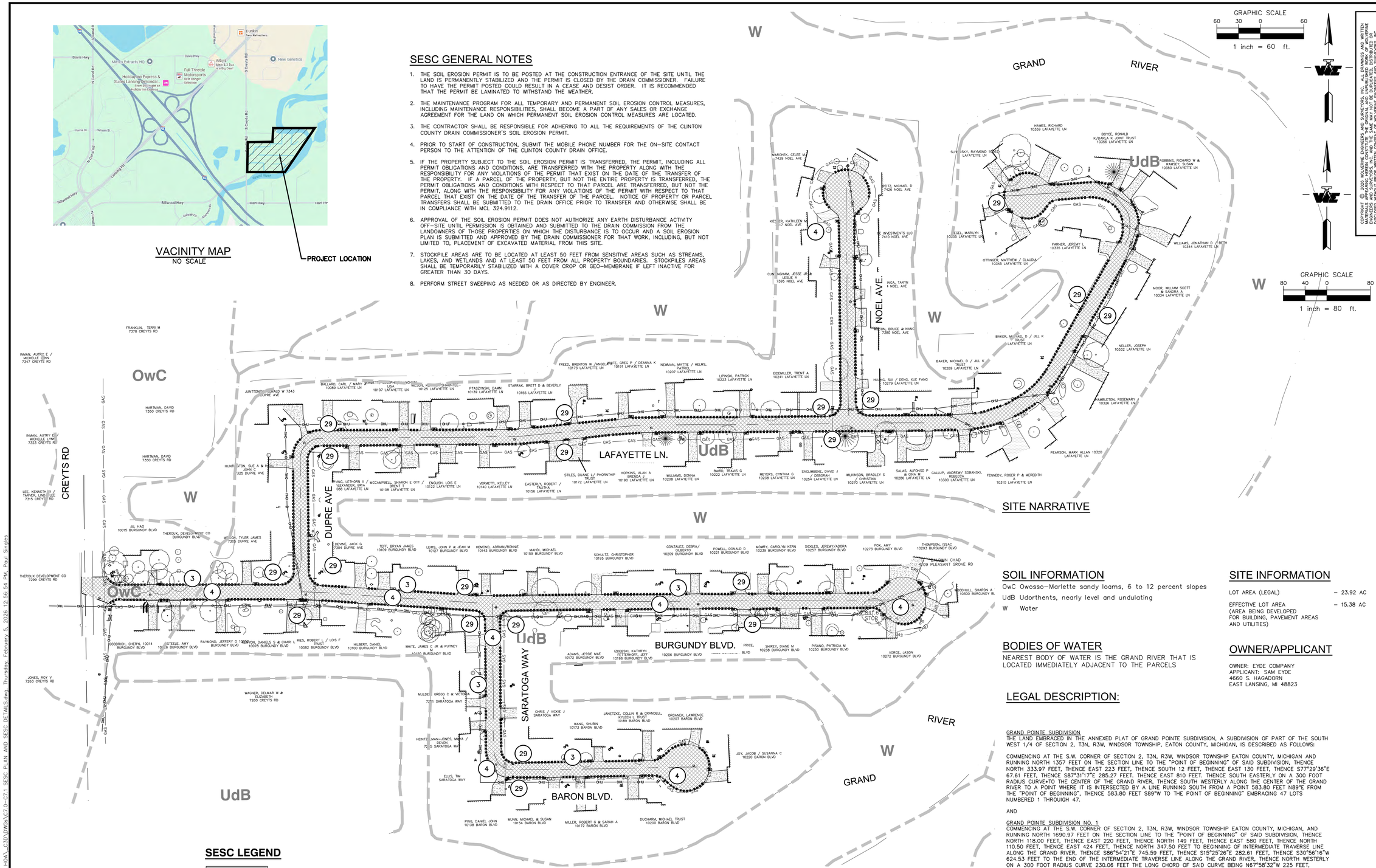
S:\Projects\2023\23-0086 Grand Pointe Sub HOA_C3D\DWGs\C6.7-C6.8 SARATOGA-BARON PLAN AND PROFILE.dwg, Monday, February 9, 2026 5:03:30 PM, Paul Singles

VACINITY MAP
NO SCALE

PROJECT LOCATION

SESC GENERAL NOTES

1. THE SOIL EROSION PERMIT IS TO BE POSTED AT THE CONSTRUCTION ENTRANCE OF THE SITE UNTIL THE LAND IS PERMANENTLY STABILIZED AND THE PERMIT IS CLOSED BY THE DRAIN COMMISSIONER. FAILURE TO HAVE THE PERMIT POSTED COULD RESULT IN A CEASE AND DESIST ORDER. IT IS RECOMMENDED THAT THE PERMIT BE LAMINATED TO WITHSTAND THE WEATHER.
2. THE MAINTENANCE PROGRAM FOR ALL TEMPORARY AND PERMANENT SOIL EROSION CONTROL MEASURES, INCLUDING MAINTENANCE RESPONSIBILITIES, SHALL BECOME A PART OF ANY SALES OR EXCHANGE AGREEMENT FOR THE LAND ON WHICH PERMANENT SOIL EROSION CONTROL MEASURES ARE LOCATED.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADHERING TO ALL THE REQUIREMENTS OF THE CLINTON COUNTY DRAIN COMMISSIONER'S SOIL EROSION PERMIT.
4. PRIOR TO START OF CONSTRUCTION, SUBMIT THE MOBILE PHONE NUMBER FOR THE ON-SITE CONTACT PERSON TO THE ATTENTION OF THE CLINTON COUNTY DRAIN OFFICE.
5. IF THE PROPERTY SUBJECT TO THE SOIL EROSION PERMIT IS TRANSFERRED, THE PERMIT, INCLUDING ALL PERMIT OBLIGATIONS AND CONDITIONS, ARE TRANSFERRED WITH THE PROPERTY ALONG WITH THE RESPONSIBILITY FOR ANY VIOLATIONS OF THE PERMIT THAT EXIST ON THE DATE OF THE TRANSFER OF THE PROPERTY. IF A PARCEL OF THE PROPERTY, BUT NOT THE ENTIRE PROPERTY IS TRANSFERRED, THE PERMIT OBLIGATIONS AND CONDITIONS WITH RESPECT TO THAT PARCEL ARE TRANSFERRED, BUT NOT THE PERMIT, ALONG WITH THE RESPONSIBILITY FOR ANY VIOLATIONS OF THE PERMIT WITH RESPECT TO THAT PARCEL THAT EXIST ON THE DATE OF THE TRANSFER OF THE PARCEL. NOTICE OF PROPERTY OR PARCEL TRANSFERS SHALL BE SUBMITTED TO THE DRAIN OFFICE PRIOR TO TRANSFER AND OTHERWISE SHALL BE IN COMPLIANCE WITH MCL 324.9112.
6. APPROVAL OF THE SOIL EROSION PERMIT DOES NOT AUTHORIZE ANY EARTH DISTURBANCE ACTIVITY OFF-SITE UNTIL PERMISSION IS OBTAINED AND SUBMITTED TO THE DRAIN COMMISSION FROM THE LANDOWNERS OF THOSE PROPERTIES ON WHICH THE DISTURBANCE IS TO OCCUR AND A SOIL EROSION PLAN IS SUBMITTED AND APPROVED BY THE DRAIN COMMISSIONER FOR THAT WORK, INCLUDING, BUT NOT LIMITED TO, PLACEMENT OF EXCAVATED MATERIAL FROM THIS SITE.
7. STOCKPILE AREAS ARE TO BE LOCATED AT LEAST 50 FEET FROM SENSITIVE AREAS SUCH AS STREAMS, LAKES, AND WETLANDS AND AT LEAST 50 FEET FROM ALL PROPERTY BOUNDARIES. STOCKPILES AREAS SHALL BE TEMPORARILY STABILIZED WITH A COVER CROP OR GEO-MEMBRANE IF LEFT INACTIVE FOR GREATER THAN 30 DAYS.
8. PERFORM STREET SWEEPING AS NEEDED OR AS DIRECTED BY ENGINEER.



SESC LEGEND

- ASPHALT
- STORM SEWER
- STORM MANHOLE / STORM CATCH BASIN / STORM END SECTION
- CONSTRUCTION LIMITS
- SF — SILT FENCE
- 100 — CONTOUR - MJR
- 100 — CONTOUR - MNR
- CHECK DAMN
- XX — BMP KEY (SEE SHEET C11.1 FOR BMP DETAILS)

CONSTRUCTION SCHEDULE

CONSTRUCTION ACTIVITY	2026 MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	2027 JAN	FEB	MAR
INSTALL SOIL EROSION CONTROLS (SILT FENCE, INLET PROTECTION, ETC.)											
PAVEMENT REMOVAL, WTR INSTALLATION											
INSTALL STORM SEWER											
BUILDING CONSTRUCTION.											
UTILITIES											
FINAL GRADE, PAVEMENT											
LANDSCAPING											
REMOVE TEMPORARY SESC MEASURES											

GRAPHIC SCALE
60 30 0 60
1 inch = 60 ft.

GRAPHIC SCALE
80 40 0 80
1 inch = 80 ft.

REVISION	DATE	DRAWN	DESCRIPTION

WOLVERINE
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Mason, Michigan 48854
Ph: 517.676.9200
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PROJECT: GRAND POINTE SUBDIVISION - WATER MAIN REPLACEMENT
TOWNSHIP OR MUNICIPALITY NAME
EATON COUNTY, MICHIGAN

SHEET TITLE: SESC PLAN

APPROVED	DBH
CHECKED	DBH
DRAWN	TAP
JOB NO.	23-0086
DATE	2/5/2026
SCALE	1" = 4' V 1" = 40' H
SHEET NO.	C7.0

S:\Projects\2023\23-0086 Grand Pointe Sub HOA\...C3D\DWGs\C7.0-C7.1 SESC PLAN AND SESC DETAILS.dwg, Thursday, February 5, 2026 12:56:54 PM, Paul Singles

APPLICABLE SOIL EROSION AND SEDIMENTATION CONTROL MEASURES

(COMPREHENSIVE DETAILS ARE LOCATED IN SECTION 6 OF) (THE SOIL EROSION & SEDIMENTATION CONTROL MANUAL)

- A = SLOPES
- B = STREAMS AND WATERWAYS
- C = SURFACE DRAINAGEWAYS
- D = ENCLOSED DRAINAGE (INLET & OUTFALL CONTROL)
- E = LARGE FLAT SURFACE AREAS
- F = BORROW AND STOCKPILE AREAS
- G = DNRE PERMIT MAY BE REQUIRED

KEY	DETAIL	CHARACTERISTICS	A	B	C	D	E	F	G
1	TURBIDITY CURTAIN	A Turbidity Curtain is used when slack water area is necessary to isolate construction activities from the watercourse. The still water area contains the sediments within the construction limits.		•					
2	GRUBBING OMITTED	Retains existing root mat which assists in stabilizing slopes. Assists in the revegetation process by providing sprout growth. Reduces sheet flow velocities preventing rilling and gullying. Discourages off-road vehicle use.	•				•		
3	PERMANENT/TEMPORARY SEEDING	Inexpensive but effective erosion control measure to stabilize flat areas and mild slopes. Permits runoff to infiltrate soil, reducing runoff volumes. Proper preparation of the seed bed, fertilizing, mulching and watering is critical to its success.	•		•		•	•	
4	DUST CONTROL	Dust control can be accomplished by watering, and/or applying calcium chloride. The disturbed areas should be kept to a minimum. PERMANENT/TEMPORARY SEEDING (KEY 3) should be applied as soon as possible.	•				•	•	
5	SODDING	Provides immediate vegetative cover such as at spillways and ditch bottoms. Proper preparation of the topsoil, placement of the sod, and watering is critical to its success.	•				•	•	
6	VEGETATED BUFFER STRIPS	Reduces sheet flow velocities preventing rilling and gullying. Assists in the collection of sediments by filtering runoff. Assists in the establishment of a permanent vegetative cover.	•				•		

PREPARED BY DESIGN DIVISION
DRAWN BY: B.L.T.
CHECKED BY: M.K.P.

DEPARTMENT DIRECTOR
KIRK T. STEUDLE
APPROVED BY: John C. Friedl — ENGINEER OF DELIVERY
APPROVED BY: Mark A. VanPortfliet — ENGINEER OF DEVELOPMENT

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR
SOIL EROSION & SEDIMENTATION CONTROL MEASURES

9-10-2010 F.H.W.A. APPROVAL	6-3-2010 PLAN DATE	R-96-E	SHEET 1 OF 6

KEY	DETAIL	CHARACTERISTICS	A	B	C	D	E	F	G
15	SLOPE DRAIN SURFACE	Excellent device for carrying water down slopes without creating an erosive condition. Generally used in conjunction with DIVERSION DIKE (KEY 10), INTERCEPTING DITCH (KEY 11) and INTERCEPTING DITCH AND DIVERSION DIKE (KEY 12) to direct flow to a stable discharge area or SEDIMENT TRAP (KEY 20).	•		•				
16	TREES, SHRUBS AND PERENNIALS	Trees, shrubs and perennials can provide low maintenance long term erosion protection. These plants may be particularly useful where site aesthetics are important along the roadside slopes.	•				•		
17	PIPE DROP	Effective way to allow water to drop in elevation very rapidly without causing an erosive condition. Also works as a sediment collector device. May be left in place as a permanent erosion control device.	•		•				
18	DEWATERING WITH FILTER BAG	It may be necessary to dewater from behind a cofferdam or construction dam to create a dry work site. Discharged water must be pumped to a filter bag. A GRAVEL FILTER BERM (KEY 13) may be placed downslope of the filter bag to provide additional filtration prior to entering any stream or wetland.		•					•
19	ENERGY DISSIPATORS	A device to prevent the erosive force of water from eroding soils. Used at outlets of culverts, drainage pipes or other conduits to reduce the velocity of the water. Prevents structure scouring and undermining.	•	•	•	•			
20	SEDIMENT TRAP	Used to intercept concentrated flows and prevent sediments from being transported off site or into a watercourse or wetland. The size of a Sediment Trap is 5 cubic yards or less. Works well when used with CHECK DAM (KEY 37).	•		•	•			
21	SEDIMENT BASIN	A Sediment Basin is used to trap sediments from an upstream construction site. Requires periodic inspections, repairs, and maintenance. Where practical, sediments should be contained on site. A Sediment Basin should be the last choice of sediment control. The size of a Sediment Basin is greater than 5 cubic yards.		•					•
22	VEGETATIVE BUFFER AT WATERCOURSE	This practice is used to maintain a vegetative buffer adjacent to a watercourse. When utilized with SILT FENCE (KEY 26) it will, under normal circumstances, prevent sediment from leaving the construction site.	•	•	•		•	•	

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR
SOIL EROSION & SEDIMENTATION CONTROL MEASURES

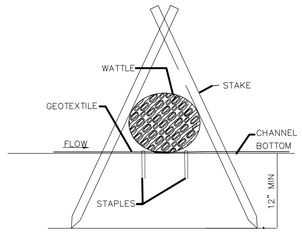
9-10-2010 F.H.W.A. APPROVAL	6-3-2010 PLAN DATE	R-96-E	SHEET 3 OF 6

KEY	DETAIL	CHARACTERISTICS	A	B	C	D	E	F	G
31	INLET PROTECTION SEDIMENT TRAP	An Inlet Protection Sediment Trap is a temporary device that can be used in areas where medium flows are anticipated. Effective in trapping small quantities of sediments prior to water entering the drainage system. Can be used in areas such as median and side ditches.			•		•		
32	SLOPE ROUGHENING AND SCARIFICATION	A simple and economical way to reduce soil erosion by wind and water. Can be accomplished by harrowing with a disk, back blading, or tracking with a dozer perpendicular to the slope.	•				•	•	
33	MULCH BLANKETS AND HIGH VELOCITY MULCH BLANKETS	Mulch blankets provide an immediate and effective cover over raw erodible slopes affording excellent protection against rain and wind erosion. High velocity mulch blankets work well for stabilizing the bottom of ditches in waterways.	•		•		•	•	
34	COFFERDAM	Used to create a dry construction area and protect the stream from raw erodible areas. Must be pumped dry or dewatered according to DEWATERING WITH FILTER BAG (KEY 18).		•					•
35	TEMPORARY BYPASS CHANNEL	Utilized when a dry construction area is needed. Isolates stream flows from raw erodible areas minimizing erosion and subsequent siltation. Can incorporate SEDIMENT BASIN (KEY 21), CHECK DAM (KEY 37), and GRAVEL FILTER BERM (KEY 13) to remove sediments from water. Construction sequence of events may be necessary.		•					•
36	CONSTRUCTION DAM	Used to create a dry or slack water area for construction. Isolates the stream from raw erodible areas. Can be created out of any non-erodible materials such as SAND AND STONE BAGS (KEY 24), a gravel dike with clay core or plastic liner, steel plates or plywood.		•					•
37	CHECK DAM	Can be constructed across ditches or any area of concentrated flow. Protects vegetation in early stages of growth. A Check Dam is intended to reduce water velocities and capture sediment. A Check Dam is not a filtering device.	•		•			•	

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR
SOIL EROSION & SEDIMENTATION CONTROL MEASURES

9-10-2010 F.H.W.A. APPROVAL	6-3-2010 PLAN DATE	R-96-E	SHEET 5 OF 6

NOTES:
1) USE A MINIMUM 12 INCH DIAMETER EXCELSIOR WATTLE.
2) USE 24 INCH LONG WOODEN STAKES WITH A 2"x2" NOMINAL CROSS SECTION.
4) INSTALL WATTLE(S) TO A HEIGHT ON SLOPE SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR SLOPES, OR AS DIRECTED.
5) INSTALL A MINIMUM OF TWO UPSLOPE STAKES AND FOUR DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO GROUND AT BOTTOM.
6) PROVIDE STAPLES MADE OF 0.125 INCH DIAMETER STEEL WIRE FORMED INTO A U-SHAPE NOT LESS THAN 12 INCHES IN LENGTH.
7) INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.
8) AFTER INSTALLATION OF STAPLES, CHINK ANY GAPS BETWEEN WATTLE AND GROUND WITH MATTING.



38

SESC PLAN NOTES:

SEE MDOT STANDARD PLANS AND SPECIFICATIONS FOR INSTALLATION AND MAINTENANCE REQUIREMENTS FOR ALL SOIL EROSION AND SEDIMENTATION CONTROL MEASURES.

REVISION	DATE	DRAWN	DESCRIPTION

WOLVERINE
Engineers & Surveyors, Inc.
317 North Street
Mason, Michigan 48854
Ph: 517 676-9200
Fx: 517 676-9396
http://www.wolveng.com

KEY	DETAIL	CHARACTERISTICS	A	B	C	D	E	F	G
7	RIPRAP	Used where vegetation cannot be established. Very effective in protecting against high velocity flows. Should be placed over a geotextile liner.	•	•	•	•			•
8	AGGREGATE COVER	Can be used in any area where a stable condition is needed for construction operations, equipment storage or in heavy traffic areas. Reduces potential soil erosion and fugitive dust by stabilizing raw areas.	•				•	•	
9	BENCHES	Reduces sheet flow velocities preventing rilling and gullying. Assists in the collection and filtering of sediments. Provides access for stabilizing slopes.	•					•	
10	DIVERSION DIKE	Assists in the diversion of runoff to a stable outlet or sediment control device. Reduces sheet flow velocities preventing rilling and gullying. Collects and diverts runoff to properly stabilized drainage ways. Works well with INTERCEPTING DITCH (KEY 11)	•				•	•	
11	INTERCEPTING DITCH	Assists in the diversion of runoff to a stable outlet or sediment control device. Reduces sheet flow velocities preventing rilling and gullying. Works well with DIVERSION DIKE (KEY 10)	•				•	•	
12	INTERCEPTING DITCH AND DIVERSION DIKE	Assists in the diversion of runoff to a stable outlet or sediment control device. Reduces sheet flow velocities preventing rilling and gullying.	•				•	•	
13	GRAVEL FILTER BERM	Useful in filtering flow prior to its reentry into a lake, stream or wetland. Works well with SEDIMENT TRAP (KEY 20) and TEMPORARY BYPASS CHANNEL (KEY 35). Not to be used in lieu of a CHECK DAM (KEY 37) in a ditch.	•		•			•	
14	GRAVEL ACCESS APPROACH	Provides a stable access to roadways minimizing fugitive dust and tracking of materials onto public streets and highways.					•	•	

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9-10-2010 F.H.W.A. APPROVAL	6-3-2010 PLAN DATE	R-96-E	SHEET 2 OF 6

KEY	DETAIL	CHARACTERISTICS	A	B	C	D	E	F	G
23	STREAM RELOCATION	A detail depicting the proper procedures for stream relocation. Maintains same width, depth, and flow velocity as the natural stream. Revegetate banks with PERMANENT/TEMPORARY SEEDING (KEY 3), MULCHING AND MULCH ANCHORING (KEY 28), MULCH BLANKETS AND HIGH VELOCITY MULCH BLANKETS (KEY 33) and woody plants to shade the stream.		•					•
24	SAND AND STONE BAGS	Sand and stone bags are a useful tool in the prevention of erosion. Can be used to divert water around a construction site by creating a DIVERSION DIKE (KEY 10). Works well for creating a CONSTRUCTION DAM (KEY 36) and temporary culvert end fill.	•	•	•	•	•	•	•
25	SAND FENCE AND DUNE STABILIZATION	A Sand Fence traps blowing sand by reducing wind velocities. Can be used to prevent sand from blowing onto roads. Must be maintained until sand source is stabilized.		•				•	•
26	SILT FENCE	A permeable barrier erected below disturbed areas to capture sediments from sheet flow. Can be used to divert small volumes of water to stable outlets. Ineffective as a filter and should never be placed across streams or ditches where flow is concentrated.		•				•	•
27	PLASTIC SHEETS OR GEOTEXTILE COVER	Plastic Sheets can be used to create a liner in temporary channels. Can also be used to create a temporary cover to prevent erosion of stockpiled materials.		•	•	•			•
28	MULCHING AND MULCH ANCHORING	Anchored mulch provides erosion protection against rain and wind. Mulch must be used on seeded areas to promote water retention and growth. Should be inspected after every rainstorm and repaired as necessary until vegetation is well established.		•		•		•	•
29	INLET PROTECTION FABRIC DROP	Provides settling and filtering of silt laden water prior to its entry into the drainage system. Can be used in median and side ditches where vegetation will be disturbed. Allows for early use of drainage systems prior to project completion.				•		•	
30	INLET PROTECTION GEOTEXTILE AND STONE	Provides settling and filtering of silt laden water prior to its entry into the drainage system. Should be used in paved areas where drainage structures are existing or proposed. Allows for early use of drainage systems prior to project completion.				•		•	

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NOTES:

THIS STANDARD PLAN WILL SERVE AS A KEY IN THE SELECTION OF THE APPROPRIATE SOIL EROSION AND SEDIMENTATION CONTROL DETAILS. THIS PLAN ALSO PROVIDES THE KEY TO THE NUMBERED EROSION CONTROL ITEMS SPECIFIED ON THE CONSTRUCTION PLANS. REFER TO THE MDOT SOIL EROSION & SEDIMENTATION CONTROL MANUAL, SECTION 6 FOR SPECIFIC DETAILS, CONTRACT ITEMS (PAY ITEMS), AND PAY UNITS.

COLLECTED SILT AND SEDIMENT SHALL BE REMOVED PERIODICALLY TO MAINTAIN THE EFFECTIVENESS OF THE SEDIMENT TRAP, SEDIMENT BASIN, AND SILT FENCE. AGGREGATES PLACED IN STREAMS SHOULD CONTAIN A MINIMUM OF FINES.

TEMPORARY EROSION AND SEDIMENTATION CONTROL PROVISIONS SHALL BE COORDINATED WITH THE PERMANENT CONTROL MEASURES TO ASSURE EFFECTIVE CONTROL OF SEDIMENTS DURING CONSTRUCTION OF THE PROJECT.

ALL TEMPORARY EROSION CONTROL DEVICES SHALL BE REMOVED AFTER VEGETATION ESTABLISHMENT OR AT THE DISCRETION OF THE ENGINEER. CARE SHALL BE TAKEN DURING REMOVAL TO MINIMIZE SILTATION IN NEARBY DRAINAGE COURSES.

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9-10-2010 F.H.W.A. APPROVAL	6-3-2010 PLAN DATE	R-96-E	SHEET 6 OF 6

PROJECT: GRAND POINTE SUBDIVISION – WATER MAIN REPLACEMENT
TOWNSHIP OR MUNICIPALITY NAME
EATON COUNTY, MICHIGAN

SHEET TITLE: SESC DETAILS

APPROVED	DBH
CHECKED	DBH
DRAWN	TAP
JOB NO.	23–0086
DATE	1/26/2026
SCALE	1" = 4' V 1" = 40' H
SHEET NO.	C7.1

Exhibit C

NOTICE OF PUBLIC HEARING
WINDSOR CHARTER TOWNSHIP, EATON COUNTY

GRAND POINTE SUBDIVISION IMPROVEMENTS
SPECIAL ASSESSMENT DISTRICT

TO: ALL RECORD OWNERS OF OR PARTIES IN INTEREST IN LAND IN THE SPECIAL ASSESSMENT DISTRICT DESCRIBED BELOW:

NOTICE IS HEREBY GIVEN that the Township Board of Windsor Charter Township, Eaton County, Michigan ("Township"), will hold a public hearing at 7:00 p.m. on March 25, 2026, at the Windsor Charter Township Emergency Services Building (300 W. Jefferson St., Dimondale, MI 48821), to hear objections to the proposed improvements, the proposed estimate of costs, and the proposed special assessment district for improvements related to, among other things, improving the water main located in Grand Pointe Subdivision in Windsor Charter Township, Eaton County, Michigan (referred to as the "Grand Pointe Subdivision Improvements"). At the public hearing, the Township Board will consider any objections, revisions, corrections, amendments, or changes to the plans, estimate of costs, or special assessment district. The Grand Pointe Subdivision Improvements and the proposed special assessment district to be established by the Township Board as the district against which the costs of the proposed improvements are to be assessed are generally described as follows:

Proposed Grand Pointe Subdivision Improvements: A project to make improvements to, among other things, the existing groundwater source and water main located in Grand Pointe Subdivision in Windsor Charter Township, Eaton County, Michigan, by providing new water main, valves, hydrants, copper water services, and all other appurtenances required for a complete and fully operational water supply system, which can be summarized as a project to improve Grande Pointe Subdivision.

Proposed Special Assessment District:

[insert parcel numbers]

PLEASE TAKE FURTHER NOTICE that the plans showing the proposed Grand Pointe Subdivision Improvements, locations and estimated costs, and the proposed special assessment district are on file with the Township Clerk, Meredith Barnhart-Smith, 300 W. Jefferson St., Dimondale, MI 48821, for public examination during ordinary business hours and at the public hearing. The special assessment proposal would assess the cost of the proposed improvements to the properties benefiting therefrom.

PLEASE TAKE FURTHER NOTICE that the owner or any person having an interest in property within the proposed district may file a written appeal with the Michigan Tax Tribunal within thirty (30) days after confirmation of the special assessment roll. However, appearance and protest at the public hearing on the special assessment roll are required in order to appeal the special assessment to the Michigan Tax Tribunal. An owner or other party of interest or his or her agent may (1) appear in person at the hearing to protest the special assessment, or (2) file his or her appearance or protest

by letter before the close of the hearing.

The Township Board shall maintain a record of parties who appear to protest at the hearing. If the hearing is terminated or adjourned for the day before a party is provided with the opportunity to be heard, a party whose appearance was recorded shall be considered to have protested the special assessment in person.

Windsor Charter Township will provide auxiliary aids or services to individuals with disabilities. Persons needing such services should contact the office of the Township Clerk by writing or calling the Clerk not less than four days before the public hearing.

BY ORDER OF THE TOWNSHIP BOARD
Meredith Barnhart-Smith, Clerk
300 W. Jefferson St.
Dimondale, MI 48821
Phone: (517) 646-0772
clerk@windsortownship.com

(Publish March 14, 2026 and _____, 2026)
(Mail March 13, 2026)