

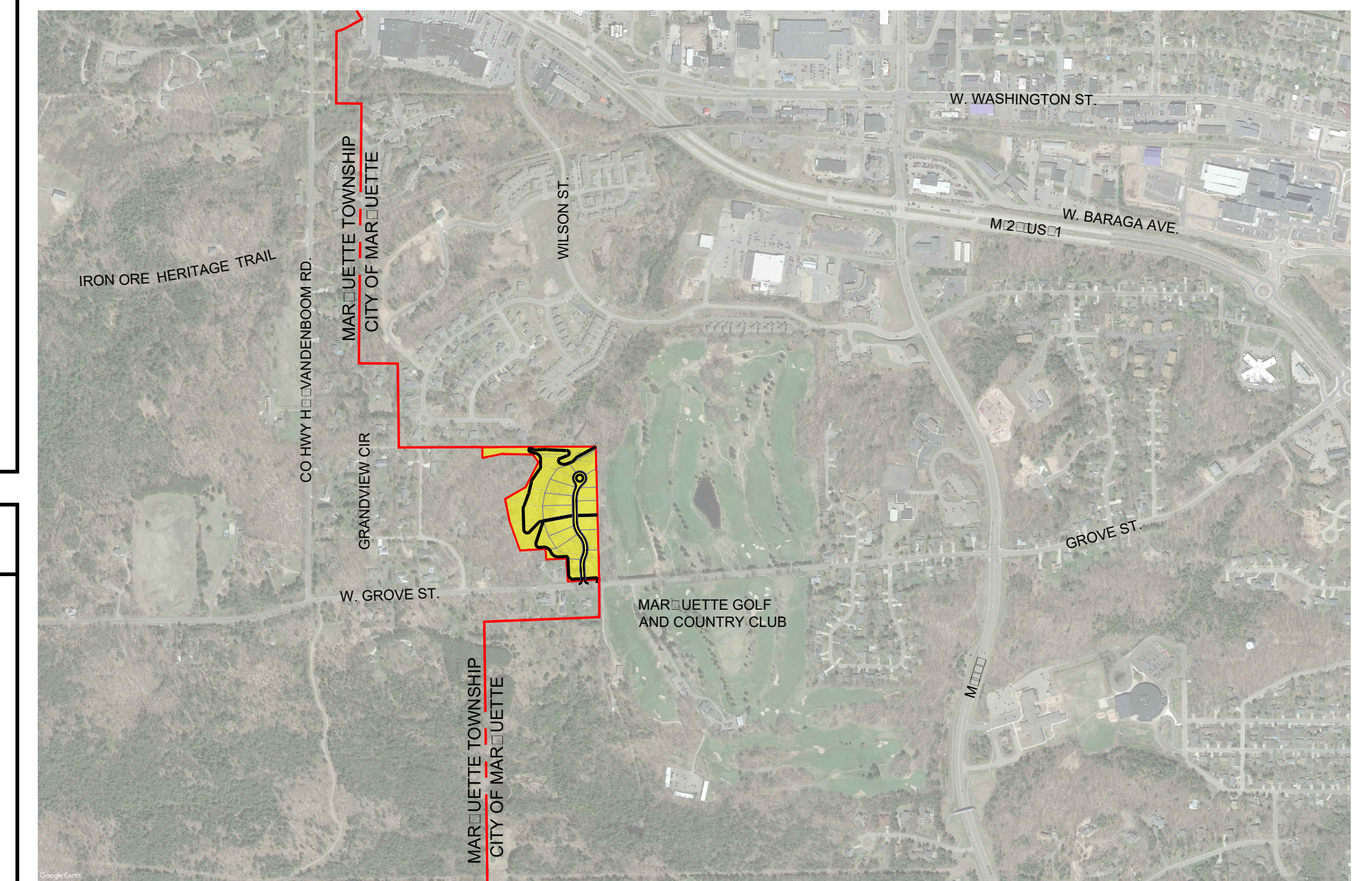
# HERITAGE SILOS LLC

## MARQUETTE MICHIGAN

DEVELOPER  
**HERITAGE SILOS LLC**  
 BISHOP WOODS RD  
 MARQUETTE MI

ARCHITECT  
**BARRY J. POLZIN ARCHITECTS INC.**  
 101 N. LAESHORE BLVD.  
 MARQUETTE MI  
 49802

CIVIL ENGINEER  
**BRIAN SAVOLAINEN P.E.**  
 22 US 1W 200  
 MARQUETTE MI  
 49802



### VICINITY MAP

### DRAWING INDEX

- COVER
- AS1.0 SITE PLAN
- L1.0 LANDSCAPE PLAN
- A1.0 FLOOR PLAN, EXTERIOR ELEVATIONS AND PARCEL B STYLE RENDERINGS
- C1 PROPOSED ROADWAY PLAN AND PROFILE
- C2 EXISTING UTILITIES PLAN AND PROFILE
- C3 STORM WATER PLAN AND SOIL EROSION
- C4 WATER MAIN DETAILS
- C5 SANITARY SEWER DETAILS
- C6 SANITARY SEWER DETAILS

### SITE INFORMATION

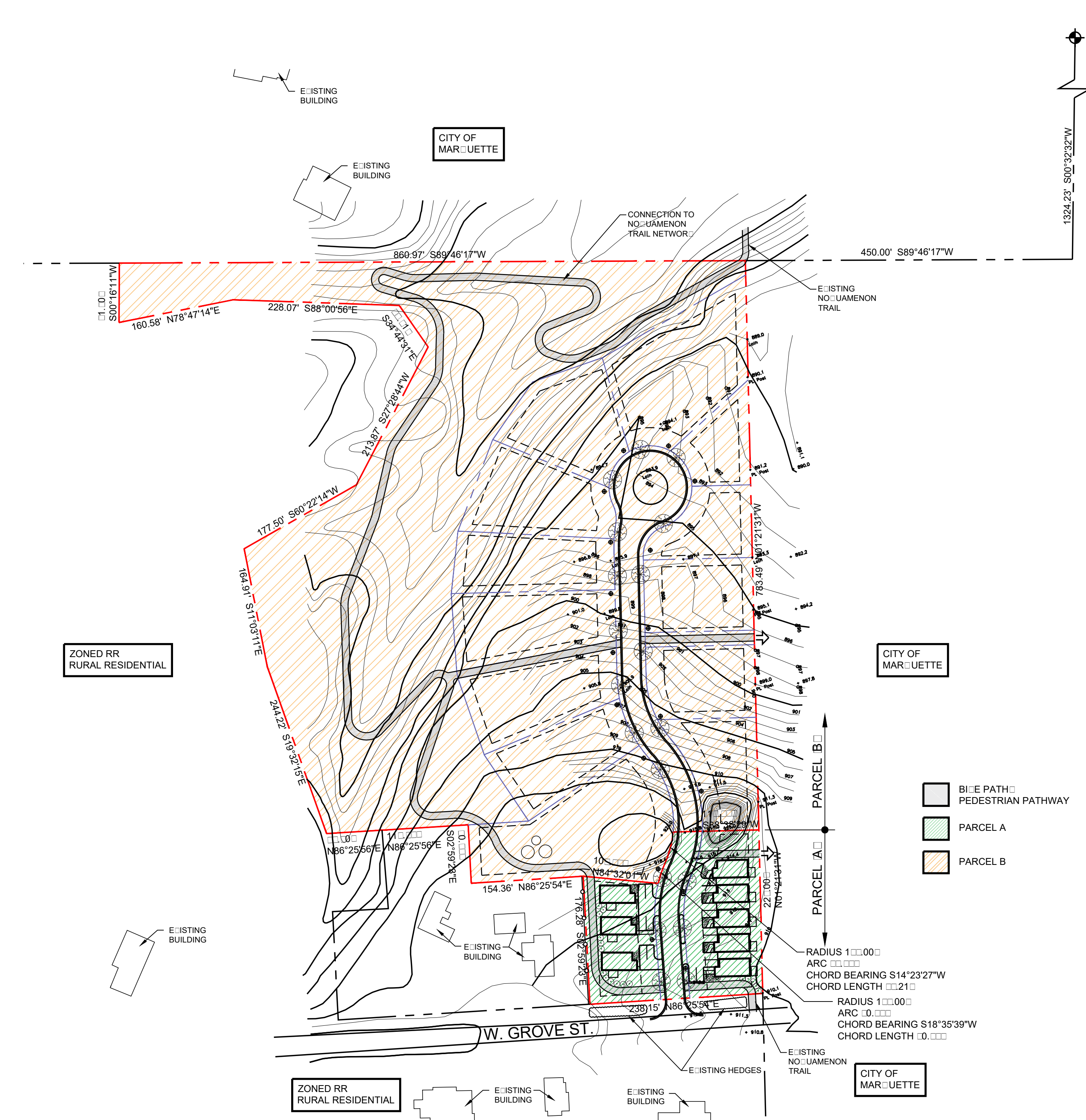
EXISTING ZONING: RURAL RESIDENTIAL  
 PROPOSED ZONING: PLANNED UNIT DEVELOPMENT URBAN RESIDENTIAL  
 PARCEL SPACES: 10'0" x 20'0" 1  
 MAXIMUM BUILDING HEIGHT: 12'  
 TOTAL PROPOSED AREA: 12,000 S.F.  
 ARCHITECTURAL STYLE: SEE ATTACHMENT.  
 NO PLANNED STREET LIGHTING: EXTERIOR LIGHTING WILL BE BY HOMEOWNERS: SEE LIGHTING ATTACHMENT  
 NO SIGNS PROPOSED: STREET SIGN WILL BE AT GROVE STREET INTERSECTION  
 ALL CABINS AND LOTS TO USE RESIDENTIAL ROLL OFF GARBAGE CANS: NO DUMPSTERS IN PLAN



**BARRY J. POLZIN**  
 ARCHITECTS

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**FINAL P.U.D. SUBMITTAL**  
 02/2021



EAST 1 CORNER OF THE  
 SOUTHEAST 1 OF THE SOUTHEAST  
 1 SE 1 OF SE 1 OF SECTION 21  
 TOWNSHIP NORTH-RANGE 2  
 WEST

#### LEGAL DESCRIPTION PARCEL A

A PARCEL OF LAND SITUATED IN THE SOUTHEAST 1 OF THE SOUTHEAST 1 OF SE 1 OF SE 1 OF SECTION 21 TOWNSHIP NORTH-RANGE 2 WEST TOWNSHIP OF MARQUETTE COUNTY OF MARQUETTE AND STATE OF MICHIGAN DESCRIBED AS FOLLOWS:

COMMENCING AT THE EAST 1 CORNER OF SAID SECTION 21 AS DESCRIBED PER LAND CORNER RECORDATION CERTIFICATE RECORDED AT LIBER R1 PAGE 2 MARQUETTE COUNTY LAND CORNER RECORDS:

THENCE SOUTH 00°32'32" WEST ALONG THE EAST LINE OF SAID SECTION 21 A DISTANCE OF 12.2 FEET TO THE NORTHEAST CORNER OF THE SOUTHEAST 1 OF SE 1 OF SE 1 OF SAID SECTION 21. THE EAST LINE OF SAID SECTION 21 BEING DEFINED AS A STRAIGHT LINE ORIGINATING AT THE EAST 1 CORNER OF SAID SECTION 21 AS DESCRIBED PER LAND CORNER RECORDATION CERTIFICATE RECORDED AT LIBER R1 PAGE 2 MARQUETTE COUNTY LAND CORNER RECORDS AND ENDING AT THE SOUTHEAST CORNER OF SAID SECTION 21 AS DESCRIBED PER LAND CORNER RECORDATION CERTIFICATE RECORDED AT LIBER R1 PAGE 2 MARQUETTE COUNTY LAND CORNER RECORDS:

THENCE SOUTH 89°46'17" WEST ALONG THE NORTH LINE OF THE SOUTHEAST 1/4 OF THE SOUTHEAST 1/4 (SE 1/4 OF SE 1/4) OF SAID SECTION 21 A DISTANCE OF 10.00 FEET TO THE NORTHWEST CORNER OF THE LAST DESCRIBED PARCEL PER QUIT CLAIM DEED RECORDED AT LIBER 1 OF DEEDS PAGE 2 MARQUETTE COUNTY RECORDS:

THENCE SOUTH 01°21'31" EAST ALONG THE WEST LINE OF LAST DESCRIBED PARCEL PER SAID QUIT CLAIM DEED RECORDED AT LIBER 1 OF DEEDS PAGE 2 MARQUETTE COUNTY RECORDS A DISTANCE OF FEET. THIS BEING THE POINT OF BEGINNING OF THE LANDS HEREIN DESCRIBED:

THENCE NORTH 88°38'29" WEST A DISTANCE OF 117.95 FEET; THENCE A 135.00 FOOT CURVE TO THE RIGHT AN ARC DISTANCE OF 43.39 FEET, HAVING A CHORD WHICH BEARS SOUTH 14°23'27" WEST A DISTANCE OF 43.21 FEET; THENCE A 175.00 FOOT CURVE TO THE LEFT AN ARC DISTANCE OF 30.57 FEET, HAVING A CHORD WHICH BEARS SOUTH 18°35'39" WEST A DISTANCE OF 30.54 FEET; THENCE NORTH 84°25'54" EAST A DISTANCE OF 103.63 FEET; THENCE SOUTH 02°59'23" EAST A DISTANCE OF 178.28 FEET; THENCE NORTH 86°25'54" EAST A DISTANCE OF 238.15 FEET; THENCE NORTH 01°21'31" WEST A DISTANCE OF 225.00 FEET TO THE POINT OF BEGINNING:

CONTAINING 1.10 ACRES MORE OR LESS

SUBJECT TO ANY AND ALL RIGHTS, RESERVATIONS, RESTRICTIONS, CONDITIONS AND EASEMENTS OF RECORD.

#### LEGAL DESCRIPTION PARCEL B

A PARCEL OF LAND SITUATED IN THE SOUTHEAST 1 OF THE SOUTHEAST 1 OF SE 1 OF SE 1 OF SECTION 21 TOWNSHIP NORTH-RANGE 2 WEST TOWNSHIP OF MARQUETTE COUNTY OF MARQUETTE AND STATE OF MICHIGAN DESCRIBED AS FOLLOWS:

COMMENCING AT THE EAST 1 CORNER OF SAID SECTION 21 AS DESCRIBED PER LAND CORNER RECORDATION CERTIFICATE RECORDED AT LIBER R1 PAGE 2 MARQUETTE COUNTY LAND CORNER RECORDS:

THENCE SOUTH 00°32'32" WEST ALONG THE EAST LINE OF SAID SECTION 21 A DISTANCE OF 12.2 FEET TO THE NORTHEAST CORNER OF THE SOUTHEAST 1 OF SE 1 OF SE 1 OF SAID SECTION 21. THE EAST LINE OF SAID SECTION 21 BEING DEFINED AS A STRAIGHT LINE ORIGINATING AT THE EAST 1 CORNER OF SAID SECTION 21 AS DESCRIBED PER LAND CORNER RECORDATION CERTIFICATE RECORDED AT LIBER R1 PAGE 2 MARQUETTE COUNTY LAND CORNER RECORDS AND ENDING AT THE SOUTHEAST CORNER OF SAID SECTION 21 AS DESCRIBED PER LAND CORNER RECORDATION CERTIFICATE RECORDED AT LIBER R1 PAGE 2 MARQUETTE COUNTY LAND CORNER RECORDS:

THENCE SOUTH 89°46'17" WEST ALONG THE NORTH LINE OF THE SOUTHEAST 1/4 OF THE SOUTHEAST 1/4 (SE 1/4 OF SE 1/4) OF SAID SECTION 21 A DISTANCE OF 10.00 FEET TO THE NORTHWEST CORNER OF THE LAST DESCRIBED PARCEL PER QUIT CLAIM DEED RECORDED AT LIBER 1 OF DEEDS PAGE 2 MARQUETTE COUNTY RECORDS. THIS BEING THE POINT OF BEGINNING OF THE LANDS HEREIN DESCRIBED:

THENCE CONTINUING SOUTH 89°46'17" WEST ALONG THE NORTH LINE OF THE SOUTHEAST 1/4 OF THE SOUTHEAST 1/4 (SE 1/4 OF SE 1/4) OF SAID SECTION 21 A DISTANCE OF FEET TO THE NORTHWEST CORNER OF THE SOUTHEAST 1 OF SE 1 OF SE 1 OF SAID SECTION 21. SAID POINT ALSO BEING THE NORTHEAST CORNER OF LANDS DESCRIBED PER DOCUMENT NO. 201 R 10 MARQUETTE COUNTY RECORDS. SAID POINT BEING MONUMENTED WITH A FOUND DIAMETER IRON ROD AND CAP NO. 21

THENCE SOUTH 00°16'11" WEST ALONG THE EAST LINE OF THE SOUTHEAST 1/4 OF THE SOUTHEAST 1/4 (SE 1/4 OF SE 1/4) OF SAID SECTION 21 AND ALONG THE EAST LINE OF SAID LANDS DESCRIBED PER DOCUMENT NO. 201 R 10 MARQUETTE COUNTY RECORDS A DISTANCE OF FEET TO A POINT ON THE EXTERIOR BOUNDARY OF LANDS DESCRIBED PER DOCUMENT NO. 201 R 10 MARQUETTE COUNTY RECORDS:

THENCE NORTH 78°47'14" EAST ALONG THE EXTERIOR BOUNDARY OF SAID LANDS DESCRIBED PER DOCUMENT NO. 201 R 10 MARQUETTE COUNTY RECORDS A DISTANCE OF 110 FEET

THENCE SOUTH 88°00'56" EAST CONTINUING ALONG THE EXTERIOR BOUNDARY OF SAID LANDS DESCRIBED PER DOCUMENT NO. 201 R 10 MARQUETTE COUNTY RECORDS A DISTANCE OF 220 FEET

THENCE SOUTH 34°44'31" EAST CONTINUING ALONG THE EXTERIOR BOUNDARY OF SAID LANDS DESCRIBED PER DOCUMENT NO. 201 R 10 MARQUETTE COUNTY RECORDS A DISTANCE OF FEET

THENCE SOUTH 27°28'44" WEST CONTINUING ALONG THE EXTERIOR BOUNDARY OF SAID LANDS DESCRIBED PER DOCUMENT NO. 201 R 10 MARQUETTE COUNTY RECORDS A DISTANCE OF 21 FEET

THENCE SOUTH 60°22'14" WEST CONTINUING ALONG THE EXTERIOR BOUNDARY OF SAID LANDS DESCRIBED PER DOCUMENT NO. 201 R 10 MARQUETTE COUNTY RECORDS A DISTANCE OF FEET. SAID POINT BEING THE NORTHEAST CORNER OF PARCEL C AS DESCRIBED PER DOCUMENT NO. 201 R 10 MARQUETTE COUNTY RECORDS:

THENCE SOUTH 11°03'11" EAST ALONG THE EXTERIOR BOUNDARY OF SAID PARCEL C AS DESCRIBED PER DOCUMENT NO. 201 R 10 MARQUETTE COUNTY RECORDS A DISTANCE OF FEET TO THE NORTHEAST CORNER OF PARCEL B AS DESCRIBED PER DOCUMENT NO. 201 R 10 MARQUETTE COUNTY RECORDS:

THENCE SOUTH 19°32'15" EAST ALONG THE EXTERIOR BOUNDARY OF SAID PARCEL B AS DESCRIBED PER DOCUMENT NO. 201 R 10 MARQUETTE COUNTY RECORDS A DISTANCE OF 22 FEET TO THE NORTHEAST CORNER OF LANDS DESCRIBED PER DOCUMENT NO. 201 R 10 MARQUETTE COUNTY RECORDS. SAID POINT ALSO BEING THE NORTHWEST CORNER OF LANDS DESCRIBED AT LIBER 1 OF DEEDS PAGE 10 MARQUETTE COUNTY RECORDS:

THENCE NORTH 86°25'56" EAST (RECORDED AS NORTH 86°28'14" EAST) ALONG THE NORTH LINE OF SAID LANDS DESCRIBED AT LIBER 10 OF DEEDS PAGE 10 MARQUETTE COUNTY RECORDS A DISTANCE OF FEET TO THE NORTHEAST CORNER SAID LANDS DESCRIBED AT LIBER 10 OF DEEDS PAGE 10 MARQUETTE COUNTY RECORDS. SAID POINT ALSO BEING THE NORTHWEST CORNER OF LANDS DESCRIBED AT LIBER 2 OF DEEDS PAGE MARQUETTE COUNTY RECORDS:

THENCE NORTH 86°26'56" EAST, 118.75 FEET; THENCE SOUTH 02°59'23" EAST A DISTANCE OF 80.44 FEET; THENCE NORTH 86°25'54" EAST A DISTANCE OF 154.38 FEET; THENCE SOUTH 84°32'01" EAST A DISTANCE OF 103.63 FEET; THENCE A 175.00 FOOT CURVE TO THE RIGHT AN ARC DISTANCE OF 30.57 FEET, HAVING A CHORD WHICH BEARS NORTH 18°35'39" EAST A DISTANCE OF FEET; THENCE A 100.00 FOOT CURVE TO THE LEFT AN ARC DISTANCE OF FEET; HAVING A CHORD WHICH BEARS NORTH 14°23'27" EAST A DISTANCE OF 43.21 FEET; THENCE NORTH 88°38'29" EAST A DISTANCE OF 117.95 FEET; THENCE NORTH 01°21'31" WEST A DISTANCE OF 225.00 FEET TO THE POINT OF BEGINNING.

CONTAINING 11.0 ACRES MORE OR LESS

SUBJECT TO ANY AND ALL RIGHTS, RESERVATIONS, RESTRICTIONS, CONDITIONS AND EASEMENTS OF RECORD.

#### LEGAL DESCRIPTION PARCEL A ROAD EASEMENT

A PARCEL OF LAND SITUATED IN THE SOUTHEAST 1 OF THE SOUTHEAST 1 OF SE 1 OF SE 1 OF SECTION 21 TOWNSHIP NORTH-RANGE 2 WEST TOWNSHIP OF MARQUETTE COUNTY OF MARQUETTE AND STATE OF MICHIGAN DESCRIBED AS FOLLOWS:

COMMENCING AT THE EAST 1 CORNER OF SAID SECTION 21 AS DESCRIBED PER LAND CORNER RECORDATION CERTIFICATE RECORDED AT LIBER R1 PAGE 2 MARQUETTE COUNTY LAND CORNER RECORDS:

THENCE SOUTH 00°32'32" WEST ALONG THE EAST LINE OF SAID SECTION 21 A DISTANCE OF 12.2 FEET TO THE NORTHEAST CORNER OF THE SOUTHEAST 1 OF SE 1 OF SE 1 OF SAID SECTION 21. THE EAST LINE OF SAID SECTION 21 BEING DEFINED AS A STRAIGHT LINE ORIGINATING AT THE EAST 1 CORNER OF SAID SECTION 21 AS DESCRIBED PER LAND CORNER RECORDATION CERTIFICATE RECORDED AT LIBER R1 PAGE 2 MARQUETTE COUNTY LAND CORNER RECORDS AND ENDING AT THE SOUTHEAST CORNER OF SAID SECTION 21 AS DESCRIBED PER LAND CORNER RECORDATION CERTIFICATE RECORDED AT LIBER R1 PAGE 2 MARQUETTE COUNTY LAND CORNER RECORDS:

THENCE SOUTH 89°46'17" WEST ALONG THE NORTH LINE OF THE SOUTHEAST 1/4 OF THE SOUTHEAST 1/4 (SE 1/4 OF SE 1/4) OF SAID SECTION 21 A DISTANCE OF 10.00 FEET TO THE NORTHWEST CORNER OF THE LAST DESCRIBED PARCEL PER QUIT CLAIM DEED RECORDED AT LIBER 1 OF DEEDS PAGE 2 MARQUETTE COUNTY RECORDS:

THENCE SOUTH 01°21'31" EAST ALONG THE WEST LINE OF LAST DESCRIBED PARCEL PER SAID QUIT CLAIM DEED RECORDED AT LIBER 139 OF DEEDS, PAGE 329, MARQUETTE COUNTY RECORDS A DISTANCE OF FEET:

THENCE NORTH 88°38'29" WEST A DISTANCE OF 77.75 FEET; THIS BEING THE POINT OF BEGINNING OF THE EASEMENT HEREIN DESCRIBED; THENCE A 175.00 FOOT CURVE TO THE LEFT AN ARC DISTANCE OF 60.83 FEET, HAVING A CHORD WHICH BEARS SOUTH 13°38'28" WEST A DISTANCE OF 60.54 FEET; THENCE A 135.00 FOOT CURVE TO THE LEFT AN ARC DISTANCE OF 65.96 FEET, HAVING A CHORD WHICH BEARS SOUTH 09°39'56" WEST A DISTANCE OF 65.01 FEET; THENCE SOUTH 04°16'04" EAST A DISTANCE OF 106.74 FEET; THENCE SOUTH 86°25'54" WEST A DISTANCE OF 40.00 FEET; THENCE NORTH 04°16'04" WEST A DISTANCE OF 106.75 FEET; THENCE A 175.00 FOOT CURVE TO THE RIGHT AN ARC DISTANCE OF 85.11 FEET, HAVING A CHORD WHICH BEARS NORTH 09°39'56" EAST A DISTANCE OF 84.28 FEET; THENCE A 135.00 FOOT CURVE TO THE LEFT AN ARC DISTANCE OF 43.39 FEET, HAVING A CHORD WHICH BEARS NORTH 14°23'27" EAST A DISTANCE OF 43.21 FEET; THENCE SOUTH 88°38'29" EAST A DISTANCE OF 43.21 FEET TO THE POINT OF BEGINNING.

**NEIGHBORHOOD SITE PLAN**  
 SCALE 1" = 100.0'



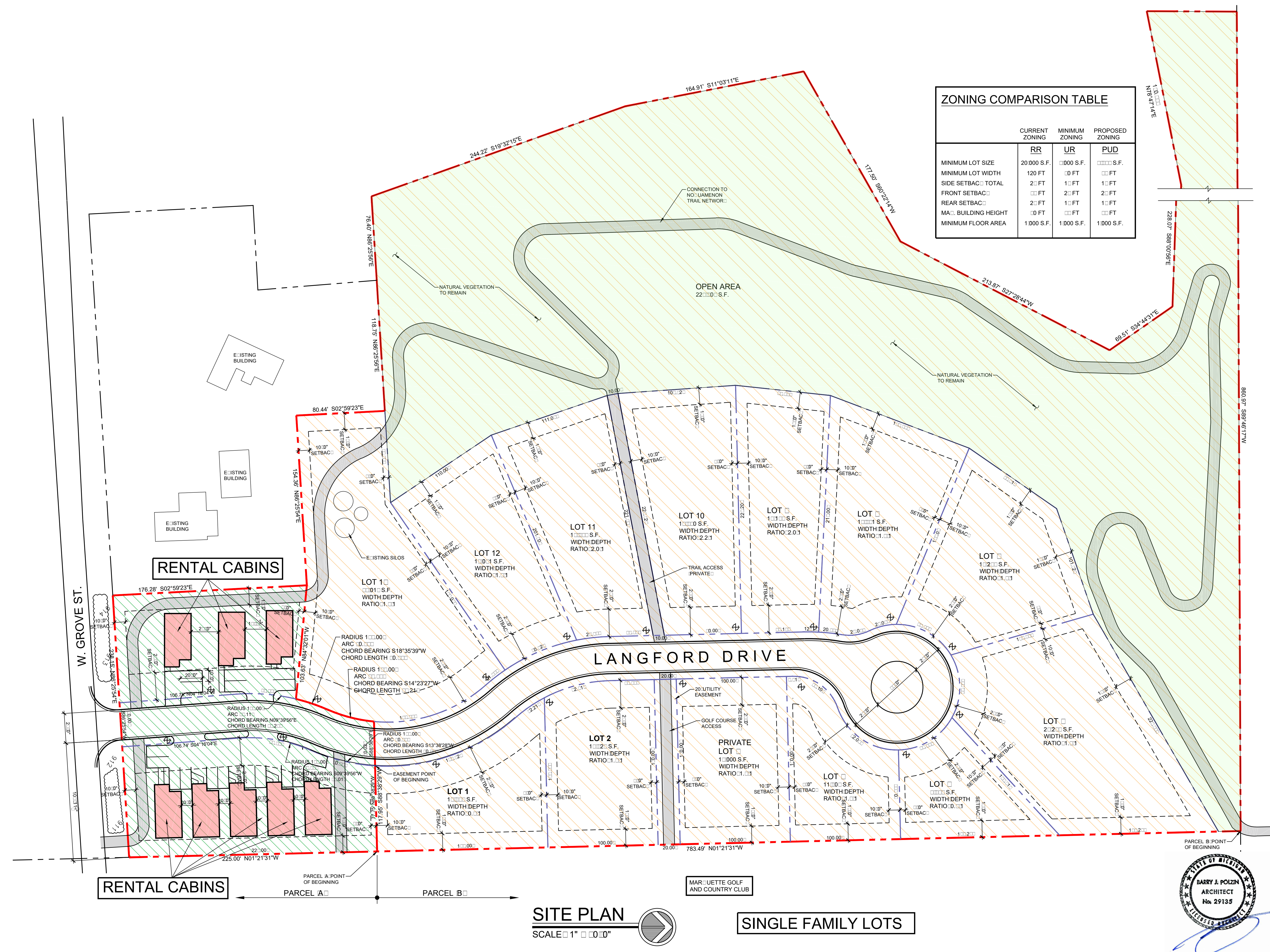
PLANNED UNIT DEVELOPMENT OF  
HERITAGE SILOS, LLC  
MARQUETTE TOWNSHIP, MICHIGAN

Design: Barry J. Polzin  
Drawn By:  
Date of Issue: 8/24/21

REVISION	DATE	ISSUE	BY
	9/28/21	FINAL	MRH

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SHEET:  
AS1.0



SITE PLAN  
SCALE 1" = 100'

SINGLE FAMILY LOTS





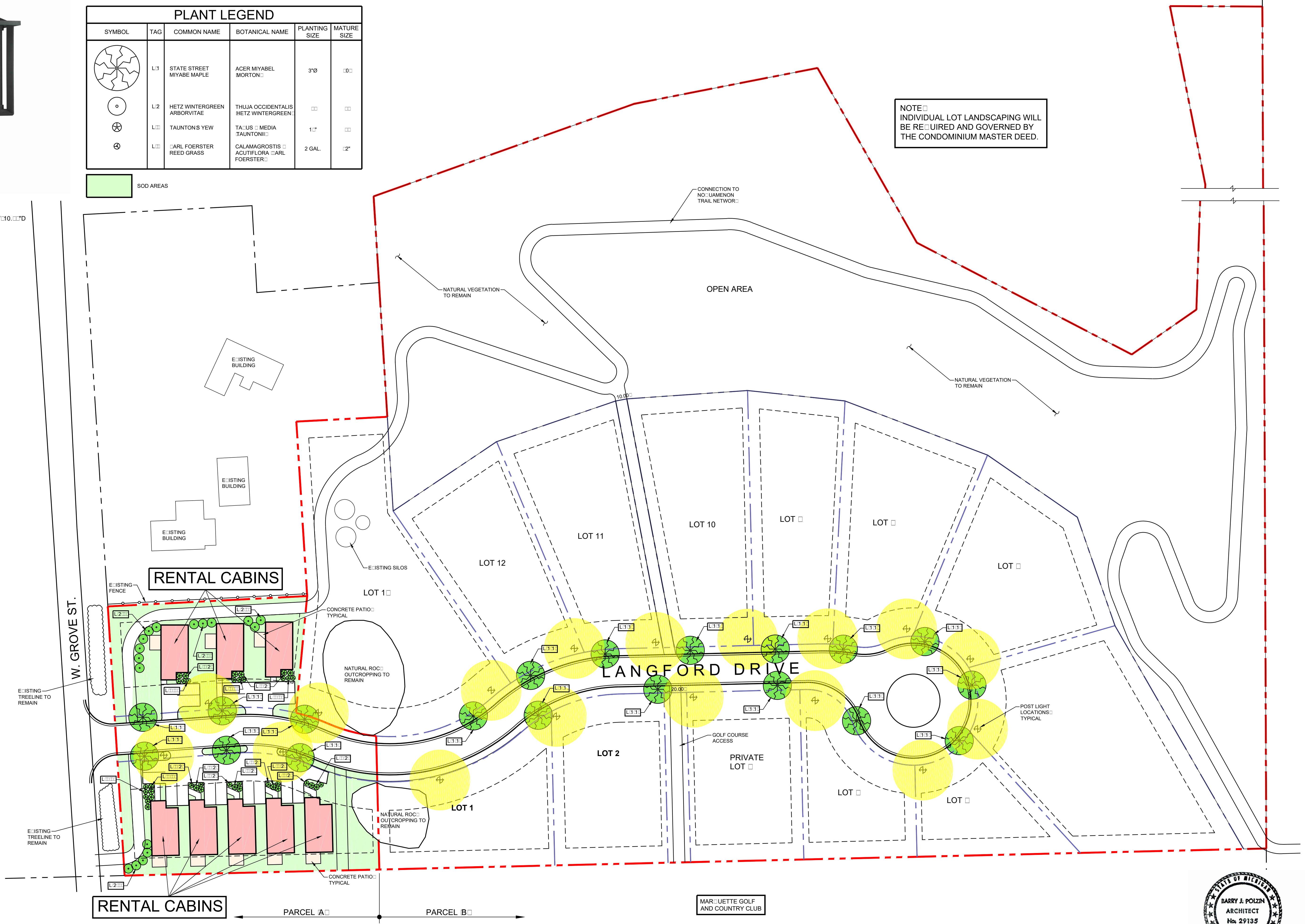


**POST LIGHT**  
 FIGURE SIZE: 1/2" H x 10" W x 10" D  
 10' POST HEIGHT

PLANT LEGEND					
SYMBOL	TAG	COMMON NAME	BOTANICAL NAME	PLANTING SIZE	MATURE SIZE
	L-1	STATE STREET MIYABE MAPLE	ACER MIYABEL MORTON	3"Ø	10'
	L-2	HETZ WINTERGREEN ARBORVITAE	THUJA OCCIDENTALIS HETZ WINTERGREEN	1"	10'
	L-3	TAUNTON'S YEWS	TAXUS MEDIA TAUNTONII	1"	10'
	L-4	CARL FOERSTER REED GRASS	CALAMAGROSTIS ACUTIFLORA CARL FOERSTER	2 GAL.	2'

SOD AREAS

NOTE: INDIVIDUAL LOT LANDSCAPING WILL BE REQUIRED AND GOVERNED BY THE CONDOMINIUM MASTER DEED.



**LANDSCAPE PLAN**  
 SCALE: 1" = 100'

**SINGLE FAMILY LOTS**



**PLANNED UNIT DEVELOPMENT OF  
 HERITAGE SILOS, LLC  
 MARQUETTE TOWNSHIP, MICHIGAN**

Design: Barry J. Polzin  
 Drawn By:  
 Date of Issue: 8/24/21

REVISION		
DATE	ISSUE	BY
9/28/21	FINAL	MRH

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SHEET:  
**L1.0**



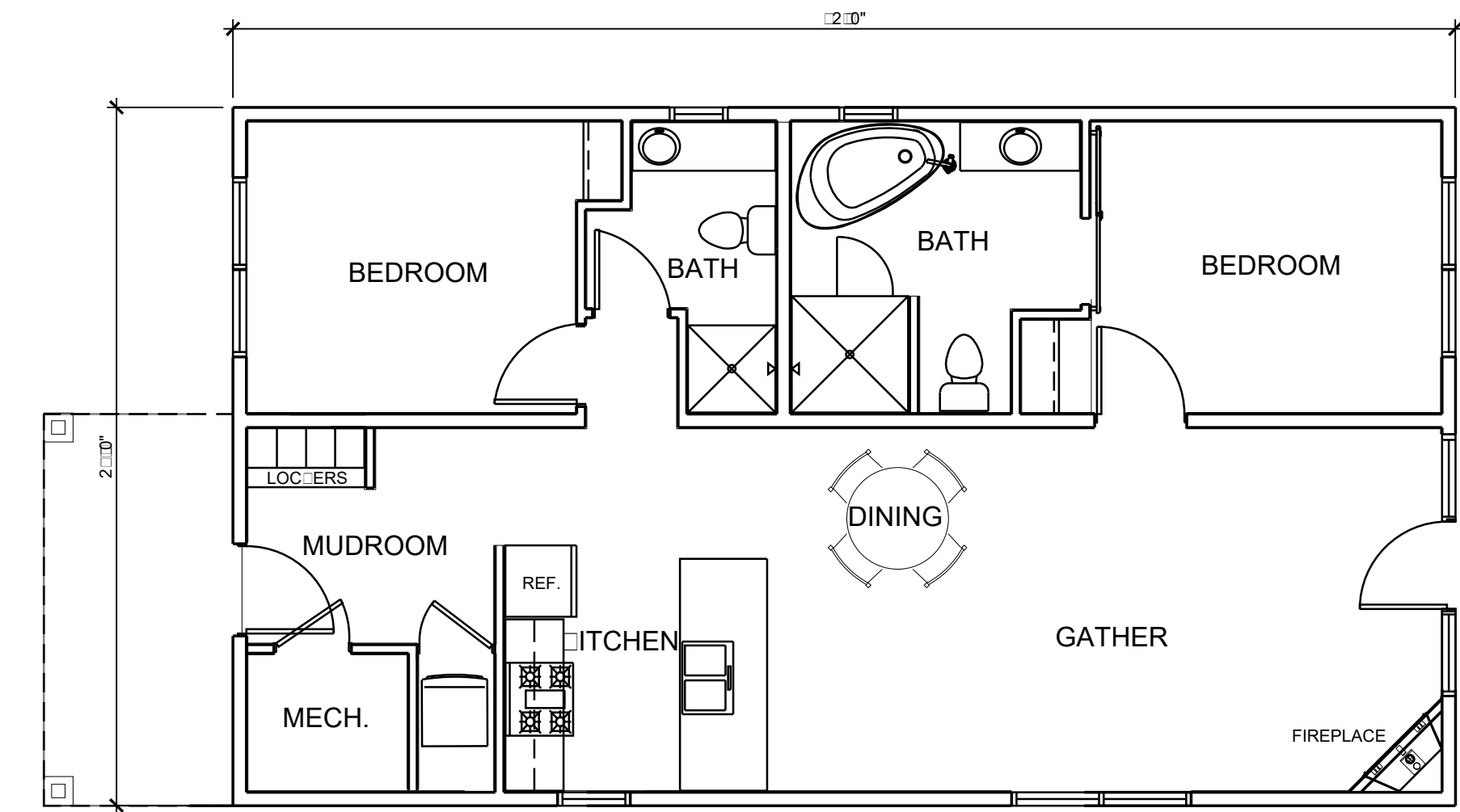


PARCEL B

PARCEL A

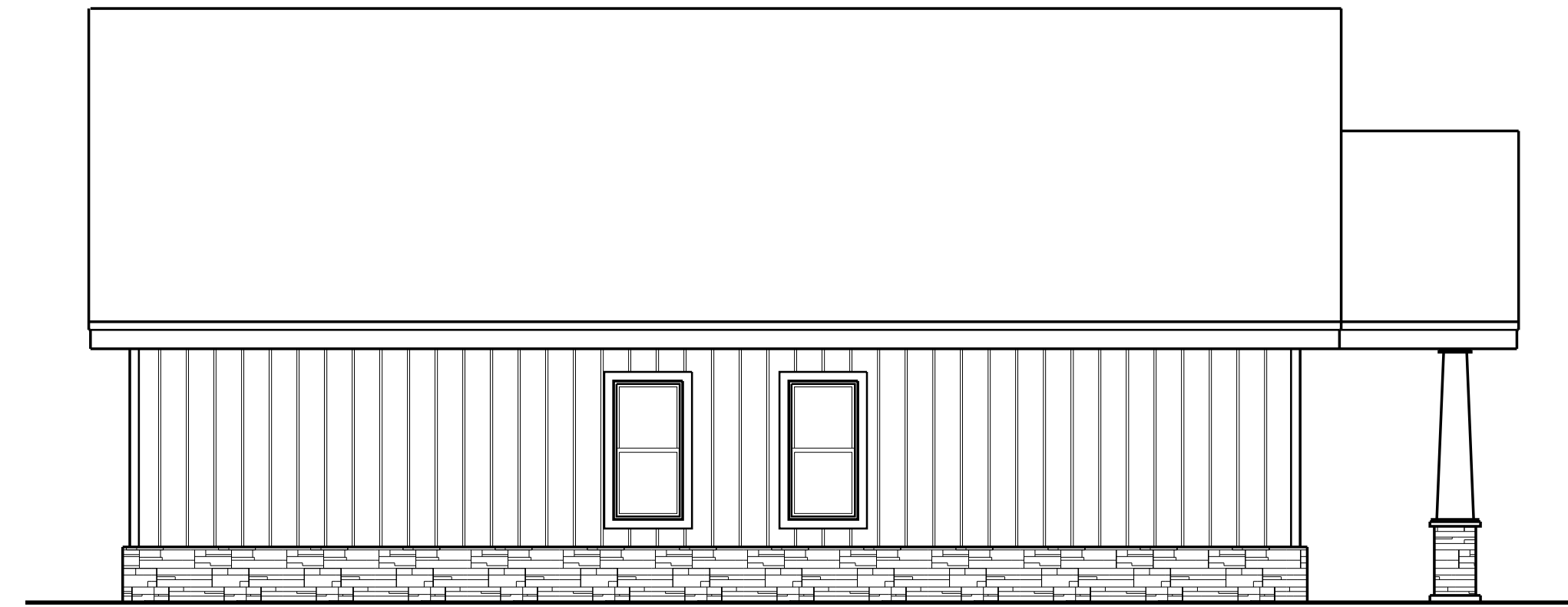


ARCHITECTURAL STYLE EXAMPLES.  
RESIDENTIAL DESIGN WILL BE  
SELECTED BY OWNER.



TYPICAL FLOOR PLAN

SCALE 1/8" = 1'-0"  
1,000 S.F.



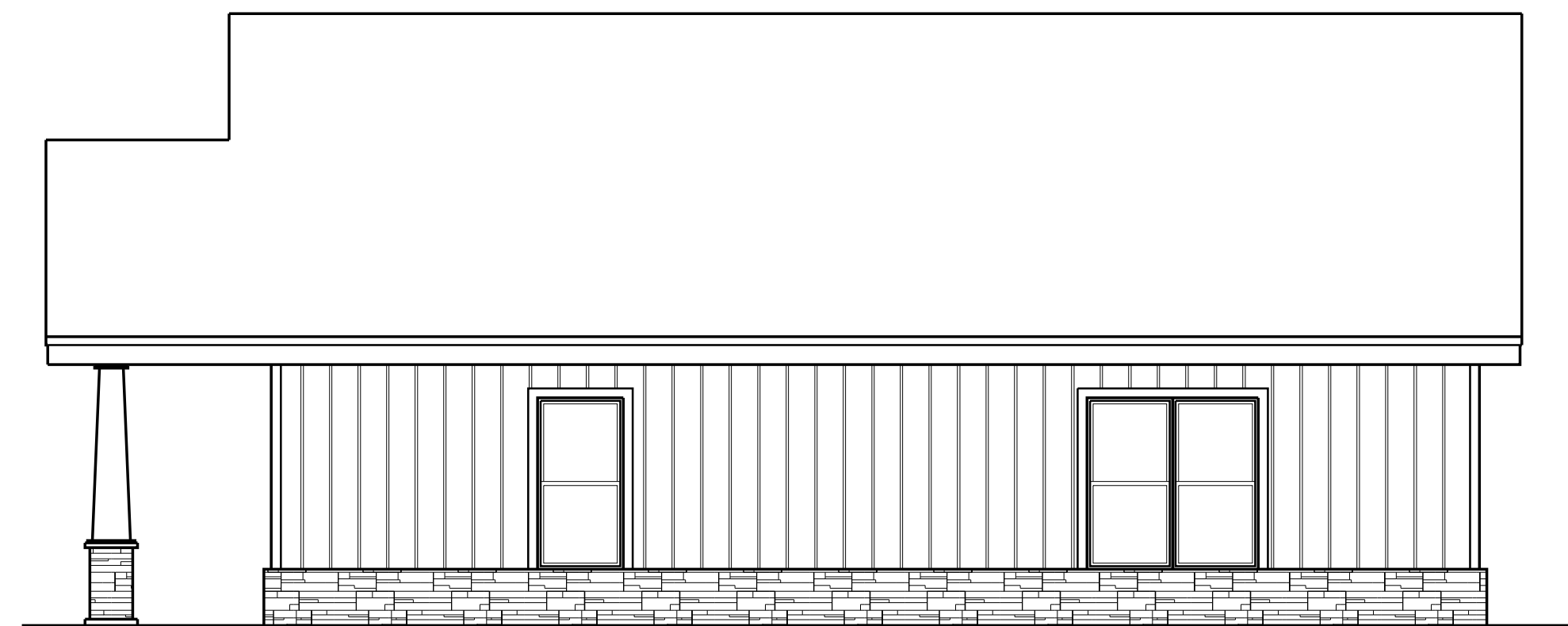
SIDE ELEVATION

SCALE 1/8" = 1'-0"



FRONT ELEVATION

SCALE 1/8" = 1'-0"



SIDE ELEVATION

SCALE 1/8" = 1'-0"



BACK ELEVATION

SCALE 1/8" = 1'-0"

PLANNED UNIT DEVELOPMENT OF  
HERITAGE SILOS, LLC  
MARQUETTE TOWNSHIP, MICHIGAN

Design: Barry J. Polzin  
Drawn By:  
Date of Issue: 8/24/21

REVISION		
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9/28/21	FINAL	MRH

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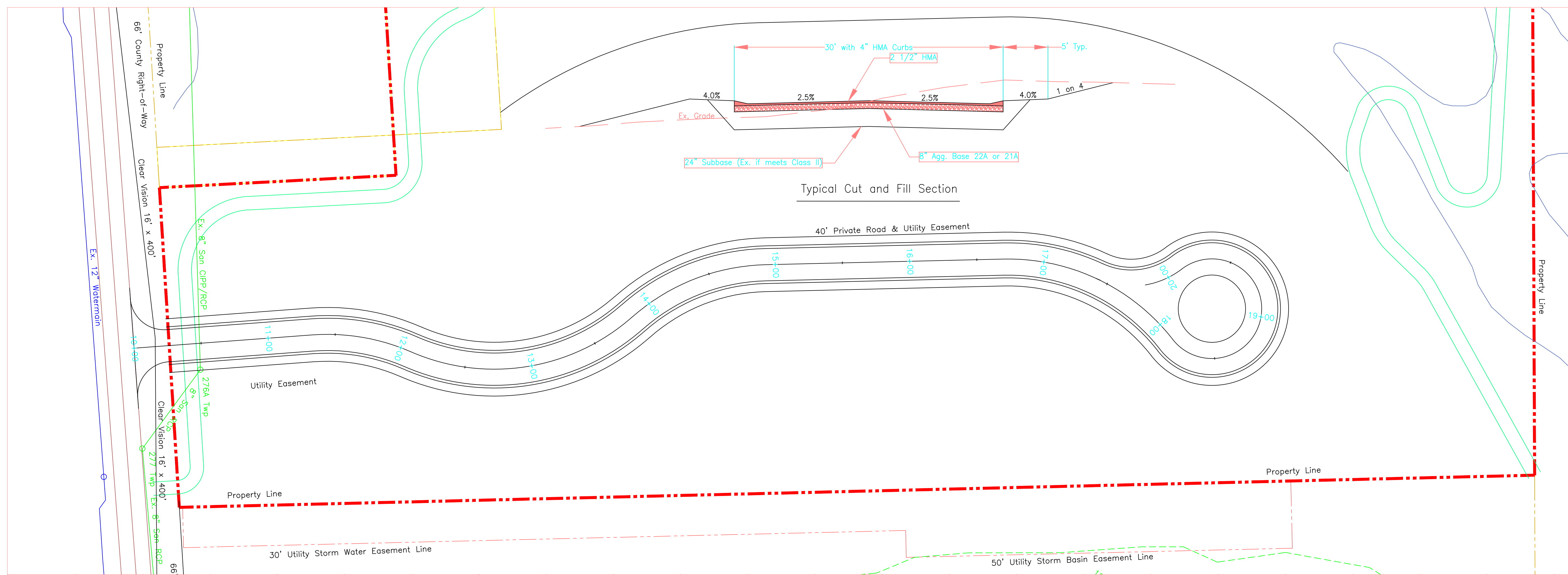
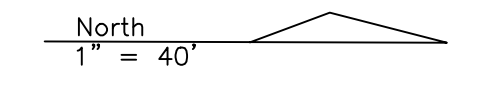
SHEET:  
A1.0



REVISION	DATE	ISSUE	BY
9/28/21	Final	BMS	

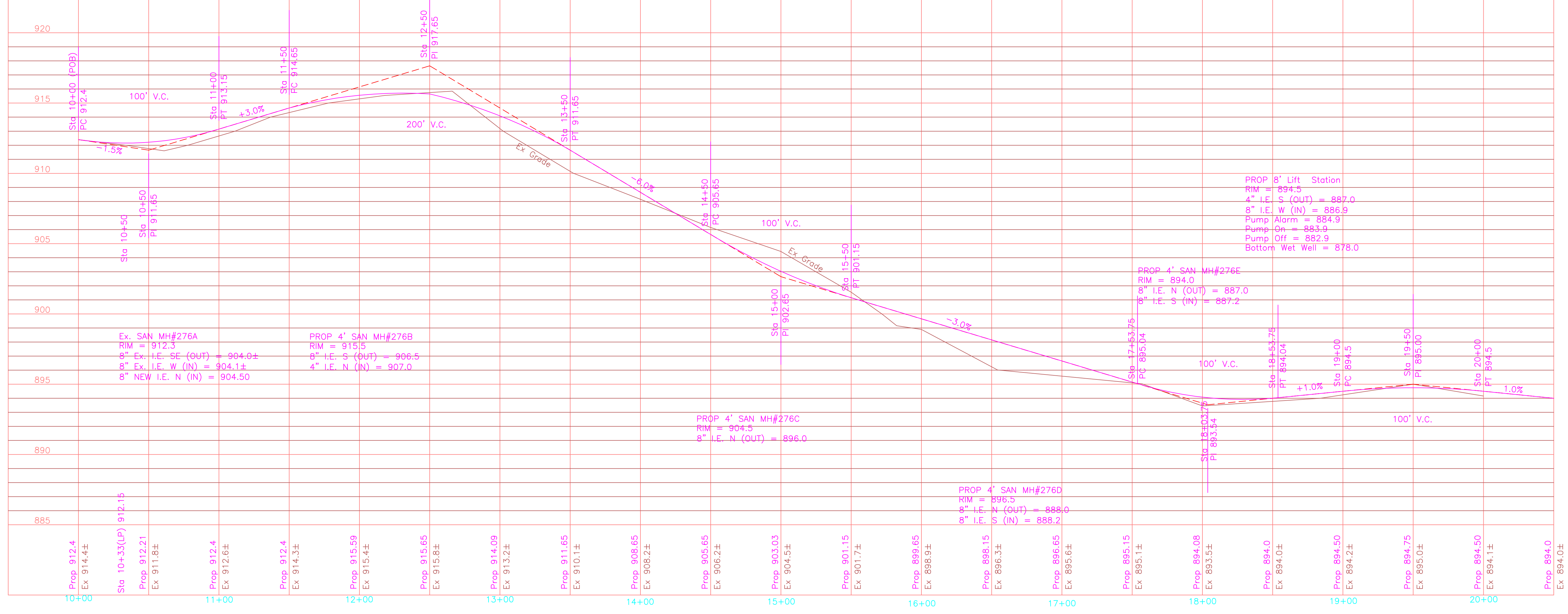
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SHEET: C-1  
Proposed Roadway Plan & Profile



Typical Cut and Fill Section

40' Private Road & Utility Easement



PROP 8' Lift Station  
RIM = 894.5  
4" L.E. S. (OUT) = 887.0  
8" L.E. W. (IN) = 886.9  
Pump Alarm = 884.9  
Pump On = 883.9  
Pump Off = 882.9  
Bottom Wet Well = 878.0

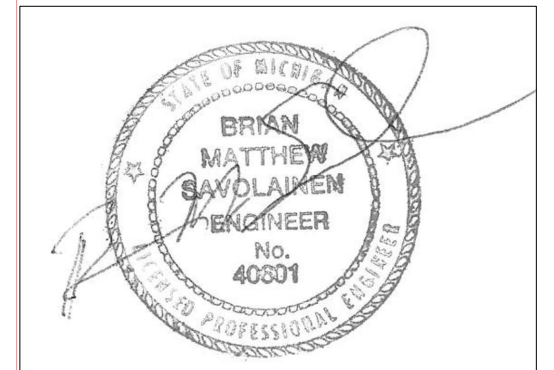
PROP 4' SAN MH#276E  
RIM = 894.0  
8" L.E. N (OUT) = 887.0  
8" L.E. S (IN) = 887.2

PROP 4' SAN MH#276C  
RIM = 904.5  
8" L.E. N (OUT) = 896.0

PROP 4' SAN MH#276D  
RIM = 896.5  
8" L.E. N (OUT) = 888.0  
8" L.E. S (IN) = 888.2

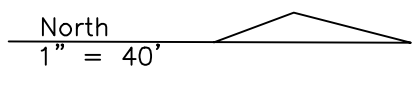
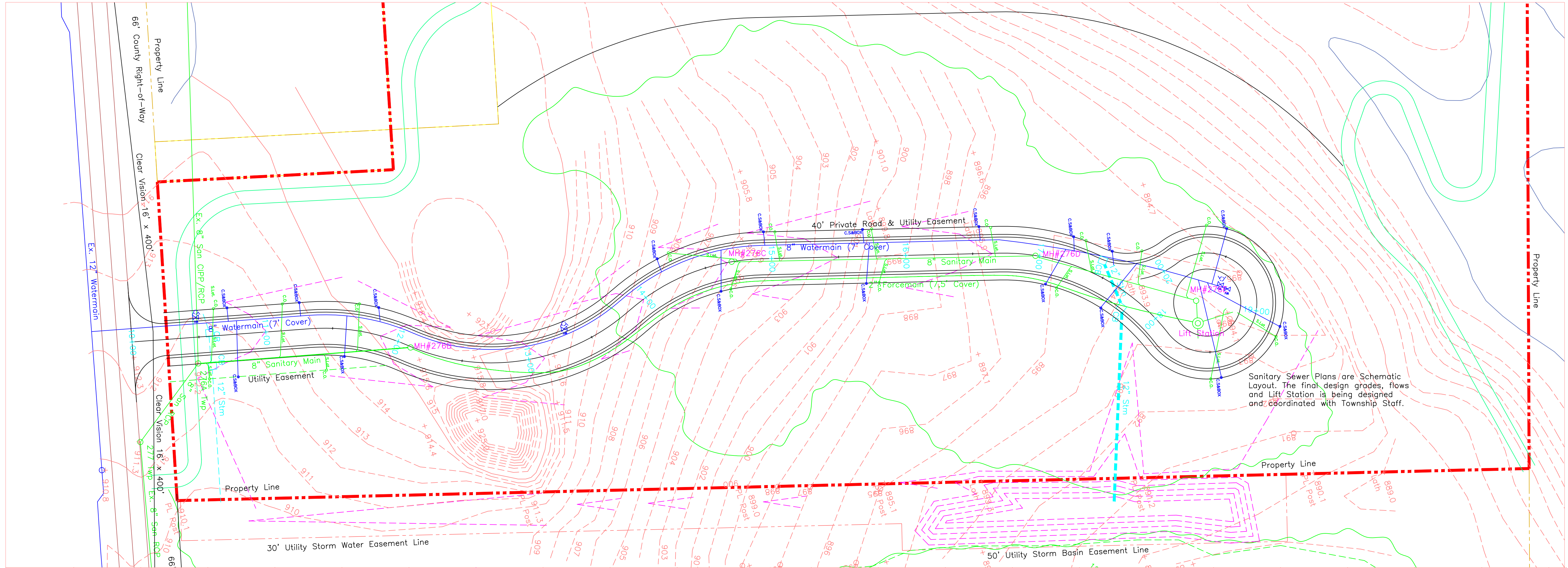
PROP 4' SAN MH#276B  
RIM = 915.5  
8" L.E. S (OUT) = 896.5  
4" L.E. N (IN) = 907.0

Ex. SAN MH#276A  
RIM = 912.3  
8" L.E. SE (OUT) = 904.0±  
8" L.E. W. (IN) = 904.1±  
8" NEW L.E. N (IN) = 904.50

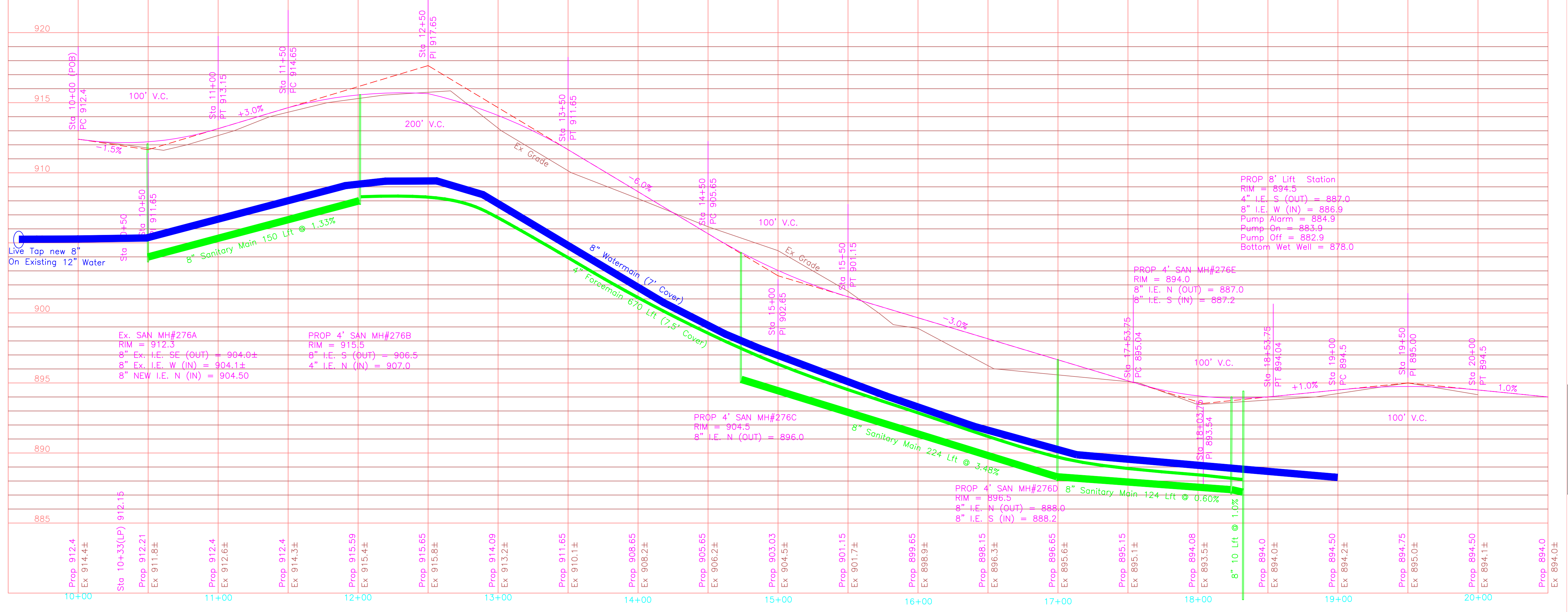


Roadway & Utility Plan/Profile  
Grove Street Development  
Updated 08/24/21  
Sept. 27, 2021





Sanitary Sewer Plans are Schematic Layout. The final design grades, flows and Lift Station is being designed and coordinated with Township Staff.

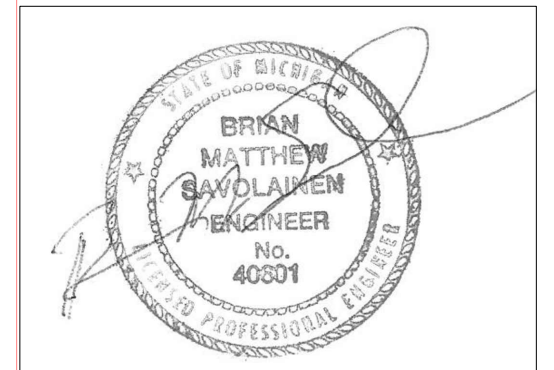


PROP 8' Lift Station  
 RIM = 894.5  
 4" I.E. S (OUT) = 887.0  
 8" I.E. W (IN) = 886.9  
 Pump Alarm = 884.9  
 Pump On = 883.9  
 Pump Off = 882.9  
 Bottom Wet Well = 878.0

PROP 4' SAN MH#276E  
 RIM = 894.0  
 8" I.E. N (OUT) = 887.0  
 8" I.E. S (IN) = 887.2

PROP 4' SAN MH#276C  
 RIM = 904.5  
 8" I.E. N (OUT) = 896.0

PROP 4' SAN MH#276D  
 RIM = 896.5  
 8" I.E. N (OUT) = 888.0  
 8" I.E. S (IN) = 888.2



PLANNED UNIT DEVELOPMENT OF  
**HERITAGE SILOS, LLC**  
 MARQUETTE TOWNSHIP, MICHIGAN

Design: BMS  
 Drawn By: BMS  
 Date of Issue: 9/28/21

REVISION	DATE	ISSUE	BY
9/28/21	Final		BMS

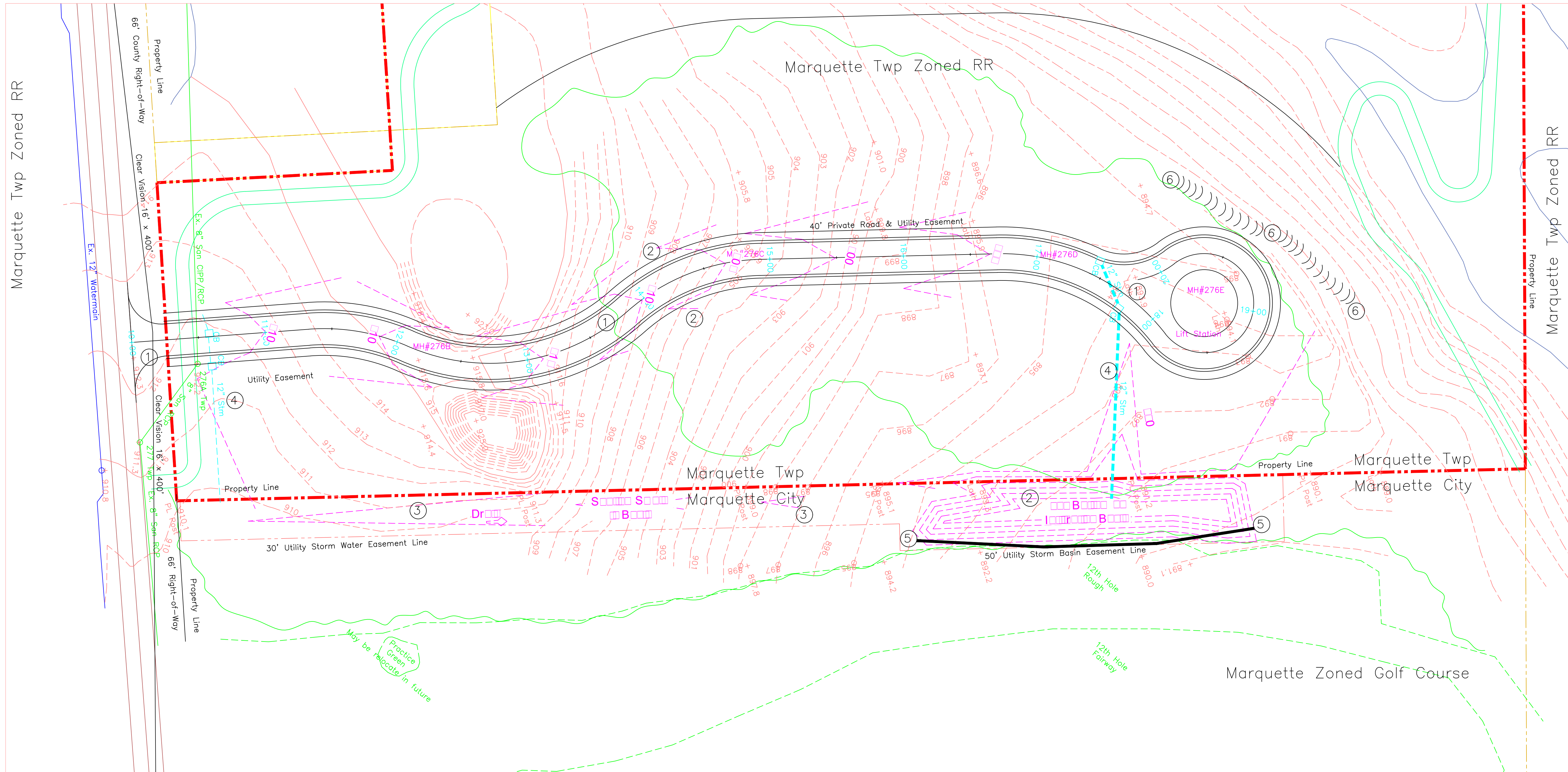
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SHEET:  
**C-2**  
 Existing Utilities  
 Plan & Profile



**Final Plans**





**Storm Drainage Notes:**  
Existing condition is based on a 4.5 acre area draining to the low area located between the Golf course and the property to the west being developed in Marquette Township.

New Site Conditions are based on lots approx.  $\frac{1}{3}$  of an acres with 30% impervious surface.

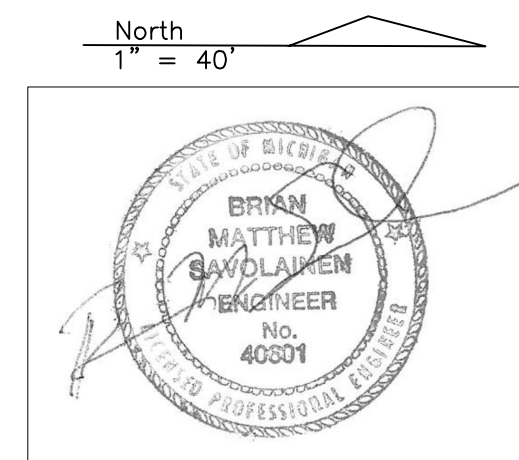
The basin has the ability to hold water up to evaporation of 891.0 without going into proposed back yards or into the rough on the 12th hole.

Pond is sized to hold a 100 year – 24 hour duration storm with a peak elevation of 890.47 with 12,348 Cubic Feet of Storage.

Drainage Calculations will be emailed upon request.

**Soil Erosion Measures**

1. 30' Wide Paved Roadway
2. 1 on 4' Slopes Topsoil 3", Seed and Mulch.
3. Drainage Swale with 1 on 4 slopes, Mulch Blanket with Seed and Fertilizer.
4. Storm Sewer 12".
5. Geotextile Silt Fence.
6. Berm topsoil stripping to West Side to prevent drainage to the west.
7. Storm Water Retention, utilize as sediment basin, cleanout prior to final restoration.



Grove Street Development  
Submitted & Approved City of Marquette  
June 7, 2021  
Submitted to Marquette Township  
August 24, 2021  
Sept. 27, 2021

Design: BMS  
Drawn By: BMS  
Date of Issue:  
9/28/21

REVISION	DATE	ISSUE	BY
	9/28/21	Final	BMS

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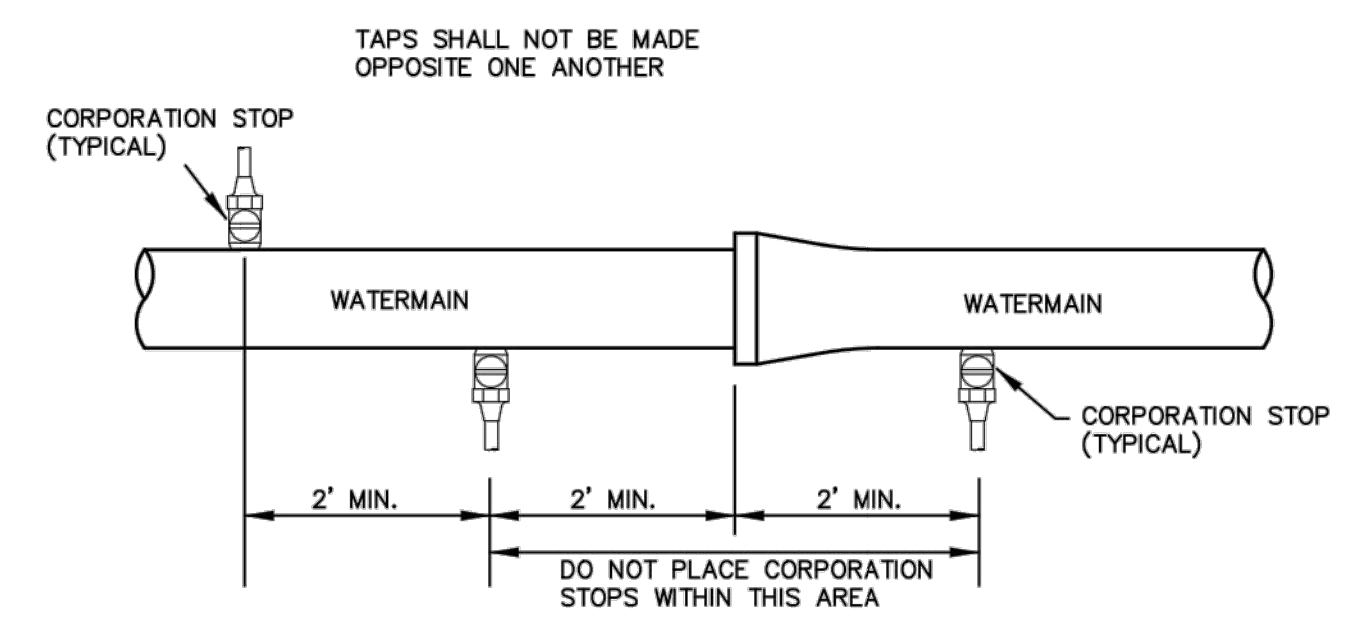
**SHEET:**  
C-3  
Storm Water Plan  
& Soil Erosion



REVISION	DATE	ISSUE	BY
9/28/21	Final		BMS

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**TAP SPACING ON WATERMAIN**

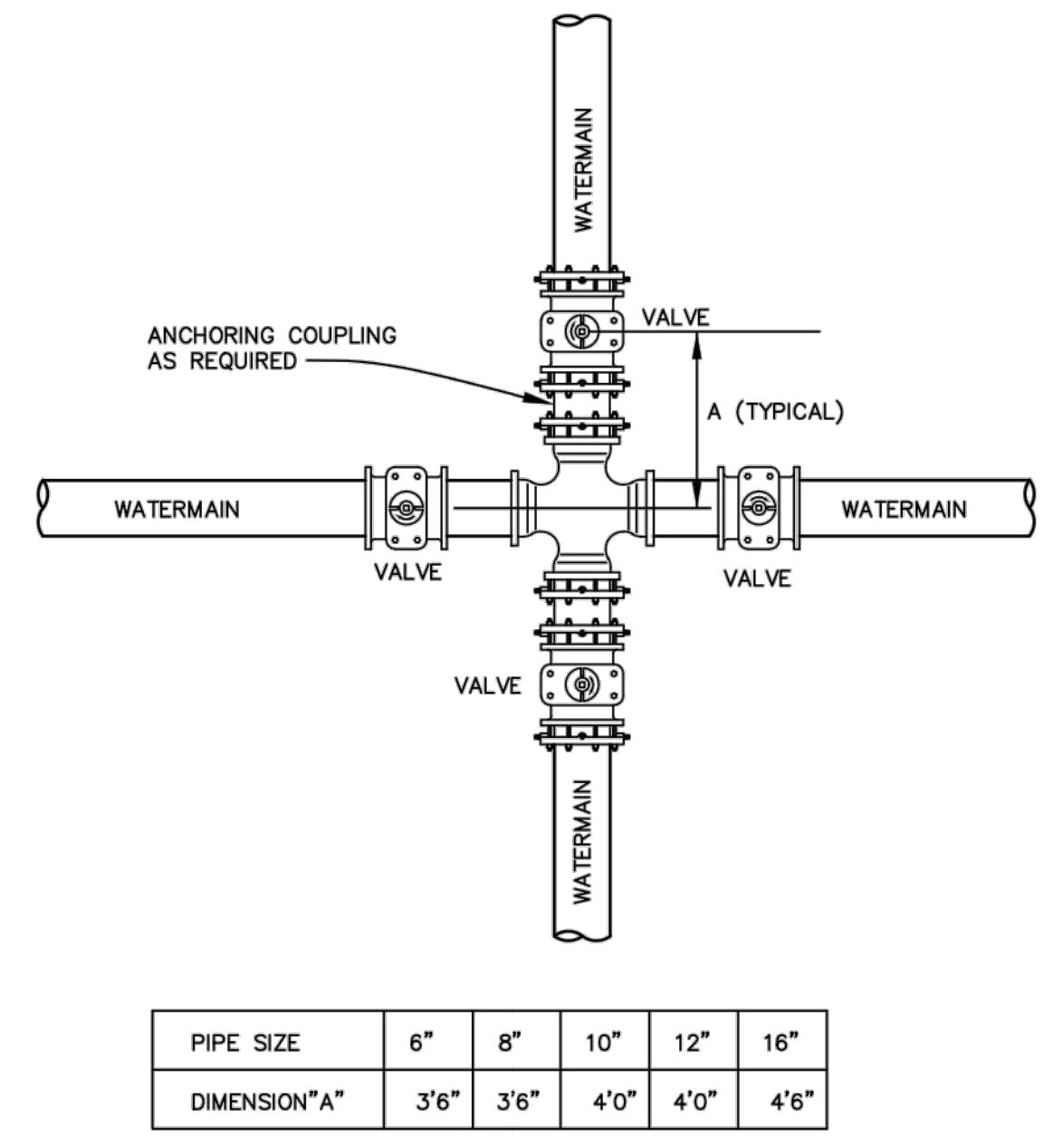


**PIPE RESTRAINT SCHEDULE**

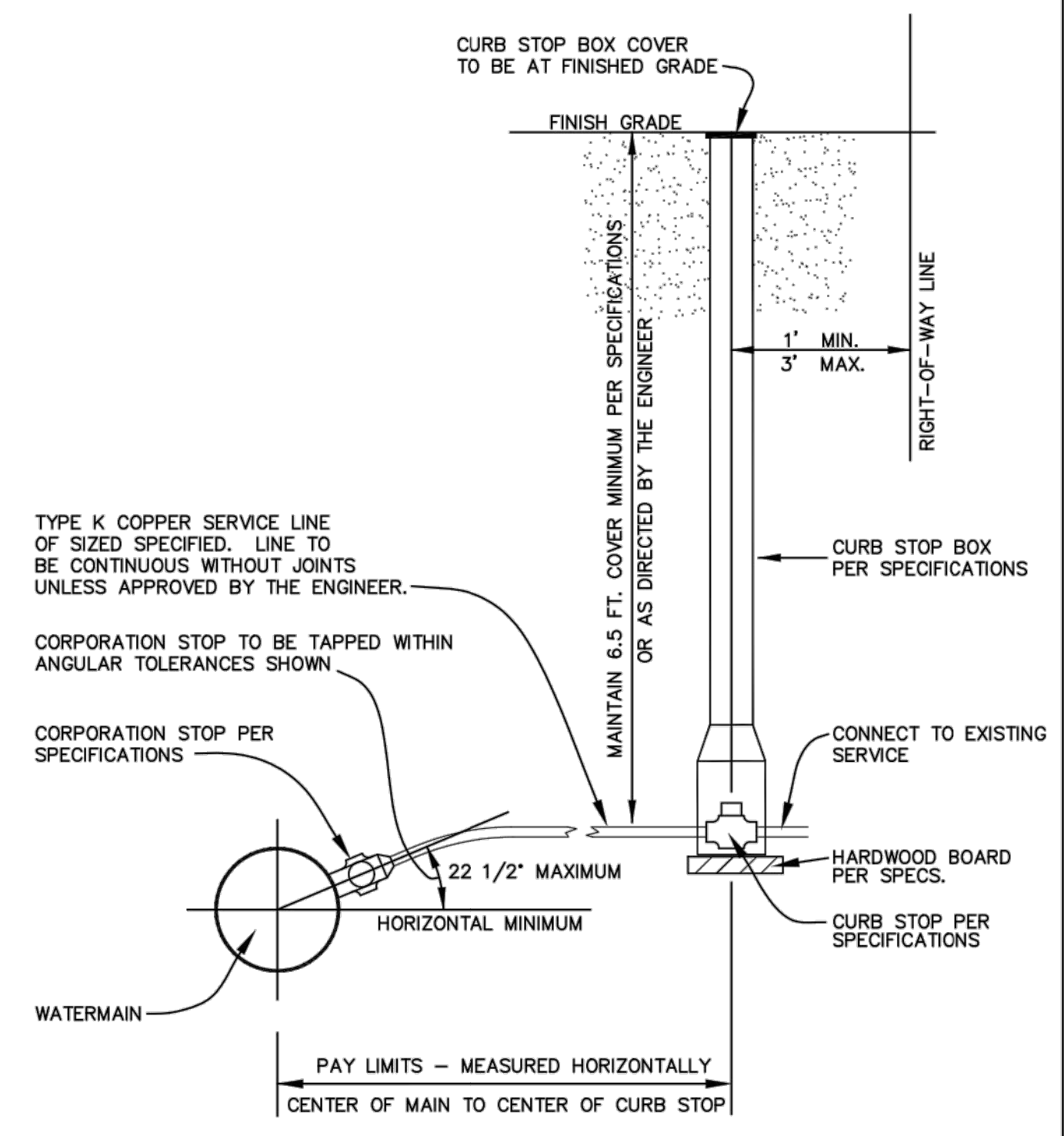
PIPE SIZE IN INCHES	RESTRAINED PIPE LENGTH IN FEET (1)								
	HORIZONTAL BENDS				DEAD ENDS (2)	45° VERTICAL BENDS		REDUCER ONE SIZE REDUCTION	REDUCER TWO SIZE REDUCTION
	TEE, 90°	45°	22-1/2°	11-1/4°		UPPER	LOWER		
4	23	9	5	2	55	23	8	-	-
6	32	13	6	3	77	32	11	21	-
8	40	17	8	4	100	41	14	21	49
12	56	23	11	6	141	58	20	40	81
16	71	29	14	7	181	75	25	41	96
20	84	35	17	8	218	90	30	42	94
24	96	40	19	10	253	105	35	42	106
30	112	47	22	11	303	125	41	59	117

1. RESTRAIN ALL PIPE JOINTS WITHIN THE DISTANCE SHOWN ON THE TABLES MEASURED FROM THE POINT OF CONNECTION.
2. ISOLATION VALVES SHALL BE TREATED AS DEAD ENDS WITH RESTRAINT ON BOTH SIDES OF THE VALVE.

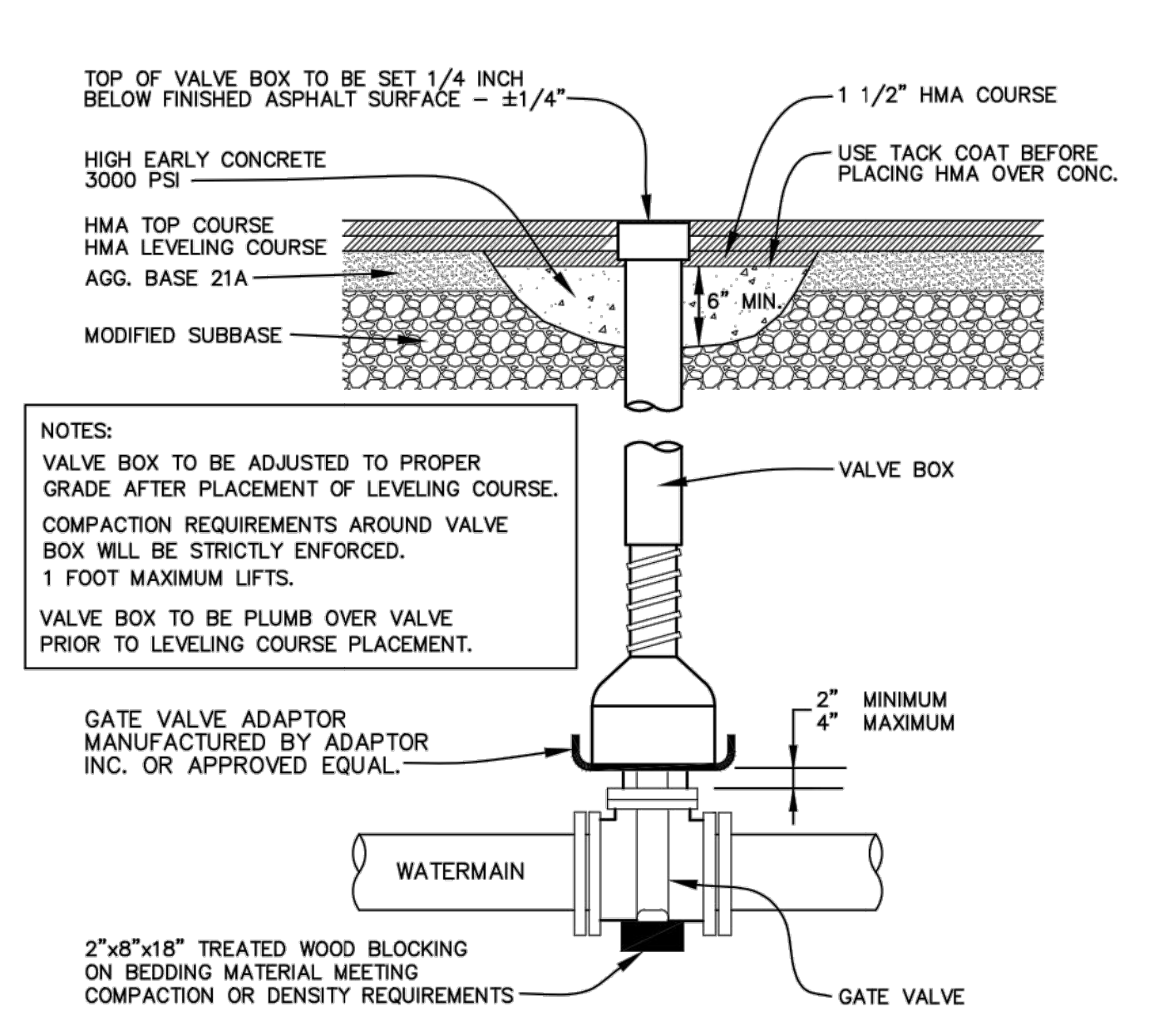
**STANDARD VALVE LOCATION**



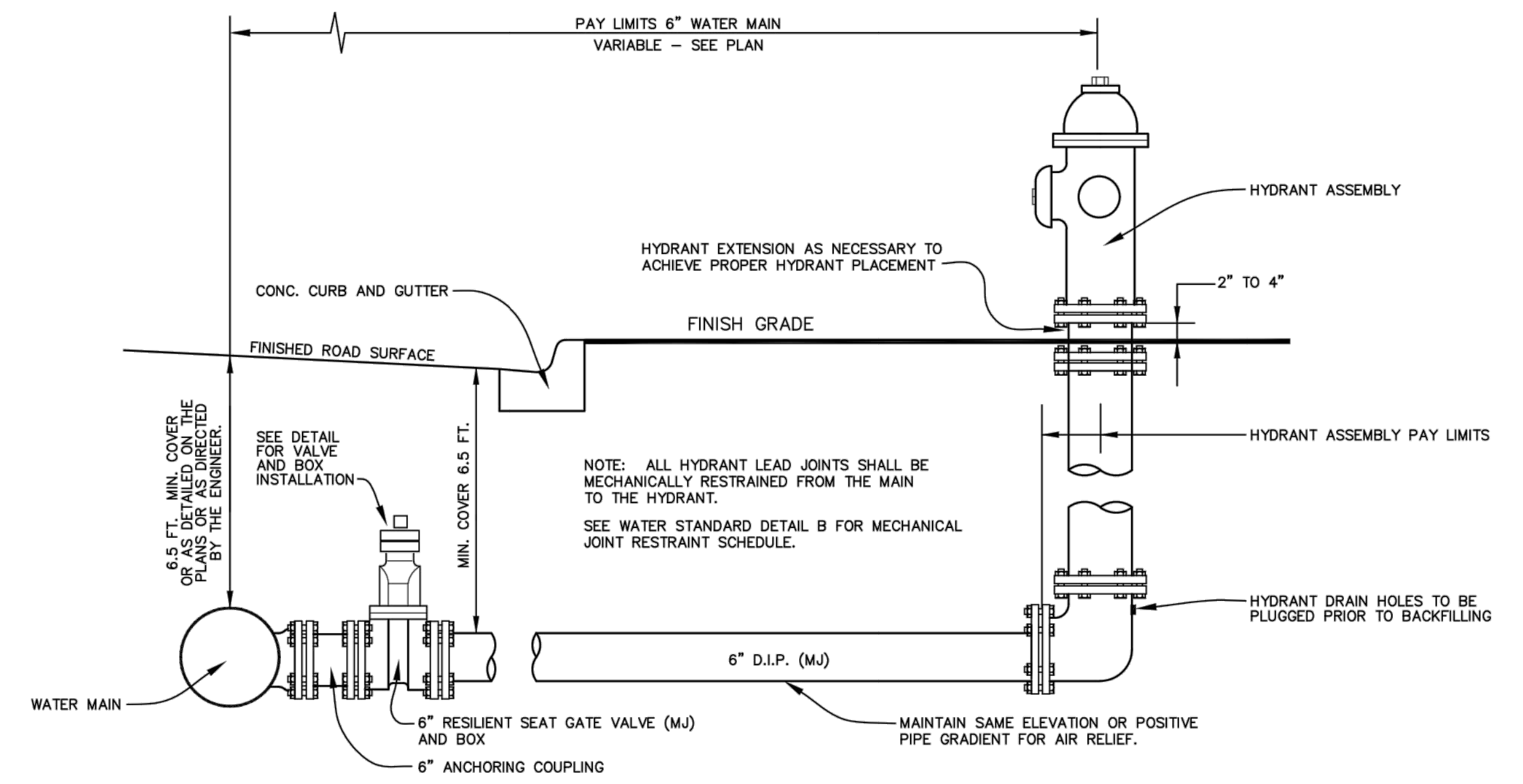
**TYPICAL SERVICE CONNECTION**



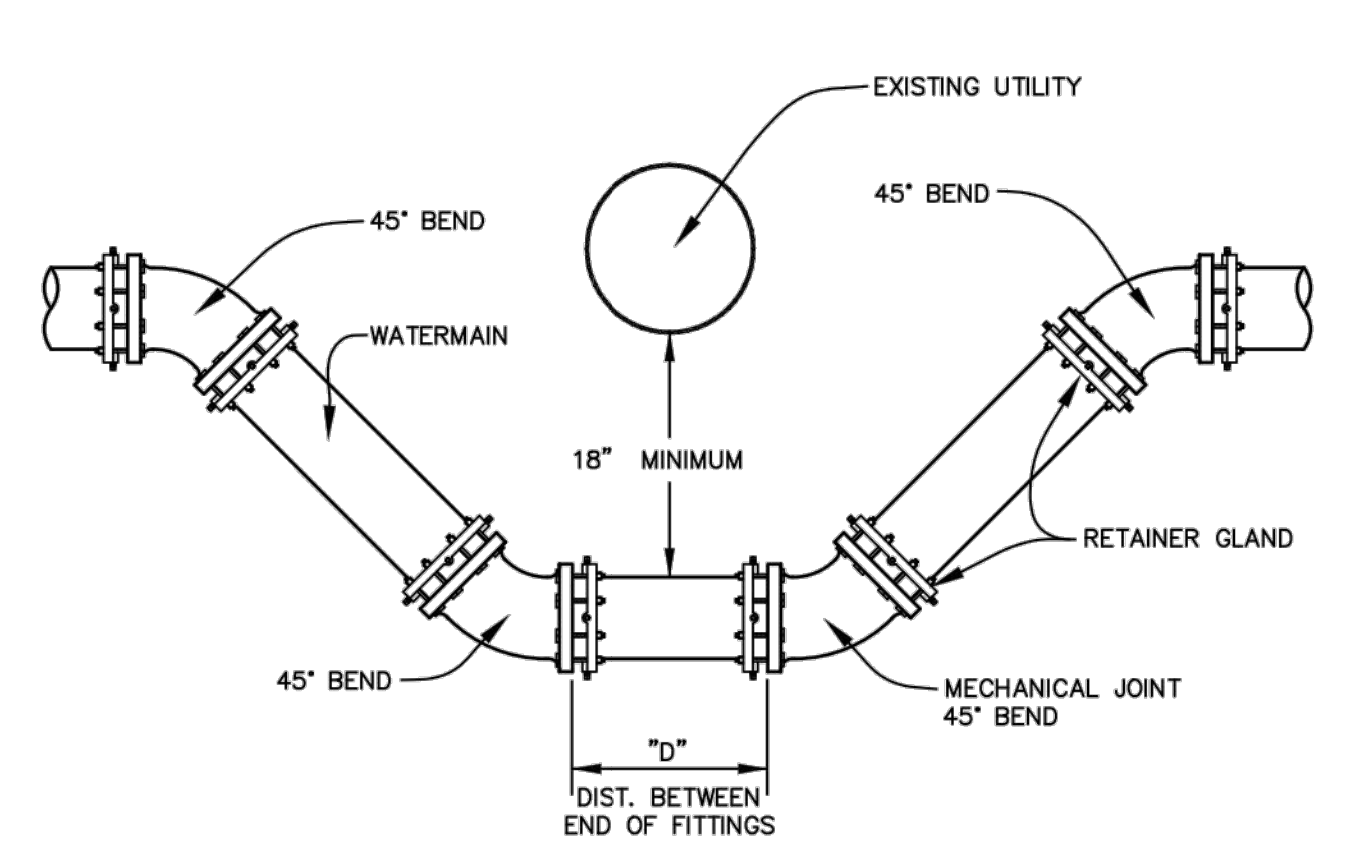
**TYPICAL VALVE BOX INSTALLATION**



**TYPICAL HYDRANT CONNECTION**



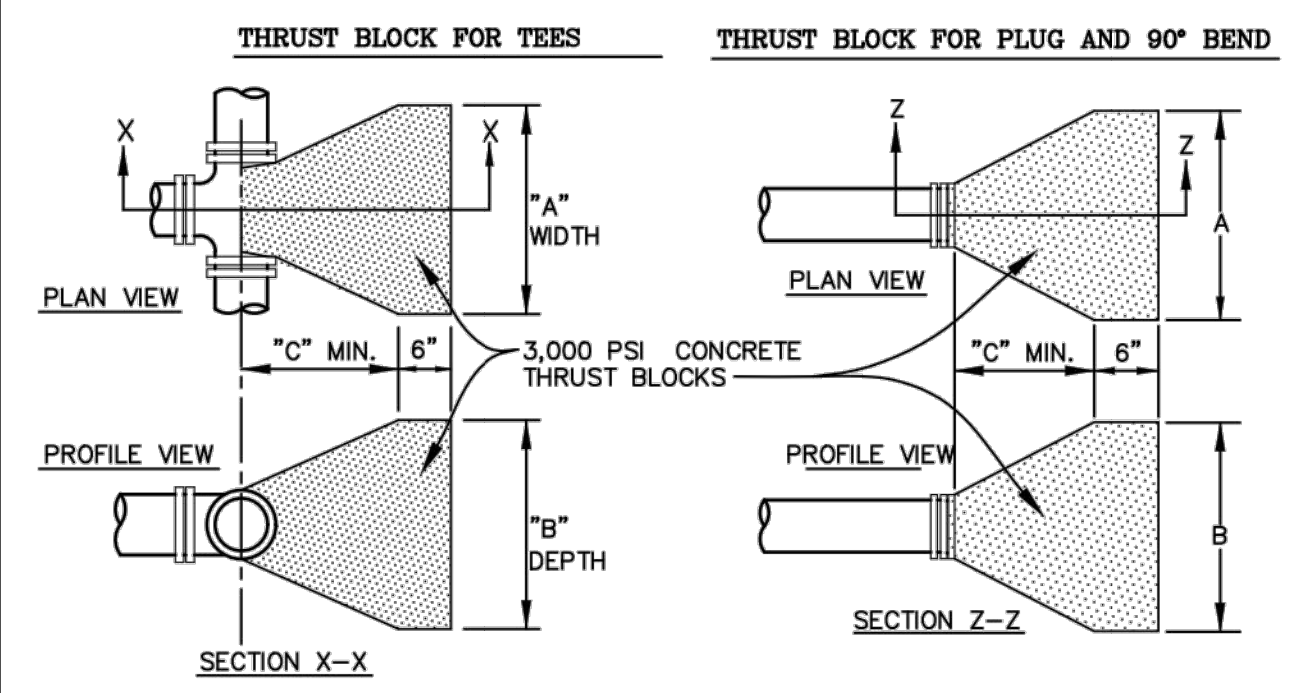
**WATER MAIN CROSSING DETAIL**



ALL JOINTS TO BE MADE UP USING MECHANICAL JOINT FITTING WITH RETAINER GLANDS. THE ENGINEER MAY ALLOW OTHER TYPES OF JOINT RESTRAINTS IF CIRCUMSTANCES WARRANT.  
SEE WATER VALVE STANDARD LOCATION DETAIL (ABOVE) FOR MECHANICAL JOINT RESTRAINT SCHEDULE.

WATERMAIN DIA.	MINIMUM DIMENSION (INCH)	I.D. EXISTING UTILITY			
		≤12"	≤24"	≤36"	≤48"
6"	D	13"	17"	22"	28"
8"	D	14"	14"	19"	25"
10"	D	14"	14"	16"	22"
12"	D	15"	15"	15"	19"
16"	D	15"	15"	15"	19"

**THRUST BLOCK DETAIL**



W.M. SIZE	MIN. THRUST BLOCK DIM.			BEARING SQ. FT.
	A (MIN)	B (MIN)	C (MIN)	
6"	1'6"	1'6"	12"	2.2
8"	2'3"	2'3"	1'3"	5.1
10"	2'6"	2'6"	1'6"	6.3
12"	3'0"	3'0"	1'9"	9.0
16"	4'0"	4'0"	2'10"	16.0

1. THE SHAPE OF THE BACK OF THE BLOCK MAY VARY AS LONG AS THE BEARING AREA IS NO LESS THAN THE AREA SHOWN IN THE TABLES AND THE POUR IS AGAINST FIRM UNDISTURBED EARTH.
2. JOINTS SHALL BE KEPT FREE OF CONCRETE AND A NON-ABRASIVE BARRIER APPROVED BY THE ENGINEER SHALL BE PLACED BETWEEN THE THRUST BLOCK AND ALL MECHANICAL JOINTS.
3. DIMENSIONS ARE BASED ON A SURGE PRESSURE OF 150 PSI AND SAFE BEARING LOADS OF 2 TONS PER SQ. FT. IN CLEAN DRY SAND



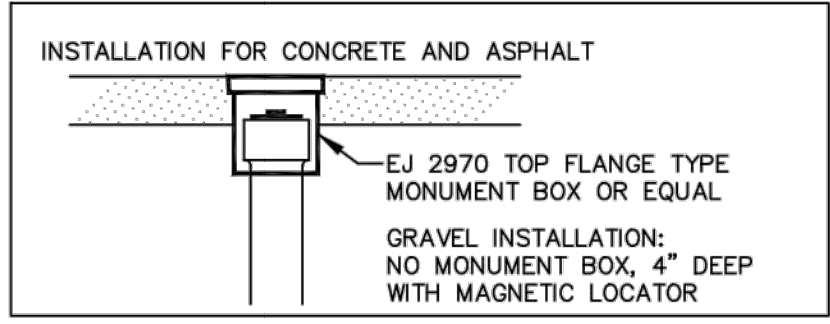
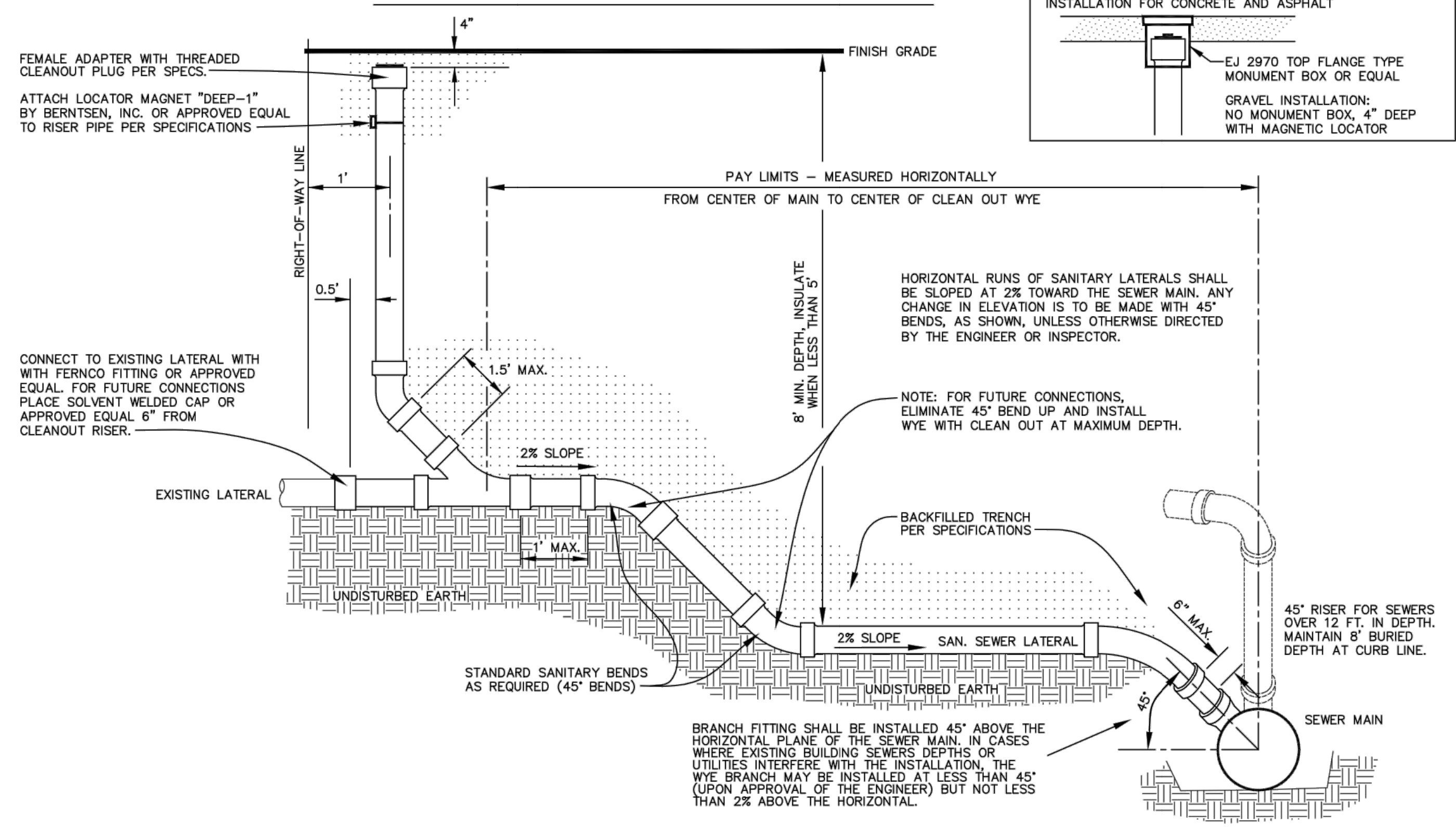
Design: BMS  
Drawn By: BMS  
Date of Issue: 9/28/21

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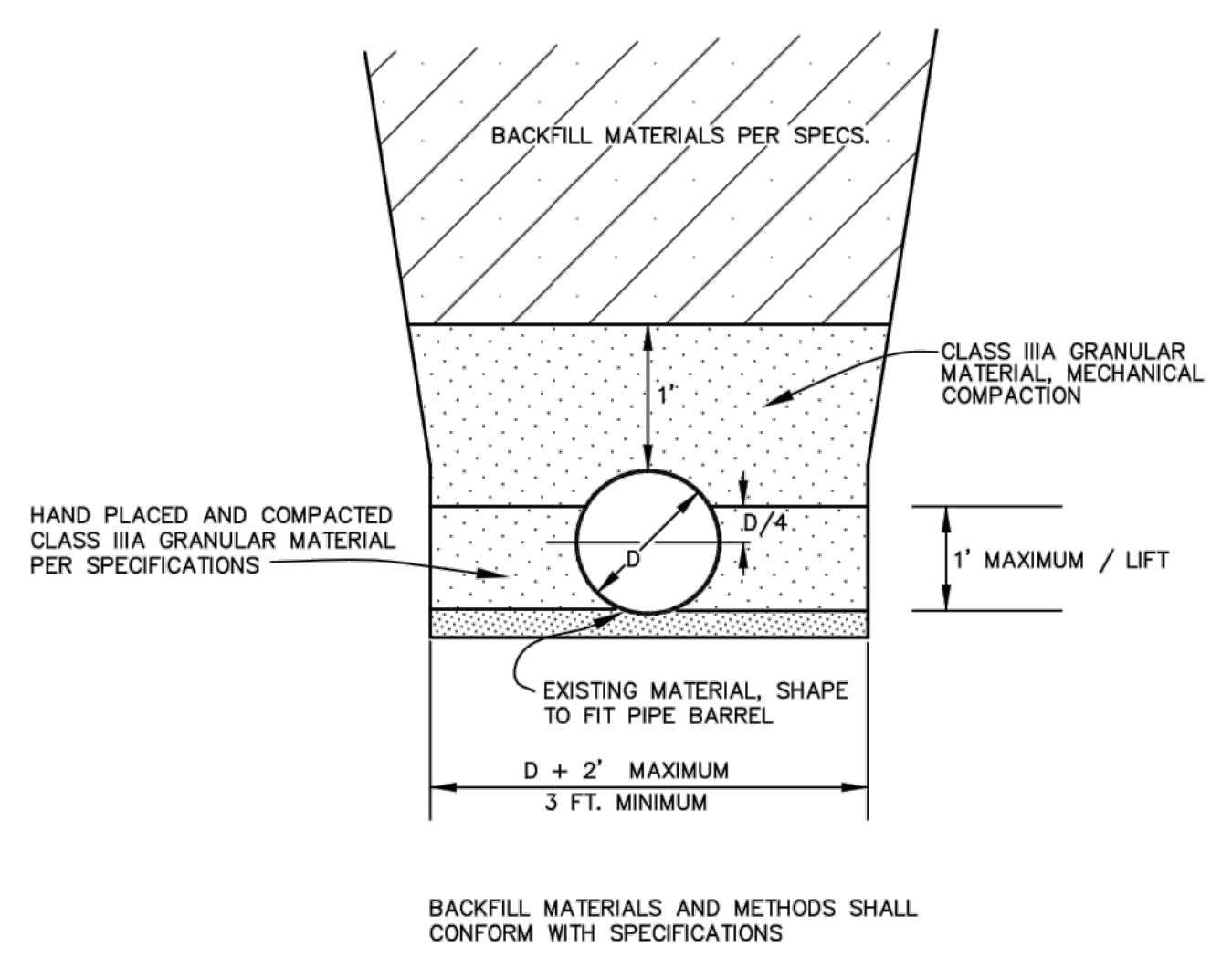
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SHEET: C-5  
Sanitary Sewer Details

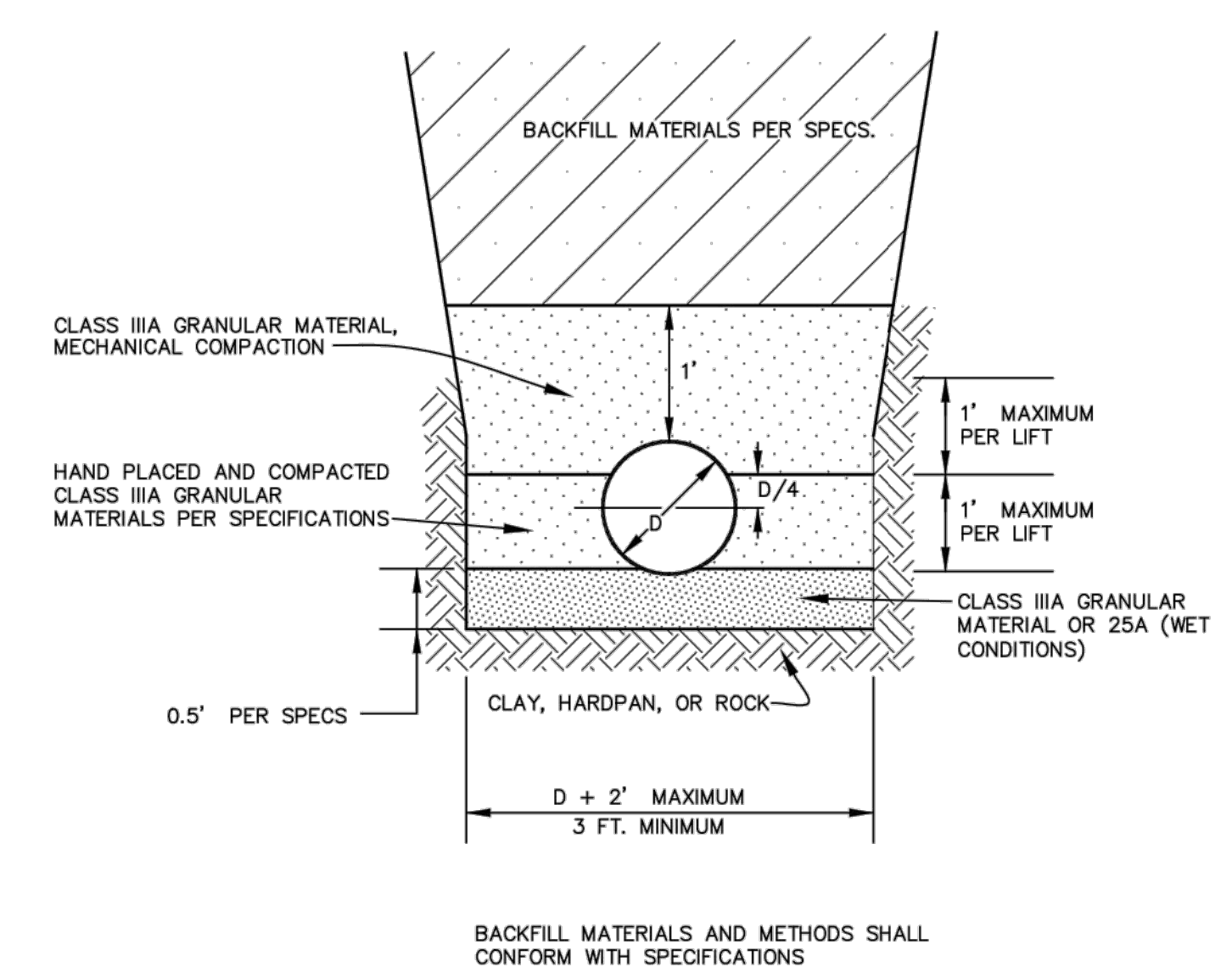
**SANITARY SEWER LATERAL RISER DETAIL**



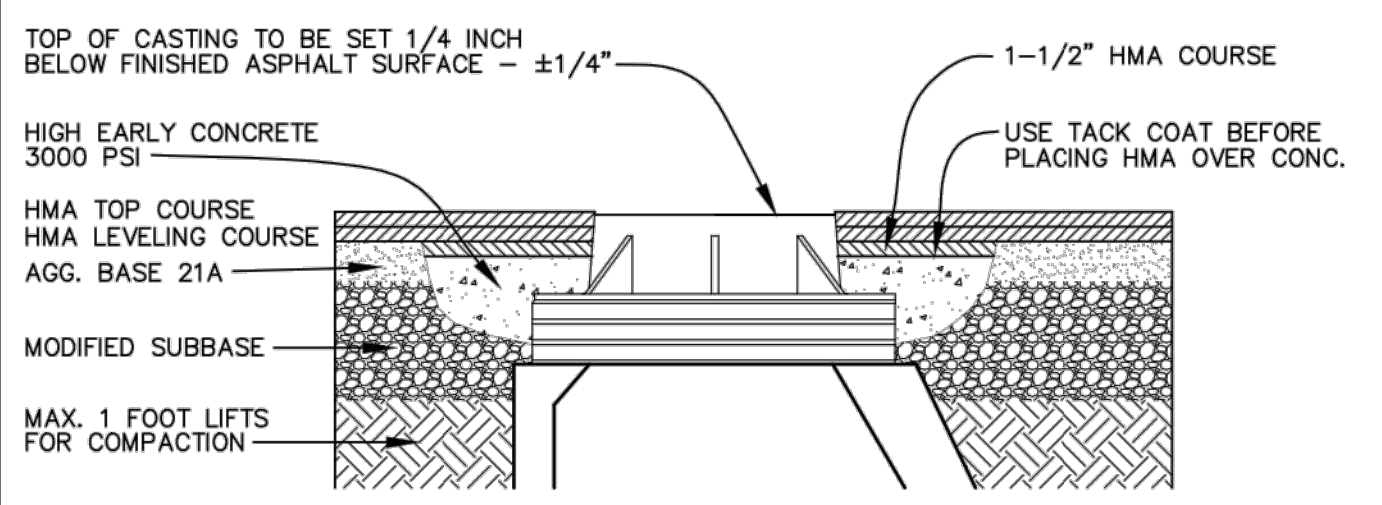
**PIPE BEDDING DETAIL "G" IN SAND AND GRAVEL**



**PIPE BEDDING DETAIL "G" IN CLAY, HARDPAN, AND ROCK OR WHERE NATURAL MATERIAL IS UNDERCUT DURING EXCAVATION**

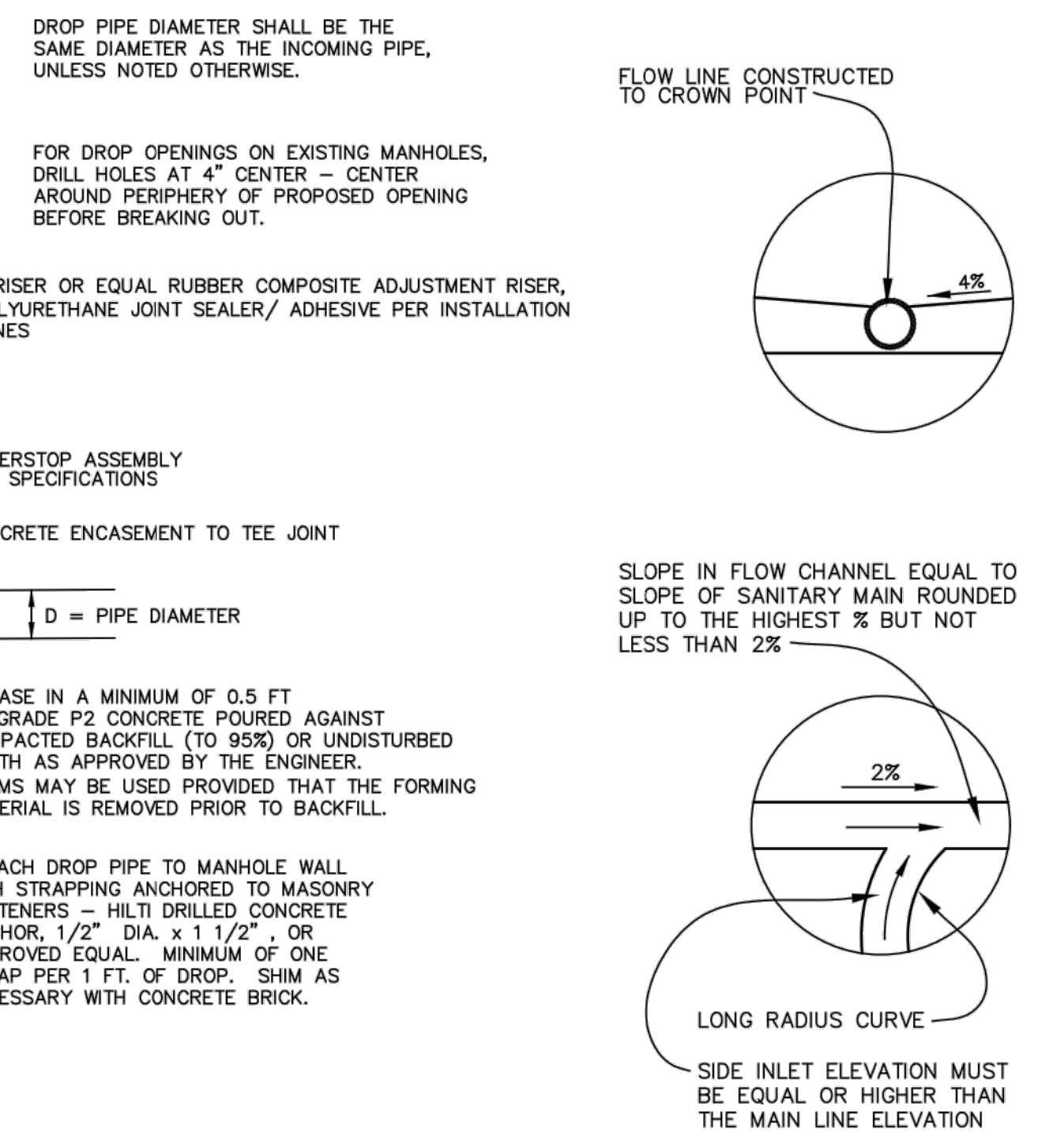


**TYPICAL MANHOLE COVER INSTALLATION**

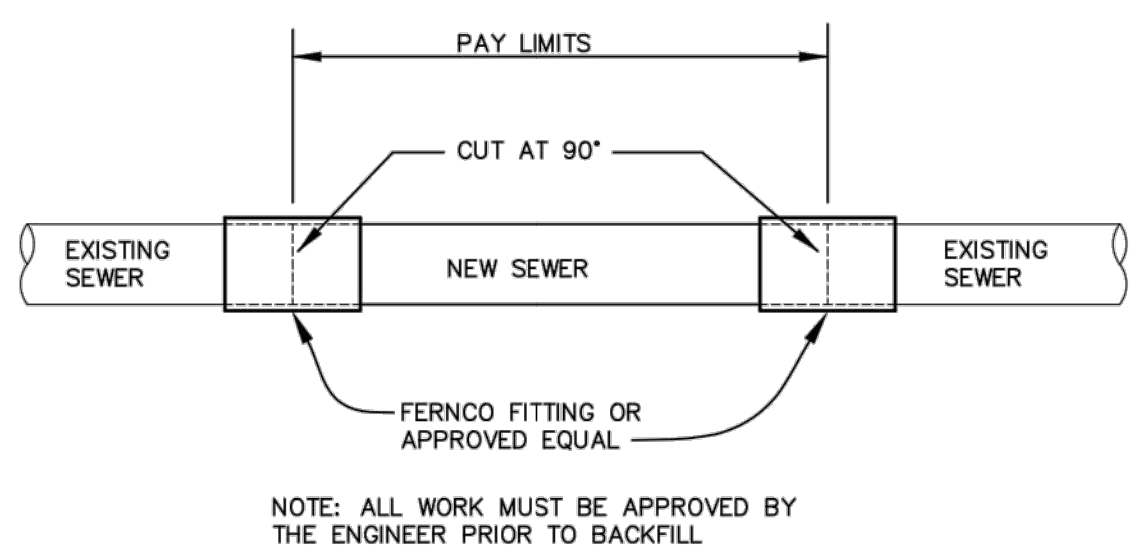


**STANDARD CONCRETE DROP MANHOLE**

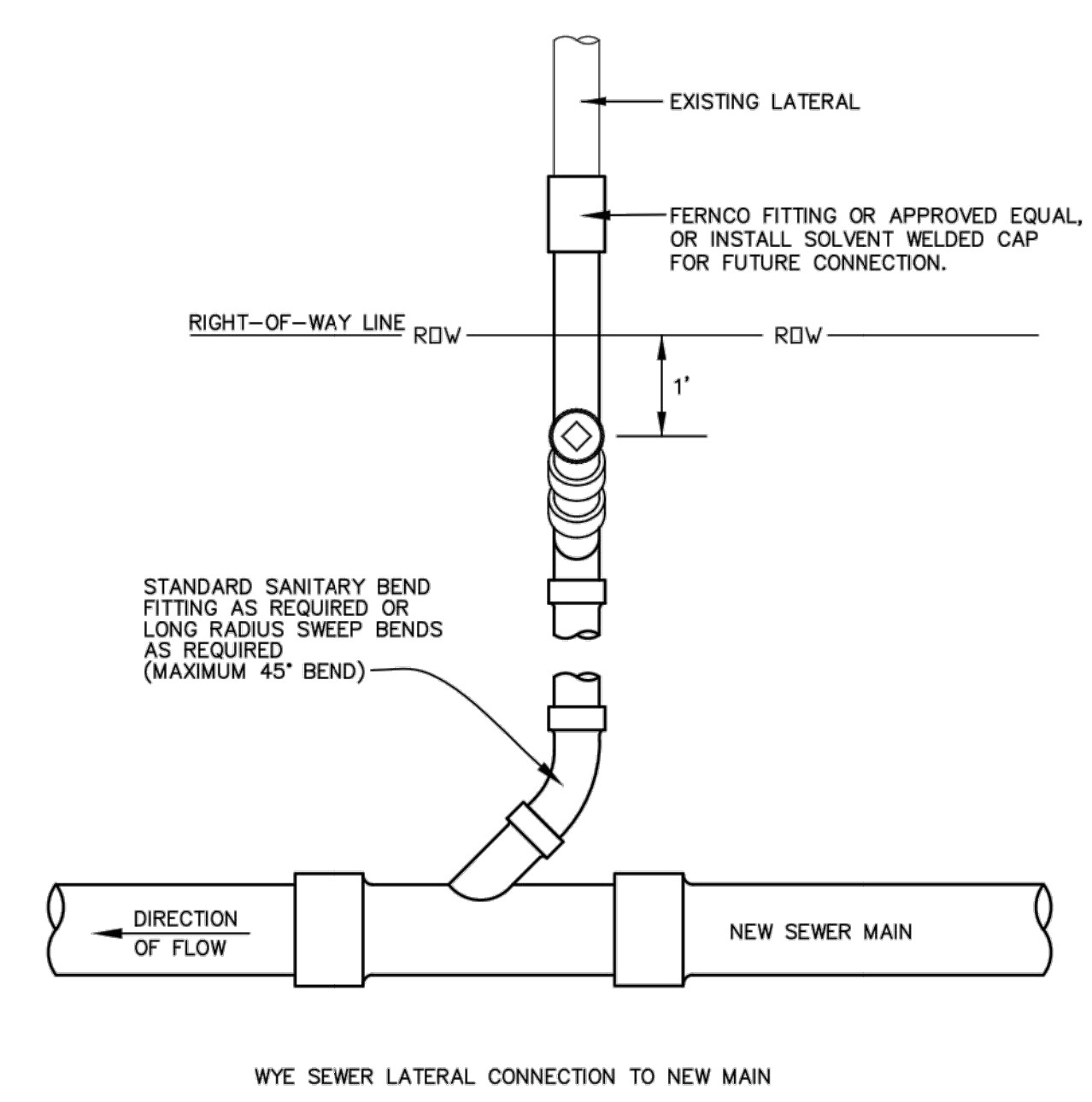
REFER TO M.D.O.T. STANDARD PLANS FOR OTHER CONFIGURATIONS



**SANITARY SEWER LATERAL REPAIR DETAIL AND SANITARY SEWER POINT REPAIR**

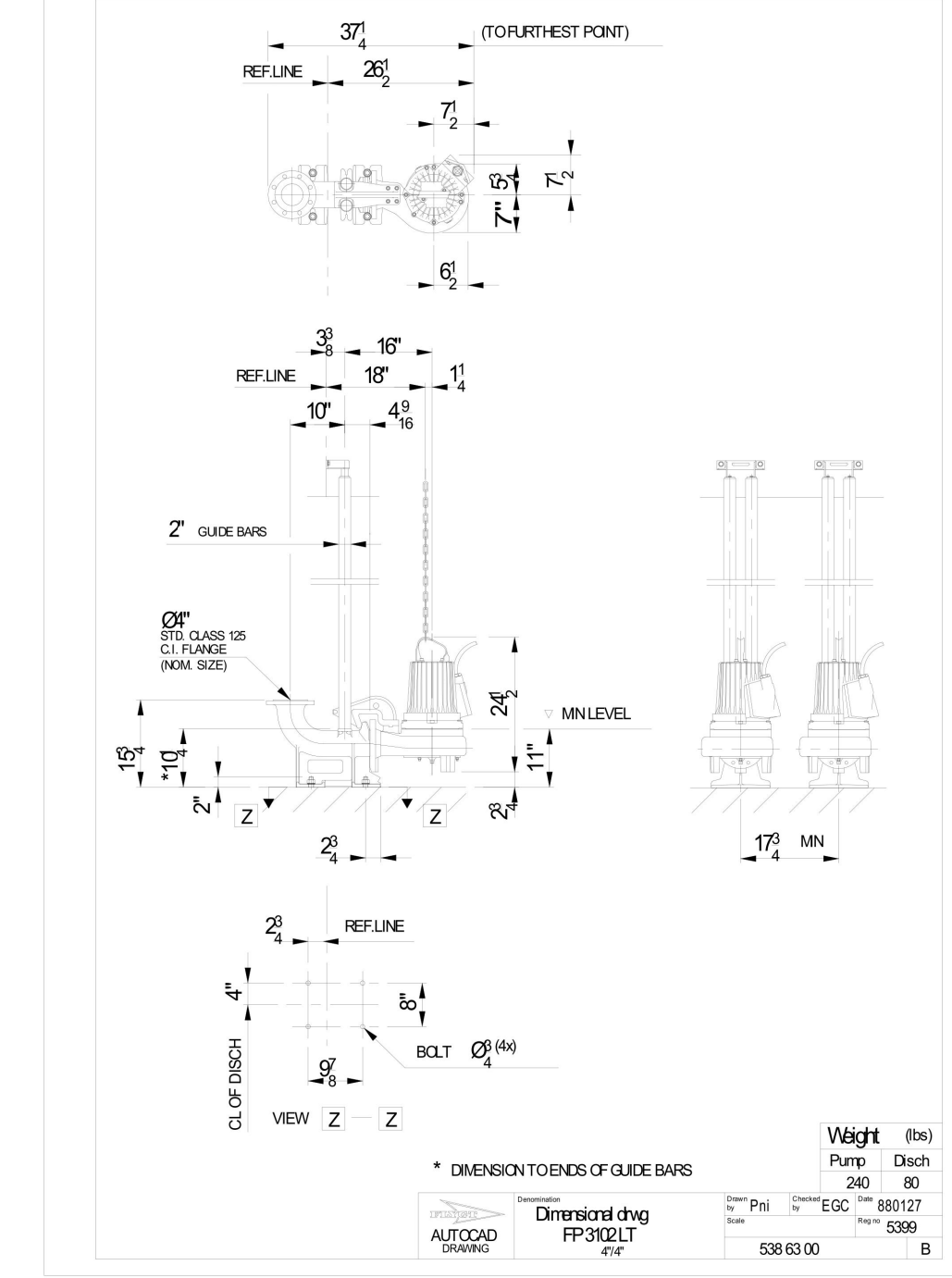


**PLAN VIEW OF SANITARY SEWER LATERAL**





**FP 3102 LT 3-492**  
Dimensional drawing



* DIMENSION TO CENTER OF GUIDE BARS		Weight (lbs)
Pump	340	60
Motor	588	589
Base	538	63.00

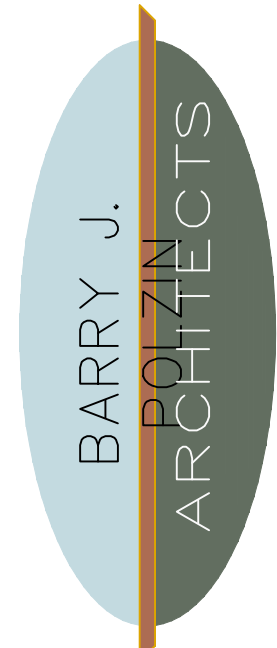
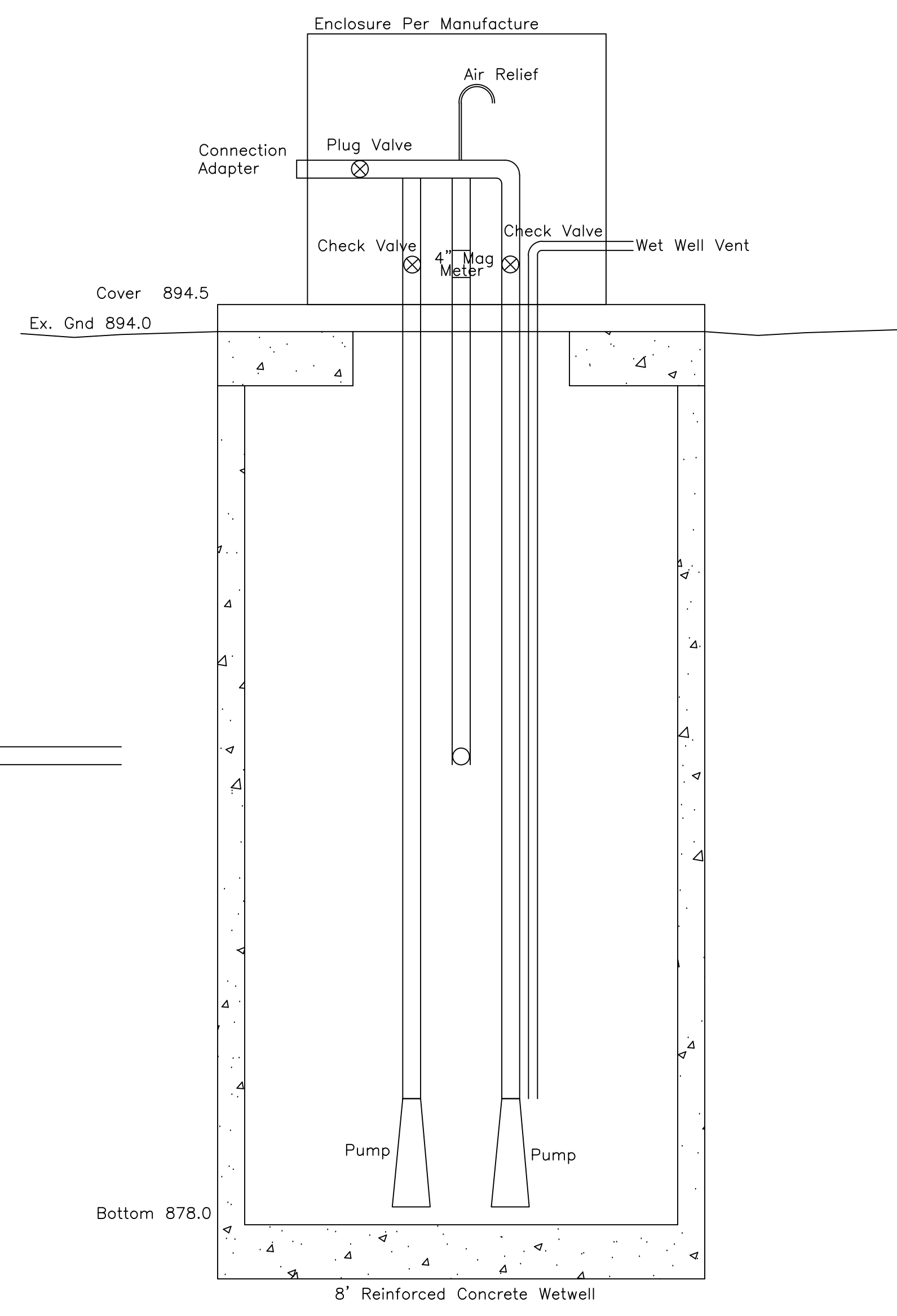
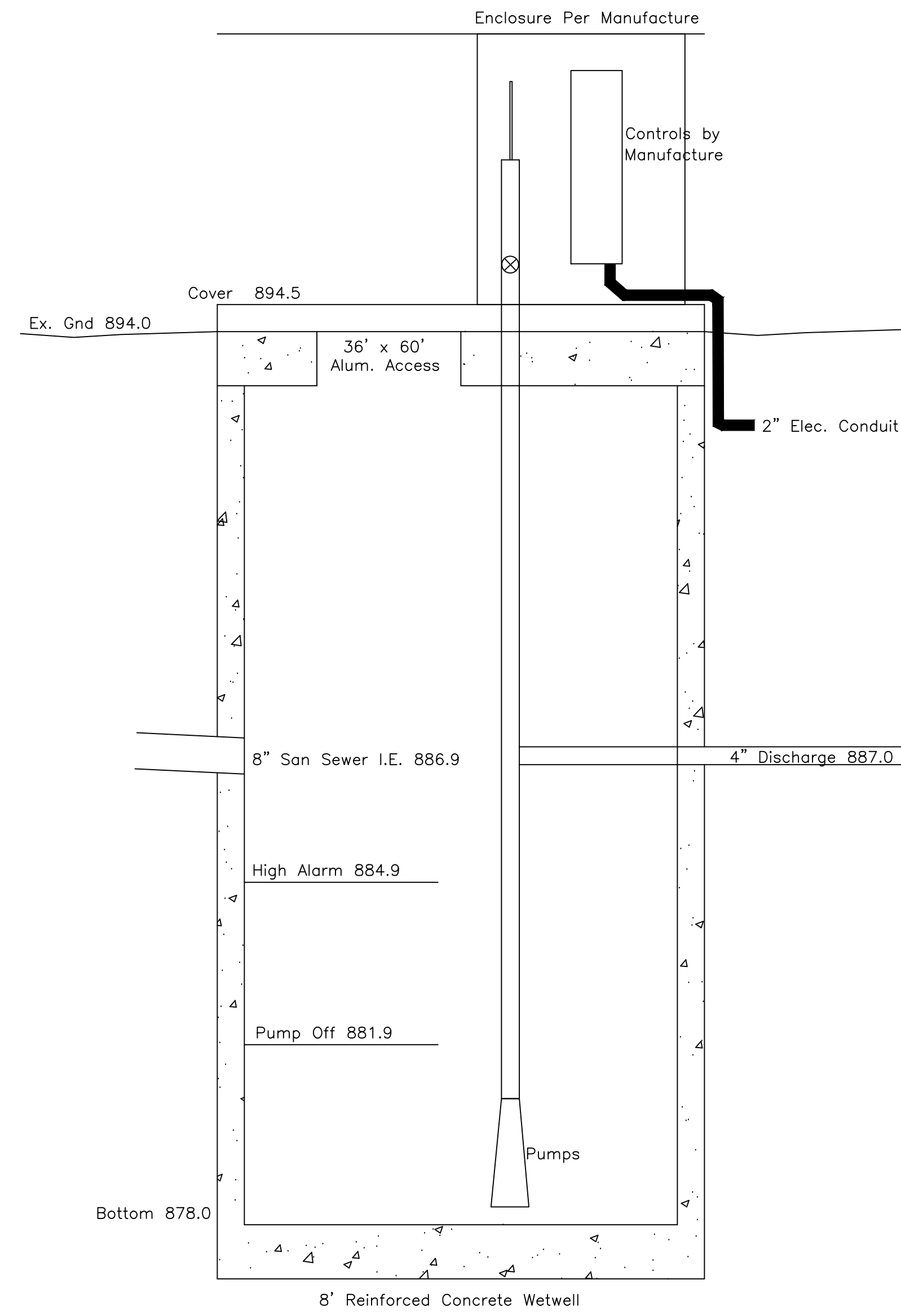
Project: Vonck  
Block: 0  
Created by: Brian Savolainen  
Created on: 9/27/2021  
Last update: 9/27/2021

Program version: 882 - 8/21/2021 (Buck 11/0)  
Date created: 8/18/2021 10:28:48 AM  
User (project): Wm1234-DIT

Lift Station Pump Data	
Head (TDH)	34 feet
Flow GPM	80 gpm
Pump Manufacture	Flygt
Pump Model	FP 3085 LT 3-493
Pump Horse Power	3 HP
Pump Motor (RPM)	1710

Level Set Point Elevations	
High Water Alarm	884.9
Lag Pump On	883.9
Lead Pump ON	882.9
Pump Off	881.9
Low Level	881.0



**Final Plans**

**PLANNED UNIT DEVELOPMENT OF  
HERITAGE SILOS, LLC**  
MARQUETTE TOWNSHIP, MICHIGAN

Design: BMS  
Drawn By: BMS  
Date of Issue: 9/28/21

REVISION			
DATE	ISSUE	BY	
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SHEET:  
C-6  
Lift Station  
Details