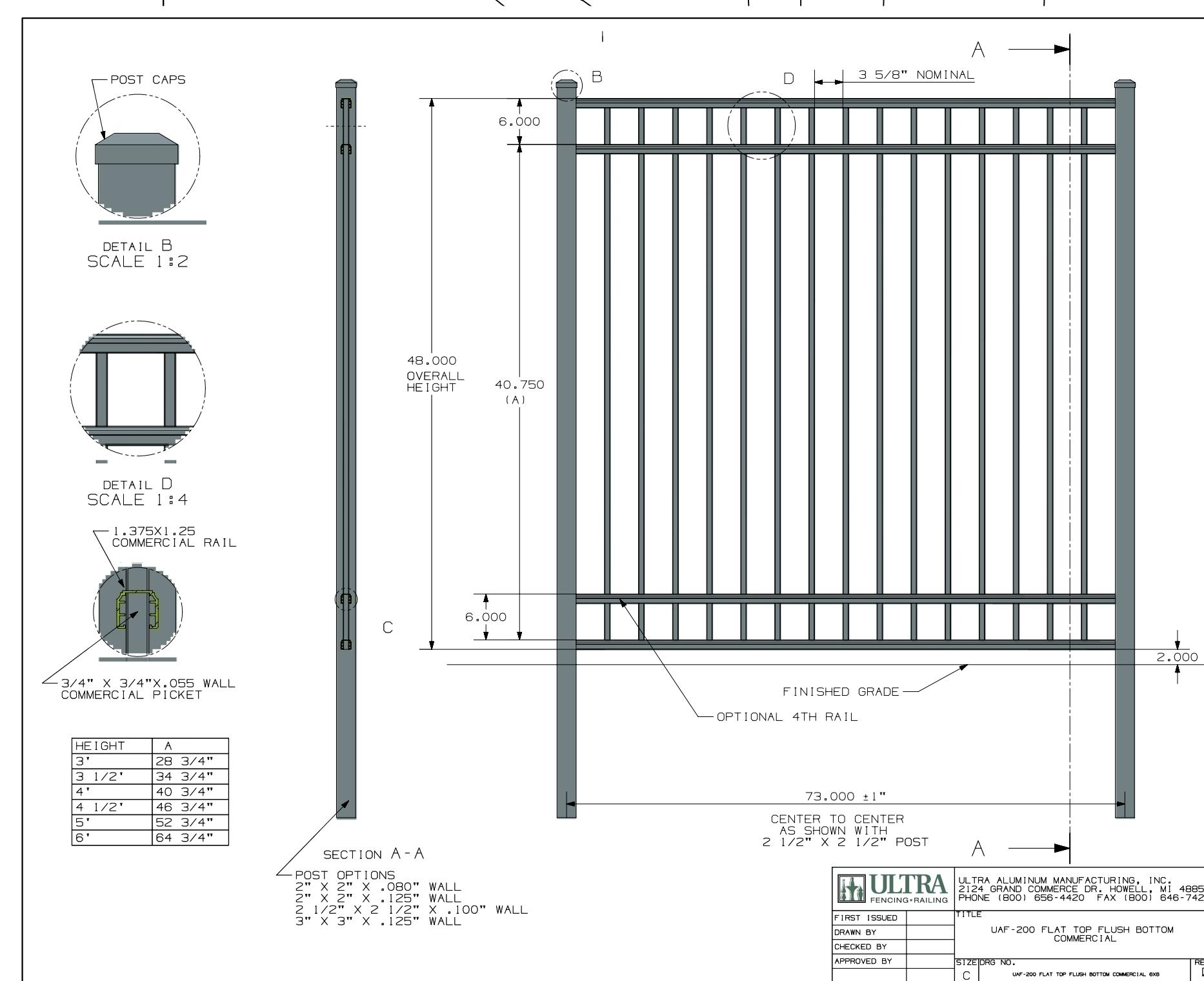


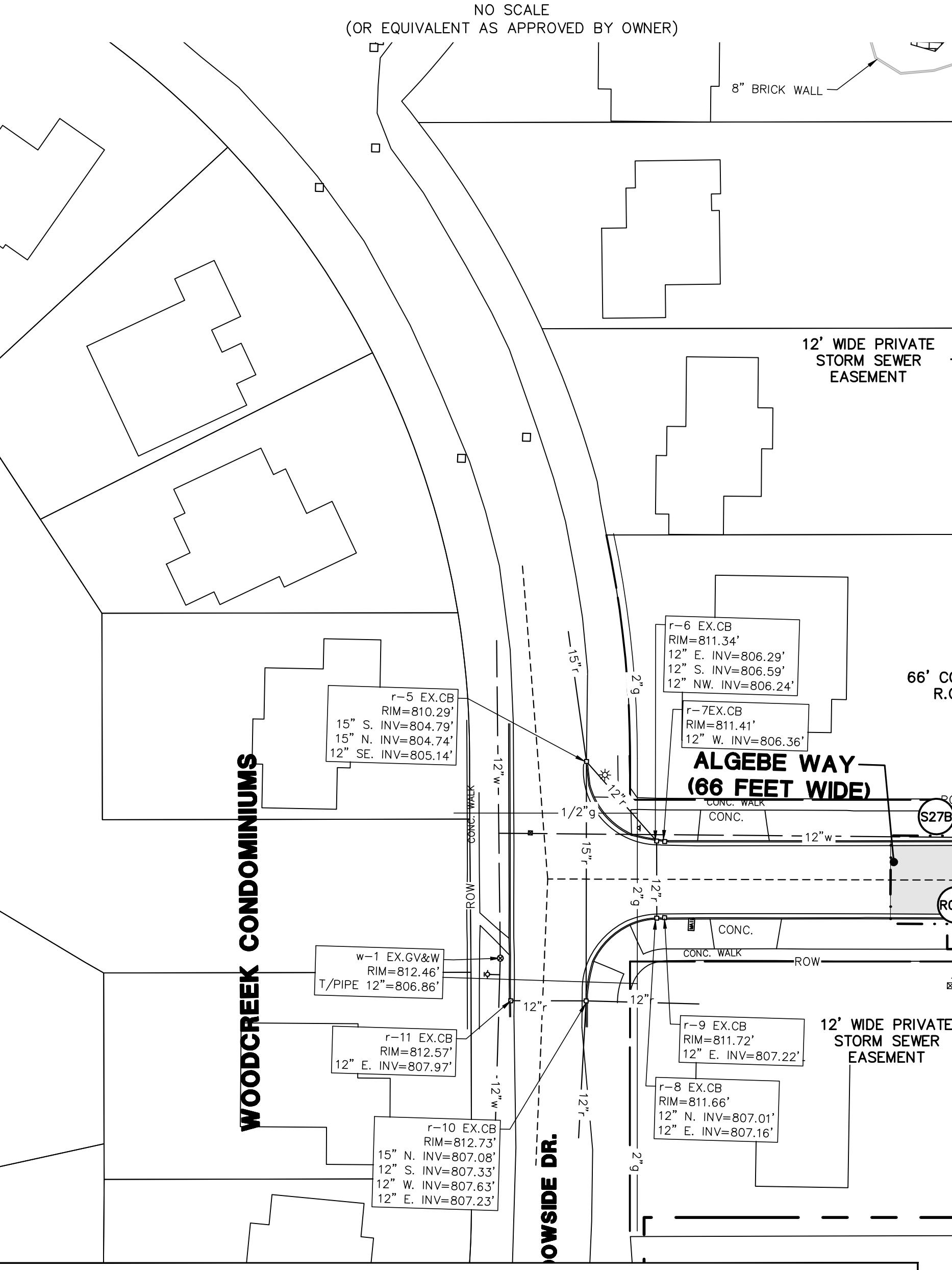
The underground utilities shown have been located from field survey information and existing records. The surveyor makes no guarantees that the underground utilities shown comprise all such utilities in the area, either in-service or abandoned. The surveyor further does not warrant that the underground utilities shown are in the exact location indicated. Although the surveyor does certify that they were located as accurately as possible from the information available.

WRP043503 v1.1
Approved
Issued On:12/03/2024
Expires On:12/03/2024

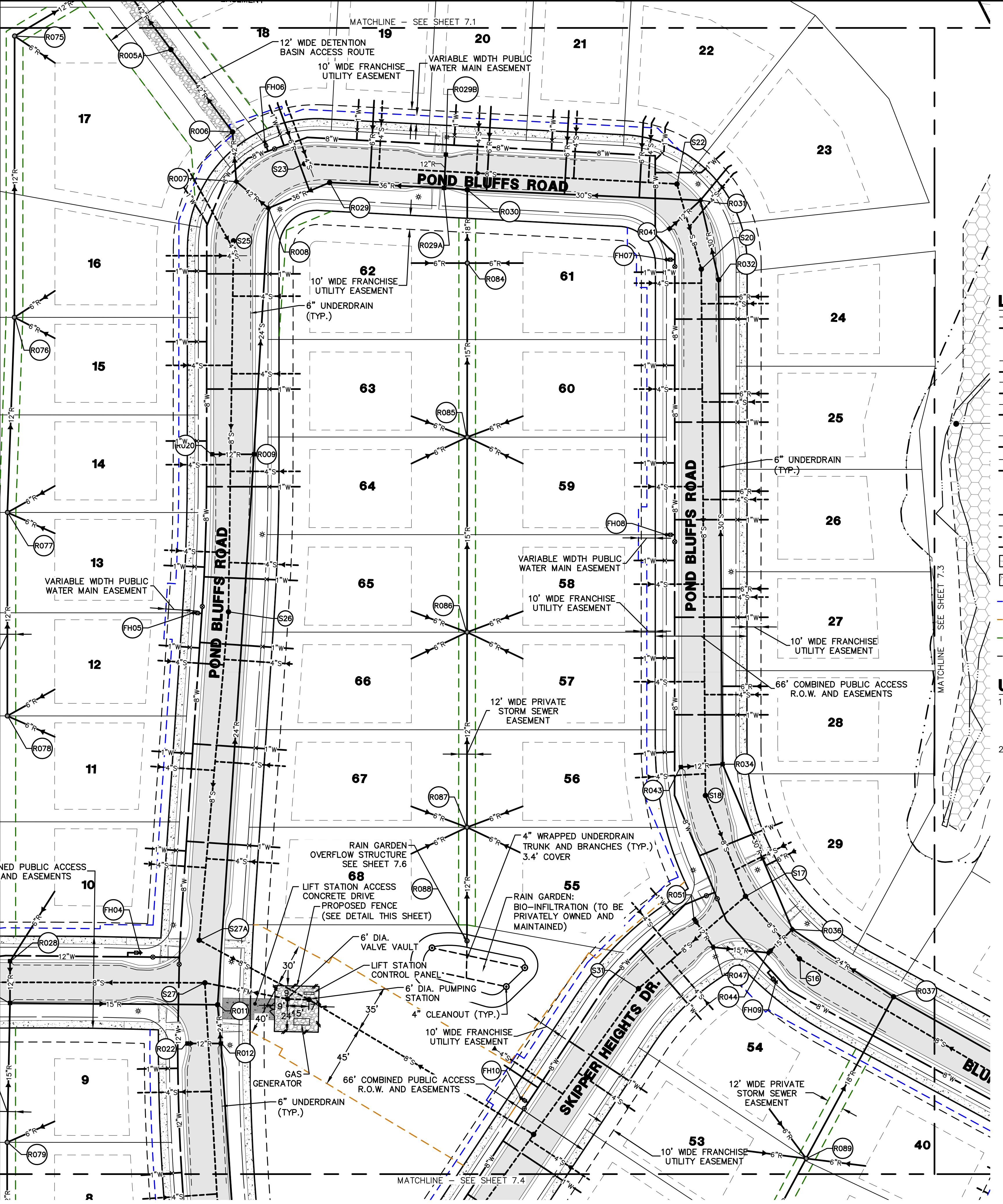


LIFT STATION FENCE DETAIL

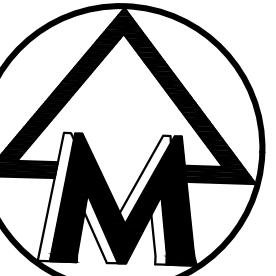
NO SCALE
(OR EQUIVALENT AS APPROVED BY OWNER)



The underground utilities shown have been located from field survey information and existing records. The surveyor makes no guarantees that the underground utilities shown comprise all such utilities in the area, either in-service or abandoned. The surveyor further does not warrant that the underground utilities shown are in the exact location indicated. Although the surveyor does certify that they were located as accurately as possible from the information available.



7.2



SCALE: 1" = 40'





WATER MAIN	CLIENT ROBERTSON HOMES 6905 TELEGRAPH RD., SUITE 200 BLOOMFIELD HILLS, MI 48301 ATTN: UNNAMED THOMAS
WATER MAIN	
HYDRANT	
HYDRANT	
ATE VALVE IN BOX	
ATE VALVE IN BOX	
ATE VALVE IN WELL	
ATE VALVE IN WELL	
URB STOP & BOX	
URB STOP & BOX	
OW-OFF	
ORM SEWER	
ORM SEWER	
ATCH BASIN OR INLET	
ATCH BASIN OR INLET	
ITION	
LL	
RAIN	
UNITARY SEWER	
UNITARY SEWER	
CTION LIMITS	
ED LAND (NOT R.O.W.)	
ATION EASEMENT	
WATER MAIN EASEMENT	
AN. SEWER EASEMENT	
EWER EASEMENT	
E UTILITY EASEMENT	
SOUTH POND	
NEERING	
AREA 5	

THE SAVANNA AT SOUTH POND
MAIL
NITARY SEWER
NITARY SEWER
CTION LIMITS
ED LAND (NOT R.O.W.)
ATION EASEMENT
ATER MAIN EASEMENT
AN. SEWER EASEMENT
EWER EASEMENT
E UTILITY EASEMENT

(G), COMCAST (C),
UTILITY SYSTEMS
ND BEFORE

RESPONSIBLE FOR
Y EXCAVATION
SIDEWALKS.

(G), COMCAST (C),
UTILITY SYSTEMS
AND BEFORE

RESPONSIBLE FOR
Y EXCAVATION
SIDEWALKS

ESTIN
ULTIN
n Arbor, Michigan 48108

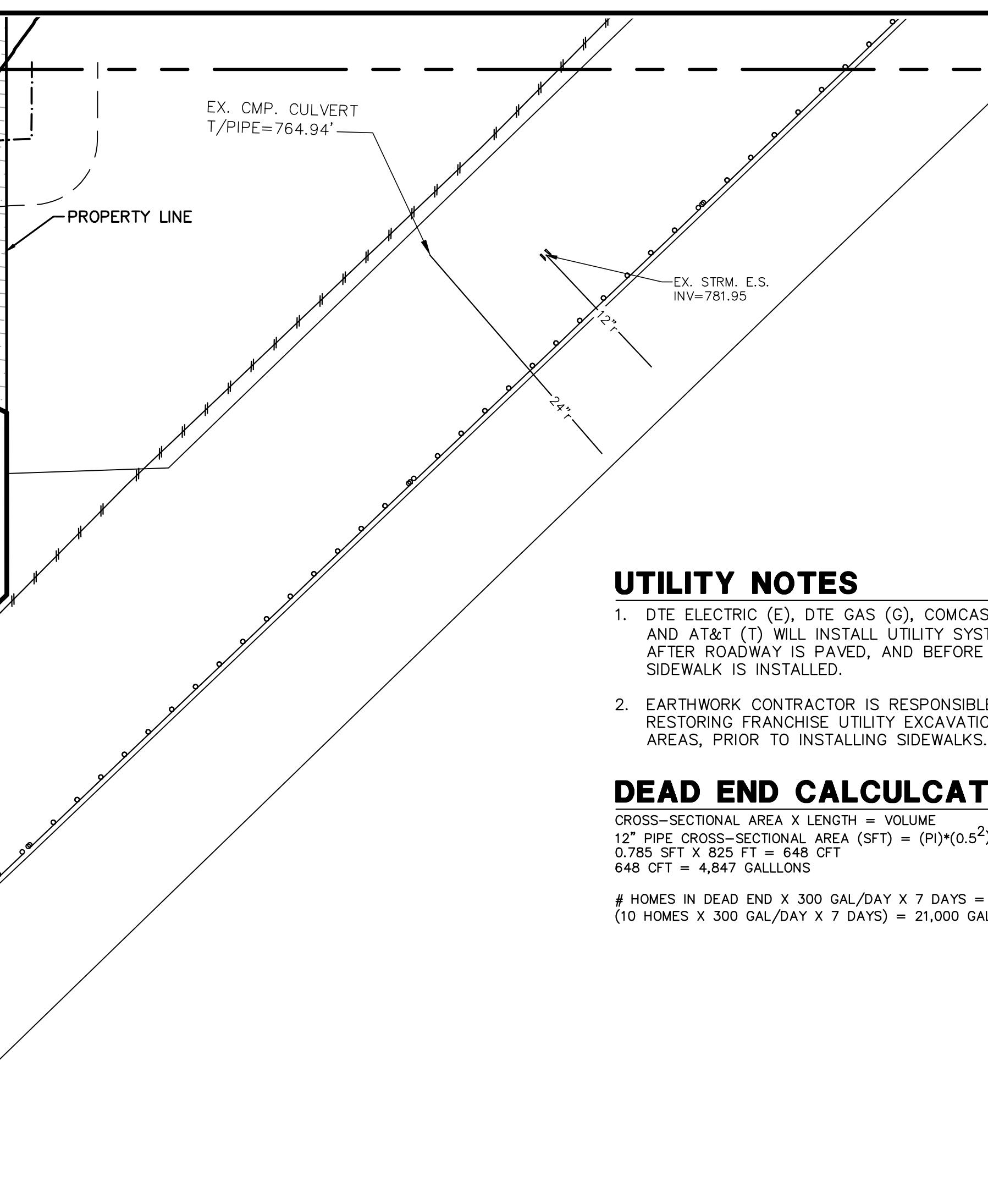
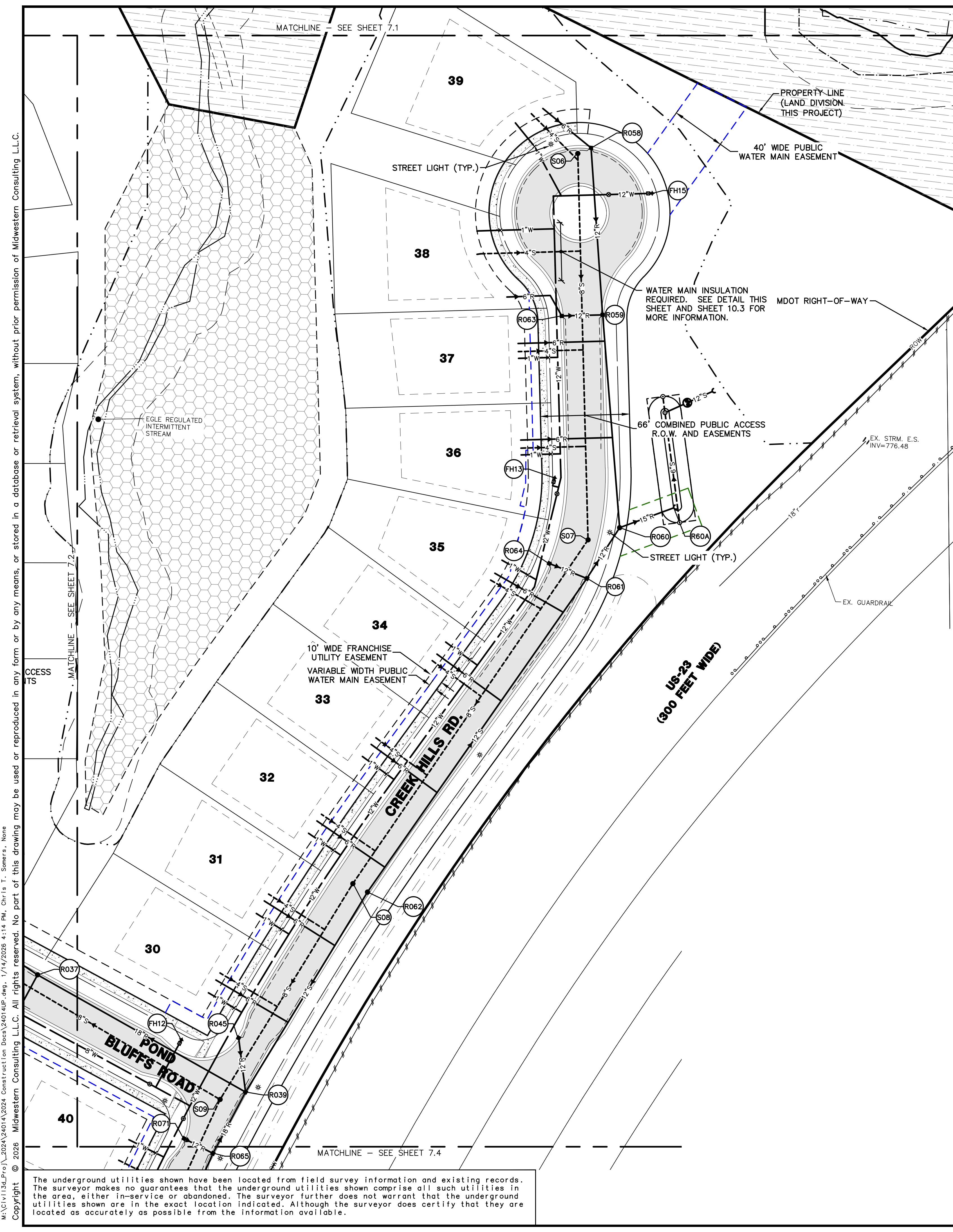
ED CONS
3815 Plaza Drive A

1 HOMES
GRAPH RD., SUITE 200
O HILLS, MI 48301
LEED THOMAS

ROBERTSON
6905 TELE
BLOOMFIELD
ATTN: LENN

SCOTT S. CND
NEERING
AREA 5

2024 DETAILED ENGINEERING



UTILITY NOTES

1. DTE ELECTRIC (E), DTE GAS (G), COMCAST (C), AND AT&T (T) WILL INSTALL UTILITY SYSTEMS AFTER ROADWAY IS PAVED, AND BEFORE SIDEWALK IS INSTALLED.
2. EARTHWORK CONTRACTOR IS RESPONSIBLE FOR RESTORING FRANCHISE UTILITY EXCAVATION AREAS, PRIOR TO INSTALLING SIDEWALKS.

DEAD END CALCULATION

CROSS-SECTIONAL AREA X LENGTH = VOLUME
 $12'' \text{ PIPE CROSS-SECTIONAL AREA (SFT)} = (\pi)(0.5^2) = 0.785 \text{ SFT}$
 $0.785 \text{ SFT} \times 825 \text{ FT} = 648 \text{ CFT}$
 $648 \text{ CFT} = 4,847 \text{ GALLONS}$

HOMES IN DEAD END X 300 GAL/DAY X 7 DAYS = TURNOVER VOLUME
 $(10 \text{ HOMES} \times 300 \text{ GAL/DAY} \times 7 \text{ DAYS}) = 21,000 \text{ GALLON}$

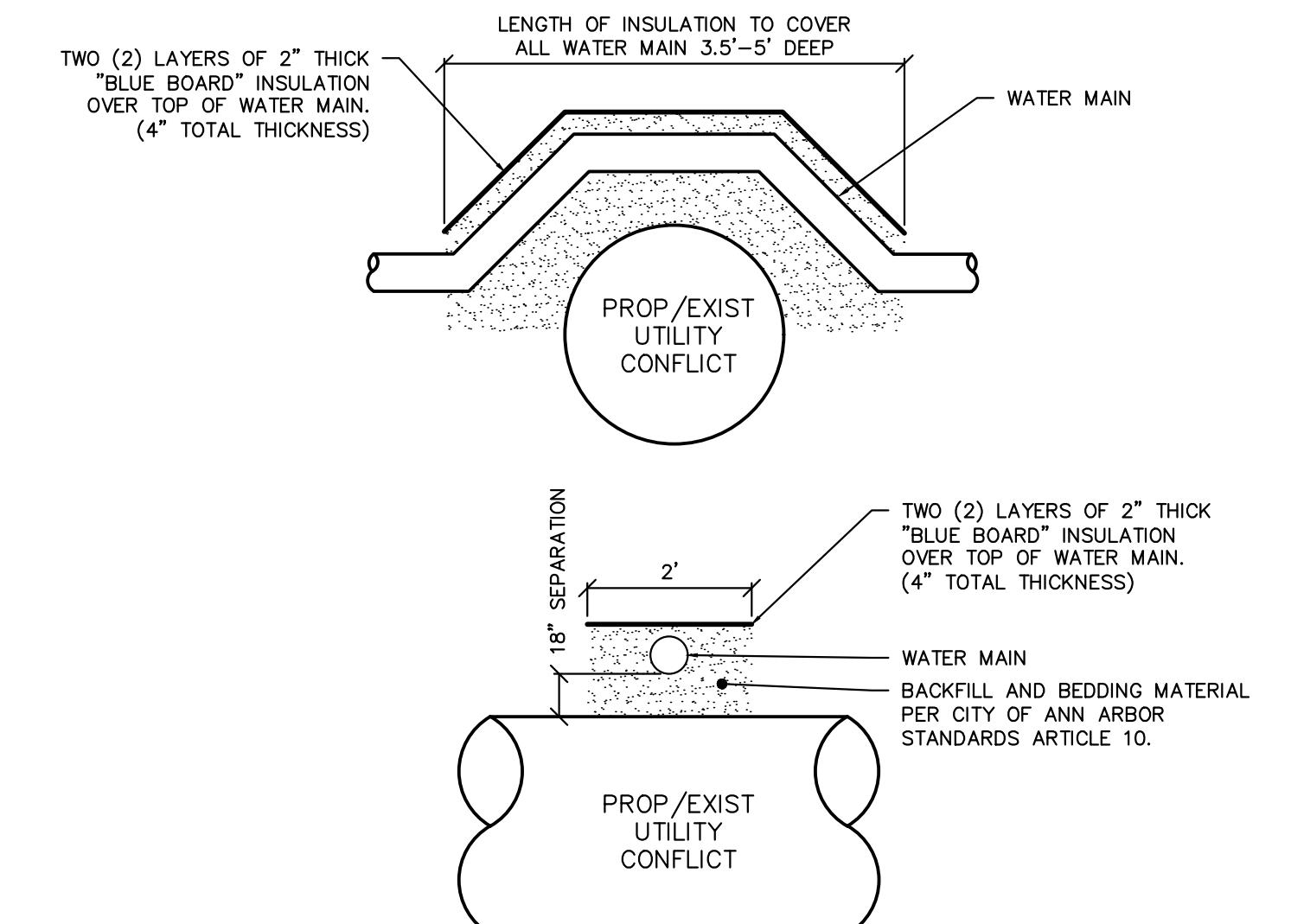
SCALE: 1" = 40'
 0 40 80 120



MIDWESTERN
CONSULTING
2815 Paragon, Ann Arbor, Michigan 48108
(734) 295-0300 • www.midwesternconsulting.com

LEGEND

w	EXIST. WATER MAIN
W	PROP. WATER MAIN
◊	EXIST. HYDRANT
◊	PROP. HYDRANT
—	EXIST. GATE VALVE IN BOX
—	PROP. GATE VALVE IN BOX
—	EXIST. GATE VALVE IN WELL
—	PROP. GATE VALVE IN WELL
—	EXIST. CURE STOP & BOX
—	PROP. CURB STOP & BOX
r	EXIST. BLOW-OFF
—	PROP. BLOW-OFF
—	EXIST. STORM SEWER
—	PROP. STORM SEWER
—	EXIST. CATCH BASIN OR INLET
—	PROP. CATCH BASIN OR INLET
—	END SECTION
—	HEAD WALL
—	CULVERT
—	UNDER DRAIN
—	EXIST. SANITARY SEWER
—	PROP. SANITARY SEWER
—	CONSTRUCTION LIMITS



CONSTRUCTION NOTES:

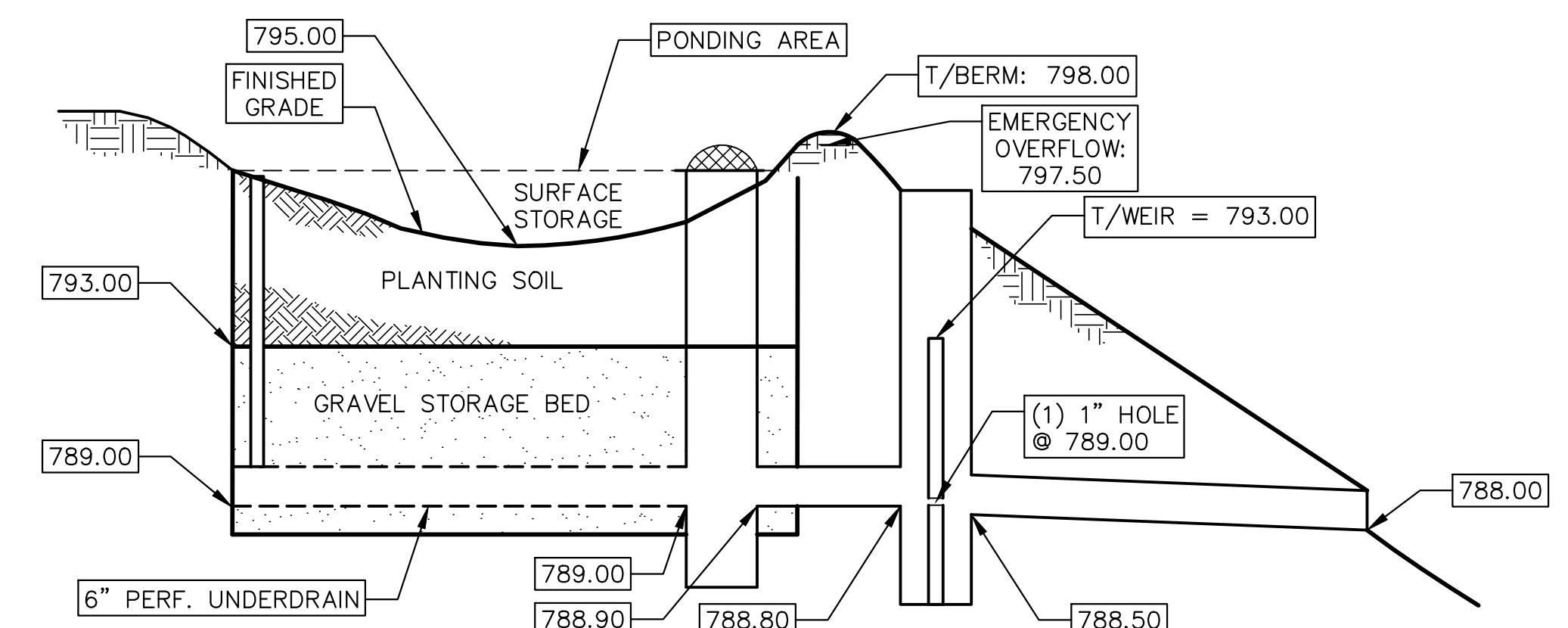
1. INSULATE WATER MAIN WHEREVER COVER OVER WATER MAIN IS LESS THAN 5 FEET. PRIOR TO PLACEMENT OF THE POLYSTYRENE BOARDS, BEDDING MATERIAL SHALL BE PLACED TO A HEIGHT OF 6 INCHES OVER THE TOP OF THE PIPE, LEVEL, AND COVERING THE INSULATING BOARDS SHALL BE PLACED ON THE COVER MATERIAL WITH THE LONG SIDE PARALLEL TO THE CENTERLINE OF THE WATER MAIN FOR A MINIMUM WIDTH OF 0.0 + 24 INCHES. THE BOARDS SHALL BE PLACED IN A STAGGERED ARRANGEMENT TO ELIMINATE CONTINUOUS TRANSVERSE JOINTS. EACH LAYER SHOULD BE PLACED TO COVER THE JOINTS OF THE LAYER IMMEDIATELY BELOW.
2. THE FIRST LIFT OF BACKFILL MATERIAL SHALL CONSIST OF 6 INCHES OF BEDDING MATERIAL WHICH SHALL BE END OR SIDE DUMPED ONTO THE INSULATION BOARD AND SPREAD IN SUCH A MANNER THAT CONSTRUCTION EQUIPMENT DOES NOT OPERATE DIRECTLY ON THE INSULATION. ONCE THIS LAYER HAS BEEN COMPACTED TO THE SPECIFIED DENSITY, THE REMAINING LAYERS OF BACKFILL MAY BE CONSTRUCTED UTILIZING CONVENTIONAL PROCEDURES.

WATER MAIN INSULATION DETAIL

SCALE : NTS

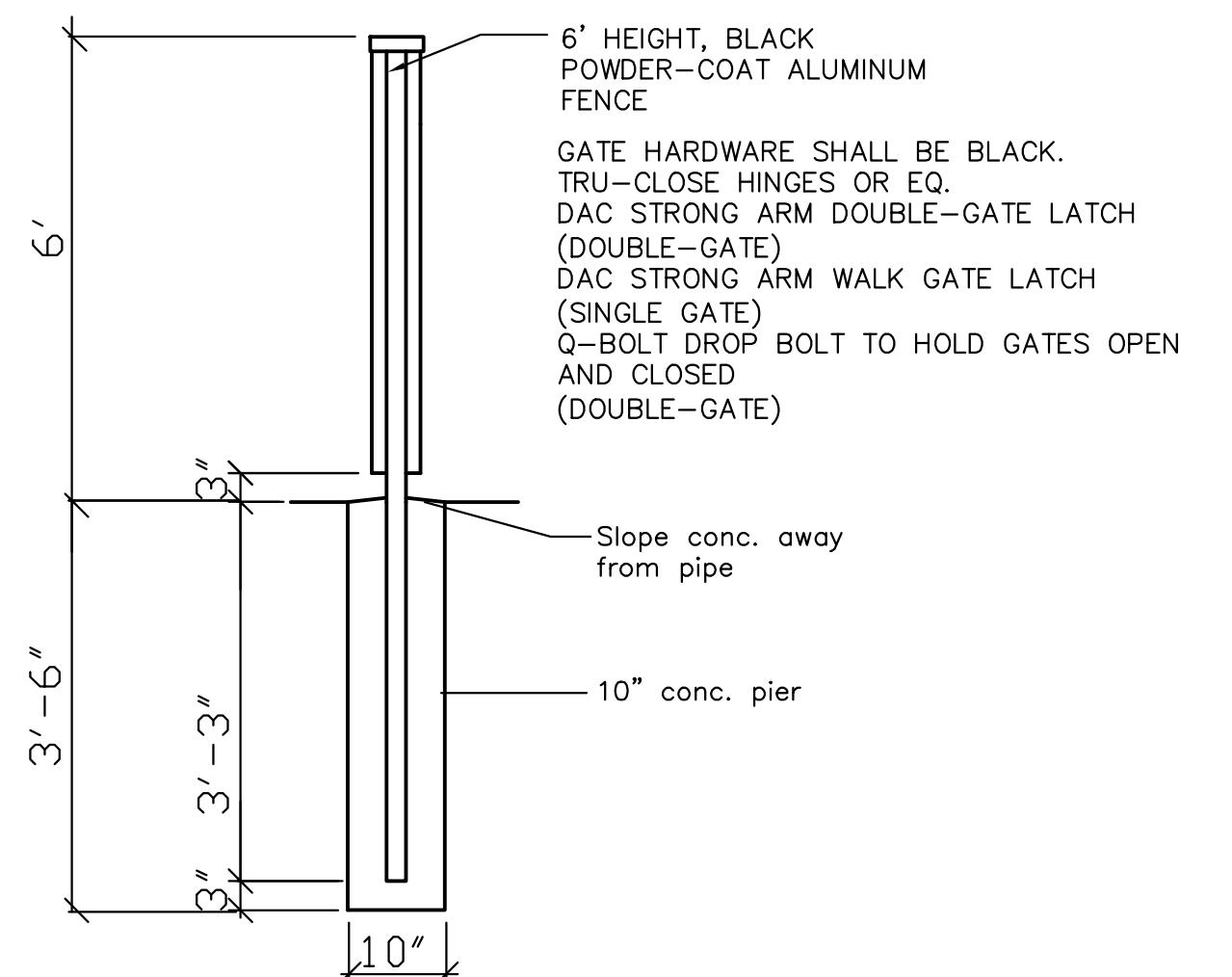
7.3
THE SAVANNA AT SOUTH POND
2024 DETAILED ENGINEERING
SITE UTILITY PLAN - AREA C

7.3



NORTHEAST FIRST FLUSH BASIN DETAIL

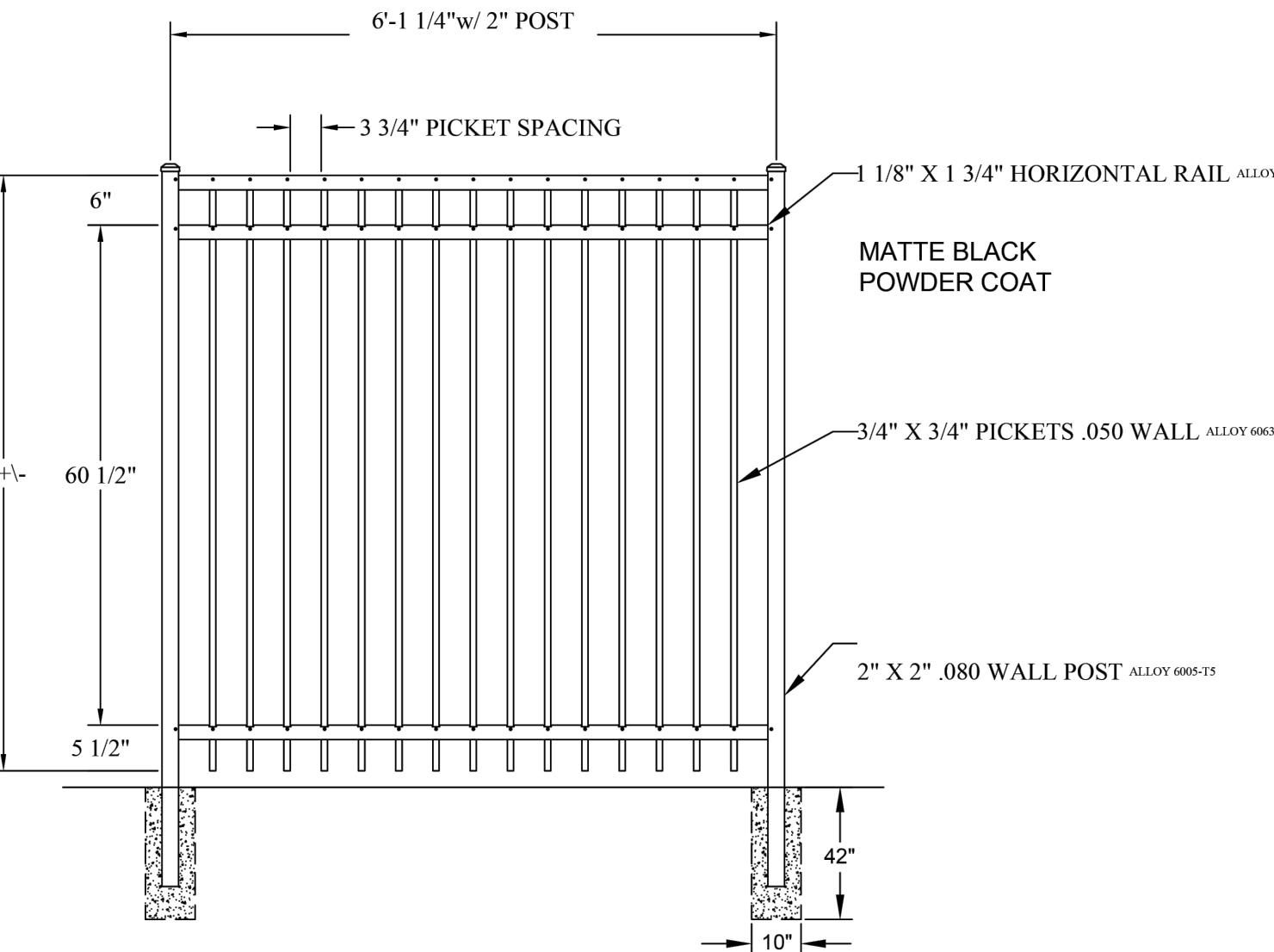
NO SCALE



NOTES

FENCE SHALL BE FOREST GREEN 5' HEIGHT ALUMINUM COMMERCIAL-GRADE FENCE WITH TWO HORIZONTAL TOP BARS AND ONE HORIZONTAL BOTTOM BAR. SUBMIT PRODUCT DATA AND COLOR SAMPLE TO ENGINEER FOR APPROVAL PRIOR TO ORDERING COMPONENTS. ACCEPTABLE SUPPLIERS INCLUDE:

FENCE-DEPOT: 72 INCH AUBURN COMMERCIAL FENCE (BLACK)
ELITE FENCE PRODUCTS: EFP-20 6' HEIGHT (BLACK)
ALUMINUM FENCE SUPPLY: FLAT TOP, COMMERCIAL SERIES A THREE-RAIL FENCE (BLACK)



7.6 THE SAVANNA AT SOUTH POND

CLIENT

ROBERTSON HOMES

6905 TELEGRAPH RD., SUITE 200

BLOOMFIELD HILLS, MI 48301

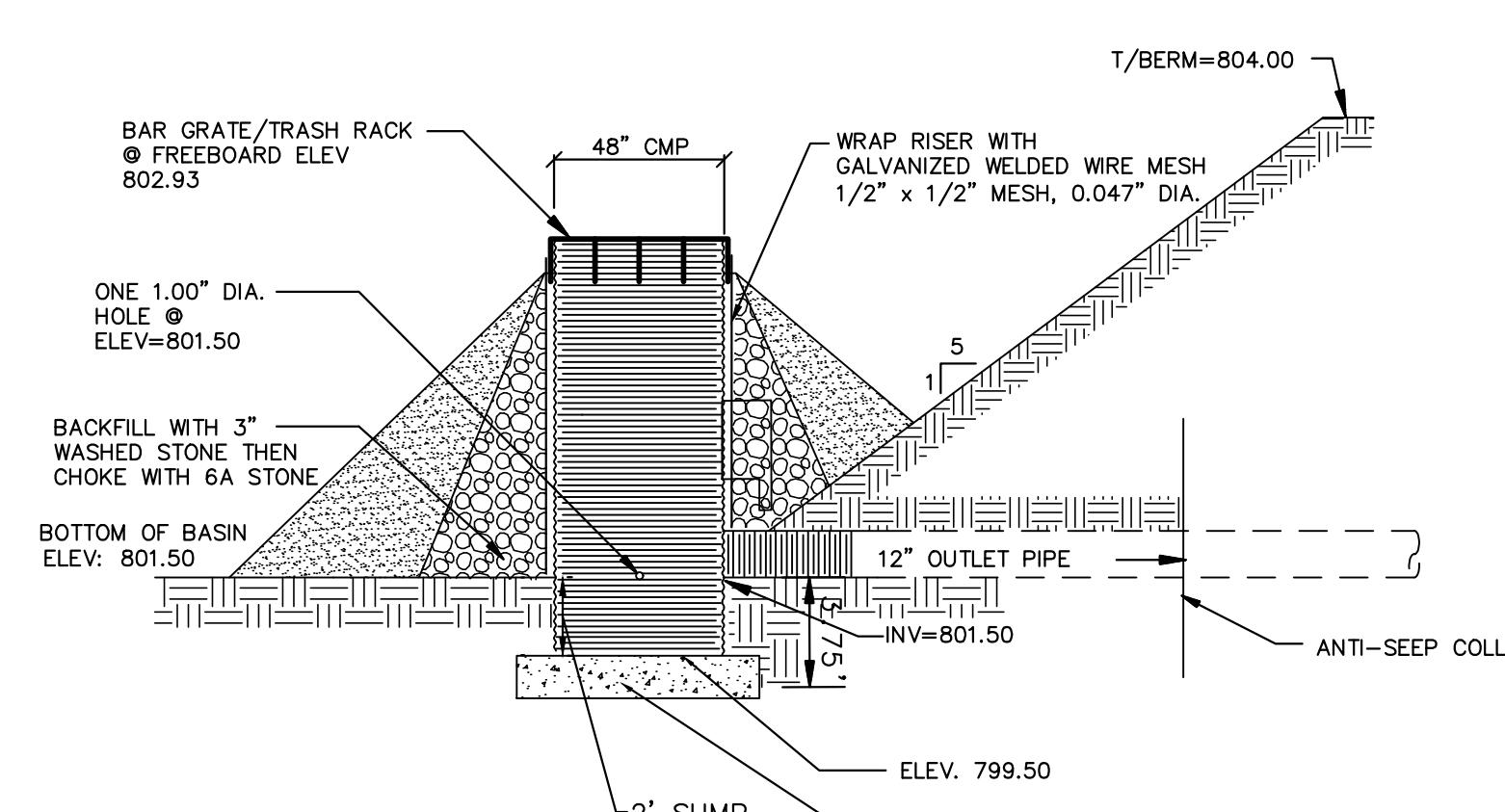
ATTN: JENNIFER THOMAS

248-761-8930

2024 DETAILED ENGINEERING
STORM DETENTION DETAILS

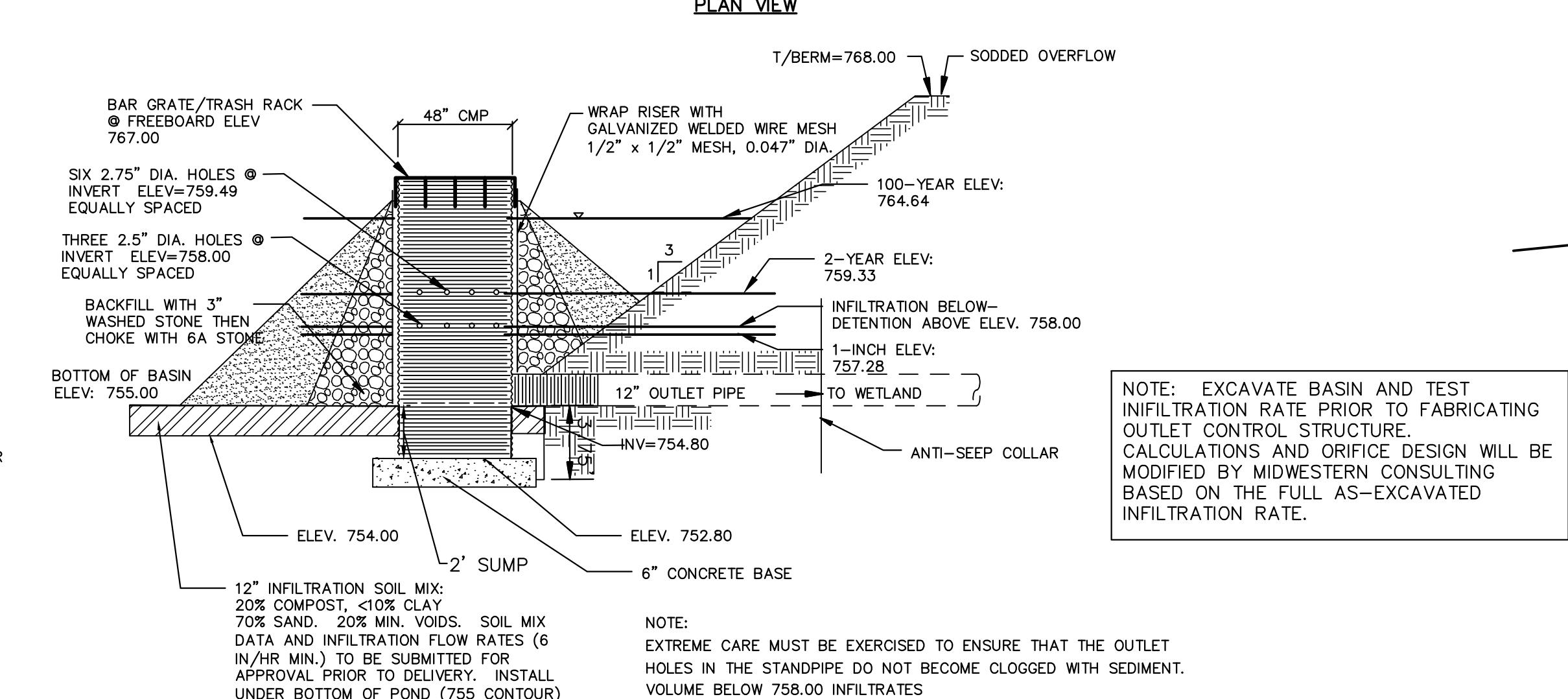
7.6

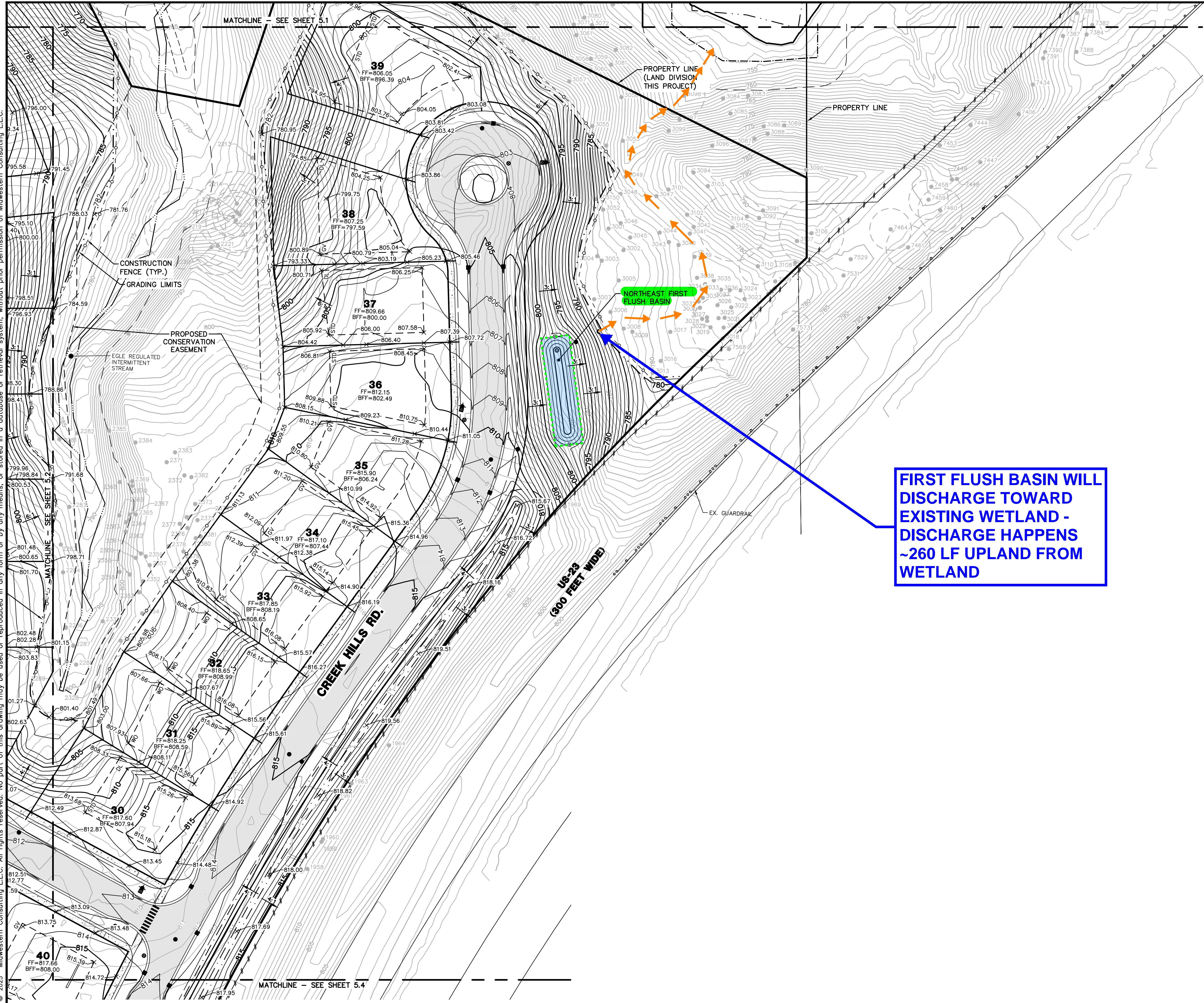
JOB No. **24014** DATE: 09/05/24
REVISIONS: SHEET 50 OF 86
FEE: MUNICIPAL REVIEW REV. DATE: 06/30/25
FEE: MUNICIPAL REVIEW CAD: CTS 07/15/25
FEE: MUNICIPAL REVIEW ENG: JAM, TPH 07/15/26
FEE: MUNICIPAL REVIEW PM: TUC 01/15/26
FEE: MUNICIPAL REVIEW TECH: CTS 24014-1ST-DETAILS.dwg
Expires On: 12/03/2029



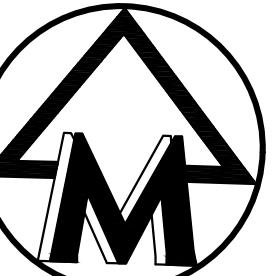
SOUTHWEST FIRST FLUSH BASIN OUTLET DETAIL

NO SCALE





**FIRST FLUSH BASIN WILL
DISCHARGE TOWARD
EXISTING WETLAND -
DISCHARGE HAPPENS
~260 LF UPLAND FROM
WETLAND**



SCALE: 1" = 40'





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



THE SAVANNA AT SOUTH POND

2024 DETAILED ENGINEERING DRAWINGS FOR AREA 3

5.3

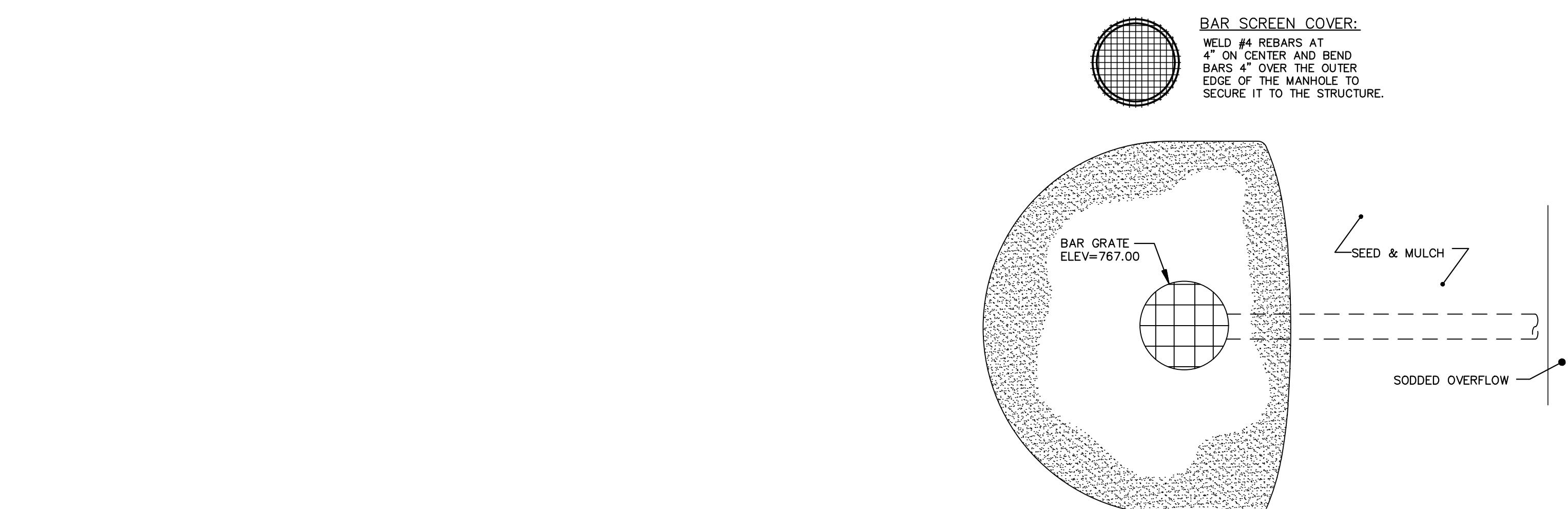
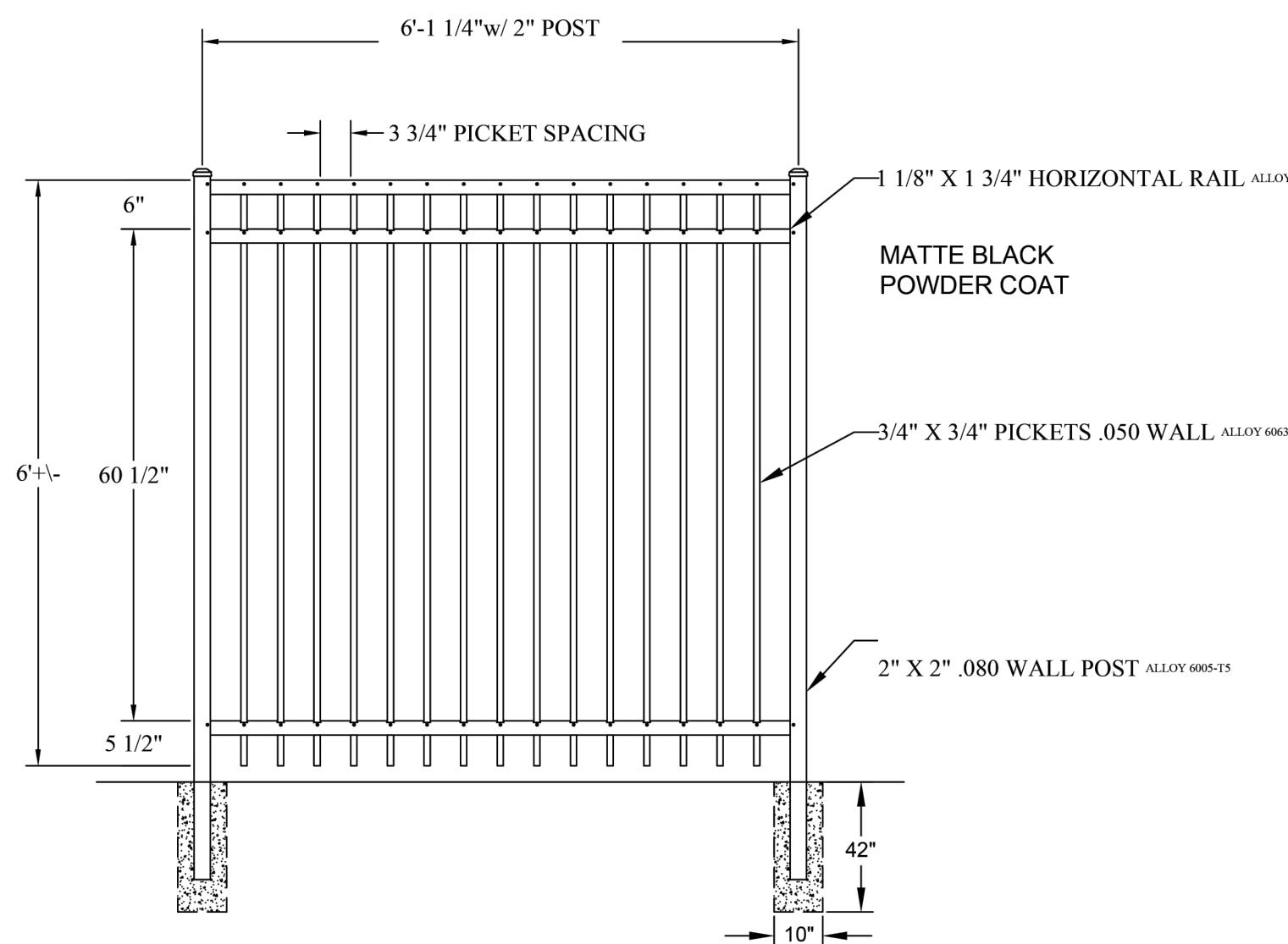
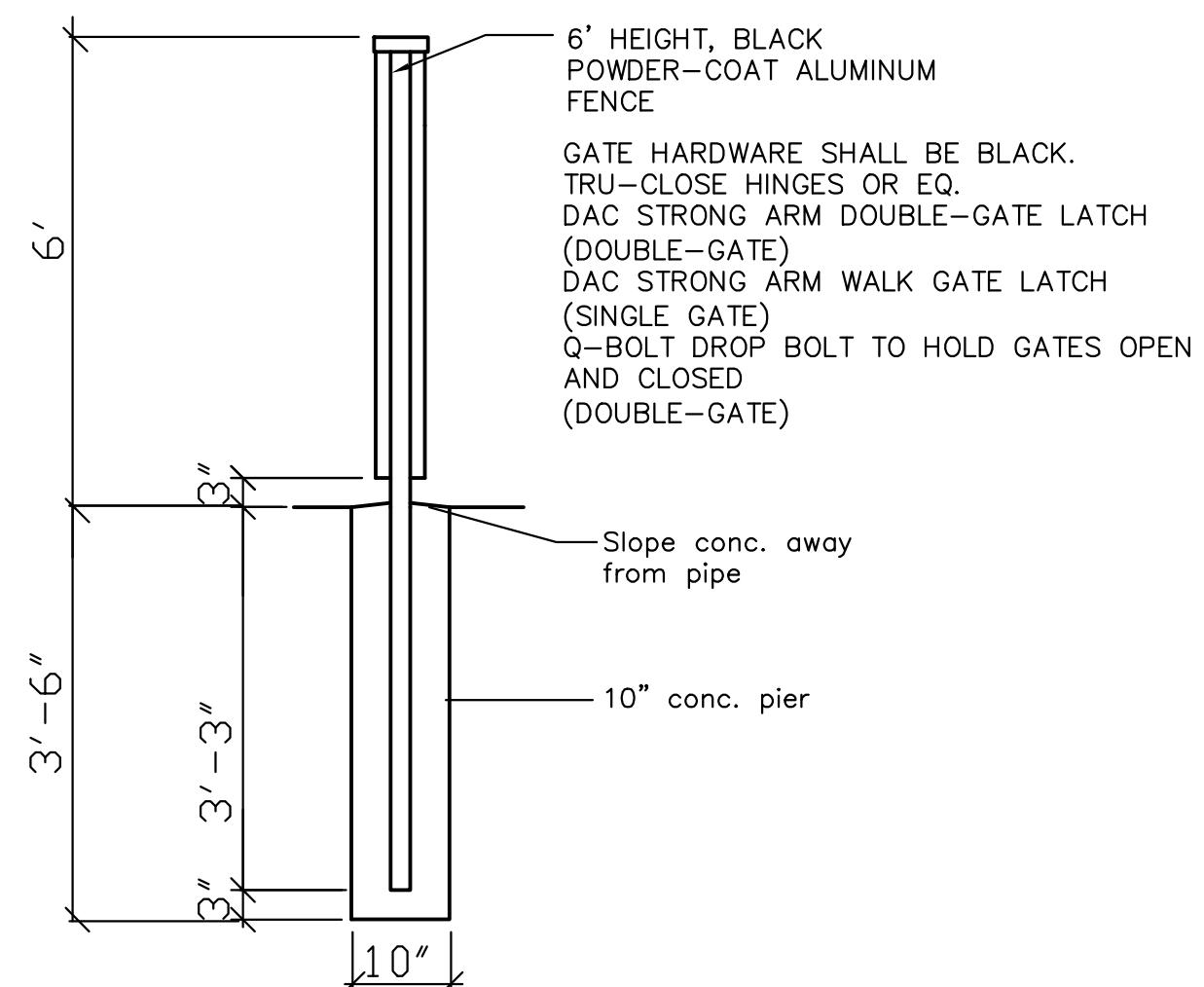
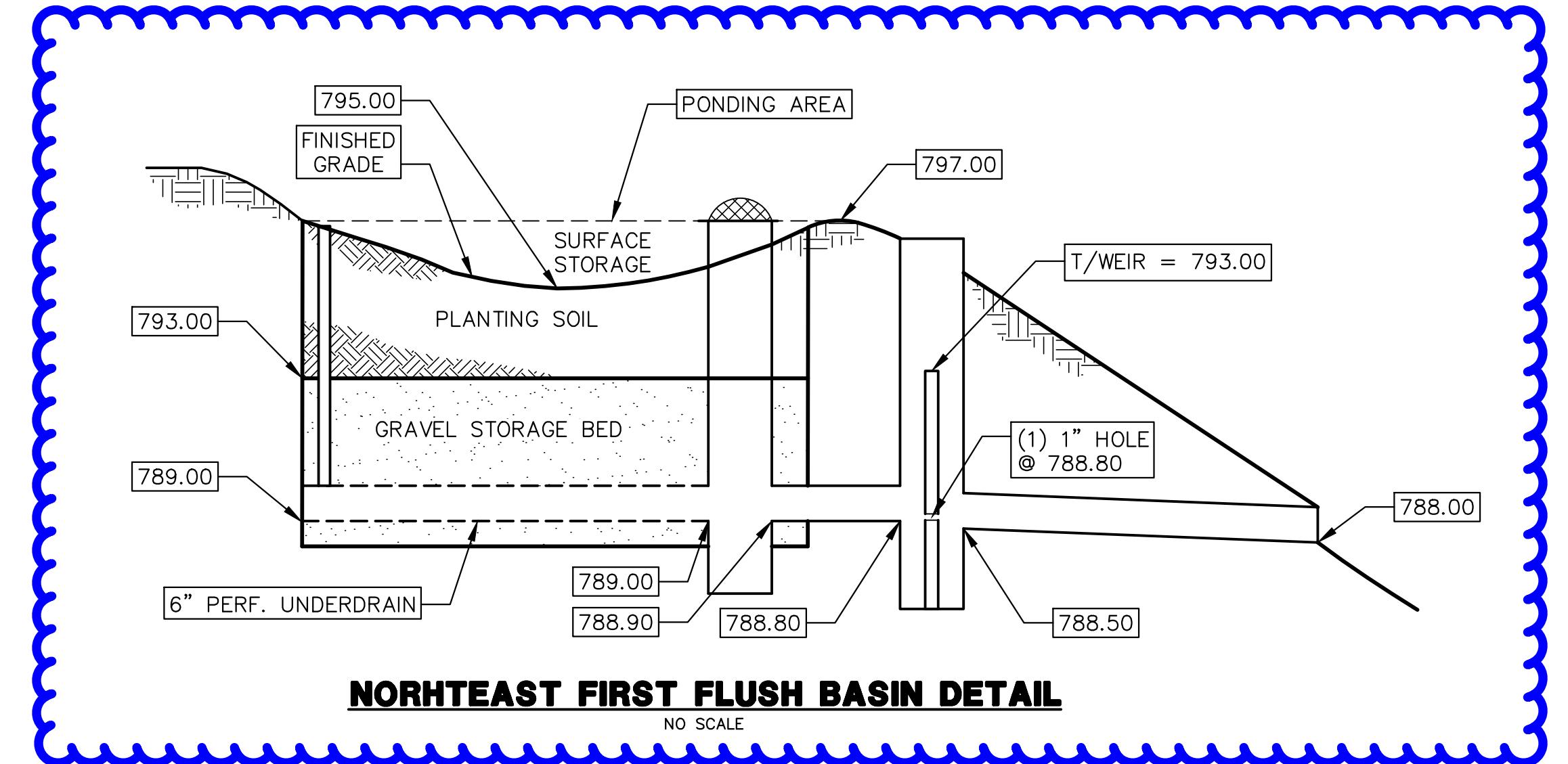
24014

REVISIONS:
PER MUNICIPAL REVIEW
PER MUNICIPAL REVIEW

WRPO
App
Issued On
Expires On

838	EXIST. CONTOUR
838	PROP. CONTOUR
×836.2	EXIST. SPOT ELEVATION
<u>36.60</u> ×	PROP. SPOT ELEVATION
→	DRAINAGE DIRECTION
○	EXIST. HYDRANT
●	PROP. HYDRANT
☒	EXIST. GATE VALVE IN BOX
☒	PROP. GATE VALVE IN BOX
⊗	EXIST. GATE VALVE IN WELL
⊗	PROP. GATE VALVE IN WELL
☒	EXIST. CURB STOP & BOX
×	PROP. CURB STOP & BOX
□	EXIST. CATCH BASIN OR INL
■	PROP. CATCH BASIN OR INL
)	END SECTION
)	HEAD WALL
—	CULVERT
○	EXIST. MANHOLE
●	PROP. MANHOLE
●	SINGLE TREE
====	FENCE
—○—	CONSTRUCTION FENCE
—·—	GRADING LIMITS

24014		DATE: 09/05/24
5 .3		SHEET 29 OF 81
THE SAVANNA AT SOUTH POND 2024 DETAILED ENGINEERING SITE GRADING PLAN – AREA C		
JOB No. 24014 REVISIONS: PER MUNICIPAL REVIEW PER MUNICIPAL REVIEW		
REV. DATE	06/30/25	CADD: CTS
	10/28/25	ENG: JAM, TPH
		PM: TJC
		TECH: CTS
		24014GP.dwg



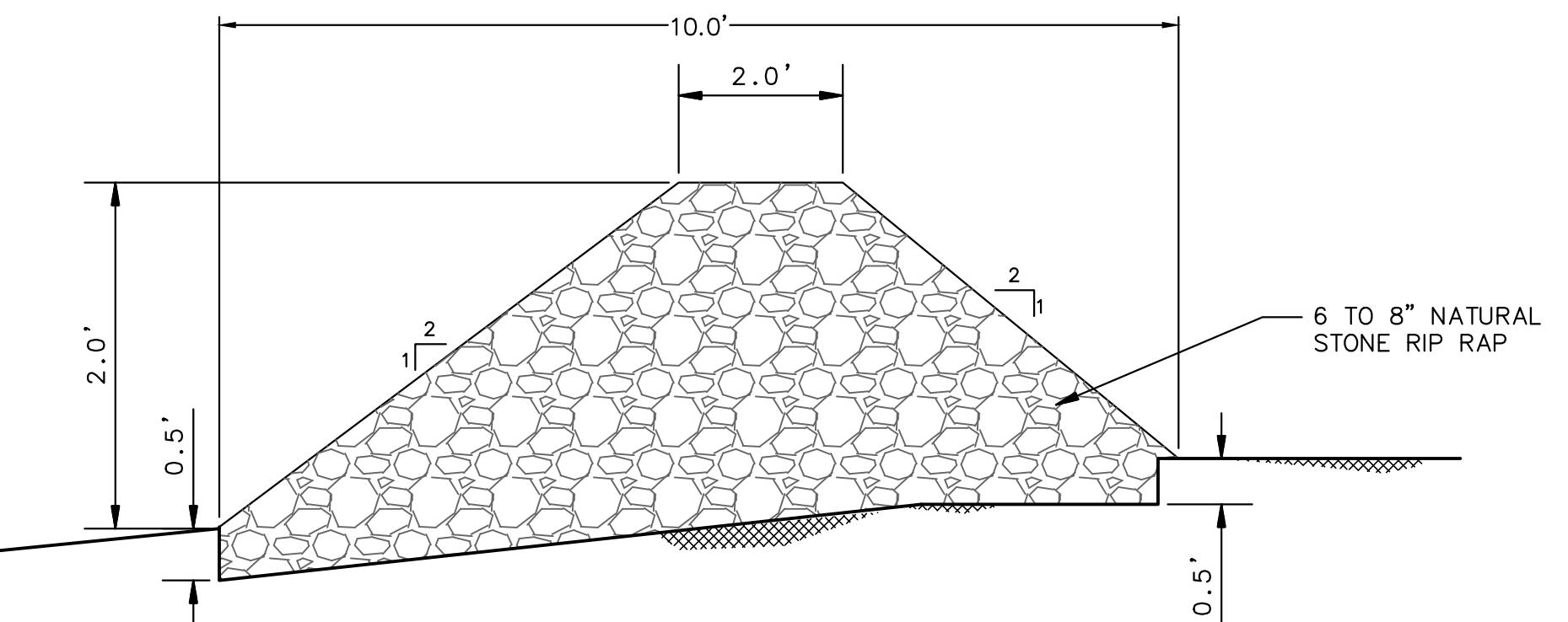
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ALUMINUM FENCE SUPPLY: FLAT TOP, COMMERCIAL SERIES A THREE-RAIL FENCE (BLACK)

DETENTION BASIN FENCING

NOT TO SCALE



SEDIMENT FOREBAY RIP-RAP BARRIER DETAIL

NO SCALE

