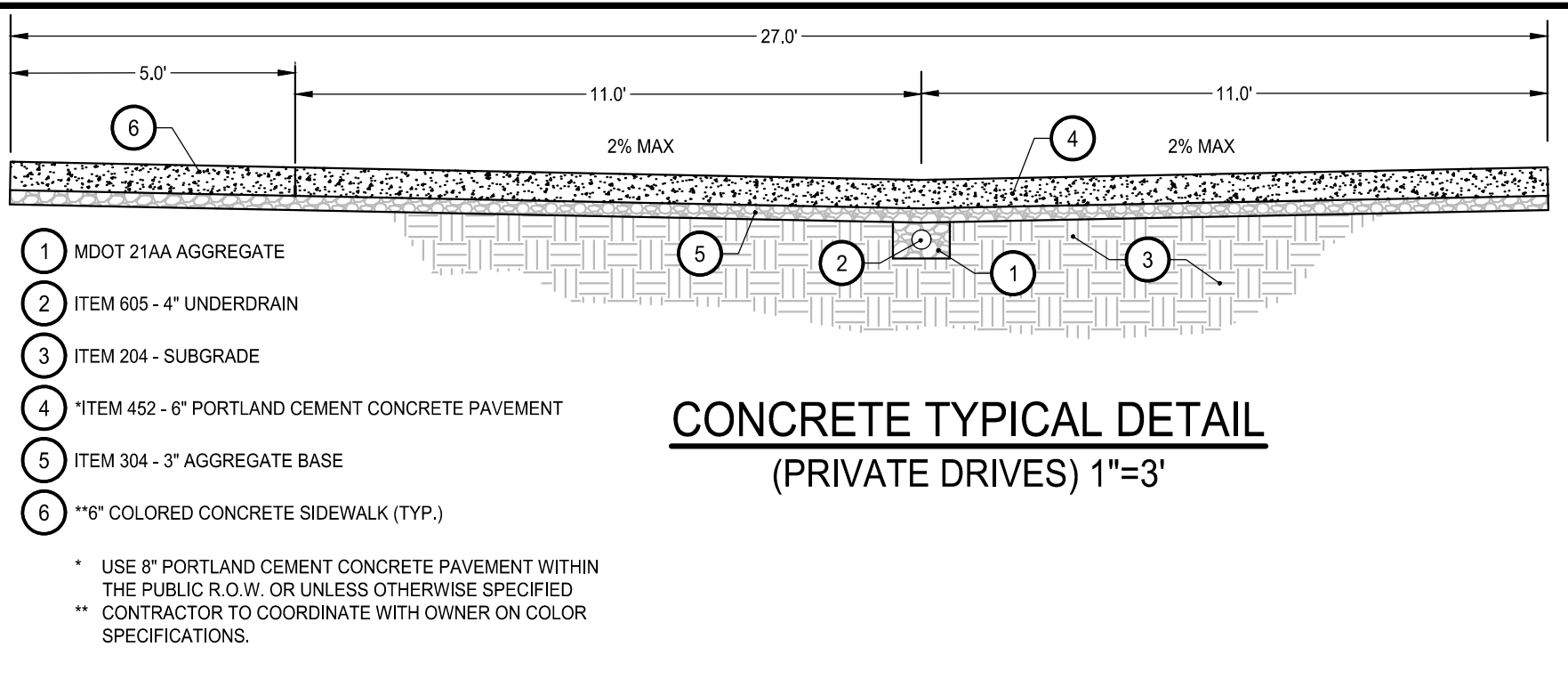




Bergmann Associates, Architects, Engineers, Landscape Architects & Surveyors, D.P.C.
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Lansing, MI 48917

office: 517.272.9835
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www.bergmannpc.com

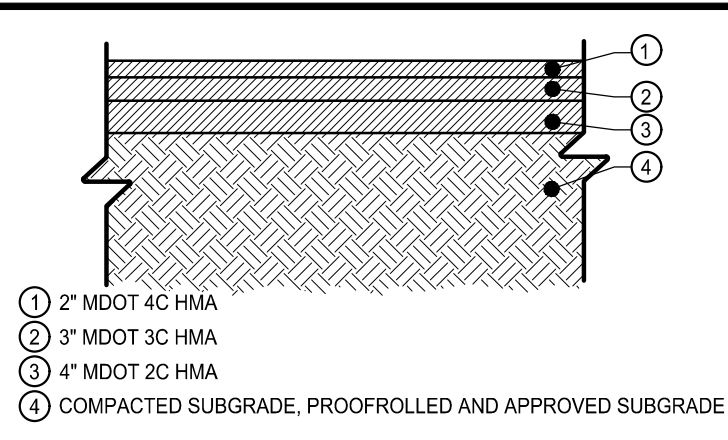
DATE	DESCRIPTION
11/16/2018	PUD REVIEW
02/04/2019	REV. PER CITY COMMENTS
03/21/2019	2ND REV. PER CITY COMMENTS
08/02/2019	3RD REV. PER CITY COMMENTS
08/02/2019	4TH REV. PER CITY COMMENTS
08/27/2019	STEP ONE PUD REVIEW
12/23/2019	CITY RESUBMITTAL PERMIT REVIEW
01/17/2020	ENGINEERING RESUBMITTAL
03/02/2020	ENGINEERING RESUBMITTAL
05/06/2020	ENGINEERING RESUBMITTAL
06/09/2020	ENGINEERING RESUBMITTAL
07/06/2020	ENGINEERING RESUBMITTAL



CONCRETE TYPICAL DETAIL (PRIVATE DRIVES) 1"=3"

- 1 MDOT 21AA AGGREGATE
- 2 ITEM 605 - 4" UNDERDRAIN
- 3 ITEM 204 - SUBGRADE
- 4 ITEM 452 - 6" PORTLAND CEMENT CONCRETE PAVEMENT
- 5 ITEM 304 - 3" AGGREGATE BASE
- 6 "6" COLORED CONCRETE SIDEWALK (TYP.)

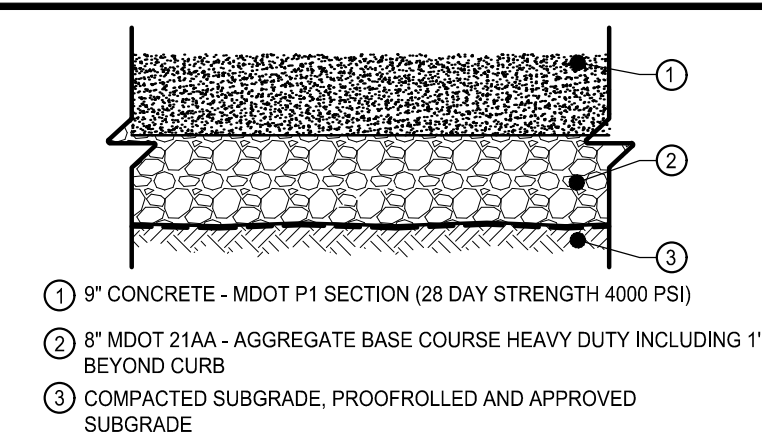
* USE OF PORTLAND CEMENT CONCRETE PAVEMENT WITHIN THE PUBLIC R.O.W. OR UNLESS OTHERWISE SPECIFIED
** CONTRACTOR TO COORDINATE WITH OWNER ON COLOR SPECIFICATIONS.



ASPHALT PAVEMENT SECTION WITHIN R.O.W. N.T.S.

- 1 2" MDOT 4C HMA
- 2 3" MDOT 3C HMA
- 3 4" MDOT 2C HMA
- 4 COMPACTED SUBGRADE, PROOFROLLED AND APPROVED SUBGRADE

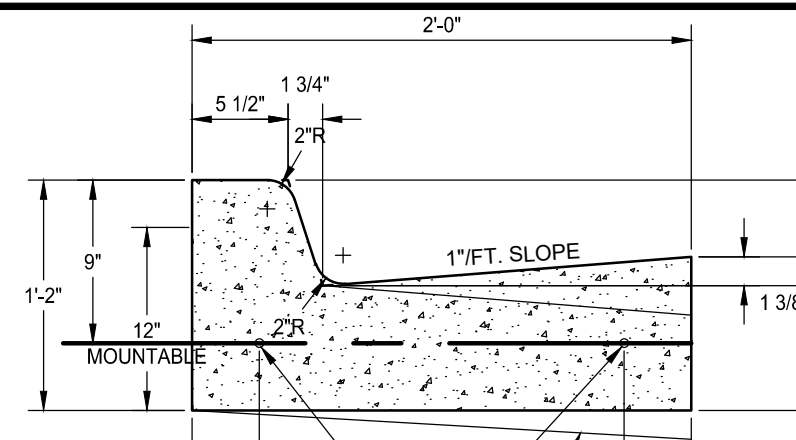
NOTES:
1. COMPACT SUBGRADE TO A MODIFIED PROCTOR DENSITY OF 95%
2. SUBBASE COURSE SHALL HAVE NO MORE THAN (7%) SEVEN PERCENT BY WEIGHT FINER THAN NO. 200 SIEVE.



CONCRETE DRIVEWAY PAVEMENT SECTION WITHIN R.O.W. N.T.S.

- 1 9" CONCRETE - MDOT P1 SECTION (28 DAY STRENGTH 4000 PSI)
- 2 8" MDOT 21AA - AGGREGATE BASE COURSE HEAVY DUTY INCLUDING 1" BEYOND CURB
- 3 COMPACTED SUBGRADE, PROOFROLLED AND APPROVED SUBGRADE

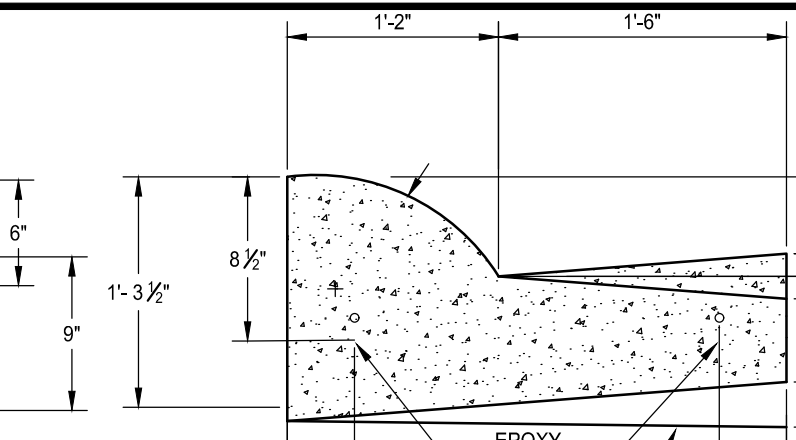
NOTES:
1. COMPACT SUBGRADE TO A MODIFIED PROCTOR DENSITY OF 95%
2. SUBBASE COURSE SHALL HAVE NO MORE THAN (7%) SEVEN PERCENT BY WEIGHT FINER THAN NO. 200 SIEVE.



M.D.O.T. B-2 CURB & GUTTER DETAIL NO SCALE

- 1 1/2" REBAR (CONT.)
- 2 EPOXY COATED #4 BAR (CONT.)

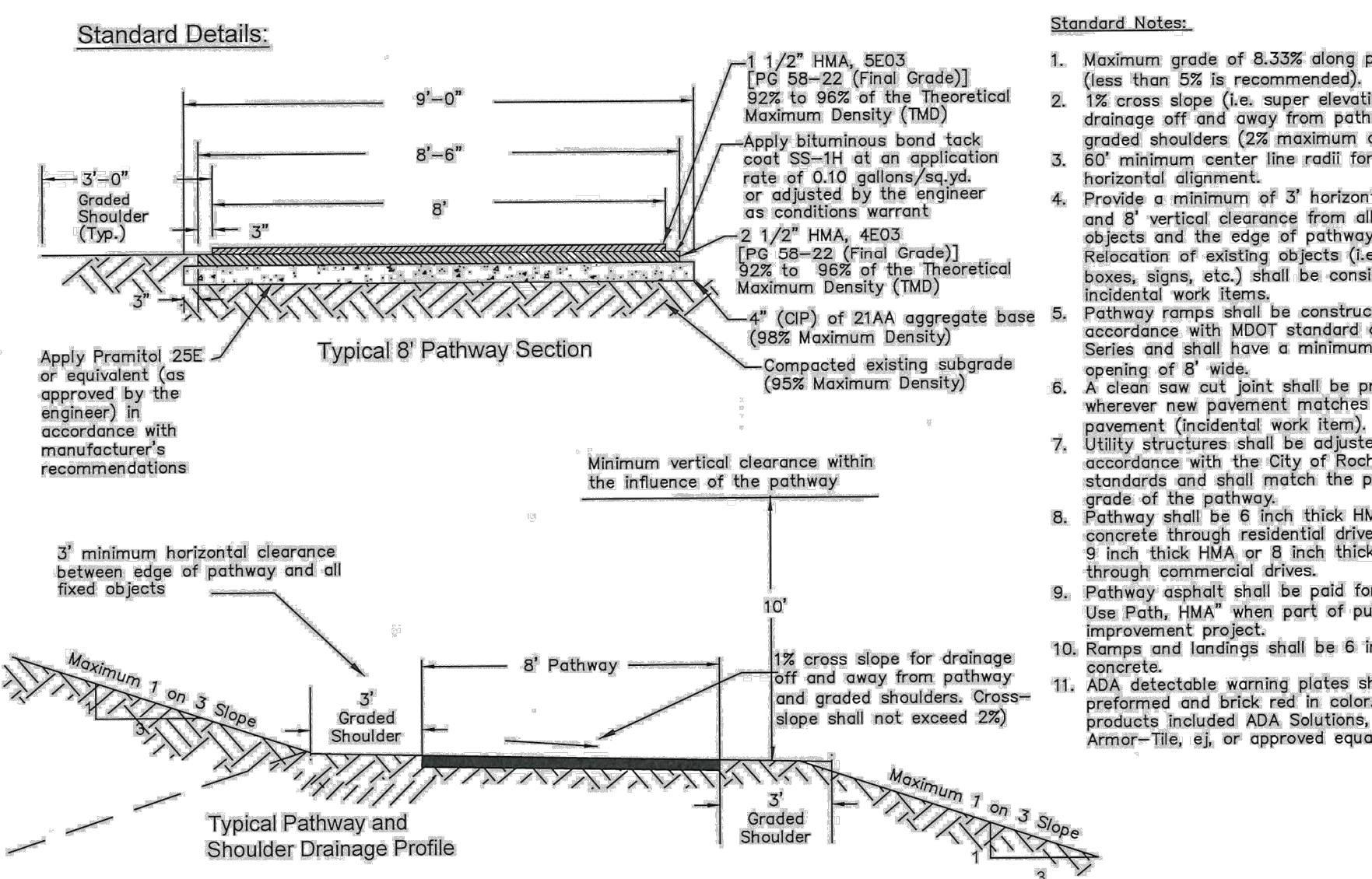
NOTE: MODIFIED/MOUNTABLE CURB AND GUTTER SHALL BE THE SAME DETAIL, BUT THE GUTTER SHALL SLOPE AWAY FROM THE CURB FACE @ 1/4" FT.



M.D.O.T. F-4 CURB & GUTTER DETAIL NO SCALE

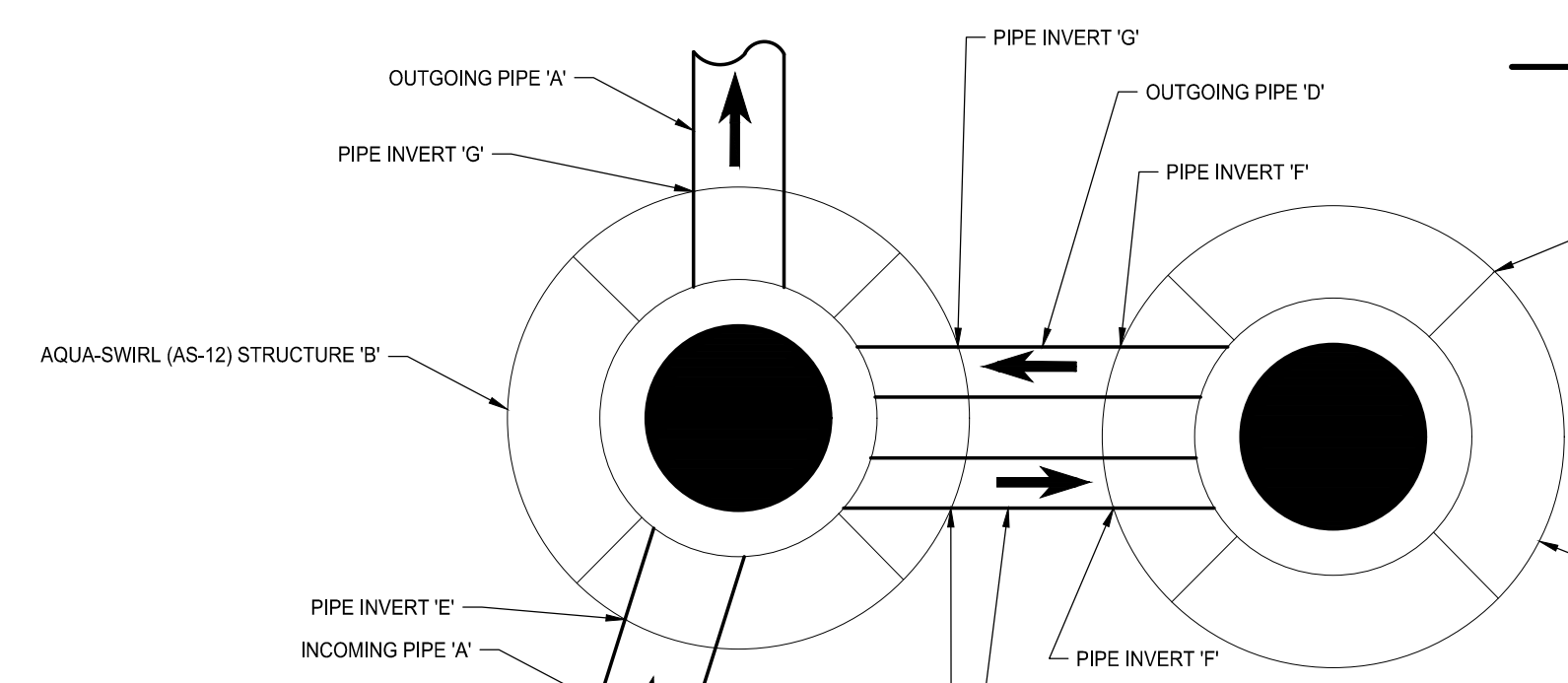
- 1 1/2" REBAR (CONT.)
- 2 EPOXY COATED #4 BAR (CONT.)

NOTE: MODIFIED/MOUNTABLE CURB AND GUTTER SHALL BE THE SAME DETAIL, BUT THE GUTTER SHALL SLOPE AWAY FROM THE CURB FACE @ 1/4" FT.



Standard Notes:

- Maximum grade of 8.33% along pathway (less than 5% is recommended).
- 1% cross slope (i.e. super elevation) for drainage off and away from pathway and graded shoulders (2% maximum cross-slope).
- 60' minimum center line radii for pathway horizontal alignment.
- Provide a minimum of 3' horizontal clearance and 8' vertical clearance from all fixed objects and the edge of pathway surface. Relocation of existing objects (i.e. mail boxes, signs, etc.) shall be considered incidental work items.
- Pathway ramps shall be constructed in accordance with MDOT standard detail R-28 Series and shall have a minimum clear opening of 8' wide.
- A clean saw cut joint shall be provided wherever new pavement matches existing pavement (incidental work item).
- Utility structures shall be adjusted in accordance with the City of Rochester Hills standards and shall match the proposed grade of the pathway.
- Pathway shall be 6 inch thick HMA or concrete through residential drives and 9 inch thick HMA or 8 inch thick concrete through commercial drives.
- Pathway asphalt shall be paid for as "Shared Use Path, HMA" when part of public improvement project.
- Ramps and landings shall be 6 inch thick concrete.
- ADA detectable warning plates shall be preformed and bid as per color. Acceptable products included ADA Solutions, Inc., Armor-Tile, etc. or approved equal.



A	B	C	D	E	F	G	WEIR ELEV.	WEIR HEIGHT	MODEL #
12"	1.3	1.2	8"	681.88	681.85	681.82	682.55	0.67	AS-3
24"	2.2	2.1	12"	679.23	679.21	679.19	680.21	1.00	AS-9
18"	3.3	3.2	10"	684.08	684.05	684.02	684.91	0.83	AS-7

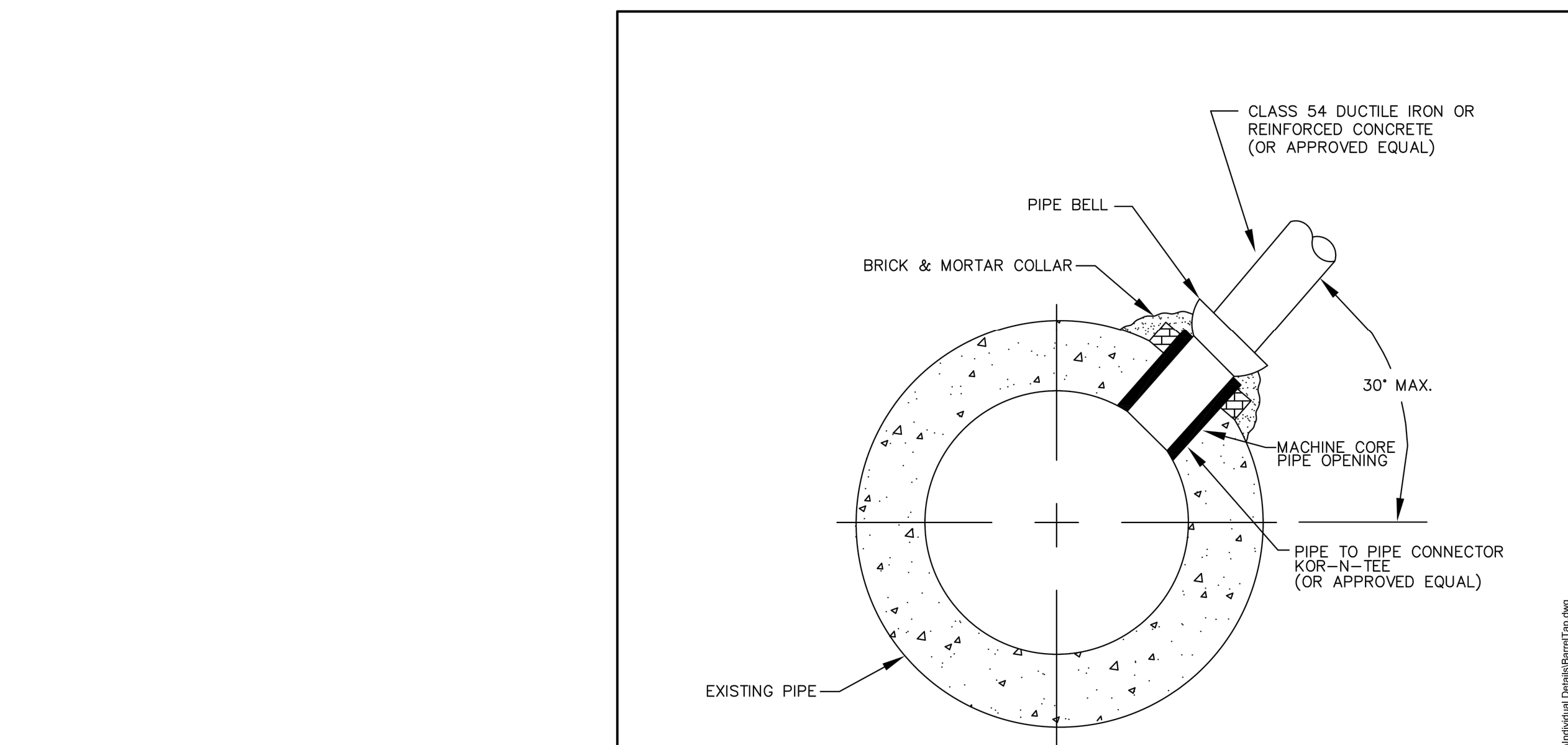
AQUA-SWIRL STRUCTURE	PIPE DIAMETER, 'D' (inches)	FLOW RATE, Q (cfs)	SLOPE (%)
1.2	8"	0.61	0.18
2.1	12"	3.96	0.89
3.2	10"	2.66	1.06

CITY OF ROCHESTER HILLS STANDARD DETAIL FOR:
Hot-Mixed Asphalt Pathway Construction, Extensions and Relocations

Drawn By: S. SHYK PLAN DATE: 8/23/2016 REV: 4/12/2012 2/25/2014 2/25/2016 8/22/2018

Approved By: PAUL SIBIENKO, P.E., PTCE CITY TRANSPORTATION ENGINEERING MANAGER

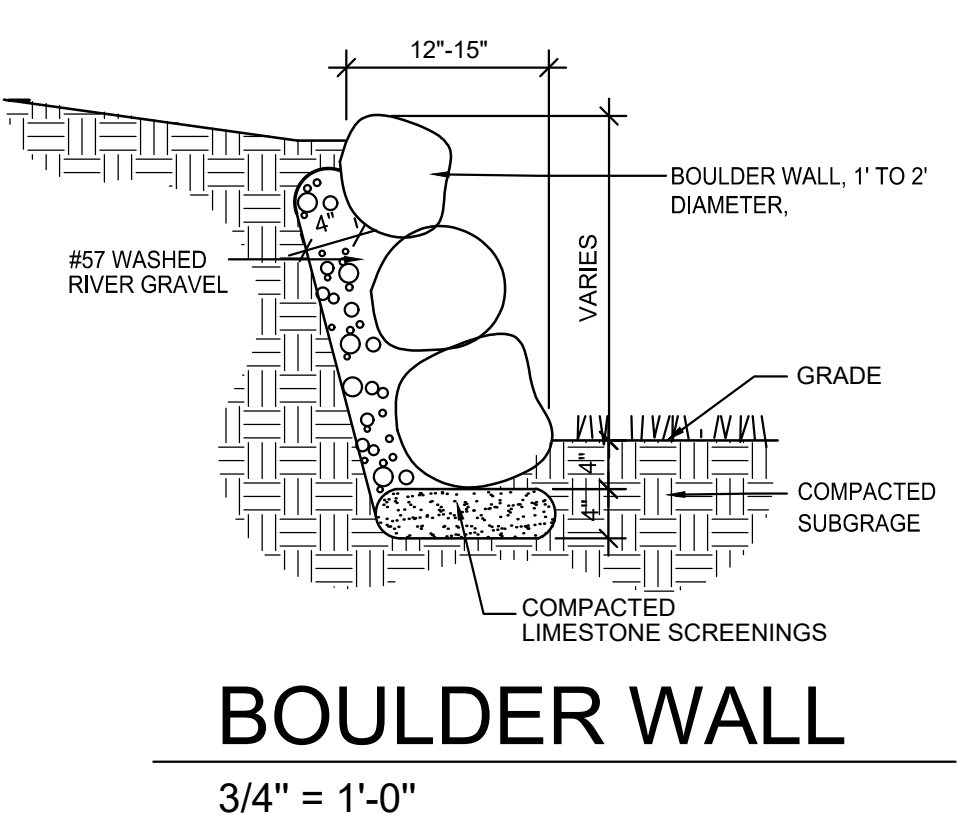
NOT TO SCALE SHEET 1 OF 1



BARREL TAP

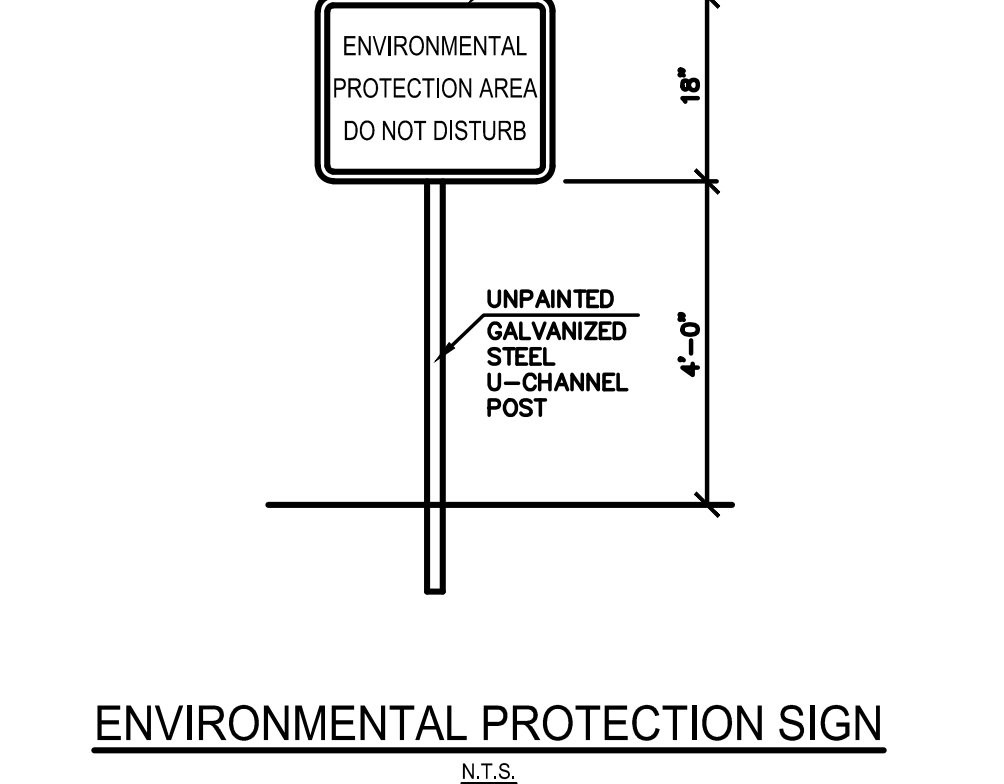
- NOTES:**
- TO BE USED ONLY WITH PRIOR WRC APPROVAL
 - 8" AND LARGER CONNECTIONS.
 - ALL STRAPS TO BE STAINLESS STEEL
 - CONNECTIONS SHALL NOT BE MADE AT THE PIPE JOINT.
 - CONNECTIONS SHALL BE MADE AT OR NEAR THE MIDDLE OF A PIPE SECTION BETWEEN THE PIPE JOINTS.
 - ALL OPENINGS SHALL BE MACHINE CORED. JACK HAMMERING SHALL NOT BE PERMITTED.
- INSTALLATION INSTRUCTIONS**
- CORE A HOLE IN THE MAIN LINE CONSISTENT WITH THE MODEL NUMBER FOR THE PIPE O.D.
 - INSPECT THE INSIDE SURFACE OF THE CORED HOLE. IF THERE IS POROSITY OR WIRE-TO-CEMENT SEPARATION, USE PATCHING OR HYDRAULIC CEMENT TO SMOOTH THE SURFACE.
 - INSERT THE KOR-N-TEE ASSEMBLY INTO THE HOLE AND EXPAND THE WEDGE OR TOGGLE KORBAND.
 - INSERT THE LATERAL PIPE UNTIL IT "BOTTOMS" ON THE POSITIVE STOP IN THE KOR-N-TEE.
 - INSTALL THE LATERAL PIPE CLAMP IN THE MOLDED GROOVE AND TIGHTEN TO 60 INCH POUNDS USING T-HANDLE TORQUE WRENCH, P/N 80090.

Rev.	By:	Rev. Date:	Description:
1			
2			
3			
4			

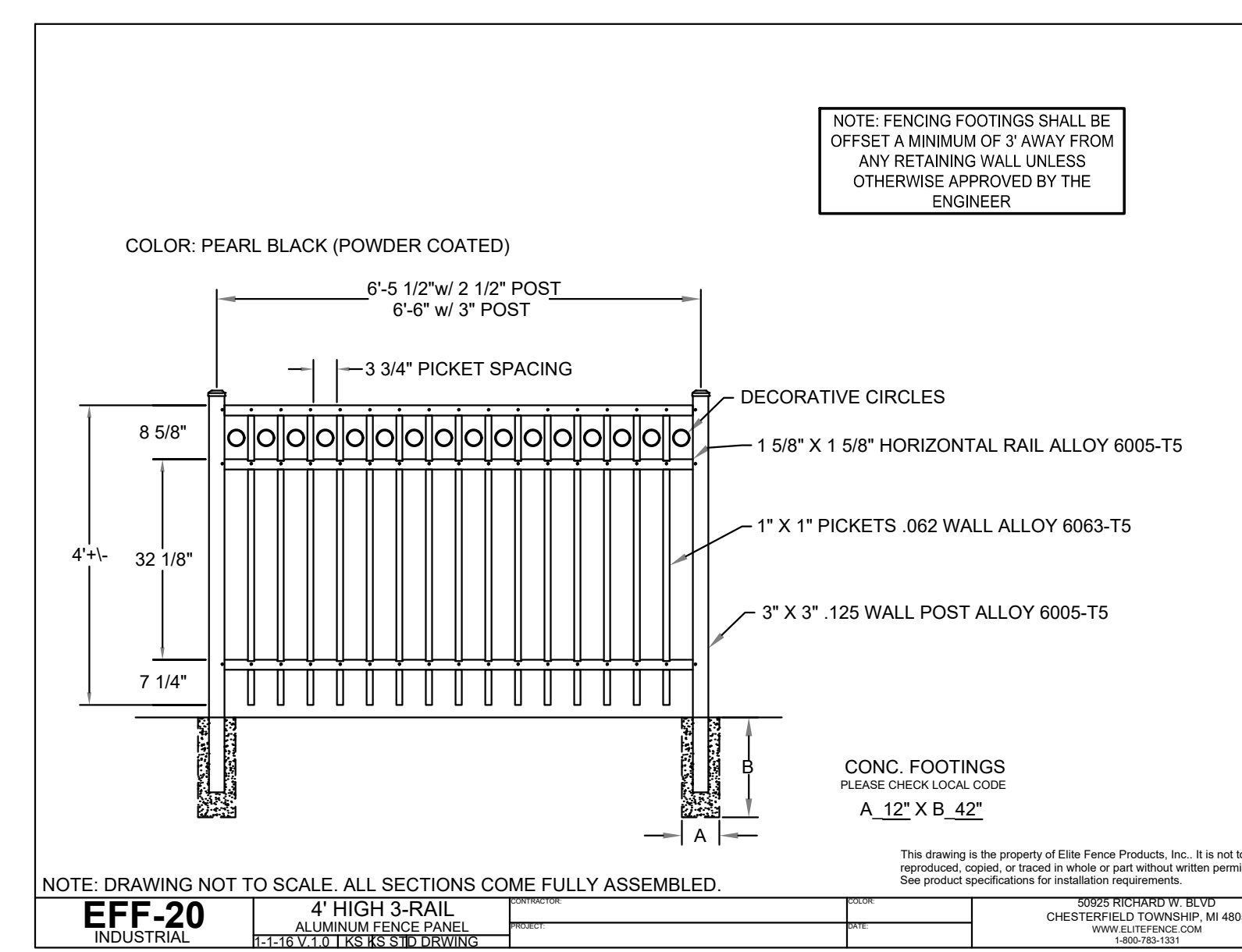


BOULDER WALL

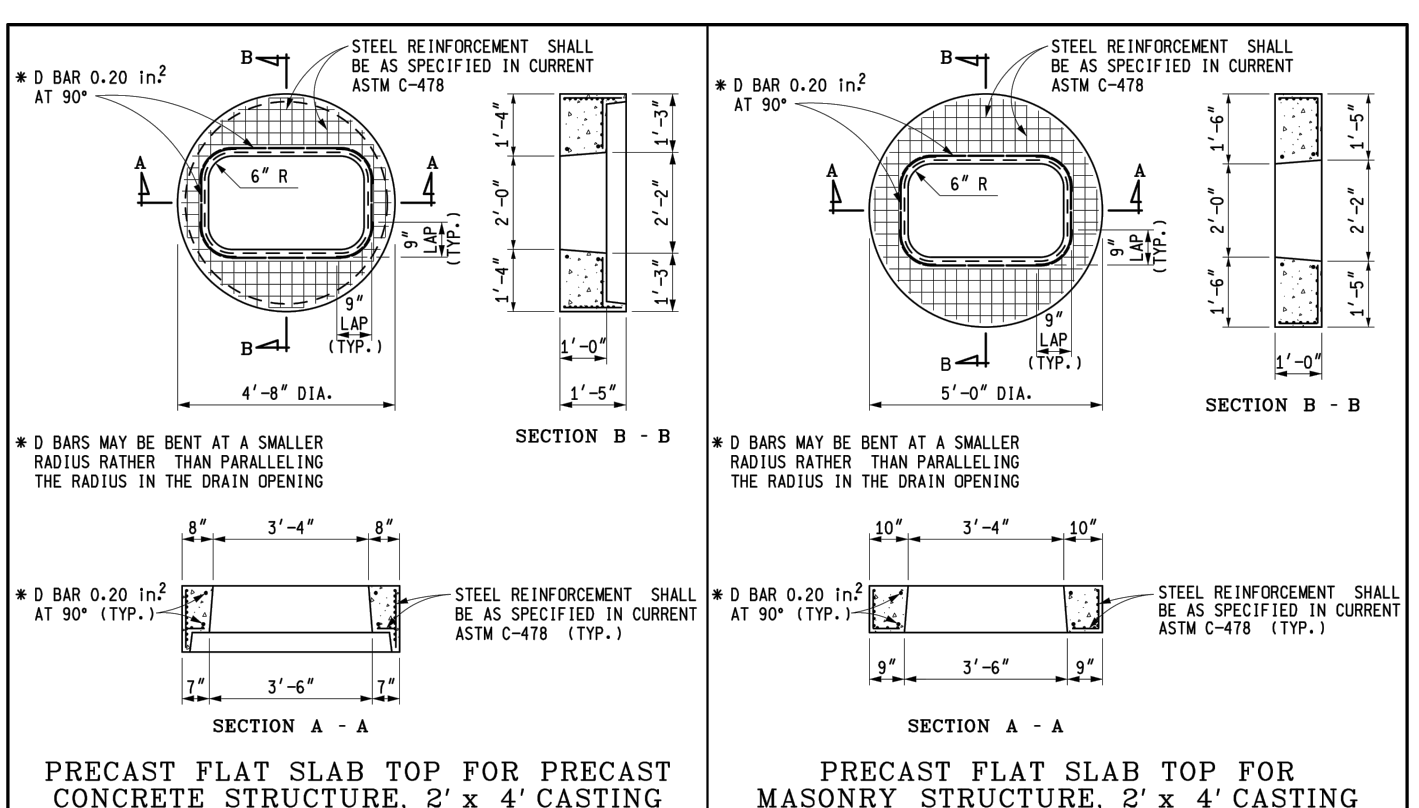
3/4" = 1'-0"



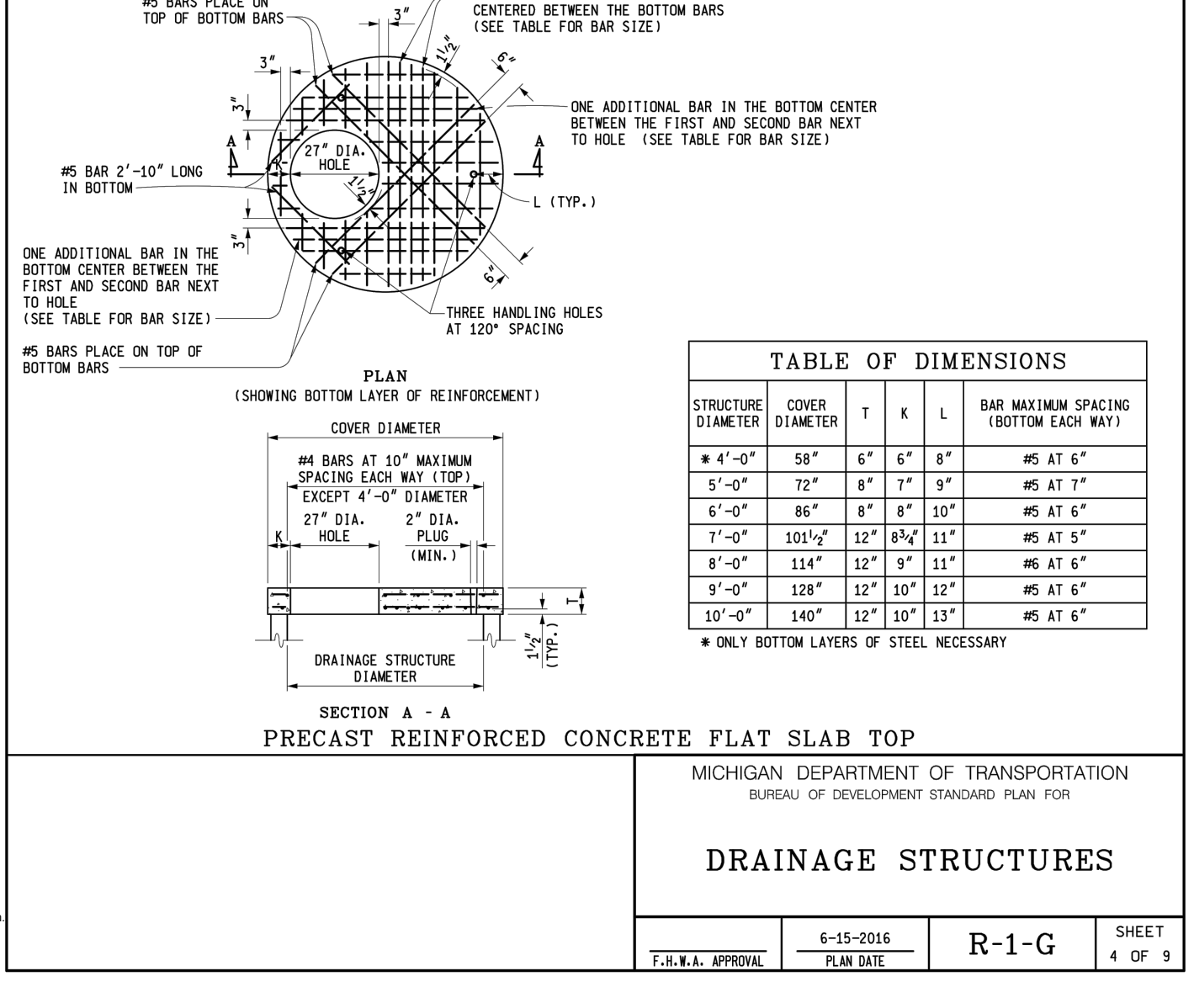
ENVIRONMENTAL PROTECTION SIGN N.T.S.



EFF-20 INDUSTRIAL 4' HIGH 3-RAIL ALUMINUM FENCE PANEL



PRECAST FLAT SLAB TOP FOR PRECAST CONCRETE STRUCTURE, 2' x 4' CASTING



STRUCTURE DIAMETER	COVER	T	X	L	BAR MAXIMUM SPACING (BOTTOM EACH WAY)
4'-0"	58"	6"	6"	8"	#5 AT 6"
5'-0"	72"	8"	7"	9"	#5 AT 7"
6'-0"	86"	8"	8"	10"	#5 AT 7"
7'-0"	100"	12"	8 1/2"	11"	#5 AT 5"
8'-0"	114"	12"	9"	11"	#5 AT 6"
9'-0"	128"	12"	10"	12"	#5 AT 6"
10'-0"	142"	12"	10"	13"	#5 AT 6"

Not For Construction

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Project Manager:	Checked By:
P. FURTAW, PE	P. FURTAW, PE
Designed By:	Drawn By:
I. GRAHAM, PE	I. GRAHAM, PE
Date Issued:	Project Number:
NOVEMBER 9, 2018	12963.00

SITE DETAILS

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR
DRAINAGE STRUCTURES

T.E.K.A. APPROVE: 6-15-2016 PLAN DATE: R-1-G SHEET 4 OF 9

C500