

Great Lakes Taco, LLC Construction Plans

E Walton Boulevard, Pontiac, MI

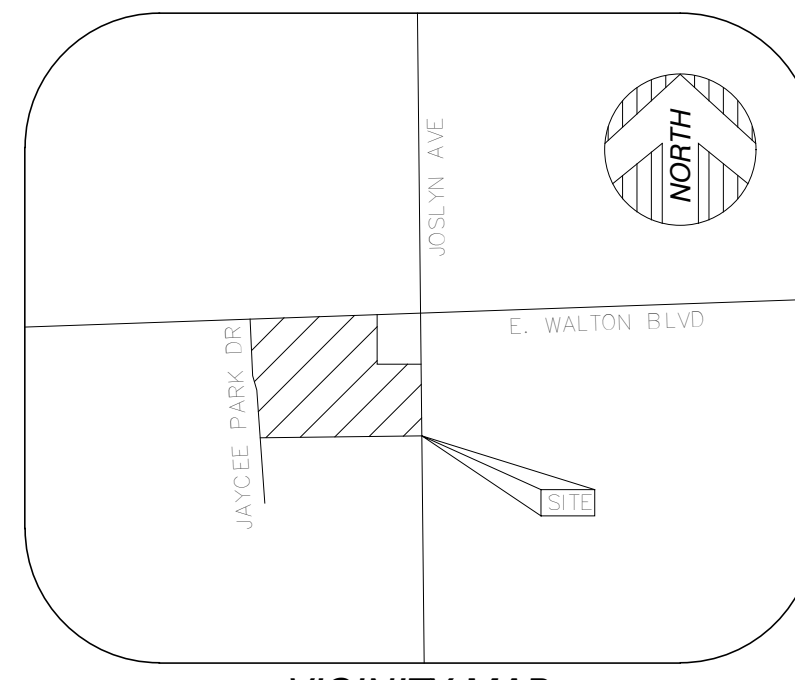
APPLICANT
DORTCH ENTERPRISES, LLC
8467 RETREAT DR.
GRAND BLANC, MI 48439
PHONE: (810)-771-4500

ARCHITECT
L + A ARCHITECTS INC.
441 S. LIVERNOIS ROAD, SUITE 265
ROCHESTER HILLS, MI 48307
PHONE: (248)-524-4700

CIVIL ENGINEER
KEM-TEC & ASSOCIATES
22556 GRATIOT AVENUE
EASTPOINTE, MI 48021
CONTACT: GREG EZZO
PHONE: (810)-712-8849

LEGEND

	LIGHTPOST/LAMP POST
	SANITARY MANHOLE
	FLAGPOLE
	SET X-CUT
	FOUND MONUMENT (AS NOTED)
	GROUND ELEVATION
	ELECTRIC MANHOLE
	ELECTRIC METER
	TRANSFORMER
	UTILITY POLE
	GAS MANHOLE
	GAS METER
	GAS VALVE
	LIGHT POLE WITH STREET LAMP
	PUBLIC LIGHTING MANHOLE
	TELEPHONE MANHOLE
	TRAFFIC SIGNAL
	STORM DRAIN MANHOLE
	FIRE HYDRANT
	FIRE DEPARTMENT CONNECTION
	WATER VALVE
	SINGLE POST SIGN
	DECIDUOUS TREE (AS NOTED)
	CONIFEROUS TREE (AS NOTED)
	CLEANOUT
	SQUARE CATCH BASIN
	SANITARY LINE
	STORM LINE
	WATER LINE
	GAS LINE
	PROPOSED CATCH BASIN
	PROPOSED MANHOLE
	PROPOSED FIRE HYDRANT
	PROPOSED WATER VALVE
	PROPOSED SANITARY LINE
	PROPOSED STORM WATER LINE
	PROPOSED WATER LINE
	PROPOSED SLIT FENCE



VICINITY MAP
(NOT TO SCALE)

DRAWING INDEX

C1.0	COVER SHEET
1	TOPOGRAPHIC SURVEY
C2.0	DEMOLITION PLAN
C3.0	SITE LAYOUT & PAVING PLAN
C4.0	GRADING PLAN
C5.0	UTILITY PLAN
C6.0	PROFILE PLAN
C7.0	SOIL EROSION & SEDIMENTATION CONTROL PLAN
C8.0	SITE DETAILS
C8.1	SITE DETAILS

SHEET 1 OAKLAND COUNTY SOIL EROSION AND SEDIMENTATION CONTROL DETAILS
SHEET 1 OAKLAND COUNTY WRC STORM DRAIN NOTES
SHEET 1 OAKLAND COUNTY WRC SANITARY SEWER DETAILS AND NOTES
SHEET 2 OAKLAND COUNTY WRC SANITARY SEWER DETAILS AND NOTES

PARCEL AREA

PARCEL 1:
422,018± SQUARE FEET = 9.688± ACRES
PARCEL 2:
79,840± SQUARE FEET = 1.832± ACRES

FLOOD NOTE

SUBJECT PARCEL DOES NOT LIE
WITHIN A FLOOD PLAIN

SITE BENCHMARKS

ARROW ON FIRE HYDRANT
ELEVATION = 978.03' (NAVD 88)

PROPERTY DESCRIPTION

LOCATED IN THE CITY OF PONTIAC, COUNTY OF OAKLAND, STATE OF MICHIGAN.

PARCEL 1:
THE SOUTH 740 FEET OF THE NORTH 800 FEET OF THE WEST 740 FEET OF THE EAST 800 FEET OF THE NORTHEAST 1/4 OF THE NORTHWEST 1/4 OF SECTION 16, TOWN 3 NORTH, RANGE 10 EAST, CITY OF PONTIAC, OAKLAND COUNTY, MICHIGAN.

EXCEPT:
PART OF THE NORTHEAST 1/4 OF THE NORTHWEST 1/4 OF SECTION 16, TOWN 3 NORTH, RANGE 10 EAST, CITY OF PONTIAC, OAKLAND COUNTY, MICHIGAN, BEING MORE PARTICULARLY DESCRIBED AS: BEGINNING AT A POINT DISTANT SOUTH 88 DEGREES 37 MINUTES 42 SECONDS WEST 60.00 FEET AND SOUTH 01 DEGREE 22 MINUTES 18 SECONDS EAST 60.49 FEET ALONG THE NORTH-SOUTH 1/4 LINE OF SECTION 16, FROM THE NORTH 1/4 CORNER OF SECTION 16; THENCE SOUTH 01 DEGREE 19 MINUTES 20 SECONDS EAST 225.00 FEET ALONG THE WEST LINE OF JOSLYN ROAD (120.00 FEET WIDE); THENCE SOUTH 88 DEGREES 02 MINUTES 51 SECONDS WEST 180.00 FEET; THENCE NORTH 01 DEGREE 19 MINUTES 20 SECONDS WEST 225.00 FEET TO A POINT ON THE SOUTH LINE OF WALTON BOULEVARD (120.00 FEET WIDE); THENCE NORTH 88 DEGREES 02 MINUTES 51 SECONDS EAST 180.00 FEET ALONG THE SOUTH LINE TO THE POINT OF BEGINNING.

ALSO EXCEPT:
PART OF THE NORTHEAST 1/4 OF THE NORTHWEST 1/4 OF SECTION 16, TOWN 3 NORTH, RANGE 10 EAST, CITY OF PONTIAC, OAKLAND COUNTY, MICHIGAN, BEING MORE PARTICULARLY DESCRIBED AS: COMMENCING AT A POINT ON THE SOUTH LINE OF WALTON BOULEVARD (120.00 FEET WIDE), DISTANT SOUTH 01 DEGREE 19 MINUTES 20 SECONDS EAST 60.00 FEET ALONG THE NORTH AND SOUTH 1/4 LINE OF SAID SECTION 16 AND SOUTH 88 DEGREES 02 MINUTES 51 SECONDS WEST 60.00 FEET FROM THE NORTH 1/4 CORNER OF SAID SECTION 16; THENCE SOUTH 01 DEGREE 19 MINUTES 20 SECONDS EAST 625.00 FEET ALONG THE WEST LINE OF JOSLYN ROAD (120.00 FEET WIDE) TO THE POINT OF BEGINNING; THENCE CONTINUING SOUTH 01 DEGREE 19 MINUTES 20 SECONDS EAST 115.00 FEET ALONG THE WEST LINE OF JOSLYN ROAD; THENCE SOUTH 88 DEGREES 02 MINUTES 51 SECONDS WEST 740.00 FEET; THENCE NORTH 01 DEGREE 19 MINUTES 20 SECONDS WEST 115.00 FEET; THENCE NORTH 88 DEGREES 02 MINUTES 51 SECONDS EAST 740.00 FEET TO THE POINT OF BEGINNING.

PARCEL 2:
PART OF THE NORTHEAST 1/4 OF THE NORTHWEST 1/4 OF SECTION 16, TOWN 3 NORTH, RANGE 10 EAST, CITY OF PONTIAC, OAKLAND COUNTY, MICHIGAN, BEING MORE PARTICULARLY DESCRIBED AS: COMMENCING AT A POINT ON THE SOUTH LINE OF WALTON BOULEVARD (120.00 FEET WIDE), DISTANT SOUTH 01 DEGREE 19 MINUTES 20 SECONDS EAST 60.00 FEET ALONG THE NORTH AND SOUTH 1/4 LINE OF SAID SECTION 16 AND SOUTH 88 DEGREES 02 MINUTES 51 SECONDS WEST 60.00 FEET FROM THE NORTH 1/4 CORNER OF SAID SECTION 16; THENCE SOUTH 88 DEGREES 02 MINUTES 51 SECONDS WEST 740.00 FEET ALONG THE SOUTH LINE OF WALTON BOULEVARD (120.00 FEET WIDE) TO THE POINT OF BEGINNING; THENCE CONTINUING SOUTH 01 DEGREE 19 MINUTES 20 SECONDS EAST 425.00 FEET; THENCE SOUTH 88 DEGREES 02 MINUTES 51 SECONDS WEST 100.61 FEET; THENCE NORTH 03 DEGREES 20 MINUTES 55 SECONDS WEST 313.75 FEET; THENCE NORTH 41 DEGREES 44 MINUTES 34 SECONDS WEST 58.13 FEET; THENCE NORTH 02 DEGREES 19 MINUTES 59 SECONDS WEST 268.19 FEET; THENCE NORTH 88 DEGREES 02 MINUTES 51 SECONDS EAST 152.83 FEET TO THE POINT OF BEGINNING.

SURVEYED PARCEL:
TO BE DETERMINED.



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COVER SHEET

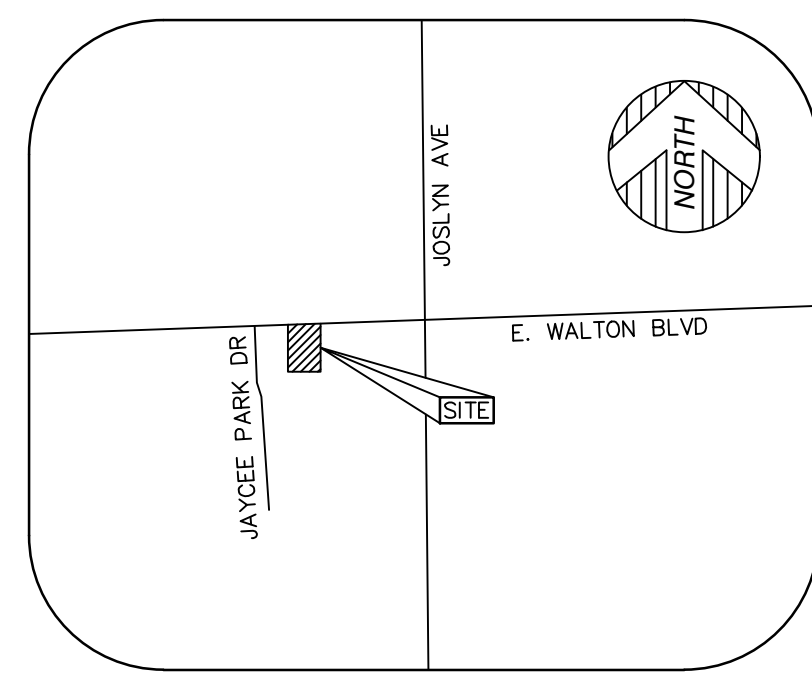
PREPARED FOR: GREAT LAKES TACO, LLC.
E WALTON BLVD., PONTIAC, MI 48340

NO.	DATE	BY	REVISION	DESCRIPTION
1	09/20/2022	GAE	DM	ENGINEERING SUBMITTAL
2	04/14/2022	DM	DM	ENGINEERING SUBMITTAL
3	03/22/2022	DM	DM	ENGINEERING SUBMITTAL

DATE:	09/20/2022
PROJECT NO.:	22008
SCALE:	
DATE:	SEPT EMBREZ 28, 2022
PROJECT NO.:	
SCALE:	

C1.0





VICINITY MAP
(NOT TO SCALE)

PARCEL AREA
32,494± SQUARE FEET = 0.746± ACRES

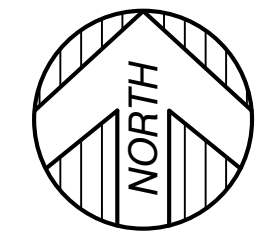
BASIS OF BEARING
SOUTH 87°29'43" WEST, BEING THE NORTH LINE OF SECTION 16, PER PREVIOUS SURVEY BY ATWELL DATED 10/04/21.

BENCHMARK
ARROW ON FIRE HYDRANT.
ELEVATION = 978.03' (NAVD 88)

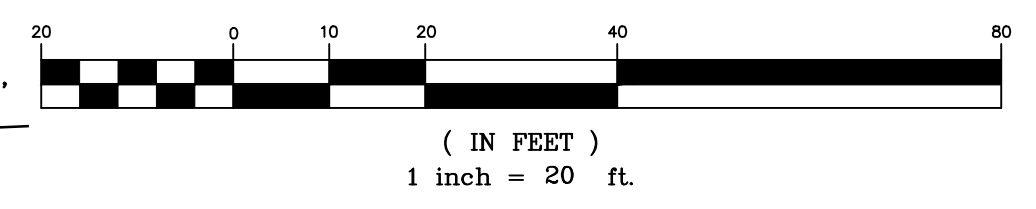
SURVEYOR'S NOTE
THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPREHEND ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES OTHER THAN THE STRUCTURE INVENTORY SHOWN HEREON.

LEGEND

●	FOUND MONUMENT (AS NOTED)
○	FOUND SECTION CORNER (AS NOTED)
(R&M)	RECORD AND MEASURED DIMENSION
(R)	RECORD DIMENSION
(M)	MEASURED DIMENSION
0.00	GROUND ELEVATION
⊙	LIGHT POLE WITH STREET LAMP
⊙	TELEPHONE MANHOLE
⊙	SANITARY MANHOLE
⊙	STORM DRAIN MANHOLE
⊙	ROUND CATCH BASIN
⊙	SQUARE CATCH BASIN
⊙	FIRE HYDRANT
⊙	SINGLE POST SIGN
⊙	DOUBLE POST SIGN
⊙	DECIDUOUS TREE (AS NOTED)
---	PARCEL BOUNDARY LINE
---	SECTION LINE
---	EASEMENT (AS NOTED)
---	CONCRETE CURB
---	PARKING
---	EDGE OF CONCRETE (CONC.)
---	EDGE OF ASPHALT (ASPH.)
---	FENCE (AS NOTED)
---	ELECTRIC LINE
---	UNDERGROUND CABLE
---	GAS LINE
---	SANITARY LINE
---	STORM LINE
---	WATER LINE
---	MINOR CONTOUR LINE
---	MAJOR CONTOUR LINE
---	ASPHALT
---	CONCRETE



GRAPHIC SCALE



PROPERTY DESCRIPTION

LOCATED IN THE CITY OF PONTIAC, COUNTY OF OAKLAND, STATE OF MICHIGAN, PARCEL B:
LAND LOCATED IN THE NORTHWEST 1/4 OF SECTION 16, TOWN 3 NORTH, RANGE 10 EAST, CITY OF PONTIAC, OAKLAND COUNTY, MICHIGAN; COMMENCING AT THE NORTH 1/4 CORNER OF SECTION 16, TOWN 3 NORTH, RANGE 10 EAST, CITY OF PONTIAC, OAKLAND COUNTY, MICHIGAN, SAID CORNER BEING WEST 1.8 FEET FROM A PROPERTY CONTROLLING CORNER (PRIOR TO 1998 REMONUMENTATION PER LCRC RECORDED IN LIBER 19629, PAGE 332, OAKLAND COUNTY RECORDS); THENCE SOUTH 87 DEGREES 28 MINUTES 49 SECONDS WEST 675.88 FEET ALONG THE NORTH LINE OF SAID SECTION 16, LYING IN WALTON BOULEVARD (120 FEET WIDE); THENCE SOUTH 02 DEGREES 28 MINUTES 44 SECONDS EAST 59.07 FEET FOR A PLACE OF BEGINNING; THENCE NORTH 87 DEGREES 31 MINUTES 16 SECONDS EAST 141.00 FEET ALONG THE SOUTH RIGHT OF WAY LINE OF SAID WALTON BOULEVARD; THENCE SOUTH 02 DEGREES 28 MINUTES 24 SECONDS EAST 229.92 FEET; THENCE SOUTH 87 DEGREES 05 MINUTES 01 SECONDS WEST 141.00 FEET; THENCE NORTH 02 DEGREES 28 MINUTES 24 SECONDS WEST 231.00 FEET TO THE PLACE OF BEGINNING.
TOGETHER WITH AN EASEMENT FOR ACCESS AS RECITED IN EASEMENT AGREEMENT WITH COVENANTS AND RESTRICTIONS AS RECORDED IN LIBER 57715, PAGE 72. (AS SHOWN)

TITLE REPORT NOTE

ONLY THOSE EXCEPTIONS CONTAINED WITHIN THE TRANSACTION TITLE AGENCY OF MI MASON BURGESS COMMITMENT No. 366088FLTS REVISION NO. 3, DATED JUNE 08, 2022, AND LISTED BELOW WERE CONSIDERED FOR THIS SURVEY. NO OTHER RECORDS RESEARCH WAS PERFORMED BY THE CERTIFYING SURVEYOR.
13. RECIPROCAL SHOPPING CENTER EASEMENT AGREEMENT RECORDED IN LIBER 44962, PAGE 219. (BLANKET EASEMENT)
16. TERMS, CONDITIONS AND PROVISIONS OF A CERTAIN EASEMENT AGREEMENT RECORDED IN LIBER 57715, PAGE 72. (AS SHOWN) (SEE DOCUMENT FOR TERMS AND CONDITIONS)
18. POLE LINE PERMIT IN FAVOR OF THE DETROIT EDISON COMPANY RECORDED IN LIBER 61 OF MISC. RECORDS, PAGE 207. (EASEMENT DOES NOT CROSS SURVEYED PORTION, THEREFOR EASEMENT IS NOT SHOWN)
19. DETROIT EDISON UNDERGROUND EASEMENT (RIGHT OF WAY) IN FAVOR OF THE DETROIT EDISON COMPANY RECORDED IN LIBER 20269, PAGE 872. (EASEMENT DOES NOT CROSS SURVEYED PORTION, THEREFOR EASEMENT IS NOT SHOWN)

SURVEYOR'S CERTIFICATION

TO GREAT LAKES TACO LLC, A MICHIGAN LIMITED LIABILITY COMPANY; DORTCH ENTERPRISES; TRANSACTION TITLE AGENCY OF MI MASON BURGESS; AND OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY.
THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2021 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 2, 4, 7A, 8, AND 9 OF TABLE A, THEREOF. THE FIELD WORK WAS COMPLETED ON 11/22/21.
DATE OF PLAT OR MAP: 11/23/21
ANTHONY T. SYCKO, JR., P.S.
PROFESSIONAL SURVEYOR
MICHIGAN LICENSE NO. 47976
22556 GRATIOT AVE., EASTPOINTE, MI 48021
TSycko@kemttec-survey.com



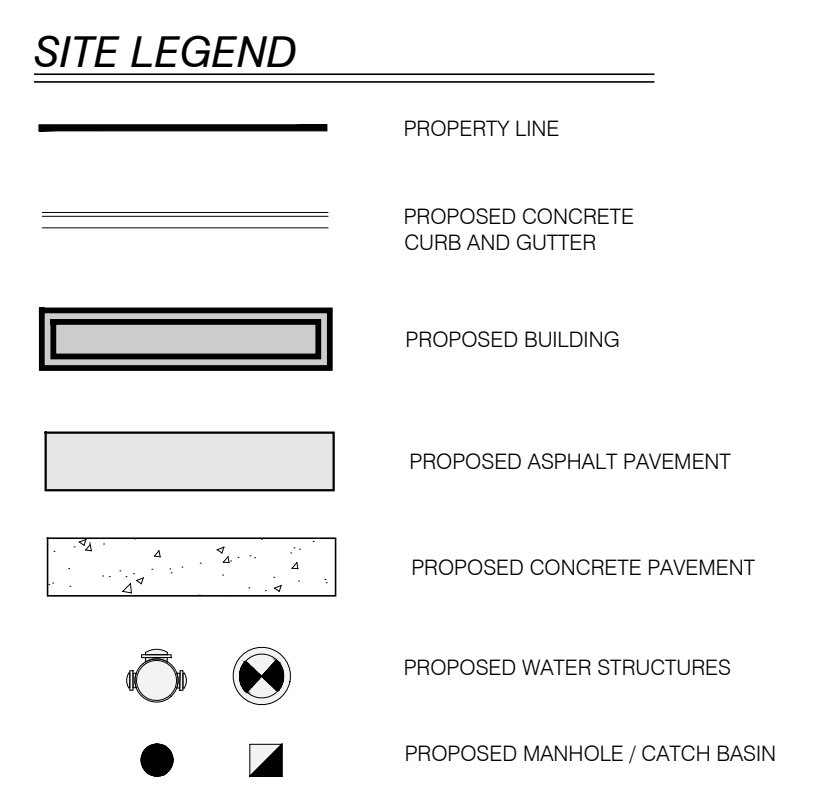
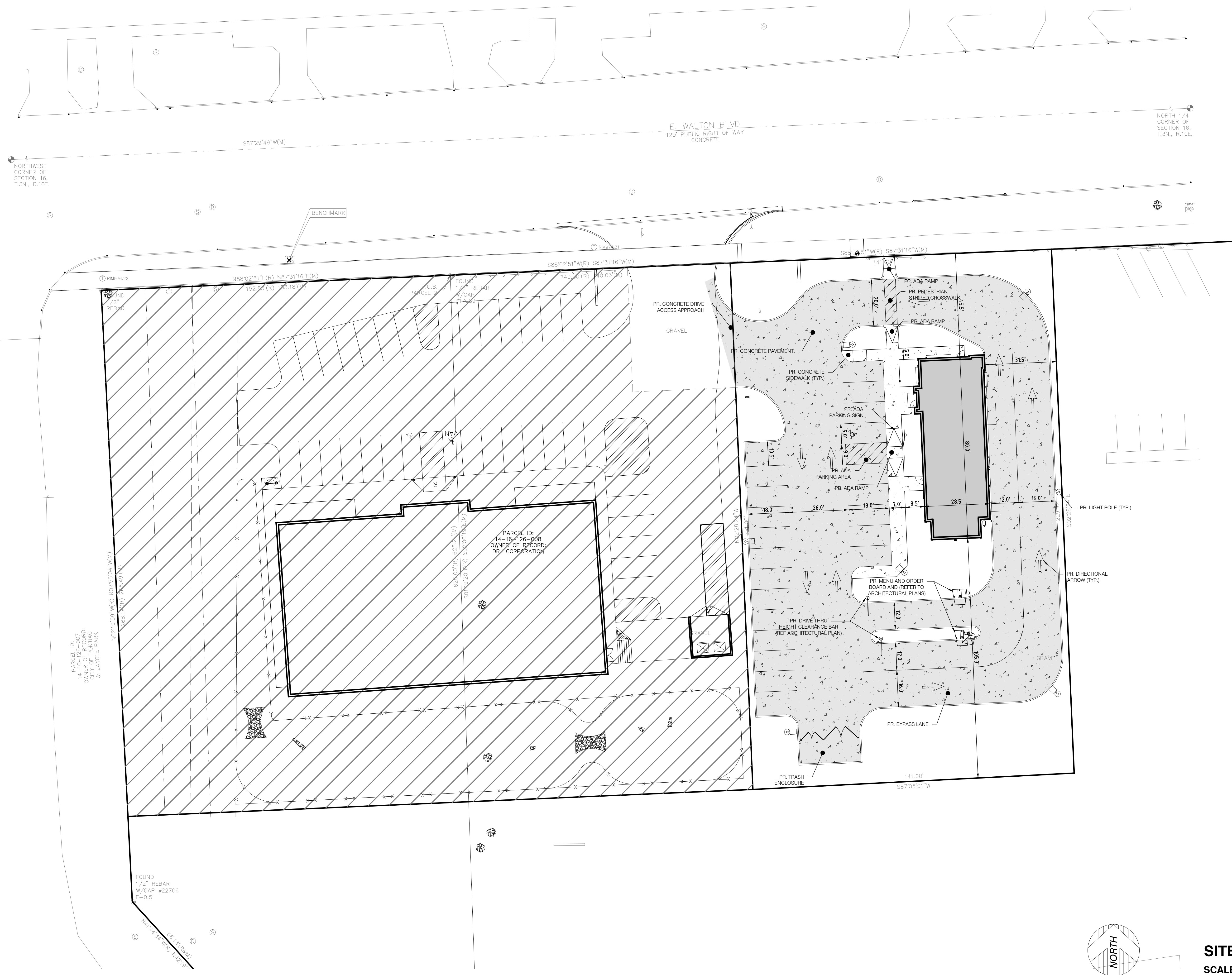
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(734) 954-0888
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ALTA / NSPS LAND TITLE SURVEY
PREPARED FOR: DORTCH ENTERPRISES
500 E. WALTON BLVD., PONTIAC, MICHIGAN,
PART OF SECTION 16,
TOWN 3 NORTH, RANGE 10 EAST

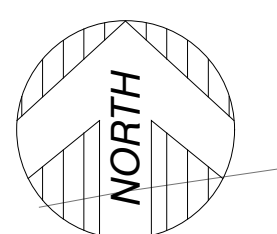
NO.	DATE	BY	REVISION	DESCRIPTION
6	9/13/22	JDM		ADDED UTILITY EASEMENT
5	8/05/22	NPH		PER UPDATED TITLE WORK
4	4/17/22	JDM		PER UPDATED TITLE WORK
3	4/8/22	JDM		DESCRIBED SURVEYED PARCEL
2	3/29/22	JDM		ADDED SURVEYED PARCEL
1	3/11/22	JDM		ADDED ACCESS EASEMENT

SCALE: 1" = 20'

1
1 OF 1 SHEETS



- ### SITE NOTES
1. ALL LIGHTING SHALL BE SHIELDED AND DIRECTED DOWNWARD AND AWAY FROM ADJACENT PROPERTIES. LIGHTING SHALL MEET REQUIREMENTS OF THE LOCAL ZONING ORDINANCE. SEE LIGHTING PLAN FOR ADDITIONAL INFORMATION.
 2. GROUND MOUNTED TRANSFORMERS AND ROOF MOUNTED MECHANICAL EQUIPMENT SHALL BE SCREENED AS REQUIRED IN THE LOCAL ZONING ORDINANCE.
 3. ALL SIGNS TO MEET REQUIREMENTS OF CITY CODE OF ORDINANCES AND BE APPROVED BY BUILDING DEPARTMENT
 4. PARKING SPACES SHALL BE STRIPPED PER LOCAL ZONING ORDINANCE
 5. RESTORATION OF ANY EXISTING HARD SURFACE AREA, OF ANY TYPE, REQUIRED AS A RESULT OF REMOVAL OF EXISTING SURFACING BY CITY OF WARREN FORCES OR AGENTS DURING THE COURSE OF MAINTENANCE OF WATER MAIN OR SANITARY SEWER LOCATED UNDER PAVEMENT, IS THE RESPONSIBILITY OF THE OWNER OF THIS SITE AND WILL NOT BE PERFORMED BY, NOR PAID FOR BY CITY OF THE CITY OF PONTIAC.
 6. THE SITE IS NOT ADJACENT TO ANY RESIDENTIALLY ZONED PROPERTY.

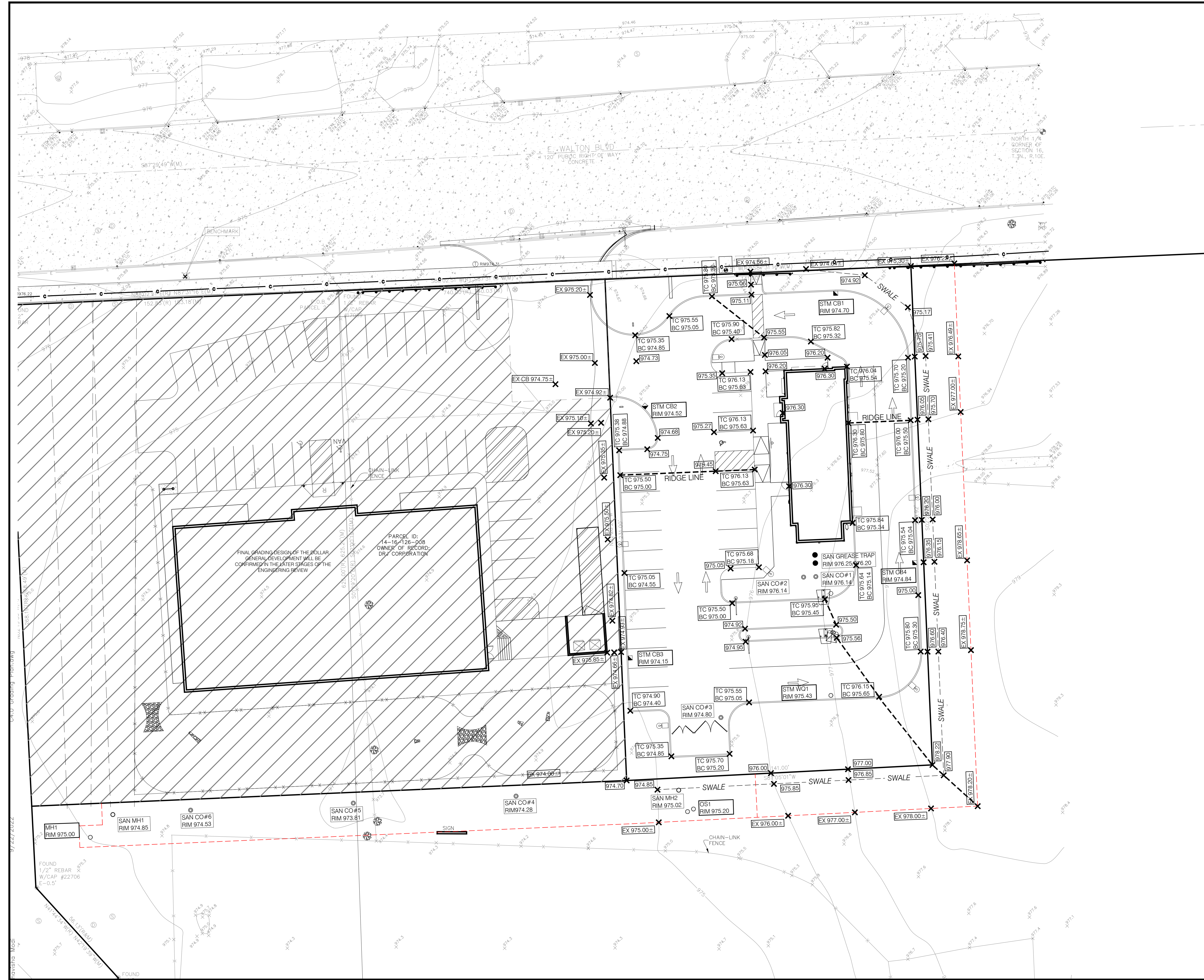


SITE LAYOUT AND PAVING PLAN

SCALE: 1" = 20'

NO.	REVISION	DATE	BY	DESCRIPTION
1		03/23/2022	DM	ENGINEERING SUBMITTAL
2		04/11/2022	DM	ENGINEERING SUBMITTAL
3		07/13/2022	GAE	SPA RE SUBMITTAL
4		07/30/2022	GAE	ENGINEERING SUBMITTAL

DATE:	09/20/2022
SCALE:	1" = 20'
PROJECT NO.:	22008
DATE:	SEPTEMBER 20, 2022
CHECKED BY:	GAE
DATE:	09/20/2022
PROJECT NO.:	22008
DATE:	09/20/2022



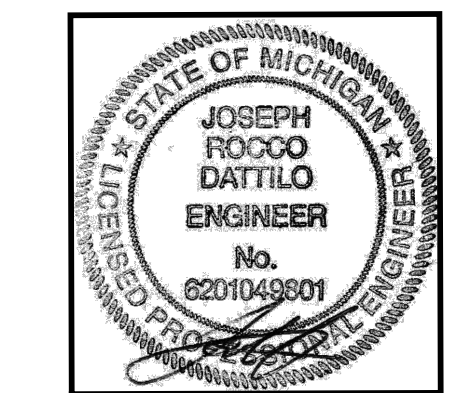
FINAL GRADING DESIGN OF THE DOLLAR GENERAL DEVELOPMENT WILL BE CONFIRMED IN THE LATER STAGES OF THE ENGINEERING REVIEW.

PARCEL ID: 14-16-126-008
OWNER OF RECORD: DRY CORPORATION

GRADING LEGEND

x 900.00	EXISTING GRADES
x 100.00	PROPOSED GRADES
---	PROPERTY LINE
---	PROPOSED RIDGE LINE

- GRADING NOTES**
1. ALL WORKMANSHIP AND MATERIAL SHALL BE IN ACCORDANCE WITH THE CURRENT STANDARDS AND SPECIFICATIONS OF THE CITY OF PONTIAC AND OAKLAND COUNTY.
 2. IN AREAS WHERE NEW PAVEMENTS ARE BEING CONSTRUCTED, THE TOPSOIL AND SOIL CONTAINING ORGANIC MATTER SHALL BE REMOVED PRIOR TO PAVEMENT CONSTRUCTION.
 3. ON-SITE SOIL CAN BE USED IF THE SPECIFIED COMPACTION REQUIREMENTS CAN BE ACHIEVED. IF ON-SITE SOIL IS USED, IT SHOULD BE CLEAN AND FREE OF FROZEN SOIL, ORGANICS, OR OTHER DELETERIOUS MATERIALS.
 4. THE FINAL SUBGRADE/EXISTING AGGREGATE BASE SHOULD BE THOROUGHLY PROOF ROLLED USING A FULLY LOADED TANDEM AXLE TRUCK OR FRONT END LOADER UNDER THE OBSERVATION OF A GEOTECHNICAL/PAVEMENT ENGINEER. LOOSE OR WELDING AREAS THAT CANNOT BE MECHANICALLY STABILIZED SHOULD BE REINFORCED USING GEORIGS OR REMOVED AND REPLACED WITH ENGINEERED FILL OR AS DICTATED BY FIELD CONDITIONS.
 5. SUBGRADE UNDERCUTTING, INCLUDING BACKFILLING SHALL BE PERFORMED TO REPLACE MATERIALS SUSCEPTIBLE TO FROST HEAVING AND UNSTABLE SOIL CONDITIONS. ANY EXCAVATIONS THAT MAY BE REQUIRED BELOW THE TOPSOIL IN FILL SECTIONS OR BELOW SUBGRADE IN CUT SECTIONS, WILL BE CLASSIFIED AS SUBGRADE UNDERCUTTING.
 6. SUBGRADE UNDERCUTTING, INCLUDING BACKFILLING SHALL BE PERFORMED WHERE NECESSARY AND THE EXCAVATED MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR. ANY SUBGRADE UNDERCUTTING SHALL BE BACKFILLED WITH SAND OR OTHER SIMILAR APPROVED MATERIAL. BACKFILL SHALL BE COMPACTED TO 95% OF THE MAXIMUM UNIT WEIGHT (PER ASTM D-1557) UNLESS OTHERWISE SPECIFIED.
 7. BACKFILL UNDER PAVED AREAS SHALL BE AS SPECIFIED ON DETAILS.
 8. ANY SUB-GRADE WATERING REQUIRED TO ACHIEVE REQUIRED DENSITY SHALL BE CONSIDERED INCIDENTAL TO THE JOB.
 9. FINAL PAVEMENT ELEVATIONS SHOULD BE SO DESIGNED TO PROVIDE POSITIVE SURFACE DRAINAGE. A MINIMUM SURFACE SLOPE OF 1.0 PERCENT IS RECOMMENDED.
 10. CONSTRUCTION TRAFFIC SHOULD BE MINIMIZED ON THE NEW PAVEMENT. IF CONSTRUCTION TRAFFIC IS ANTICIPATED ON THE PAVEMENT STRUCTURE, THE INITIAL LIFT THICKNESS COULD BE INCREASED AND PLACEMENT OF THE FINAL LIFT COULD BE DELAYED UNTIL THE MAJORITY OF THE CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED. THIS ACTION WILL ALLOW REPAIR OF LOCALIZED FAILURE, IF ANY DOES OCCUR, AS WELL AS REDUCE LOAD DAMAGE ON THE PAVEMENT SYSTEM.
 11. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF PONTIAC AND SPECIFICATIONS.
 12. SPOT ELEVATIONS INDICATE TOP OF PAVEMENT UNLESS OTHERWISE INDICATED:
TC = TOP OF CURB
BC = BOTTOM OF CURB
 13. REFER TO LANDSCAPE PLAN FOR LANDSCAPE TREATMENT AND PLACEMENT.
 14. MATCH EXISTING GRADES ALONG NORTH, EAST AND WEST PROPERTY LINES.



GRADING PLAN
SCALE: 1" = 20'

GRADING PLAN

PREPARED FOR: GREAT LAKES TACO, LLC.
E WALTON BLVD., PONTIAC, MI 48340

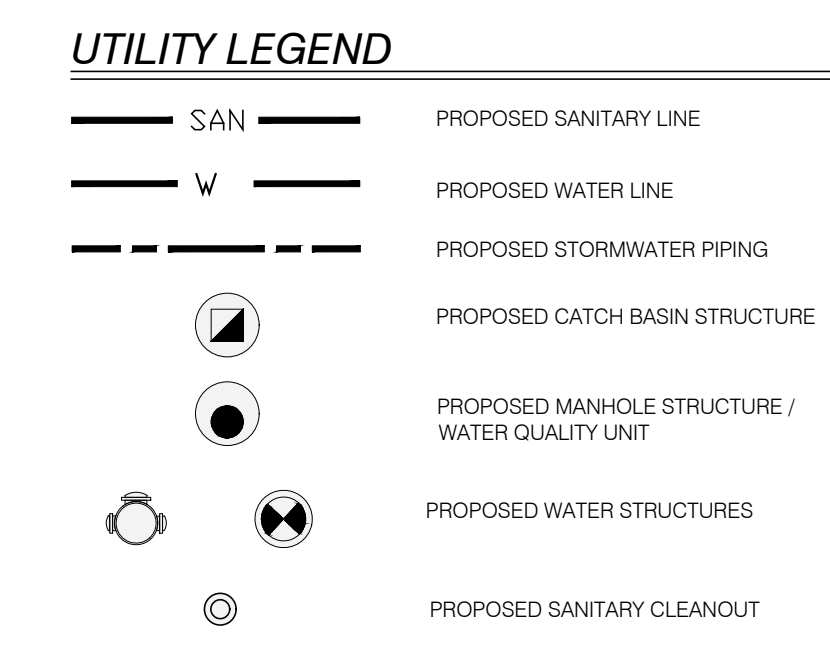
NO.	DATE	BY	DESCRIPTION
1	09/20/2022	GAE	ENGINEERING SUBMITTAL
2	09/22/2022	GAE	SPA RESUBMITTAL
3	09/23/2022	DM	ENGINEERING SUBMITTAL
4	09/23/2022	DM	ENGINEERING SUBMITTAL

NO.	DATE	BY	DESCRIPTION
1	09/20/2022	GAE	ENGINEERING SUBMITTAL
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3	09/23/2022	DM	ENGINEERING SUBMITTAL
4	09/23/2022	DM	ENGINEERING SUBMITTAL

SCALE: 1" = 20'

C4.0

STORM SEWER CALCULATIONS																		
AREA NO.	FROM MH/CB	TO MH/CB	Area A	AREA Grass (C+0.20)	AREA Paved (C+0.00)	AVG. COEFF. C	A x C	Area TOTAL	COEFF. Wt Co	At x Cw	TIME To min	INT I	n	FLOW Q ₁₅	PIPE CAP. Q ₁₅	PIPE DIA. IN	PIPE SLOPE %	
DA1	BLD5	CB1	0.05	0.00	0.00	0.80	0.04	0.05	0.05	0.05	30.00	3.36	0.0130	0.12	0.75	34	6	1.00
DA2	CB1	CB2	0.08	0.00	0.00	0.81	0.06	0.13	0.08	0.11	20.20	3.34	0.0130	0.35	2.02	102	12	0.32
DA3	CB2	CB3	0.14	0.00	0.00	0.81	0.11	0.25	0.16	0.21	20.20	3.34	0.0130	0.66	2.02	110	12	0.32
DA4	CB3	WO1	0.32	0.00	0.00	0.81	0.26	0.59	0.37	0.49	30.00	3.36	0.0130	1.33	2.02	94	12	0.32
DA5	WO1	INLET	0.12	0.00	0.00	0.73	0.08	0.12	0.08	0.10	30.00	3.36	0.0130	0.28	2.02	72	12	0.32
WO1	INLET					0.71	0.72	0.51	0.22	0.29	3.07	0.0130	1.57	2.02	7	12	0.32	
			7885	22938														



- ### UTILITY NOTES
- ALL CONSTRUCTION PROCEDURES AND MATERIALS SHALL CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS OF THE CITY OF PONTIAC A PRE-CONSTRUCTION MEETING SHALL BE SCHEDULED BY THE CITY OF PONTIAC AND HELD PRIOR TO THE START OF CONSTRUCTION.
 - CONTRACTOR MUST CONTACT MISS DIG (811) AT LEAST THREE WORKING DAYS PRIOR TO THE START OF CONSTRUCTION FOR UNDERGROUND UTILITY LOCATIONS. ALL UTILITIES SHALL BE STAKED BEFORE CONSTRUCTION BEGINS.
 - ALL WATER MAIN EASEMENTS SHALL BE PROVIDED PRIOR TO CONSTRUCTION AND ACCEPTANCE OF THE WATER DISTRIBUTION SYSTEM.
 - WATER MAINS SHALL BE CONSTRUCTED WITH A MINIMUM COVER OF 6 FEET BELOW FINISHED GRADES, INCLUDING OPEN DRAINAGE COURSES.
 - ALL TRENCHES UNDER OR WITHIN A 1:1 RATIO OF EXISTING OR PROPOSED PAVEMENT OR DRIVEWAYS, SHALL BE BACKFILLED WITH COMPACTED CLASS II SAND TO GRADE (95% MAXIMUM UNIT DENSITY).
 - WHERE TWO UTILITIES CROSS, PROVIDE CLASS II BACKFILL MATERIAL IN SIX (6) INCH COMPACTED LAYERS TO TOP HIGHEST UTILITY.
 - WHERE WATER MAINS DIP UNDER OTHER UTILITIES, THE SECTIONS WHICH ARE DEEPER THAN NORMAL SHALL BE CONSTRUCTED WITH 11-1/4" VERTICAL BENDS, 22 1/2" OR 45" BENDS MUST BE RODDED AND PROPERLY ANCHORED.
 - ALL PRECAST CONCRETE GATE WELL SECTIONS SHALL BE IN ACCORDANCE WITH A.S.T.M. C478, STANDARD SPECIFICATIONS FOR PRECAST REINFORCED CONCRETE MANHOLE SECTIONS. WALL THICKNESS SHALL BE AS SHOWN ON THESE DETAILS. ALL JOINTS FOR PRECAST CONCRETE GATE WELL SECTIONS SHALL BE "MODIFIED GROOVE TONGUE" WITH GASKET MANUFACTURED TO CONFORM WITH A.S.T.M. C443, STANDARD SPECIFICATION FOR JOINTS FOR CIRCULAR CONCRETE SEWER AND CULVERT PIPE USING RUBBER GASKETS.
 - CONTRACTOR SHALL INSTALL VALVES, TAPPING SLEEVES, AND GATE WELL STRUCTURES IN STRICT COMPLIANCE WITH MEASUREMENTS PROVIDED ON SHEET 1 (2'-0" BETWEEN GATE WELL WELL AND CENTERLINE OF OPERATING NUT) TO ALLOW PROPER OPERATION OF VALVE THROUGH GATE WELL OPENING.
 - ALL CROSS-CONNECTION CONTROL DEVICES SHALL BE INSTALLED AS REQUIRED BY THE PLYMOUTH TOWNSHIP PLUMBING INSPECTOR AND IN ACCORDANCE WITH THE STANDARDS OF THE OAKLAND COUNTY COUNTY DRAIN COMMISSIONER OPERATION AND MAINTENANCE DIVISION AND THE MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY, DIVISION OF DRINKING WATER AND RADIOLOGICAL PROTECTION.
 - ALL FITTINGS AND BENDS SHOULD BE BLOCKED IN ACCORDANCE WITH THRUST BLOCK DETAILS, UNLESS ALTERNATE THRUST RESTRAINT SYSTEM, AS INDICATED PLANS AND SPECIFICATIONS, IS APPROVED BY THE CITY OF PONTIAC DEPARTMENT OF PUBLIC SERVICES.

UTILITY QUANTITIES

1.5" TYPE K COPPER	152 LF
6" SCH 40 PVC	438 LF
12" RCP CL IV	715 LF
45° BEND	2
CLEANOUT	6
MANHOLE	3
CATCH BASIN	4
WATER QUALITY UNIT	1
OUTLET CONTROL	1
GREASE TRAP	1
CURB STOP	1

UTILITY CROSSING SCHEDULE

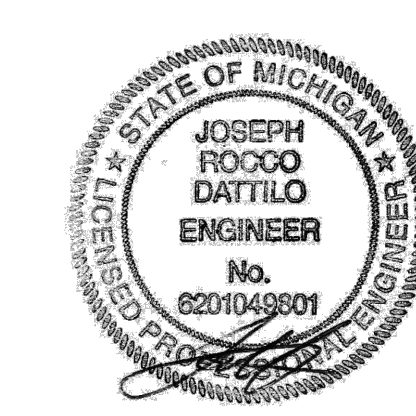
UC	DATE	REVISION	DESCRIPTION
1	09/20/2022	1	GRADE 976.00 = 12" STORM INVERT 976.58 TOP OF 1.5" WATER 969.08 (WATER DIPPED WITH MIN. CLEARANCE 1.5 FT. DIPPING/DEFLECTING OF THE WATERMAIN SHALL FOLLOW APPLICABLE AGENCY STANDARDS)
2	07/13/2022	2	12" STORM INVERT 969.59 6" SANITARY TOP 968.08 6" SANITARY INVERT 967.59 TOTAL CLEARANCE OF 1.50 FT
3	04/11/2022	3	12" STORM INVERT 966.59 12" SANITARY TOP 964.55 12" SANITARY INVERT 963.55 TOTAL CLEARANCE OF 2.04 FT

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Grand Blanc, MI
Aim Arbor (734) 894-8888
Eastpointe (810) 758-0877
Eastpointe (810) 758-0877
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UTILITY PLAN
PREPARED FOR: GREAT LAKES TACO, LLC.
E WALTON BLVD, PONTIAC, MI 48340

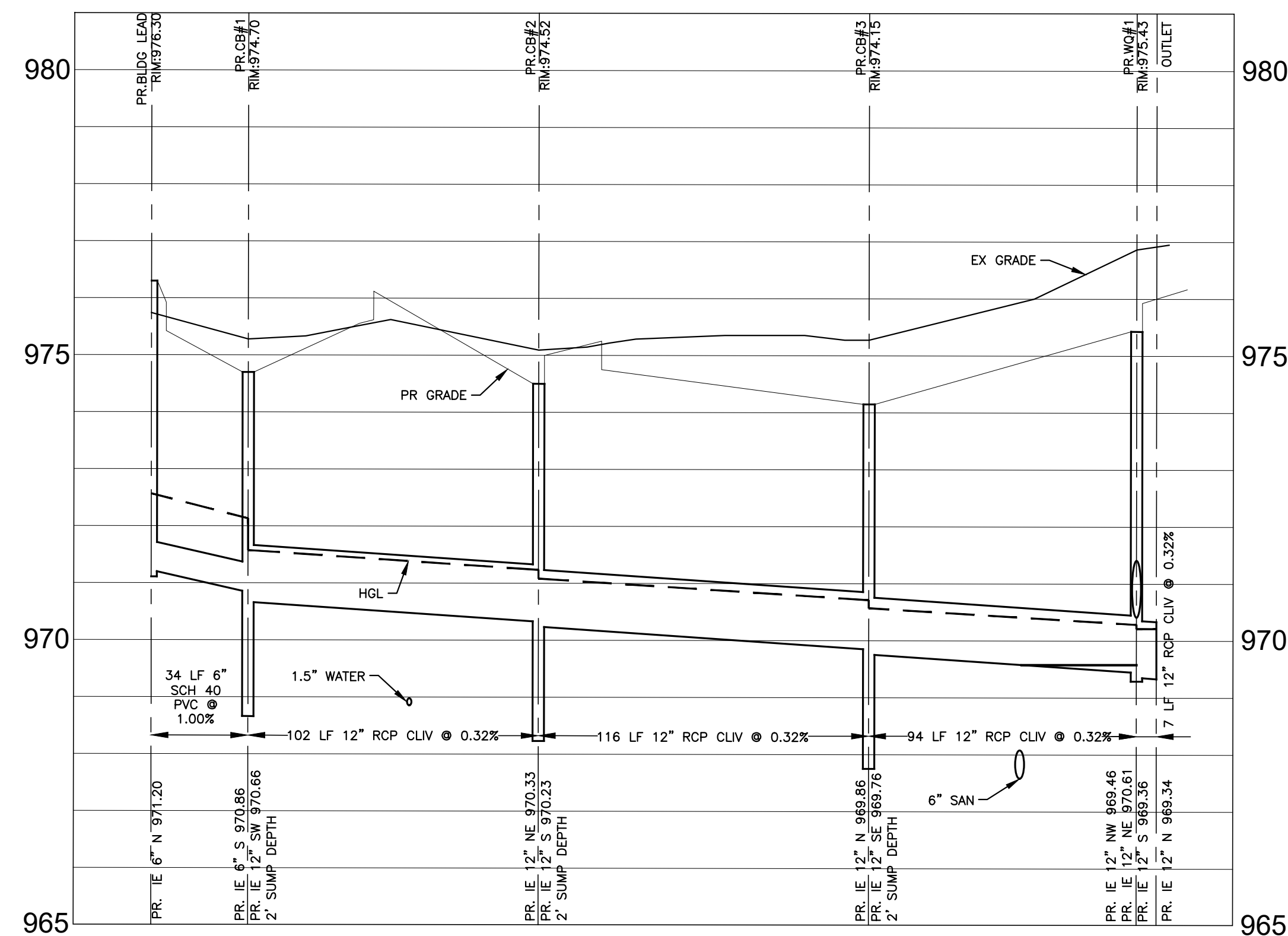
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07/13/2022	GAE	SPA RESUBMITTAL
04/11/2022	DM	ENGINEERING SUBMITTAL
04/08/2022	DM	ENGINEERING SUBMITTAL
		REVISION
		DATE
		BY

SCALE: 1" = 20'
PROJECT NO: 22008



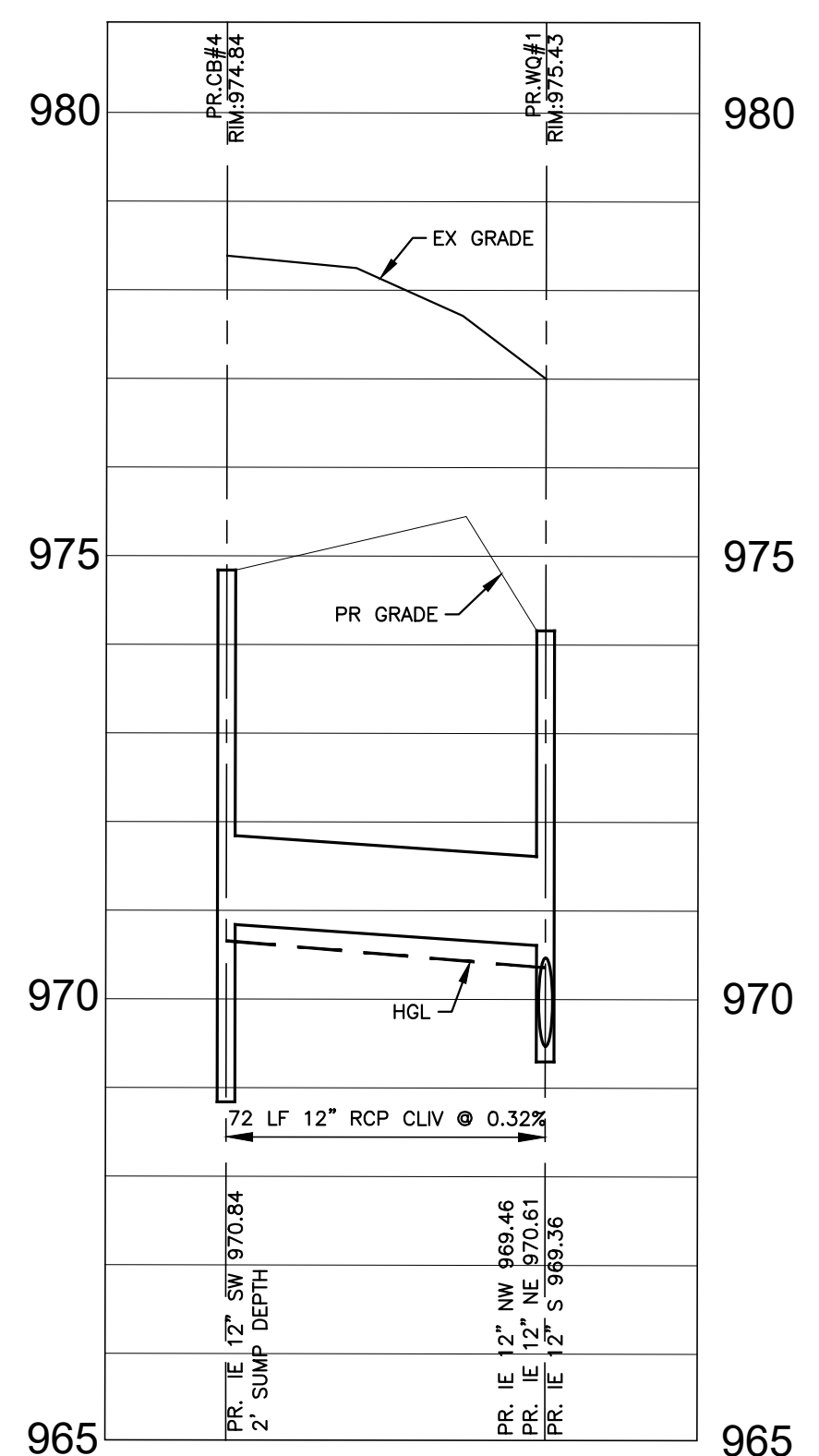
UTILITY PLAN
SCALE: 1" = 20'

C5.0



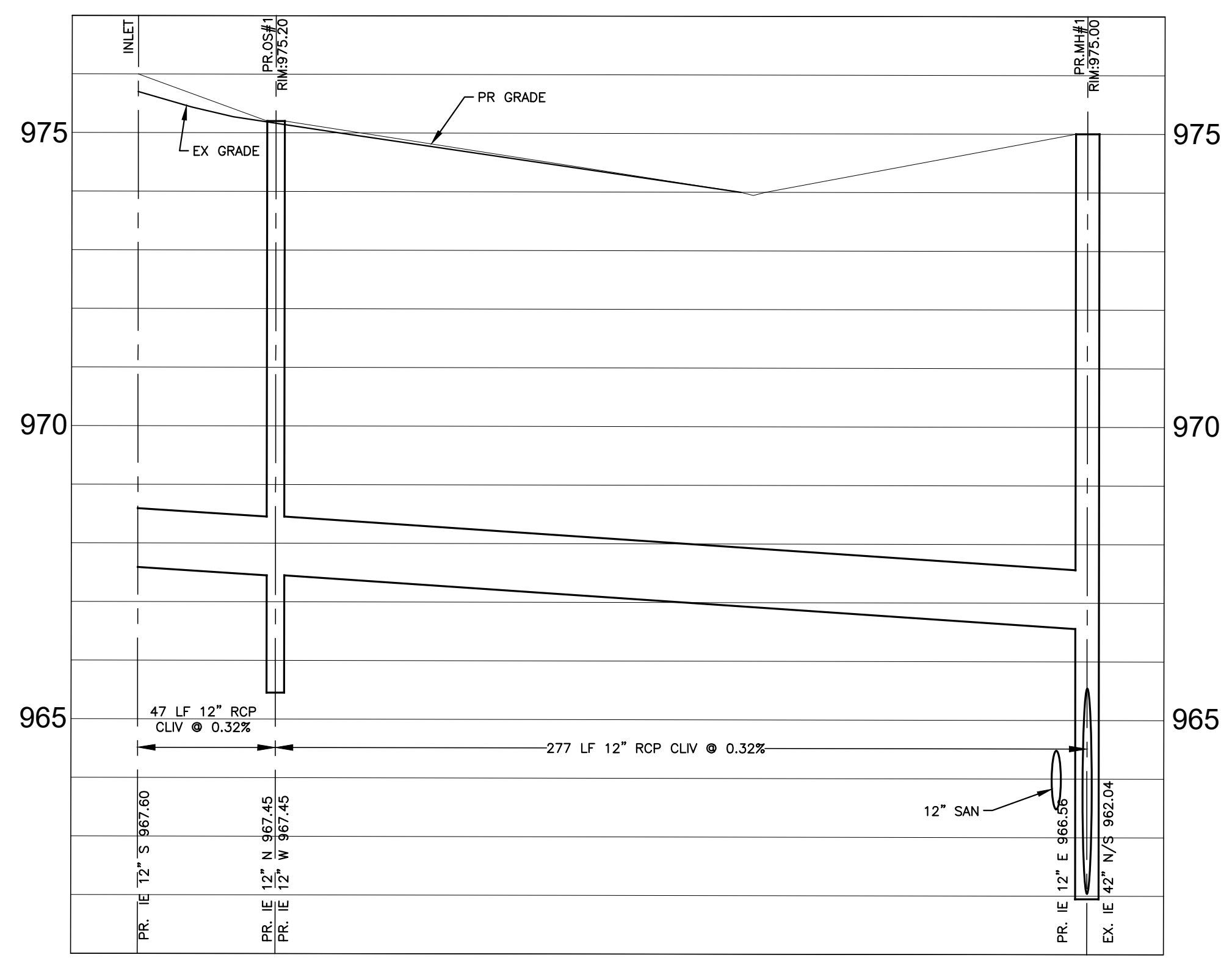
STORM PROFILE BLDG LEAD - INLET

SCALE: 1"=40' HOR / 1"=2' VERT



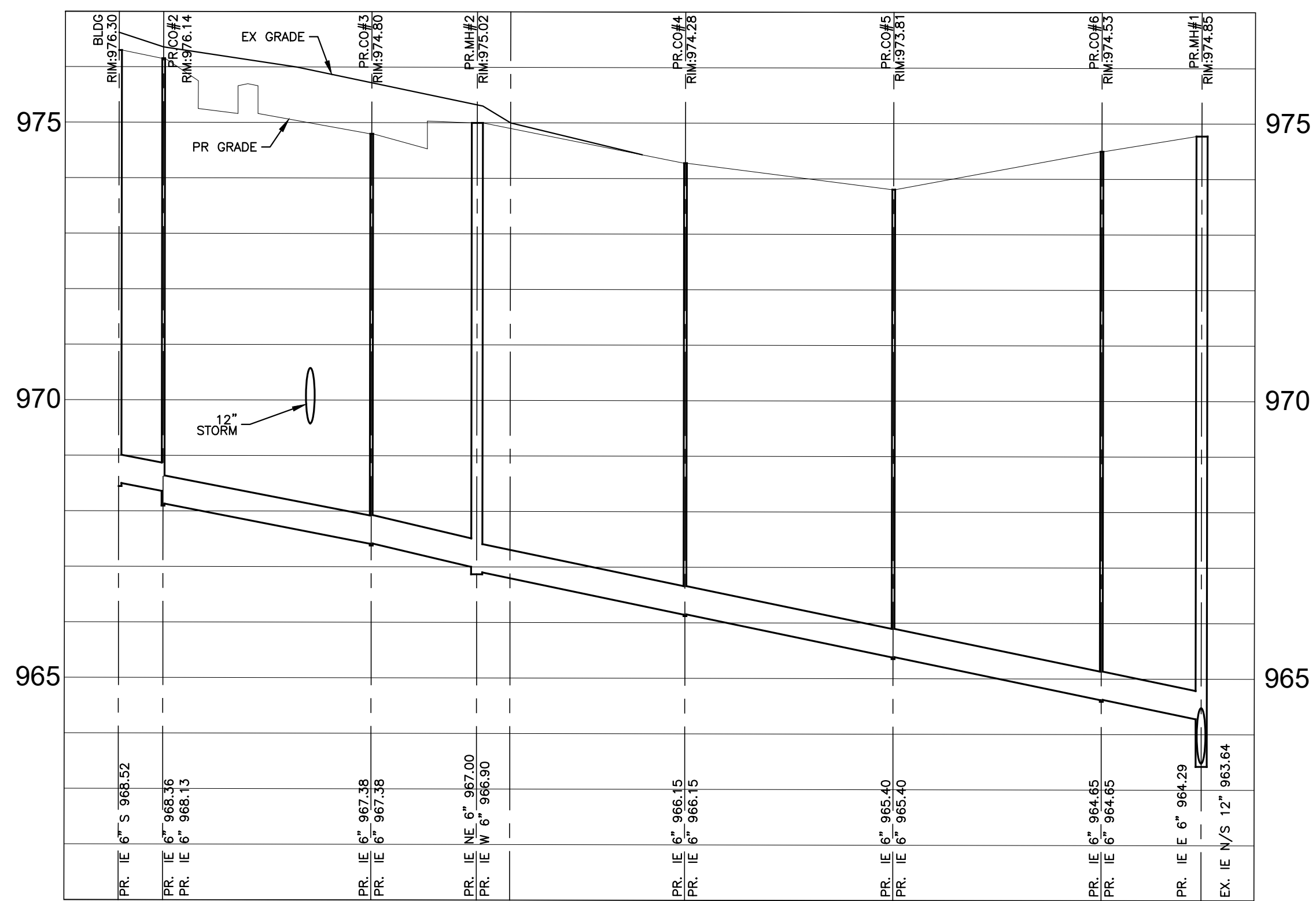
STORM PROFILE CB4 - WQ1

SCALE: 1"=40' HOR / 1"=2' VERT



STORM PROFILE OUTLET - MH1

SCALE: 1"=40' HOR / 1"=2' VERT



SANITARY PROFILE BLDG - SAN MH2

SCALE: 1"=40' HOR / 1"=2' VERT



NO.	REVISION	DATE	BY	DESCRIPTION
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2		09/21/2022	DM	ENGINEERING SUBMITTAL

DATE	09/20/2022
SCALE	1" = 20'

NO.	REVISION	DATE	BY
1		09/20/2022	GAE
2		09/20/2022	GAE
3		09/20/2022	DM
4		09/20/2022	DM

SOIL EROSION LEGEND

- PROPERTY LINE
- LDD PROPOSED LIMIT OF DISTURBANCE
- SF PROPOSED SILT FENCE
- PROPOSED INLET FILTER

**SOIL EROSION & SEDIMENTATION
 CONTROL OPERATION TIME SCHEDULE**

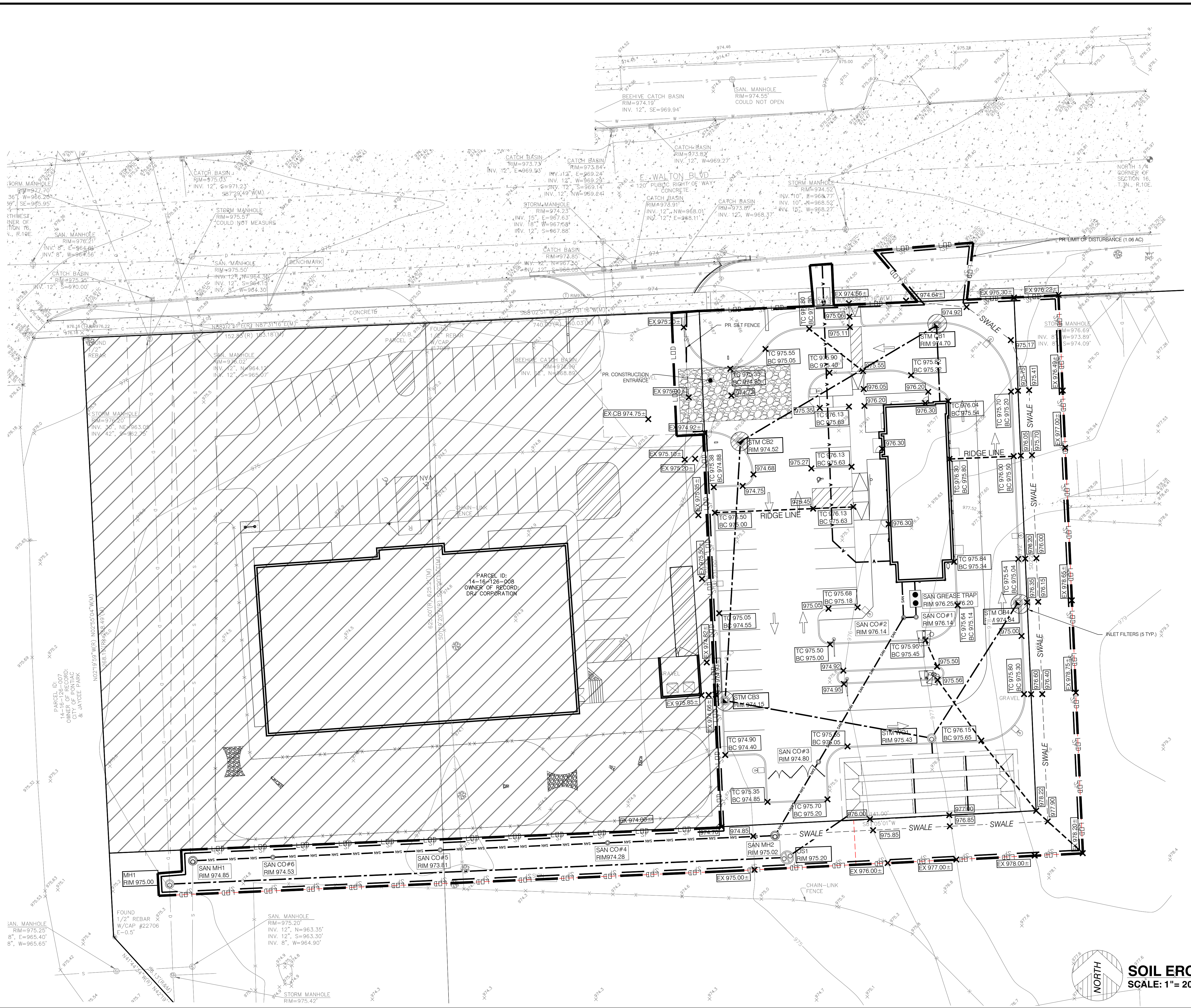
CONSTRUCTION SEQUENCE	NOV 2022	DEC	JAN	FEB
TEMPORARY EROSION CONTROL MEASURES	█			
STRIP & STOCKPILE TOPSOIL / ROUGH GRADE		█		
STORM SEWER		█		
FOUNDATION / BLDG. CONSTRUCTION			█	
SANITARY SEWER & WATER MAIN			█	
INSTALL ALL OTHER UTILITIES			█	
SITE CONSTRUCTION & PAVEMENT			█	
PERMANENT EROSION CONTROL MEASURES			█	
FINISH GRADING			█	
LANDSCAPING			█	
DISTURBED AREA = 1.08± ACRES				

SOIL TYPE INFORMATION

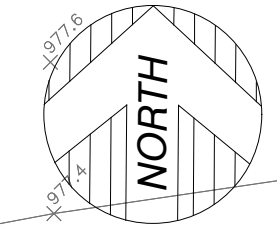
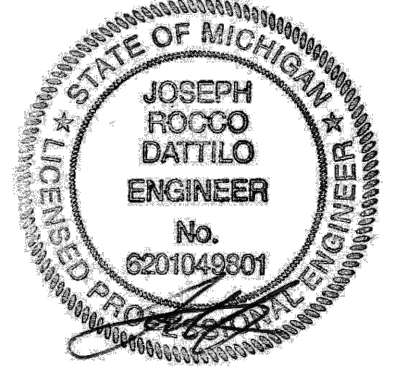
MAP UNIT SYMBOL	MAP UNIT NAME
508	UDIPSAMENTS, UNDULATING

MAINTENANCE OF EROSION CONTROL DEVICES

- FILTERS MUST BE CLEANED PERIODICALLY SO THEY DON'T CLOGGED.
- FILTER FENCING WHICH SAGS, FALLS OVER OR IS NOT STAKED IN, SHOULD BE PROMPTLY REPAIRED OR REPLACED.
- SILT FENCES SHOULD BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND SEVERAL TIMES DURING PROLONGED RAINFALLS.
- IF THE FENCE IS SAGGING OR THE SOIL HAS REACHED ONE HALF THE HEIGHT OF THE FABRIC, THE SOIL BEHIND THE FABRIC MUST BE REMOVED.
- MULCHED AREAS SHOULD BE CHECKED FOLLOWING EACH RAIN TO ENSURE THE MULCH IS STAYING IN PLACE. ADDITIONAL TACKLING MATERIALS OR NETTING MAY NEED TO BE APPLIED TO HOLD THE MULCH IN PLACE.
- NEWLY SEEDED AREAS NEED TO BE INSPECTED FREQUENTLY FOR THE FIRST FEW MONTHS TO ENSURE THE GRASS IS GROWING. IF THE SEEDED AREA IS DAMAGED DUE TO RUNOFF, ADDITIONAL STORMWATER MEASURES MAY BE NEEDED.



Know what's below.
 Call before you dig.



SOIL EROSION & SEDIMENTATION CONTROL PLAN
 SCALE: 1" = 20'

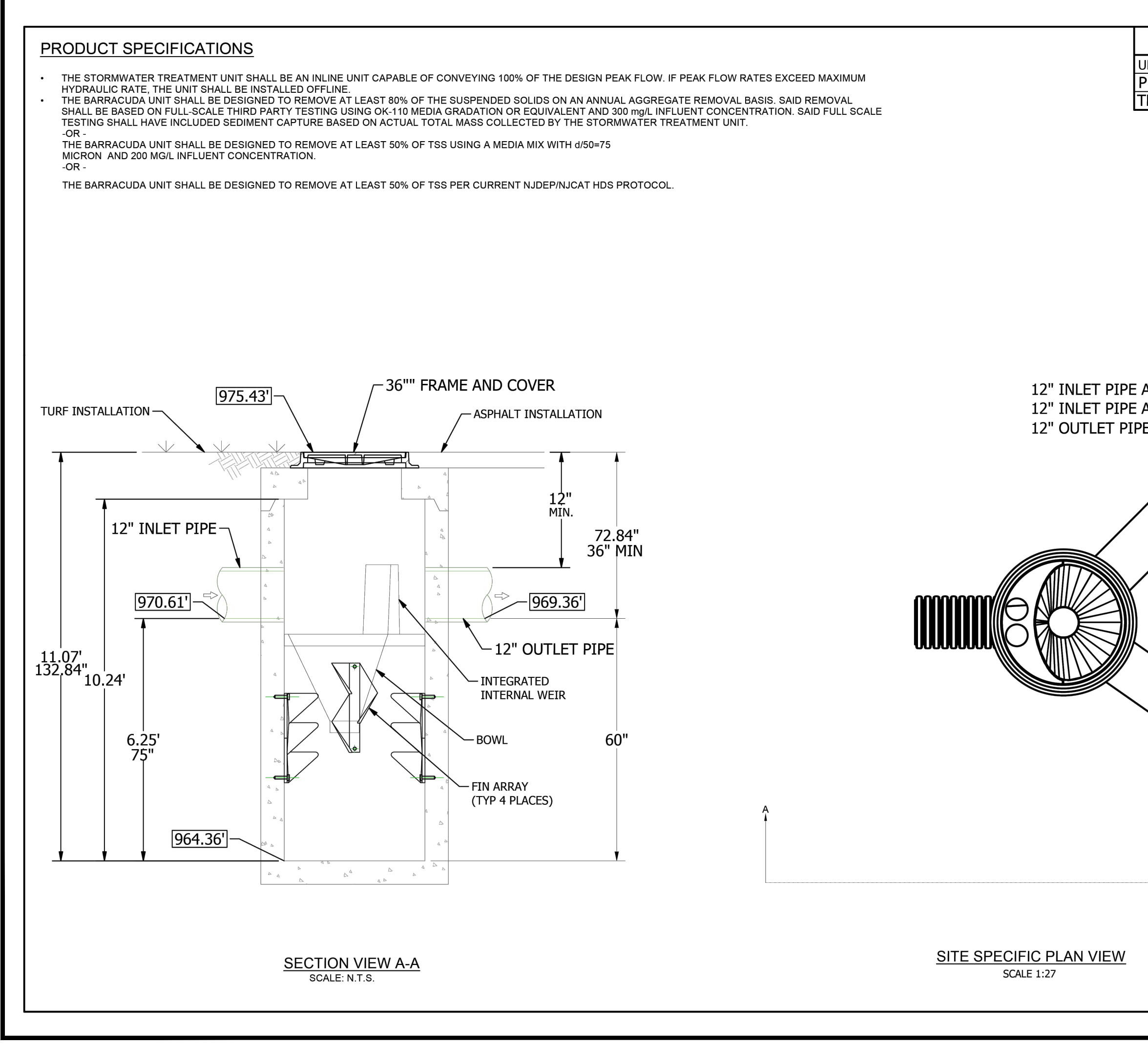
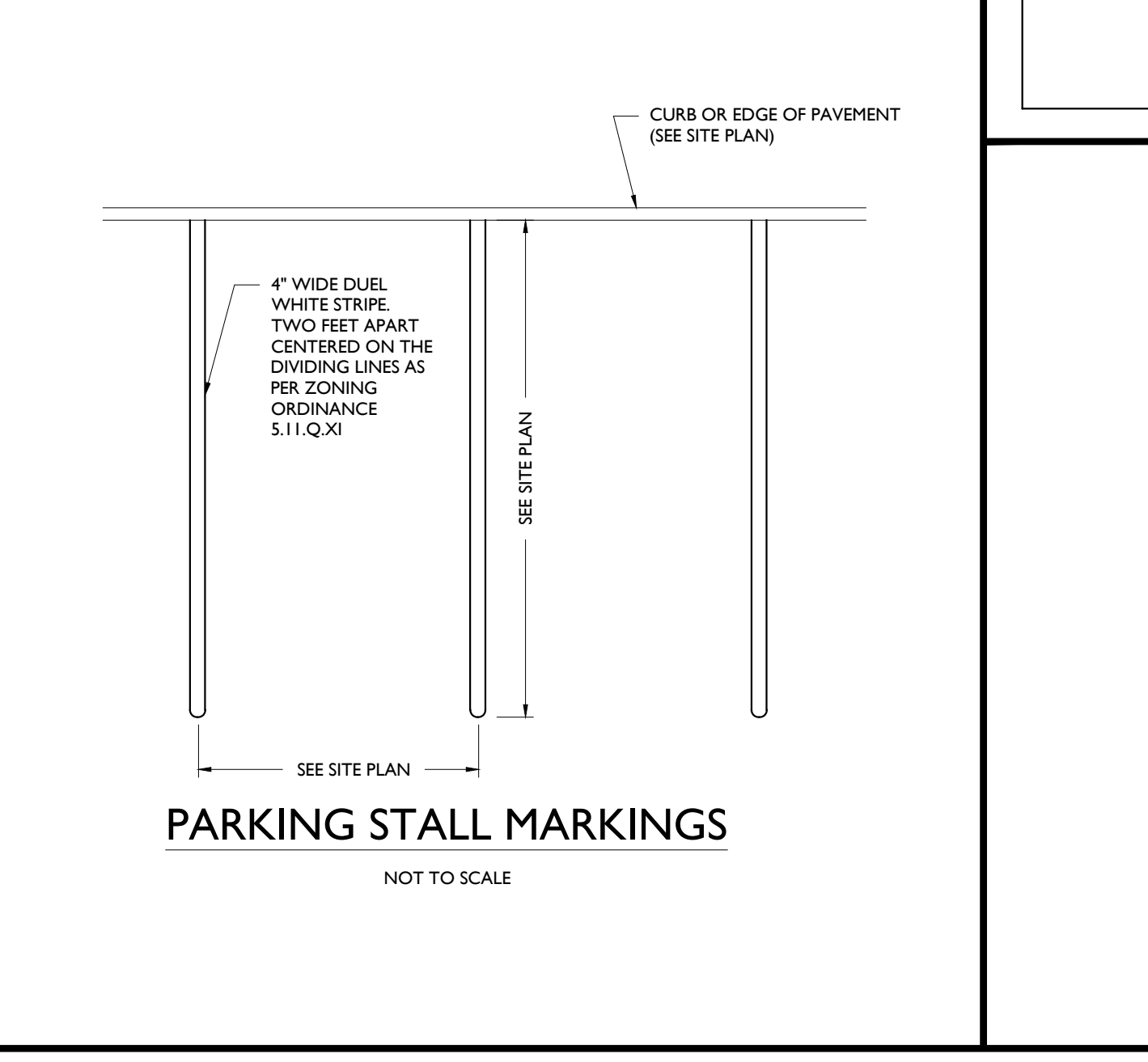
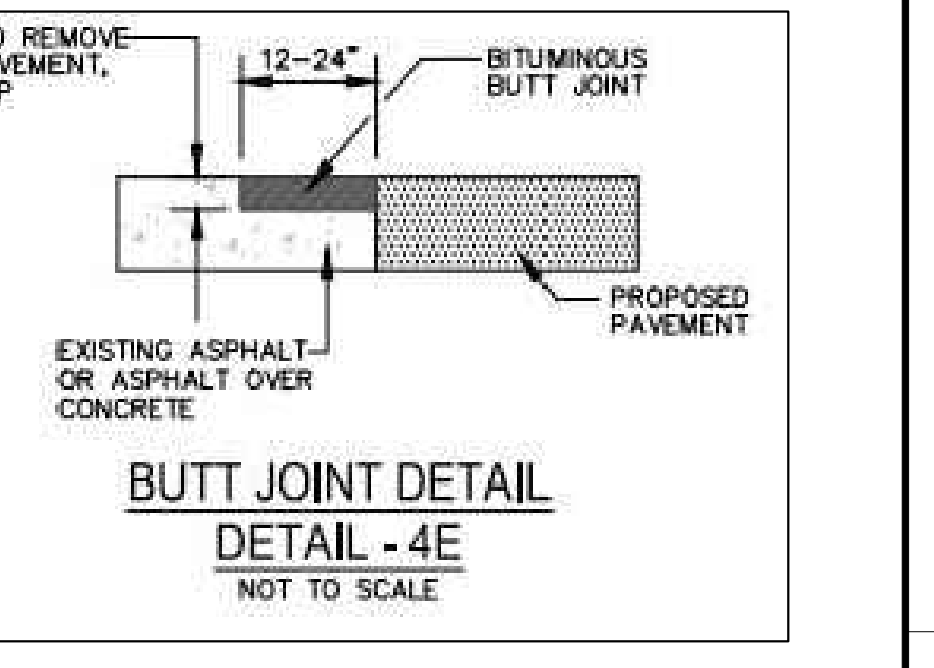
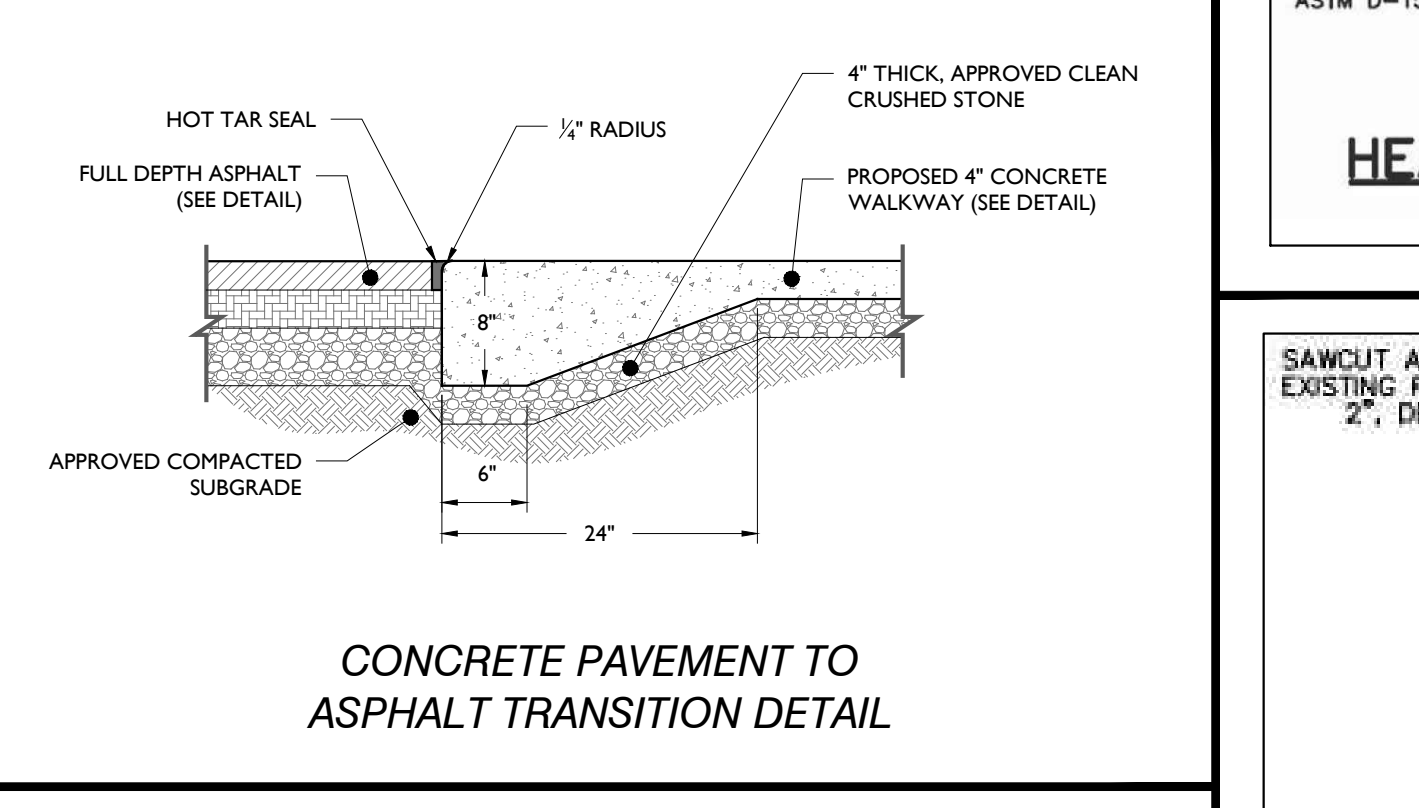
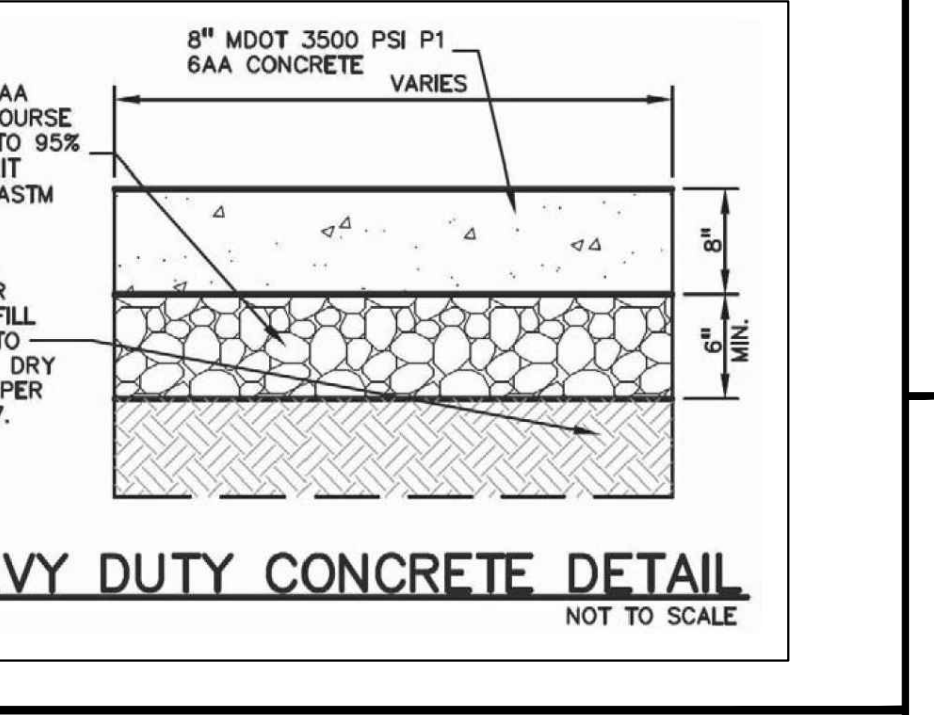
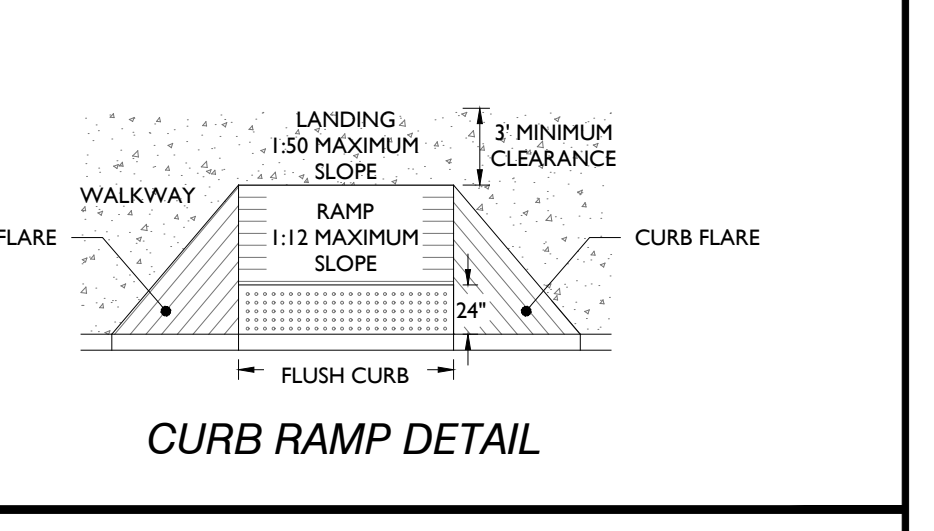
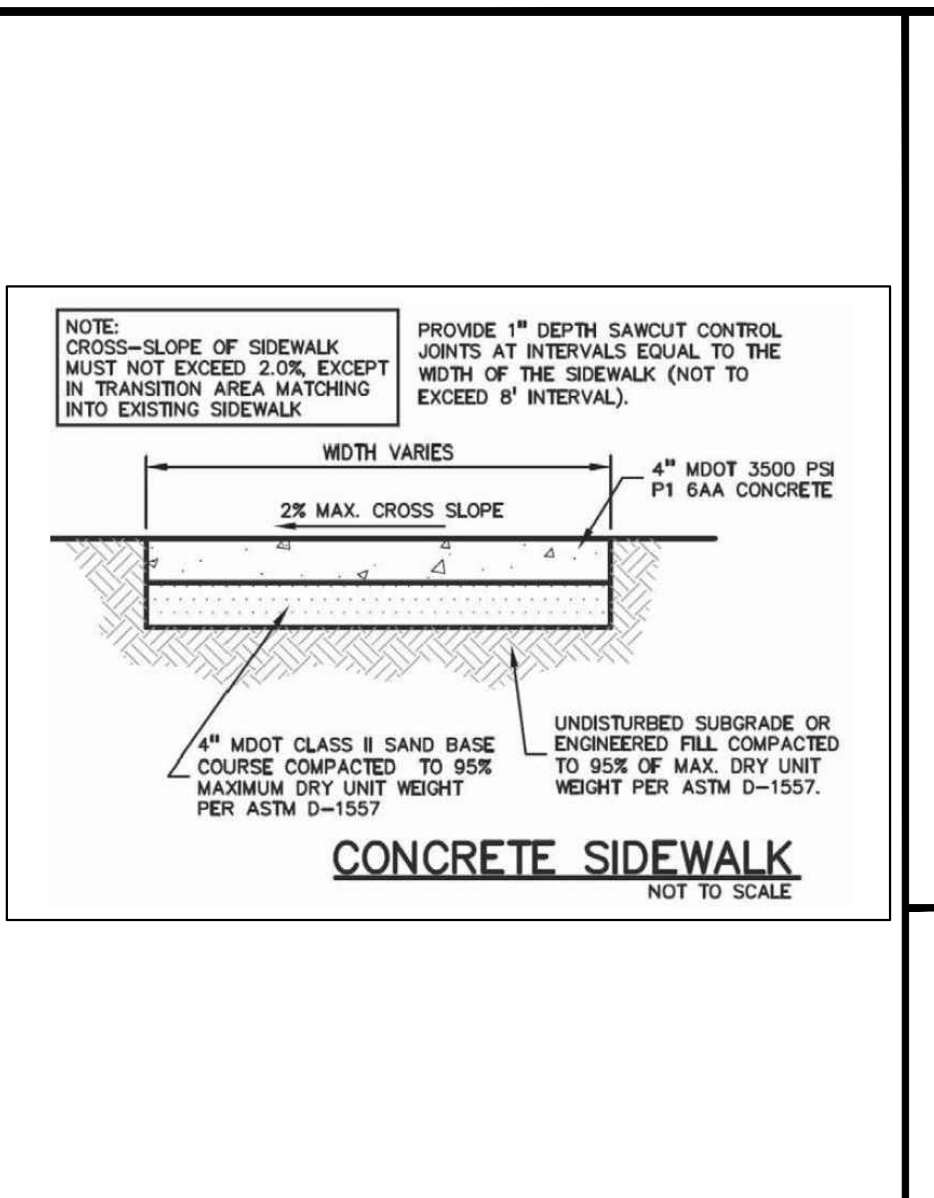
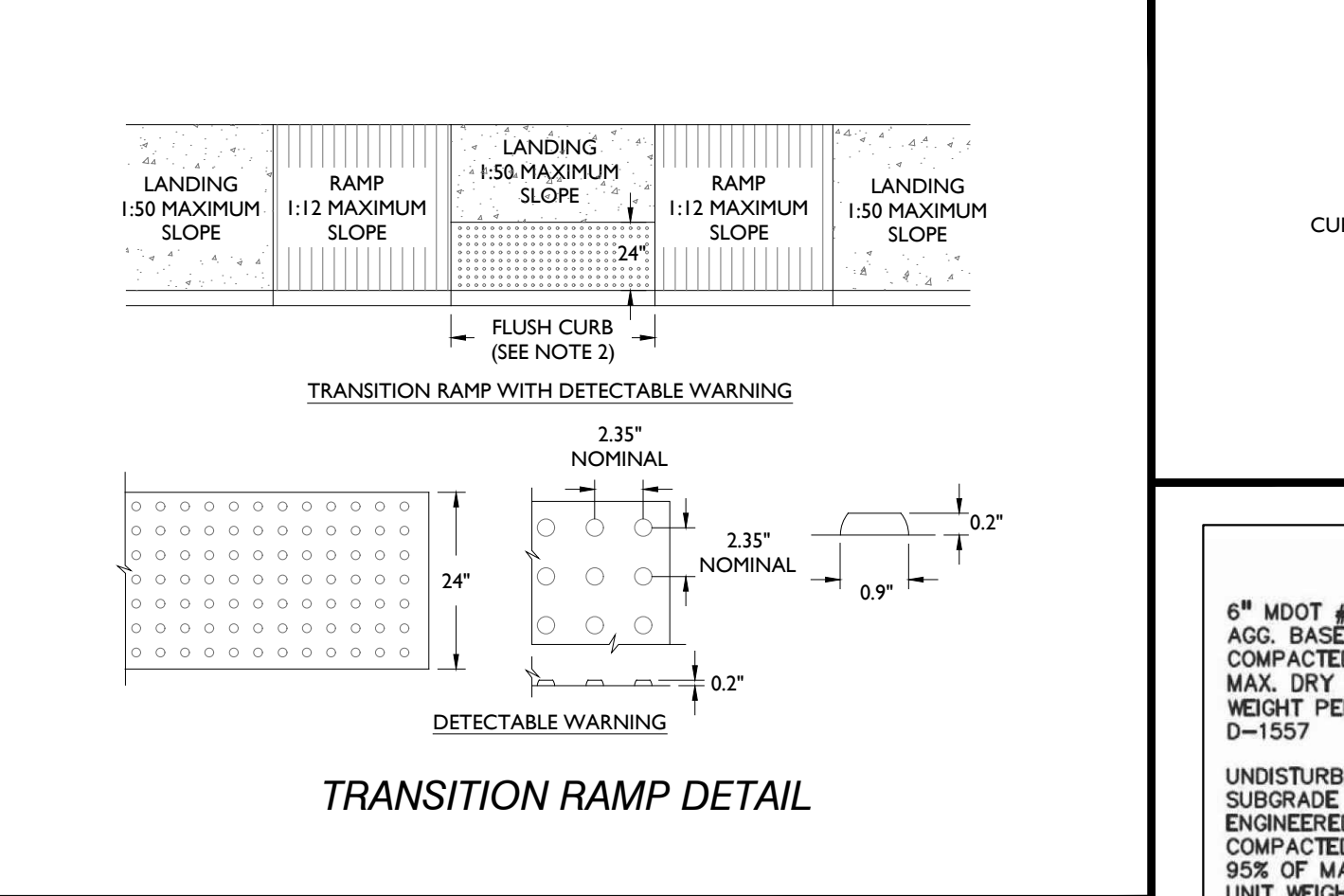
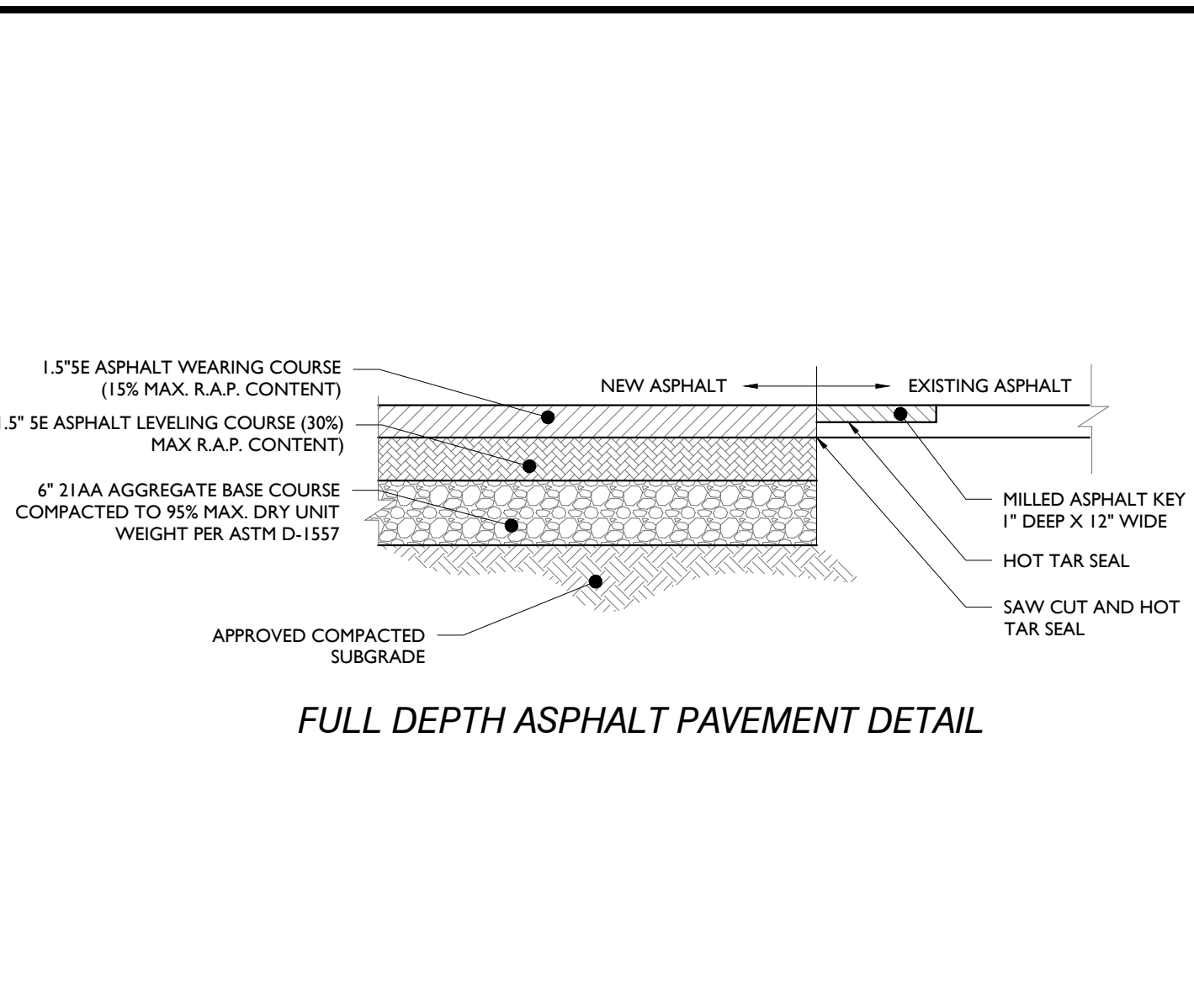
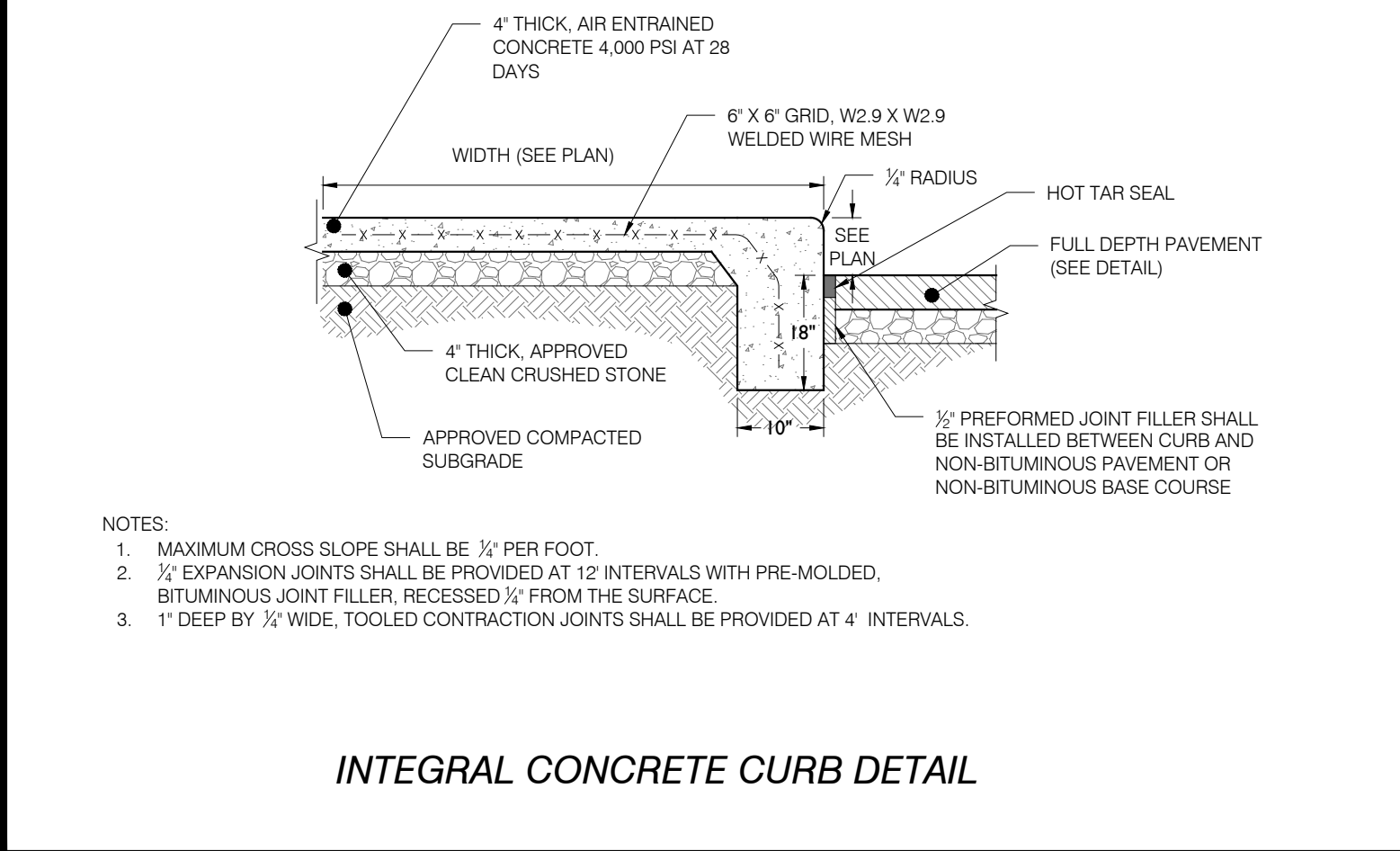
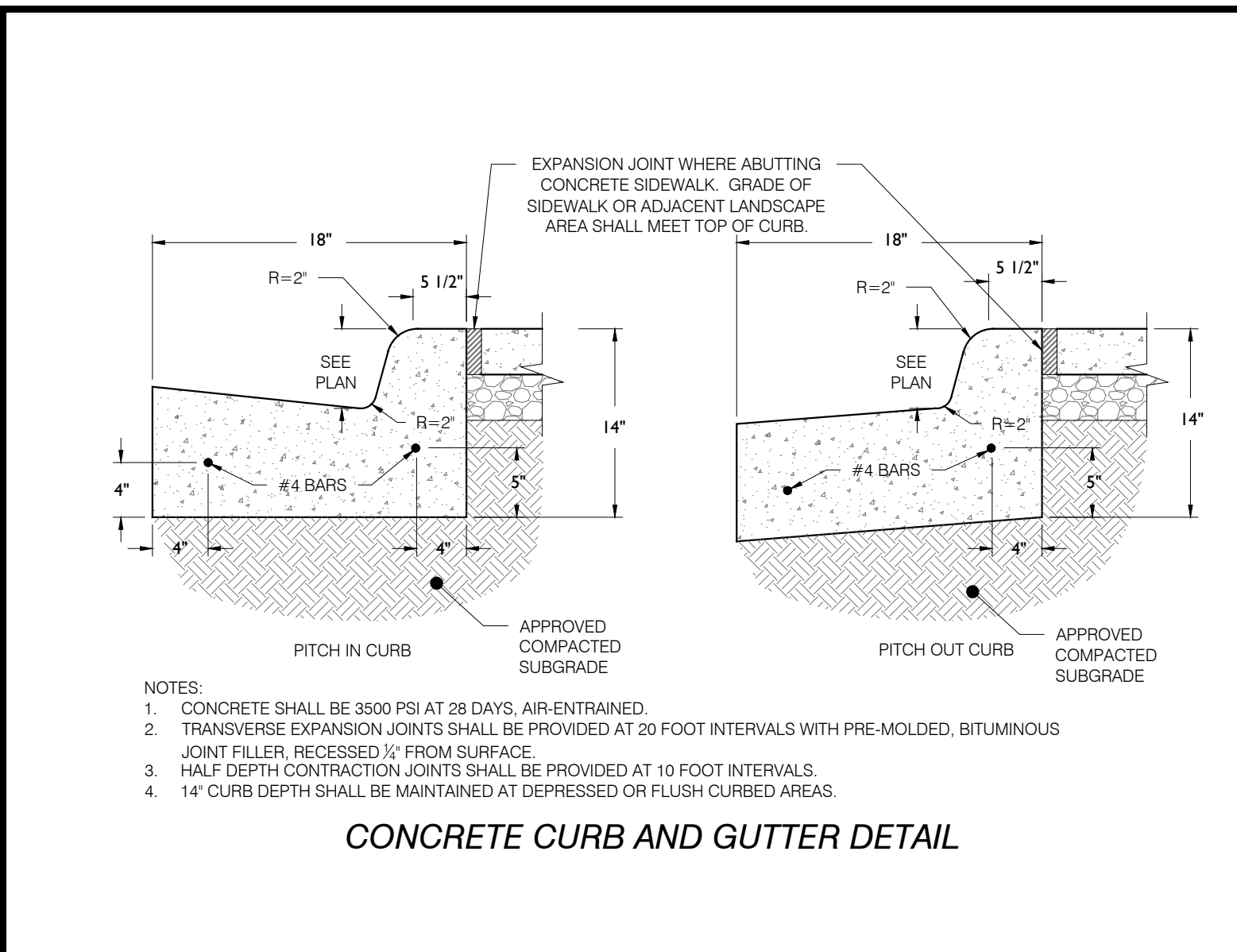
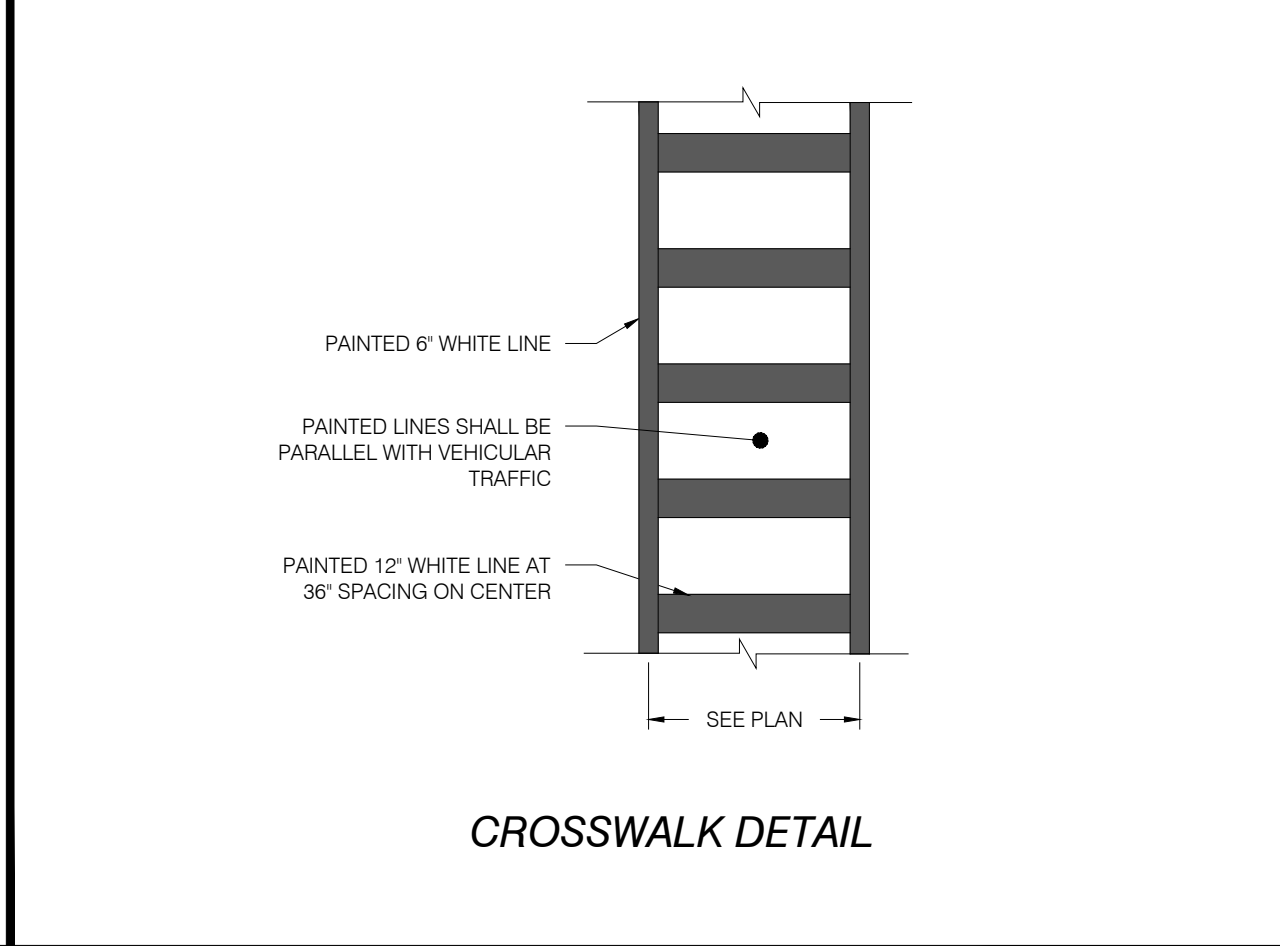
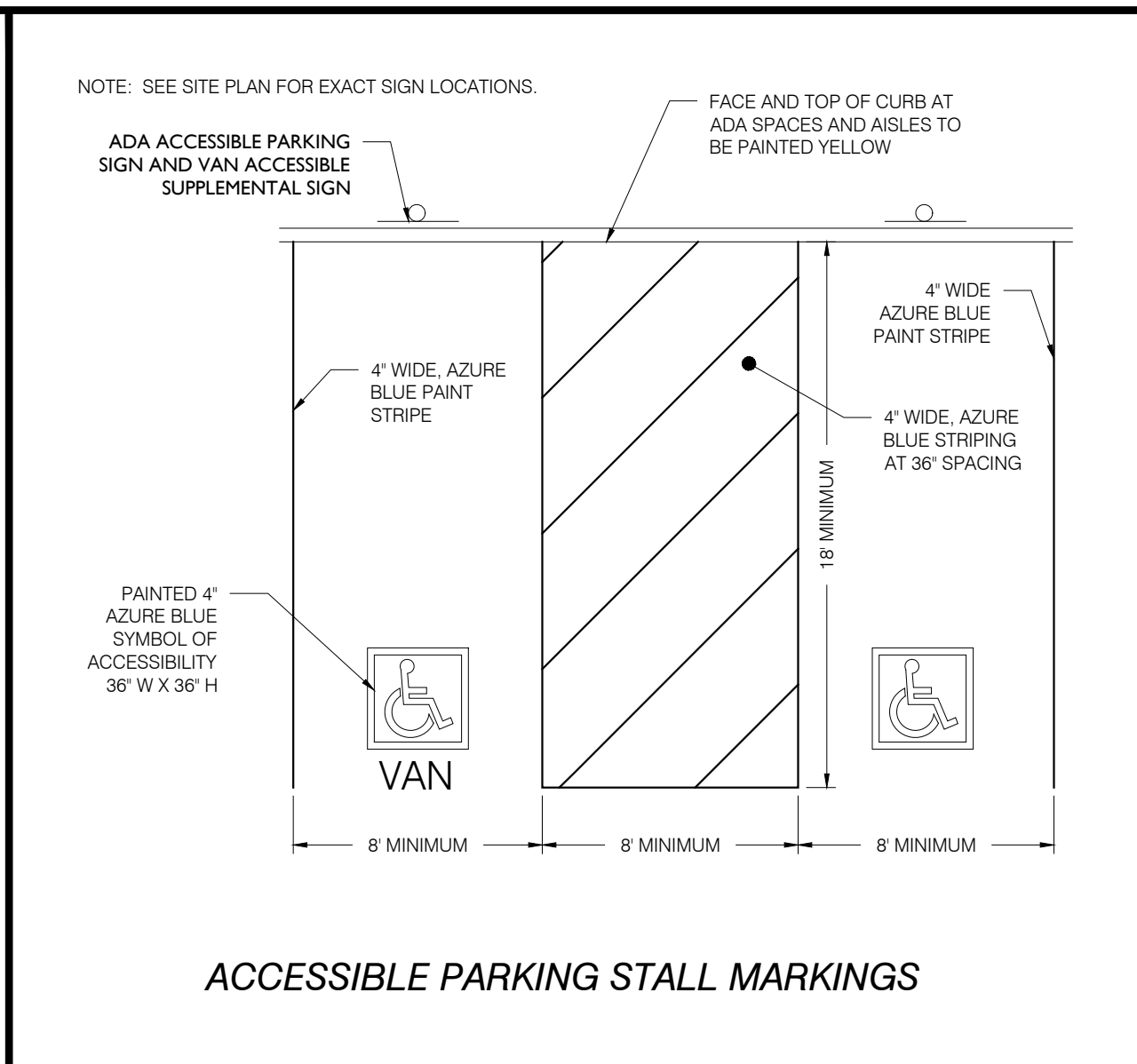
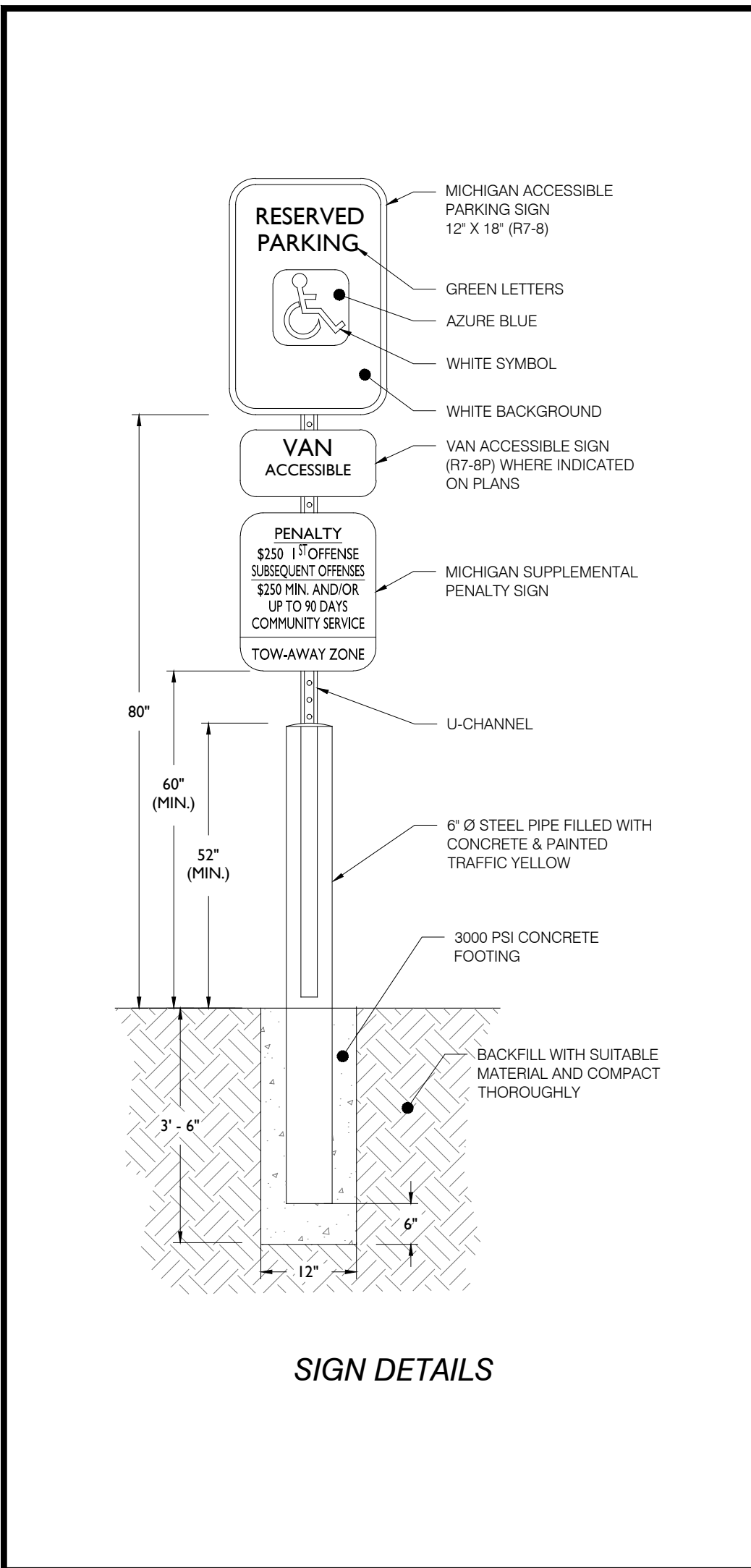
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 OWNER OF RECORD:
 CITY OF PONTIAC
 & JAYCEE PARK

PARCEL ID:
 14-16-126-008
 OWNER OF RECORD:
 DR. CORPORATION

FOUND 1/2" REBAR W/CAP #22706
 E=0.5'
 SAN. MANHOLE RIM=975.20'
 INV. 12", N=963.35'
 INV. 12", S=963.30'
 INV. 8", W=964.90'

STORM MANHOLE RIM=975.42'

9/22/2022
C8.0 Detail Sheet.dwg
Bhavisha Modi



BARRACUDA S3	
UNIT ID	S3
PEAK FLOW RATE CFS	N/A
TREATMENT FLOW RATE CFS	0.28
*TREATMENT FLOW RATE PER OK-110	

DATE:	DRAWN:	CHECKED:
PROJECT #:		
PONTIAC TACO, MI		
1000 Dowd Hollow Drive, Pontiac, MI 48340		
SCALE: AS NOTED		
SHEET: 1 OF 1		

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Engr. Joseph Rocco Dattilo
Professional Engineer
No. 2201049601

Engr. Anna Akbar
Professional Engineer
No. 2201049601

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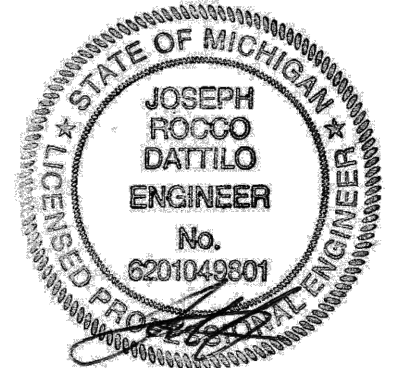
DETAILS SHEET

PREPARED FOR: GREAT LAKES TACO, LLC.
E. WALTON BLVD, PONTIAC, MI 48340

DATE	BY	DESCRIPTION
09/22/2022	GAE	ENGINEERING SUBMITTAL
09/22/2022	GAE	ENGINEERING SUBMITTAL
09/22/2022	DM	REVISION
09/22/2022	DM	REVISION

SCALE: NOT TO SCALE

C8.0



PROJECT INFORMATION	
ENGINEERED PRODUCT MANAGER	
ADS SALES REP	
PROJECT NO.	



PONTIAC TACO BELL PONTIAC, MI

ADS RETENTION/DETENTION PIPE SYSTEM SPECIFICATION

SCOPE
THIS SPECIFICATION DESCRIBES ADS RETENTION/DETENTION PIPE SYSTEMS FOR USE IN NON-PRESSURE GRAVITY-FLOW STORM WATER COLLECTION SYSTEMS UTILIZING A CONTINUOUS OUTFALL STRUCTURE.

PIPE REQUIREMENTS
ADS RETENTION/DETENTION SYSTEMS MAY UTILIZE ANY OF THE VARIOUS PIPE PRODUCTS BELOW:

- N-12" STIB PIPE (PER AASHTO) SHALL MEET AASHTO M 294, TYPE S OR ASTM F2306
 - N-12" STIB PIPE (PER ASTM F2648) SHALL MEET ASTM F2648
 - N-12" MEGA GREEN™ STIB SHALL MEET ASTM F2648
- ALL PRODUCTS SHALL HAVE A SMOOTH INTERIOR AND ANNULAR EXTERIOR CORRUGATIONS. ALL STIB PIPE PRODUCTS ARE AVAILABLE AS PERFORATED OR NON-PERFORATED. WITH PIPE PRODUCTS ARE ONLY AVAILABLE AS NON-PERFORATED. PRODUCT-SPECIFIC PIPE SPECIFICATIONS ARE AVAILABLE IN THE DRAINAGE HANDBOOK SECTION 1 "SPECIFICATIONS".

JOINT PERFORMANCE
PLAIN END / SOIL-TIGHT (STIB):
STIB PIPE SHALL BE JOINED USING A BELL AND SPIGOT JOINT. THE BELL AND SPIGOT JOINT SHALL MEET THE SOIL-TIGHT REQUIREMENTS OF ASTM F2306 AND GASKETS SHALL MEET THE REQUIREMENTS OF ASTM F477.

PLAIN END PIPE AND FITTINGS CONNECTIONS SHALL BE JOINED WITH COUPLING BANDS COVERING AT LEAST TWO FULL CORRUGATIONS ON EACH END OF THE PIPE. GASKETED SOIL-TIGHT COUPLING BAND CONNECTIONS SHALL INCORPORATE A CLOSED-CELL SYNTHETIC EXPANDED RUBBER GASKET MEETING THE REQUIREMENTS OF ASTM D1056 GRADE 2A2. GASKETS, WHEN APPLICABLE, SHALL BE INSTALLED BY THE PIPE MANUFACTURER.

FITTINGS
FITTINGS SHALL CONFORM TO ASTM F2306 AND MEET JOINT PERFORMANCE INDICATED ABOVE FOR FITTINGS CONNECTIONS. CUSTOM FITTINGS ARE AVAILABLE AND MAY REQUIRE SPECIAL INSTALLATION CRITERION.

INSTALLATION
INSTALLATION SHALL BE IN ACCORDANCE WITH ASTM D2321 AND ADS RECOMMENDED INSTALLATION GUIDELINES. WITH THE EXCEPTION THAT MINIMUM COVER IN NON-TRAFFIC AREAS FOR 12-60 INCH (300-1500 mm) DIAMETERS SHALL BE 1 FT (0.3 m), MINIMUM COVER IN TRAFFIC AREAS FOR 12-36 INCH (300-900 mm) DIAMETERS SHALL BE 1 FT (0.3 m) AND FOR 42-60 INCH (1050-1500 mm) DIAMETERS, THE MINIMUM COVER SHALL BE 2 FT (0.6 m). BACKFILL SHALL CONSIST OF CLASS I (COMPACTED) OR CLASS II (MINIMUM 95% SPD) MATERIAL, WITH THE EXCEPTION THAT 60 INCH (1500 mm) SYSTEMS SHALL USE CLASS I MATERIAL ONLY. MINIMUM COVER HEIGHTS DO NOT ACCOUNT FOR PIPE BUOYANCY. REFER TO ADS TECHNICAL NOTE 5.05 "PIPE FLOTATION" FOR BUOYANCY DESIGN CONSIDERATIONS. MAXIMUM COVER OVER SYSTEM USING STANDARD BACKFILL IS 8 FT (2.4 m). CONTACT A REPRESENTATIVE WHEN MAXIMUM FILL HEIGHT MAY BE EXCEEDED. ADDITIONAL INSTALLATION REQUIREMENTS ARE PROVIDED IN THE DRAINAGE HANDBOOK SECTION 6 "RETENTION/DETENTION".

ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES:

- ALL ELEVATIONS, DIMENSIONS AND LOCATIONS OF RISERS, INLETS AND OUTLETS, SHALL BE VERIFIED BY THE ENGINEER PRIOR TO RELEASING FOR FABRICATION.
- IN SITUATIONS WHERE A FINE-GRAINED BACKFILL MATERIAL IS USED ADJACENT TO THE PIPE SYSTEM, AND ESPECIALLY INVOLVING GROUND WATER CONDITIONS, CONSIDERATION SHOULD BE GIVEN TO THE USE OF GASKETED PIPE JOINTS. AT THE VERY LEAST THE PIPE JOINTS SHOULD BE WRAPPED IN A SUITABLE, NON-WOVEN GEOTEXTILE FABRIC TO PREVENT INFILTRATION OF FINES INTO THE PIPE SYSTEM.
- CONSIDERATION FOR CONSTRUCTION EQUIPMENT LOADS MUST BE TAKEN INTO ACCOUNT.
- ALL PIPE DIMENSIONS ARE SUBJECT TO MANUFACTURERS TOLERANCES.
- ALL RISERS TO BE FIELD EXTENDED OR TRIMMED TO FINAL GRADE.

THE UNDERSIGNED HEREBY APPROVES THE ATTACHED PAGES.

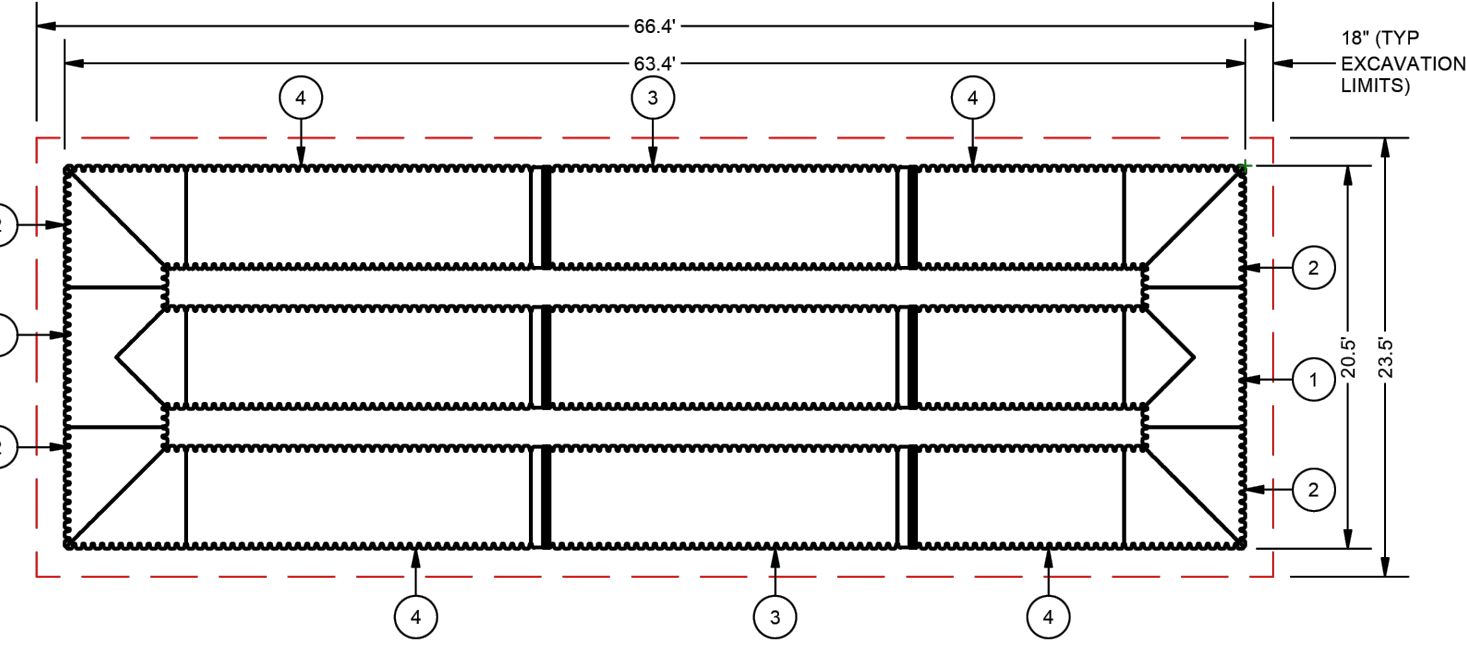
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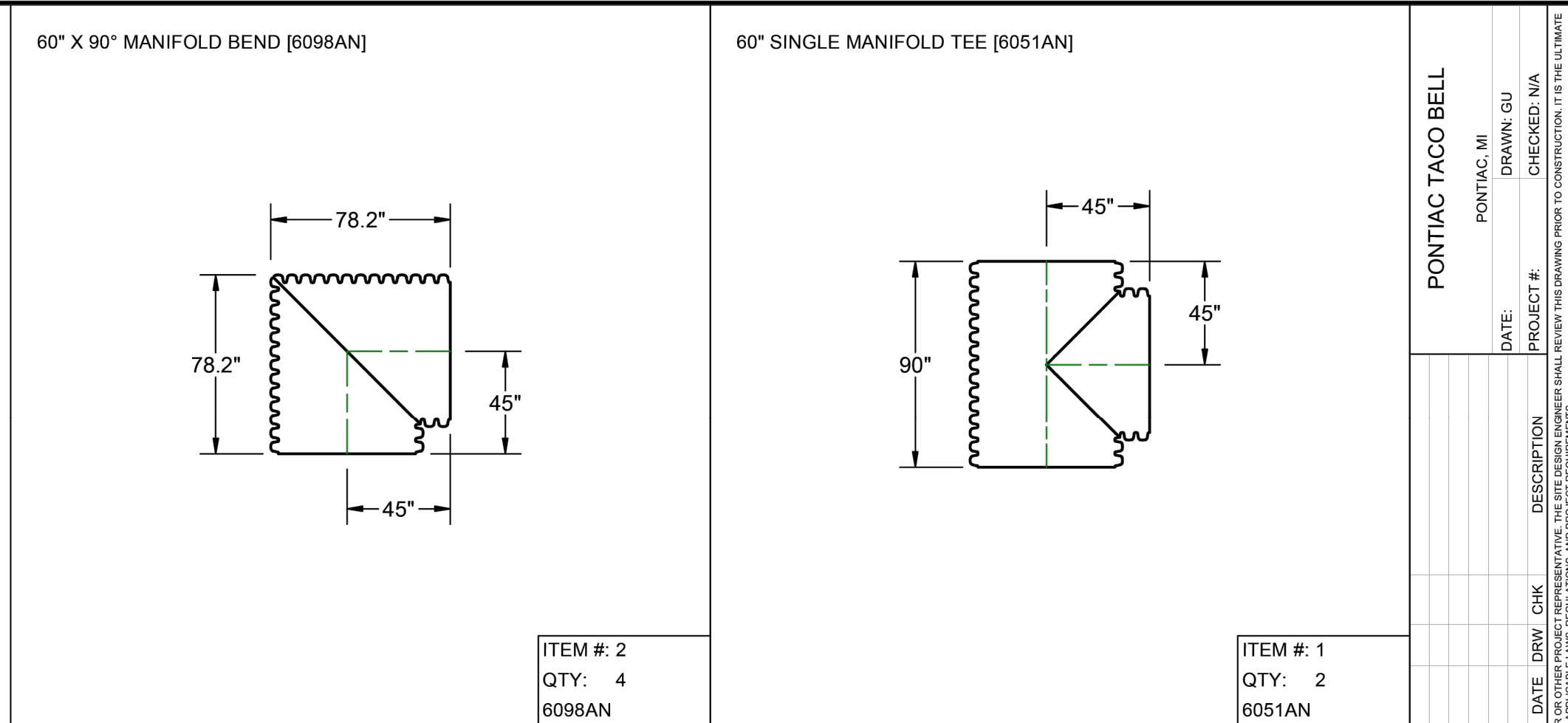
ITEM	QTY	ALT. QTY	PART #	DESCRIPTION	STAN.	VENDOR	NOTE
1	2		6051AN	60" SINGLE MANIFOLD TEE	STAN	ADS	SEE DETAIL
2	4		6098AN	60" MANIFOLD 90 DEG BEND	STAN	ADS	SEE DETAIL
3	3 STICKS	60 LF	60850202IB	60" N12 HWY STIB SOLID 20'	STAN	ADS	AS SHOWN
4	5 STICKS	93 LF	60850202IB	60" N12 HWY STIB SOLID 20'	STAN	ADS	FIELD CUT
5	10		6055AA	60" SPLIT COUPLER (25 PALLET)	STAN	ADS	NOT SHOWN
6	2 ROLLS	574 SY	0601TG	601.15 X 300' (500 SY) (NTPEP SCAN) (20% OVERAGE)	STAN	ADS	SEE DETAIL
7	10204 CF	378 CY	NA	EXCAVATION	NA	NA	NOT SHOWN

NOTES

- THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE PIPE COVER REQUIREMENTS ARE MET.
- STIB SIZES AND INVERTS TO BE VERIFIED BY THE SITE DESIGN ENGINEER PRIOR TO FABRICATION.
- ADS RISERS ARE FABRICATED 36" (900 mm) FROM TOP OF PIPE TO TOP OF RISER DUE TO SHIPPING LIMITATIONS. ADDITIONAL PIPE AND COUPLERS CAN BE USED TO EXTEND THE RISERS TO GRADE.
- LAYOUT SHOWN DOES NOT INCLUDE ADDITIONAL PIPE & MANIFOLD NEEDED FOR PROPER PIPE INSERTION INTO STRUCTURES.
- NOT FOR CONSTRUCTION:** THIS LAYOUT IS FOR DIMENSIONAL PURPOSES ONLY TO PROVE CONCEPT & THE REQUIRED STORAGE VOLUME CAN BE ACHIEVED ON SITE.



--- ADS GEOTEXTILE FABRIC

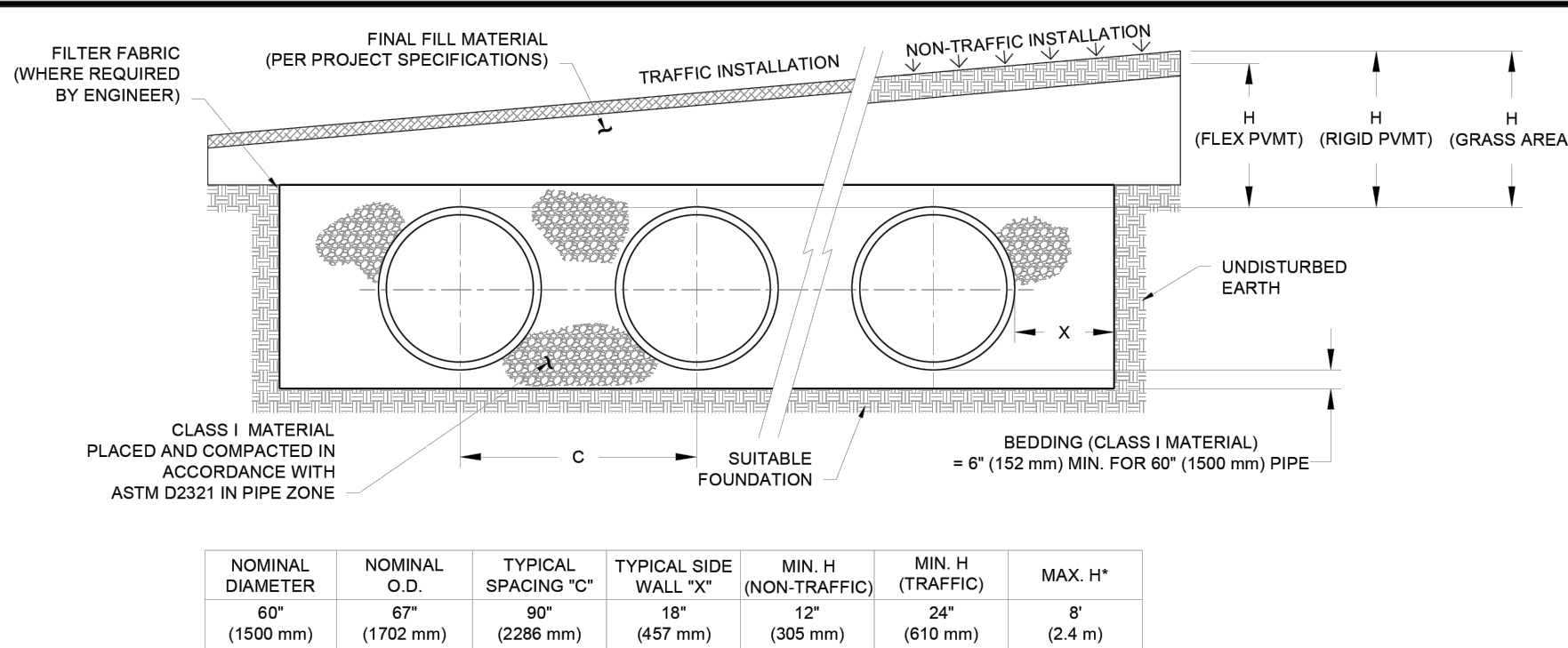


ITEM #: 2
QTY: 4
6098AN

ITEM #: 1
QTY: 2
6051AN

DATE	DRW.	CHK.	DESCRIPTION

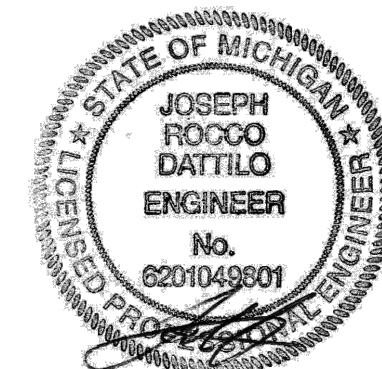
SHEET
3 OF 4



NOMINAL DIAMETER	NOMINAL O.D.	TYPICAL SPACING "C"	TYPICAL SIDE WALL "X"	MIN. H (NON-TRAFFIC)	MIN. H (TRAFFIC)	MAX. H*
60" (1500 mm)	67" (1702 mm)	90" (2286 mm)	18" (457 mm)	12" (305 mm)	24" (610 mm)	8' (2.4 m)

NOTES:

- ALL REFERENCES TO CLASS I MATERIAL ARE PER ASTM D2321 "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR RISERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST EDITION.
- ALL RETENTION AND DETENTION SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, LATEST EDITION AND THE MANUFACTURER'S PUBLISHED INSTALLATION GUIDELINES.
- MEASURES SHOULD BE TAKEN TO PREVENT THE MIGRATION OF NATIVE FINES INTO THE BACKFILL MATERIAL, WHEN REQUIRED. SEE ASTM D2321.
- FILTER FABRIC: A GEOTEXTILE FABRIC MAY BE USED AS SPECIFIED BY THE ENGINEER TO PREVENT THE MIGRATION OF FINES FROM THE NATIVE SOIL INTO THE SELECT BACKFILL MATERIAL.
- FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.
- BEDDING: SUITABLE MATERIAL SHALL BE CLASS I. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER, UNLESS OTHERWISE NOTED BY THE ENGINEER. MINIMUM BEDDING THICKNESS SHALL BE 4" (102 mm) FOR 4'-24" (100-600 mm); 6" (152 mm) FOR 30-60" (750-900 mm).
- INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I IN THE PIPE ZONE EXTENDING NOT LESS THAN 6" (152 mm) ABOVE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.
- COVER: MINIMUM COVER OVER ALL RETENTION/DETENTION SYSTEMS IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" (305 mm) FROM TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOTATION. FOR TRAFFIC APPLICATIONS, MINIMUM COVER IS 12" (305 mm) UP TO 36" (900 mm) DIAMETER PIPE AND 24" (610 mm) OF COVER FOR 42-60" (1050-1500 mm) DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT. MAXIMUM FILL HEIGHT LIMITED TO 8 FT (2.4 m) OVER FITTINGS FOR STANDARD INSTALLATIONS. CONTACT A SALES REPRESENTATIVE WHEN MAXIMUM FILL HEIGHTS EXCEED 8 FT (2.4 m) FOR INSTALLATION CONSIDERATIONS.



DATE	DRW.	CHK.	DESCRIPTION

SHEET
2 OF 4

DATE	DRW.	CHK.	DESCRIPTION

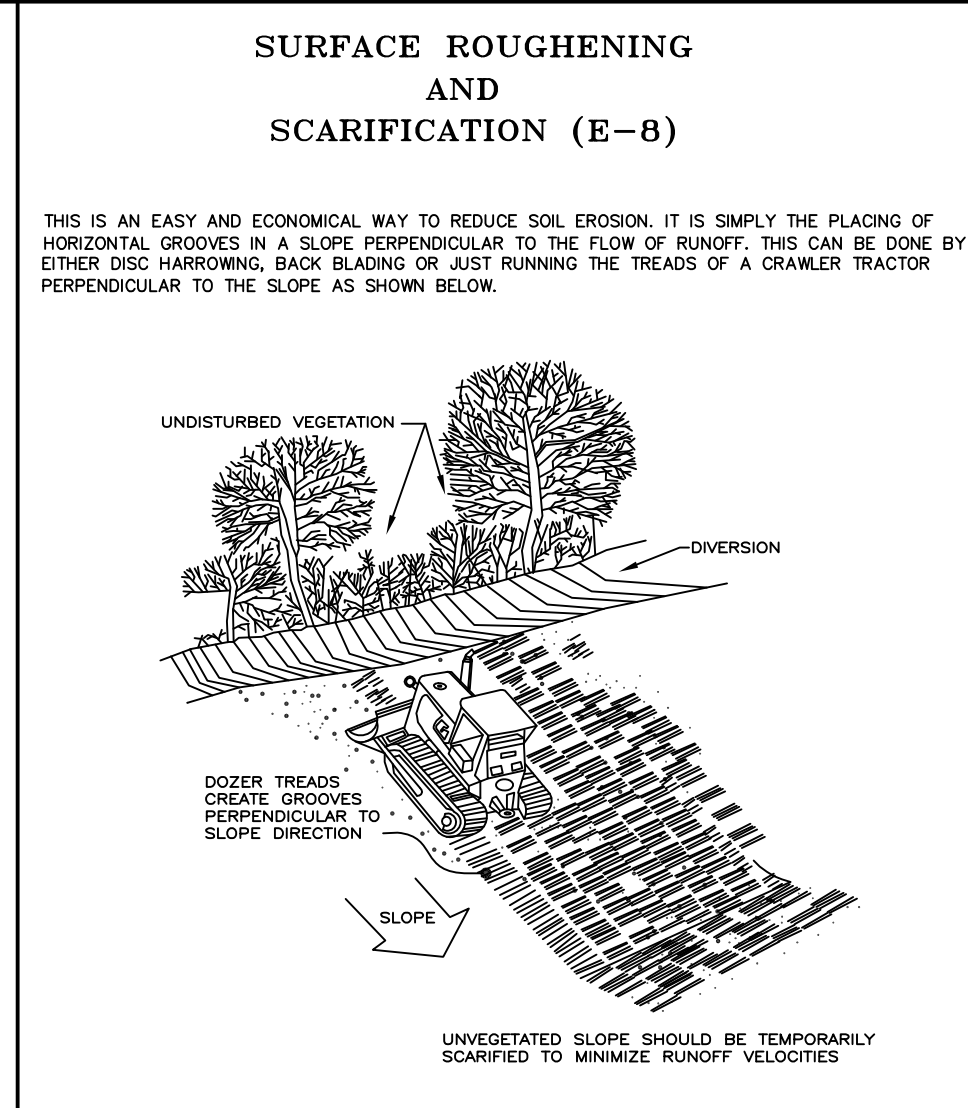
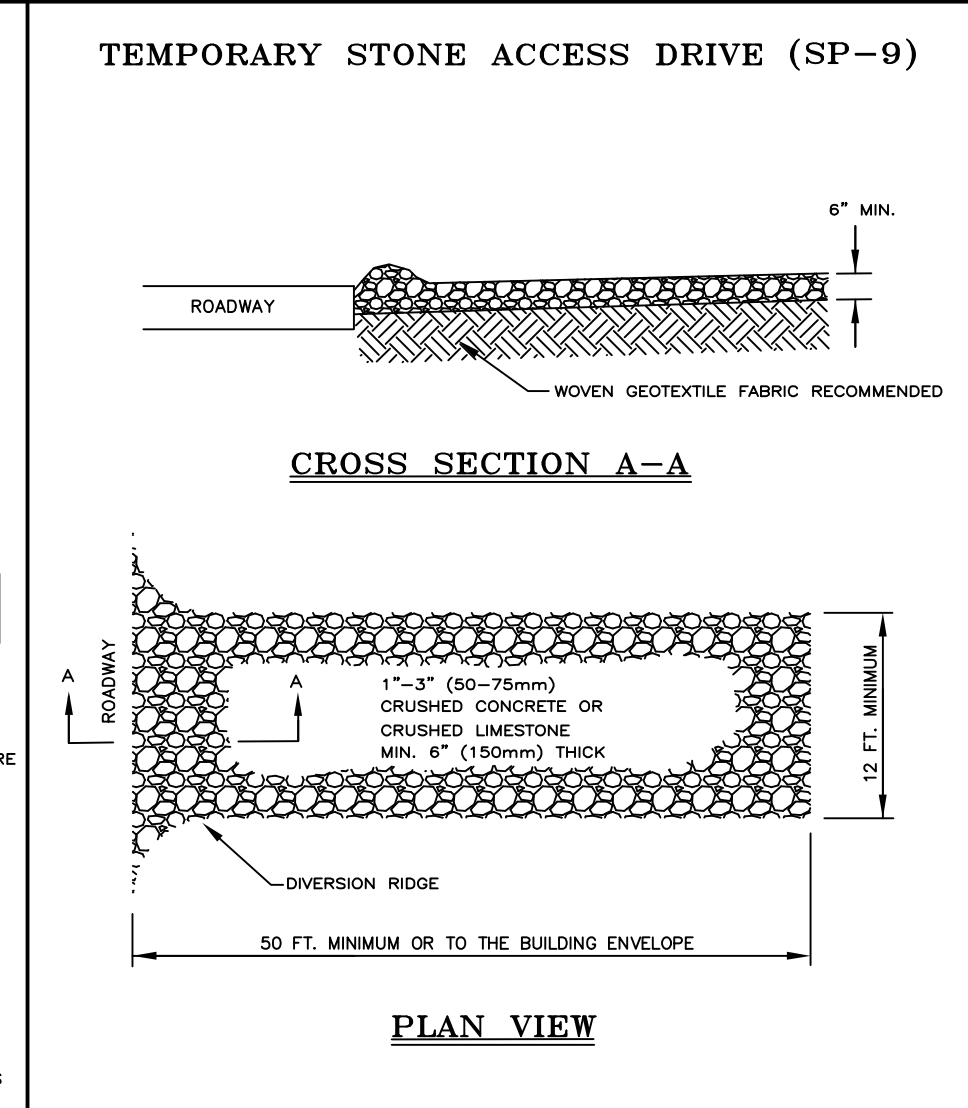
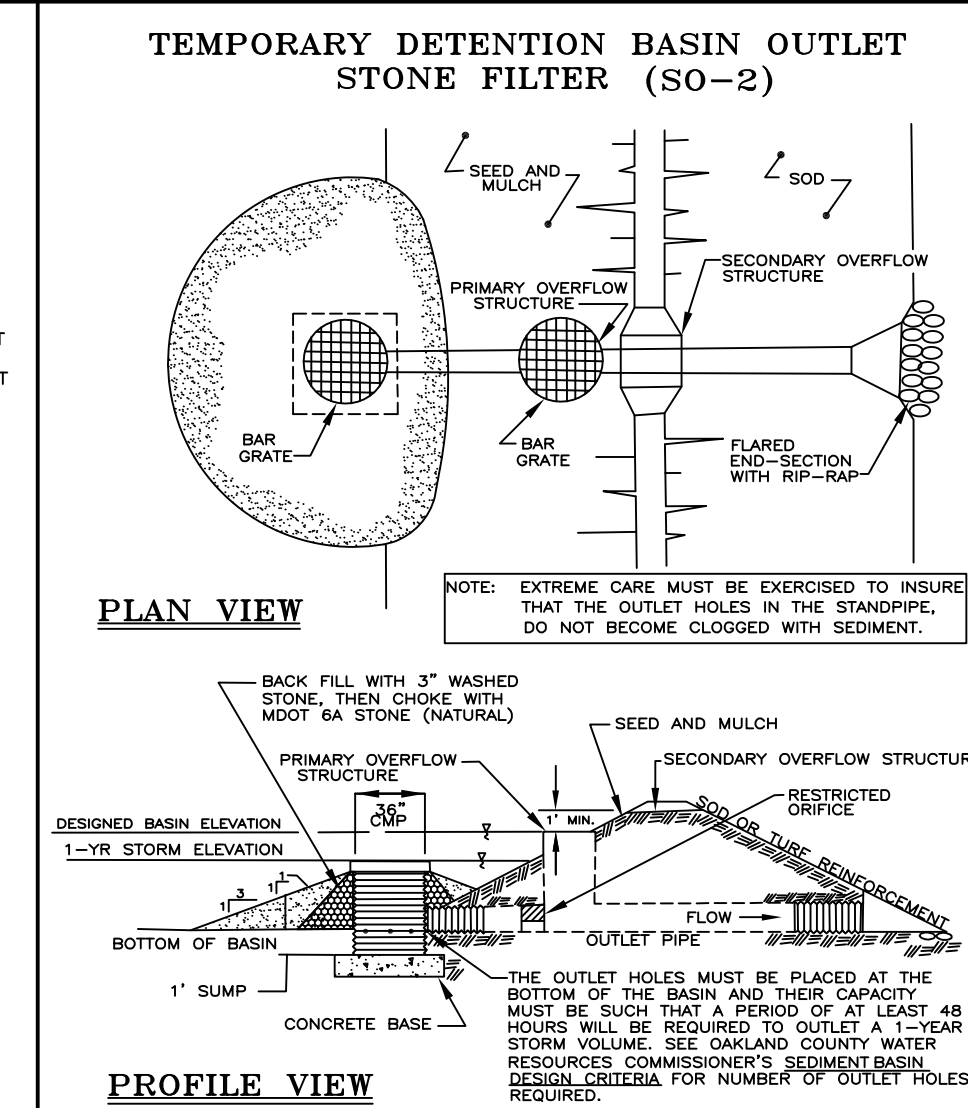
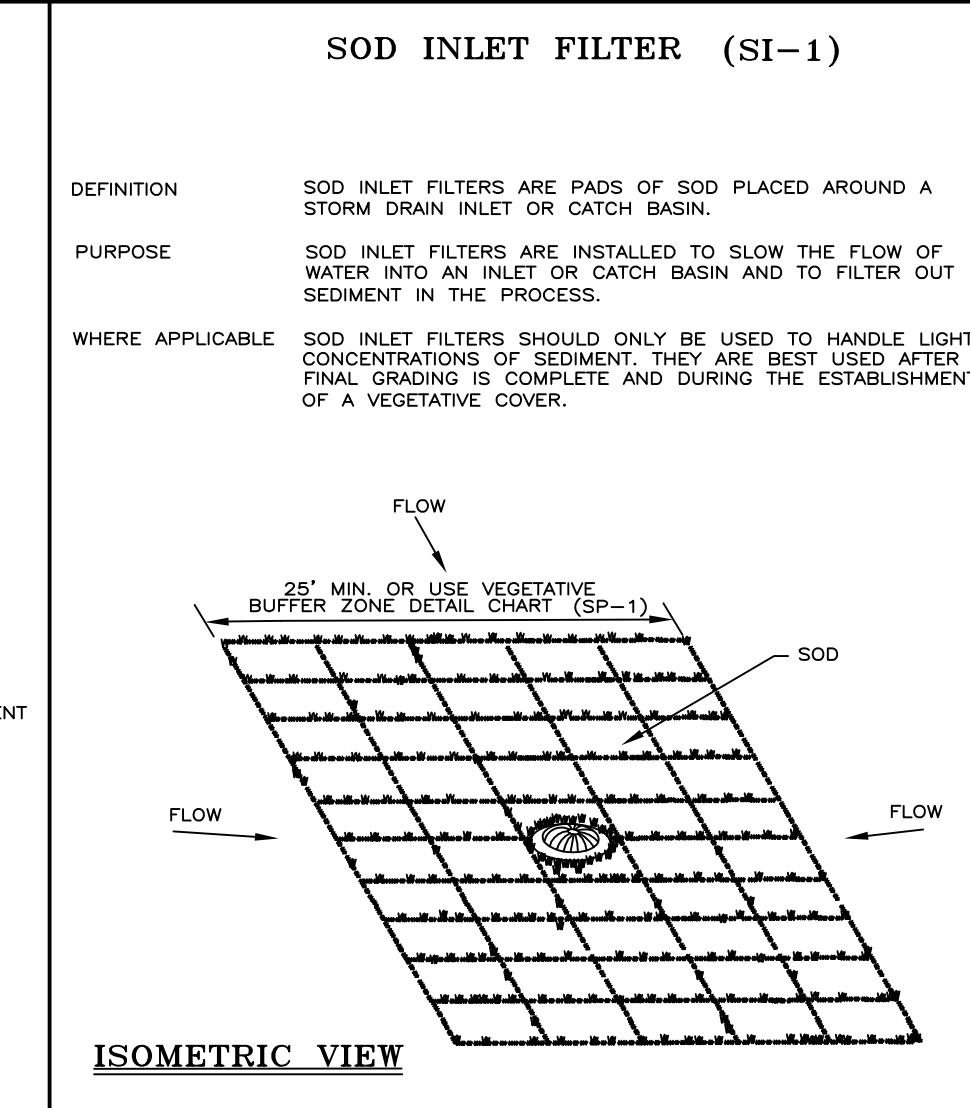
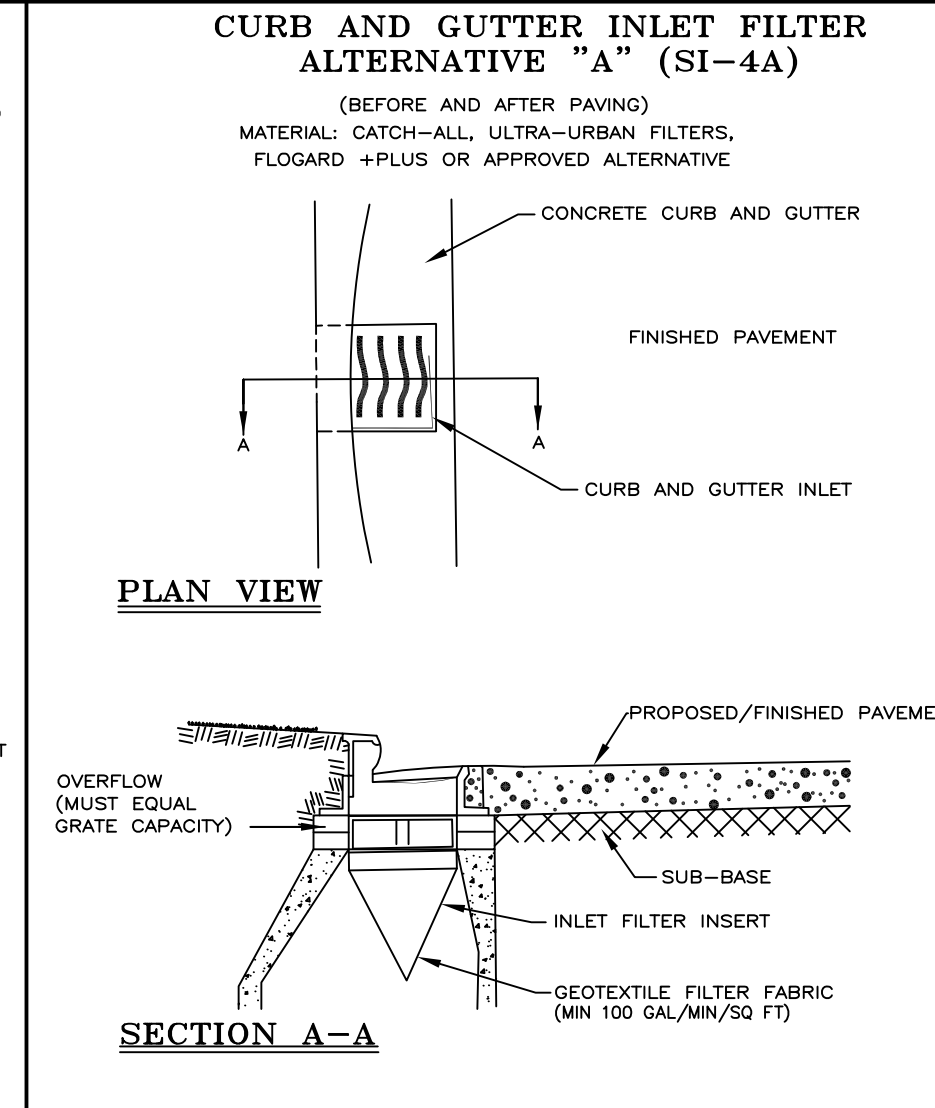
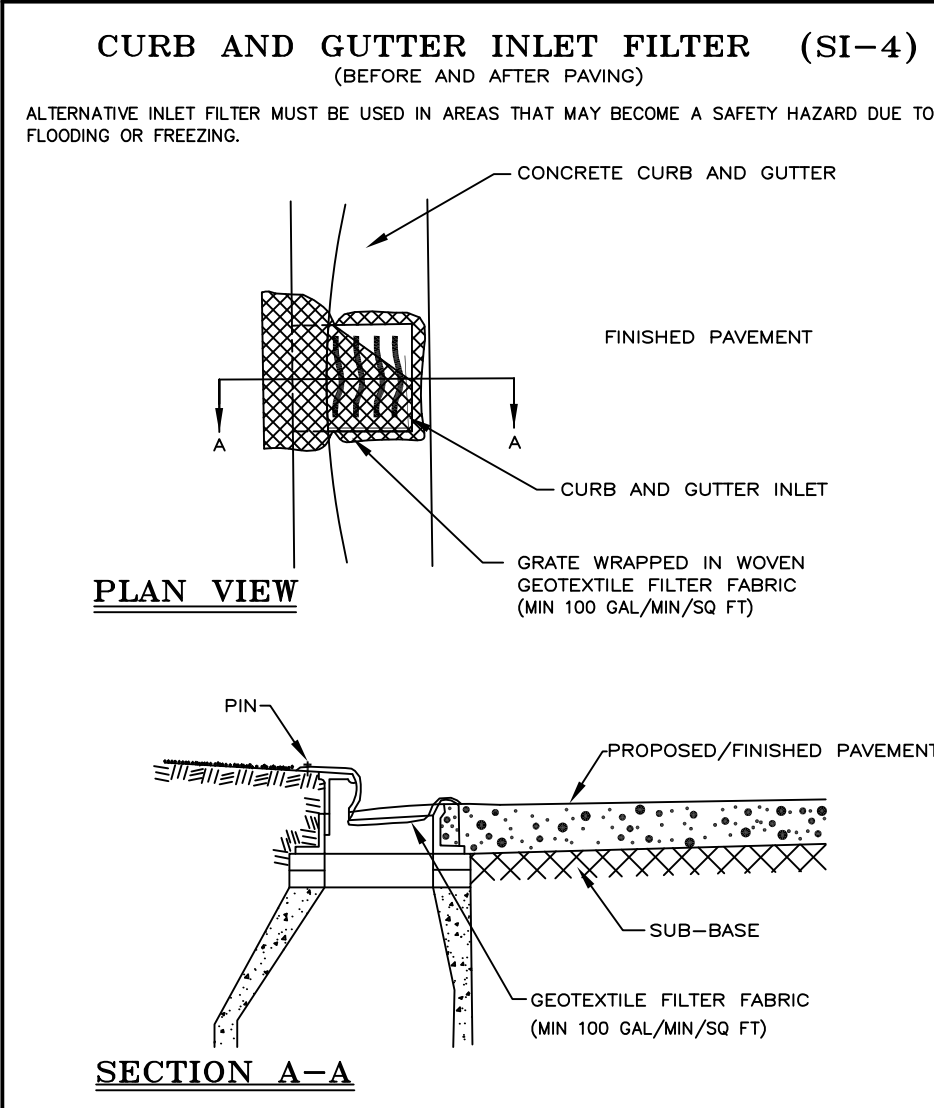
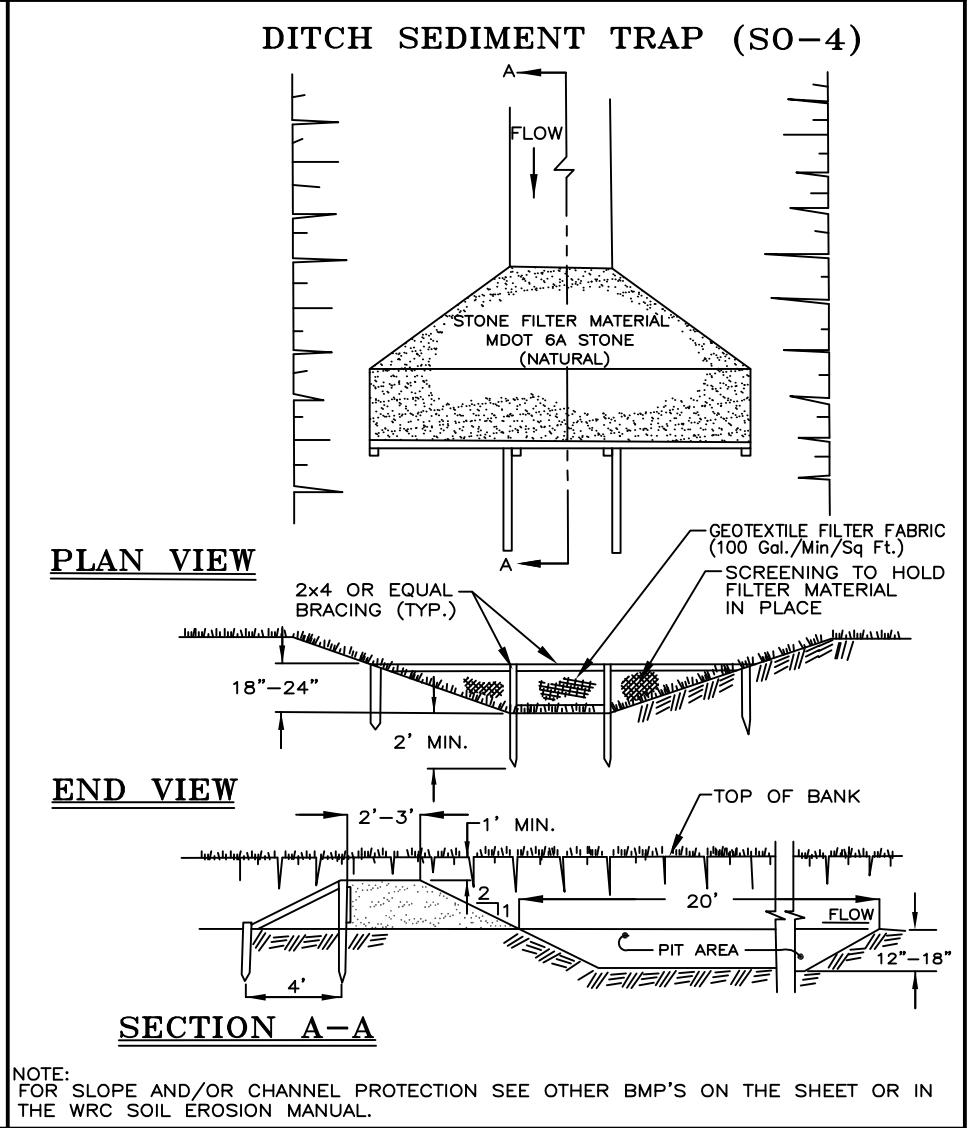
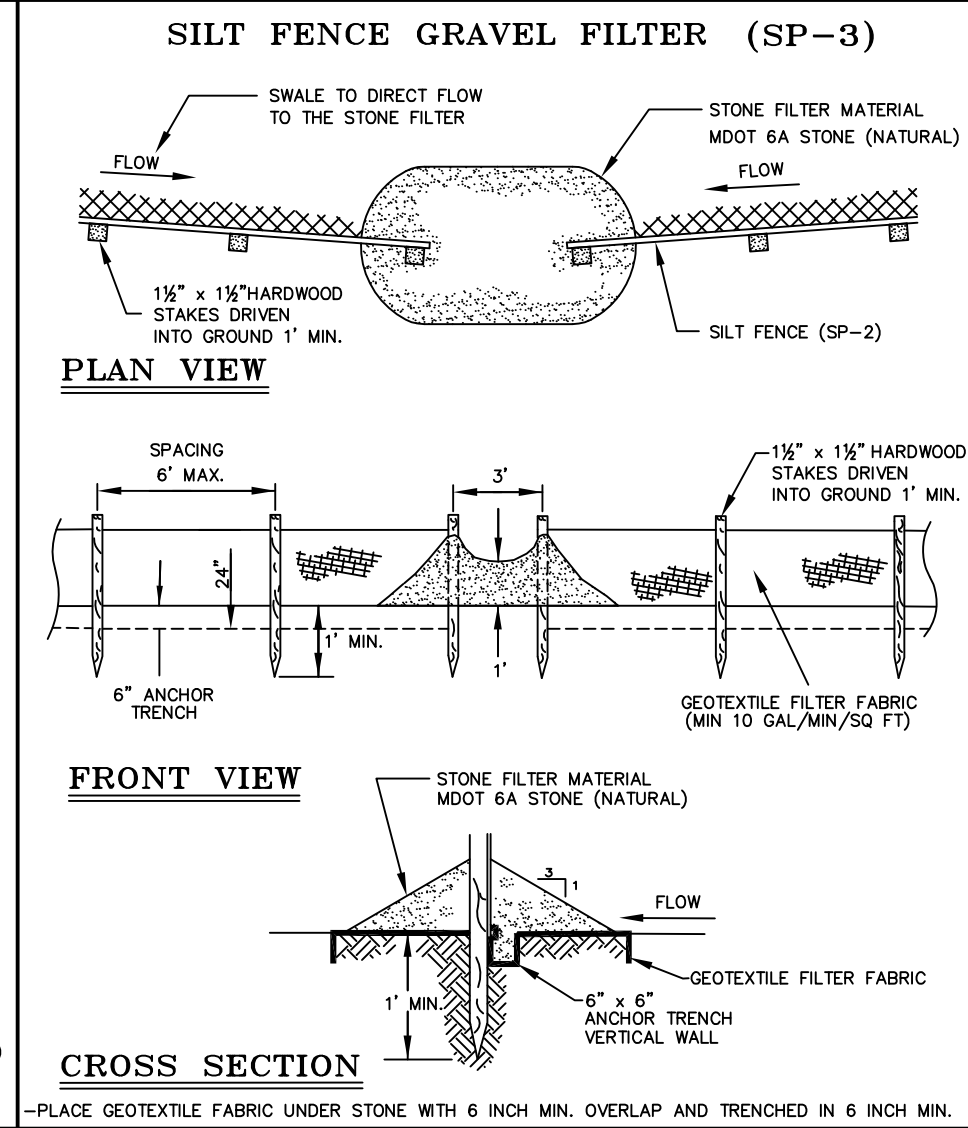
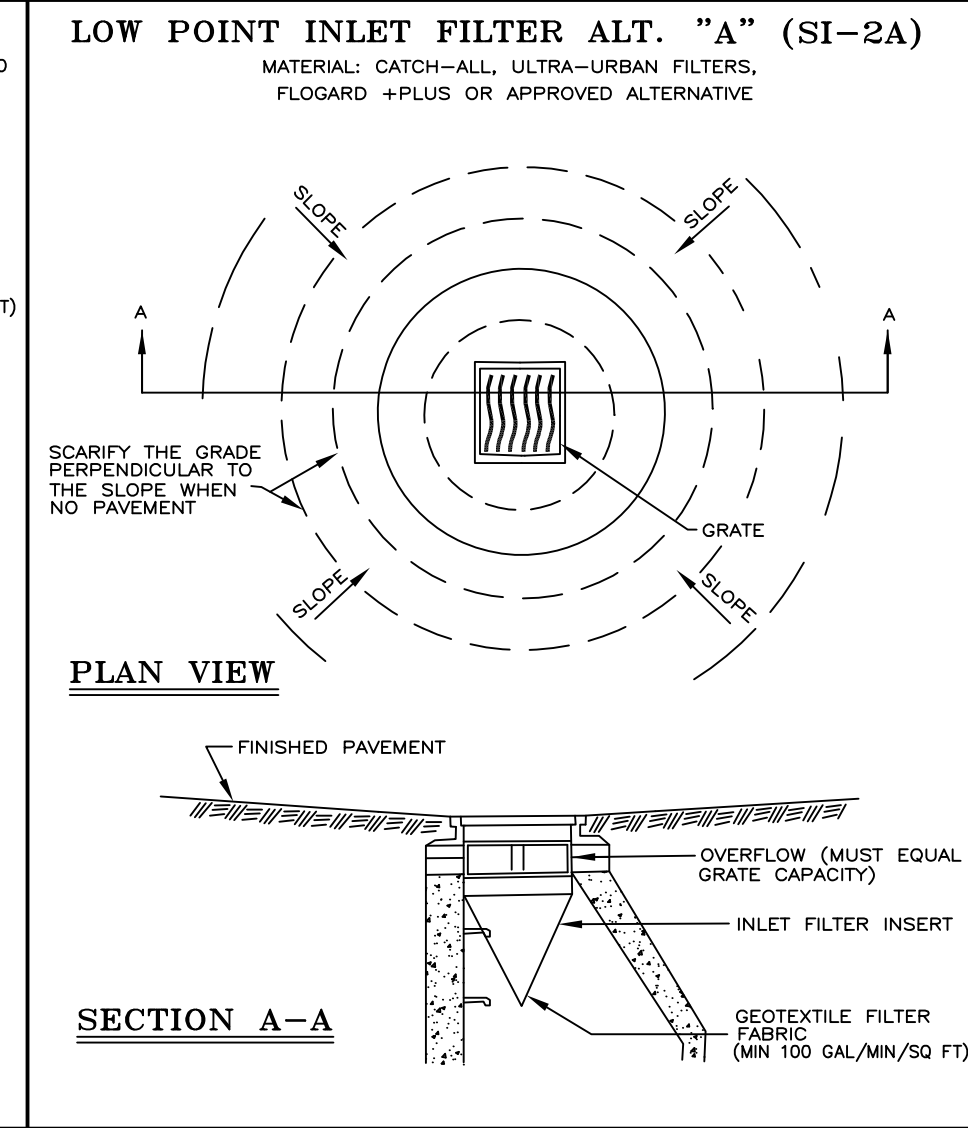
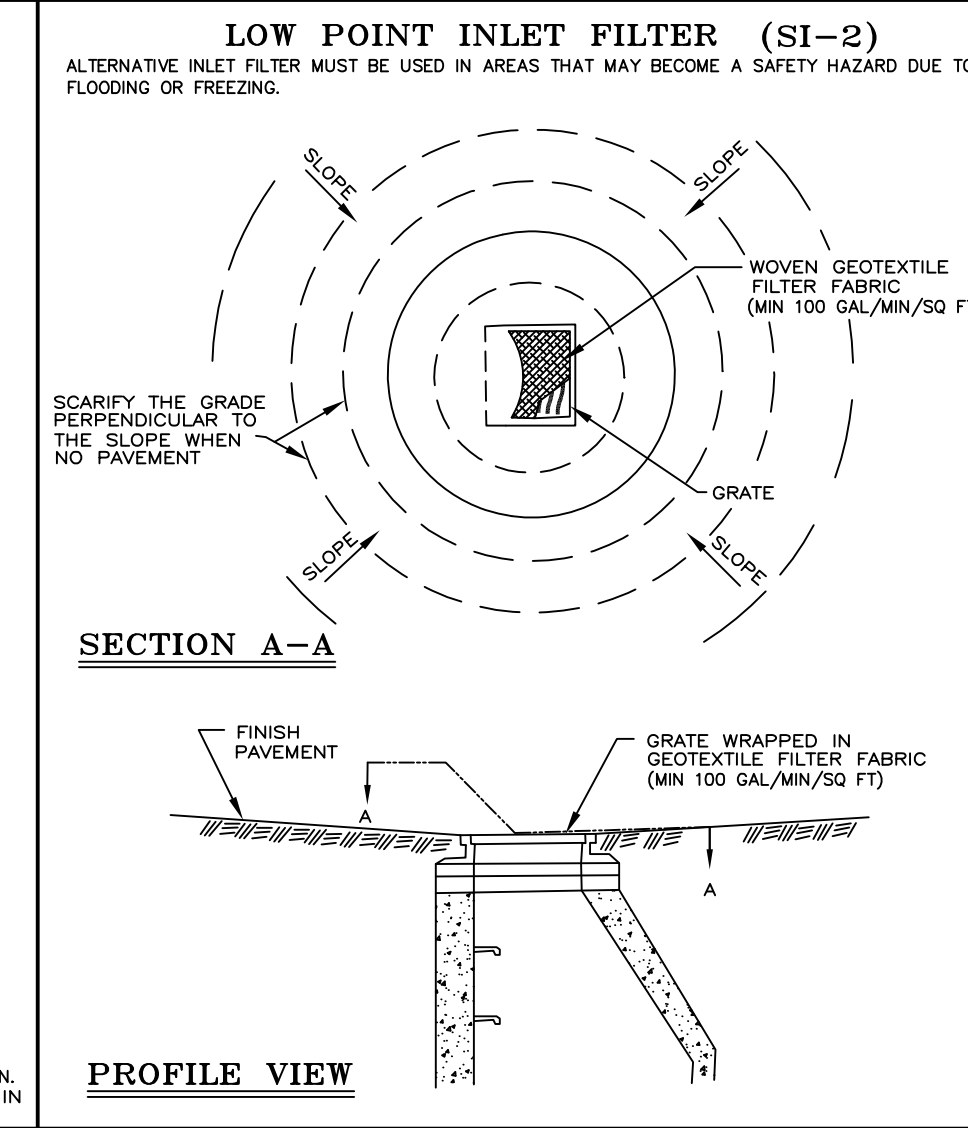
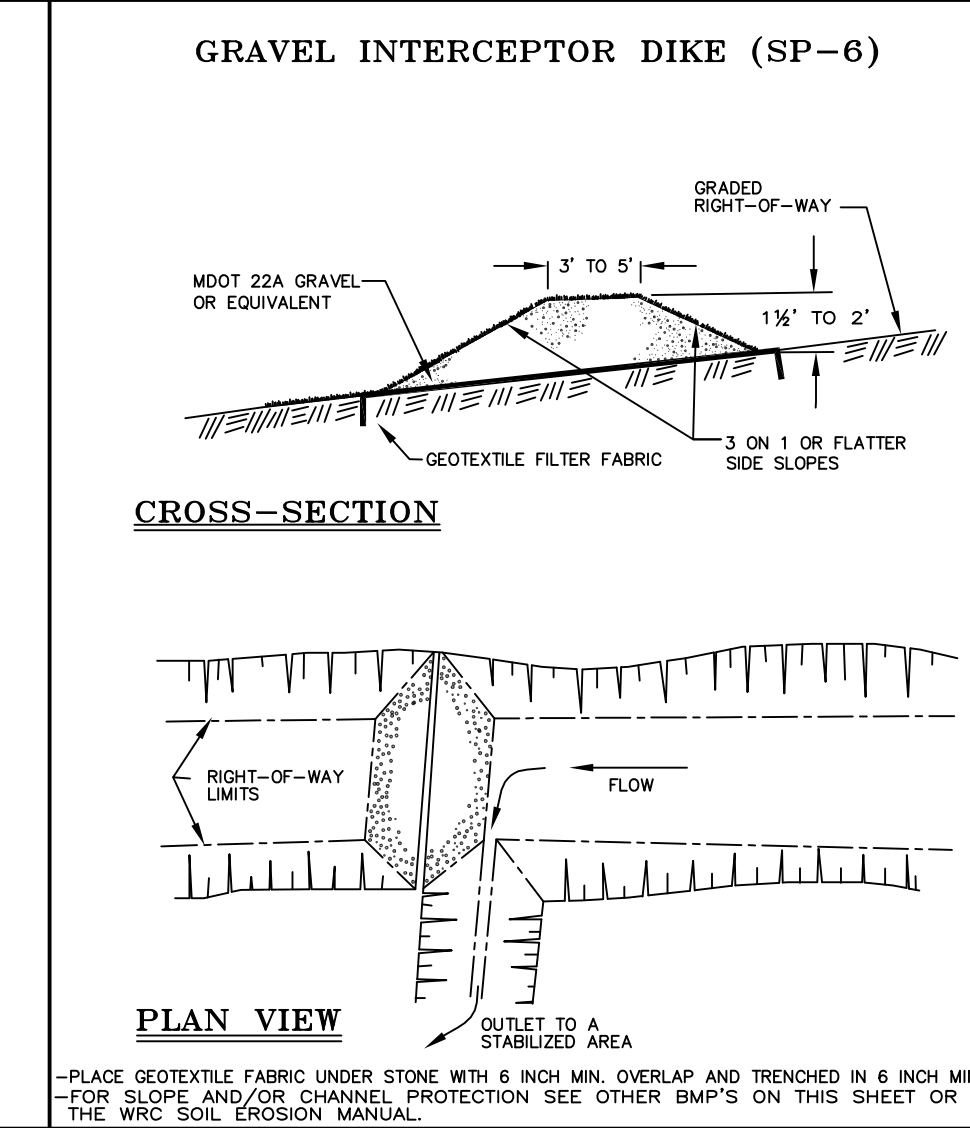
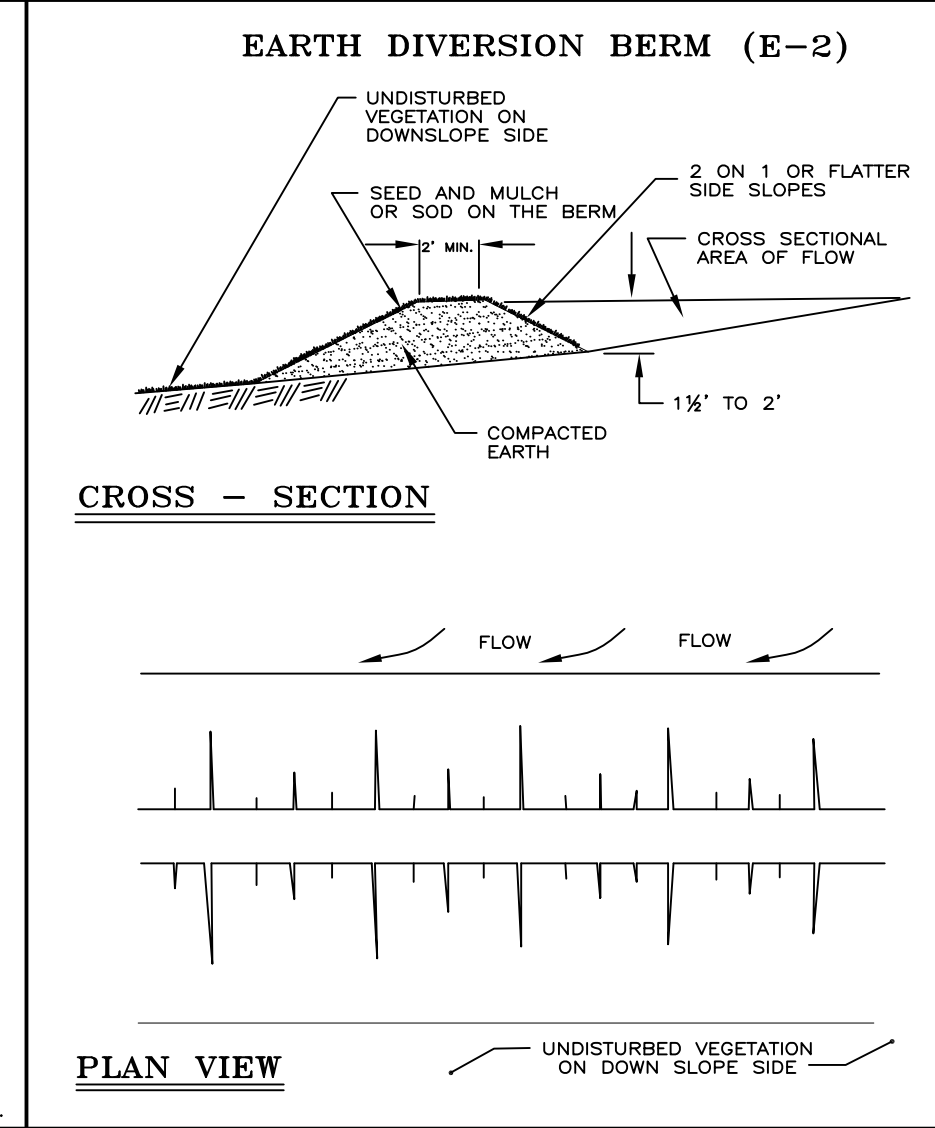
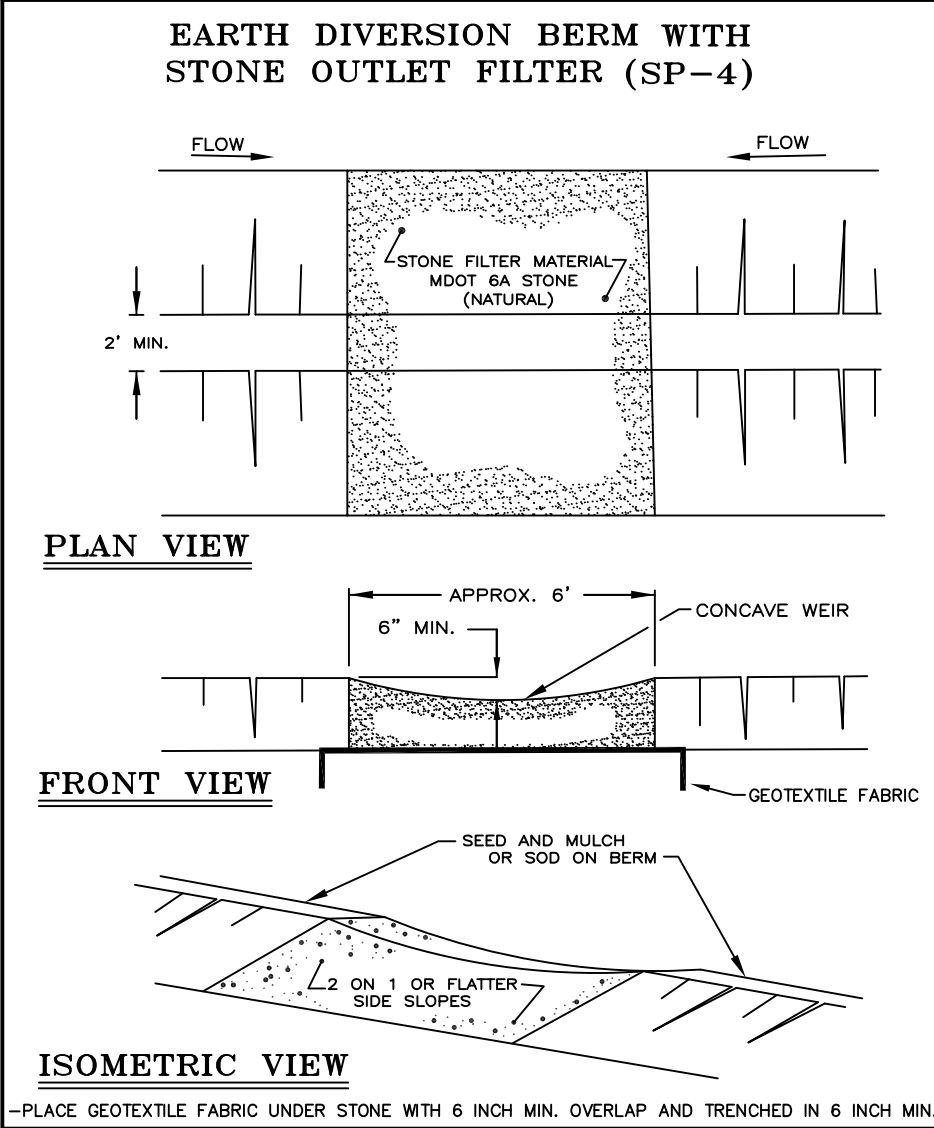
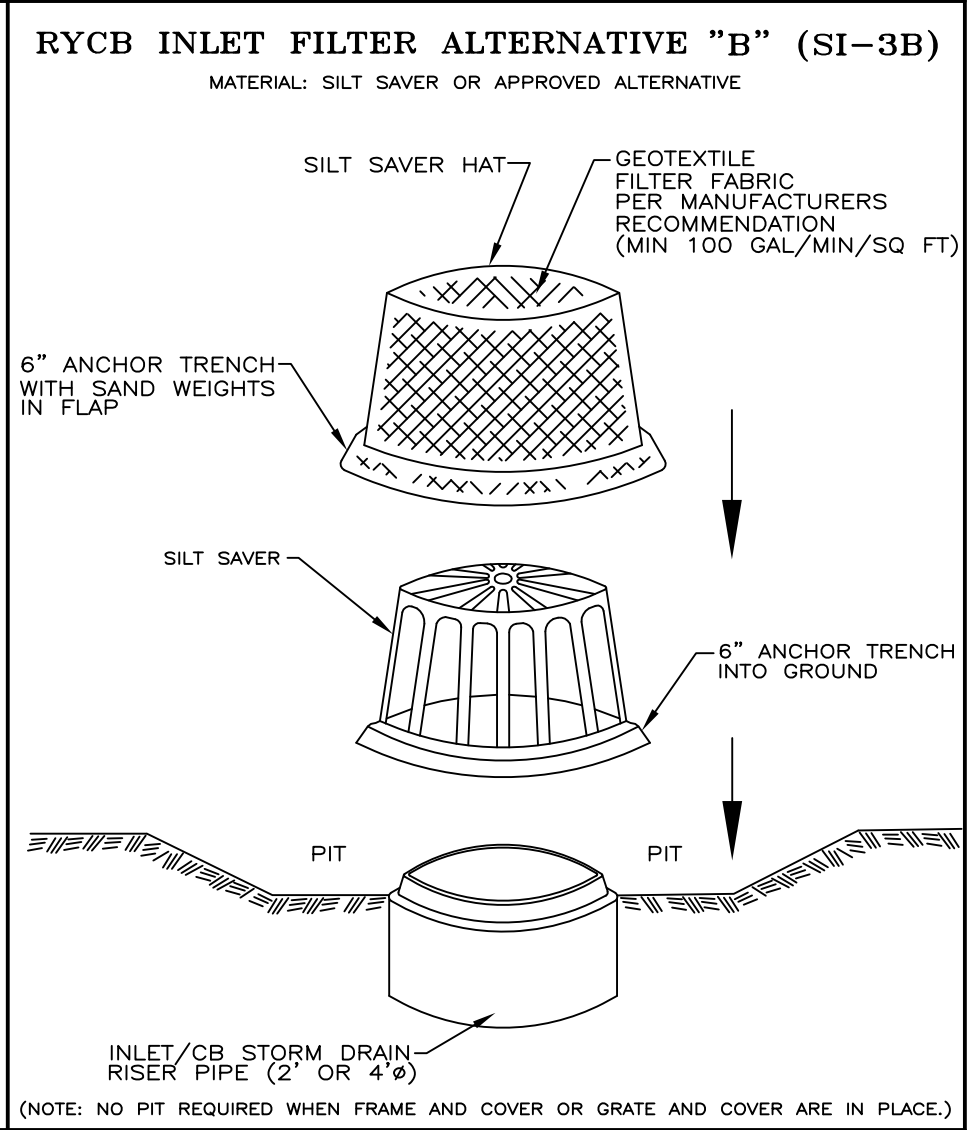
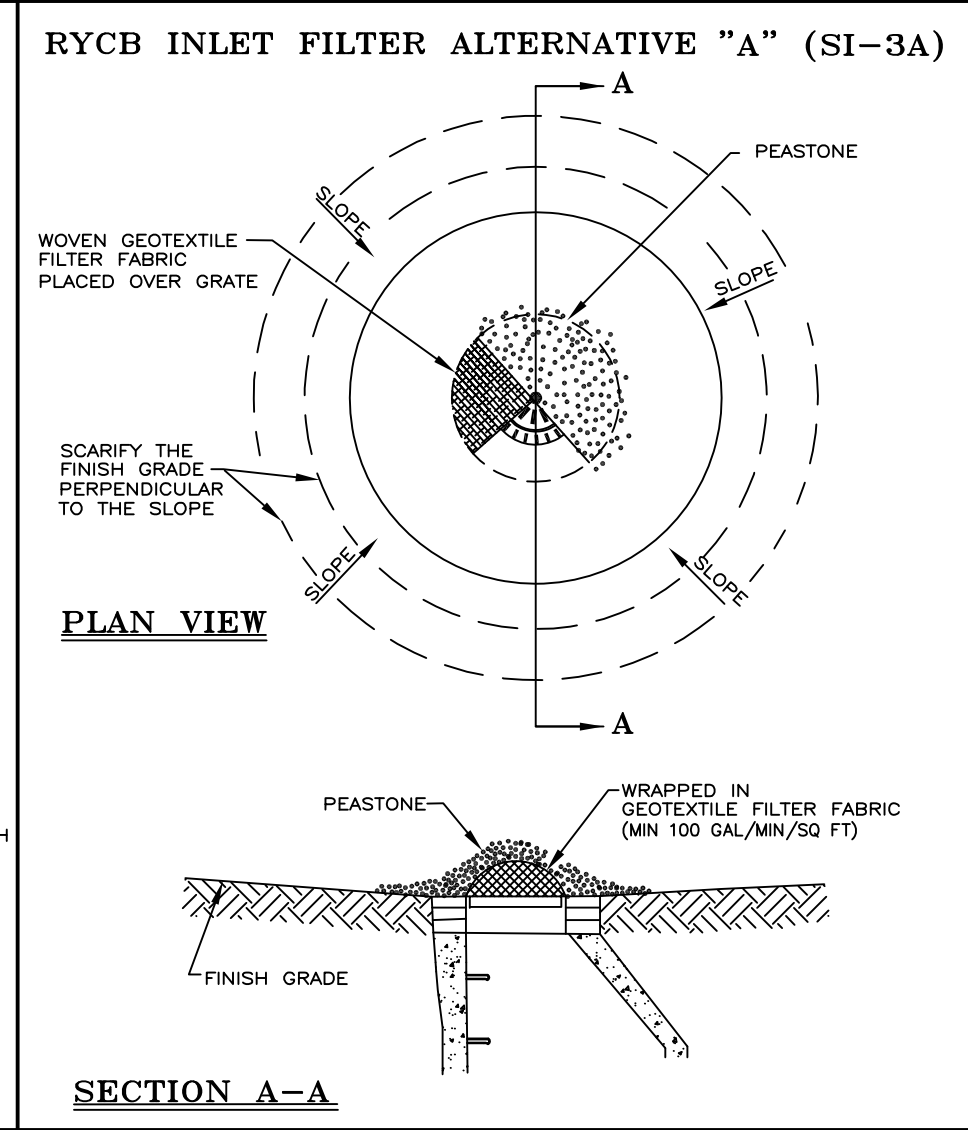
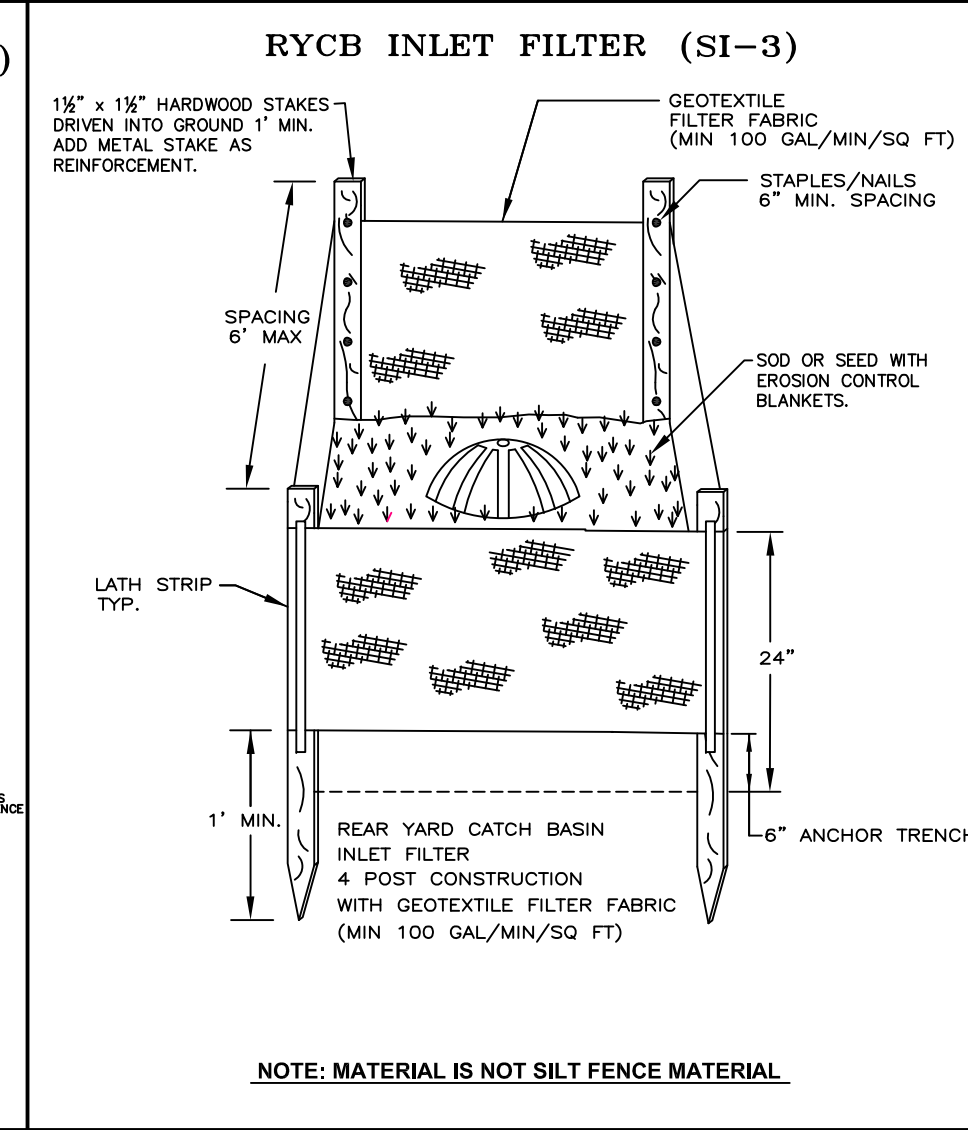
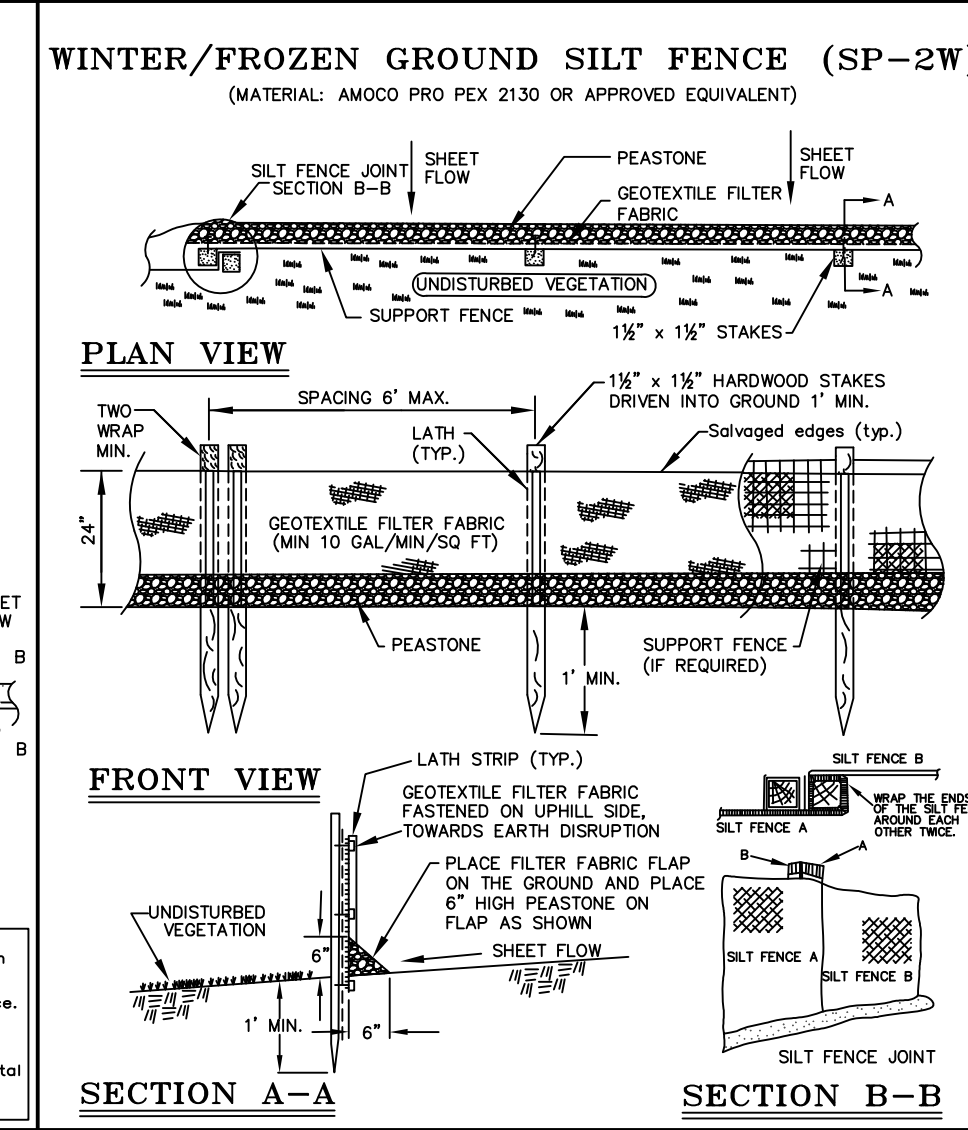
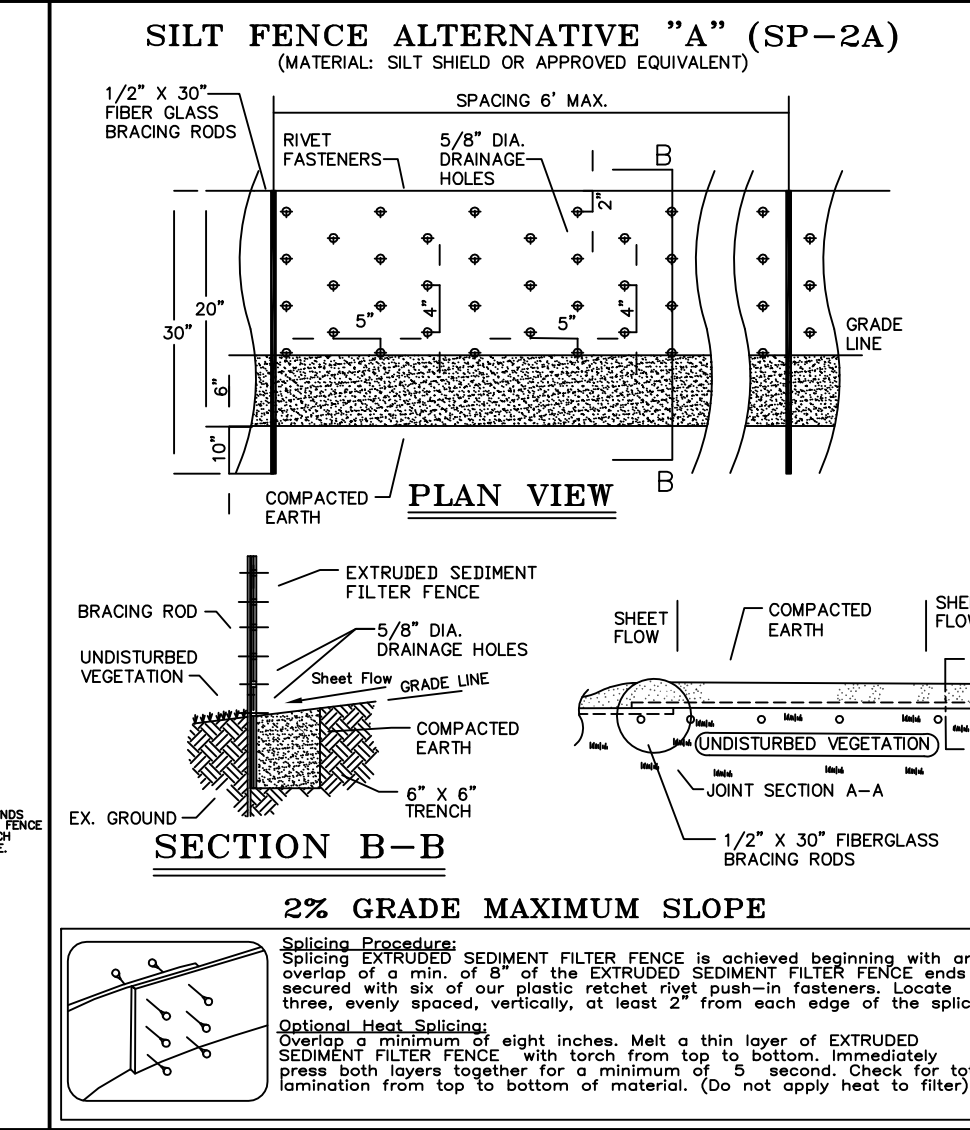
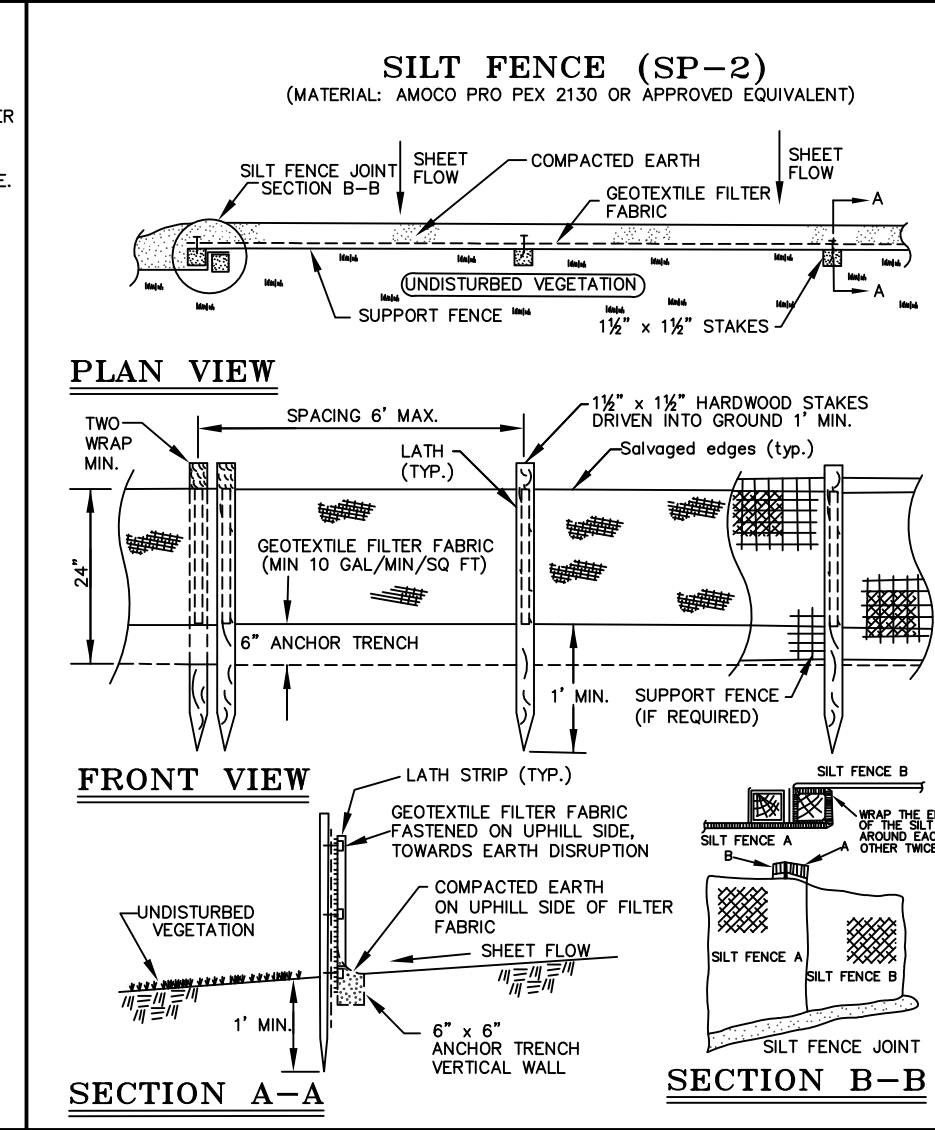
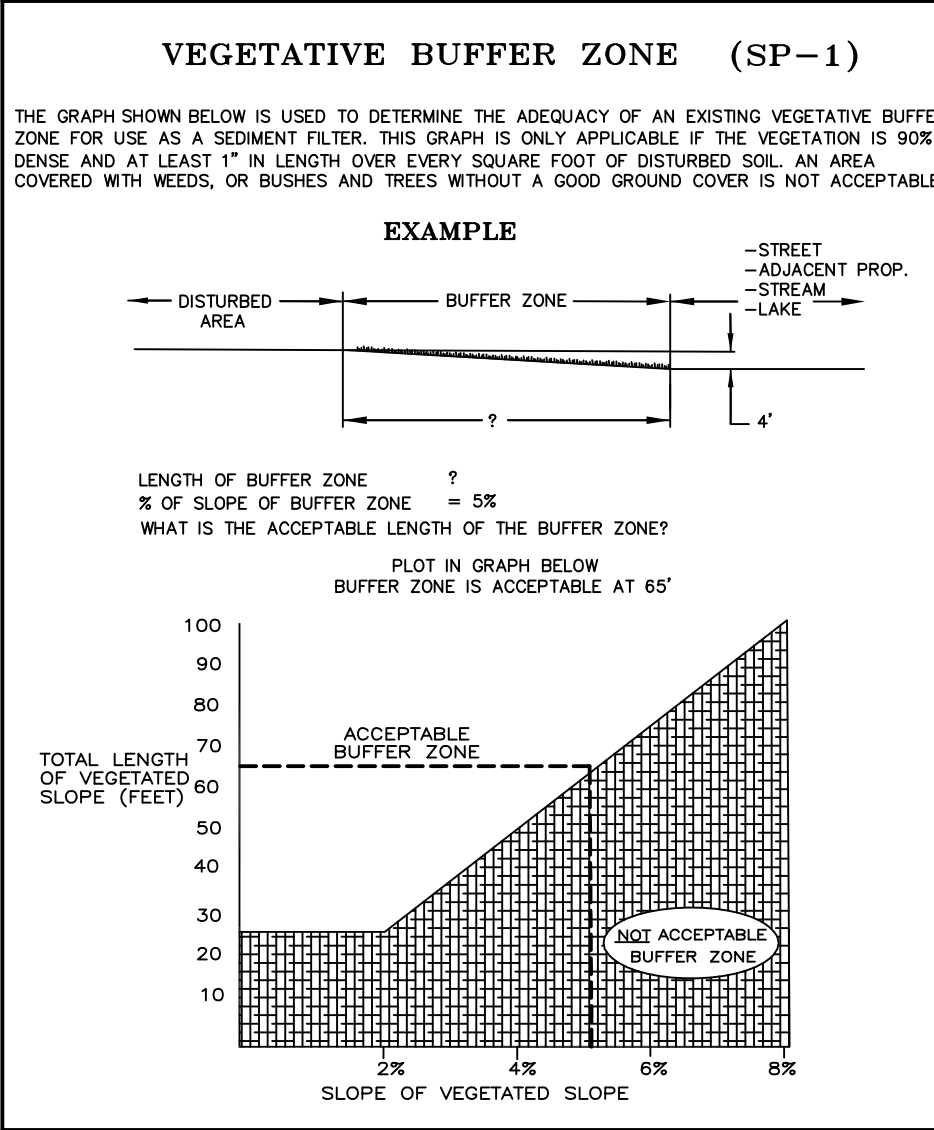
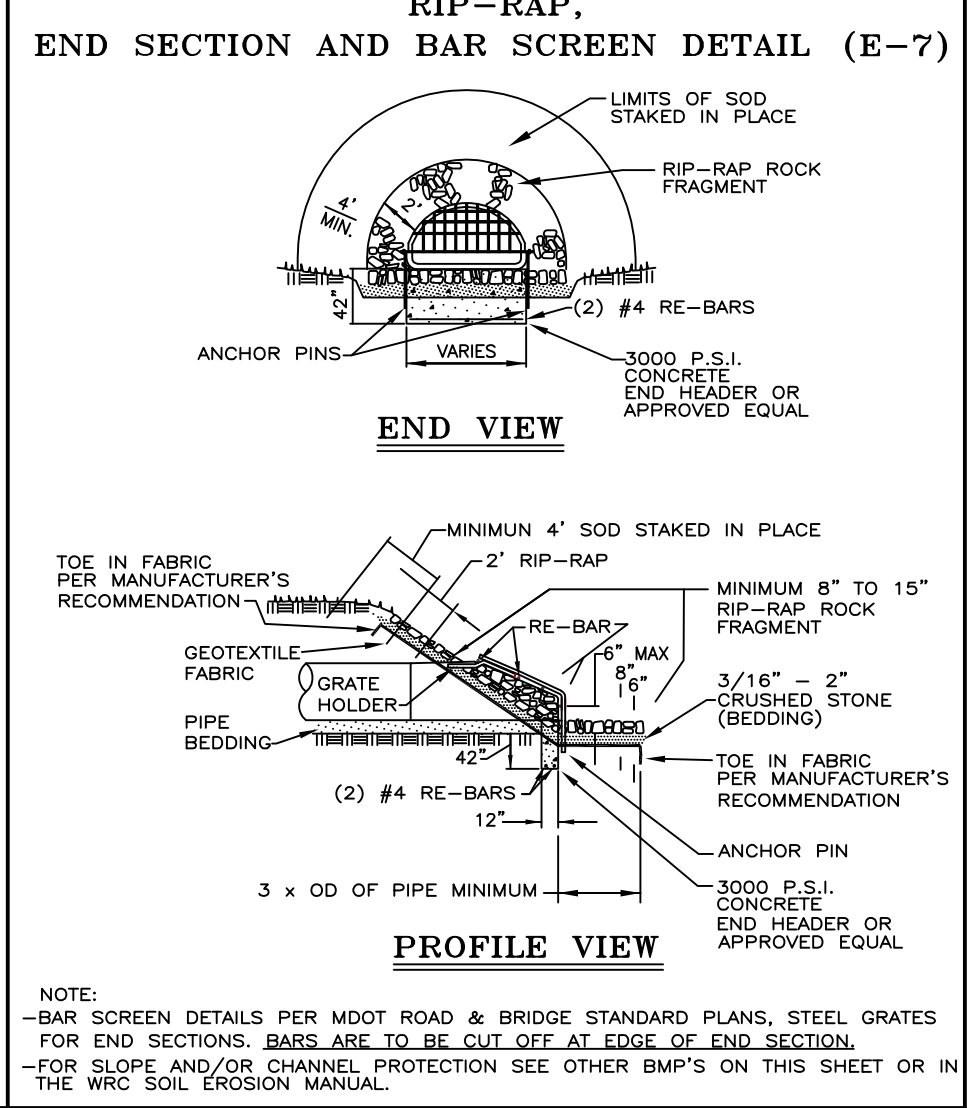
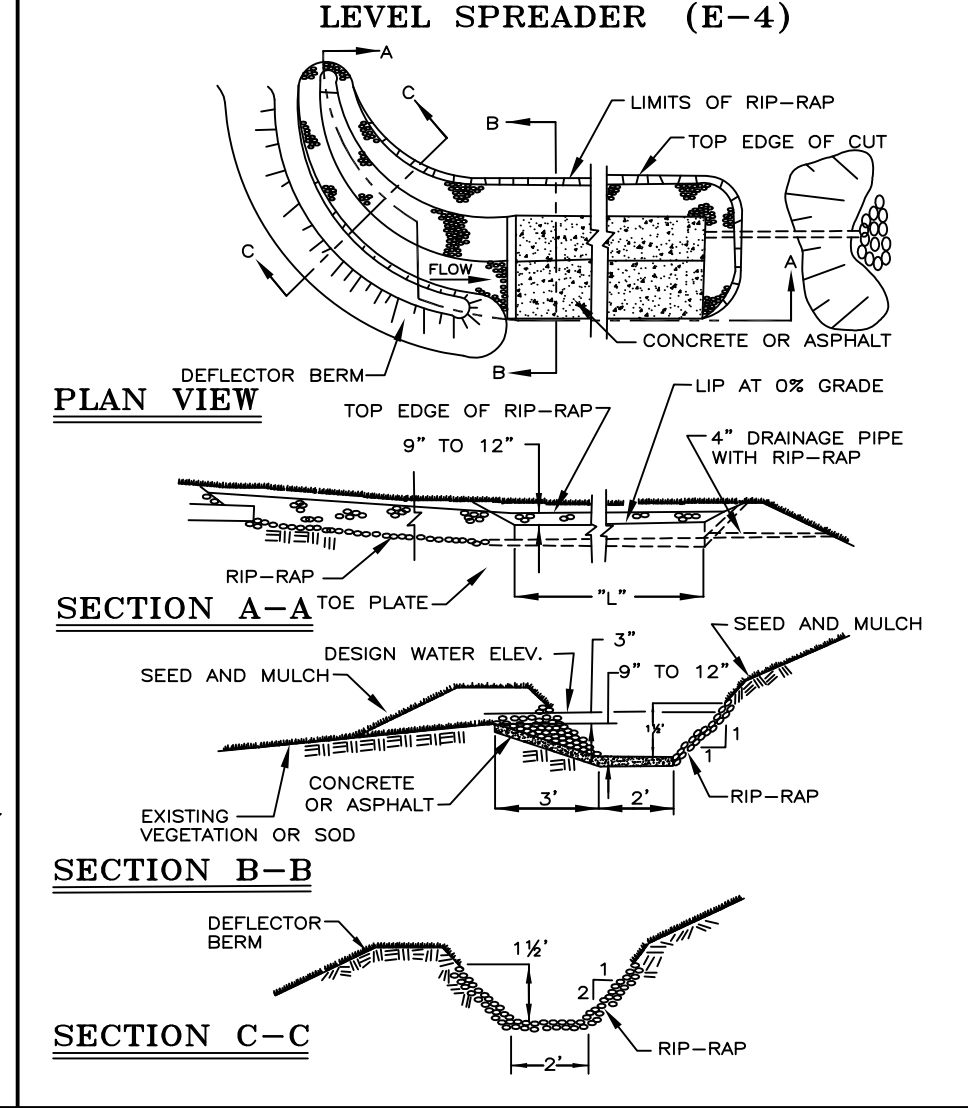
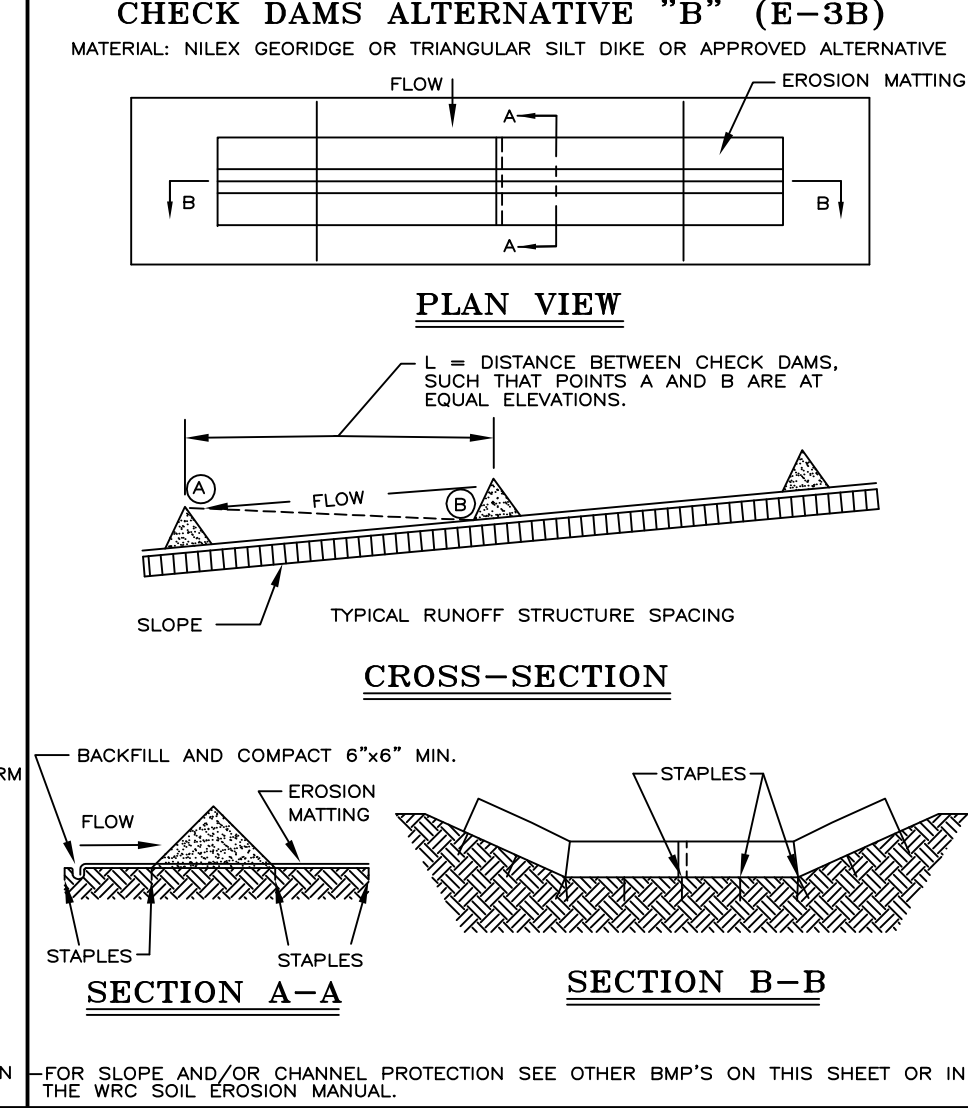
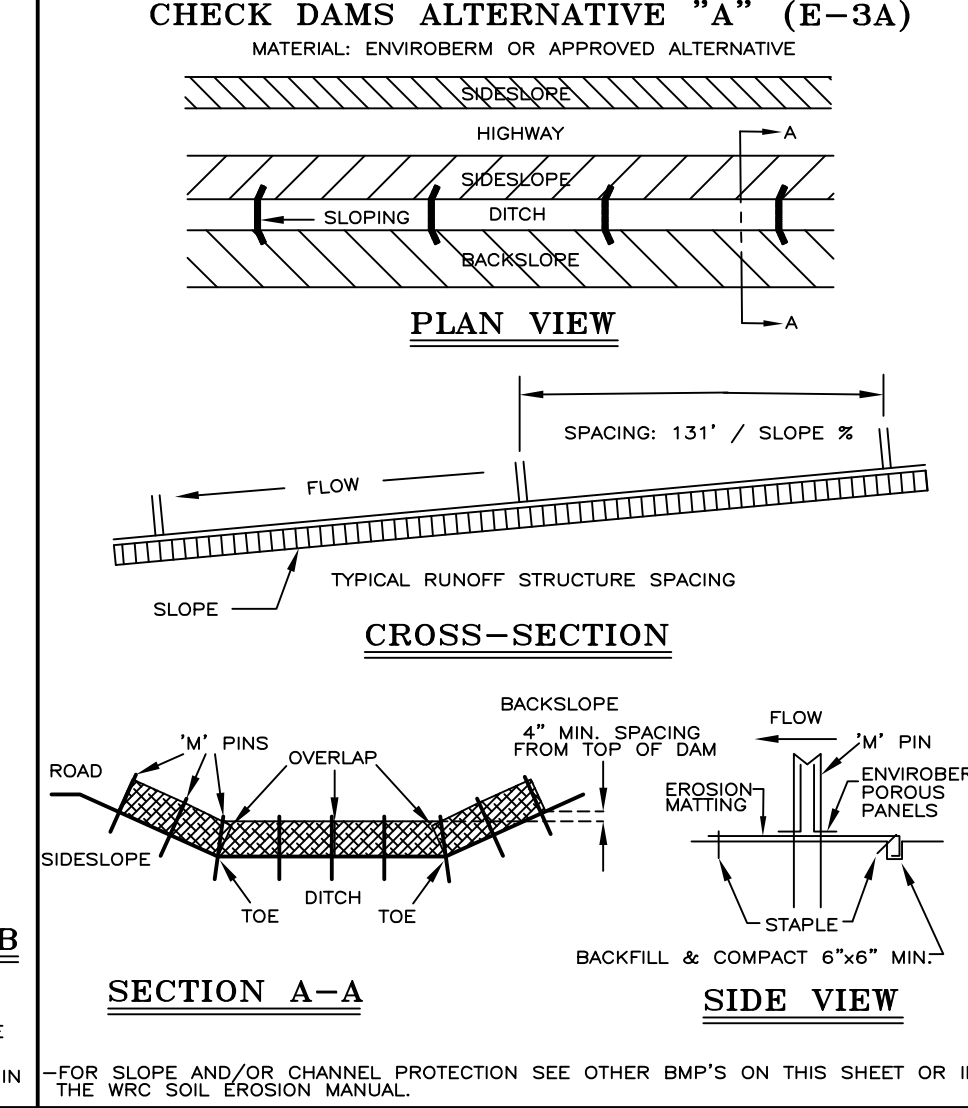
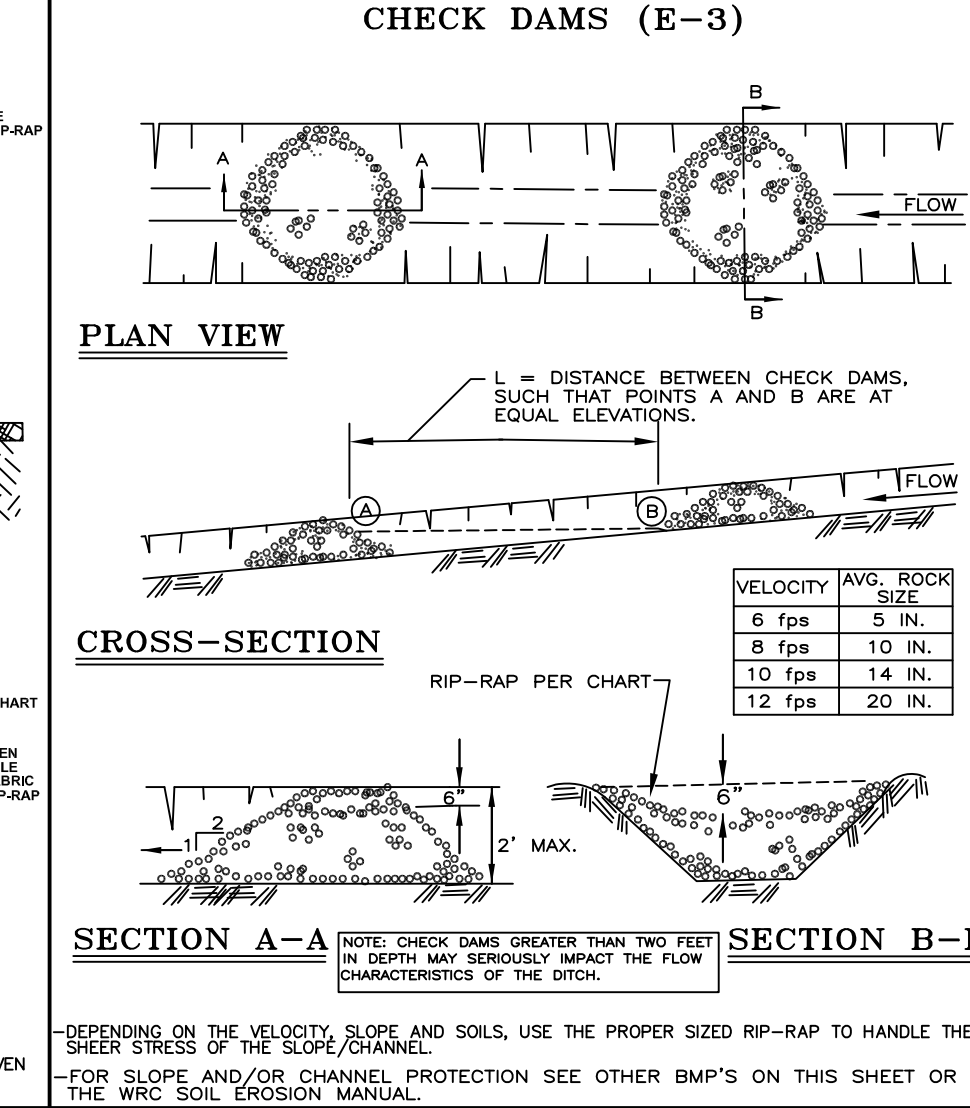
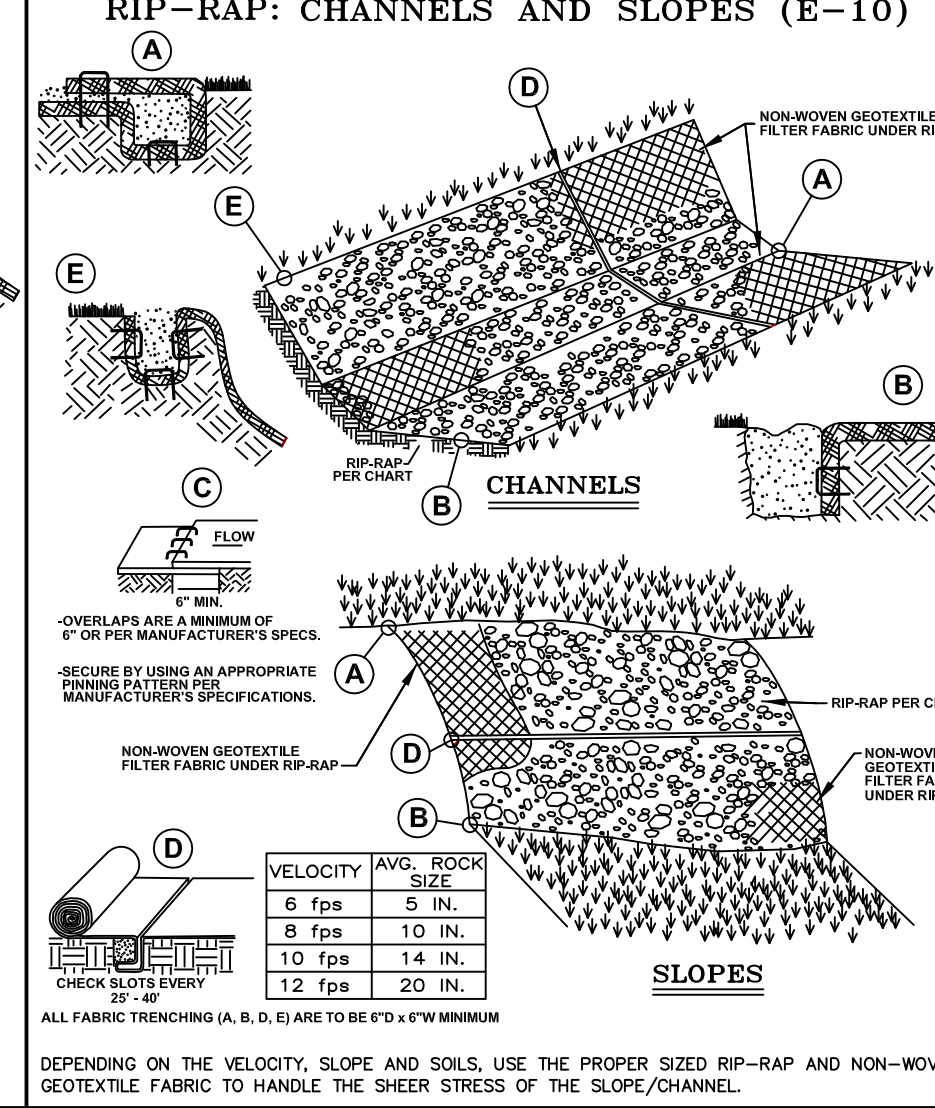
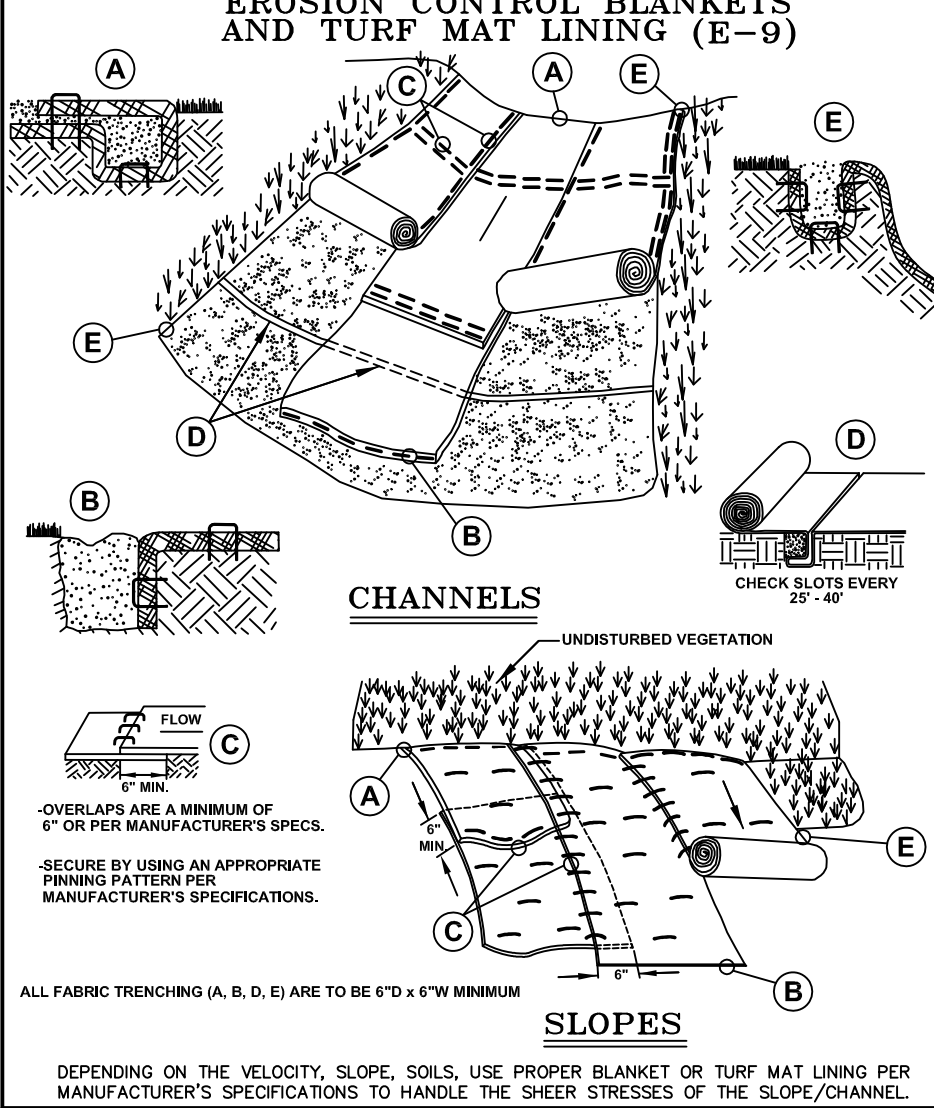
SHEET
4 OF 4

KEM-TEC
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PROFESSIONAL ENGINEERING, ARCHITECTURAL & ENVIRONMENTAL SERVICES
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(988) 994 0001
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DETAILS SHEET
PREPARED FOR: GREAT LAKES TACO, LLC.
E WALTON BLVD, PONTIAC, MI 48340

DATE	BY	REVISION	DESCRIPTION
SEPTEMBER 20, 2022	GAE	4	ENGINEERING SUBMITTAL
SEPTEMBER 20, 2022	DM	1	ENGINEERING SUBMITTAL
NOT TO SCALE	BY		

C8.1



NOTE:

WHILE PERFORMING WORK INVOLVING GROUNDS MAINTENANCE AND/OR THE CONSTRUCTION/MAINTENANCE OF ANY INFRASTRUCTURE, INCLUDING ROADS, WATER MAINS, SANITARY SEWERS, STORM DRAINS AND STORM WATER BEST MANAGEMENT PRACTICES (BMPs), CONTRACTORS SHALL MINIMIZE POLLUTION FROM STORM WATER RUNOFF THAT CAN AFFECT WATER QUALITY RELATED TO WORK ACTIVITIES. POLLUTANTS THAT COULD IMPAIR WATER QUALITY MAY INCLUDE FUEL, GREASE AND OIL, NUTRIENTS, BACTERIA AND PATHOGENS, LITTER AND DEBRIS, AND SOIL EROSION AND SEDIMENTATION. APPLICABLE BMPs SHALL BE IMPLEMENTED BY THE CONTRACTOR TO THE MAXIMUM EXTENT PRACTICABLE TO PROTECT WATER QUALITY AND WILDLIFE HABITAT.

SOIL EROSION AND SEDIMENTATION CONTROL DETAILS

REV.	DATE	DESCRIPTION
1	01/01/01	ISSUED FOR BIDDING
2	01/01/01	PROPOSED DETAIL REVISIONS
3	01/01/01	FOR ENGINEER'S COMMITTEE APPROVAL, NAME CHANGES
4	01/01/01	FOR ENGINEER'S COMMITTEE APPROVAL, NAME CHANGES
5	01/01/01	FOR ENGINEER'S COMMITTEE APPROVAL, NAME CHANGES

ORIG. DATE: 01/01/01

SCALE: _____

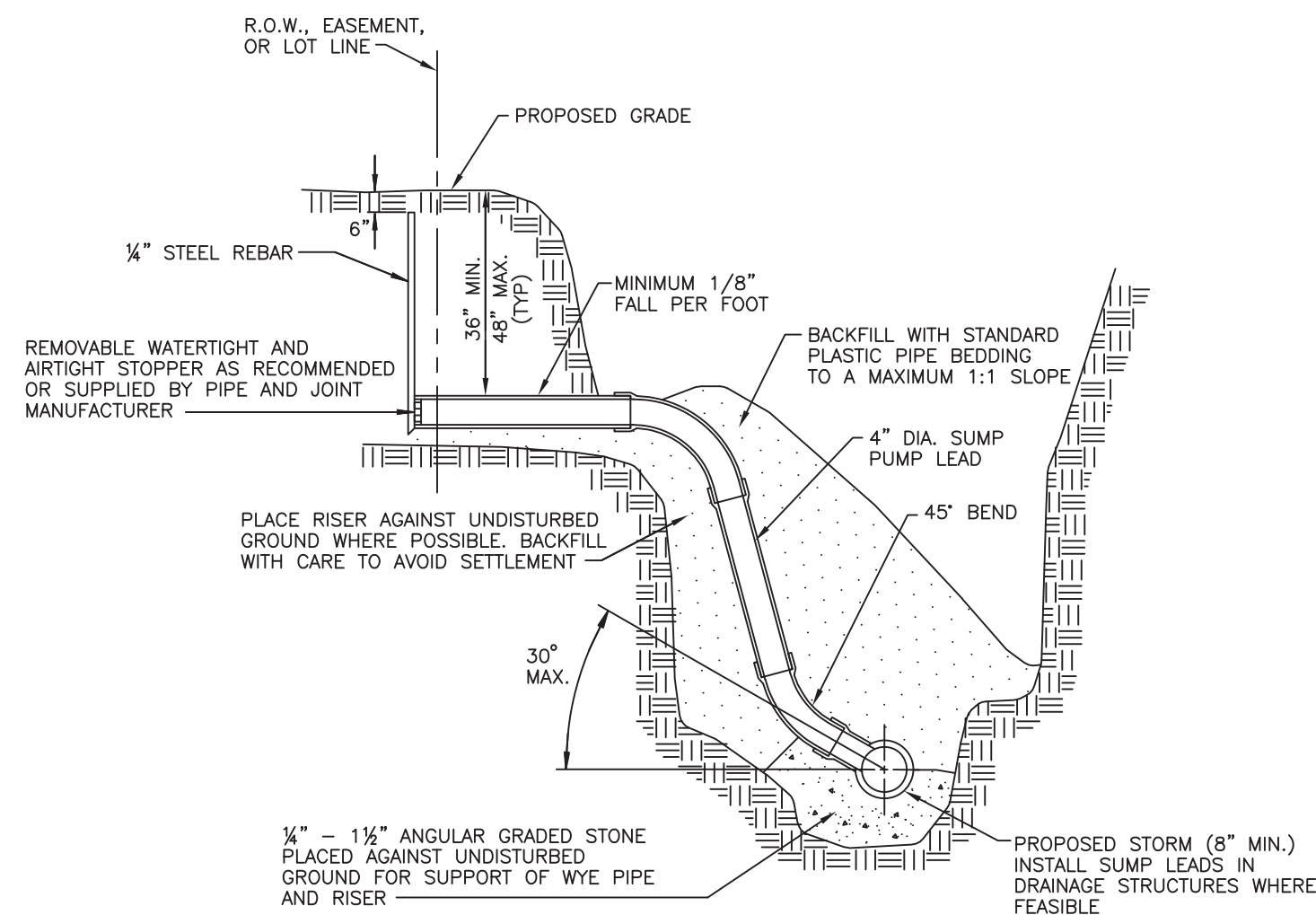
DESIGNED BY: WRC

DRAWN BY: Mapping

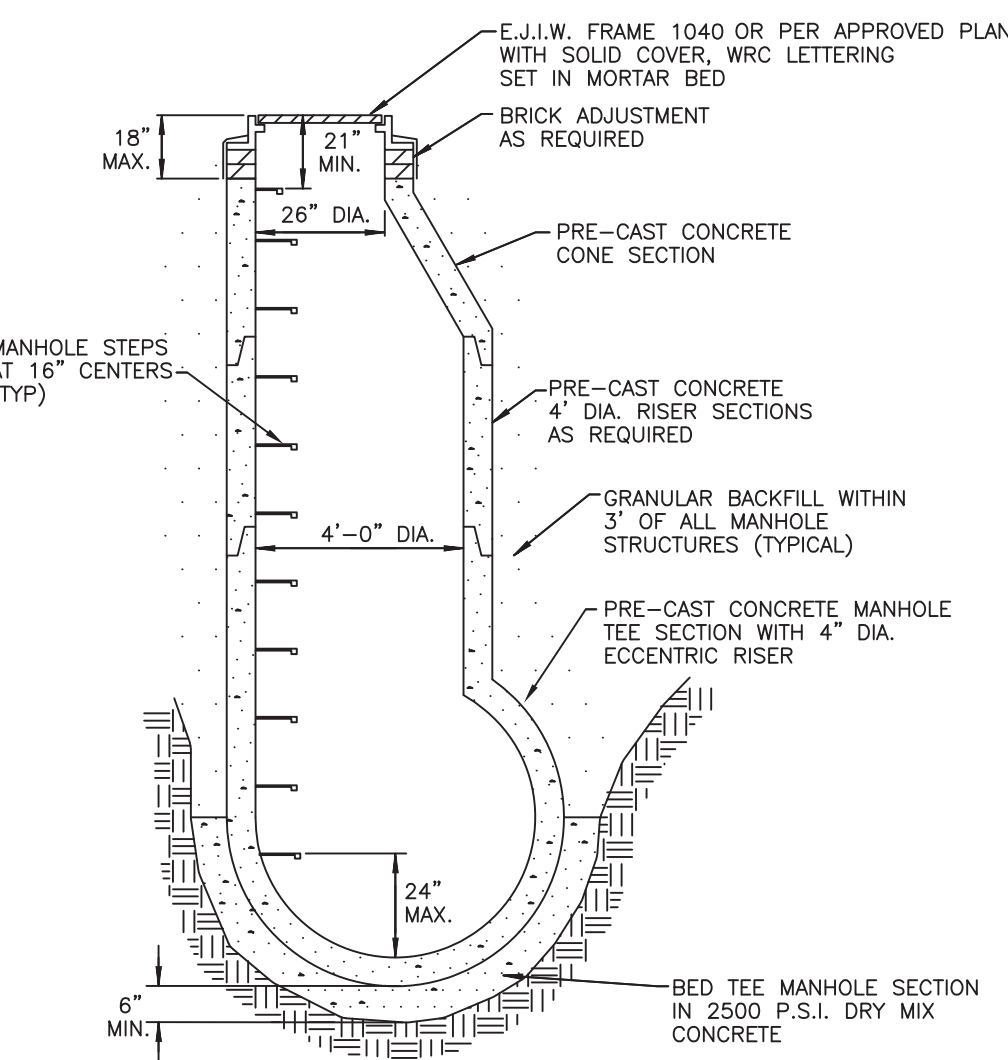
WRC WATER RESOURCES COMMISSIONER

ONE PUBLIC WORKS DRIVE, BLDG 95 WEST WATERFORD, MICHIGAN 48320-1907

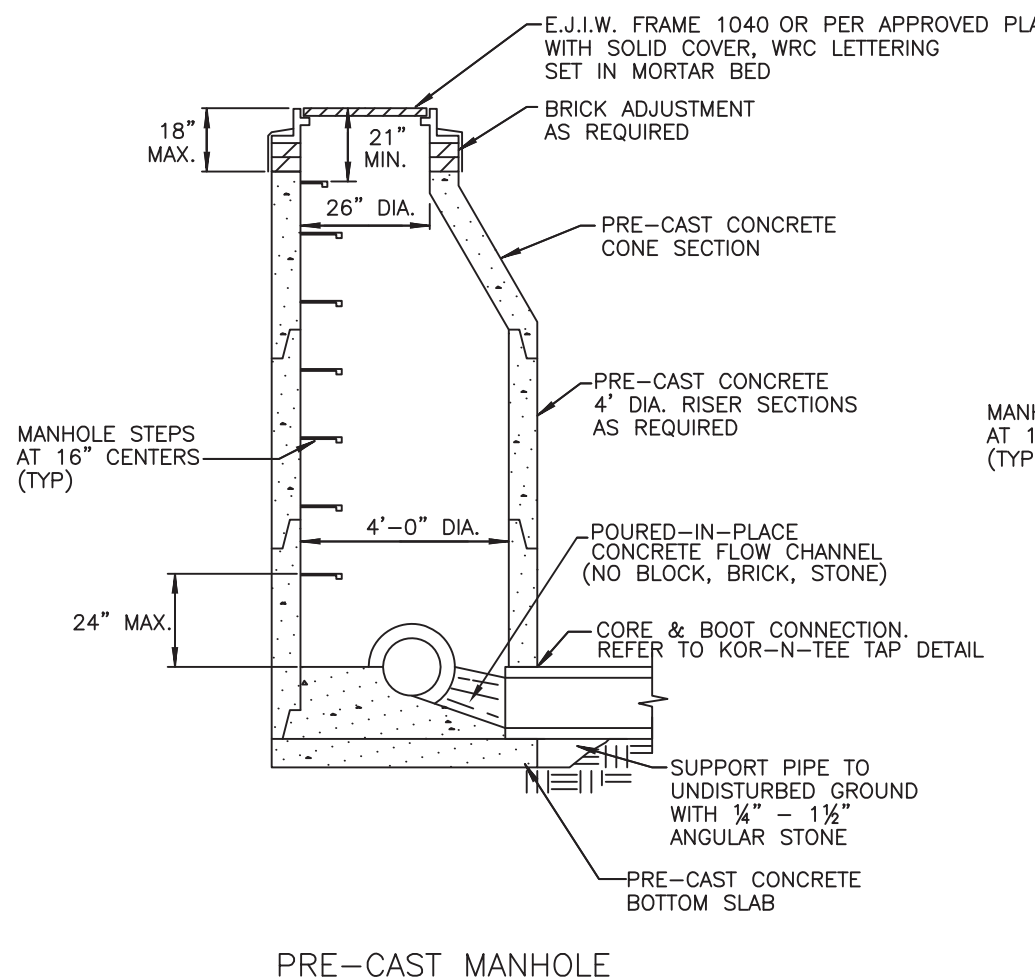
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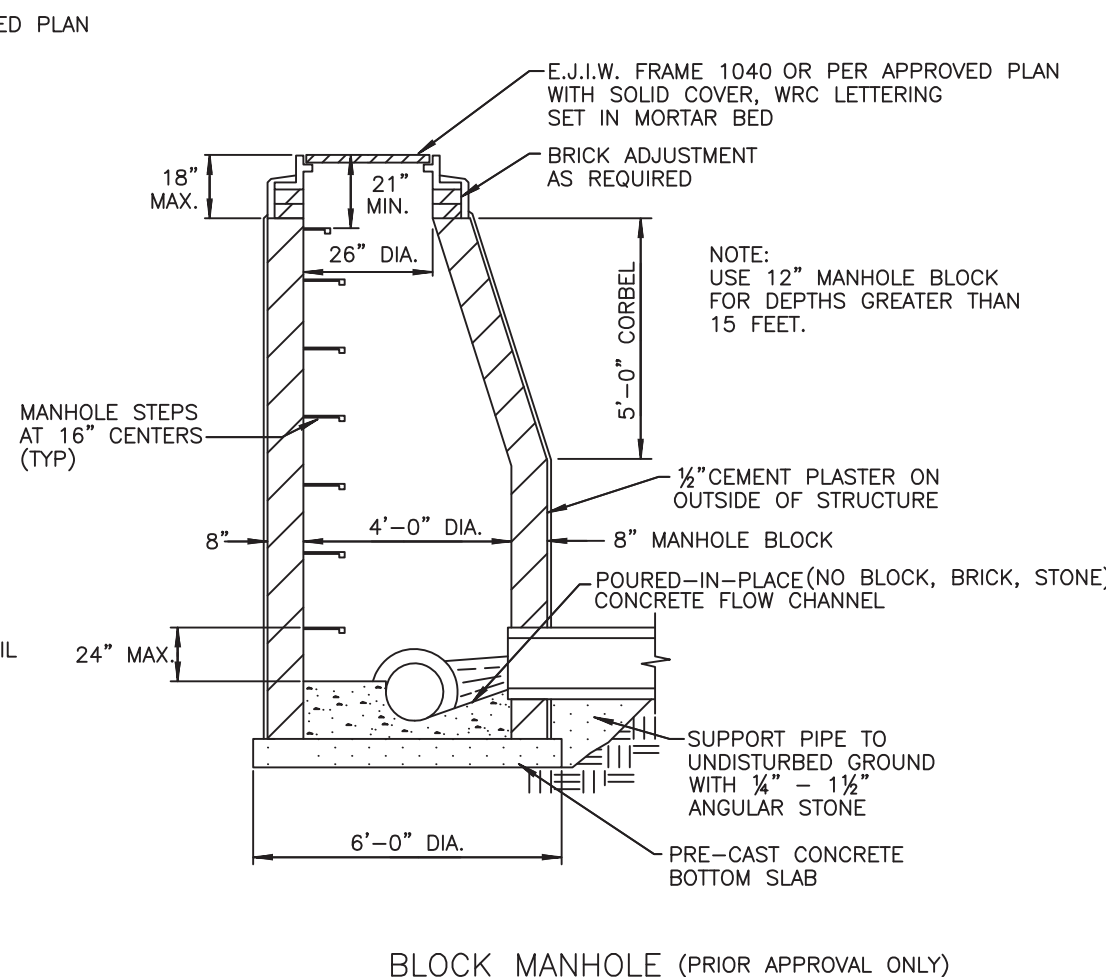
HOUSE LEAD DETAIL FOR 4" DIA. PLASTIC SUMP PUMP LEADS
NO SCALE



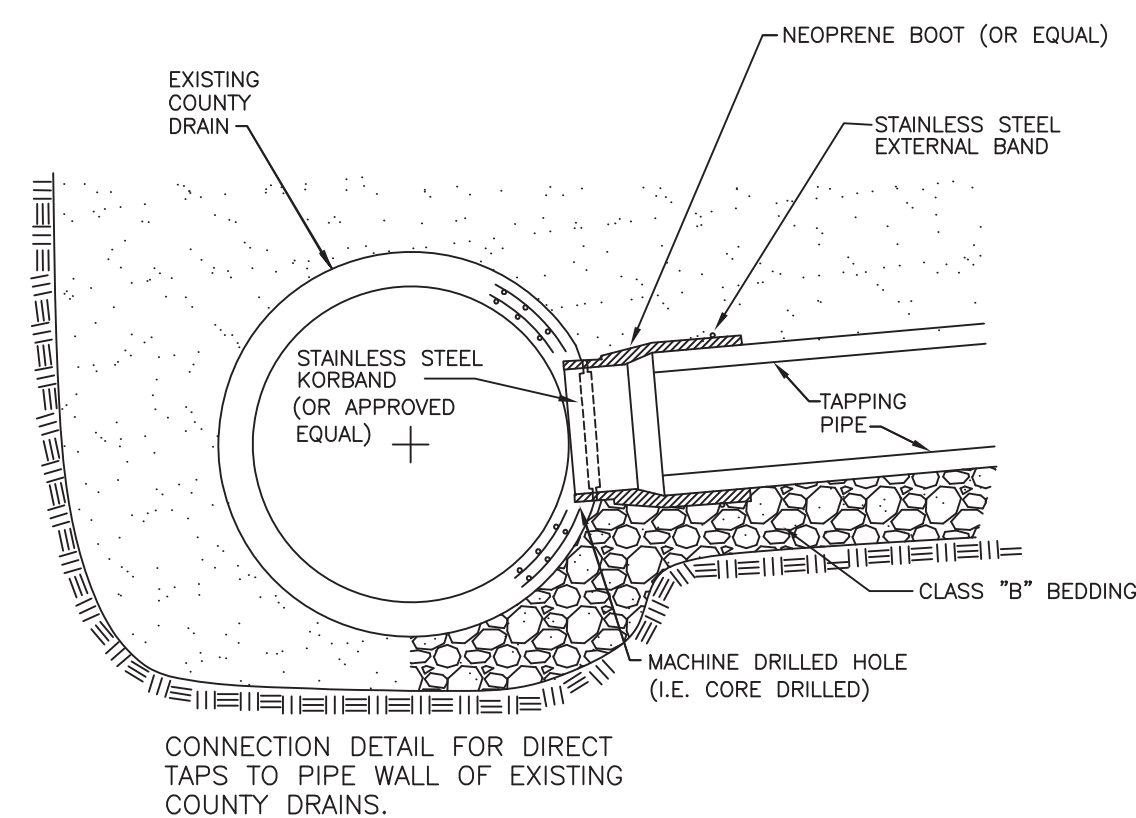
PRE-CAST TEE MANHOLE DETAIL
NO SCALE



STANDARD MANHOLE DETAILS
NO SCALE

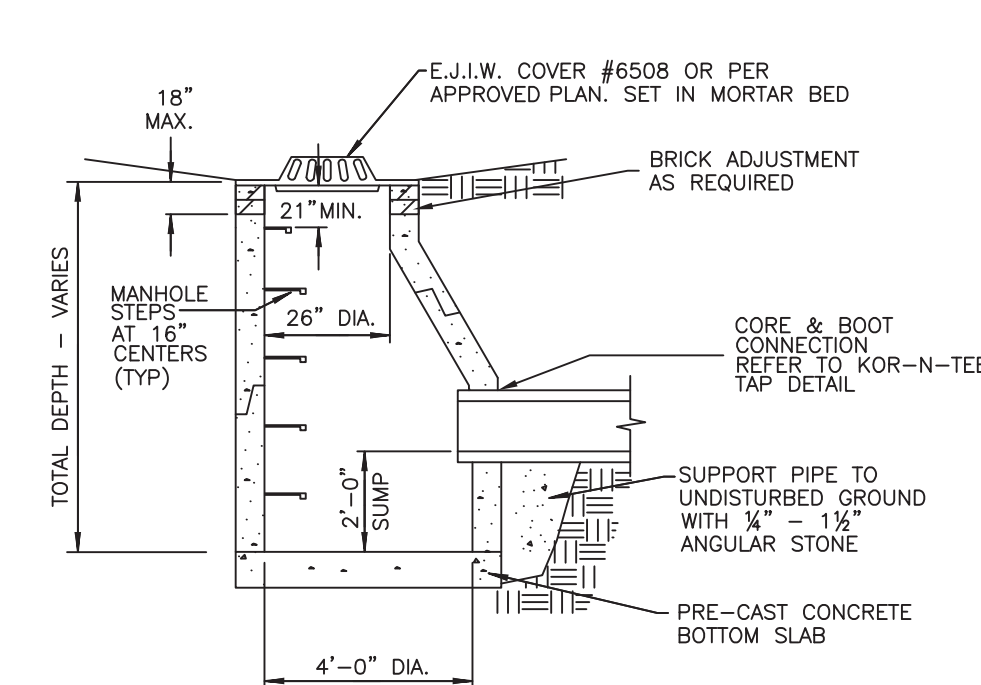


BLOCK MANHOLE (PRIOR APPROVAL ONLY)

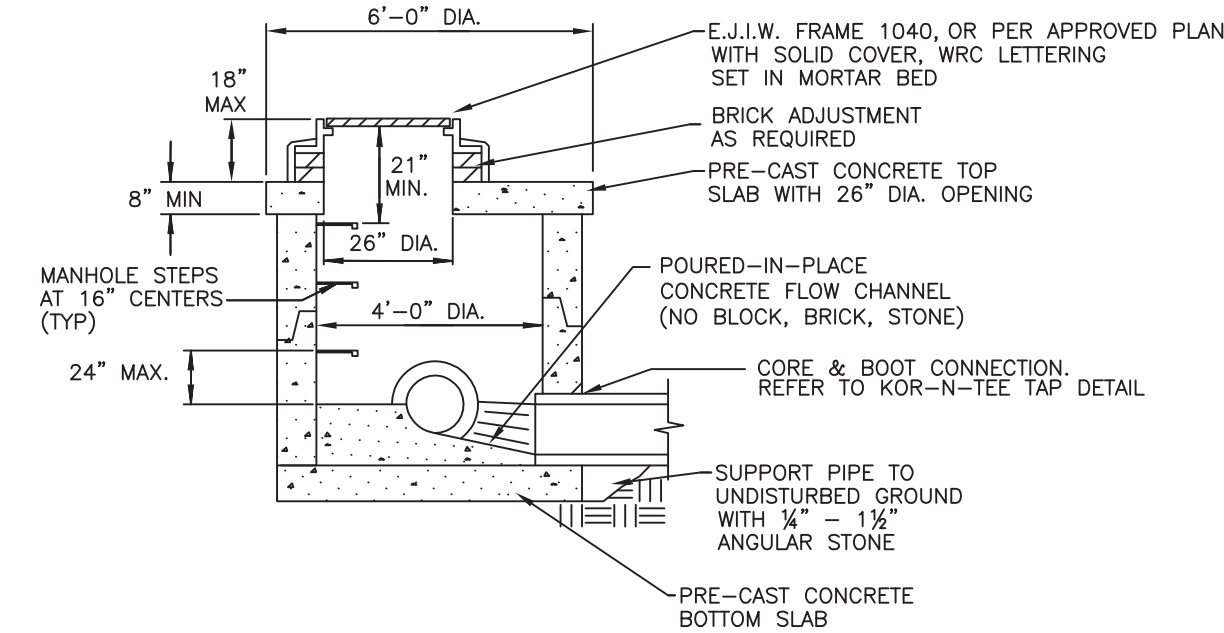


KOR-N-TEE TAP (OR APPROVED EQUAL)
NO SCALE

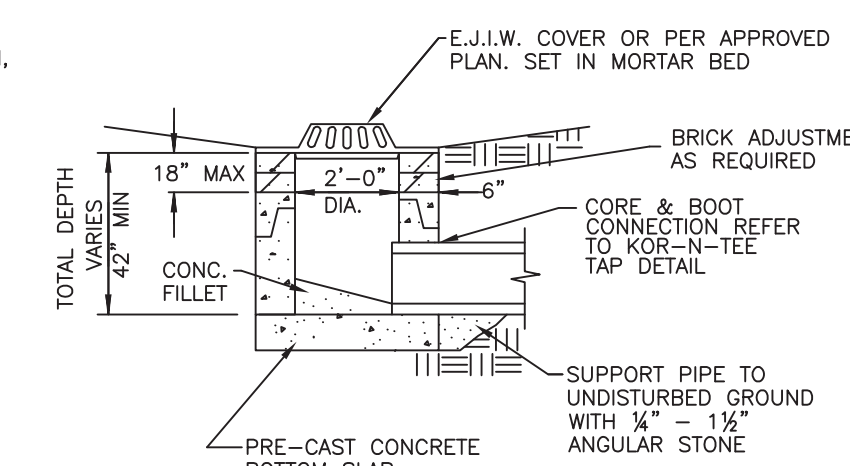
* For non-concrete to concrete taps.
* Use link-seal, A-lock or approved equal for concrete to concrete taps.



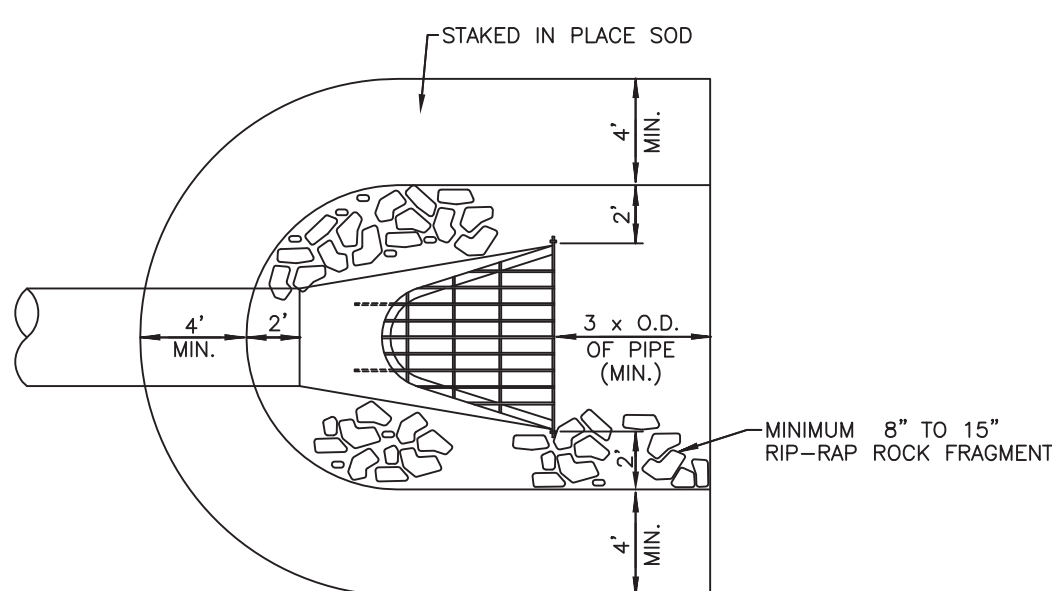
PRE-CAST CATCH BASIN DETAIL
NO SCALE



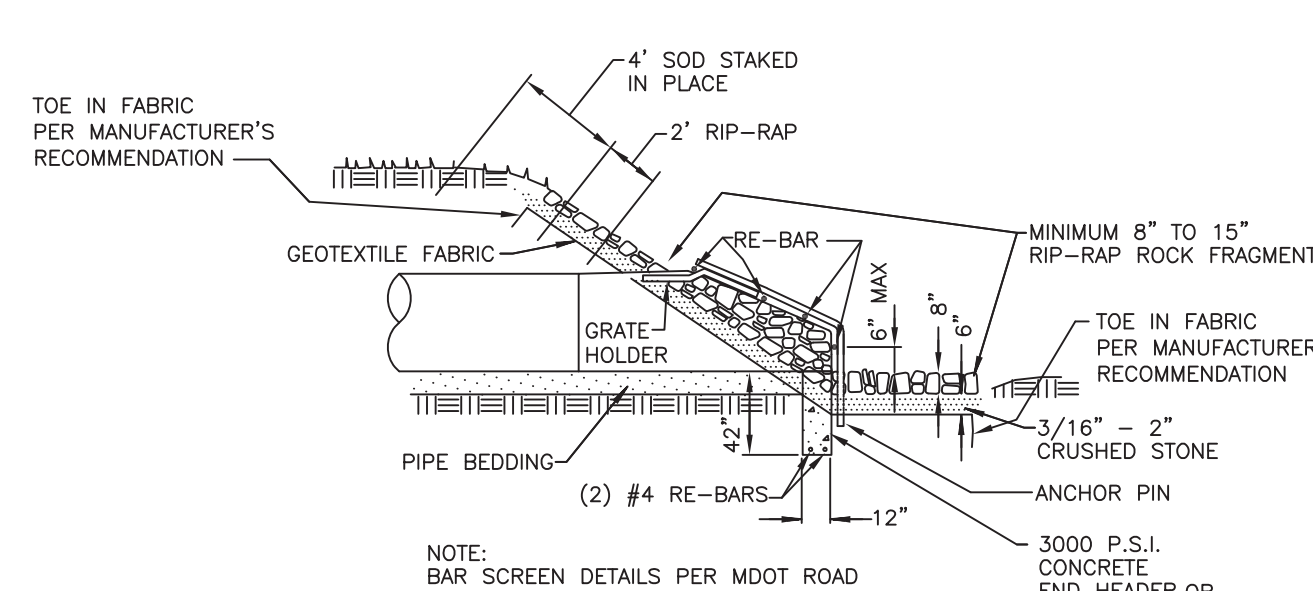
PRE-CAST LOW HEAD MANHOLE DETAIL
(PRIOR APPROVAL ONLY)



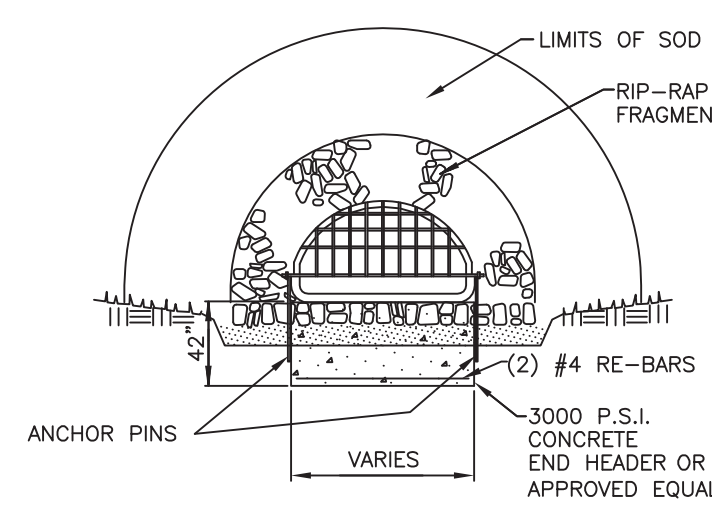
PRE-CAST INLET DETAIL
NO SCALE



PLAN VIEW

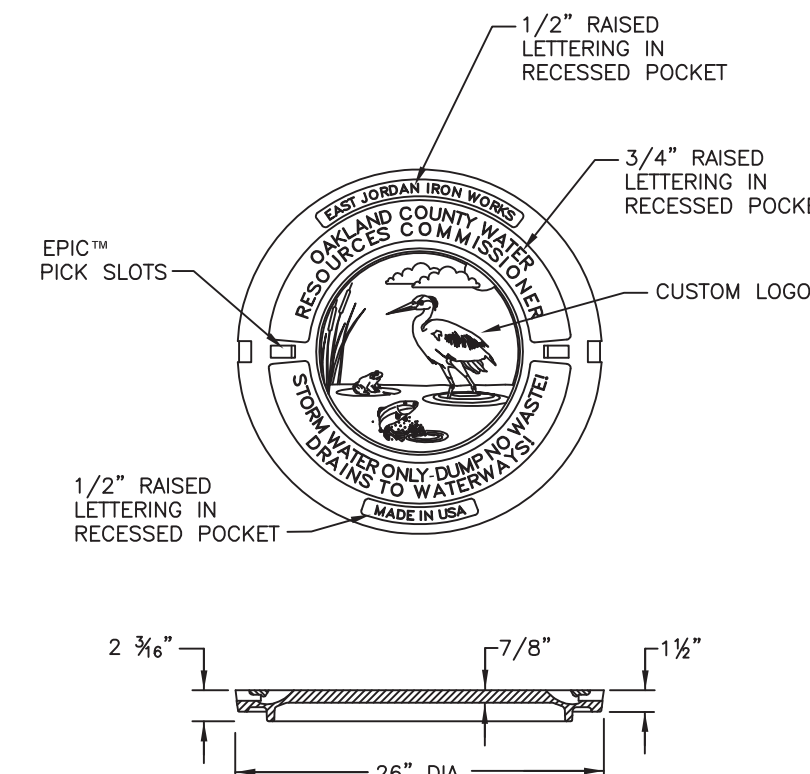


PROFILE VIEW



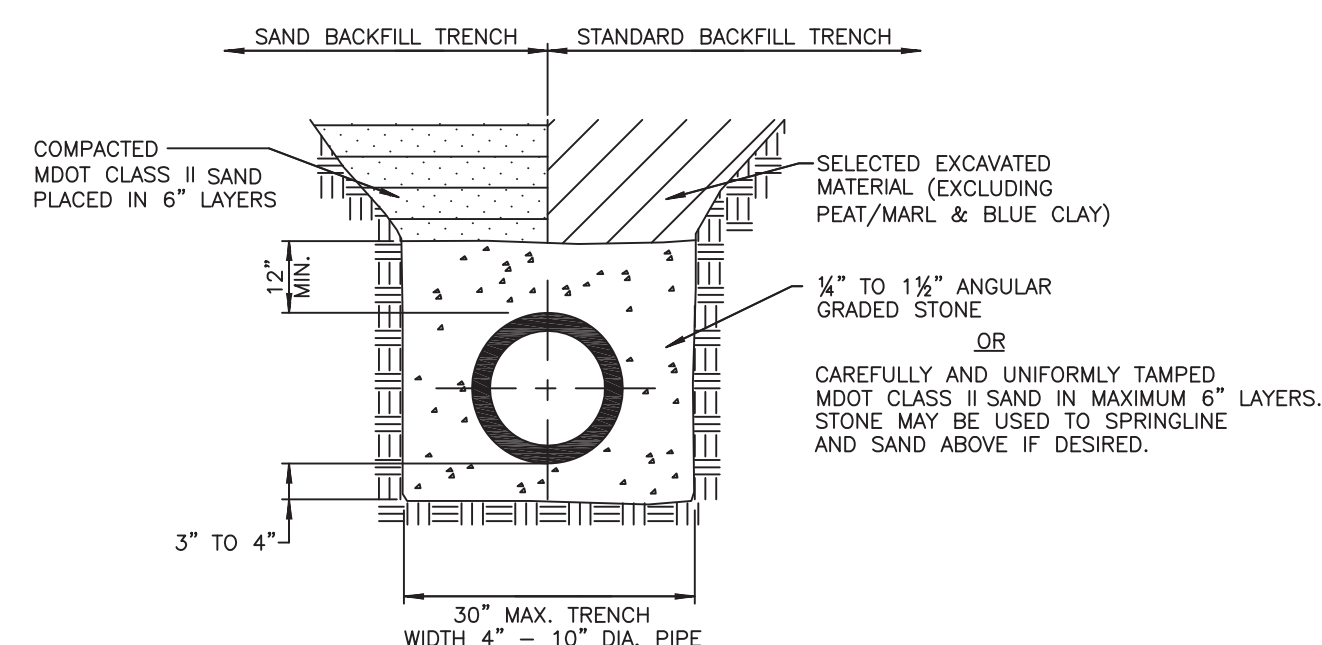
END VIEW

END SECTION AND BAR SCREEN DETAIL
NO SCALE

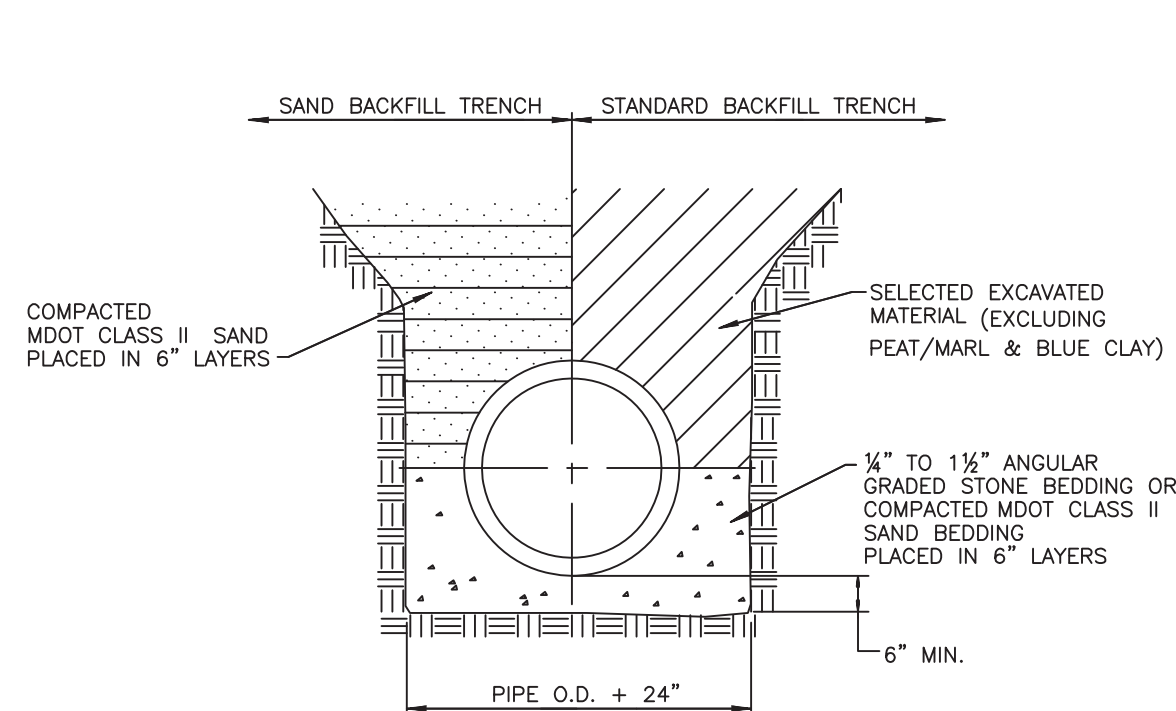


EAST JORDAN IRON WORKS OR APPROVED EQUAL
HEAVY DUTY MATERIAL ASTM A48 CL35B
CATALOG NO. 1040A
PATTERN NO. 1040A, PRODUCT NO. 104718 OAKCOSTD.
2" HIGH RAISED LETTERS, 1" WIDE RAISED LETTERS
ALL IN RECESSED POCKET.

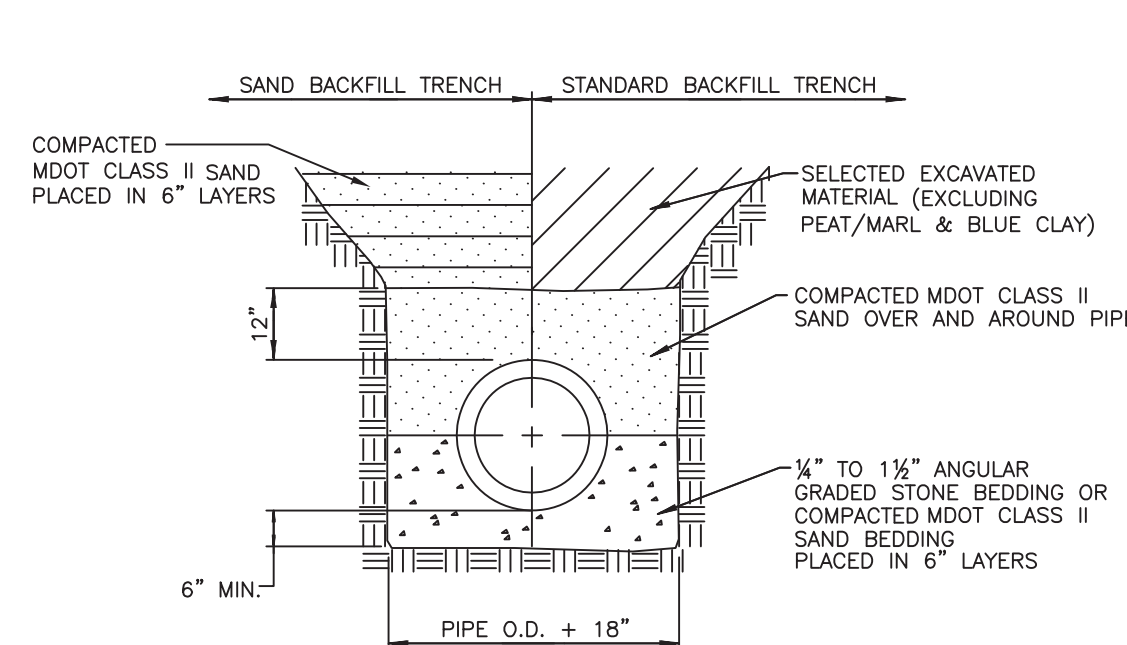
LETTERED MANHOLE COVER FOR WRC
NO SCALE



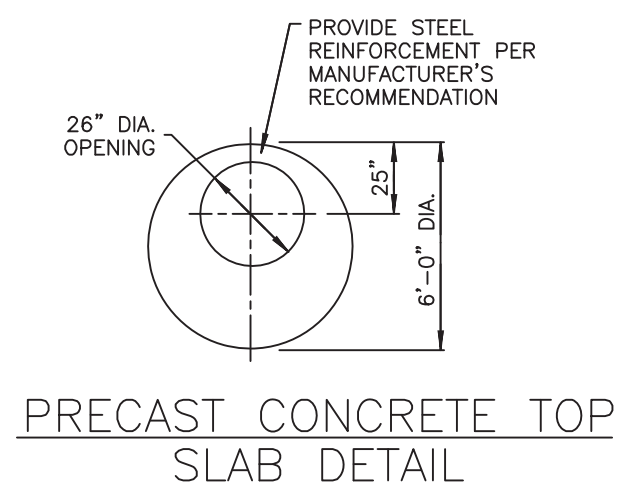
ABS (TRUSS AND SOLID WALL),
PVC (TRUSS, SOLID WALL, A2000),
ADS N-12 WT PIPE BEDDING DETAIL
NO SCALE



CLASS "B" BEDDING TRENCH DETAIL FOR 27" DIAMETER AND LARGER CONCRETE PIPE
NO SCALE



CLASS "B" BEDDING TRENCH DETAIL FOR 24" DIAMETER AND SMALLER CONCRETE PIPE
NO SCALE



PRECAST CONCRETE TOP SLAB DETAIL

GENERAL NOTES

- Type and class of pipe shall be as specified on plans.
- Class "B" bedding shall be used throughout, unless otherwise specified on the plan.
- All end sections 18" and larger shall be provided with a bar screen unless otherwise approved.
- Standard rip-rap shall be 8"-15" fragmented rock, heavy rip-rap shall be 16"-24" fragmented rock. (No Broken Concrete)
- MANHOLE REQUIREMENTS:
 - All new catch basins, inlets, and manholes are to be manufactured to ASTM C-478 specifications.
 - All new catch basins, inlets, and manholes shall have WRC approved flexible, watertight seals where pipes pass through walls. Manholes shall be of precast sections with modified groove tongue and rubber gasket type joints. Pre cast manhole cone sections shall be WRC approved modified eccentric cone type.
 - Taps through manhole joints or cone sections are prohibited unless otherwise approved.
 - Manhole steps to be plastic coated steel meeting the requirements in ASTM D 2146, Type II, Grade 49108, MA. Industries P.S.I. Polypropylene, (or approved equal). Steps to be installed during manhole manufacture. Place at 16" centers 45" from centerline of sewer.
 - Cone section with modified groove tongue joints and with stud inserts cast in place. Top to have flush surface.
 - ASTM C-478 riser section with modified groove tongue joints.
 - Res-seal, link-seal, press wedge II, or kor-n-seal boot (with stainless steel korband) flexible rubber manhole joints. (or approved equal).
 - The inside joints of manholes, catch basins, and pipe sizes over 42" and larger in diameter shall be pointed up with mortar upon completion of backfilling.
- CONCRETE PIPE REQUIREMENTS:
 - Concrete pipe to be per ASTM C76 standards.
 - It will be required to TV all pipe 30 days after installation
 - The contractor shall provide reinforced concrete pipe as specified on the plans.
 - All reinforced concrete pipe shall have modified grooved tongue joints with o-ring type rubber gasket, per A.S.T.M. specifications C443.
 - The inside joints of manholes, catch basins, and pipe sizes over 42" and larger in diameter shall be pointed up with mortar upon completion of backfilling.
- SUMP PUMP LEAD REQUIREMENTS:
 - All sump pump leads connected to a County Drain pipe shall be pre-manufactured.
 - Sump pump leads connected to a manhole shall be cored and booted. Refer to Kor-N-Tee Tap Detail.
 - Sump pump mains and leads shall be ADS (truss and solid wall), PVC (truss, solid wall, A2000), ADS N-12 WT with premium joints.
 - Ends of all 4" sump pump leads shall be temporarily capped and their location staked, witnessed and recorded.
 - All sump pump leads to be taken to the property line, easement line or as indicated on the plan.
 - Sump pump mains must have a cleanout with a minimum inside diameter of 24" and be constructed at changes of alignment, ends of sump pump mains or as indicated on the plan.
- RESTORATION REQUIREMENTS:
 - All disturbed area within the County Drain right-of-way shall be restored as follows:
 - Under roads, sidewalks, driveways and parking areas, backfill material shall be placed loosely into trenches in six (6) inch layers with each layer compacted to not less than 95% of maximum dry density as determined by the ASTM D 1557 Compaction Standard (modified proctor compaction test). All other areas shall have each layer compacted to not less than 90% of maximum dry density.
 - Finish subgrade
 - Place 3" thickness clean topsoil acceptable to the engineer to attain finished grade. Topsoil must not be contaminated and may not be a mixture of natural underlying soils, subbase materials, or other materials. It must consist of natural loam, sandy loam, silty loam or clay loam humus-bearing soil adapted to the sustenance of plant life. Topsoil must be neither excessively acidic nor excessively alkaline. It must be of mineral origin, exclusive of any peat or muck.
 - Apply seed and fertilizer as follows:

Location	Seeding Requirements	Fertilizer Requirement
Slopes and Ditch Banks, Etc.	M.D.O.T. "Roadside Mix" Turf Seed Mixture TGM (10% Kentucky Blue, 20% Perennial Rye, 30% Hard Fescue, 40% Creeping Red Fescue) applied at 220 lb/acre	M.D.O.T. Seeding and Sodding Fertilizers, Class A
Other Areas	M.D.O.T. "Roadside Mix" Turf Seed Mixture THM (30% Kentucky Blue, 20% Perennial Rye, 50% Creeping Red Fescue) applied at 220 lb/acre	M.D.O.T. Seeding and Sodding Fertilizers, Class A
 - Sod is required in maintained lawn areas. Refer to WRC General Specifications for additional requirements and information.
 - apply straw or marsh hay mulch in an air-dry condition to all seeded areas over the surface to a uniform thickness at 2 tons/acre.
 - mulch shall be anchored in place with biodegradable netting, not larger than 1 1/2" by 2" nor smaller than 1/2" by 1/2"
 - the contractor shall be responsible to insure the growth of all seeded areas, and shall re-seed as necessary to accomplish this.
- The Storm Drain Notes and Details Sheet shall be a supplement to WRC Standards and Specifications, which are available on the WRC website (www.oakgov.com/water).

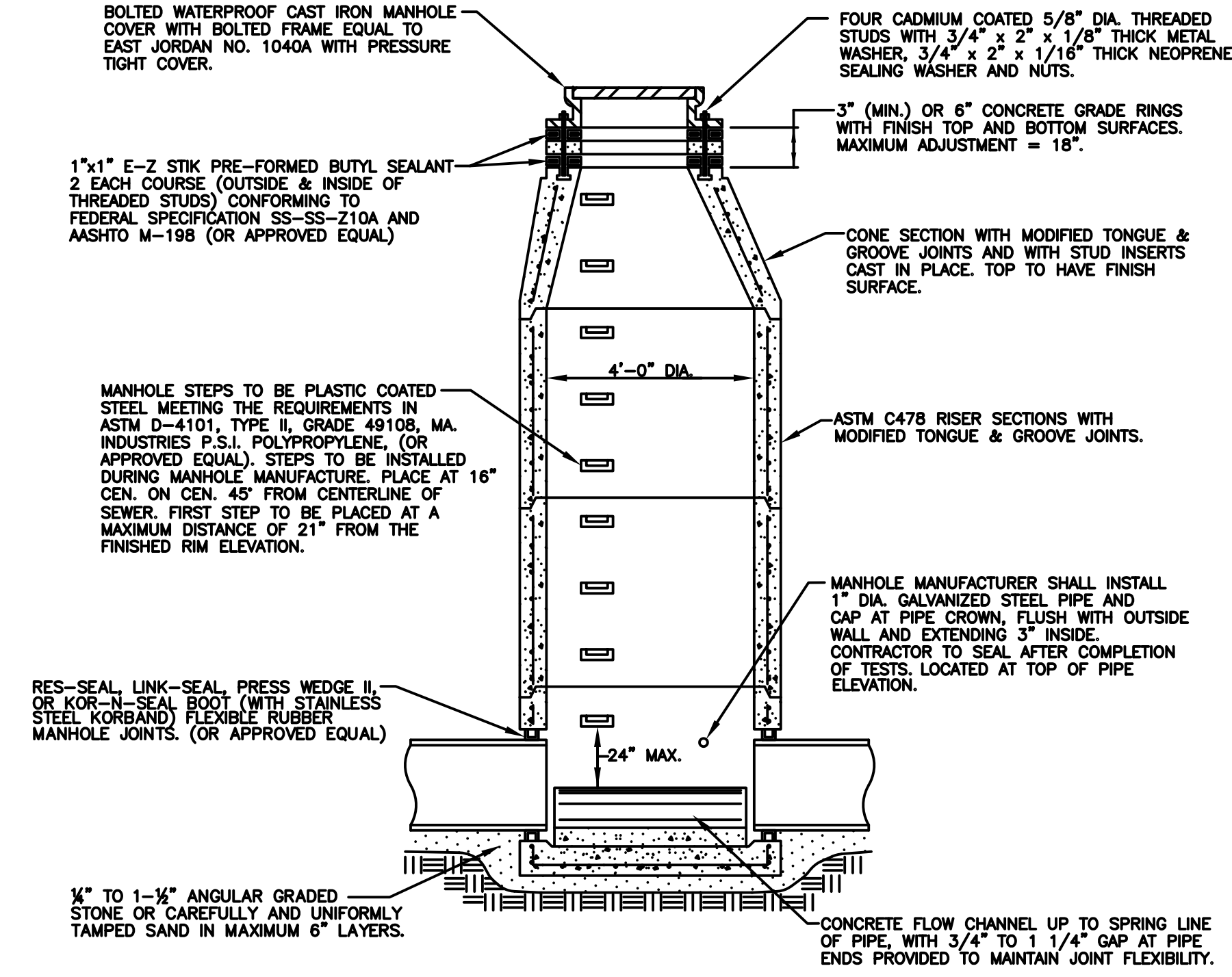
STORM DRAIN NOTES AND DETAILS

REVISION BLOCK			
Rev.	By	Date	Description
1	EL	3/17/09	PROPOSED DETAIL CHANGES NEW LOGO
2	EL	06/12/09	APPROVAL PER STAKEHOLDERS COMMITTEE
3	EL	02/28/10	REVISED MH COVER DETAIL
4	DS	04/27/10	REVISED GENERAL NOTES

ORIG. DATE:	05/05/97		ONE PUBLIC WORKS DRIVE, BLDG 95 WEST WATERFORD, MICHIGAN 48326-1907
SCALE:	NONE		
DESIGNED BY:	WRC		SHEET NO.: 1 of 1
DRAWN BY:	Mapping		

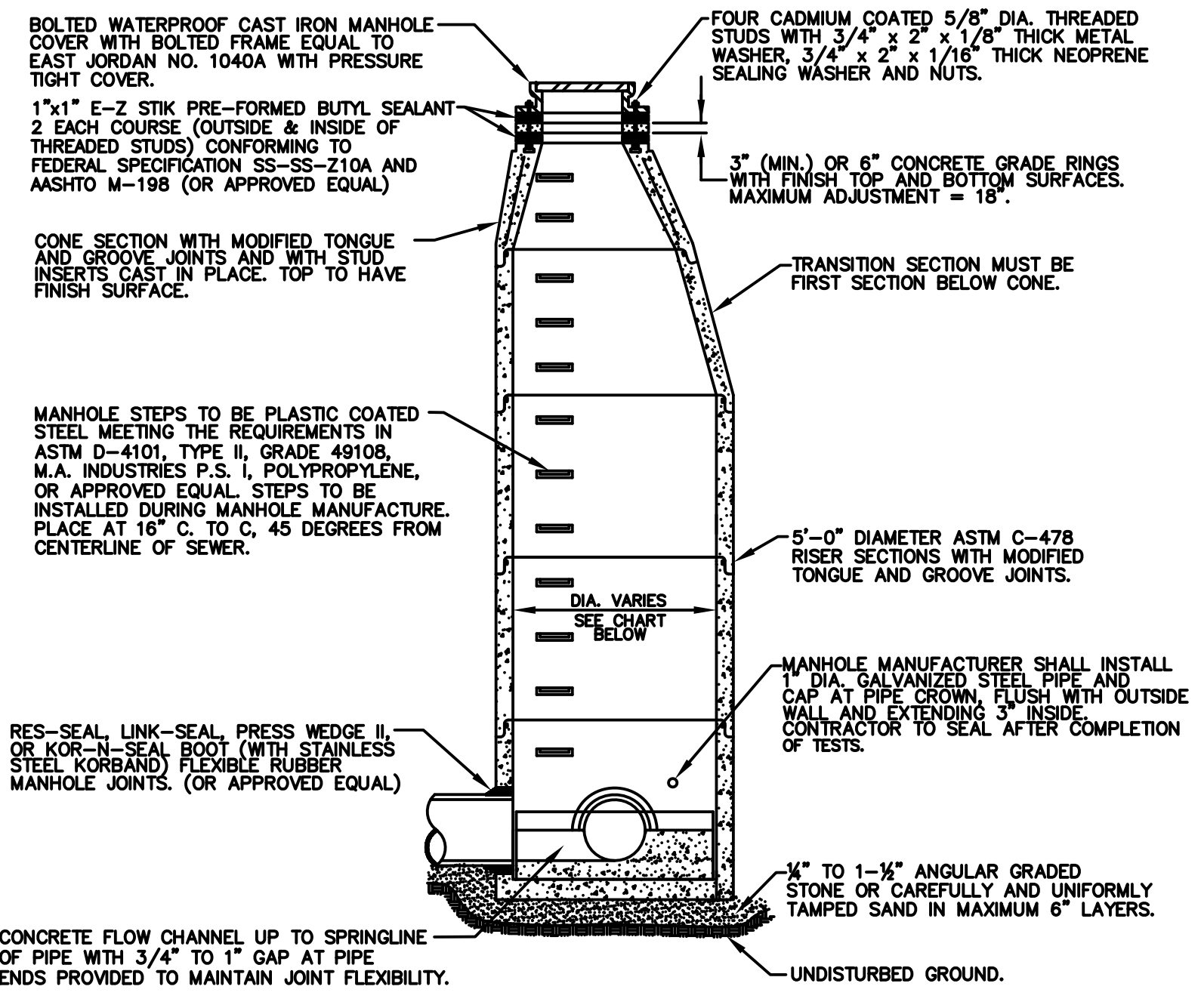
SANITARY SEWER CONSTRUCTION NOTES

- ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS OF THE LOCAL UNIT OF GOVERNMENT AND THE WATER RESOURCES COMMISSIONER (WRC). ALL SANITARY SEWER CONSTRUCTION SHALL HAVE FULL-TIME INSPECTION SUPERVISED BY A STATE OF MICHIGAN LICENSED PROFESSIONAL ENGINEER PROVIDED BY, OR CAUSED TO BE PROVIDED BY, THE LOCAL UNIT OF GOVERNMENT.
- AT ALL CONNECTIONS TO WRC SEWERS OF EXTENSIONS, AND BEFORE START OF CONSTRUCTION, THE CONTRACTOR MUST OBTAIN A SEWER INSPECTION PERMIT ISSUED BY WRC. GRAVITY SEWER PERMIT CHARGES ARE \$250 FOR EACH CONNECTION PLUS \$25 FOR EACH MANHOLE CONSTRUCTED. PRESSURE SEWER PERMIT CHARGES ARE \$250 PER 2,460 L.F. OF FORCE MAIN WITH A MINIMUM PERMIT FEE OF \$250. FAILURE TO PASS ANY TEST SEGMENT WILL RESULT IN AN ADDITIONAL CHARGE TO THE CONTRACTOR FOR EACH RETEST, IN ACCORDANCE WITH THE ABOVE PRICE SCHEDULE. THE CONTRACTOR SHALL ALSO HAVE POSTED WITH WRC A \$5,000 SURETY BOND AND \$500 CASH DEPOSIT. THE CONTRACTOR SHALL NOTIFY THE LOCAL UNIT OF GOVERNMENT AND WRC (248-858-1105) 24 HOURS PRIOR TO THE BEGINNING OF ANY CONSTRUCTION. FINAL ACCEPTANCE TESTS MUST BE WITNESSED BY COUNTY PERSONNEL AND MUST BE SCHEDULED BY MUNICIPALITY OR ITS CONSULTANT IN ADVANCE WITH 24 HOUR NOTICE AT 248-858-1105.
- NO SEWER INSTALLATION SHALL HAVE AN INFILTRATION EXCEEDING 100 GALLONS PER INCH DIAMETER PER MILE OF PIPE IN A 24 HOUR PERIOD, AND NO SINGLE RUN OF SEWER BETWEEN MANHOLES SHALL EXCEED 100 GALLONS PER INCH DIAMETER PER MILE. AIR TESTS IN LIEU OF INFILTRATION TESTS SHALL BE AS SPECIFIED IN THE WATER RESOURCES COMMISSIONER STANDARDS. ONLY PIPE AND PIPE JOINTS APPROVED BY WRC MAY BE USED FOR SANITARY SEWER CONSTRUCTION.
- LOCATED IN THE FIRST MANHOLE UPSTREAM FROM THE POINT OF ALL CONNECTIONS TO AN EXISTING WRC SEWER, OR EXTENSION THEREOF, A TEMPORARY 12-INCH DEEP SUMP SHALL BE PROVIDED IN THE FIRST MANHOLE ABOVE THE CONNECTION WHICH WILL BE FILLED IN AFTER SUCCESSFUL COMPLETION OF ANY ACCEPTANCE TEST UP TO THE STANDARD FILLET PROVIDED FOR THE FLOW CHANNEL. A WATER TIGHT BULKHEAD SHALL BE PROVIDED ON THE DOWNSTREAM SIDE OF THE SUMP MANHOLE.
- AT ALL TIMES WHEN LAYING OF NEW PIPE IS NOT ACTUALLY IN PROGRESS, THE UPSTREAM OPEN END OF THE PIPE SHALL BE CLOSED BY TEMPORARY WATER TIGHT PLUGS OR BY OTHER APPROVED MEANS. IF WATER IS IN THE TRENCH WHEN WORK IS RESUMED, THE PLUG SHALL NOT BE REMOVED UNTIL THE DANGER OF WATER ENTERING THE PIPE HAS PASSED.
- ALL BUILDING LEADS AND RISERS SHALL BE SIX INCH SDR 23.5 ABS PIPE WITH CHEMICALLY FUSED JOINTS OR AN APPROVED EQUAL PIPE AND JOINT. BUILDING LEADS TO BE FURNISHED WITH REMOVABLE AIR TIGHT AND WATER TIGHT STOPPERS.
- ALL RIGID SEWER PIPE SHALL BE INSTALLED IN CLASS "B" BEDDING OR BETTER. ALL FLEXIBLE, SEMI-FLEXIBLE, OR COMPOSITE SEWER PIPE SHALL BE INSTALLED IN CONFORMANCE TO WRC SPECIFICATIONS.
- ALL NEW MANHOLES SHALL HAVE WRC APPROVED FLEXIBLE, WATER TIGHT SEALS WHERE PIPES PASS THROUGH WALLS. MANHOLES SHALL BE OF PRE CAST SECTIONS WITH MODIFIED GROOVE TONGUE AND RUBBER GASKET TYPE JOINTS. PRE CAST MANHOLE CONE SECTIONS SHALL BE WRC APPROVED MODIFIED ECCENTRIC CONE TYPE. ALL MANHOLES SHALL BE PROVIDED WITH BOLTED, WATER TIGHT COVERS.
- AT ALL CONNECTIONS TO MANHOLES ON WRC SEWERS, OR EXTENSIONS THEREOF, DROP CONNECTIONS WILL BE REQUIRED WHEN THE DIFFERENCE IN INVERT ELEVATIONS EXCEEDS 18 INCHES.
- TAPS TO EXISTING MANHOLES SHALL BE MADE BY CORING. THE CONTRACTOR SHALL PLACE A KOR-N-SEAL BOOT (OR WRC APPROVED EQUAL) AFTER CORING IS COMPLETED. BLIND DRILLING WILL ONLY BE PERMITTED IN LIEU OF CORING WITH PRIOR WRC APPROVAL.
- MANHOLES CONSTRUCTED DIRECTLY ON WRC SEWERS SHALL BE PROVIDED WITH COVERS READING "WATER RESOURCES COMMISSIONER-SANITARY" IN RAISED LETTERS.
- NO GROUND WATER, STORM WATER, CONSTRUCTION WATER, DOWN SPOUT DRAINAGE OR WEEP TILE DRAINAGE SHALL BE ALLOWED TO ENTER ANY SANITARY SEWER INSTALLATION.
- PRIOR TO ANY EXCAVATION, THE CONTRACTOR SHALL TELEPHONE MISS DIG (800-482-7171) FOR THE LOCATION OF UNDERGROUND PIPELINE AND CABLE FACILITIES AND SHALL ALSO NOTIFY REPRESENTATIVES OF OTHER UTILITIES LOCATED IN THE VICINITY OF THE WORK.
- AN 18 INCH MINIMUM VERTICAL SEPARATION AND A 10 FOOT MINIMUM HORIZONTAL SEPARATION MUST BE MAINTAINED BETWEEN SANITARY SEWER AND WATER MAIN.
- NEW MANHOLES BUILT OVER AN EXISTING SANITARY SEWER SHALL HAVE MONOLITHIC POURED BOTTOMS.
- IF THE STRUCTURE FALLS WITHIN THE ROADBED OF A GRAVEL ROAD OR WITHIN THE UNPAVED SHOULDER OF A PAVED ROAD, THE COVER SHALL BE SIX (6") INCHES BELOW THE FINISHED GRAVEL SURFACE.



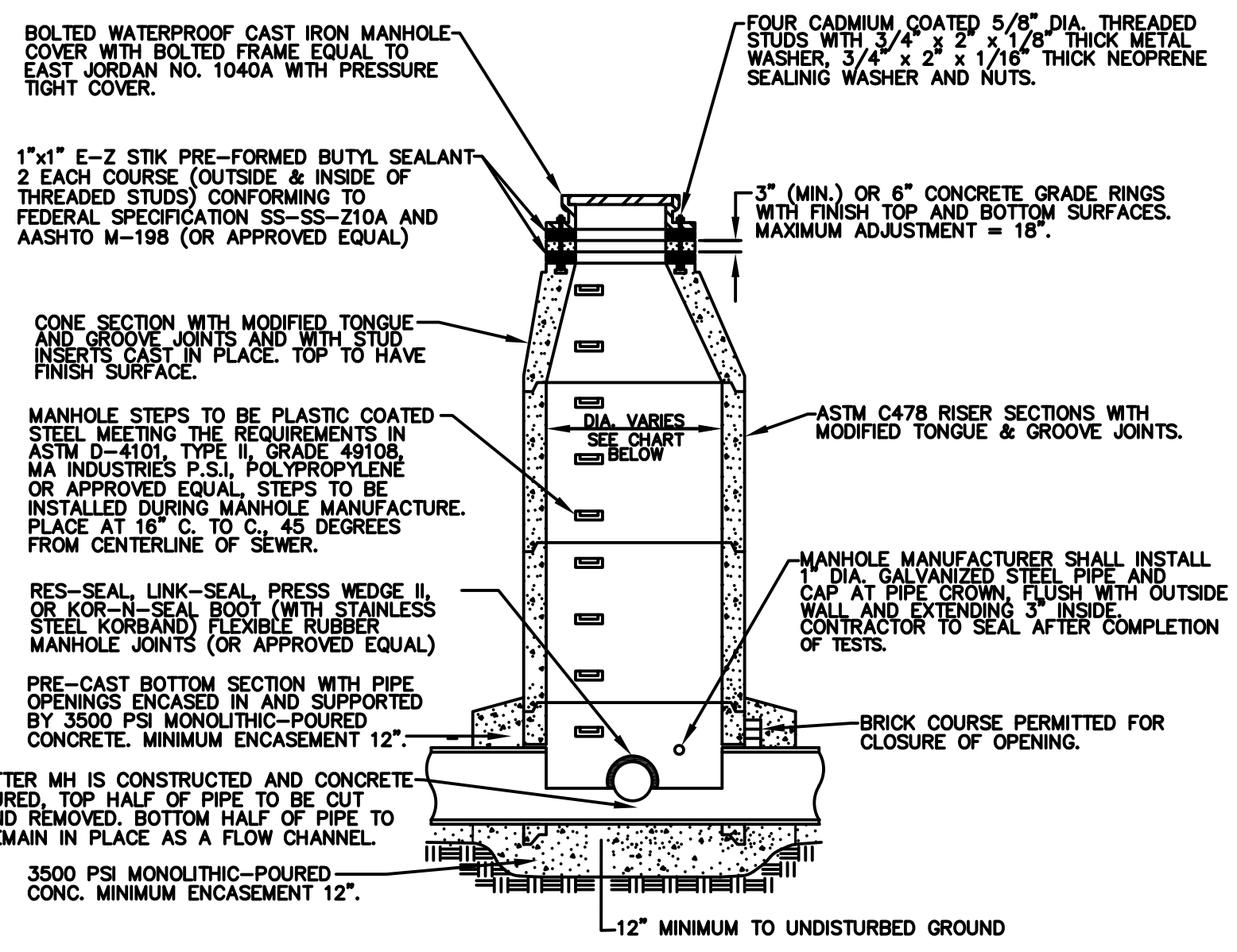
STANDARD MANHOLE

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



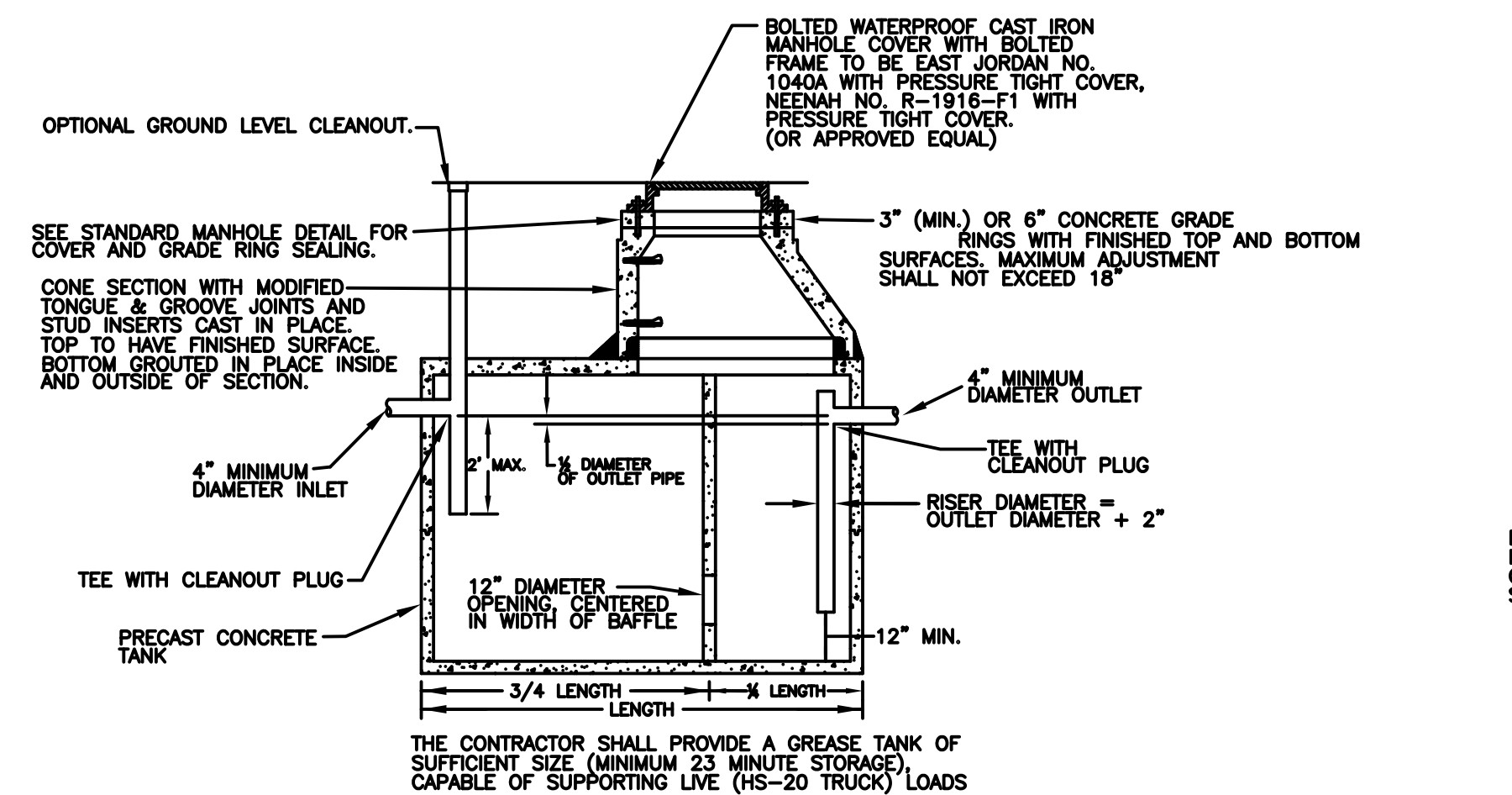
STANDARD OVERSIZED MANHOLE

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

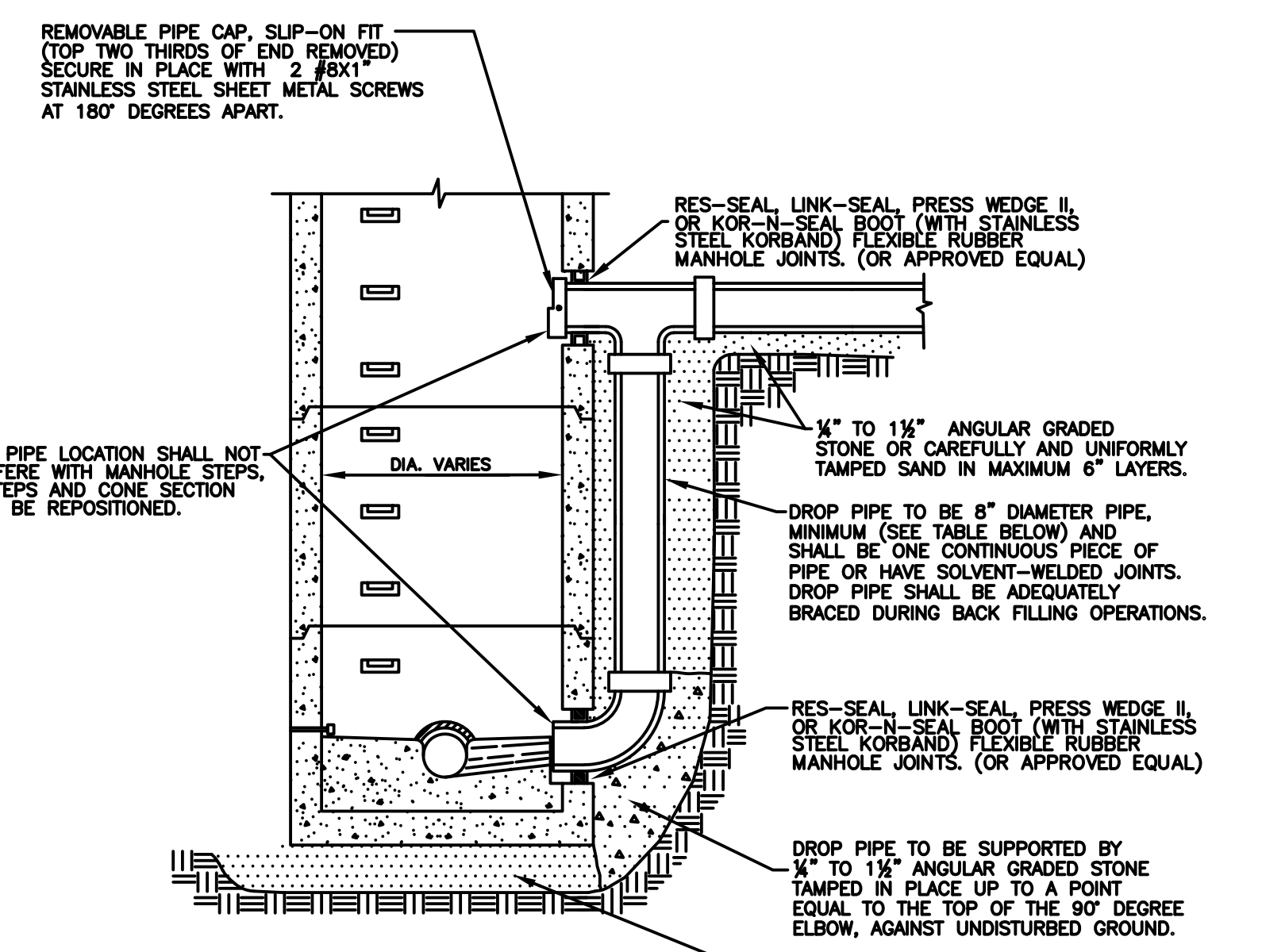


MANHOLE CONSTRUCTED OVER EXISTING SEWER

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

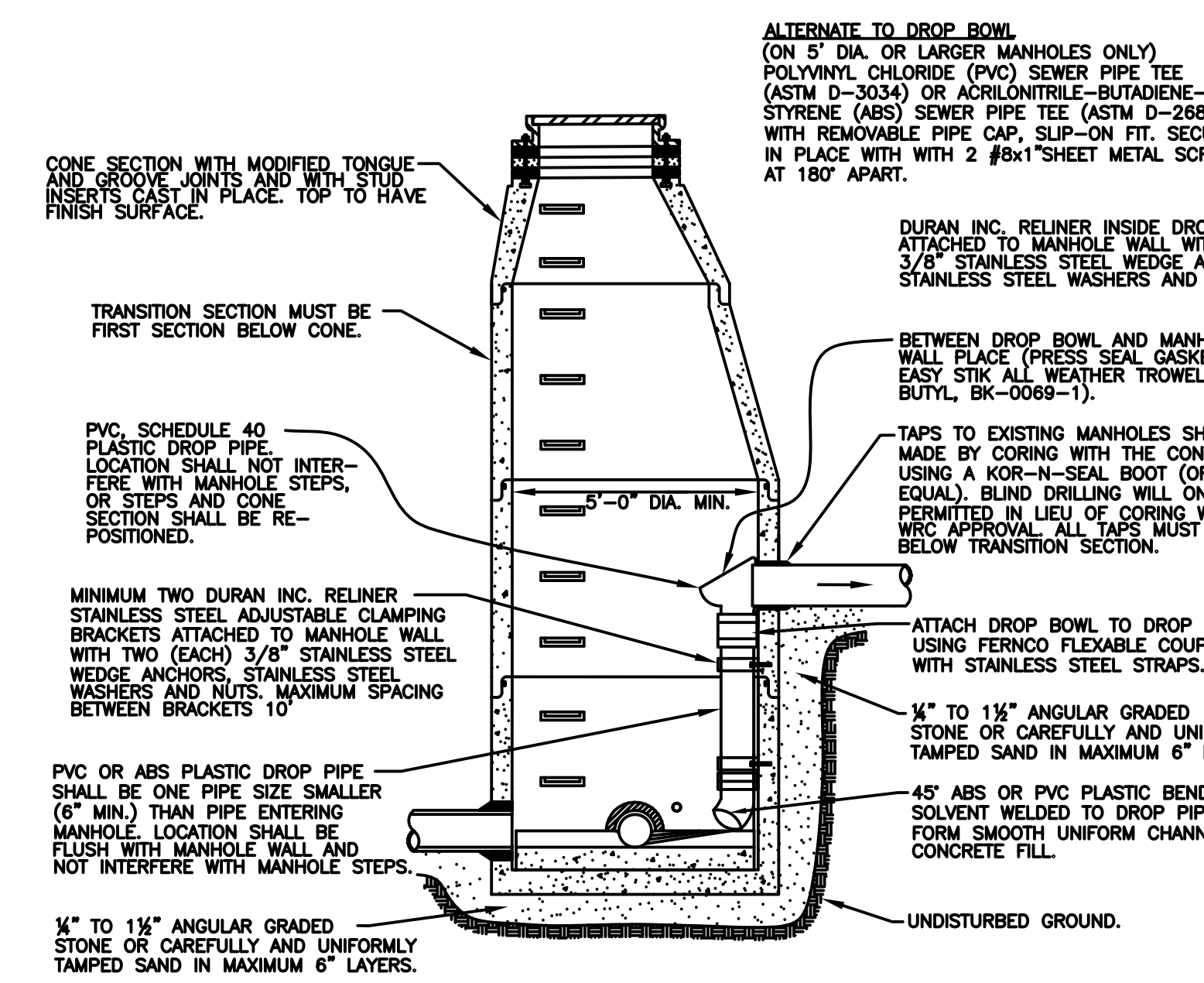


DOUBLE-COMPARTMENT GREASE INTERCEPTOR TANK FOR OUTLET PIPE BURIAL 42" AND DEEPER



SEWER SIZE	DROP SIZE	MH SIZE
UP TO 10"	8"	4'
UP TO 18"	10"	4'
UP TO 30"	18"	5'

EXTERIOR DROP CONNECTION (REQUIRES ADVANCED APPROVAL BY WRC)



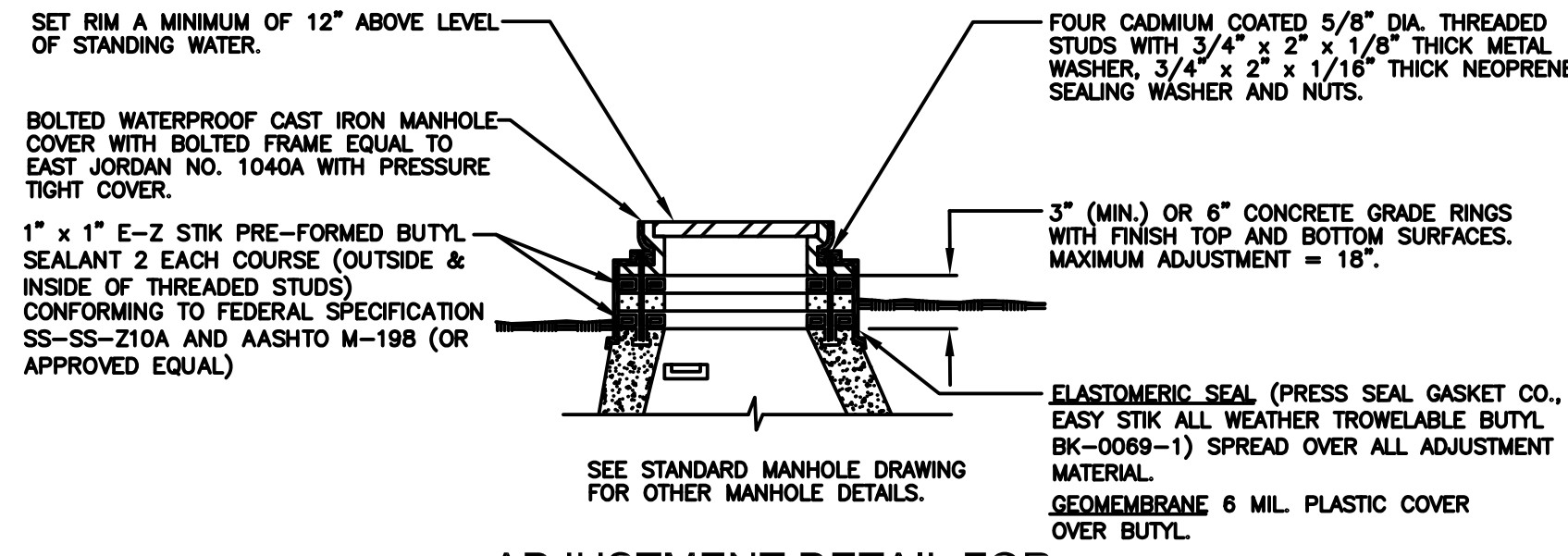
INTERIOR DROP CONNECTION

Rev. No.	Rev. By	Rev. Date	Description
1	RRH	8-31-10	FIXED NOTES THAT HAD "GROOVE TONGUE" TO READ "TONGUE AND GROOVE"
2	DS	3-23-11	REMOVED STANDARD MONITORING MANHOLE
3	KB	6-21-16	ADDED NOTE "REQUIRES ADVANCED APPROVAL BY WRC" AND UPDATE PHONE # IN NOTE #2
4	KB	7-22-20	UPDATED MH STEPS TO ASTM D-4101

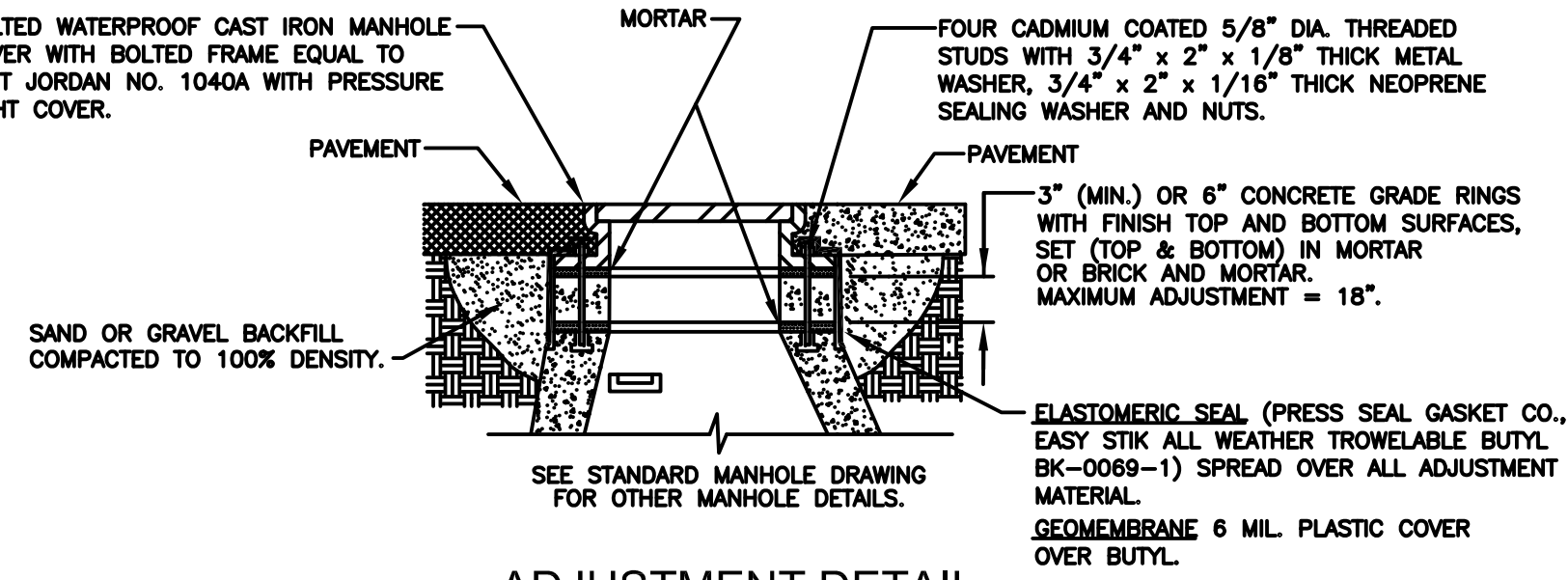
SANITARY SEWER DETAILS AND NOTES

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

MANHOLE RIM ADJUSTMENT CHART	
MANHOLE LOCATION	SET RIM ELEVATION
DITCH	12" ABOVE FINISH GRADE
FLOOD PLAIN	12" ABOVE STANDING WATER
GRAVEL ROAD / SHOULDER	6" BELOW FINISH GRADE
PAVEMENT / GREENBELT	FLUSH WITH FINISH GRADE



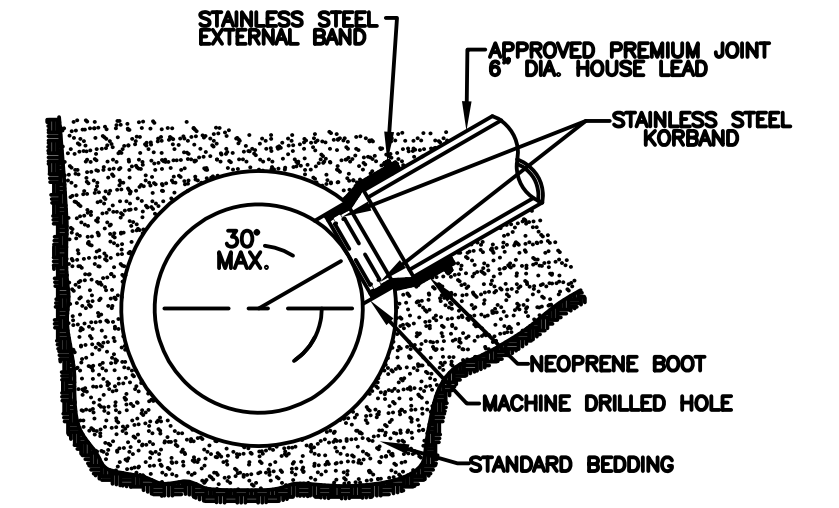
ADJUSTMENT DETAIL FOR MANHOLE TOPS WITHIN FLOOD PRONE AREAS



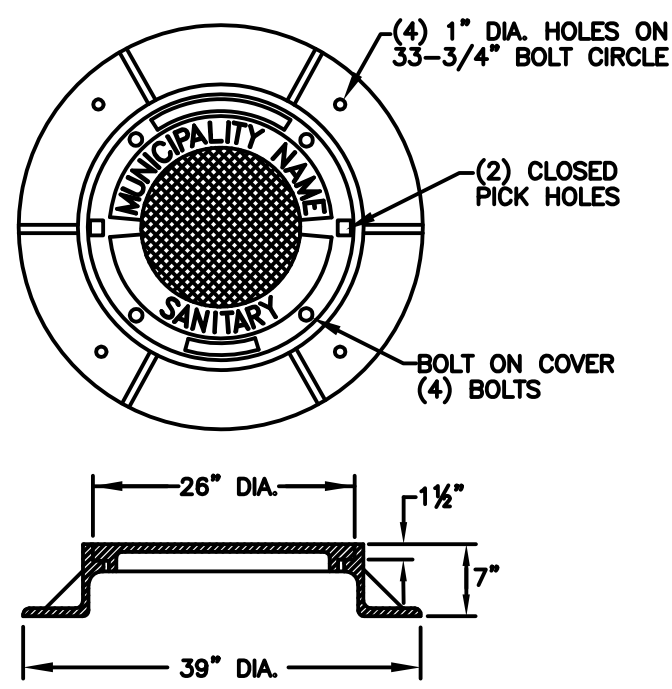
ADJUSTMENT DETAIL MANHOLE TOPS WITHIN PAVEMENT AREAS

WATER RESOURCES COMMISSIONER
GRAVITY BUILDING LEAD REQUIREMENTS AND DETAILS

- ALL BUILDING LEAD WORK MUST BE PERFORMED UNDER WATER RESOURCES COMMISSIONER (WRC) AND/OR LOCAL UNIT OF GOVERNMENT INSPECTION.
- FOR ALL WRC-OPERATED SYSTEMS, CALL 248-858-1110 24-HOURS IN ADVANCE OR WORK TO SCHEDULE INSPECTION.
- NO SANITARY SEWER MAY BE USED AS A CLEANOUT OF DEWATERING OUTLET.
- WHERE AN EXISTING BUILDING LEAD IS BEING EXTENDED, DISSIMILAR TYPES AND SIZES OF PIPE SHALL BE JOINED USING AN WRC APPROVED ADAPTER.
- APPROVED BUILDING LEAD PIPE FOR GRAVITY SEWER LEADS:
 - ABS PLASTIC, ASTM D2751, SDR 23.5.
 - PVC PLASTIC, ASTM D3034, SDR 23.5 OR ASTM D2685, SCHEDULE 40.
 - DUCTILE IRON PIPE, AMERICAN WATER WORKS ASSOCIATION (AWWA) C-104/A21.4, CLASS 54. JOINTS SHALL BE SUPER BEL TITE, TYTON, TY-SEAL, MULTI-TITE, DUAL-TITE, OR VERI-TITE.
 - ANY DEVIATIONS FROM SPECIFIED ABOVE REQUIRE APPROVAL BY WRC.
- ALLOWABLE TYPES OF SEWER PIPE ADAPTERS:
 - FERRICO ADAPTER/REDUCER DONUTS.
 - FERRICO FLEXIBLE COUPLING.
 - MISSION CLAY BAND-SEAL COUPLING.
 - SMITH-BLAIR STAINLESS STEEL REPAIR CLAMP.
 - HURON-CLINTON O-RING ADAPTER.
 - HAMILTON-KENT GEAR GRIP ADAPTER.
 - PLANT FABRICATED JOINT CONVERSION PIPE.

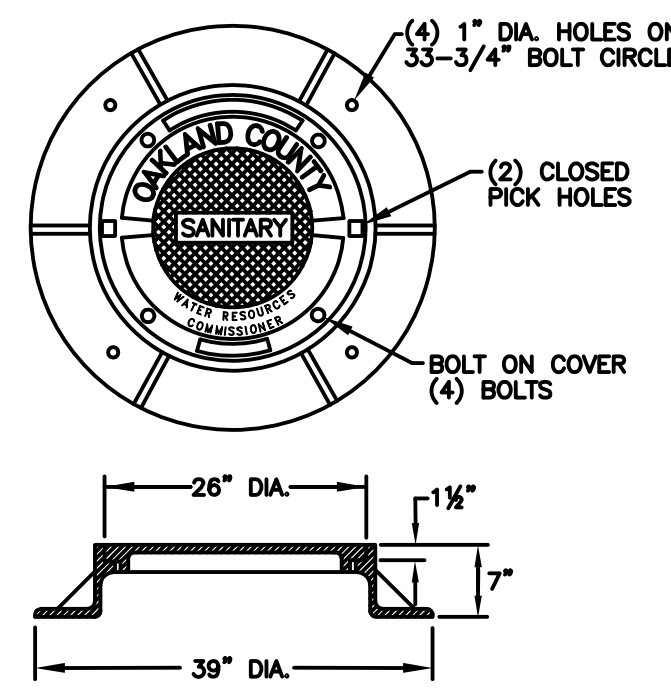


KOR-N-TEE TAP FOR CONCRETE PIPE



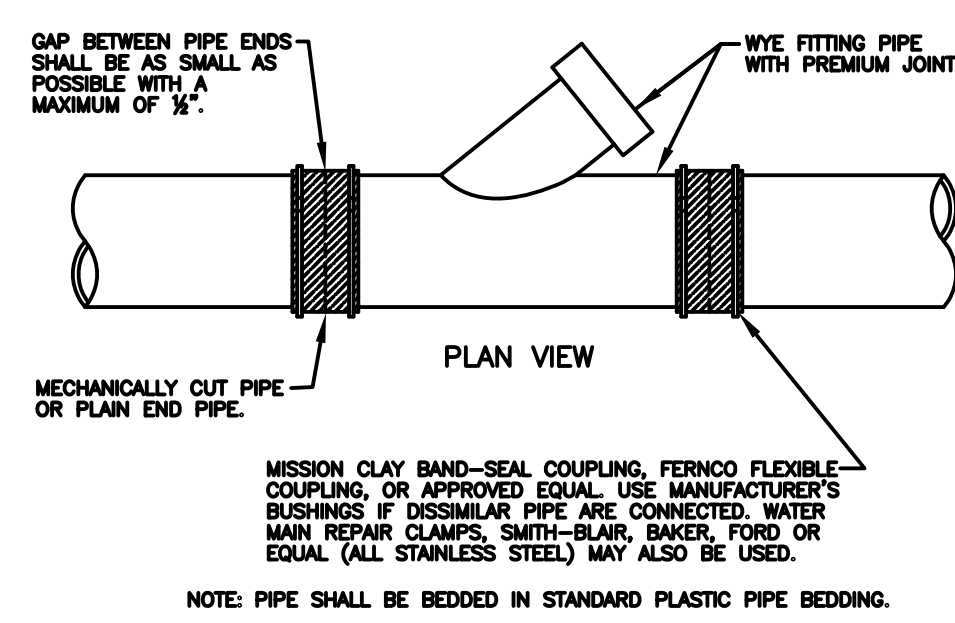
EAST JORDAN IRON WORKS
HEAVY DUTY MATERIAL ASTM A48 CL.35
COVER WT. 150 LBS., CATALOG NO. 1040A
PATTERN NO. 1040A, PRODUCT NO. 1040XX OAKCOSTD.
2" RAISED LETTERS, 1" RAISED LETTERS
ALL RECESSED FLUSH.

LOCAL MUNICIPALITIES MANHOLE COVER

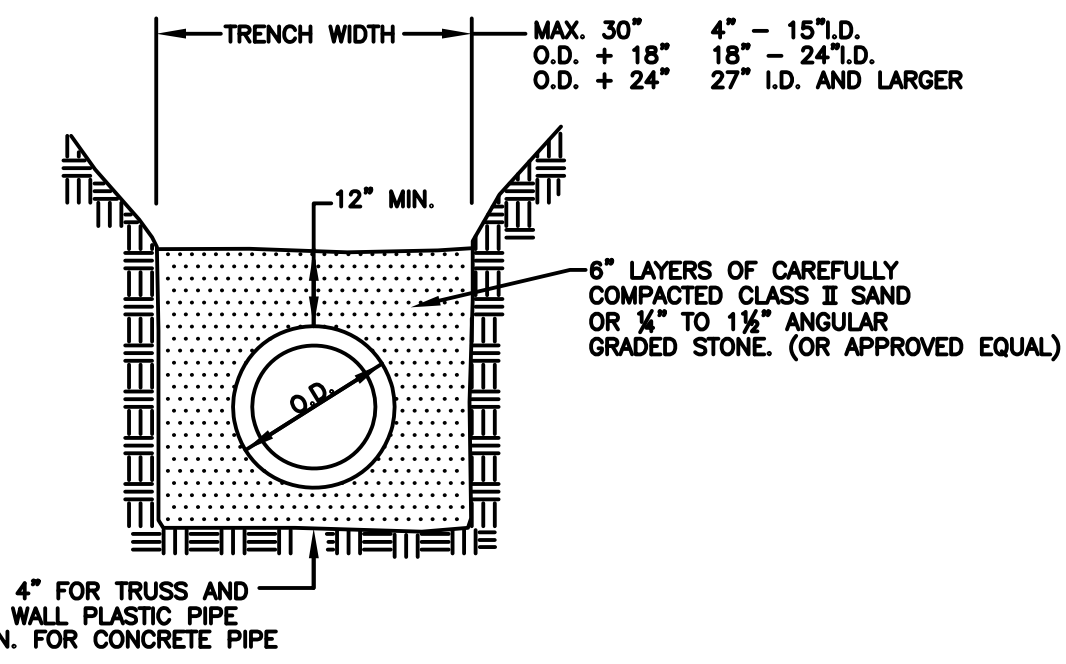


EAST JORDAN IRON WORKS
HEAVY DUTY MATERIAL ASTM A48 CL.35
COVER WT. 150 LBS., CATALOG NO. 1040APT
PATTERN NO. 1040A, PRODUCT NO. NCR09-1280 C
2" RAISED LETTERS, 1" RAISED LETTERS, 3/4" RAISED LETTERS
ALL RECESSED FLUSH.

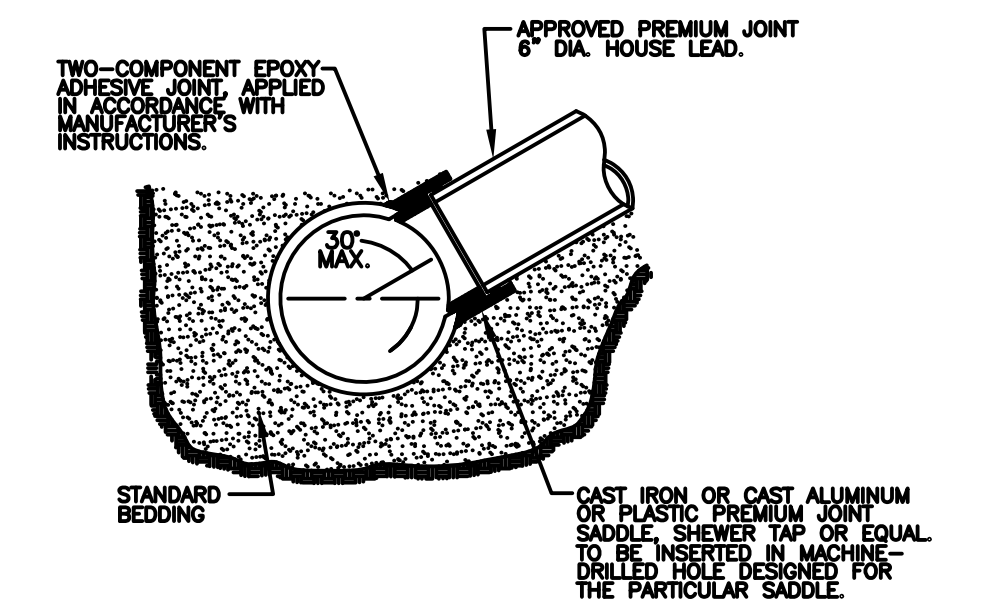
W.R.C. LETTERED MANHOLE COVER



WYE PIPE INSERTION WITH FLEXIBLE COUPLINGS (RIGID PIPE)

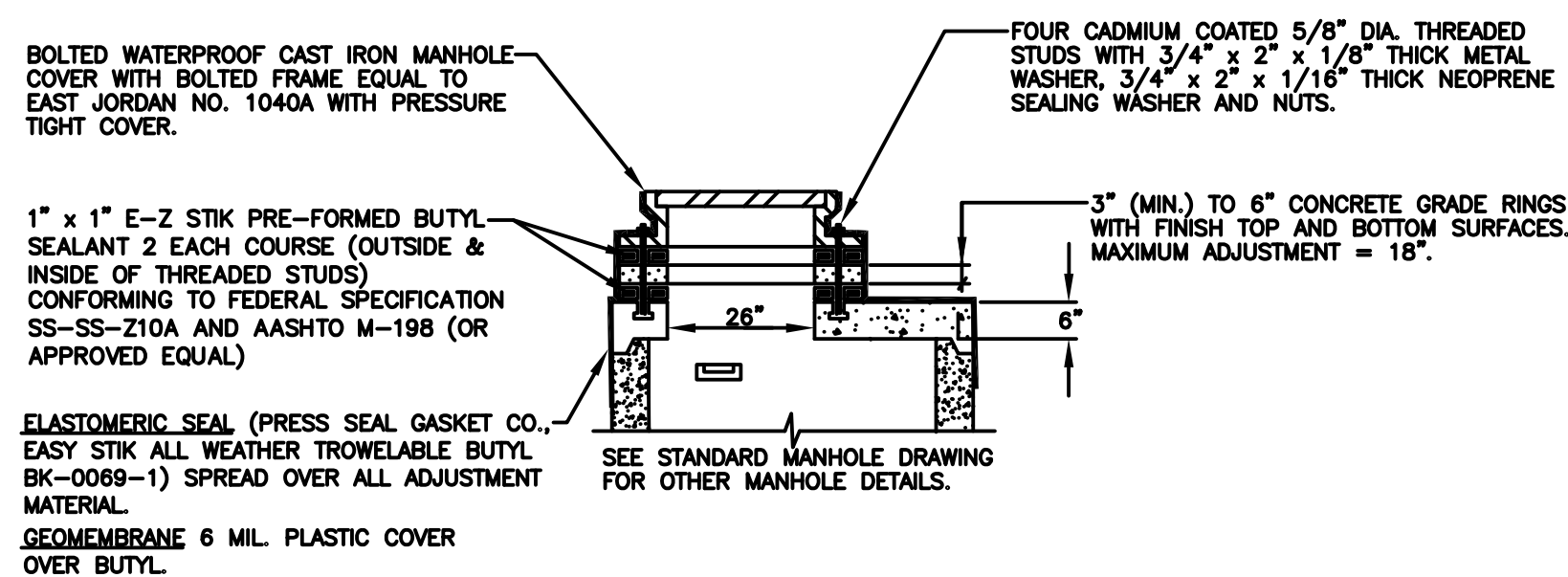


STANDARD BEDDING (CLASS B)

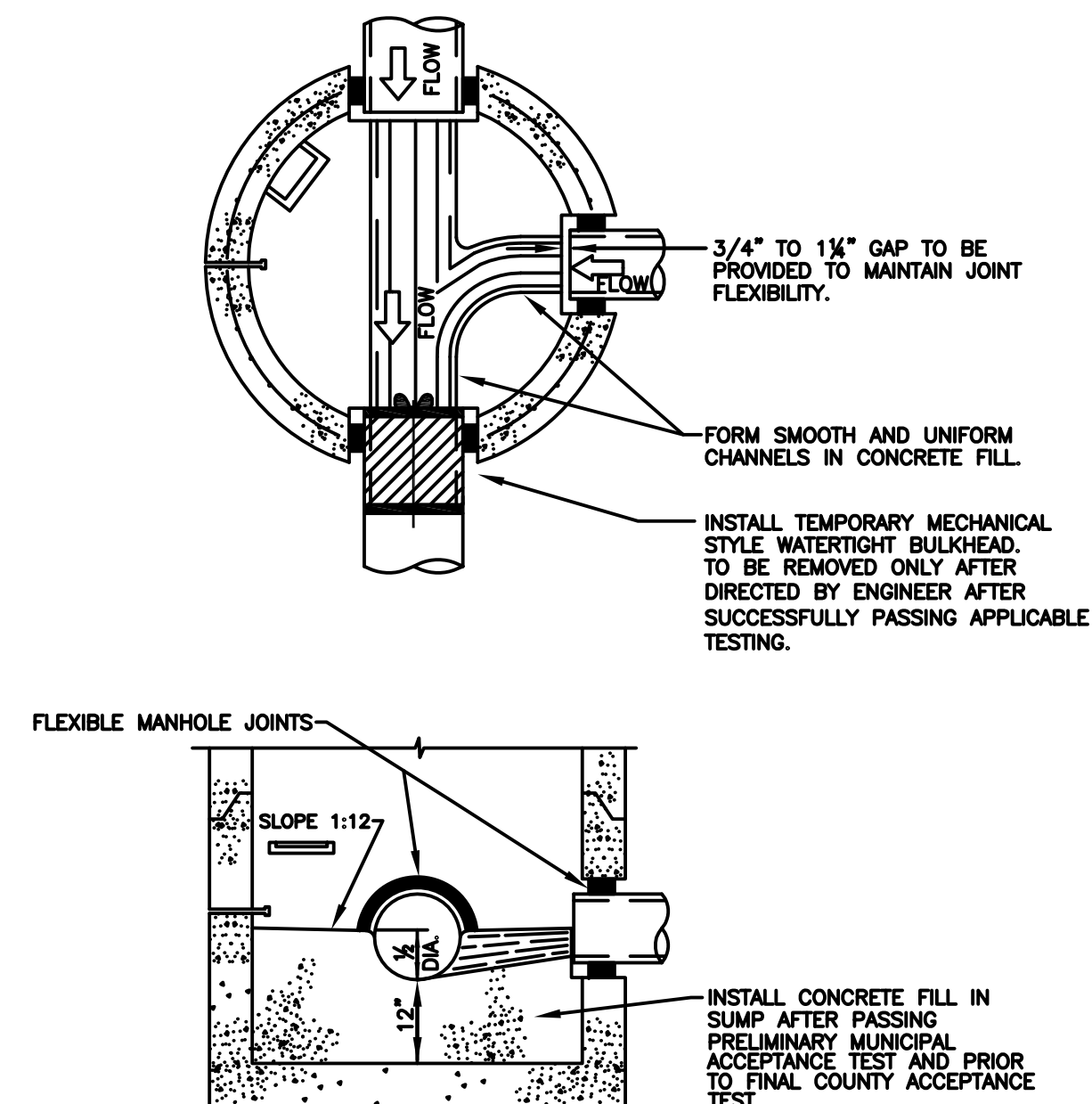


NOTE: SURFACE OF MAIN SEWER SHALL BE CLEANED WITH AN ABRASIVE GRINDER PRIOR TO EPOXY APPLICATION, DUE TO VARIATION OF SET-UP TIME OF EPOXY ADHESIVE WITH TEMPERATURE. ANCHOR STRAPS SHALL BE USED TO SECURE SADDLE IN POSITION IN COLD WEATHER OR WHENEVER WORK IS TO PROCEED PRIOR TO COMPLETE CURE OF EPOXY.

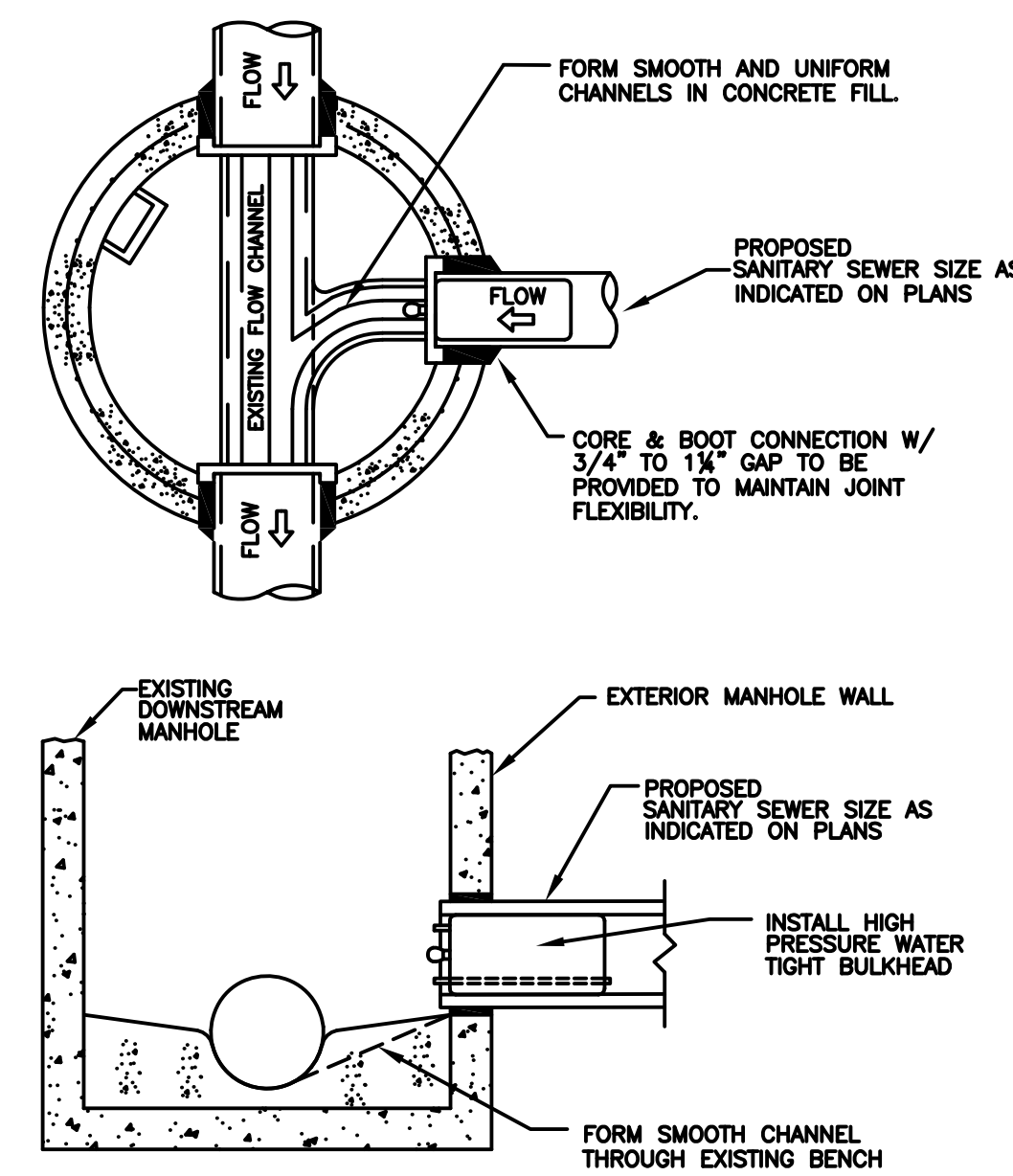
SEWER TAP-ALL SIZES OF MAIN SEWER PIPES VITRIFIED CLAY



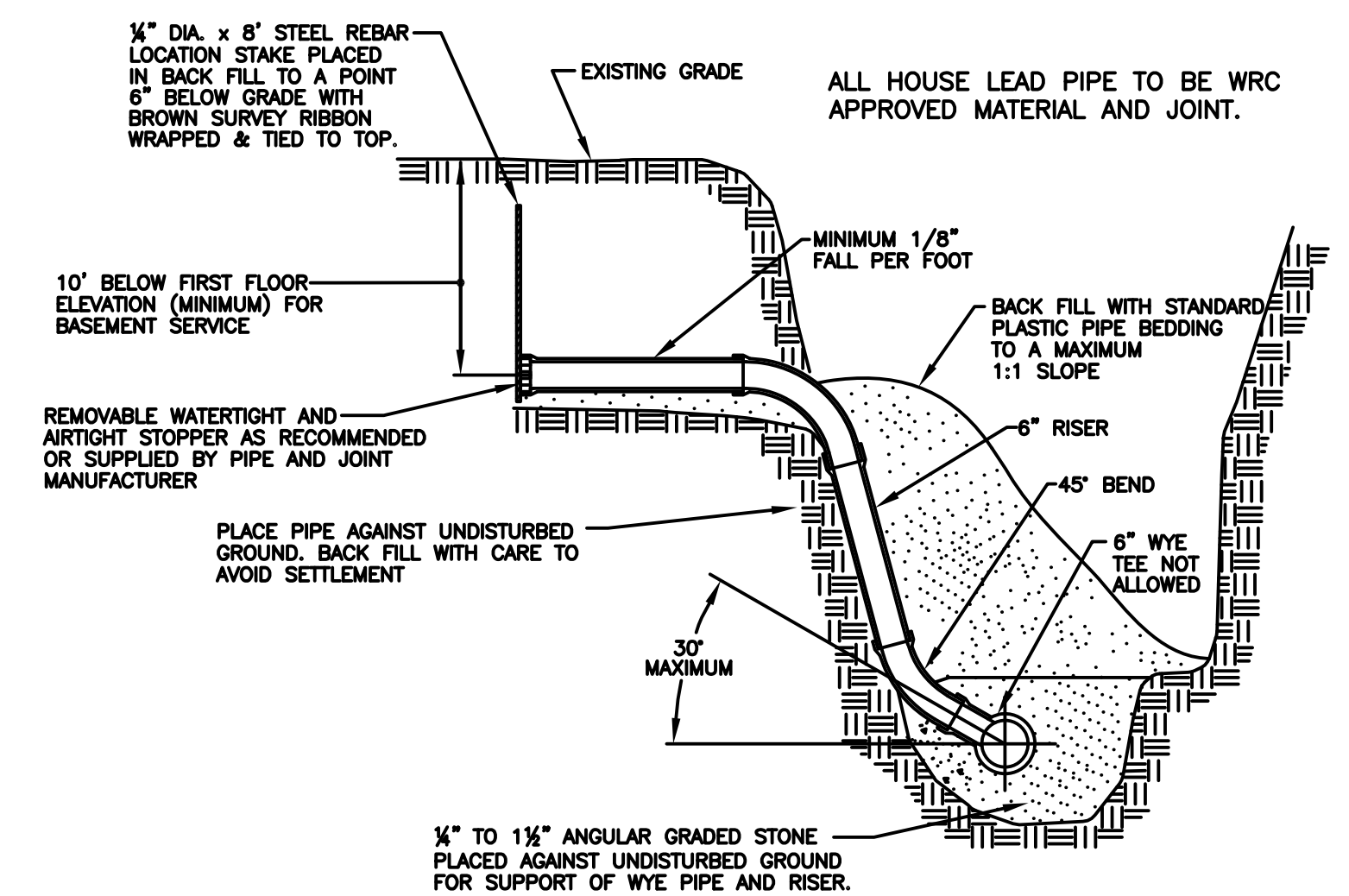
FLAT TOP MANHOLE



SUMP MANHOLE FOR TESTING, CLEANING AND DEWATERING



TESTING BULKHEAD WITH PIPE TAP



HOUSE LEAD DETAIL

REVISION BLOCK			
Rev. No.	By	Date	Description
1	DS	05/28/06	ADDED TESTING BULKHEAD WITH PIPE TAP DETAIL
2	lz	05/28/09	MOVED DETAILS FROM SHEET 1 ONTO SHEET 2
3	lz	07/14/09	STANDARDS COMMITTEE APPROVAL FOR DETAIL CHANGES
4	DS	02/03/14	REPLACE/UPDATE CDDC WITH WRC FOR THE MANHOLE COVER DETAIL

SANITARY SEWER DETAILS AND NOTES

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