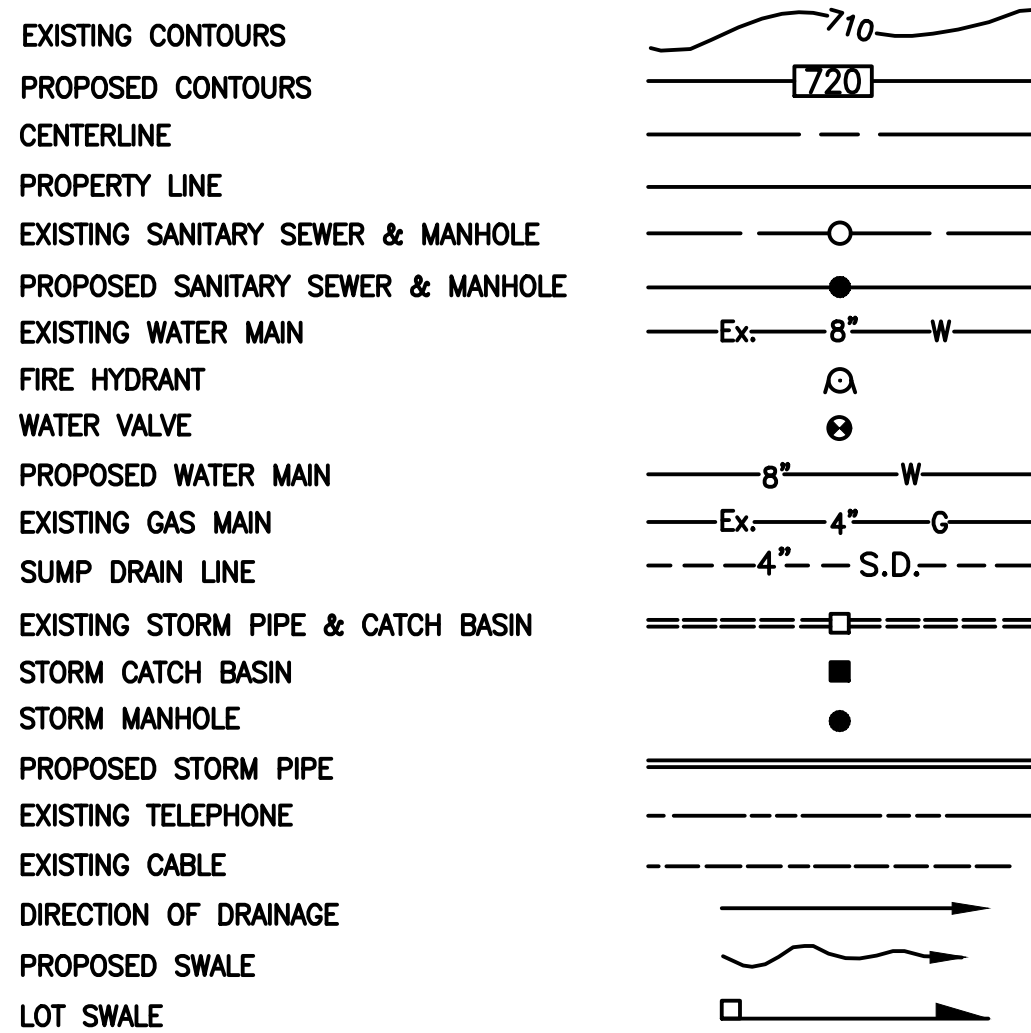


INDEX TO SHEETS

Table listing sheet titles and numbers: Title Sheet 1, Overall Layout 2, Plan & Profile Sheets 3-4, Grading Plan 5, Water Quality Details 6, Detail Sheets 7-9, Soil Erosion & Sedimentation Control Detail Sheet 10.

LEGEND



AS-BUILTS

SANITARY 1-23-20
WATER 2-6-20
STORM

VENICE CROSSING SECTION TWO

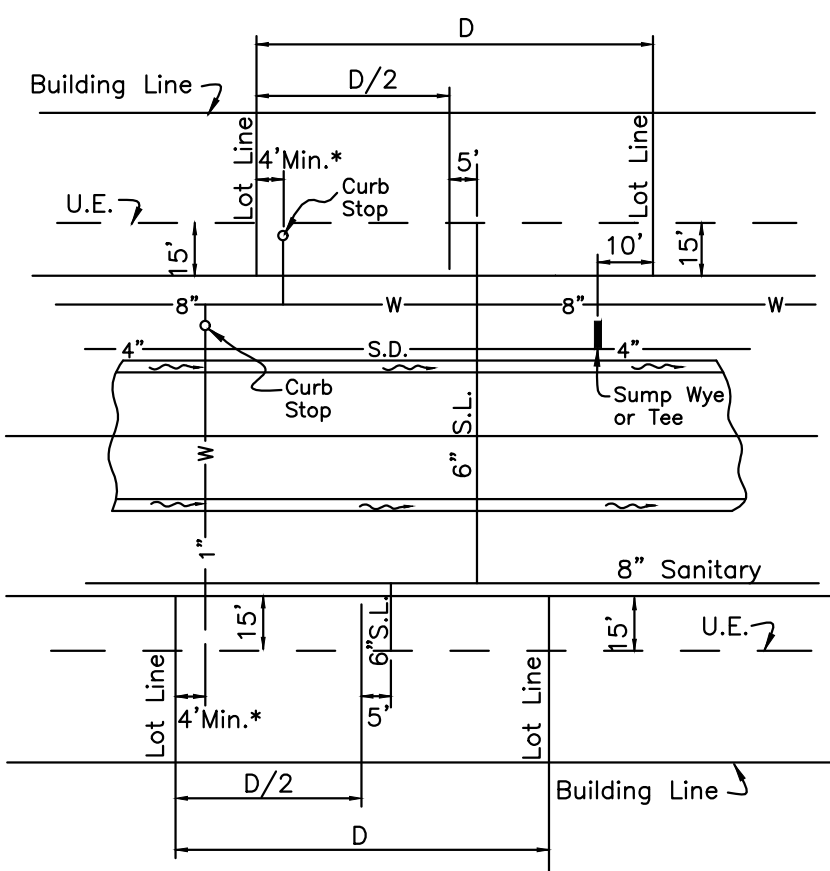
SECTION 28 & 33, TOWN 3, RANGE 2
ROSS TOWNSHIP, BUTLER COUNTY, OHIO
APRIL, 2020



Know what's below. Call before you dig.

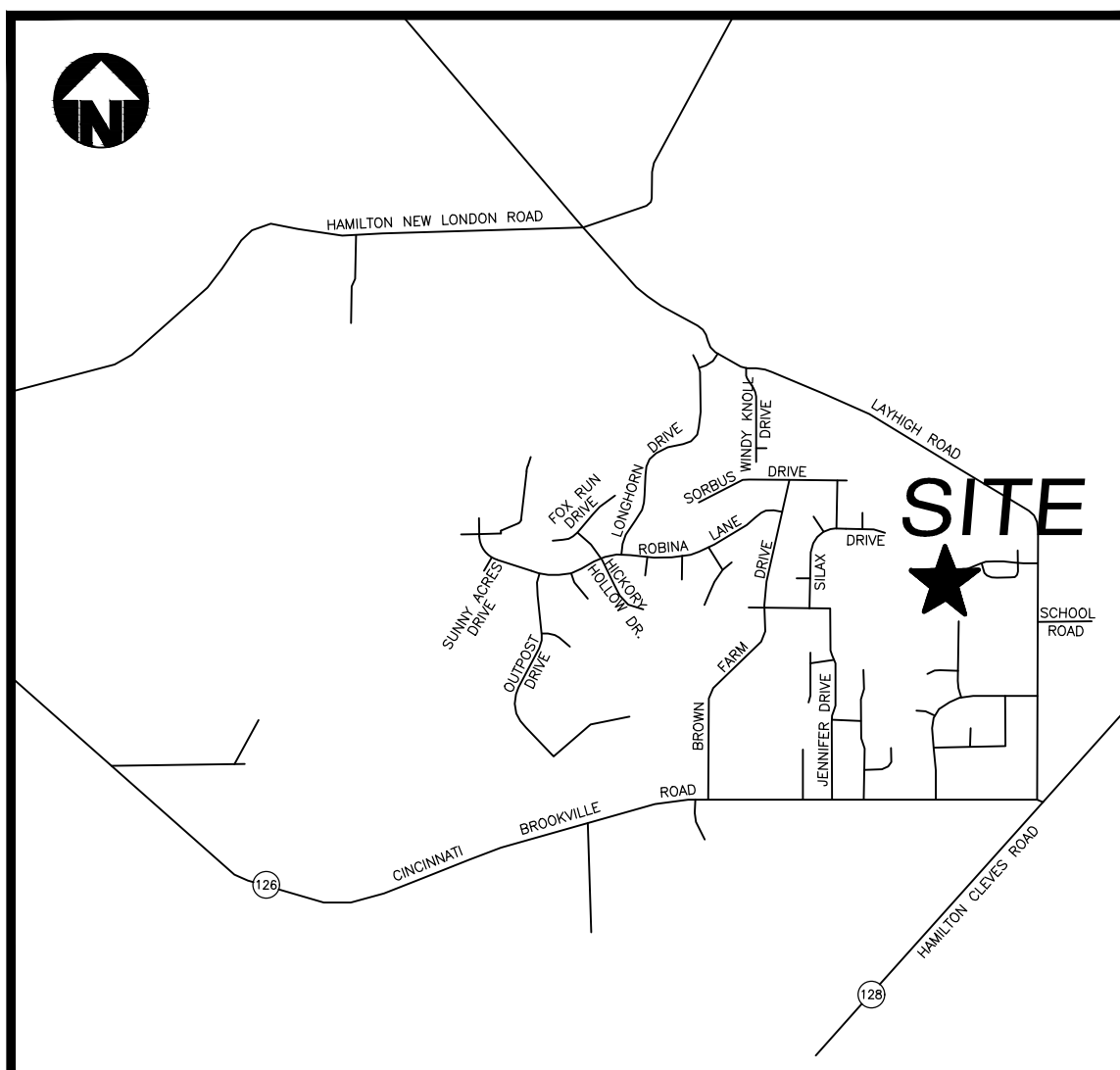
GENERAL NOTES

- 1. Item numbers refer to the 2010 Ohio Department of Transportation construction and material specifications...
2. Items that pertain to underground utilities such as watermain pipe, sanitary sewer pipe, water valves and manhole frames and covers, etc., will remain under specifications of the utility serving the area.
3. All trenches within the right-of-way and 15' utility easement shall be compacted and backfilled...
4. Surface course (item 404) and tack coat (item 407) are to be applied no sooner than nine (9) months after the leveling course...
5. A minimum 10' utility easement shall be shown on the record plat parallel and immediately adjacent to the right-of-way line...
6. Developer shall be responsible for the installation of conduits for the full width of the public right-of-way...
7. All electrical transformers shall be located so that they do not interfere with the existing manholes or water main appurtenances.
8. Sump line conduits are to be SDR 35, Armo 2000.
9. WATER MAIN
A. Water main materials, valves, fire hydrants, fittings and appurtenances and installation to be as per Southwest Regional Water District specifications.
B. All water main valves to have a minimum depth of 2.5' and a maximum depth of 4' from proposed grade to the top of the Valve Operating Nut.
C. Minimum 10' horizontal, 18' vertical separation between water main and sanitary and/or storm sewer.
D. Service risers to be installed per Typical Section. Meter Facilities to be installed by Southwest Regional Water District.
10. SANITARY SEWER
A. Sanitary sewer materials and installation to be as per Butler County specifications, using Section 3110 for PVC SDR-35 & 26 pipe; Section 3140 for ABS or PVC composite pipe; Section 3410 for manholes.
B. Crossings Whenever a sanitary sewer and water main must cross, the sewer shall be at such an elevation that the crown of the sewer is at least 18 inches measured between the outside pipe walls, below the bottom of the water main.
C. Sanitary laterals shall be extended to at least ten (10) feet beyond the Property / Right-of-Way or to the edge of the easement, whichever is greater.
D. Sanitary sewer laterals, which shall include all pipe and appurtenances from the building to the public sewer main, and the connection to the public sewer main shall be considered private and the responsibility of the property owner to maintain.
E. All buildings to be served by the public sewer system shall be constructed so as to provide a minimum of four feet (4') of vertical separation between the public sanitary sewer, at the point of connection, and the lowest building level served by a gravity sewer connection and shall not exceed a depth of 12 feet below finish grade at the end of the lateral at the right-of-way unless specifically authorized by the County.
11. Butler County Water and Sewer Department and Southwest Regional Water District does not accept any responsibility for the relocation, repair, or replacement of any other utility installed within five (5) feet of the center line of any sanitary sewer main or water main.
12. STORM SEWER
A. Storm sewer pipe shall meet the requirements as follows:
1. PVC pipe as per ODOT Supplemental Specification 707.42 for all diameters.
2. HDPE pipe as per ODOT Supplemental Specification 707.33.
3. Corrugated steel spiral rib pipe as per ODOT Supplemental Specification 707.01 or 707.02 for all diameters.
4. Reinforced concrete pipe as per ODOT Construction and Material Specification 706.02 for all diameters. Class shall be specified at the contractor's request.
5. Bituminous coated corrugated steel pipe as per ODOT Specification 707.05 or 707.07.
B. Deflection Testing for Storm Sewers and Culverts 15% of all storm sewers shall be tested for deflection within thirty days after they are completed.
C. All catch basins and manholes with a depth greater than 4' shall be provided with steps.
D. Headwall: HW-4A to be used with Corrugated Metal pipe or HW-4B to be used with Concrete Pipe.
13. Roof drains, foundation drains, and other clean water connections to the sanitary sewer system are prohibited.
14. Any detention basin on site should be constructed prior to the clearing of topsoil and grading of the site.
15. SEDIMENTATION CONTROL
The project has been designed to control erosion and prevent damage to other property.
All areas disturbed by the construction of the roadways, ditches and sediment basins shall be seeded and strawed as soon as possible to limit the erosion and stabilize the soil.
16. Butler County and Southwest Regional Water District will not be responsible for any pavement or storm sewer repairs resulting from water main and sanitary sewer repairs.
17. Any roadway settlement greater than one inch will be required to be repaired with Item 613 Low Strength Mortar Backfill (Type 1).
18. Provide the Butler County Engineer's Office with a forty-eight (48) hour notice prior to the start of any construction, including sanitary installation.
19. Contractors to accept all Quantities as correct prior to beginning construction.
20. Contractor shall include the cost of County and Southwest Regional Water District inspection and extension fees in unit price bid.
21. Existing Zoning: R-PUD
22. Total Acreage: 13.9191 Acres



STANDARD SERVICE DETAIL

*Except Otherwise shown on plan.



VICINITY MAP

OWNER/DEVELOPER

Ross Trails Inc.
P.O. Box 277
Ross, Ohio
(513) 720-9900

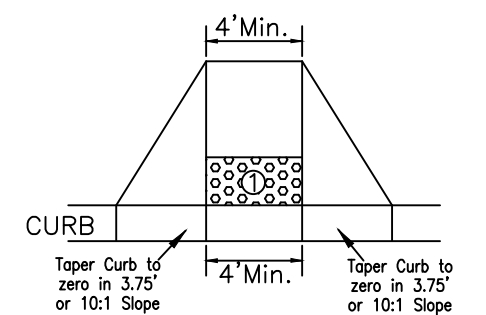
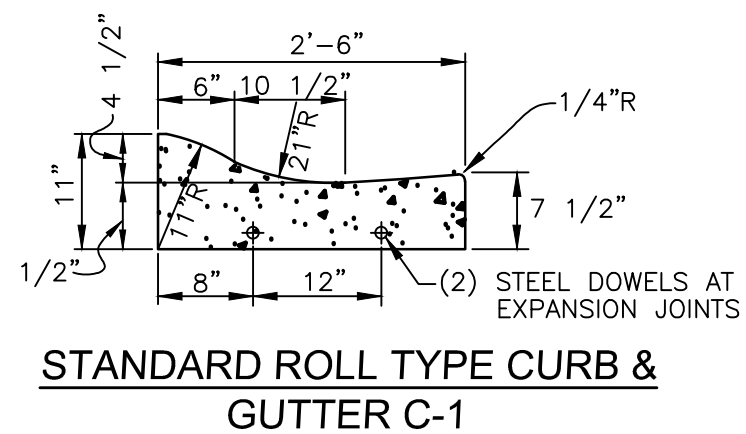
BENCHMARK

O.D.O.T VRS Network NAVD88-
Sanitary Manhole 17.0 Feet North of
the North Terminus of Mikehill Drive
Elevation= 571.04

JOB LOG table with columns for DATE and COMMENT, listing submission dates to Butler County Planning and BCEO.

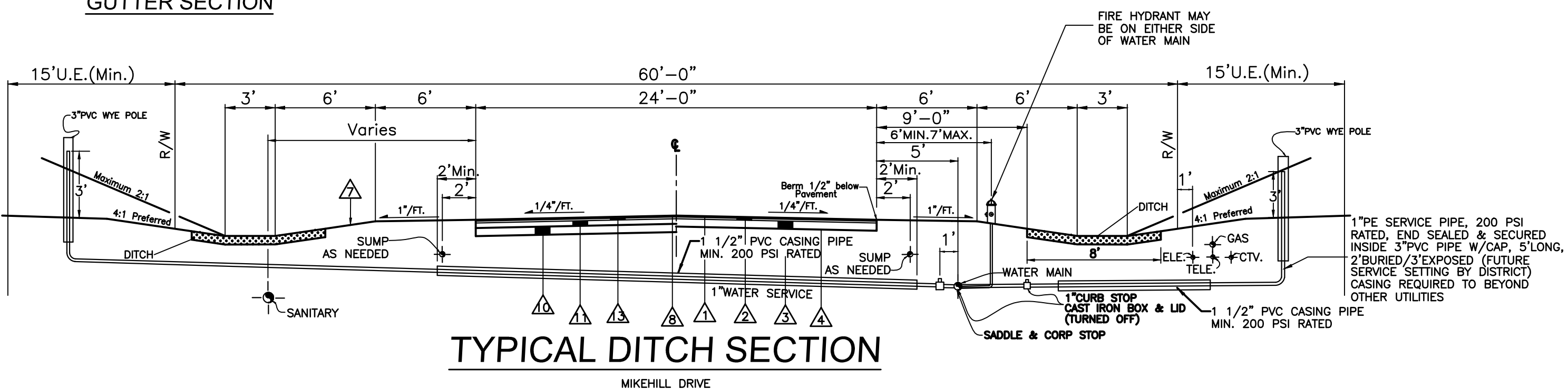
SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS table listing drawing codes like C-1, Std.MH-1A, Std.HW-D, etc.

CONSTRUCTION APPROVAL table with columns for Agency and Date, listing approvals from Butler Co. Water & Sewer Dept, Engineer's Office, etc.

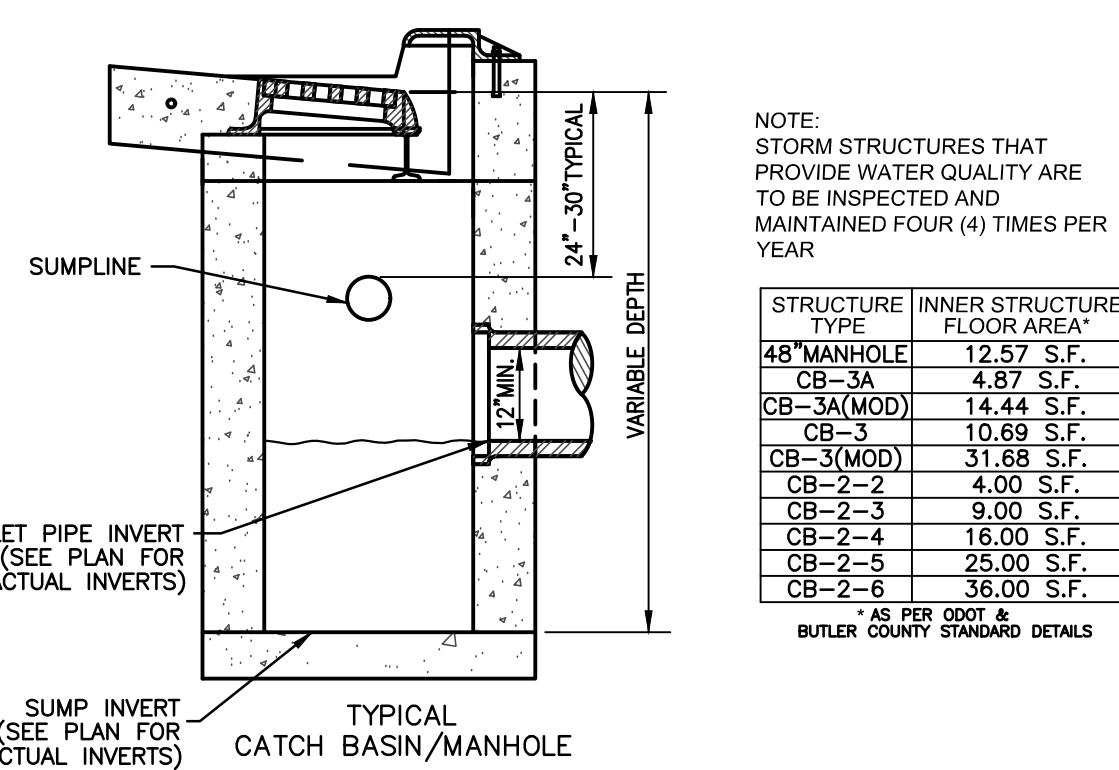


CURB RAMP DETAIL

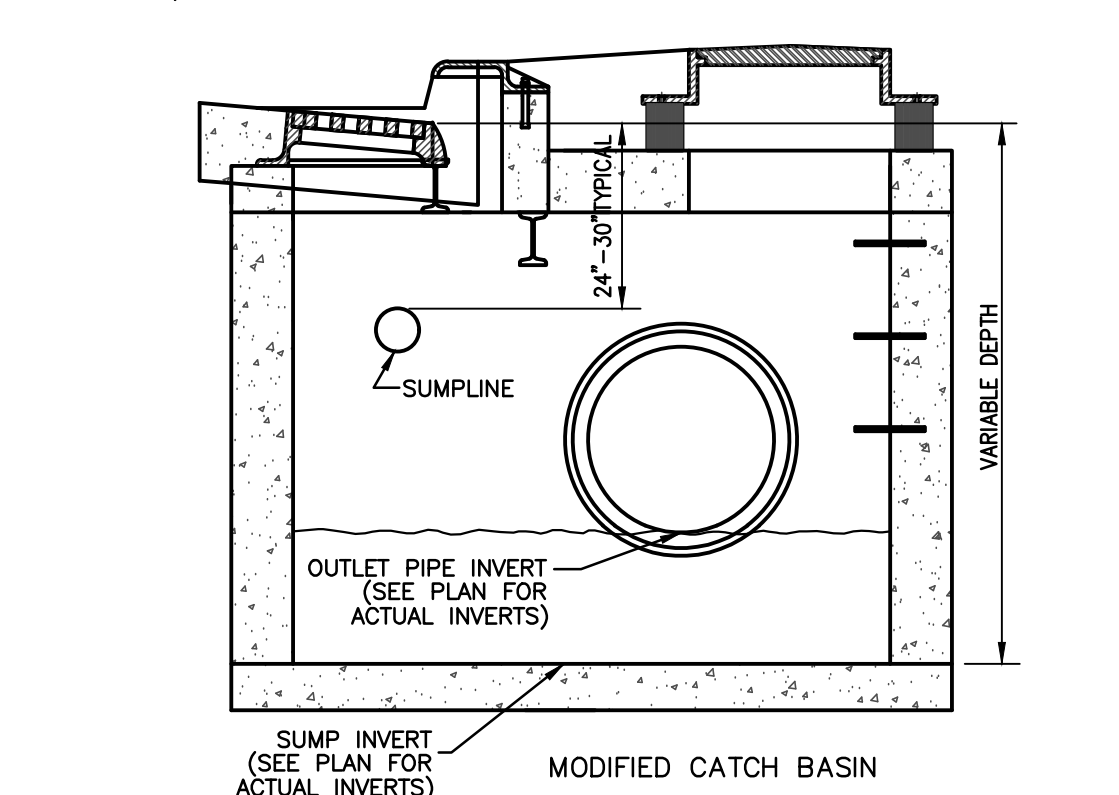
- 1. Detectable Warning (Truncated Domes) are to be installed in the location shown.
2. Minimum Landing is to be 4' but 5' is preferred.
3. Curb ramps shall be design A or design B per ODOT Drawing 7-12-02, sheets 1 through 3.



TYPICAL DITCH SECTION

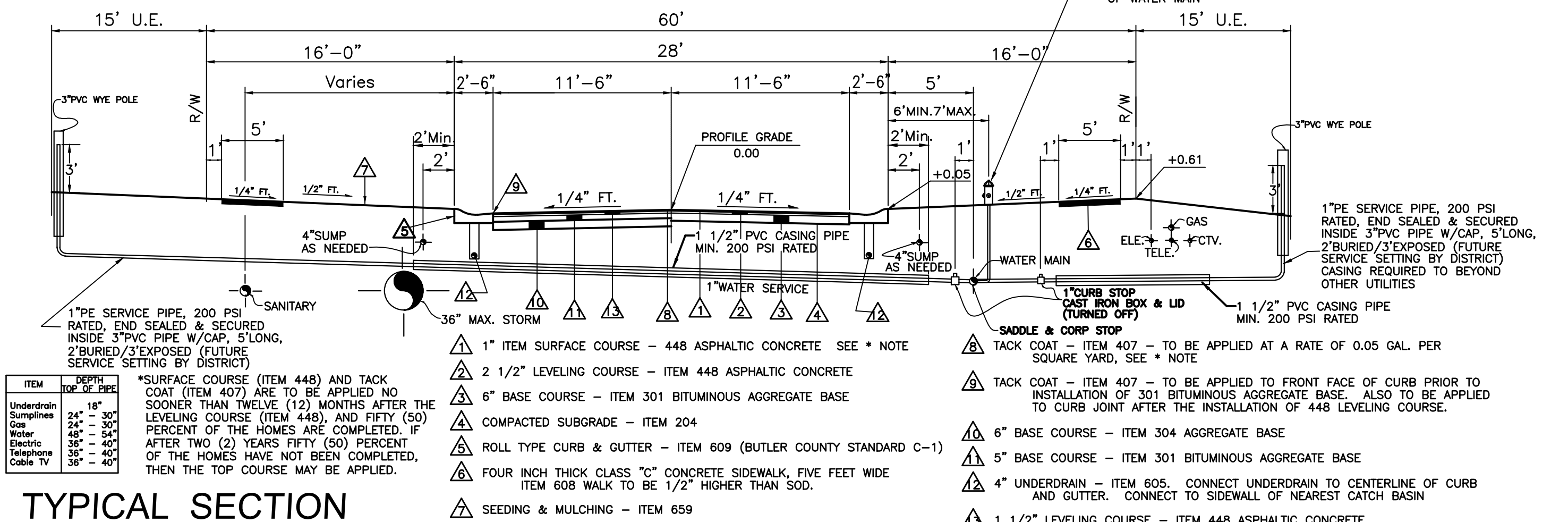


STRUCTURE TYPE and FLOOR AREA table listing details for 48" Manhole, CB-3A, CB-3A(MOD), etc.



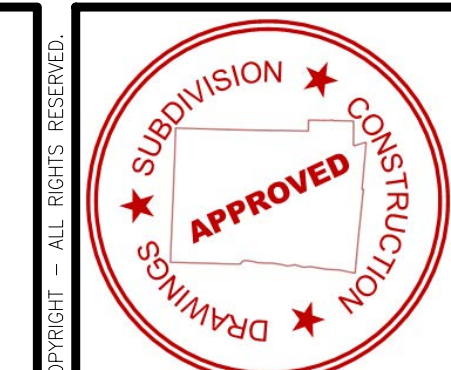
STORM WATER QUALITY STRUCTURE DETAILS

(Not to Scale)



TYPICAL SECTION

VENICE CROSSING DRIVE

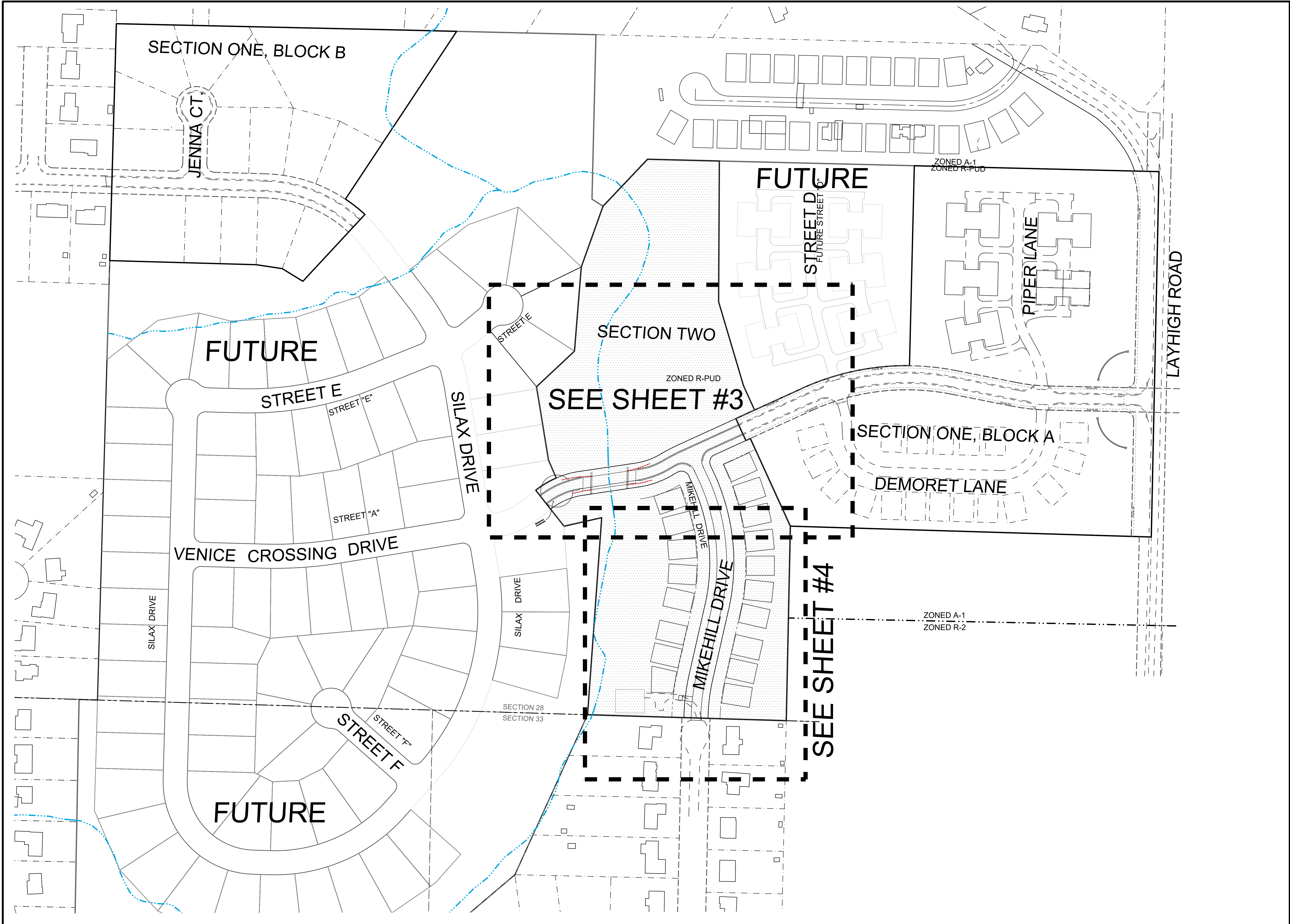


Revision Description table with columns for Date, Description, and Checked/Drawn/Reviewed initials.

VENICE CROSSING SECTION TWO
ROSS TOWNSHIP, BUTLER COUNTY, OHIO
SECTION 28 & 33, TOWN 3, RANGE 2
TITLE SHEET

Bauer Becker logo and contact information: www.bauerbecker.com, 6900 Tyersville Road, Suite A, Mason, OH 45040-513.339.6600

Plot time: Apr 22, 2020 - 3:32pm
Drawing name: J:\2013\13M074-002\CV\DWG\13M074-002_CD.dwg - Layout Tab: OV2



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Item	Revision Description	Date	Drawn	Chk
1				
2				
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7				
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9				

VENICE CROSSING SECTION TWO
ROSS TOWNSHIP, BUTLER COUNTY, OHIO
SECTION 28 & 33, TOWN 3, RANGE 2

bayer becker
www.bayerbecker.com
6900 Tyersville Road, Suite A
Mason, OH 45040 - 513.336.6600

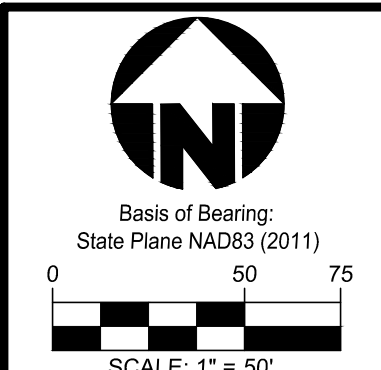
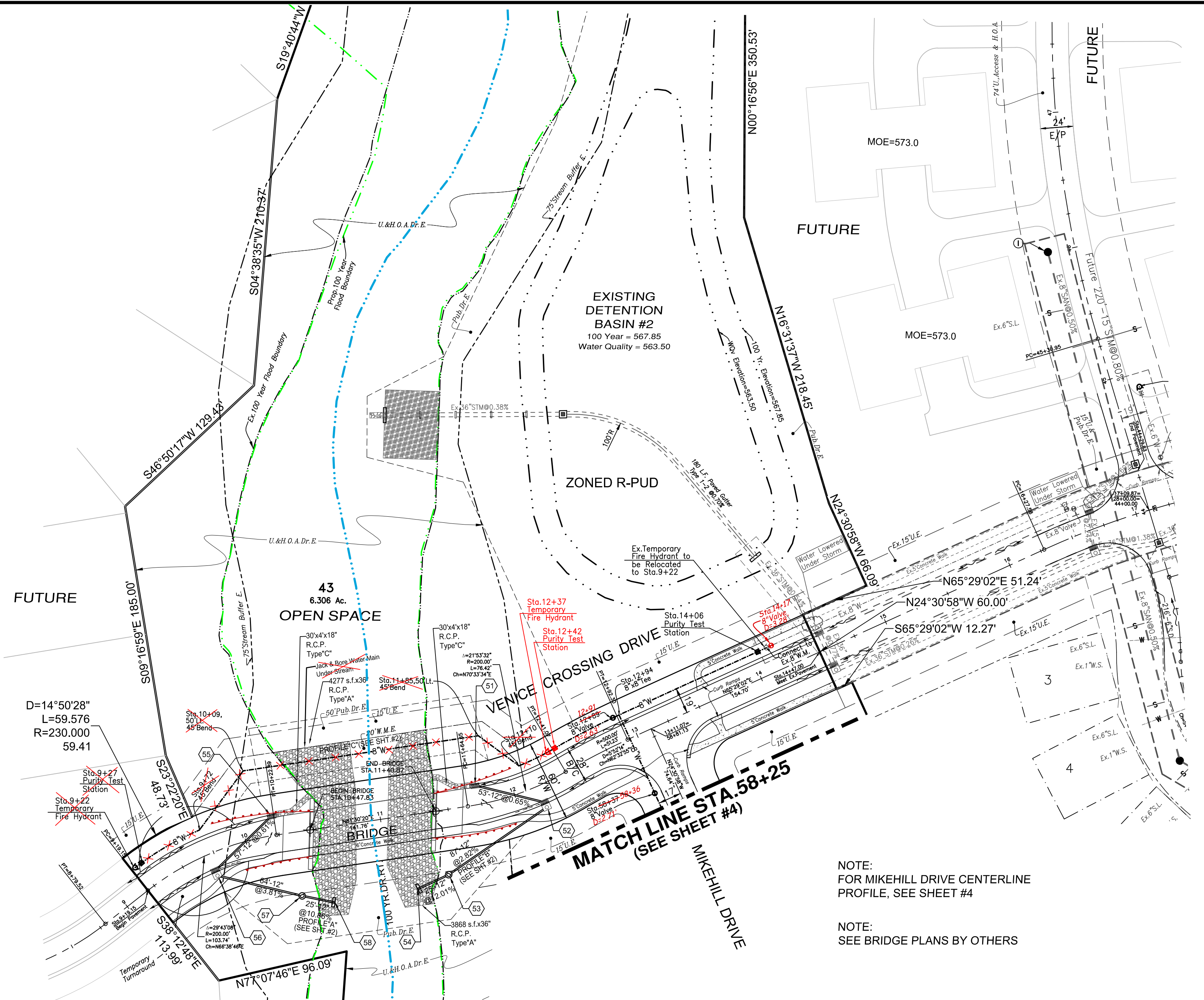
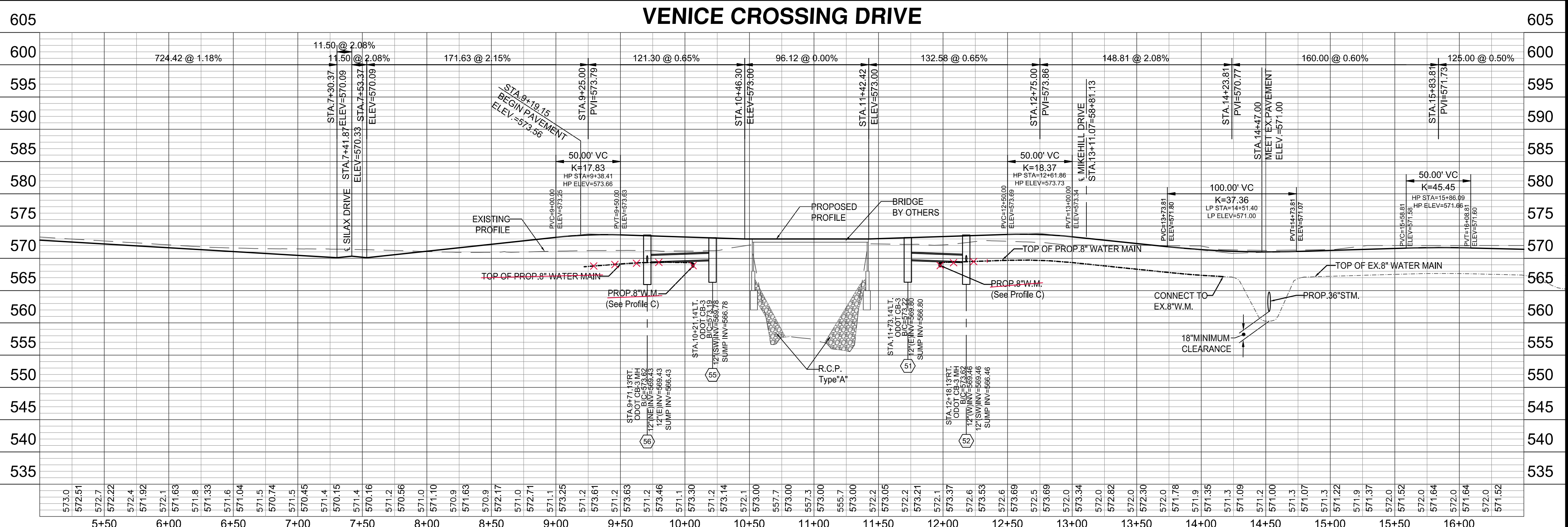
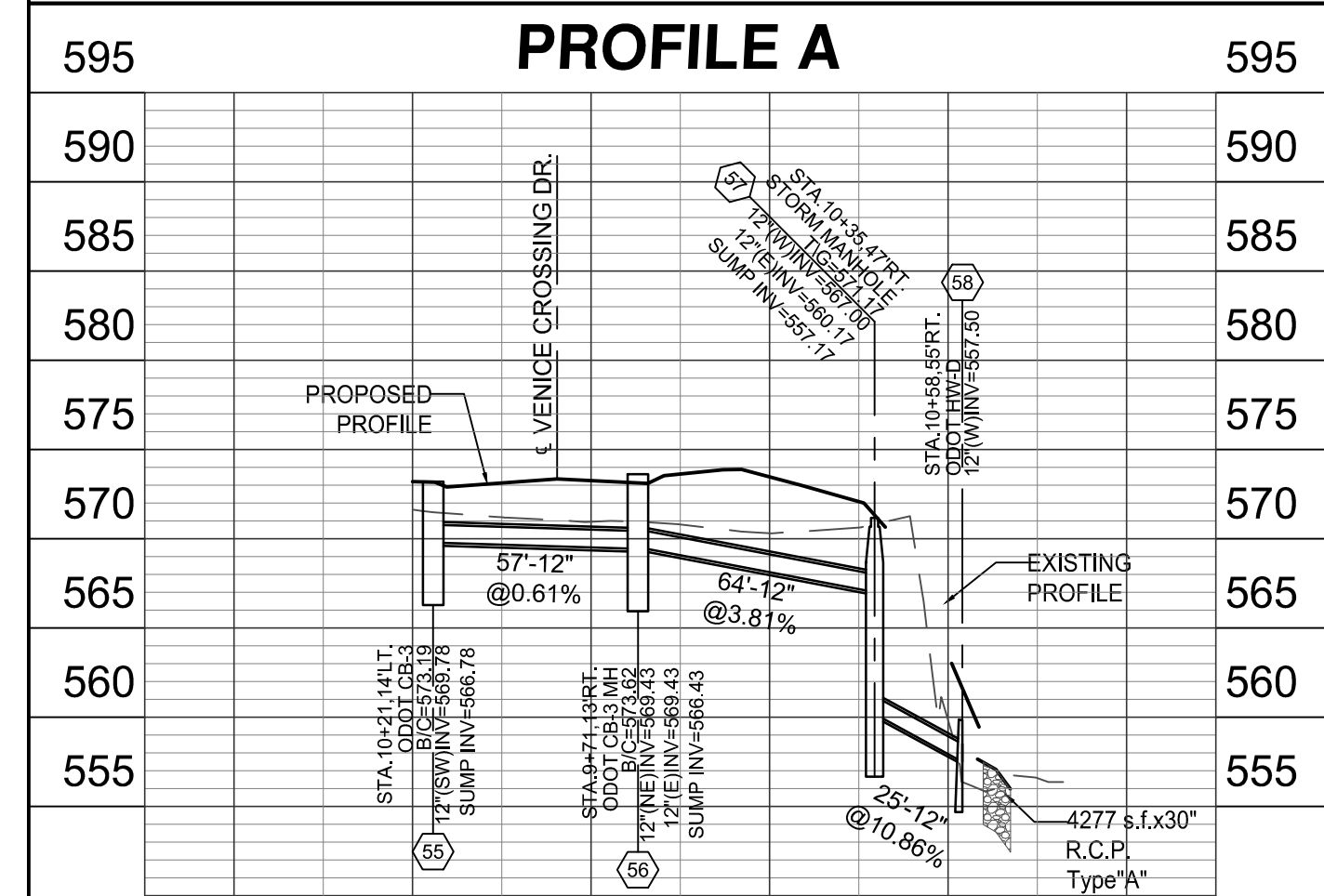
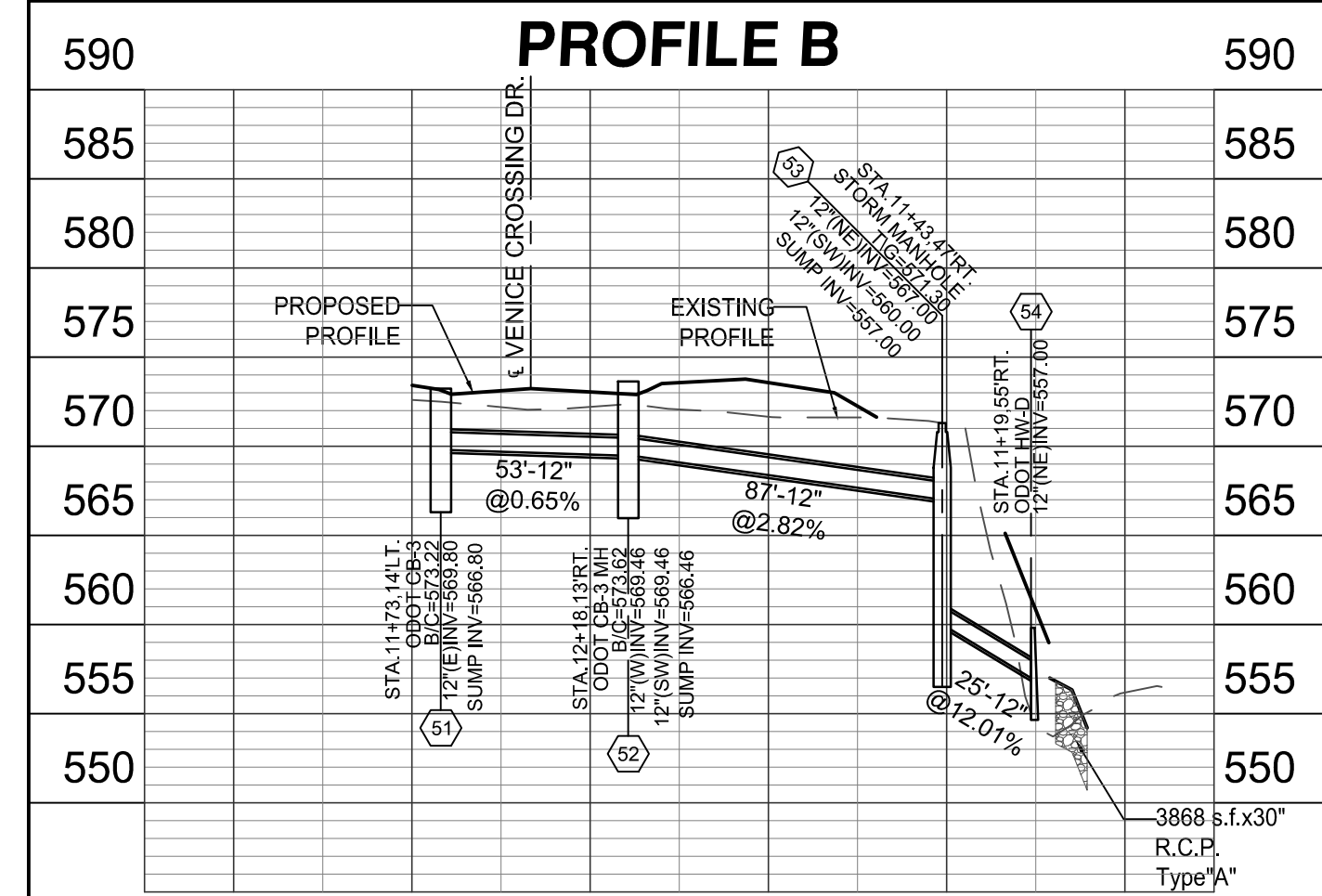
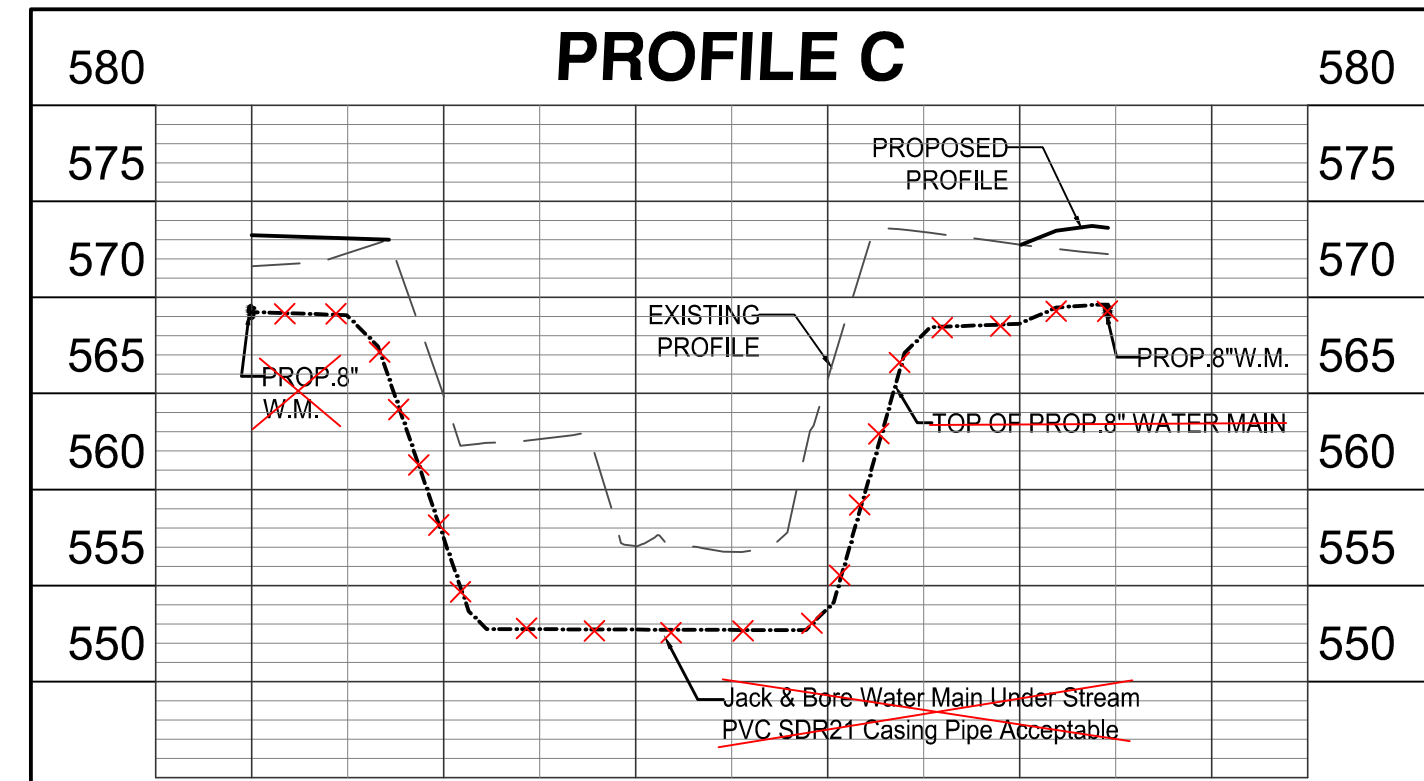
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Drawn by: JAB
Checked by: TAC
Issue Date: 5-29-19

Sheet: **2/10**

OVERALL PLAN

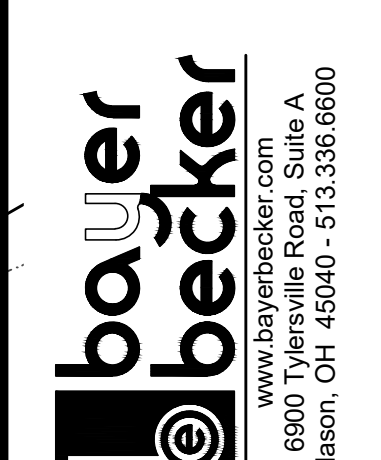
- NOTES:
- 48 hours notice to be given to affected residents before construction begins.
 - All Catch Basin B/C Elevations located within the curb are set to the Back of Curb Elevations.
 - Lower 1" Water Services as needed to avoid conflicts with Storm with Min. 4' Cover.
 - Location of existing utilities to be determined in the field prior to work beginning.
 - All lots Sump to Sump Drain unless otherwise noted in plan.
 - Sump Lines to be installed as per Standard Service Detail. Wyes or Tees are to be placed ten feet past lot line, on the low side of specified lots, and marked with Wye poles.
 - Contractors to accept all quantities as correct prior to beginning construction.

NOTE:
At Crossings, the water main shall have a minimum vertical distance of eighteen (18") inches from storm and sanitary sewers. Also, one full length of water main shall be located so the joints are as far from the storm and sanitary sewers as possible. Fittings, not joint deflection, must be used when water main is lowered at crossings.



Item	Revision Description	Date	Drawn	Chk
1	Revised as per BCEO	5-25-19	TAC	
2	Revised as per SDRWD	7-25-19	TAC	
3	Entered water main installation East of Creek	8-28-19	TAC	
4	Revised Lot Numbers	8-5-19	TAC	
5	Revised as per BCEO	3-24-20	TAC	
6	Revised as per BCEO	4-22-20	TAC	
7				
8				
9				

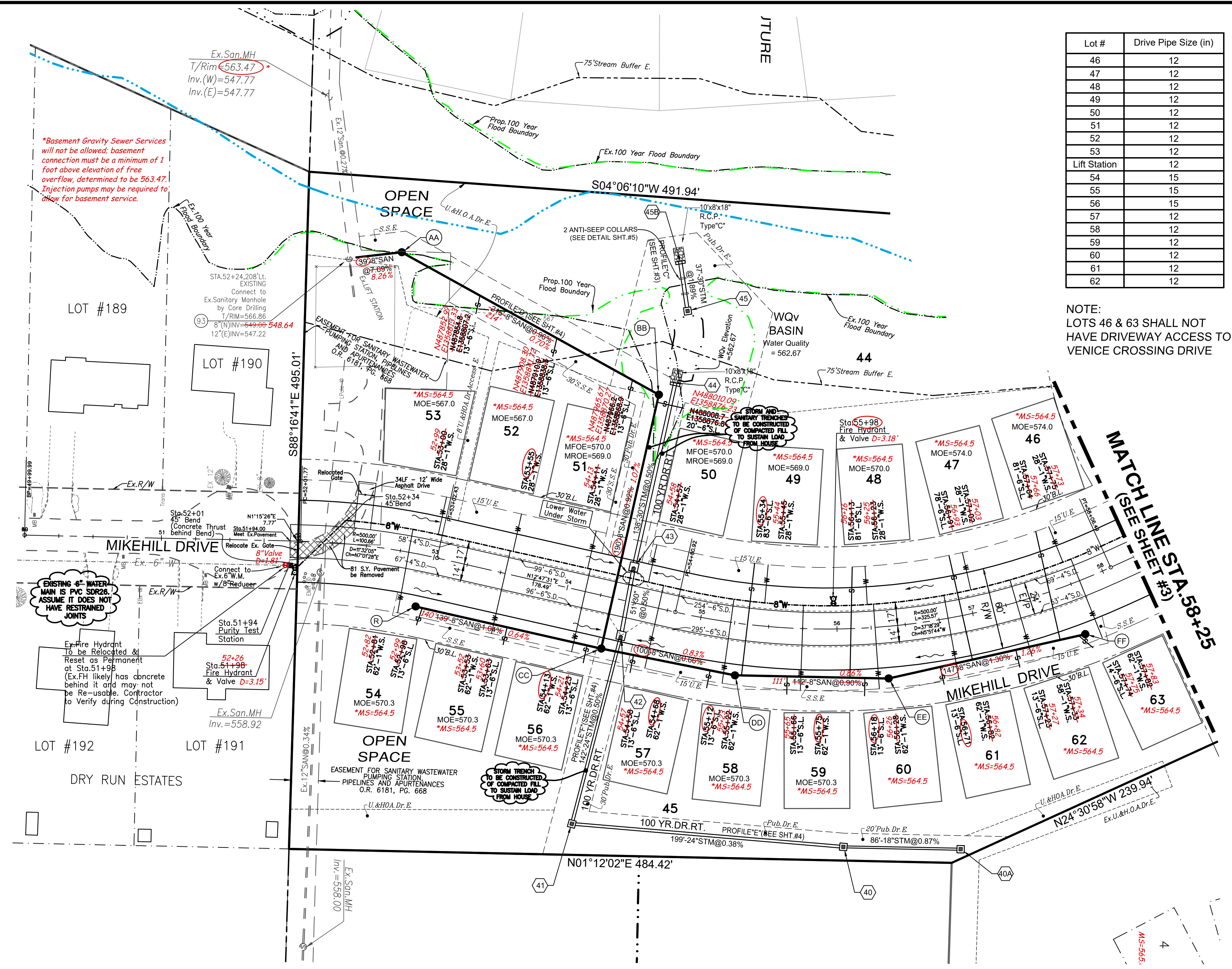
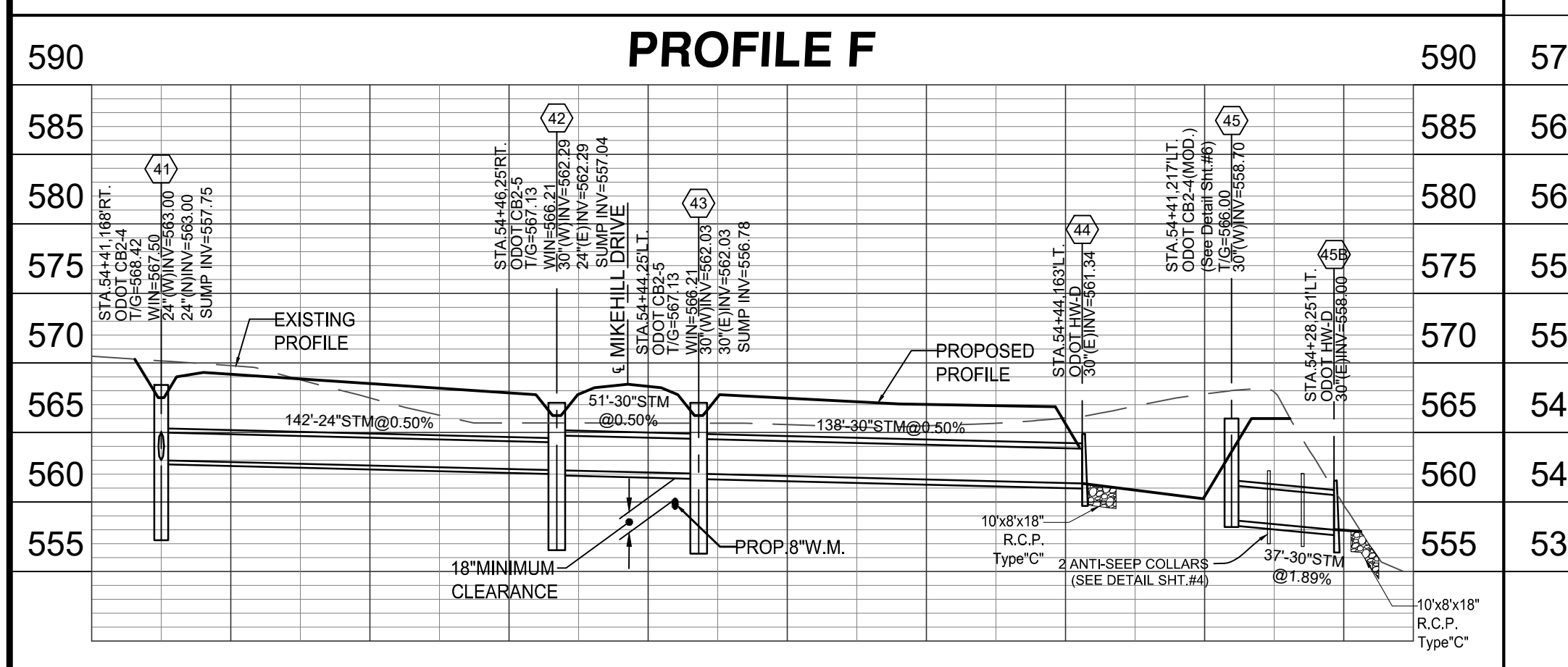
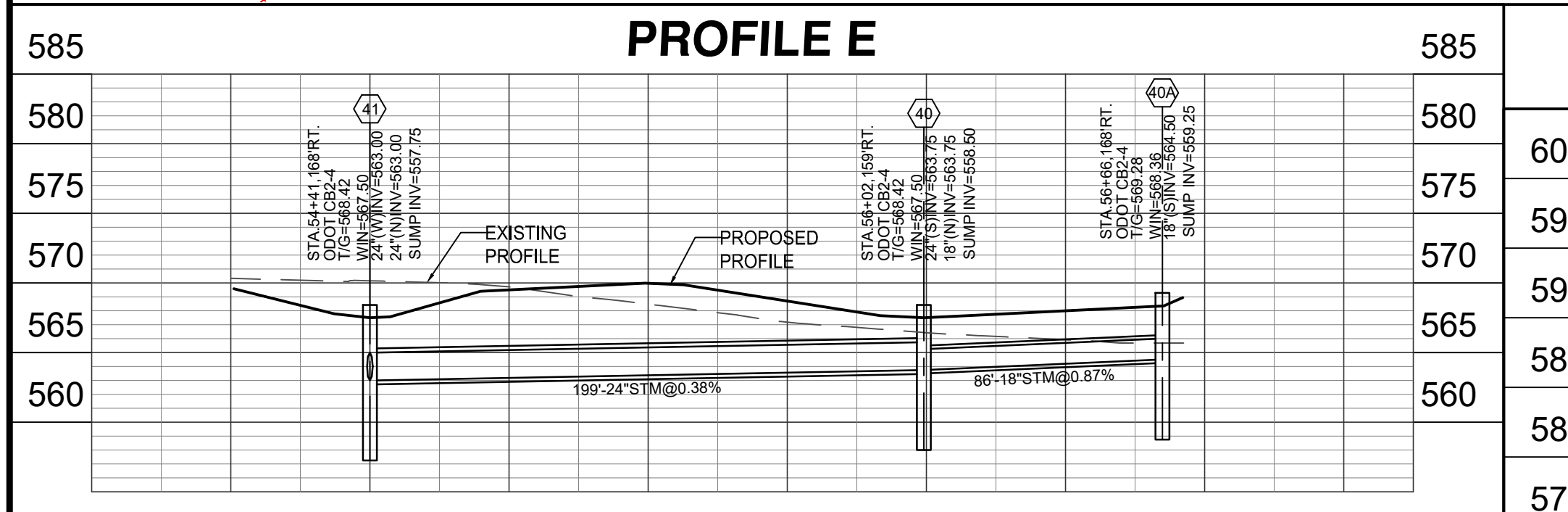
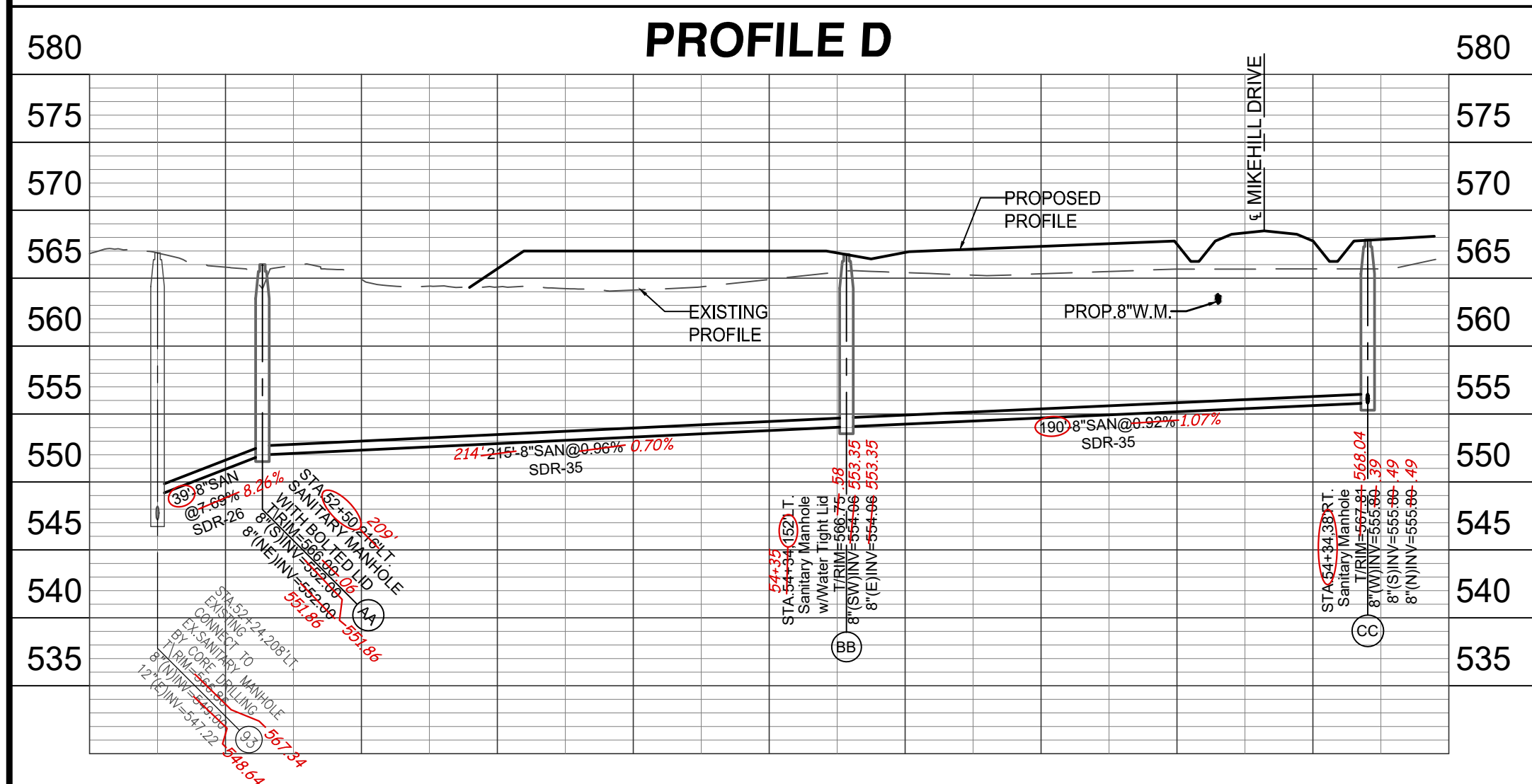
VENICE CROSSING SECTION TWO
ROSS TOWNSHIP, BUTLER COUNTY, OHIO
SECTION 28 & 33, TOWN 3, RANGE 2



Drawing: 13M074-002 CD
Drawn by: JAB
Checked by: TAC
Issue Date: 5-29-19

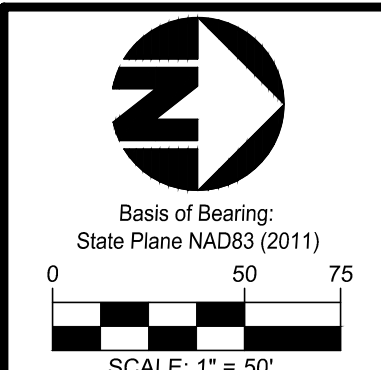
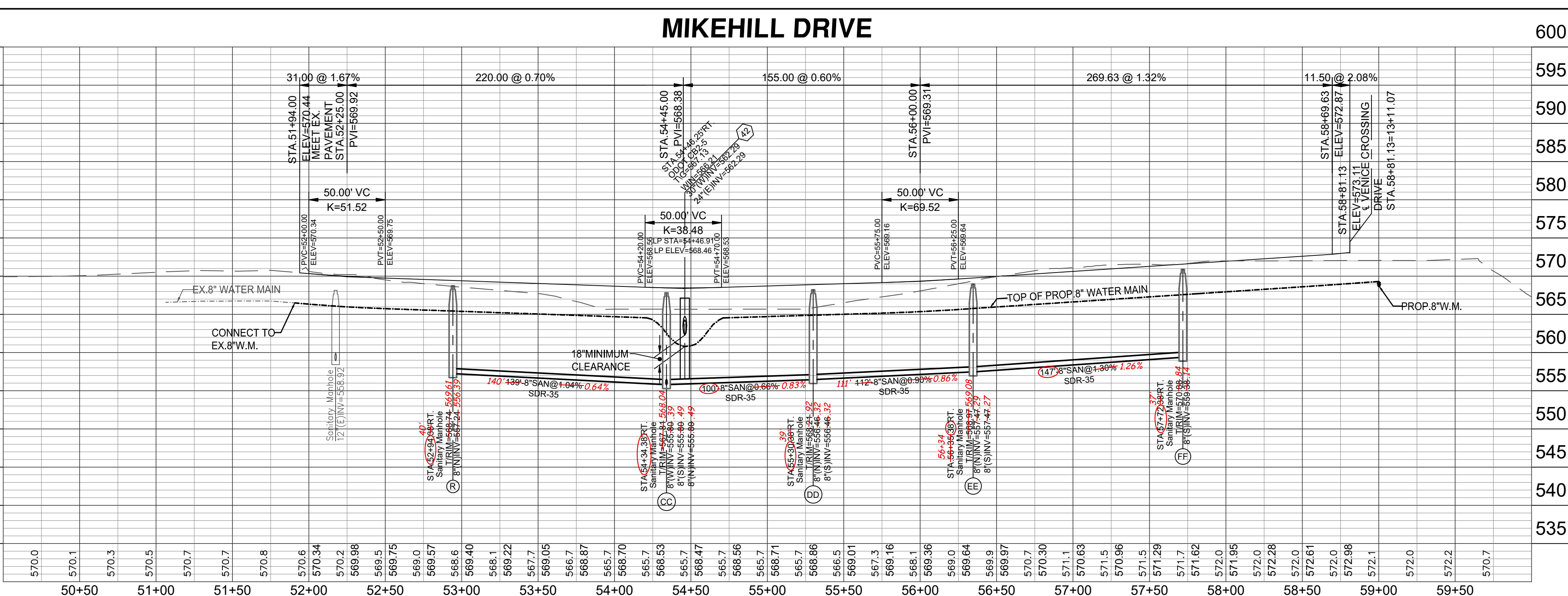
- NOTES:
- 48 hours notice to be given to affected residents before construction begins.
 - All Catch Basin B/C Elevations located within the curb are set to the Back of Curb Elevations.
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 - Sump Lines to be installed as per Standard Service Detail. Wyes or Tees are to be placed ten feet past lot line, on the low side of specified lots, and marked with Wye poles.
 - Contractors to accept all quantities as correct prior to beginning construction.

NOTE:
At Crossings, the water main shall have a minimum vertical distance of eighteen (18") inches from storm and sanitary sewers. Also, one full length of water main shall be located so the joints are as far from the storm and sanitary sewers as possible. Fittings, not joint deflection, must be used when water main is lowered at crossings.



Lot #	Drive Pipe Size (in)
46	12
47	12
48	12
49	12
50	12
51	12
52	12
53	12
Lift Station	12
54	15
55	15
56	15
57	12
58	12
59	12
60	12
61	12
62	12

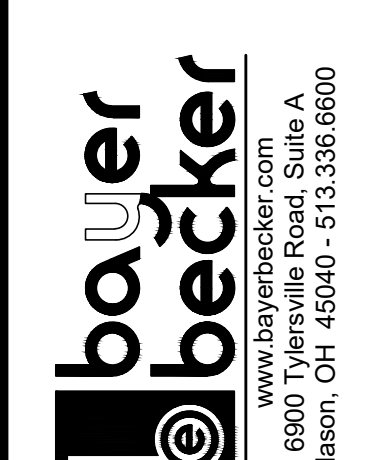
NOTE:
LOTS 46 & 63 SHALL NOT HAVE DRIVEWAY ACCESS TO VENICE CROSSING DRIVE



Date	Chk:
7-25-19	TAC
8-5-19	TAC

Item	Revision Description
1	Revised as per SWRWD
2	Revised Lot Numbers
3	
4	
5	
6	
7	
8	
9	

VENICE CROSSING SECTION TWO
ROSS TOWNSHIP, BUTLER COUNTY, OHIO
SECTION 28 & 33, TOWN 3, RANGE 2



Item	Revision Description	Date	Drawn	Chk
1	Revised 100 Year Water Surface Elevations	7-25-19	TAC	
2	Revised Lot Numbers	8-5-19	TAC	
3	Revised 100 Year Elevations as per Flood Study	1-16-20	TAC	
4	Revised as per BCDO	3-24-20	TAC	
5	Revised as per BCDO	4-13-20	TAC	
6	Revised as per BCDO	4-22-20	TAC	
7	Revised as per BCDO	4-23-20	TAC	
8				
9				

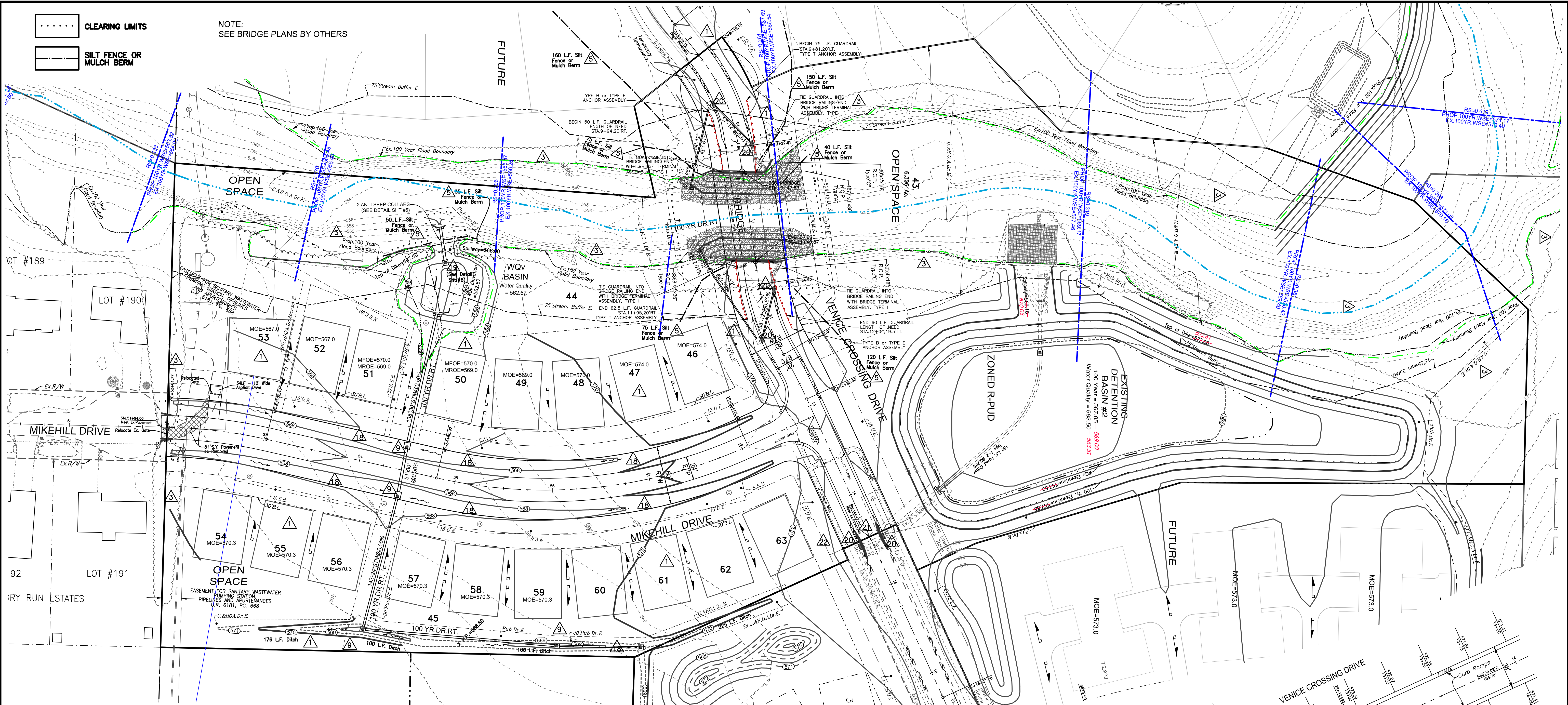
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1	Revised 100 Year Water Surface Elevations	7-25-19	TAC	
2	Revised Lot Numbers	8-5-19	TAC	
3	Revised 100 Year Elevations as per Flood Study	1-16-20	TAC	
4	Revised as per BCDO	3-24-20	TAC	
5	Revised as per BCDO	4-13-20	TAC	
6	Revised as per BCDO	4-22-20	TAC	
7	Revised as per BCDO	4-23-20	TAC	
8				
9				

VENICE CROSSING
SECTION TWO
 ROSS TOWNSHIP, BUTLER COUNTY, OHIO
 SECTION 28 & 33, TOWN 3, RANGE 2
 GRADING PLAN



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 6900 Tyersville Road, Suite A
 Mason, OH 45040 - 513.336.6600

Drawing:	13M074-002.CD
Drawn by:	TAC
Checked by:	EMR
Issue Date:	5-29-19
Sheet:	



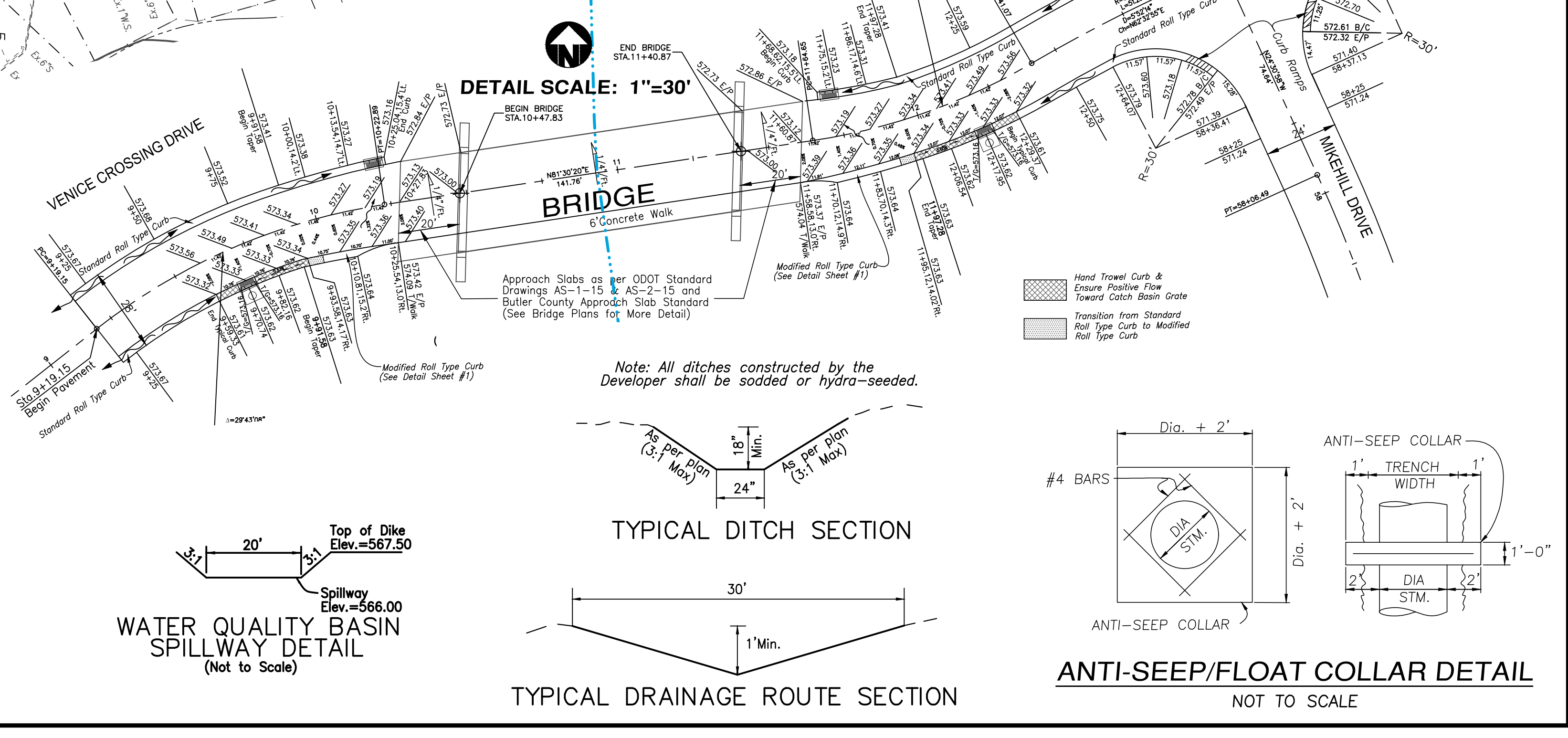
- NOTES:**
- Regular inspection and maintenance will be provided for all erosion and sediment control practices. Permanent records of maintenance and inspections must be kept throughout the construction period. Inspections must be made a minimum of once every seven (7) days and immediately after storm events greater than 0.5 inches of rain in a 24 hour period. Provided will be name of inspector, major observations, date of inspection and corrective measures taken.
 - All erosion and sediment control practices must conform to the specifications of Rainwater and Land Development, Ohio's standards for storm water management, land development and urban stream protection.
 - Perimeter Sedimentation control and basins/traps shall be implemented as the first step of grading and within seven (7) days of initial grubbing or grading and shall continue to function until upland areas are stabilized.
 - Disturbed areas which will remain unworked for a period of twenty-one (21) days or more, shall be stabilized with seeding and mulching or other approved means within seven (7) days. All disturbed areas within fifty (50) feet of an intermittent or solid blue line stream shall be stabilized within two (2) days. All areas of a site which are at final grade shall be stabilized with seeding and mulching or other approved means within seven (7) days.
 - Quantities for Erosion Control may vary between detailed plans and field conditions during construction. Plan quantities are a minimum; more erosion control may be necessary due to environmental conditions.
 - Sedimentation control and ditch swales are subject to change upon completion of entire set of construction drawings.
 - No solid or liquid waste shall be discharged into storm water runoff.
 - Home builders are responsible for erosion control on each individual lot.

- EROSION CONTROL NOTES**
- ▲ SEEDING AND MULCHING
 - ▲ SODDING
 - ▲ PRESERVE EXISTING VEGETATION
 - ▲ STRAW BALE
 - ▲ SILT FENCE OR MULCH BERM
 - ▲ SOIL PILES
 - ▲ TEMPORARY STREAM CROSSING
 - ▲ GRAVEL CURB INLET SEDIMENT FILTER
 - ▲ GEOTEXTILE INLET SEDIMENT FILTER
 - ▲ GABIONS
 - ▲ STRAW BALE DROP INLET SEDIMENT FILTER
 - ▲ SOD DROP INLET SEDIMENT FILTER
 - ▲ GRASS & WIRE MESH DROP INLET SEDIMENT FILTER
 - ▲ BLOCK & GRAVEL CURB INLET SEDIMENT FILTER
 - ▲ TEMPORARY SEDIMENT TRAPS & DAMS
 - ▲ DIKES & SLOPE PROTECTION
 - ▲ ROLLED GRAVEL CURB INLET SEDIMENT FILTER
 - ▲ CHECK DAM
 - ▲ TEMPORARY DETENTION SEDIMENT FILTER/BASIN
 - ▲ DANDY BAG/BEAVER DAM® OR EQUAL
 - ▲ CONSTRUCTION ENTRANCE
 - ▲ CONCRETE WASHOUT AREA
- SEE SOIL EROSION & SEDIMENTATION CONTROL DETAIL SHEET (Page #10.)
- NOTE:**
Quantities for Erosion Control may vary between detailed plans and field conditions during construction. Plan quantities are a minimum; more erosion control may be necessary due to environmental conditions.
- NOTE:**
Sedimentation control and ditch swales are subject to change upon completion of entire set of construction drawings.
- NOTE:**
Contractors to accept all quantities as correct prior to beginning construction.

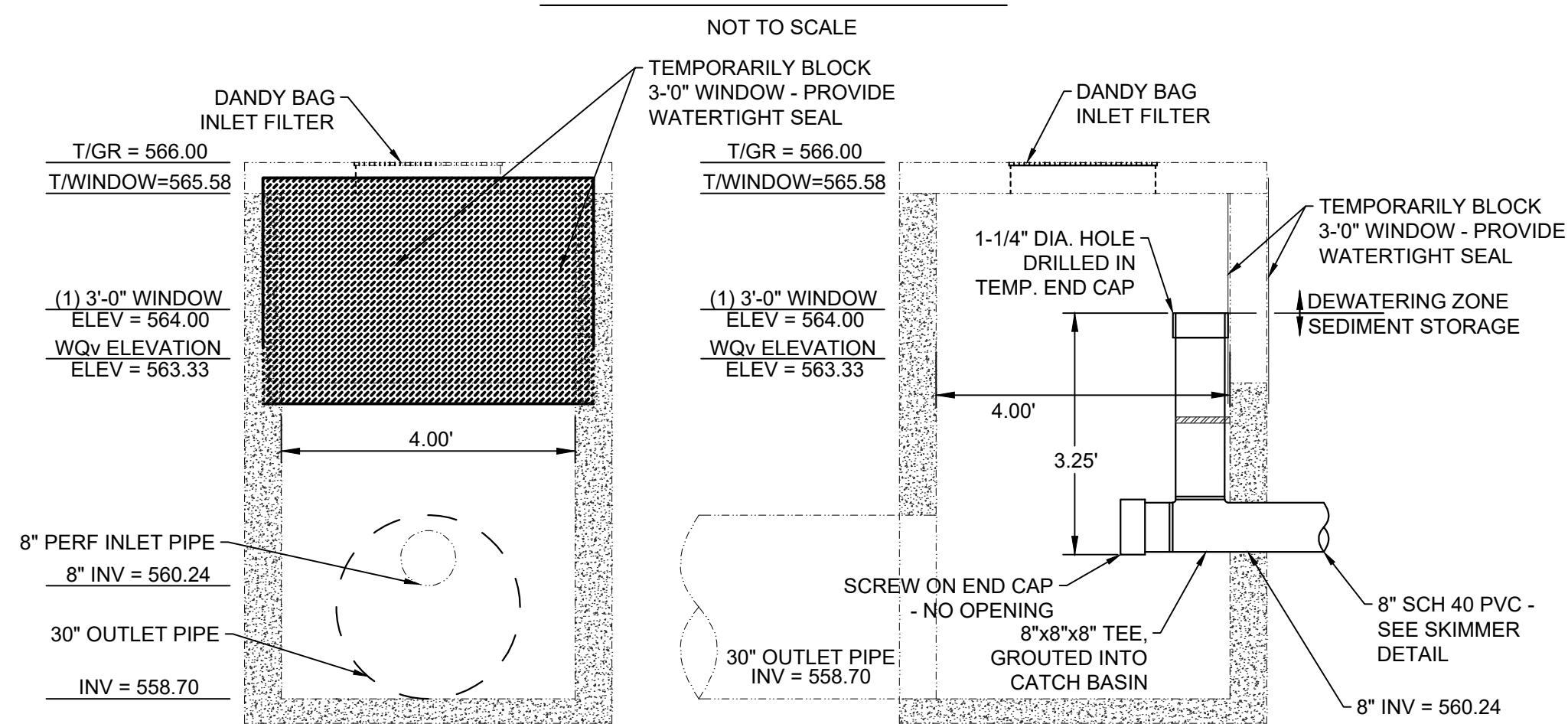
STREAM CROSSING DETAILS

The Ohio EPA has concerns about any sanitary sewer which crosses or runs parallel to any flowing streams. For streams which drain one square mile or greater, communities are required to implement control practices in these areas as much as possible. For streams with less than one square mile of drainage, communities must implement control practices as much as practical. The area of concern include 2.5 times the full bank width of the stream on both sides of the stream (riparian area). For these stream crossings or other areas where the sewers are in this riparian area, the entity should specify the means for mitigating any impacts on these streams which could result from this activity. These factors would include the following:

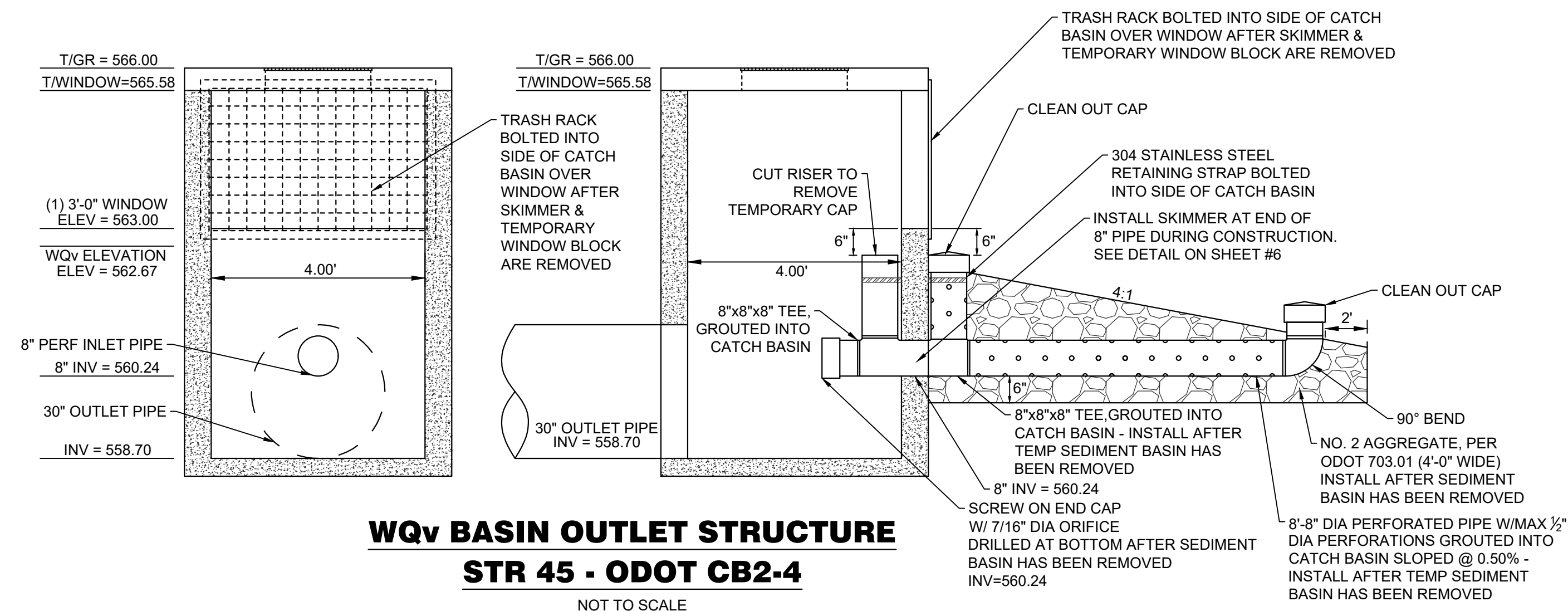
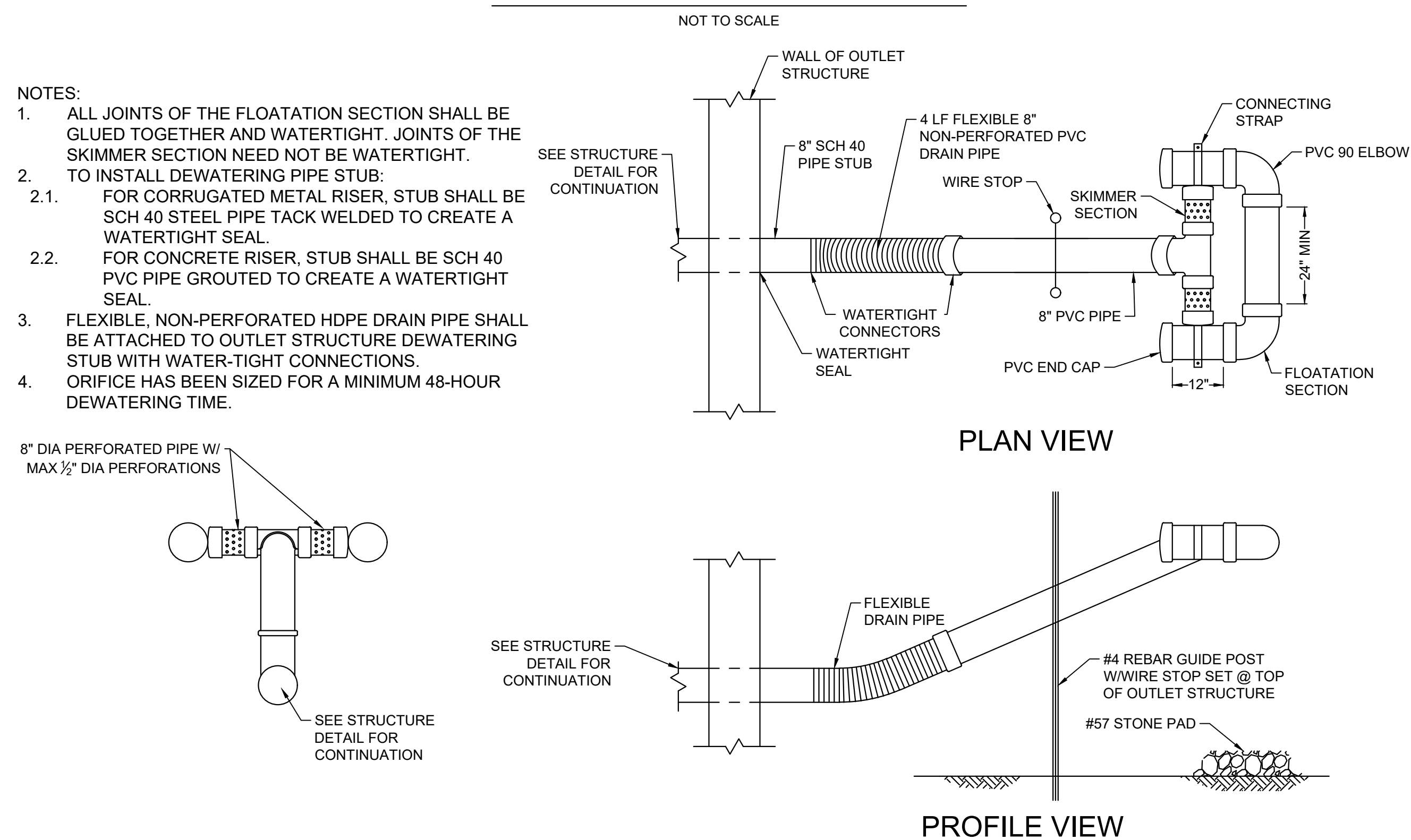
- The construction elements for the clearing activities should be as narrow as possible or practical depending on the size of the stream. A maximum of a 20 foot clearing limit is all that will be allowed in the riparian area. For all sanitary sewers running proposed along a stream, the clearing limit should be shifted as far from the stream as possible.
- The construction of the stream crossing should be completed as soon as possible but should not exceed more than one day.
- The material removed from the trench excavation should be stored outside of the riparian area. This area should be enclosed by a siltation fence.
- Trees within the riparian area should be avoided as much as possible. Older trees along the stream should be given the greatest level of protection possible. In the event that a tree must be removed so that the sewers can be constructed, the tree should be either cut at the ground or 1 or 2 feet above the ground so that the root mass is maintained and that the tree may regrow after the project. All other vegetation in the riparian area should be cut at the ground surface, intended for trench water.
- Coffer dams should be used to bypass the trench excavation during the construction of the stream crossing.
- Final bank stabilization should be completed immediately after completion of the stream crossing. The banks shall be stabilized with seeding and mulching as soon as disturbance of the area is complete. In the event that a stream bank is severely steep, site matting may be utilized to provide bank stabilization. In most cases, the stream bank should be stabilized within one day of completion of the stream crossing.
- The stockpile location for the materials used for the pipe bedding material and the backfill material should be shown on the detailed plans. This area should be located outside of the riparian area. (See plans for stockpile location)
- Any locations where equipment will cross the stream should have a temporary stream crossing constructed. Construction equipment crossings should only be used when there is no other feasible method such as constructing sewers from both sides of the stream. For situations where this may not be practical, two common ways to construct a stream crossing are using tree trunks removed from other locations of the project laid lengthwise in the stream or constructing a culvert in the stream with back fill placed on top of it. The temporary stream culverts should be designed in accordance to the Ohio Department of Natural Resources, Division of Soil and Water Conservation's "Rainwater and Land Development" manual.
- All trench dewatering shall be passed through a sediment impoundment structure. Adequate outlet protection must be provided for each impoundment. If any groundwater dewatering should occur, the contractor shall contact the Ohio Department of Natural Resources, Division of Water, to assure proper well installation and abandonment of wells. The contractor shall not direct the groundwater to the impoundment intended for trench water.



**TEMPORARY SEDIMENT BASIN RETROFIT
STR 45 - ODOT CB2-4**



SKIMMER DEWATERING DEVICE



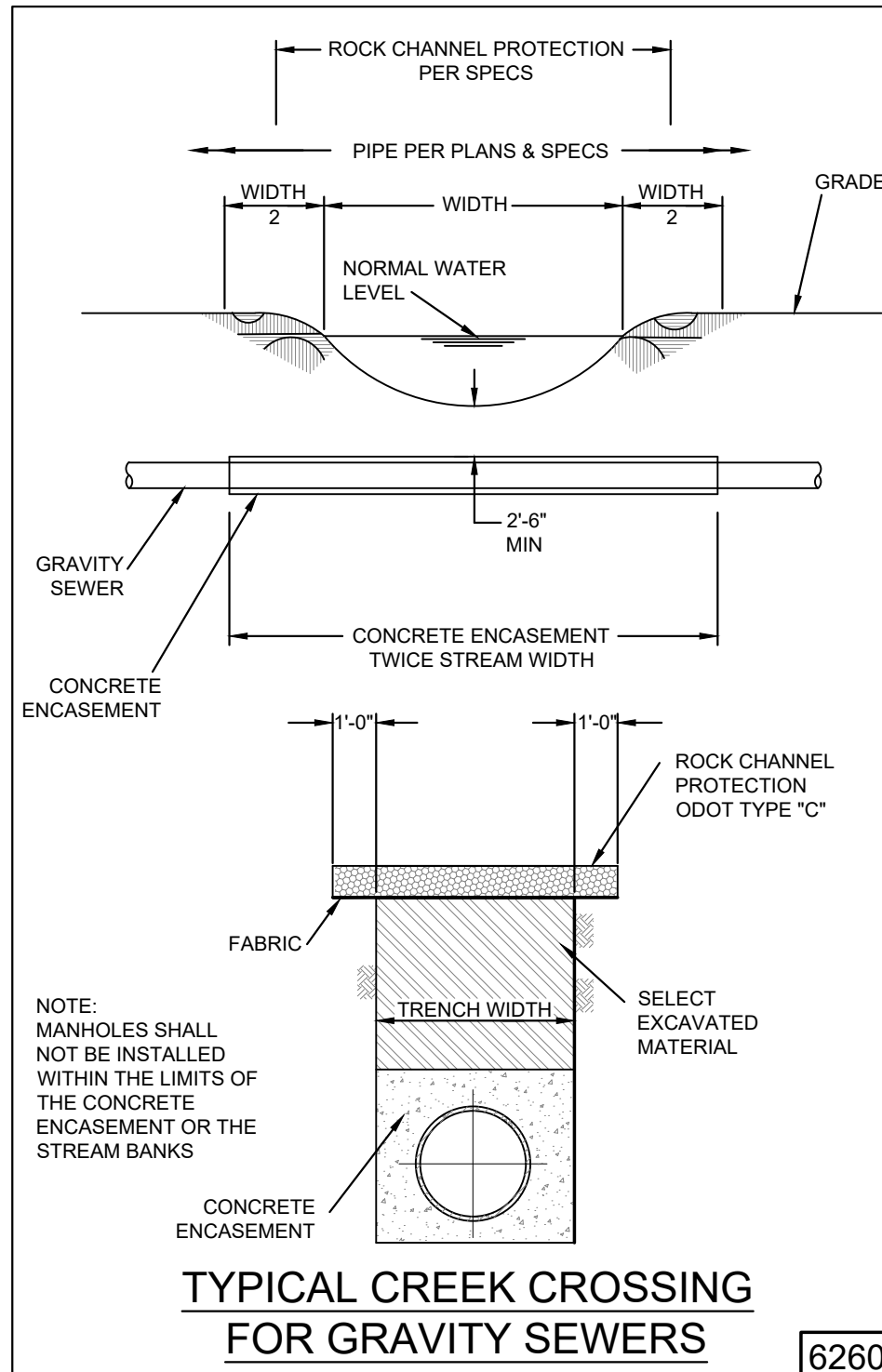
VENICE CROSSING
SECTION TWO
ROSS TOWNSHIP, BUTLER COUNTY, OHIO
SECTION 28 & 33, TOWN 3, RANGE 2
WATER QUALITY DETAILS

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Mason, OH 45040 - 513.336.6600

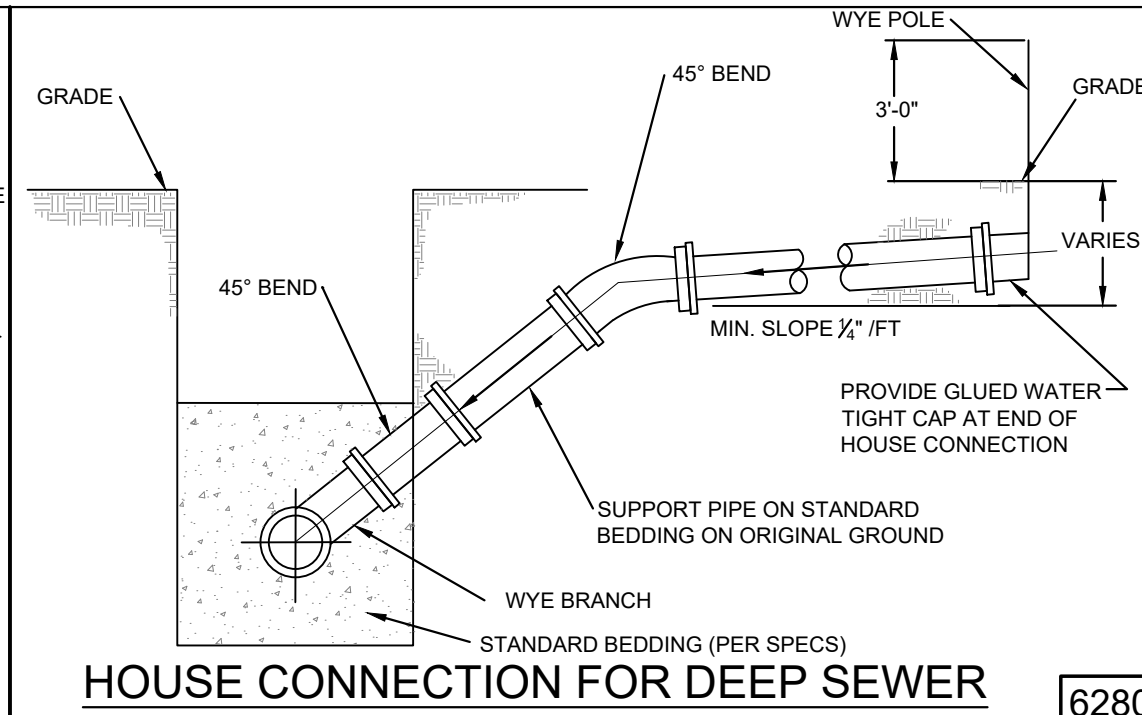
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1				
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Drawing: 13M074-002 CD
Drawn by: TAC
Checked by: EMR
Issue Date: 5-29-19
Sheet: 6/10

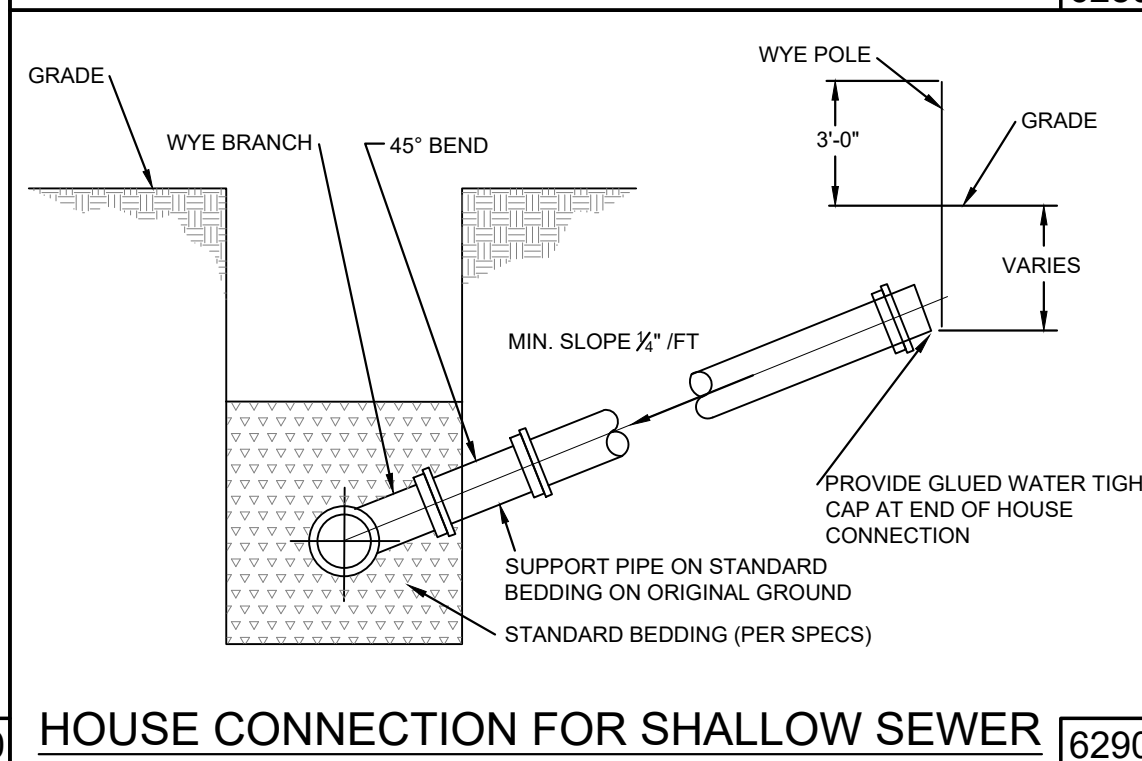
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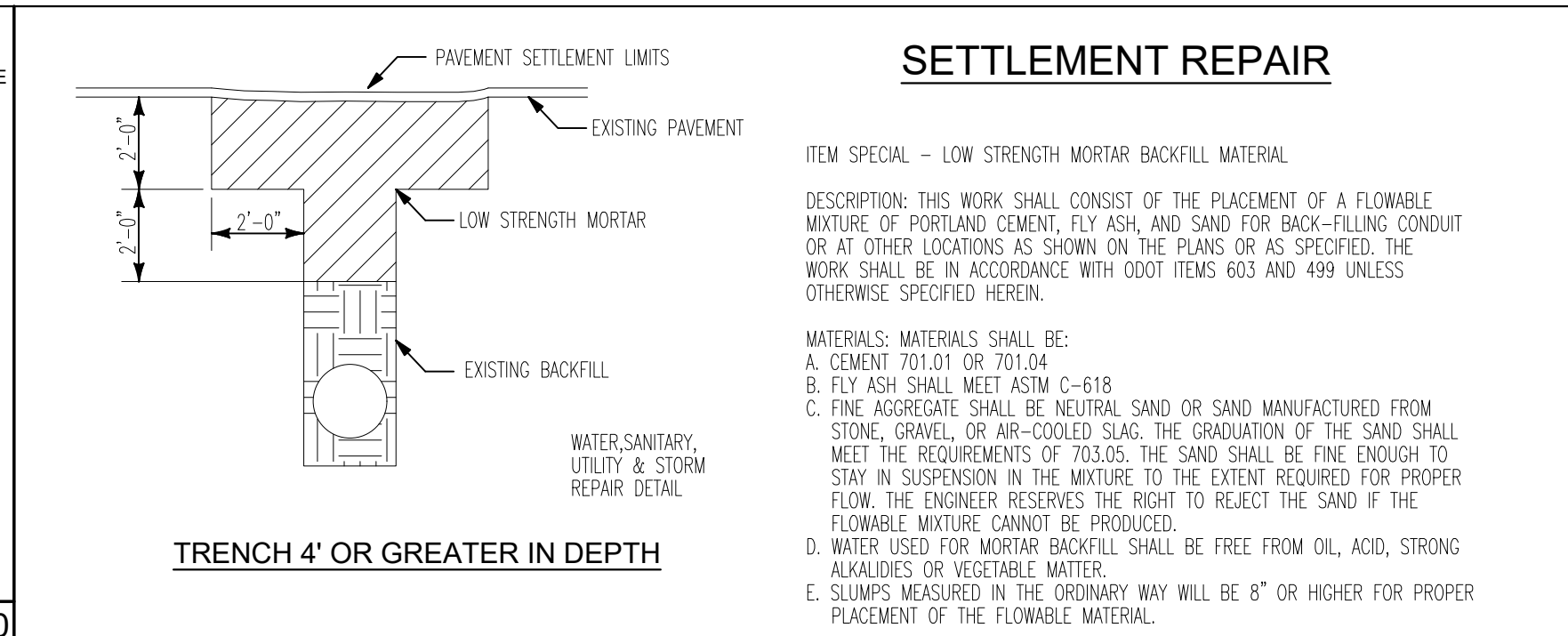
TYPICAL CREEK CROSSING FOR GRAVITY SEWERS [6260]



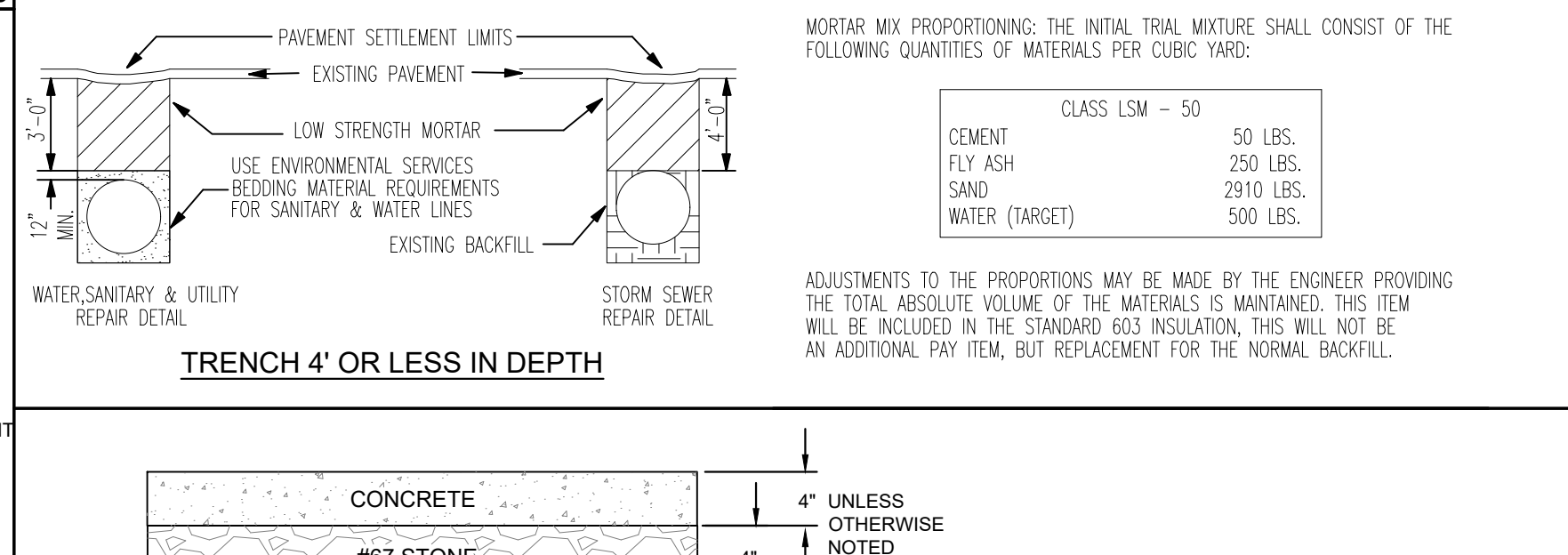
HOUSE CONNECTION FOR DEEP SEWER [6280]



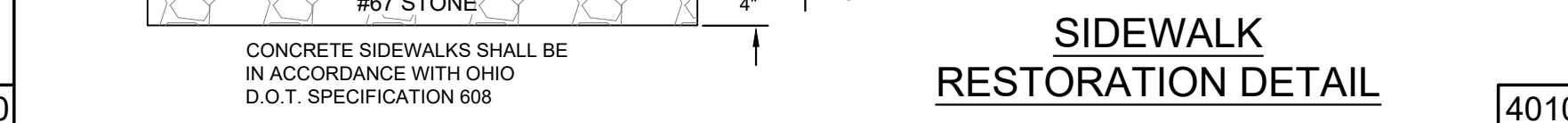
HOUSE CONNECTION FOR SHALLOW SEWER [6290]



TRENCH 4' OR GREATER IN DEPTH



TRENCH 4' OR LESS IN DEPTH



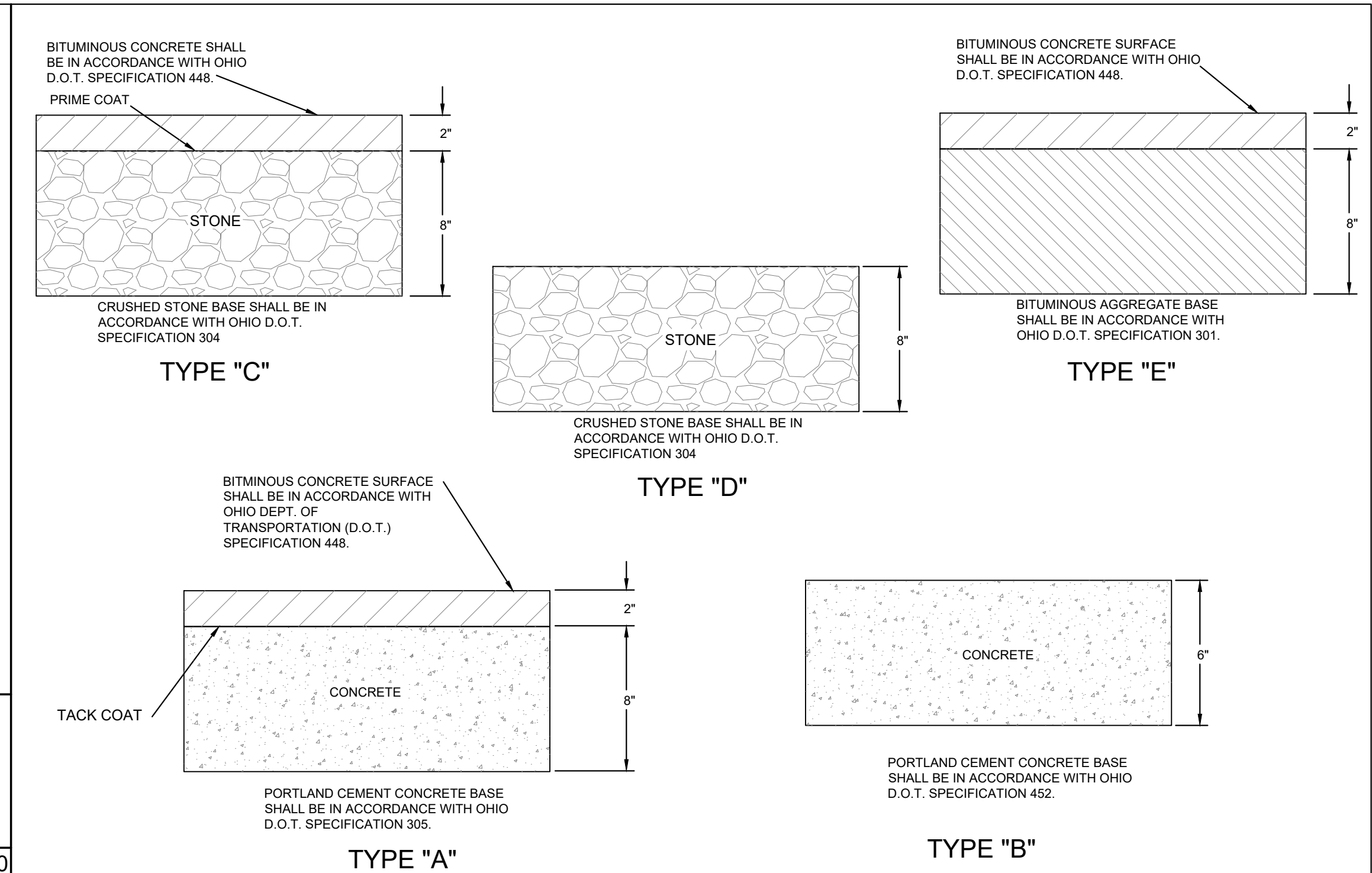
SIDEWALK RESTORATION DETAIL [4010]

SETTLEMENT REPAIR

ITEM SPECIAL - LOW STRENGTH MORTAR BACKFILL MATERIAL
 DESCRIPTION: THIS WORK SHALL CONSIST OF THE PLACEMENT OF A FLOWABLE MIXTURE OF PORTLAND CEMENT, FLY ASH, AND SAND FOR BACK-FILLING CONDUIT OR AT OTHER LOCATIONS AS SHOWN ON THE PLANS OR AS SPECIFIED. THE WORK SHALL BE IN ACCORDANCE WITH ODOT ITEMS 603 AND 499 UNLESS OTHERWISE SPECIFIED HEREIN.
 MATERIALS: MATERIALS SHALL BE:
 A. CEMENT 701.01 OR 701.04
 B. FLY ASH SHALL MEET ASTM C-618
 C. FINE AGGREGATE SHALL BE NEUTRAL SAND OR SAND MANUFACTURED FROM STONE, GRAVEL OR AIR-COOLED SLAG. THE GRADATION OF THE SAND SHALL MEET THE REQUIREMENTS OF 703.05. THE SAND SHALL BE FINE ENOUGH TO STAY IN SUSPENSION IN THE MIXTURE TO THE EXTENT REQUIRED FOR PROPER FLOW. THE ENGINEER RESERVES THE RIGHT TO REJECT THE SAND IF THE FLOWABLE MIXTURE CANNOT BE PRODUCED.
 D. WATER USED FOR MORTAR BACKFILL SHALL BE FREE FROM OIL, ACID, STRONG ALKALOIDES OR VEGETABLE MATTER.
 E. SLUMPS MEASURED IN THE GROUNDWAY MAY BE 8" OR HIGHER FOR PROPER PLACEMENT OF THE FLOWABLE MATERIAL.
 MORTAR MIX PROPORTIONING: THE INITIAL TRIAL MIXTURE SHALL CONSIST OF THE FOLLOWING QUANTITIES OF MATERIALS PER CUBIC YARD:

CEMENT	CLASS 15M - 50	50 LBS.
FLY ASH		250 LBS.
SAND		2910 LBS.
WATER (TARGET)		500 LBS.

ADJUSTMENTS TO THE PROPORTIONS MAY BE MADE BY THE ENGINEER PROVIDING THE TOTAL ABSOLUTE VOLUME OF THE MATERIALS IS MAINTAINED. THIS ITEM WILL BE INCLUDED IN THE STANDARD 603 INSULATION, THIS WILL NOT BE AN ADDITIONAL PAY ITEM, BUT REPLACEMENT FOR THE NORMAL BACKFILL.



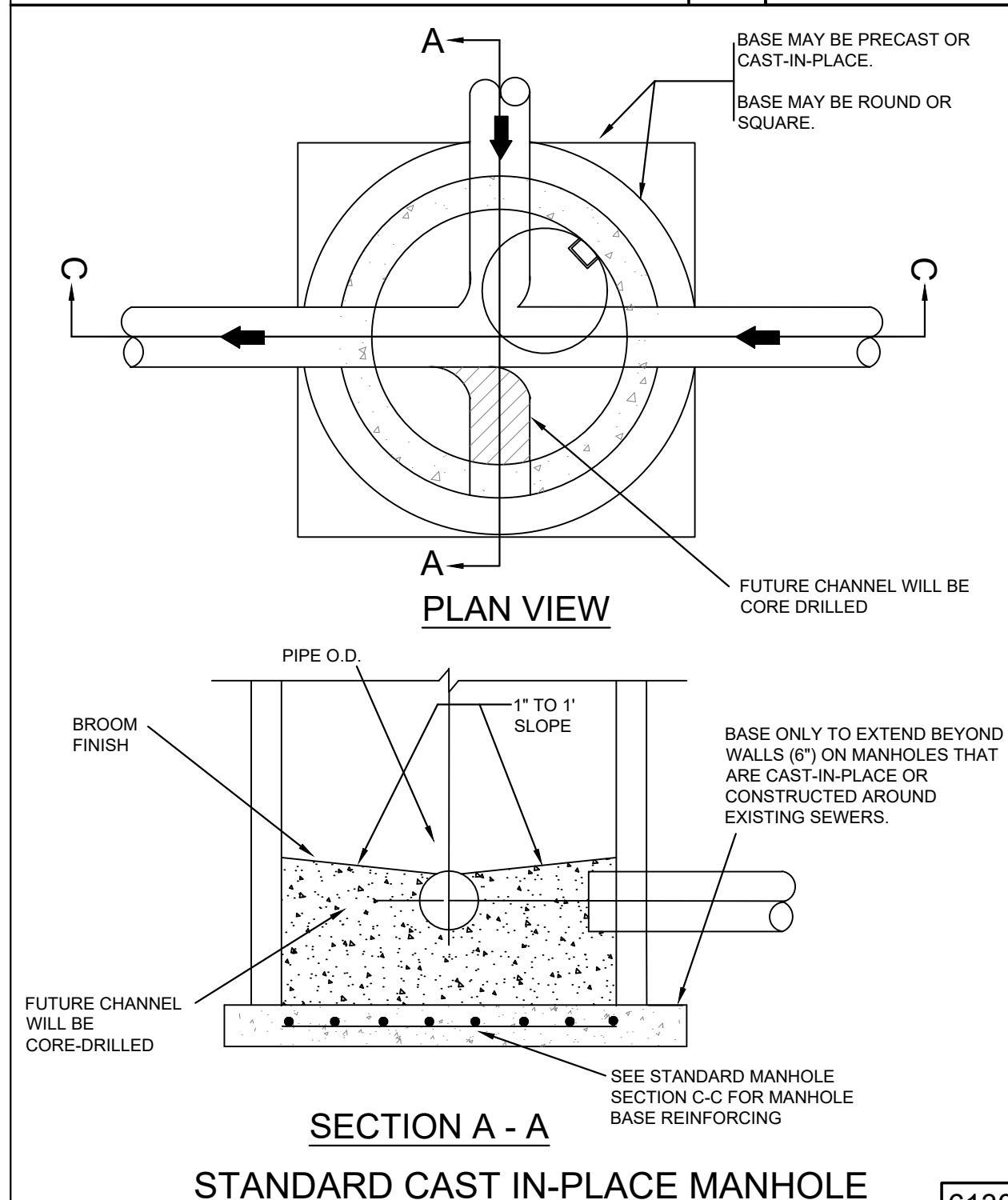
TYPE "C"

TYPE "D"

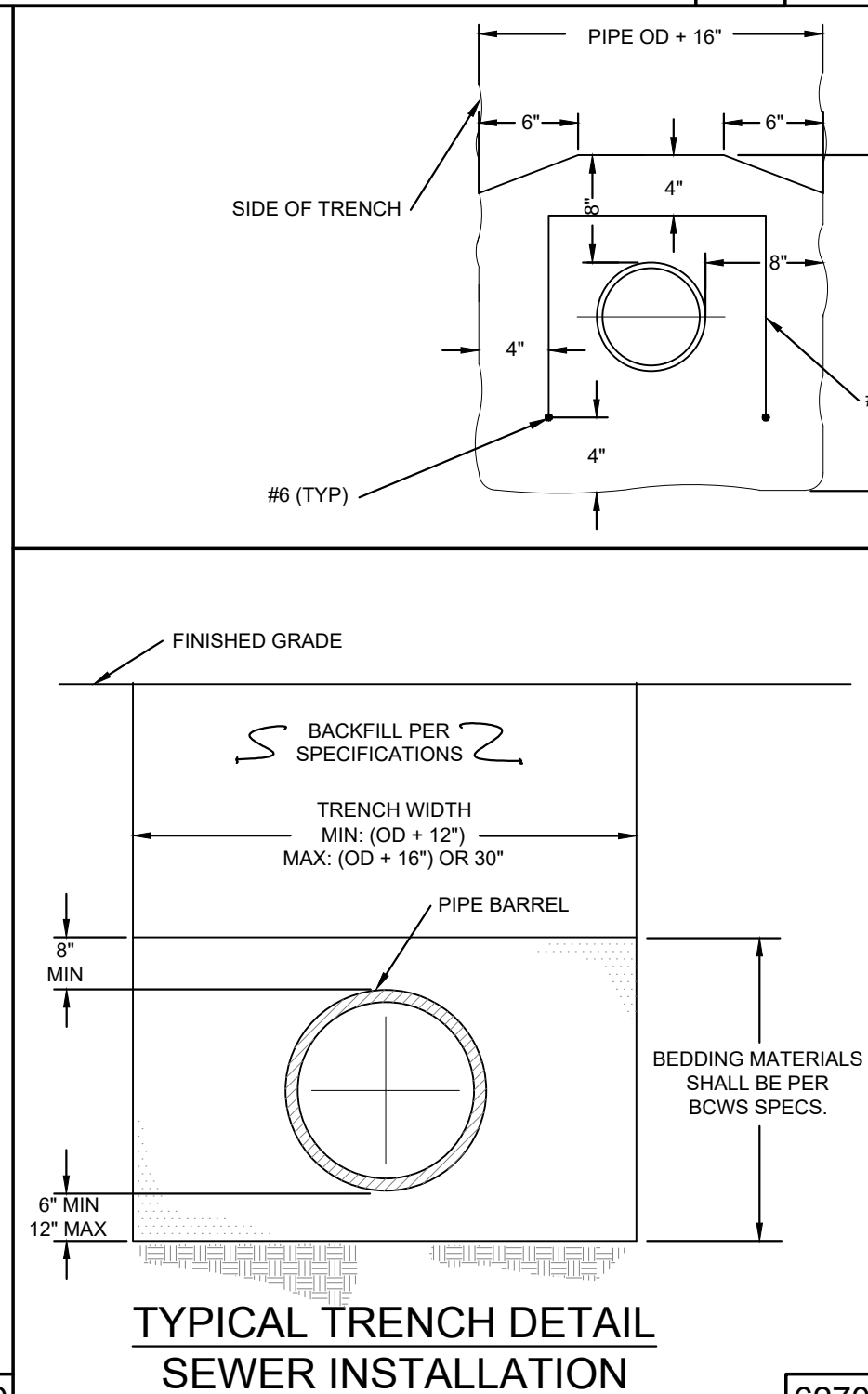
TYPE "A"

TYPE "B"

PAVEMENT REPLACEMENT DETAILS [4120]



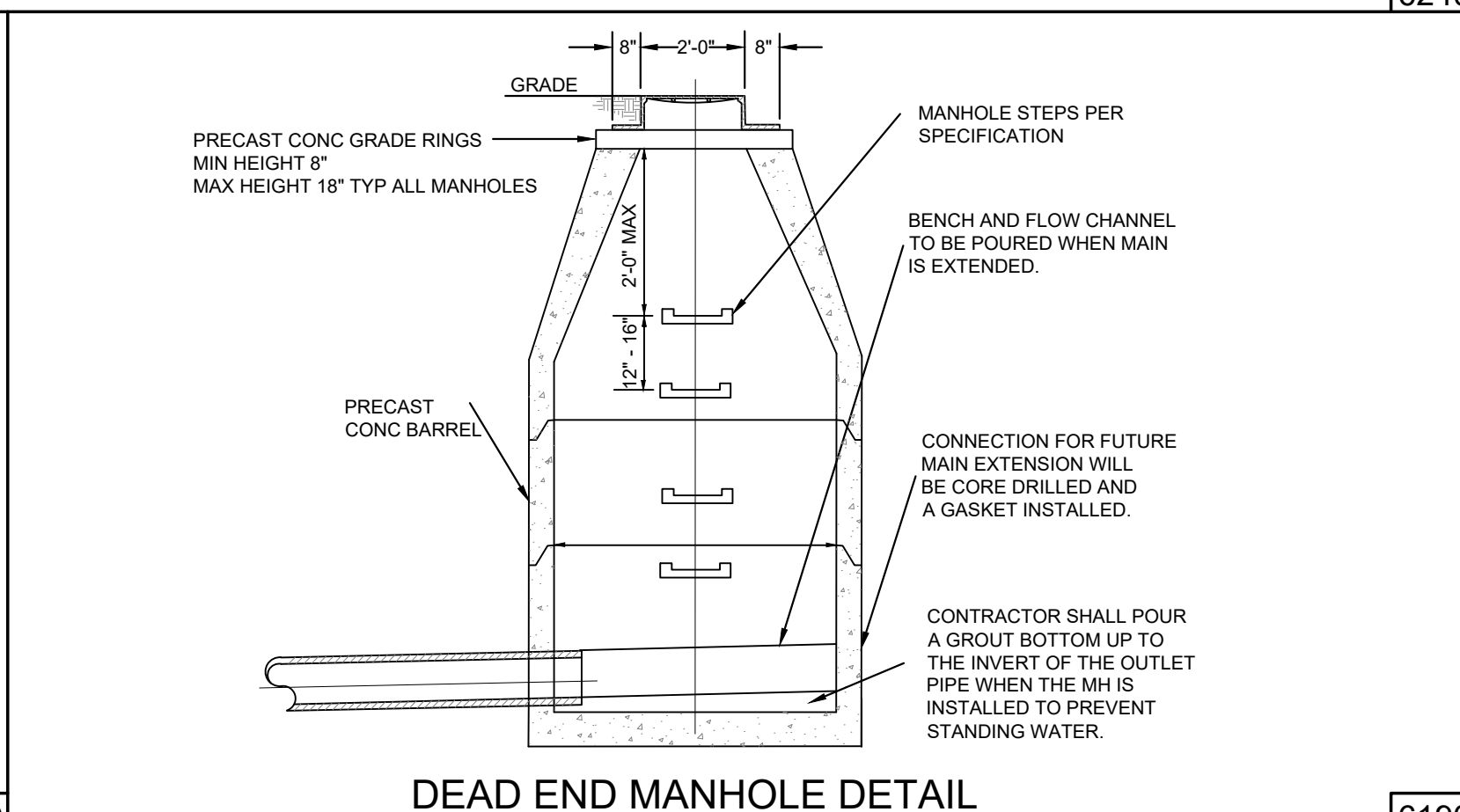
STANDARD CAST IN-PLACE MANHOLE [6130]



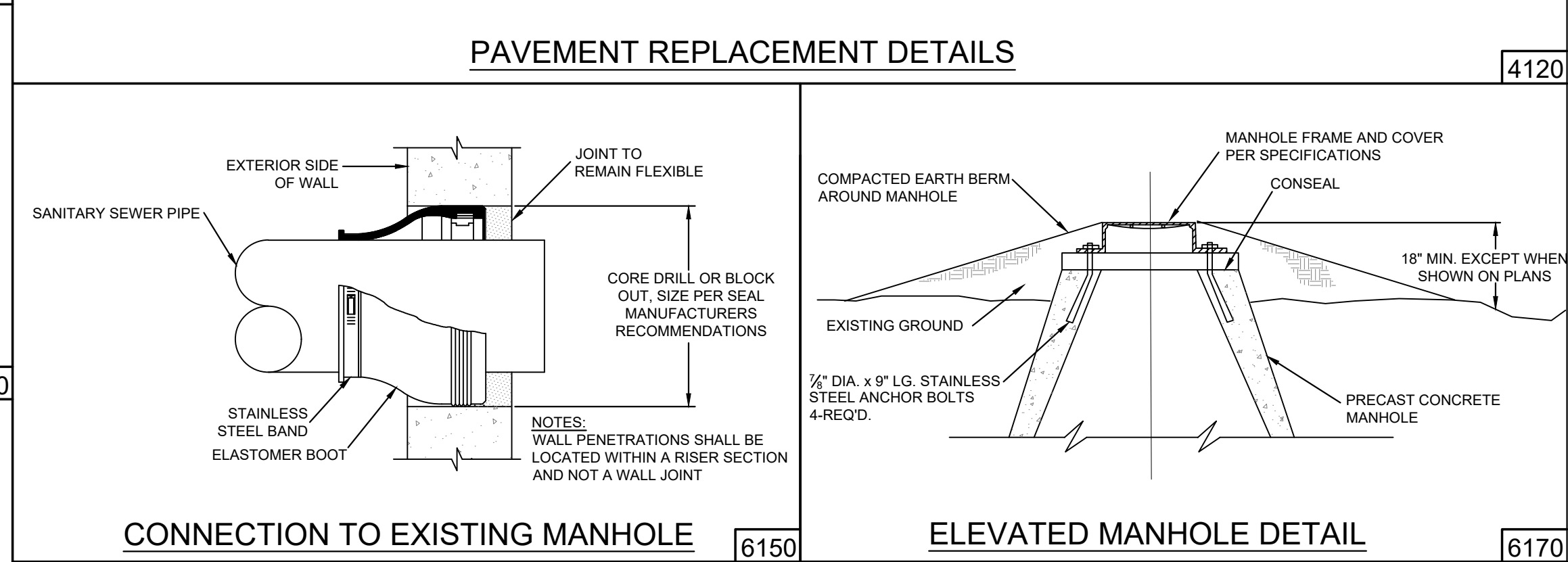
TYPICAL TRENCH DETAIL SEWER INSTALLATION [6270]

PIPE SIZE	CY CONC PER LIN FT	LENGTH OF NO 3 BARS	SPACING (FT) BETWEEN NO 3 BARS
6"	0.121	3'-9"	1.64
8"	0.139	4'-3"	1.25
10"	0.157	4'-9"	1.12
12"	0.177	5'-3"	1.02
16"	0.200	6'-3"	0.85
18"	0.247	6'-10"	0.78
20"	0.270	7'-5"	0.72
24"	0.315	8'-6"	0.63
30"	0.540	10'-0"	0.57

CONCRETE ENCASEMENT DETAIL [6240]

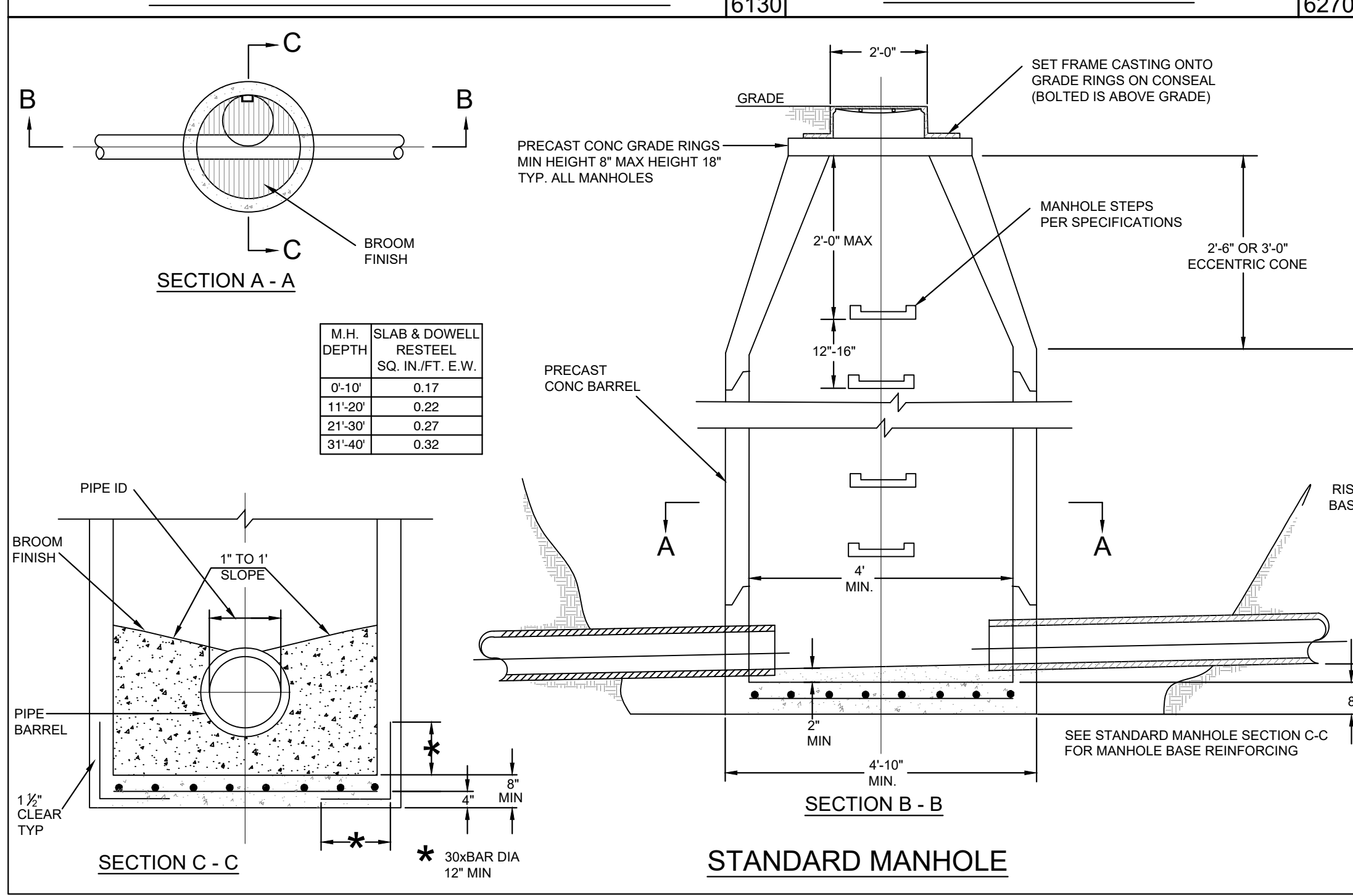


DEAD END MANHOLE DETAIL [6190]

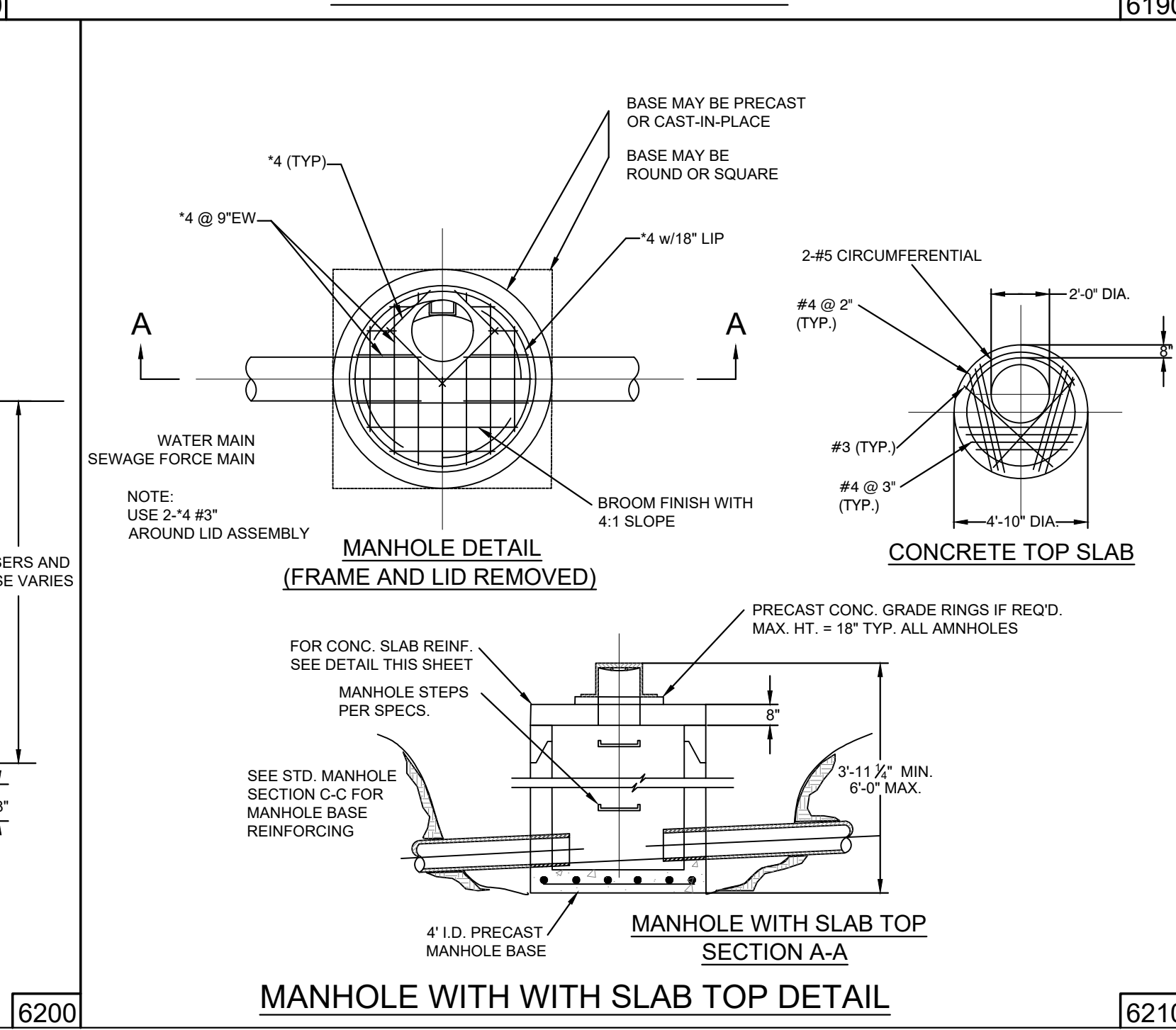


CONNECTION TO EXISTING MANHOLE [6150]

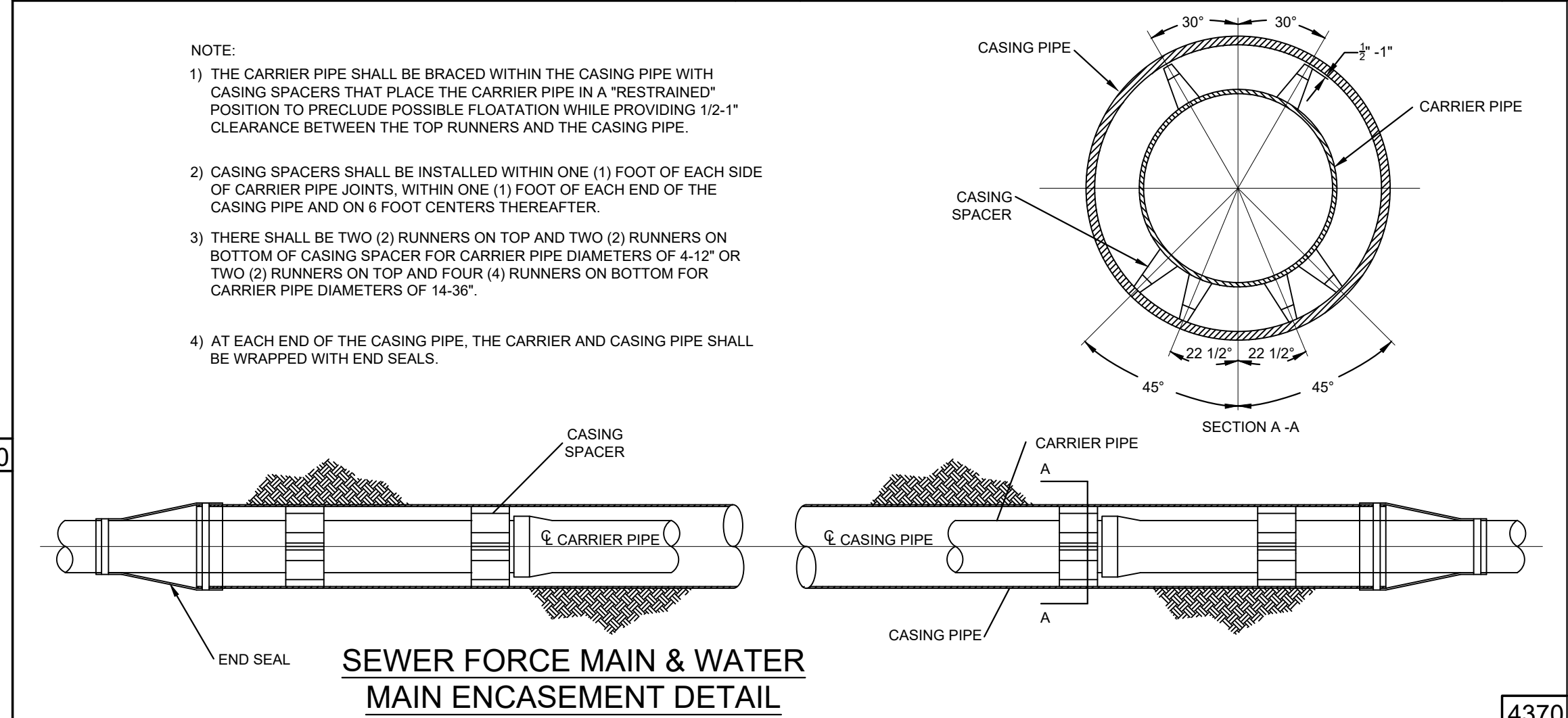
ELEVATED MANHOLE DETAIL [6170]



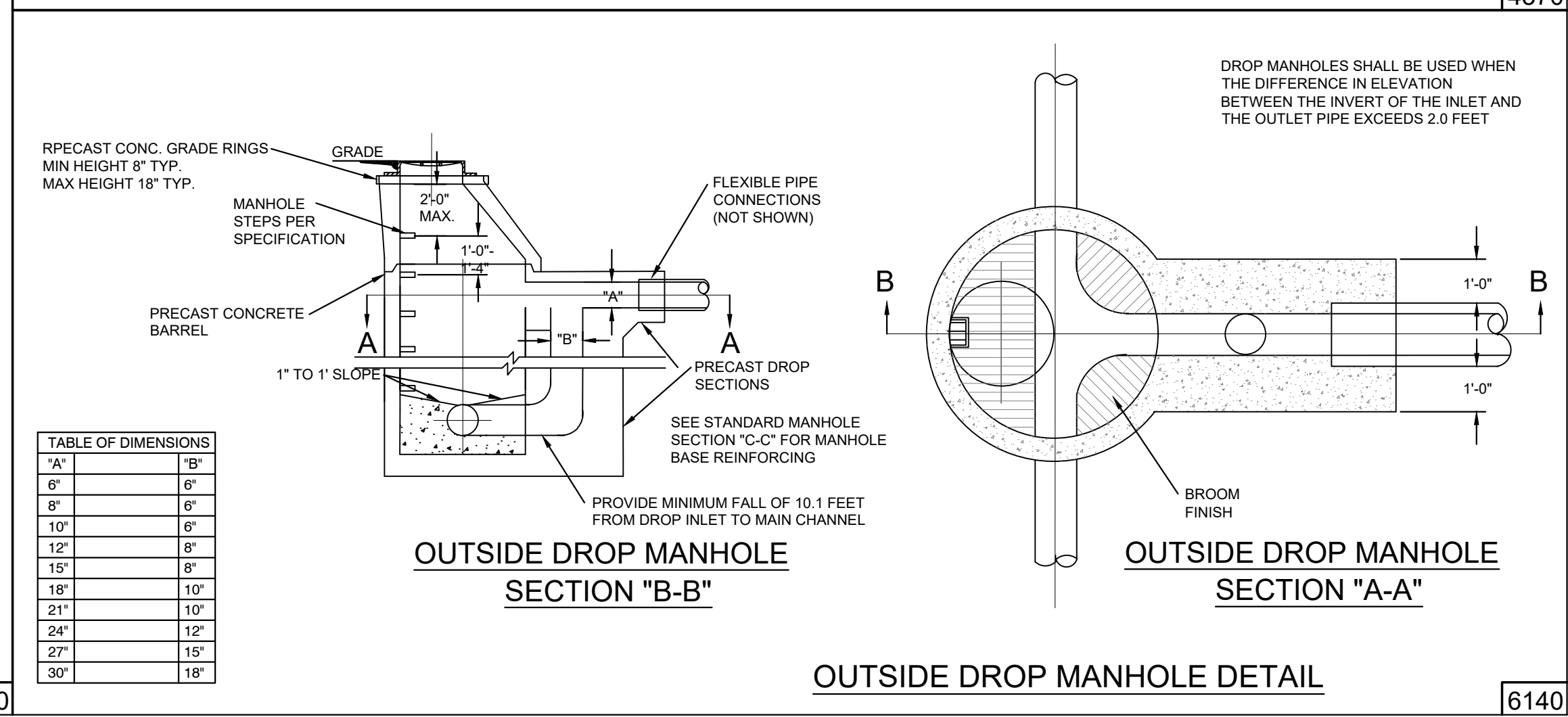
STANDARD MANHOLE [6200]



MANHOLE WITH WITH SLAB TOP DETAIL [6210]



SEWER FORCE MAIN & WATER MAIN ENCASEMENT DETAIL [4370]



OUTSIDE DROP MANHOLE SECTION "B-B"

OUTSIDE DROP MANHOLE SECTION "A-A"

OUTSIDE DROP MANHOLE DETAIL [6140]

Plot time: May 14, 2019 10:01 am
 Drawing name: K:\OLD-K\Mason\FF BLOCKS\DETAILS\BUTLER\BC SAN.dwg - Layout Tab: SAN

Revision Description

Item	Date	Drawn	Chk

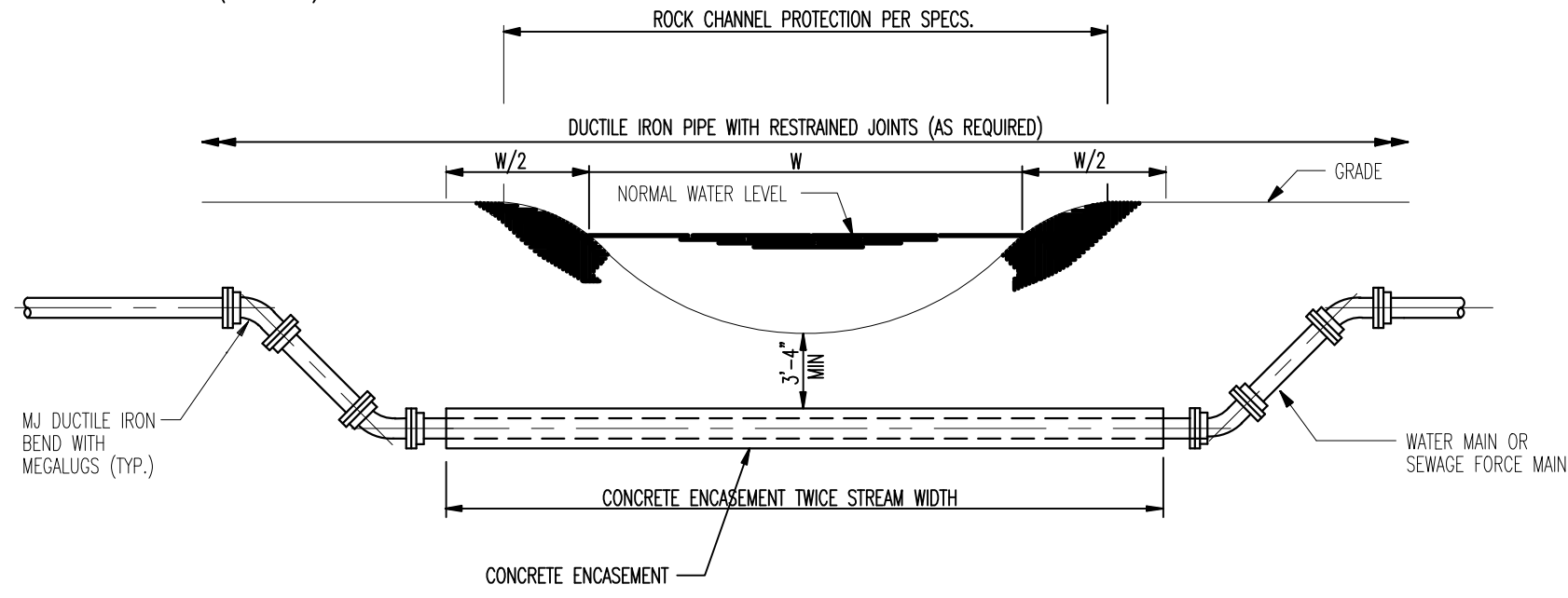
DATE: 12-28-17

Drawing: BC SAN
 Drawn by:
 Checked by:
 Issue Date: 12-28-17
 Sheet: 7/10

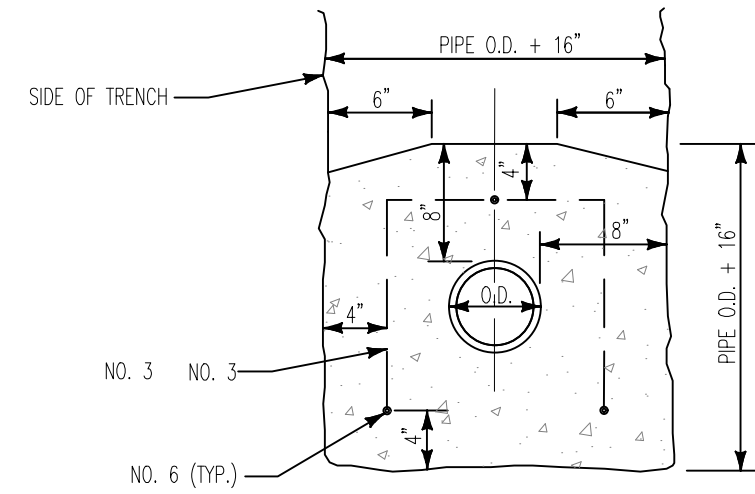
www.bayerbecker.com
 6800 Tyersville Road Suite A
 Mason, Ohio 45440 - 513.336.6600

BUTLER COUNTY, OHIO
 MISCELLANEOUS & SANITARY DETAILS

NOTE: FOR WATER MAINS ONLY, MODIFICATIONS FROM THIS DETAIL MAY BE NECESSARY IF W IS GREATER THAN 15 FEET (SEE SPECS).

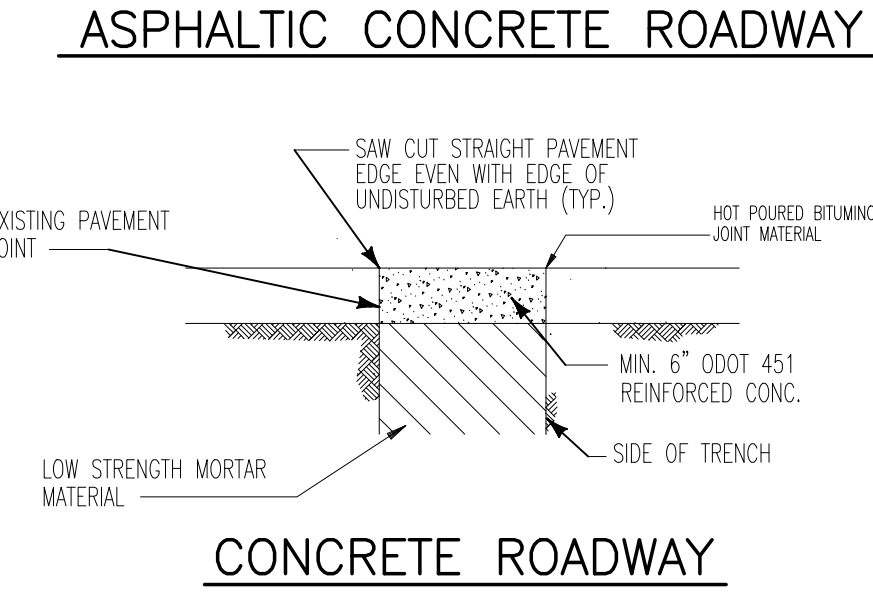
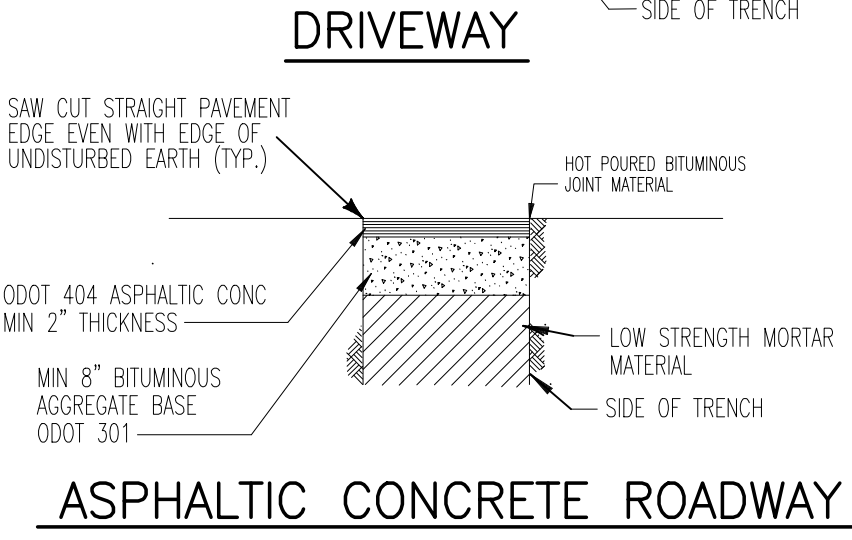
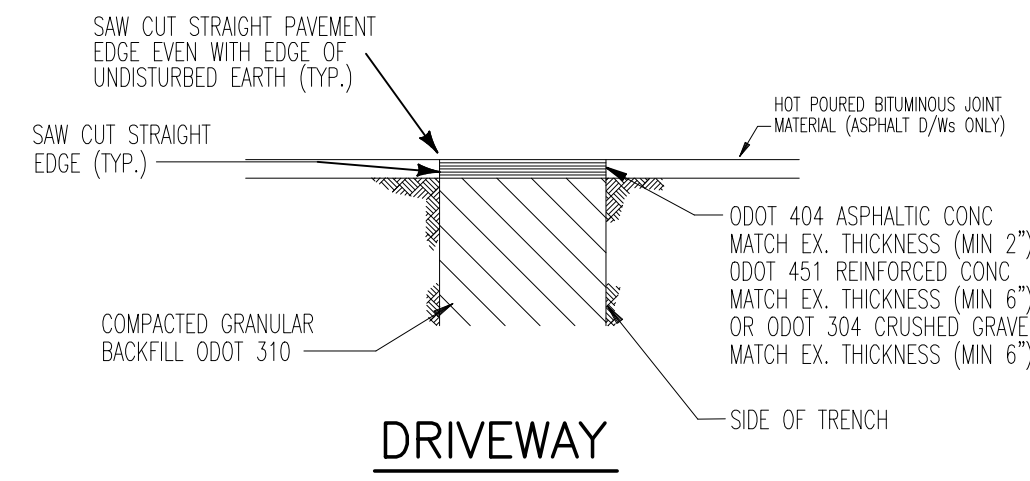


TYPICAL CREEK CROSSING
FOR WATER MAINS & SEWAGE FORCE MAINS
NTS

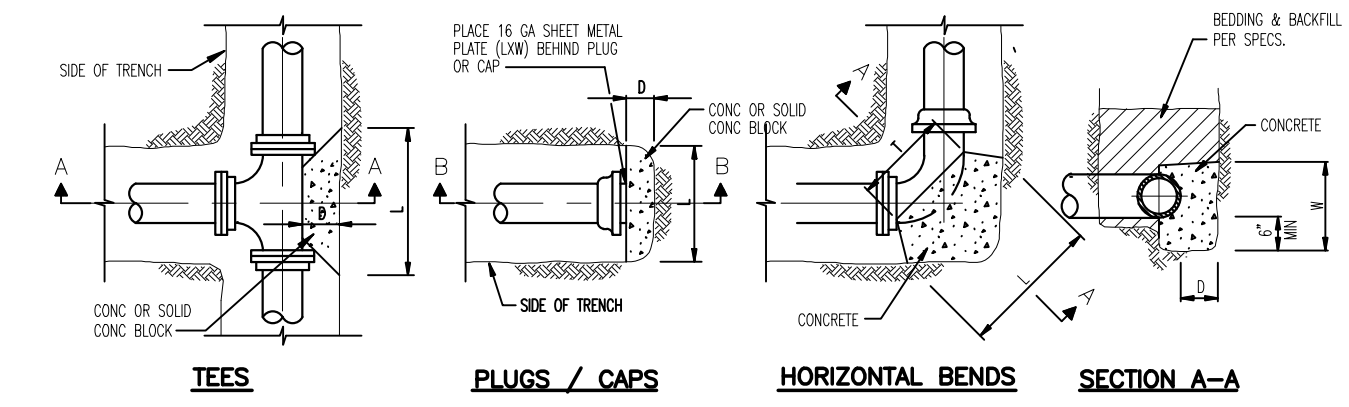


PIPE SIZE	C.Y. CONC. PER LIN. FT.	LENGTH OF NO. 3 BARS	SPACING (FT) BETWEEN NO. 3 BARS
6"	0.121	3'-9"	1.64
8"	0.139	4'-3"	1.25
10"	0.157	4'-9"	1.12
12"	0.177	5'-3"	1.02
16"	0.200	6'-3"	0.85
18"	0.247	6'-10"	0.78
20"	0.270	7'-5"	0.72
24"	0.315	8'-6"	0.63
30"	0.540	10'-0"	0.57

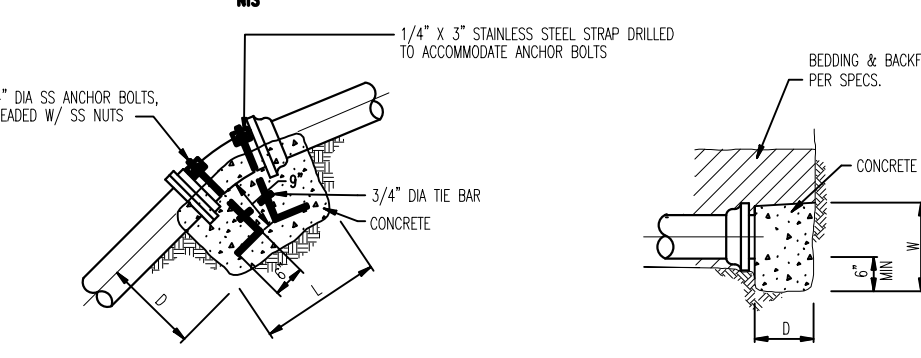
CONCRETE ENCASEMENT
NTS



PAVEMENT REPLACEMENT DETAILS



CONCRETE THRUST BLOCKS

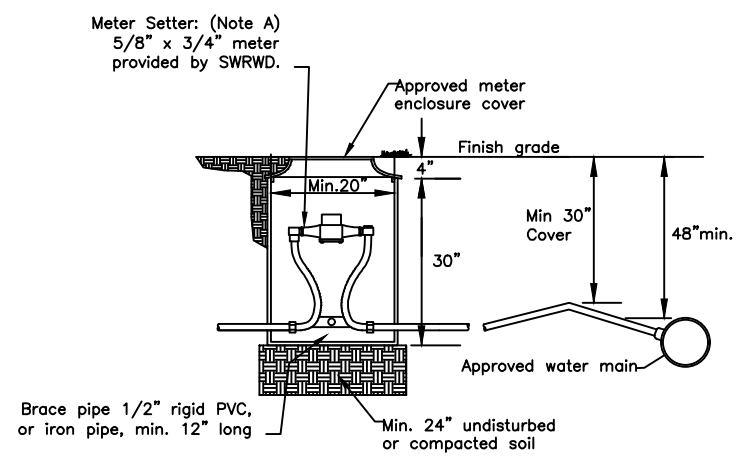


CONCRETE ANCHOR BLOCKS

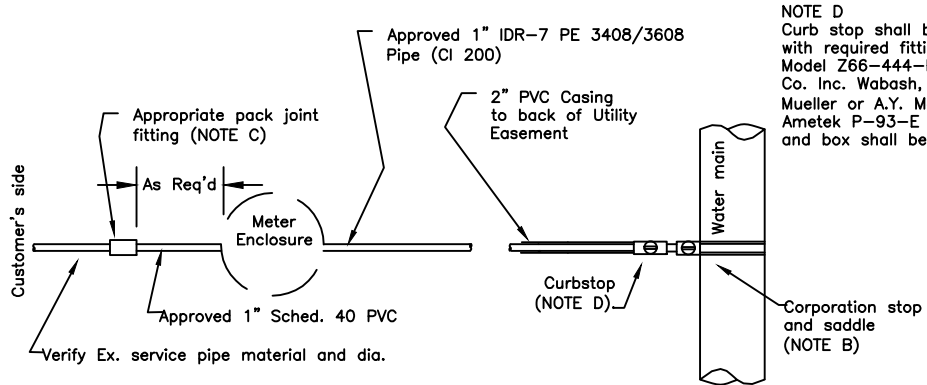
PLUGS, CAPS & TEES												
SIZE	6"	8"	10"	12"	16"	18"	20"	24"	30"	36"		
D	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"		
L & W	20"	22"	24"	24"	32"	36"	40"	54"	76"	102"		
45° EIGHTH BENDS												
SIZE	6"	8"	10"	12"	16"	18"	20"	24"	30"	36"		
D	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"		
L	18"	20"	22"	24"	34"	40"	45"	58"	72"	88"		
T	16"	16"	18"	18"	28"	33"	37"	46"	52"	58"		
W	12"	14"	16"	18"	22"	25"	28"	36"	48"	76"		
90° QUARTER BENDS												
SIZE	6"	8"	10"	12"	16"	18"	20"	24"	30"	36"		
D	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"		
L	24"	27"	30"	34"	48"	51"	54"	78"	92"	144"		
T	16"	18"	20"	22"	36"	40"	44"	50"	56"	62"		
W	12"	16"	20"	24"	28"	34"	40"	50"	66"	96"		

VERTICAL BEND & STRAIGHT PIPE												
SIZE	6"	8"	10"	12"	16"	18"	20"	24"	30"	36"		
D	15"	15"	18"	18"	21"	21"	24"	24"	32"	38"		
L	24"	24"	30"	30"	36"	36"	42"	42"	56"	65"		

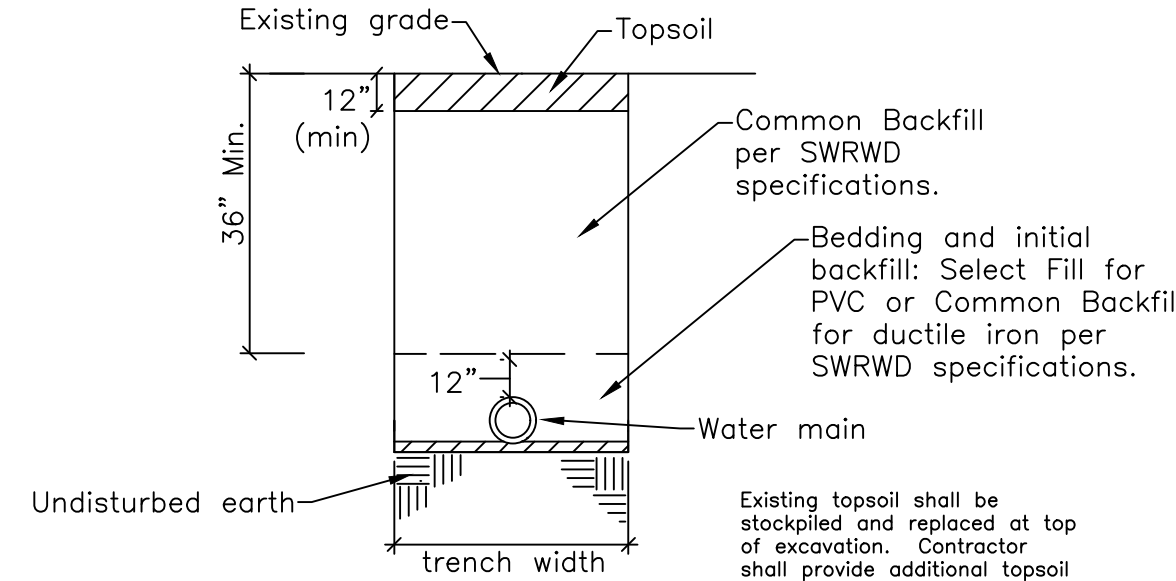
- NOTES:
- ANCHORS TO BE FULL WIDTH OF TRENCH
 - DEPTH "D" MAY BE GREATER THAN SPECIFIED TO ALLOW WORKING SPACE. CONC MUST BE PLACED AGAINST UNDISTURBED EARTH.
 - THESE ARE REPRESENTATIVE BLOCKING DIMENSIONS OTHER BENDS WILL ALSO NEED BLOCKING IF NOT UTILIZING RESTRAINED JOINTS.
 - ENCASE ALL JOINTS, BOLTS, & NUTS WITH POLYETHYLENE BEFORE PLACING CONCRETE.
 - CONCRETE TYPE AND STRENGTH PER SPECS.
 - ALL ANCHOR BOLTS, NUTS, AND STRAPS TO BE STAINLESS STEEL.
 - UPWARD VERTICAL BENDS TO HAVE THRUST BLOCKS WITH SAME DIMENSIONS AS FOR HORIZONTAL BENDS.
 - 1 1/4 DEGREE AND 22 1/2 DEGREE BENDS TO HAVE THRUST BLOCKS WITH SAME DIMENSIONS AS FOR 45 DEGREE BENDS.



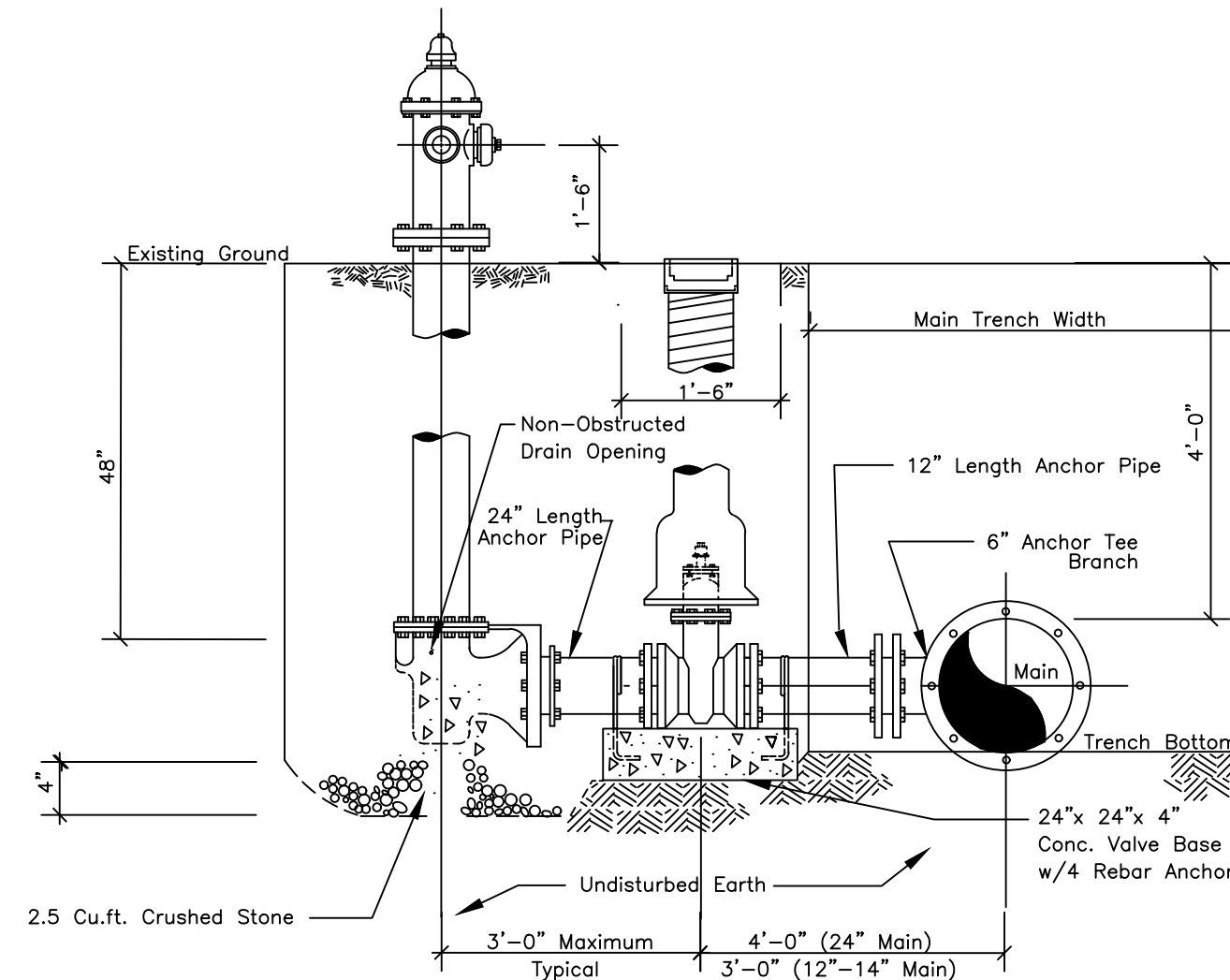
Typical Meter Facility and Service Line Installation Detail
NTS



Typical Meter Facility and Service Line Installation Plan
NTS



Typical Water Main Trench Detail
NTS



Typical Hydrant Installation
NTS

NOTE: Fire Hydrants shall be AWWA breakable type with 5 1/4" compression type main valve, 2-2 1/2" hose, nozzles, 1 - 4 1/2" pumper nozzle, 6" mechanical joint inlet and National Standard 1-1/2" Pentagon operating nut for installation on pipe with 48" of cover. Hydrant nozzle threading shall conform to specification B26-1925 of ASA for the National Standard fire hose thread. Hydrant shall open to "left and shall be rated for at least 200 lbs. working pressure".

Contractor shall ensure that drain opening drains into crushed stone fill.

Gate valves shall conform to latest specifications of AWWA, Section C-515 for resilient seated valves. Valves shall be non-rising stem type, open left, 2" square operating nut, standard mechanical joint.

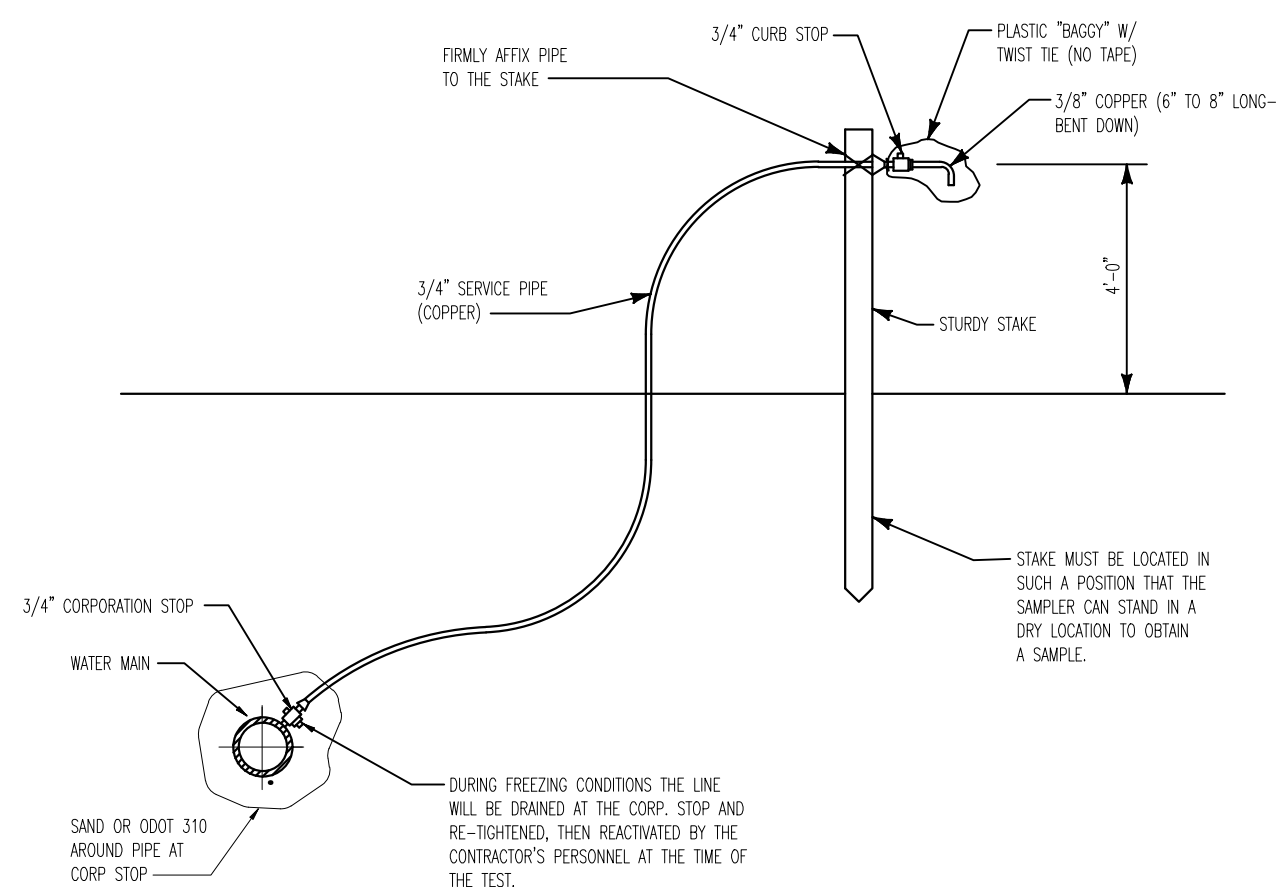
See Section SWRW Specifications.

FITTING TYPE	POLYWRAPPED DUCTILE IRON				PVC			
	6"	8"	10"	12"	6"	8"	10"	12"
90° ELBOW	46'	60'	71'	84'	37'	48'	57'	68'
45° ELBOW	19'	25'	30'	35'	16'	20'	24'	28'
45° ELBOW VERTICAL UPPER	43'	56'	67'	79'	28'	36'	44'	51'
45° ELBOW VERTICAL LOWER	13'	17'	21'	24'	11'	14'	17'	20'
22.5° ELBOW	9'	12'	15'	17'	8'	10'	12'	14'
22.5° ELBOW VERTICAL UPPER	21'	27'	32'	38'	14'	18'	21'	25'
22.5° ELBOW VERTICAL LOWER	7'	9'	10'	12'	5'	7'	8'	10'
11.25° ELBOW	5'	6'	7'	9'	4'	5'	6'	7'
TEE	65'	97'	123'	152'	42'	63'	80'	99'
VALVE, HYDRANT, DEAD END	103'	134'	161'	190'	66'	87'	105'	124'

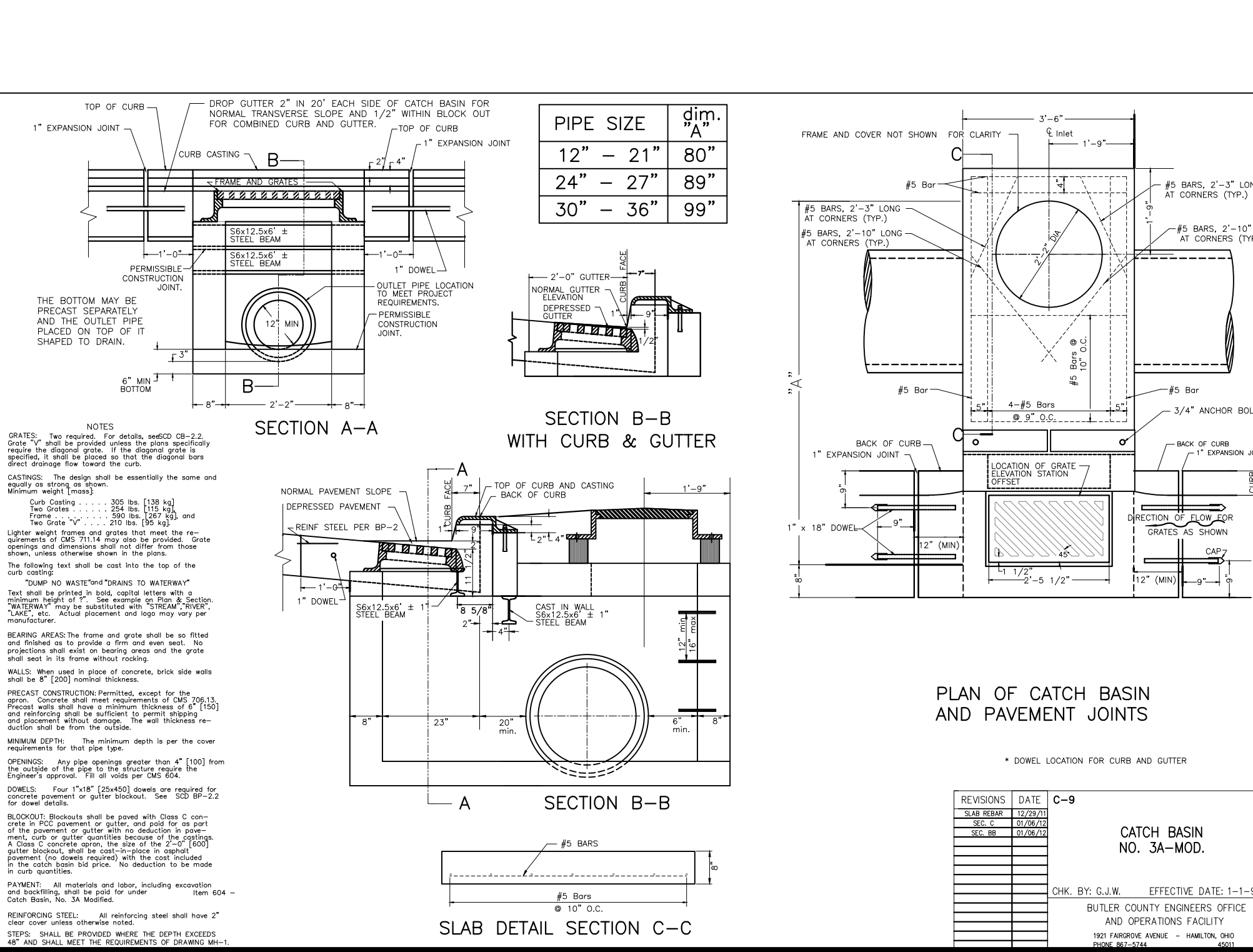
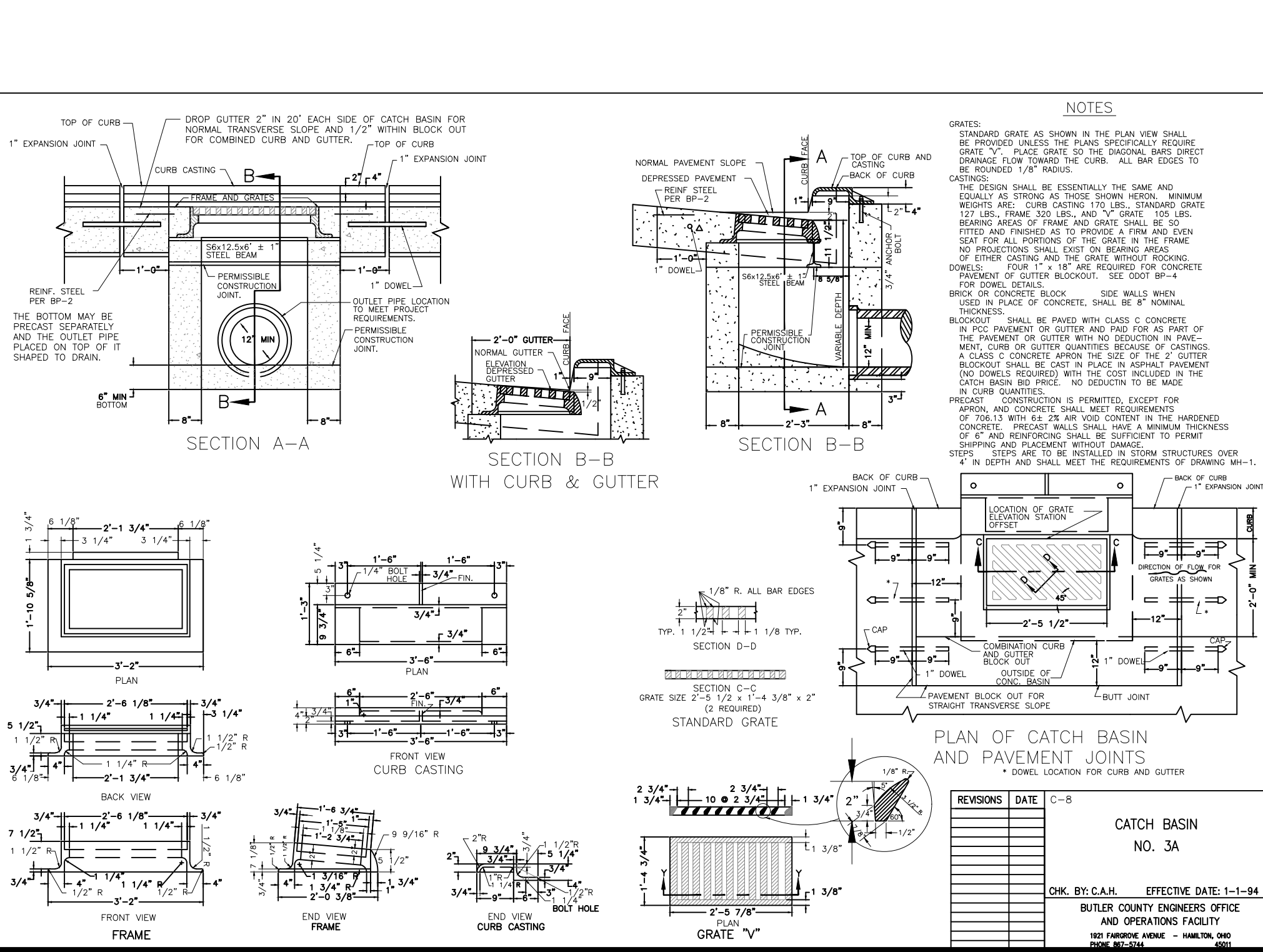
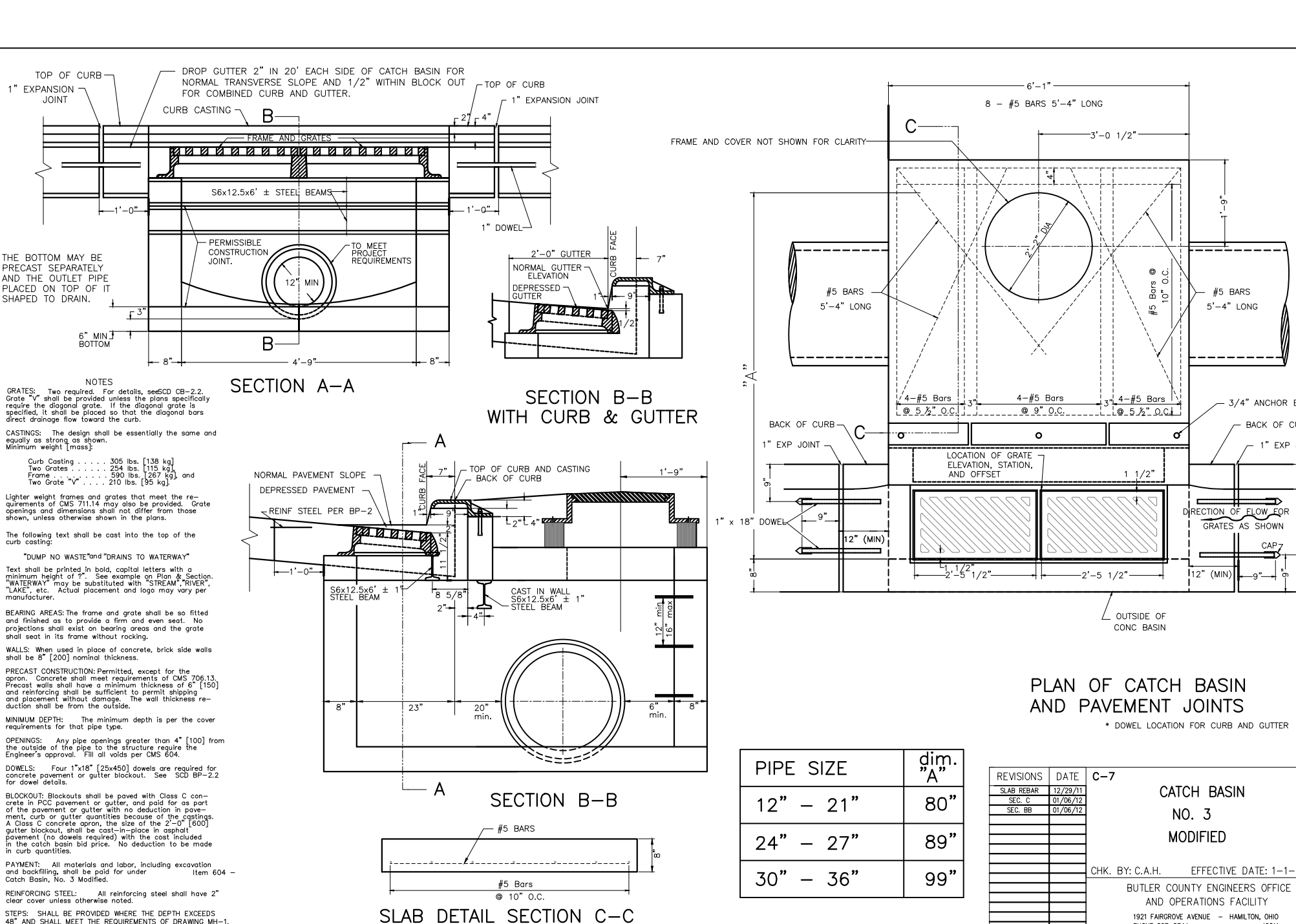
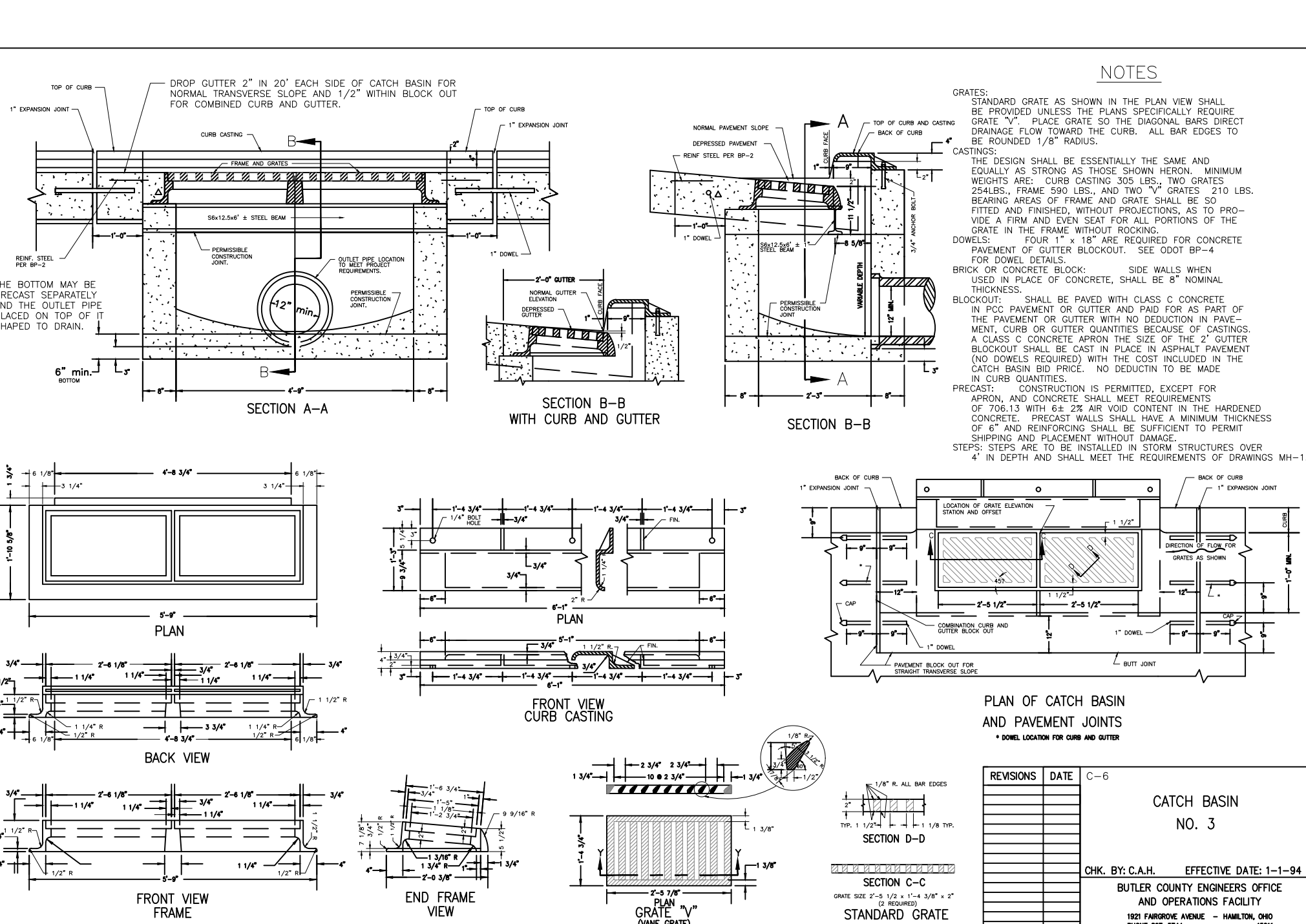
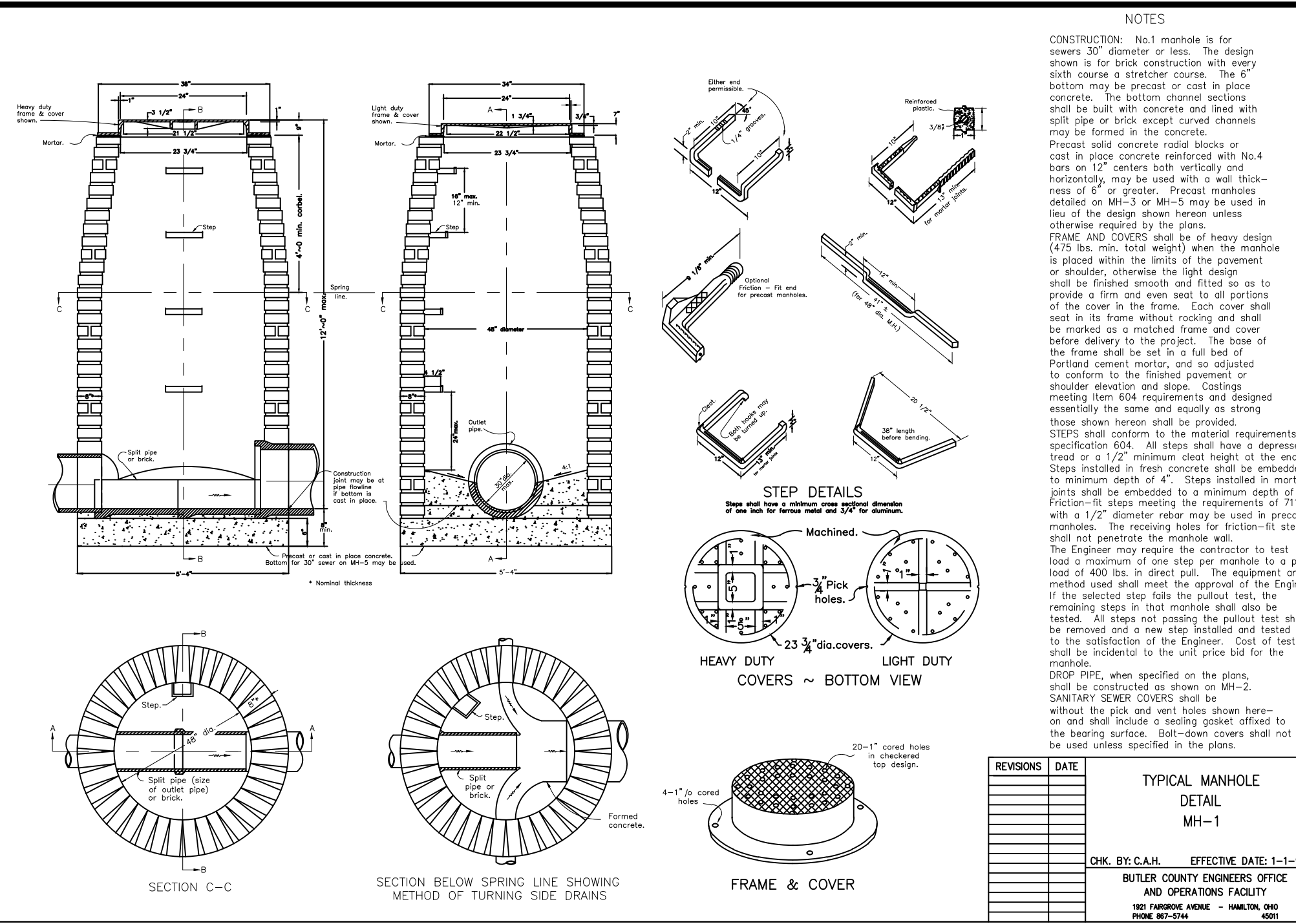
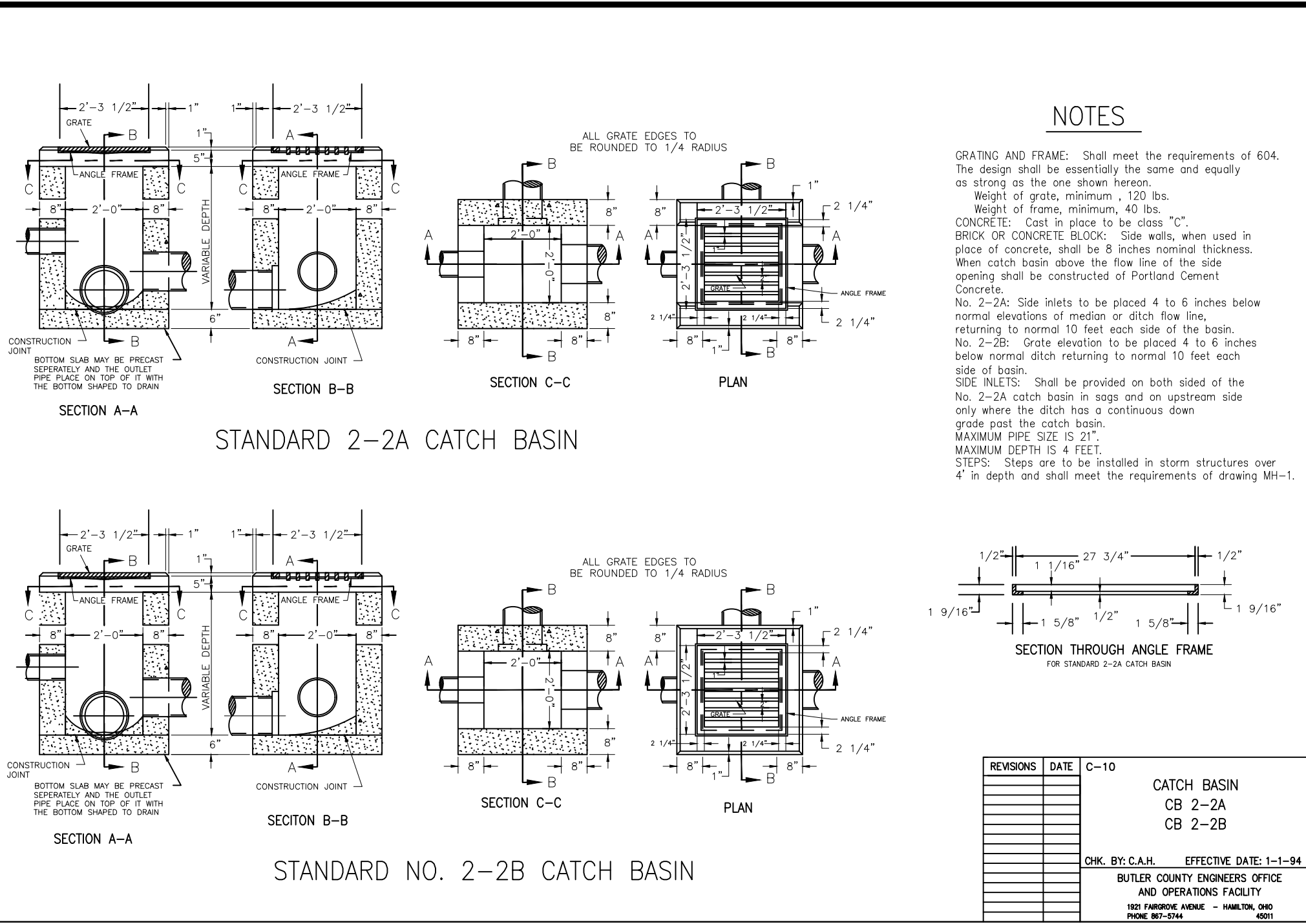
Note: Recommended restrained lengths for tees are for the branch outlet and assume a minimum restrained length of pipe of 10 ft. on each side of the run. Restraint devices shall also be installed on both run joints of the tee itself.

Note: Any joints that fall within these recommended lengths should be restrained; on each side of the bends, on the branch outlet of tees, and before reducers or dead-ends.

Note: Regardless of Table A value, a minimum of one joint, each side of all bends, shall be restrained. This is in addition to restraint of the fitting itself.



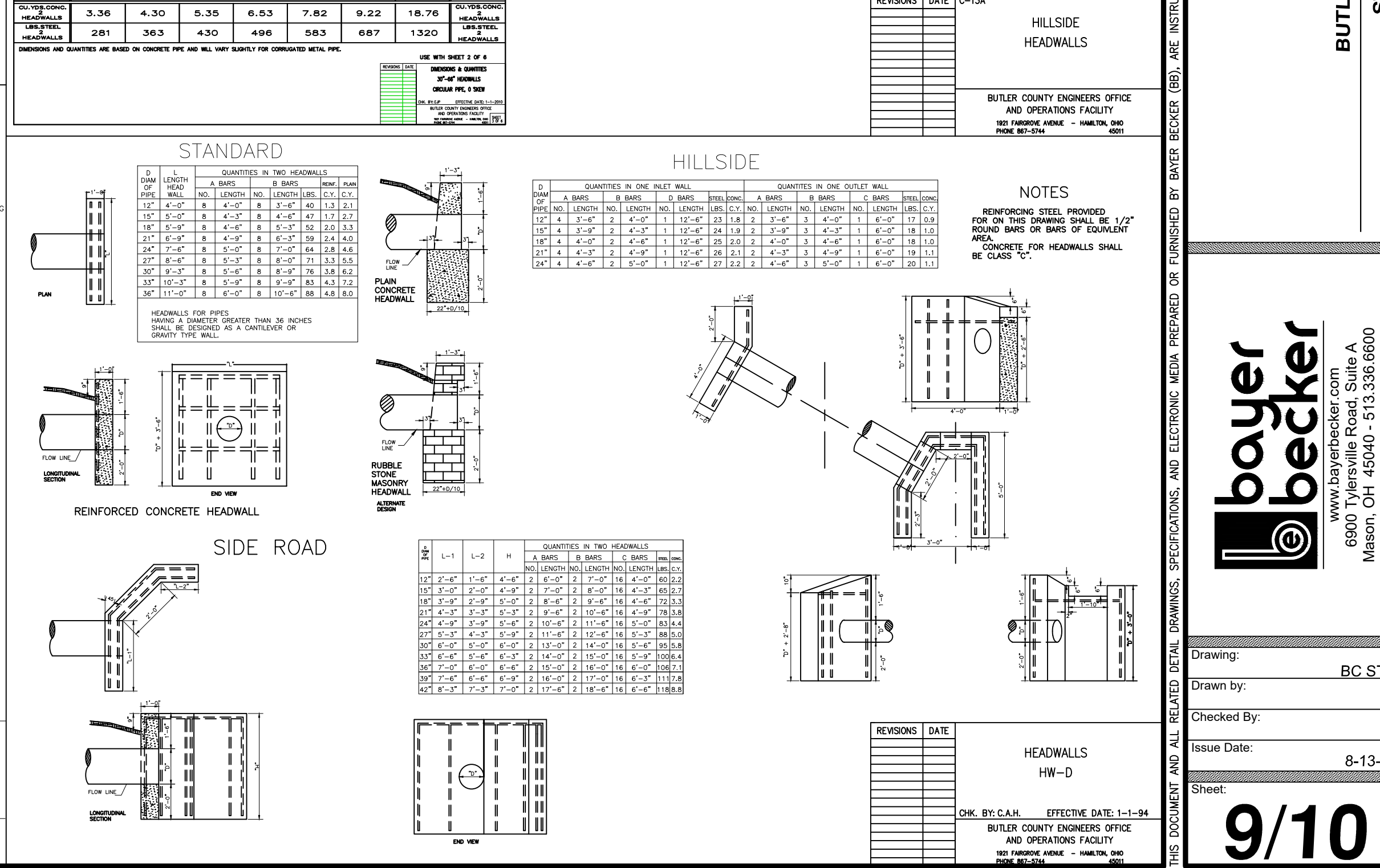
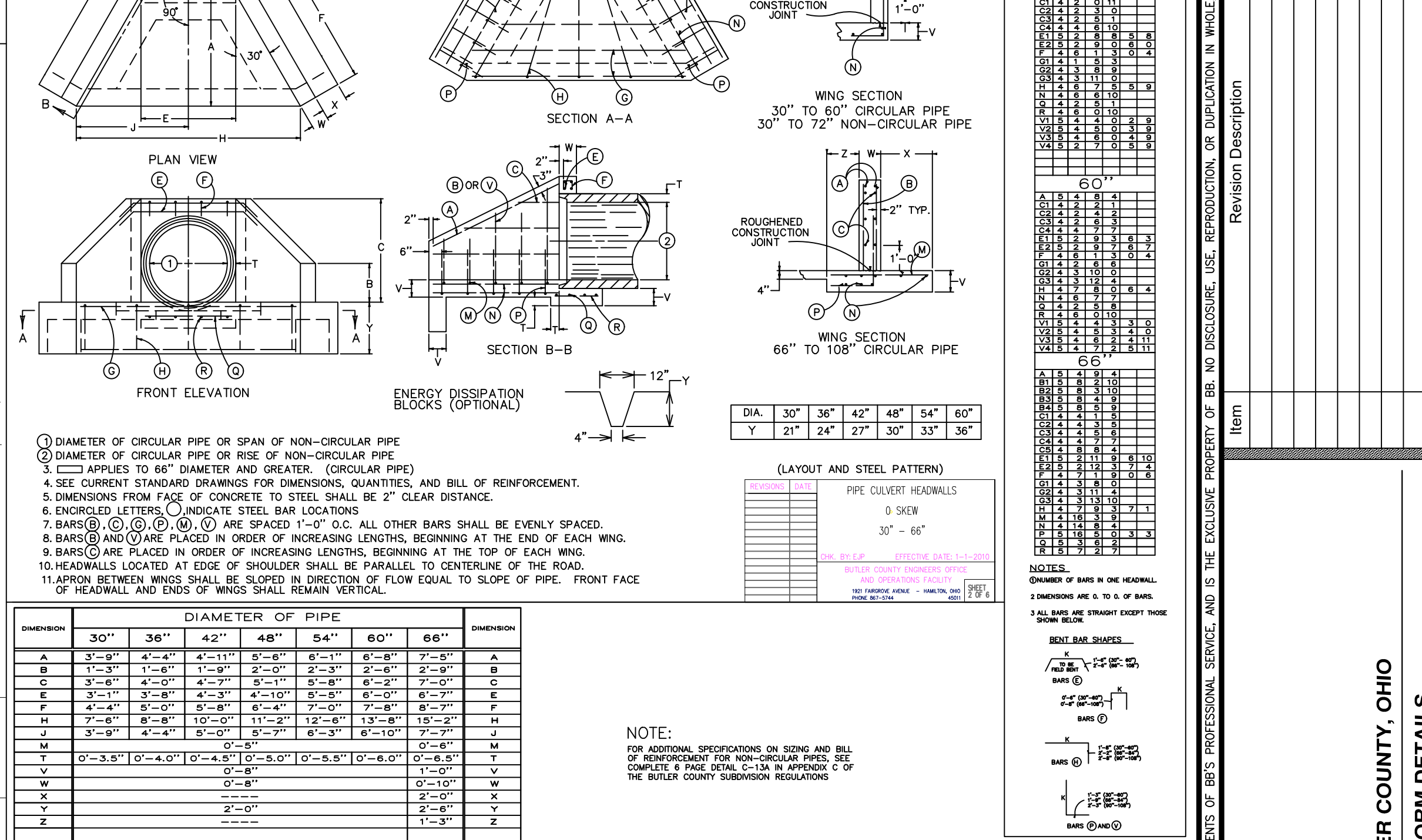
PURITY TEST STATION
NTS



REINFORCEMENT TABLE

PIPE DIA. OR SHAPE	C	E	F	L	W	T	X	Y	CLASS CONC.	REIN. STEEL
12"	1'-9"	2'-6"	2'-3"	3'-6"	4'-0"	2'	12"	12"	15/2"	0.58
15"	2'-0"	2'-9"	2'-9"	4'-0"	4'-9"	2'	14"	14"	15/2"	0.75
18"	2'-0"	3'-6"	3'-6"	4'-0"	5'-6"	2'	14"	14"	15/2"	0.89
21"	2'-6"	3'-3"	4'-0"	5'-0"	6'-0"	2'	14"	14"	15/2"	1.14
24"	2'-6"	4'-0"	4'-0"	5'-0"	6'-9"	3'	18"	18"	15/2"	1.35
27"	3'-0"	3'-9"	5'-0"	6'-0"	7'-0"	3'	18"	18"	15/2"	1.57

NOTES:
 1. DIMENSIONS AND QUANTITIES ARE BASED ON CONCRETE REINFORCED FOR CORRUGATED METAL PIPE.
 2. REINFORCING STEEL - MINIMUM GRADE 40, BARS EVENLY SPACED.
 3. 6 - NO. 4 x 1'-0" DOWEL BARS.
 4. 2 - NO. 4 x (E DIMENSION MINUS 4").
 5. SLOPES SHALL BE WARPED TO FIT HEADWALL WHEN PIPE IS SKEWED AND/OR NORMAL SLOPE VARIES FROM 2:1 TO 3:1.
 6. VOLUME DISPLACED BY PIPE COMPUTED USING INSIDE DIAMETER OF PIPE.
 7. WING ANGLES AND/OR DIMENSIONS MAY BE ALTERED TO ACCOMMODATE FLOW OF WATER.
 8. APPROX BETWEEN WINGS SHALL BE SLOPED IN DIRECTION OF FLOW EQUAL TO SLOPE OF PIPE. FRONT FACE OF HEADWALL SHALL REMAIN VERTICAL.



Plot time: May 14, 2019 1:10:02pm
 Drawing name: K:\OLD-K\Mason\LA-F BLOCKS DETAILS\BUTLER BC STA.dwg - Layout Tab: STM

Butler County, Ohio Storm Details
 Revision Description
 Date
 Drawn: Chk
 Checked By: BC STM
 Issue Date: 8-13-12
 Sheet: 9/10
 bayer becker
 www.bayerbecker.com
 6900 Tyersville Road, Suite A
 Mason, OH 45040 - 513.336.6600

GENERAL NOTES
EROSION AND SEDIMENT CONTROLS

Vegetative Practices
Such practices may include: temporary seeding, permanent seeding, mulching, matting, sod stabilization, vegetative buffer strips, phasing and protection of trees. The contractor shall initiate appropriate vegetative practices on all disturbed areas within seven (7) days if they are to remain dormant (undisturbed) for more than fourteen (14) days. Permanent or temporary soil stabilization shall be applied to disturbed areas within seven (7) days after final grade is reached on any portion of the site.

Structural Practices
Structural practices shall be used to control erosion and trap sediment from all sites remaining disturbed for more than fourteen (14) days.

Timing
Sediment control structures shall be functional throughout earth disturbing activity. Sediment ponds and perimeter sediment barriers shall be implemented as the first step of grading and within seven days from the start of grubbing. They shall continue to function until the upslope development area is reestablished.

Sediment Barriers
Sheet flow runoff from denuded areas shall be intercepted by sediment barriers. Sediment barriers, such as sediment fences or diversions direction runoff to settling facilities, shall protect adjacent properties and water resources from sediment transported by sheet flow.

Erosion and sediment control practices used to satisfy the conditions of this plan shall meet the standards and specifications in the current edition of Water Management and Sediment Control in Urbanized Areas (Soil Conservation Service.)

Waste Disposal
No solid or liquid waste, including building materials, shall be discharged in storm water runoff. Off-site vehicle tracking and sediments shall be minimized. The plan shall ensure and demonstrate compliance and applicable State of local waste disposal, sanitary sewer or septic system regulations.

Maintenance
All temporary and permanent control practices shall be maintained and repaired as needed to assure continued performance of their intended function.

Dormant Seeding
1. Seedlings shall not be planted from October 1 through November 20. During this period the seeds are likely to germinate but probably will not be able to survive the winter.
2. The following methods may be used for "Dormant Seeding":
From October 1 through November 20, prepare the seedbed, add the required amounts of lime and fertilizer, then mulch and anchor. After November 20 and before March 15, broadcast the selected seed mixture. Increase the seeding rates by 50% for this type of seeding.
From November 20 through March 15, when soil conditions permit, prepare the seedbed, lime and fertilizer, apply the selected seed mixture, mulch and anchor. Increase the seeding rates by 50% for this type of seeding.

Apply seed uniformly with a cyclone seeder, drill, cultipacker seeder, or hydro-seeder (slurry may include seed and fertilizer) on a firm, moist seedbed.

Where feasible, except when a cultipacker type seeder is used, the seedbed should be formed following seeding operations with a cultipacker, roller, or light drag. On sloping land, seeding operations should be on the contour where feasible.

REVEGETATION
Seed, sod or mulch bare soil as soon as possible

SEEDING AND MULCHING
Spread 4 to 6 inches of topsoil. Fertilize according to soil test (or apply 10 lb./1000 sq. ft. of 20-10-10 or 10-10-10 fertilizer.) Seed with an appropriate mix for the site (see table.) Rake lightly to cover seed with 1/4" of soil. Roll lightly. Mulch with straw (70-90 lb. or one bale per 1000 sq. ft.) Anchor mulch by punching 2 inches into the soil with a dull, weighted disk or by using netting or other measures on steep slopes, or windy areas. Water gently every day or two to keep soil moist. Less watering is needed once grass is 2 inches tall.

SODDING
Spread 4 to 6 inches of topsoil. Fertilize according to soil test (or apply 10 lb./1000 sq. ft. of 20-10-10 or 10-10-10 fertilizer.) Lightly water the soil. Lay sod. Tamp or roll lightly. On slopes, lay sod starting at the bottom and work toward the top. Peg each piece down in several places. Initial watering should wet soil 6 inches deep (or until water stands 1 inch deep in a straight-sided container.) Then water lightly every day or two for 2 weeks. If construction is completed after October 31, seeding or sodding may be delayed. Applying mulch or temporary seed (such as rye or winter wheat) is recommended if weather permits. Straw bale or silt fences must be maintained until final seeding or sodding is completed in spring March 15 - May 31.

INSTALLATION NOTES AND SPECIFICATIONS FOR MULCH BERM:
1. Mulch berm should be placed along a level contour so that it will not channel runoff and create concentrated flows.
2. Uphill drainage limitations (sheet flow).
3. Design Criteria:
- particle sizes (99% passing 1 inch sieve etc.)
- moisture content
- no less than 70% organics
4. Planning considerations: most effective when combined with vegetated buffer.

CONSTRUCTION OF A STRAW BALE BARRIER
Source: Adapted from Installation of Straw and Fabric Filter Barriers for Sediment Control, Sherwood and Wyant

1. Excavate the trench.
2. Place and stake the straw bales.
3. Wedge loose straw between bales.
4. Backfill and compact the excavated soil.

CONSTRUCTION OF A FILTER BARRIER
Source: Installation of Straw and Fabric Filter Barriers for Sediment Control, Sherwood and Wyant

1. Set the stakes.
2. Excavate a 4" x 4" trench upslope along the line of stakes.
3. Staple filter material to stakes and extend it into the trench.
4. Backfill and compact the excavated soil.

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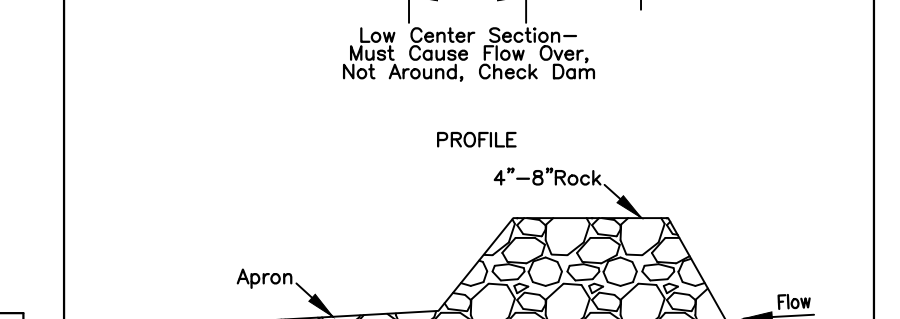
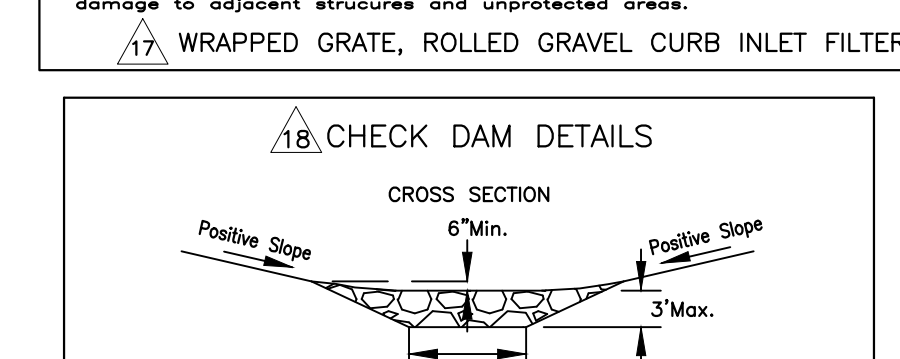
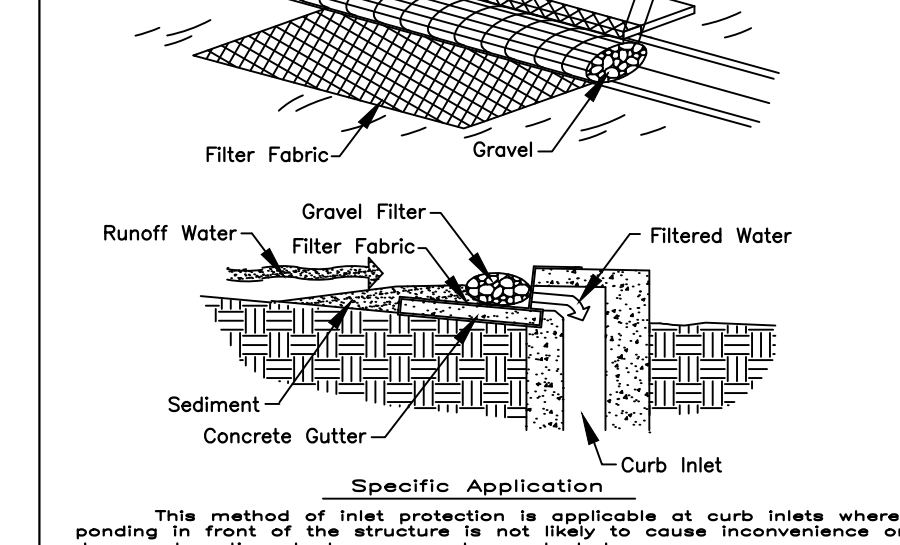
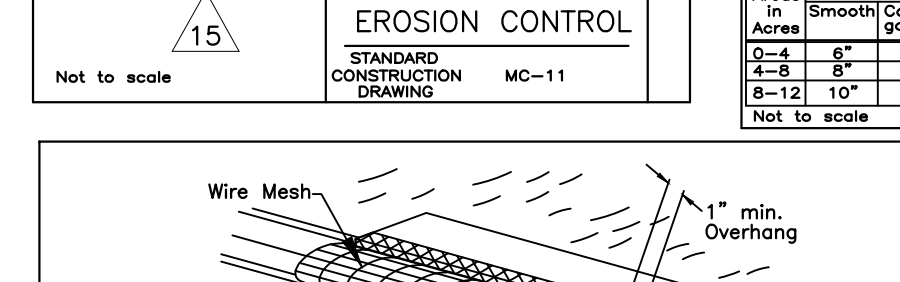
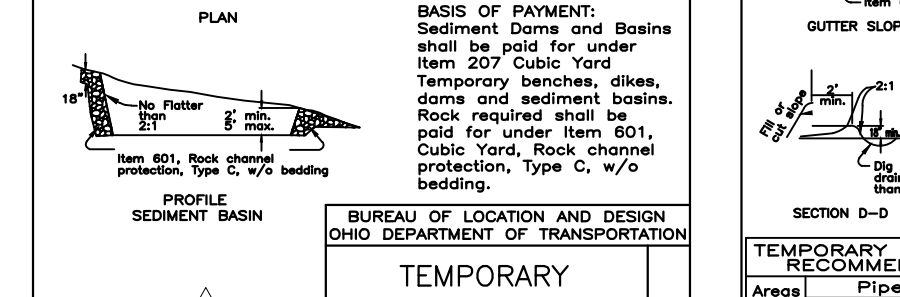
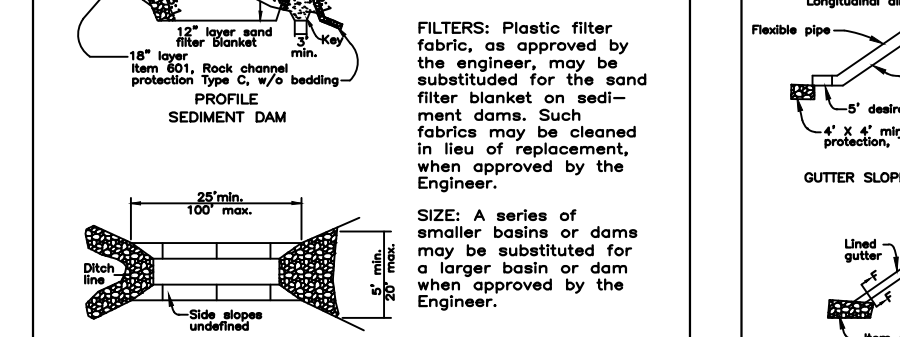
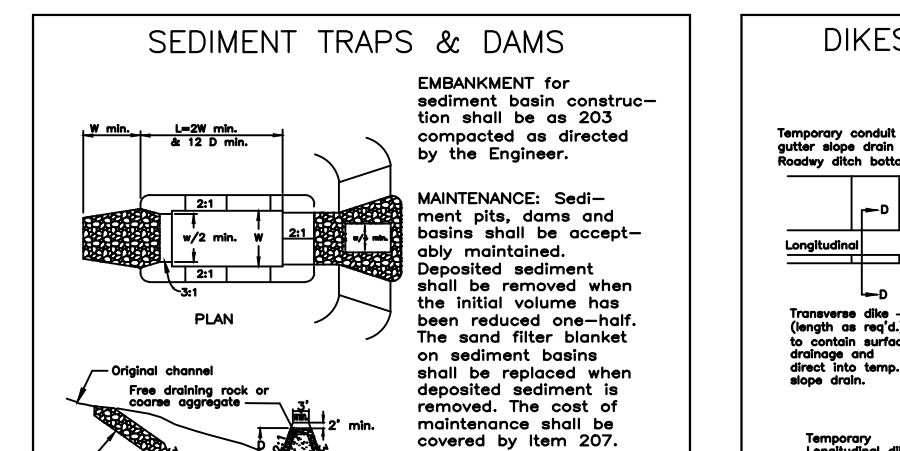
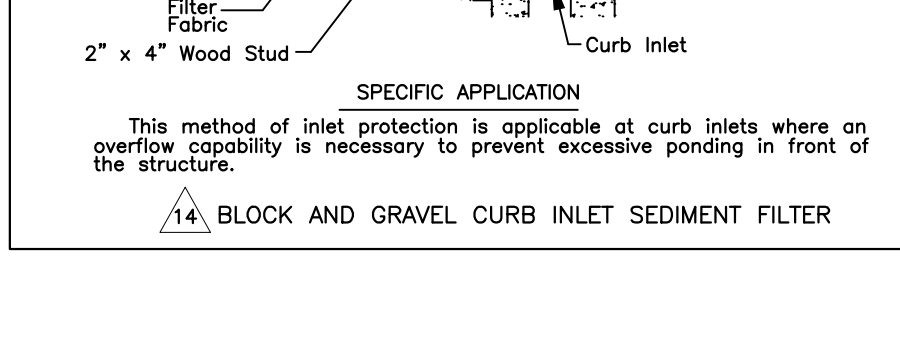
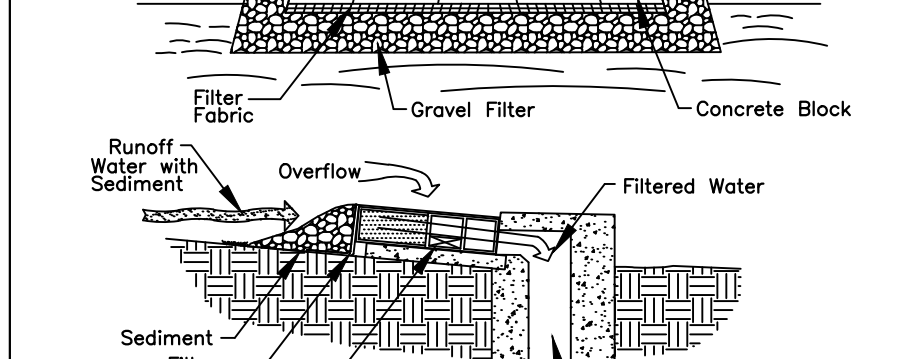
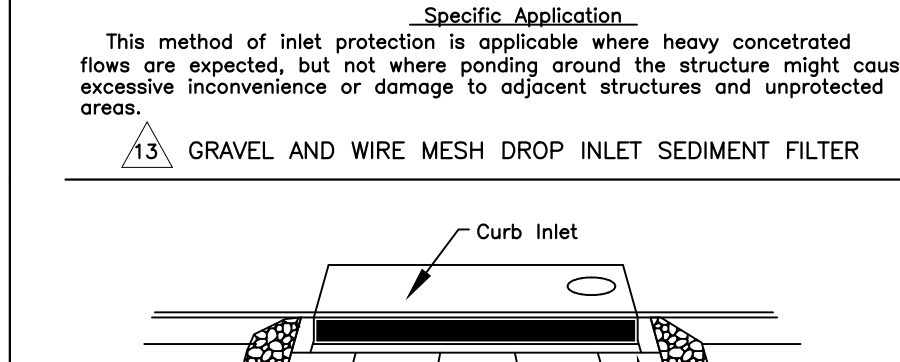
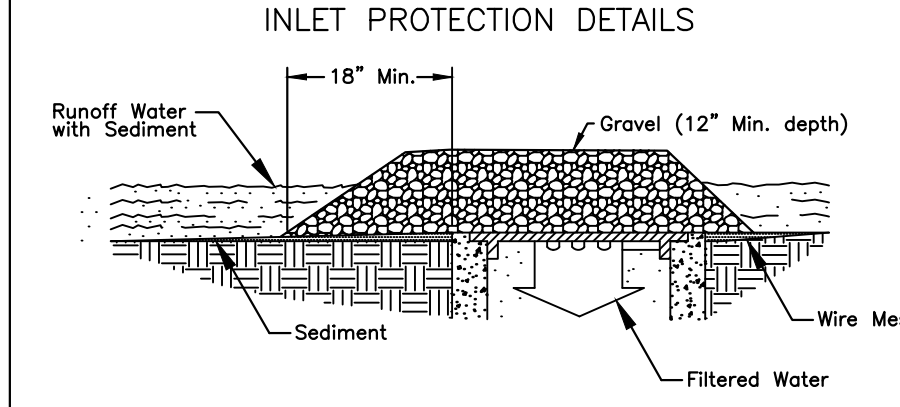
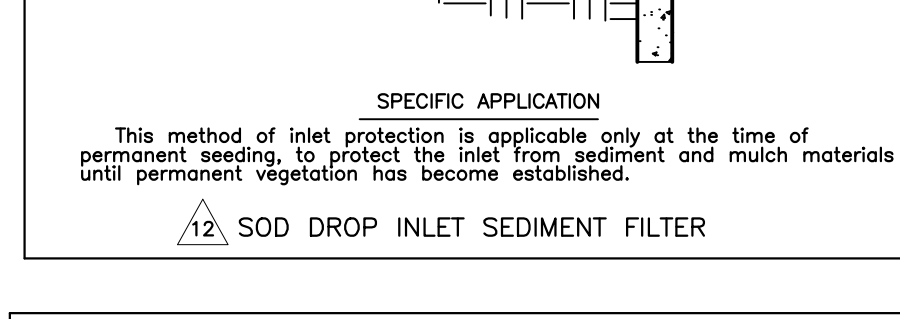
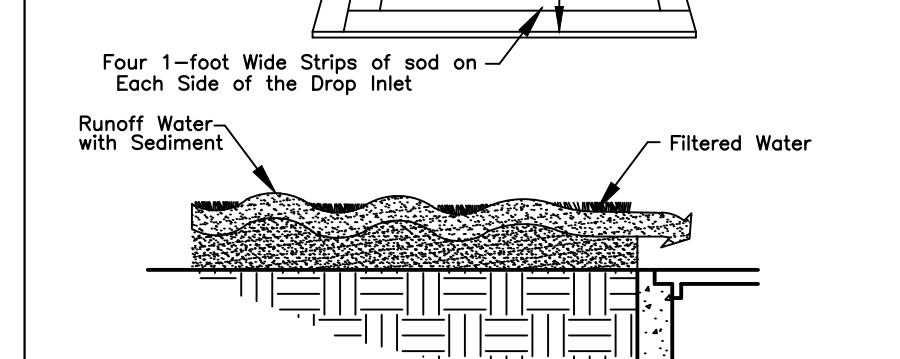
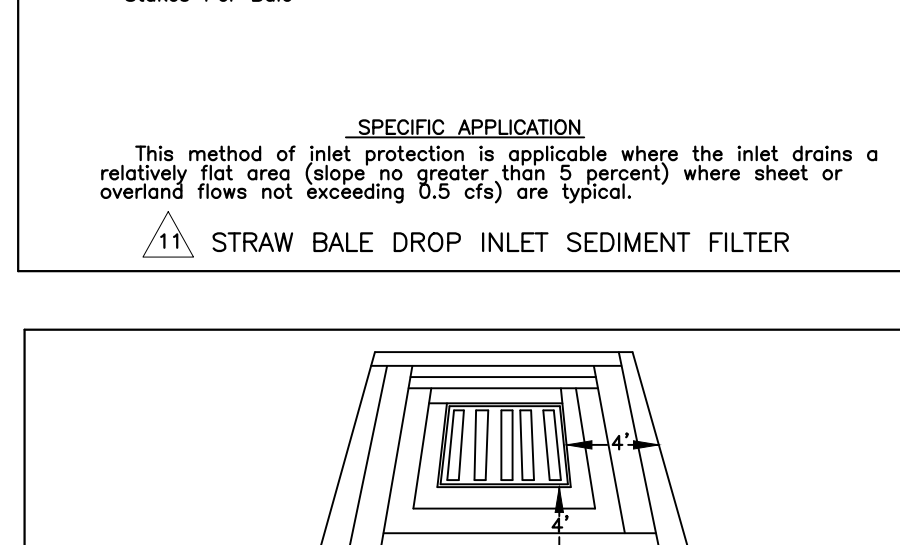
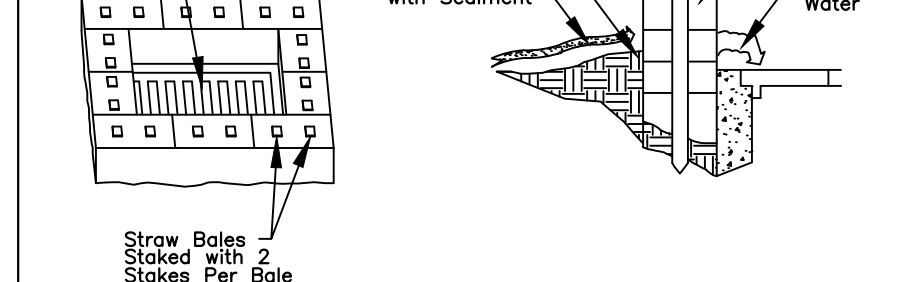
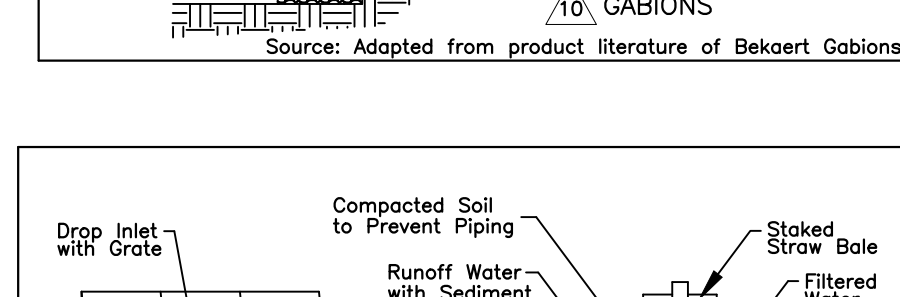
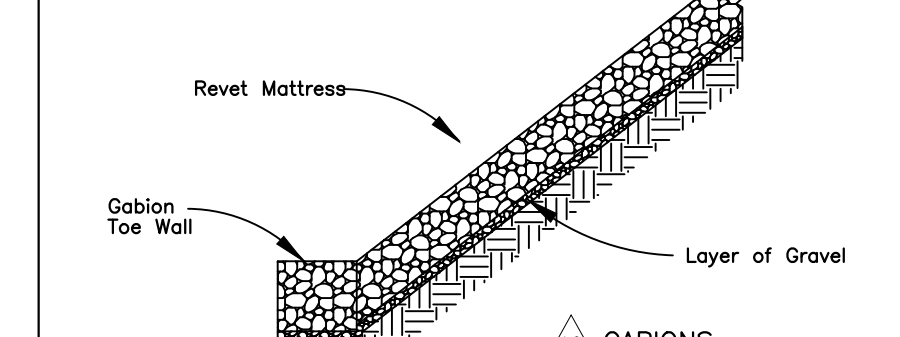
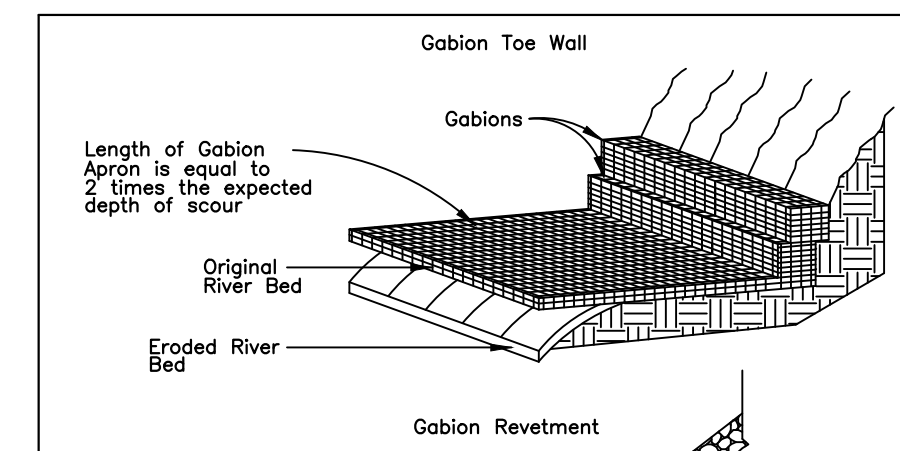
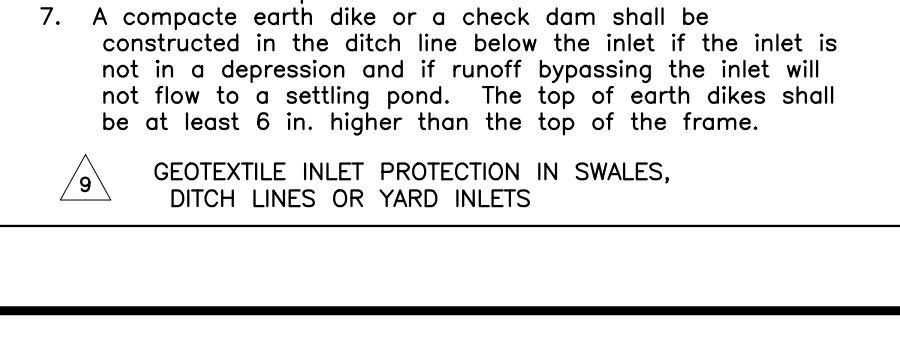
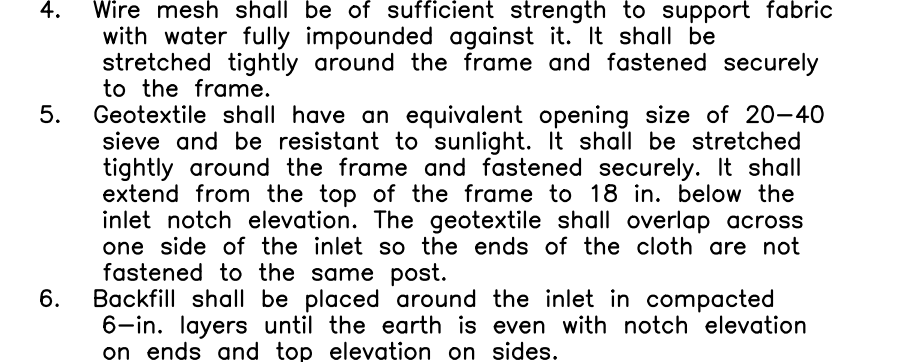
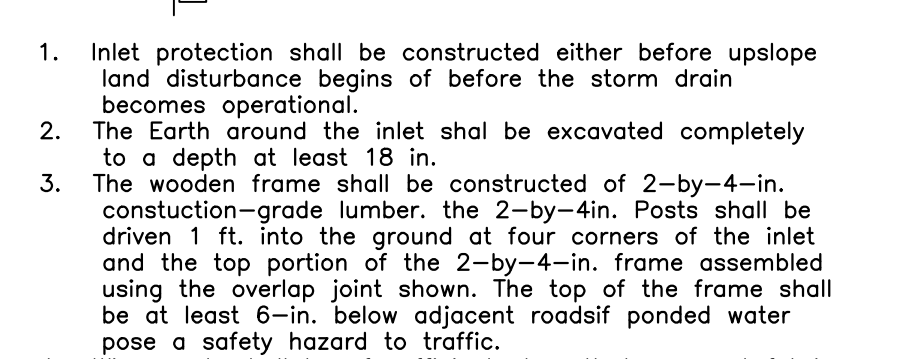
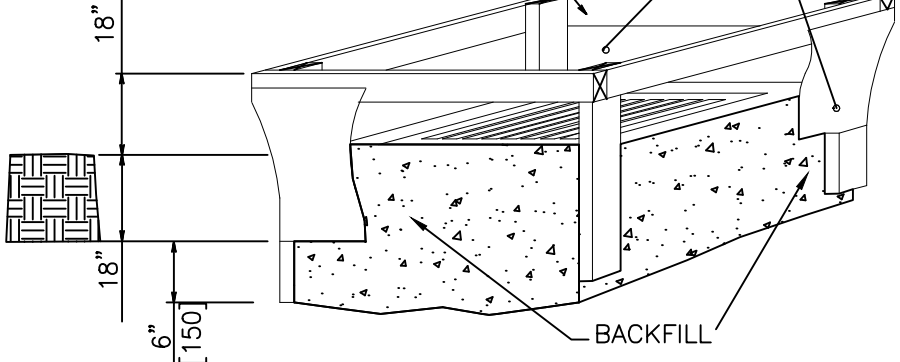
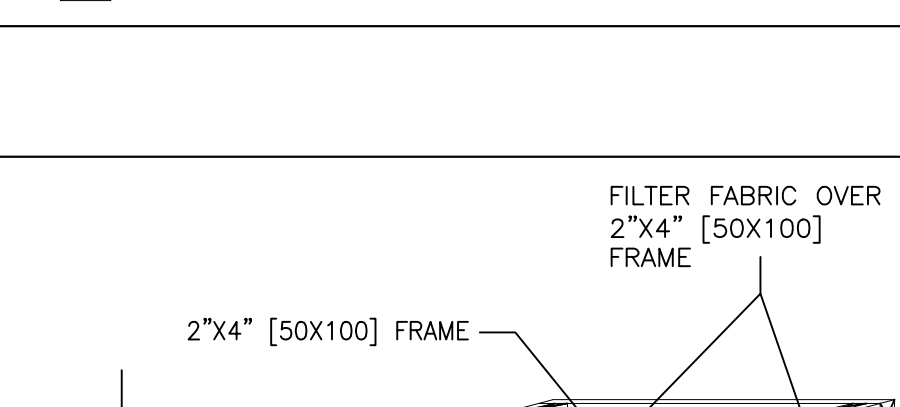
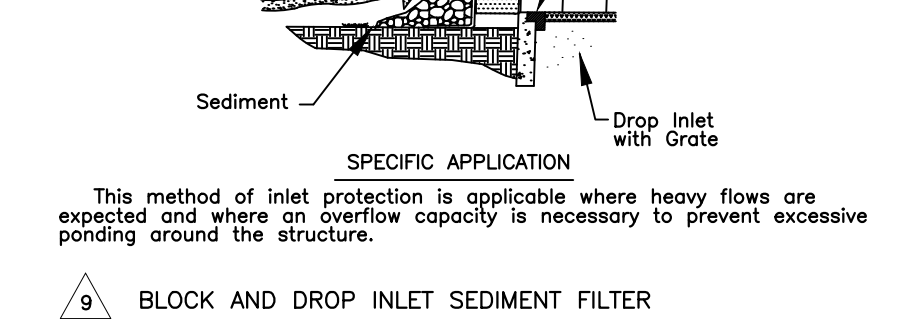
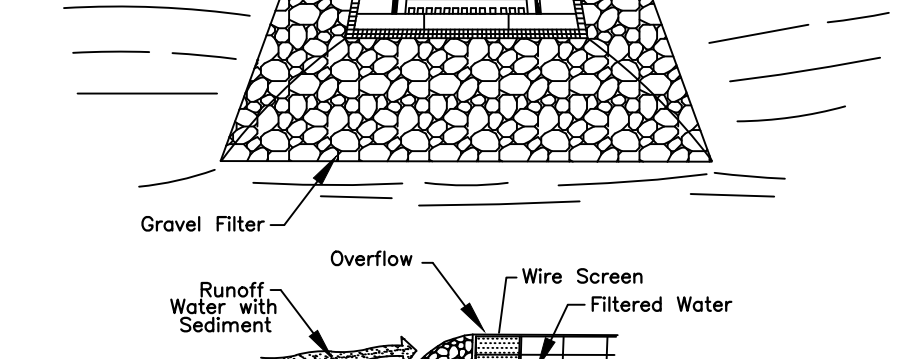
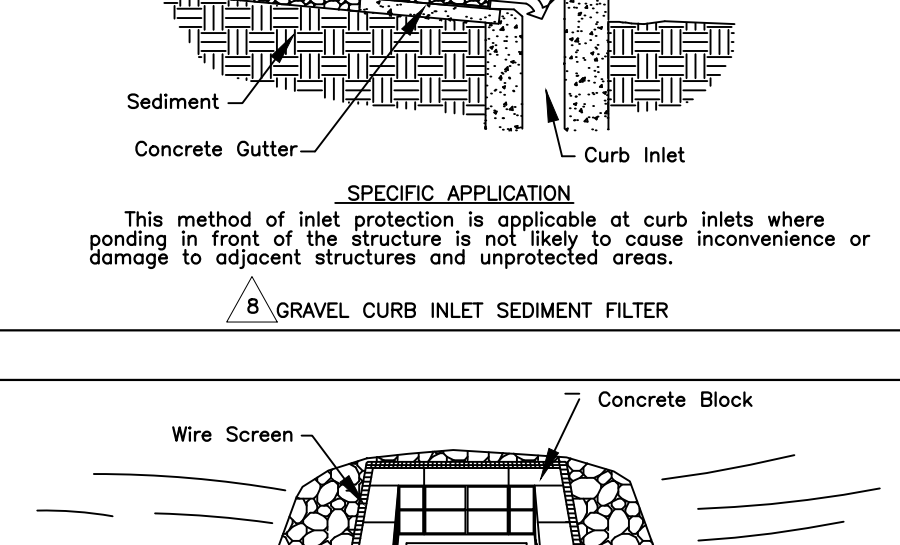
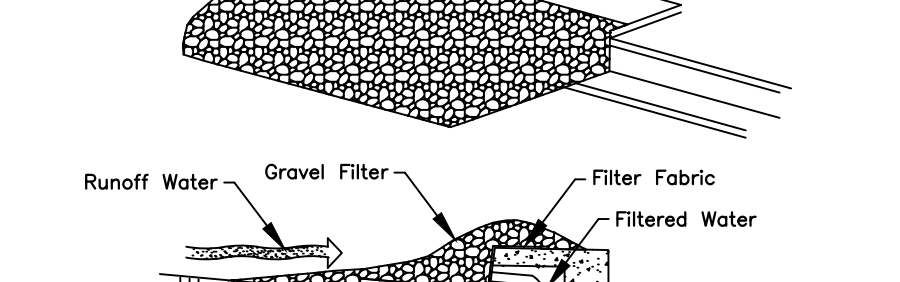
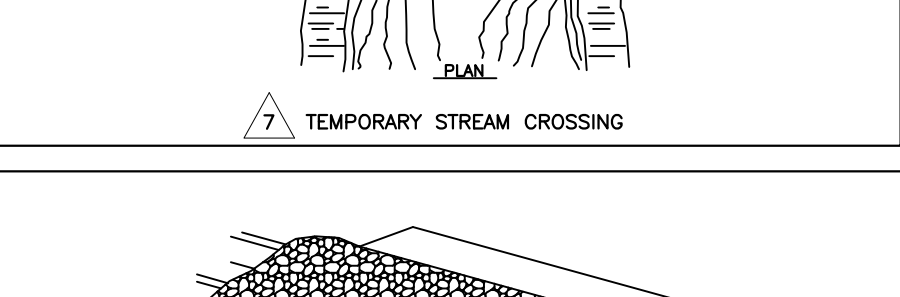
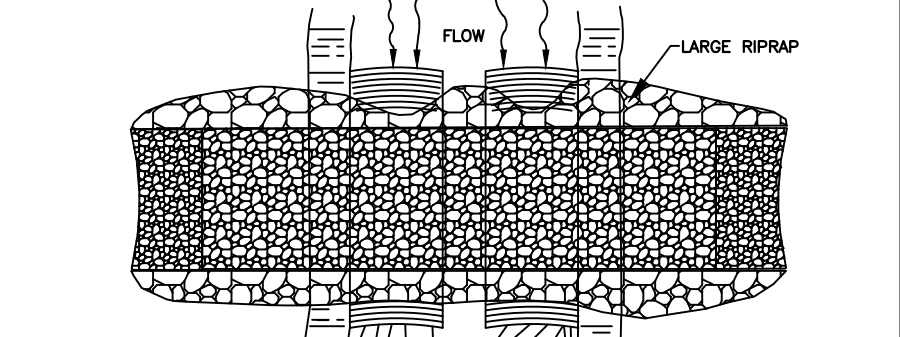
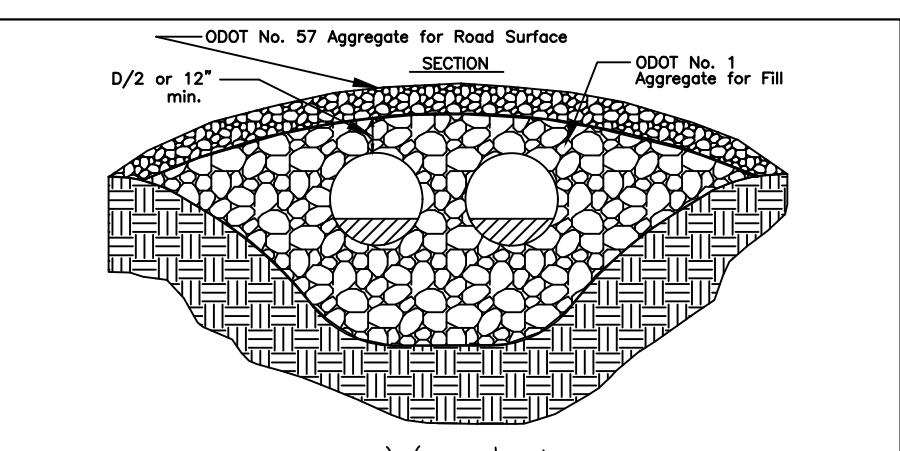
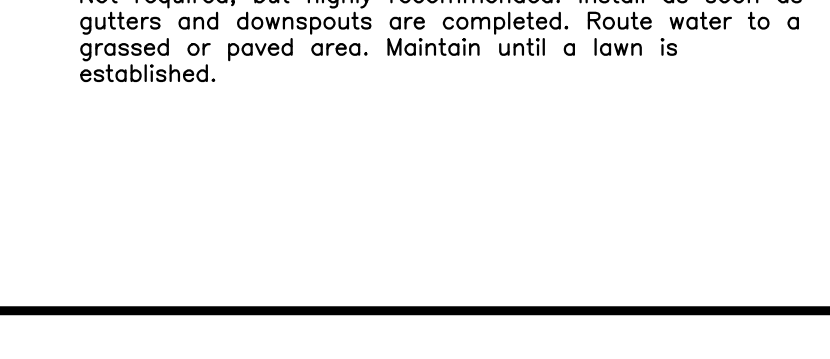
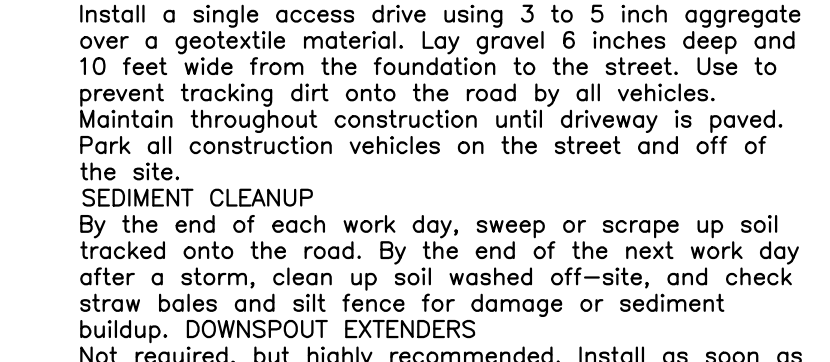
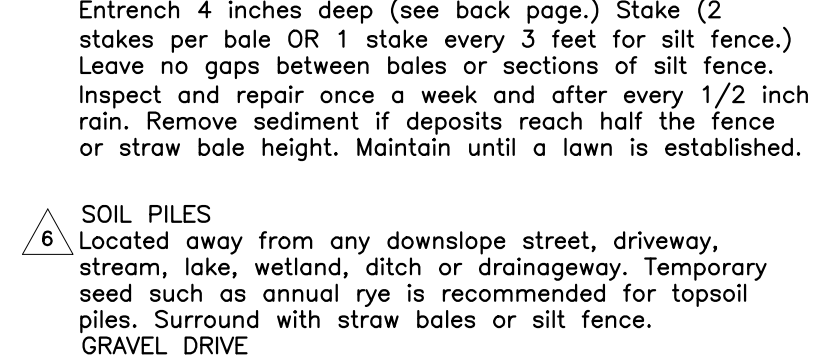
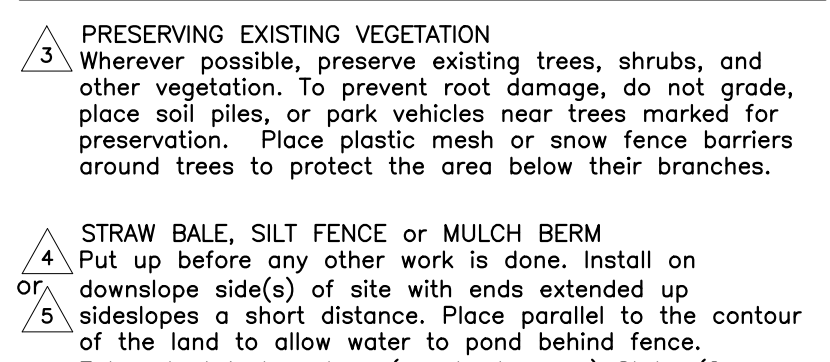
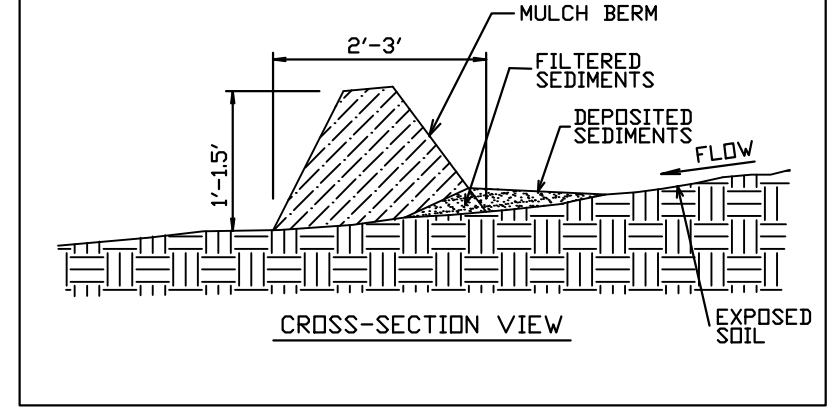
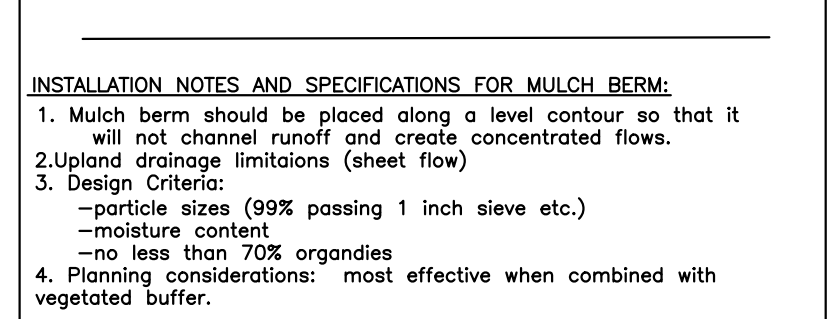
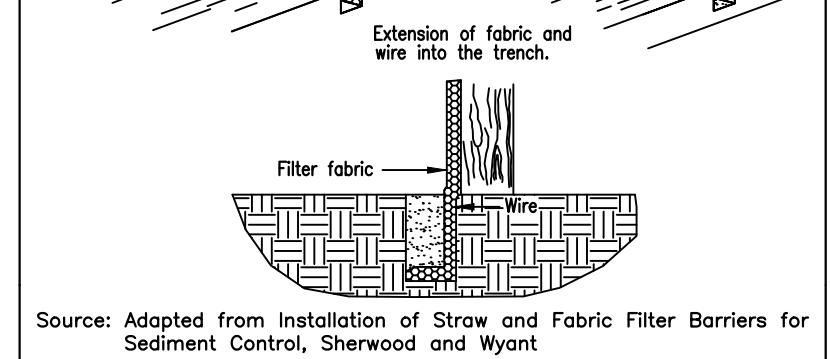
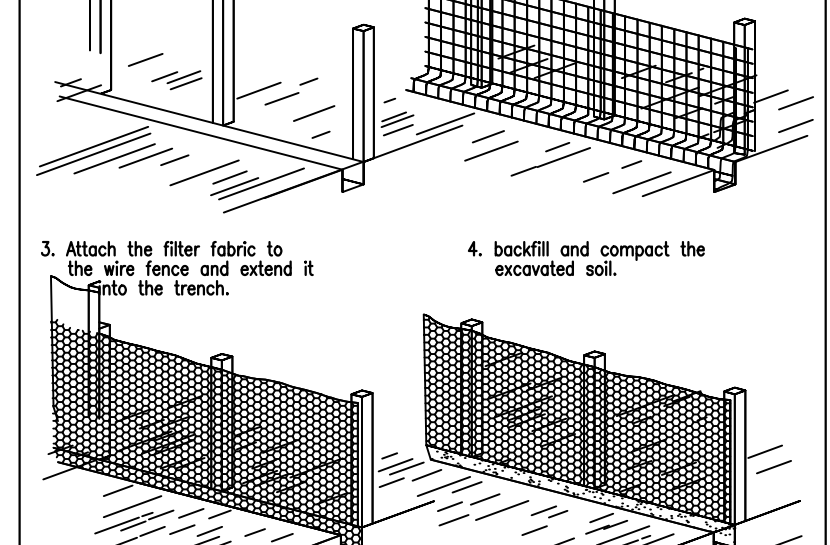
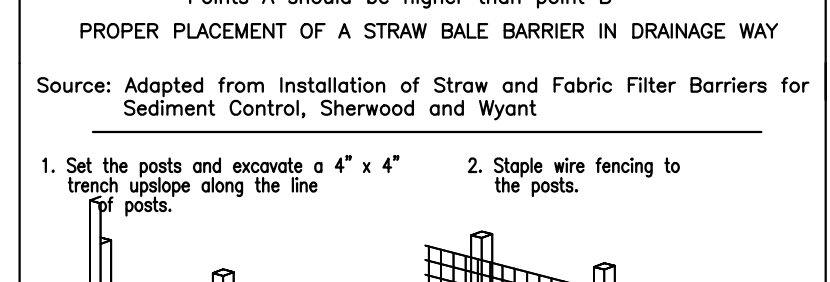
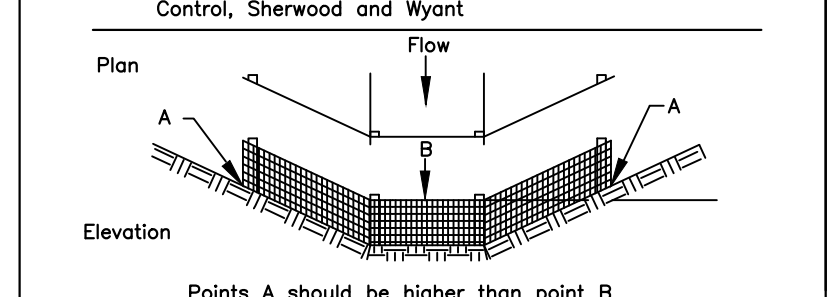
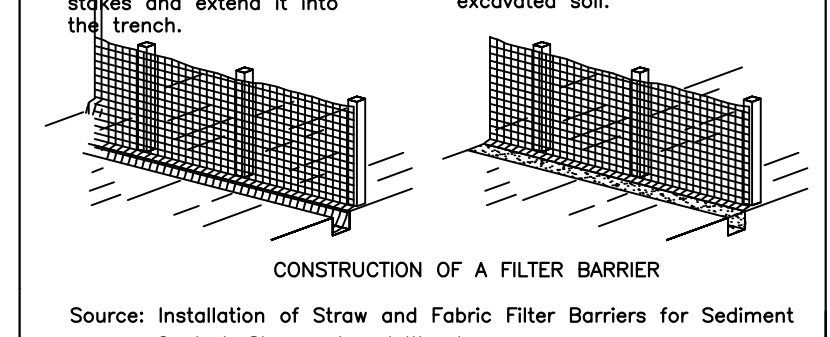
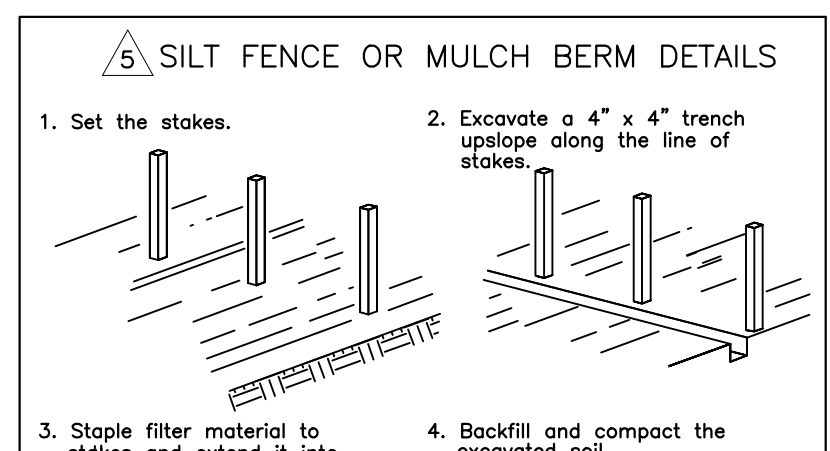
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Dam Height (ft.)	< 5%	5-10%	10-15%	15-20%
1	65 ft.	30 ft.	20 ft.	15 ft.
2	130 ft.	65 ft.	40 ft.	30 ft.
3	200 ft.	100 ft.	65 ft.	50 ft.

