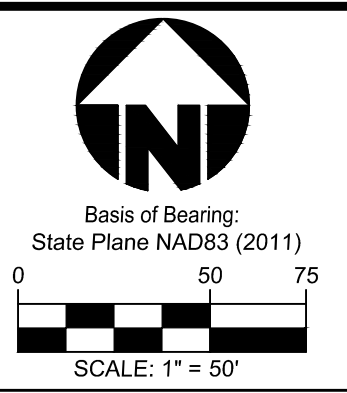


Plot time: Jul 13, 2022 - 3:36pm
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- NOTES:
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 - Lower 3/4" Water Services as needed to avoid conflicts with Storm with Min. 4' Cover.
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 - Contractors to accept all quantities as correct prior to beginning construction.

REGULATED WATERWAY OF UNITED STATES

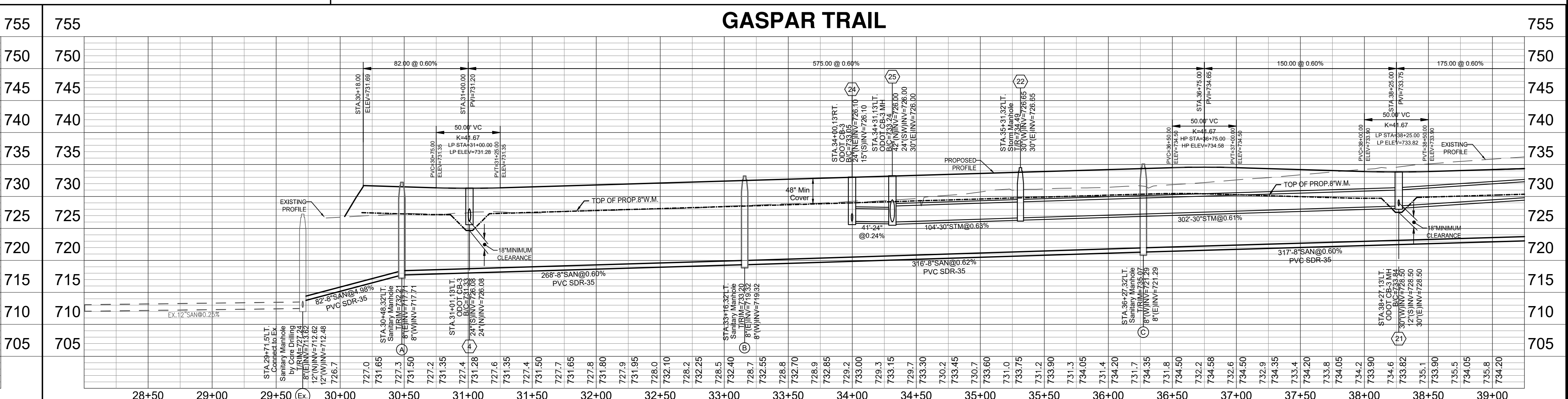
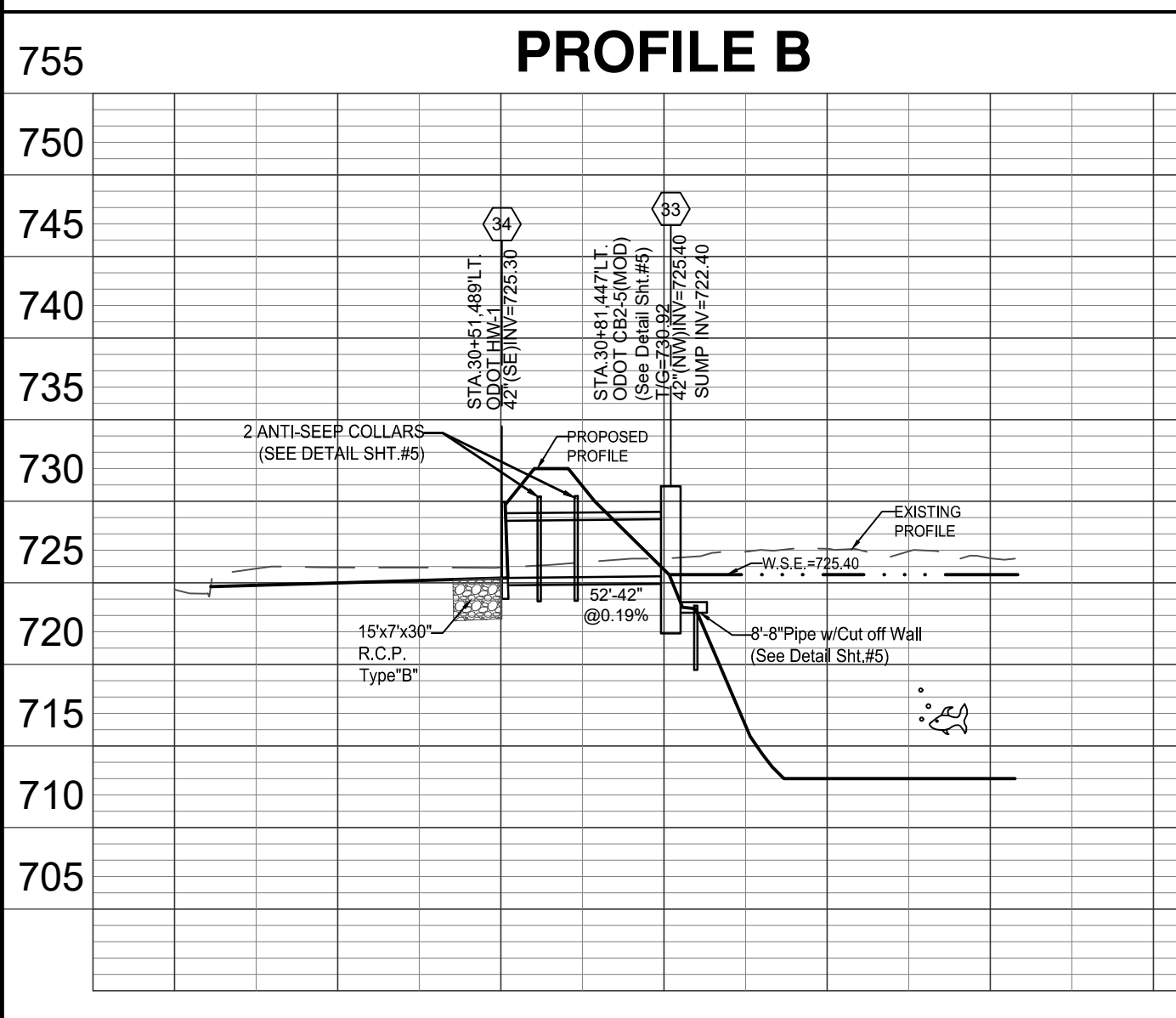
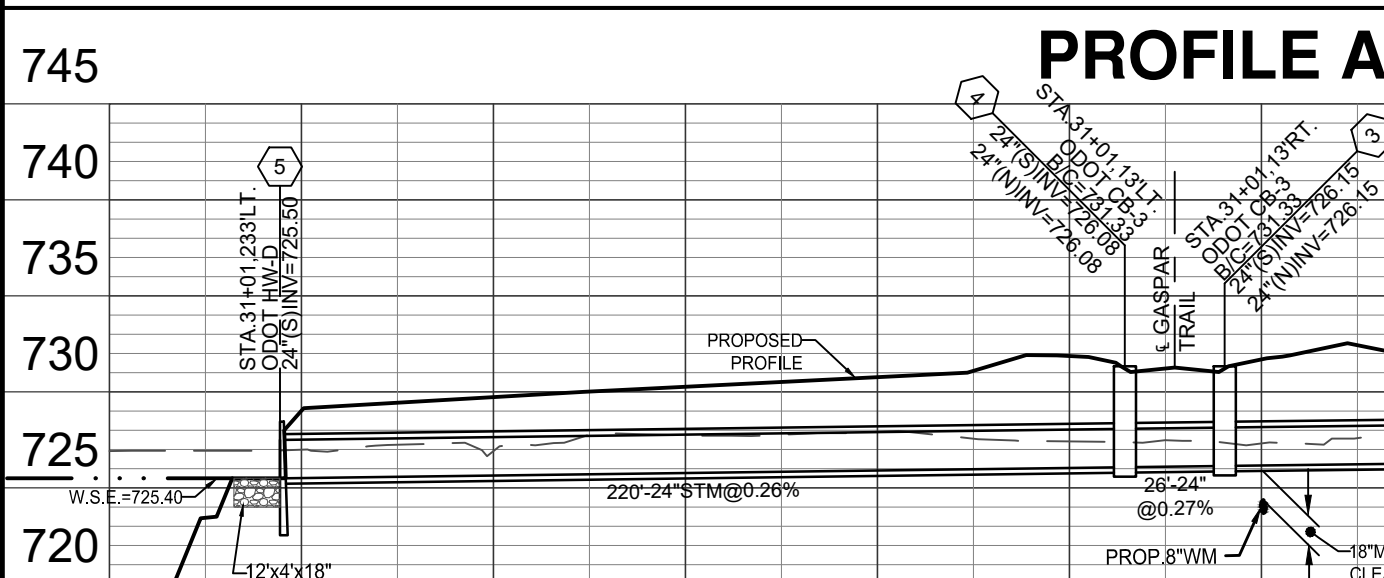
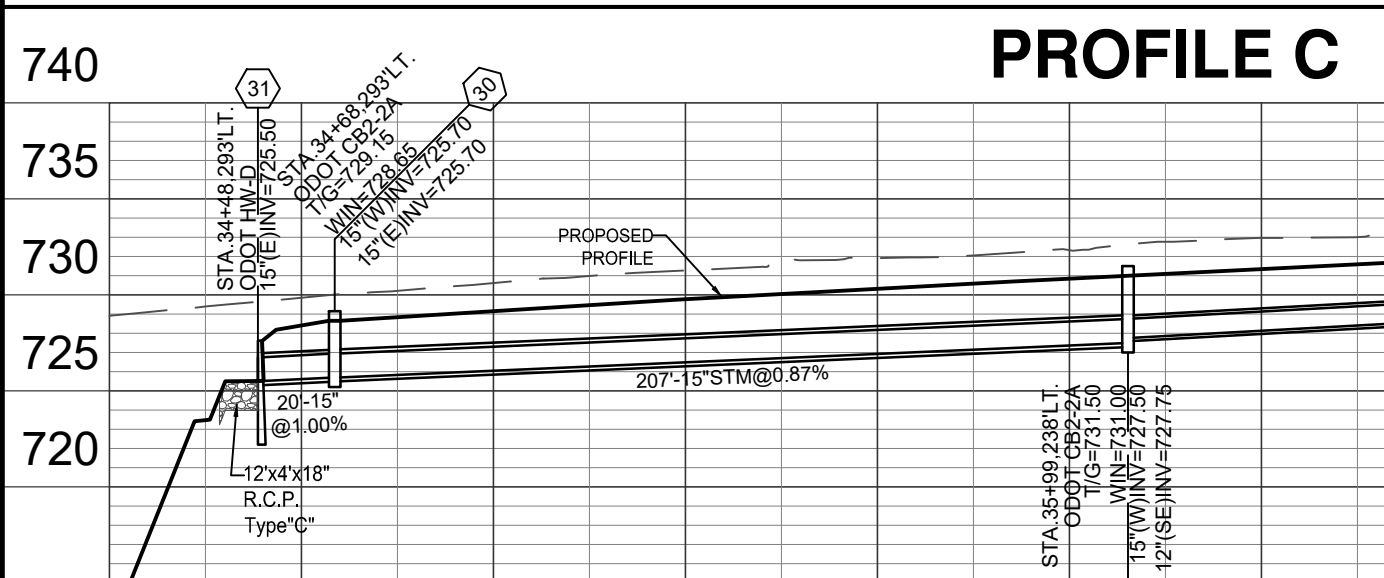
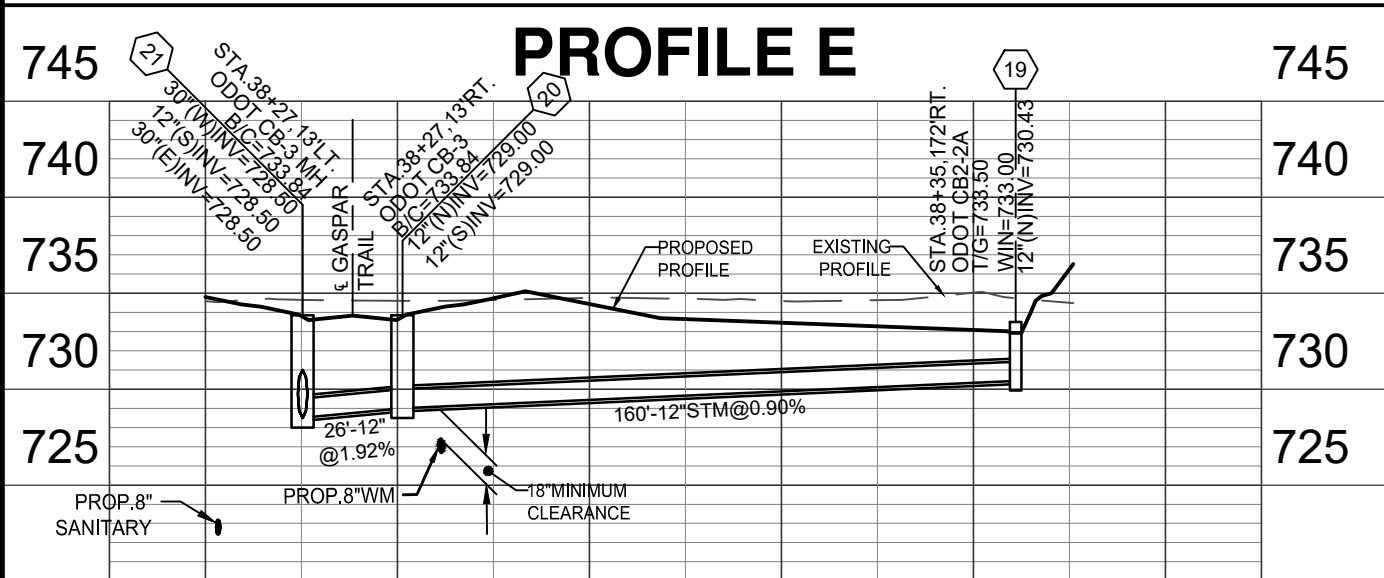
NOTE: CONTRACTOR SHALL COORDINATE LOCATIONS OF PURITY TEST STATIONS WITH BCWS INSPECTOR

RETENTION POND #1
 Water Surface Elevation = 725.40
 Water Quality Elevation = 725.95
 100 Year Elevation = 728.41

Contractor shall channelize the inflowing drop invert to the existing manhole invert.

STA 29+71.5 LL
 Connect to Ex. Sanitary Manhole by Core Drilling
 TRIM TO 721.2
 12"(N)INV=712.62
 12"(W)INV=712.48

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.



WATER MAIN RESTRAINT JOINT LOCATION CHART

Water Main Dia.	Horizontal 45° Bends	Vertical 45° Bends Up (Lower Water Under...)	Vertical 45° Bends Down (Lower Water Under...)	Dead Ends (Permanent & Temporary)	Tees (for Tee Branch)
6"	18' both sides	18' both sides	72' Back	54'	54'
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10"	36' both sides	36' both sides	117' Back	54' 72'	90'
12"	36' both sides	54' both sides	72' both sides	180' Back	36' 72' 90'
14"	54' both sides	54' both sides	90' both sides	198' Back	36' 72' 90'
16"	54' both sides	54' both sides	90' both sides	216' Back	36' 54' 90'

NOTE:
 Existing water valves, fire hydrants, road signs and mailboxes may need to be relocated or reset to grade with roadway improvements and hiker/biker trail installation along Kyles Station Road and Yankee Road. Contractor to coordinate.

NOTE:
 LOTS 2 THROUGH 10 SHALL NOT HAVE DRIVEWAY ACCESS TO KYLES STATION ROAD.

DATE: 7-13-22
 DRAWN BY: TAC
 CHECKED BY: XXX
 ISSUE DATE: 5-27-22

Revision Description

Item	Revision Description
1	Revised as per BCWS
2	Revised as per BCED
3	
4	
5	
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DATE: 7-13-22
 DRAWN BY: TAC
 CHECKED BY: XXX
 ISSUE DATE: 5-27-22

Sheet: 2/11

19-0168 CD
 TAC
 XXX
 5-27-22

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CARAVEL SECTION ONE
 SECTION 22, TOWN 3, RANGE 3
 LIBERTY TOWNSHIP, BUTLER COUNTY, OHIO
 PLAN & PROFILE



NOTE: CONTRACTOR SHALL COORDINATE LOCATIONS OF PURITY TEST STATIONS WITH BCWS INSPECTOR

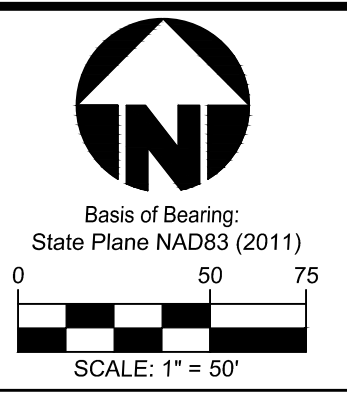
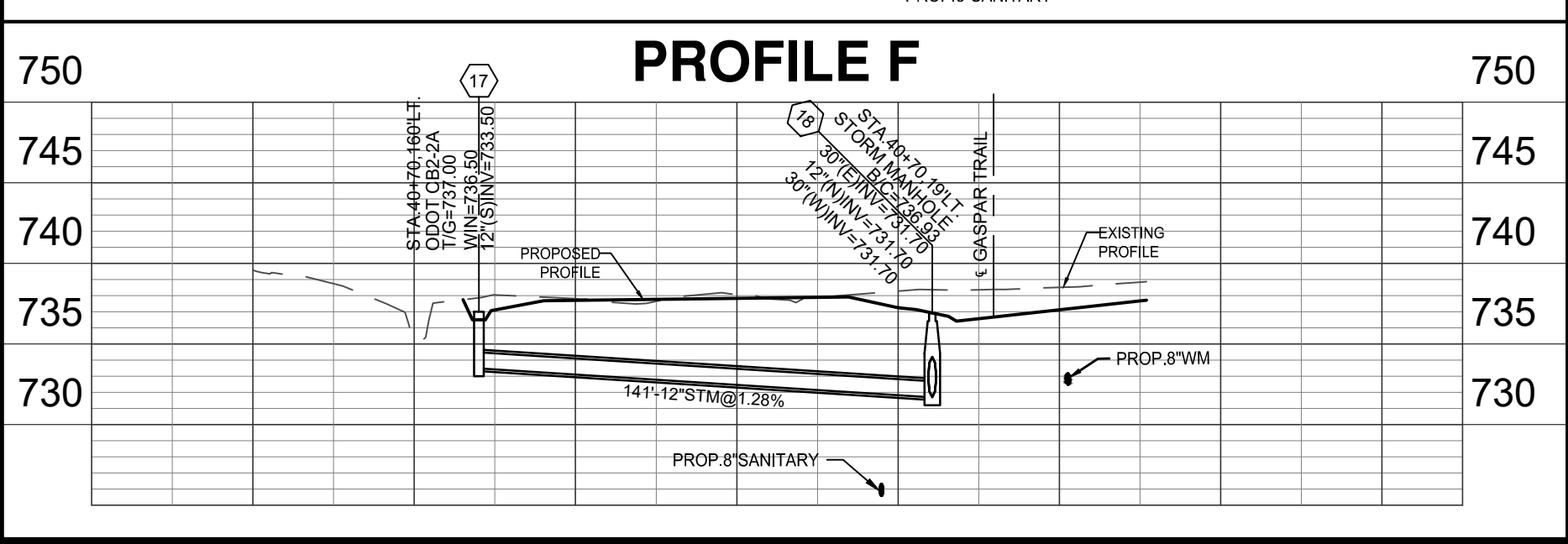
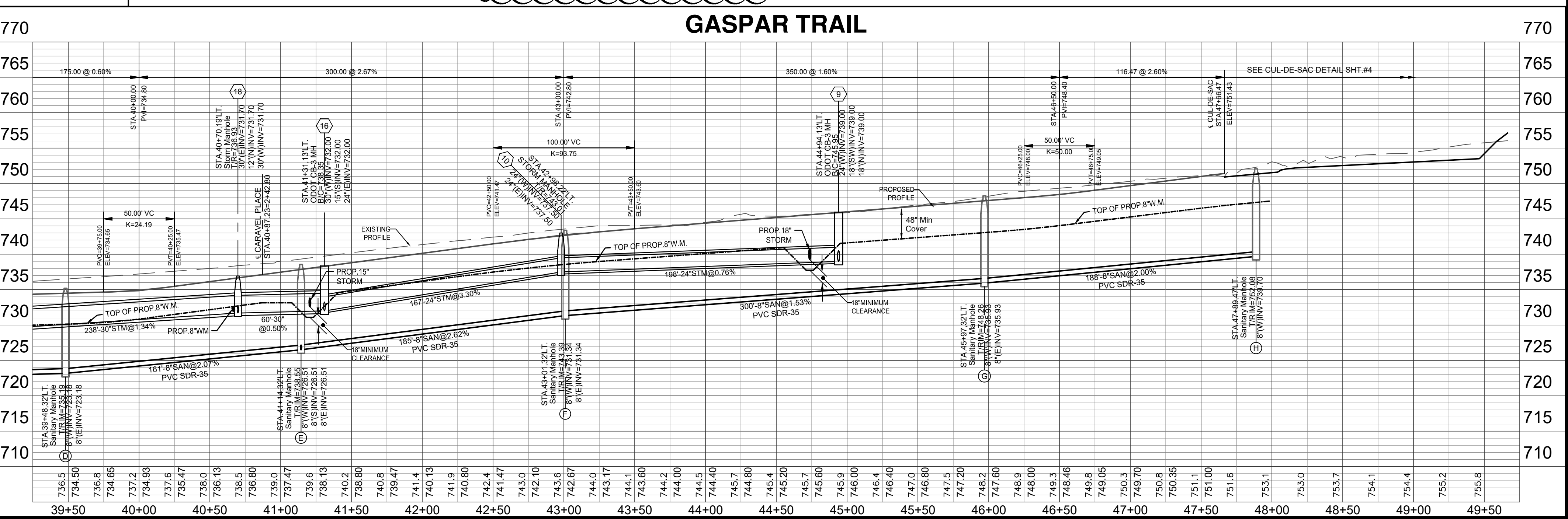
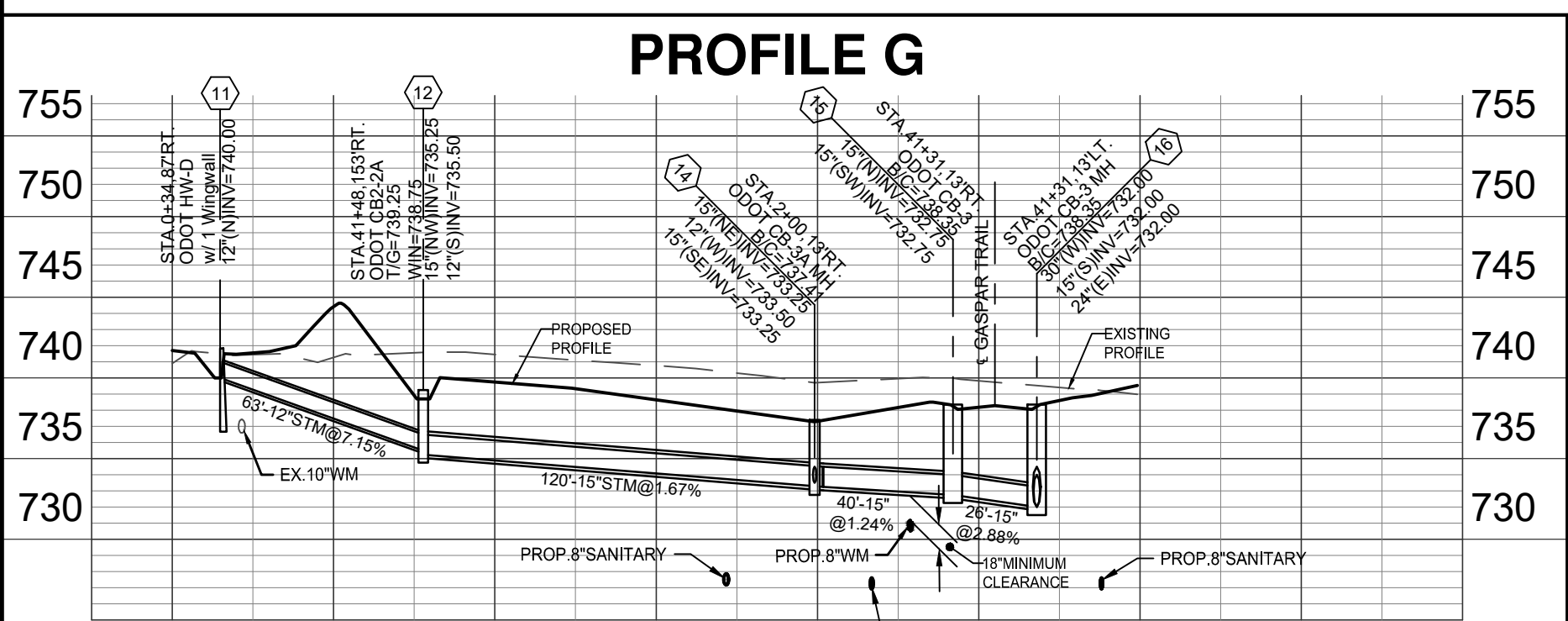
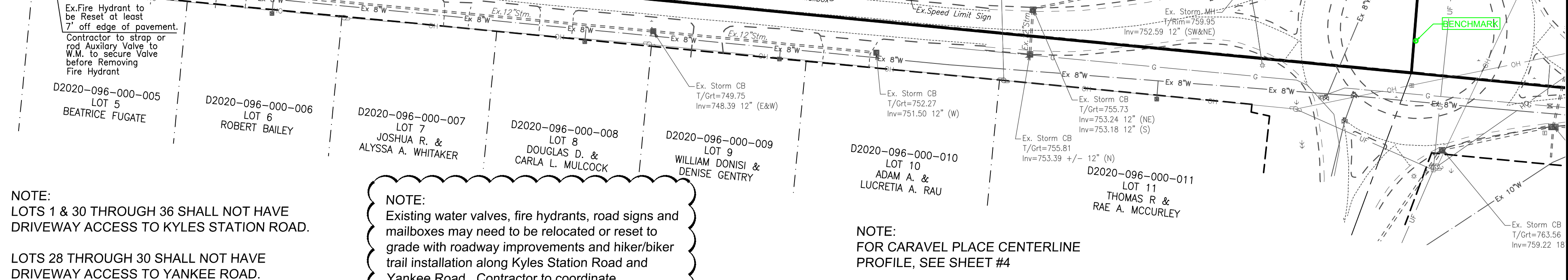
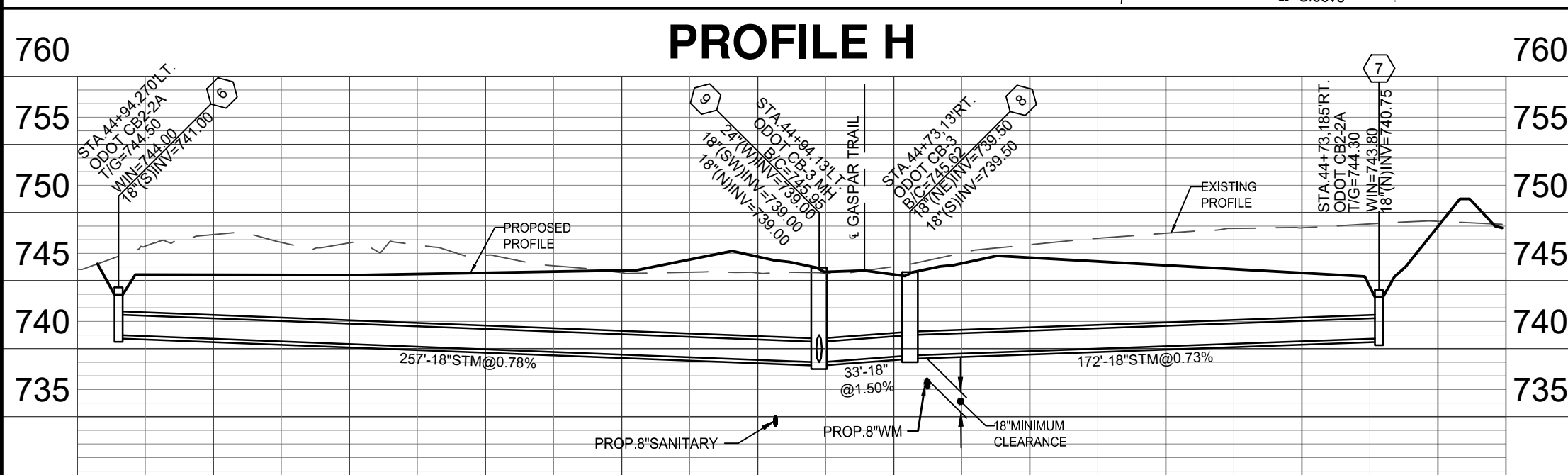
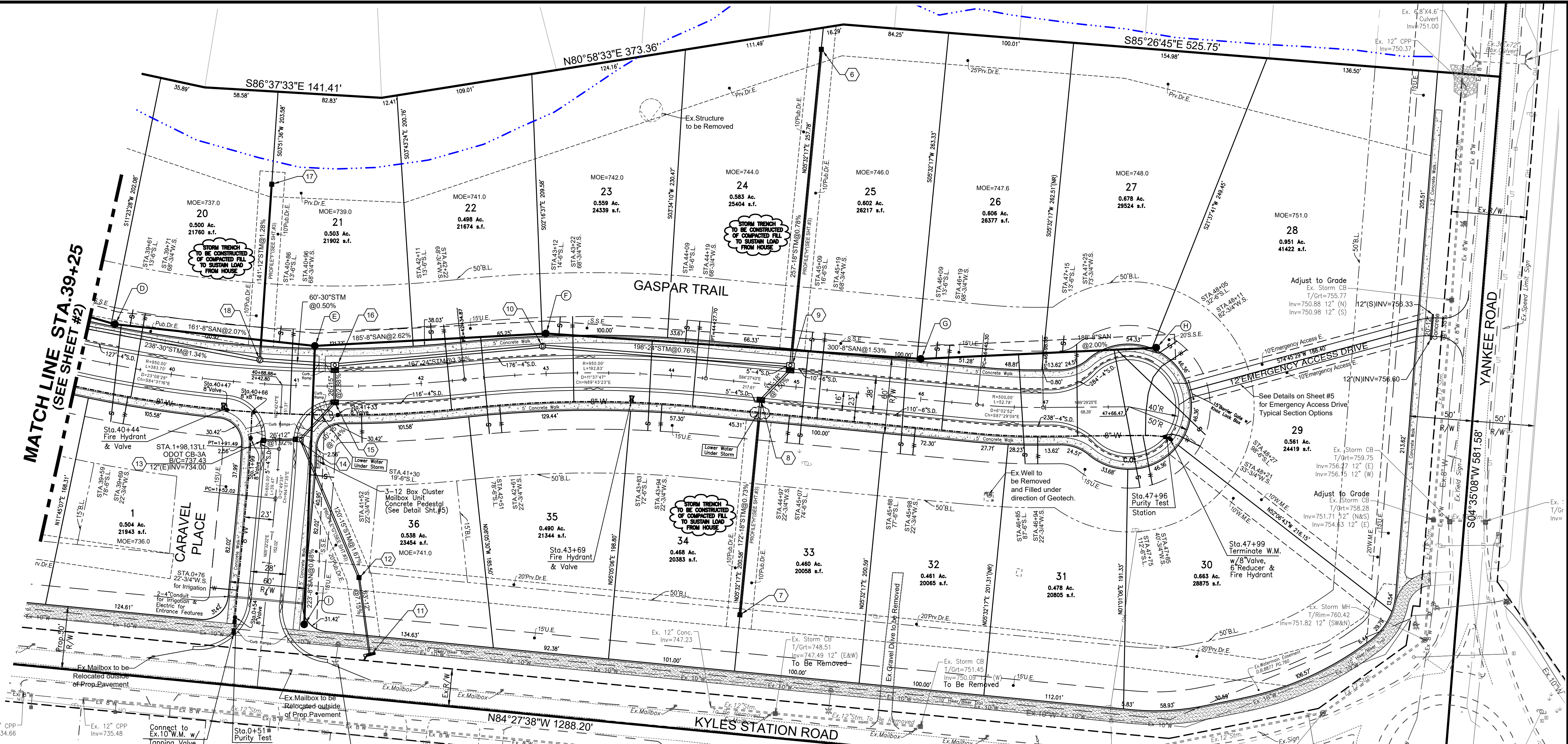
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MATCH LINE STA. 39+25 (SEE SHEET #2)



Revision Description

Date	Drawn	Checked	Item
7-1-22	TAC		1 Revised as per BCWS
			2
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CARAVEL SECTION ONE
SECTION 22, TOWN 3, RANGE 3
LIBERTY TOWNSHIP, BUTLER COUNTY, OHIO

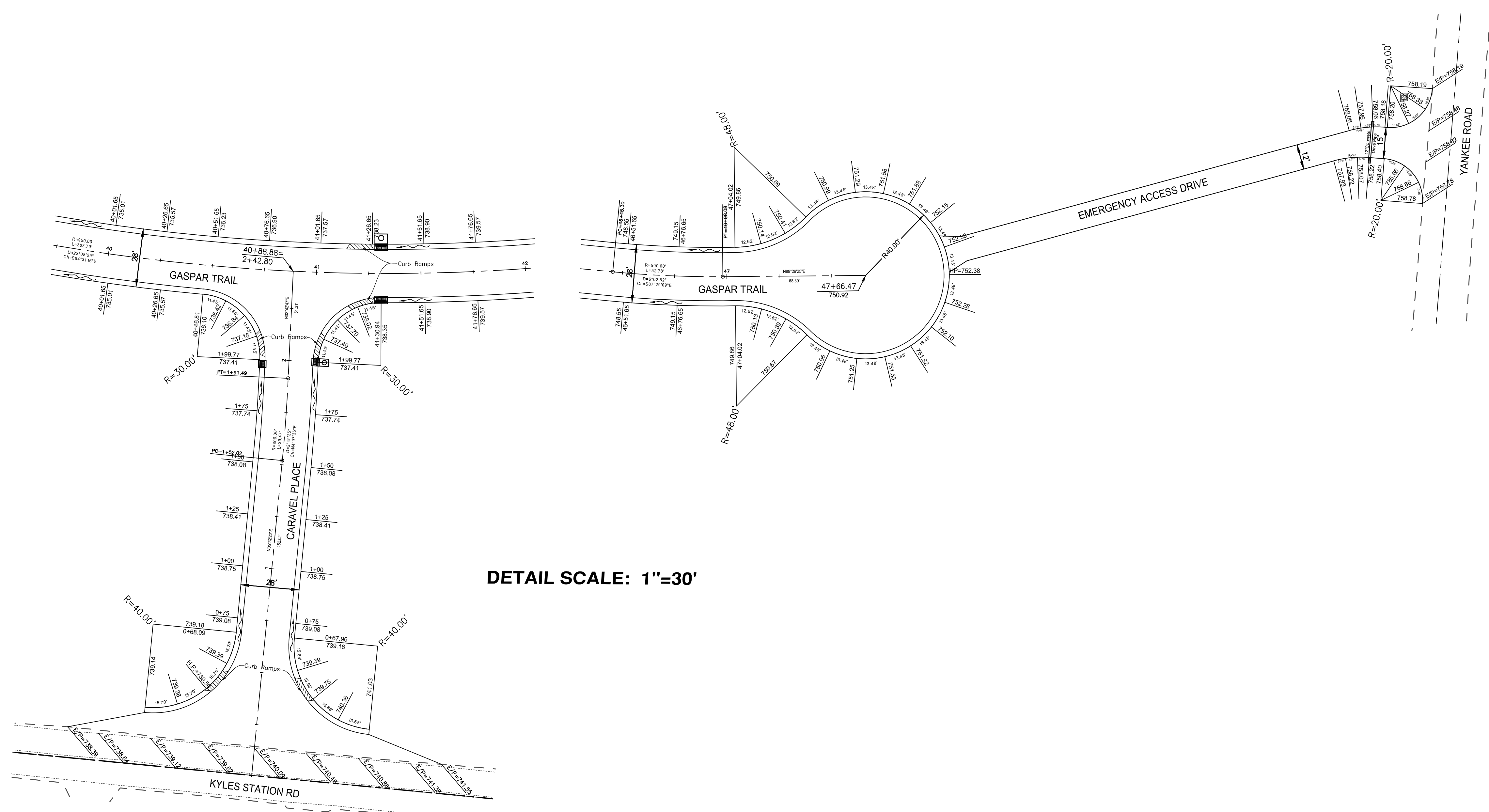


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3/11

Plot time: Jul 13, 2022 - 5:06pm
Drawing name: J:\2019\19-0168\CV\DWG\19-0168 CD.dwg - Layout Tab: 3PP

Drawing: 19-0168 CD
Drawn by: TAC
Checked by: XXX
Issue Date: 5-27-22
Sheet:



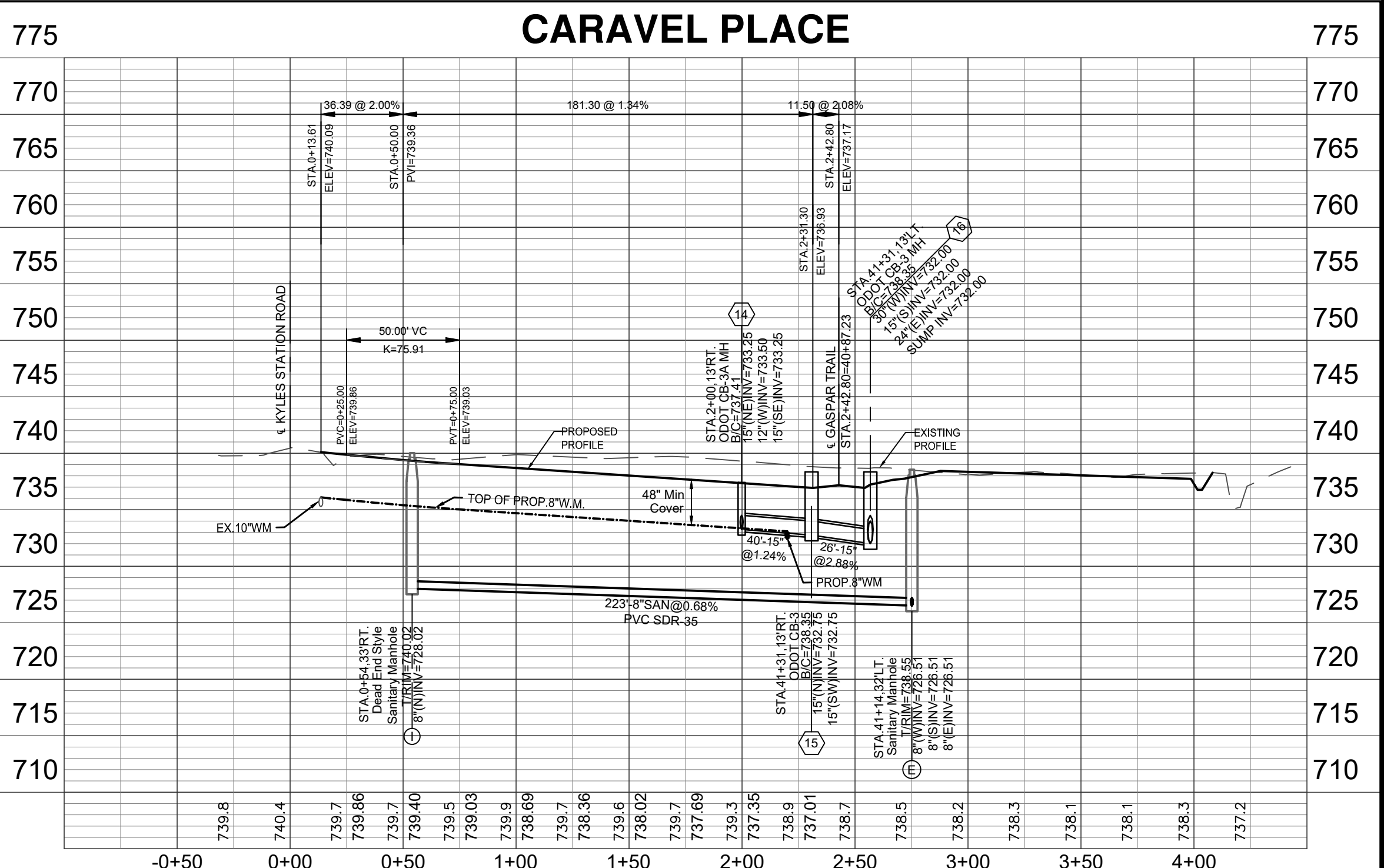
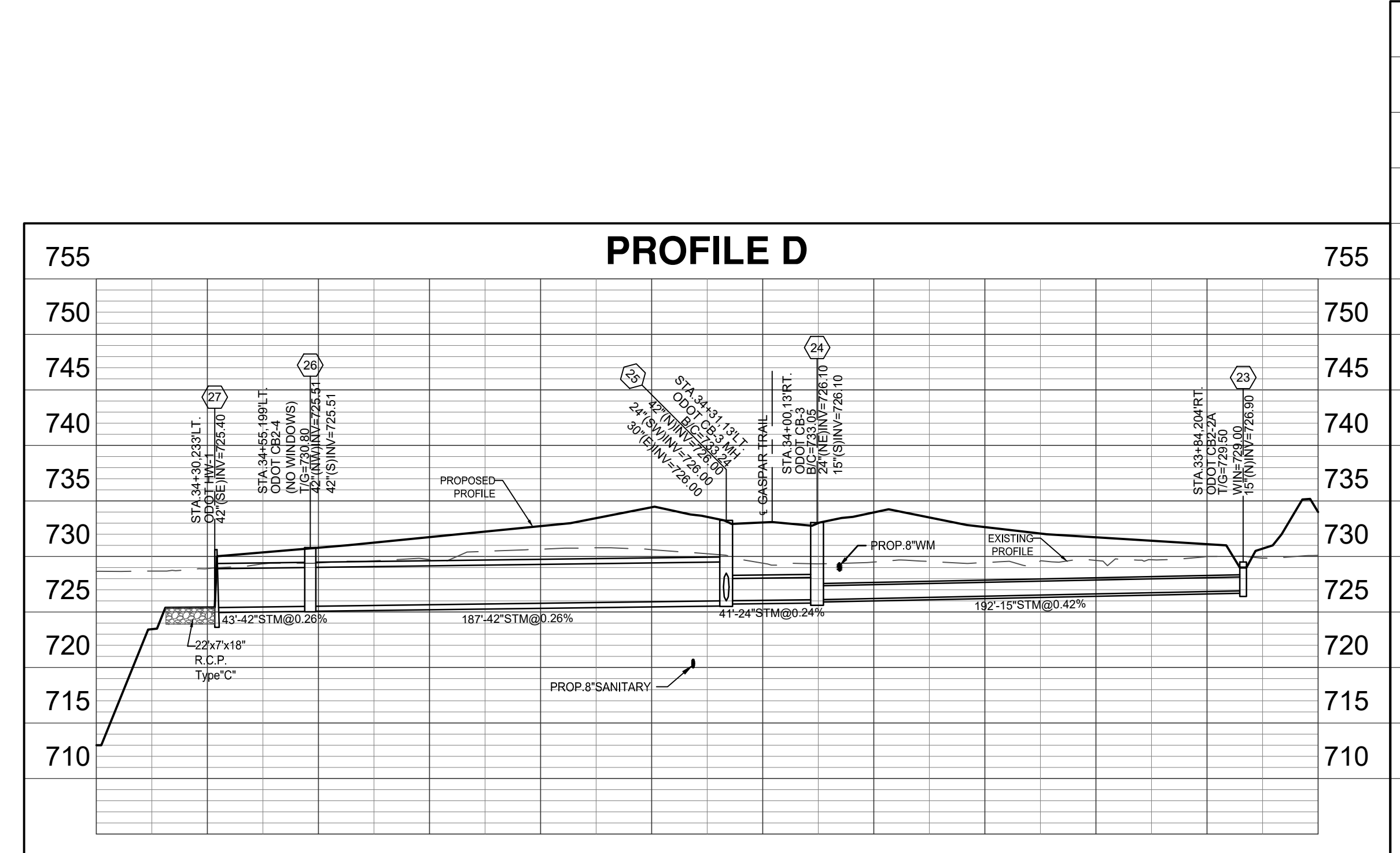
DETAIL SCALE: 1"=30'

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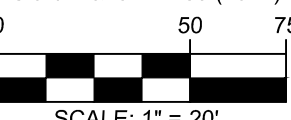
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 Drawn by: TAC
 Checked By: XXX
 Issue Date: 5-27-22
 Sheet:

CARAVEL SECTION ONE
 SECTION 22, TOWN 3, RANGE 3
 LIBERTY TOWNSHIP, BUTLER COUNTY, OHIO
PLAN & PROFILE

Item	Revision Description	Date	Drawn	Chk
1				
2				
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Basis of Bearing:
State Plane NAD83 (2011)



SCALE: 1" = 20'

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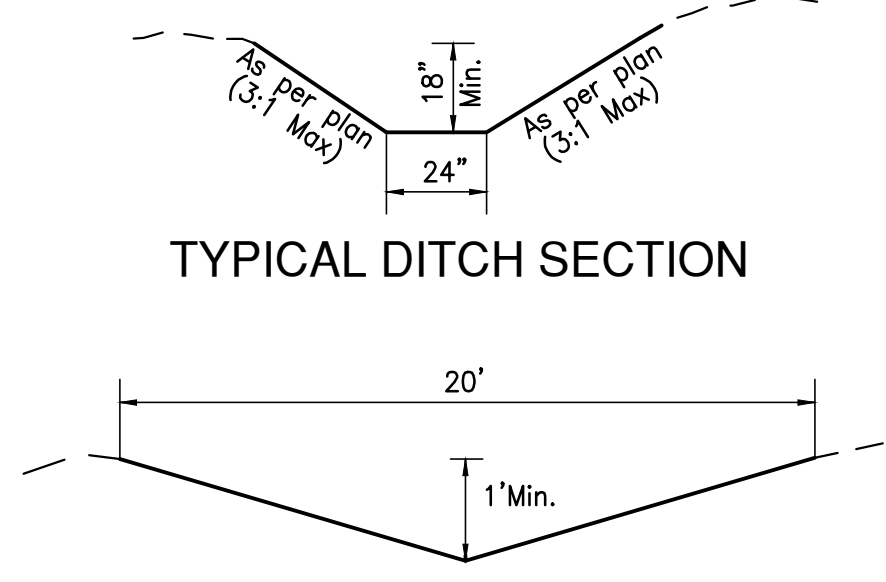
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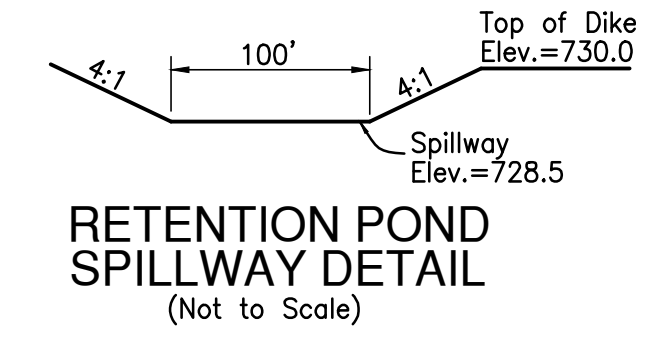
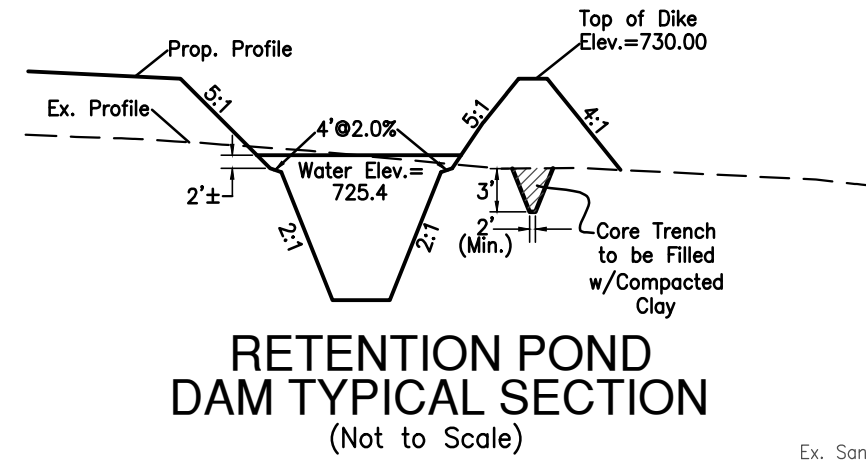
318

319</

Note: All ditches constructed by the Developer shall be sodded or hydra-seeded.



NOTE: Geotechnical Engineer to be on site during construction of Retention Basin.



[Symbol]	SOIL TYPES
[Symbol]	CLEARING LIMITS
[Symbol]	SILT FENCE OR MULCH BERM
[Symbol]	REGULATED WATERWAY OF STATE OF OHIO
[Symbol]	RIPARIAN AREA: NO DISTURBANCE PERMITTED
[Symbol]	CORE TRENCH (SEE DETAIL SHEET #6)
[Symbol]	10.5" TOPSOIL CAP
[Symbol]	WASTE FILL: DO NOT STRIP

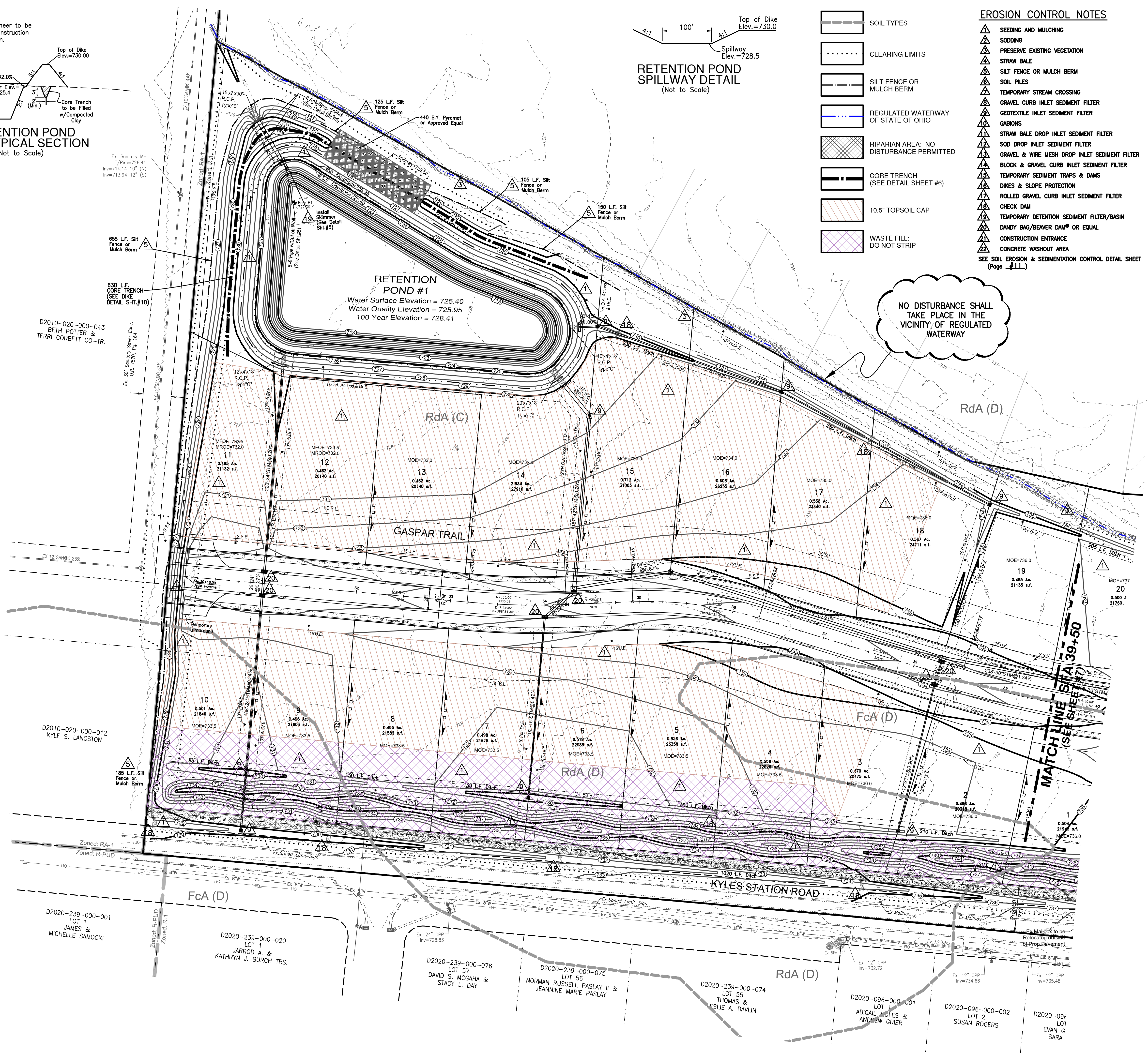
EROSION CONTROL NOTES	
[Symbol]	SEEDING AND MULCHING
[Symbol]	SODDING
[Symbol]	PRESERVE EXISTING VEGETATION
[Symbol]	STRAW BALE
[Symbol]	SILT FENCE OR MULCH BERM
[Symbol]	SOIL PILES
[Symbol]	TEMPORARY STREAM CROSSING
[Symbol]	GRAVEL CURB INLET SEDIMENT FILTER
[Symbol]	GEOTEXTILE INLET SEDIMENT FILTER
[Symbol]	GABIONS
[Symbol]	STRAW BALE DROP INLET SEDIMENT FILTER
[Symbol]	SOD DROP INLET SEDIMENT FILTER
[Symbol]	GRAVEL & WIRE MESH DROP INLET SEDIMENT FILTER
[Symbol]	BLOCK & GRAVEL CURB INLET SEDIMENT FILTER
[Symbol]	TEMPORARY SEDIMENT TRAPS & DAMS
[Symbol]	DIKES & SLOPE PROTECTION
[Symbol]	ROLLED GRAVEL CURB INLET SEDIMENT FILTER
[Symbol]	CHECK DAM
[Symbol]	TEMPORARY DETENTION SEDIMENT FILTER/BASIN
[Symbol]	DANDY BAG/BEAVER DAM OR EQUAL
[Symbol]	CONSTRUCTION ENTRANCE
[Symbol]	CONCRETE WASHOUT AREA
SEE SOIL EROSION & SEDIMENTATION CONTROL DETAIL SHEET (Page #11)	

PROJECT DATA		
Total Area	27.70 Ac.	
Sediment Basin Calculations:		
Drainage Area	24.67 Ac.	
Disturbed Tributary Area	24.67 Ac.	
Required Sediment Storage	0.57 Ac./FT.	
Required Dewatering Storage	2.10 Ac./FT.	
Water Quality Volume Required	0.58 Ac./FT.	
Estimated Proposed Impervious Area	7.23 Ac.(26%)	
Pre-Developed Runoff Coefficient	0.32	
Post-Developed Runoff Coefficient	0.50	
Immediate Receiving Waters	Unnamed Tributary to Panther Run Creek	
Subsequent Receiving Waters	Panther Run Creek	
SOIL TYPES		
Symbol	Name	Type
FcA	Fincastle silt loam 0 to 2 percent slopes	D
RdA	Raub silt loam 0 to 2 percent slopes	C
RdB	Raub silt loam 2 to 6 percent slopes	C
XeB	Xenia silt loam, 2 to 6 percent slopes	C
XeB2	Xenia silt loam, 2 to 6 percent slopes, moderately eroded	D

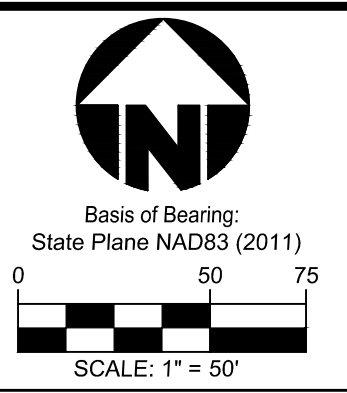
NOTE: The Temporary Sediment Basins are to be cleaned out in accordance with the Rainwater and Land Development Manual and Butler County standards.

- 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 fourteen (14) 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.
 - Contractors to accept all quantities as correct prior to beginning construction.

- GRADING NOTES**
- LOCATION OF EXISTING UTILITIES TO BE DETERMINED IN THE FIELD PRIOR TO BEGINNING WORK.
 - CONTRACTOR SHALL OBTAIN A COPY OF THE COMPLETE GEOTECHNICAL REPORT PRIOR TO BIDDING THE PROJECT.
 - CONTRACTORS SHALL SET UP AN ONSITE PRE-CONSTRUCTION MEETING WITH THE BUTLER COUNTY STORM WATER DISTRICT/BCDO, DEVELOPER, PROJECT GEOTECHNICAL ENGINEER, EARTHWORK CONTRACTOR, AND SITE CIVIL ENGINEER PRIOR TO BEGINNING CONSTRUCTION.
 - CONTRACTOR SHALL ASSUME THE TOP 5" OF EXISTING GROUND IS TOPSOIL. TOPSOIL REMOVED TO DEPTHS GREATER THAN 5" SHALL BE DONE ONLY AFTER CONSULTATION WITH THE PROJECT GEOTECHNICAL ENGINEER AND APPROVAL OF THE DEVELOPER.
 - ALL EARTHWORK AND CONSTRUCTION ACTIVITY SHALL BE PERFORMED PER THE RECOMMENDATIONS OF THE PROJECT GEOTECHNICAL ENGINEER AS DESCRIBED IN THE GEOTECHNICAL EXPLORATION REPORT AND ALL ADDENDUMS.
 - CONTRACTOR SHALL VERIFY ALL EARTHWORK QUANTITIES PRIOR TO AWARD OF CONTRACT. PAY QUANTITIES ARE FINAL EXCEPT FOR DOCUMENTED UNDERCUT APPROVED BY DEVELOPER PRIOR TO COMPLETION OF THE EXTRA WORK. UPON REQUEST, CONTRACTORS MAY HAVE ACCESS TO THE SITE TO FIELD CHECK TOPOGRAPHY.
 - THE AREAS LABELED DENSE VEGETATION ARE WHERE THE EXISTING GROUND WAS OBSCURED FROM VIEW BY EXISTING VEGETATION. THE EXISTING CONTOURS SHOWN IN THIS AREA MAY VARY.



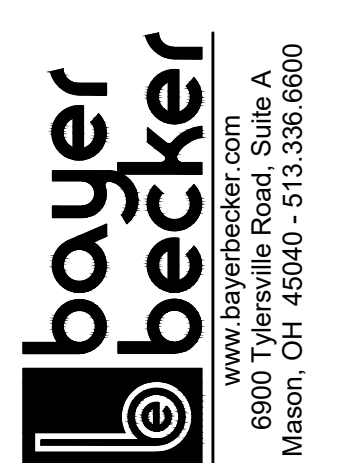
NO DISTURBANCE SHALL TAKE PLACE IN THE VICINITY OF REGULATED WATERWAY



Date	Drawn	Chk
7-13-22	TAC	

Item	Revision Description
1	Revised as per BCDO
2	
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CARAVEL SECTION ONE
SECTION 22, TOWN 3, RANGE 3
LIBERTY TOWNSHIP, BUTLER COUNTY, OHIO
GRADING PLAN



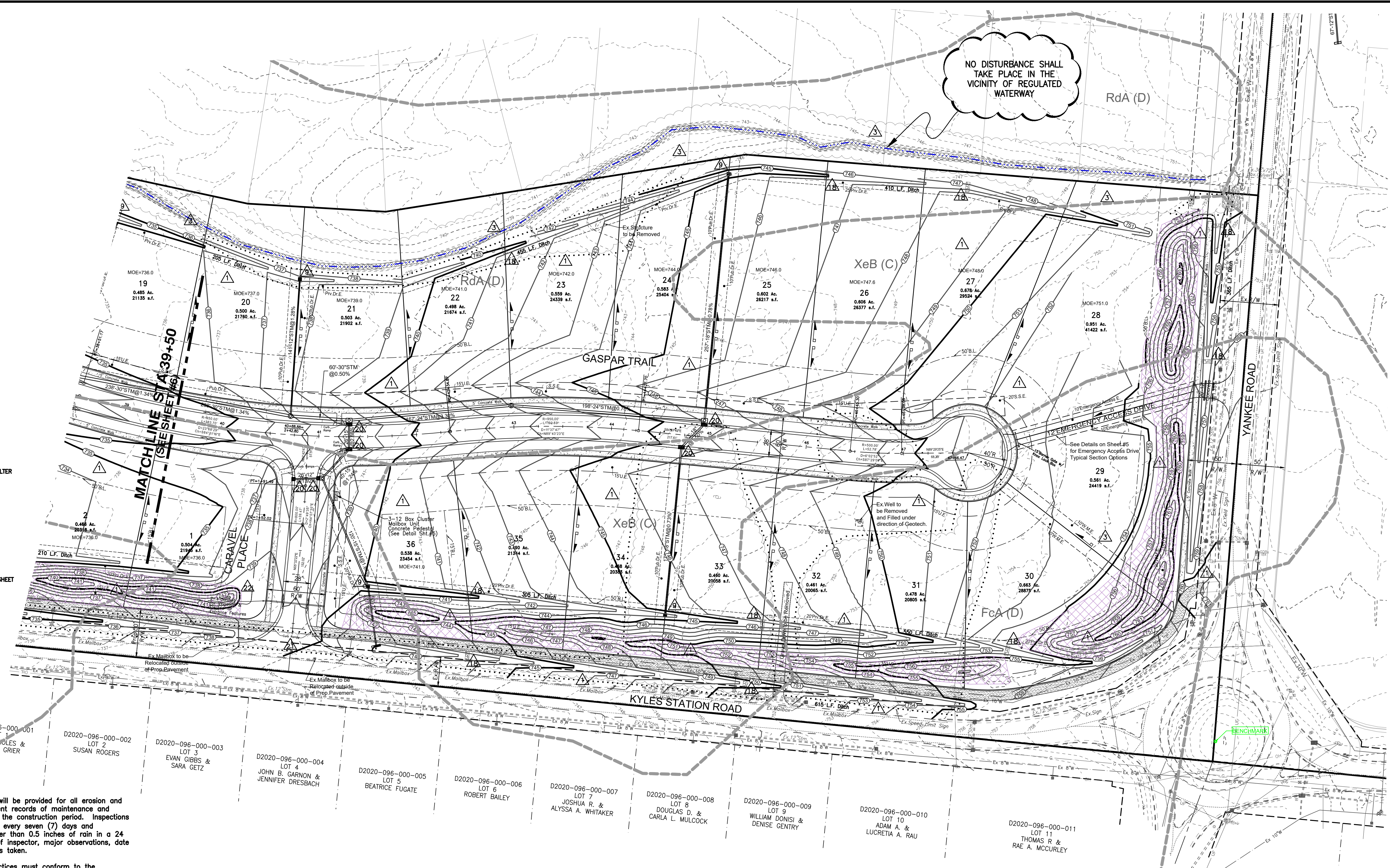
Drawing:	19-0168 CD
Drawn by:	TAC
Checked by:	XXX
Issue Date:	5-27-22

6/11

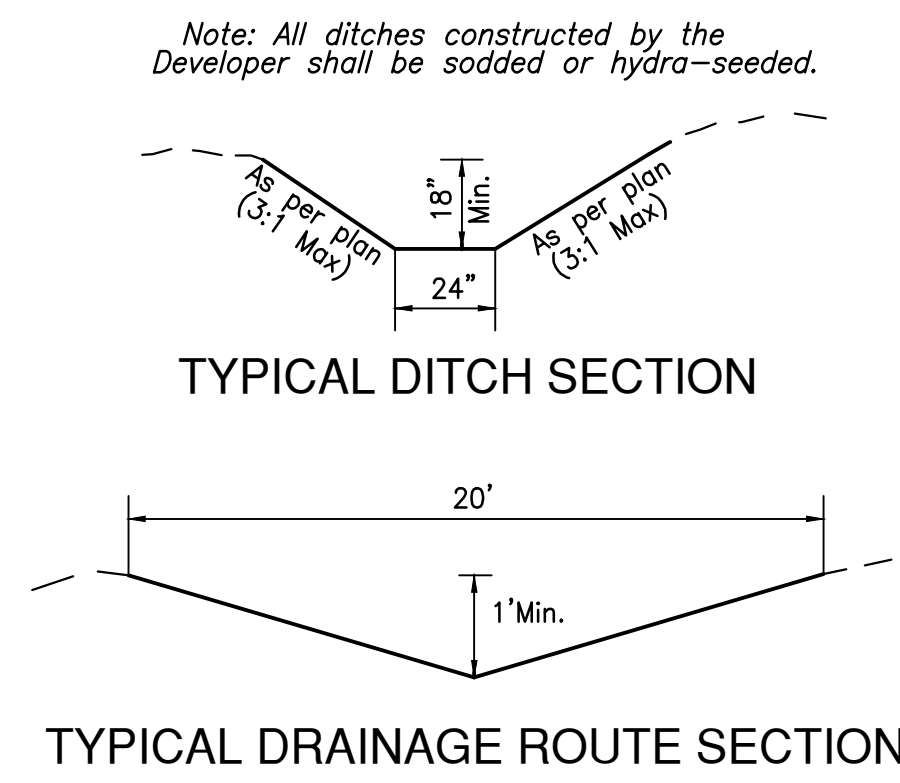
- SOIL TYPES
- CLEARING LIMITS
- SILT FENCE OR MULCH BERM
- REGULATED WATERWAY OF STATE OF OHIO
- RIPARIAN AREA: NO DISTURBANCE PERMITTED
- CORE TRENCH (SEE DETAIL SHEET #6)
- 10.5" TOPSOIL CAP
- WASTE FILL: DO NOT STRIP

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
 - GRAVEL & 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
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 - CONSTRUCTION ENTRANCE
 - CONCRETE WASHOUT AREA
- SEE SOIL EROSION & SEDIMENTATION CONTROL DETAIL SHEET (Page #11)



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 - 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 fourteen (14) 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.
 - Contractors to accept all quantities as correct prior to beginning construction.



North Arrow
 Basis of Bearing: State Plane NAD83 (2011)
 Scale: 1" = 50'

Date	Drawn	Chk

Item	Revision Description
1	
2	
3	
4	
5	
6	
7	
8	
9	

CARAVEL SECTION ONE
 SECTION 22, TOWN 3, RANGE 3
 LIBERTY TOWNSHIP, BUTLER COUNTY, OHIO
 GRADING PLAN

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

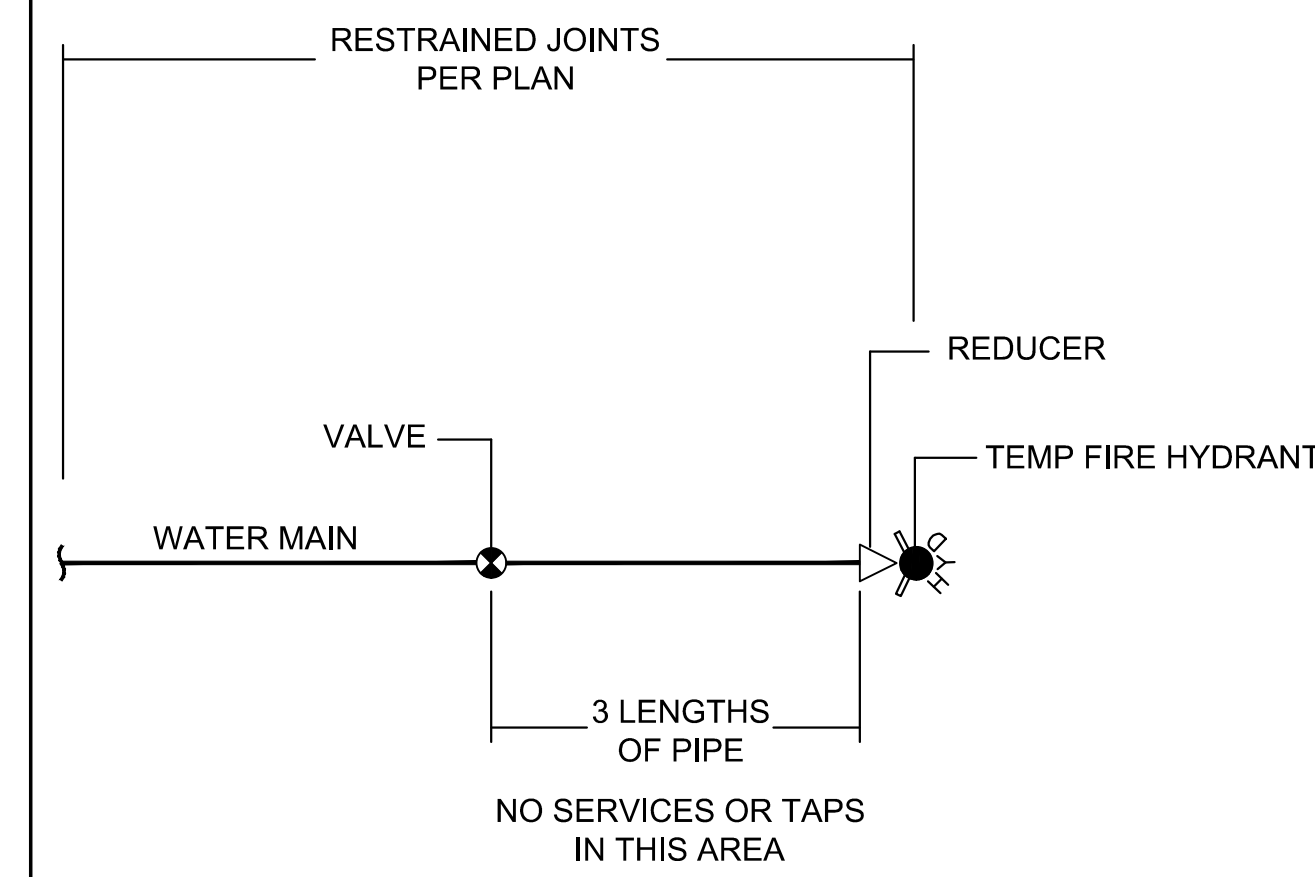
Drawing:	19-0168 CD
Drawn by:	TAC
Checked by:	XXX
Issue Date:	5-27-22

Sheet: **7/11**

Plot time: Jul 13, 2022 - 5:07pm
 Drawing name: J:\2019\19-0168\CD\DWG\19-0168 CD.dwg - Layout Tab: 7GR

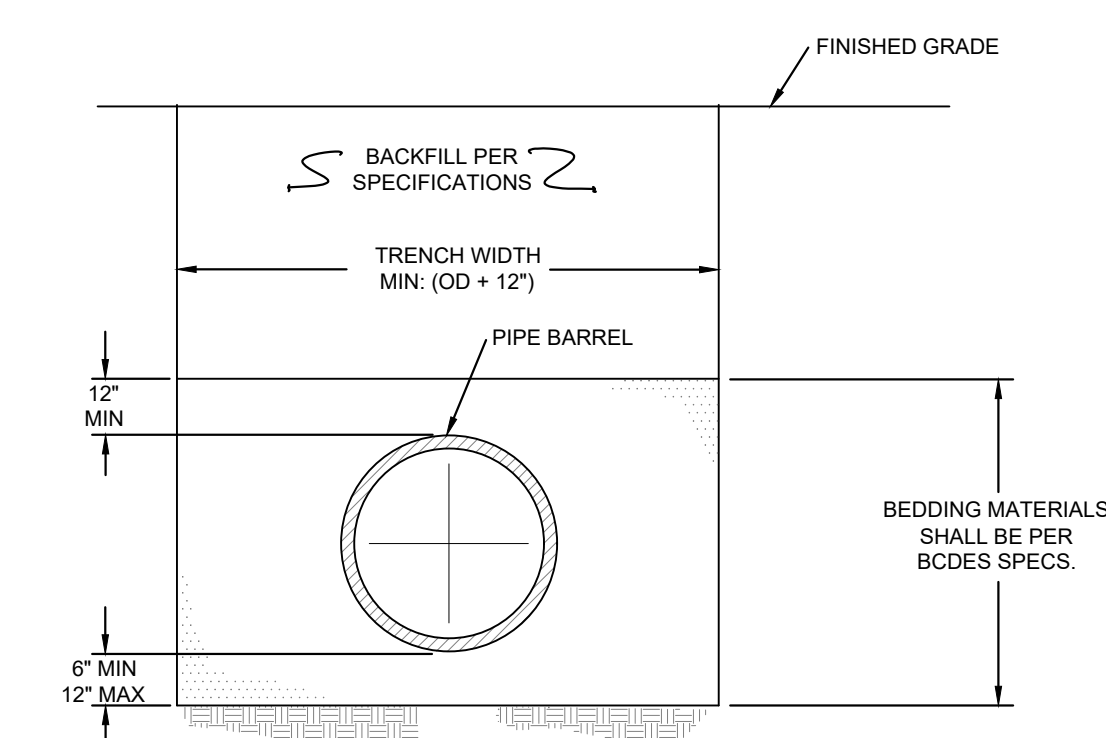
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Plot time: May 26, 2022 4:21pm
 Drawing name: K:\OLD-K\Mason\FF BLOCKS\DETAILS\BUTLER\BC WAT.DWG - Layout Tab: WAT



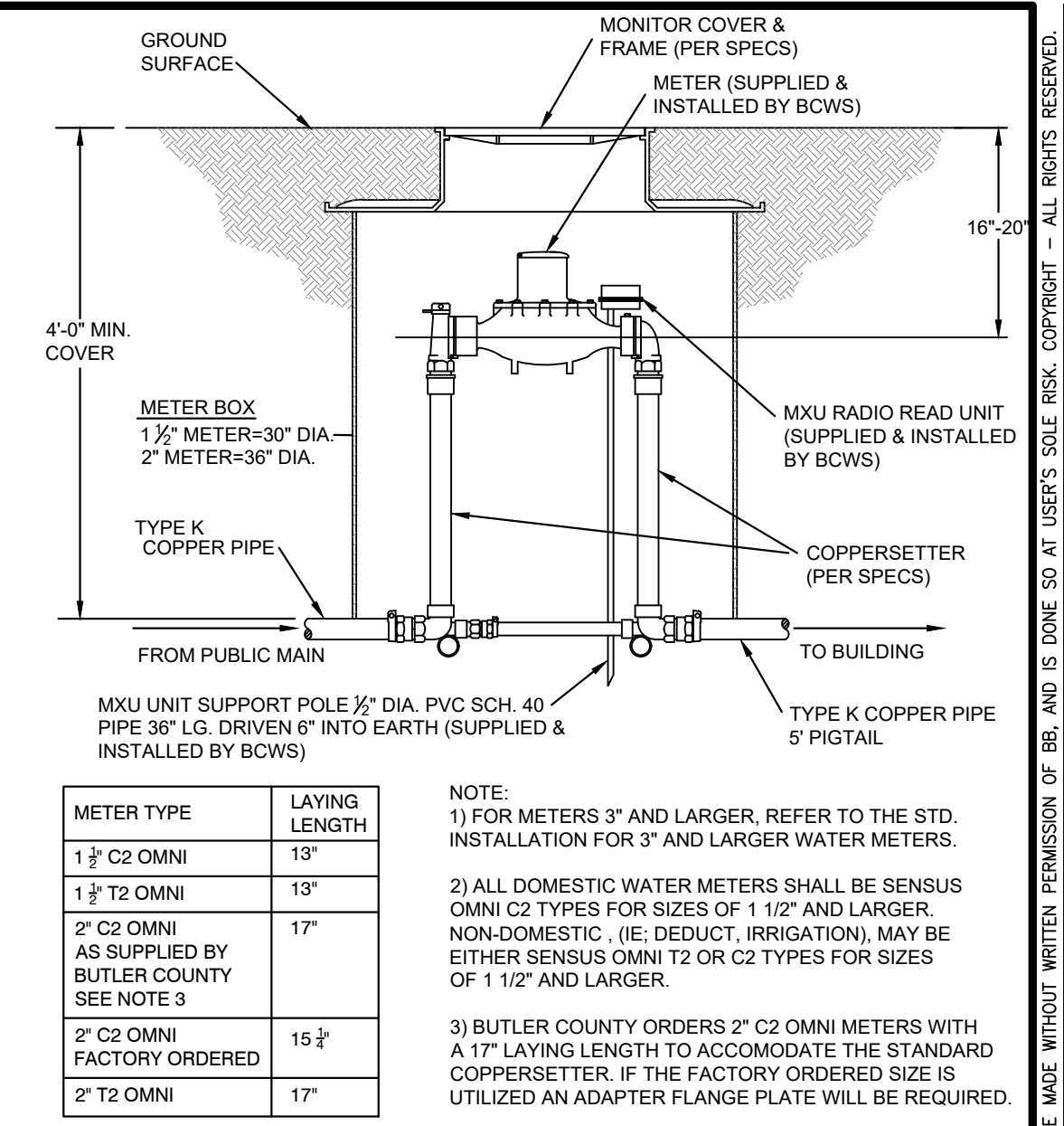
DEAD END DETAIL WITH TEMPORARY FIRE HYDRANT

5140



TYPICAL TRENCH DETAIL WATER MAIN INSTALLATION

5280

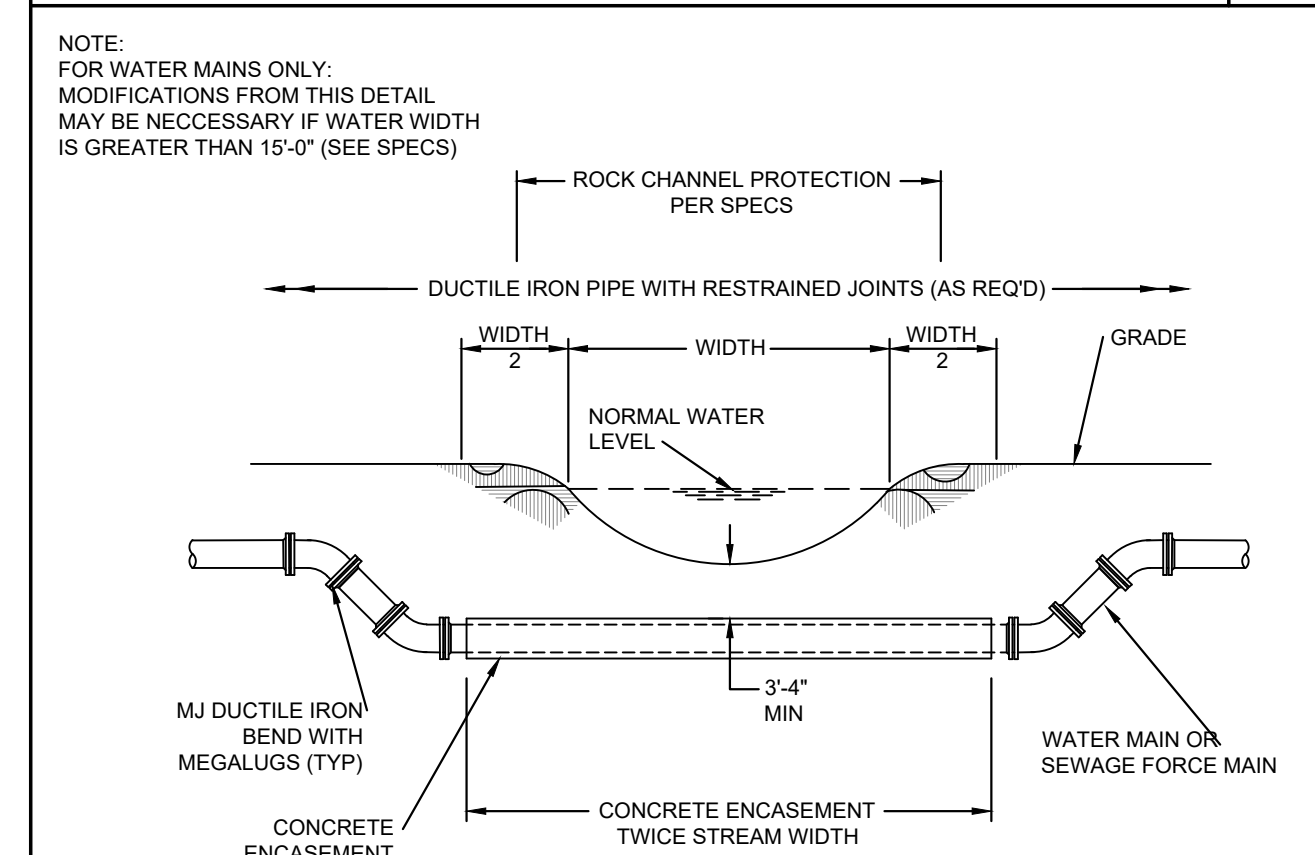


METER TYPE	LAYING LENGTH
1 1/2" C2 OMNI	13'
1 1/2" T2 OMNI	13'
2" C2 OMNI AS SUPPLIED BY BUTLER COUNTY SEE NOTE 3	17'
2" C2 OMNI FACTORY ORDERED	15 1/2'
2" T2 OMNI	17'

NOTE:
 1) FOR METERS 3" AND LARGER, REFER TO THE STD. INSTALLATION FOR 3" AND LARGER WATER METERS.
 2) ALL DOMESTIC WATER METERS SHALL BE SENSUS OMNI C2 TYPES FOR SIZES OF 1 1/2" AND LARGER. NON-DOMESTIC (I.E. DEDUCT, IRRIGATION), MAY BE EITHER SENSUS OMNI T2 OR C2 TYPES FOR SIZES OF 1 1/2" AND LARGER.
 3) BUTLER COUNTY ORDERS 2" C2 OMNI METERS WITH A 17' LAYING LENGTH TO ACCOMMODATE THE STANDARD COPPERSETTER. IF THE FACTORY ORDERED SIZE IS UTILIZED AN ADAPTER FLANGE PLATE WILL BE REQUIRED.

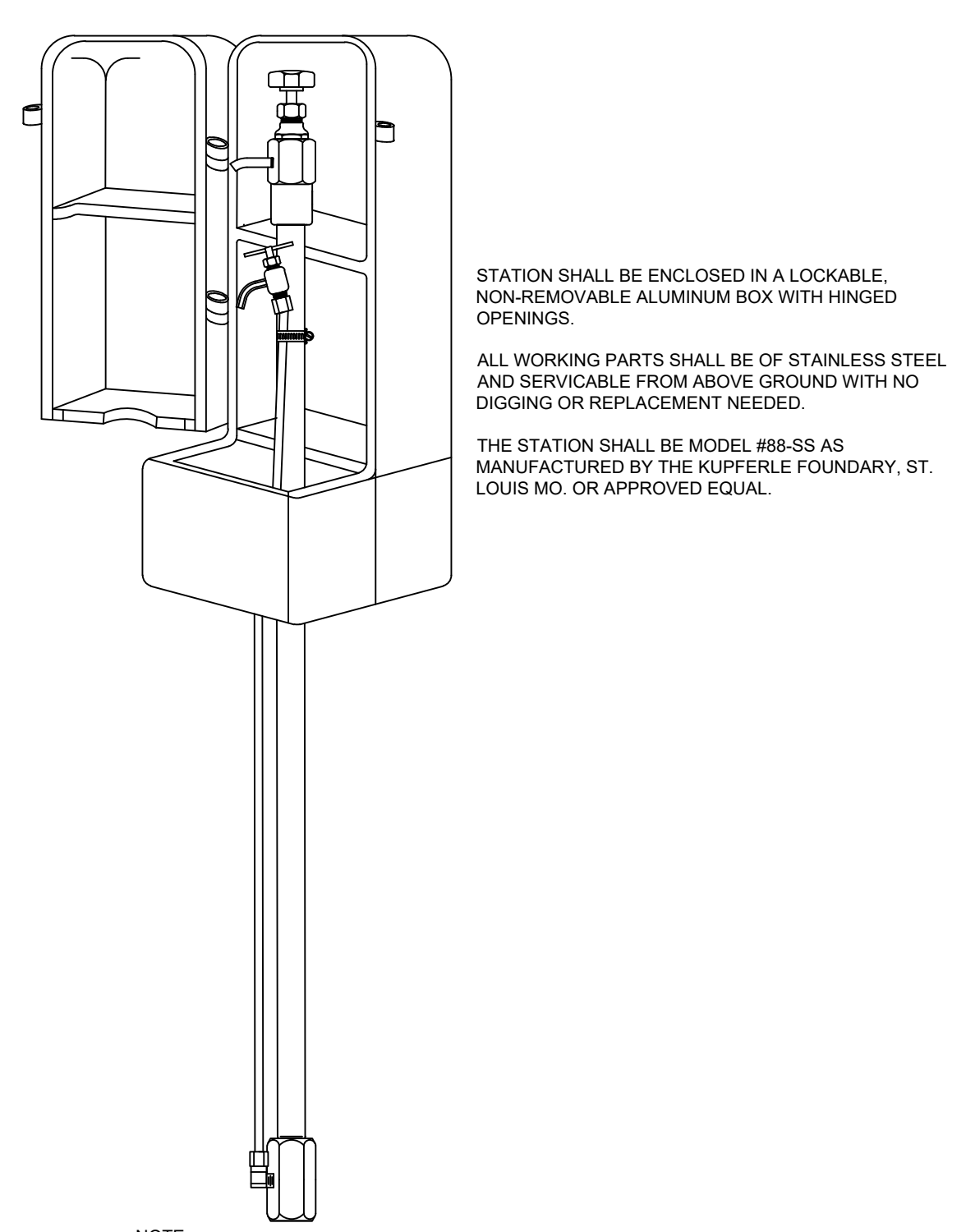
STANDARD INSTALLATION FOR 1-1/2" & 2" WATER METER SETTINGS

5170



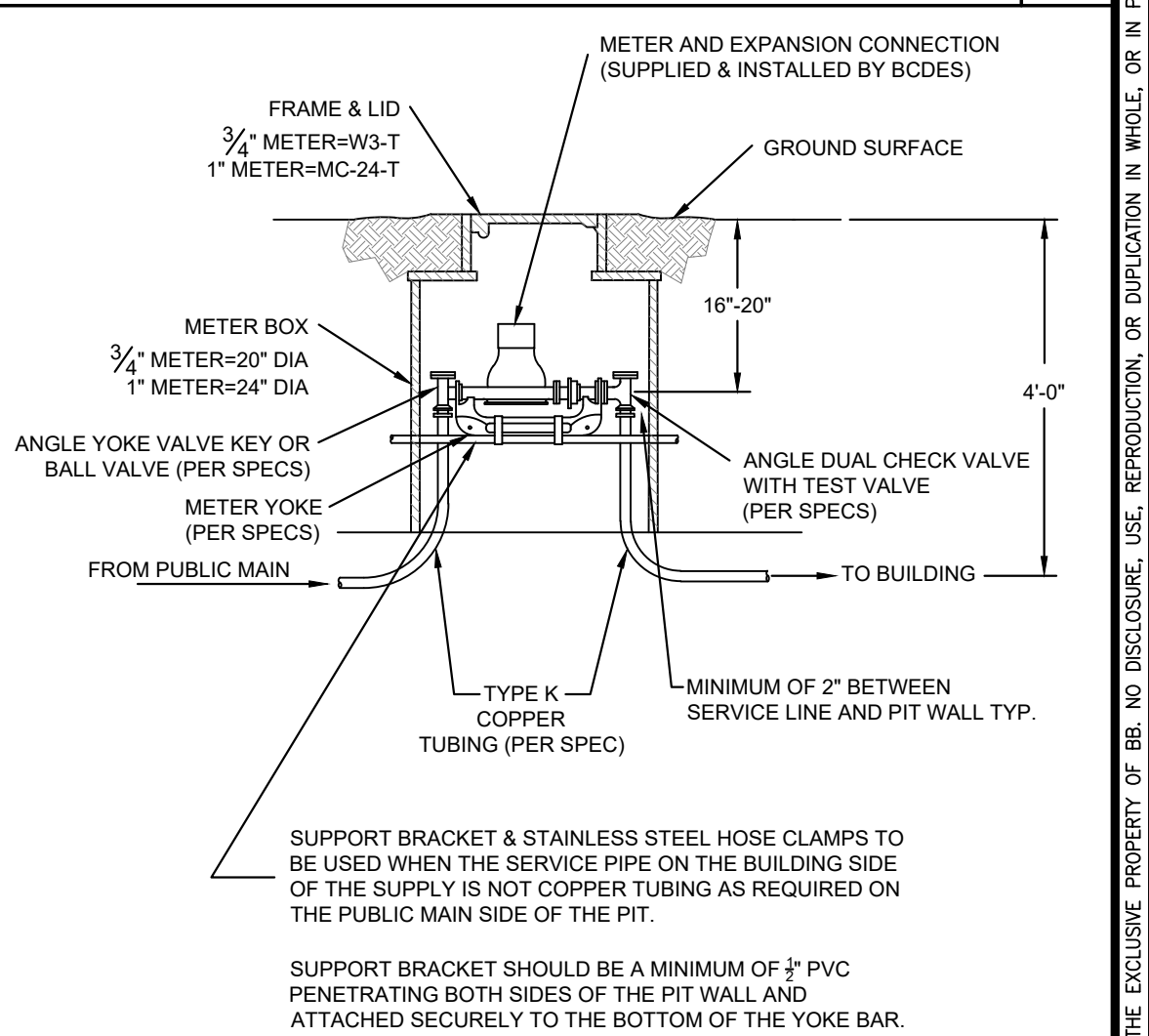
TYPICAL CREEK CROSSING & TRENCH DETAIL FOR WATER & SEWER FORCE MAINS

4170



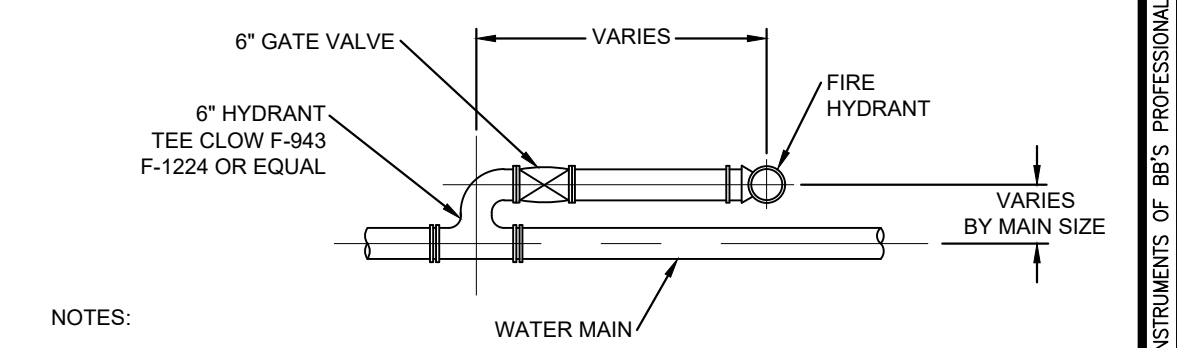
PERMANENT LAB SAMPLING STATION

5270



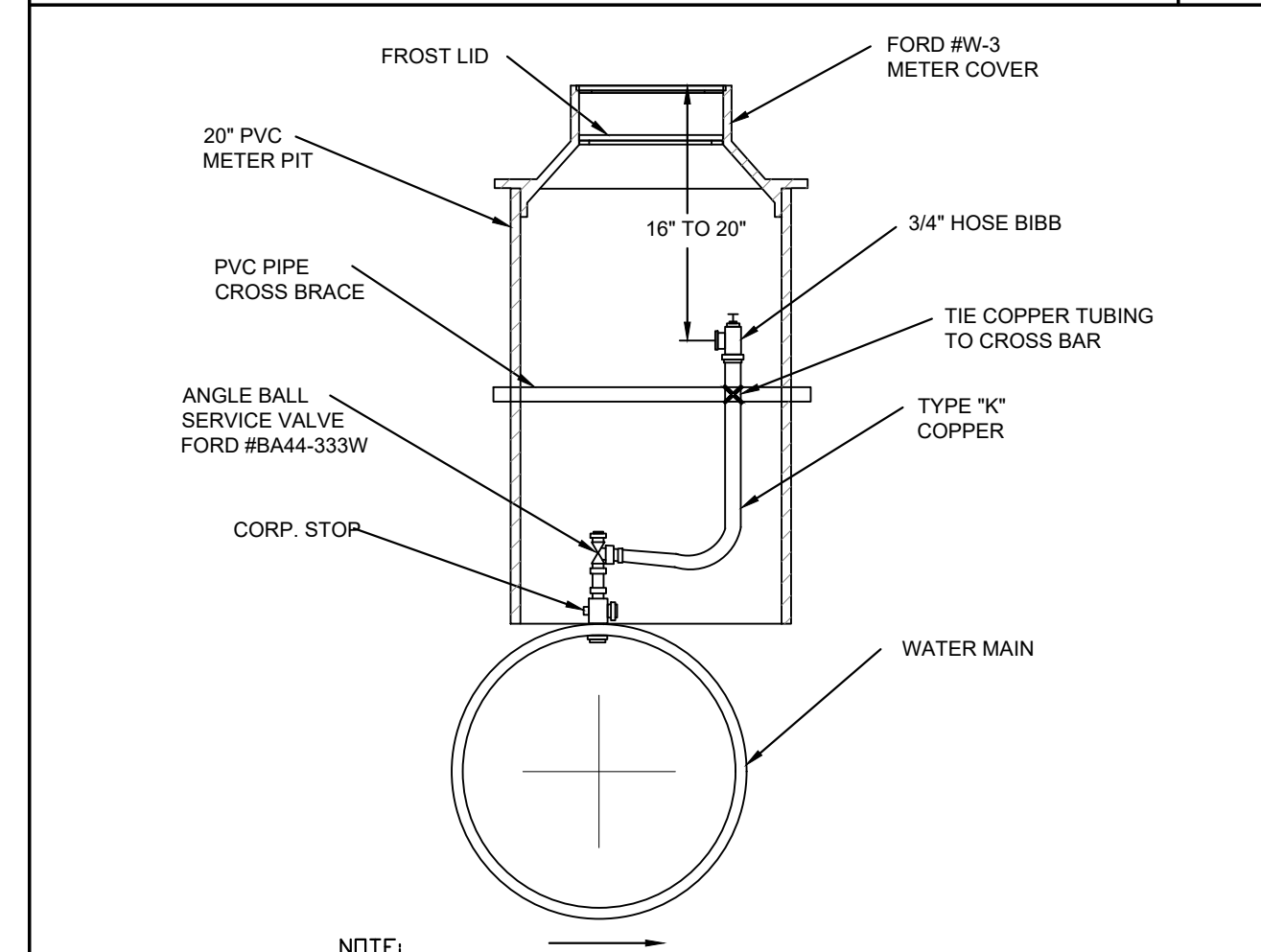
STANDARD INSTALLATION FOR 3/4" AND 1" WATER METER SETTINGS

5150



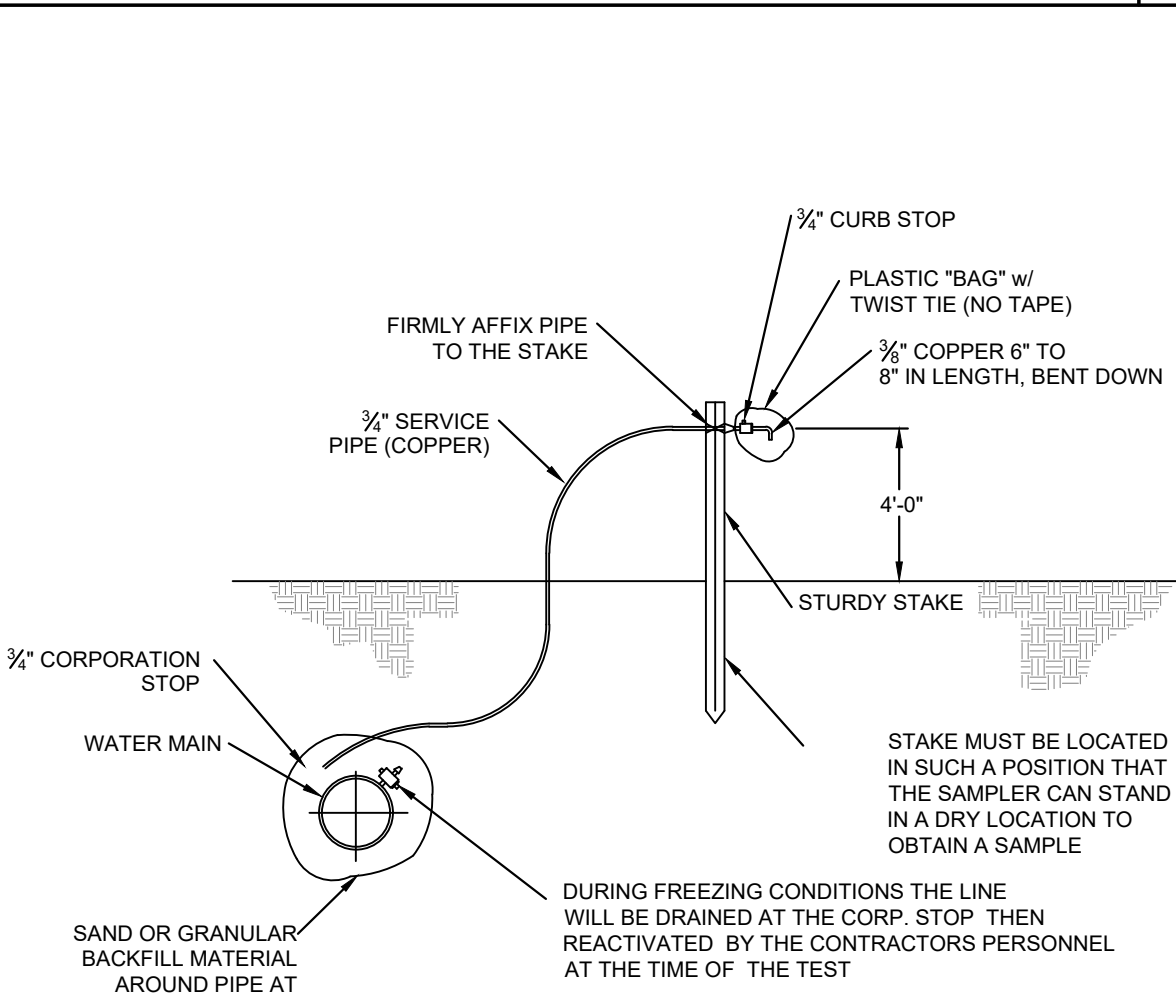
SETTING FOR HYDRANT ADJACENT TO MAIN

5120



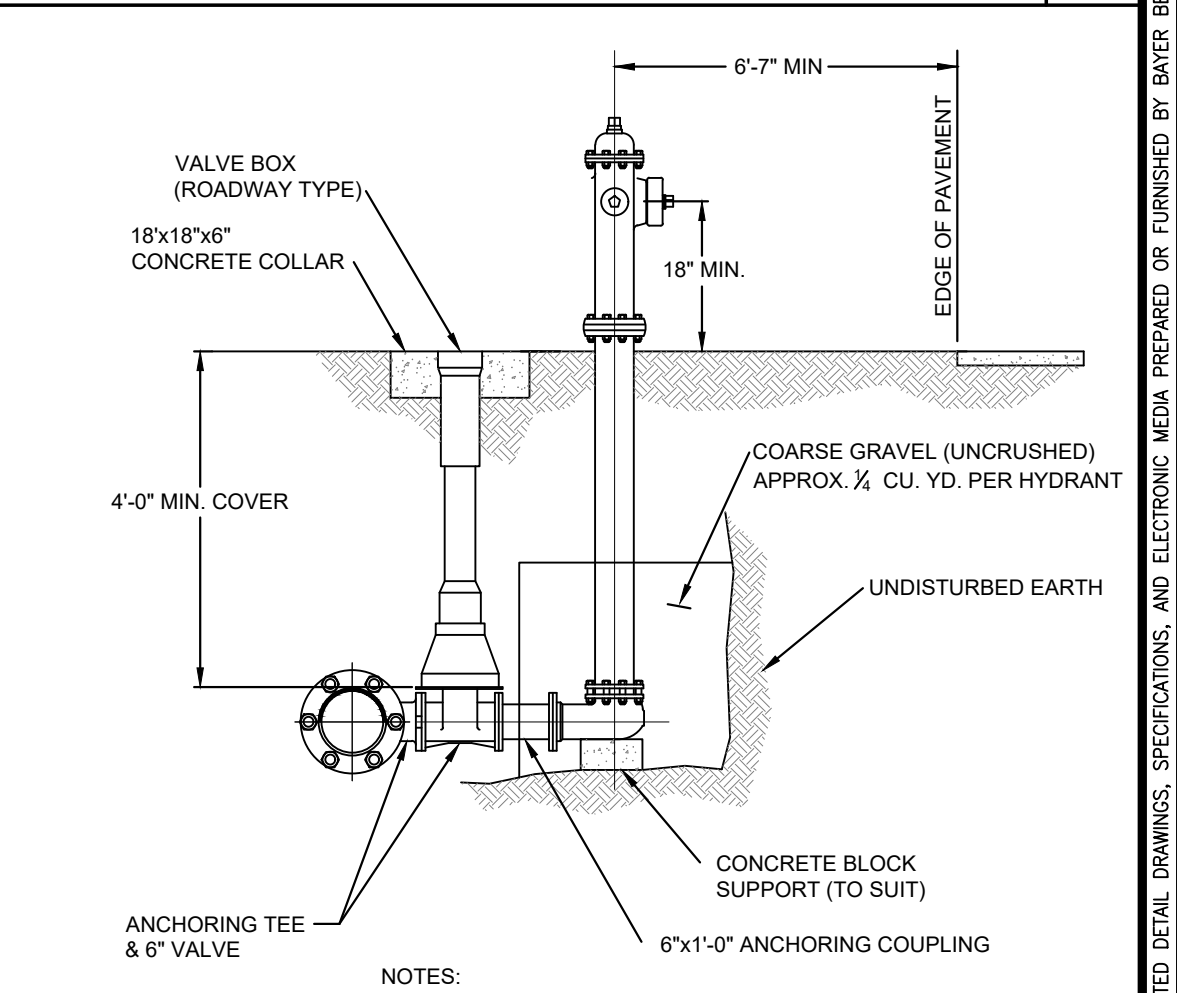
AIR RELEASE VALVE DETAIL

5290



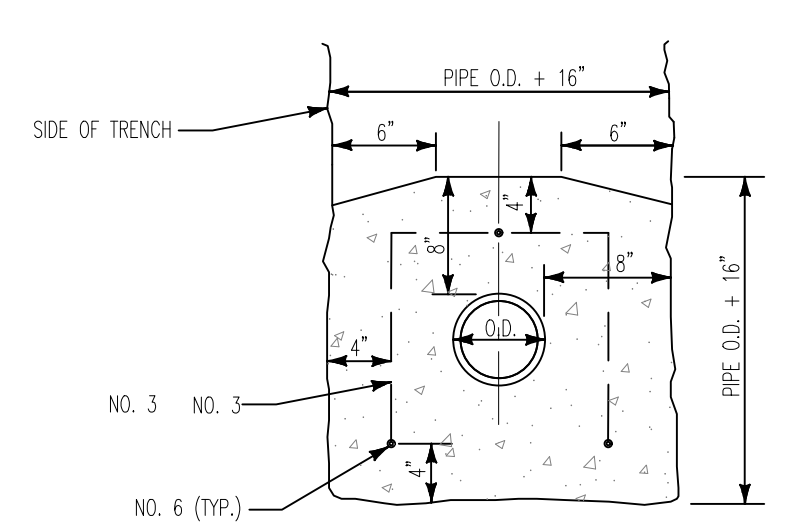
TEMPORARY PURITY TEST STATION

5260

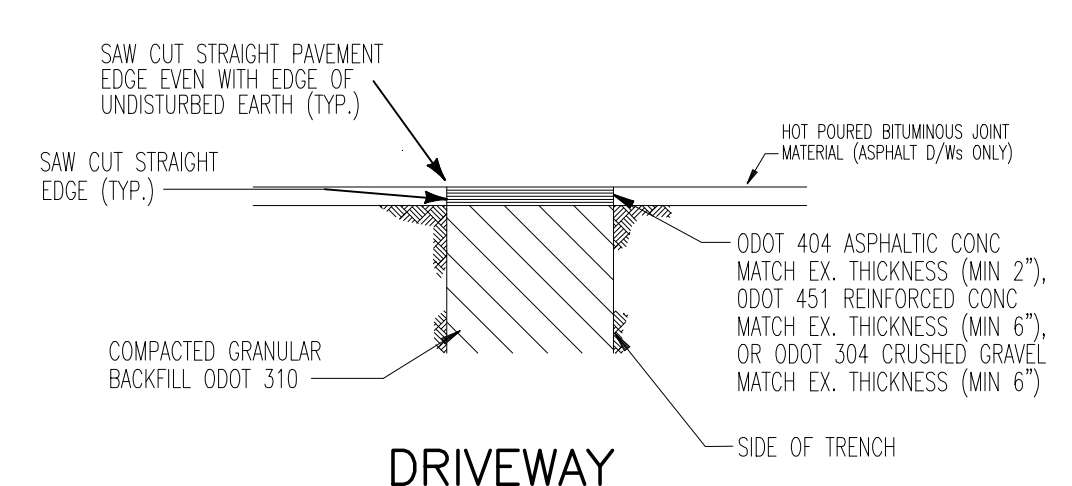


TYPICAL FIRE HYDRANT INSTALLATION

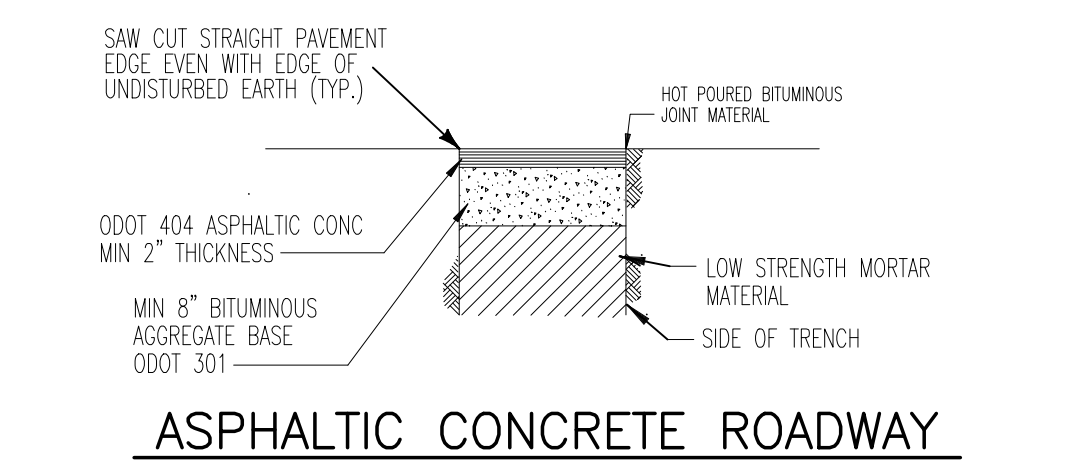
5110



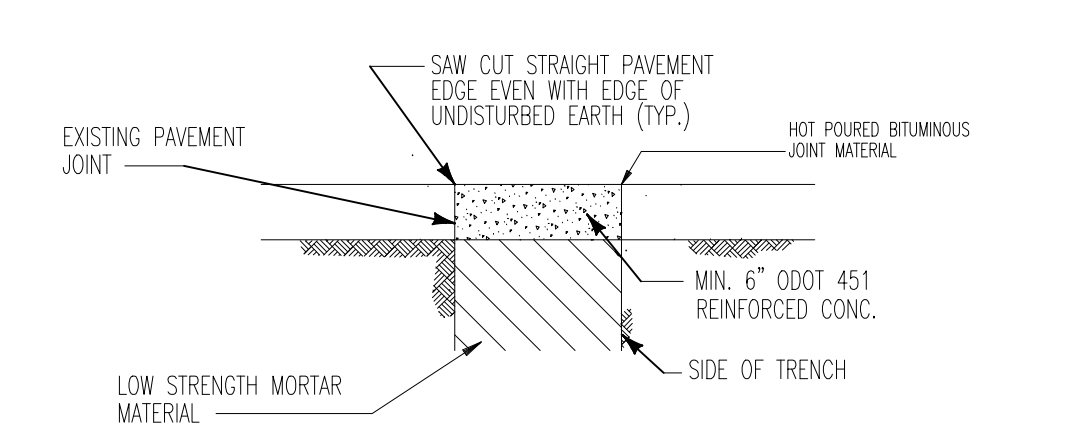
CONCRETE ENCASEMENT



DRIVEWAY



ASPHALTIC CONCRETE ROADWAY



CONCRETE ROADWAY

PAVEMENT REPLACEMENT DETAILS

PIPE SIZE	C.Y. CONC. PER LIN. FT.	LENGTH OF NO. 3 BARS BETWEEN NO. 3 BARS	SPACING (FT)
6"	0.121	3'-0"	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

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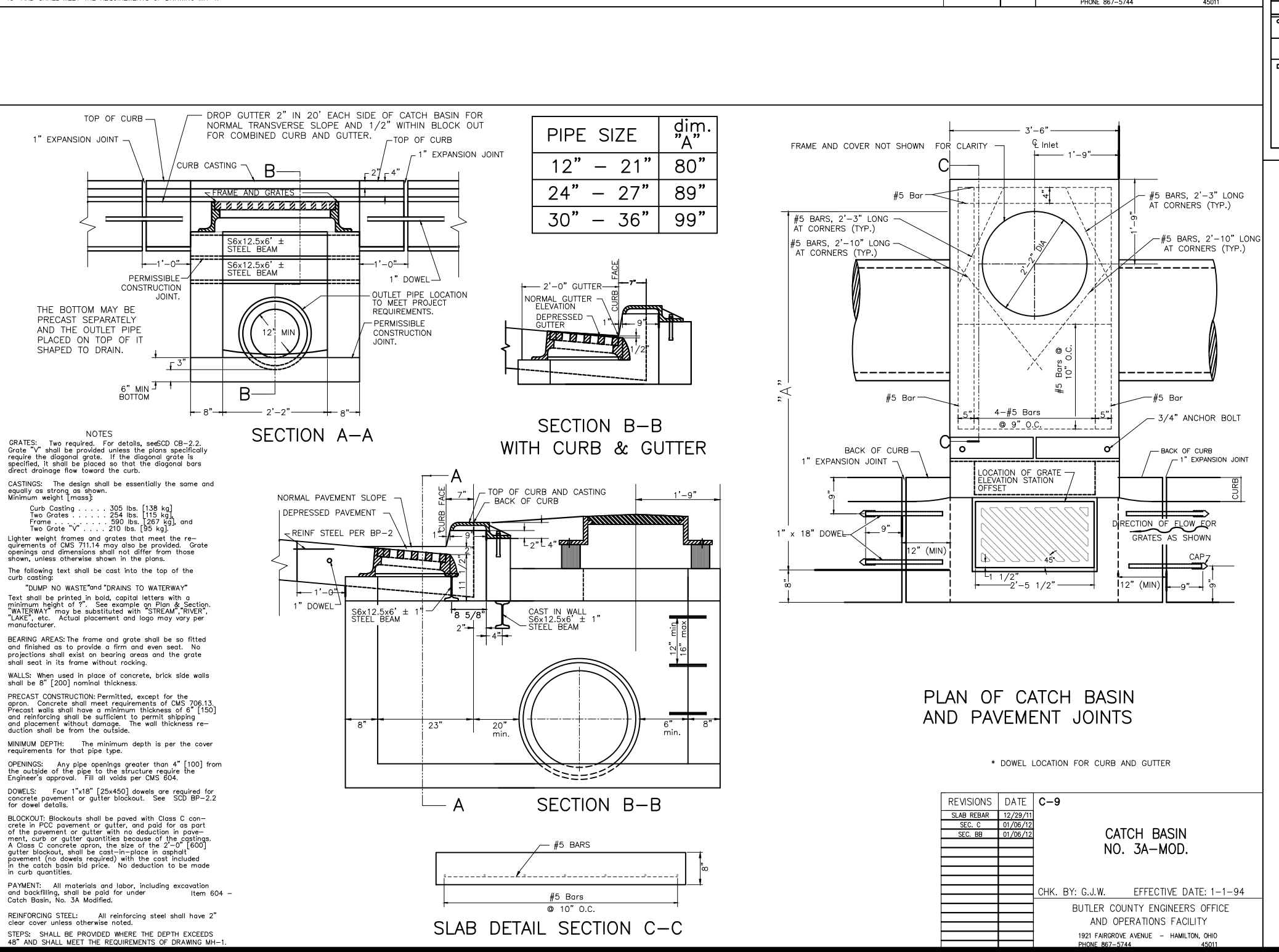
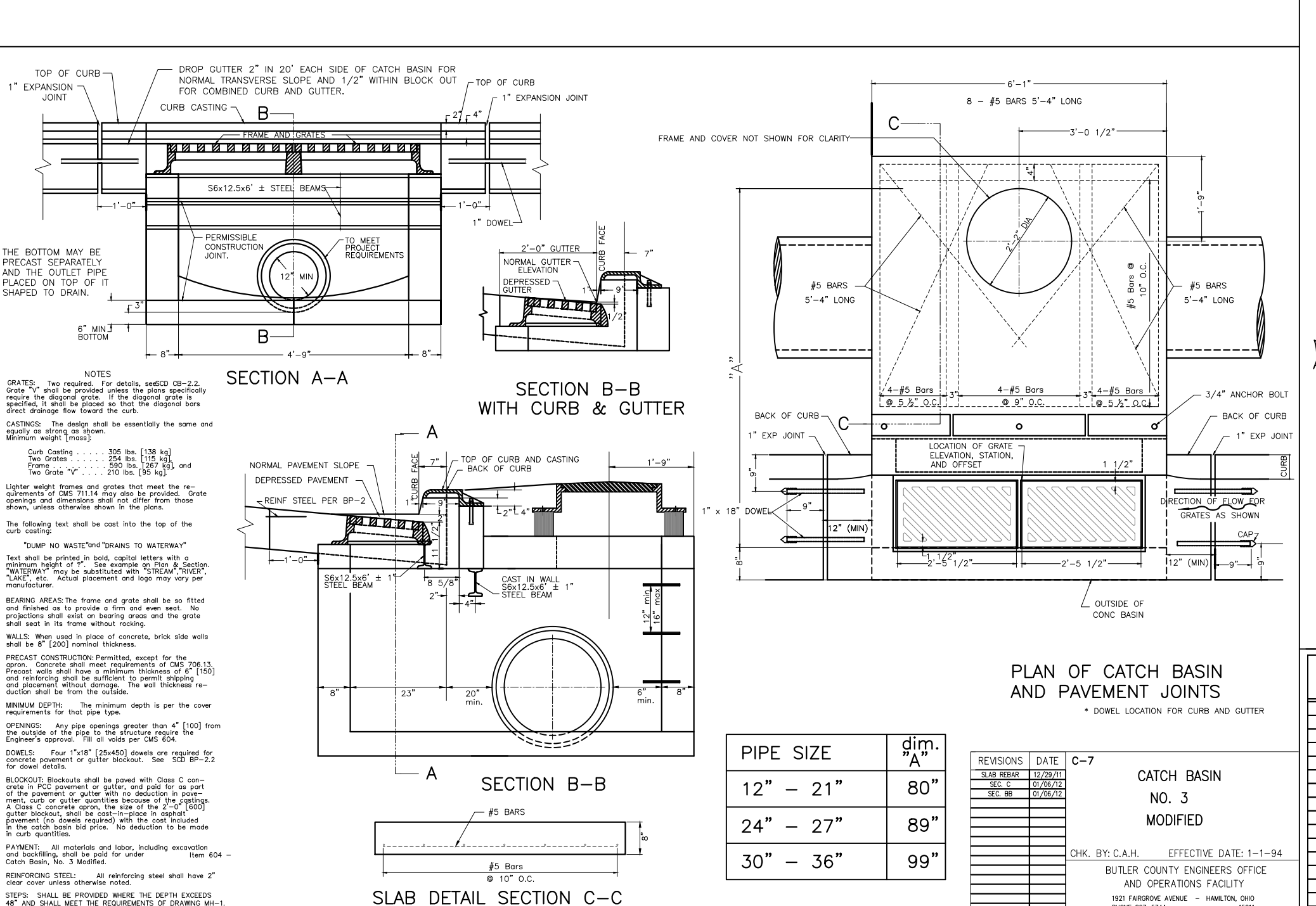
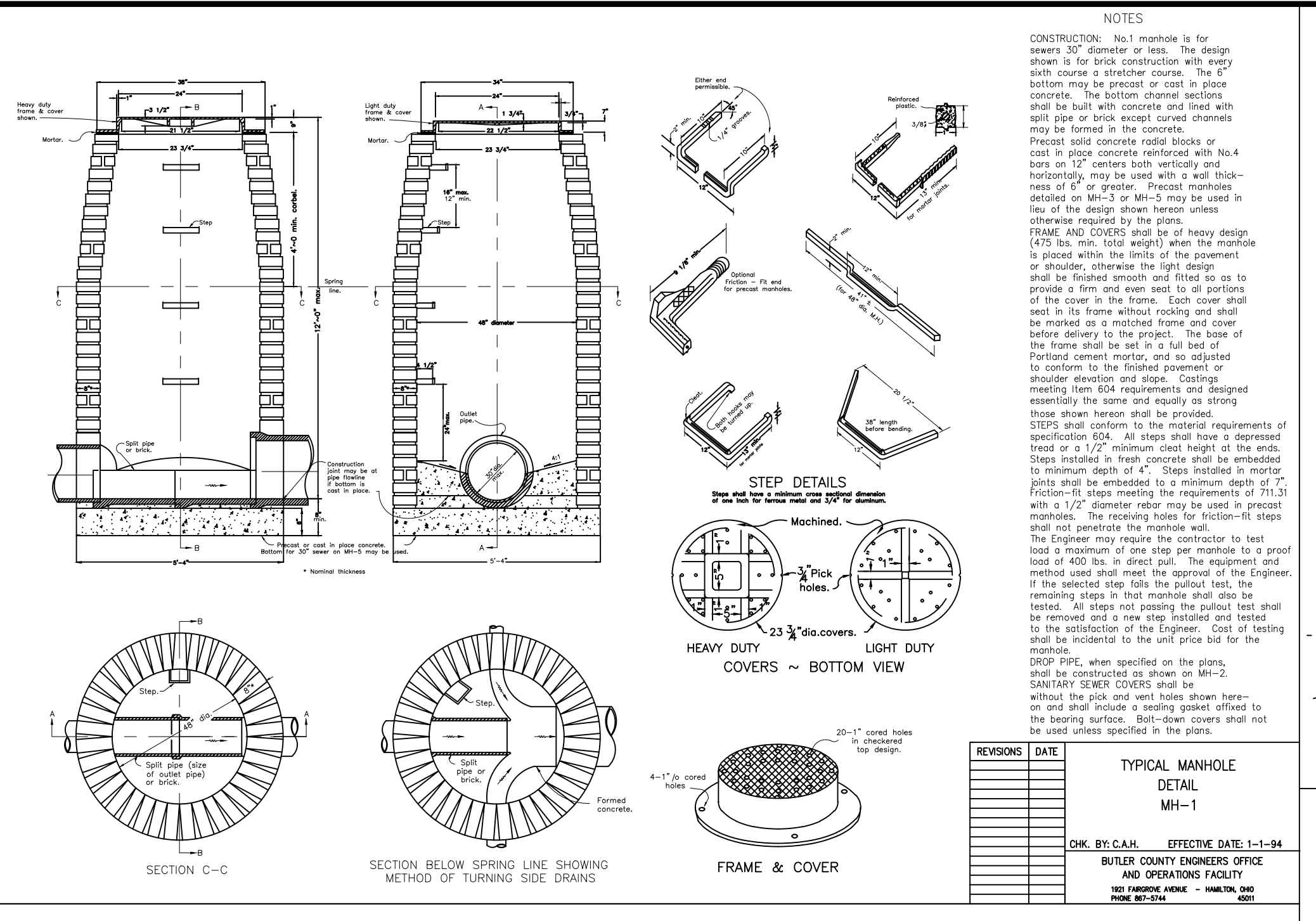
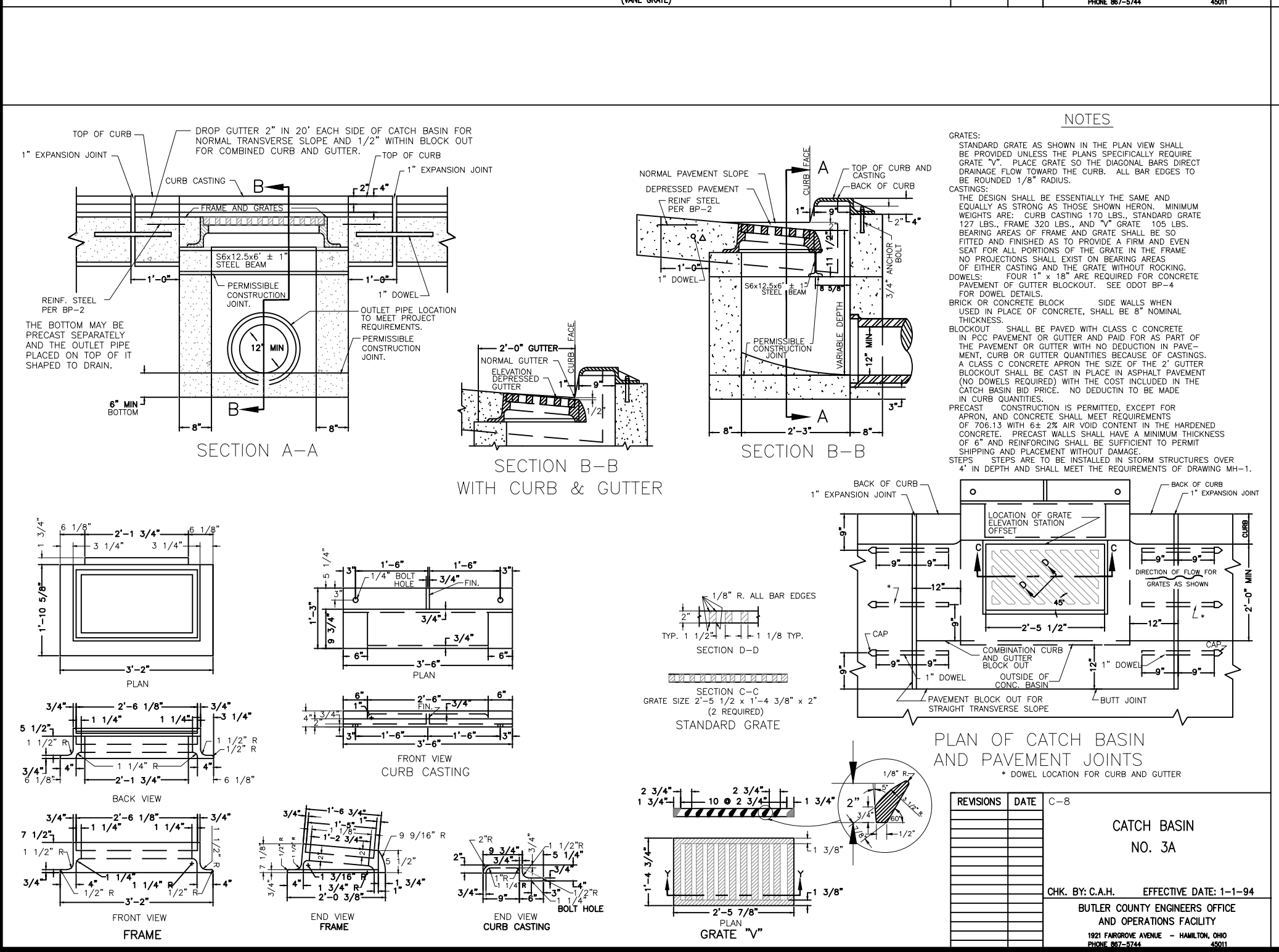
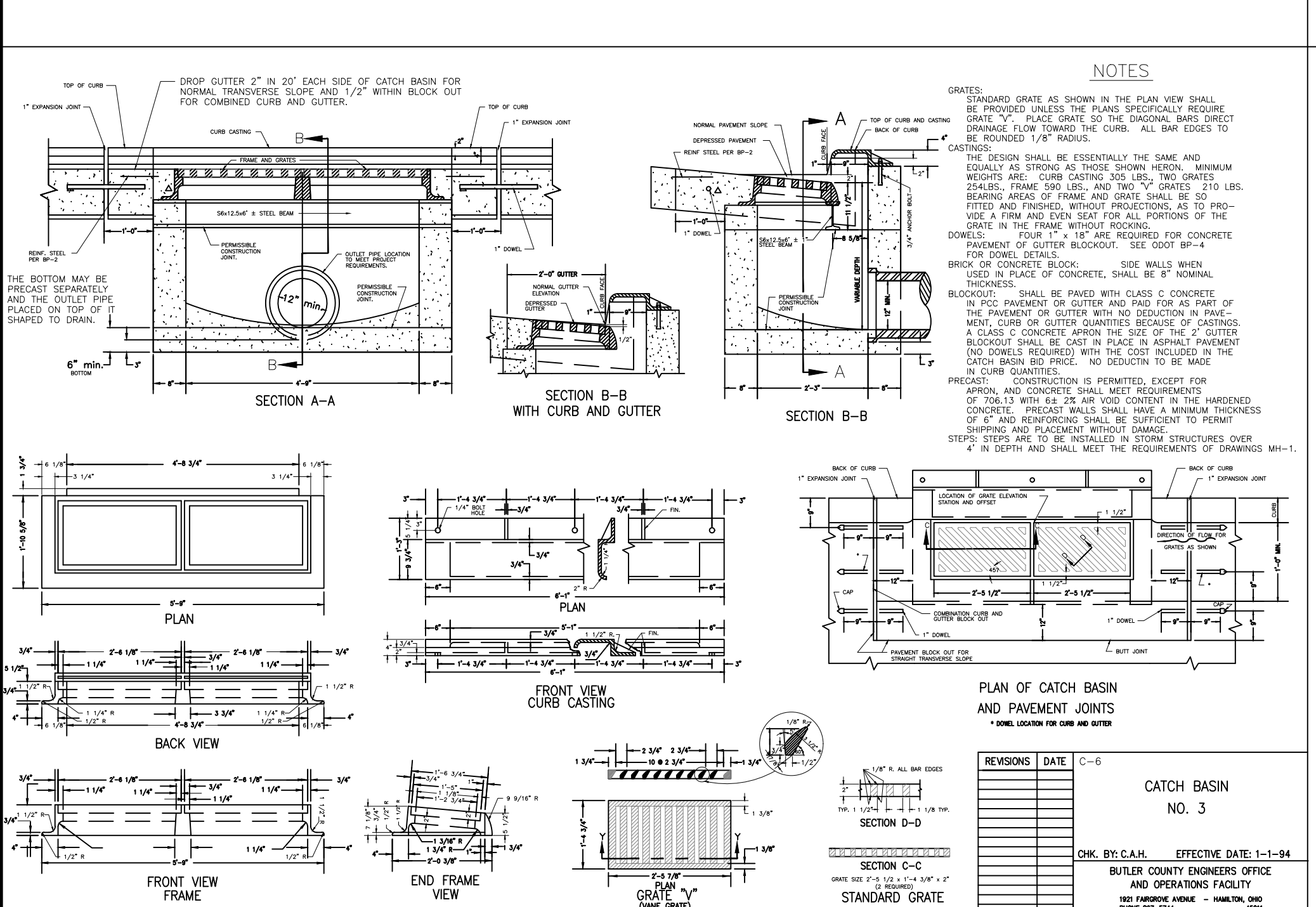
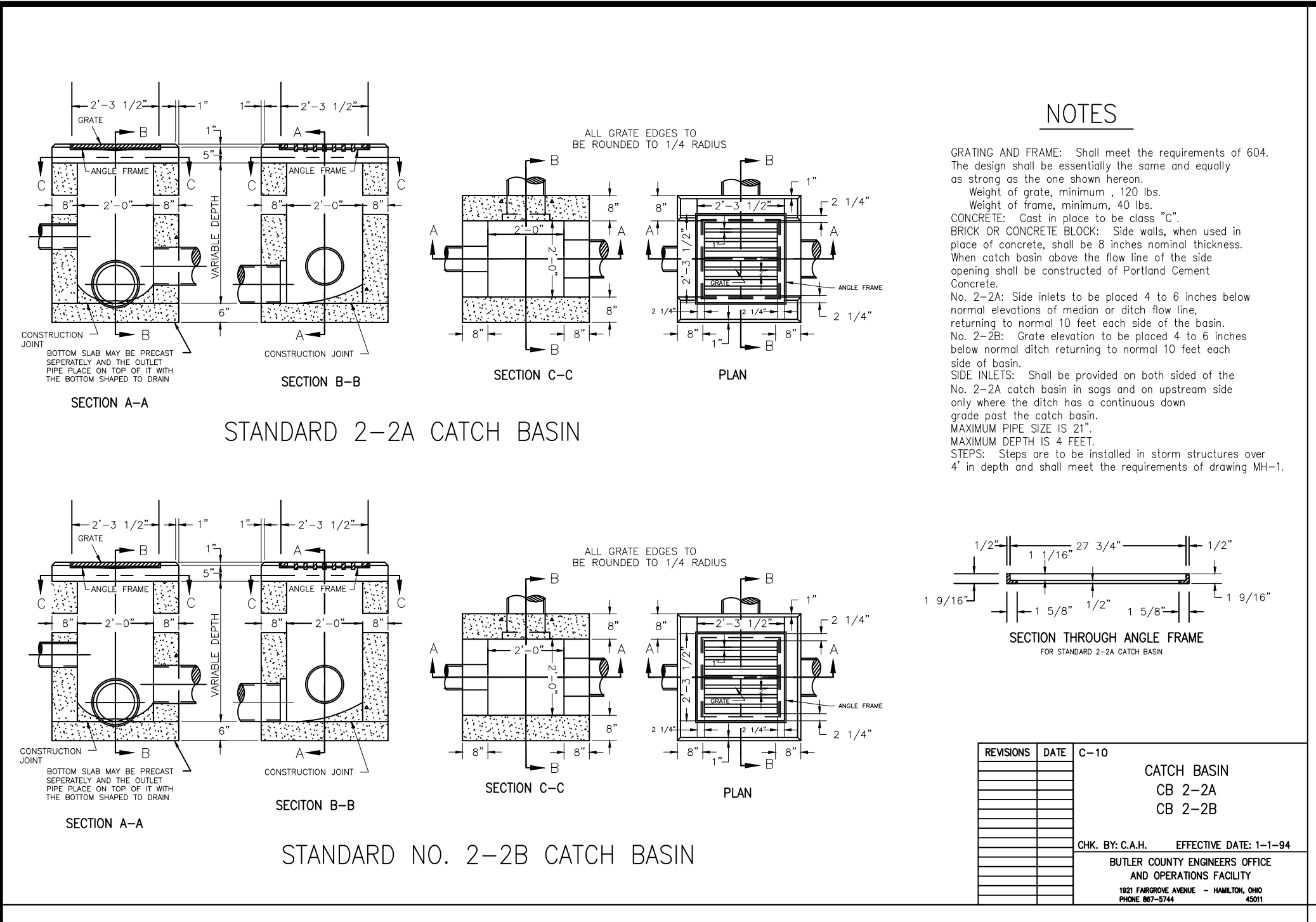
Date: _____
 Drawn: _____
 Item: _____
 Revision Description: _____

BUTLER COUNTY, OHIO
 WATER DETAILS

www.bayerbecker.com
 6800 Tyler Road, Suite A
 Mason, Ohio 45040-3133, 513.336.6600

Drawing: BC WAT
 Drawn by:
 Checked by:
 Issue Date: 2019
 Sheet:

9/11



NOTES

CONSTRUCTION: No. 1 manhole to be for 30" diameter or less. The design shown is for brick construction with every sixth course a structural course. The 6" bottom may be precast or cast in place concrete. The bottom channel sections shall be built with concrete and lined with spot pipe or brick except channel sections may be formed in the concrete.

Precast used concrete radial blocks or cast in place concrete reinforced with No. 4 bars on 12" centers both vertically and horizontally, may be used with a wall thickness of 6" or greater. Precast manholes detailed on M-1-3 or M-1-5 may be used in lieu of the design shown herein unless otherwise required by the plans.

FRAME AND COVER: shall be of heavy design (475 lbs. min. total weight) when the manhole is placed within the limits of the pavement or shoulder, otherwise the light design shall be required. The manhole shall be set in its frame without rocking and shall be mortared in the frame with concrete. Each cover shall be marked as to a matched frame and cover. Delivery to the project shall be in a full load of concrete blocks and mortar. The manhole shall conform to the finished pavement or shoulder. The manhole shall be installed in accordance with the requirements of the specifications and designed accordingly. The same shall apply to other manholes shown herein shall be provided.

STEPS: shall conform to the material requirements of specification 604. All steps shall have a depressed tread or a 1/2" minimum steel height of the end. Steps installed in front concrete shall be embedded to a minimum depth of 2". Steps installed in mortar shall be embedded to a minimum depth of 2". Precast steps meeting these requirements shall be used with a 1/2" diameter rebar may be used in precast steps shall penetrate the mortar. The manhole shall be installed in accordance with the requirements of the specifications and designed accordingly. The same shall apply to other manholes shown herein shall be provided.

DROP PIPE: when specified on the plans, shall be constructed of 60" diameter pipe. SANITARY SEWER COVERS shall be without the brick and concrete manhole and shall include a sealing gasket offered to the bearing surface. Best-dressed covers shall not be used unless specified in the plans.

PIPE AND WALL VARY UNLESS OTHERWISE SPECIFIED

PIPE DIA. OR SHAPE EQUIV. DIA.	C	E	F	L	W	T	X	C. Y.	LIBS.
12"	1'-9"	2'-6"	2'-3"	3'-6"	4'-0"	4'-9"	2'	15/2"	0.58
15"	2'-0"	2'-9"	2'-9"	4'-0"	4'-9"	5'-0"	21/4"	15/2"	0.75
18"	2'-3"	3'-0"	3'-6"	4'-6"	5'-3"	21/2"	15'	0.93	0.89
21"	2'-6"	3'-3"	4'-0"	5'-0"	6'-0"	23/4"	18'	1.14	1.07
24"	2'-9"	3'-6"	4'-6"	5'-6"	6'-6"	3'	18'	1.35	0.8
27"	3'-0"	3'-9"	5'-0"	6'-0"	7'-0"	31/2"	18'	1.57	1.0

NOTES

1. PIPE AND WALL VARY UNLESS OTHERWISE SPECIFIED 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 WAIVED TO FIT HEADWALL WHEN PIPE IS SKEWED AND/OR NORMAL SLOPE VARIES FROM 2:1.

6. VOLUME DISPLACED BY PIPE COMPUTED USING INSIDE DIAMETER OF PIPE.

7. WIND ANGLES AND/OR DIMENSIONS MAY BE ALTERED DURING CONSTRUCTION TO ACCOMMODATE FLOW OF WATER.

8. APRON BETWEEN WINGS SHALL BE SLOPED IN DIRECTION OF FLOW EQUAL TO SLOPE OF PIPE. FRONT FACE OF HEADWALL SHALL REMAIN VERTICAL.

