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Know what's below.
Call before you dig.

VISTA VERDE SECTION THREE

SECTIONS 3&9, TOWN 2, RANGE 3
LIBERTY TOWNSHIP, BUTLER COUNTY, OHIO
JUNE, 2018

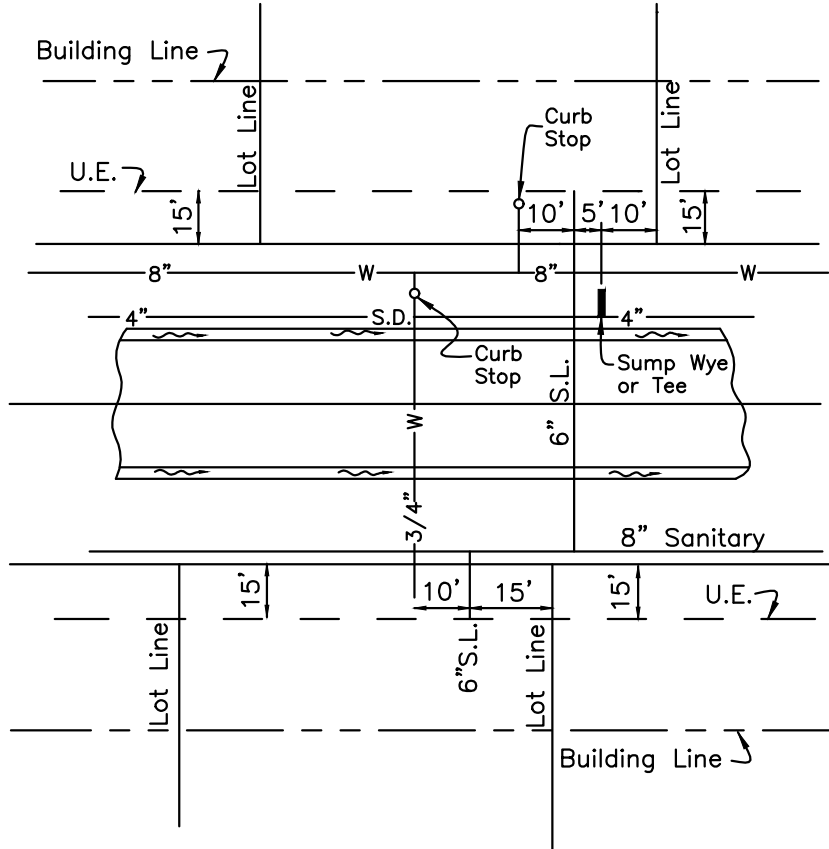


GENERAL NOTES

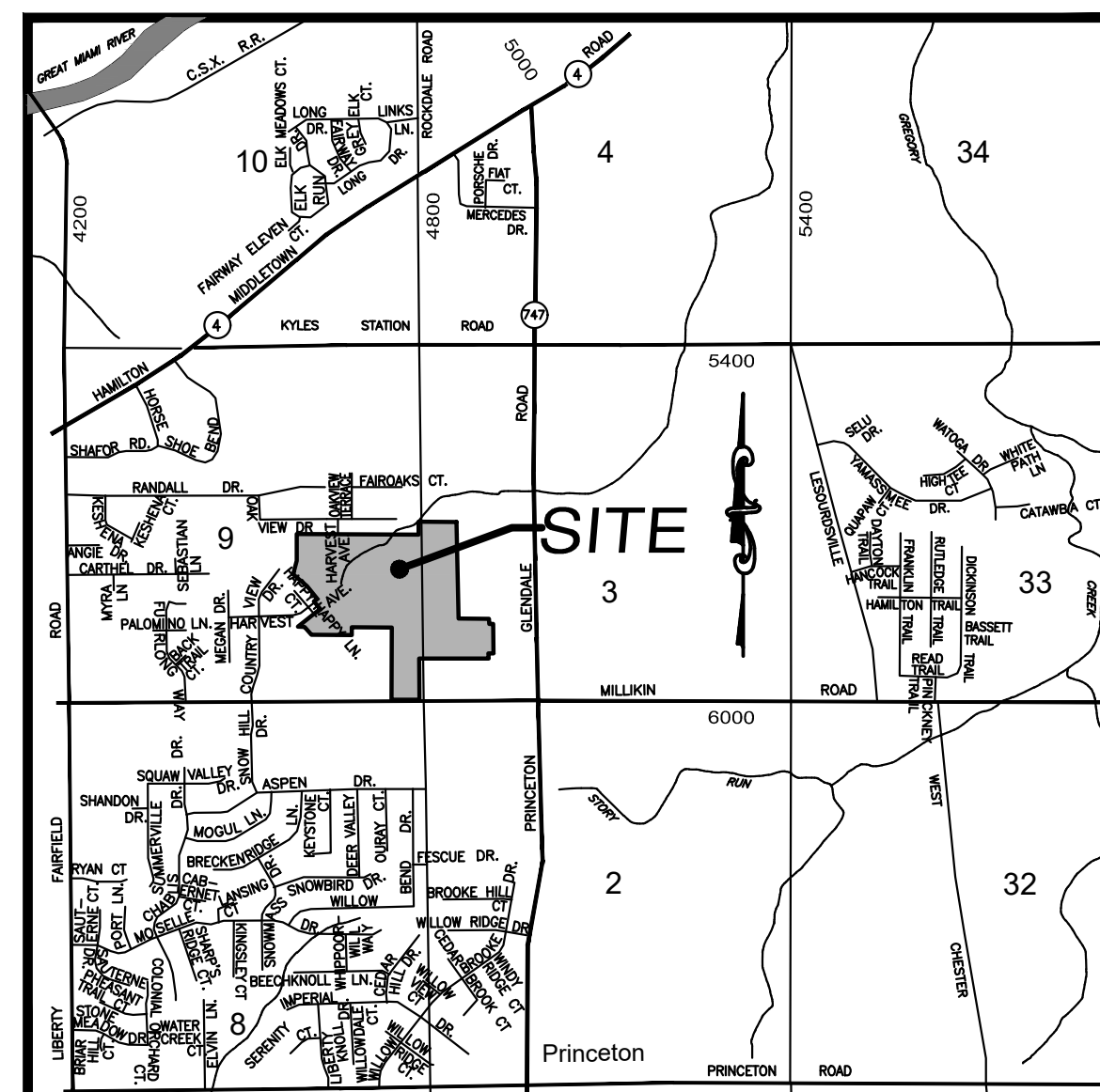
- Item numbers refer to the Ohio Department of Transportation construction and material specifications, and all construction work shall be done according to said specifications of Butler County requirements and standards for subdivisions. When in conflict, the County requirements shall prevail.
 - Items 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. Storm sewers shall be designed and constructed in accordance with the requirements of the Butler County Engineer.
 - All trenches within the right-of-way and 10' utility easement shall be compacted and backfilled in accordance with item 203 and 603 in the state specifications.
 - Surface course (item 448) and tack coat (item 407) are to be applied no sooner than nine (9) months after the leveling course, (item 448), and fifty (50) percent of the homes are completed. If after two (2) years fifty (50) percent of the homes have not been completed, then the top course may be applied.
 - A minimum 10' utility easement shall be shown on the record plat parallel and immediately adjacent to the right-of-way line allowing for installation, operation and maintenance of sewers, water, electric and telephone conduits and any other public or quasi public utility.
 - Developer shall be responsible for the installation of conduits for the full width of the public right-of-way at a depth of 36" for use by the electric, telephone and cable services. The location of the lines shall be coordinated with utility companies by the developer.
 - All electrical transformers shall be located so that they do not interfere with the existing manholes or water main appurtenances.
 - Sump line conduits are to be SDR 35, Armo 2000, or equivalent.
 - WATER MAIN**
 - Water main materials, valves, fire hydrants, fittings and appurtenances and installation to be as per Butler County specifications, using class 53 Ductile Iron as per AWWA C-151 with minimum 4' cover.
 - 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.
 - Minimum 10' horizontal, 18" vertical separation between water main and sanitary and/or storm sewer.
 - If meter pits cannot be initially installed at the location shown on the typical section, a curb stop can be set up at this location.
 - SANITARY SEWER**
 - 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.
 - 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. If it is absolutely impossible to maintain the 18 inch vertical separation, the water main shall be relocated or the sewer shall be constructed as follows:
 - A sewer passing over or under the water main shall be enclosed or constructed of materials that are equivalent to water main standards of construction for a minimum distance of 10 feet on each side of the water main.
 - The sewer crossing shall be constructed so that the sewer joints will be equidistant and as far as possible from the water main joints.
 - Where a water main passes under a sewer, adequate structural support shall be provided for the sewer to prevent damage to the water main.
 - 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.
 - 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. The connection to the sewer would be any piping that extends out from the main barrel of the sewer main.
 - 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. In addition, said building level shall be at least one (1) foot above the lowest point of free-overflow (non-sealed manhole cover) upstream of any treatment facility of wastewater pumping facility that receives the discharge from said building. Said minimum service levels shall be recorded on the "As-Built" plans for the development which will be kept on file in the office of the Butler County Department of Environmental Services.
 - Butler County Water and Sewer Department 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.
 - Private driveways, parking lots and other paved areas, earthen berms or structures should not be constructed over private water or sewer service lines within the public road right of way or within the easement areas for public utilities. Should this occur, the property owner shall be held responsible for the protection and repair and for providing access to any curbs, meter pits, manholes, clean-outs, etc. installed in conjunction with these private service lines and for any damage or restoration of the paved surfaces or structures that may result from the future operation, maintenance, repair or replacement of said service lines and appurtenances.
 - STORM SEWER**
 - Storm sewer pipe shall meet the requirements as follows:
 - PVC pipe as per ODOT Specification 707.42 for all diameters
 - HDPE pipe as per ODOT Specification 707.33
 - Corrugated steel pipe as per ODOT Specification 707.01 or 707.02 for all diameters
 - Reinforced concrete pipe as per ODOT Construction and Material Specification 706.02 for all diameters. Class shall be specified at the contractor's request. (Cincinnati Concrete Pipe, Duracrete or equal).
 - Bituminous coated corrugated steel pipe as per ODOT Specification 707.05 or 707.07
- Installation shall meet Butler County Specifications. All joints shall be soil seal joints unless specifically noted on the plans.
- Deflection Testing for Storm Sewers and Culverts 15% of all storm sewers shall be tested for deflection within thirty days after they are complete. Butler County Engineer or his designated representative will determine what 15% shall be tested. If any storm sewer in the original 15% is found out of compliance, deflection tests will be required on 100% of the remaining storm sewer. A vertical ring deflection greater than 5% will not be allowed. This deflection is defined as 5% reduction in the vertical base or average inside diameter. The method of testing shall be subject to the approval of the engineer. If rigid balls or mandrels are used to test pipe deflection, no mechanical pulling devices shall be used. The deflection test may be conducted with a nine prong mandrel, a ball or a cylinder or another manner acceptable to the Butler County Engineer or his designated representative. The testing will be accomplished from manhole to manhole or catchbasin to catchbasin, following the complete flushing of the line. The contractor shall furnish all equipment required to complete the deflection testing. The deflection test shall be witnessed by the County Engineer or his designated representative. Any section of pipe that fails to meet the aforementioned requirements shall be reworked by a procedure acceptable to the County or be excavated and either be relayed or replaced, and retested until the requirements are met.
 - All catch basins and manholes with a depth greater than 4' shall be provided with steps. Steps shall meet the requirements of ODOT STD. 604 and shall conform to the details as shown on Butler County Standard Drawing MH-1A.
 - Headwall: HW-4A to be used with Corrugated Metal pipe or HW-4B to be used with Concrete Pipe.
- Roof drains, foundation drains, and other clean water connections to the sanitary sewer system are prohibited.
 - Any detention basin on site should be constructed prior to the clearing of topsoil and grading of the site. All trees and vegetation shall be removed from all proposed detention basins regardless of maintenance responsibility.
 - SEDIMENTATION CONTROL**
The project has been designed to control erosion and prevent damage to other property. All stripping, earthwork, and regrading shall be performed to minimize erosion. Natural vegetation shall be retained wherever possible. The proposed plan will allow almost all eroded material to be retained on site.
All areas disturbed by the construction of the roadways, ditches and sediment basins shall be seeded and stowed as soon as possible to limit the erosion and stabilize the soil. Payment will be by the number of square yards disturbed as per the grading plan. For additional sedimentation control details, see grading plan.
 - Butler County will not be responsible for any pavement or storm sewer repairs resulting from water main and sanitary sewer repairs. Butler County also will not be responsible for adjusting manholes, valves, fire hydrants, meter pits, etc. as a result of grade changes. The grantor shall be responsible for proper adjustment of manholes, valves, fire hydrants, meter pits, etc. to the satisfaction of Butler County, due to grade changes, paving, repairing, etc. initiated by the grantor.
 - A typical five (5) foot drainage easement is to be provided on both sides of every lot line.
 - Any roadway settlement greater than one inch will be required to be repaired with Item 613 Low Strength Mortar Backfill (Type 1). See Detail on Sheet #7.
 - Provide the Butler County Engineer's Office with a forty-eight (48) hour notice prior to the start of any construction, including sanitary installation. Phone 785-4145.
 - Contractors to accept all Quantities as correct prior to beginning construction.
 - Contractor shall include the cost of County inspection and extension fees in unit price bid.
 - Existing Zoning: R-1
Frontage: 100'
Setbacks: Front = 50', unless otherwise noted on plan
Side = 15', 30' total
Rear = 45', unless otherwise noted on plan
 - Total Acreage: 21.547 Acres
 - Total # Single Family Lots: 31

LEGEND

EXISTING CONTOURS	
PROPOSED CONTOURS	
CENTERLINE	
PROPERTY LINE	
EXISTING SANITARY SEWER & MANHOLE	
PROPOSED SANITARY SEWER & MANHOLE	
EXISTING WATER MAIN	
FIRE HYDRANT	
WATER VALVE	
PROPOSED WATER MAIN	
EXISTING GAS MAIN	
SUMP DRAIN LINE	
EXISTING STORM PIPE & CATCH BASIN	
STORM CATCH BASIN	
STORM MANHOLE	
PROPOSED STORM PIPE	
EXISTING TELEPHONE	
EXISTING CABLE	
DIRECTION OF DRAINAGE	
PROPOSED SWALE	
LOT SWALE	



STANDARD SERVICE
DETAIL



OWNER/DEVELOPER

Welsh Development Company
5780 S.R. 128
Clevs, OH 45002
(513) 353-5380

BENCHMARK

Butler County Control Monument
#99FC61
Elevation = 721.15

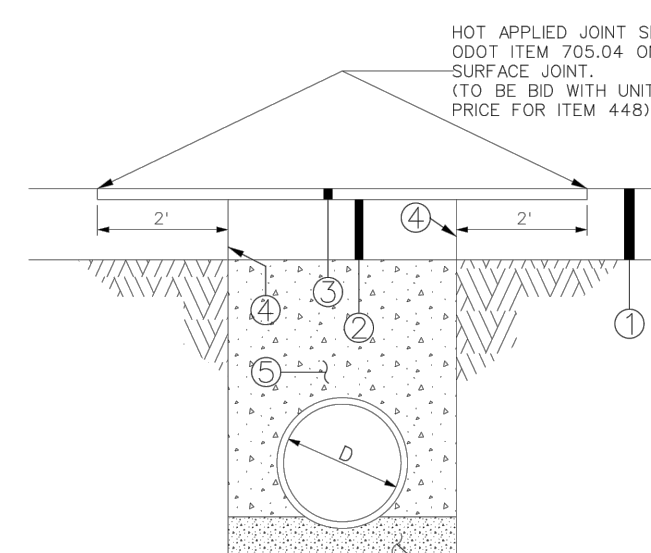
JOB LOG	
DATE	COMMENT
4-20-18	Submitted to Butler County Planning
5-14-18	Resubmitted to BCWS
6-29-18	Resubmitted to BCEO

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS	
C-1	
Std.MH-1A	
Std.HW-D	
CB-3	
CB-3(Mod.)	
CB-3A	
CB-3A(Mod.)	
CB-2-2-A(O.D.O.T.)	
CB-2-2-B(O.D.O.T.)	
Std.R-1	

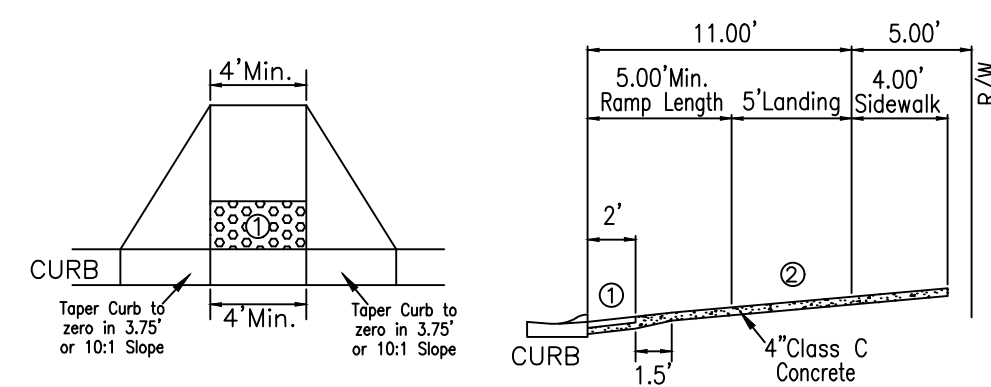
CONSTRUCTION APPROVAL	
	Date
Butler Co. Water & Sewer Dept.	5-16-18
Butler Co. Engineer's Office	

These plans are not for construction until ALL approval dates have been filled in.

BUTLER COUNTY ENGINEER'S OFFICE STANDARD DETAIL FOR ROADWAY PAVEMENT RESTORATION

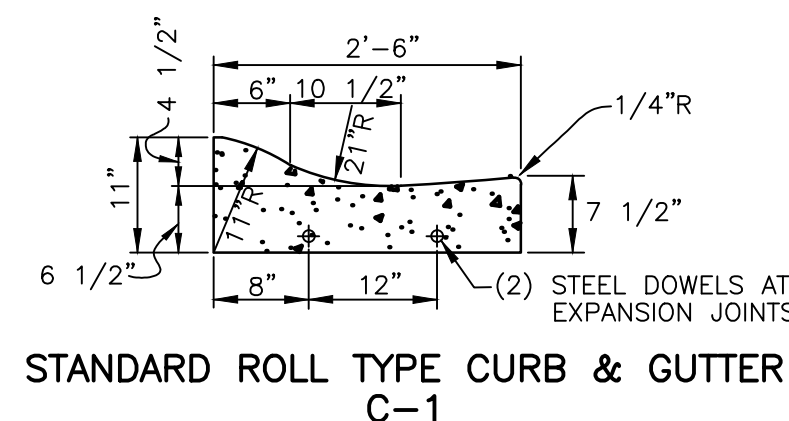


- EXISTING PAVEMENT
- 8" ITEM 301 BITUMINOUS AGGREGATE BASE IN TWO 4" LIFTS
- 2" ITEM 448 ASPHALTIC CONCRETE SURFACE COURSE MIN. 2" EACH SIDE OF CUT
- ITEM 407 TACK COAT APPLIED AT 0.10 GAL/SY
- LOW STRENGTH MORTAR BACKFILL MATERIAL CLASS LSM 50
- MIN. 6" GRANULAR PIPE BEDDING (OPTION - USE GRANULAR BEDDING EXTENDED 12" ABOVE PIPE FOR FULL WIDTH OF TRENCH)

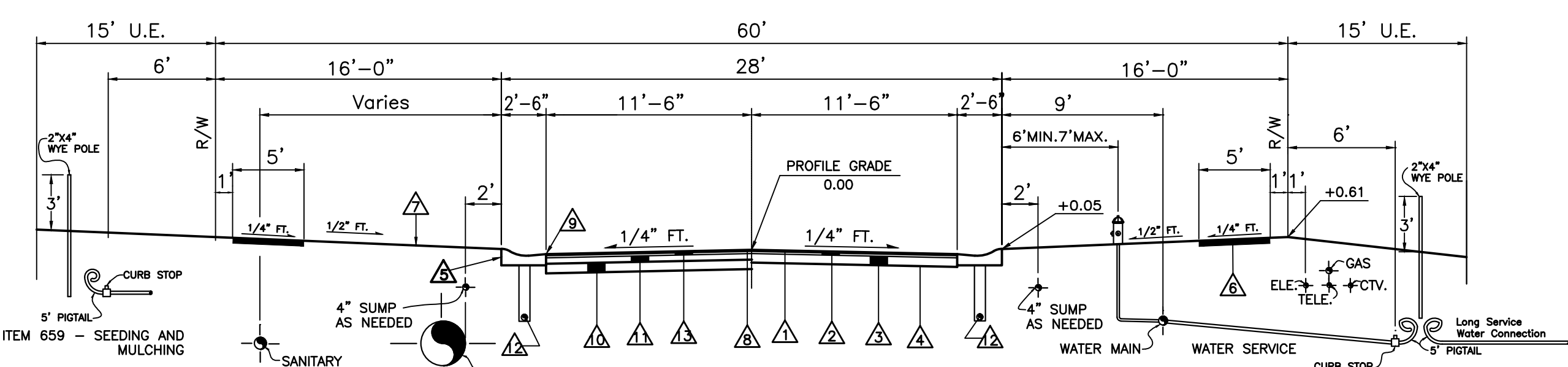


- Detectable Warning (Truncated Domes) are to be installed in the location shown. Dimensions of the domes are 24" from the back of the curb by the width of the ramp.
- Minimum Landing is to be 4' but 5' is preferred. The slope of the ramp is preferred to be 12:1 or flatter related to the horizontal, but the minimum slope shall be 12:1 relative to the existing or proposed walk slope.
- Curb ramps shall be design A or design B per ODOT Drawing 7-12-02, sheets 1 thru 3. Truncated domes are to meet the specifications of ODOT drawing 7-12-02 sheet 3.

CURB RAMP DETAIL



STANDARD ROLL TYPE CURB & GUTTER
C-1



- | ITEM | DEPTH TO TOP OF CURB | DESCRIPTION |
|------------|----------------------|-------------|
| Underdrain | 18" | |
| Gas | 24" - 30" | |
| Water | 36" - 40" | |
| Electric | 36" - 40" | |
| Telephone | 36" - 40" | |
| Cable TV | 36" - 40" | |
- *SURFACE COURSE (ITEM 448) AND TACK COAT (ITEM 407) ARE TO BE APPLIED NO SOONER THAN TWELVE (12) MONTHS AFTER THE LEVELING COURSE (ITEM 448), AND FIFTY (50) PERCENT OF THE HOMES ARE COMPLETED. IF AFTER TWO (2) YEARS FIFTY (50) PERCENT OF THE HOMES HAVE NOT BEEN COMPLETED, THEN THE TOP COURSE MAY BE APPLIED.
 - 1" ITEM SURFACE COURSE - 448 ASPHALTIC CONCRETE SEE * NOTE
 - 2 1/2" LEVELING COURSE - ITEM 448 ASPHALTIC CONCRETE
 - 6" BASE COURSE - ITEM 301 BITUMINOUS AGGREGATE BASE
 - COMPACTED SUBGRADE - ITEM 204
 - ROLL TYPE CURB & GUTTER - ITEM 609 (BUTLER COUNTY STANDARD C-1)
 - FOUR INCH THICK CLASS "C" CONCRETE SIDEWALK, FOUR FEET WIDE ITEM 608 WALK TO BE 1/2" HIGHER THAN SOD.
 - SEEDING & MULCHING - ITEM 659
 - TACK COAT - ITEM 407 - TO BE APPLIED AT A RATE OF 0.05 GAL. PER SQUARE YARD, SEE * NOTE
 - TACK COAT - ITEM 407 - TO BE APPLIED TO FRONT FACE OF CURB PRIOR TO INSTALLATION OF 301 BITUMINOUS AGGREGATE BASE. ALSO TO BE APPLIED TO CURB JOINT AFTER THE INSTALLATION OF 448 LEVELING COURSE.
 - 6" BASE COURSE - ITEM 304 AGGREGATE BASE
 - 5" BASE COURSE - ITEM 301 BITUMINOUS AGGREGATE BASE
 - UNDERDRAIN - ITEM 605. CONNECT UNDERDRAIN TO CENTERLINE OF CURB AND GUTTER. CONNECT TO SIDEWALL OF NEAREST CATCH BASIN
 - 1 1/2" LEVELING COURSE - ITEM 448 ASPHALTIC CONCRETE

TYPICAL SECTION

THIS DOCUMENT AND ALL RELATED DETAIL DRAWINGS, SPECIFICATIONS, AND ELECTRONIC MEDIA PREPARED OR FURNISHED BY BAYER BECKER (BB), ARE INSTRUMENTS OF PROFESSIONAL SERVICE, AND IS THE EXCLUSIVE PROPERTY OF BB. NO DISCLOSURE, USE, REPRODUCTION, OR DISTRIBUTION IN WHOLE OR IN PART, MAY BE MADE WITHOUT WRITTEN PERMISSION OF BB AND IS DONE SO AT USER'S SOLE RISK. COPYRIGHT - ALL RIGHTS RESERVED.

VISTA VERDE SECTION THREE
 SECTIONS 3&9, TOWN 2, RANGE 3
 LIBERTY TOWNSHIP, BUTLER COUNTY, OHIO
 TITLE SHEET

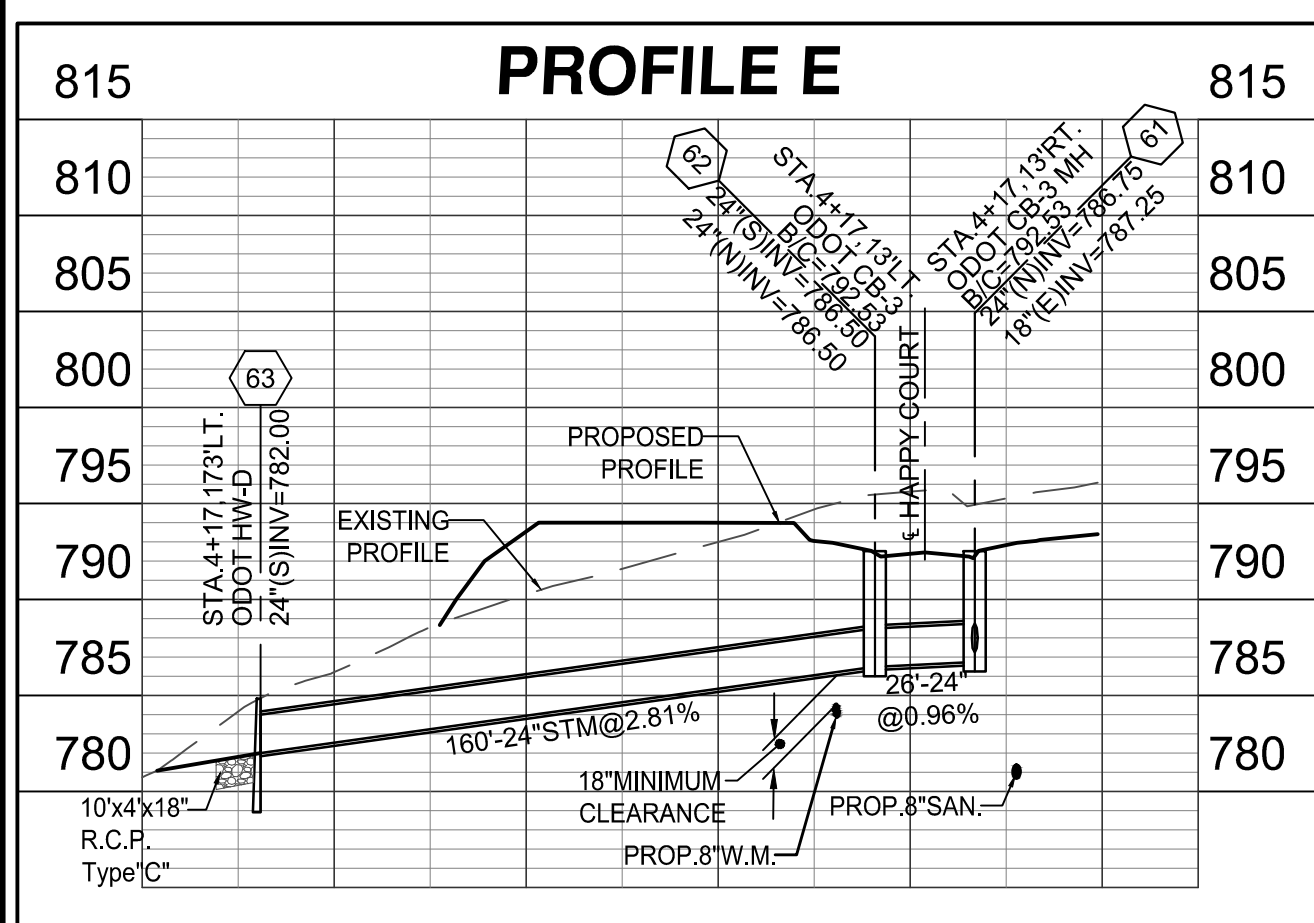
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1	Revised as per BCWS	5-9-18	TAC	
2	Adjusted Profiles and Sanitary Inverts	5-29-18	TAC	
3	Revised as per BCEO	5-29-18	TAC	
4				
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7				
8				
9				

Drawing: 15M069-003 CD
 Drawn by: TAC
 Checked by: EMR
 Issue Date: 4-20-18
 Sheet: 1/9

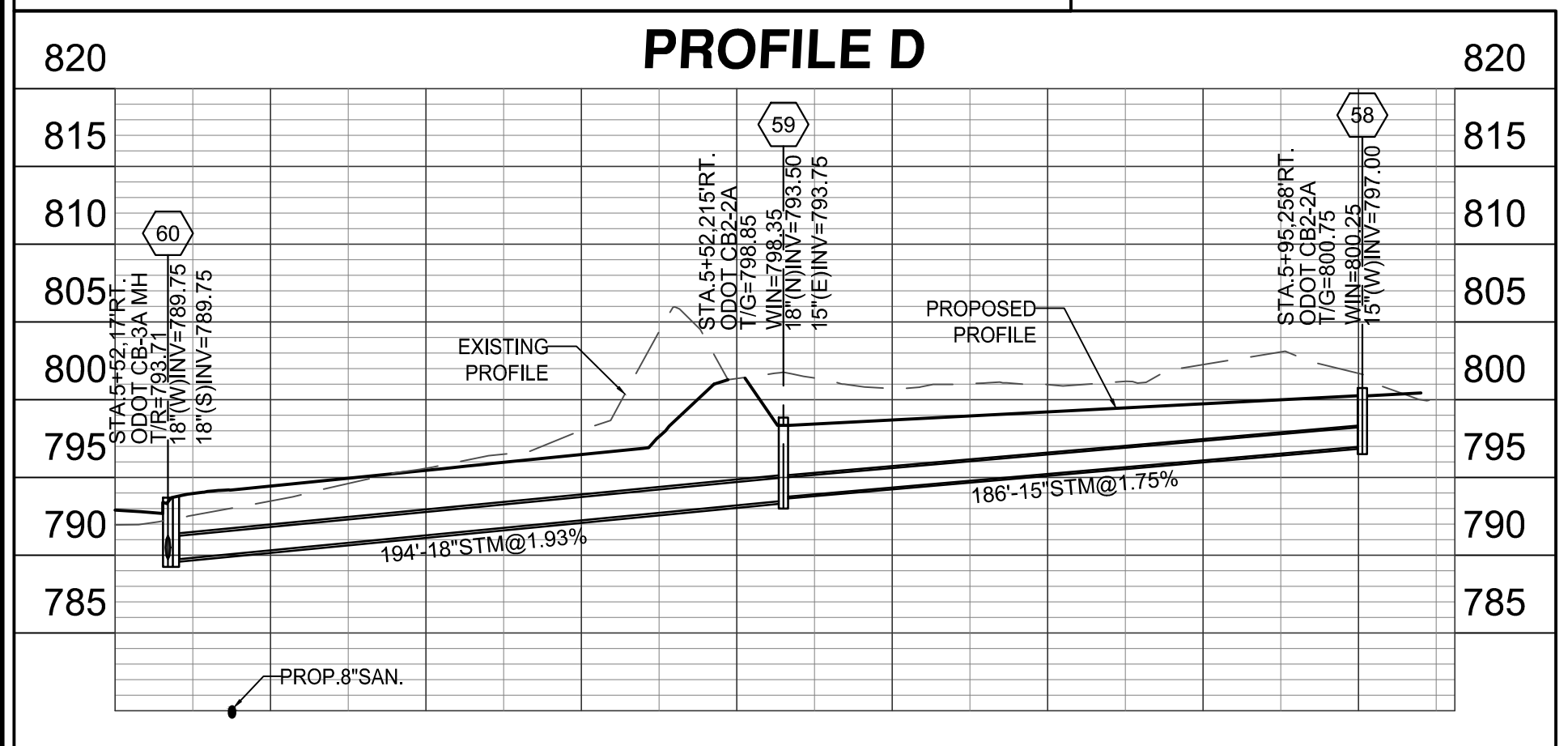
bayer becker
 www.bayerbecker.com
 6900 Tylersville Road, Suite A
 Mason, OH 45040 - 513.336.6600

Plot time: Jun 29, 2018 - 3:45pm
Drawing name: J:\2015\15M069-003\CD\DWG\15M069-003 CD.dwg - Layout Tab: T1

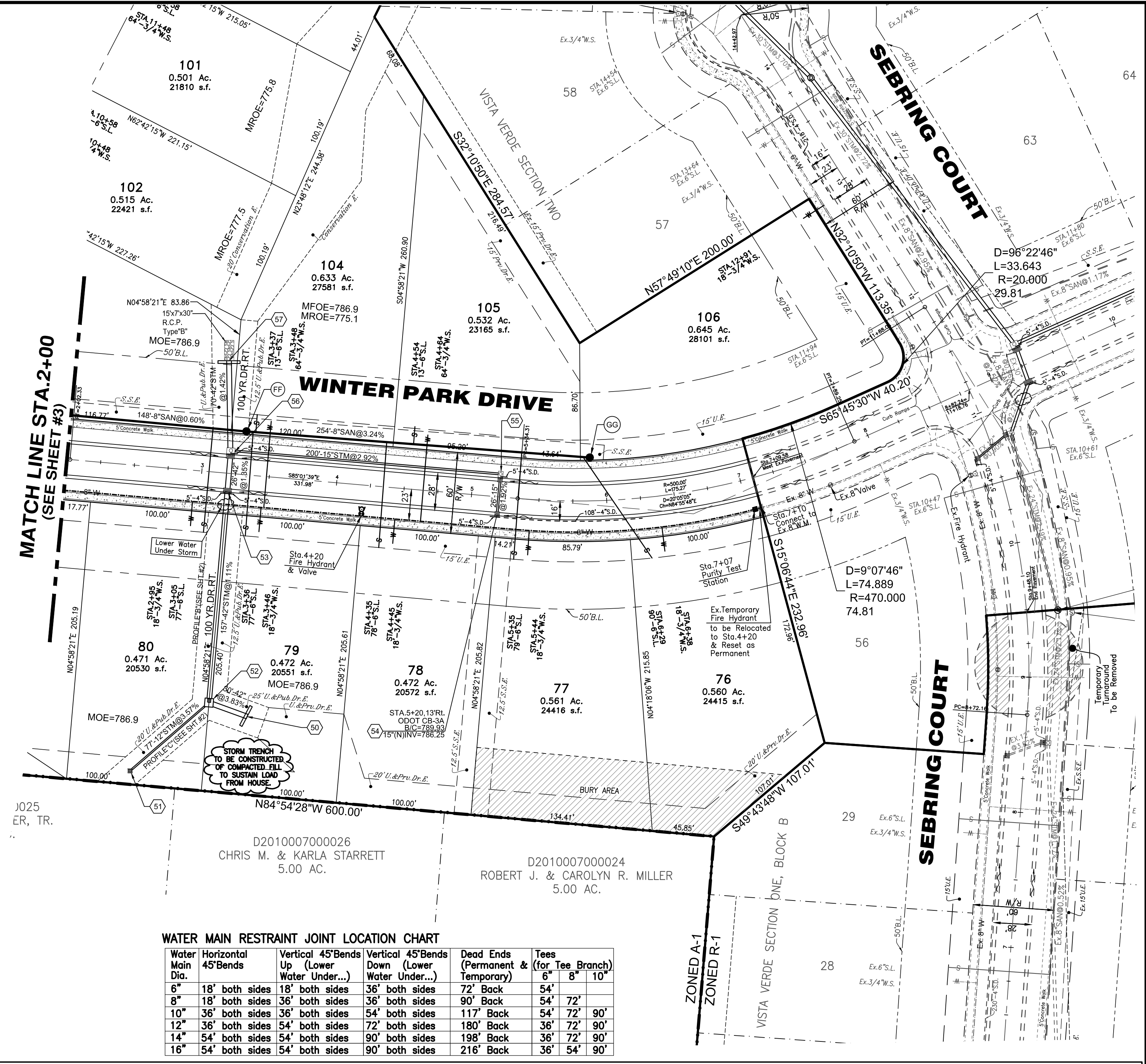
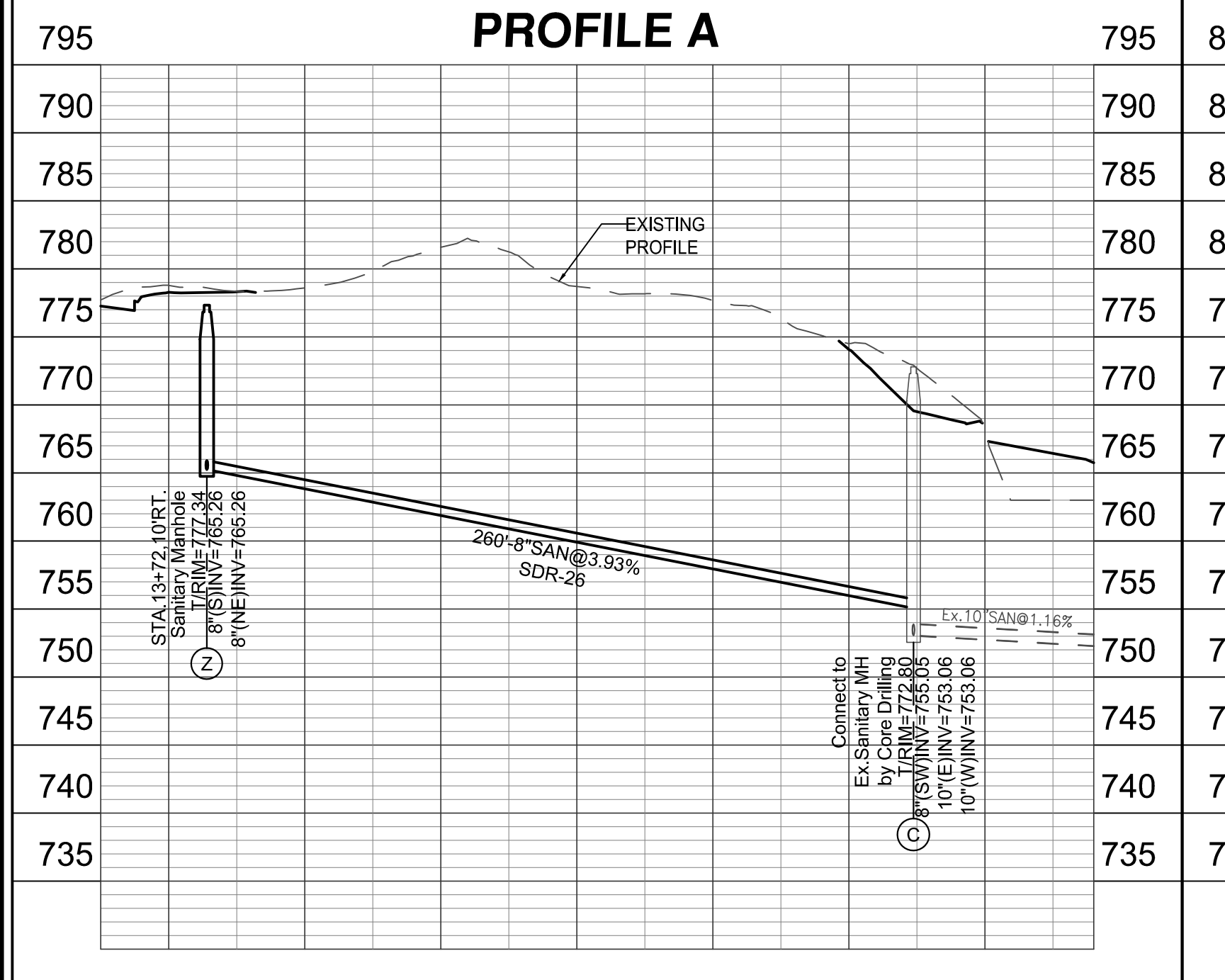
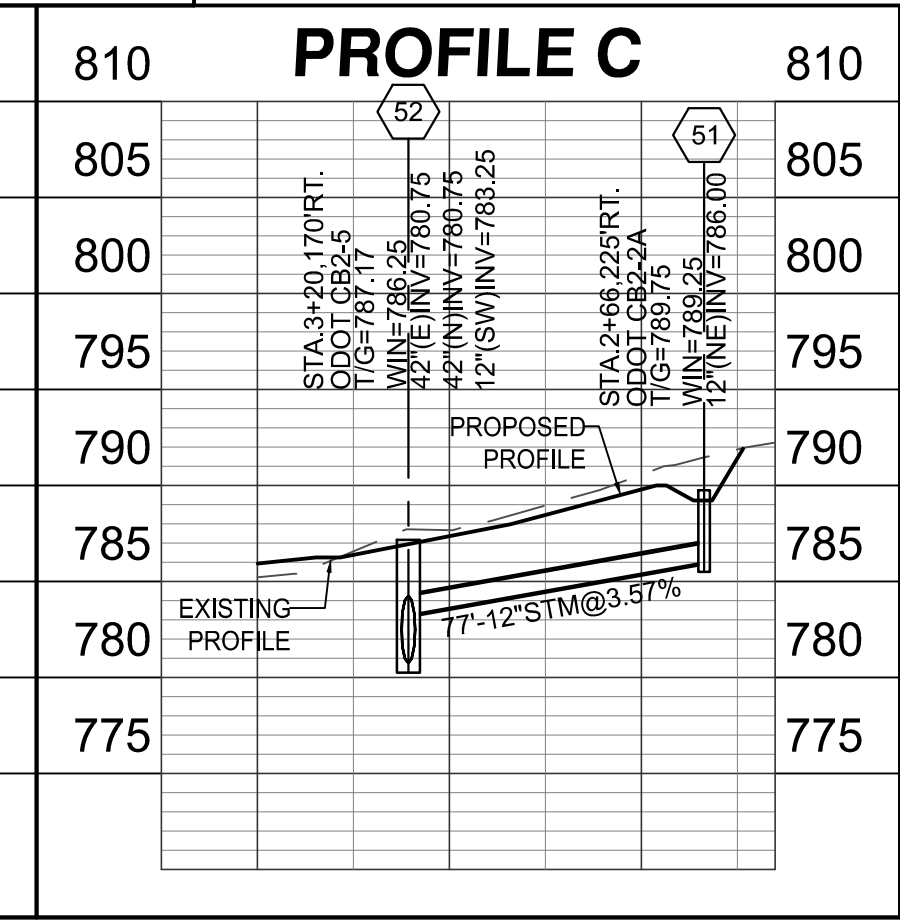
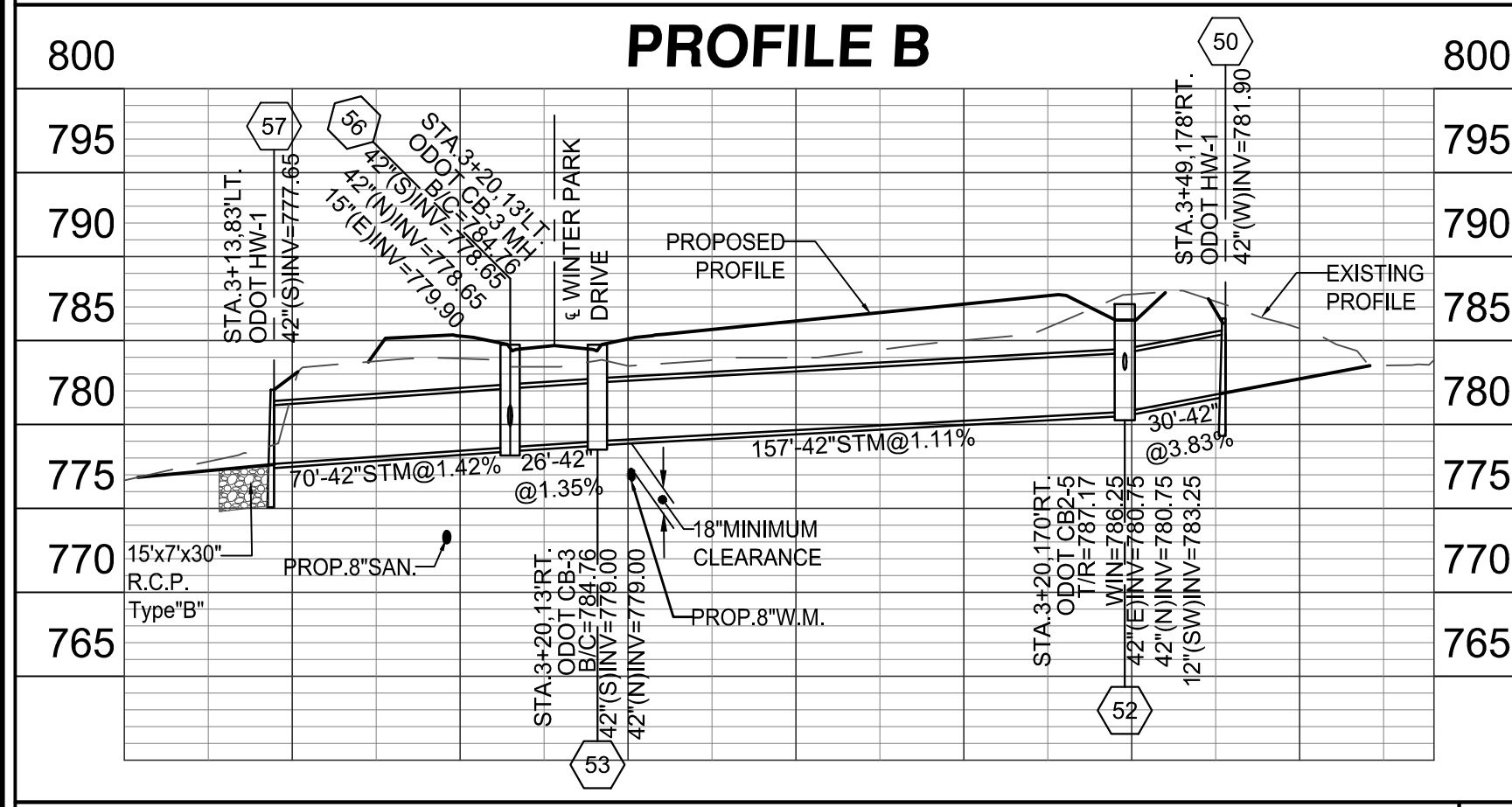
Plot time: Jul 02, 2018 - 10:54am
 Drawing name: J:\2015\15M069-003\CV\DWG\15M069-003_CD.dwg - Layout Tab: PP2



- 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 3/4" 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.

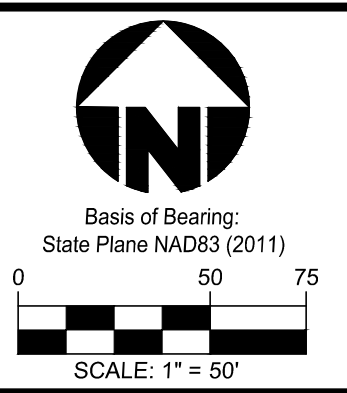
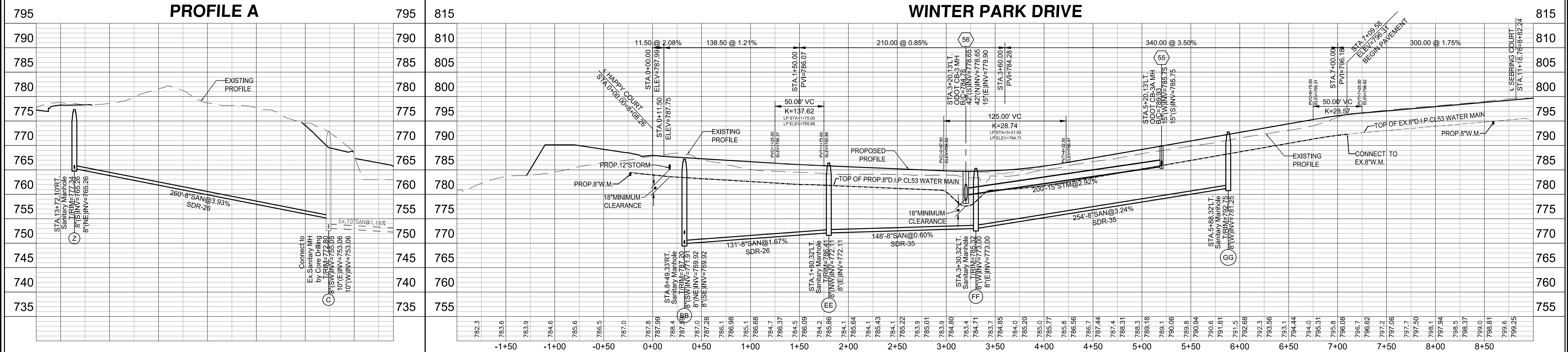


NOTE:
 At Crossings, the water main shall have a minimum vertical distance of eighteen (18") inches from storm and sanitary sewers. Also, one full length of water main shall be located so the joints are as far from the storm and sanitary sewers as possible. Fittings, not joint deflection, must be used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



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	36' both sides	72' Back	54' 6" 8" 10"
8"	18' both sides	36' both sides	36' both sides	90' Back	54' 72' 90'
10"	36' both sides	36' both sides	54' 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'



Date: Dwn: Chk:

Item	Revision Description	Date	Dwn	Chk
1	Revised as per BCWS	6-9-18	TAC	
2	Revised Profile & Sanitary Inlets	6-16-18	TAC	
3	Revised as per BCCE	6-29-18	TAC	
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VISTA VERDE SECTION THREE
 SECTIONS 3&9, TOWN 2, RANGE 3
 LIBERTY TOWNSHIP, BUTLER COUNTY, OHIO

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

Drawing: 15M069-003 CD
 Drawn by: TAC
 Checked by: EMR
 Issue Date: 4-20-18
 Sheet: 2/9

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.

NOTE:

All existing paved areas, walls, buildings, golf course appurtenances, etc. to be removed. Location of on site bury pits to be disclosed to site engineer for notation on final plot.

NOTE:

Contractors to accept all quantities as correct prior to beginning construction.

***NOTE:**

Compaction Testing required for all pond fills in the vicinity of crossing Public Roads, Utilities and Home Sites. Reports to be submitted to BCEO.

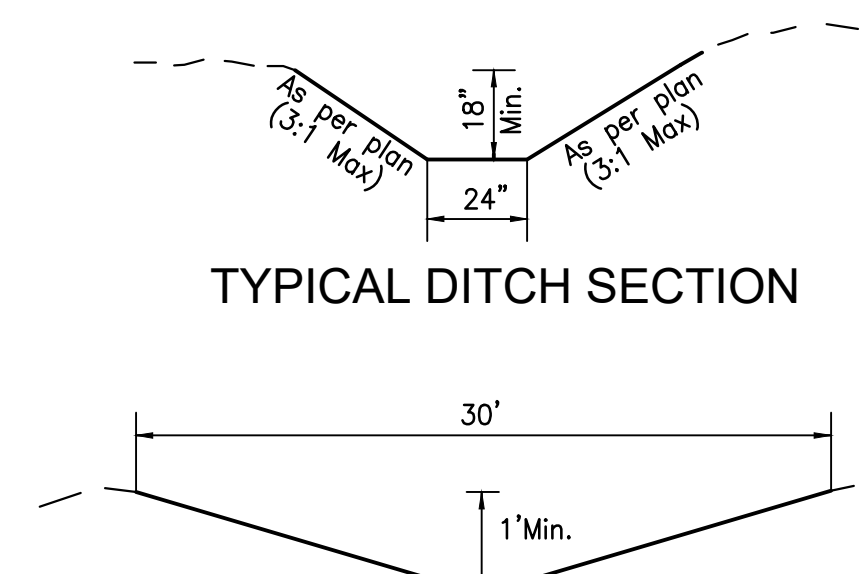
NOTE:

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.

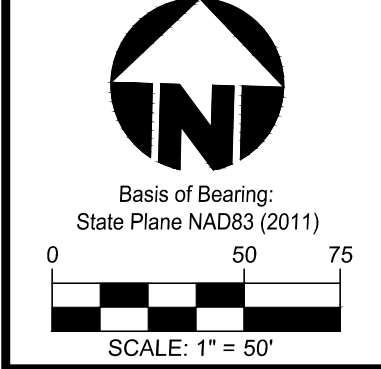
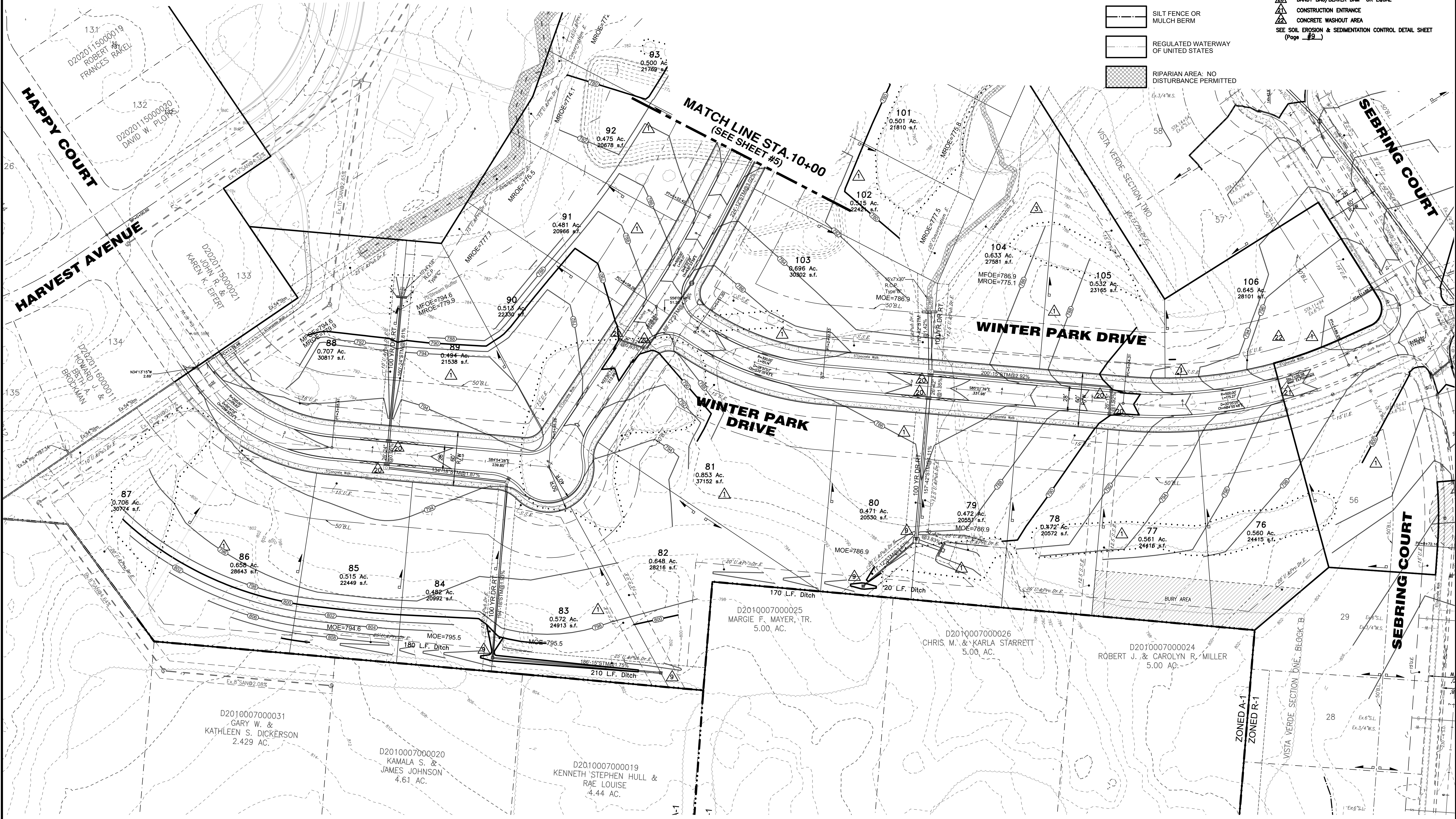
Note: All ditches constructed by the Developer shall be sodded or hydra-seeded.



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
 - TEMPORARY DETENTION SEDIMENT FILTER/BASIN
 - DANDY BAG/BEAVER DAM OR EQUAL
 - CONSTRUCTION ENTRANCE
 - CONCRETE WASHOUT AREA
- SEE SOIL EROSION & SEDIMENTATION CONTROL DETAIL SHEET (Page #9)

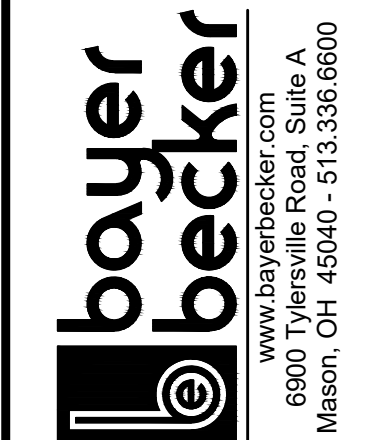
- CLEARING LIMITS
- SILT FENCE OR MULCH BERM
- REGULATED WATERWAY OF UNITED STATES
- RIPARIAN AREA: NO DISTURBANCE PERMITTED



Item	Revision Description	Date	Drawn	Chk
1	Revised as per BCEO	6-29-18	TAC	
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Item	Revision Description	Date	Drawn	Chk
1	Revised as per BCEO	6-29-18	TAC	
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VISTA VERDE SECTION THREE
 SECTIONS 38.9, TOWN 2, RANGE 3
 LIBERTY TOWNSHIP, BUTLER COUNTY, OHIO



Drawing:	15M069-003 CD
Drawn by:	TAC
Checked by:	EMR
Issue Date:	4-20-18

Plot time: Jul 02, 2018 - 10:56am
 Drawing name: J:\2015\15M069-003\CD\DWG\15M069-003 CD.dwg - Layout Tab: GR4

NOTE:
All existing paved areas, walls, buildings, golf course appearances, etc. to be removed.
Location of on site bury pits to be disclosed to site engineer for notation on final plot.

NOTE:
Contractors to accept all quantities as correct prior to beginning construction.

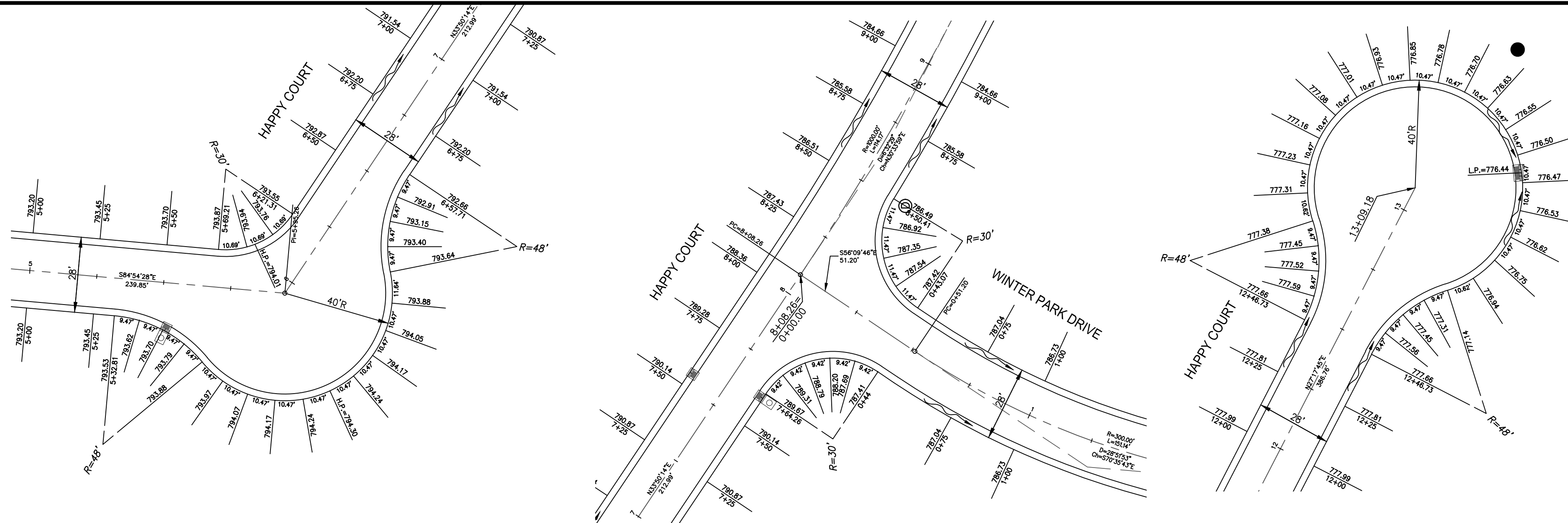
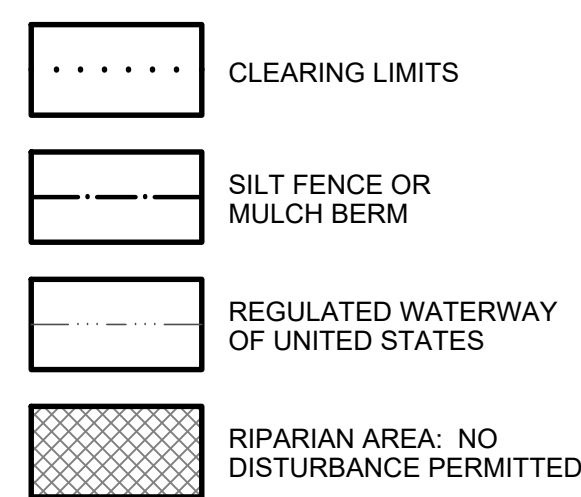
*NOTE:
Compaction Testing required for all pond fills in the vicinity of crossing Public Roads, Utilities and Home Sites. Reports to be submitted to BCEO.

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.

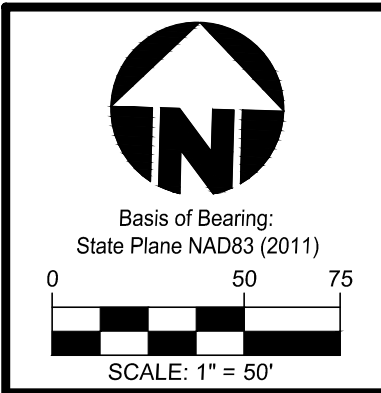
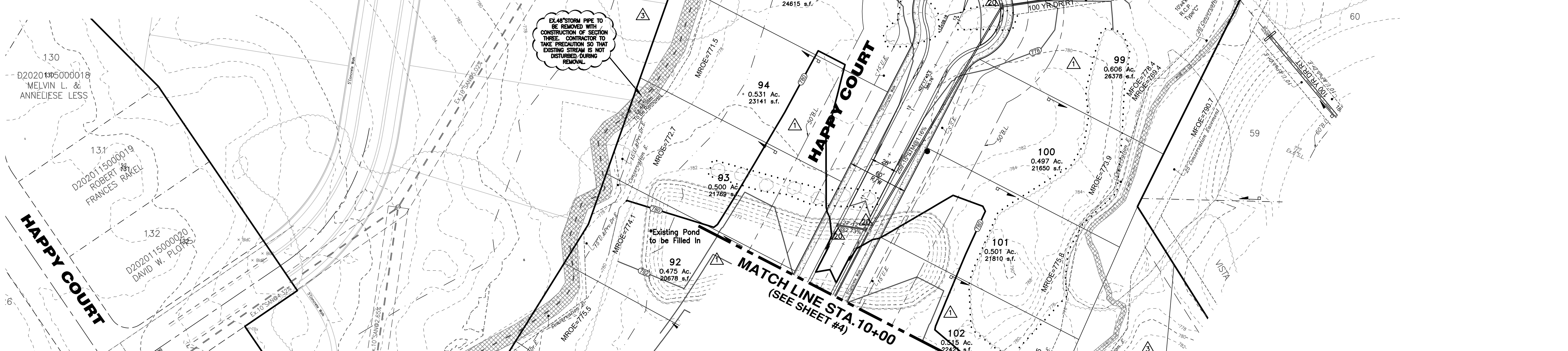
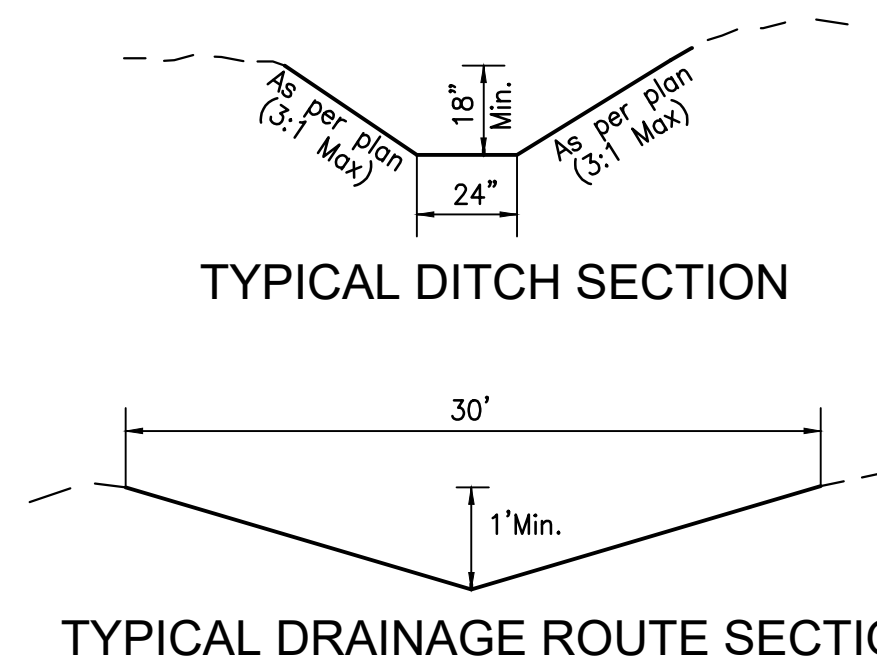
EROSION CONTROL NOTES

- ▲ 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
 - ▲ TEMPORARY DETENTION SEDIMENT FILTER/BASIN
 - ▲ DANDY BAG/BEAVER DAM® OR EQUAL
 - ▲ CONSTRUCTION ENTRANCE
 - ▲ CONCRETE WASHOUT AREA
- SEE SOIL EROSION & SEDIMENTATION CONTROL DETAIL SHEET (Page #9)



- 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 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.

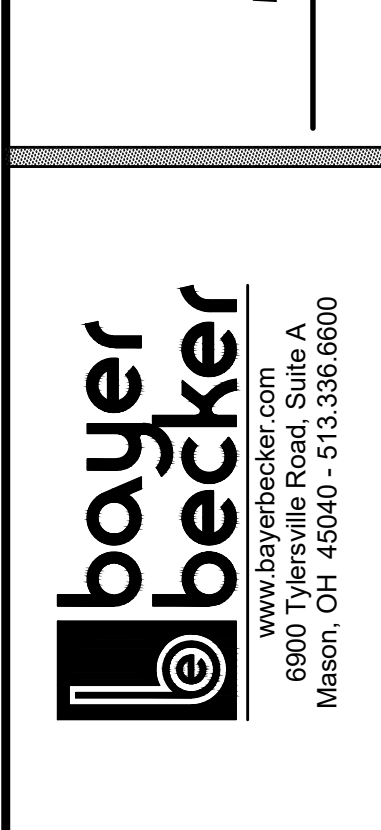
Note: All ditches constructed by the Developer shall be sodded or hydra-seeded.



Date	Drawn	Checked
6-29-18	TAC	

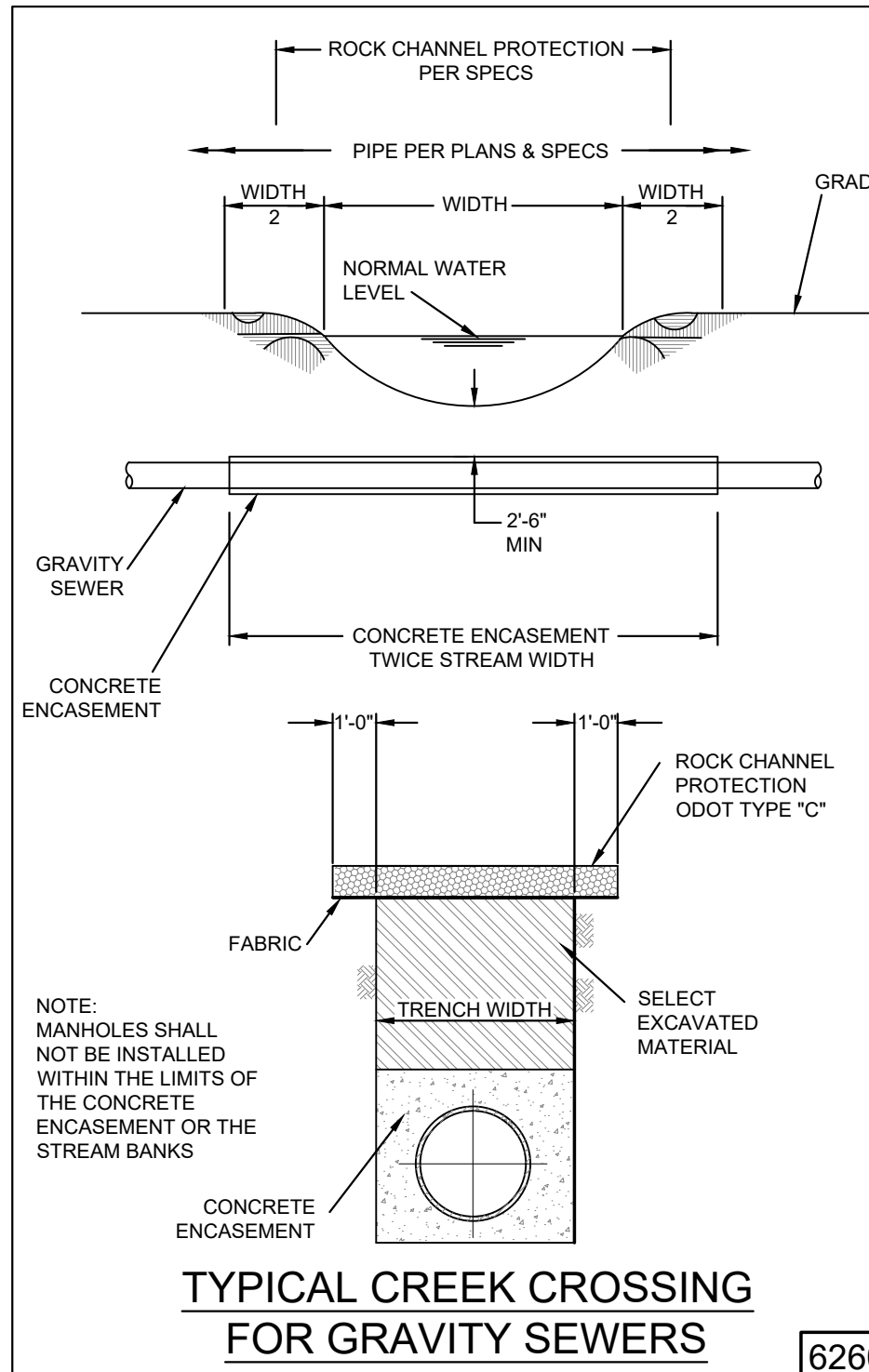
Item	Revision Description
1	Revised as per BCEO
2	
3	
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VISTA VERDE SECTION THREE
SECTIONS 3&9, TOWN 2, RANGE 3
LIBERTY TOWNSHIP, BUTLER COUNTY, OHIO

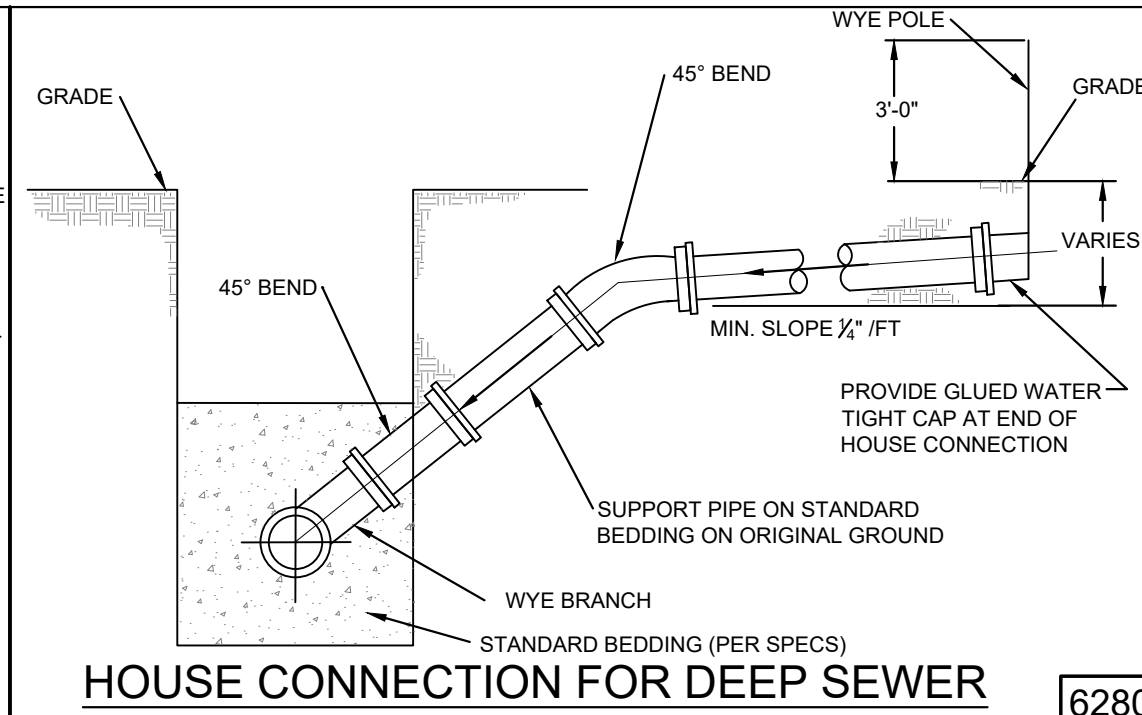


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Drawn by:	TAC
Checked by:	EMR
Issue Date:	4-20-18

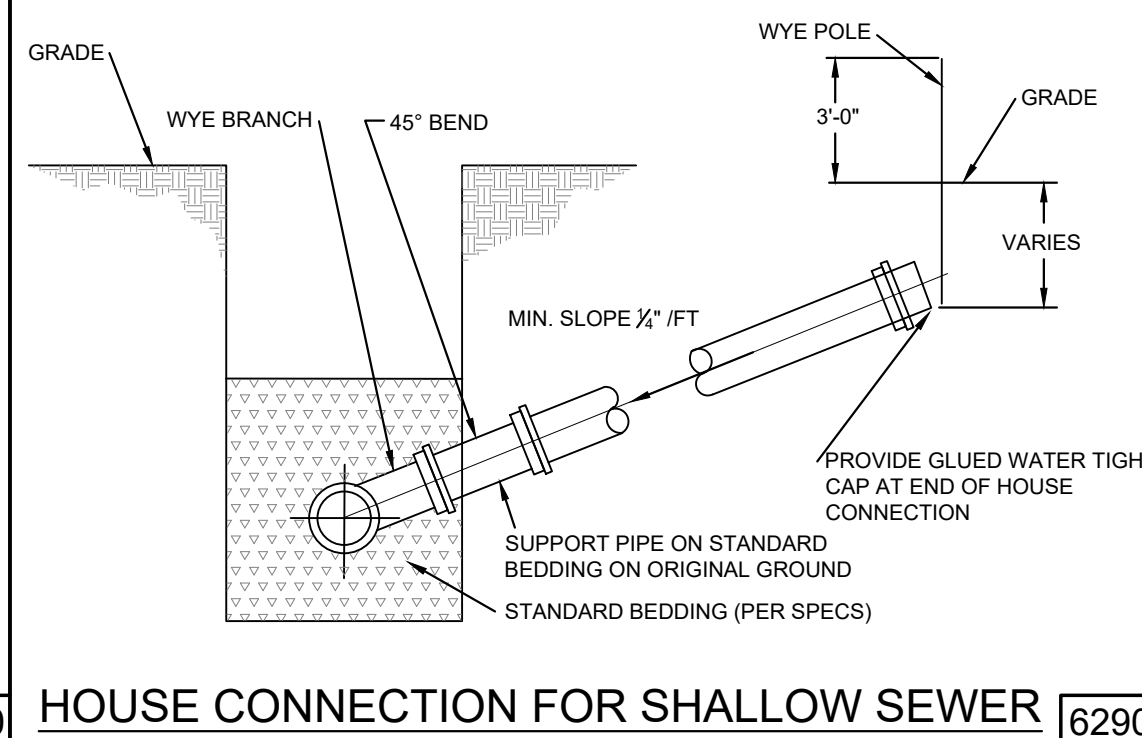
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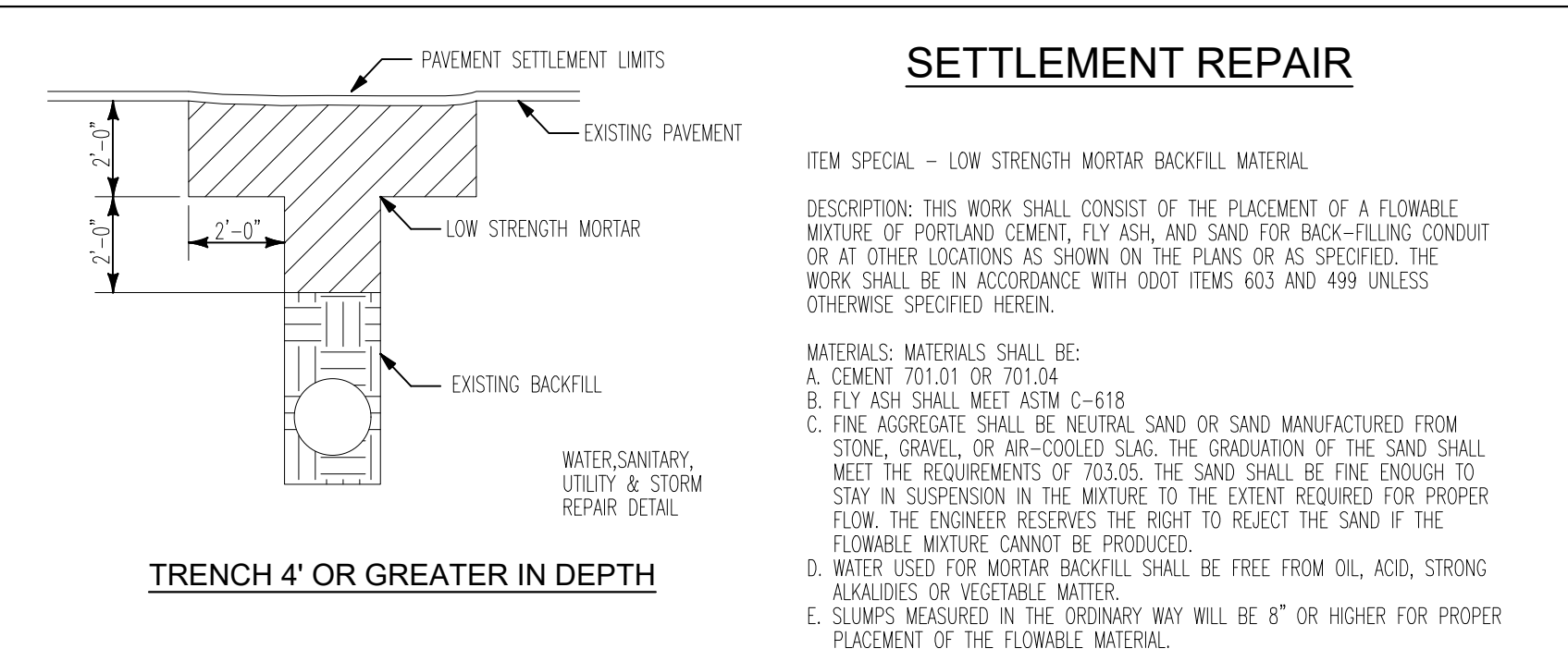
TYPICAL CREEK CROSSING FOR GRAVITY SEWERS [6260]



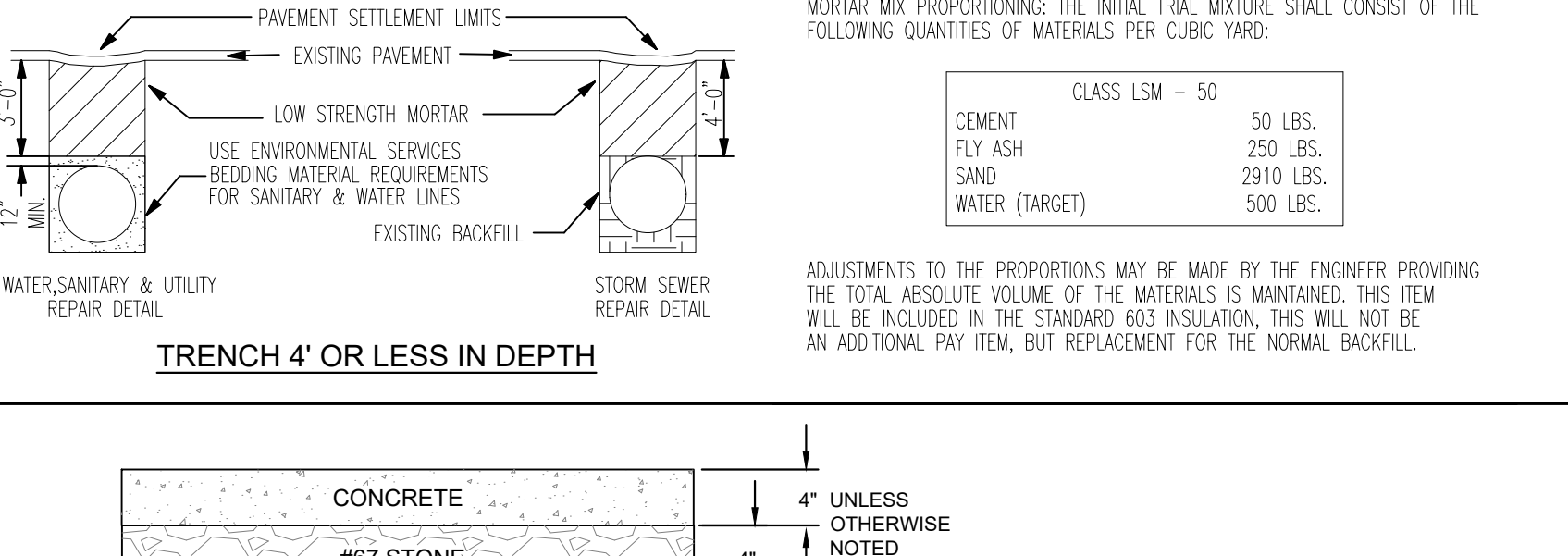
HOUSE CONNECTION FOR DEEP SEWER [6280]



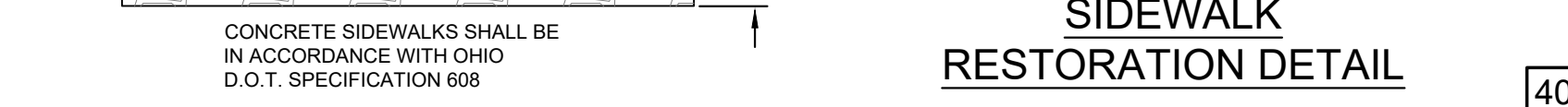
HOUSE CONNECTION FOR SHALLOW SEWER [6290]



TRENCH 4' OR GREATER IN DEPTH



TRENCH 4' OR LESS IN DEPTH



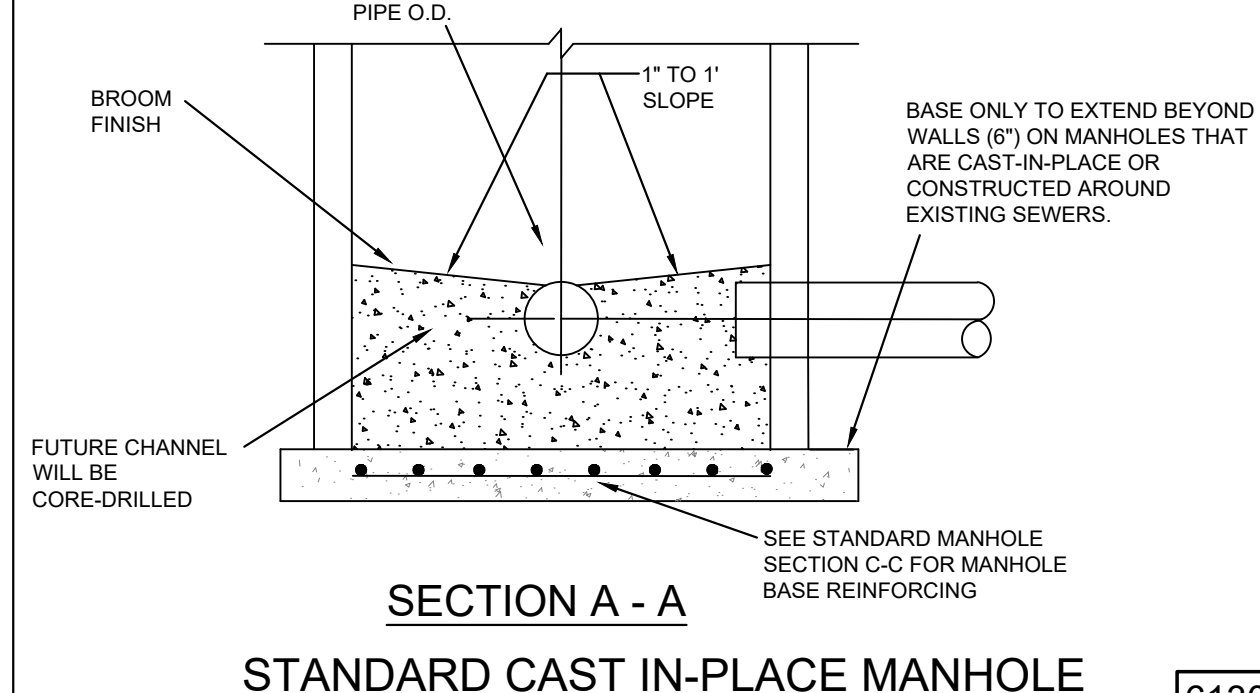
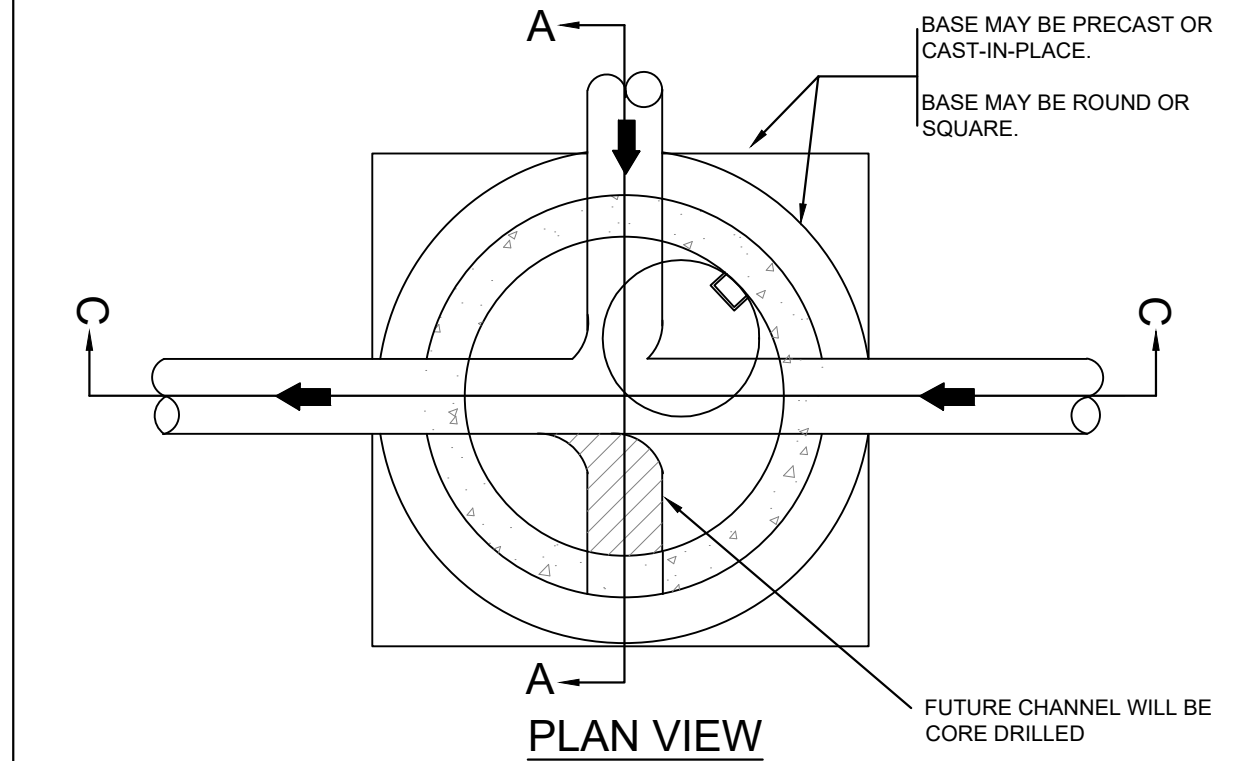
SIDEWALK RESTORATION DETAIL [4010]

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 WILL BE 8\"/>

MORTAR MIX PROPORTIONING: THE INITIAL TRIAL MIXTURE SHALL CONSIST OF THE FOLLOWING QUANTITIES OF MATERIALS PER CUBIC YARD:
 CLASS LSM - 50
 CEMENT 50 LBS.
 FLY ASH 250 LBS.
 SAND 2910 LBS.
 WATER (TARGET) 500 LBS.

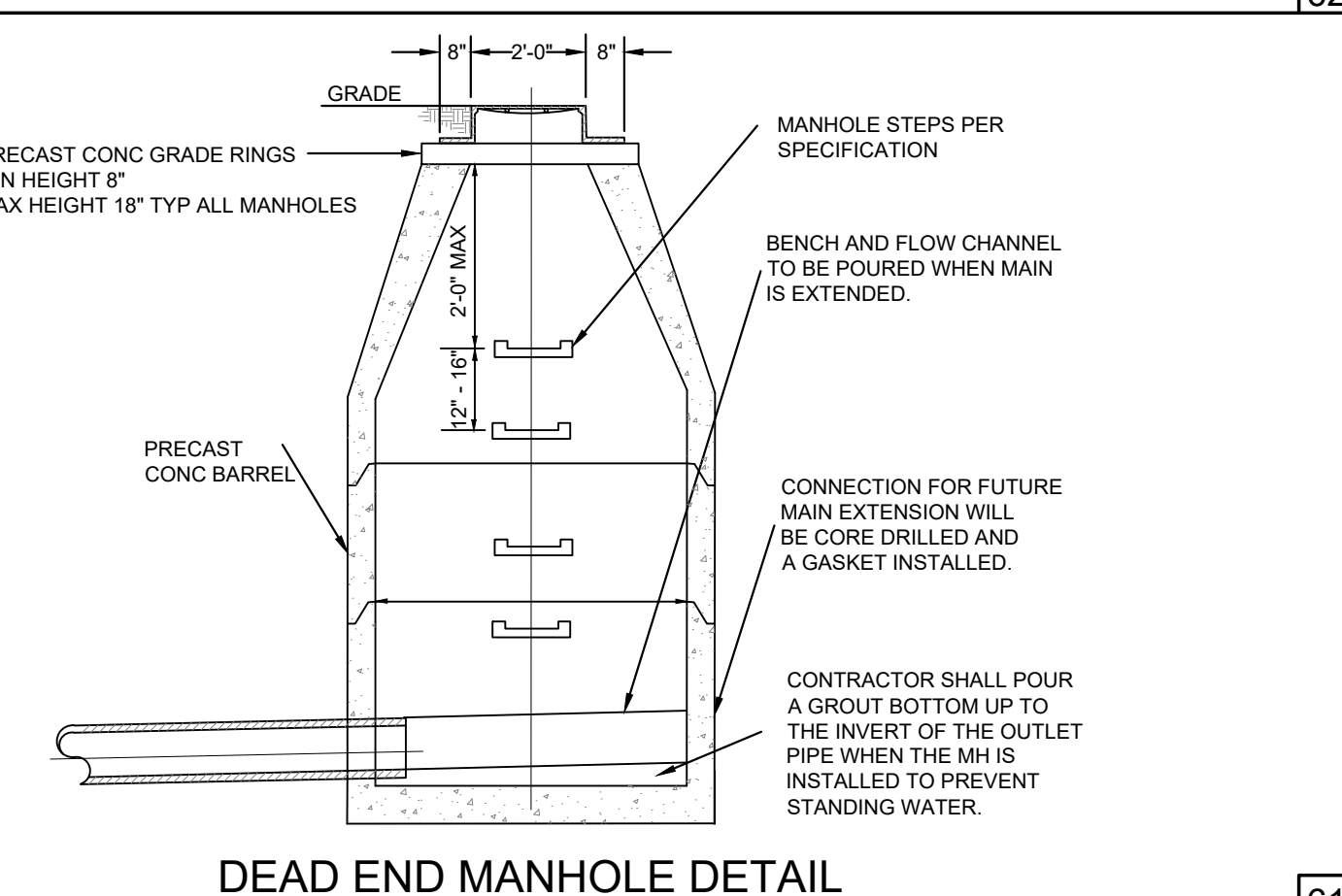
ADJUSTMENTS TO THE PROPORTIONS MAY BE MADE BY THE ENGINEER PROVIDING THE TOTAL ABSOLUTE VOLUME OF THE MATERIALS IS MAINTAINED. THIS ITEM WILL BE INCLUDED IN THE STANDARD 603 INSULATION. THIS WILL NOT BE AN ADDITIONAL PAY ITEM, BUT REPLACEMENT FOR THE NORMAL BACKFILL.



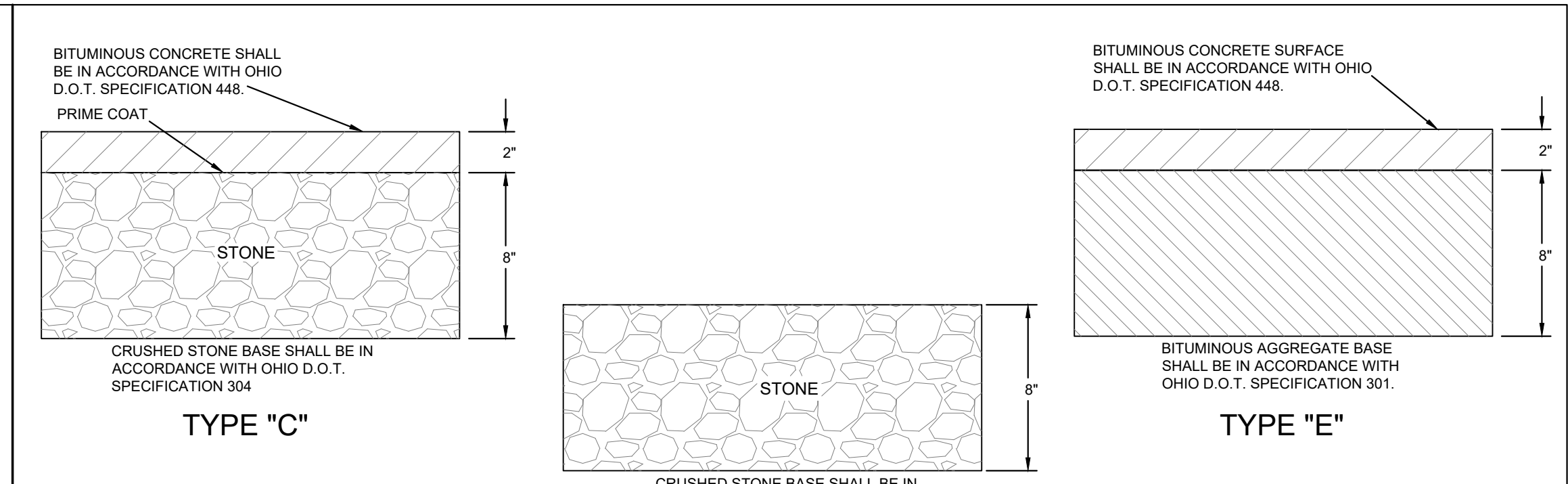
TYPICAL TRENCH DETAIL SEWER INSTALLATION [6270]

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]

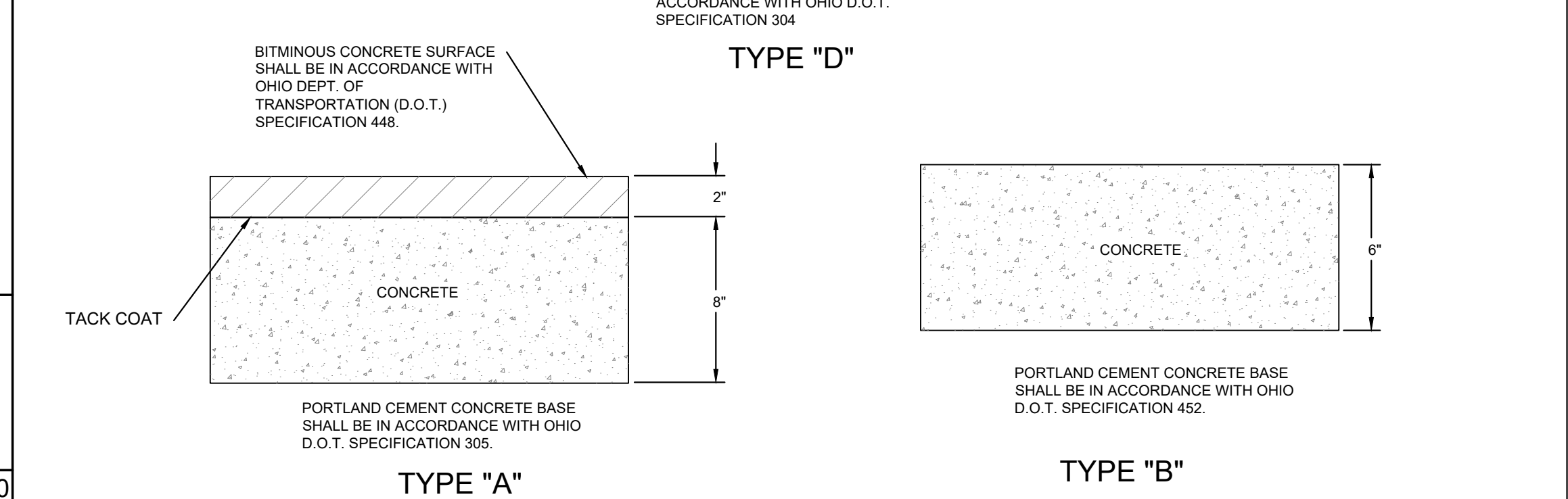


DEAD END MANHOLE DETAIL [6190]



TYPE 'C'

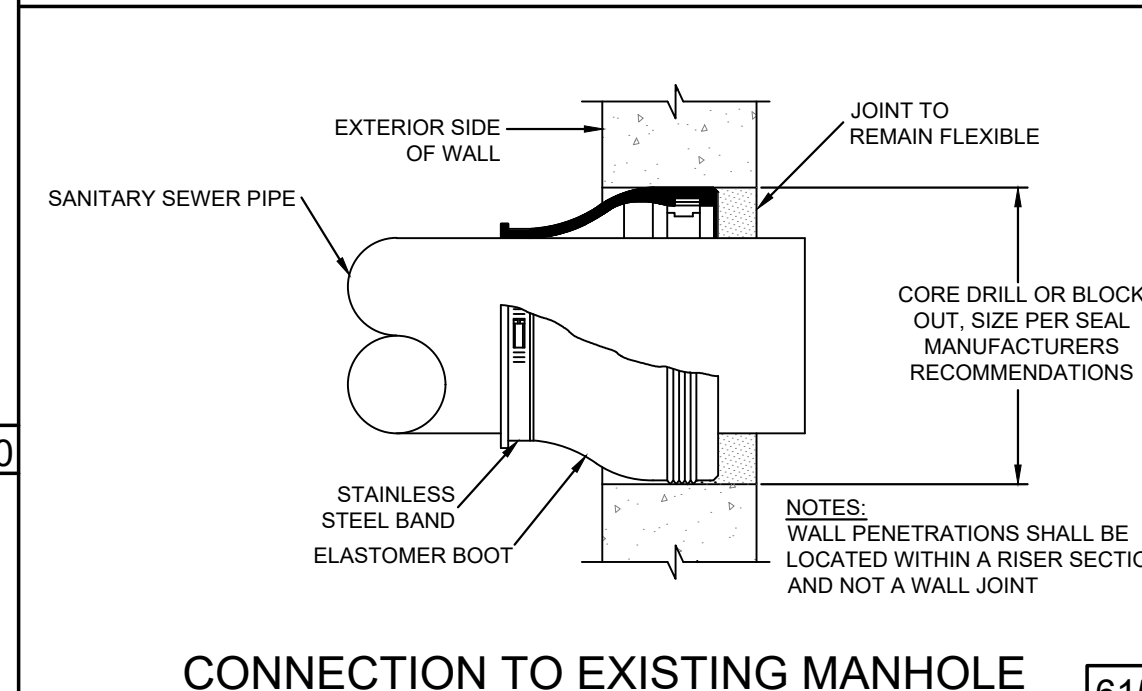
TYPE 'E'



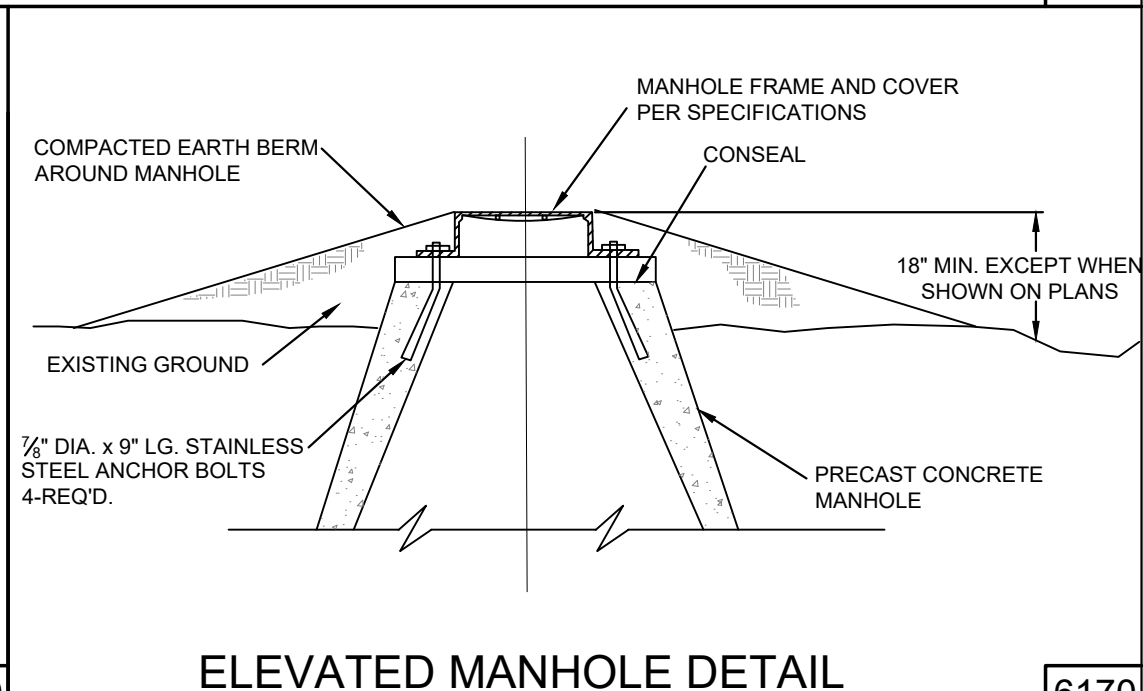
TYPE 'A'

TYPE 'B'

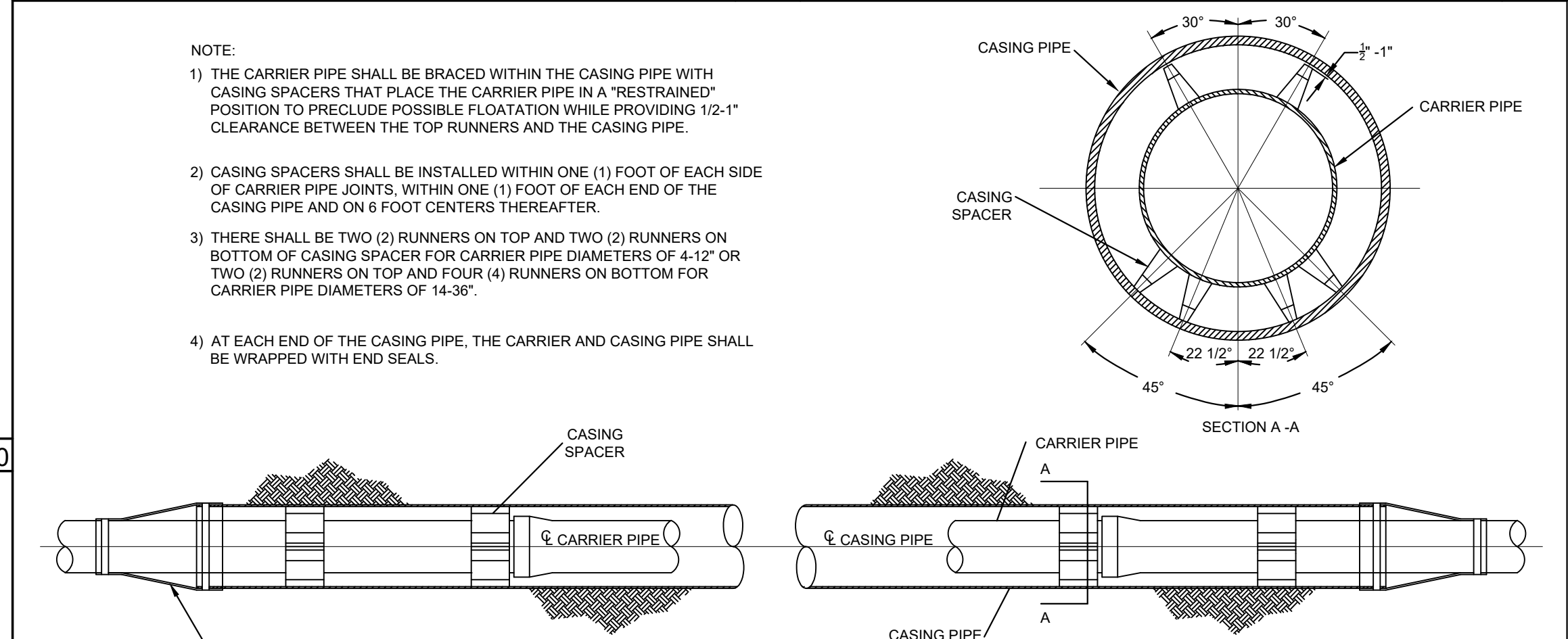
PAVEMENT REPLACEMENT DETAILS [4120]



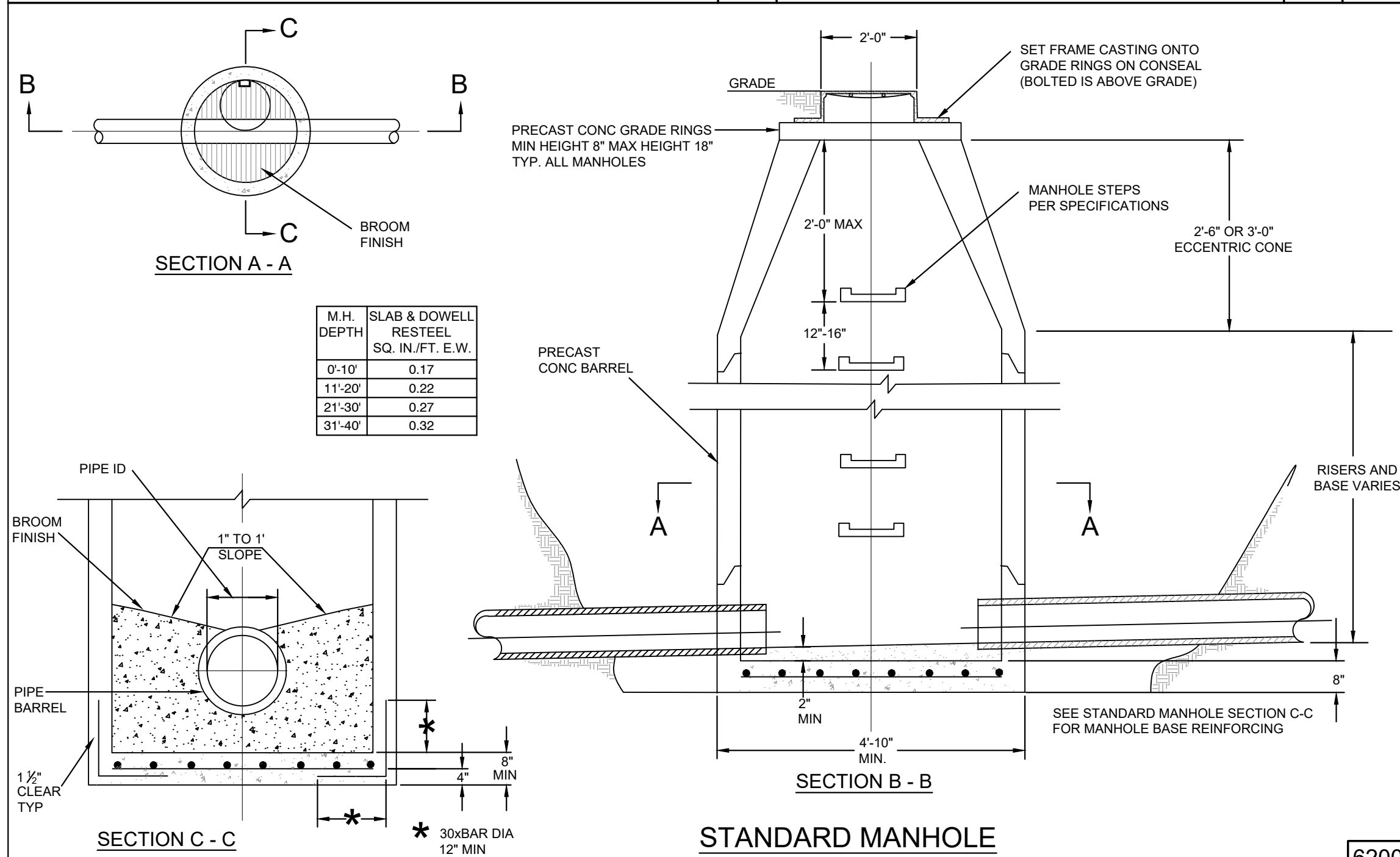
CONNECTION TO EXISTING MANHOLE [6150]



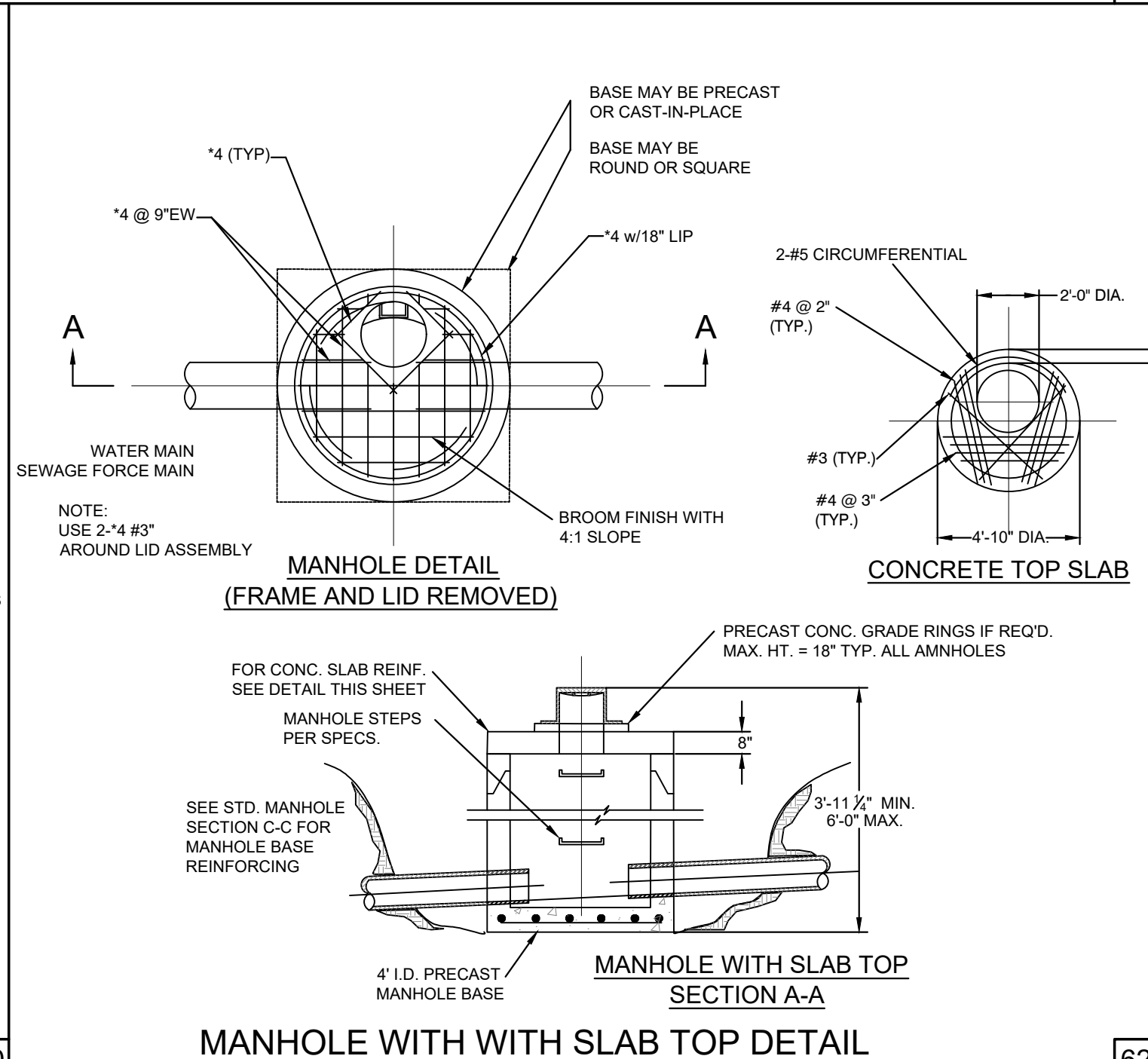
ELEVATED MANHOLE DETAIL [6170]



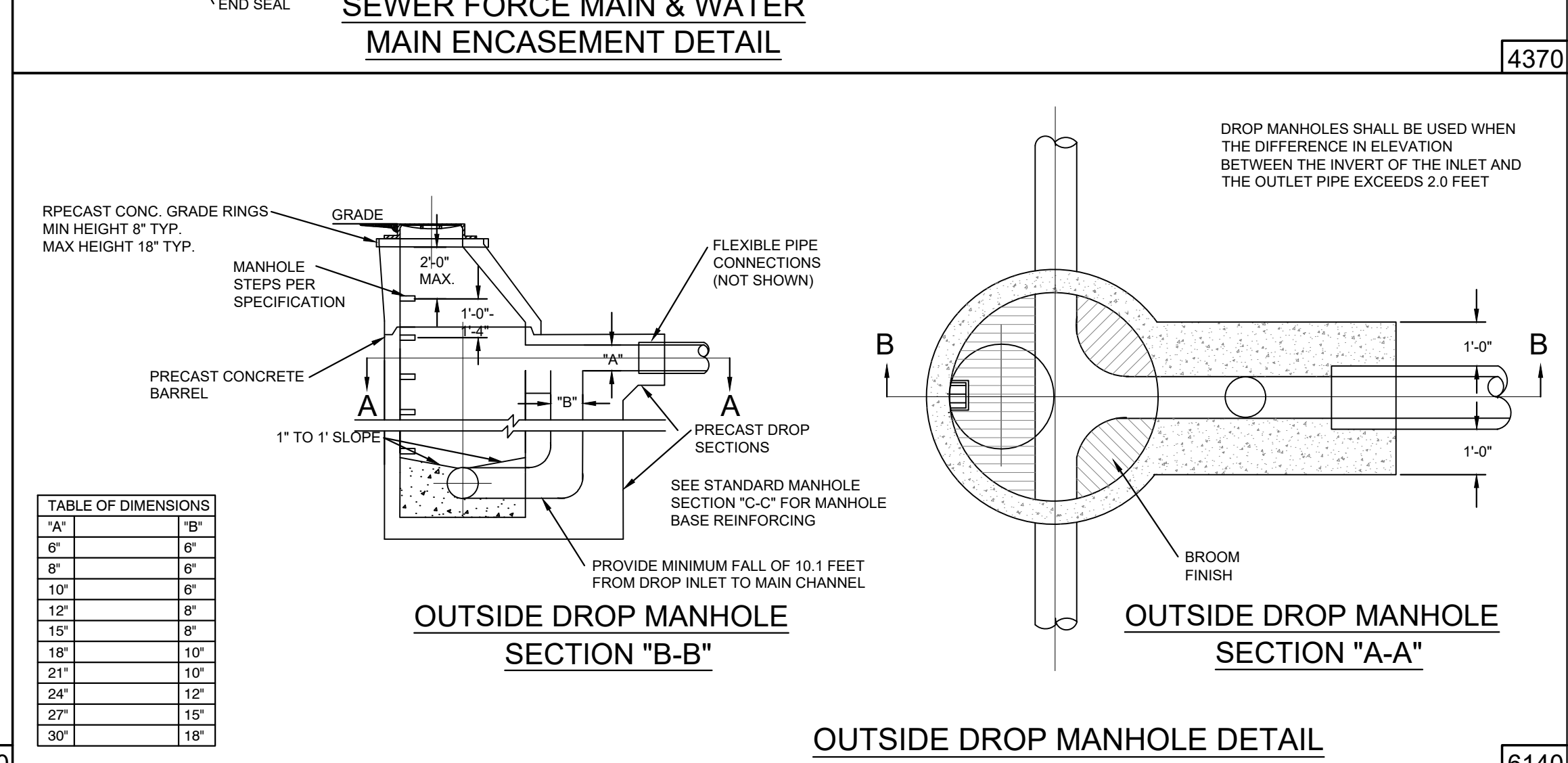
SEWER FORCE MAIN & WATER MAIN ENCASEMENT DETAIL [4370]



STANDARD MANHOLE [6200]



MANHOLE WITH WITH SLAB TOP DETAIL [6210]



OUTSIDE DROP MANHOLE SECTION 'B-B'

OUTSIDE DROP MANHOLE SECTION 'A-A'

OUTSIDE DROP MANHOLE DETAIL [6140]

Plot time: Apr 24, 2018 - 2:31pm
 Drawing name: K:\OFF\BLOCKS\DETAILS\BUTLER BC SAN.dwg - Layout Tab: SAN

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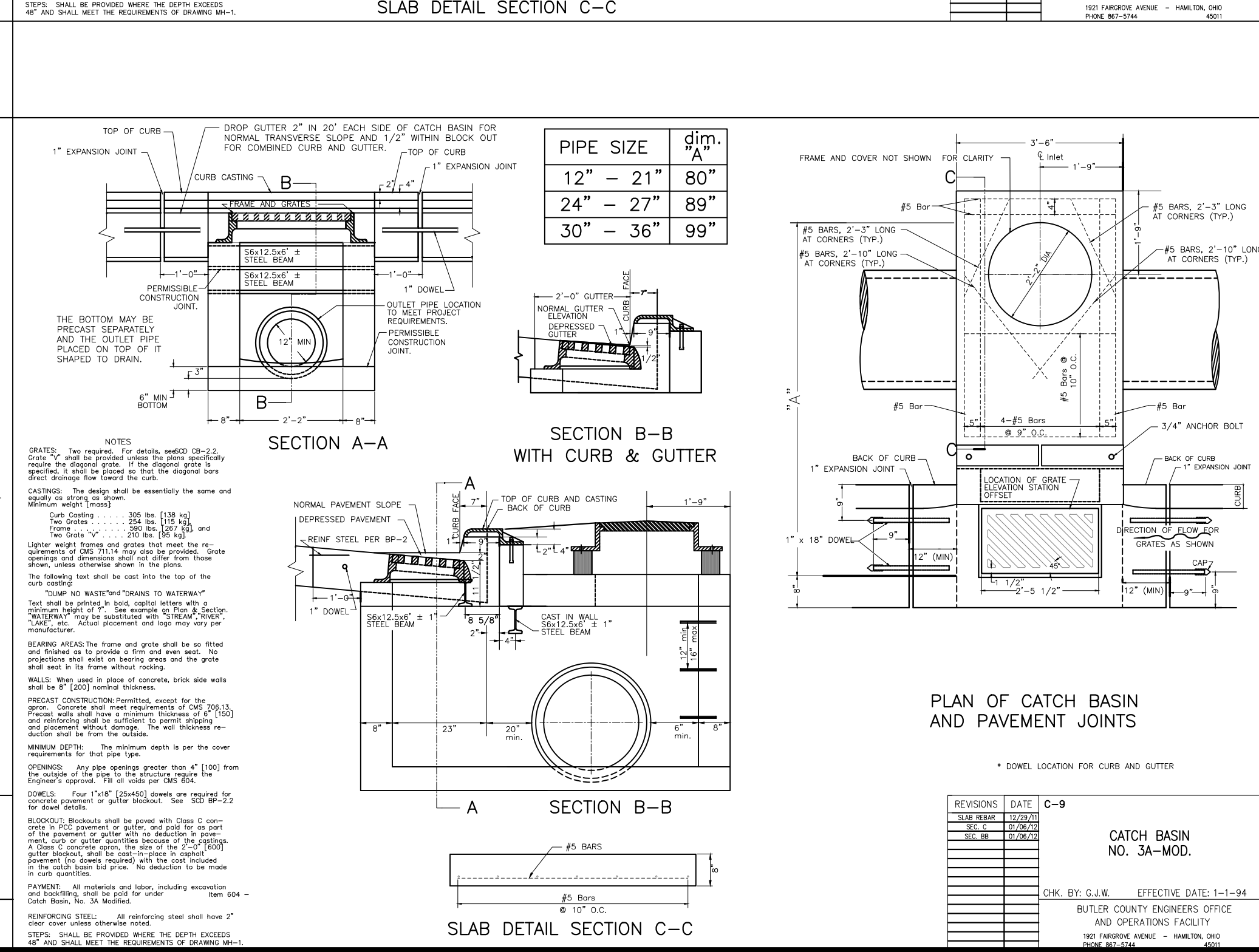
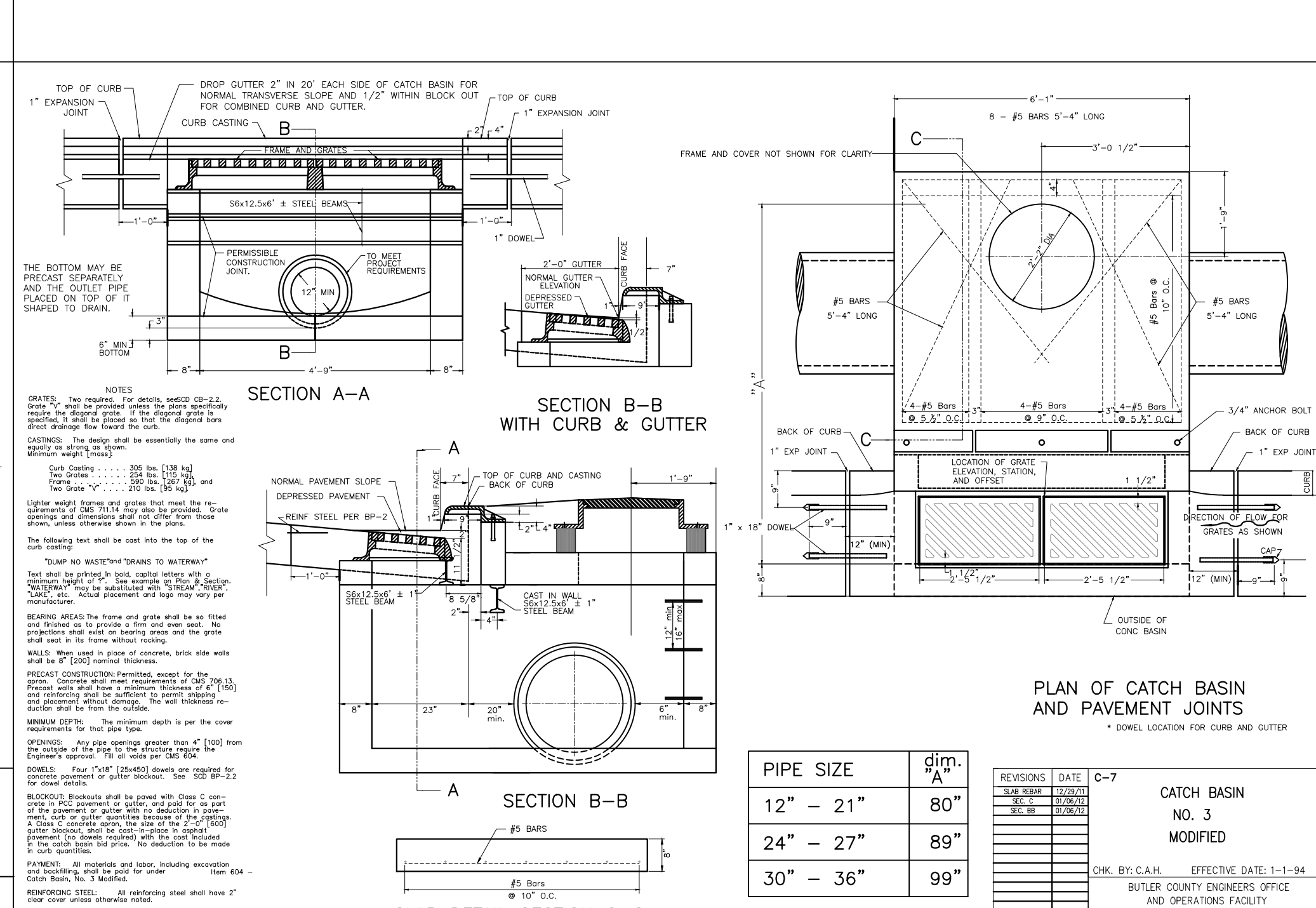
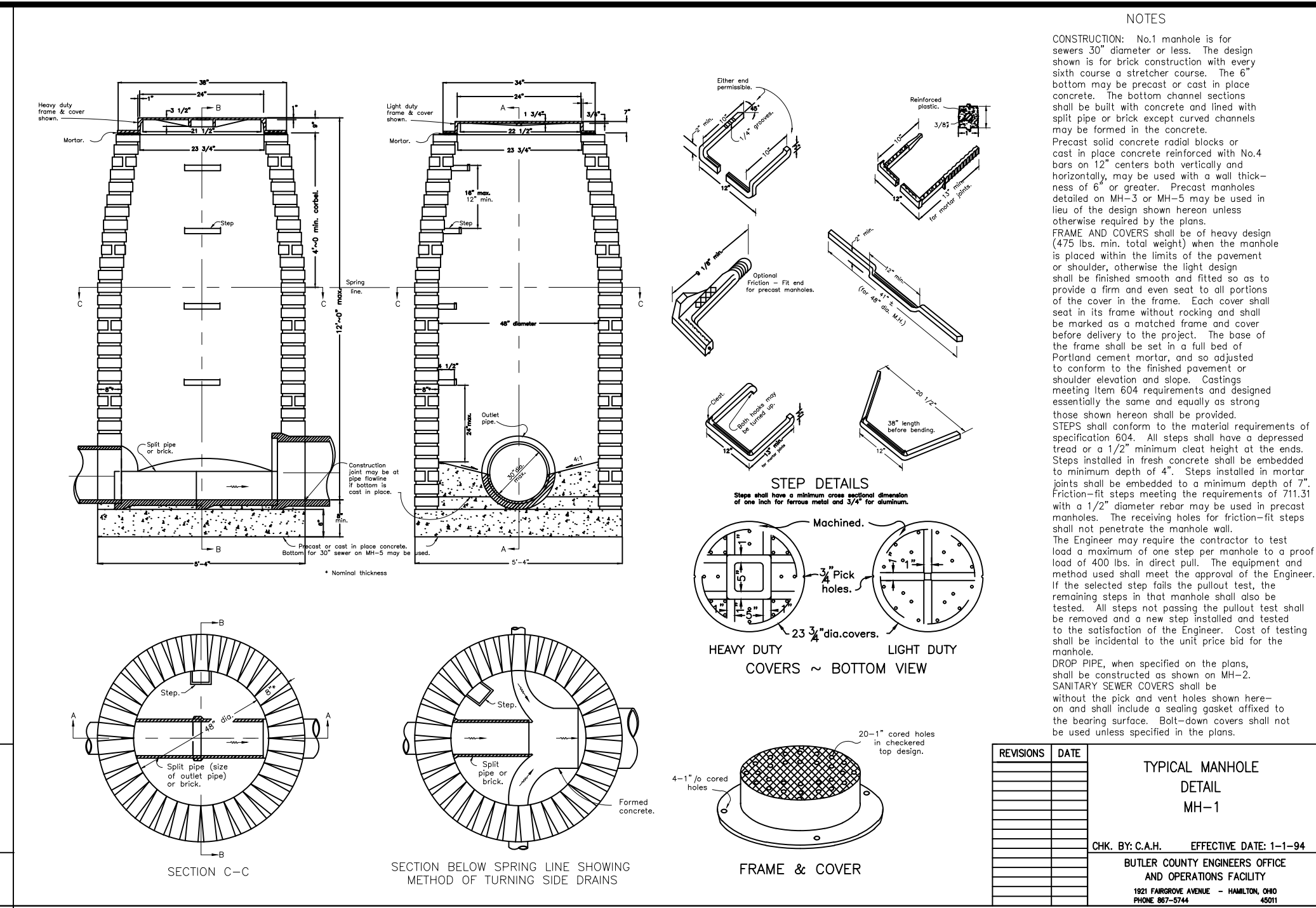
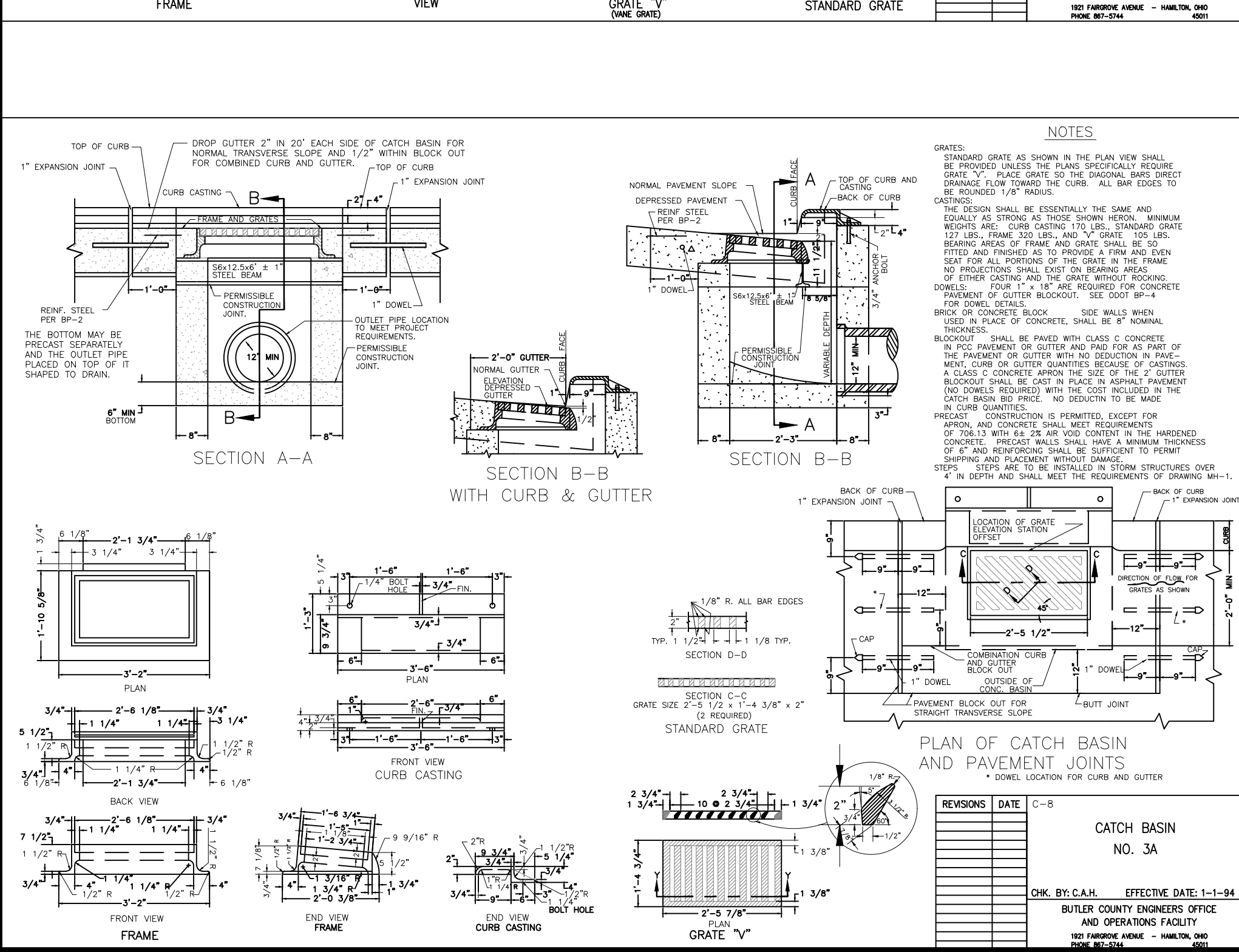
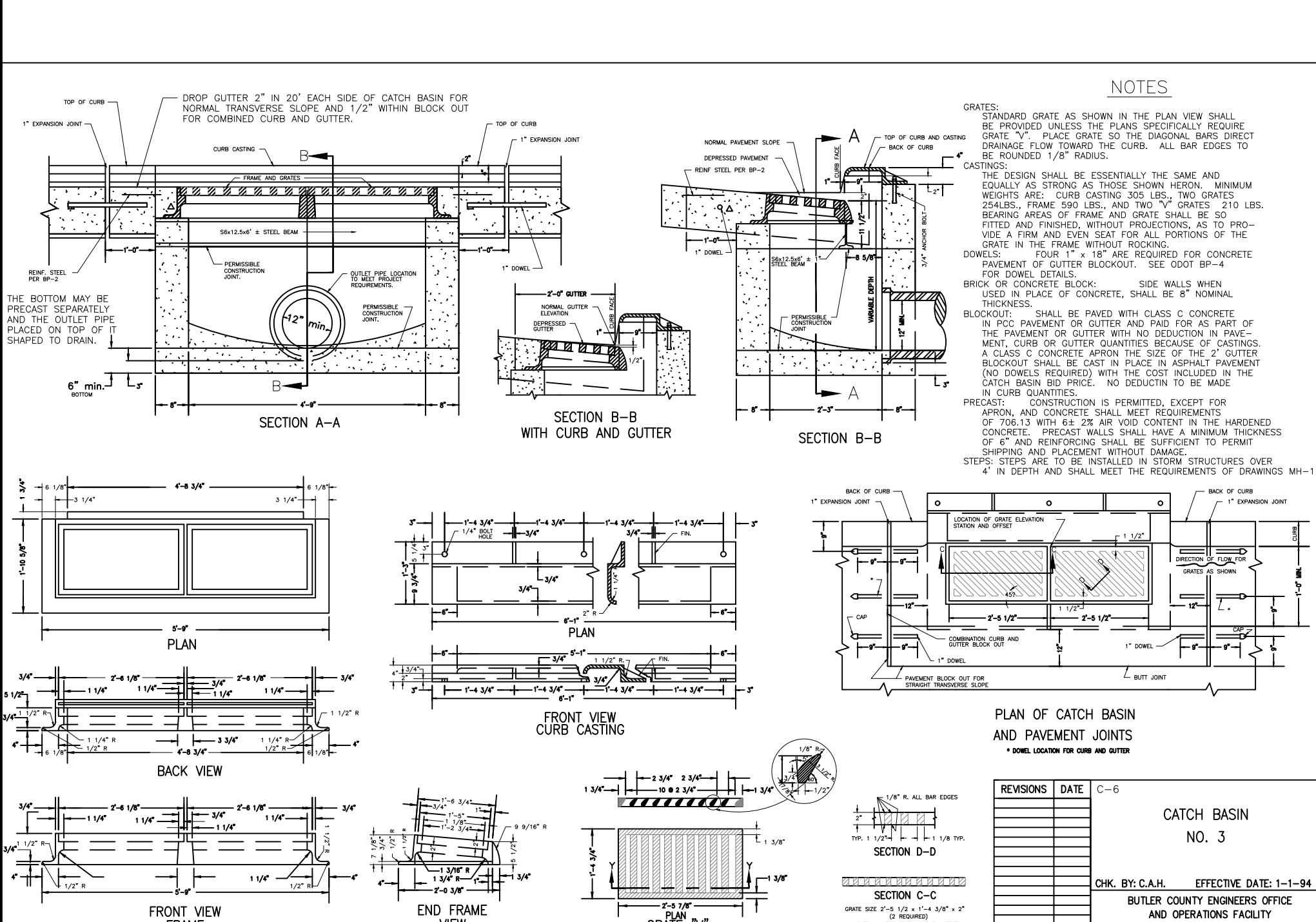
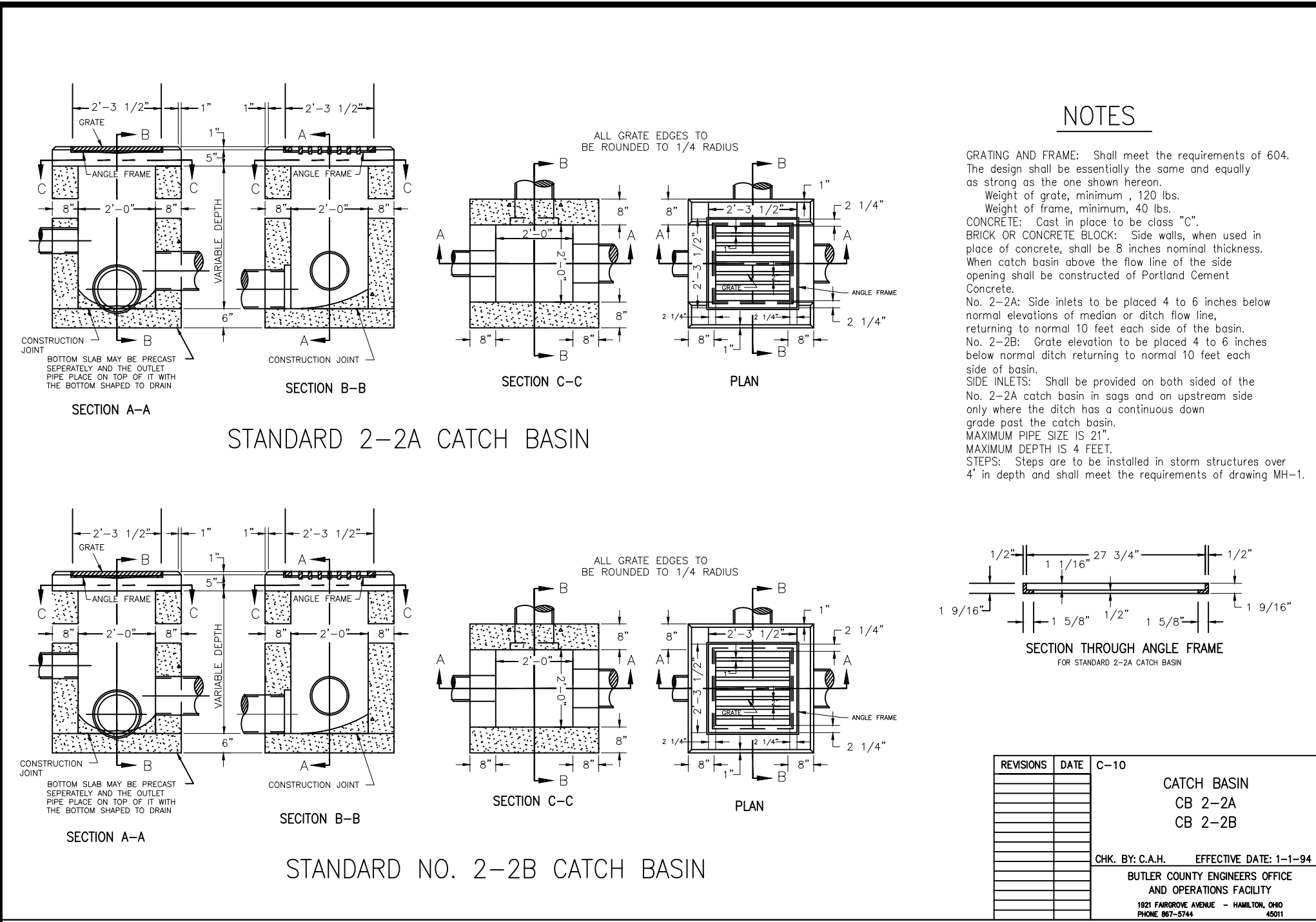
Revision Description
 Date
 Item

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

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

BUTLER COUNTY, OHIO
 MISCELLANEOUS & SANITARY DETAILS

6/9



NOTES

CONSTRUCTION: No. 1 construction is for slopes 20' 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 section shall be built with concrete and lined with asphalt or brick. Precast manhole sections may be formed in the concrete.

Precast solid concrete road blocks or cast in place concrete reinforced with No. 4 bars on 12" centers shall be used horizontally. They may be used with a wall thickness of 6" or greater. Precast manhole details on MH-1 or MH-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 above the line of the pavement or shoulder, otherwise the light design may be used. The frame and cover shall be placed on a firm and even seat at all portions of the cover in the frame. Each cover shall be self-aligning to the project. The slope of the frame shall be set in a full bed of hand cement mortar, and as adjusted to conform to the finished pavement, or shoulder and adjacent sidewalk. The manhole shall meet 604 requirements and designed accordingly. The same shall apply to strong floors shown herein that be provided.

STEPS shall conform to the material requirements of specification 604. All steps shall have a depressed tread or a 1/2" minimum clear height at the ends. Steps installed in fresh concrete shall be embedded to minimum depth of 2 inches in the concrete. Steps shall be embedded to a minimum depth of 2 inches in the concrete. Steps shall be embedded to a minimum depth of 2 inches in the concrete. Steps shall be embedded to a minimum depth of 2 inches in the concrete.

PIPE: shall conform to the material requirements of specification 604. All steps shall have a depressed tread or a 1/2" minimum clear height at the ends. Steps installed in fresh concrete shall be embedded to minimum depth of 2 inches in the concrete. Steps shall be embedded to a minimum depth of 2 inches in the concrete. Steps shall be embedded to a minimum depth of 2 inches in the concrete.

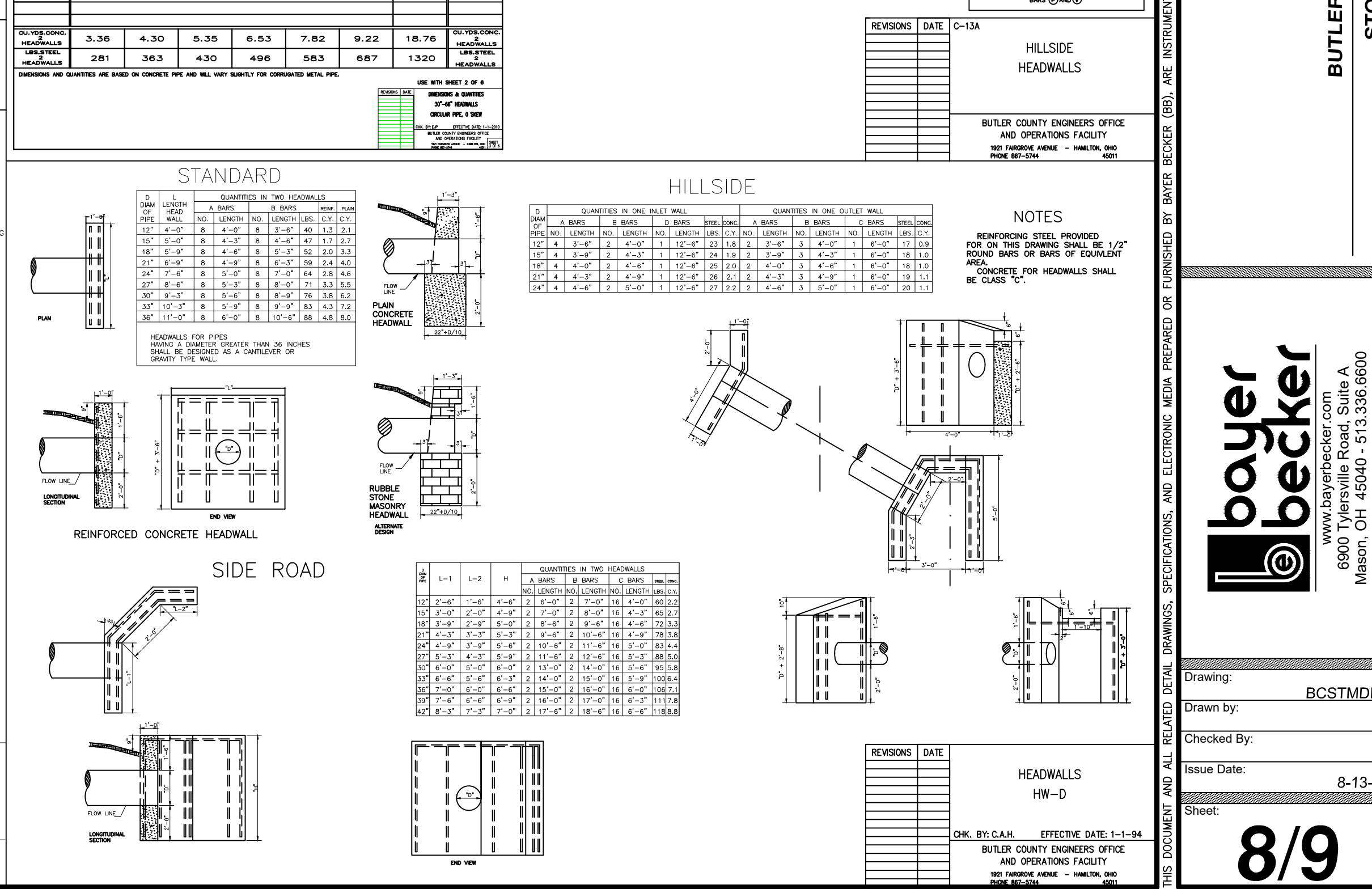
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DIAMETER OF PIPE

DIAMETER	30"	36"	42"	48"	54"	60"	66"
30"	3.36	4.30	6.35	6.53	7.82	9.22	18.76
36"	281	363	430	496	583	687	1320

DIAMETER OF PIPE

DIAMETER	30"	36"	42"	48"	54"	60"	66"
A	3'-0"	4'-0"	4'-6"	5'-0"	5'-6"	6'-0"	6'-6"
B	1'-3"	1'-6"	1'-9"	2'-0"	2'-3"	2'-6"	2'-9"
C	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-0"
D	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-0"
E	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-0"
F	4'-4"	4'-4"	5'-0"	5'-0"	5'-6"	5'-6"	6'-0"
G	3'-0"	3'-0"	3'-0"	3'-0"	3'-0"	3'-0"	3'-0"
H	7'-0"	7'-0"	7'-0"	7'-0"	7'-0"	7'-0"	7'-0"
I	0'-3"	0'-3"	0'-3"	0'-3"	0'-3"	0'-3"	0'-3"
J	0'-3"	0'-3"	0'-3"	0'-3"	0'-3"	0'-3"	0'-3"
K	0'-3"	0'-3"	0'-3"	0'-3"	0'-3"	0'-3"	0'-3"
L	0'-3"	0'-3"	0'-3"	0'-3"	0'-3"	0'-3"	0'-3"
M	0'-3"	0'-3"	0'-3"	0'-3"	0'-3"	0'-3"	0'-3"
N	0'-3"	0'-3"	0'-3"	0'-3"	0'-3"	0'-3"	0'-3"
O	0'-3"	0'-3"	0'-3"	0'-3"	0'-3"	0'-3"	0'-3"
P	0'-3"	0'-3"	0'-3"	0'-3"	0'-3"	0'-3"	0'-3"
Q	0'-3"	0'-3"	0'-3"	0'-3"	0'-3"	0'-3"	0'-3"
R	0'-3"	0'-3"	0'-3"	0'-3"	0'-3"	0'-3"	0'-3"
S	0'-3"	0'-3"	0'-3"	0'-3"	0'-3"	0'-3"	0'-3"
T	0'-3"	0'-3"	0'-3"	0'-3"	0'-3"	0'-3"	0'-3"
U	0'-3"	0'-3"	0'-3"	0'-3"	0'-3"	0'-3"	0'-3"
V	0'-3"	0'-3"	0'-3"	0'-3"	0'-3"	0'-3"	0'-3"
W	0'-3"	0'-3"	0'-3"	0'-3"	0'-3"	0'-3"	0'-3"
X	0'-3"	0'-3"	0'-3"	0'-3"	0'-3"	0'-3"	0'-3"
Y	0'-3"	0'-3"	0'-3"	0'-3"	0'-3"	0'-3"	0'-3"
Z	0'-3"	0'-3"	0'-3"	0'-3"	0'-3"	0'-3"	0'-3"



Plot time: Apr 24, 2018 12:32PM
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 Checked By: 8-13-12
 Issue Date: 8-13-12
 Sheet: 8/9
 BUTLER COUNTY, OHIO
 STORM DETAILS
 Revision Description
 Date
 Chk
 Item
 REVISIONS DATE C-10
 CATCH BASIN NO. 2A
 CATCH BASIN NO. 2B
 OK BY: C.A.H. EFFECTIVE DATE: 1-1-94
 BUTLER COUNTY ENGINEERS OFFICE AND OPERATIONS FACILITY
 100 PARKWAY AVENUE - HAINES, OHIO 44633
 PHONE 419-245-2400
 REVISIONS DATE C-7
 CATCH BASIN NO. 3
 OK BY: C.A.H. EFFECTIVE DATE: 1-1-94
 BUTLER COUNTY ENGINEERS OFFICE AND OPERATIONS FACILITY
 100 PARKWAY AVENUE - HAINES, OHIO 44633
 REVISIONS DATE C-13A
 HILLSIDE HEADWALLS
 BUTLER COUNTY ENGINEERS OFFICE AND OPERATIONS FACILITY
 100 PARKWAY AVENUE - HAINES, OHIO 44633
 REVISIONS DATE C-9
 CATCH BASIN NO. 3A-MOD.
 OK BY: C.A.H. EFFECTIVE DATE: 1-1-94
 BUTLER COUNTY ENGINEERS OFFICE AND OPERATIONS FACILITY
 100 PARKWAY AVENUE - HAINES, OHIO 44633
 REVISIONS DATE C-8
 HEADWALLS HW-D
 OK BY: C.A.H. EFFECTIVE DATE: 1-1-94
 BUTLER COUNTY ENGINEERS OFFICE AND OPERATIONS FACILITY
 100 PARKWAY AVENUE - HAINES, OHIO 44633

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 washout 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 fertilize, 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 fence 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: Installation of Straw and Fabric Filter Barriers for Sediment Control, Sherwood and Wyant

PROPER PLACEMENT OF A STRAW BALE BARRIER IN DRAINAGE WAY
Points A should be higher than point B

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

PROPER PLACEMENT OF A STRAW BALE BARRIER IN DRAINAGE WAY
Points A should be higher than point B

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

PROPER PLACEMENT OF A STRAW BALE BARRIER IN DRAINAGE WAY
Points A should be higher than point B

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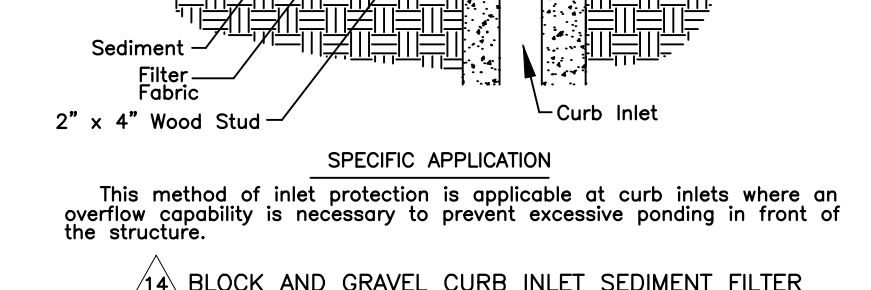
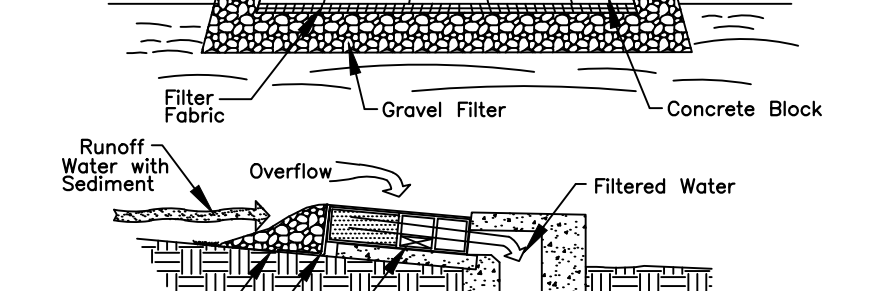
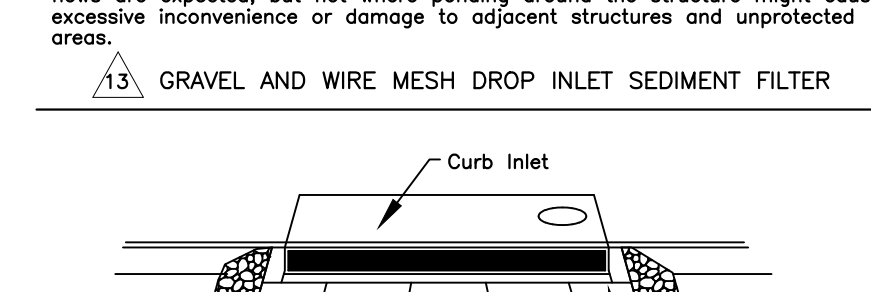
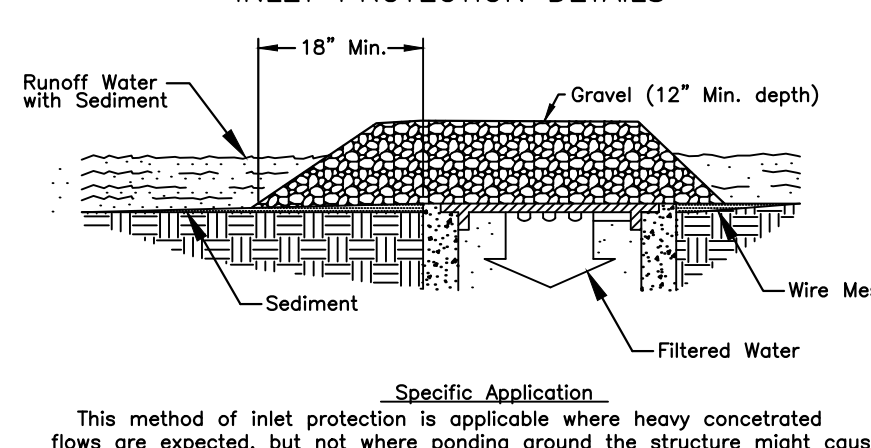
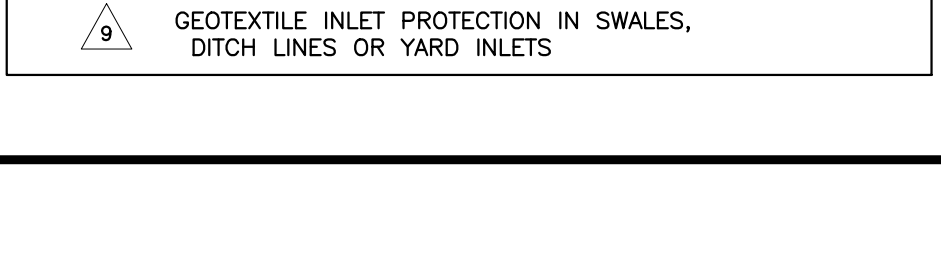
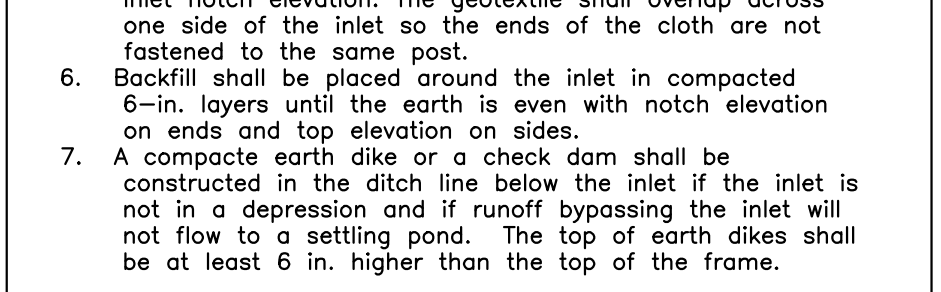
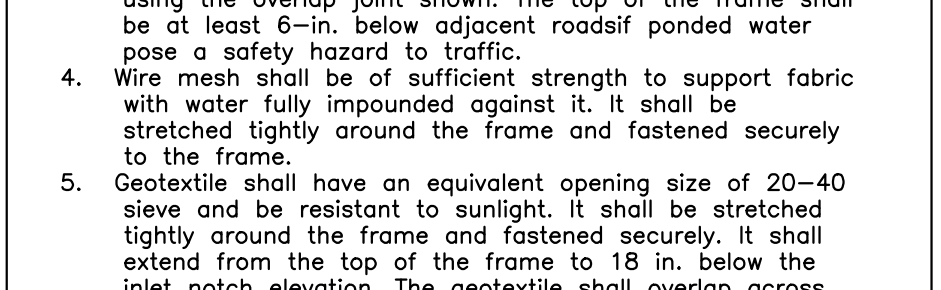
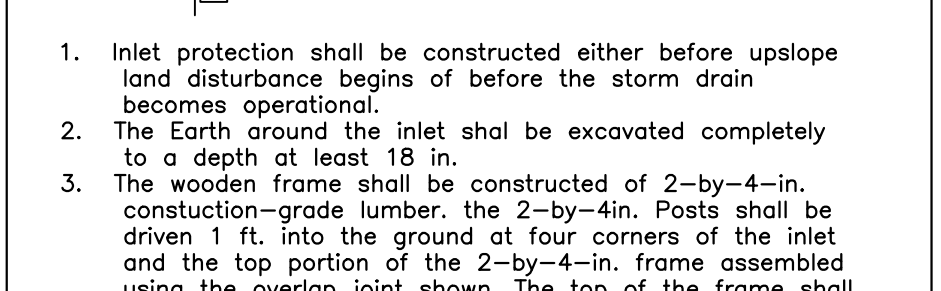
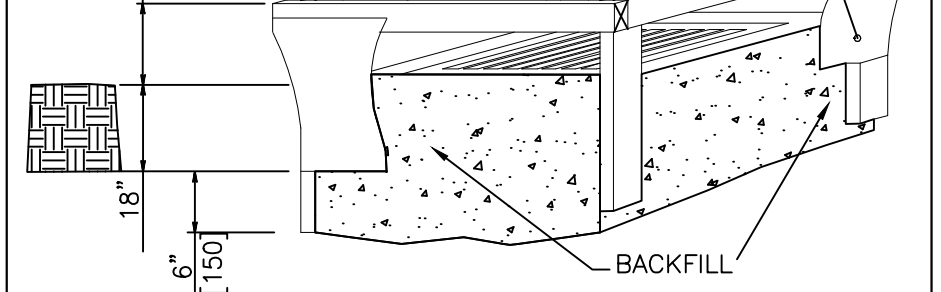
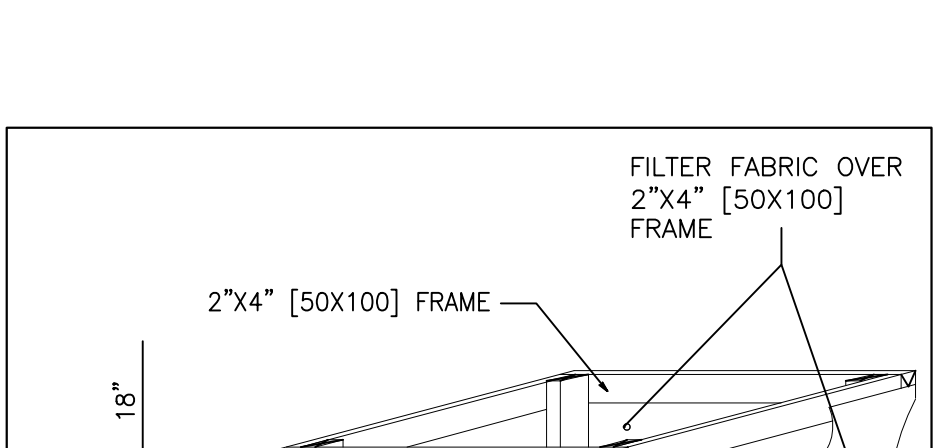
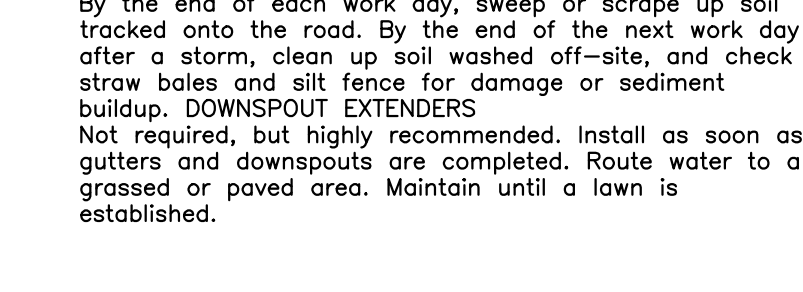
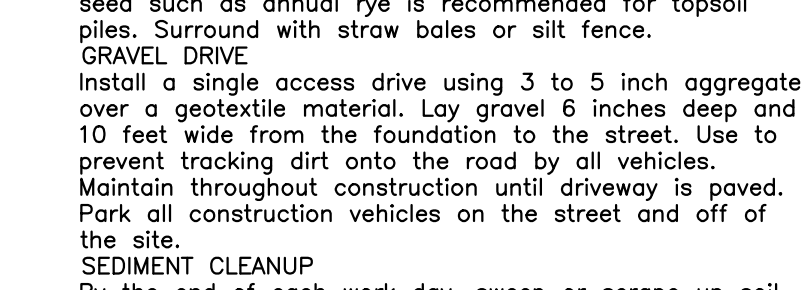
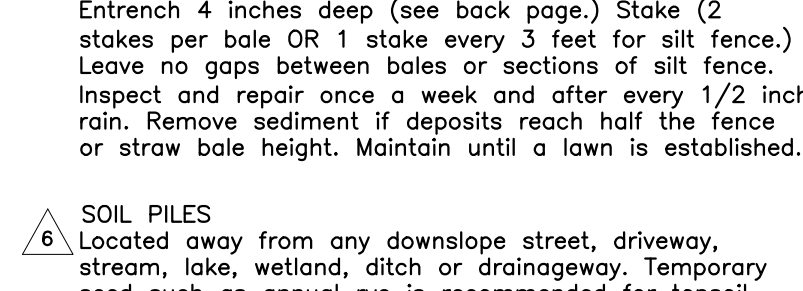
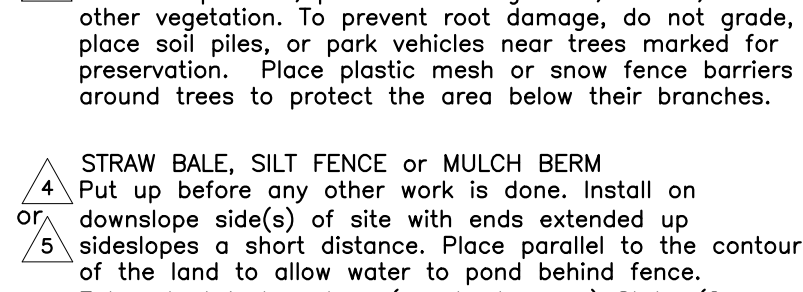
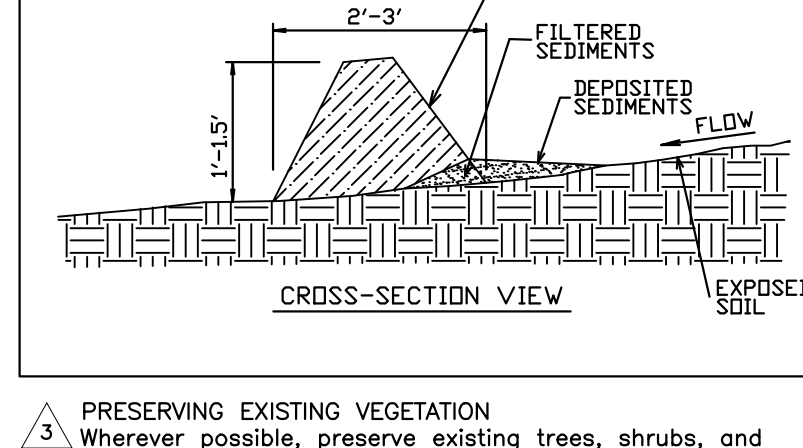
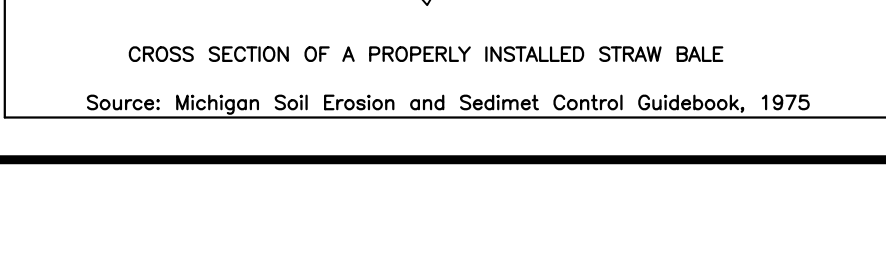
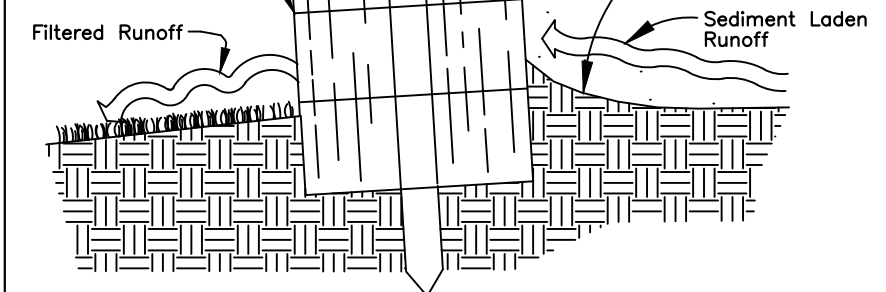
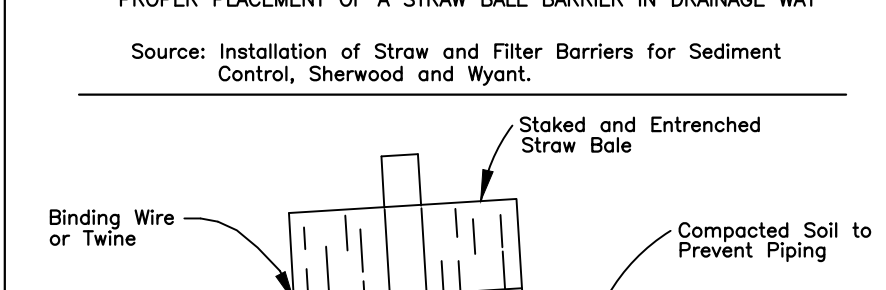
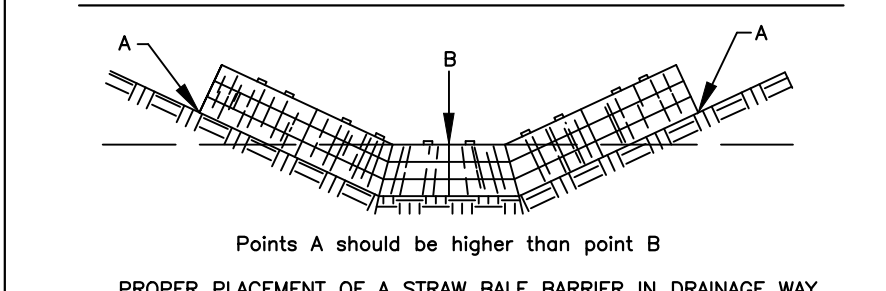
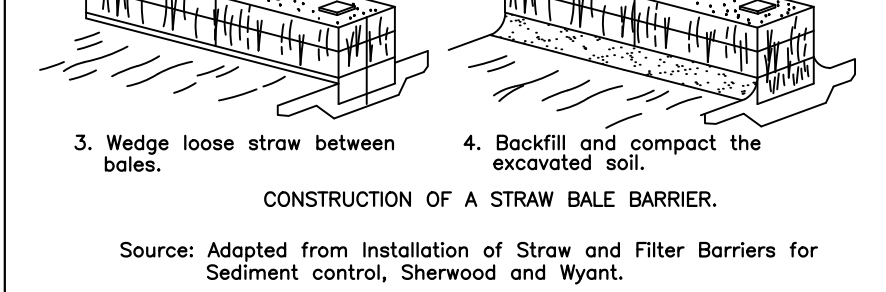
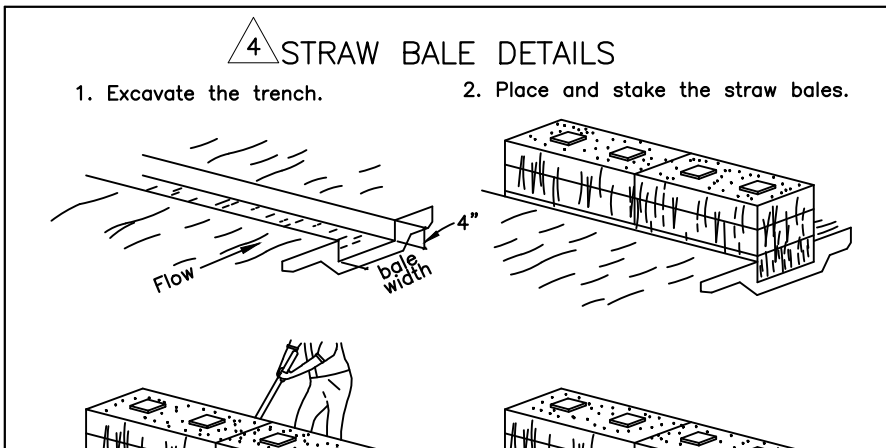
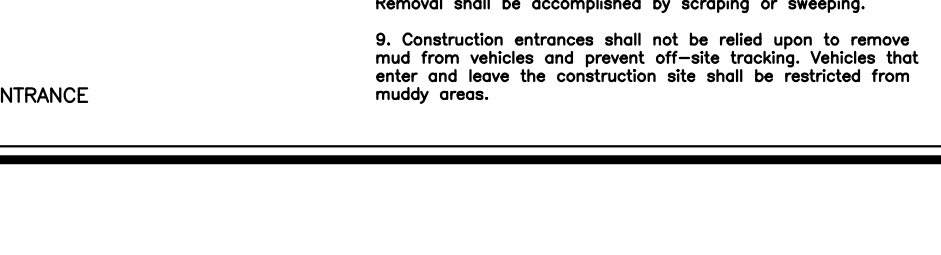
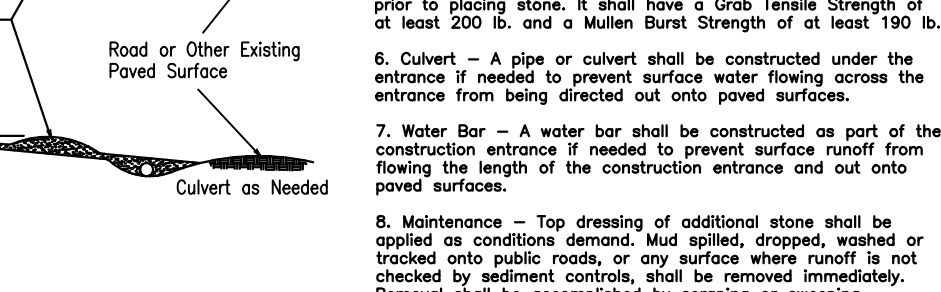
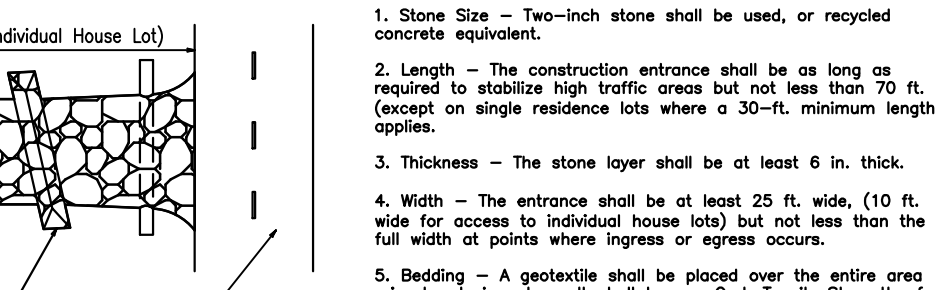
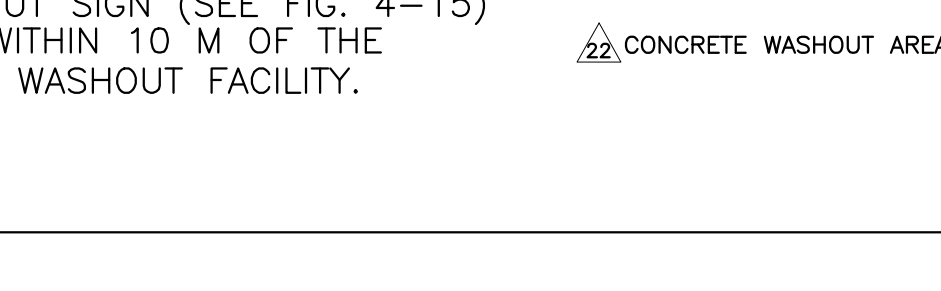
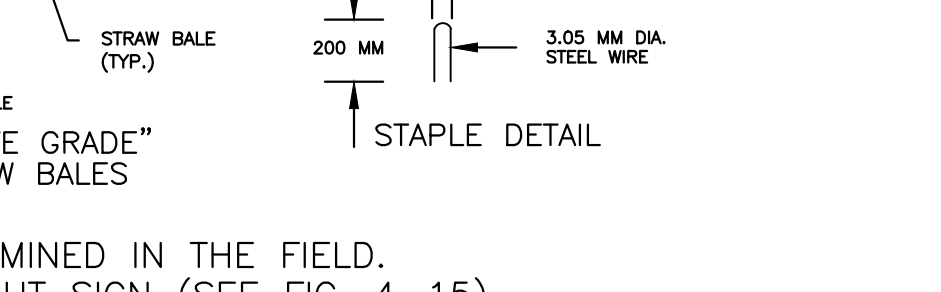
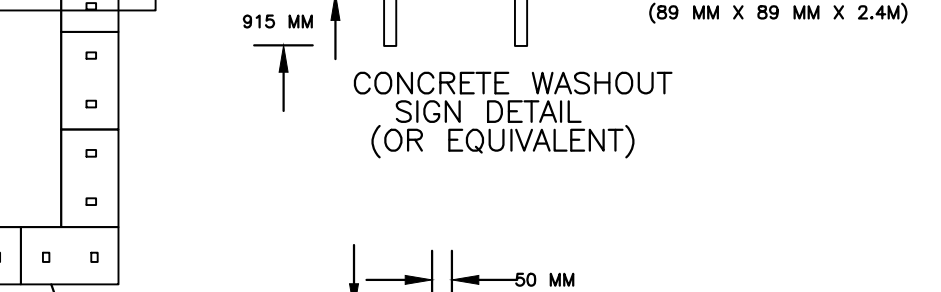
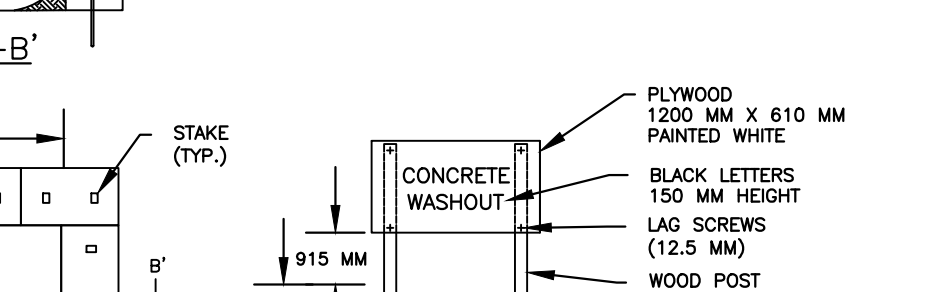
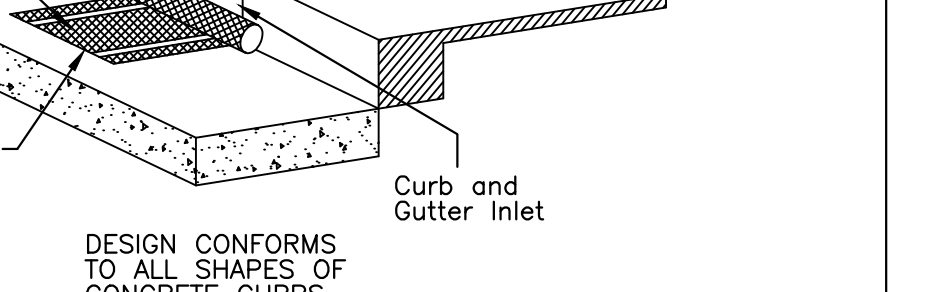
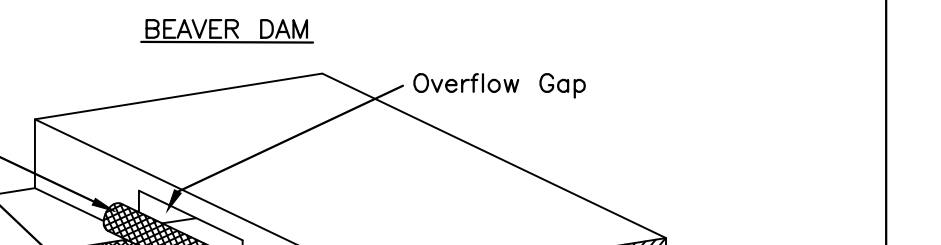
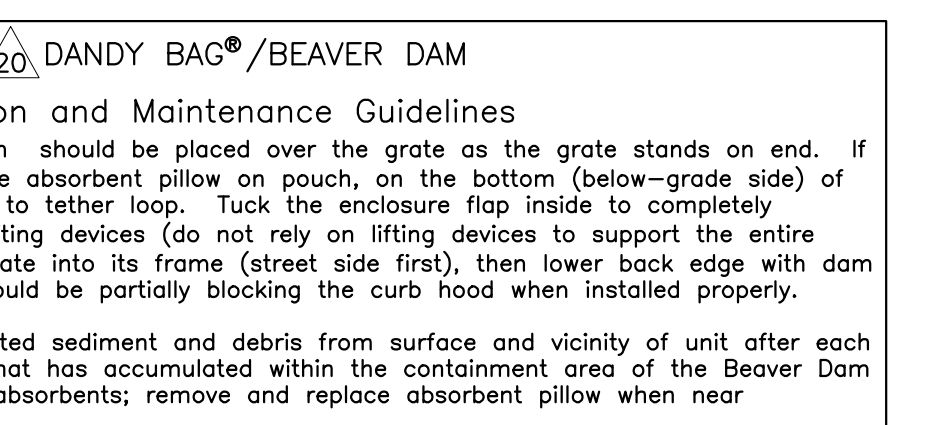
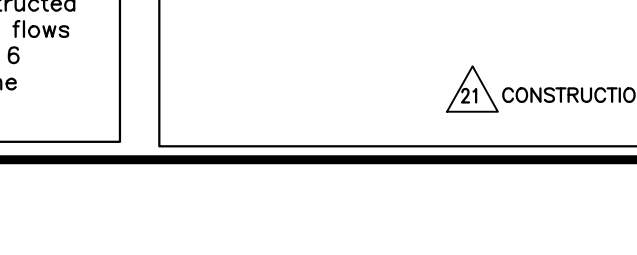
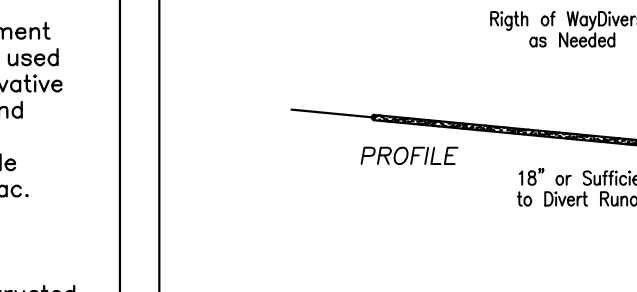
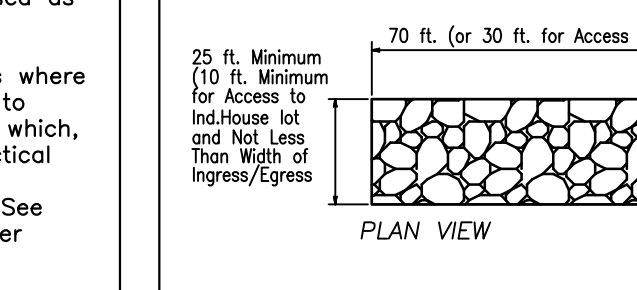
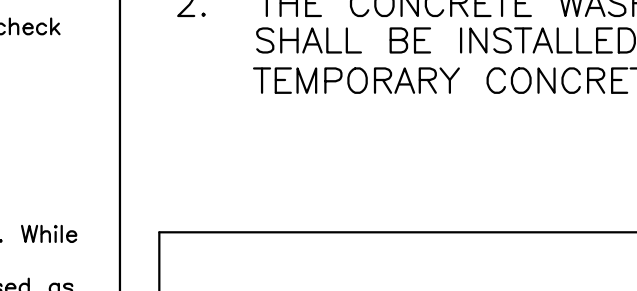
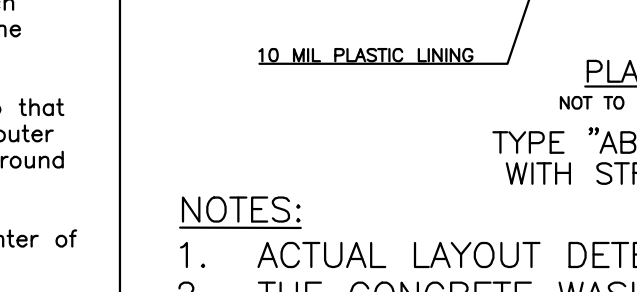
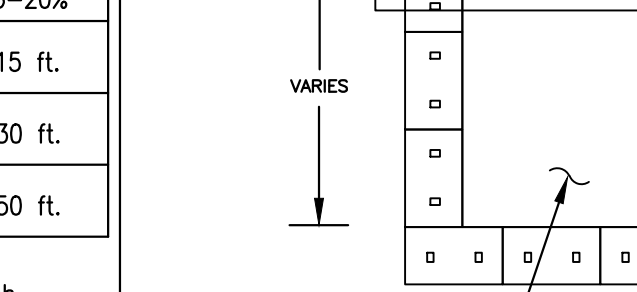
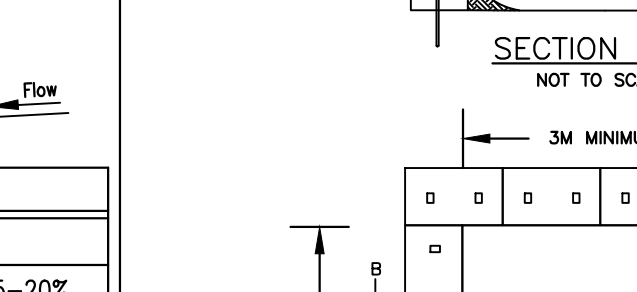
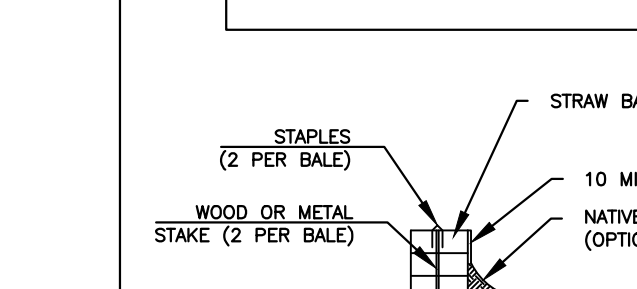
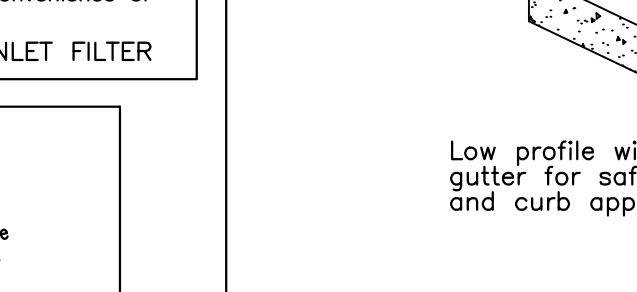
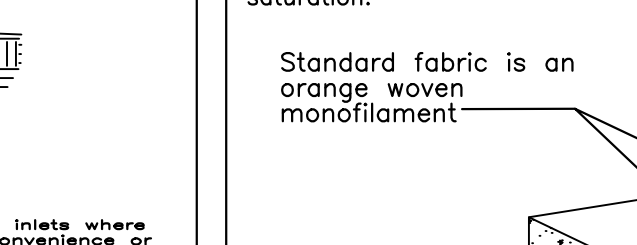
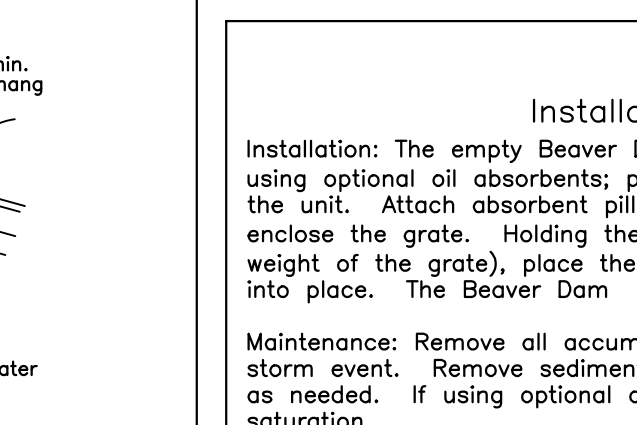
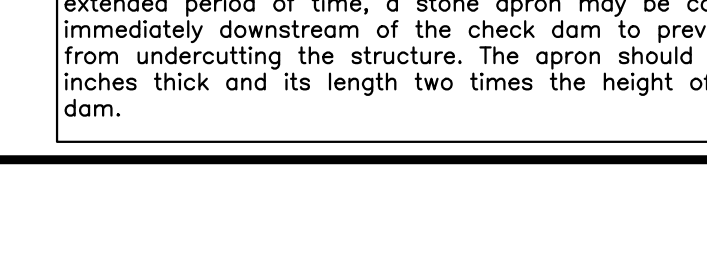
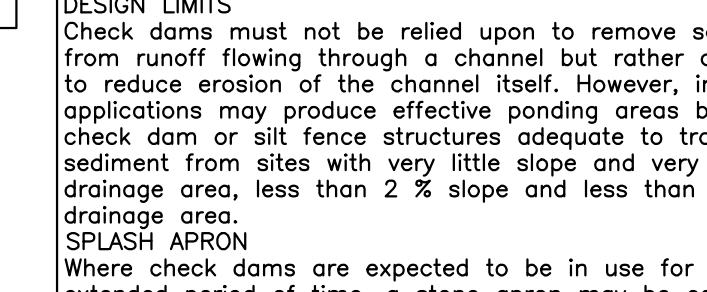
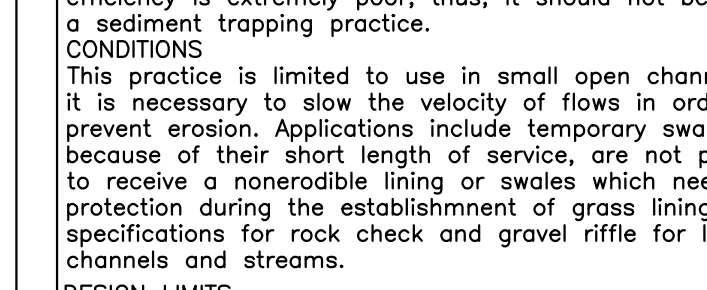
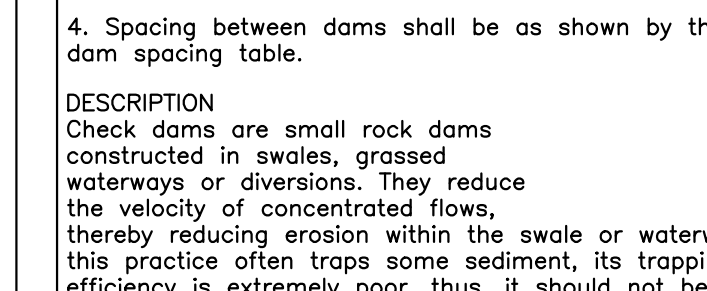
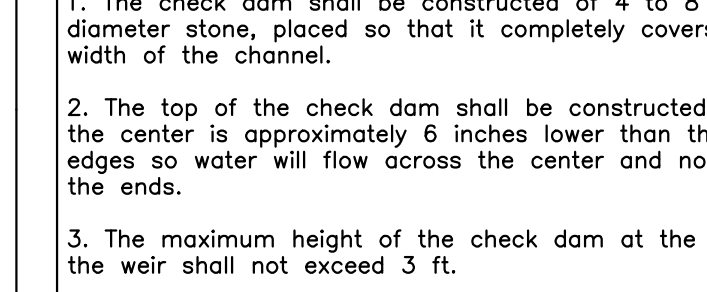
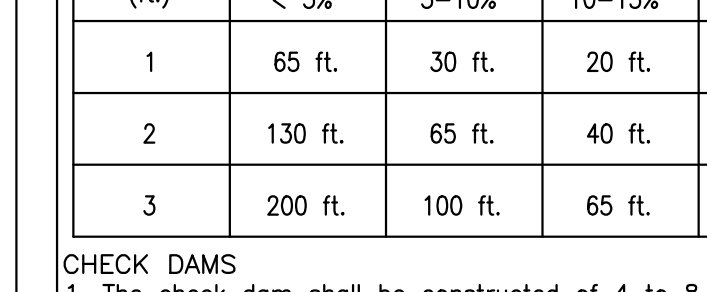
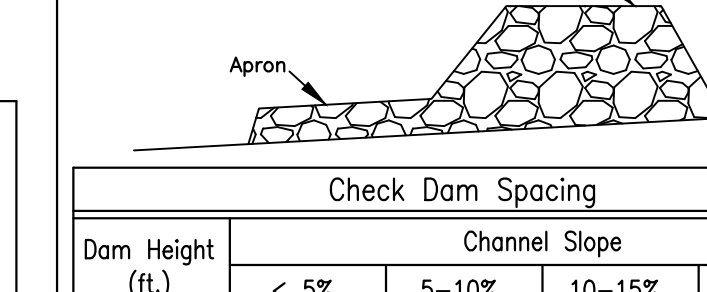
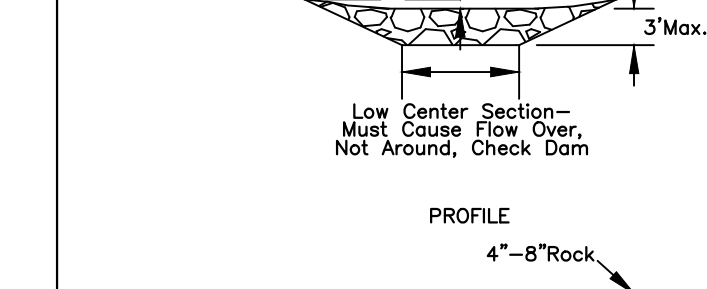
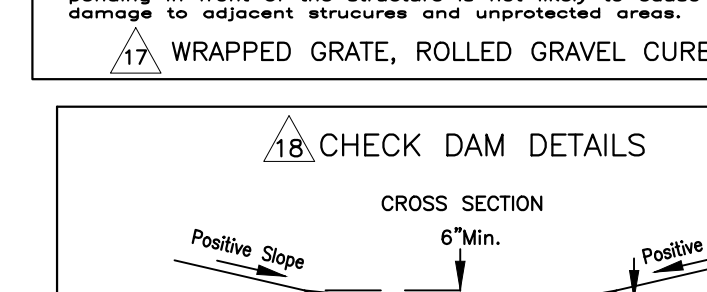
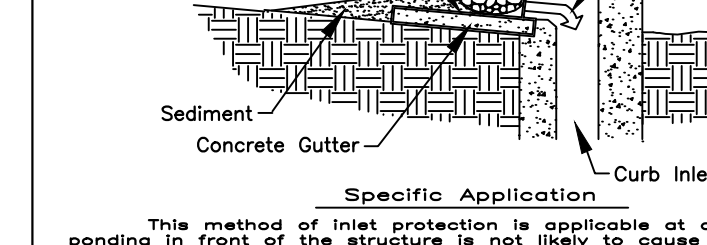
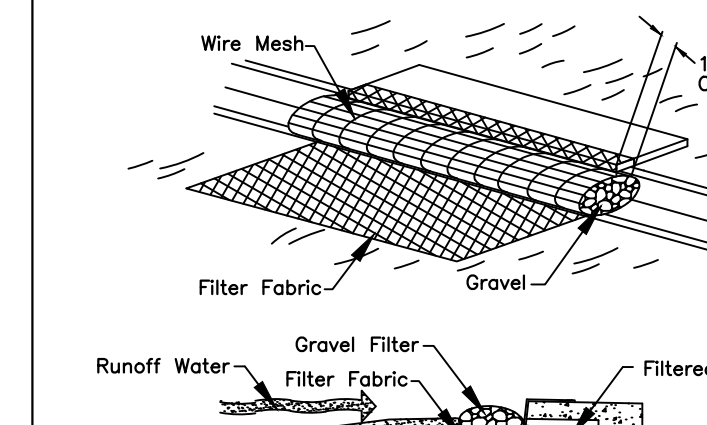
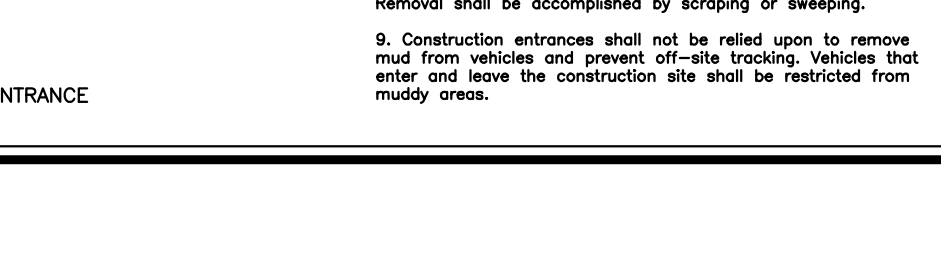
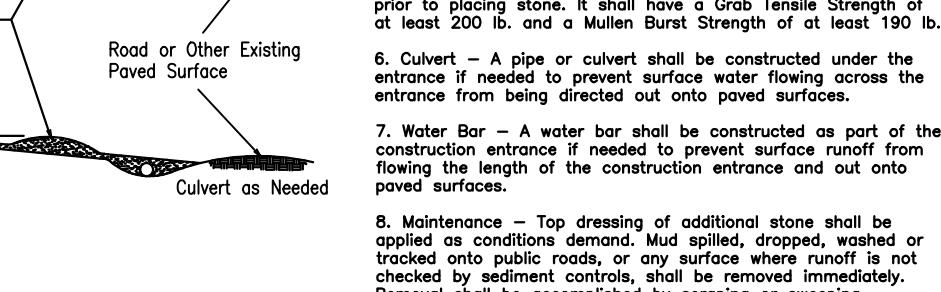
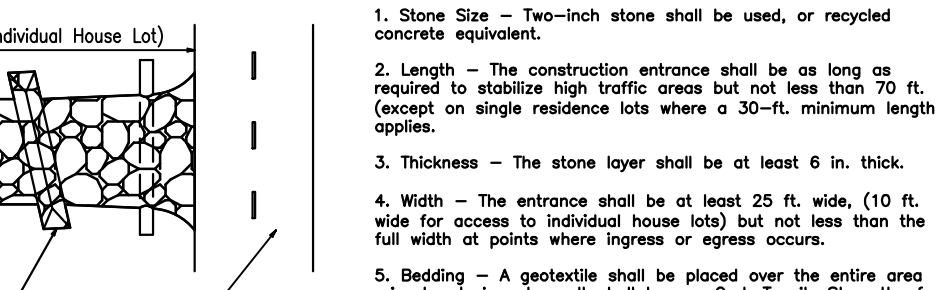
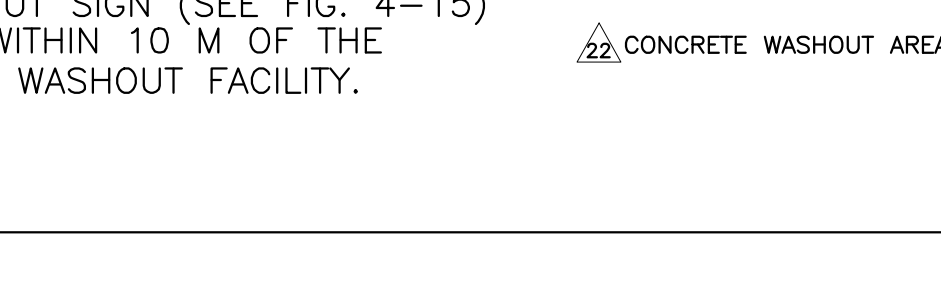
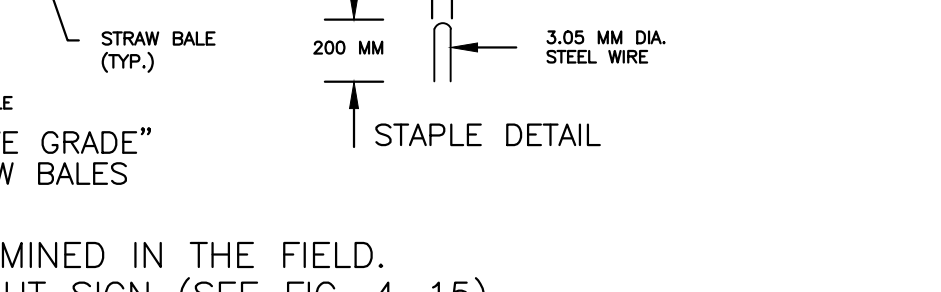
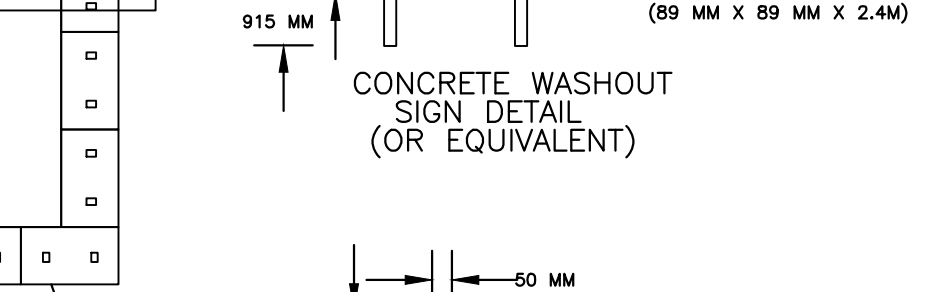
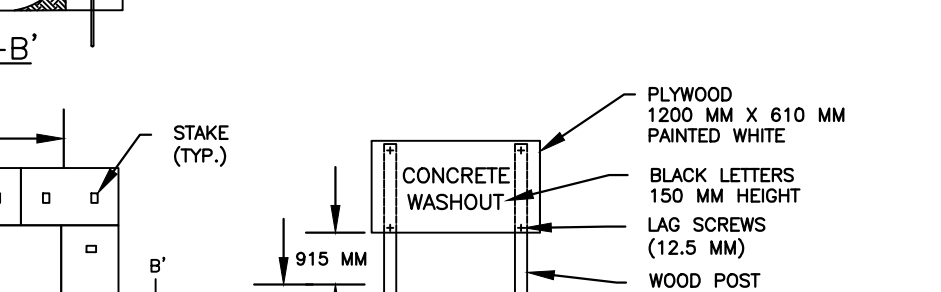
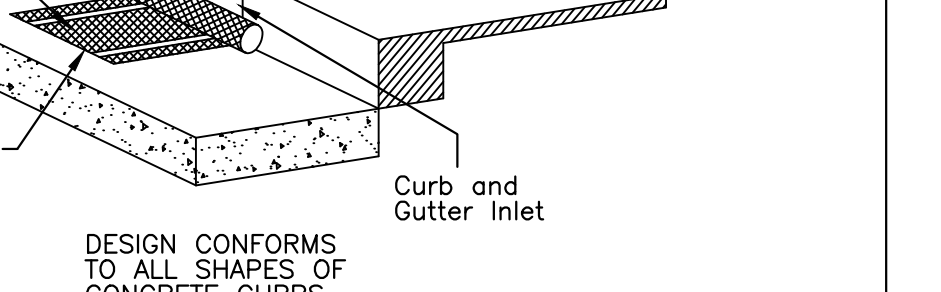
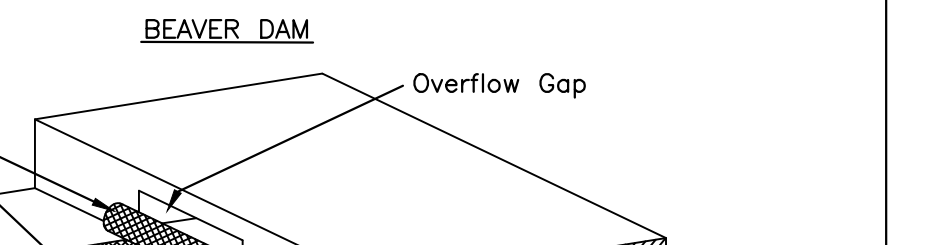
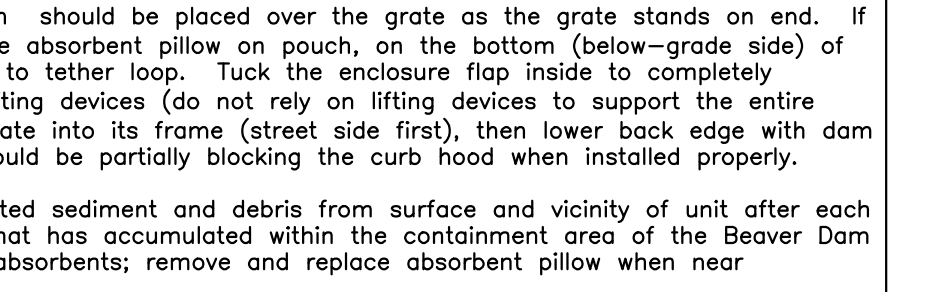
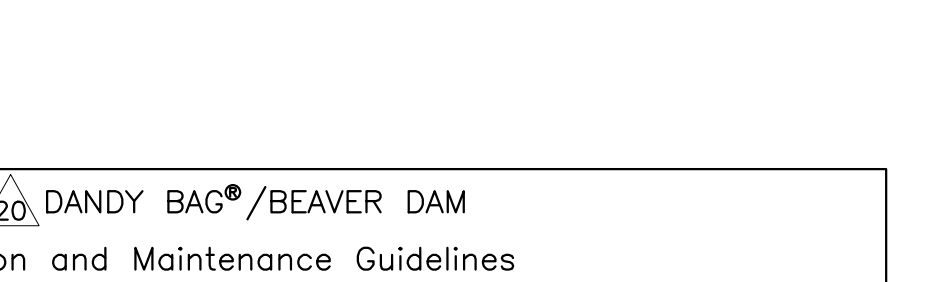
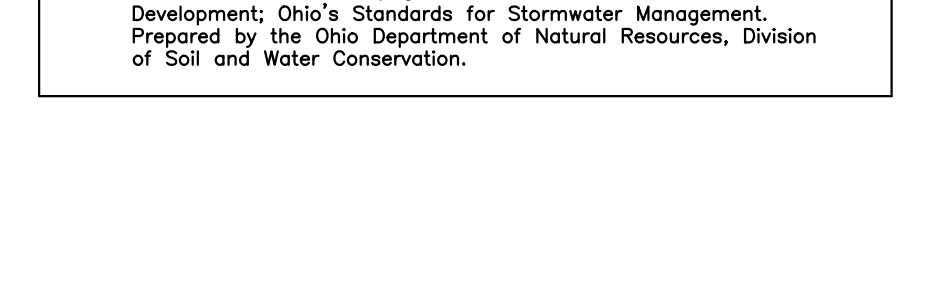
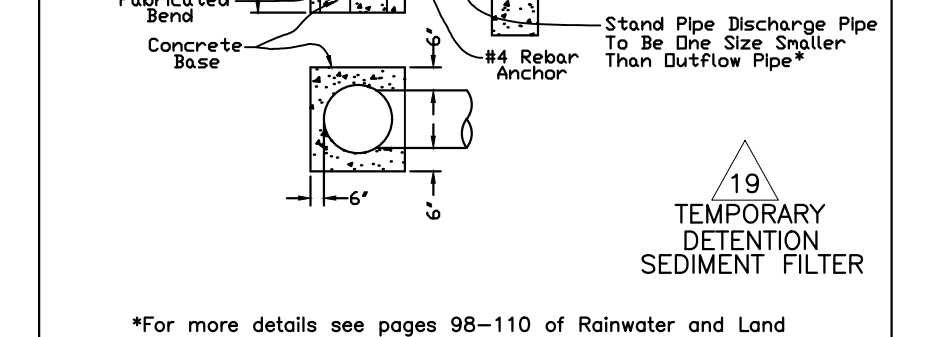
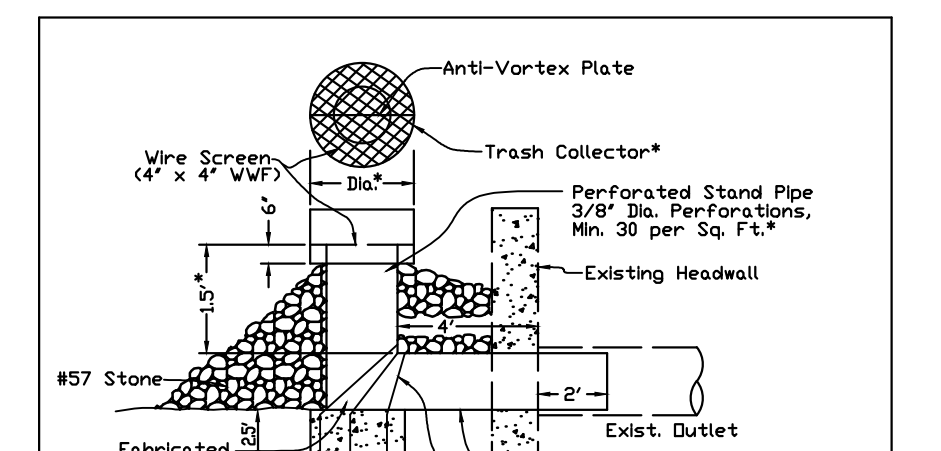
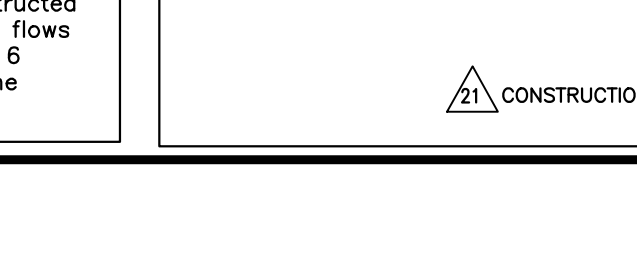
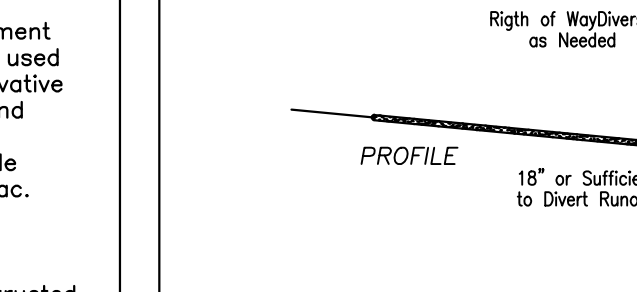
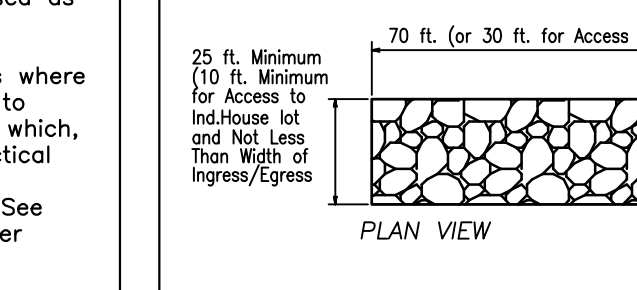
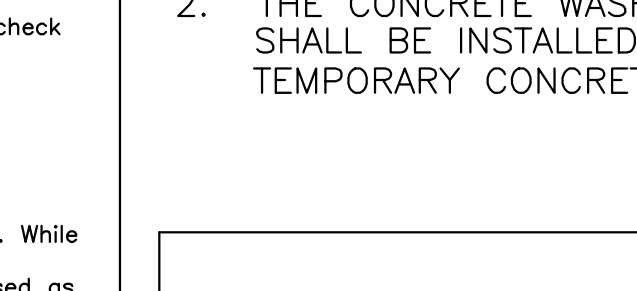
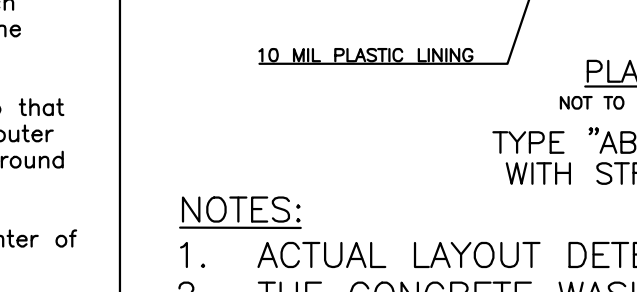
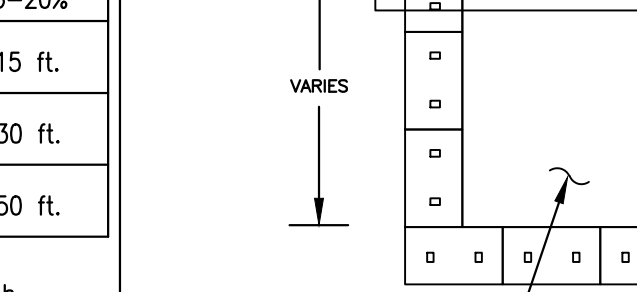
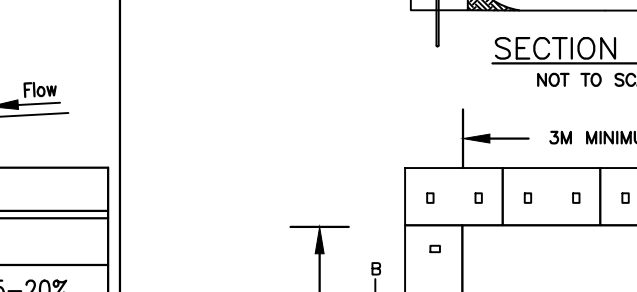
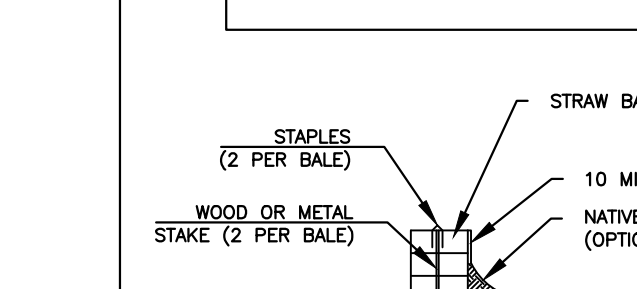
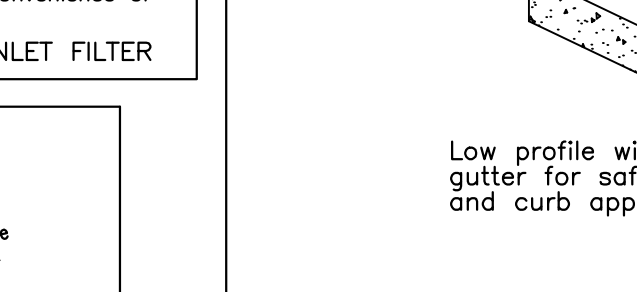
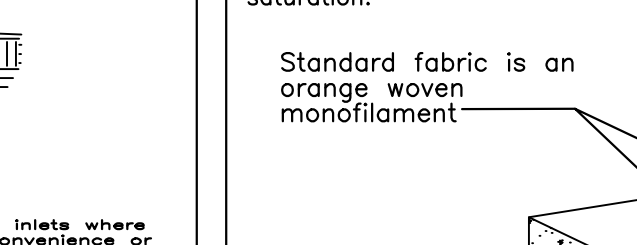
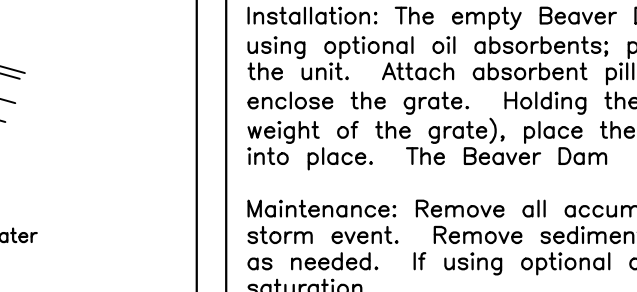
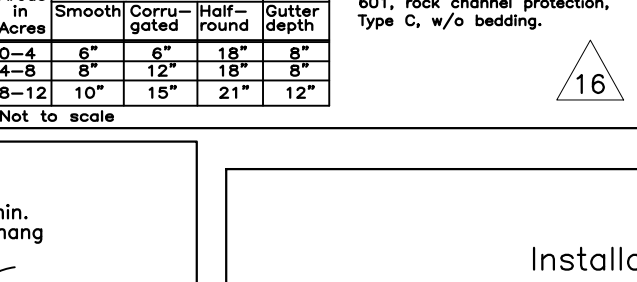
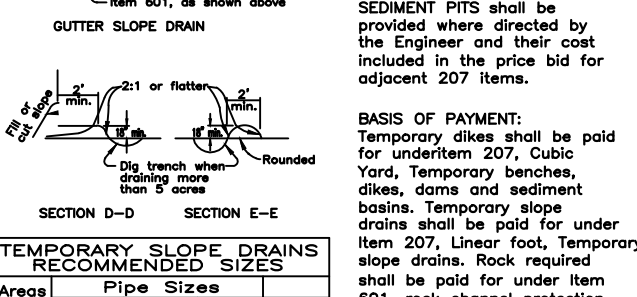
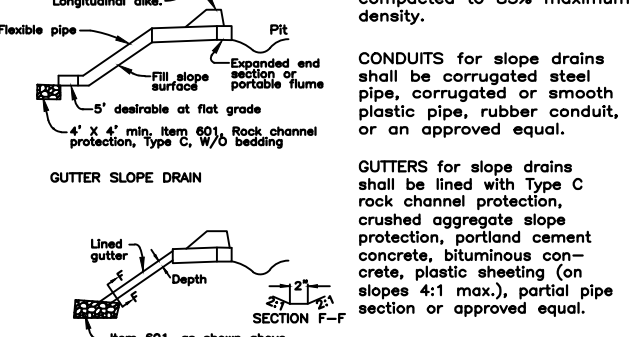
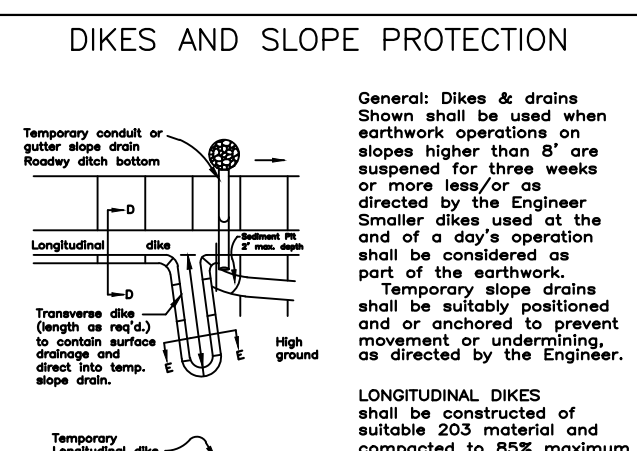
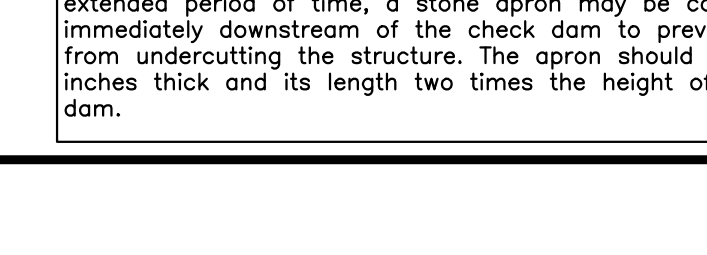
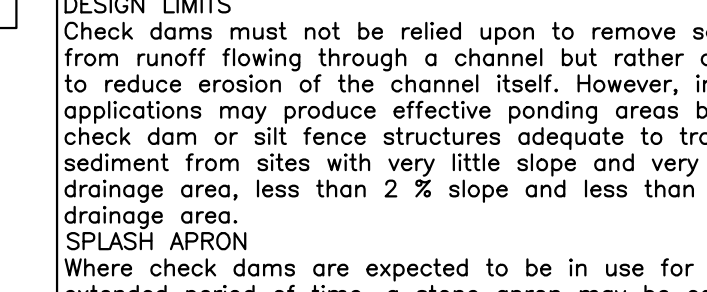
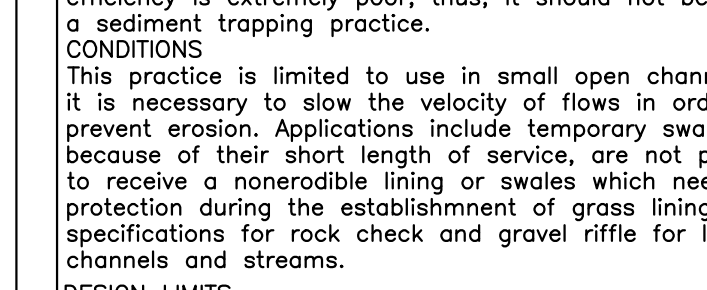
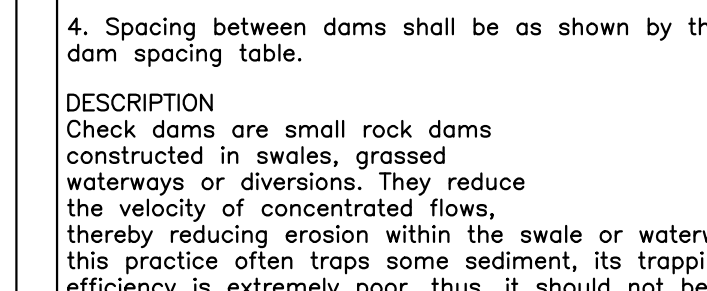
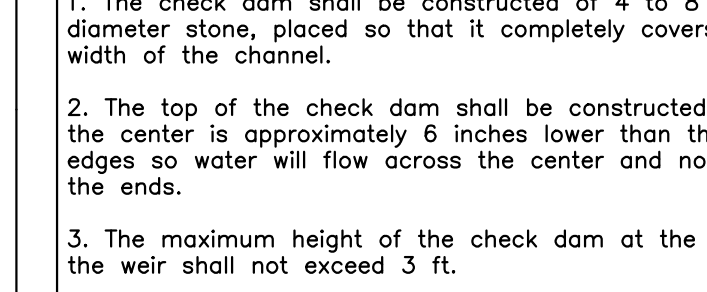
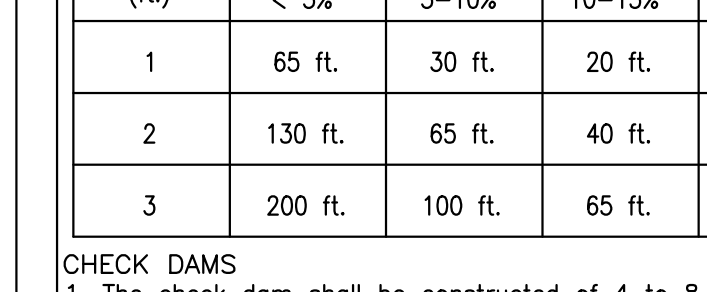
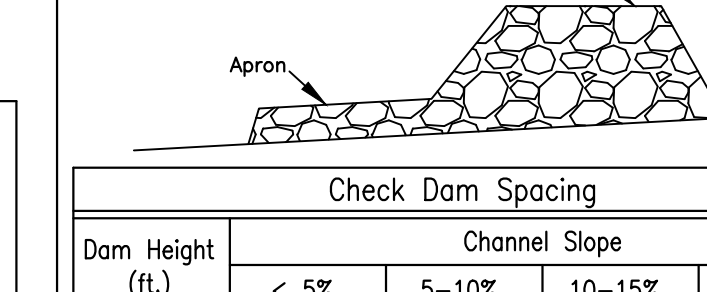
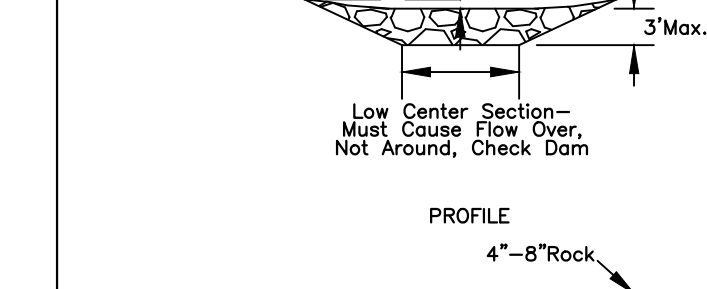
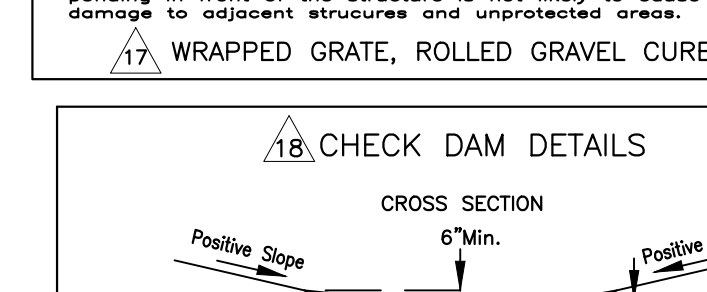
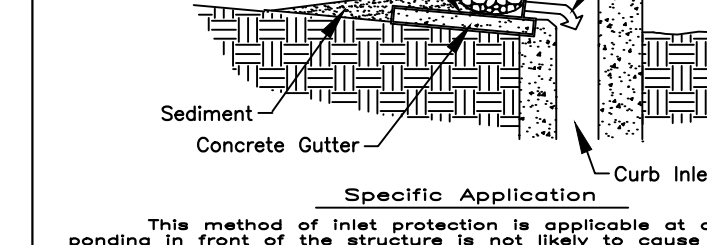
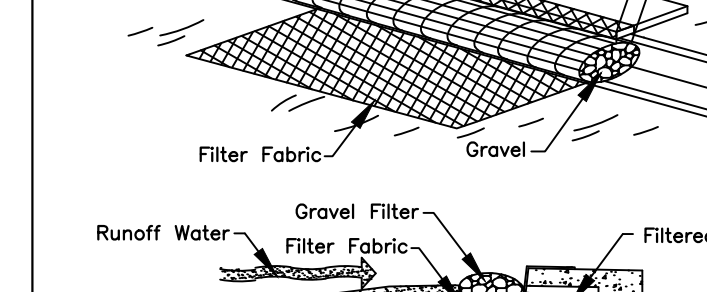
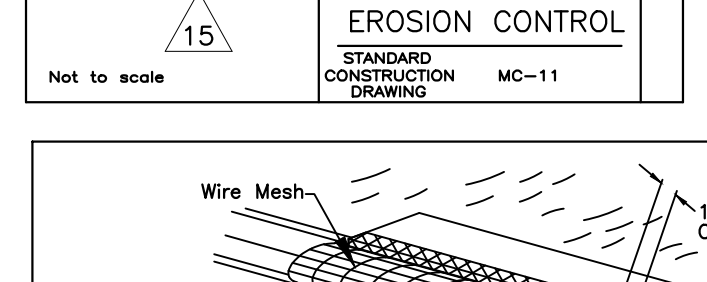
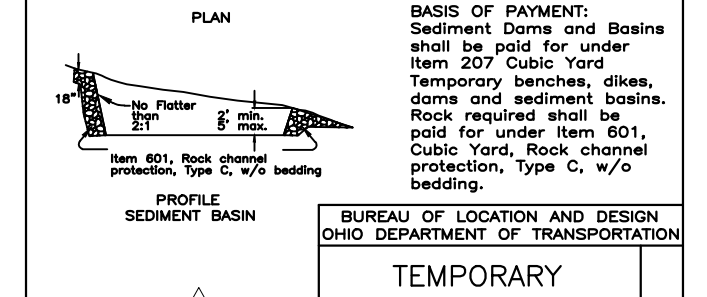
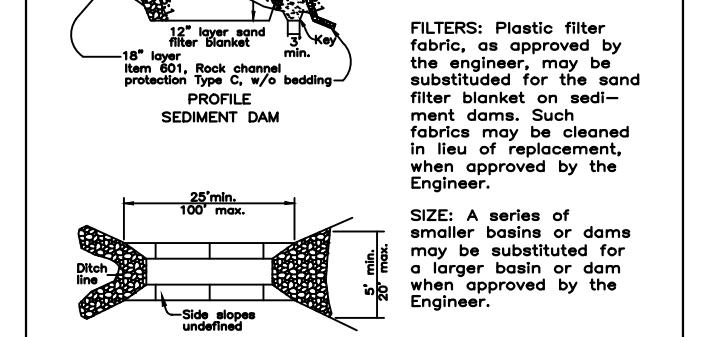
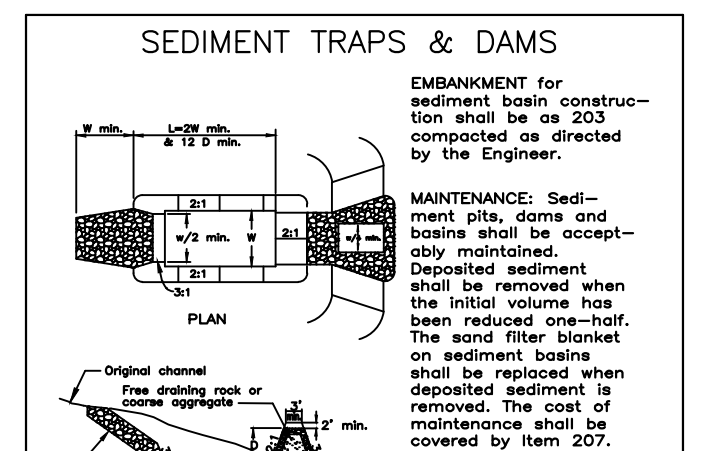
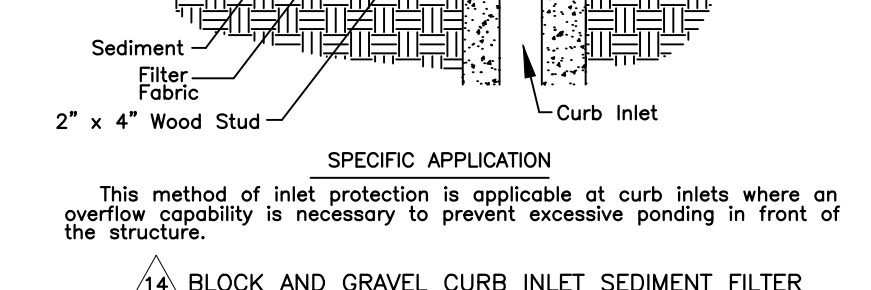
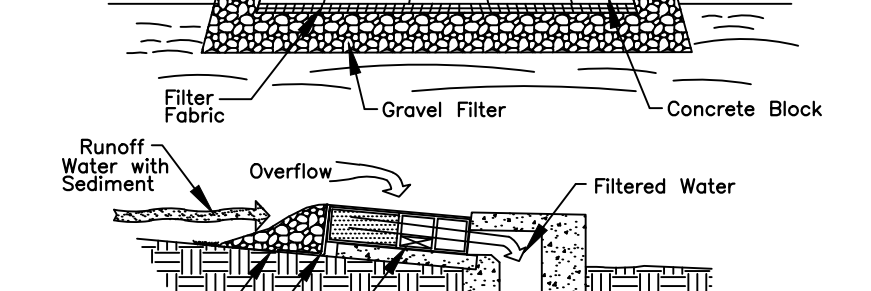
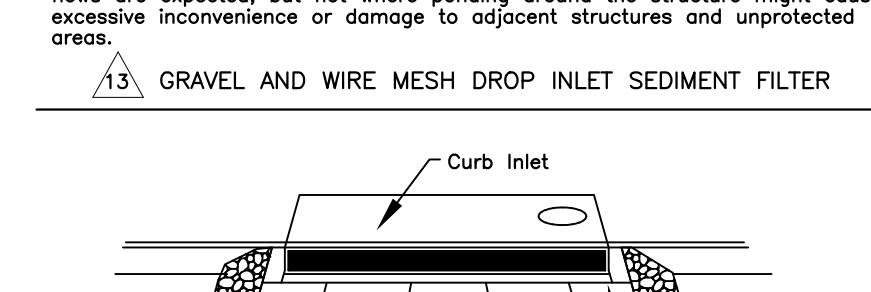
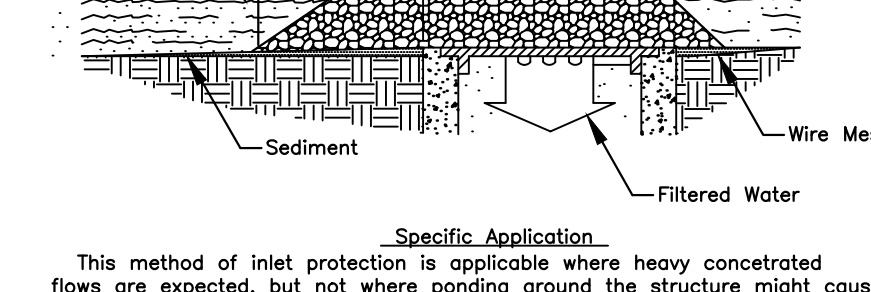
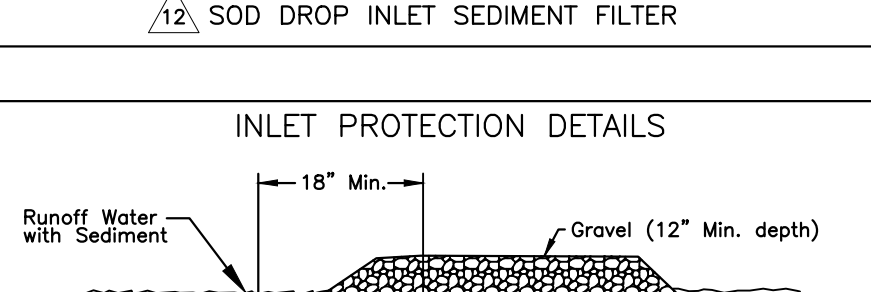
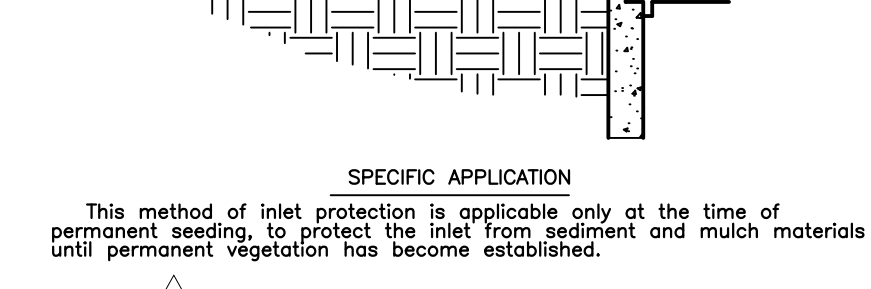
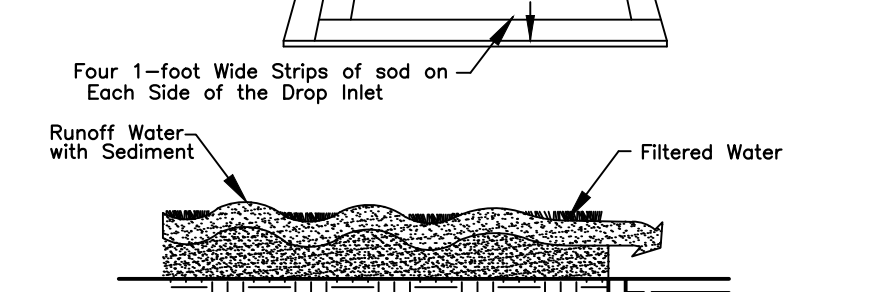
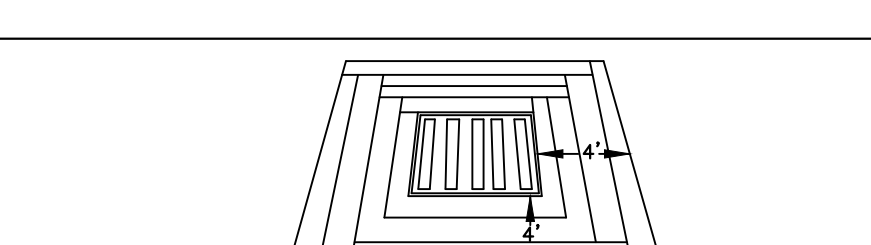
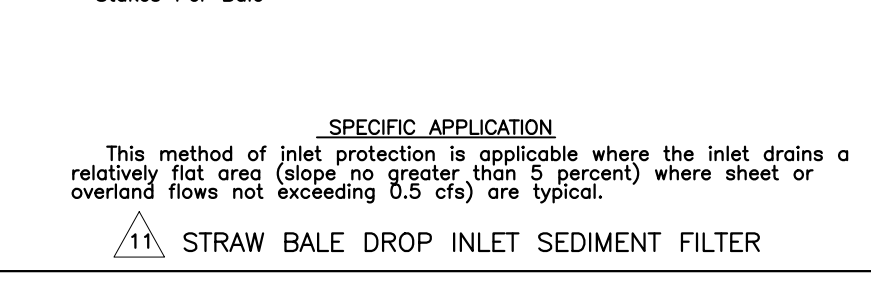
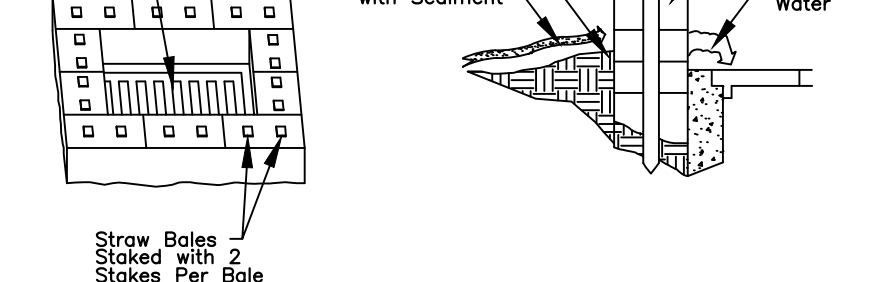
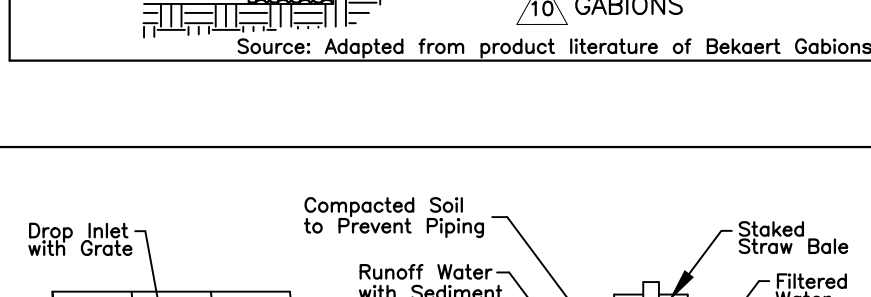
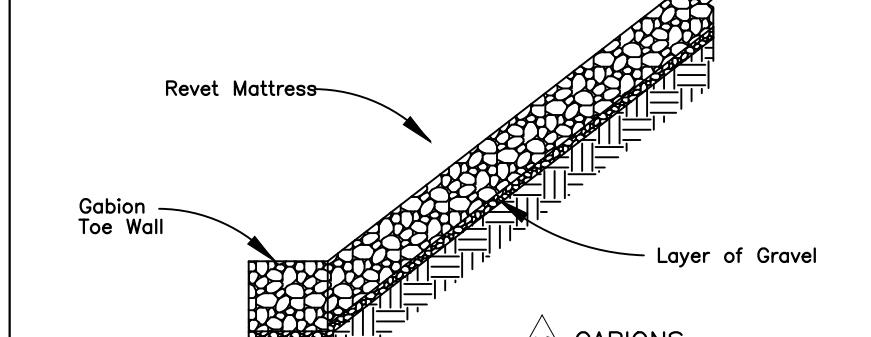
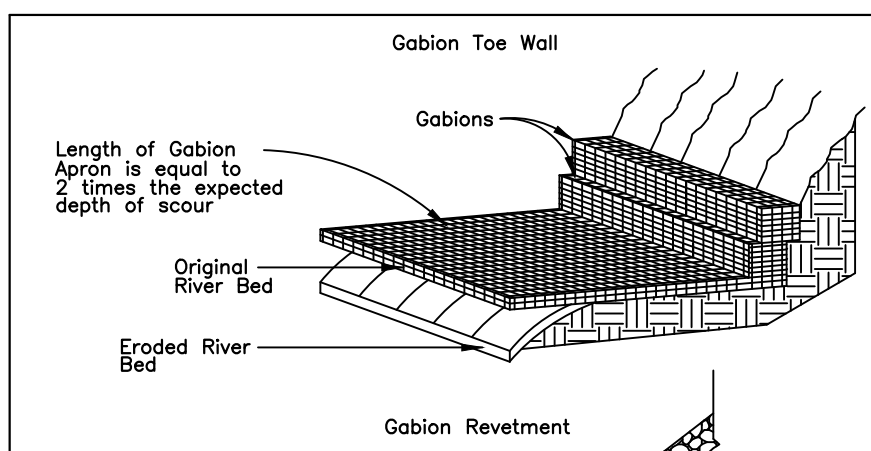
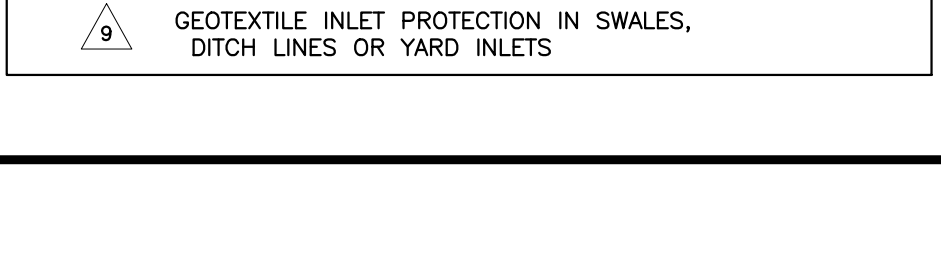
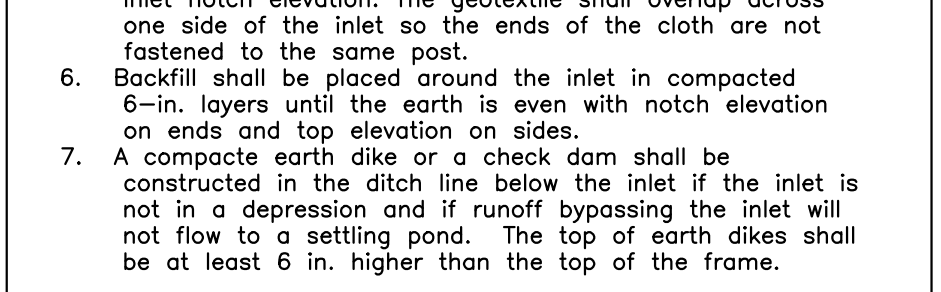
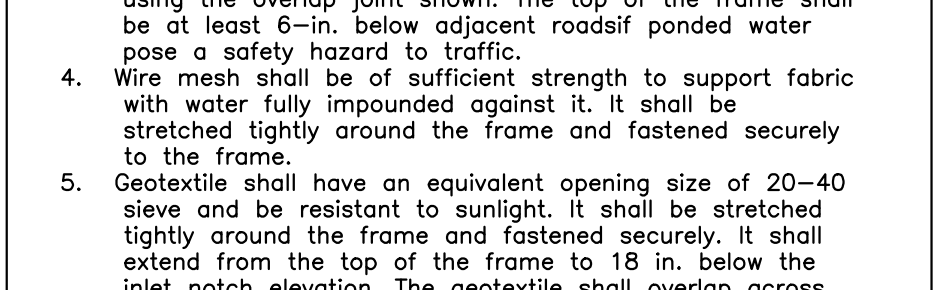
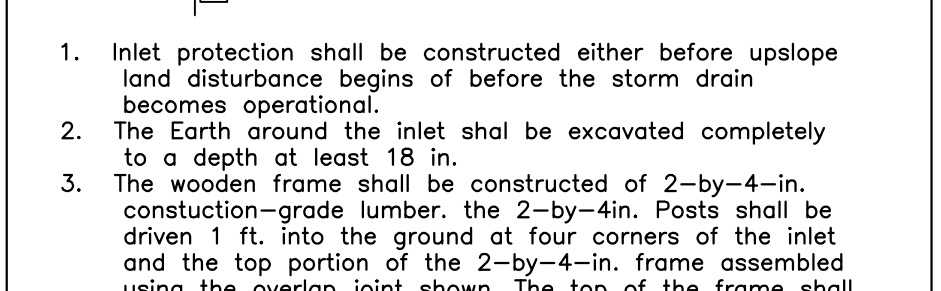
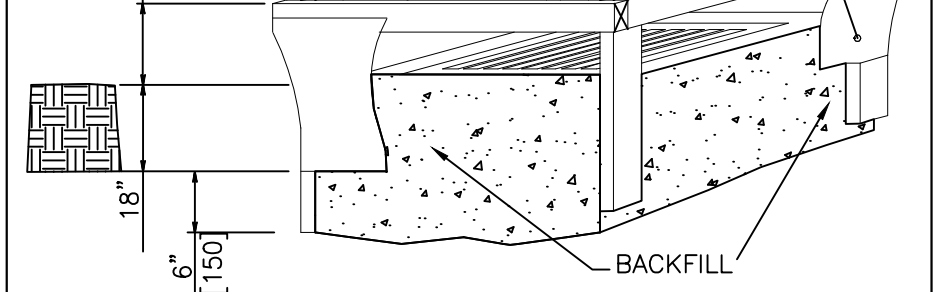
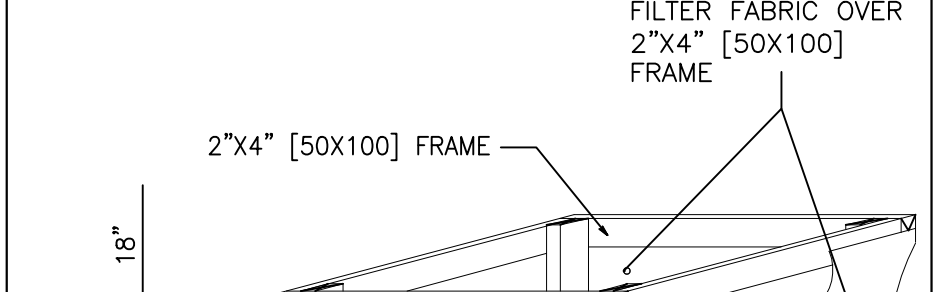
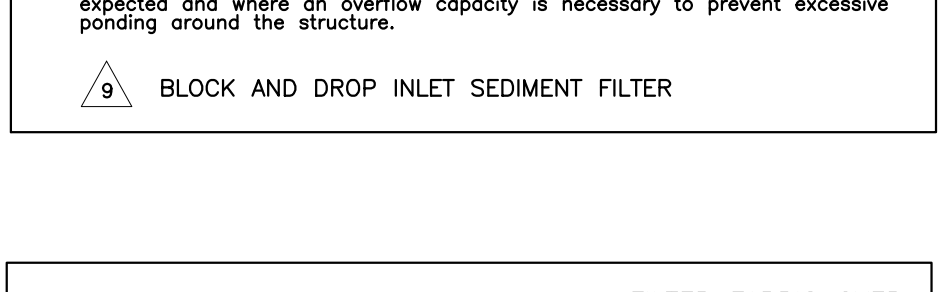
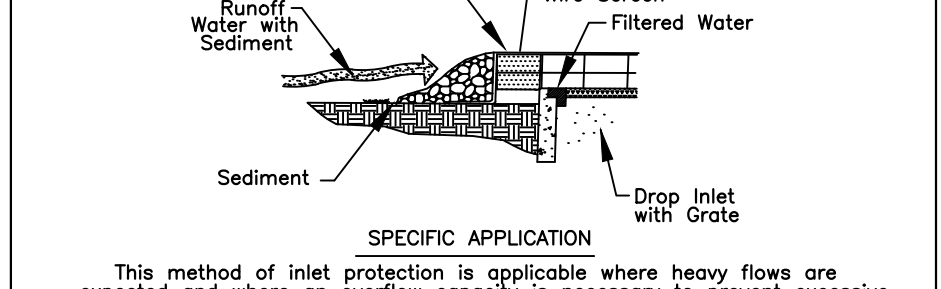
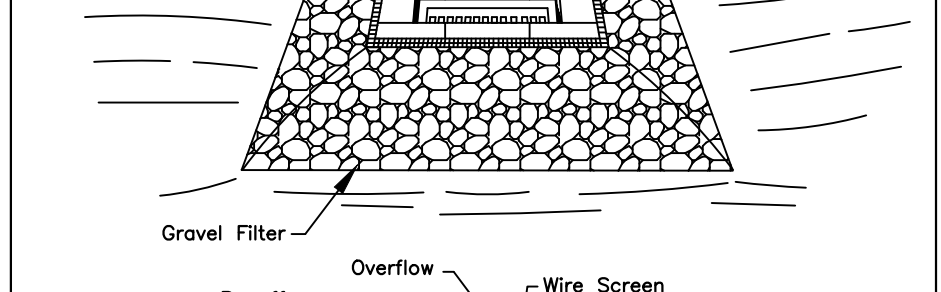
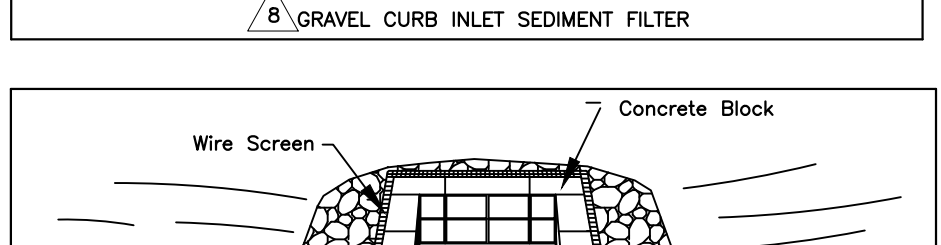
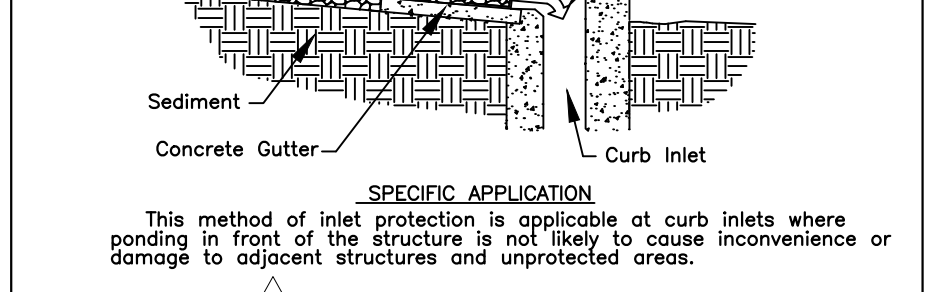
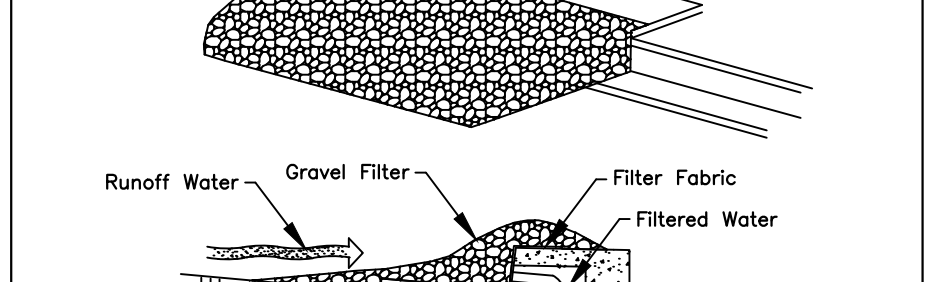
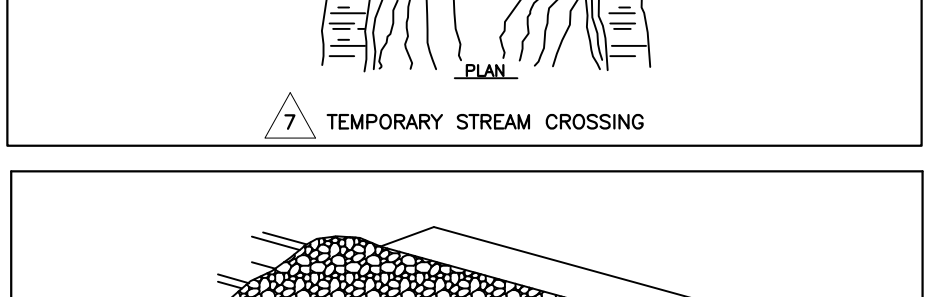
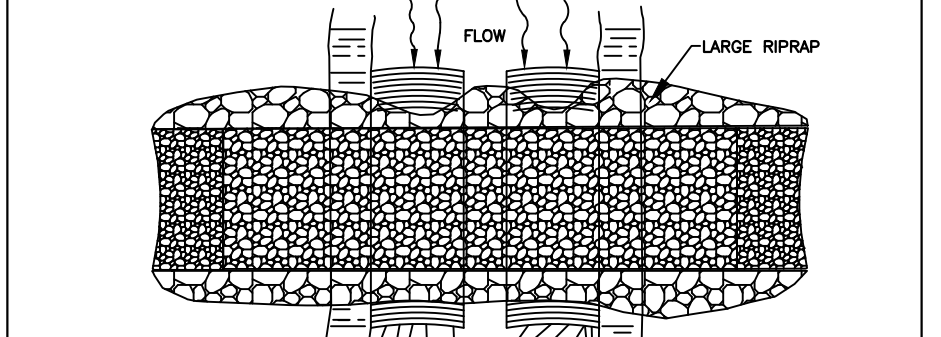
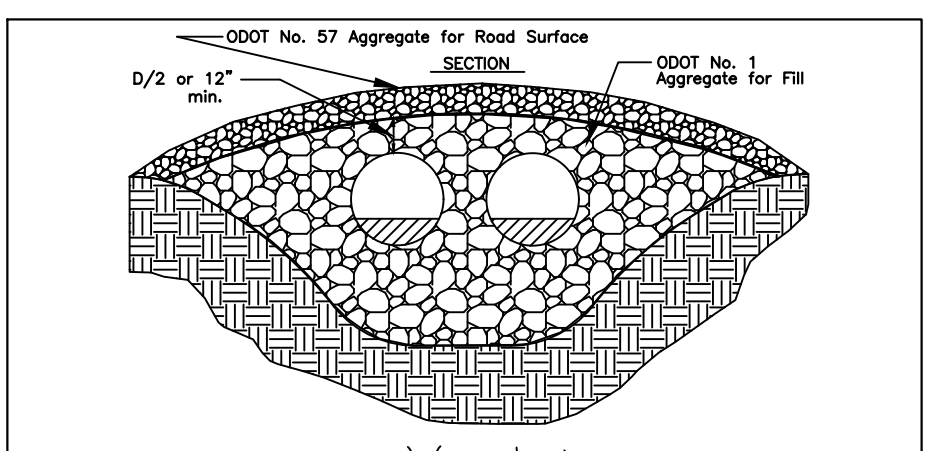
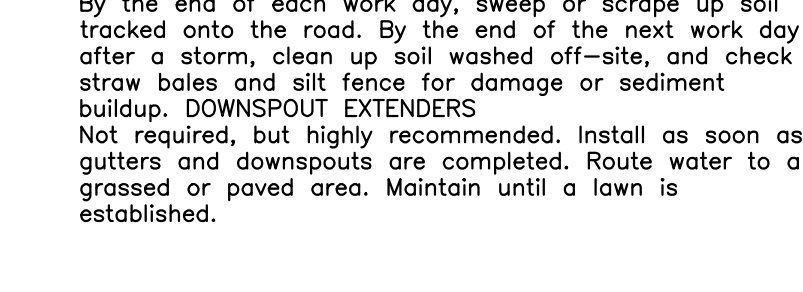
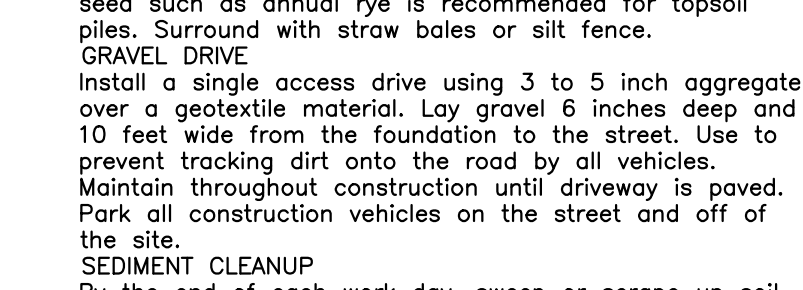
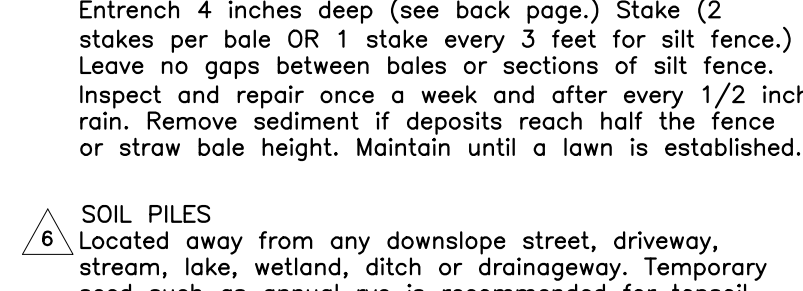
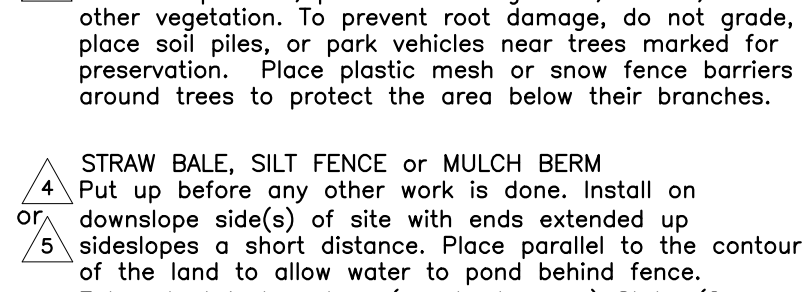
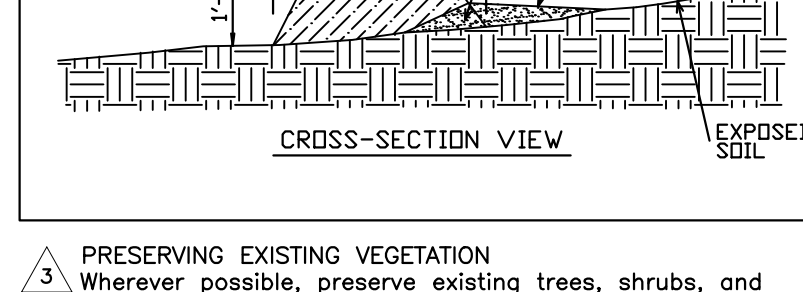
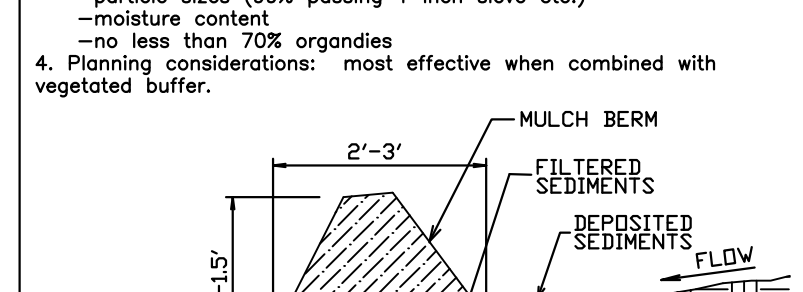
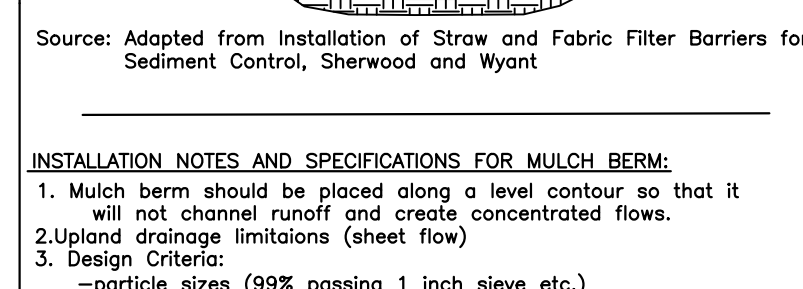
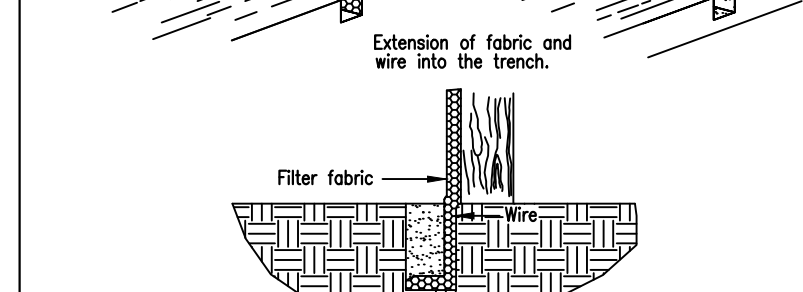
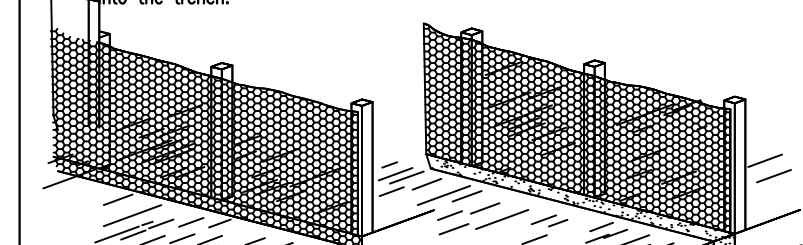
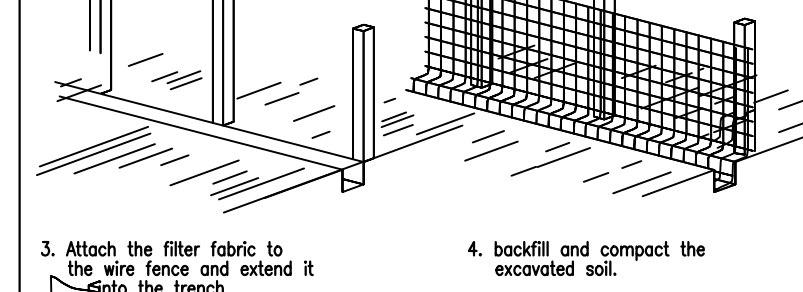
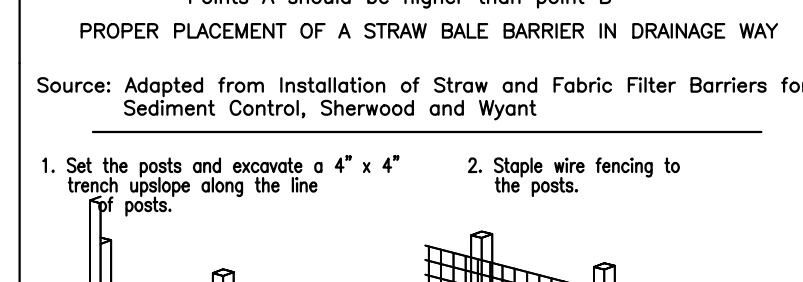
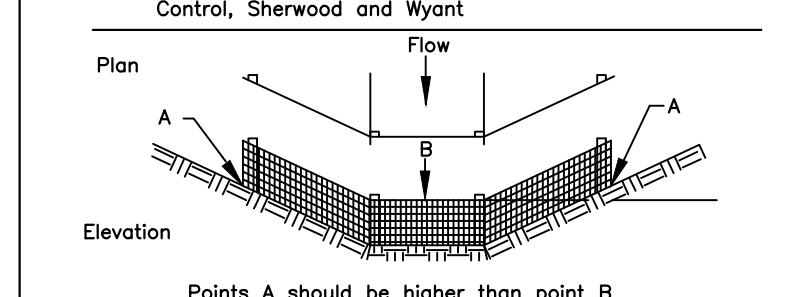
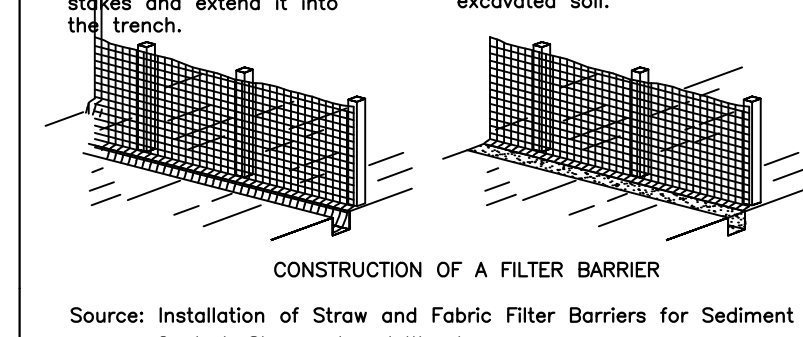
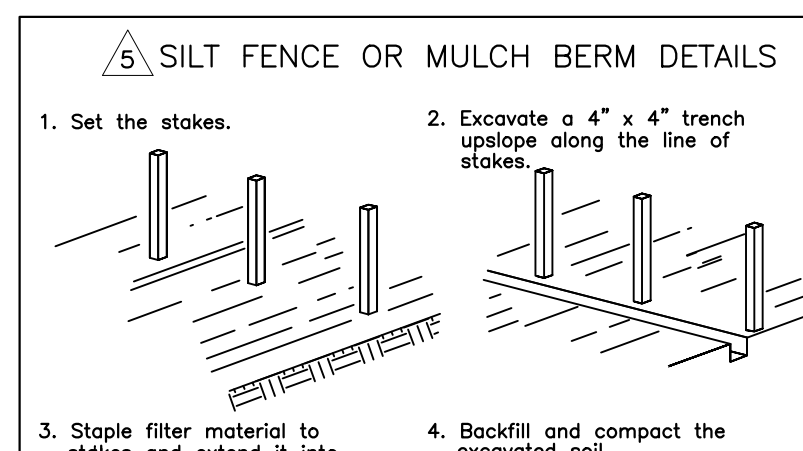
PROPER PLACEMENT OF A STRAW BALE BARRIER IN DRAINAGE WAY
Points A should be higher than point B

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

PROPER PLACEMENT OF A STRAW BALE BARRIER IN DRAINAGE WAY
Points A should be higher than point B

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PROPER PLACEMENT OF A STRAW BALE BARRIER IN DRAINAGE WAY
Points A should be higher than point B



Check Dam Spacing

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.

CHECK DAMS
1. The check dam shall be constructed of 4 to 8 inch diameter stone, placed so that it completely covers the width of the channel.
2. The top of the check dam shall be constructed so that the center is approximately 6 inches lower than the outer edges so water will flow across the center and not around the ends.
3. The maximum height of the check dam at the center of the weir shall not exceed 3 ft.
4. Spacing between dams shall be as shown by the check dam spacing table.

DESCRIPTION
Check dams are small rock dams constructed in swales, grassed waterways or diversions. They reduce the velocity of concentrated flows, thereby reducing erosion within the swale or waterway. While this practice often traps