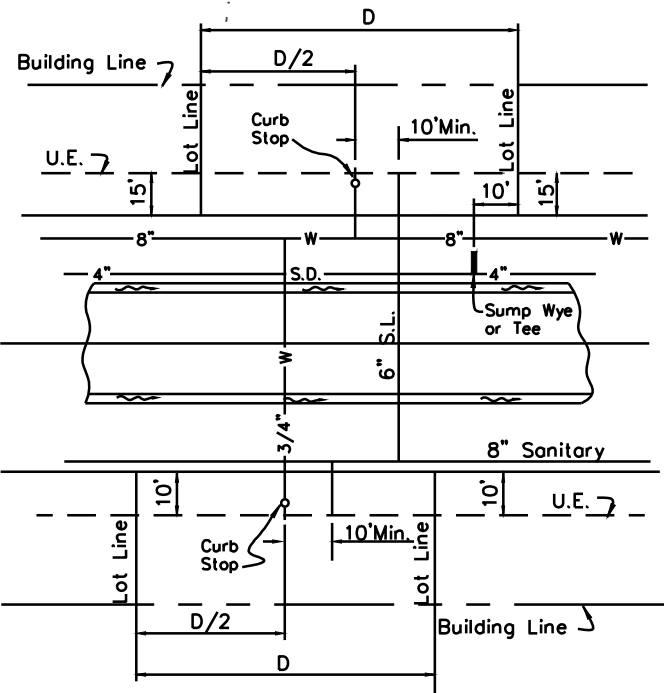
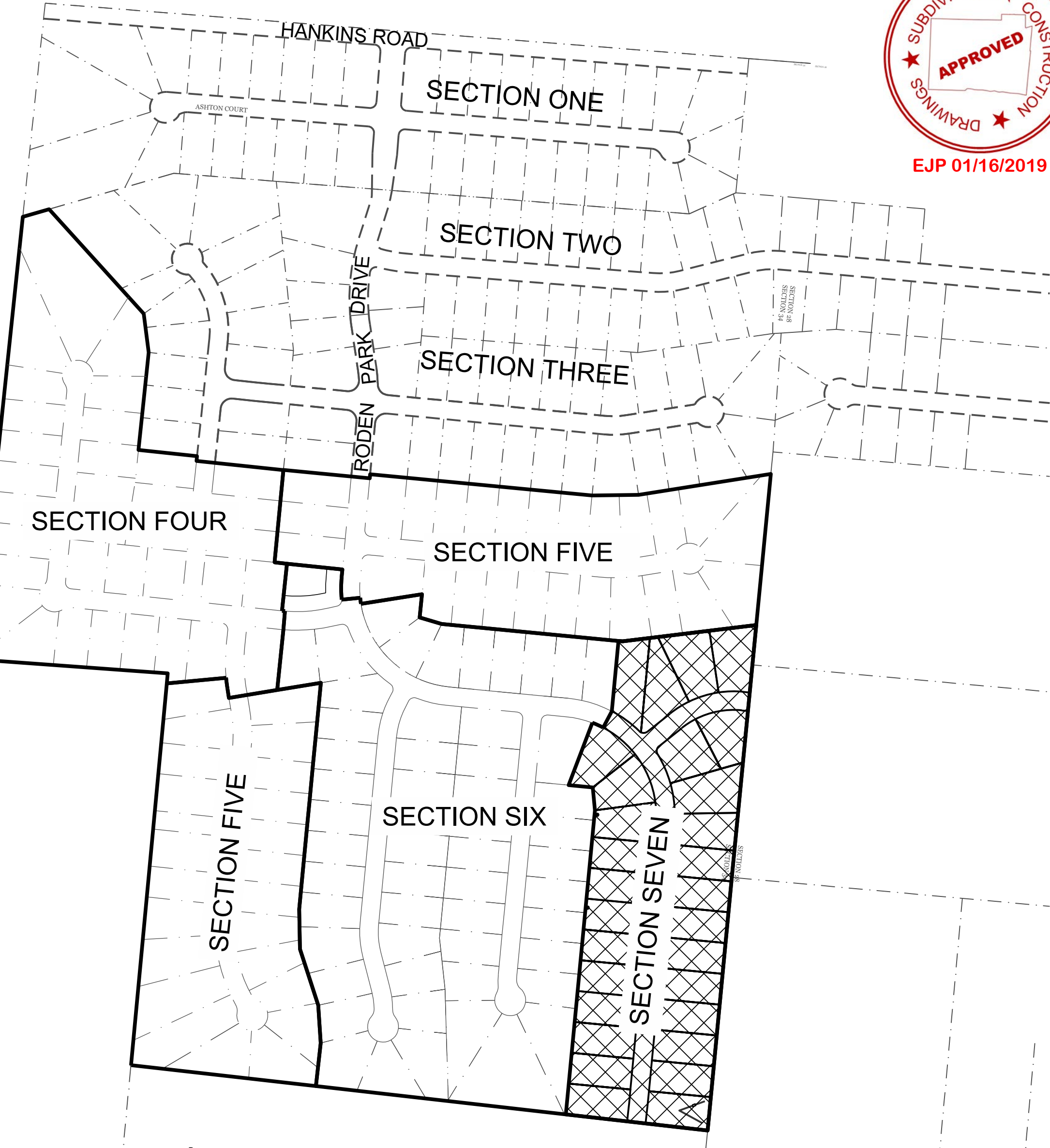


GENERAL NOTES

1. ITEM NUMBERS REFER TO THE OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS 2010, 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.
2. ITEMS THAT PERTAIN TO UNDERGROUND UTILITIES SUCH AS WATERMAIN PIPE, SANITARY SEWER PIPE, WATER VALVES AND MANHOLE FRAMES AND COVERS, ETC., WILL REMAIN UNDER SPECIFICATIONS OF THE UTILITY SERVING THE AREA. STORM SEWERS SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE BUTLER COUNTY ENGINEER.
3. 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.
4. 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 BEEN COMPLETED, THEN THE TOP COURSE MAY BE APPLIED.
5. 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.
6. 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.
7. 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.
8. SANITARY 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.
9. 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.
10. ALL ELECTRICAL TRANSFORMERS SHALL BE LOCATED SO THAT THEY DO NOT INTERFERE WITH THE EXISTING MANHOLES OR WATER MAIN APPURTENANCES.
11. SUMP LINE CONDUITS ARE TO BE SDR-35.
12. WATER MAIN MATERIALS, VALVES, FIRE HYDRANTS, FITTINGS, AND APPURTENANCES AND INSTALLATION SHALL BE AS PER BUTLER COUNTY SPECIFICATIONS, USING CLASS 53 DUCTILE IRON AS PER AWWA C-151 WITH 4" MINIMUM COVER.
13. SANITARY SEWER MATERIALS AND INSTALLATION SHALL BE AS PER BUTLER COUNTY SPECIFICATION, USING SECTION 3110 FOR PVC SDR-35 & 26 PIPE; SECTION 3140 FOR ABS OR PVC COMPOSITE PIPE; SECTION 3410 FOR MANHOLES.
14. 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 EIGHTEEN (18) INCHES MEASURED BETWEEN THE OUTSIDE PIPE WALLS, BELOW THE BOTTOM OF THE WATER MAIN.
- IF IT IS ABSOLUTELY IMPOSSIBLE TO MAINTAIN THE EIGHTEEN (18) IN VERTICAL SEPARATION, THE WATER MAIN SHALL BE RELOCATED OR THE SEWER SHALL BE CONSTRUCTED AS FOLLOWS:
- A. A SEWER PASSING OVER OR UNDER THE WATER MAIN SHALL BE ENCASED OR CONSTRUCTED OF MATERIALS THAT ARE EQUIVALENT TO WATER MAIN STANDARDS OF CONSTRUCTION FOR A MINIMUM DISTANCE OF TEN (10) FEET ON EACH SIDE OF THE WATER MAIN.
- B. THE SEWER CROSSING SHALL BE CONSTRUCTED SO THAT THE SEWER JOINTS WILL BE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE WATER MAIN JOINTS.
- C. WHERE A WATER MAIN PASSES UNDER A SEWER, ADEQUATE STRUCTURAL SUPPORT SHALL BE PROVIDED FOR THE SEWER TO PREVENT DAMAGE OF THE WATER MAIN.
15. STORM SEWER PIPE SHALL MEET THE REQUIREMENTS AS FOLLOWS:
- A. PVC PIPE AS PER ODOT SUPPLEMENTAL SPECIFICATION 931 FOR ALL DIAMETERS (CONTECH A2000 OR EQUAL).
- B. HDPE PIPE AS PER ODOT SUPPLEMENTAL SPECIFICATION 944 FOR DIAMETERS UP TO AND INCLUDING 24".
- C. CORRUGATED STEEL SPIRAL RIB PIPE AS PER ODOT SUPPLEMENTAL SPECIFICATION 943 FOR ALL DIAMETERS (CONTECH ULTRAFLO OR EQUAL).
- D. 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)

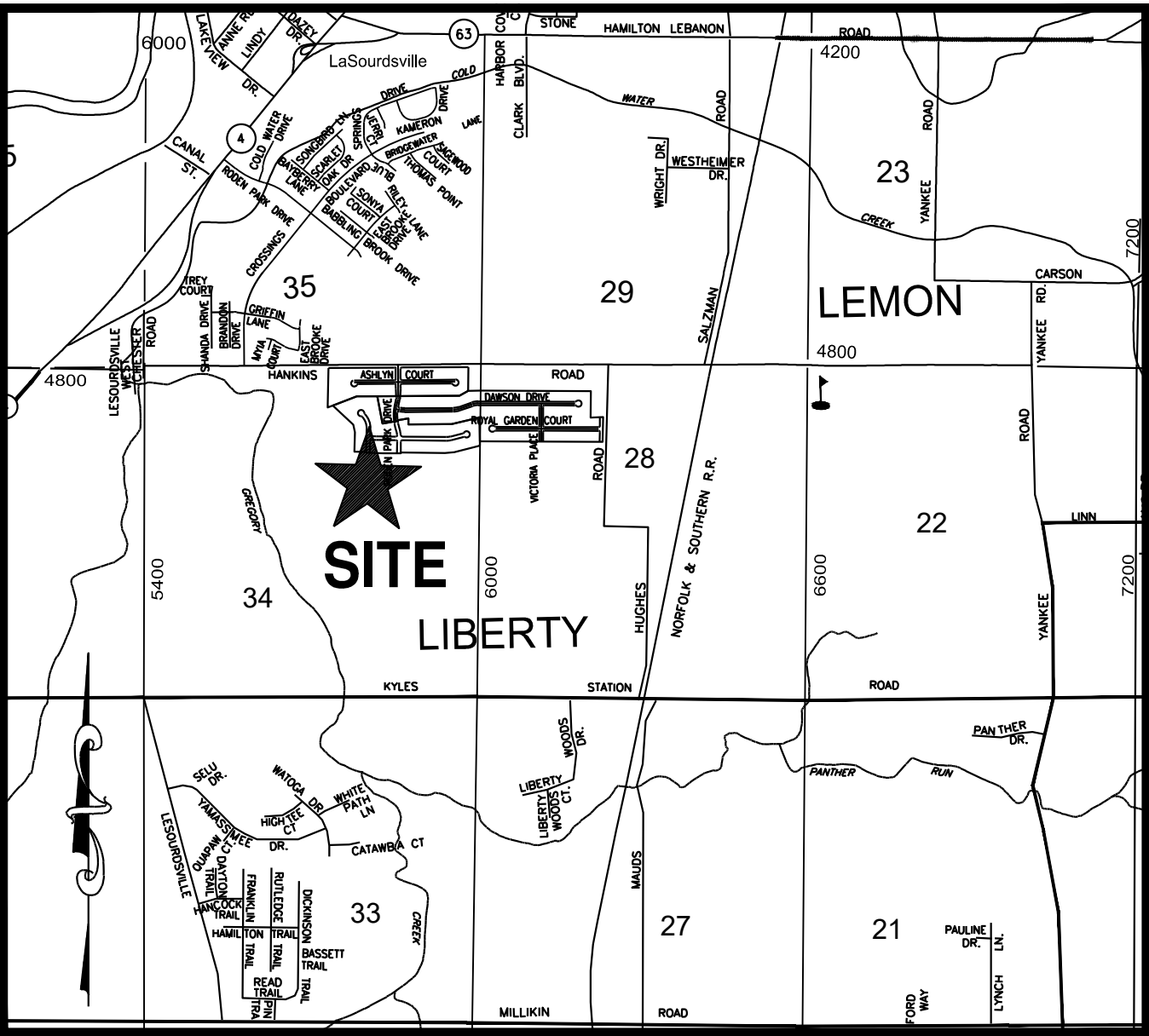
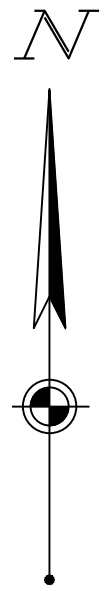
INSTALLATION SHALL MEET BUTLER COUNTY SPECIFICATIONS. ALL JOINTS SHALL BE SOIL SEAL. JOINTS UNLESS SPECIFICALLY NOTED ON THE PLANS.

16. DEFLECTION TESTING FOR STORM SEWERS AND CULVERTS. FIFTEEN PERCENT (15%) OF ALL STORM SEWERS SHALL BE TESTED FOR DEFLECTION WITHIN THIRTY (30) DAYS AFTER THEY ARE COMPLETE. BUTLER COUNTY ENGINEER OR HIS DESIGNATED REPRESENTATIVE WILL DETERMINE WHAT FIFTEEN PERCENT (15%) SHALL BE TESTED. IF ANY STORM SEWER IN THE ORIGINAL FIFTEEN PERCENT (15%) IS FOUND OUT OF COMPLIANCE, DEFLECTION TESTS WILL BE REQUIRED ON 100% OF THE REMAINING STORM SEWER. A VERTICAL RING DEFLECTION GREATER THAN FIVE PERCENT (5%) WILL NOT BE ALLOWED. THIS DEFLECTION IS DEFINED AS FIVER PERCENT (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. ANY SECTION OF PIPE THAT FAILS TO MEET THE AFOREMENTIONED REQUIREMENTS SHALL BE REROUNDED BY A PROCEDURE ACCEPTABLE TO THE COUNTY OR BE EXCAVATED AND EITHER RELAYED OR REPLACED, AND RETESTED UNTIL THE REQUIREMENTS ARE MET.
17. ROOF DRAINS, FOUNDATION DRAINS, AND OTHER CLEAN WATER CONNECTIONS TO THE SANITARY SEWER SYSTEM ARE PROHIBITED.
18. ALL CATCH BASINS AND MANHOLES WITH A DEPTH GREATER THAN FOUR (4) FEET 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.
19. ALL BUILDINGS TO BE SERVED BY THE PUBLIC SEWER SYSTEM SHALL BE CONSTRUCTED SO AS TO PROVIDE A MINIMUM OF FOUR (4) FEET OF VERTICAL SEPARATION BETWEEN THE PUBLIC SANITARY SEWER, AT THE POINT OF CONNECTION, AND THE LOWEST BUILDING LEVEL SERVED BY THE GRAVITY SEWER CONNECTION. 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 LATERALS SHALL BE RECORDED ON THE "AS-BUILT" PLANS FOR THE DEVELOPMENT WHICH WILL BE KEPT ON FILE IN THE OFFICE OF THE BUTLER COUNTY WATER AND SEWER DEPARTMENT.
20. 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.
21. ALL WATER MAIN VALVES TO HAVE A MINIMUM DEPTH OF TWO AND ONE HALF (2.5) FEET AND A MAXIMUM DEPTH OF FOUR (4) FEET FROM PROPOSED GRADE TO THE TOP OF THE VALVE OPERATING NUT.
22. ANY WATER MAIN TWELVE (12) INCH DIAMETER OR LARGER SHALL BE ENCASED WITH LINEAR LOW-DENSITY POLYETHYLENE ENCASEMENT (POLYWRAP) AS PER SECTION 1520 OF THE BUTLER COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES STANDARD SPECIFICATIONS AND DETAILS BOOK.
23. ALL SANITARY SEWER LATERALS SHALL BE AT LEAST FOUR (4) FEET BELOW A PROPOSED BASEMENT FLOOR ELEVATION AT THE POINT OF CONNECTION TO SEWER MAIN AND SHALL NOT EXCEED A DEPTH OF TWELVE (12) FEET BELOW FINISH GRADE AT THE END OF THE LATERAL AT THE RIGHT-OF-WAY UNLESS SPECIFICALLY AUTHORIZED BY THE COUNTY.
24. PRIVATE DRIVEWAYS, PARKING LOTS AND OTHER PAVED AREAS, EARTHEN BERMS, OR STRUCTURES SHOULD NOT BE CONSTRUCTED OVER PRIVATE WATER OR SEWER LINES WITHIN THE PUBLIC ROAD RIGHT-OF-WAY OR WITHIN EASEMENT AREAS FOR THE PUBLIC UTILITIES. SHOULD THIS OCCUR, THE PROPERTY OWNER SHALL BE HELD RESPONSIBLE FOR THE PROTECTION AND REPAIR AND FOR PROVIDING ACCESS TO ANY CURB STOPS, METER PITS, MANHOLES, CLEAN-OUTS, ETC. INSTALLED IN CONJUNCTION WITH THESE PRIVATE SERVICES LIENS 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.
25. 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: (513) 785-4145
26. CONTRACTORS TO ACCEPT ALL QUANTITIES AS CORRECT PRIOR TO BEGINNING CONSTRUCTION.
27. ANY ROADWAY SETTLEMENT GREATER THAN ONE (1) INCH WILL BE REQUIRED TO BE REPAIRED WITH ODOT ITEM 613 LOW STRENGTH MORTAR BACKFILL (TYPE 1)
28. A TYPICAL FIVE (5) FOOT DRAINAGE EASEMENT IS TO BE PROVIDED ON BOTH SIDES OF EVERY LOT LINE.
29. EXISTING ZONING: R-SE  
FRONTAGE: 100'  
SETBACKS: FRONT = 50' UNLESS OTHERWISE NOTED ON PLAN  
SIDE = 15' MIN., 30' TOTAL  
REAR = 45', UNLESS OTHERWISE NOTED ON PLAN
30. TOTAL ACREAGE: 16.94 ACRES
31. TOTAL # OF SINGLE FAMILY LOTS: 29



STANDARD SERVICE  
DETAIL  
(Not to Scale)

DEVELOPMENT PLANS  
FOR  
WINDSOR ESTATES SECTION 7  
LIBERTY TOWNSHIP, BUTLER COUNTY, OHIO  
SECTION 34, TOWN 3, RANGE 3



VICINITY MAP  
(Not to Scale)

OWNER/DEVELOPER

WINDSOR ESTATES, LLC  
8534 YANKEE STREET  
DAYTON, OH 45458  
PH: (937) 435-8584

ENGINEER

CESO, INC.  
8534 YANKEE STREET  
DAYTON, OH 45458  
PH: (937) 435-8584  
DAVID C. OAKES, P.E., P.S.

INDEX OF SHEETS

TITLE SHEET	1
OVERALL UTILITY PLAN & INDEX MAP	2
PLAN AND PROFILE - RODEN PARK DRIVE	3-4
PLAN AND PROFILE - ALTHORP PLACE	5
OFFSTREET PROFILES	6
GRADING & EROSION CONTROL PLAN	7
SWPPP NOTES	8
SWPPP DETAILS	9-10
STORM DETAILS	11
SANITARY DETAILS	12
WATER DETAILS	13

JUSTIN ELAM, P.E.  
REGISTERED ENGINEER  
OHIO LICENSE NO. E-76298

DATE

DATE APPROVED BY OHIO EPA-WATER

DATE APPROVED BY OHIO EPA-SEWER



WINDSOR ESTATES, LLC  
WINDSOR ESTATES  
SECTION 7

TITLE SHEET

ISSUE:  
BID SET  
DATE:  
12/11/2018  
JOB NO.: 751421  
DESIGN: KEH  
DRAWN: KEH  
CHECKED: JEE  
SHEET NO.  
1





**OHIO**  
**Utilities Protection**  
**SERVICE**

811 or  
1-800-362-2764

Call Before You Dig

[illegible]

WINDSOR ESTATES, LLC

# WINDSOR ESTATES

## SECTION 7

LIBERTY TOWNSHIP BUTLER COUNTY OHIO

# OVERALL UTILITY PLAN & INDEX MAP

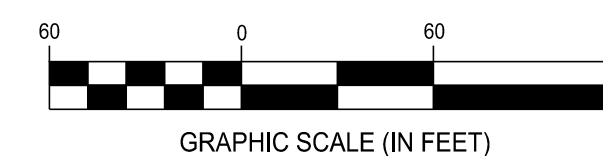
ISSUE:	
BID SET	
DATE:	
12/11/2018	
JOB NO.:	751421
DESIGN:	KEH
DRAWN:	KEH
CHECKED:	JEE
SHEET NO.	
2	

CHRISTOPHER J & PAMELA M MARTINKOVIC, TRUSTEES  
CHRISTOPHER J MARTINKOVIC REVOCABLE TRUST  
54-925 AC  
PARCEL #D2010028000006  
OR BOOK 7422 PAGE 119

CAROLYN SUE PRATT  
17.806 AC  
PARCEL #D2010024000052  
OR BOOK 1628 PAGE 129

LINDA K HALCOMB  
19.639 AC  
PARCEL #D2010024000033  
OR BOOK 8597 PAGE 2186

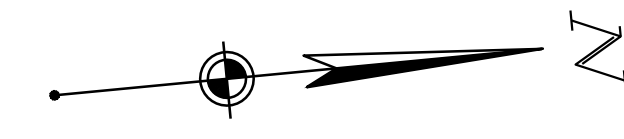
LINDA K HALCOMB  
31.728 AC  
PARCEL #D2010024000031  
OR BOOK 8597 PAGE 2186









[illegible]

WINDSOR ESTATES, LLC

---

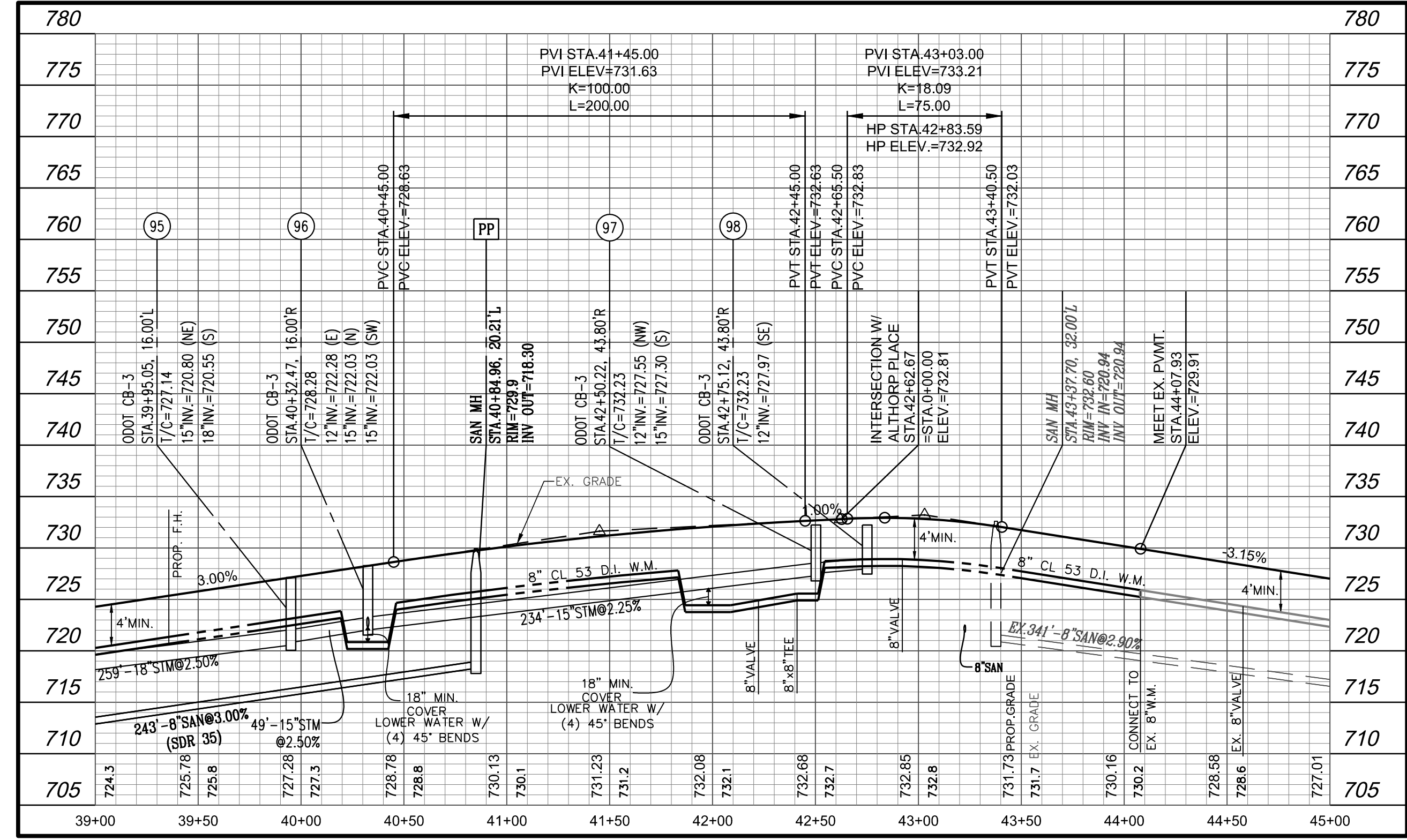
WINDSOR ESTATES  
SECTION 7

LIBERTY TOWNSHIP, BUTLER COUNTY, OHIO

LIBERTY TOWNSHIP BUTLER COUNTY OHIO

PLAN AND  
PROFILE -  
RODEN PARK  
DRIVE

ISSUE:	
BID SET	
DATE:	
12/11/2018	
JOB NO.:	751421
DESIGN:	KEH
DRAWN:	KEH
CHECKED:	JEE
SHEET NO.	
4	



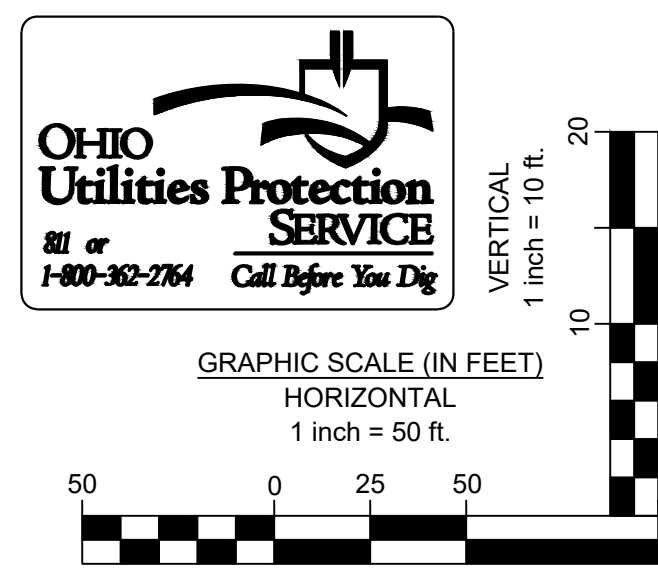
RODEN PARK DRIVE

CURVE TABLE						
CURVE #	LENGTH	RADIUS	DELTA	CHORD DIRECTION	CHORD LENGTH	TANGENT
C1	413.86'	350.00'	67°44'59"	S28° 25' 02"E	390.17'	234.97'

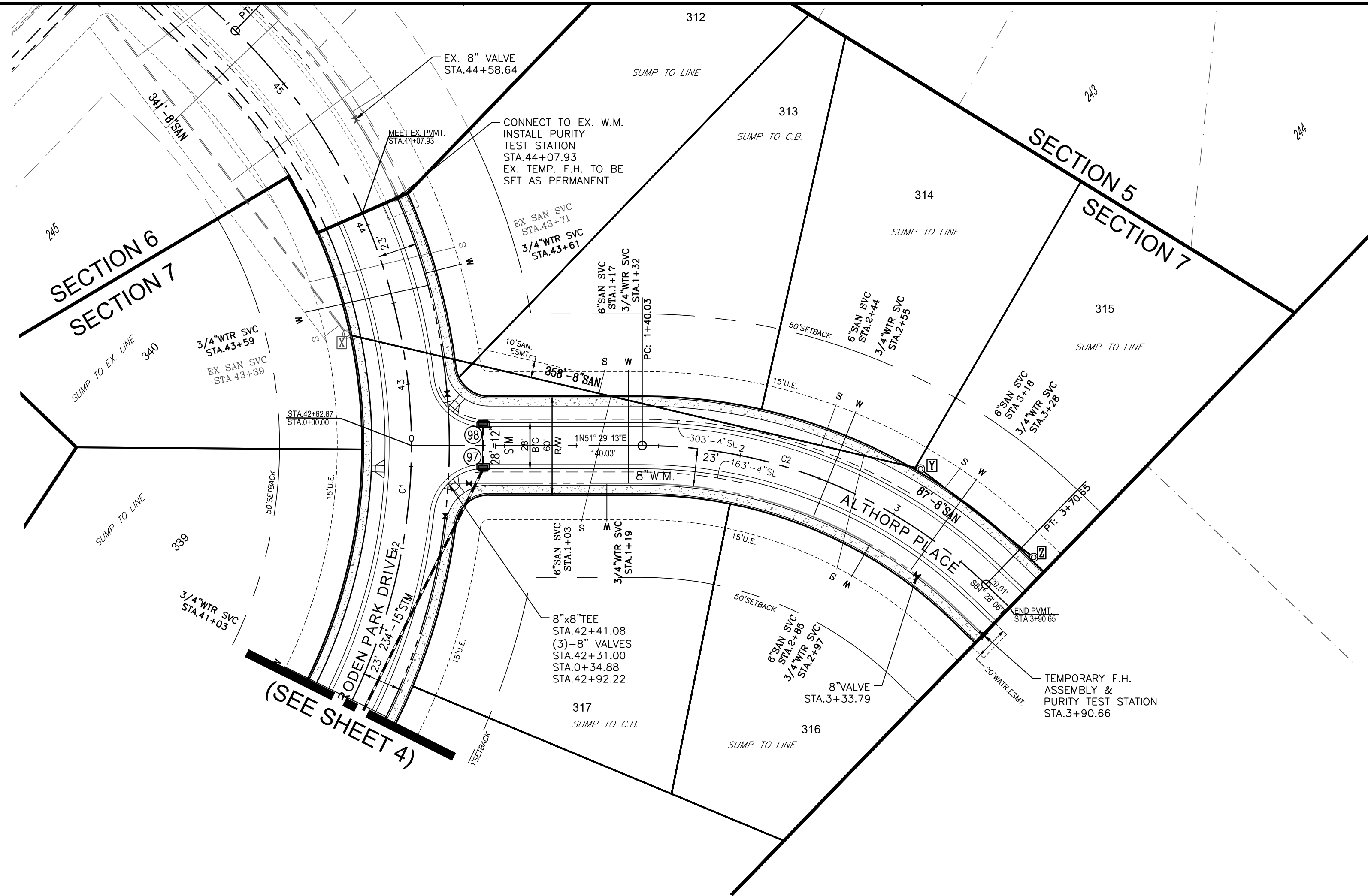
WATER MAIN RESTRAINT JOINT LOCATION CHART					
Water Main Dia.	Horizontal 45°Bends	Vertical 45°Bends Up (Lower Water Under...)	Vertical 45°Bends Down (Lower Water Under...)	Dead Ends (Permanent & Temporary)	TEE (Branch Only)
6"	18' both sides	18' both sides	36' both sides	72' Back	18'
8"	18' both sides	36' both sides	36' both sides	90' Back	18'

- NOTES:
1. 48 hours notice to be given to affected residents before construction begins.
2. Catch Basin T/C Elevations located within the curb are set to the Back of Curb Elevations.
3. Lower 3/4" Water Services as needed to avoid conflicts with Storm with Min. 4' Cover.
4. Location of existing utilities to be determined in the field prior to work beginning.
5. All lots Sump to Sump Drain unless otherwise noted in plan.
6. 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.
7. Contractors to accept all quantities as correct prior to beginning construction.
8. All utility service lines shall extend one (1) foot beyond the easement.

**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.

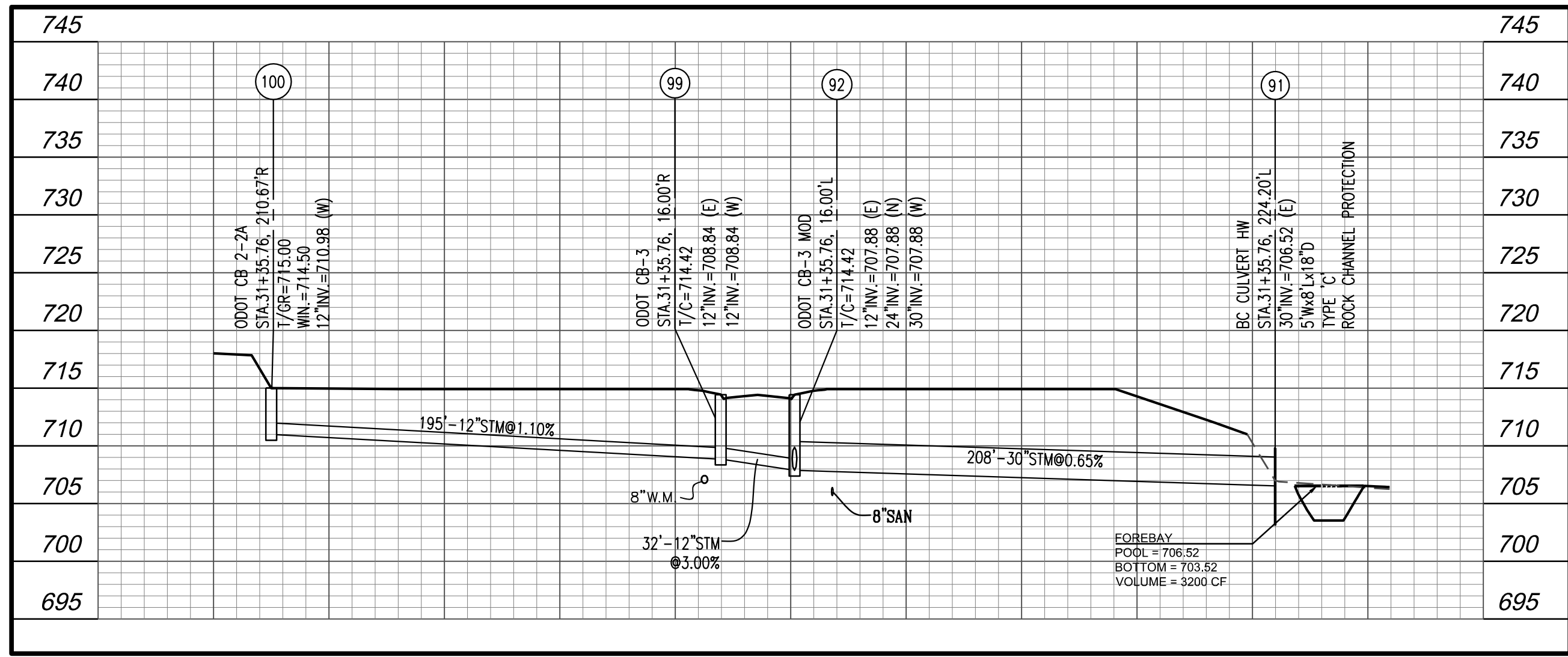




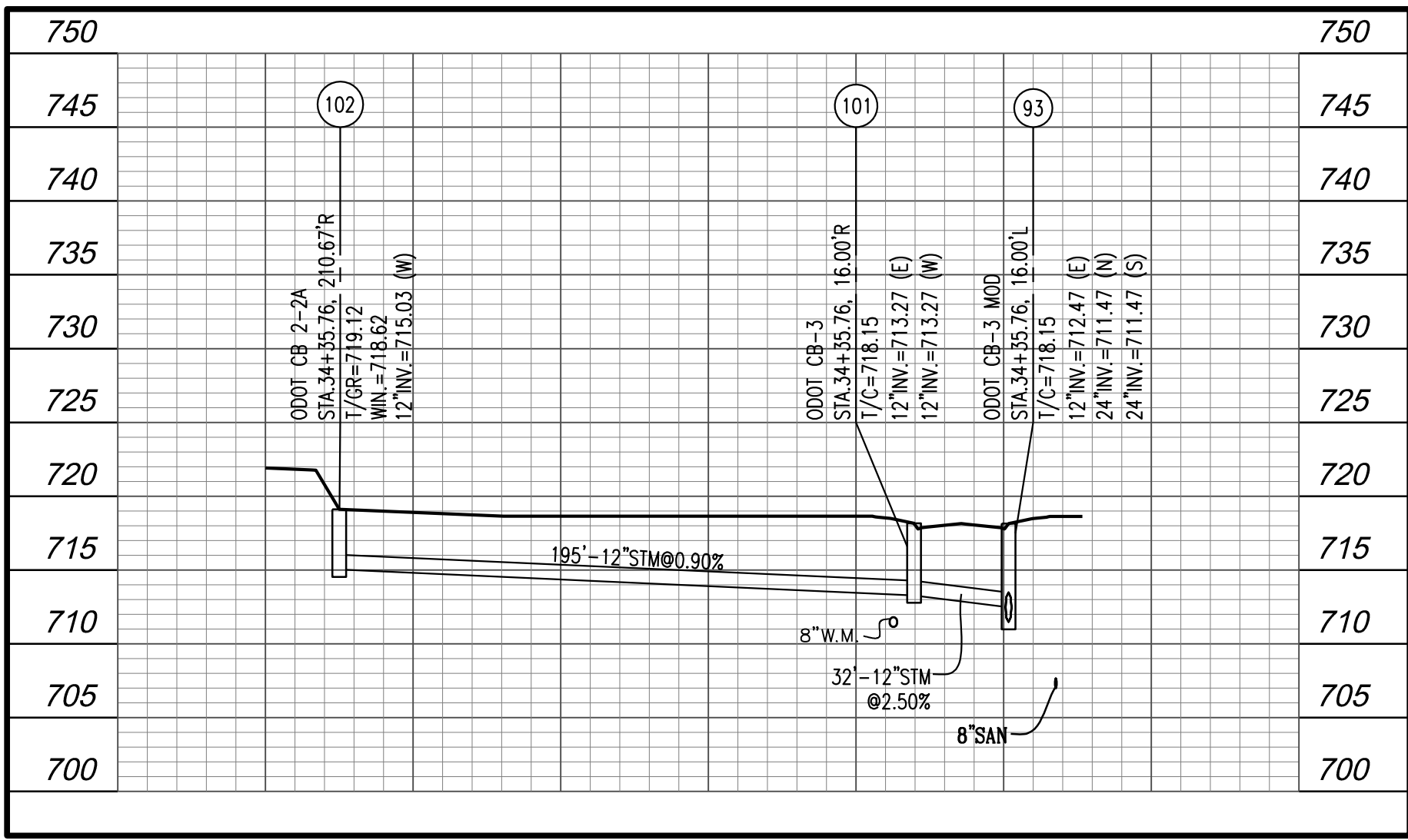


W:\PROJECTS\OAKES DEVELOPMENTS\751421 WINDSOR ESTATES\03-CIVIL\SECTION 7\PLAN\751421 - PLAN AND PROFILE.DWG - 12/18/2018 4:08 PM

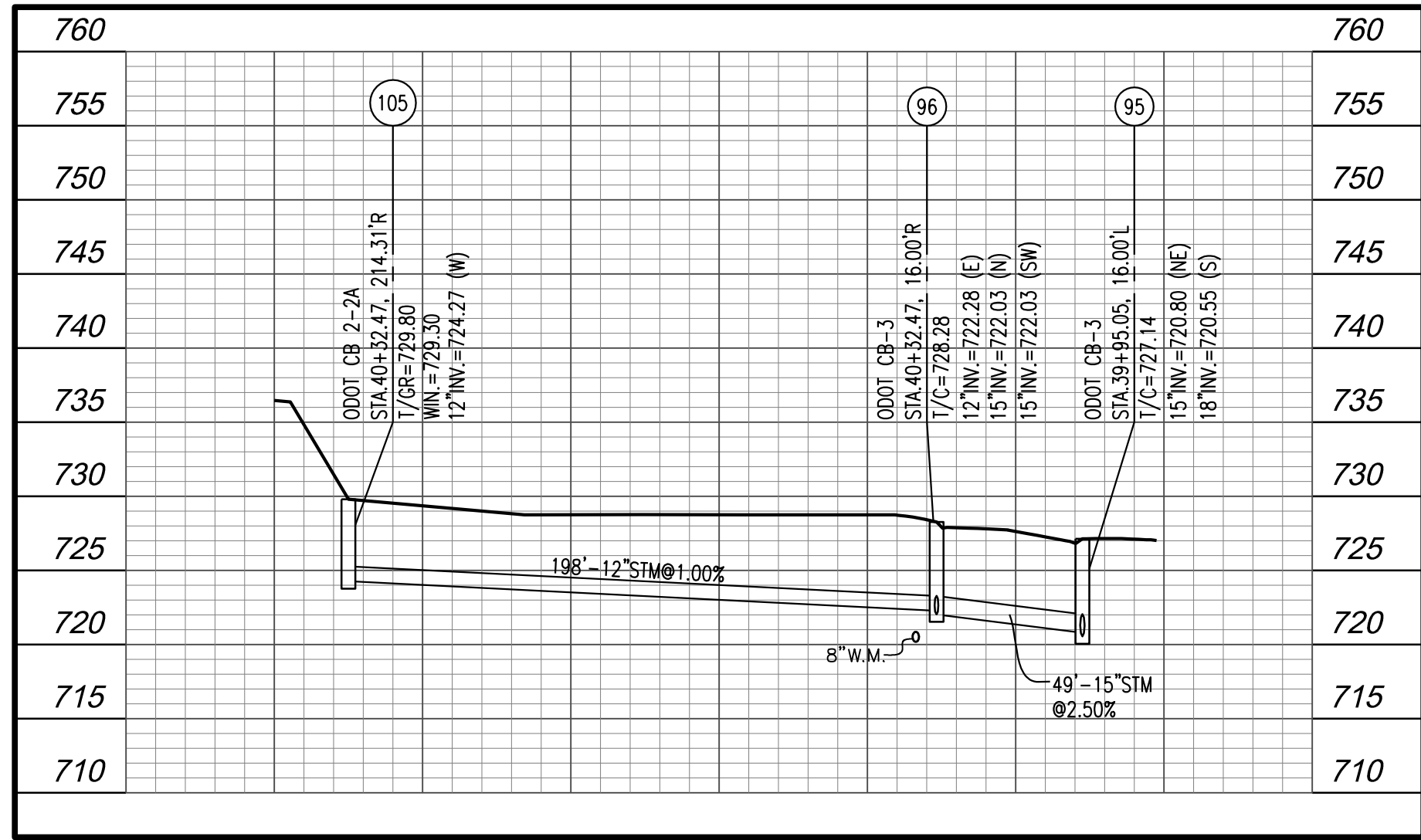




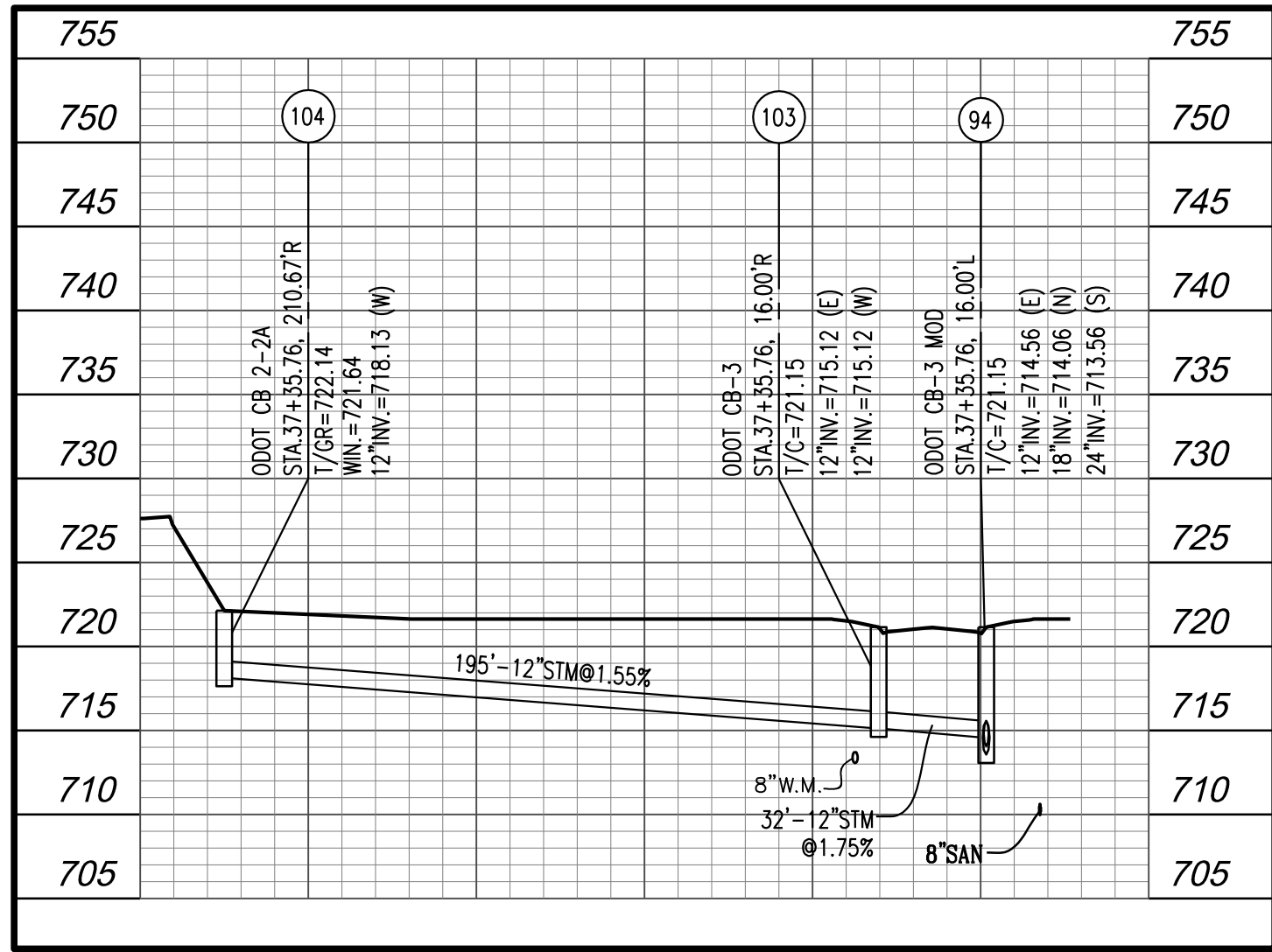
CB 100 - HW 91



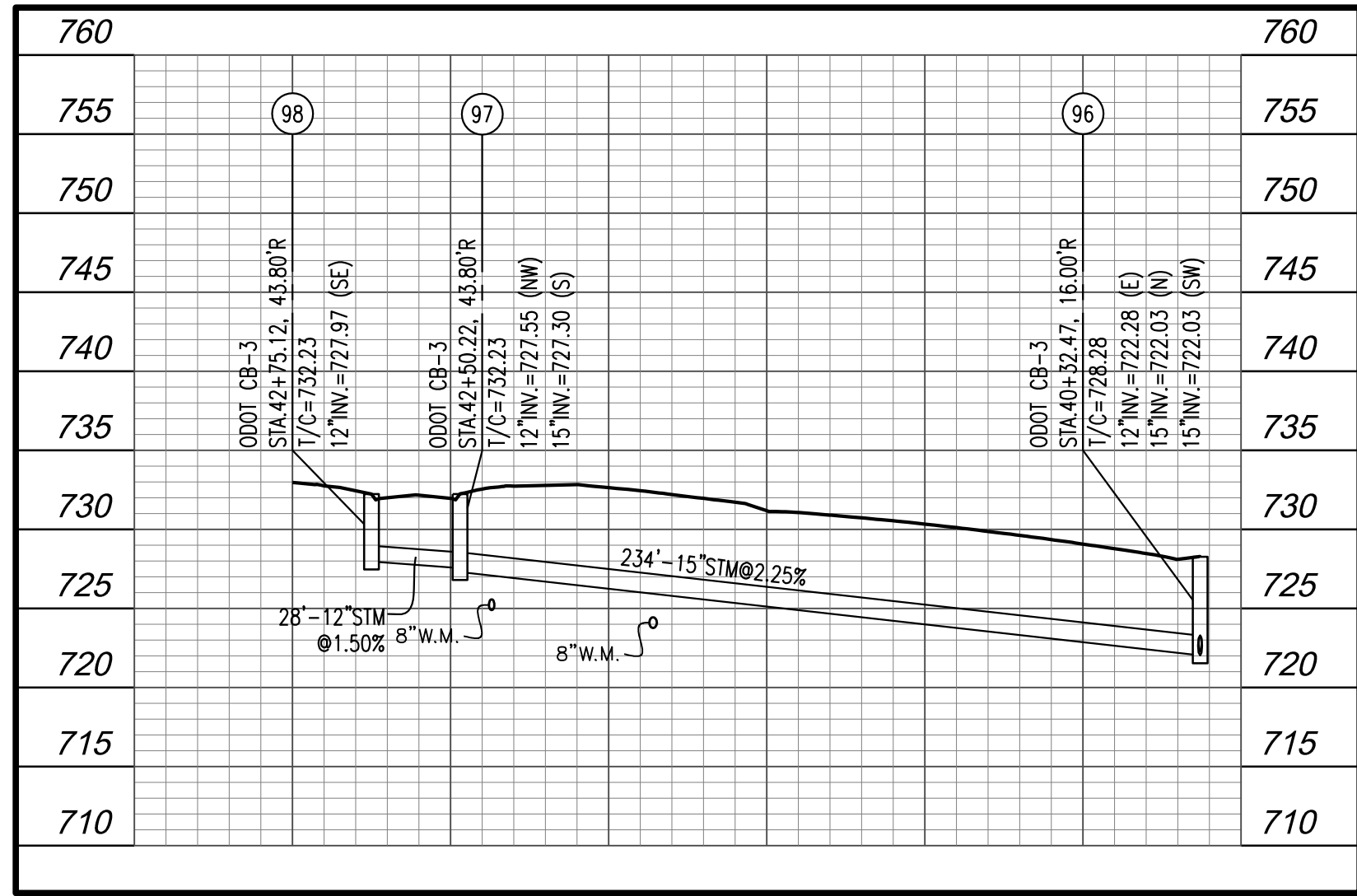
CB 102 - CB 93



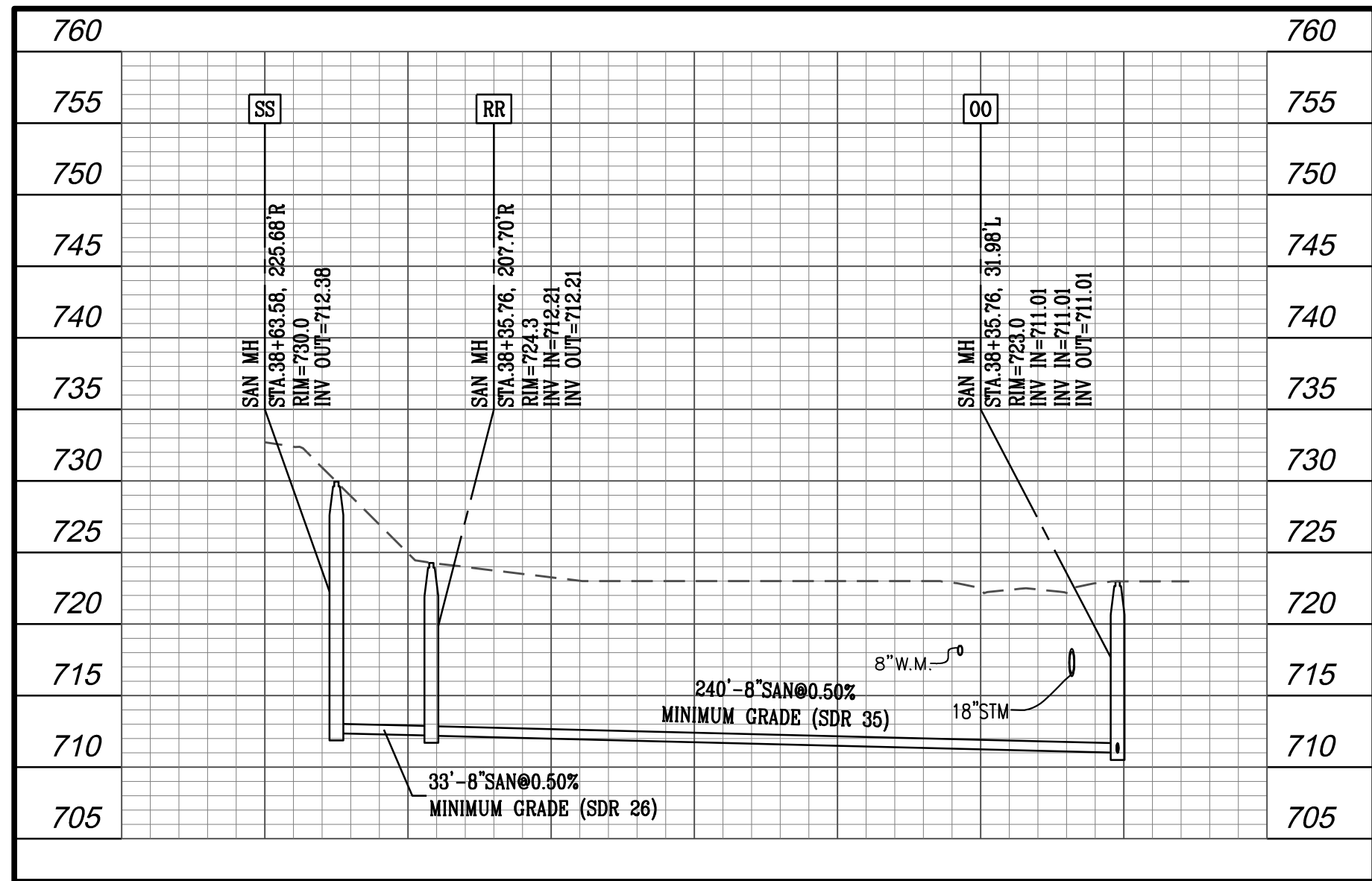
CB 105 - CB 95



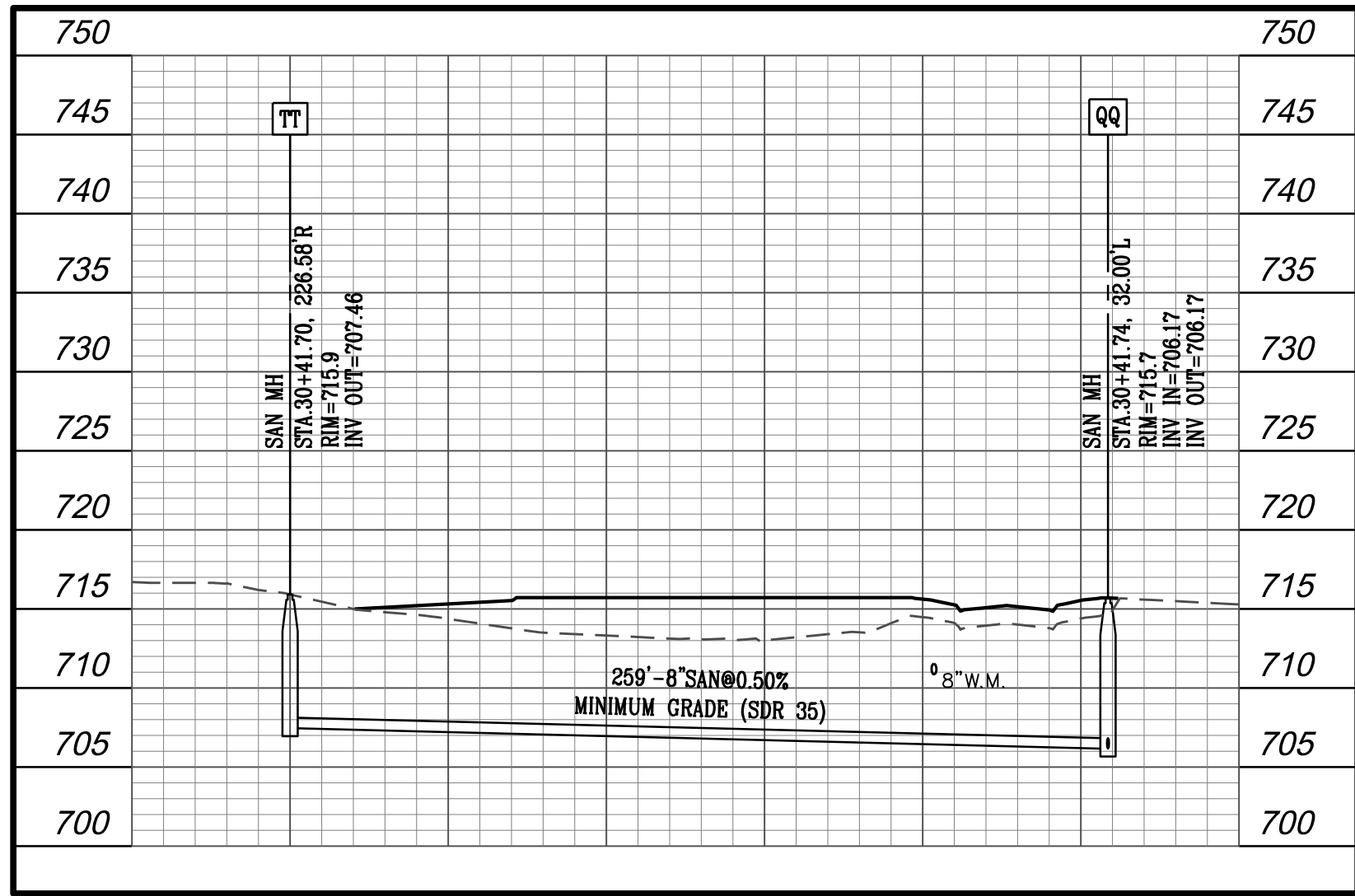
CB 104 - CB 94



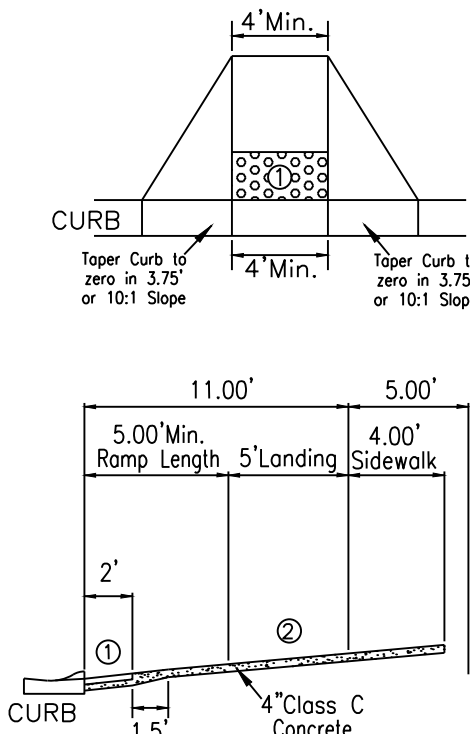
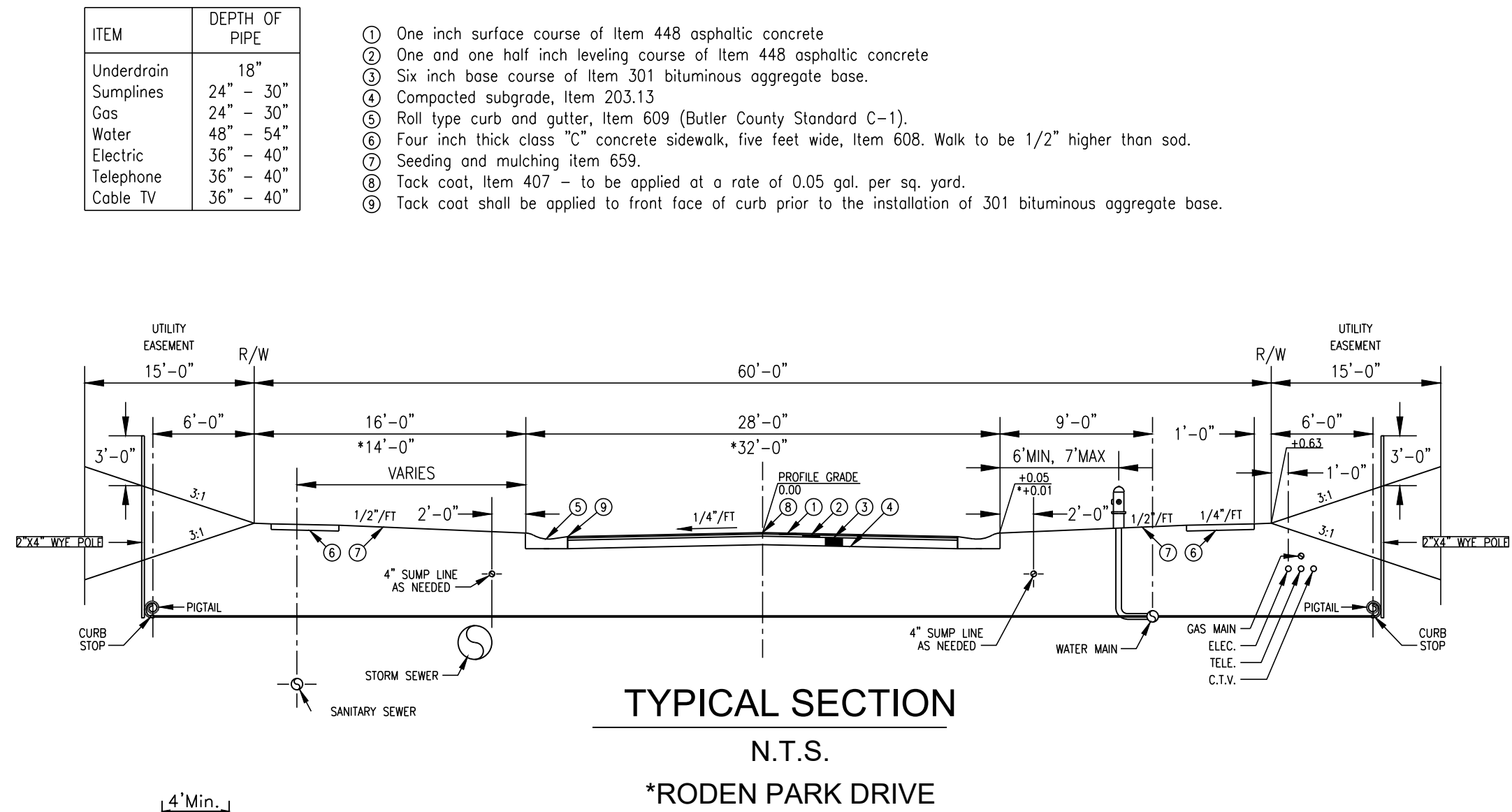
CB 98 - CB 96



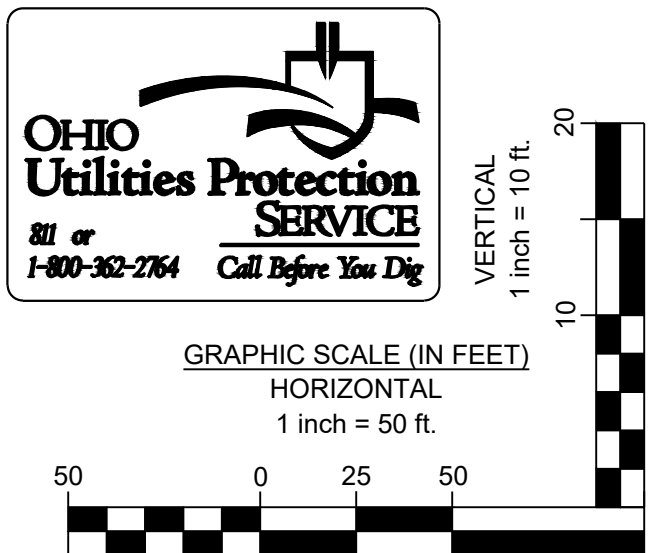
MH SS - MH OO



MH TT - MM QQ



CURB RAMP DETAIL  
N.T.S.



- NOTES:
- 48 hours notice to be given to affected residents before construction begins.
  - All Catch Basin T/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.
  - All utility service lines shall extend one (1) foot beyond the easement.

WATER MAIN RESTRAINT JOINT LOCATION CHART			
Water Main Dia.	Horizontal 45° Bends	Vertical 45° Bends Up (Lower Water Under...)	Dead Ends (Permanent & Temporary)
6"	18" both sides	18" both sides	72" Back
8"	18" both sides	36" both sides	90" Back
10"	36" both sides	36" both sides	117" Back
12"	36" both sides	72" both sides	180" Back
14"	54" both sides	54" both sides	198" Back
16"	54" both sides	54" both sides	216" Back

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.



REVISION DESCRIPTION

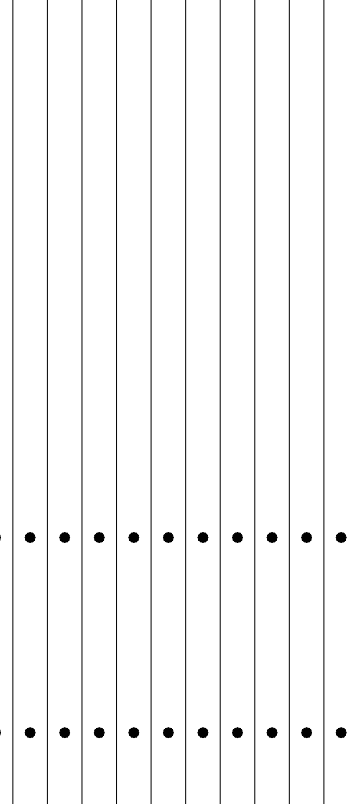
NO. DATE

WINDSOR ESTATES, LLC  
WINDSOR ESTATES  
SECTION 7

OFFSTREET  
PROFILES

ISSUE:  
BID SET  
DATE:  
12/11/2018  
JOB NO.: 751421  
DESIGN: KEH  
DRAWN: KEH  
CHECKED: JEE  
SHEET NO.  
6





## LIBERTY TOWNSHIP, BUTLER COUNTY, OHIO

ISSUE:	
BID SET	
DATE:	
12/11/2018	
NO.:	751421
SIGN:	KEH
AWN:	KEH
CHECKED:	JEE
SHEET NO.	
7	









**PLAN VIEW**

- Temporary seeding and/or mulch applied to rough graded areas
- Construction Entrance gravel
- Rough grade areas to allow settling below grade elevation
- Storm Drain w/inlet protection
- Yard Drain w/inlet protection
- Silt Fence
- Curb
- Concrete Washout

Inset Diagram Labels:

- Fine Elevations
- Rough Graded Soil
- Leave Rough Graded Areas Below Fine Elevation of Curb and Streets

1. Preexisting vegetation shall be retained on idle portions of the building lot for as long as construction operations allow. Clearing shall be done so only active working areas are bare.
2. Temporary seed and/or mulch shall be applied to areas, such as stockpiles and rough graded areas, that are bare and not actively being worked. This shall apply to areas that will not be reworked for 14 days or more.
3. Stockpiles created from basement excavation and grading shall be situated away from streets, swales, or other waterways and shall be seeded and/or mulched immediately.
4. Silt fence or other sediment barriers shall control sheet flow runoff from the building lot. These shall not be constructed in channels or areas of concentrated flow. Other sediment controls such as sediment traps and inlet protection shall also be used as needed to control sediment runoff. Sediment control practices shall be inspected weekly after storm events, and maintained in good working condition.
5. Construction vehicle access shall be limited to one route, to the greatest extent practical. The access shall be gravel or crushed rock underlain with geotextile.
6. Mud tracked onto streets or sediment settled around curb inlet protection shall be removed daily or as needed to prevent it from accumulating. It shall be removed by shoveling and scraping and shall NOT be washed off paved surfaces or into storm drains. Sediment removed shall be placed where it will not be subject to erosion or concentrated runoff.

The diagram consists of two parts: a Plan View and a Profile View.

**PLAN VIEW:** This top-down view shows a road diversion structure. A horizontal line represents the "Road or Other Existing Paved Surface". A diversion structure, shown as a trapezoidal shape with a textured interior, crosses this road. The width of the diversion structure is labeled as "14ft Minimum and Not Less Than Width of Ingress or Egress". The total width of the diversion structure is labeled as "70 ft. (or 30ft for Access to Individual House Lot)". The structure is flanked by "Right of Way Diversion as Needed".

**PROFILE:** This side view shows the cross-section of the diversion structure. The structure is shown as a trapezoidal shape with a textured interior. The height of the structure is labeled as "18" or Sufficient of Divert Runoff". The structure is flanked by "Right of Way Diversion as Needed". The bottom of the structure is labeled as "Culvert as Needed".

1. Stone Size—000T # 2 (1.5-2.5 inch) stone shall be used, or **equivalent concrete aggregate**.
2. Length—The Construction entrance shall be as long as required to stabilize high traffic areas but not less than 70 ft. (exception: apply 30 ft. minimum to single residence lots).
3. Thickness—The stone layer shall be at least 6 inches thick for light duty entrances or at least 10 inches for heavy duty use.
4. Width—The entrance shall be at least 14 feet wide, but not less than the full width at points where ingress or egress occurs.
5. Geotextile—A geotextile shall be laid over the entire area prior to placing stone. It shall be composed of strong rot-proof polymeric fibers and meet the following specifications:

Geotextile Specification for Construction Entrance	
Minimum Tensile Strength	200 lbs
Minimum Puncture Strength	80 psi
Minimum Tear Strength	50 lbs
Minimum Burst Strength	320 psi

6. Timing—The construction entrance shall be installed as soon as is practicable before major grading activities.
7. Culvert—A pipe or culvert shall be constructed under the entrance if needed to prevent surface water from flowing across the entrance or to prevent runoff from being directed onto paved surfaces.
8. Water Bar—A water bar shall be constructed as part of the construction entrance if needed to prevent surface runoff from flowing the length of the construction entrance and out onto paved surfaces.
9. Maintenance—Top dressing of additional stone shall be applied as conditions demand. Mud spilled, dropped, washed or tracked onto public roads, or any surface where runoff is not checked by sediment controls, shall be removed immediately. Removal shall be accomplished by scraping or sweeping.
10. Construction entrances shall not be relied upon to remove mud from vehicles and prevent off-site tracking. Vehicles that enter and leave the construction-site shall be restricted from muddy areas.
11. Removal—the entrance shall remain in place until the disturbed area is stabilized or replaced with a permanent roadway or entrance.

Figure 7.4.1

Minimum Tensile Strength	200 lbs
Minimum Puncture Strength	80 psi
Minimum Tear Strength	50 lbs
Minimum Burst Strength	320 psi
Minimum Elongation	20%
Equivalent Opening Size	EOS < 0.6 mm
Permittivity	1 x 10 <sup>-3</sup> cm/sec

1. Construction personnel, including subcontractors who may use or handle hazardous or toxic materials, shall be made aware of the following general guidelines regarding disposal and handling of hazardous and construction wastes:
  - Prevent spills
  - Use products up
  - Follow label directions for disposal
  - Remove lids from empty bottles and cans when disposing in trash
  - Recycle wastes whenever possible
  - Don't pour into waterways, storm drains or onto the ground
  - Don't pour down the sink, floor drain or septic tanks
  - Don't bury chemicals or containers
  - Don't burn chemicals or containers
  - Don't mix chemicals together
2. Containers shall be provided for the proper collection of all waste material including construction debris, trash, petroleum products and any hazardous materials used on-site. Containers shall be covered and not leaking. All waste material shall be disposed of at facilities approved for that material. Construction Demolition and Debris (CD&D) waste must be disposed of at an Ohio EPA approved CD&D landfill.
3. No construction related waste materials are to be buried on-site. By exception, clean fill (bricks, hardened concrete, soil) may be utilized in a way which does not encroach upon natural wetlands, streams or floodplains or result in the contamination of waters of the state.
4. **Handling Construction Chemicals.** Mixing, pumping, transferring or other handling of construction chemicals such as fertilizer, lime, asphalt, concrete drying compounds, and all other potentially hazardous materials shall be performed in an area away from any watercourse, ditch or storm drain.
5. **Equipment Fueling and Maintenance.** oil changing, etc., shall be performed away from watercourses, ditches or storm drains, in an area designated for that purpose. The designated area shall be equipped for recycling oil and catching spills. Secondary containment shall be provided for all fuel oil storage tanks. These areas must be inspected every seven days and within 24 hrs. of a 0.5 inch or greater rain event to ensure there are no exposed materials which would contaminate storm water. Site operators must be aware that Spill Prevention Control and Countermeasures (SPCC) requirements may apply. An SPCC plan is required for sites with one single above ground tank of 660

6. **Concrete Wash Water** shall not be allowed to flow to streams, ditches, storm drains, or any other water conveyance. A sump or pit with no potential for discharge shall be constructed if needed to contain concrete wash water. Field tile or other subsurface drainage structures within 10 ft. of the sump shall be cut and plugged. For small projects, truck chutes may be rinsed away from any water conveyances.



7. **Spill Reporting Requirements:** Spills on pavement shall be absorbed with sawdust or kitty litter and disposed of with the trash at a licensed sanitary landfill. Hazardous or industrial wastes such as most solvents, gasoline, oil-based paints, and cement curing compounds require special handling. Spills shall be reported to Ohio EPA (1 800 282 9378). Spills of 25 gallons or more of petroleum products shall be reported to Ohio EPA, the local fire department, and the Local Emergency Planning Committee within 30 min. of the discovery of the release. All spills which contact waters of the state must be reported to Ohio EPA.
8. **Contaminated Soils.** If substances such as oil, diesel fuel, hydraulic fluid, antifreeze, etc. are spilled, leaked, or released onto the soil, the soil should be dug up and disposed of at licensed sanitary landfill or other approved petroleum contaminated soil remediation facility. (not a construction/demolition debris landfill). Note that storm water run off associated with contaminated soils are not be authorized under Ohio EPA's General Storm Water Permit associated with Construction Activities.
9. **Open Burning.** No materials containing rubber, grease, asphalt, or petroleum products, such as tires, auto parts, plastics or plastic coated wire may be burned (OAC 3745-19). **Open burning is not allowed in restricted areas, which are defined as:** 1) within corporation limits; 2) within 1000 feet outside a municipal corporation having a population of 1000 to 10,000; and 3) a one mile zone outside of a corporation of 10,000 or more. Outside of restricted areas, no open burning is allowed within a 1000 feet of an inhabited building on another property. Open burning is permissible in a restricted area for: heating tar, welding, smudge pots and similar occupational needs, and heating for warmth or outdoor barbecues. Outside of restricted areas, open burning is permissible for landscape or land clearing wastes (plant material, with prior written permission from Ohio EPA), and agricultural wastes, excluding buildings.

10. **Dust Control or dust suppressants** shall be used to prevent nuisance conditions, in accordance with the manufacturer's specifications and in a manner, which prevent a discharge to waters of the state. Sufficient distance must be provided between applications and nearby bridges, catch basins, and other waterways. Application (excluding water) may not occur when rain is imminent as noted in the short term forecast. Used oil may not be applied for dust control.

**11. Other Air Permitting Requirements:** Certain activities associated with construction will require air permits including but not limited to: mobile concrete batch plants, mobile asphalt plants, concrete crushers, large generators, etc. These activities will require specific Ohio EPA Air Permits for installation and operation. Operators must seek authorization from the corresponding district of Ohio EPA. For demolition of all commercial sites, a Notification for Restoration and Demolition must be submitted to Ohio EPA to determine if asbestos corrective actions are required.

**12. Process Waste Water/Leachate Management.** Ohio EPA's Construction General Permit only allows the discharge of storm water and does not include other waste streams/discharges such as vehicle and/or equipment washing, on-site septic leachate concrete wash outs, which are considered process wastewaters. All process wastewaters must be collected and properly disposed at an approved disposal facility. In the event, leachate or seepage is discharged, it must be isolated for collection and proper disposal and corrective actions taken to eliminate the source of waste water.

**13. A Permit To Install (PTI)** is required prior to the construction of all centralized sanitary systems, including sewer extensions, and sewerage systems (except those serving one, two, and three family dwellings) and potable water lines. Plans must be submitted and approved by Ohio EPA. Issuance of an Ohio EPA Construction General Storm Water Permit does not authorize the installation of any sewerage system where Ohio EPA has not approved a PTI.

This diagram shows a cross-section of a structure, likely a retaining wall or a foundation. It features a 2" x 4" frame. The structure is reinforced with geotextile over wire mesh backing. The geotextile is shown as a patterned material. The structure is 18" high. The geotextile is compacted backfill around the inlet. The diagram is labeled "SECTION".

1. Inlet protection shall be constructed either before upslope land disturbance begins or before the inlet becomes functional.
2. The earth around the inlet shall be excavated completely to a depth at least 18 inches.
3. The wooden frame shall be constructed of 2-inch by 4-inch construction grade lumber. The 2-inch by 4-inch posts shall be driven one (1) ft. into the ground at four corners of the inlet and the top portion of 2-inch by 4-inch frame assembled using the overlap joint shown. The top of the frame shall be at least 6 inches below adjacent roads if ponded water will pose a safety hazard to traffic.
4. Wire mesh shall be of sufficient strength to support backfill with water fully impinged against it. It shall be stretched tightly around the frame and fastened securely to the frame.
5. Geotextile material shall have an equivalent opening size of 20-40 sieve and be resistant to sunlight. It shall be stretched tightly around the frame and fastened securely. It shall extend from the top of the frame to 18 inches below the inlet notch elevation. The geotextile shall overlap across one side of the inlet so the ends of the cloth are not fastened to the same post.
6. Backfill shall be placed around the inlet in compacted 6-inch layers until the earth is even with notch elevation on ends and top elevation on sides.
7. A compacted earth dike or check dam shall be constructed in the ditch line below the inlet if the inlet is not in a depression. The top of the dike shall be at least 6 inches higher than the top of the frame.



REVISION DESCRIPTION

NO.	DATE
-----	------

**WINDSOR ESTATES, LLC**

# WINDSOR ESTATES

## SECTION 7

LIBERTY TOWNSHIP, BUTLER COUNTY, OHIO

## SWPPP DETAILS

ISSUE:	
BID SET	
DATE:	
12/11/2018	
JOB NO.:	751421
DESIGN:	KEH
DRAWN:	KEH
CHECKED:	JEE
SHEET NO.	
9	



Specifications for  
**Permanent Seeding**

- Site Preparation**
- Subsoiler, plow, or other implement shall be used to reduce soil compaction and allow maximum infiltration. (Maximizing infiltration will help control both runoff rate and water quality.) Subsoiling should be done when the soil moisture is low enough to allow the soil to crack or fracture. Subsoiling shall not be done on slip-prone areas where soil preparation should be limited to what is necessary for establishing vegetation.
  - The site shall be graded as needed to permit the use of conventional equipment for seedbed preparation and seeding.
  - Topsoil shall be applied where needed to establish vegetation.

- Seedbed Preparation**
- Lime—Agricultural ground limestone shall be applied to acid soil as recommended by a soil test. In lieu of a soil test, lime shall be applied at the rate of 100 pounds per 1,000-sq. ft. or 2 tons per acre.
  - Fertilizer—Fertilizer shall be applied as recommended by a soil test. In place of a soil test, fertilizer shall be applied at a rate of 25 pounds per 1,000-sq. ft. or 1000 pounds per acre of a 10-10-10 or 12-12-12 analyses.
  - The lime and fertilizer shall be worked into the soil with a disk harrow, spring-tooth harrow, or other suitable field implement to a depth of 3 inches. On sloping land, the soil shall be worked on the contour.

- Seeding Dates and Soil Conditions**
- Seeding should be done March 1 to May 31 or August 1 to September 30. If seeding occurs outside of the above-specified dates, additional mulch and irrigation may be required to ensure a minimum of 80% germination. Tillage for seedbed preparation should be done when the soil is dry enough to crumble and not form ribbons when compressed by hand. For winter seeding, see the following section on dormant seeding.

- Dormant Seedings**
- Seedings should not be made 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.
  - The following methods may be used for "Dormant Seeding":

- Straw and Mulch Anchoring Methods  
Straw mulch shall be anchored immediately to minimize loss by wind or water.
    - Mechanical—A disk, crimper, or similar type tool shall be set straight to punch or anchor the mulch material into the soil. Straw mechanically anchored shall not be finely chopped but, generally, be left longer than 6 inches.
    - Mulch Netting—Netting shall be used according to the manufacturer's recommendations. Netting may be necessary to hold mulch in place in areas of concentrated runoff and on critical slopes.
    - Asphalt Emulsion—Asphalt shall be applied as recommended by the manufacture or at the rate of 160 gallons per acre.
  - Synthetic Binders—Synthetic binders such as Acrylic DLR (Agri-Tac), DCA-70, Petroset, Terra Tack or equivalent may be used at rates specified by the manufacturer.
  - Wood Cellulose Fiber—Wood cellulose fiber shall be applied at a net dry weight of 750 pounds per acre. The wood cellulose fiber shall be mixed with water with the mixture containing a maximum of 50 pounds cellulose per 100 gallons of water.
- Irrigation**
- Permanent seeding shall include irrigation to establish vegetation during dry weather or on adverse site conditions, which require adequate moisture for seed germination and plant growth.
- Irrigation rates shall be monitored to prevent erosion and damage to seeded areas from excessive runoff.

Table 7.10.2 Permanent Seeding				
Seed Mix	Seeding Rate		Notes:	
	Lbs./acre	Lbs/1,000 Sq. Feet		
General Use				
Creeping Red Fescue	20-40	1/2-1	For close mowing & for waterways with <2.0 ft/sec velocity	
Domestic Ryegrass	10-20	1/4-1/2		
Kentucky Bluegrass	20-40	1/2-1		
Tall Fescue	40-50	1-1 1/4		
Turf-type (dwarf) Fescue	90	2 1/4		
Steep Banks or Cut Slopes				
Tall Fescue	40-50	1-1 1/4		
Crown Vetch	10-20	1/4-1/2	Do not seed later than August	
Tall Fescue	20-30	1/2-3/4		
Flat Pea	20-25	1/2-3/4	Do not seed later than August	
Tall Fescue	20-30	1/2-3/4		
Road Ditches and Swales				
Tall Fescue	40-50	1-1 1/4		
Turf-type (Dwarf) Fescue	90	2 1/4		
Kentucky Bluegrass	5	0.1		
Lawns				
Kentucky Bluegrass	100-120	2	For shaded areas	
Perennial Ryegrass		2		
Kentucky Bluegrass	100-120	2		
Creeping Red Fescue		1-1/2		

Note: Other approved seed mixtures may be substituted.

Specifications for  
**Temporary Seeding**

Table 7.8.1 Temporary Seeding Species Selection				
Seeding Dates	Species	Lb./1000 ft2	Lb./Acre	
March 1 to August 15	Oats	3	128 (4 bushel)	
	Tall Fescue	1	40	
	Annual Ryegrass	1	40	
	Perennial Ryegrass	1	40	
	Tall Fescue	1	40	
	Annual Ryegrass	1	40	
	Annual Ryegrass	1.25	55	
	Perennial Ryegrass	3.25	142	
	Creeping Red Fescue	0.4	17	
	Kentucky Bluegrass	0.4	142	
August 16th to November	Oats	3	128 (3 bushel)	
	Tall Fescue	1	40	
	Annual Ryegrass	1	40	
	Rye	3	112 (2 bushel)	
	Tall Fescue	1	40	
	Annual Ryegrass	1	40	
	Wheat	3	120 (2 bushel)	
	Tall Fescue	1	40	
	Annual Ryegrass	1	40	
	Perennial Rye	1	40	
November 1 to Feb. 29	Tall Fescue	1	40	
	Annual Ryegrass	1	40	
	Annual Ryegrass	1.25	40	
	Perennial Ryegrass	3.25	40	
	Creeping Red Fescue	0.4	40	
	Kentucky Bluegrass	0.4	40	
	Use mulch only or dormant seeding			

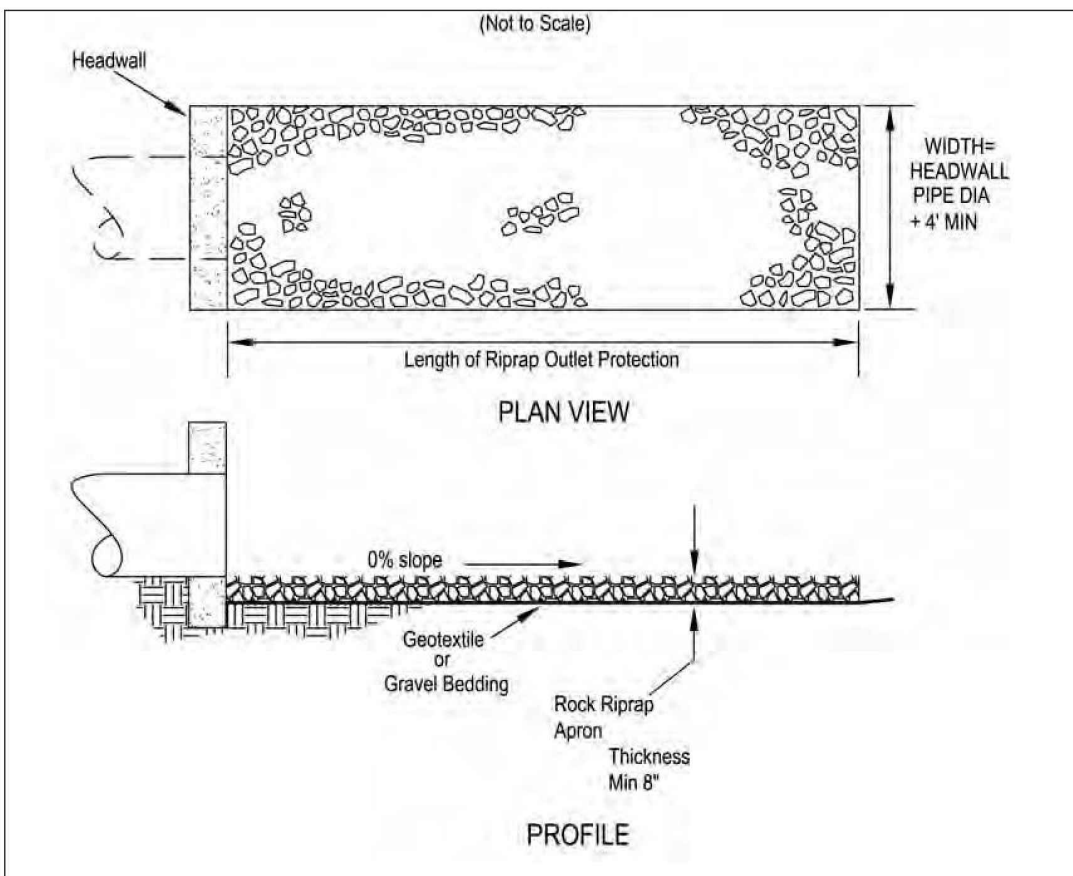
Note: Other approved species may be substituted.

- Structural erosion and sediment control practices such as diversions and sediment traps shall be installed and stabilized with temporary seeding prior to grading the rest of the construction site.
- Temporary seed shall be applied between construction operations on soil that will not be graded or reworked for 14 days or greater. These idle areas shall be seeded within 7 days after grading.
- The seedbed should be pulverized and loose to ensure the success of establishing vegetation. Temporary seeding should not be postponed if ideal seedbed preparation is not possible.
- Soil Amendments—Temporary vegetation seeding rates shall establish adequate stands of vegetation, which may require the use of soil amendments. Base rates for lime and fertilizer shall be used.
- Seeding Method—Seed shall be applied uniformly with a cyclone spreader, drill, cut/packer seeder, or hydroseeder. When feasible, seed that has been broadcast shall be covered by raking or dragging and then lightly tamped into place using a roller or cut/packer. If hydroseeding is used, the seed and fertilizer will be mixed on-site and the seeding shall be done immediately and without interruption.

**Mulching Temporary Seeding**

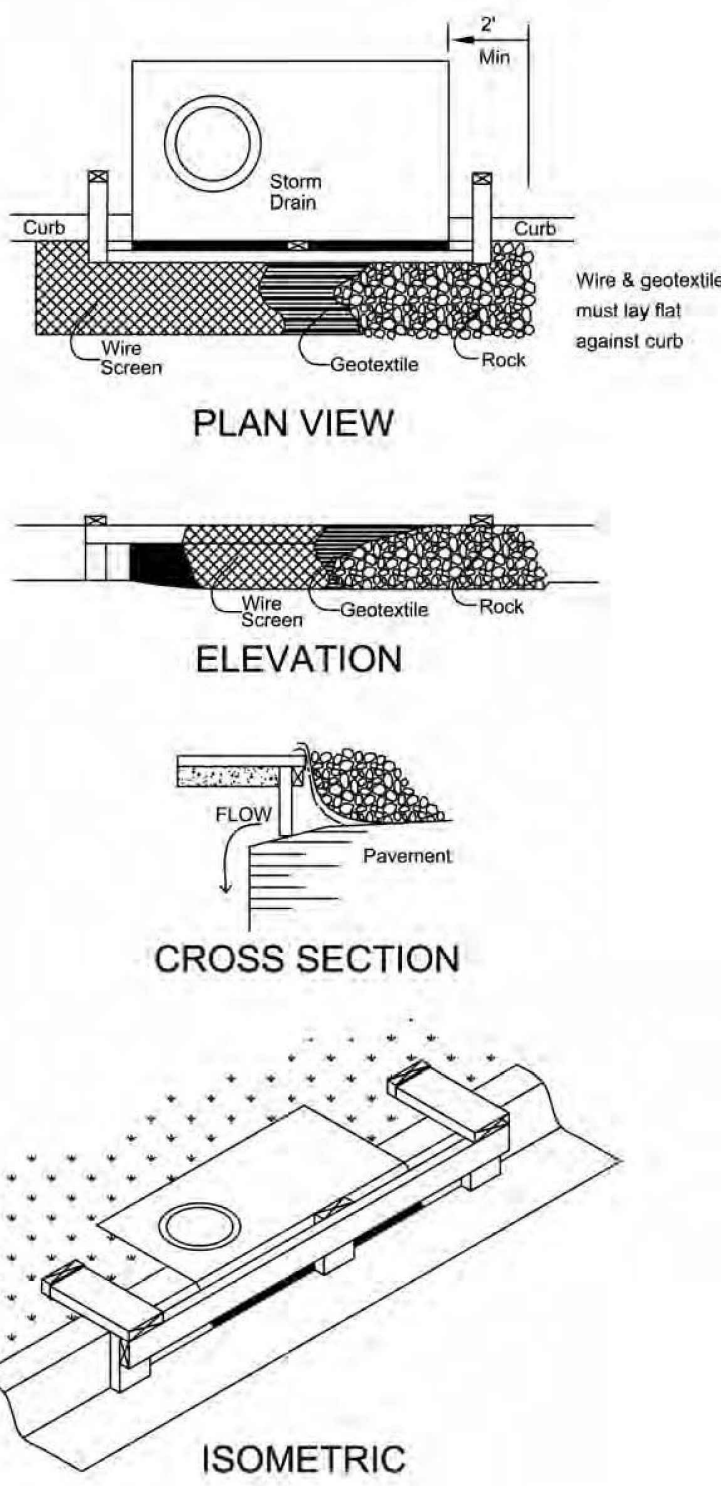
- Applications of temporary seeding shall include mulch, which shall be applied during or immediately after seeding. Seedings made during optimum seeding dates on favorable, very flat soil conditions may not need mulch to achieve adequate stabilization.
- Materials:
  - Straw—If straw is used, it shall be unrotted small-grain straw applied at a rate of 2 tons per acre or 90 lbs./1,000 sq. ft. (2-3 bales)
  - Hydroseeders—If wood cellulose fiber is used, it shall be used at 2000 lbs./ac. or 46 lb./1,000-sq.-ft.
  - Other—Other acceptable mulches include mulch mattings applied according to manufacturer's recommendations or wood chips applied at 6 ton/ ac.
- Straw Mulch shall be anchored immediately to minimize loss by wind or water. Anchoring methods:
  - Mechanical—A disk, crimper, or similar type tool shall be set straight to punch or anchor the mulch material into the soil. Straw mechanically anchored shall not be finely chopped but left to a length of approximately 6 inches.
  - Mulch Netting—Netting shall be used according to the manufacturer's recommendations. Netting may be necessary to hold mulch in place in areas of concentrated runoff and on critical slopes.
  - Synthetic Binders—Synthetic binders such as Acrylic DLR (Agri-Tac), DCA-70, Petroset, Terra Track or equivalent may be used at rates recommended by the manufacturer.
  - Wood-Cellulose Fiber—Wood-cellulose fiber binder shall be applied at a net dry wt. of 750 lb./ac. The wood-cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 50 lb. / 100 gal.

Specifications for  
**Rock Outlet Protection**



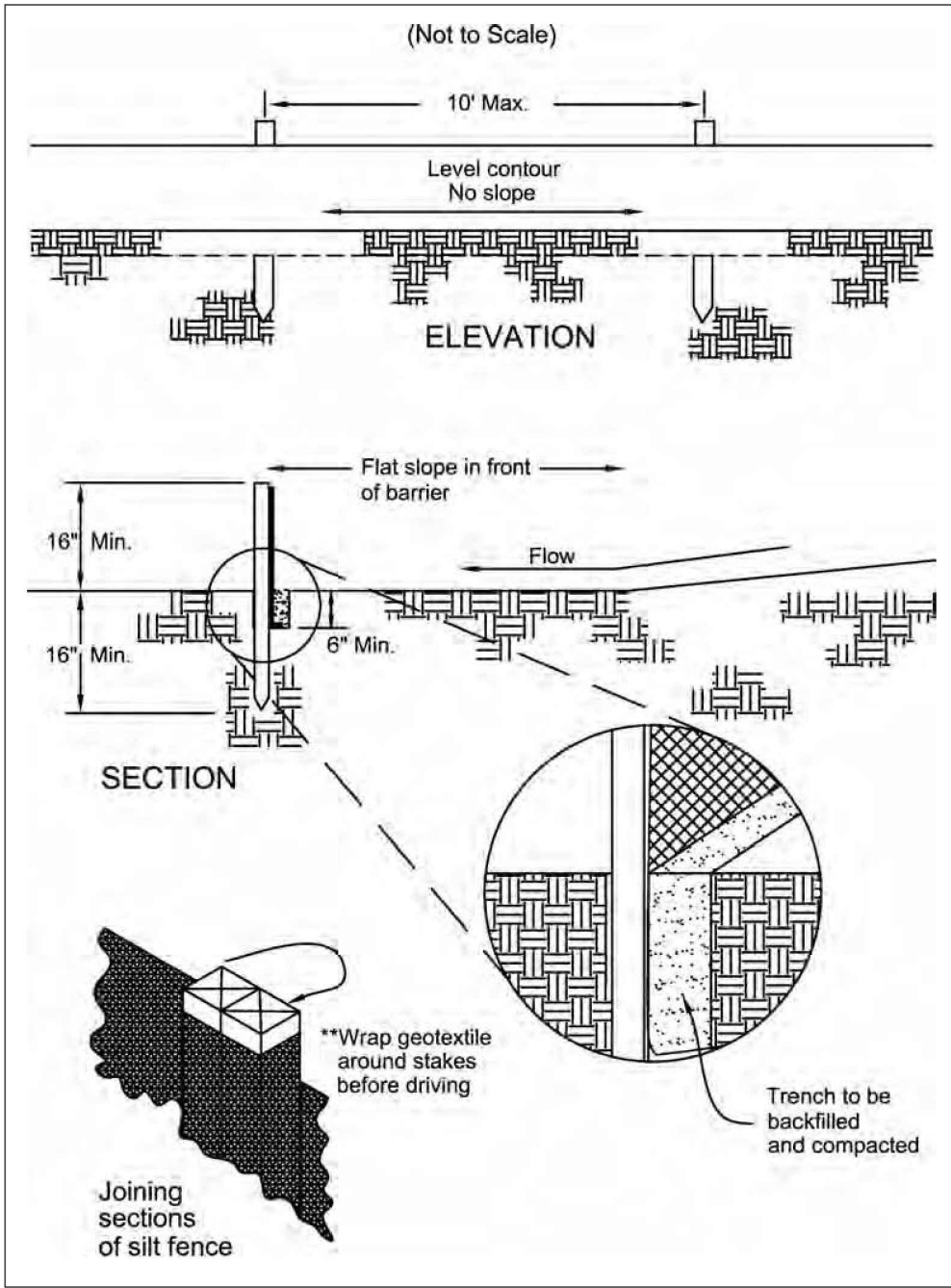
- Subgrade for the filter or bedding and riprap shall be prepared to the required lines and grades as shown on the plan. The subgrade shall be cleared of all trees, stumps, roots, sod, loose rock, or other material.
- Riprap shall conform to the grading limits as shown on the plan.
- Geotextile shall be securely anchored according to manufacturers' recommendations.
- Geotextile shall be laid with the long dimension parallel to the direction of flow and shall be laid loosely but without wrinkles and creases. Where joints are necessary, strips shall be placed to provide a 12-in. minimum overlap, with the upstream strip overlapping the downstream strip.
- Gravel bedding shall be ODOT No. 67's or 57's unless shown differently on the drawings.
- Riprap may be placed by equipment but shall be placed in a manner to prevent slippage or damage to the geotextile.
- Riprap shall be placed by a method that does not cause segregation of sizes. Extensive pushing with a dozer causes segregation and shall be avoided by delivering riprap near its final location within the channel.
- Construction shall be sequenced so that outlet protection is placed and functional when the storm drain, culvert, or open channel above it becomes operational.
- All disturbed areas will be vegetated as soon as practical.

Specifications for  
**Geotextile - Stone Inlet Protection for Curb Inlets**



- Inlet protection shall be constructed either before upslope land disturbance begins or before the inlet becomes functional.
- Construct a wooden frame of 2-by-4-in. construction-grade lumber. The end spacers shall be a minimum of 1 ft. beyond both ends of the throat opening. The anchors shall be nailed to 2-by-4-in. stakes driven on the opposite side of the curb.
- The wire mesh shall be of sufficient strength to support fabric and stone. It shall be a continuous piece with a minimum width of 30 in. and 4 ft. longer than the throat length of the inlet, 2 ft. on each side.
- Geotextile cloth shall have an equivalent opening size (EOS) of 20-40 sieve and be resistant to sunlight. It shall be at least the same size as the wire mesh.
- The wire mesh and geotextile cloth shall be formed to the concrete gutter and against the face of the curb on both sides of the inlet and securely fastened to the 2-by-4-in. frame.
- Two-inch stone shall be placed over the wire mesh and geotextile in such a manner as to prevent water from entering the inlet under or around the geotextile cloth.
- This type of protection must be inspected frequently and the stone and/or geotextile replaced when clogged with sediment.

Specifications for  
**Silt Fence**



- Silt fence shall be constructed before upslope land disturbance begins.
  - All silt fence shall be placed as close to the contour as possible so that water will not concentrate at low points in the fence and so that small swales or depressions that may carry small concentrated flows to the silt fence are dissipated along its length.
  - Ends of the silt fences shall be brought upslope slightly so that water ponded by the silt fence will be prevented from flowing around the ends.
  - Silt fence shall be placed on the flattest area available.
  - Where possible, vegetation shall be preserved for 5 feet (or as much as possible) upslope from the silt fence. If vegetation is removed, it shall be reestablished within 7 days from the installation of the silt fence.
  - The height of the silt fence shall be a minimum of 16 inches above the original ground surface.
  - The silt fence shall be placed in an excavated or sliced trench cut a minimum of 6 inches deep. The trench shall be made with a trencher, cable laying machine, slicing machine, or other suitable device that will ensure an adequately uniform trench depth.
  - The silt fence shall be placed with the stakes on the downslope side of the geotextile. A minimum of 8 inches of geotextile must be below the ground surface. Excess material shall lay on the bottom of the 6-inch deep trench. The trench shall be backfilled and compacted on both sides of the fabric.
  - Seams between sections of silt fence shall be spliced together only at a support post with a minimum 6-in. overlap prior to driving into the ground, (see details).
  - Maintenance—Silt fence shall allow runoff to pass only as diffuse flow through the geotextile. If runoff over-tops the silt fence, flows under the fabric or around the fence ends, or in any other way allows a concentrated flow discharge, one of the following shall be performed, as appropriate: 1) the layout of the silt fence shall be changed, 2) accumulated sediment shall be removed, or 3) other practices shall be installed.
- Sediment deposits shall be routinely removed when the deposit reaches approximately one-half of the height of the silt fence.
- Silt fences shall be inspected after each rainfall and at least daily during a prolonged rainfall. The location of existing silt fence shall be reviewed daily to ensure its proper location and effectiveness. If damaged, the silt fence shall be repaired immediately.

**Criteria for silt fence materials**

- Fence post – The length shall be a minimum of 32 inches. Wood posts will be 2-by-2-in. nominal dimensioned hardwood of sound quality. They shall be free of knots, splits and other visible imperfections, that will weaken the posts. The maximum spacing between posts shall be 10 ft. Posts shall be driven a minimum 16 inches into the ground, where possible. If not possible, the posts shall be adequately secured to prevent overturning of the fence due to sediment/water loading.
- Silt fence fabric – See chart below.

Table 6.3.2 Minimum criteria for Silt Fence Fabric (ODOT, 2002)

FABRIC PROPERTIES	VALUES	TEST METHOD
Minimum Tensile Strength	120 lbs. (535 N)	ASTM D 4632
Maximum Elongation at 60 lbs	50%	ASTM D 4632
Minimum Puncture Strength	50 lbs (220 N)	ASTM D 4833
Minimum Tear Strength	40 lbs (180 N)	ASTM D 4533
Apparent Opening Size	≤ 0.84 mm	ASTM D 4751
Minimum Permittivity	1X10-2 sec.-1	ASTM D 4491
UV Exposure Strength Retention	70%	ASTM G 4355



NO. DATE REVISION DESCRIPTION

WINDSOR ESTATES, LLC

WINDSOR ESTATES  
SECTION 7

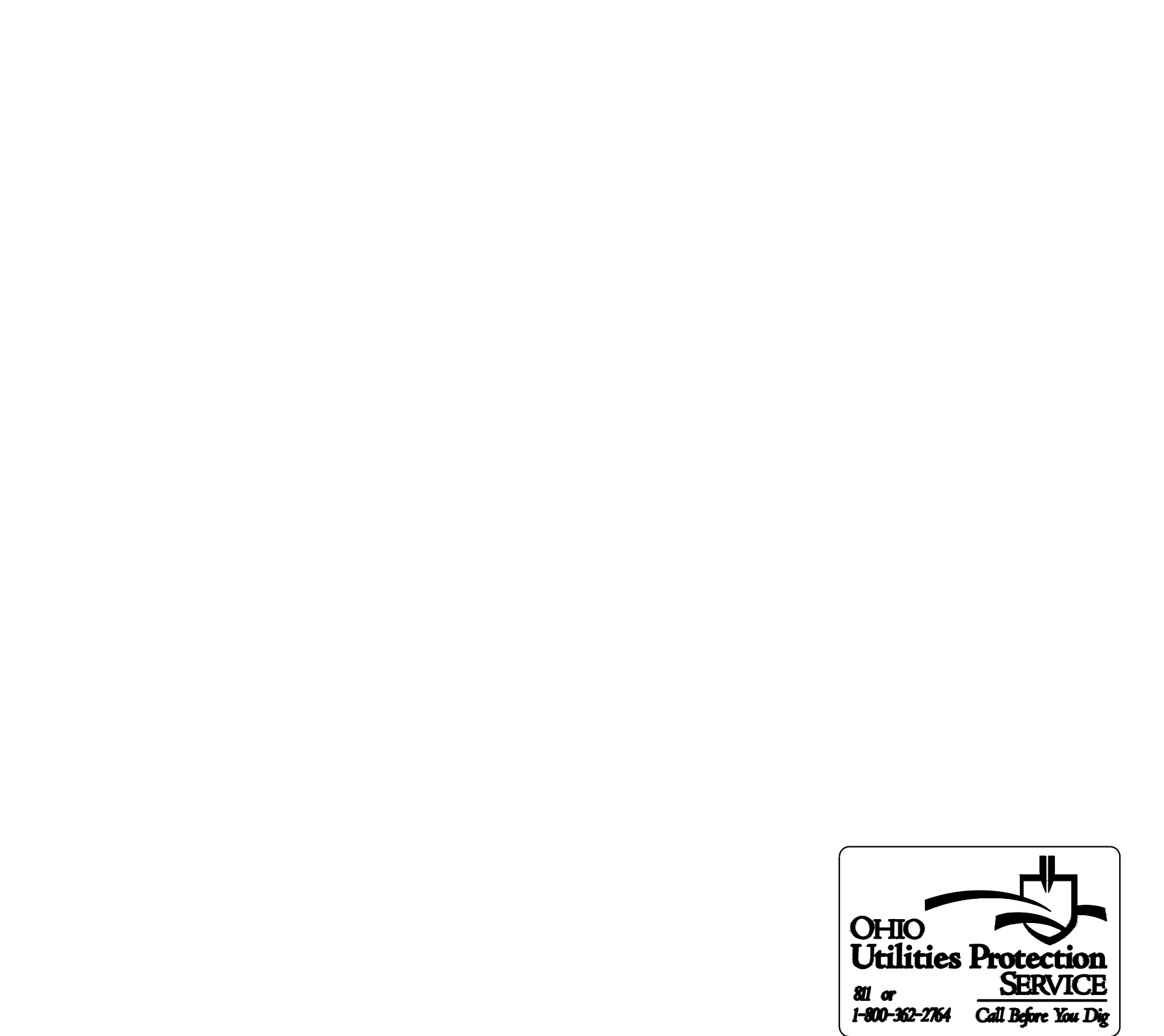
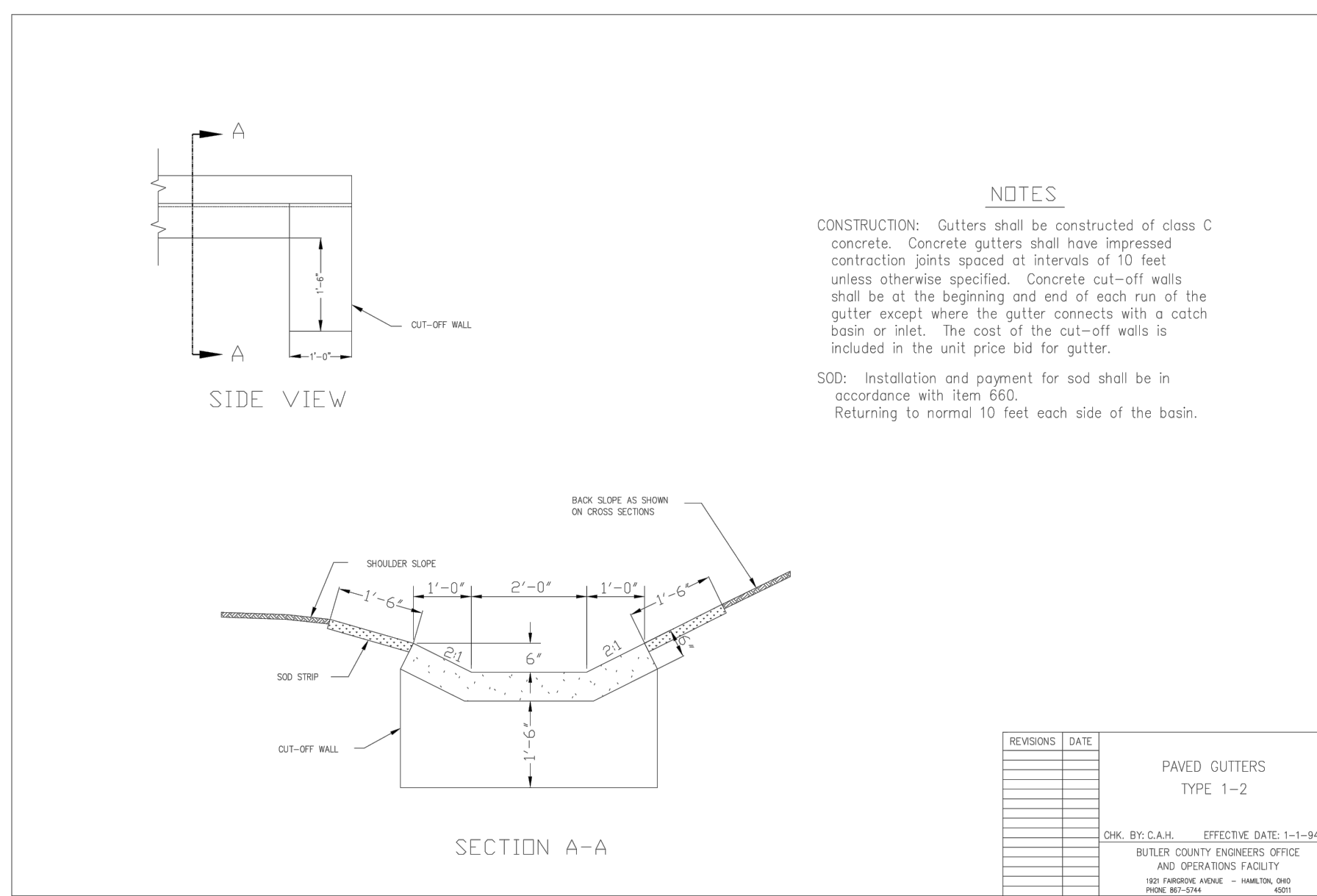
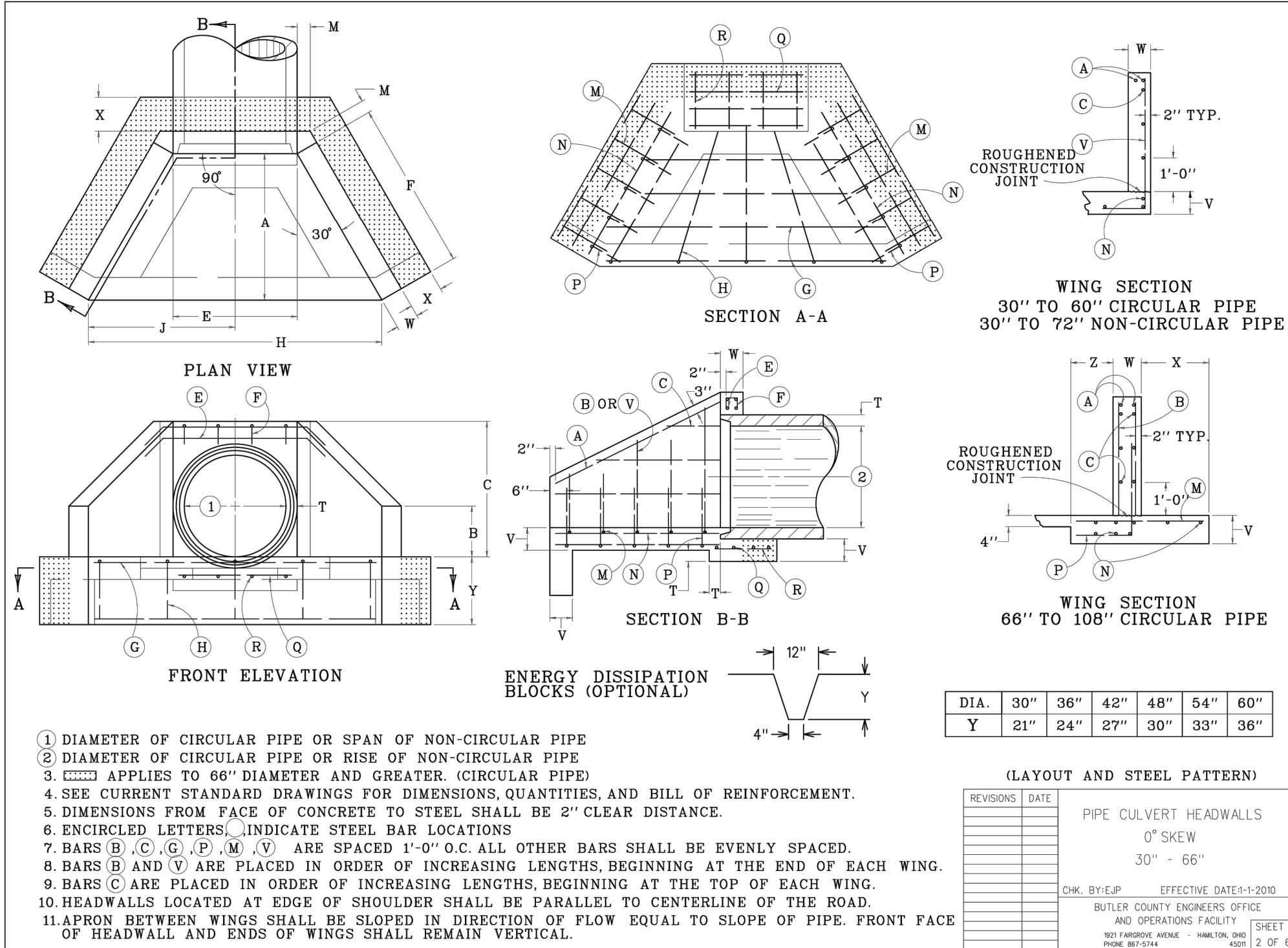
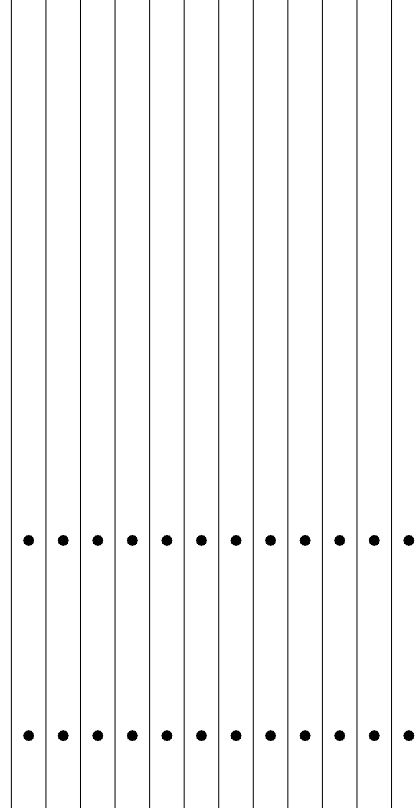
LIBERTY TOWNSHIP - BUTLER COUNTY, OHIO

SWPPP  
DETAILS

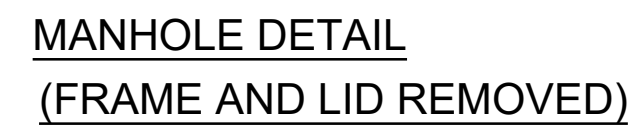
ISSUE:  
BID SET  
DATE:  
12/11/2018  
JOB NO.: 751421  
DESIGN: KEH  
DRAWN: KEH  
CHECKED: JEE  
SHEET NO.  
10











**BUTLER COUNTY  
WATER AND SEWER**

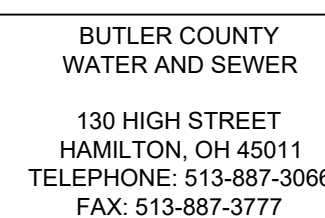
**130 HIGH STREET  
HAMILTON, OH 45011  
TELEPHONE: 513-887-3066  
FAX: 513-887-3777**



**BUTLER COUNTY  
WATER AND SEWER**

**130 HIGH STREET  
HAMILTON, OH 45011  
TELEPHONE: 513-887-3066  
FAX: 513-887-3777**

TYPICAL TRENCH  
DETAIL  
SEWER INSTALLATION



**BUTLER COUNTY  
WATER AND SEWER**

**130 HIGH STREET  
HAMILTON, OH 45011  
TELEPHONE: 513-887-3068  
FAX: 513-887-3777**



**BUTLER COUNTY  
WATER AND SEWER**

**130 HIGH STREET  
HAMILTON, OH 45011  
TELEPHONE: 513-887-3068  
FAX: 513-887-3777**



WINDSOR ESTATES, LLC  
WINDSOR ESTATES  
SECTION 7

## SANITARY DETAILS

ISSUE:	
BID SET	
DATE:	
12/11/2018	
JOB NO.:	75142
DESIGN:	KEH
DRAWN:	KEH
CHECKED:	JEE
SHEET NO.	
12	



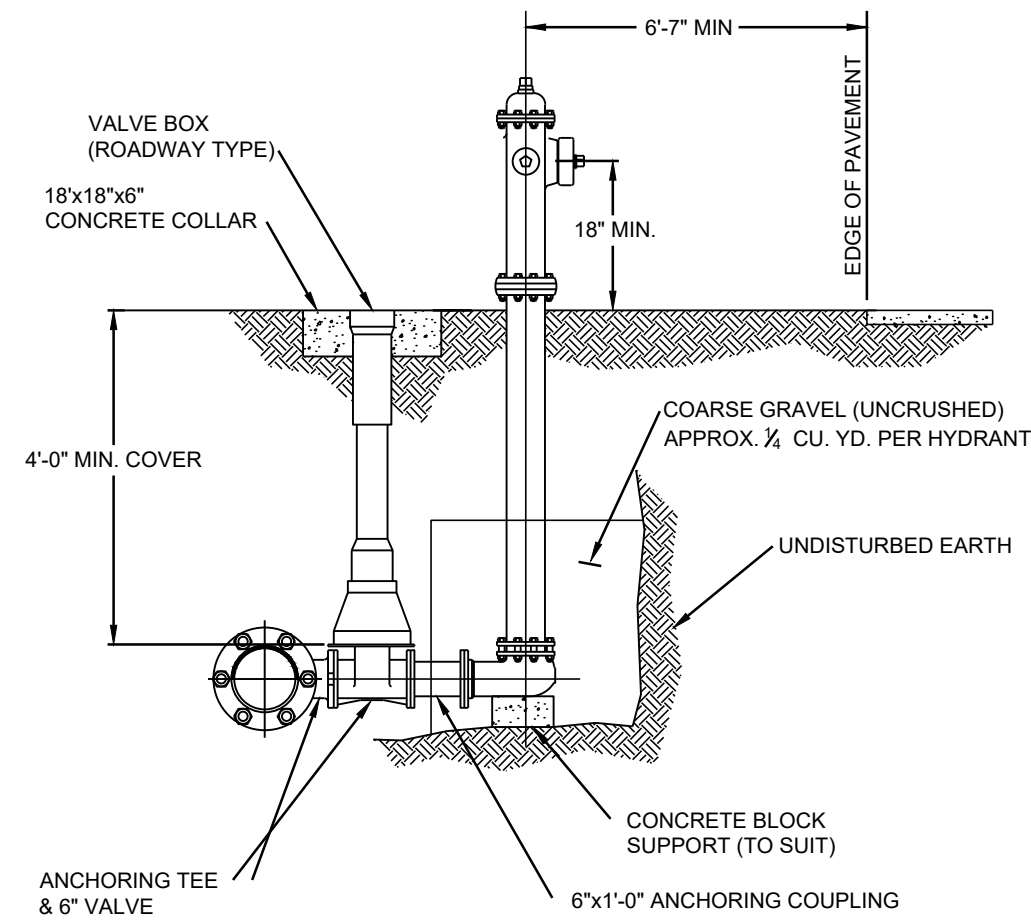
REVISION DESCRIPTION

NO. DATE

WINDSOR ESTATES, LLC  
**WINDSOR ESTATES**  
**SECTION 7**  
LIBERTY TOWNSHIP - BUTLER COUNTY, OHIO

**WATER**  
**DETAILS**

ISSUE:  
BID SET  
DATE:  
12/11/2018  
JOB NO.: 751421  
DESIGN: KEH  
DRAWN: KEH  
CHECKED: JEE  
SHEET NO.  
**13**



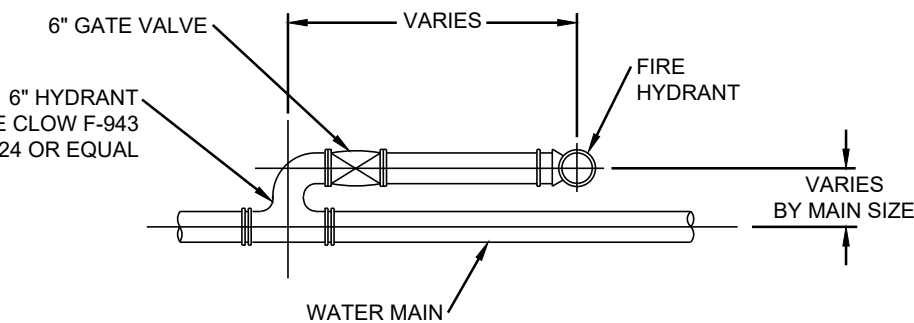
- NOTES:
- 1.) VERIFY LOCATION OF F.H. RELATIVE TO WATER MAIN ON PLANS.
  - 2.) CHECK STREET DETAILS FOR RELATIONSHIP BETWEEN MAIN, STREET AND F.H.

**TYPICAL FIRE**  
**HYDRANT INSTALLATION**

BUTLER COUNTY  
WATER AND SEWER  
130 HIGH STREET  
HAMILTON, OH 45011  
TELEPHONE: 513-887-3066  
FAX: 513-887-3777

5110

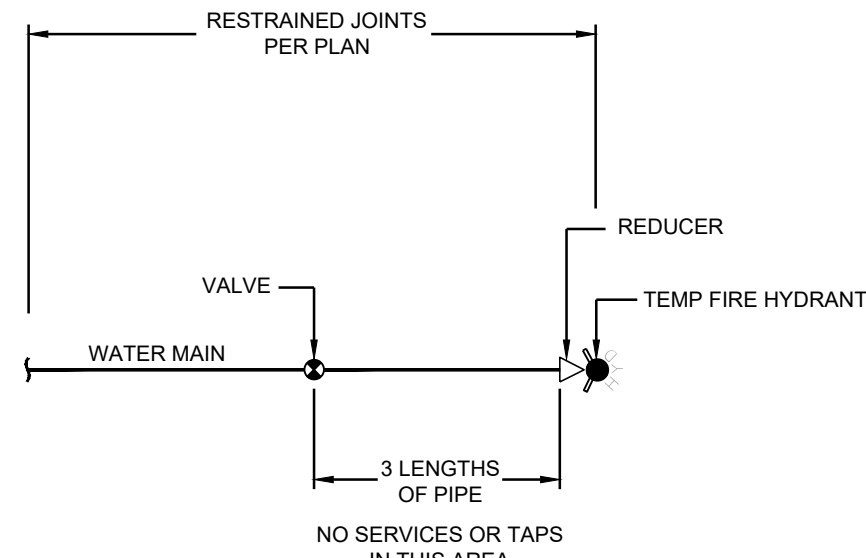
- NOTES:
- 1.) FITTINGS TO BE MECHANICAL JOINT HYDRANT ANCHOR FITTINGS.
  - 2.) SEE TYPICAL FIRE HYDRANT INSTALLATION DETAIL FOR ADDITIONAL DETAILS.



**SETTING FOR HYDRANT**  
**ADJACENT TO MAIN**

BUTLER COUNTY  
WATER AND SEWER  
130 HIGH STREET  
HAMILTON, OH 45011  
TELEPHONE: 513-887-3066  
FAX: 513-887-3777

5120

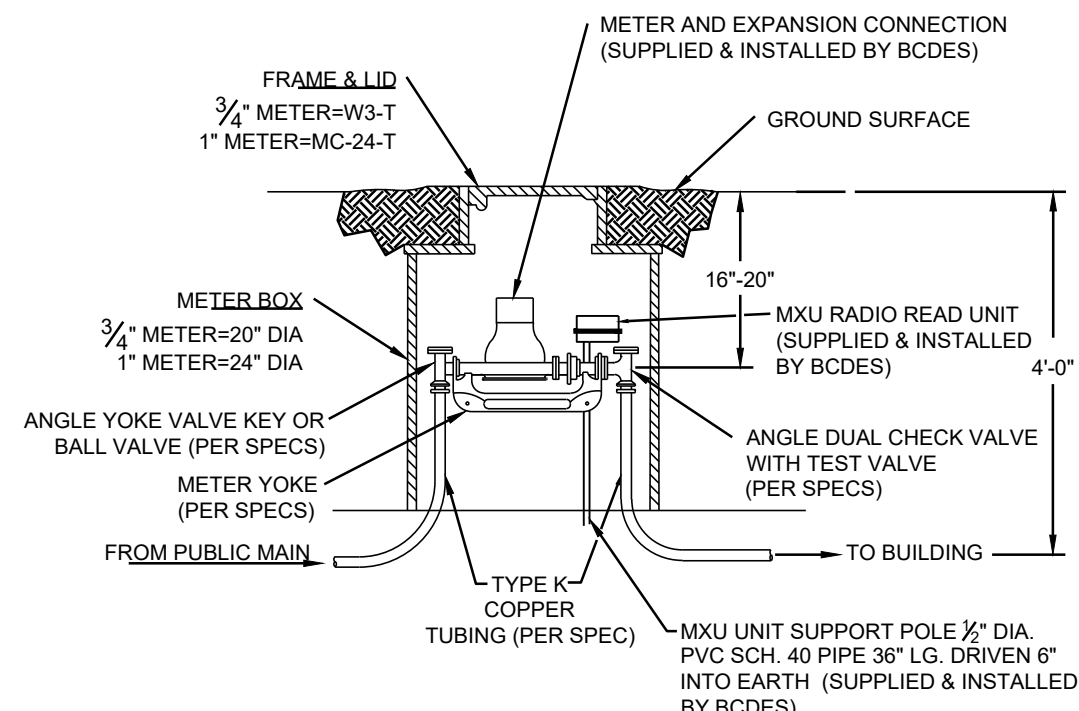


**DEAD END DETAIL**  
**W/ TEMP F.H.**



BUTLER COUNTY  
WATER AND SEWER  
130 HIGH STREET  
HAMILTON, OH 45011  
TELEPHONE: 513-887-3066  
FAX: 513-887-3777

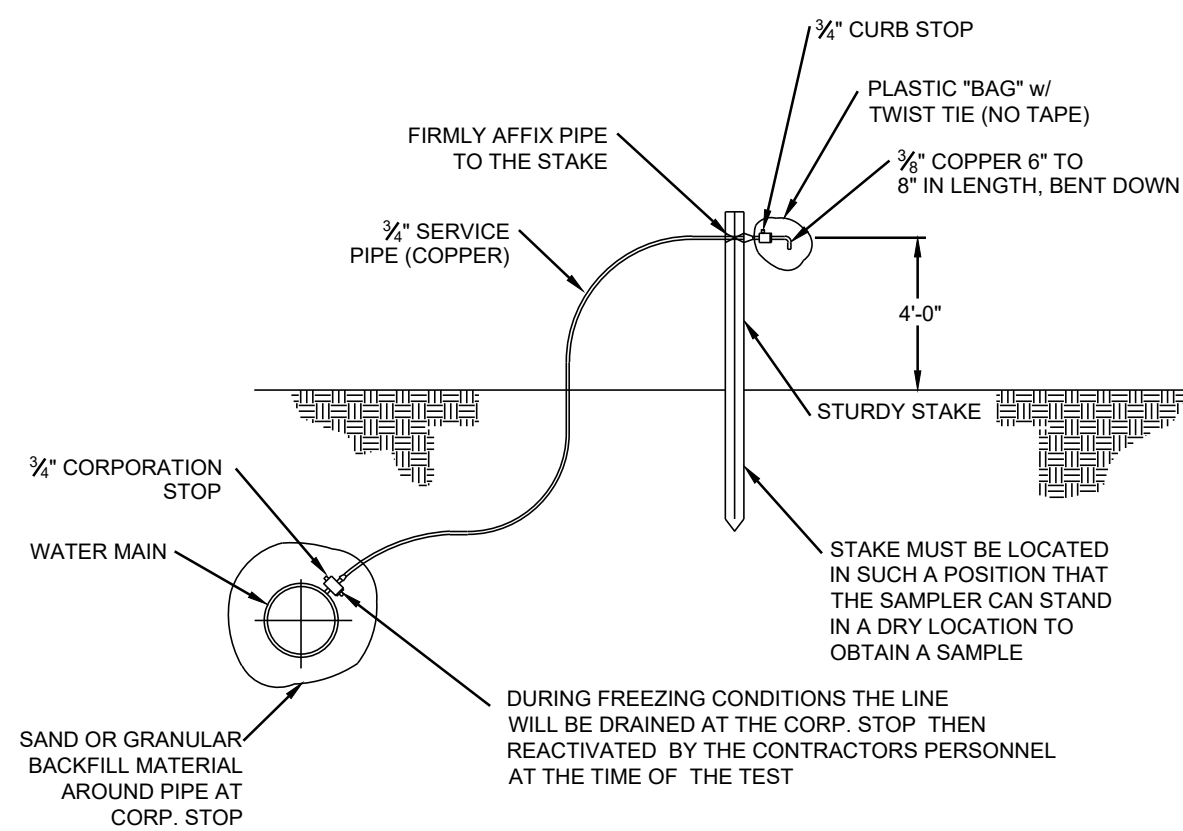
5140



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

BUTLER COUNTY  
WATER AND SEWER  
130 HIGH STREET  
HAMILTON, OH 45011  
TELEPHONE: 513-887-3066  
FAX: 513-887-3777

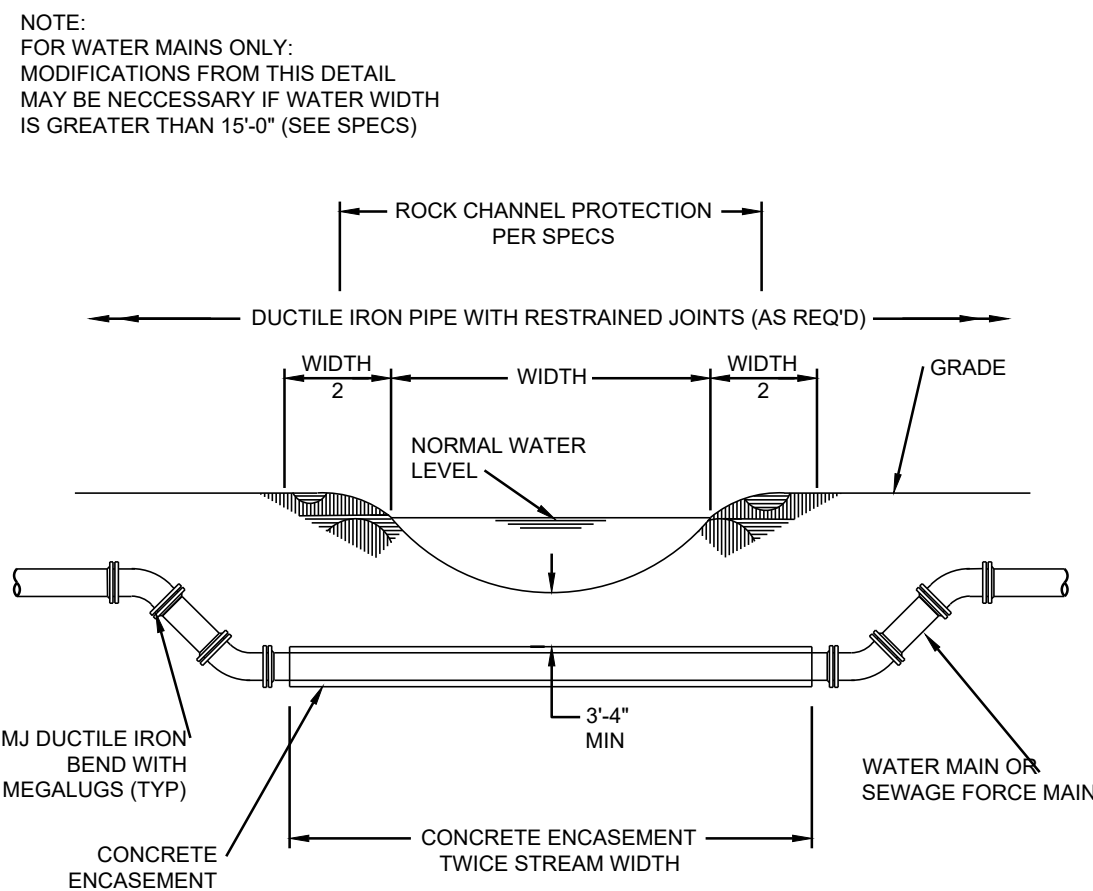
5150



**PURITY TEST**  
**STATION**

BUTLER COUNTY  
WATER AND SEWER  
130 HIGH STREET  
HAMILTON, OH 45011  
TELEPHONE: 513-887-3066  
FAX: 513-887-3777

5260

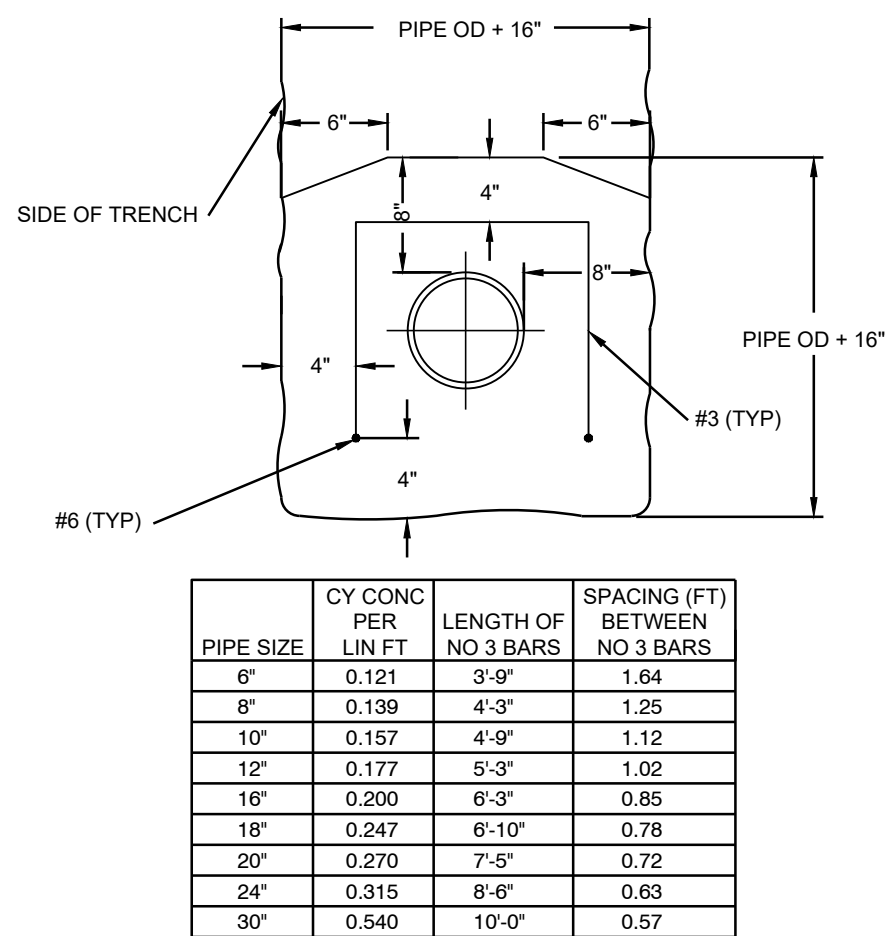


**TYPICAL CREEK CROSSING &**  
**TRENCH DETAIL FOR WATER &**  
**SEWER FORCE MAINS**



BUTLER COUNTY  
WATER AND SEWER  
130 HIGH STREET  
HAMILTON, OH 45011  
TELEPHONE: 513-887-3066  
FAX: 513-887-3777

4170

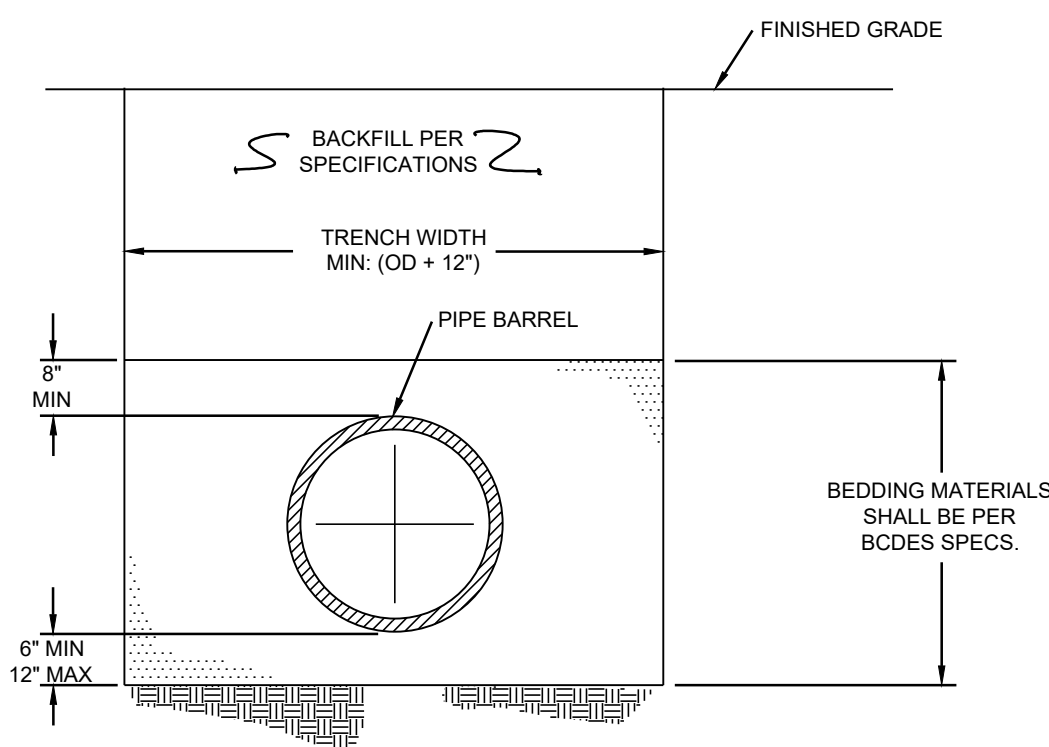


PIPE SIZE	CY CONC PER LIN FT	LENGTH OF NO 3 BARS	SPACING (FT) BETWEEN NO 3 BARS
6"	0.121	3'-9"	1.64
8"	0.139	4'-3"	1.25
10"	0.157	4'-9"	1.12
12"	0.177	5'-3"	1.02
16"	0.200	6'-3"	0.85
18"	0.247	6'-10"	0.78
20"	0.270	7'-5"	0.72
24"	0.315	8'-6"	0.63
30"	0.540	10'-0"	0.57

**CONCRETE**  
**ENCASEMENT**  
**DETAIL**

BUTLER COUNTY  
WATER AND SEWER  
130 HIGH STREET  
HAMILTON, OH 45011  
TELEPHONE: 513-887-3066  
FAX: 513-887-3777

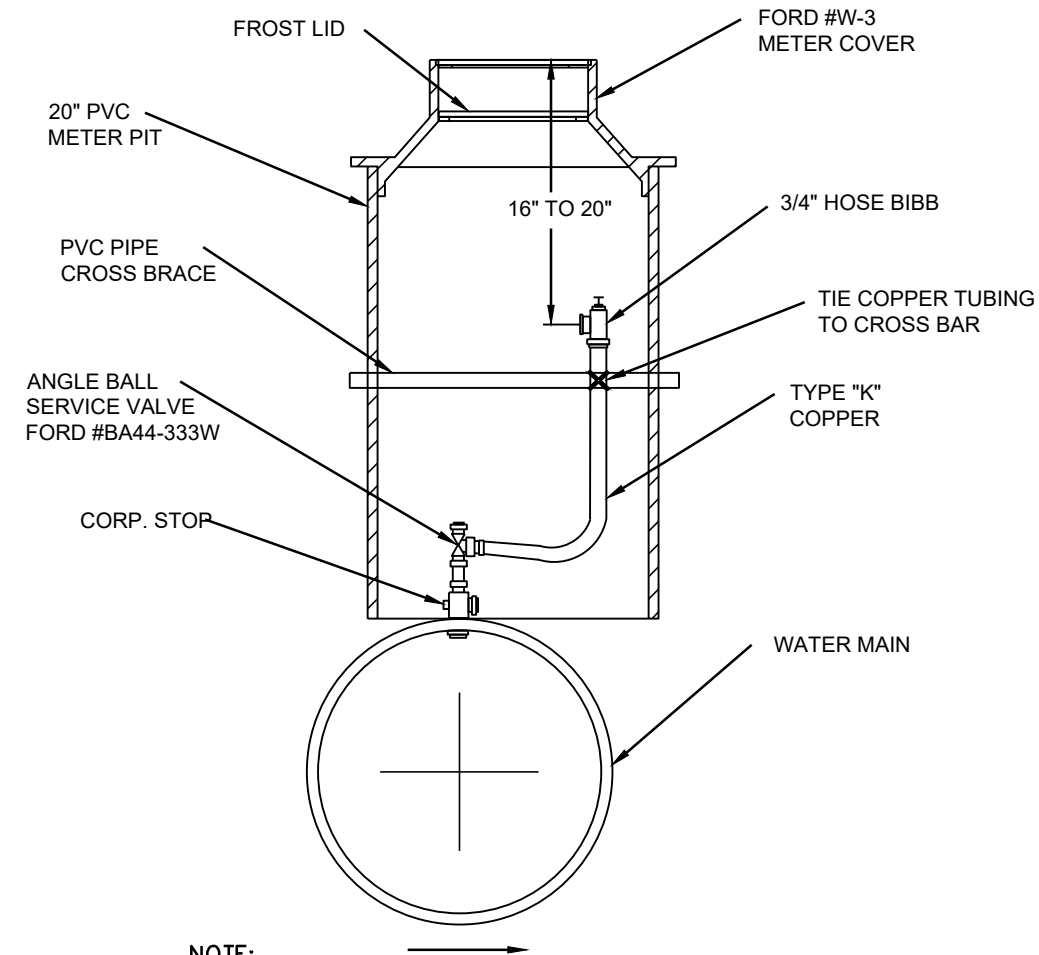
4360



**TYPICAL TRENCH**  
**DETAIL WATER**  
**MAIN INSTALLATION**

BUTLER COUNTY  
WATER AND SEWER  
130 HIGH STREET  
HAMILTON, OH 45011  
TELEPHONE: 513-887-3066  
FAX: 513-887-3777

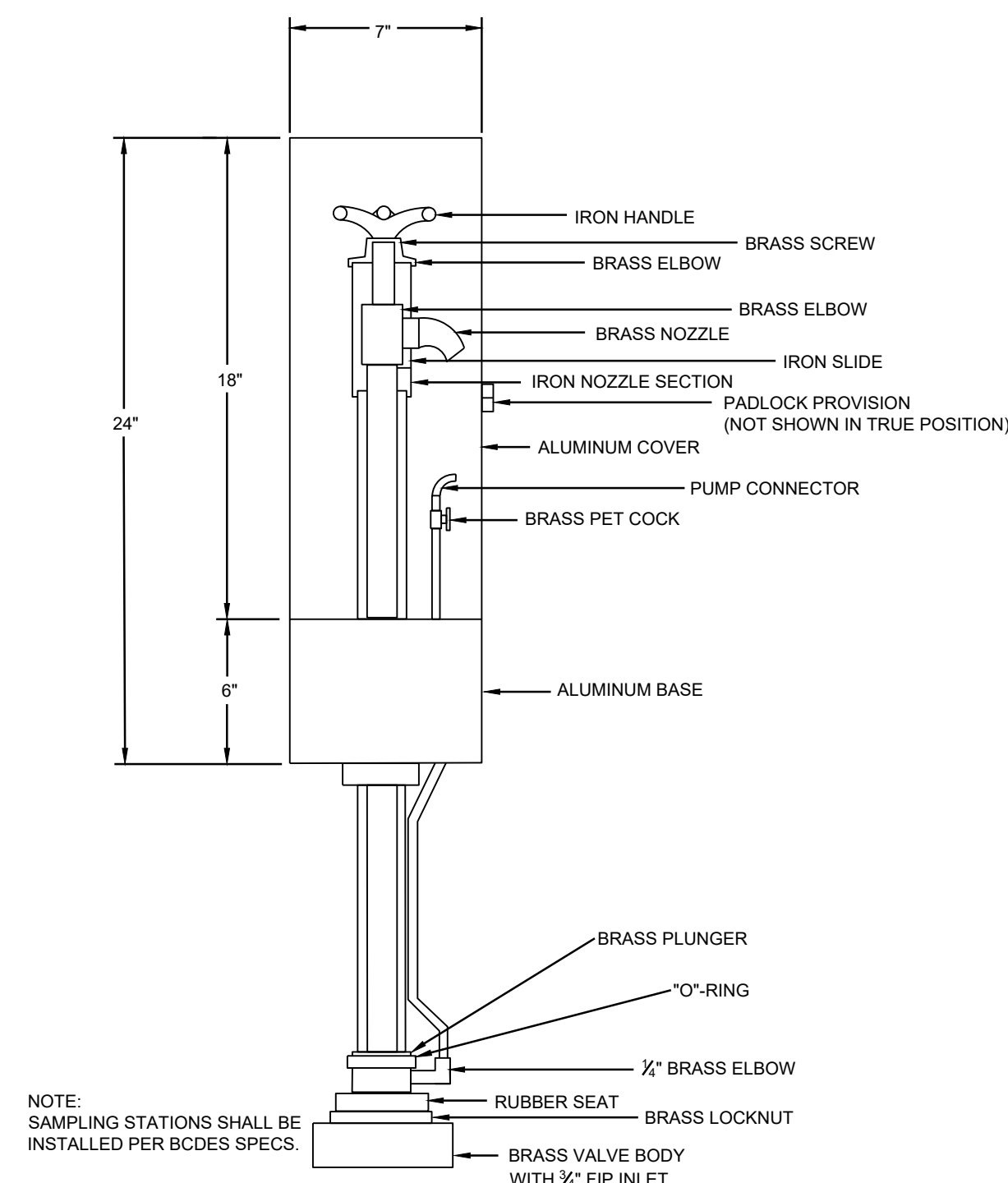
5280



**MANUAL AIR RELEASE**  
**VALVE DETAIL**

BUTLER COUNTY  
WATER AND SEWER  
130 HIGH STREET  
HAMILTON, OH 45011  
TELEPHONE: 513-887-3066  
FAX: 513-887-3777

5290



**PERMANENT LAB**  
**SAMPLING STATION**

BUTLER COUNTY  
WATER AND SEWER  
130 HIGH STREET  
HAMILTON, OH 45011  
TELEPHONE: 513-887-3066  
FAX: 513-887-3777

5290