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FOR

DEVELOPMENT, LLC

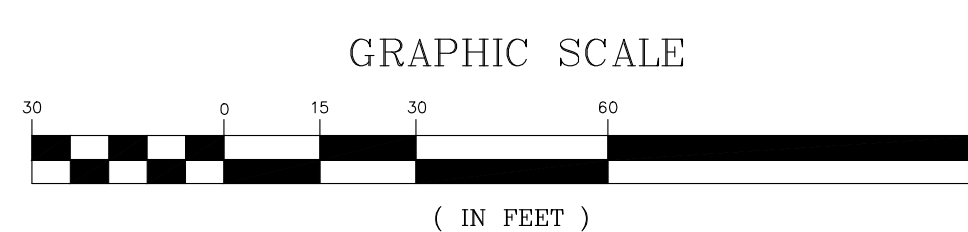
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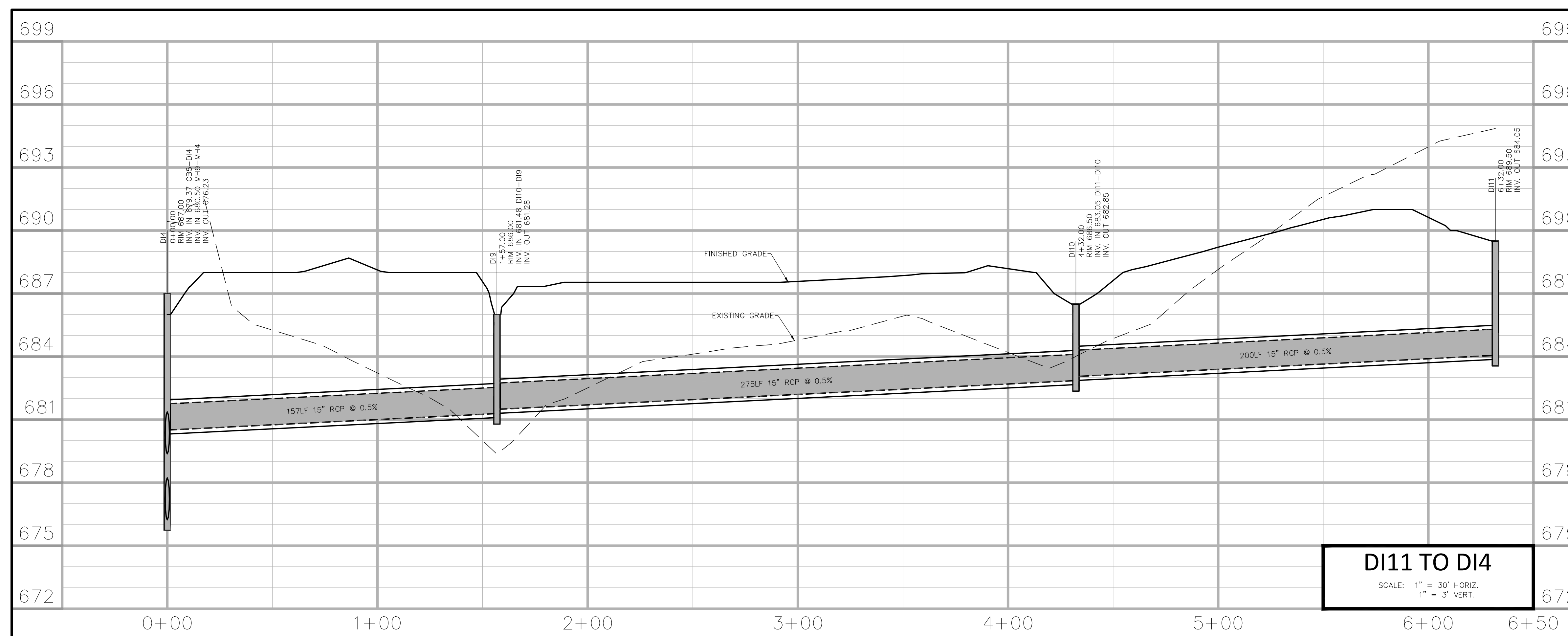
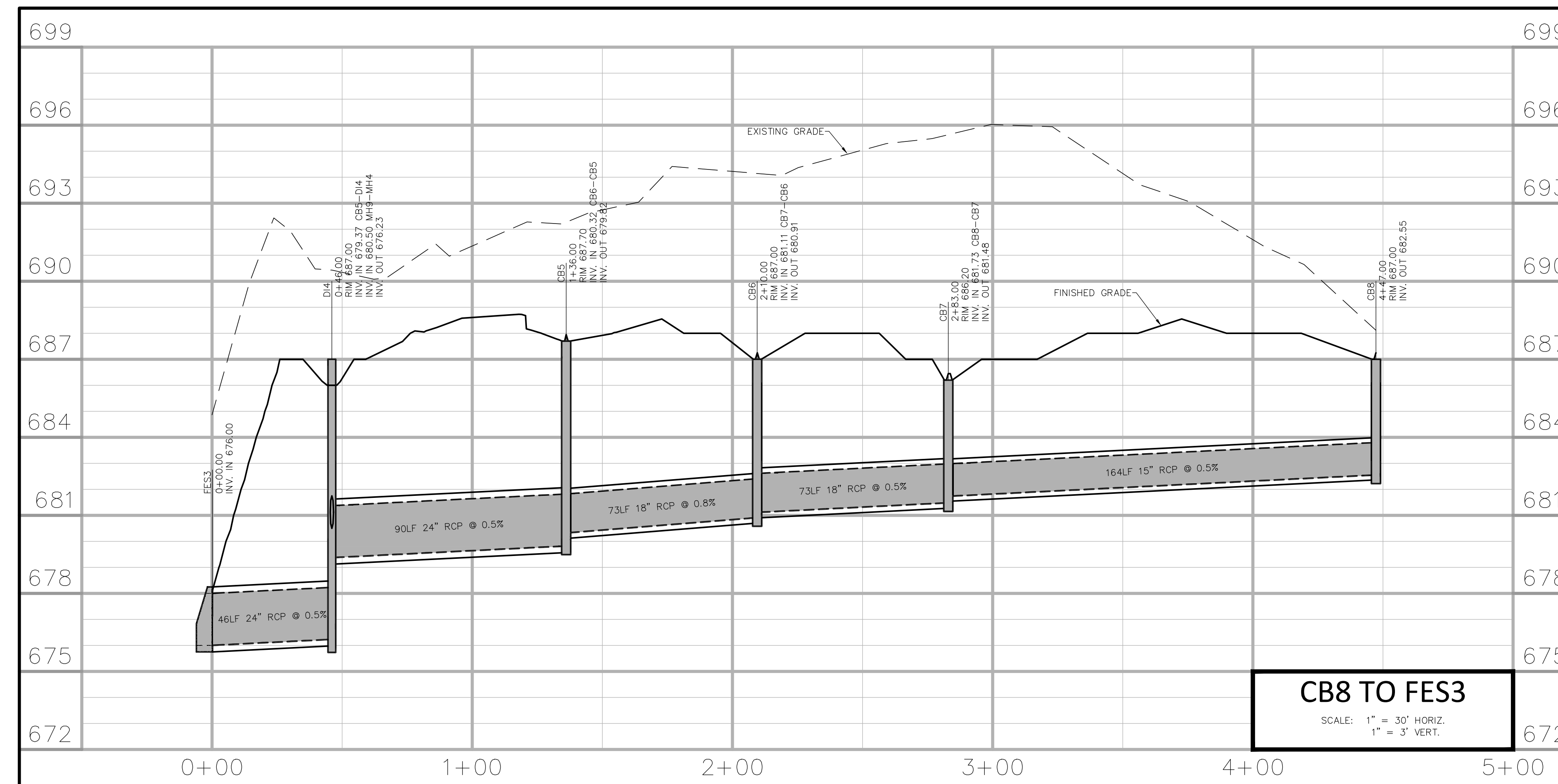
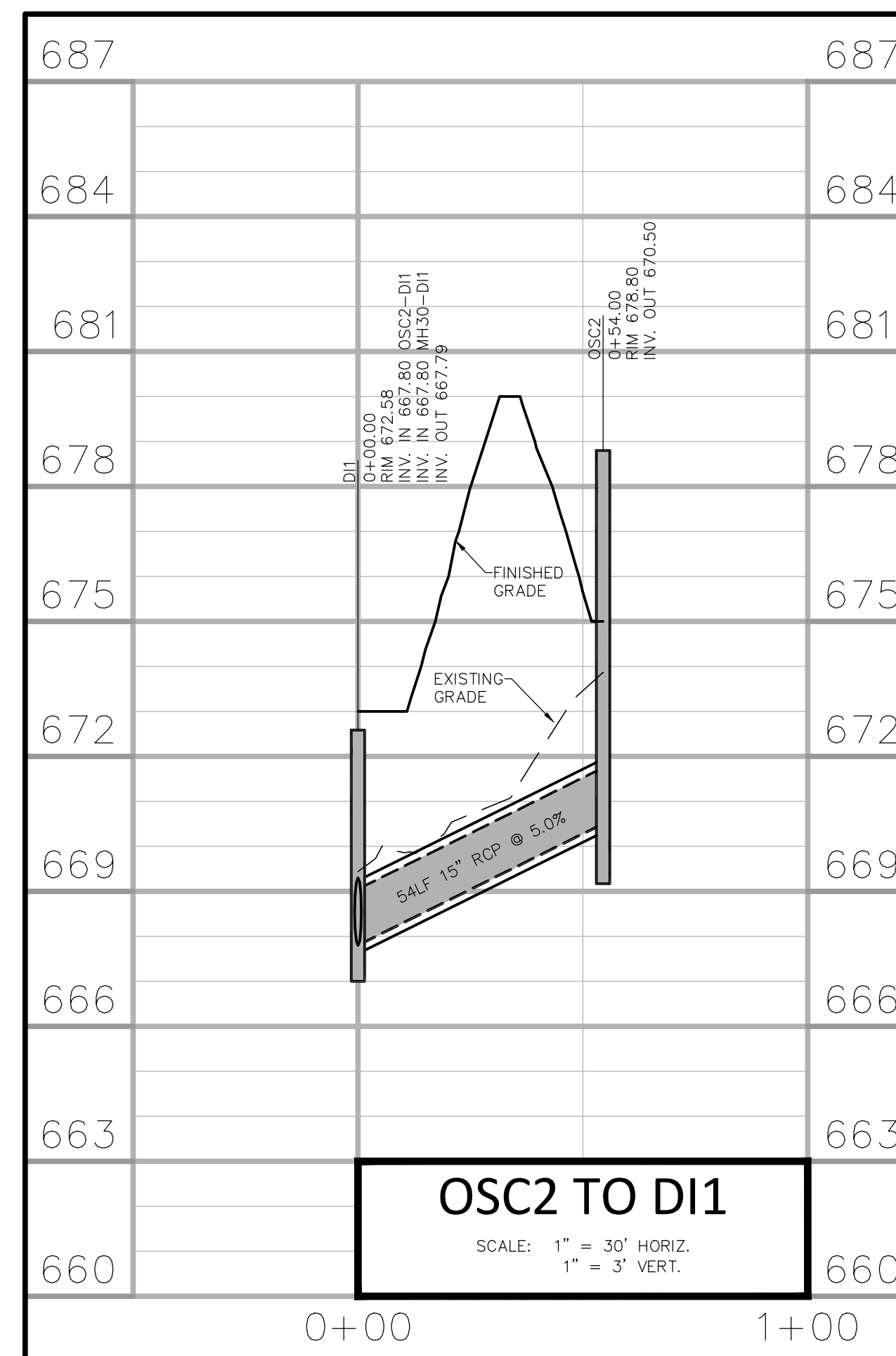
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	DATE	REVISIONS

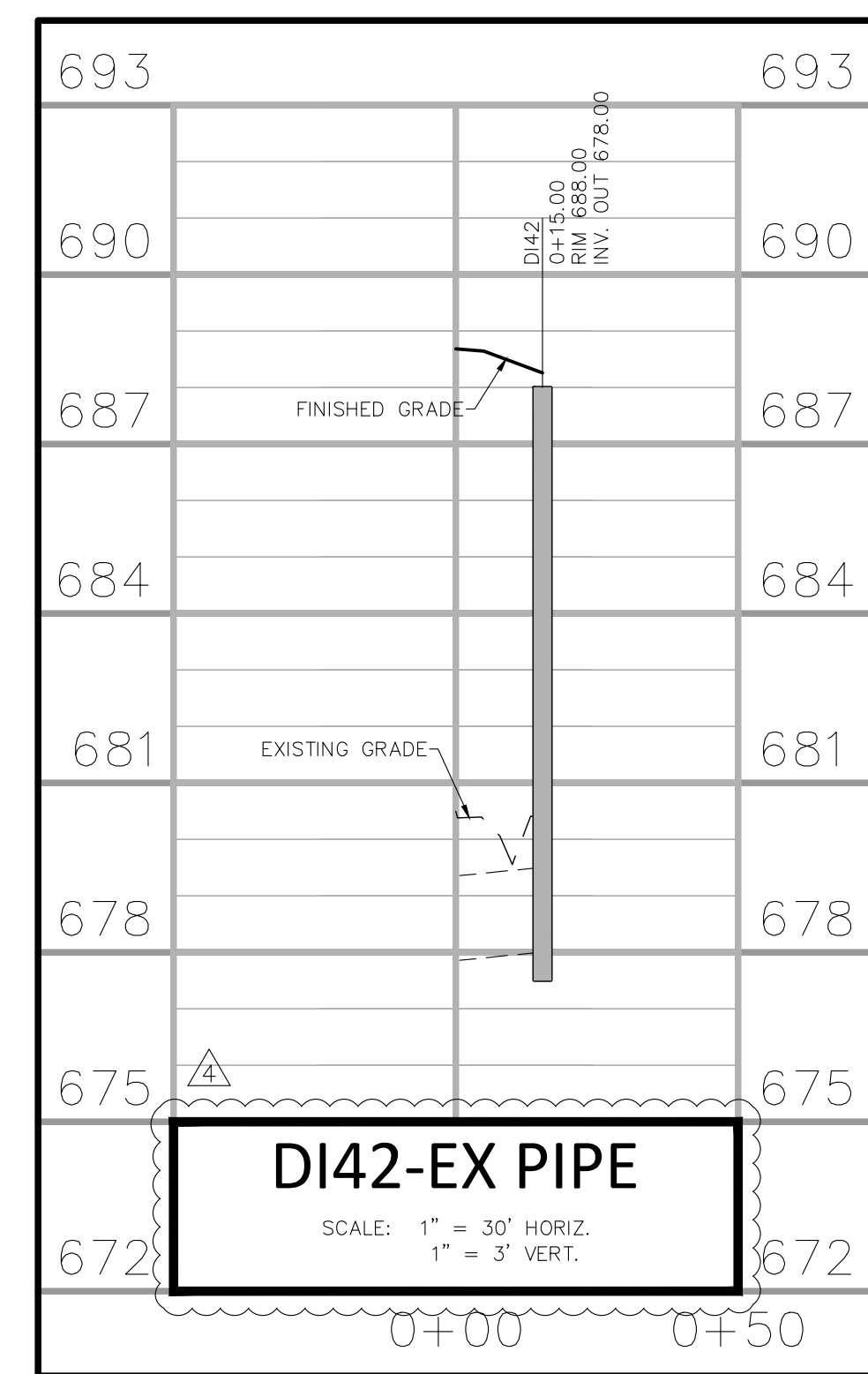
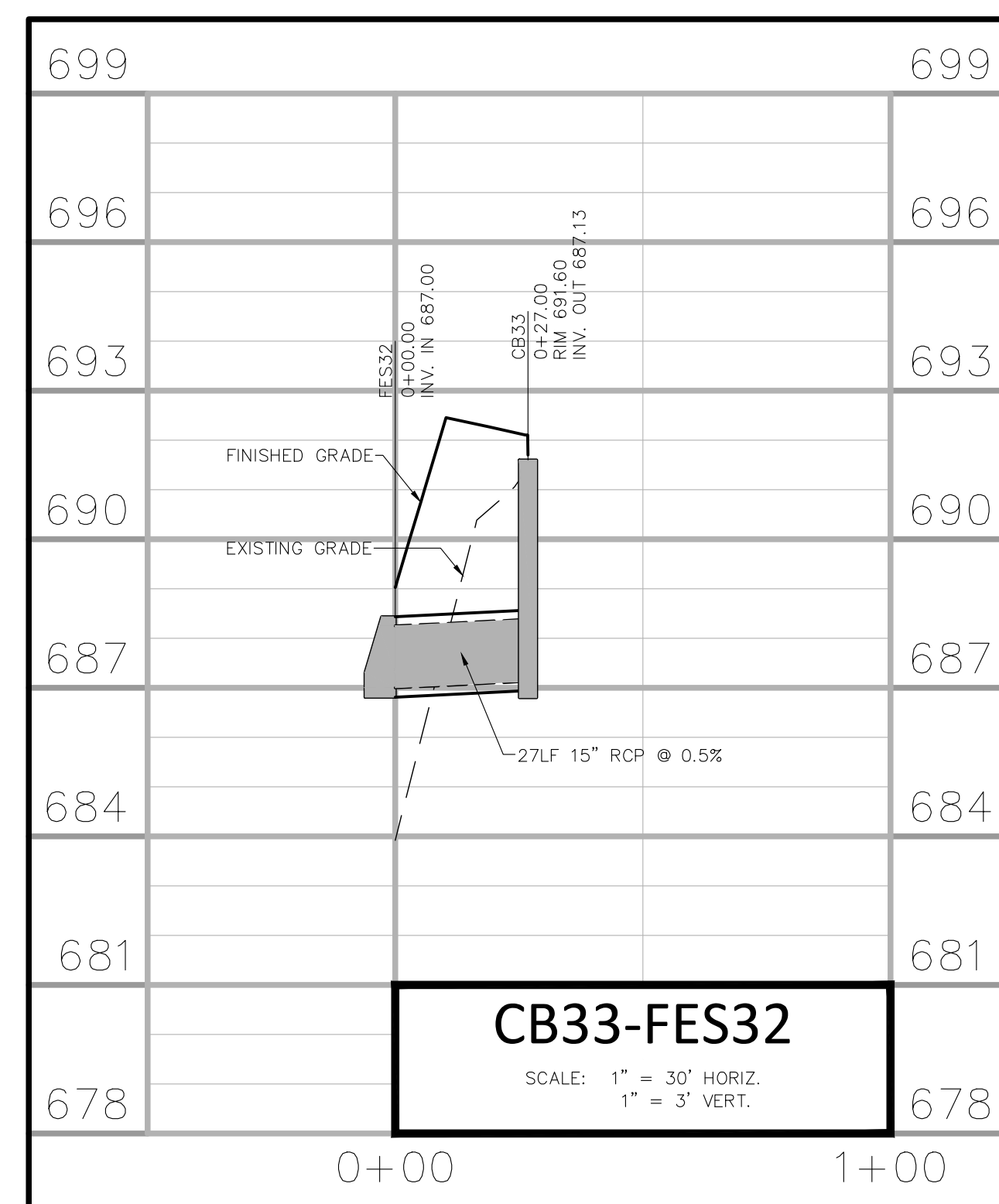
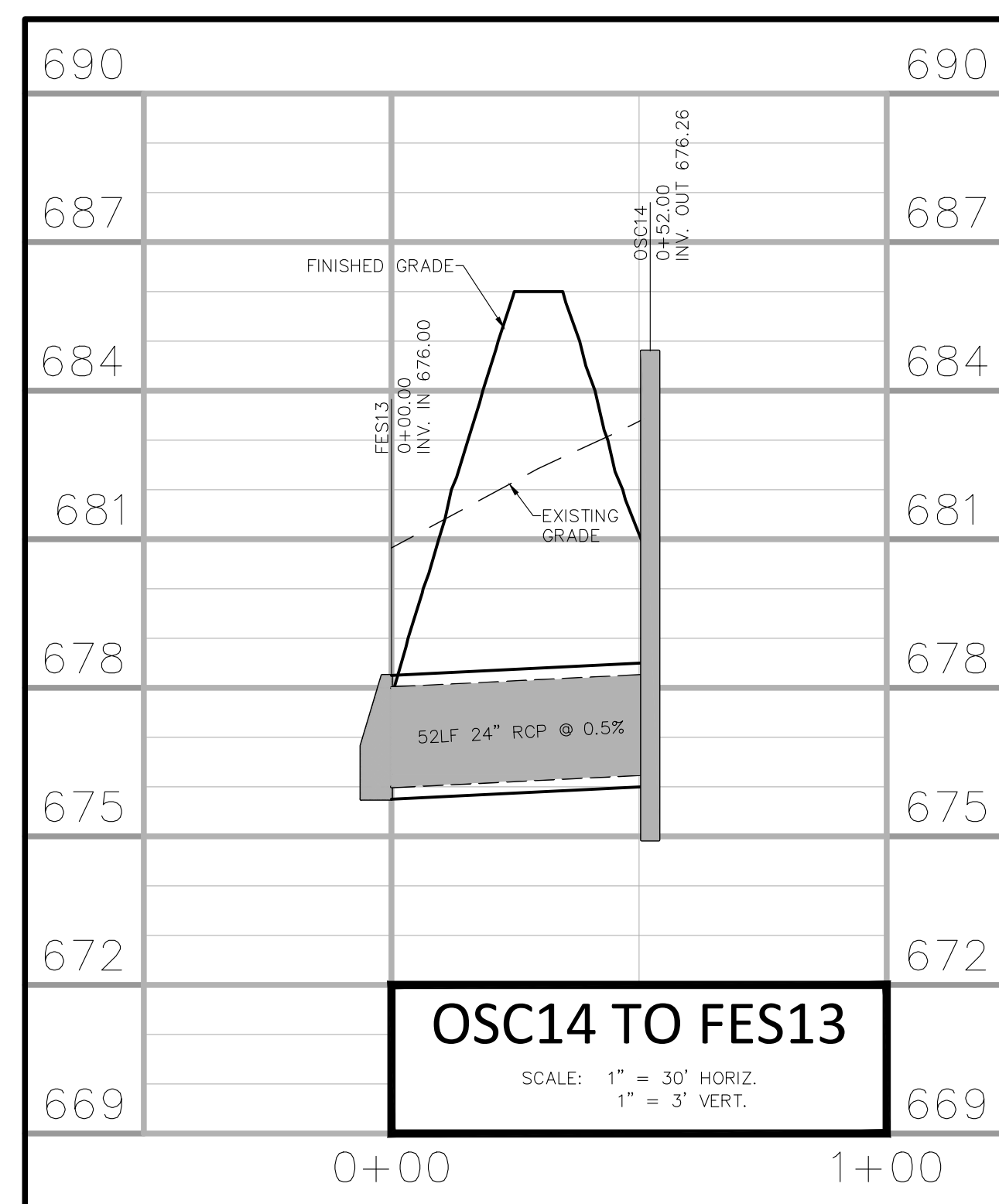
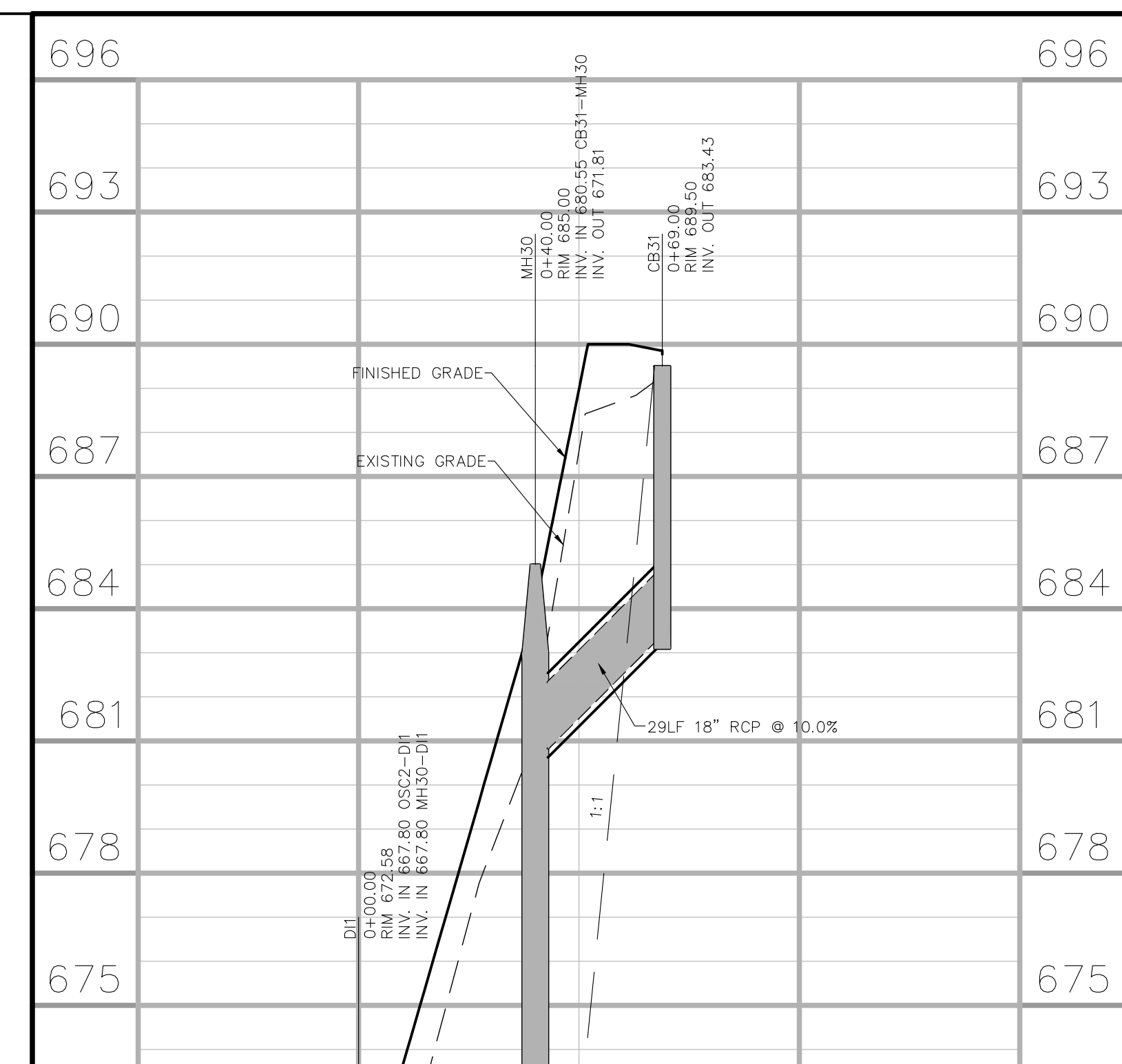
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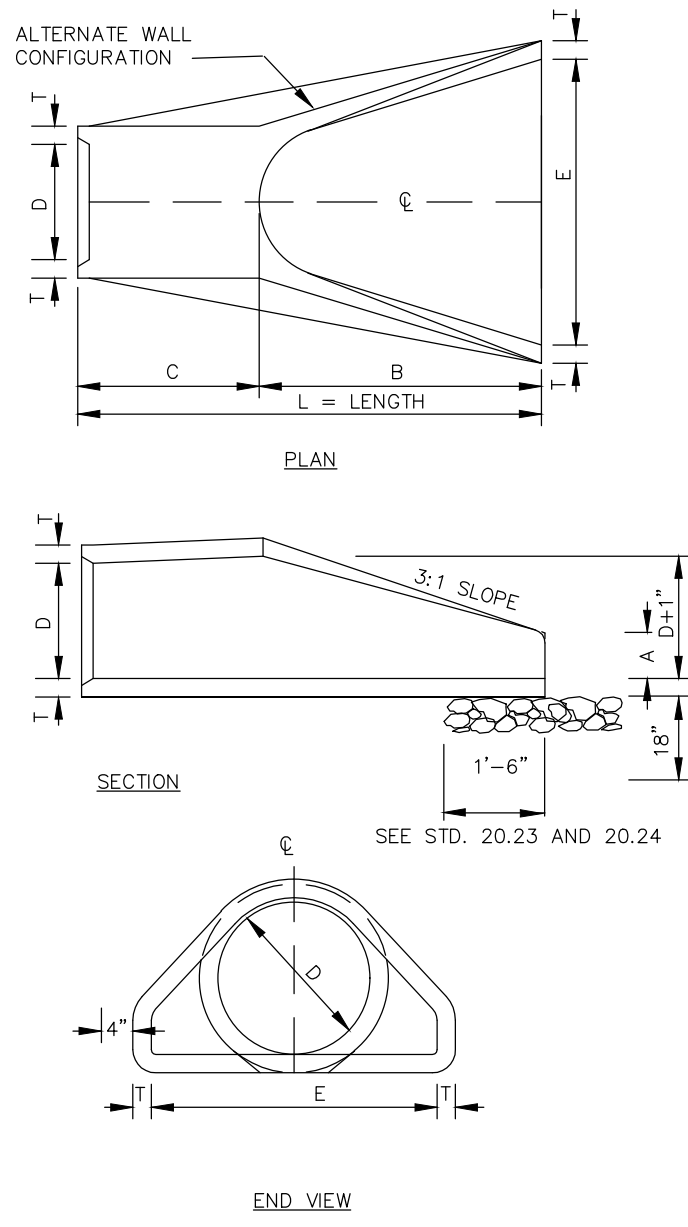




[illegible]

JOB #	16022
DATE:	12/16/16
SCALE:	1" = 30'
DRAWN BY:	BY
APPROVED BY:	JCO

C3.4



1 FLARED END SECTION 12" THRU 72" PIPE

D	T	A	B	C	E	L	WT.
12"	2-1/4"	4"	2'-0"	4'-1"	2'-0"	6'-1"	730
15"	2-1/4"	6"	2'-3"	3'-10"	2'-0"	6'-1"	730
18"	2-1/2"	9"	2'-3"	3'-10"	3'-0"	6'-1"	1790
24"	3"	10"	3'-8"	2'-6"	4'-0"	6'-2"	1770
30"	3-1/2"	1'-0"	4'-6"	1'-8"	5'-0"	6'-2"	2380
36"	4"	1'-3"	5'-3"	2'-11"	6'-0"	8'-2"	5320
42"	4-1/2"	1'-9"	6'-3"	2'-11"	6'-0"	8'-2"	5920
48"	5"	2'-0"	6'-0"	2'-2"	7'-0"	8'-2"	7470
54"	5-1/2"	2'-5"	5'-6"	2'-10"	7'-6"	8'-4"	8810
60"	6"	2'-6"	5'-0"	3'-3"	8'-0"	8'-3"	11180
66"	6-1/2"	3'-0"	6'-0"	2'-3"	8'-0"	8'-3"	12530
72"	7"	3'-0"	6'-6"	1'-9"	9'-0"	8'-3"	13980

GENERAL NOTES:

- SEE FORMER NCDOT STANDARD 310.01 FOR DETAILS.
- REINFORCEMENT SHALL CONFORM TO THE REQUIREMENTS OF REINFORCED CONCRETE PIPE OF LIKE DIAMETER PER AASHTO M170, TABLE 2, WALL B.
- ALL CONCRETE TO BE 3600 P.S.I. COMPRESSIVE STRENGTH.
- PROVIDE TONGUE OR SHOOT JOINT AT INLET END SECTION.
- PROVIDE GROOVE OR BELL JOINT AT OUTLET END SECTION.
- THE DIMENSIONS FOR END SECTIONS SHALL SUBSTANTIALLY AGREE WITH THE TABLE. MINOR VARIATIONS WILL BE PERMITTED BASED ON THE MANUFACTURER'S STANDARD FORMS AND TEMPLATES.
- NOT TO BE USED IN NCDOT MAINTAINED RIGHT OF WAY.

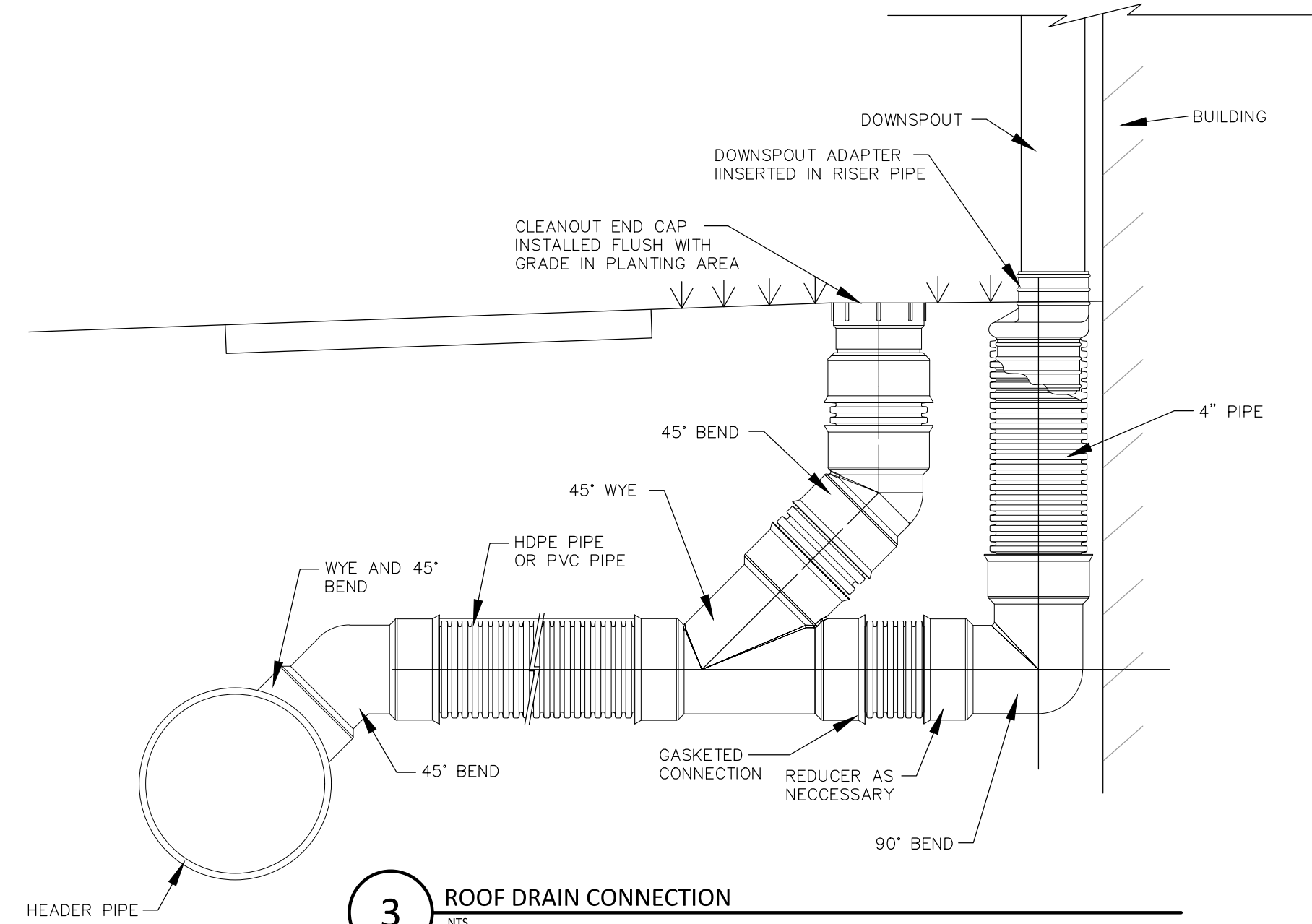
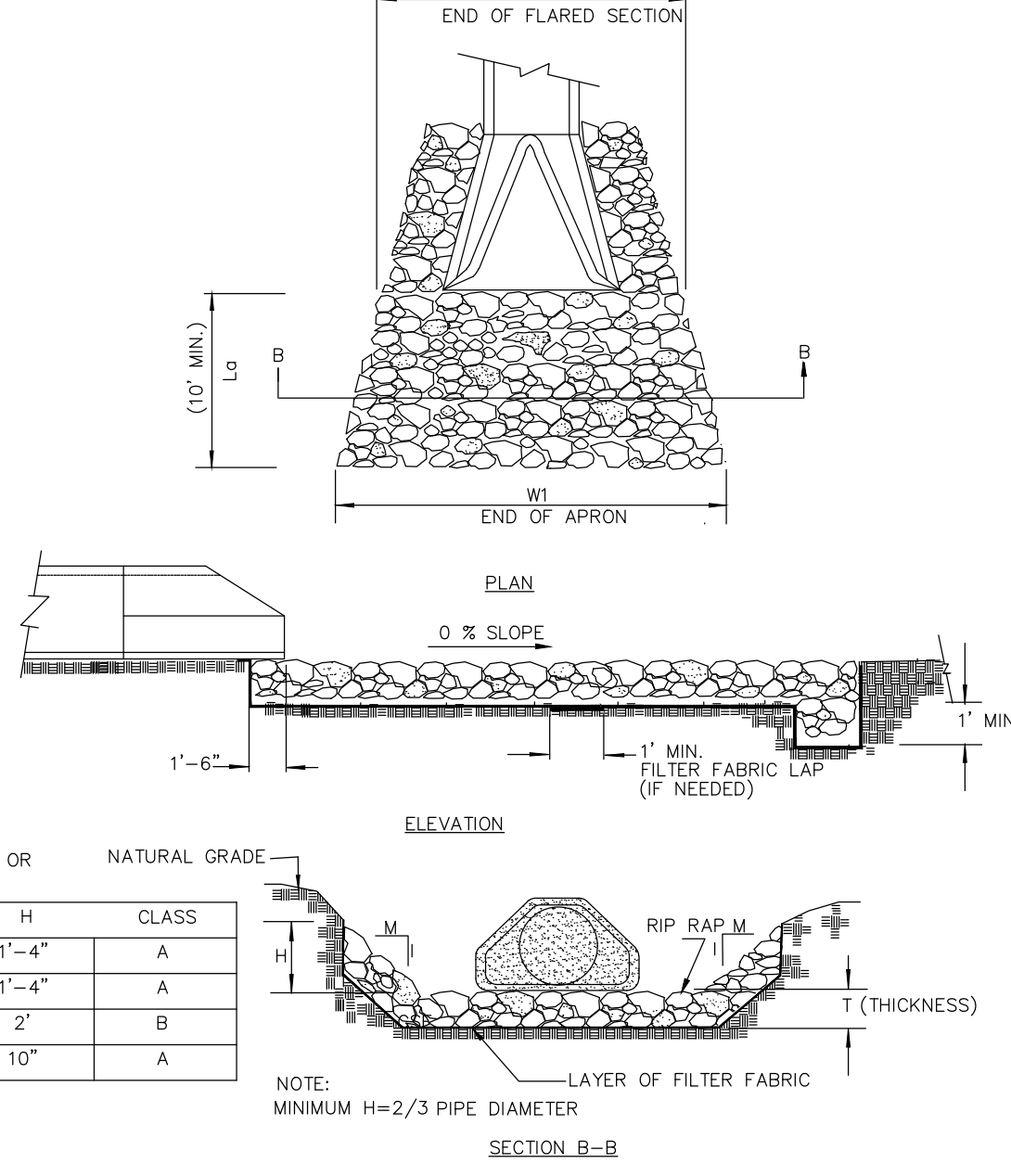
- NOTES:
- CLASS OR MEDIAN SIZE OF RIPRAP AND LENGTH, WIDTH AND DEPTH OF APRON TO BE DESIGNED BY THE ENGINEER.
 - REFER TO THE CHARLOTTE-MECKLENBURG STORM WATER DESIGN MANUAL FOR RIPRAP APRON DESIGN STANDARDS.
 - RIPRAP SHOULD EXTEND UP BOTH SIDES OF THE APRON AND AROUND THE END OF THE PIPE OR CULVERT AT THE DISCHARGE OUTLET AT A MAXIMUM SLOPE OF 2:1 AND A HEIGHT NOT LESS THAN TWO THIRDS THE PIPE DIAMETER OR CULVERT HEIGHT.
 - THERE SHALL BE NO OVERTOP FROM THE END OF THE APRON TO THE SURFACE OF THE RECEIVING CHANNEL. THE AREA TO BE PAVED OR RIPRAPPED SHALL BE UNDERCUT SO THAT THE INVERT OF THE APRON SHALL BE AT THE SAME GRADE (FLUSH) WITH THE SURFACE OF THE RECEIVING CHANNEL. THE APRON SHALL HAVE A CUTOFF OR TOE WALL AT THE DOWNSTREAM END.
 - THE WIDTH OF THE END OF THE APRON SHALL BE EQUAL TO THE BOTTOM WIDTH OF THE RECEIVING CHANNEL MAXIMUM TAPER TO RECEIVING CHANNEL. (S)
 - ALL SUBGRADE FOR STRUCTURE TO BE COMPACTED TO 95% OR GREATER.
 - THE PLACING OF FILL, EITHER LOOSE OR COMPACTED IN THE RECEIVING CHANNEL SHALL NOT BE ALLOWED.
 - NO BENDS OR CURVES IN THE HORIZONTAL ALIGNMENT OF THE APRON WILL BE PERMITTED.
 - FILTER FABRIC SHALL BE INSTALLED ON COMPACTED SUBGRADE PRIOR TO PLACEMENT OF RIP RAP.
 - ANY DISTURBED AREA FROM END OF APRON TO RECEIVING CHANNEL MUST BE STABILIZED.

USE USDA NOMOGRAPH FROM NC SEDIMENT AND EROSION CONTROL MANUAL OR CHARLOTTE-MECKLENBURG STORM WATER DESIGN MANUAL FOR DESIGN DATA.

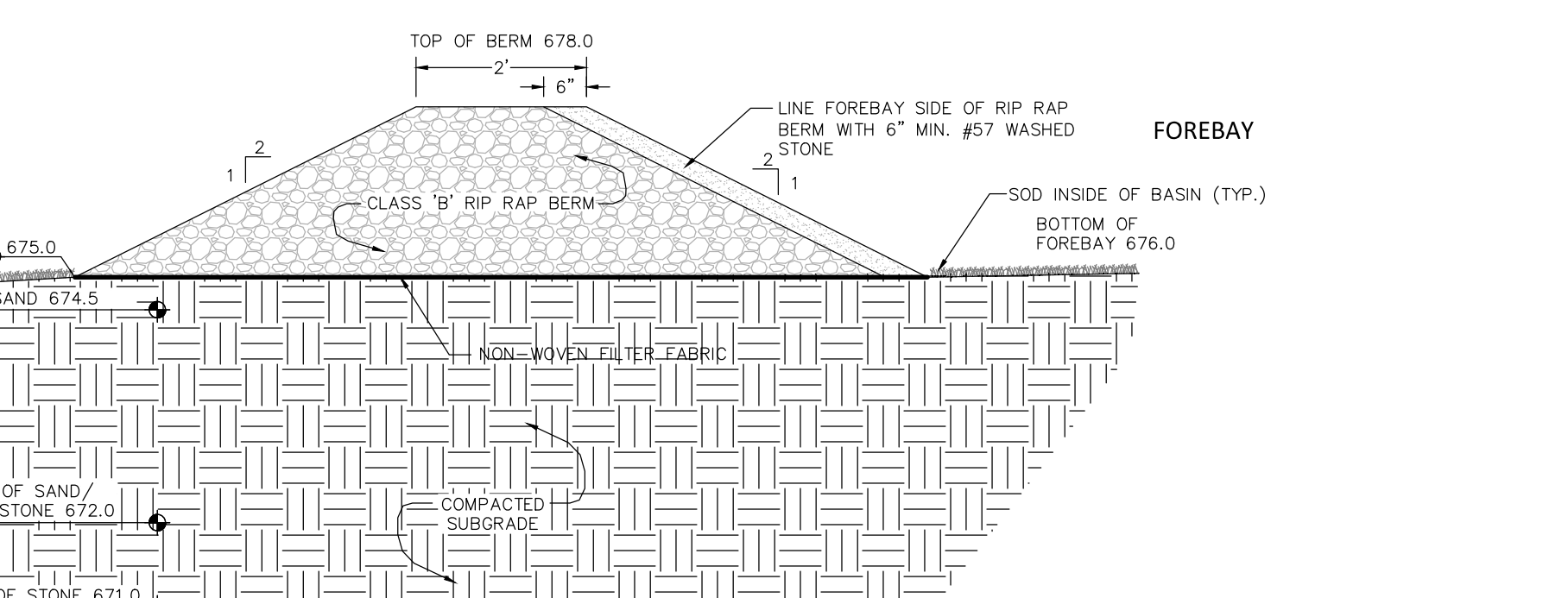
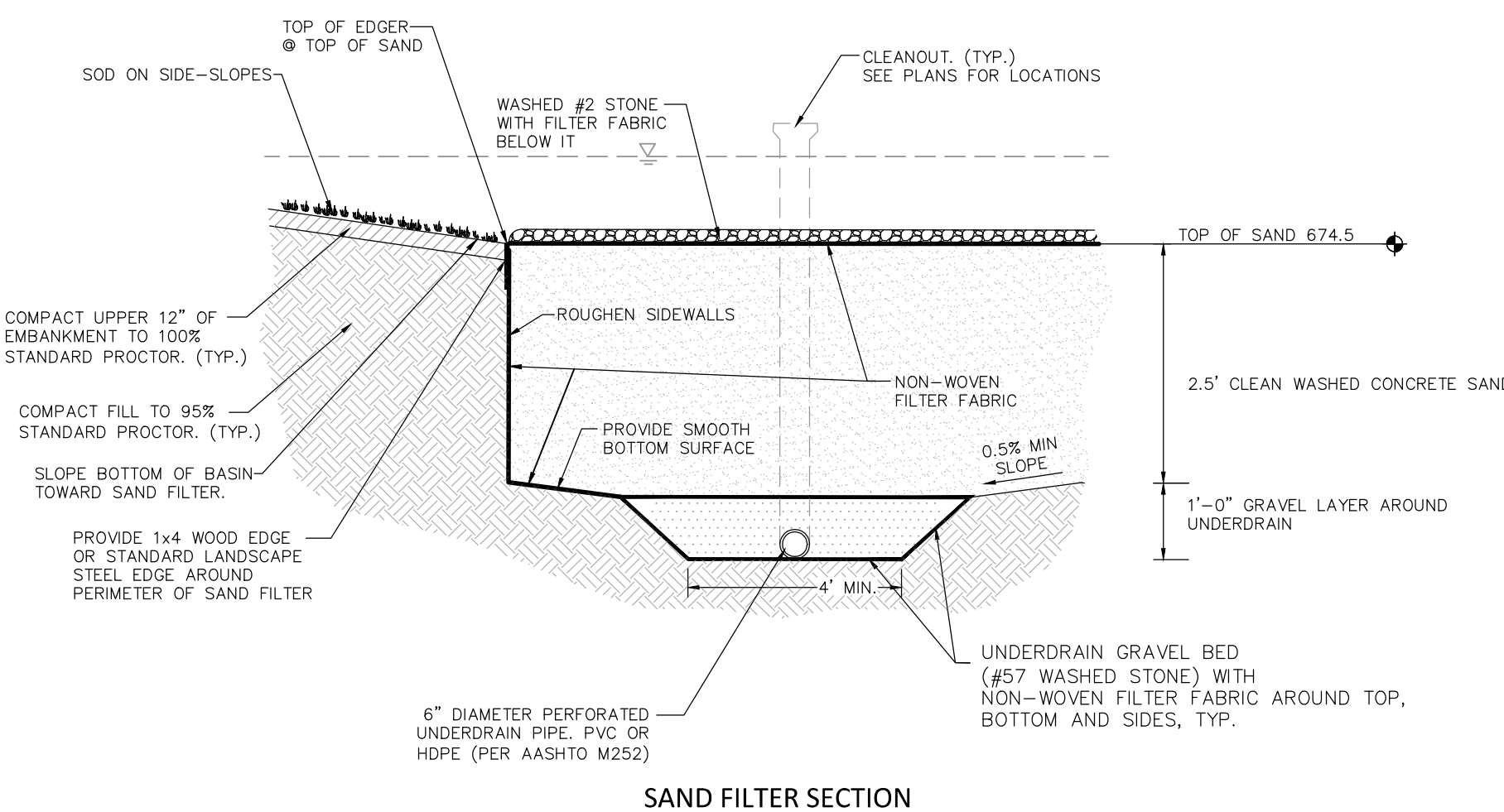
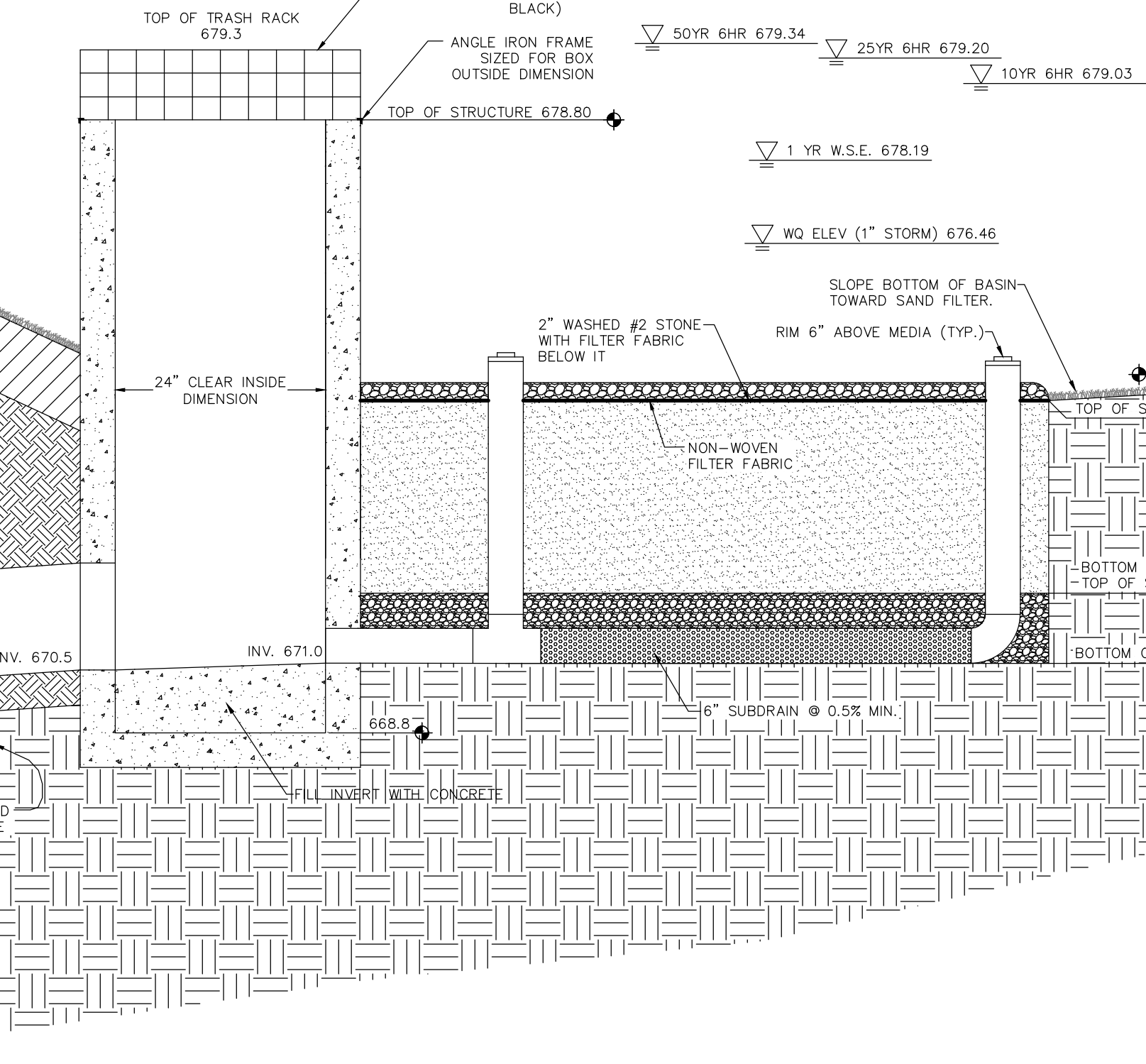
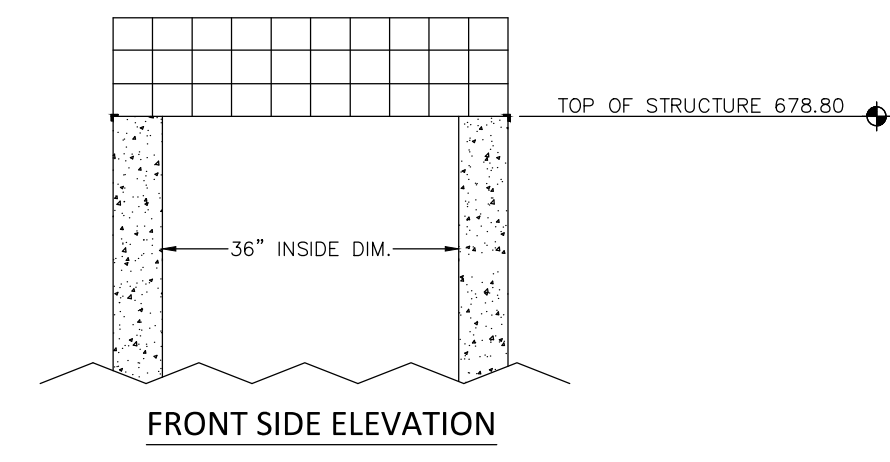
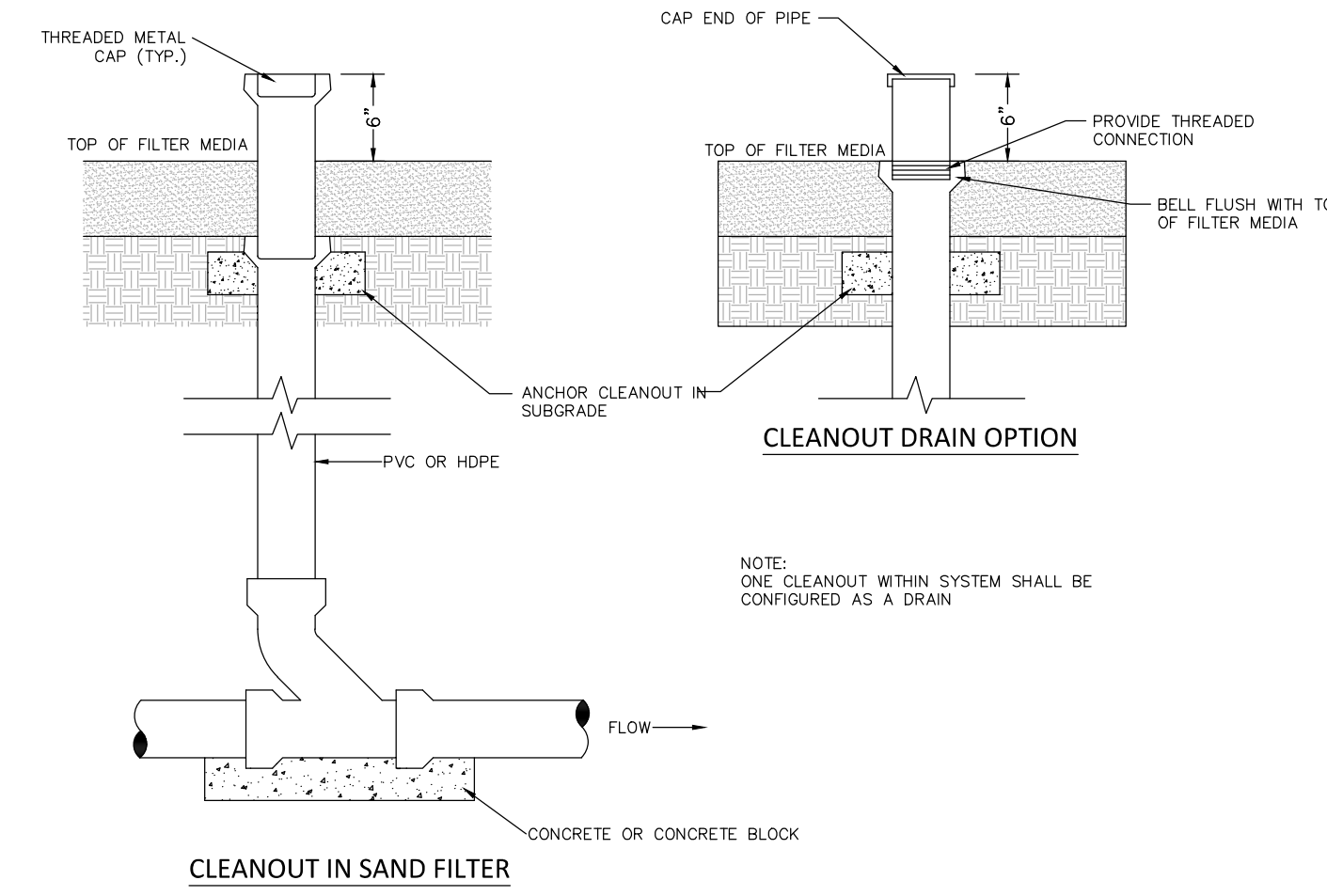
OUTLET	L ₁	W ₁	W ₂	H ₁	H ₂	CLASS
FES13	11'	13'	6'	9"	1'-4"	A
FES13	11'	13'	6'	9"	1'-4"	A
FES15	20'	23'	9'	18"	2'	B
FES32	8'	9.25'	3'-8"	9"	10"	A

* d50 (see Fig 8.06 o&b "NC SEDIMENT AND EROSION CONTROL MANUAL")
gmax = 1.5 x d50
T = 1.5 X dmax
Tmin = 10"

2 RIPRAP APRON AT PIPE OUTFALLS OTHER THAN AT SWIM



3 ROOF DRAIN CONNECTION



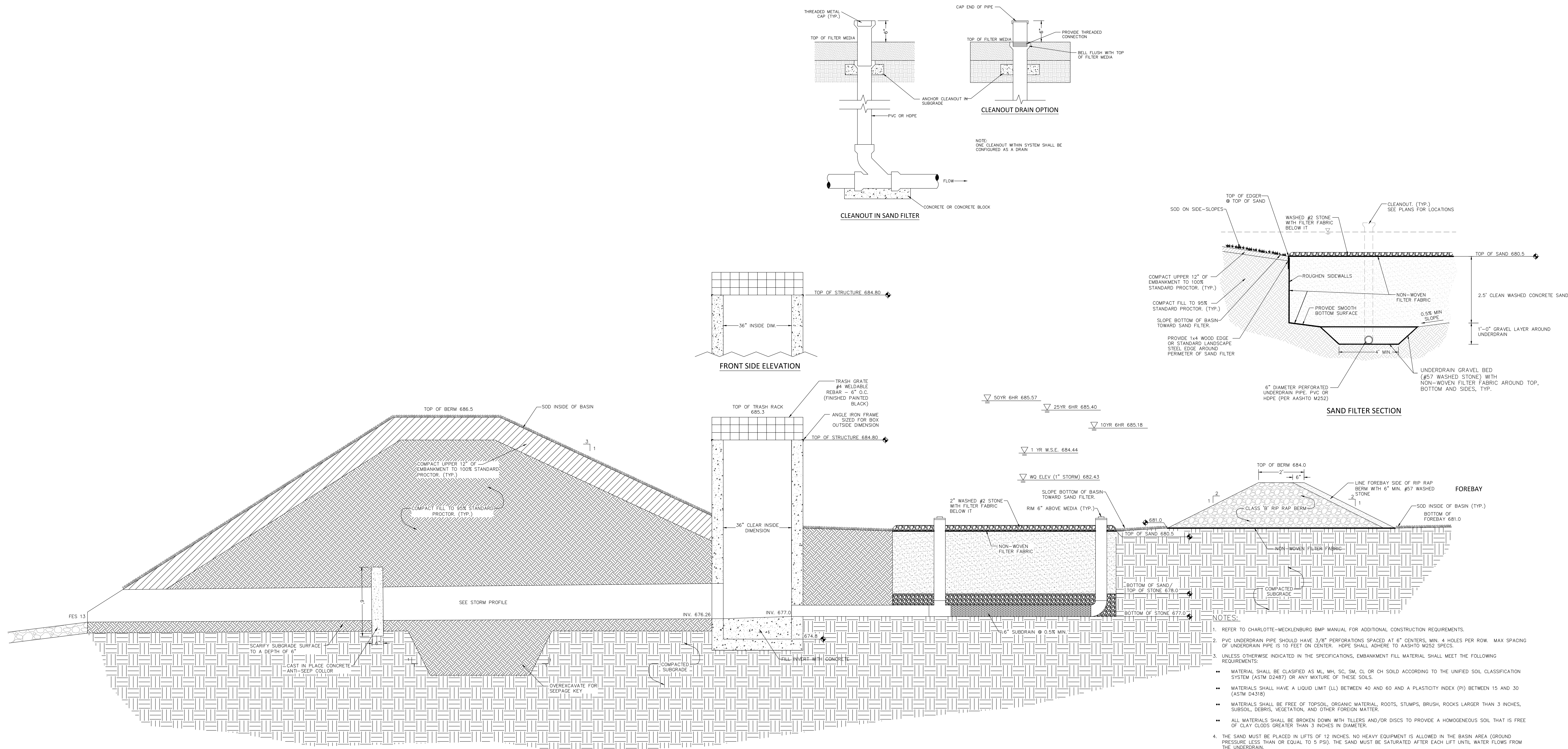
- NOTES:
- REFER TO CHARLOTTE-MECKLENBURG BMP MANUAL FOR ADDITIONAL CONSTRUCTION REQUIREMENTS.
 - PVC UNDERDRAIN PIPE SHOULD HAVE 3/8" PERFORATIONS SPACED AT 6" CENTERS, MIN. 4 HOLES PER ROW. MAX SPACING OF UNDERDRAIN PIPE IS 10 FEET ON CENTER. HOPE SHALL ADHERE TO AASHTO M252 SPECS.
 - UNLESS OTHERWISE INDICATED IN THE SPECIFICATIONS, EMBANKMENT FILL MATERIAL SHALL MEET THE FOLLOWING REQUIREMENTS:
 - MATERIAL SHALL BE CLASSIFIED AS ML, MH, SC, SM, CL OR CH SOILS ACCORDING TO THE UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D2487) OR ANY MIXTURE OF THESE SOILS.
 - MATERIALS SHALL HAVE A LIQUID LIMIT (LL) BETWEEN 40 AND 60 AND A PLASTICITY INDEX (PI) BETWEEN 15 AND 30 (ASTM D4318).
 - MATERIALS SHALL BE FREE OF TOPSOIL, ORGANIC MATERIAL, ROOTS, STUMPS, BRUSH, ROCKS LARGER THAN 3 INCHES, SUBSOIL, DEBRIS, VEGETATION, AND OTHER FOREIGN MATTER.
 - ALL MATERIALS SHALL BE BROKEN DOWN WITH TILLERS AND/OR DISCS TO PROVIDE A HOMOGENEOUS SOIL THAT IS FREE OF CLAY CLODS GREATER THAN 3 INCHES IN DIAMETER.
 - THE SAND MUST BE PLACED IN LIFTS OF 12 INCHES. NO HEAVY EQUIPMENT IS ALLOWED IN THE BASIN AREA (GROUND PRESSURE LESS THAN OR EQUAL TO 5 PSF). THE SAND MUST BE SATURATED AFTER EACH LIFT UNTIL WATER FLOWS FROM THE UNDERDRAIN.
 - IF THE SAND BECOMES CONTAMINATED DURING THE CONSTRUCTION OF THE FACILITY, THE CONTAMINATED MATERIAL MUST BE REMOVED AND REPLACED WITH UNCONTAMINATED MATERIAL.

4 SAND FILTER 1 (OCS 2)

REVISIONS	DATE	REVISED PER COMMENTS
1	01/23/17	

JOB #	16022
DATE:	12/16/16
SCALE:	NTS
DRAWN BY:	CIBB
APPROVED BY:	JCO

February 01, 2017 - 2:25pm By: Misker
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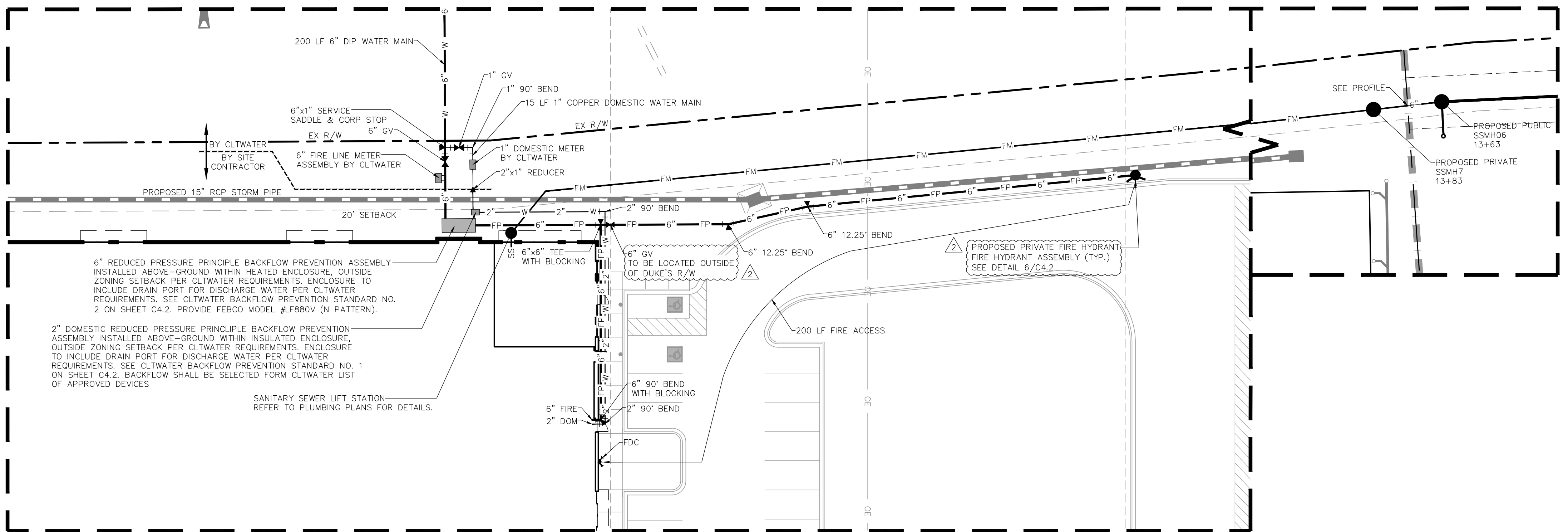
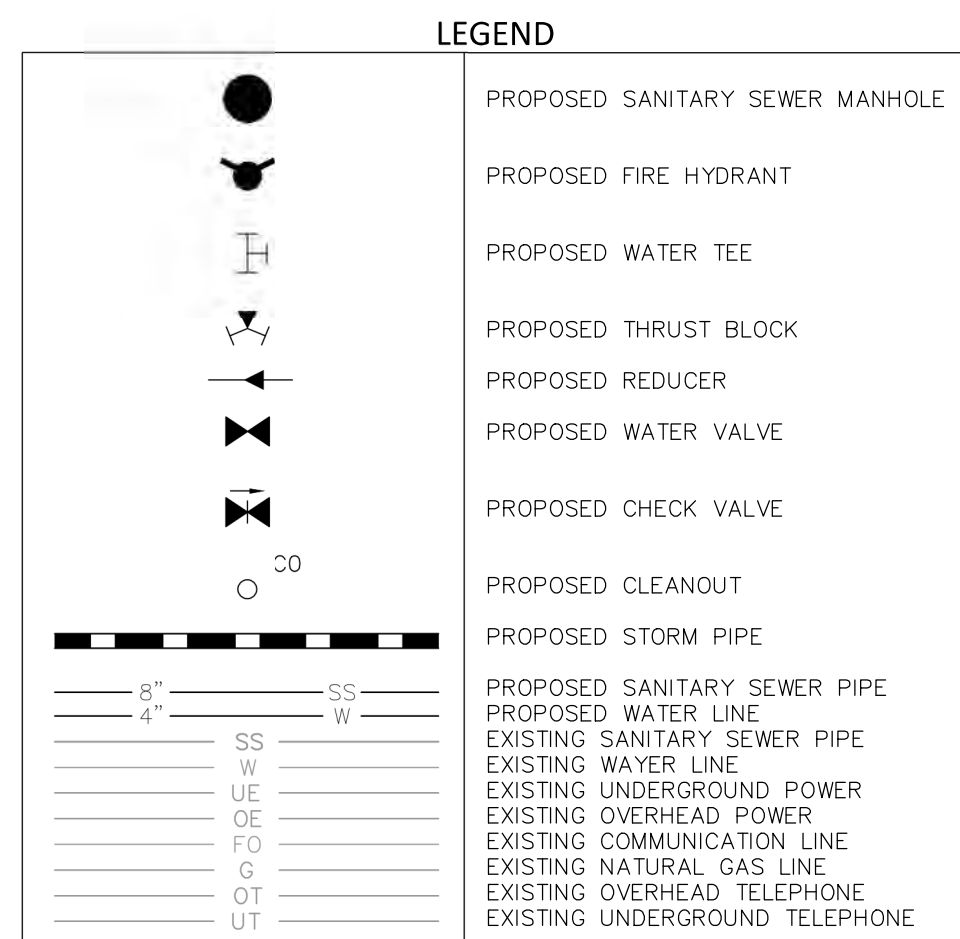


1 SAND FILTER 2 (OCS 7)

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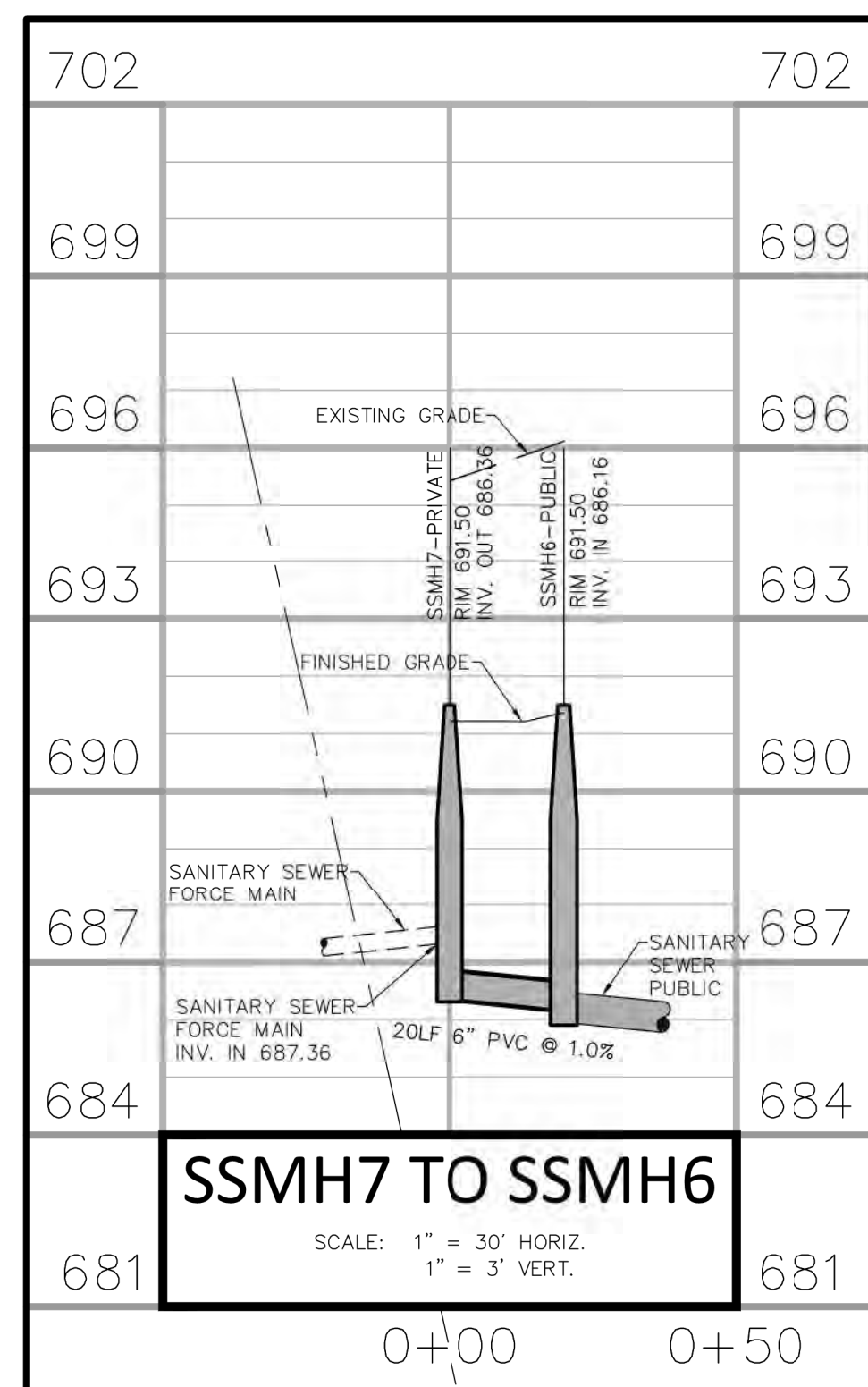
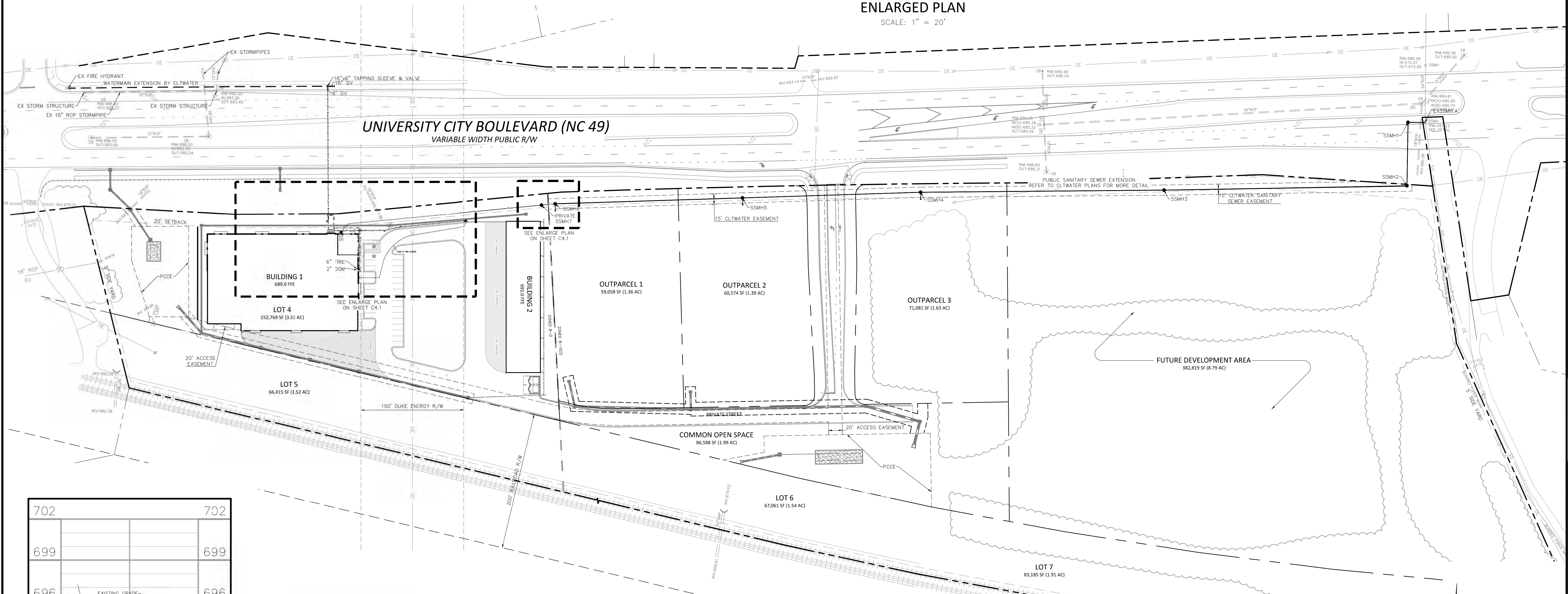
JOB #	16022
DATE:	12/16/16
SCALE:	NTS
DRAWN BY:	CIBB
APPROVED BY:	JCO

C3.6



ENLARGED PLAN

SCALE: 1" = 20'



UTILITY NOTES

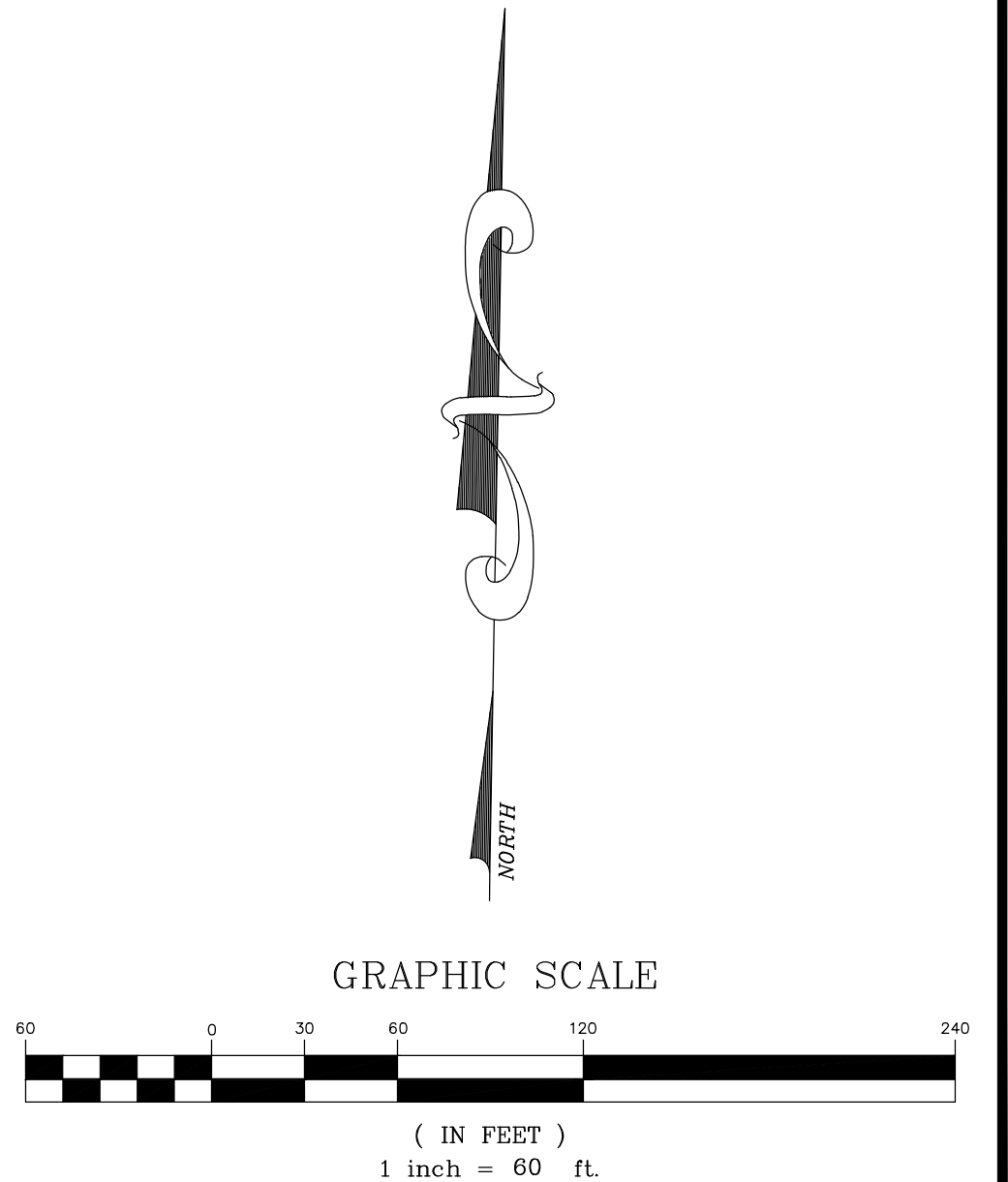
1. ALL MATERIALS AND CONSTRUCTION REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE LATEST CODES, REGULATIONS AND/OR STANDARDS, AND REQUIREMENTS OF THE CHARLOTTE-MECKLENBURG GOVERNMENT CENTER DEVELOPMENT.
2. THE CONTRACTOR SHALL COORDINATE AND MARK ALL EXISTING UTILITIES IN THE PROJECT AREA BEFORE COMMENCING WORK IN THAT AREA. ANY DAMAGES TO ANY UTILITIES SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTORS EXPENSE.
3. THE LOCATIONS OF EXISTING UTILITIES SUCH AS WATER MAINS, SEWER, GAS LINES, ETC. AS SHOWN ON THE PLANS SHALL BE VERIFIED BY THE CONTRACTOR. AVAILABLE INFORMATION IS PROVIDED FOR THE CONVENIENCE OF THE CONTRACTOR. HOWEVER, THE ENGINEER DOES NOT GUARANTEE THE ACCURACY OF THE INFORMATION. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO CONTACT ALL UTILITY COMPANIES 48 HOURS PRIOR TO COMMENCEMENT OF CONSTRUCTION TO VERIFY THE LOCATION OF ALL UTILITIES.
4. UNLESS OTHERWISE SPECIFIED ALL UTILITIES SHOWN ON THESE CIVIL PLANS TERMINATE APPROXIMATELY FIVE FEET OUTSIDE THE BUILDING. REFER TO THE PLUMBING, ELECTRICAL, AND MECHANICAL PLANS FOR CONTINUATION.
5. FIRE SERVICE MAINS SHALL TERMINATE AT A FLANGE, CAP, PLUG, OR VALVE INSIDE THE BUILDING. SEE THE FOOT AND JOINT DETAIL ON SET 04/0-3.
6. STORM SEWER SHOWN FOR REFERENCE ONLY. REFER TO C-3.1 FOR MORE INFORMATION.
7. REFER TO ELECTRICAL PLANS FOR ALL ELECTRICAL WORK.
8. ELECTRIC POWER PROVIDER WILL INSTALL, REGULATE AND MAINTAIN THE PROPOSED POWER DISTRIBUTION SYSTEM. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING HIS WORK WITH THE ELECTRIC POWER PROVIDER TO INSURE PROPER CONSTRUCTION PHASING.
9. THE TELEPHONE UTILITY PROVIDER WILL INSTALL THE PROPOSED TELEPHONE DISTRIBUTION SYSTEM. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING HIS WORK WITH THE TELEPHONE UTILITY PROVIDER TO INSURE PROPER CONSTRUCTION PHASING, ELIMINATE

UTILITY NOTES

10. NEW WATER AND SEWER TAPS TO PUBLIC MAINS SHALL BE COMPLETED BY CLT WATER. CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL WORK AND PAYING ALL FEES.
11. TAP LOCATIONS AS SHOWN ON THESE PLANS ARE SUBJECT TO CHANGE DURING THE COURSE OF THE PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR WORK TO BE COMPLETED BY CLT WATER IS DONE AT THE CONTRACTORS OWN RISK.
12. THE CONTRACTOR SHALL INSTALL THE WATER LINE AND SYSTEM A MINIMUM OF THREE (3) FEET BELOW FINISHED GRADE, TO THE TOP OF THE PIPE.
13. WHERE WATER LINES CONFLICT WITH STORM AND SANITARY SEWER, THE WATER LINE SHALL BE INSTALLED DURING CONSTRUCTION. INSTALL 45° BENDS AS NECESSARY TO OBTAIN A MINIMUM CLEARANCE OF 18" INCHES.
14. CONTRACTOR SHALL INSTALL THRUST BLOCKS PER DETAIL 4/C4.3 ON ALL WATER LINES 4" AND LARGER AT ALL TEES AND BENDS SUCH THAT THRUST BLOCKS BEAR ON UNDISTURBED FIRM, UNCOMPRESSED, NATURAL LOCATIONS. CONTRACT ENGINEER FOR REQUIRED LENGTH.
15. UNLESS OTHERWISE INDICATED, SANITARY SEWER LATERALS SHALL BE INSTALLED AT 1% SLOPE MINIMUM WITH CLEANOUTS SPACED 80' ON CENTER MAX.
16. THERE SHALL BE NO TAPS, PIPE BRANCHES, UNAPPROVED BYPASS PIPES, HYDRANTS, FIRE TAPES, OR OTHER CONNECTIONS TO ANY MAINS OR LATERALS WITHOUT THE APPROVANCE OF THE SUPPLY LINE BETWEEN ANY WATER METER AND ITS CLT WATER REQUIRED BACKFLOW PREVENTER.
17. EACH CLT WATER REQUIRED BACKFLOW PREVENTER IS REQUIRED TO BE TESTED BY A CLT WATER APPROVED CERTIFIED TESTER PRIOR TO PLACING THE WATER SYSTEM IN SERVICE.
18. BACKFLOW PREVENTER INSPECTION REQUIREMENTS: INSTALLER MUST OBTAIN FIELD VERIFICATION OF EACH INSTALLATION FROM A CLT WATER BACKFLOW PREVENTER (BP) INSPECTION INSPECTOR PRIOR TO PLACING THE WATER SYSTEM IN SERVICE. CALL 391-5188 TO REQUEST INSPECTION OR ON-SITE ASSISTANCE. ALLOW THREE WORKING DAYS FOR THE INSPECTION. THE INSPECTION REPORT WILL BE PROVIDED TO THE CONTRACTOR. THE CERTIFICATION OF OCCUPANCY WILL BE WITHHELD UNTIL THE BP CONSTRUCTION INSPECTOR APPROVES EACH BACKFLOW PREVENTER. LARGE AFFECTING THE SUPPLY LINE OF CLT WATER REQUIRED BACKFLOW PREVENTER REMOVAL FROM THE CONSTRUCTION INSPECTOR.

UTILITY NOTES

22. UNLESS OTHERWISE INDICATED, WATER LINES 1-1/2" – 2" IN DIAMETER SHALL BE PVC 120 IN ACCORDANCE WITH ASTM D-2241: THE PIPE SHALL BE MINIMUM PRESSURE CLASS 200 AND A SDR OF 21 OR LESS. PIPE JOINTS SHALL CONFORM TO ASTM D-3350.
23. UNLESS OTHERWISE INDICATED, WATER LINES 3" IN DIAMETER AND LARGER SHALL BE PIP 120 IN ACCORDANCE WITH AWWA C-900. THE PIPE SHALL BE MINIMUM PRESSURE CLASS 200 AND A SDR OF 14 OR LESS. PIPE JOINTS SHALL CONFORM TO AWWA C-900.
24. UNLESS OTHERWISE INDICATED, WATER LINES 1" IN DIAMETER AND SMALL SHALL BE SOFT COPPER TUBE, TYPE K, PER ASTM B-88. COPPER SERVICES SHALL CONFORM TO AWWA C-800. FITTINGS SHALL BE RED BRASS IN CONFORMANCE WITH ASTM B-62. FITTINGS MAY BE FLANGED OR WELDED TO PIPE, IN ACCORDANCE WITH AWWA C-800. COMPRESSION FITTINGS SHALL UTILIZE A COMPRESSION NUT AND/OR SPLIT CLAMP WITH TIGHTENING SCREW.
25. UNLESS OTHERWISE INDICATED, ALL SANITARY SEWER PIPE SHALL BE SDR 35 PVC CONFORMING TO ASTM D-3034. THE PIPE SHALL BE APPLICABLE IN ACCORDANCE WITH AWWA D-3034 WITH STIFFNESS AND WALL THICKNESS EQUAL TO OR GREATER THAN THE PIPE. ADAPTERS SHALL BE PROVIDED TO JOIN DIFFERENT MATERIALS.
26. DUCTILE IRON PIPE SHALL CONFORM TO THE REQUIREMENTS OF AWWA STANDARD C-151: PRESSURE CLASS 350, AND SHALL HAVE CEMENT-MORTAR LINING OF STANDARD THICKNESS IN ACCORDANCE WITH AWWA C-151. UNLESS OTHERWISE NOTED, DIP SHALL BE FURNISHED WITH PUSH-ON JOINTS IN ACCORDANCE WITH AWWA C-111.
27. ALL SANITARY SEWER MANHOLES SHALL BE A MINIMUM OF 4 FT. INSIDE DIAMETER.



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UTILITY PLAN
FOR
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11820 UNIVERSITY CITY BOULEVARD
CHARLOTTE, NC 28213

ROBERT HIGH
DEVELOPMENT, LLC
223 GREENVILLE AVENUE
WILMINGTON, NC 28403

[illegible]

JOB # 16022

DATE: 12/16/16

SCALE: 1" = 60'

DRAWN BY: BY

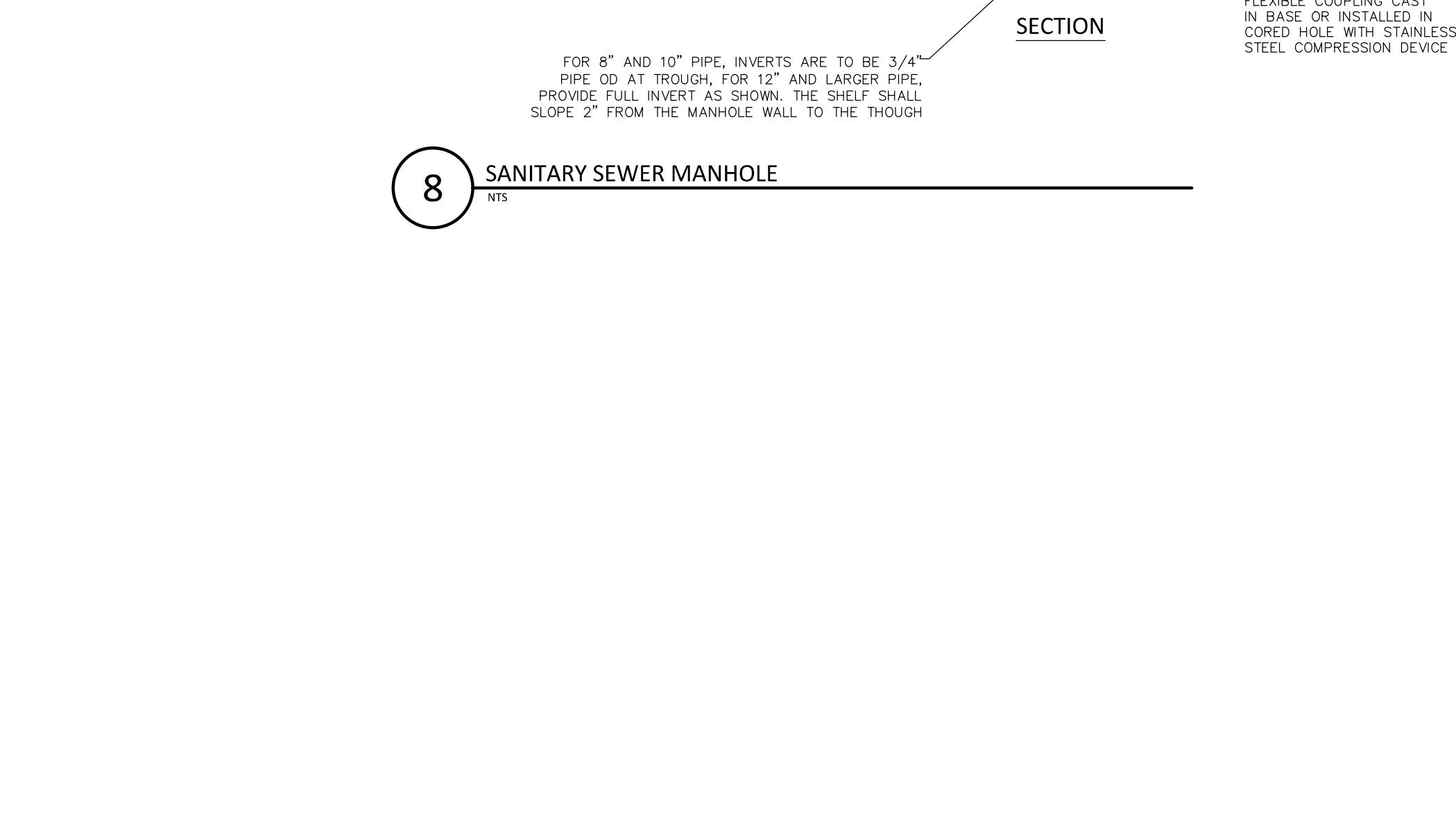
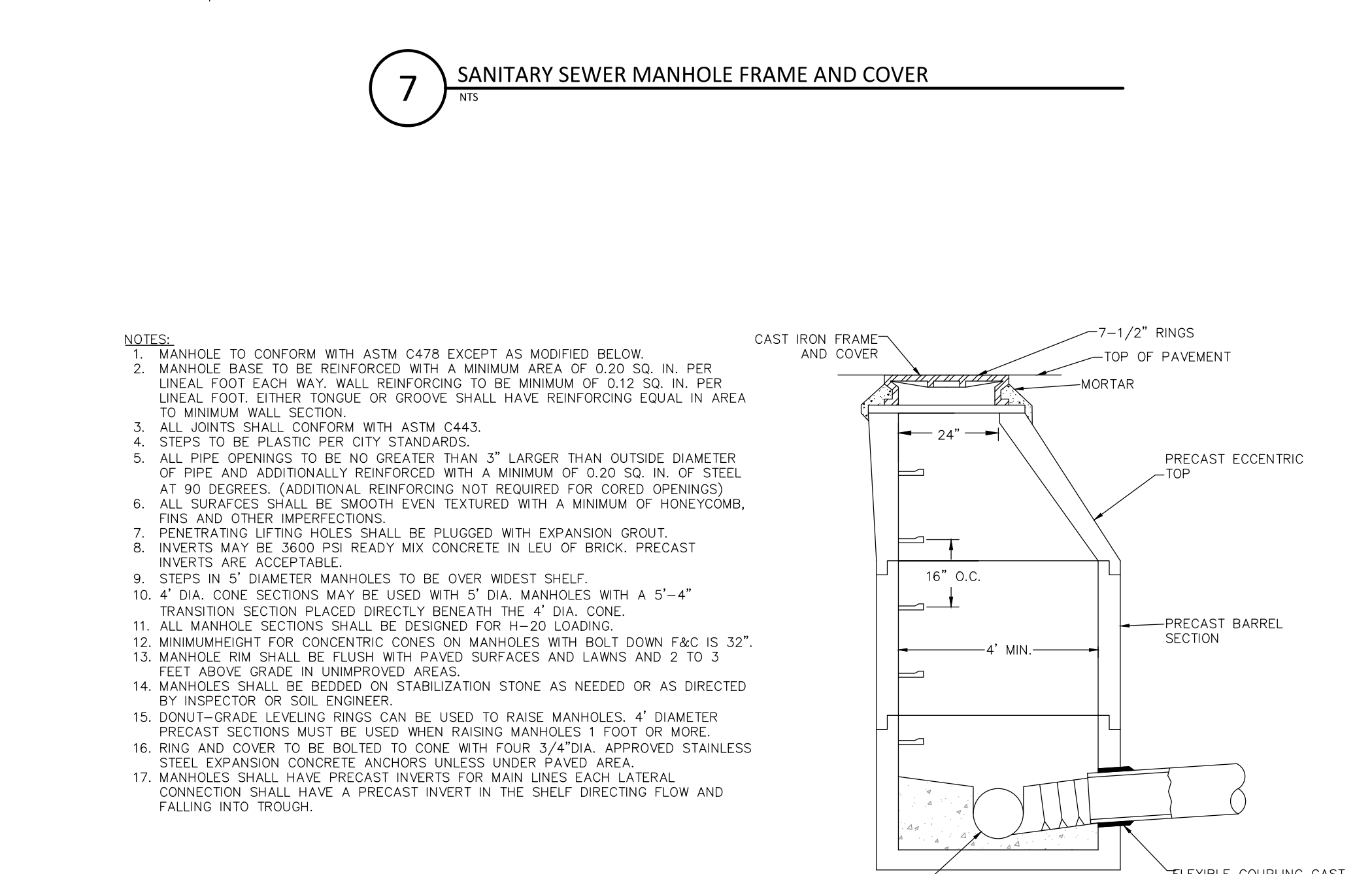
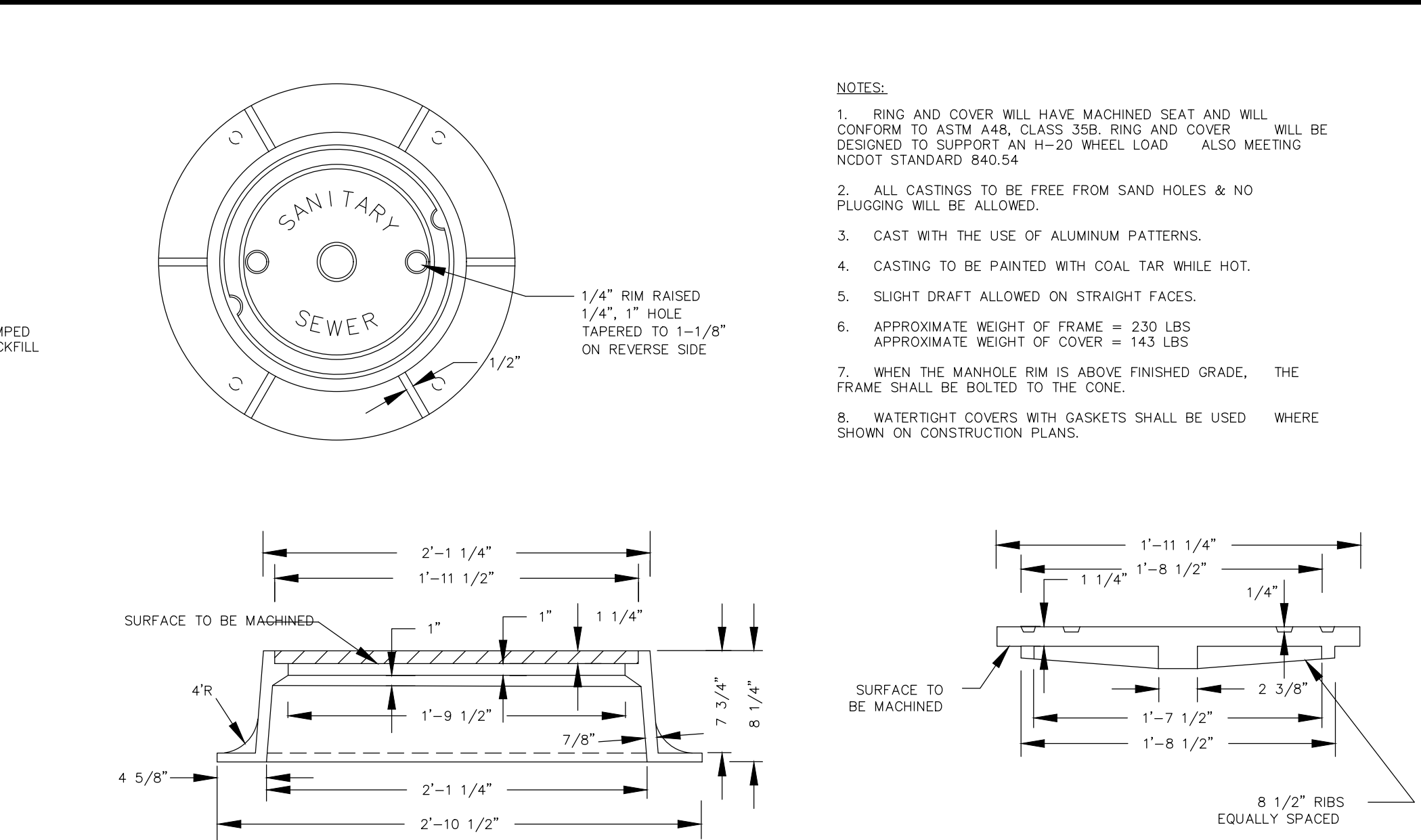
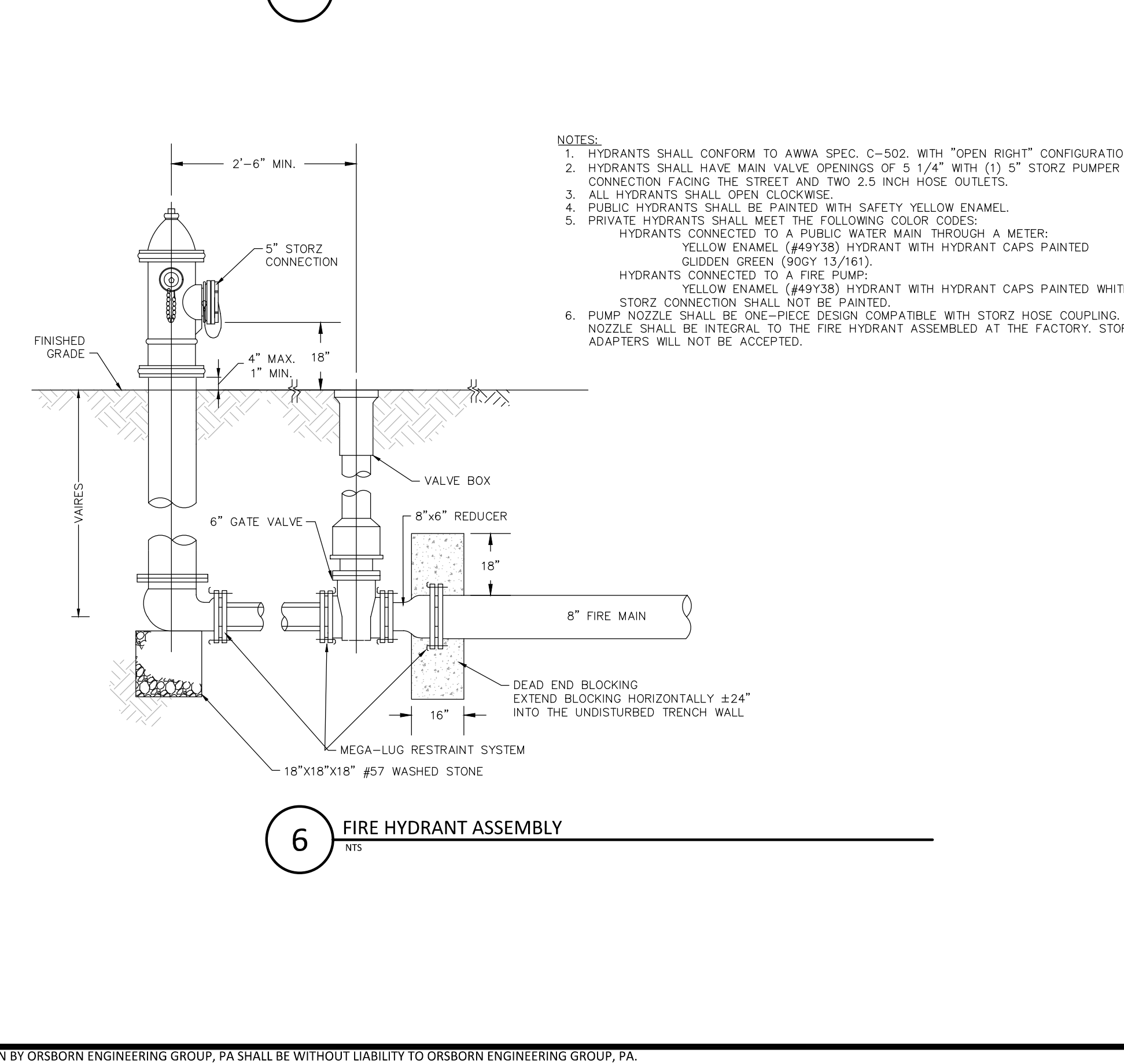
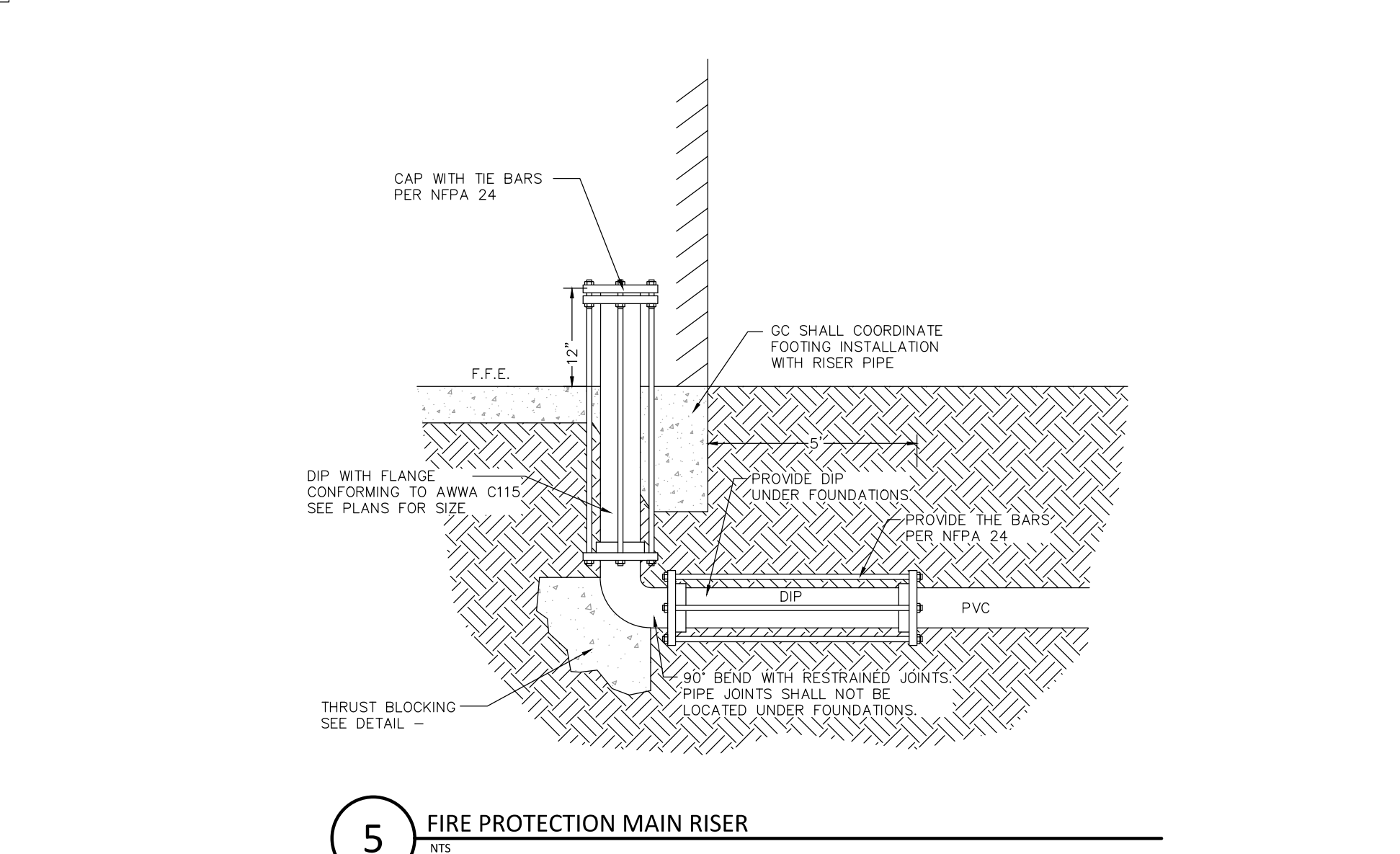
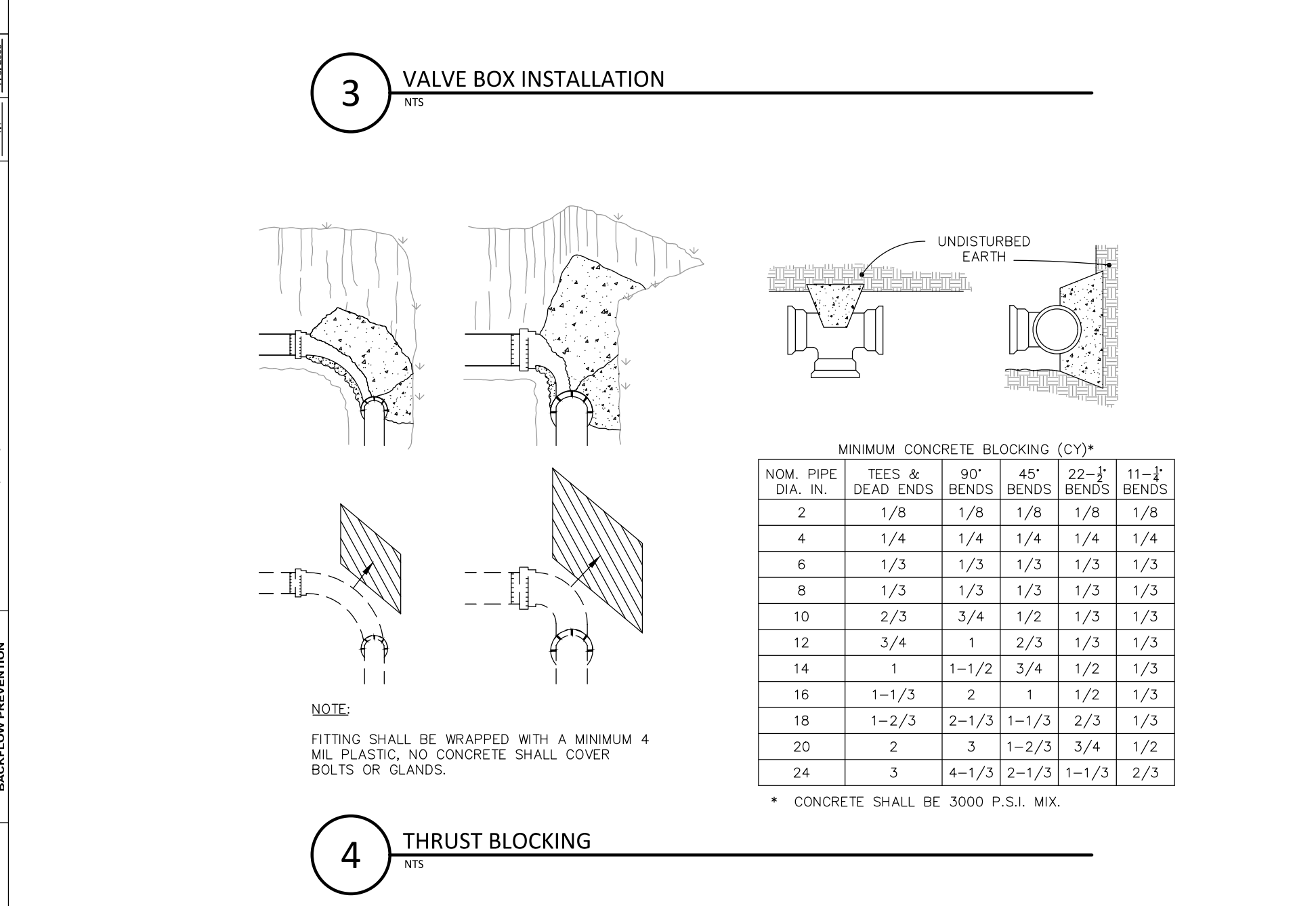
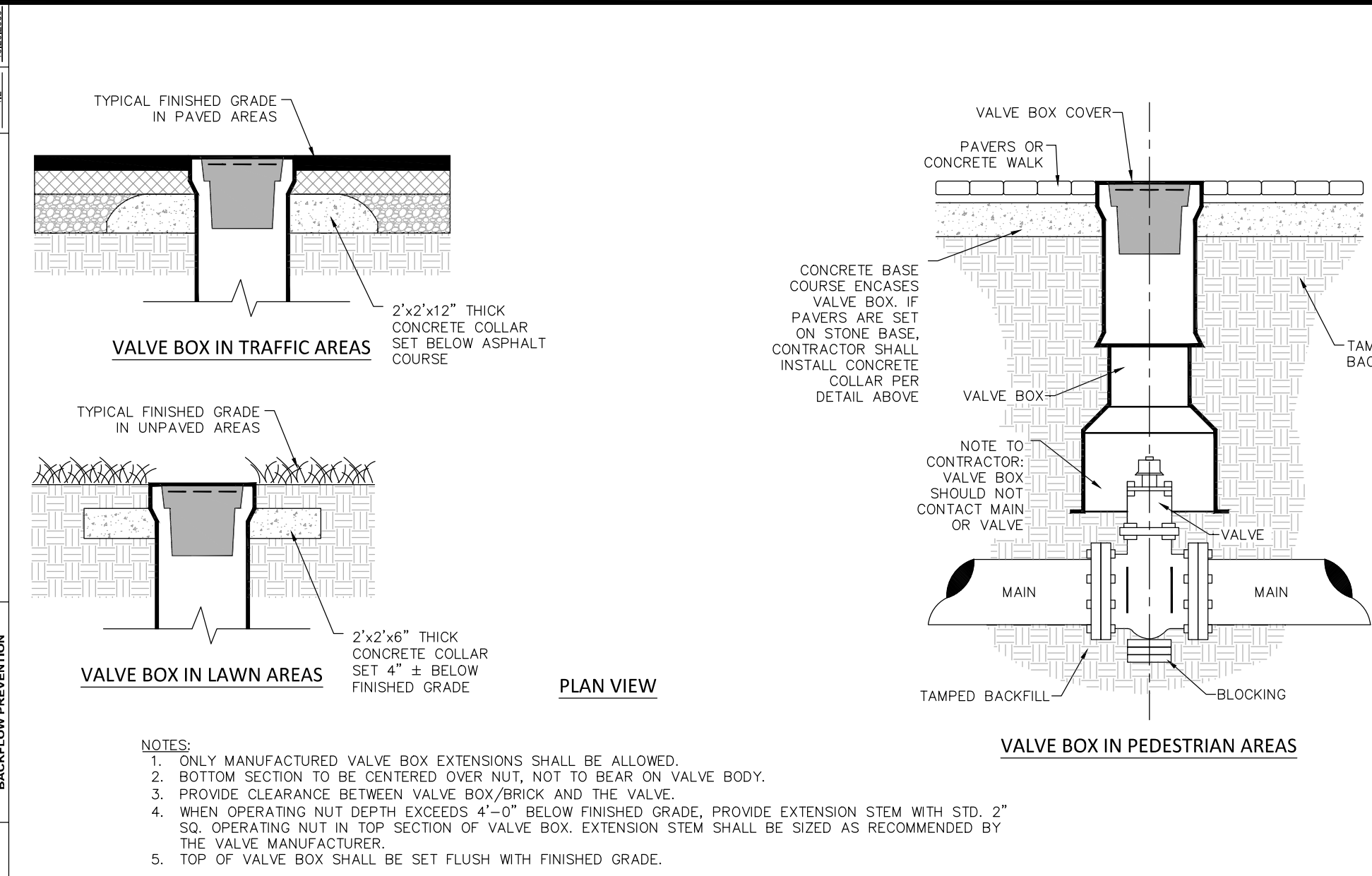
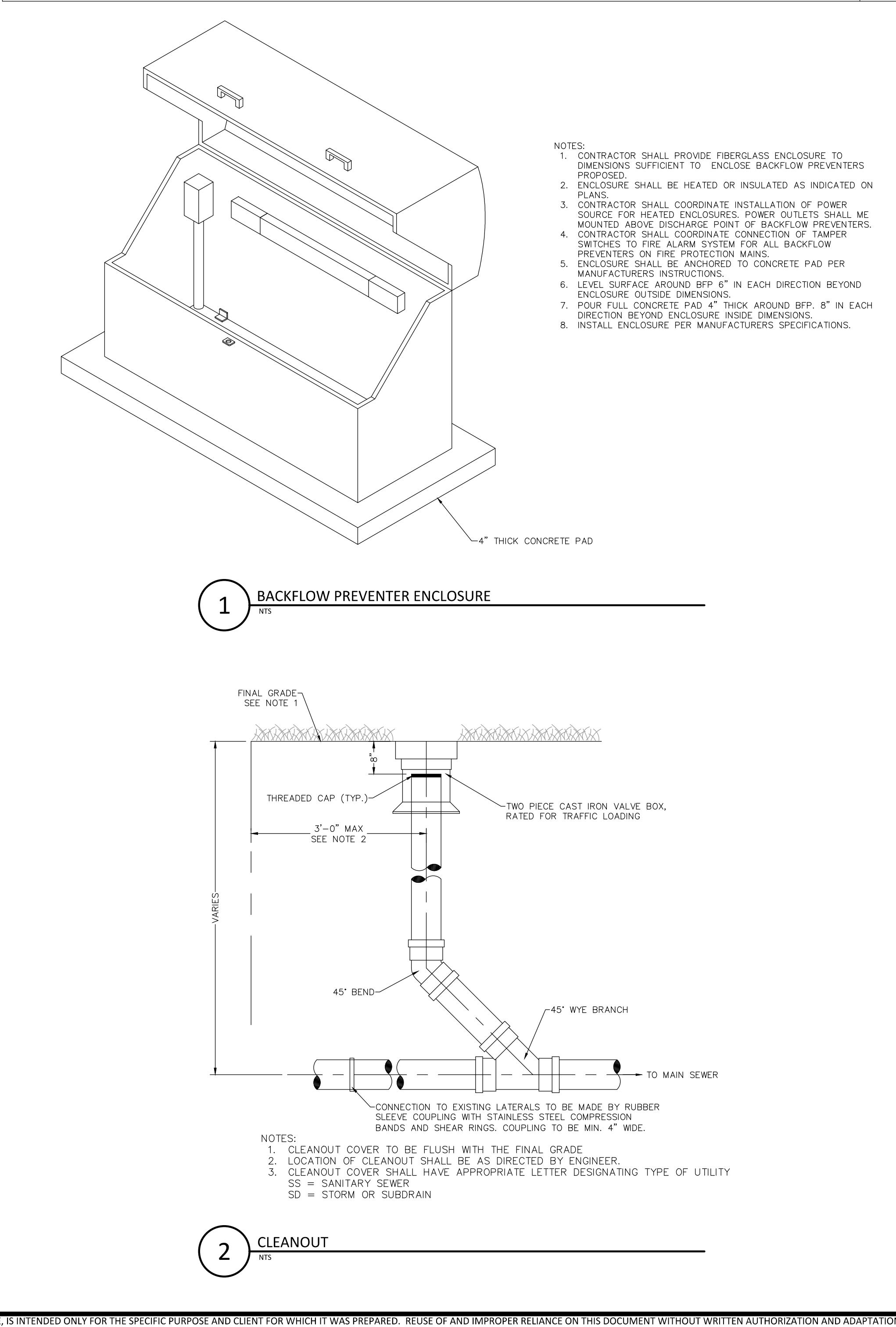
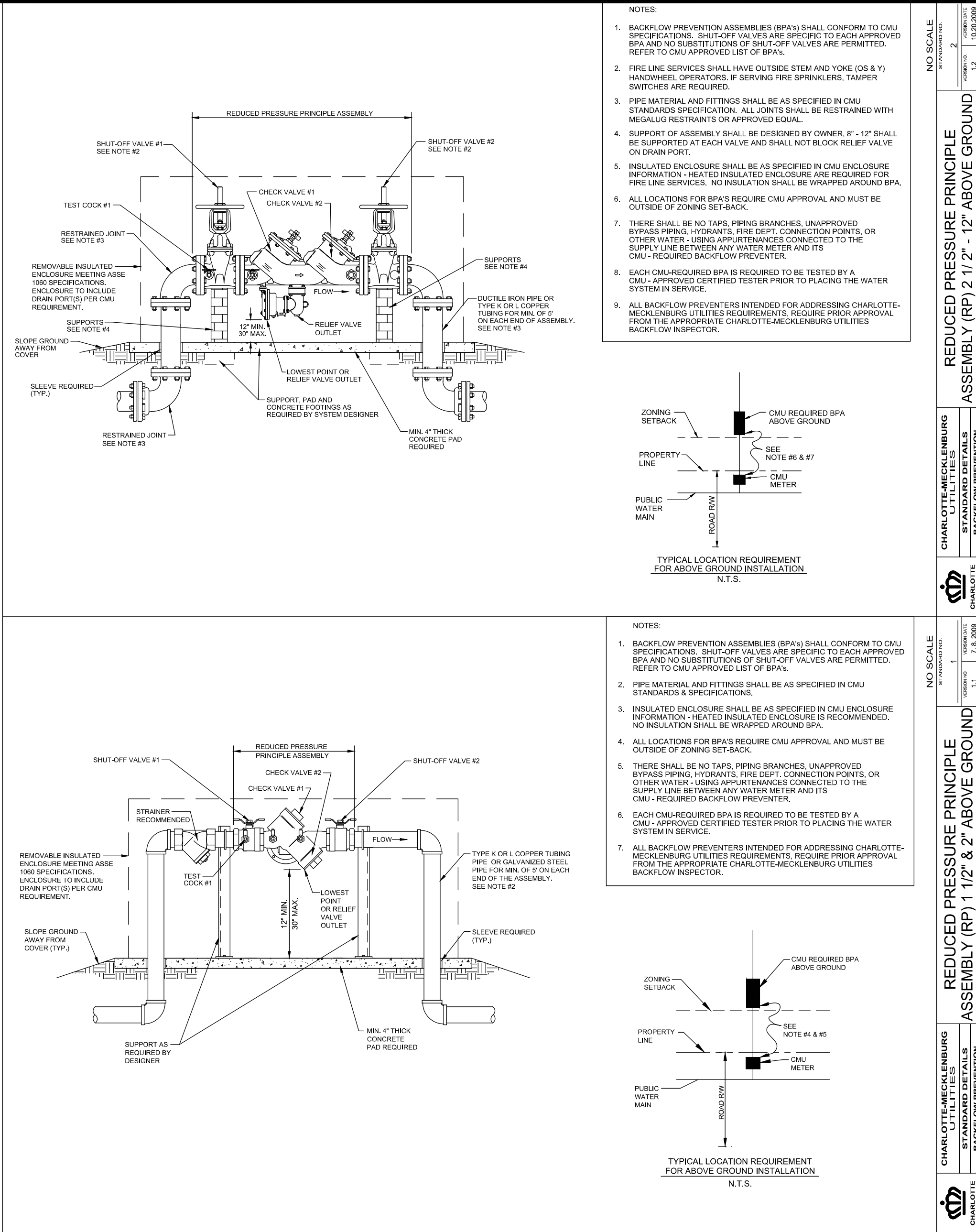
APPROVED BY: JCO

C4.1

C4.1

February 01, 2017 - 2:25pm By: Jtwang
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THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGNS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY ORSBORN ENGINEERING GROUP, PA SHALL BE WITHOUT LIABILITY TO ORSBORN ENGINEERING GROUP, PA.



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UTILITY DETAILS
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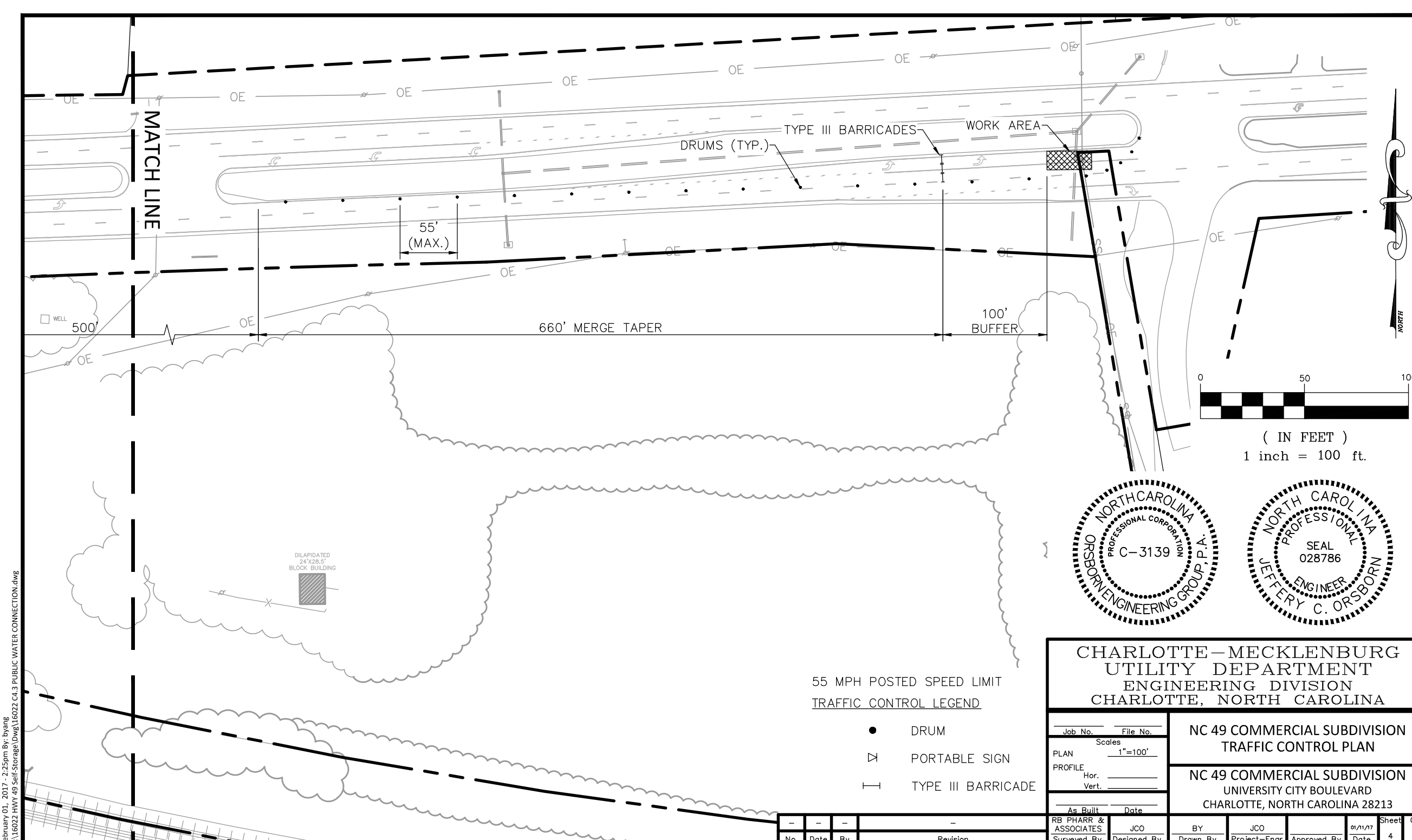
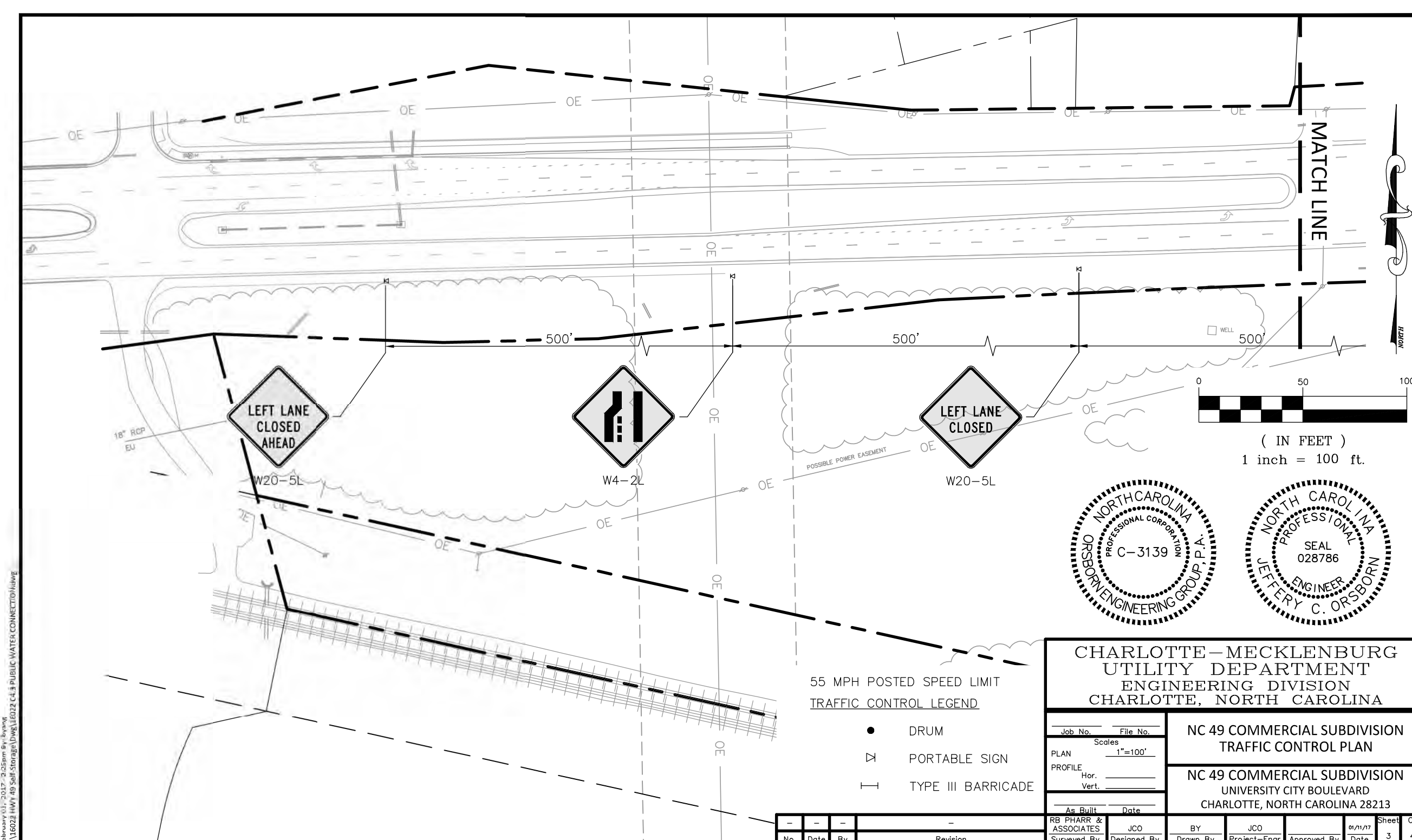
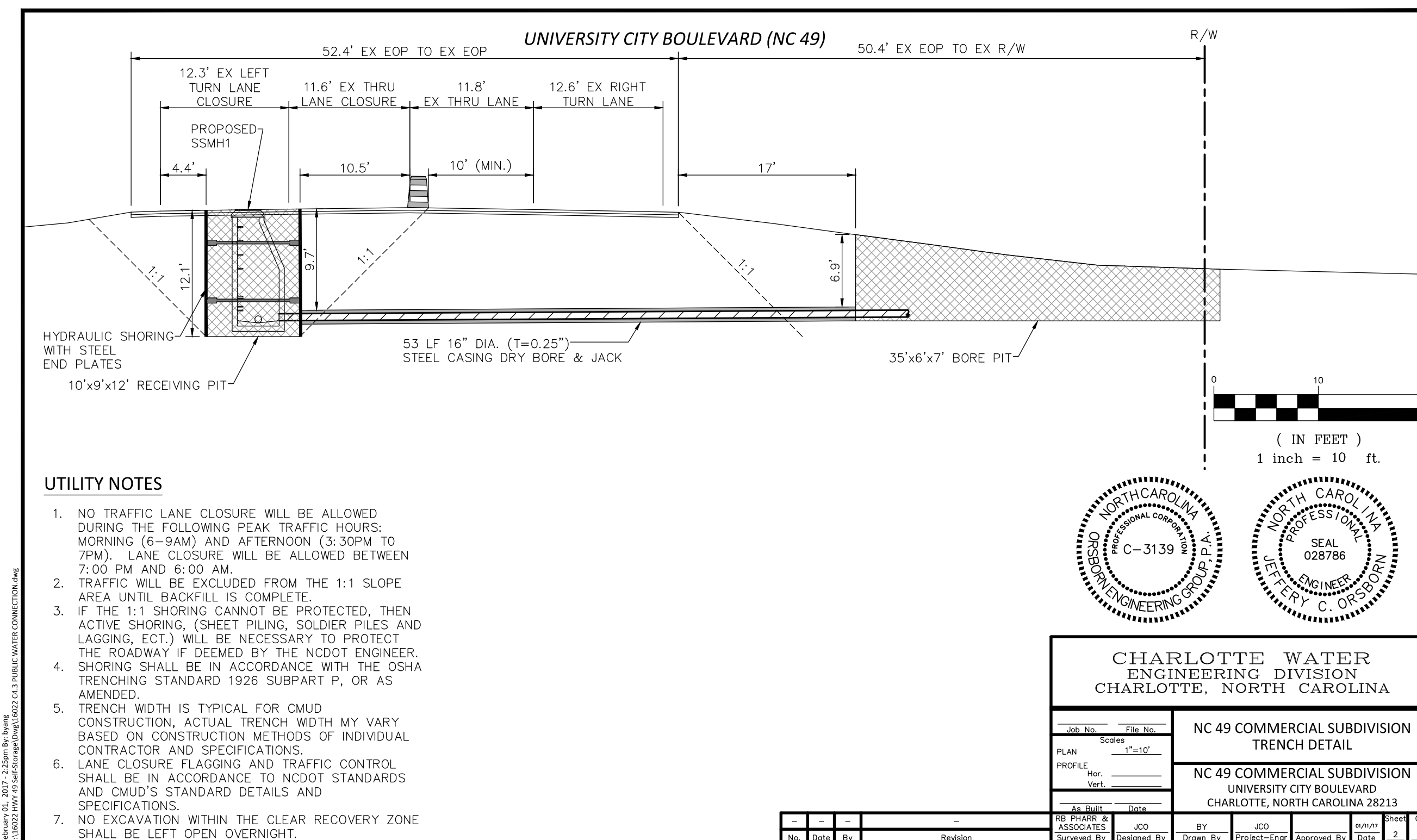
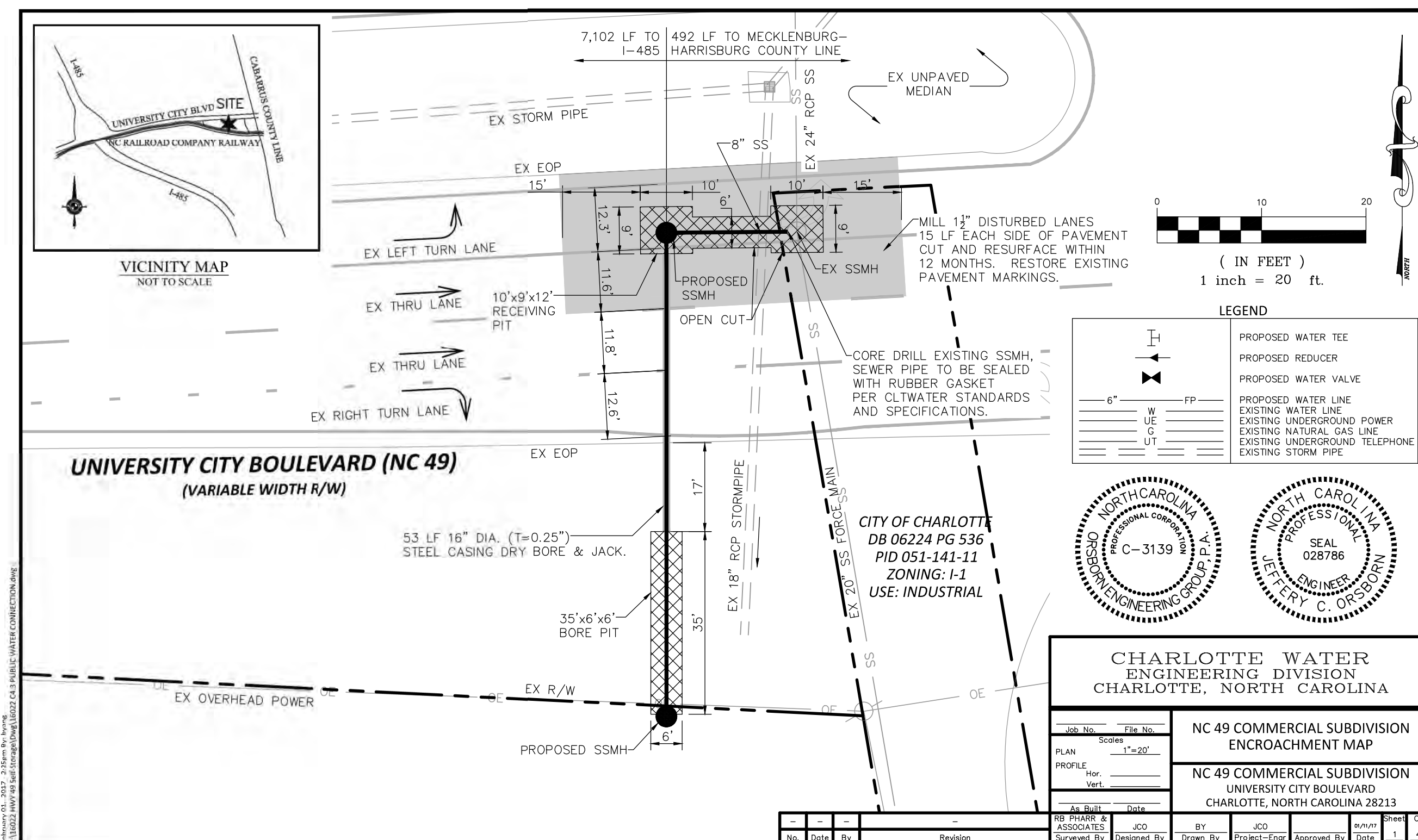
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JTWANG
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REVISIONS

NO.	DATE	DESCRIPTION
1	02/01/2017	ISSUED FOR PERMIT

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DATE: 12/16/16
SCALE: NTS
DRAWN BY: CJB
APPROVED BY: JCO

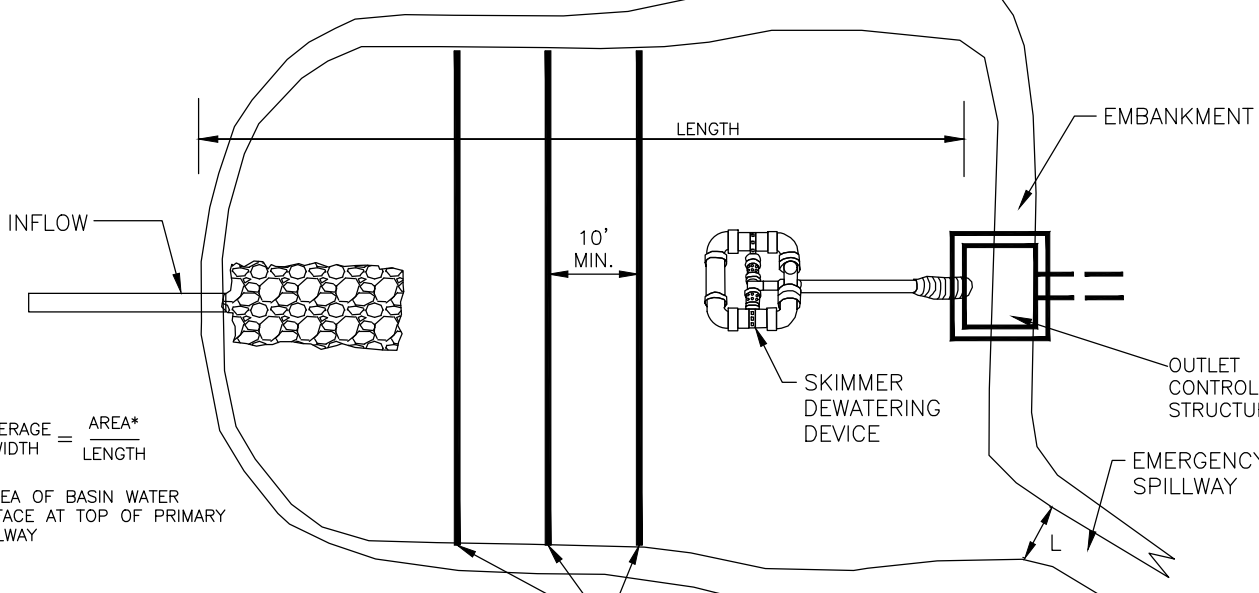
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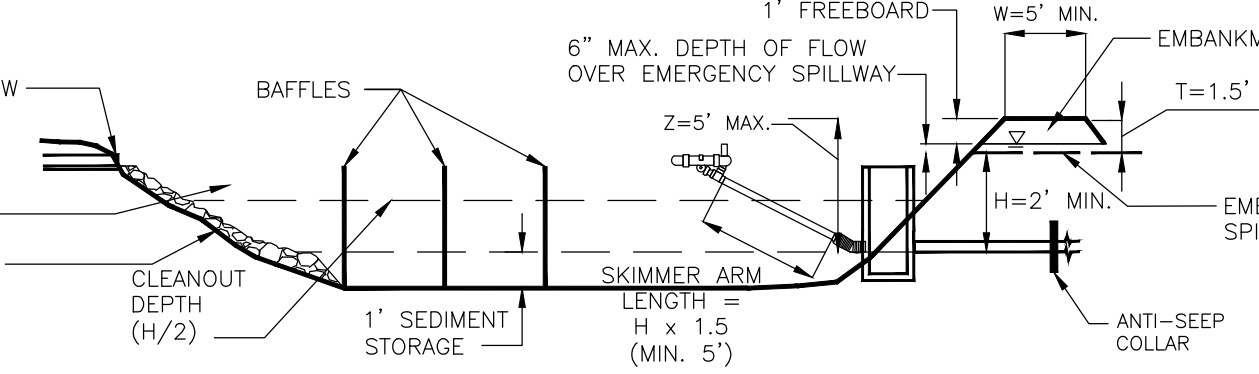
THESE PLANS ILLUSTRATE WORK TO BE PERFORMED BY CLTWATER CONTRACTOR

SKIMMER SEDIMENT BASIN DESIGN CRITERIA	
DRAINAGE AREA (ACRES)	< 10 AC.
MIN. LENGTH TO WIDTH RATIO	2:1
MAX. LENGTH TO WIDTH RATIO	6:1
MIN. VOLUME REQUIRED (CU. FT. PER AC. DISTURBED)	1800
SURFACE AREA REQUIRED (SQ. FT. PER CFS @10)	325

PLAN VIEW



CROSS-SECTION VIEW



NOTES:

1. REFER TO NCSDPDM SECTION #6.64 FOR ADDITIONAL DESIGN SPECIFICATIONS REGARDING SKIMMER SEDIMENT BASINS.
2. REFER TO STD. #30.19 FOR BAFFLE SPACING AND INSTALLATION.
3. SKIMMER INVERT ELEVATION = BASIN BOTTOM + 1' MIN.
4. H = SPILLWAY ELEVATION - SKIMMER INVERT ELEVATION

NOT TO SCALE

DATA BLOCK

SKIMMER BASIN 1	DRAINAGE AREA (ACRES)	DENURED AREA (ACRES)	Q10	BASIN VOLUME		BASIN SURFACE AREA		CLEANOUT DEPTH (FT.) H/2	H (FEET)	Z (FEET)	L (FEET)	T (FEET)	W (FEET)	SKIMMER PIPE DIAMETER	SKIMMER ORIFICE DIAMETER
				REQUIRED (CU.BIC FT.)	PROVIDED (CU.BIC FT.)	REQUIRED (SQ. FT.)	PROVIDED (SQ. FT.)								
PH1	3.85	3.63	12.6	6,930	19,714	4,085	6,969	1.9	3.8	5	N/A	1.4	5	2.07/2.5	1.87/2.5
PH2	3.47	3.47	18.2	6,246	19,714	5,908	6,969	1.9	3.8	5	N/A	1.4	5	2.07/2.5	1.87/2.5

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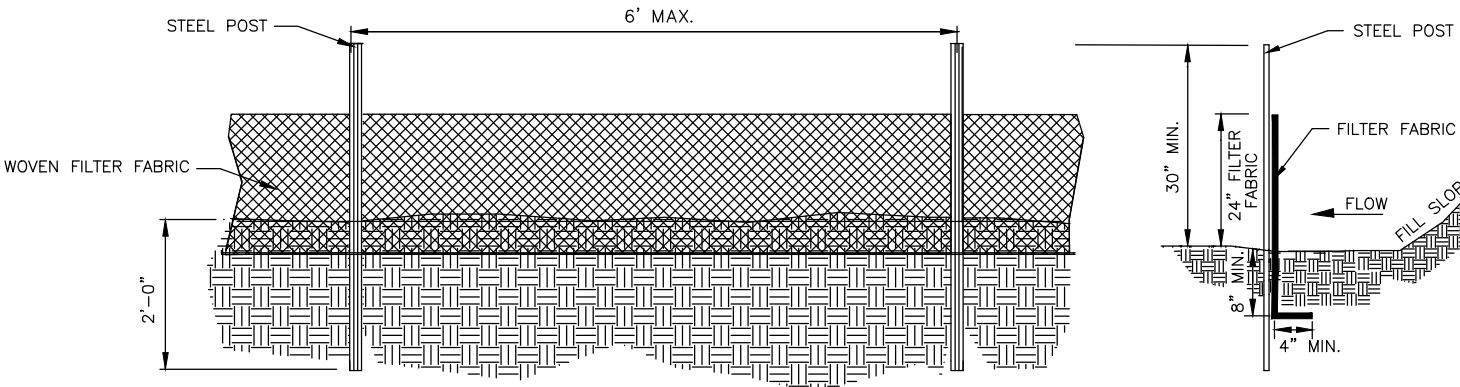
SKIMMER BASIN 2	DRAINAGE AREA (ACRES)	DENURED AREA (ACRES)	Q10	BASIN VOLUME		BASIN SURFACE AREA		CLEANOUT DEPTH (FT.) H/2	H (FEET)	Z (FEET)	L (FEET)	T (FEET)	W (FEET)	SKIMMER PIPE DIAMETER	SKIMMER ORIFICE DIAMETER
				REQUIRED (CUBIC FT.)	PROVIDED (CUBIC FT.)	REQUIRED (SQ. FT.)	PROVIDED (SQ. FT.)								
PH1	4.92	4.62	14.9	8,856	43,433	4,856	14,436	1.9	3.8	5.2	N/A	1.4	5	2.5"/4.0"	2.0"/3.2"
PH2	6.50	4.84	35.0	11,700	43,433	11,388	14,436	1.9	3.8	5.2	N/A	1.4	5	2.5"/4.0"	2.0"/3.2"

GENERAL NOTES:

1. AREA UNDER EMBANKMENT SHALL BE CLEARED, GRUBBED, AND STRIPPED OF ANY VEGETATION AND ROOT MATERIAL. THE BASIN AREA SHALL BE CLEARED.
2. THE FILL MATERIAL FOR THE EMBANKMENT SHALL BE FREE OF ROOTS OR OTHER WOODY VEGETATION AS WELL AS OVERSIZED STONES, ROCKS, ORGANIC MATERIAL, OR OTHER OBJECTIONABLE MATERIAL. THE EMBANKMENT SHALL BE COMPACTED BY TRAVELING WITH EQUIPMENT WHILE BEING CONSTRUCTED. SPILLWAYS SHOULD NOT BE CONSTRUCTED THROUGH FILL SECTIONS. ALL SPILLWAYS SHOULD BE LINED AND/OR RIPRAPPED.
3. SEDIMENT SHALL BE REMOVED AND TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO DEPTH SHOWN ON STANDARD. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA IN SUCH A MANNER THAT IT WILL NOT ERODE.
4. THE TRAP SHALL BE INSPECTED AFTER EACH RAIN AND REPAIRS MADE AS NECESSARY.
5. CONSTRUCTION OPERATION SHALL BE CARRIED OUT IN SUCH A MANNER THAT EROSION AND WATER POLLUTION IS MINIMIZED.
6. ALL CUT AND FILL SLOPES SHALL BE 2:1 OR FLATTER, UNLESS CERTIFIED BY REGISTERED GEOTECHNICAL ENGINEER.
7. SEDIMENT BASIN EMBANKMENTS SHOULD BE PROVIDED WITH EROSION CONTROL AND STABILIZATION.
8. STORAGE AREA MAY BE CONSTRUCTED IN ANY SHAPE PROVIDED THE MINIMUM STORAGE VOLUME REQUIREMENT IS MET. THE BASIN SHOULD ALSO BE ORIENTED SUCH THAT THE FILTER AND THE MAIN FLOW OF WATER AND SEDIMENT ARE ON OPPOSITE ENDS ON THE LONGER BASIN DIMENSIONS.
9. THE LENGTH OF THE STONE OUTLET (SPILLWAY) IS TO BE BASED ON A 10 YEAR STORM.
10. WHENEVER TOPOGRAPHY ALLOWS, THE BASIN LENGTH SHOULD BE TWICE (2X) THE BASIN WIDTH, TO ALLOW FOR SETTLING. BAFFLES SHALL BE INSTALLED IN ALL BASINS.
11. CLEANOUT STAKES SHALL BE PLACED IN ALL SEDIMENT BASINS AT THE LOW POINT IN THE BASIN. THE STAKES SHALL BE MARKED SHOWING THE HALF FULL CLEANOUT POINT OF THE BASIN.
12. SAFETY FENCING 3' HIGH SHOULD BE PLACED AROUND ALL SEDIMENT BASINS.
13. FOR DESIGN OF SEDIMENT BASINS, REFER TO THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES, EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.
14. FOR SLOPES GREATER THAN 10' IN LENGTH AND PROTECTED BY SILT FENCE AT THE TOE OF THE SLOPE, SLOPE TERRACING WILL BE REQUIRED.
15. THE BERM ON SEDIMENT BASINS SHALL BE SEEDED ONCE FINAL GRADE HAS BEEN REACHED. THE SILT FENCE MAY BE REMOVED IF PERMISSION HAS BEEN GRANTED BY THE CITY LAND DEVELOPMENT INSPECTOR AFTER THE GRASS HAS GERMINATED AND STABLE GROUND HAS BEEN ESTABLISHED.
16. WASHED STONE AND WIRE BACKING SHALL BE USED WITH SILT FENCE WHENEVER SILT FENCE IS PLACED AT THE TOE OF A SLOPE >10' VERTICAL OR ALONG ANY CHANNEL OR WATER COURSE WHERE 50' OF BUFFER IS NOT PROVIDED.

1 SKIMMER SEDIMENT BASIN

NTS CLOSM STD. DTL. 30.02A (REV.13)



GENERAL NOTES:

1. WOVEN FILTER FABRIC BE USED WHERE SILT FENCE IS TO REMAIN FOR A PERIOD OF MORE THAN 30 DAYS.
2. STEEL POSTS SHALL BE 5'-0" IN HEIGHT AND BE OF THE SELF-FASTENER ANGLE STEEL TYPE.
3. TURN SILT FENCE UP SLOPE AT ENDS.
4. ORANGE SAFETY FENCE IS REQUIRED AT BACK OF SILT FENCE WHEN GRADING IS ADJACENT TO SWIM BUFFERS, STREAMS OR WETLANDS. (REFER TO SWIM BUFFER GUIDELINES). THE COLOR ORANGE IS RESERVED FOR VISUAL IDENTIFICATION OF ENVIRONMENTALLY SENSITIVE AREAS.
5. DRAINAGE AREA CAN NOT BE GREATER THAN 1/4 ACRE PER 100 FT. OF FENCE.
6. SLOPE LENGTHS CAN NOT EXCEED CRITERIA SHOWN IN TABLE 6.62A NORTH CAROLINA EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.
7. DO NOT INSTALL SEDIMENT FENCE ACROSS STREAMS, DITCHES, WATERWAYS OR OTHER AREAS OF CONCENTRATED FLOW.

MAINTENANCE NOTES:

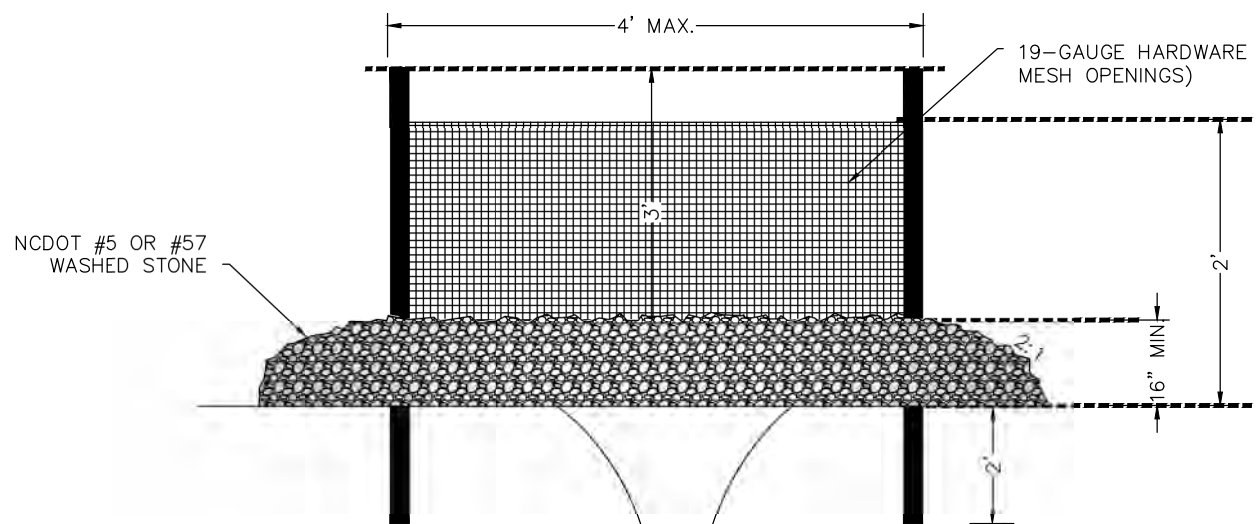
1. FILTER BARRIERS SHALL BE INSPECTED BY THE FINANCIALLY RESPONSIBLE PARTY OR HIS AGENT IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REPAIRS NEEDED SHALL BE MADE IMMEDIATELY.
2. SHOULD THE FABRIC DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL IS NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY.
3. SEDIMENT DEPOSITS SHOULD BE REMOVED WHEN DEPOSITS REACH APPROX. HALF THE HEIGHT OF THE BARRIER. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE IS REMOVED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.

2 TEMPORARY SILT FENCE

NTS CLOSM STD. DTL. 30.06A (REV.14)

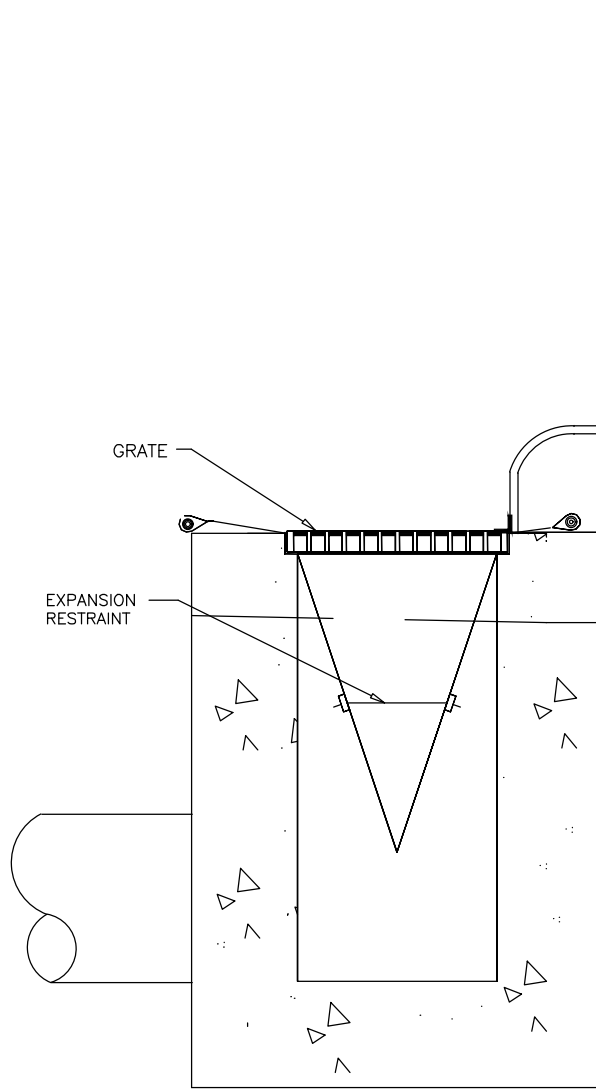
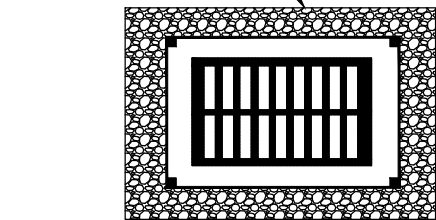
GENERAL NOTES:

1. UNIFORMLY GRADE A SHALLOW DEPRESSION APPROACHING THE INLET.
2. DRIVE 5'-0" STEEL POSTS 2 FEET INTO THE GROUND SURROUNDING THE INLET. SPACE POSTS EVENLY AROUND THE PERIMETER OF THE INLET. A MAXIMUM OF 4 FEET APART.
3. SURROUND THE POSTS WITH WIRE MESH HARDWARE CLOTH. SECURE THE WIRE MESH TO THE STEEL POSTS AT THE TOP, MIDDLE, AND BOTTOM. PLACING A 2'-0" FLAP OF THE WIRE MESH UNDER THE GRAVEL FOR ANCHORING IS RECOMMENDED.
4. PLACE CLEAN GRAVEL (NO DOT #5 OR #57 STONE) ON A 2:1 SLOPE WITH A HEIGHT OF 16 INCHES AROUND THE WIRE, AND SMOOTH TO AN EVEN GRADE.
5. ONCE THE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED, REMOVE ACCUMULATED SEDIMENT, AND ESTABLISH FINAL GRADING ELEVATIONS.
6. COMPACT THE AREA PROPERLY AND STABILIZED IT WITH GROUND COVER.



3 HARDWARE CLOTH AND GRAVEL INLET PROTECTION

NTS CLOSM STD. DTL. 30.09A (REV.1)



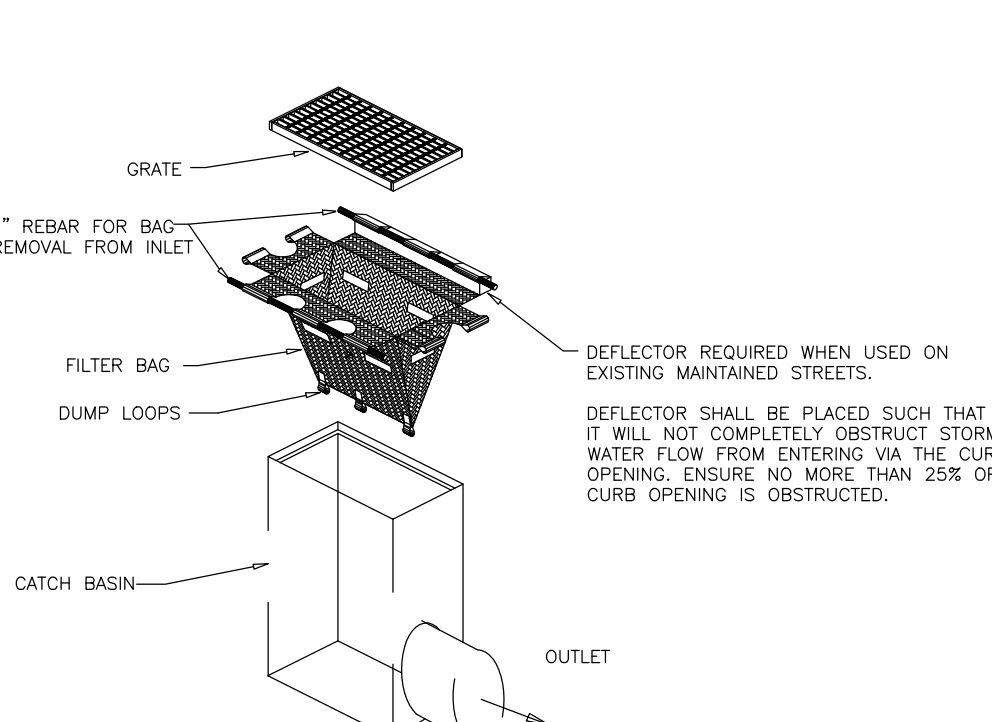
SECTION

4 CATCH BASIN INLET PROTECTION

NTS CLOSM STD. DTL. 30.15 (REV.13)

NOTES:

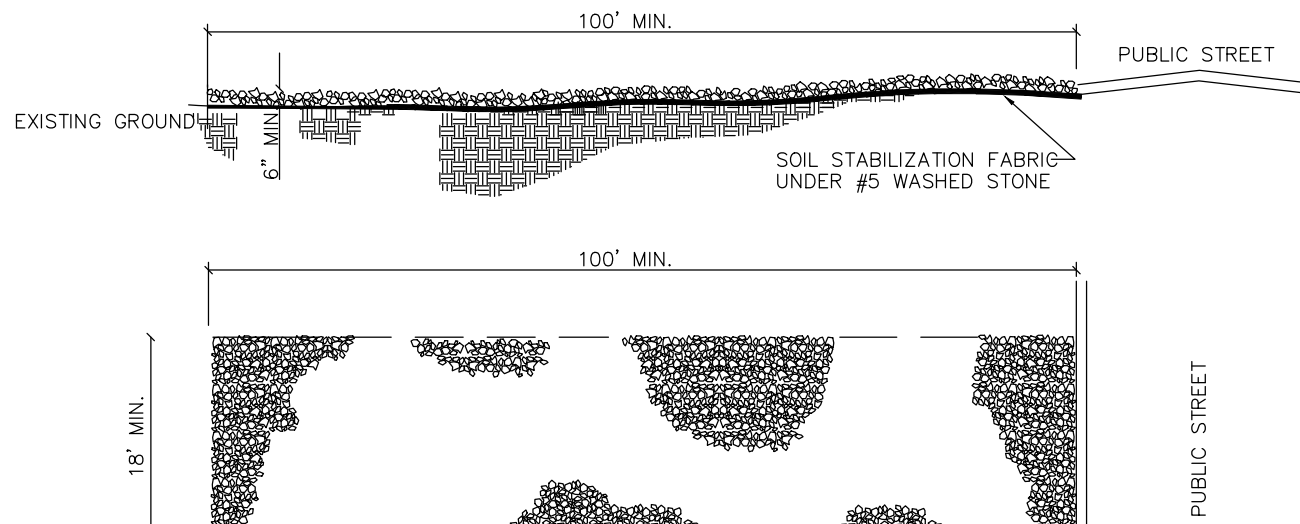
1. INLET MAINTENANCE SHALL BE DOCUMENTED IN PROJECT LOG BOOK.
2. FILTER TYPES SHALL BE APPROVED BY THE CITY INSPECTOR PRIOR TO INSTALLATION.
3. FILTER BAGS MAY BE REMOVED WHEN SITE IS STABILIZED AT THE DIRECTION OF THE ENGINEER.
4. FILTER BAGS SHALL BE REMOVED PRIOR TO STREET ACCEPTANCE AND/OR CLOSE OUT OF GRADING PERMIT.
5. FILTER BAGS SHALL BE CLEANED OR REPLACED ON A REGULAR BASIS (NOT BE MORE THAN HALF FULL AT ANY TIME).
6. FILTER BAGS MAY BE INSTALLED IN EXISTING CITY OR NCDOT ROADS AS LONG AS STORM DRAINAGE IS NOT IMPEDED.



INSTALLATION

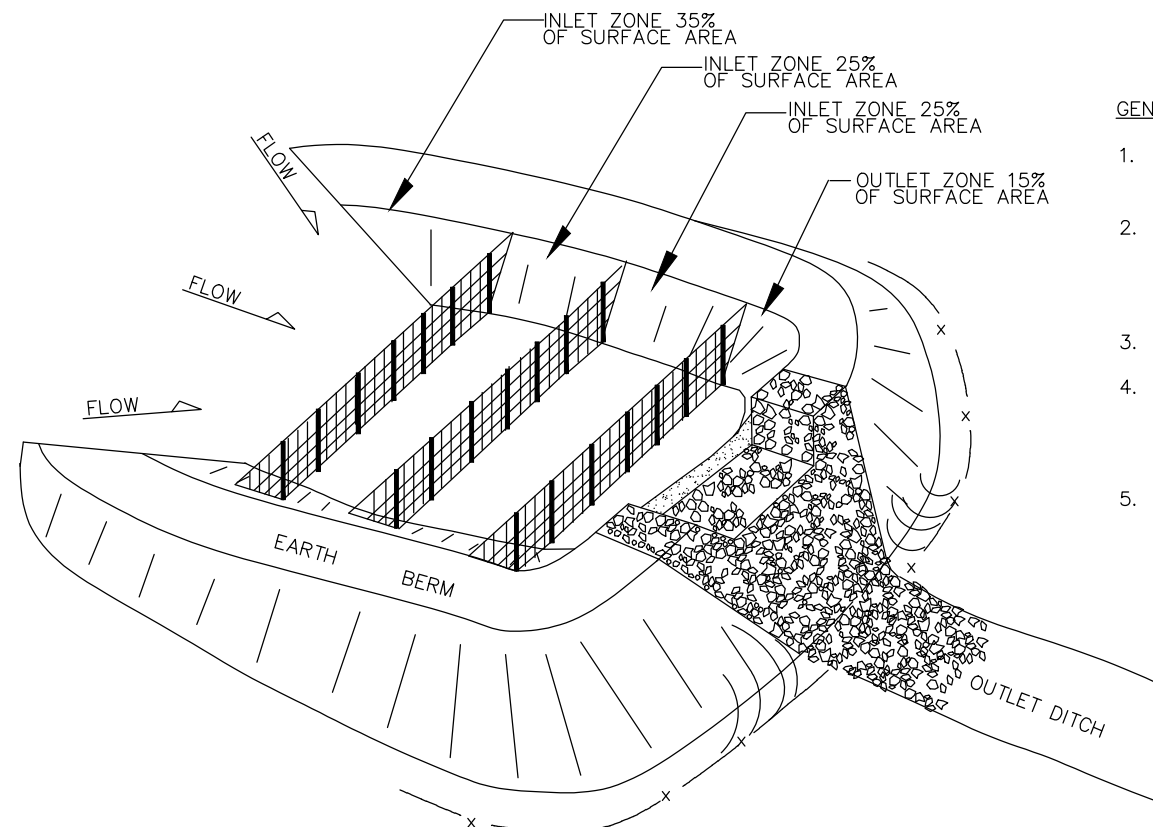
NOTES:

1. A STABILIZED ENTRANCE PAD OF #5 WASHED STONE AND RAILROAD BALLAST SHALL BE LOCATED WHERE TRAFFIC WILL ENTER OR LEAVE THE CONSTRUCTION SITE ONTO A PUBLIC STREET.
2. FILTER FABRIC OR COMPACTED CRUSHER RUN STONE SHALL BE USED AS A BASE FOR THE CONSTRUCTION ENTRANCE.
3. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC STREETS OR EXISTING PAVEMENT. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS WARRANT AND REPAIR OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
4. ANY SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC STREETS MUST BE REMOVED IMMEDIATELY. ANY AGGREGATE TRACKED INTO THE ROADWAY MUST BE SWEEP BACK ON SITE ON A NIGHTLY BASIS.
5. WHEN APPROPRIATE, WHEELS MUST BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTERING A PUBLIC STREET. WHEN WASHING IS REQUIRED, IT SHALL BE DONE IN AN AREA STABILIZED WITH CRUSHER STONE WHICH DRAINS INTO AN APPROVED SEDIMENT BASIN SEE STD. NO. 30.11B.
6. CDOT MAY REQUIRE A STANDARD COMMERCIAL DRIVEWAY (STD. 10.24 & 10.25) TO ACCESS THE CONSTRUCTION SITE IF THE DRIVEWAY IS ON A THOROUGHFARE.



5 STABILIZED CONSTRUCTION ENTRANCE

NTS CLOSM STD. DTL. 30.13A (REV.13)

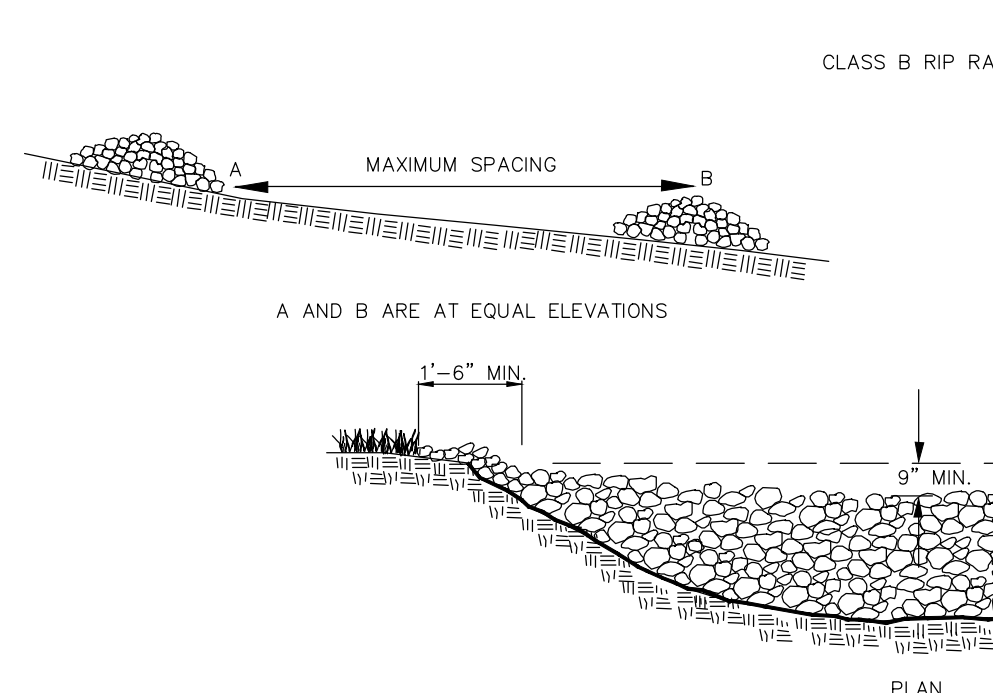


6 BAFFLE INSTALLATION

NTS CLOSM STD. DTL. 30.19 (REV.1)

GENERAL NOTES:

1. RIPRAP SIZE TO BE DESIGNED BY ENGINEER.
2. CHECK DAMS MAY BE USED IN SLOPING DITCHES OR CHANNELS TO SLOW VELOCITY OR TO CREATE SEDIMENT TRAPS.
3. ENSURE THAT MAXIMUM SPACING BETWEEN DAMS PLACES THE TOE OF THE UPSTREAM DAM AT THE SAME ELEVATION AS THE DOWNSTREAM DAM (SEE DIAGRAM BELOW).

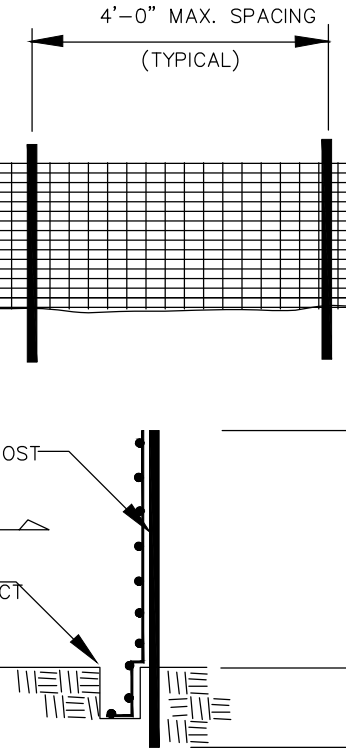


7 TEMPORARY ROCK CHECK DAM

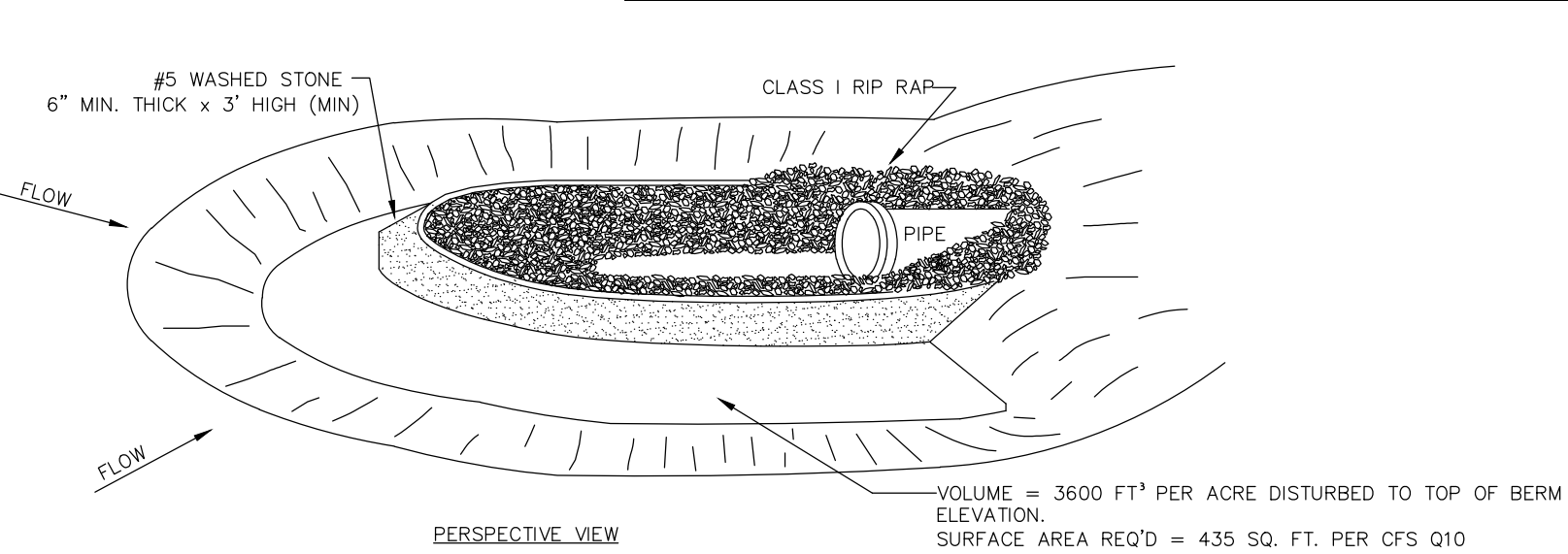
NTS CLOSM STD. DTL. 30.10

GENERAL NOTES:

1. DRIVE 5' STEEL POST AT LEAST 24" INTO SOLID GROUND.
2. USE STAPLES 1' APART HORIZONTALLY AND VERTICALLY TO ATTACH THE FILTER FABRIC TO THE WIRE FENCE.
3. MINIMUM BAFFLE SPACING IS 10'.
4. THE FLOOR OF THE BASIN IN THE OUTLET ZONE AND BERMS SHOULD BE SEEDED IMMEDIATELY AFTER THE BASIN IS CONSTRUCTED.
5. REFER TO NCSDPDM SECTION #6.65 FOR ADDITIONAL SPECIFICATIONS.



DATA BLOCK	
BASIN NO.	DRAINAGE AREA (ACRES)
DENuded AREA (ACRES)	BASIN VOLUME REQUIRED (CU. FT.)
BASIN SURFACE AREA REQUIRED (SQ. FT.)	CLEANOUT DEPTH (FT.)
H (FEET)	

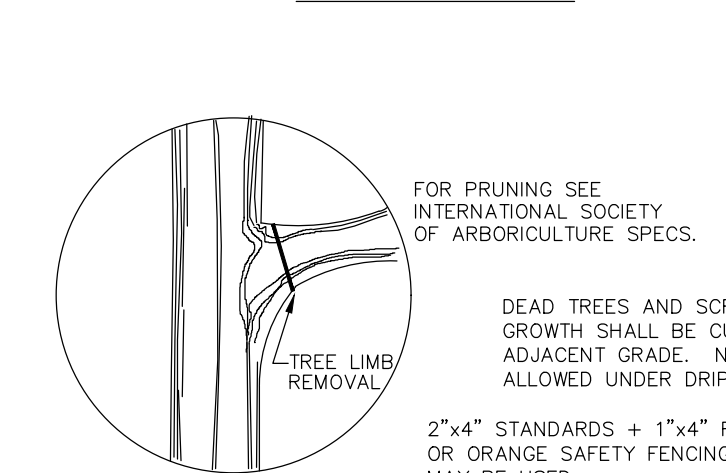
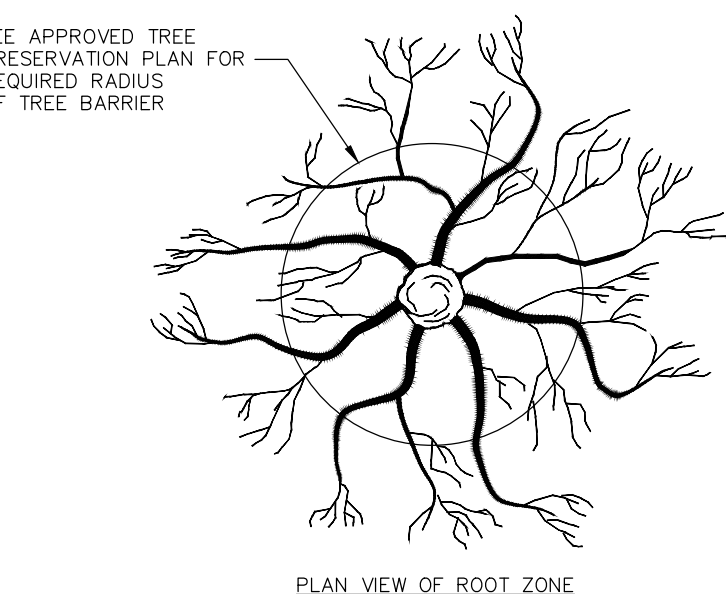


GENERAL NOTES:

1. GRAVEL AND RIP RAP FILTER BERM BASIN SHOULD BE USED TO PROTECT EXISTING PIPE INVERTS THAT DRAIN 5 ACRES OR LESS.
2. DIMENSIONS SHOWN ARE THE MINIMUM ACCEPTED UNLESS OTHERWISE NOTED.
3. CLEANOUT PRIOR TO SEDIMENT REACHING HALF OF BERM HEIGHT.

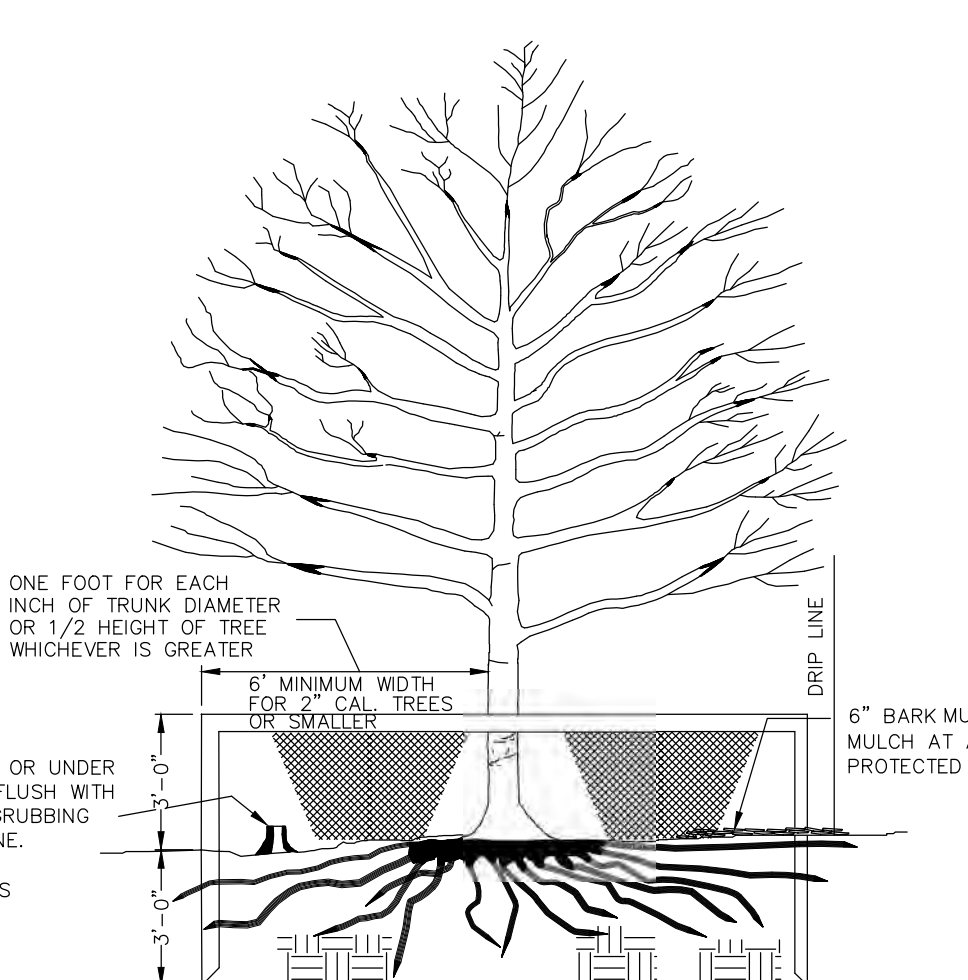
8 GRAVEL & RIP RAP FILTER BERM BASIN

NTS CLOSM STD. DTL. 30.12 (REV.1)



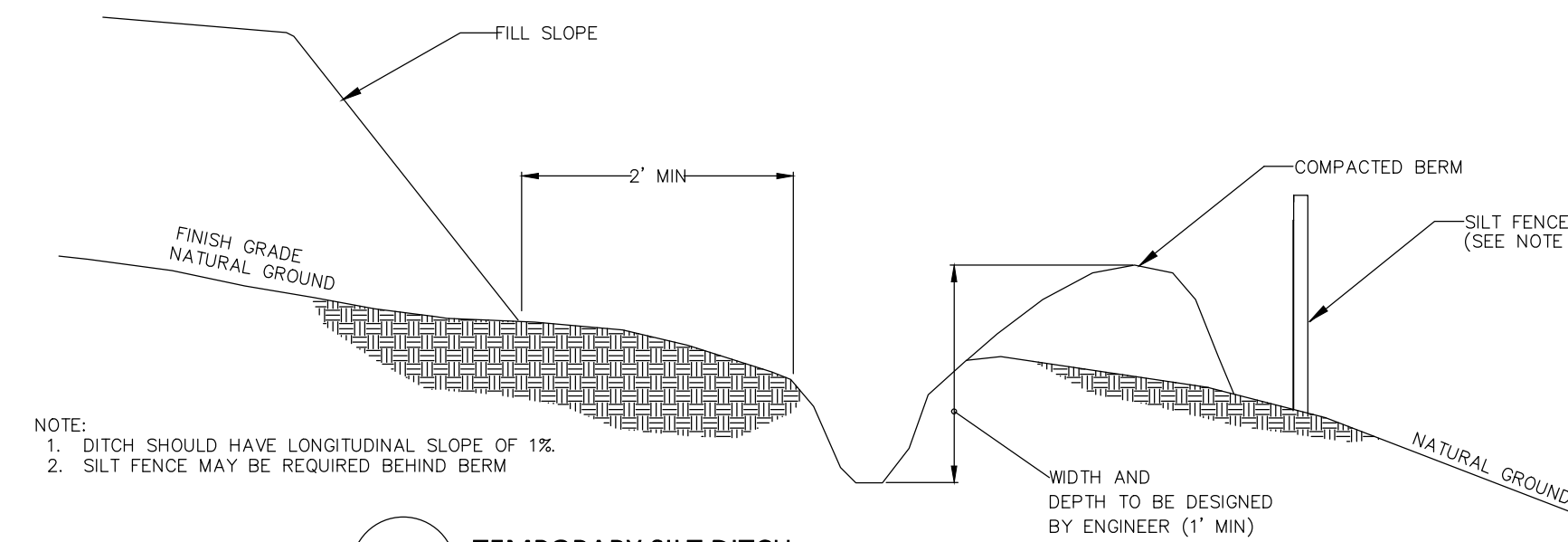
NOTES:

1. REMOVE ALL BARRIERS UPON COMPLETION OF PROJECT.
2. LANDSCAPING PLANS SHALL SHOW THE LOCATIONS OF ALL TREE PROTECTION FENCES.
3. REFER TO CITY OF CHARLOTTE LANDSCAPE CONSTRUCTION STANDARDS SECTION 01000 FOR GENERAL SPECIFICATION REGARDING TREE PROTECTION.



9 TREE PROTECTION DETAIL

NTS CLOSM STD. DTL. 01.002



10 TEMPORARY SILT DITCH

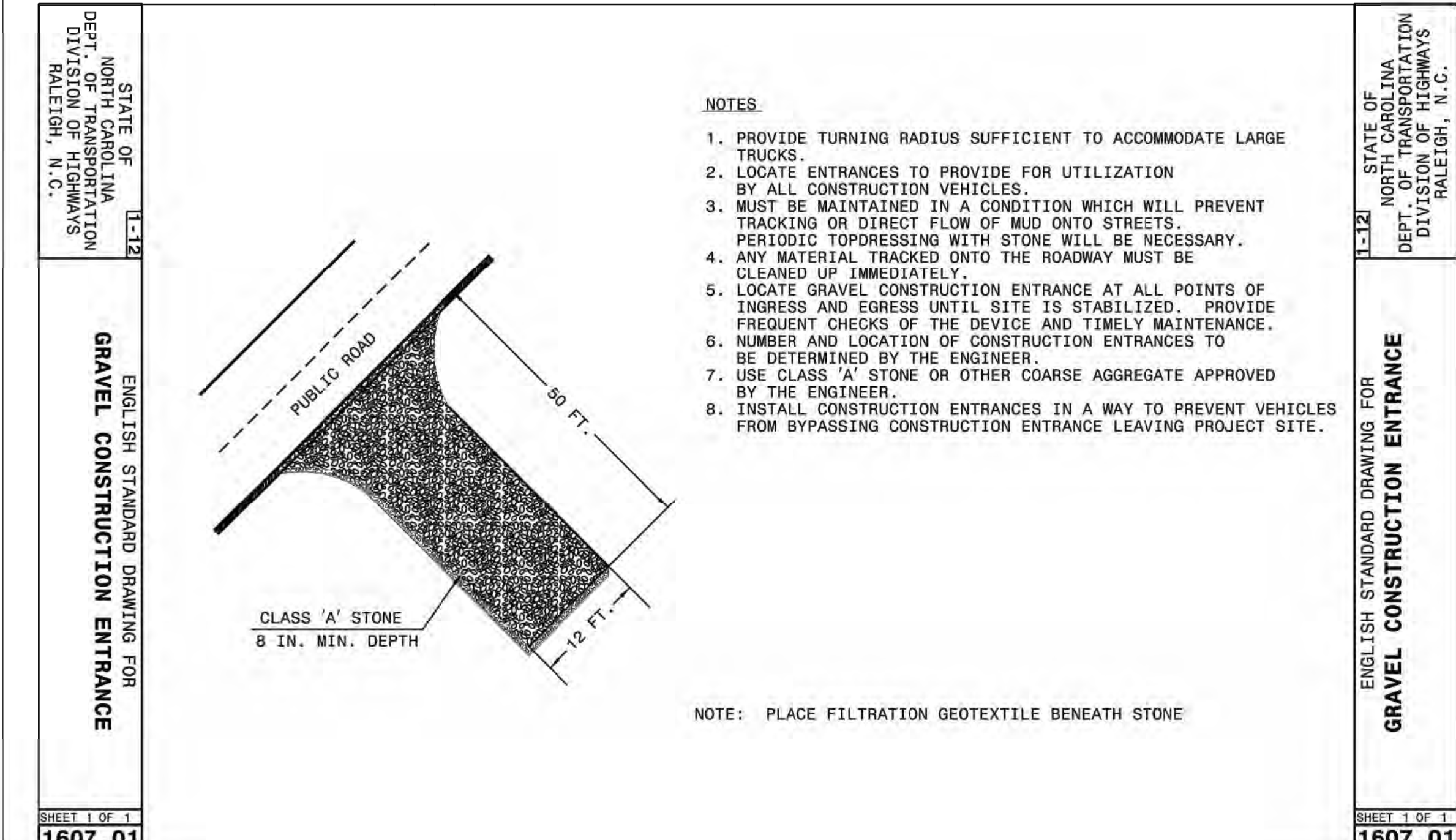
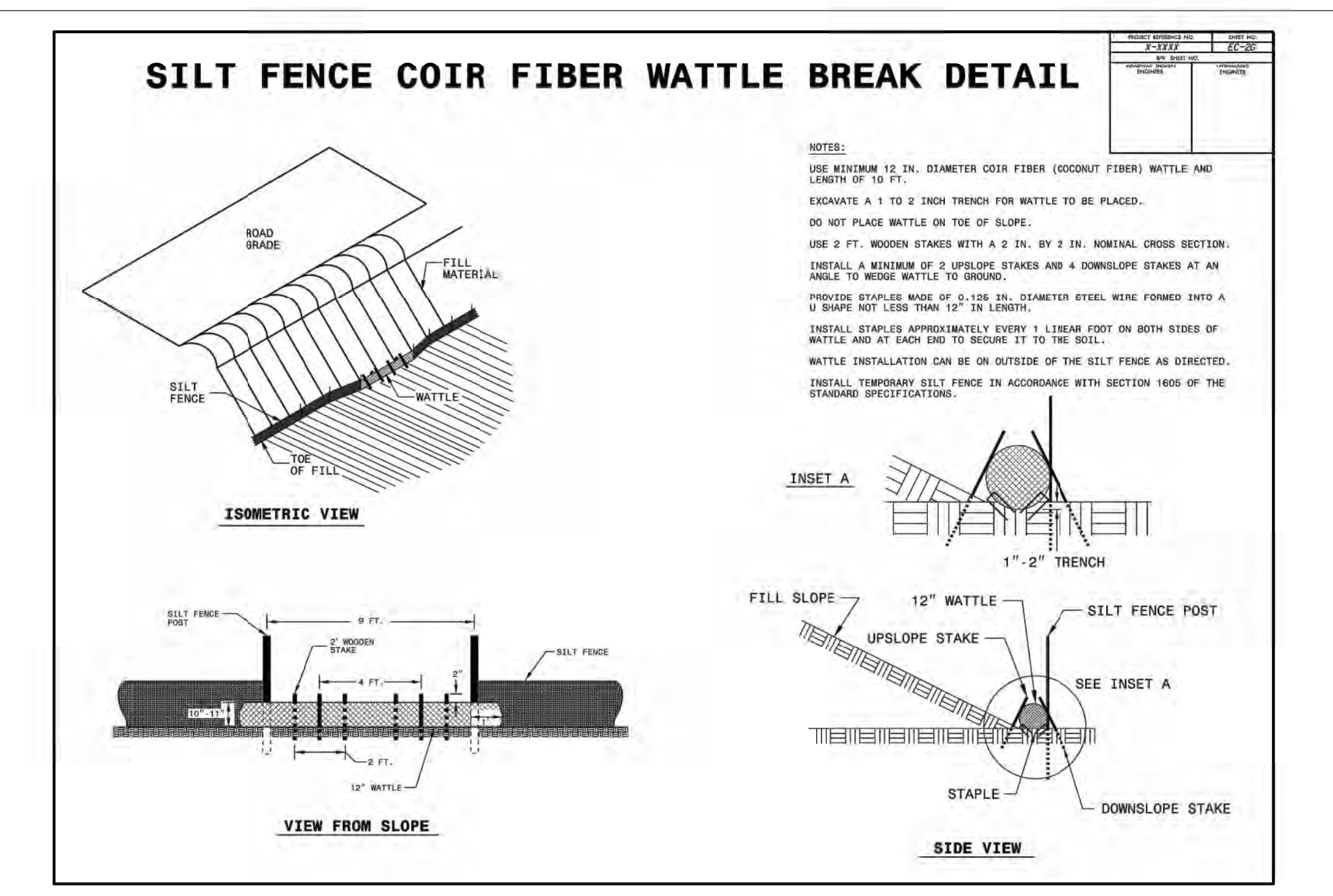
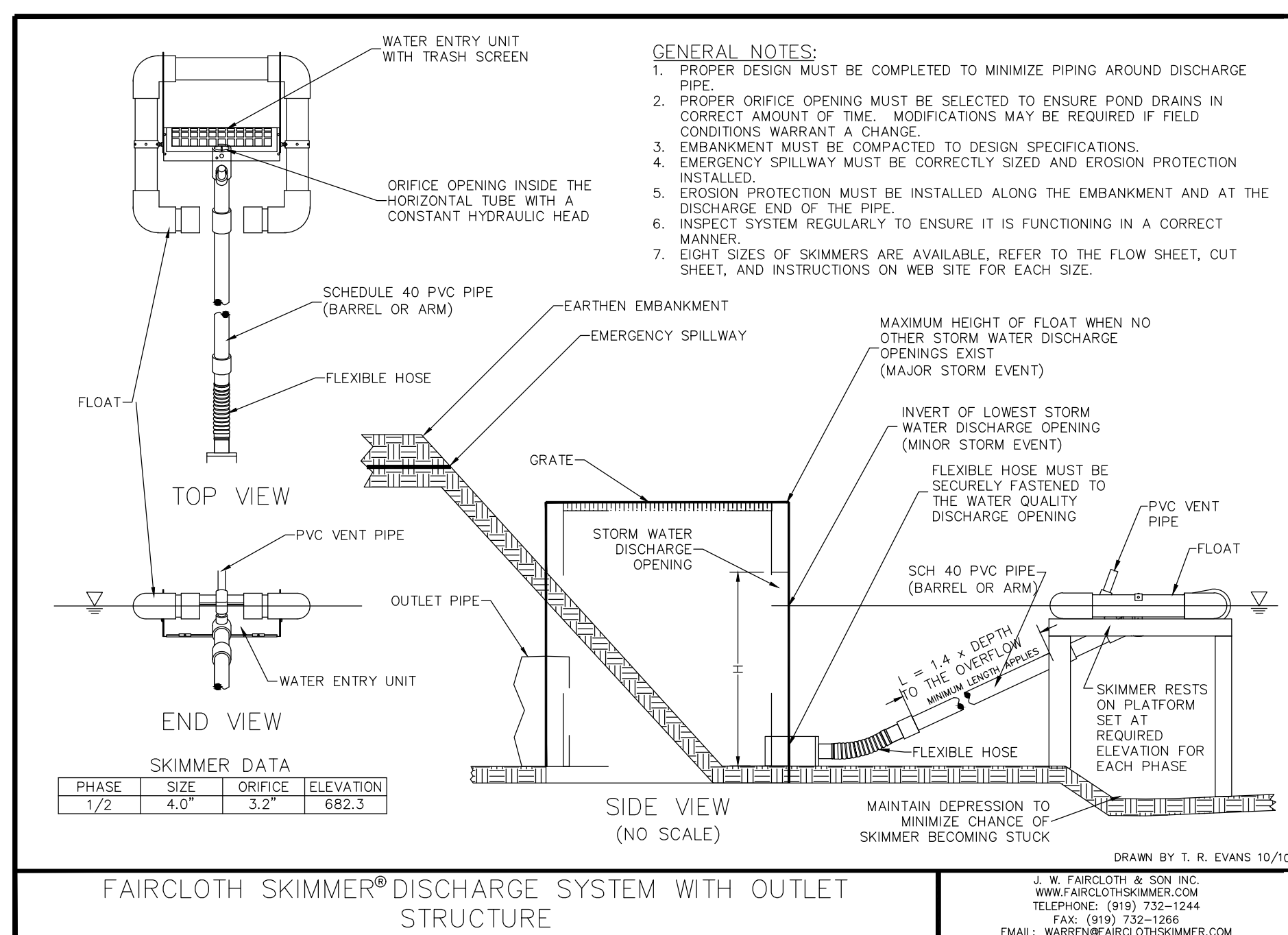
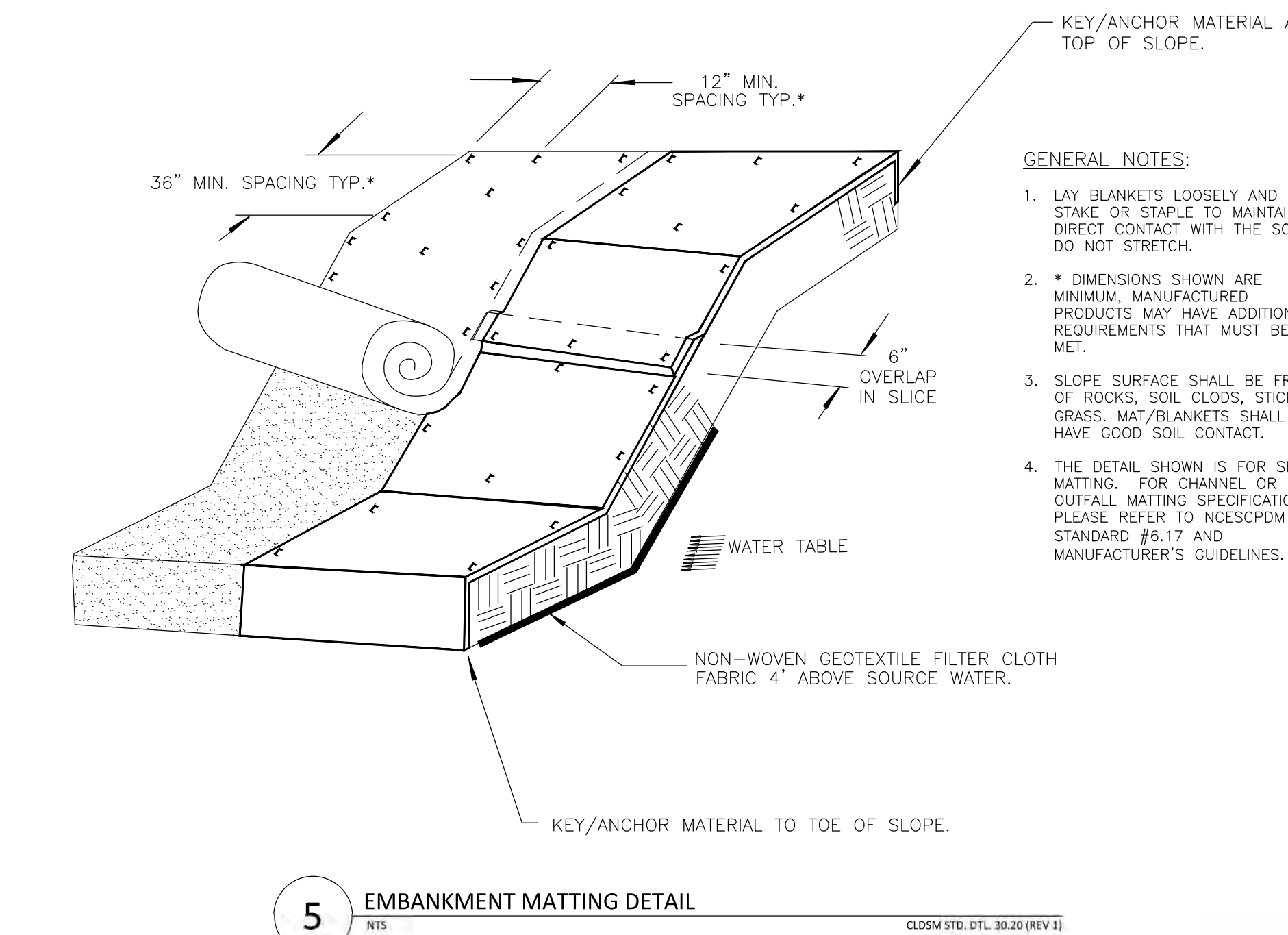
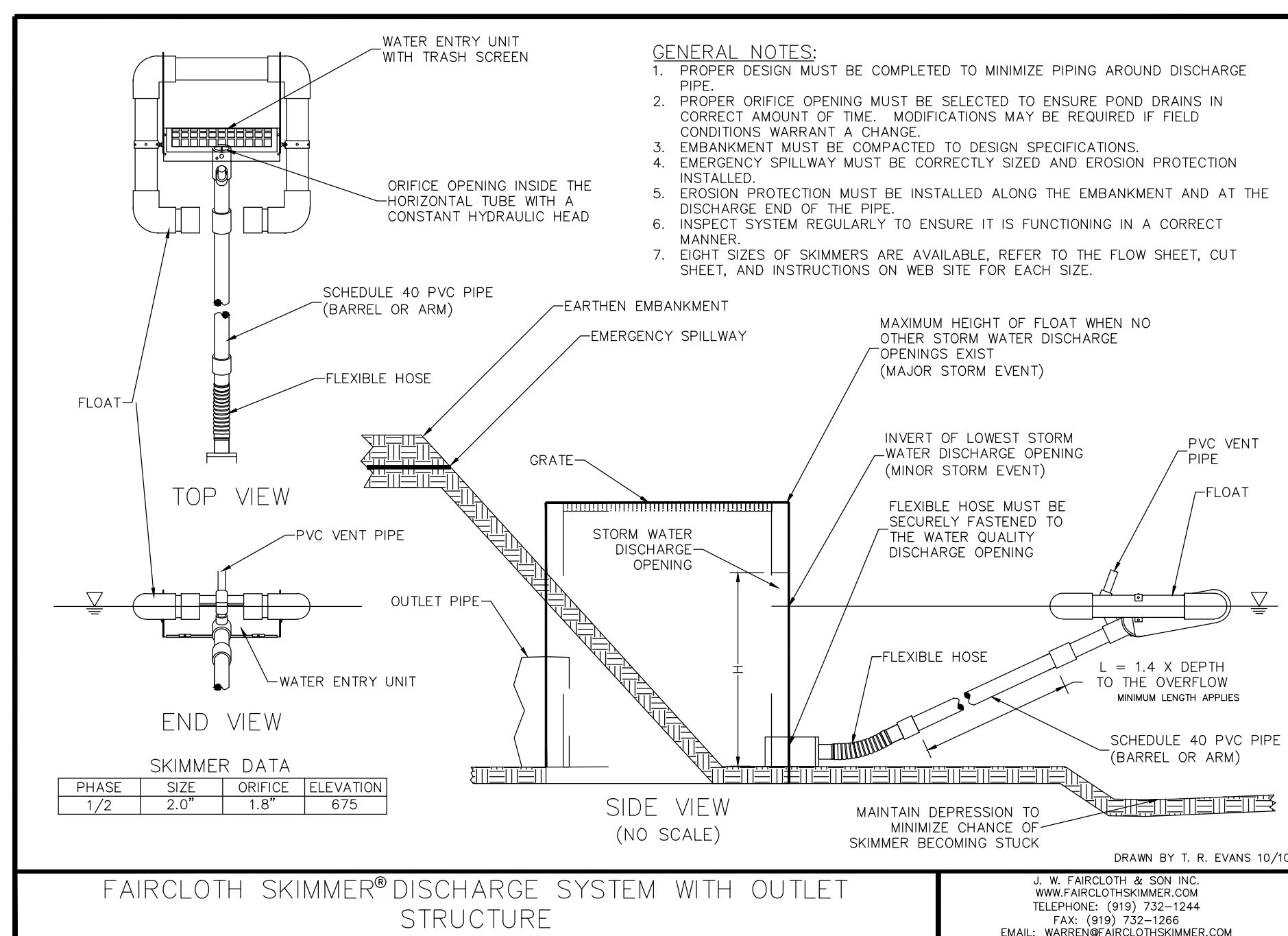
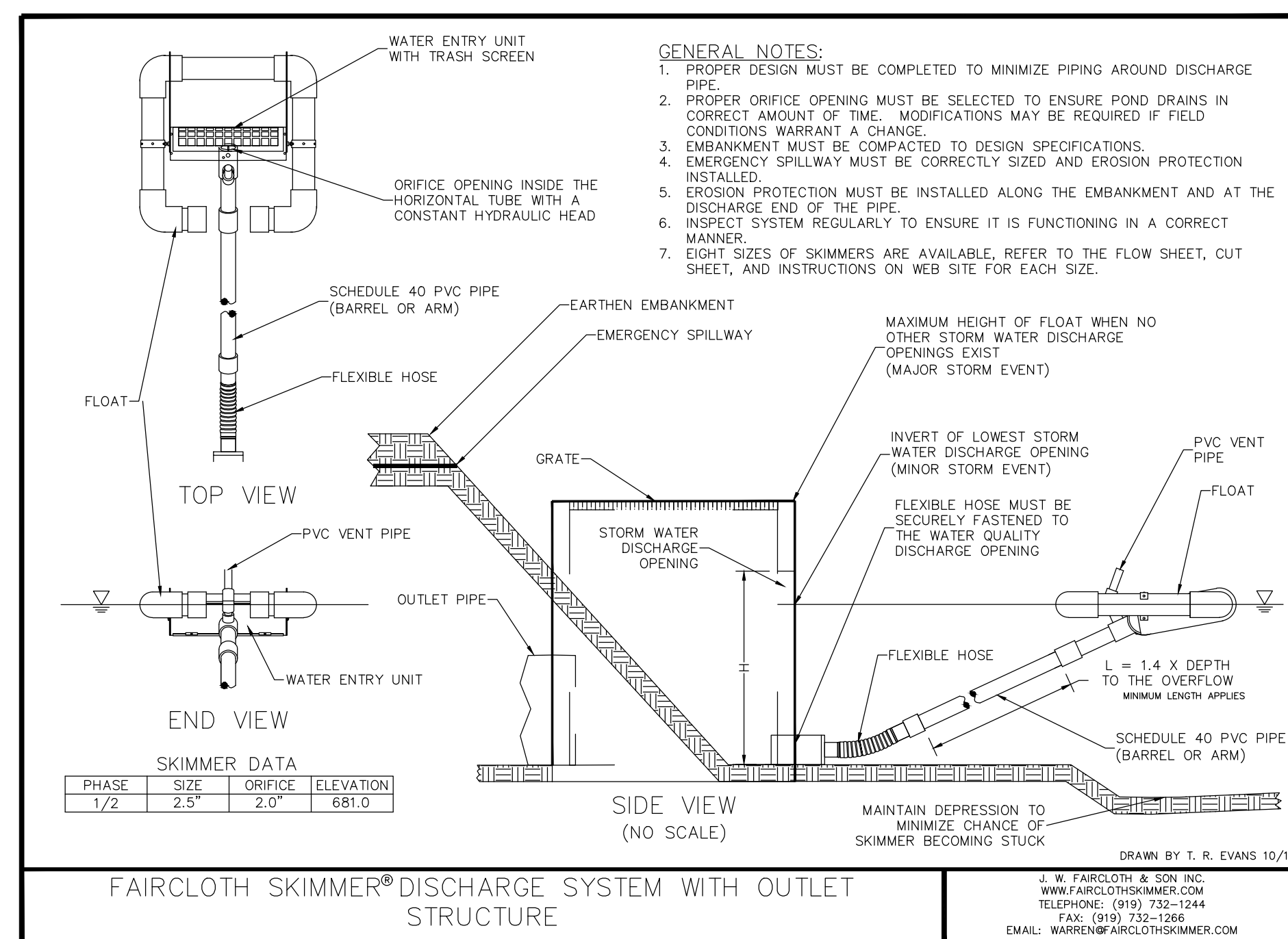
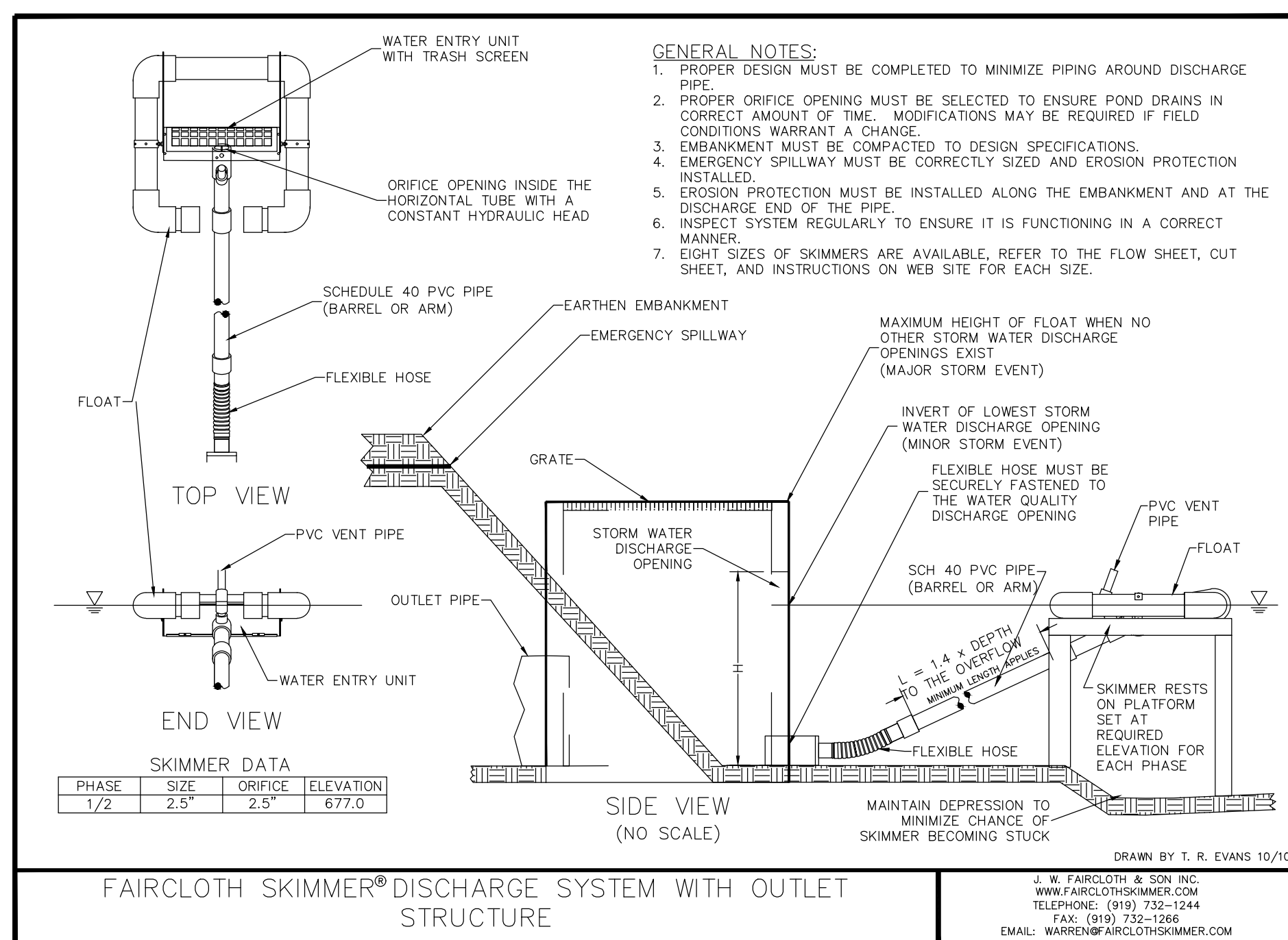
NTS CLOSM STD. DTL. 30.05

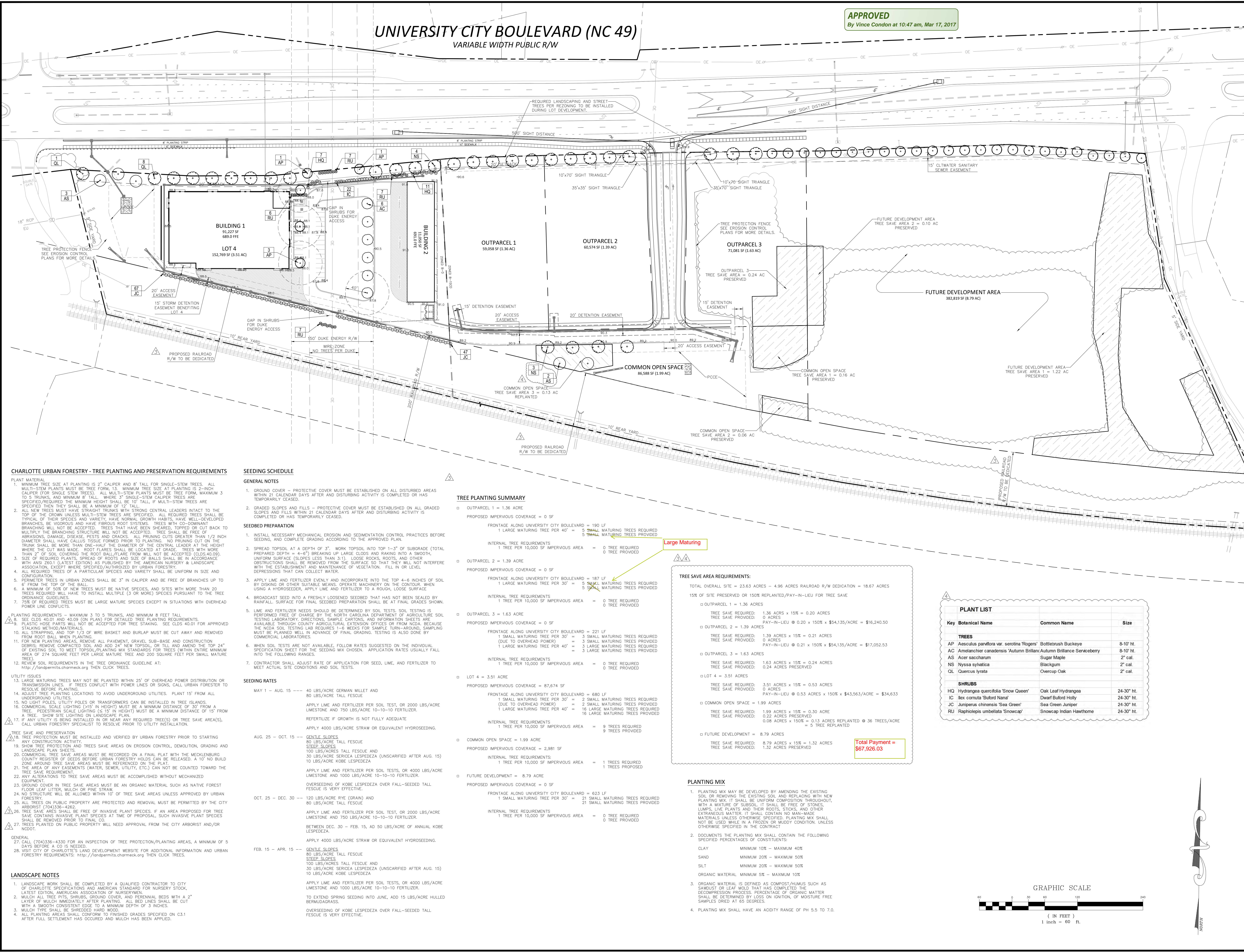
NOTE:

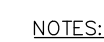
1. DITCH SHOULD HAVE LONGITUDINAL SLOPE OF 1%.
2. SILT FENCE MAY BE REQUIRED BEHIND BERM.

REVISIONS	DATE	REVISED PER COMMENTS
1	07/21/17	

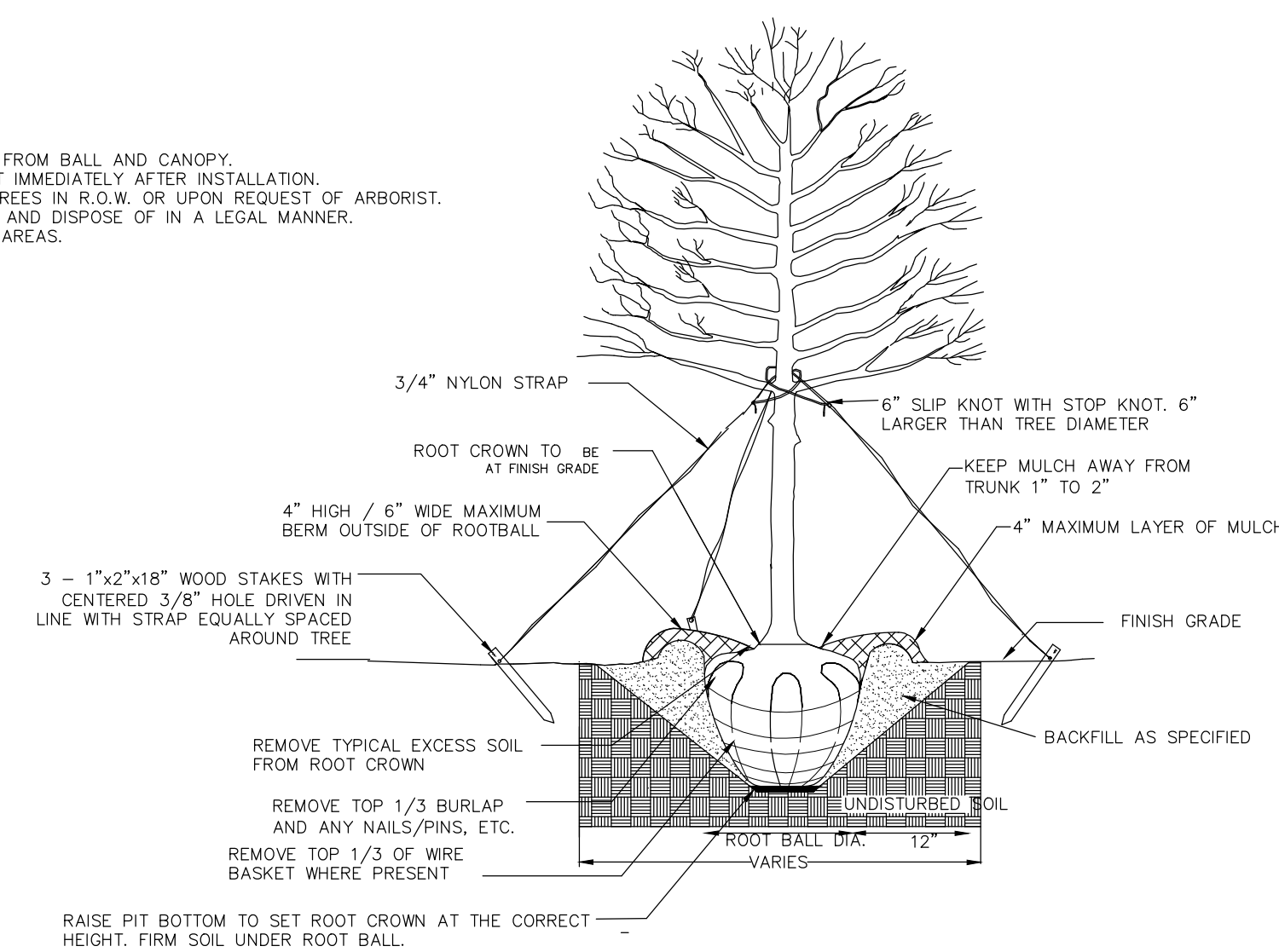
JOB #	16022
DATE:	12/16/16
SCALE:	NTS
DRAWN BY:	BY
APPROVED BY:	JCO







- NOTES:
1. REMOVE WIRE AND NYLON TWINE FROM BALL AND CANOPY.
 2. SOAK ROOT BALL AND PLANT PIT IMMEDIATELY AFTER INSTALLATION.
 3. STAKING IS REQUIRED FOR ALL TREES IN R.O.W. OR UPON REQUEST OF ARBORIST.
 4. REMOVE EXCESS SOIL FROM SITE AND DISPOSE OF IN A LEGAL MANNER.
 5. RESEED UNMULCHED, DISTURBED AREAS.



ALL TREES SHALL MEET AMERICAN STANDARD FOR NURSERY STOCK (ANSI Z60.1-2004)					
FOR EXAMPLE:	CALIPER	HEIGHT (RANGE)	MAX. HEIGHT	MIN. ROOT BALL DIA.	MIN. ROOT BALL DEPTH
	2"	12-14'	16'	24"	16"
	3"	14-16'	18'	32"	21"

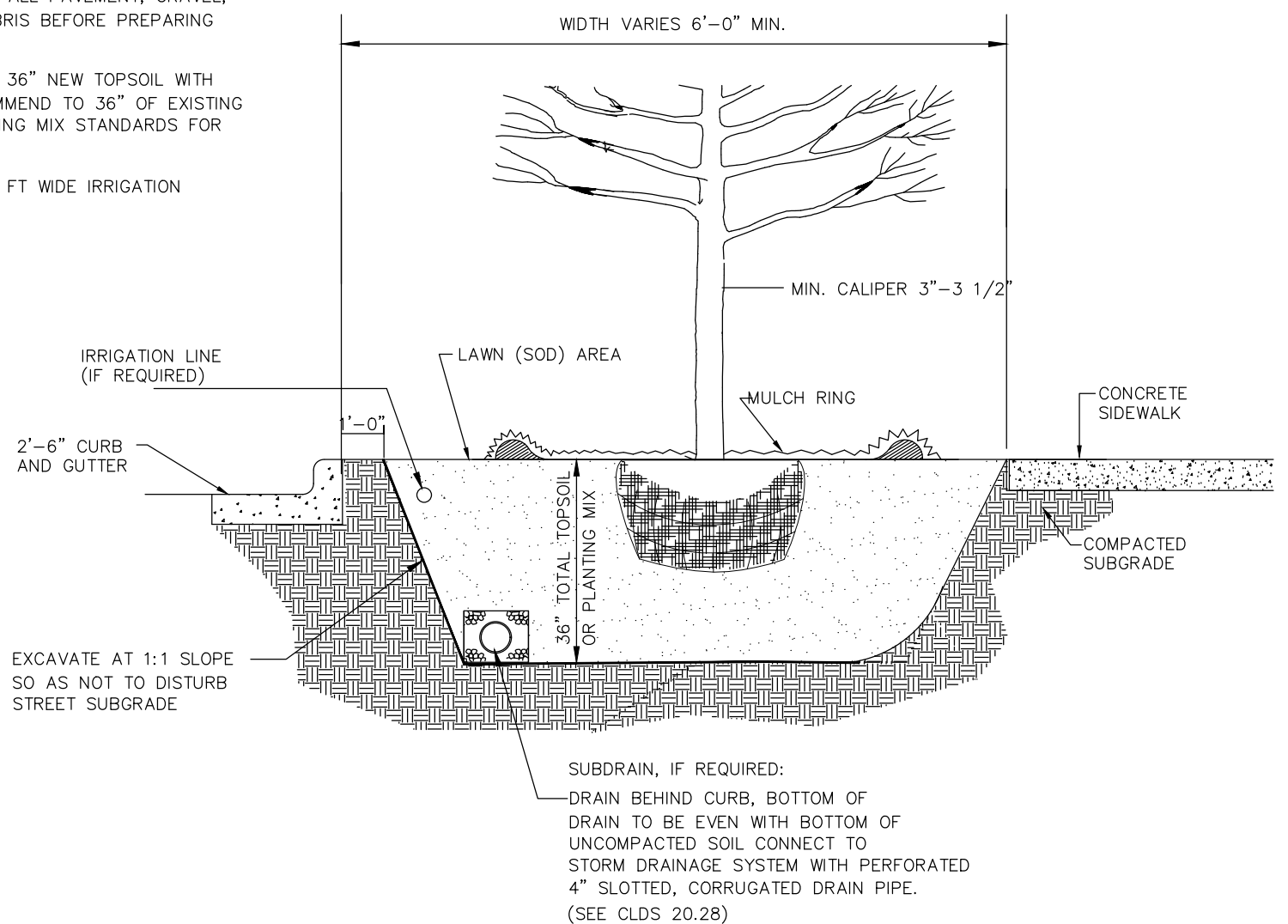
1 TREE PLANTING (FOR SINGLE AND MULTI-STEM TREES)

NTS

CLOSURE STD. DTL. 40.00

- NOTE

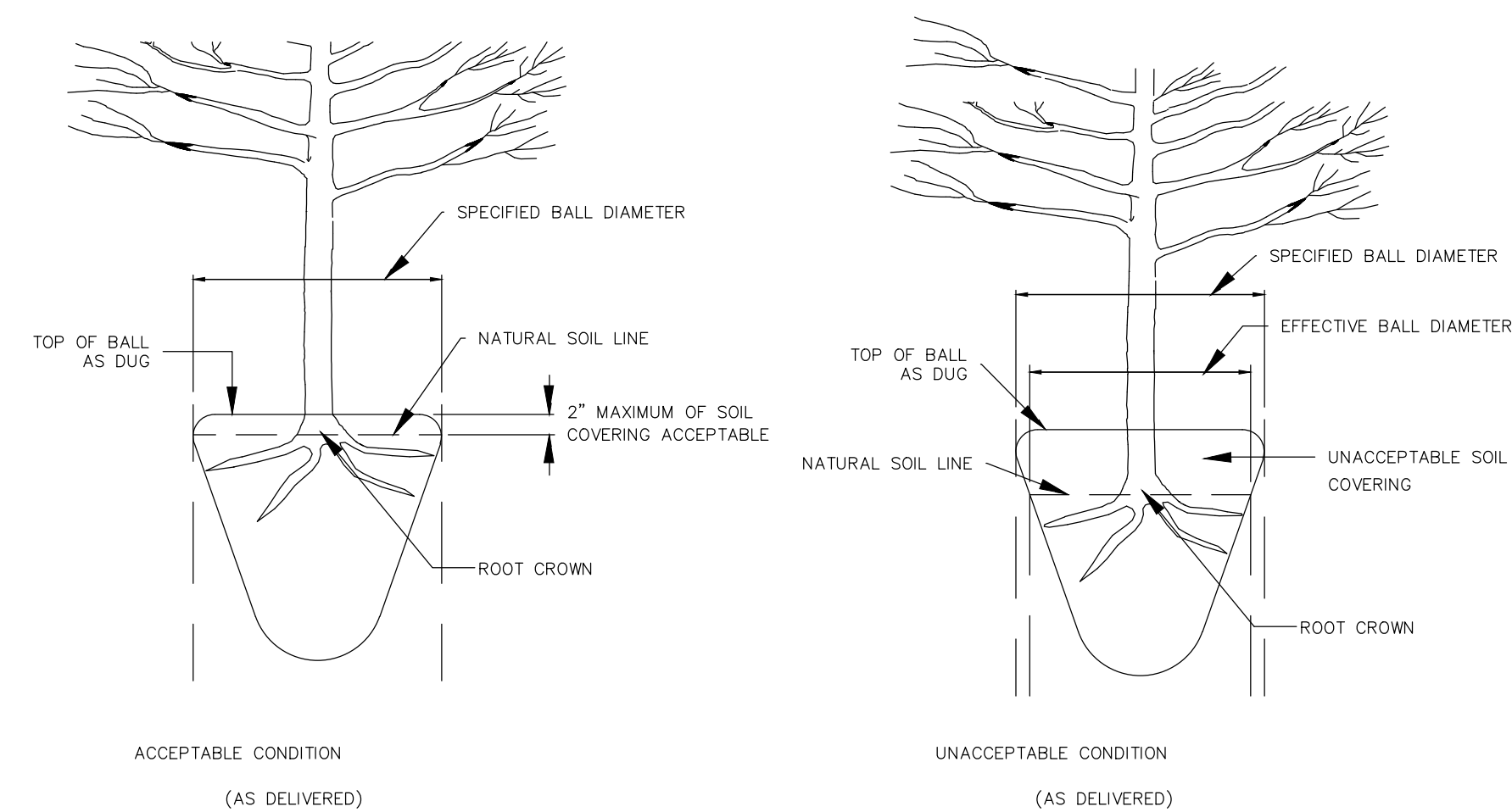
1. FOR NEW PLANTING AREAS, REMOVE ALL PAVEMENT, GRAVEL, SUB-BASE AND CONSTRUCTION DEBRIS BEFORE PREPARING SOIL AND PLANTING TREES
2. REMOVE COMPACTED SOIL AND ADD 36" NEW TOPSOIL WITH PLANT MIX OR UNCOMPACT AND AMMEND TO 36" OF EXISTING SOIL TO MEET TOPSOIL WITH PLANTING MIX STANDARDS FOR TREES. (SEE DETAIL)
3. IF PLANTING STRIP IS LESS THAN 8 FT WIDE IRRIGATION AND SUBDRAIN ARE REQUIRED.



6' TREE PLANTING STRIP UMUD ONLY
(WITH IRRIGATION AND DRAINAGE)

NTS

CLOSM STD. DTL. 40.06 (REV 3)



NOTE:
A ROOT COLLAR EXCAVATION FOR ALL TREES SPECIFIED
WILL BE DONE BY THE CITY ARBORIST TO ENSURE THAT
TREES WERE NOT PLANTED/GROWN TOO DEEPLY AT SOURCE
(NURSERY). LANDSCAPE CONTRACTOR SHALL HAVE SUPPLIER
MARK GROUND LEVEL LINE ABOVE ROOT BALL. IF CITY ARBORIST
DETERMINES THAT THERE IS EXCESSIVE SOIL OVER THE ROOT
CROWN, THESE TREES WILL BE REJECTED.

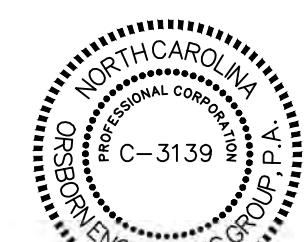
2 ROOT CROWN DEPTHS

NTS

CLOSM STD. DTL. 40.0%

LANDSCAPE DETAILS
FOR
HIGHWAY 49 SELF-STORAGE
11820 UNIVERSITY CITY BOULEVARD
CHARLOTTE, NC 28213

ROBERT HIGH
DEVELOPMENT, LLC
223 GREENVILLE AVENUE
WILMINGTON, NC 28403

[illegible]

JOB #	16022
DATE:	12/16/16
SCALE:	NTS
DRAWN BY:	BY
APPROVED BY:	JCO

L1.2