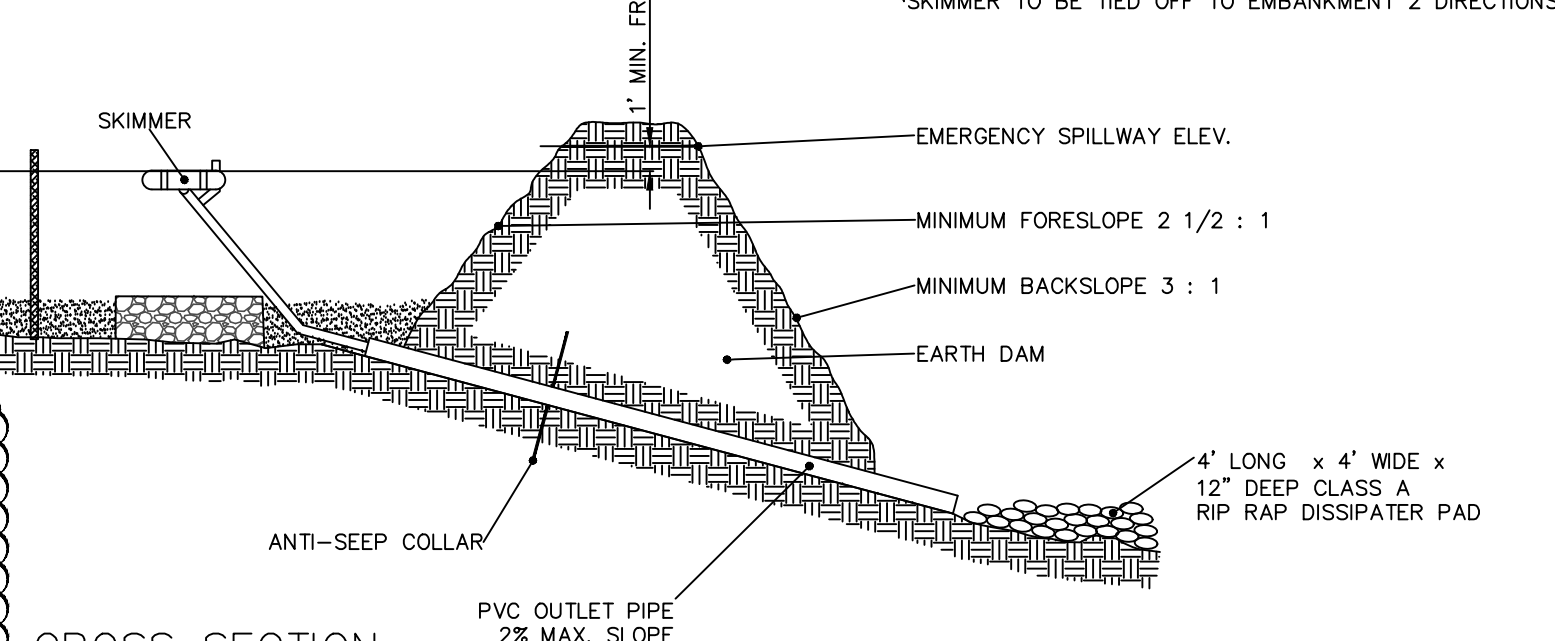
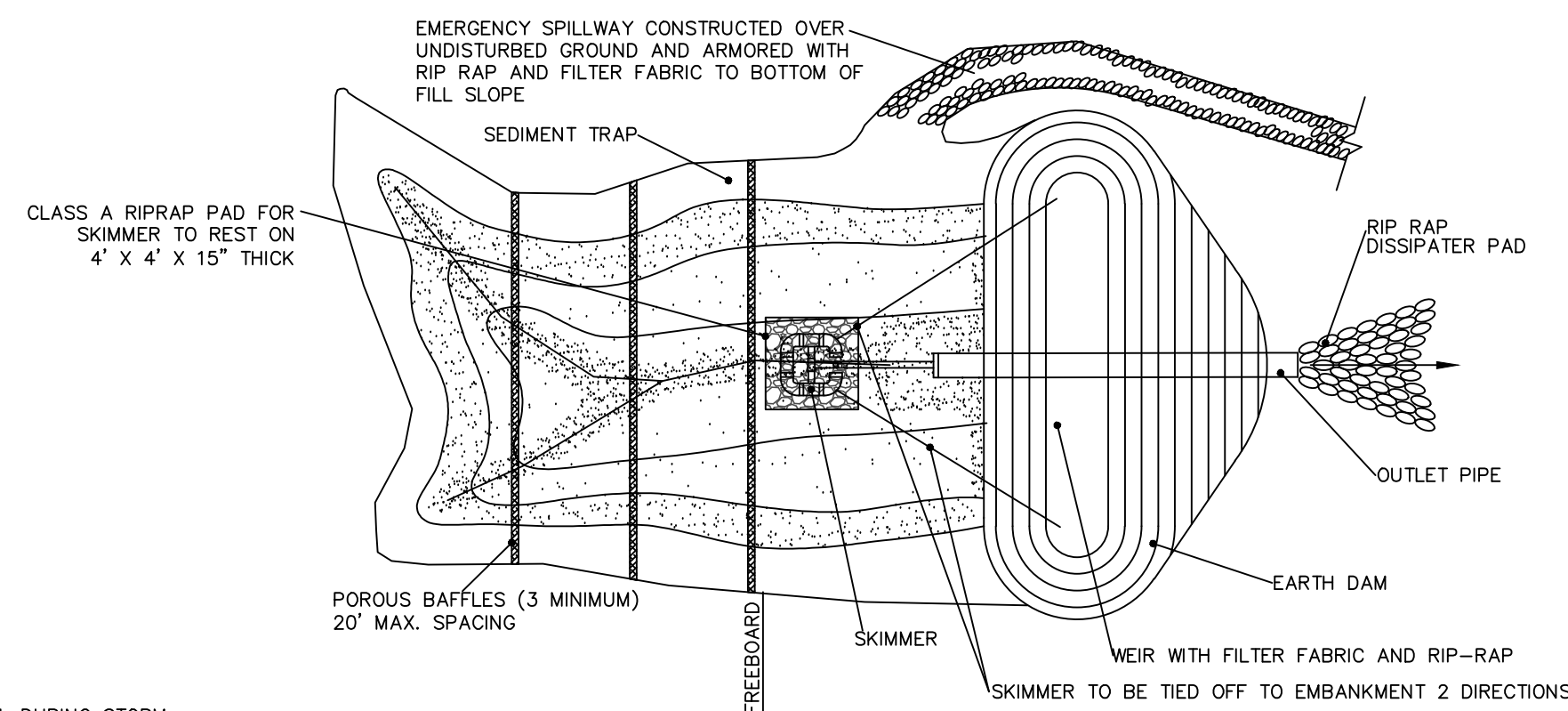


SKIMMER DETAIL
END VIEW
PLAN VIEW



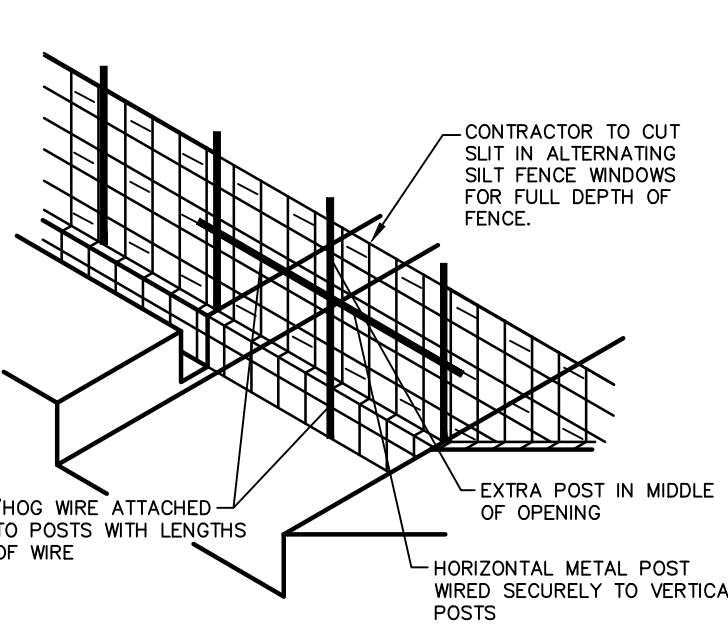
TEMPORARY SKIMMER SEDIMENT BASIN
NTS

NOTES:
1. ANY EXISTING SKIMMER SEDIMENT BASINS PREVIOUSLY APPROVED SHALL MAINTAINED PER THEIR ORIGINAL DIMENSIONS AND IN ACCORDANCE WITH THIS DETAIL.

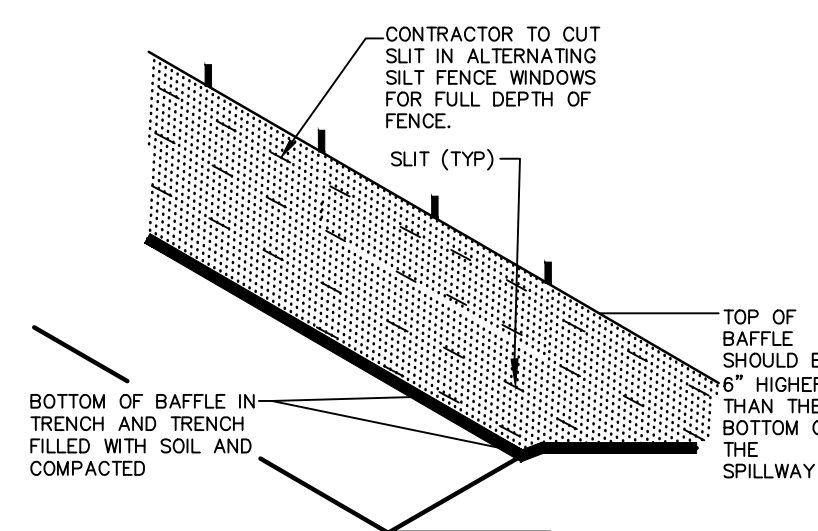
BASIN #	DISTURBED AREA (ac)	TOTAL DRAINAGE AREA (ac)	REQUIRED STORAGE	REQUIRED SURFACE AREA	MINIMUM DEPTH	BOTTOM ELEVATION	TOP WIDTH	TOP LENGTH	PROVIDED STORAGE	PROVIDED SURFACE AREA	STORAGE/SPILLWAY ELEVATION	SPILLWAY WIDTH	TOP OF DAM ELEVATION	SKIMMER SIZE	SKIMMER ORIFICE DIAMETER
STAGE 2															
BMP #35	9.91	13.02	35,680 CF	23,160 SF	10.0'	485.0'	PER PLAN	PER PLAN	135,775 CF	29,897 SF	495.0'	20.0'	498.0'	6.0"	5.4"
BMP #36	5.96	5.96	21,460 CF	10,600 SF	11.0'	502.5'	PER PLAN	PER PLAN	57,362 CF	14,933 SF	512.5'	20.0'	514.5'	4.0"	3.3"
STAGE 3															
BMP #35	15.17	16.72	54,610 CF	23,710 SF	10.0'	485.0'	PER PLAN	PER PLAN	123,108 CF	23,730 SF	495.0'	20.0'	498.0'	6.0"	5.4"
BMP #36	8.08	10.33	29,090 CF	14,650 SF	11.0'	502.5'	PER PLAN	PER PLAN	57,362 CF	14,933 SF	512.5'	20.0'	514.5'	4.0"	3.3"

*SKIMMER SHALL ATTACH TO PERMANENT RISER AT THE EMERGENCY DRAWDOWN DEVICE.

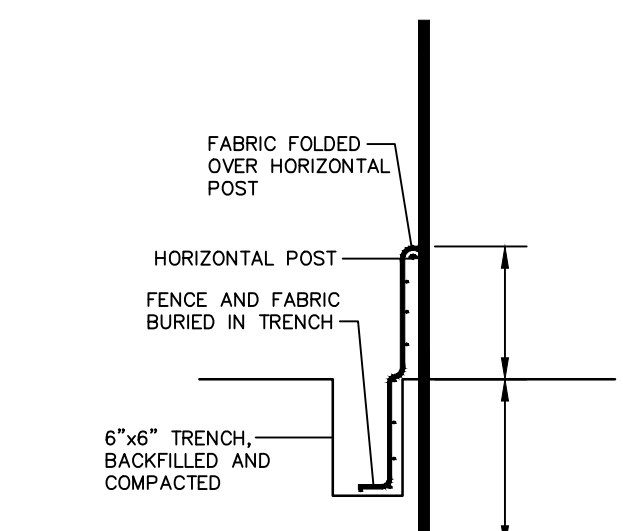
BAFFLE INSTALLATION DETAIL



BAFFLE INSTALLATION - STEP 1



BAFFLE INSTALLATION - STEP 2



SECTION AT OPENING

NOTES:
1. DRIVE STEEL FENCE POST AT LEAST 18" INTO SOLID GROUND.
2. WOOD POSTS ARE NOT ACCEPTABLE.
USE STAPLES 1" APART TO ATTACH FABRIC TO "HOG WIRE".
BAFFLE SPACED AS PER APPROVED PLAN.

TDD #	TOTAL LENGTH	SLOPE (%)	LINER	RECEIVING SLOPE DRAIN SIZE (IN.)
201	1008'	4.4	PS50	24
202	118'	5.9	SYNTHETIC MAT	30
203	192'	6.3	SYNTHETIC MAT	18
204	347'	3.3	SYNTHETIC MAT	15
205	108'	5.1	STRAW W/NET	15
206	170'	6.5	STRAW W/NET	15

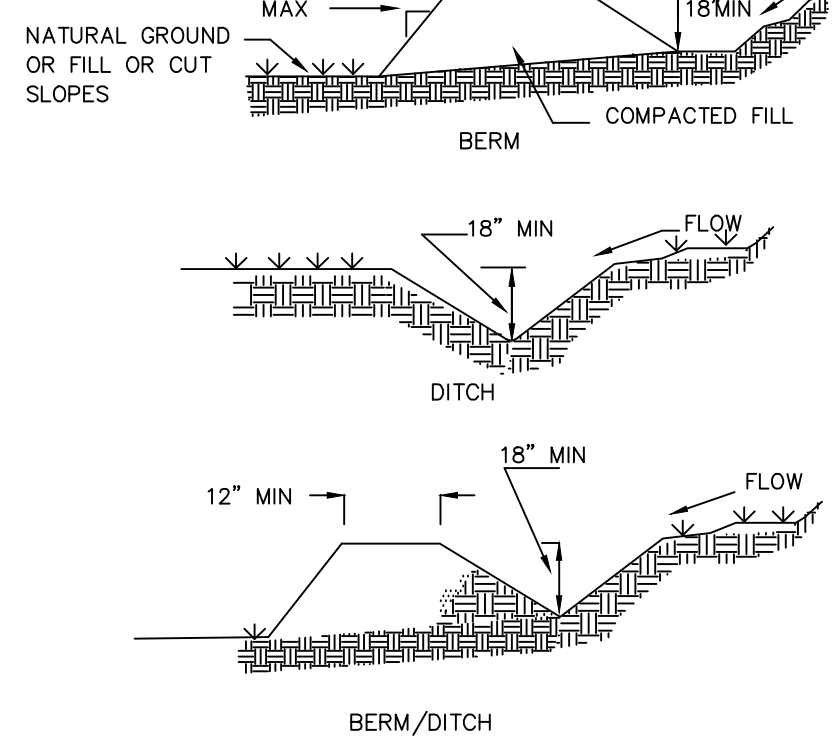
NOTES:

POSITIVE GRADE MUST BE PROVIDED TO ASSURE DRAINAGE. IF SLOPE EXCEEDS 2%, SEED AND MULCH DIVERSION. TRY NOT TO EXCEED 5% MAXIMUM D.A. = 5 ACRES WITHOUT SUPPORTING CALCS. DIVERSIONS AT THE TOP OF SLOPES MUST EMPTY INTO AN APPROVED SLOPE DRAIN. BERM/DITCH IS MOST COMMONLY USED.

- MACHINE COMPACTION OF ALL FILL IS REQUIRED. DIVERSIONS SUFFICIENT TO DIRECT ALL SEDIMENT-LADEN STORMWATER INTO A SEDIMENT CONTROL DEVICE MUST BE INSTALLED PRIOR TO CLEARING AND GRUBBING OF THE AREA (OR IN CONJUNCTION WITH THIS OPERATION) IF SEDIMENT CONTROLS AND DIVERSIONS ARE INSTALLED AS EACH CRITICAL POINT IS REACHED.
- DIVERSIONS SHOULD BE LOCATED TO MINIMIZE DAMAGES BY CONSTRUCTION OPERATIONS.
- DIVERSIONS SHOULD BE SEEDED AND MULCHED IF THEY ARE TO REMAIN IN PLACE OVER 30 DAYS.
- CHECK DEVICE AFTER EACH RAIN, BUT ONCE A WEEK REGARDLESS. REPAIR AS NECESSARY.

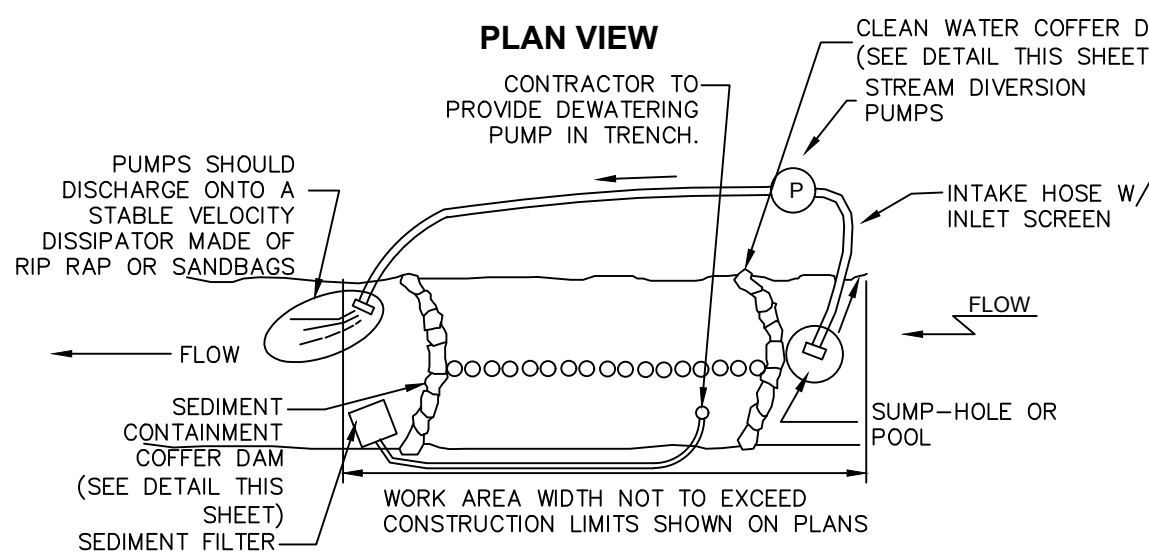
MAINTENANCE:

- INSPECT TEMPORARY DIVERSIONS ONCE A WEEK AND AFTER EVERY RAINFALL. IMMEDIATELY REMOVE SEDIMENT FROM THE FLOW AREA AND REPAIR THE DIVERSION RIDGE. CAREFULLY CHECK OUTLETS AND MAKE TIMELY REPAIRS AS NEEDED. WHEN THE AREA PROTECTED IS PERMANENTLY STABILIZED, REMOVE THE RIDGE AND THE CHANNEL TO BLEND WITH THE NATURAL GRADE LEVEL AND APPROPRIATELY STABILIZE IT.
- ALL TEMPORARY DIVERSION AND CLEAN WATER DITCHES SHALL BE MAINTAINED PER THEIR ORIGINAL DESIGN DIMENSIONS DURING CONSTRUCTION ACTIVITIES. ANY DITCHES THAT REQUIRE REMOVAL OR RELOCATION SHALL RECEIVE APPROVAL FROM CHATHAM COUNTY EROSION CONTROL INSPECTOR.



TEMPORARY DIVERSION/CLEAN WATER DIVERSION DITCH
NTS

PLAN VIEW



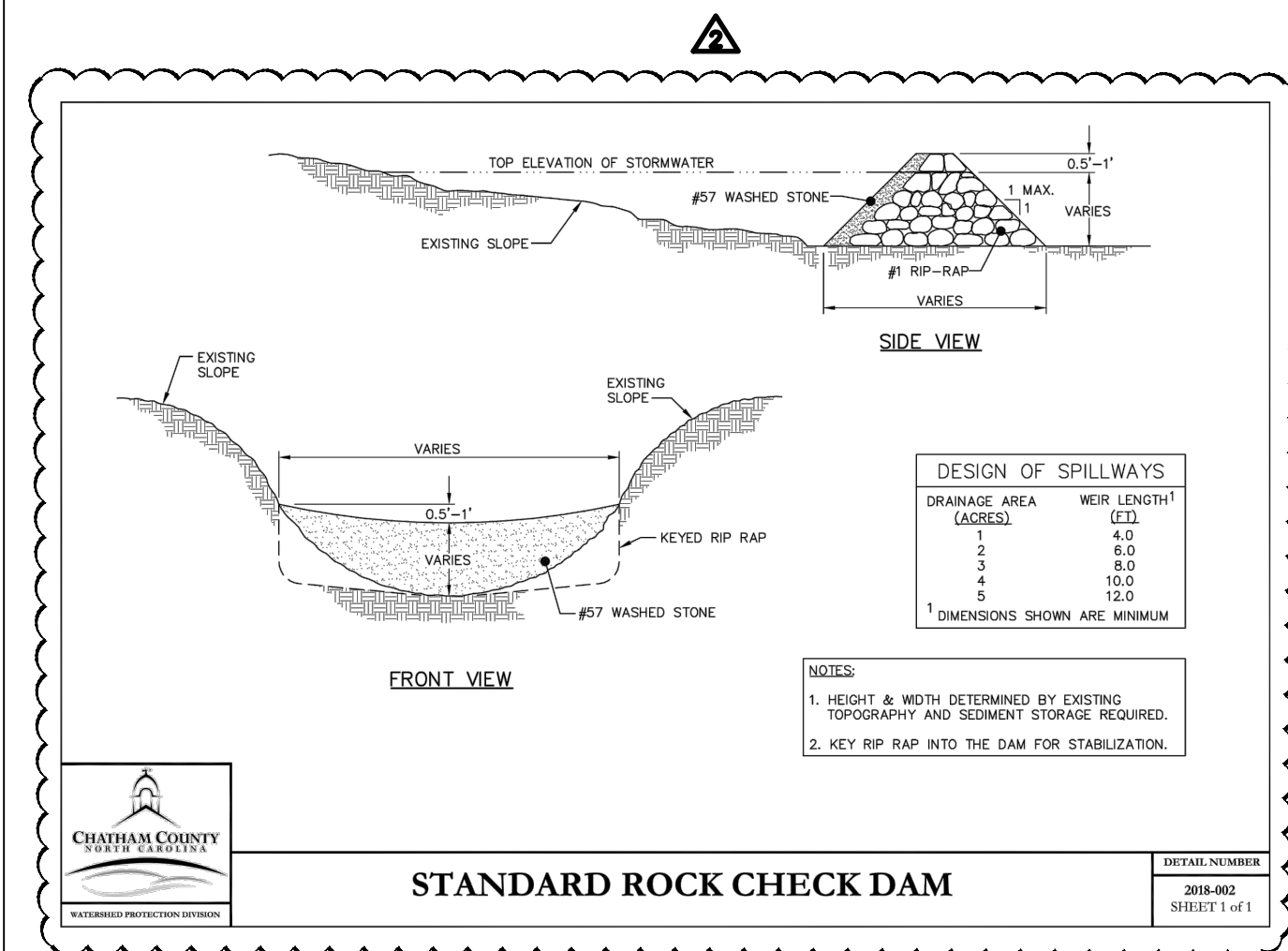
PUMP-AROUND PRACTICE:
TEMPORARY MEASURE FOR DEWATERING STREAM CROSSING SITES.

DESCRIPTION:
THE WORK SHOULD CONSIST OF INSTALLING A TEMPORARY PUMP AROUND AND SUPPORTING MEASURES TO DIVERT FLOW AROUND CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR SIZING PUMPS TO ENSURE ADEQUATE CAPACITY TO KEEP FLOW FROM ENTERING WORK AREA.

IMPLEMENTATION SEQUENCE:
SEDIMENT CONTROL MEASURES, PUMP-AROUND PRACTICES, AND ASSOCIATED CONSTRUCTION SHOULD BE COMPLETED IN THE FOLLOWING SEQUENCE (REFER TO DETAIL).

- INSTALL SCOUR HOLE AND FILTER BAGS WHERE SHOWN ON PLANS.
- COFFER DAMS SHOULD BE SITUATED AT THE ENDS OF THE WORK AREA AS SHOWN ON THE PLANS, AND WATER ON THE UPSIDE OF THE DAM AREA SHOULD BE PUMPED AROUND THE WORK AREA.
- THE PUMP SHOULD DISCHARGE INTO THE FILTER BAGS AND SCOUR HOLES.
- WATER FROM THE WORK AREA SHOULD BE PUMPED TO A SEDIMENT FILTERING MEASURE SUCH AS A TEMPORARY WOOD CHIP DEWATERING BASIN, FILTER BAG OR OTHER APPROVED SEDIMENT FILTERING MEASURE.
- AFTER THE CULVERT IS INSTALLED AND THE SLOPES HAVE BEEN STABILIZED, THE PUMP INTAKE HOSES, SCOUR HOLES AND FILTER BAGS SHOULD BE REMOVED AND THEN THE COFFER DAMS SHOULD BE REMOVED.
- A PUMP AROUND MUST BE INSTALLED ON ANY TRIBUTARY OR STORM DRAIN OUTFALL WHICH CONTRIBUTES BASEFLOW TO THE WORK AREA. THIS SHOULD BE ACCOMPLISHED BY LOCATING A COFFER DAM AT THE DOWNSTREAM END OF THE TRIBUTARY OR STORM DRAIN OUTFALL AND PUMPING THE STREAM FLOW AROUND THE WORK AREA. THIS WATER SHOULD DISCHARGE ONTO THE SAME VELOCITY DISSIPATOR USED FOR THE MAIN STREAM PUMP AROUND.

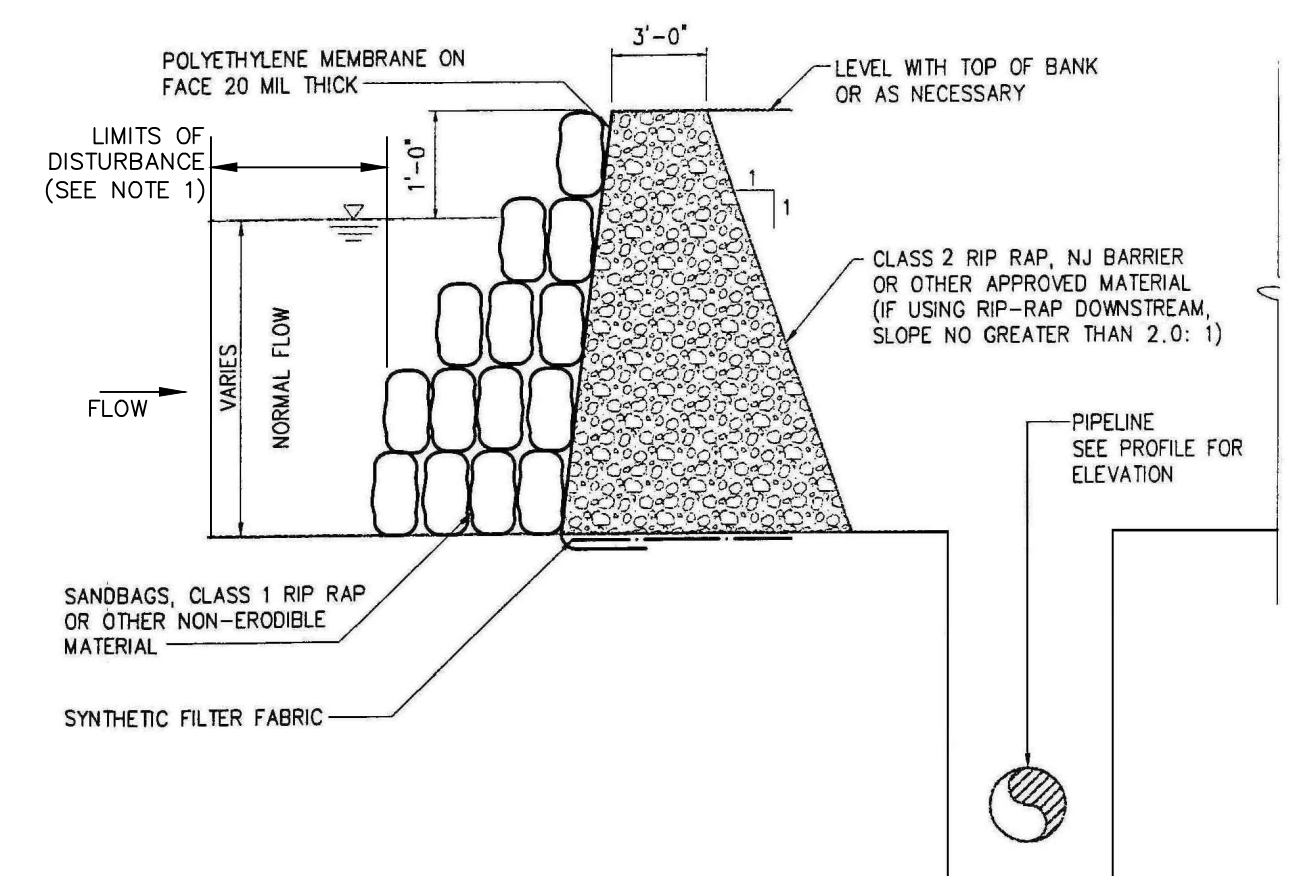
TEMPORARY PUMP AROUND DETAIL
NTS



STANDARD ROCK CHECK DAM

DRAINAGE AREA (ACRES)	WEIR LENGTH (FT)
1	4.0
2	6.0
3	8.0
4	10.0
5	12.0

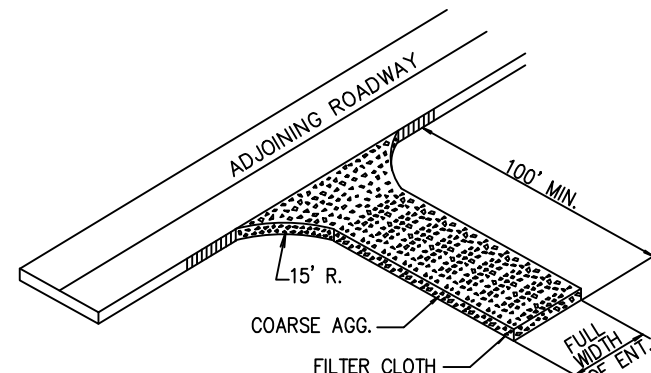
NOTES:
1. HEIGHT & WIDTH DETERMINED BY EXISTING TOPOGRAPHY AND SEDIMENT STORAGE REQUIRED.
2. KEY RIP-RAP INTO THE DAM FOR STABILIZATION.



NOTES:

- CONTRACTOR SHALL INSTALL COFFER DAMS WITH ENOUGH SEPARATION FROM THE PROJECT CONSTRUCTION LIMITS OF DISTURBANCE TO PLACE PUMP INTAKE AND DISCHARGE HOSES, DISSIPATORS AND SEDIMENT FILTER STRUCTURES.
- TEMPORARY PRE-FABRICATED COFFER DAMS SUCH AS PORT-A-DAM AND OTHERS MAY BE USED IN SUBSTITUTION TO THE SANDBAG/RIP-RAP DAM WITH PRIOR APPROVAL BY THE OWNER AND ENGINEER.

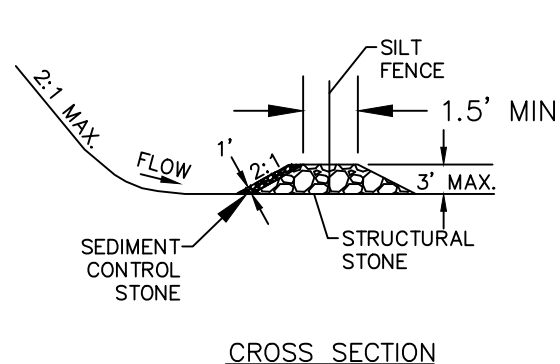
TEMPORARY COFFER DAM DETAIL
NTS



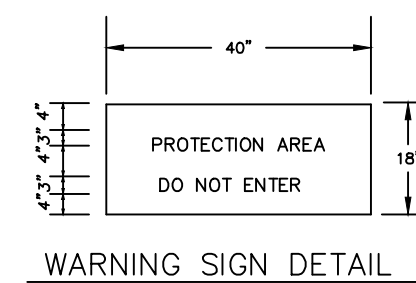
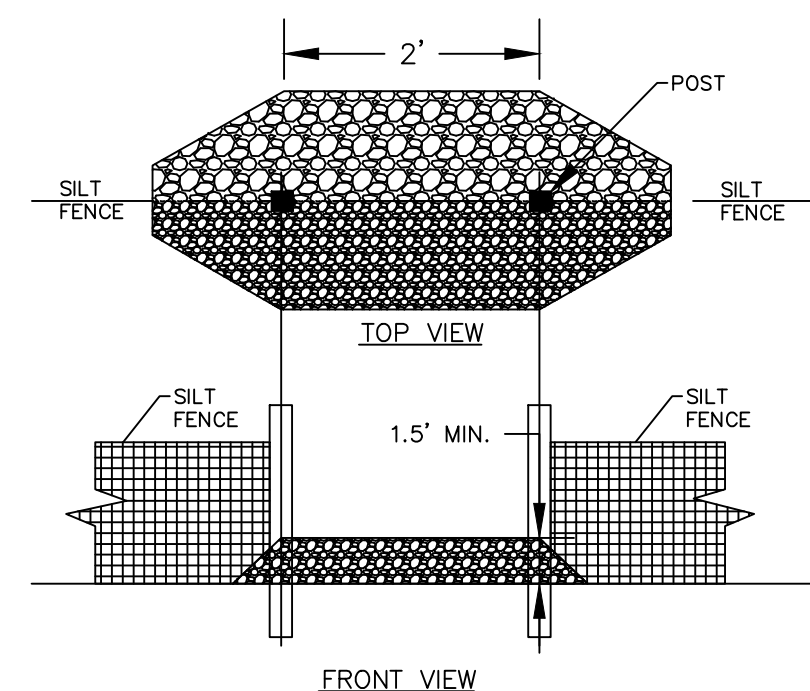
- COARSE AGGREGATE (2"-3" STONE) SHALL BE USED. PAD TO BE 100'L X 25'W X 6"D MIN. PLACE A MINIMUM OF 3" OF STONE IN A CUT SECTION TO HELP SECURE FILTER CLOTH.
- TURNING RADIUS SUFFICIENT TO ACCOMMODATE LARGE TRUCKS IS TO BE PROVIDED.
- ENTRANCES SHOULD BE LOCATED TO PROVIDE FOR MAXIMUM UTILITY BY ALL CONSTRUCTION VEHICLES.
- MUST BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR DIRECT FLOW OF MUD ONTO STREETS. PERIODIC TOP DRESSING MAY BE NECESSARY. AFTER EACH RAINFALL, INSPECT ANY STRUCTURE USED TO TRAP SEDIMENT AND CLEANED STONE. AS NECESSARY, IMMEDIATELY REMOVE ALL OBJECTIONABLE MATERIALS SPILLED, WASHED, OR TRACKED ONTO PUBLIC ROADWAYS.
- TEMPORARY PADS MUST BE LOCATED ON EACH SIDE OF ADJOINING ROADWAY.

TEMPORARY CONSTRUCTION ENTRANCE
NTS

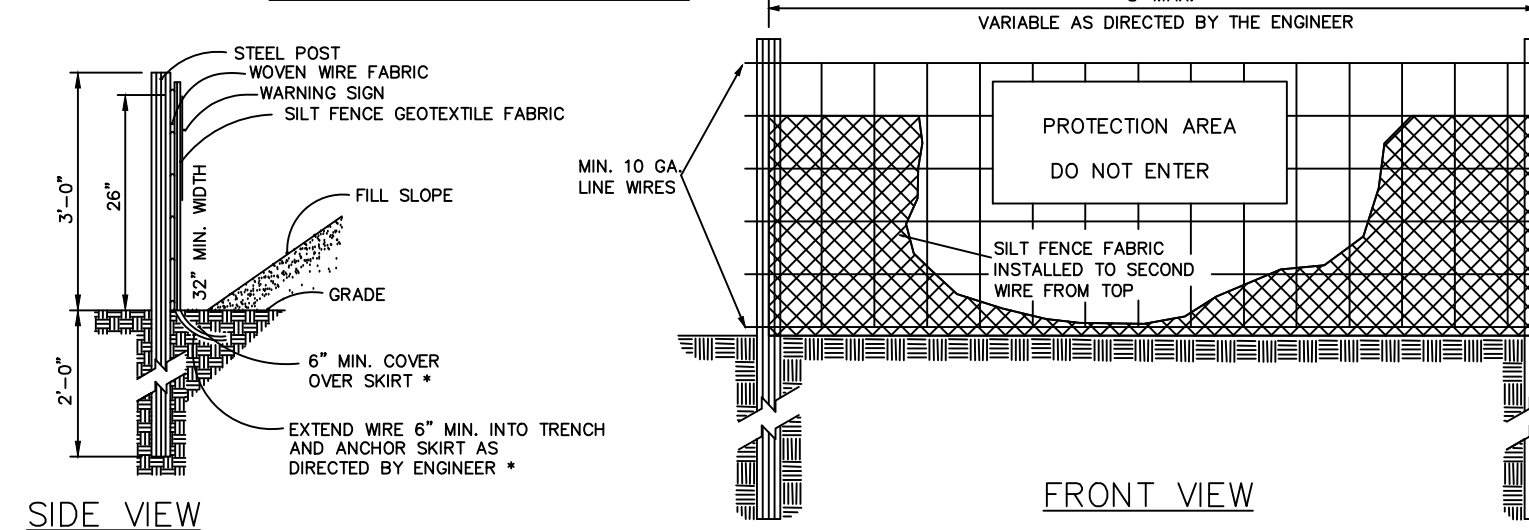
NOTE:
STRUCTURAL STONE SHALL BE CLASS B STONE FOR EROSION CONTROL PURPOSES.
SEDIMENT CONTROL STONE SHALL BE NO. 5 OR NO. 57 STONE.



SILT FENCE OUTLET
NTS



WARNING SIGN DETAIL

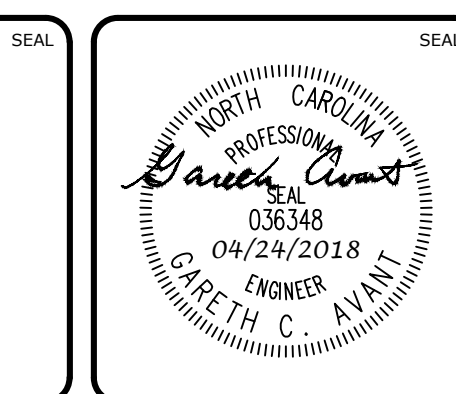


COMBINATION SILT/TREE PROTECTION FENCE
NTS

NOTES:

- WARNING SIGNS TO BE MADE OF DURABLE, WEATHERPROOF MATERIAL.
- LETTERS TO BE 3" HIGH MINIMUM, CLEARLY LEGIBLE AND SPACED AS DETAILED.
- SIGNS SHALL BE PLACED AT 50' MAXIMUM INTERVALS.
- PLACE A SIGN AT EACH END OF LINEAR TREE PROTECTION AND 50' ON CENTER THEREAFTER.
- FOR TREE PROTECTION AREAS LESS THAN 200' IN PERIMETER, PROVIDE NO LESS THAN ONE SIGN PER PROTECTION AREA.
- ATTACH SIGNS SECURELY TO FENCE POSTS AND FABRIC.
- MAINTAIN TREE PROTECTION FENCE THROUGHOUT DURATION OF PROJECT.
- ADDITIONAL SIGNS MAY BE REQUIRED BY CHATHAM COUNTY BASED ON ACTUAL FIELD CONDITIONS.
- PLACE A SIGN AT EACH END OF LINEAR TREE PROTECTION AND 50' ON CENTER THEREAFTER.
- FLOW SHALL NOT RUN PARALLEL WITH THE FENCE.
- END OF SILT FENCE NEEDS TO BE TURNED UPHILL.
- SEE NCCENR PRACTICE & SPECIFICATIONS MANUAL. SEDIMENTS FENCE SECTION FOR CONDITIONS WHERE PRACTICE APPLIES AND DESIGN CRITERIA.

REV. NO.	DESCRIPTIONS	DATE
2	REVISIONS PER CHATHAM COUNTY EROSION CONTROL	2018.04.24
1	REVISIONS PER CHATHAM COUNTY PUBLIC WORKS	2018.04.19
0	INITIAL SUBMITTAL	2018.03.21



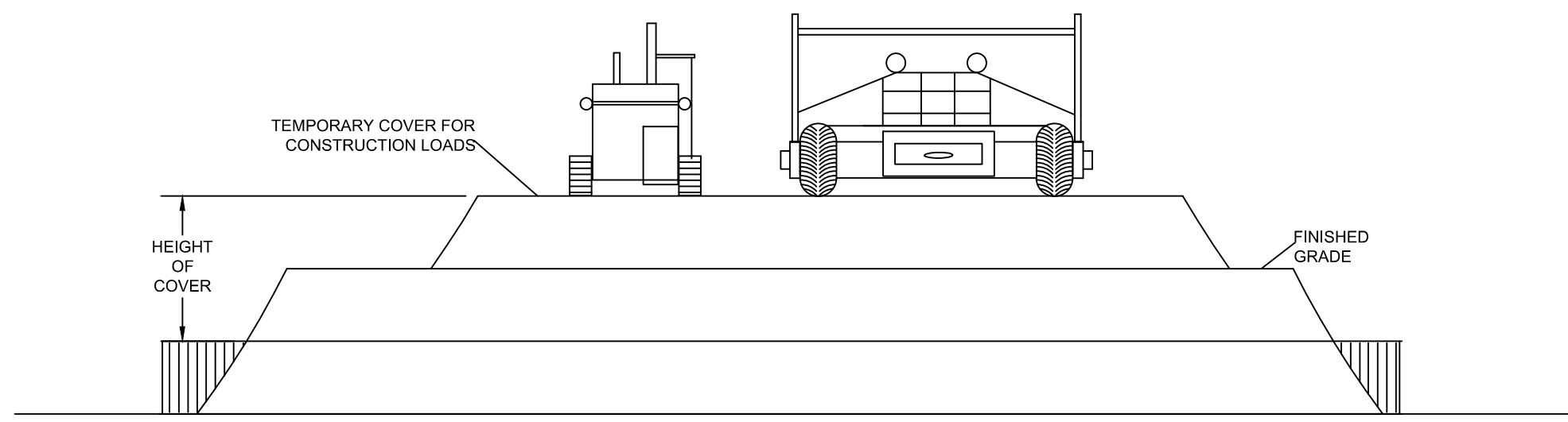
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BRIAR CHAPEL™
by
Newland COMMUNITIES

**BRIAR CHAPEL
BC PHASE 16 NORTH
CHATHAM COUNTY, NORTH CAROLINA**
EROSION AND SEDIMENTATION CONTROL
DETAILS

DATE: MARCH 21, 2018	SCALE: HORIZONTAL: N/A	HSC FILE NUMBER: D1.X
MCE PROJ. # 02735-0206	VERTICAL: N/A	DRAWING NUMBER: D1.2
DRAWN: BSS		
DESIGNED: BSS		
CHECKED: GCA		
PROJ. MGR.: CHS		

STATUS: FINAL DRAWINGS FOR REVIEW PURPOSES ONLY
REVISION: 2

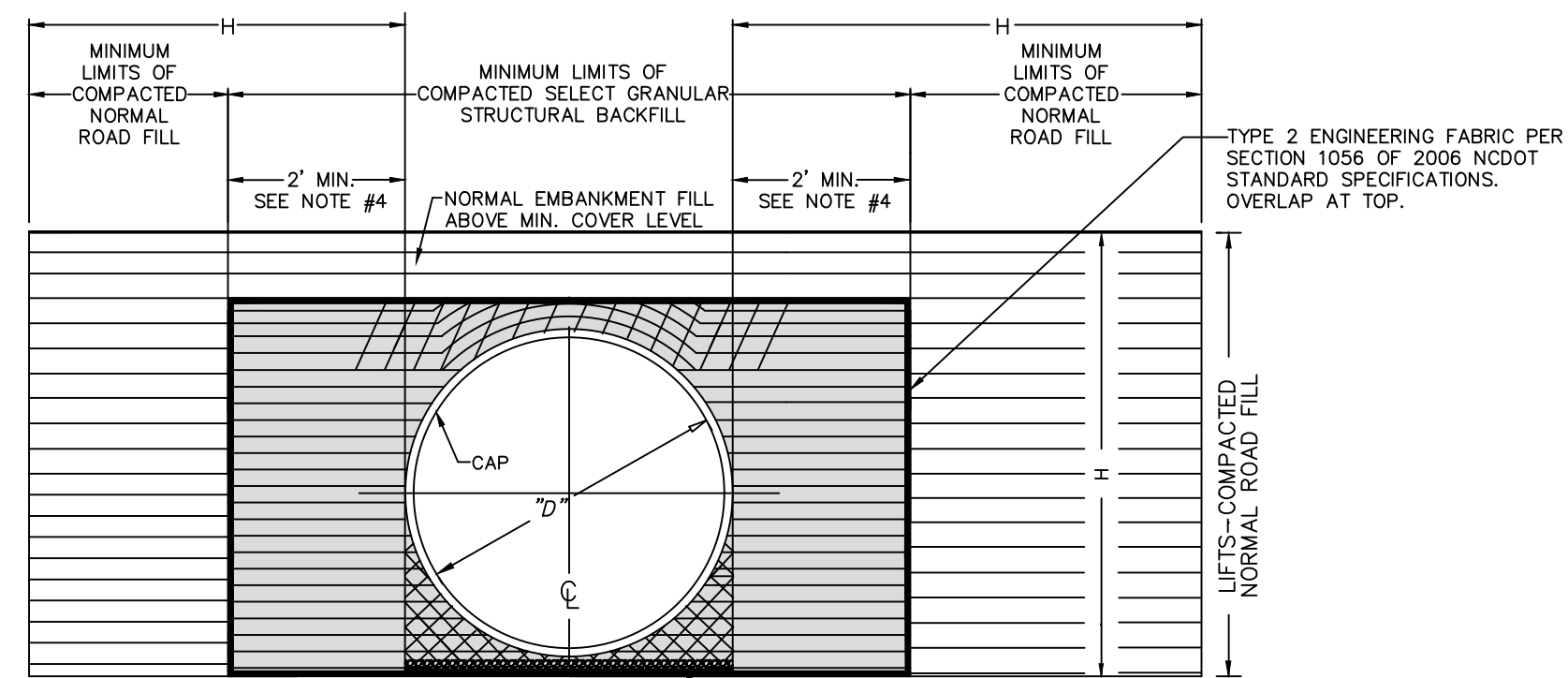


PIPE SPAN, INCHES	AXLE LOADS (kips)			
	18-50	50-75	75-110	110-150
	MINIMUM COVER (FT)			
12-42	2.0	2.5	3.0	3.0
48-72	3.0	3.0	3.5	4.0
78-120	3.0	3.5	4.0	4.0
126-144	3.5	4.0	4.5	4.5

*MINIMUM COVER MAY VARY, DEPENDING ON LOCAL CONDITIONS. THE CONTRACTOR MUST PROVIDE THE ADDITIONAL COVER REQUIRED TO AVOID DAMAGE TO THE PIPE. MINIMUM COVER IS MEASURED FROM THE TOP OF THE PIPE TO THE TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE.

CONSTRUCTION LOADING **

SCALE: NOT TO SCALE

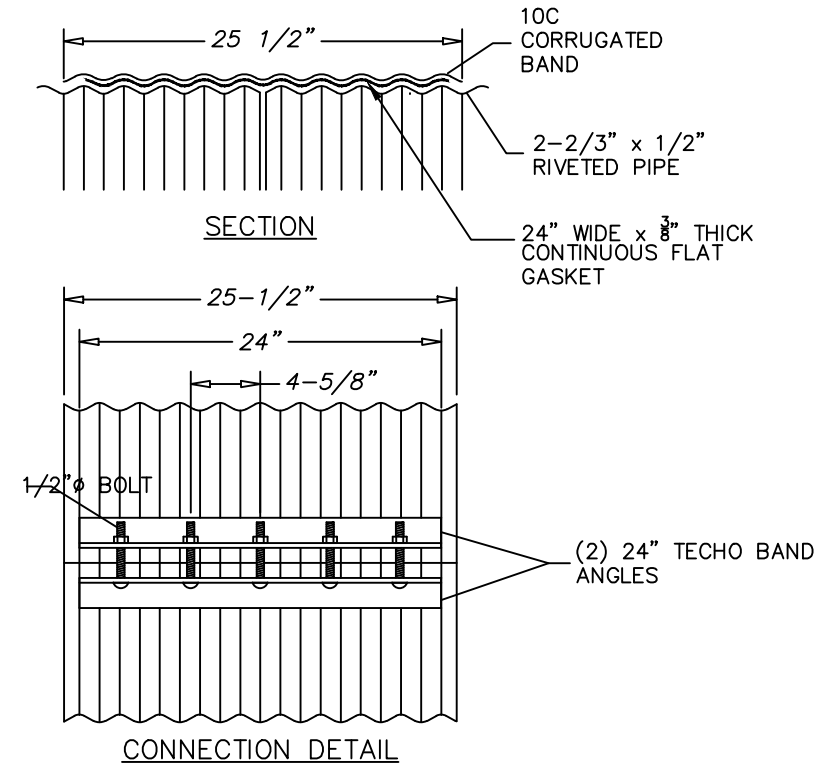


- SECTION**
- CRITICAL BACKFILL ZONE, SEE NOTE #5
 - INITIAL LIFTS OVER CROWN OF STRUCTURE AS INDICATED BY HATCHED AREA TO BE COMPACTED TO REQUIRED DENSITY WITH HAND OPERATED EQUIPMENT OR WITH SMALL TRACTOR (D=4 OR SMALLER) DRAWN EQUIPMENT.
 - SELECT GRANULAR STRUCTURAL BACKFILL LIMITS.
 - #57 STONE

- NOTES:**
- ALL SELECT GRANULAR BACKFILL TO BE PLACED IN A BALANCED FASHION IN THIN LIFTS (6"-8" LOOSE TYPICALLY) AND COMPACTED TO 90 PERCENT DENSITY PER AASHTO T-180.
 - COMPLETE AND REGULAR MONITORING OF THE CAP SHAPE IS NECESSARY DURING ALL BACKFILLING OF THE STRUCTURE.
 - PREVENT EXCESSIVE DISTORTION OF SHAPE AS NECESSARY BY VARYING COMPACTION METHODS AND EQUIPMENT.
 - NCDOT #57 STONE BACKFILL MIN. 2' OUTSIDE OF PIPE (EACH SIDE) AND 12" OVER TOP OF PIPE.
 - BEDDING ZONE SHOULD BE FREE OF DEBRIS. BEDDING MATERIAL SHALL BE #57 STONE AT MIN. THICKNESS OF 6" UNDER PIPE, COMPACTED TO 90% DENSITY.
 - PRESSURES FROM CAP PIPE-ARCH SHAPE WILL BE MAINTAINED THROUGHOUT THE LIFE OF INSTALLATION. THIS WIDTH TO BE DETERMINED BY THE PROJECT ENGINEER.

CAP BACKFILL DETAIL

SCALE: NOT TO SCALE

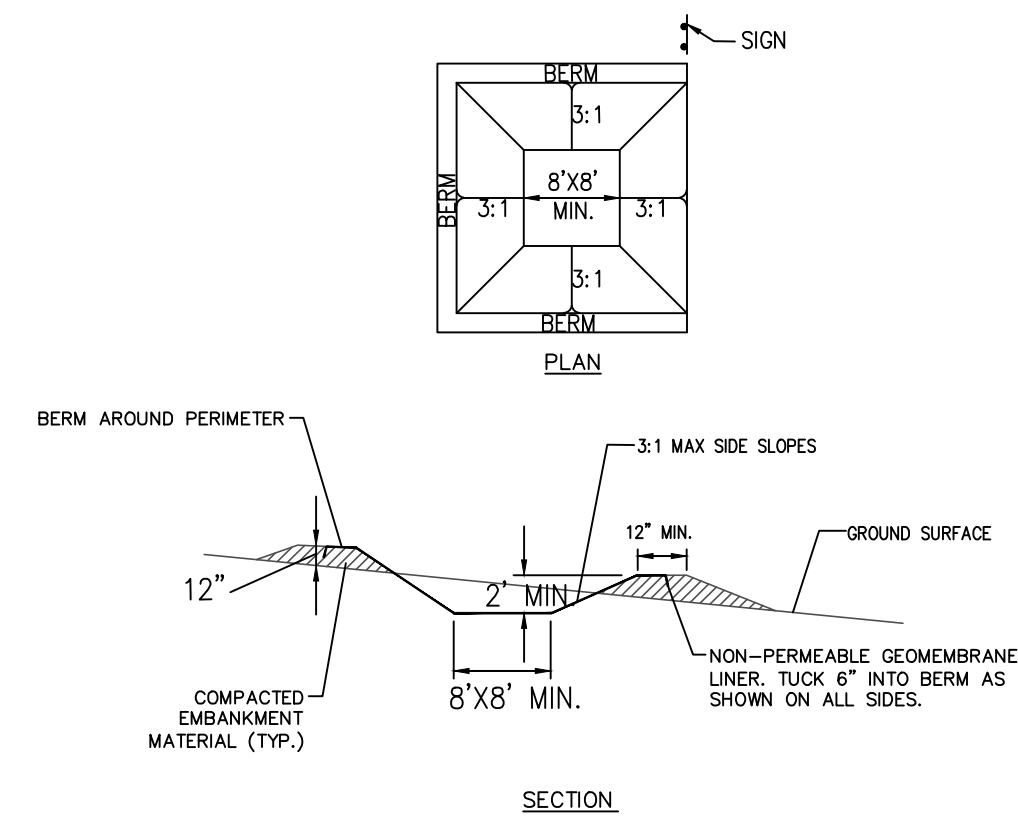


CORRUGATIONS	PIPE PRODUCTS
2-2/3"x1/2"	ALUMINUM

- GENERAL NOTES:**
- BANDS FOR PIPE-ARCH ARE THE SAME AS FOR EQUIVALENT DIAMETER ROUND PIPE.
 - BANDS ARE FURNISHED AS FOLLOWS:
12" THRU 48" 1-PIECE
54" THRU 96" 2-PIECE
102" THRU 144" 3-PIECES.
 - BAND FASTENERS ARE ATTACHED WITH SPOT WELDS, RIVETS OR HAND WELDS.
 - PEROLLED ANNULAR END CORRUGATIONS ARE 2-2/3" X 1/2".
 - DIMENSIONS ARE SUBJECT TO MANUFACTURING TOLERANCES.

CONNECTING BAND DETAIL

SCALE: NOT TO SCALE

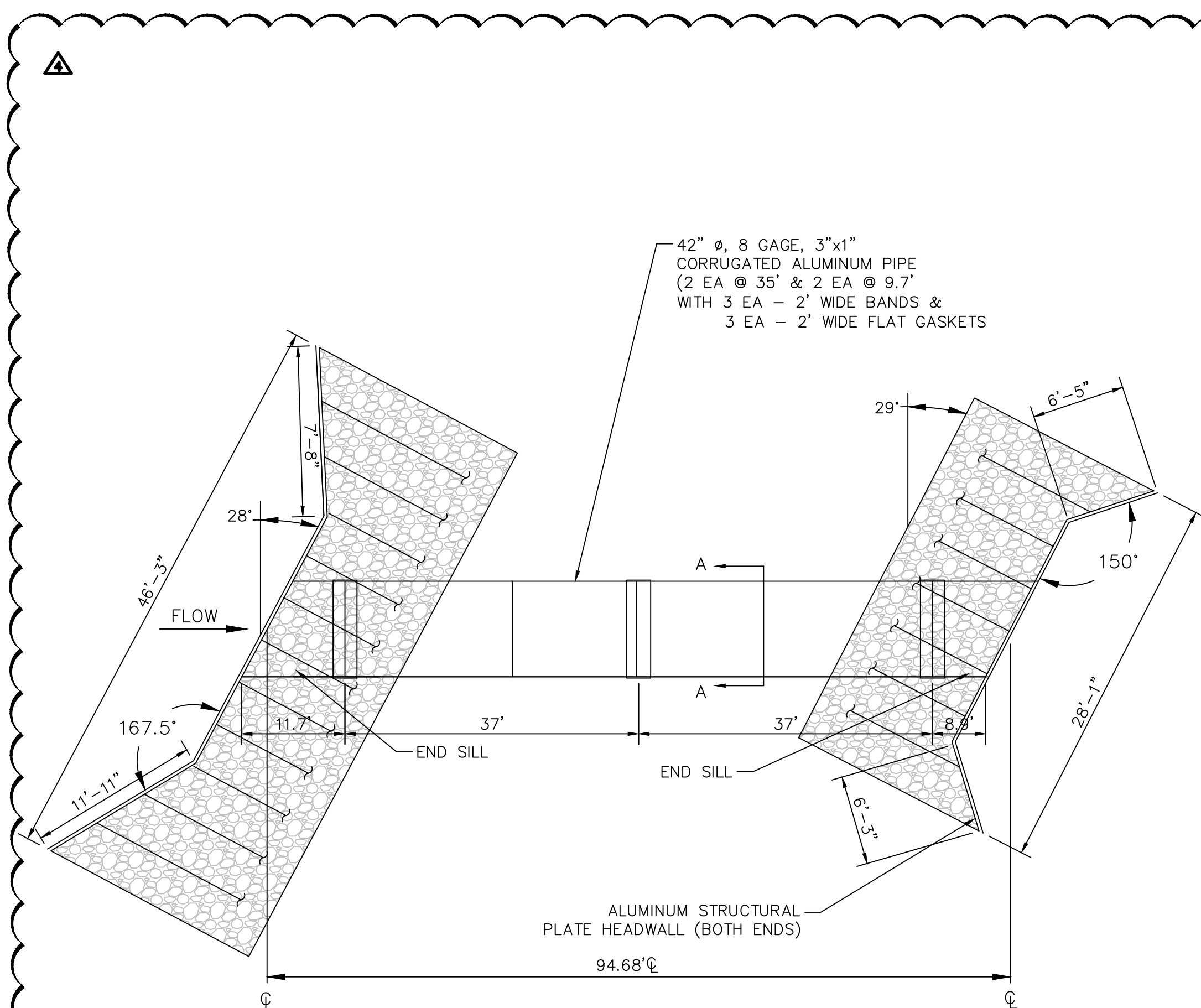


- CONCRETE WASHOUT AREA INSTALLATION NOTES:**
- SEE PLAN FOR LOCATION OF CONCRETE WASHOUT AREA. (TO BE PLACED A MINIMUM OF 50 FT FROM INLETS, BODIES OF WATER, AND DRAINAGEWAYS.)
 - THE CONCRETE WASHOUT AREA SHALL BE INSTALLED PRIOR TO ANY CONCRETE PLACEMENT ON SITE.
 - SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE WASHOUT AREA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CONCRETE WASHOUT AREA TO OPERATORS OF CONCRETE TRUCKS AND PUMP TRUCKS.
 - EXCAVATED MATERIAL SHALL BE USED IN PERIMETER BERM CONSTRUCTION.

- CONCRETE WASHOUT AREA MAINTENANCE NOTES:**
- THE CONCRETE WASHOUT AREA SHALL BE REPAIRED AND ENLARGED OR CLEANED OUT AS NECESSARY TO MAINTAIN CAPACITY FOR WASTED CONCRETE.
 - AT THE END OF CONSTRUCTION, ALL CONCRETE SHALL BE REMOVED AND DISPOSED OF AT APPROVED WASTE SITE.
 - AFTER REMOVAL OF CONCRETE WASHOUT AREA, SEED DISTURBED AREA.
 - INSPECT WEEKLY, DURING AND AFTER ANY STORM EVENT.

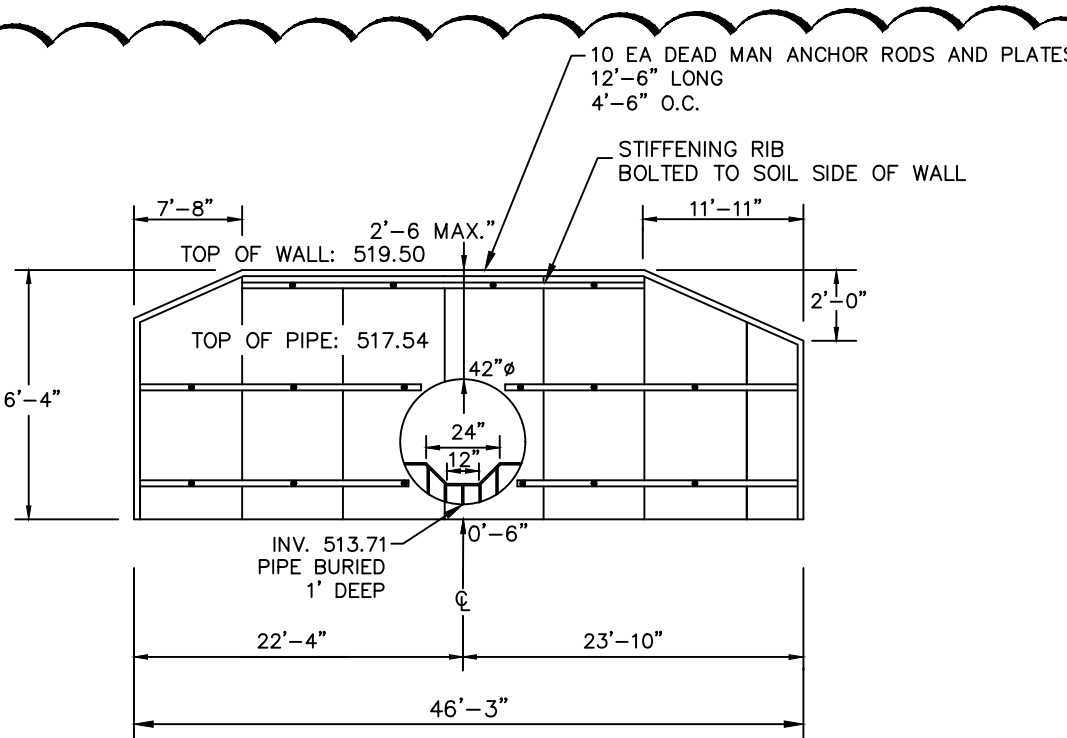
CONCRETE WASHOUT AREA

SCALE: NOT TO SCALE



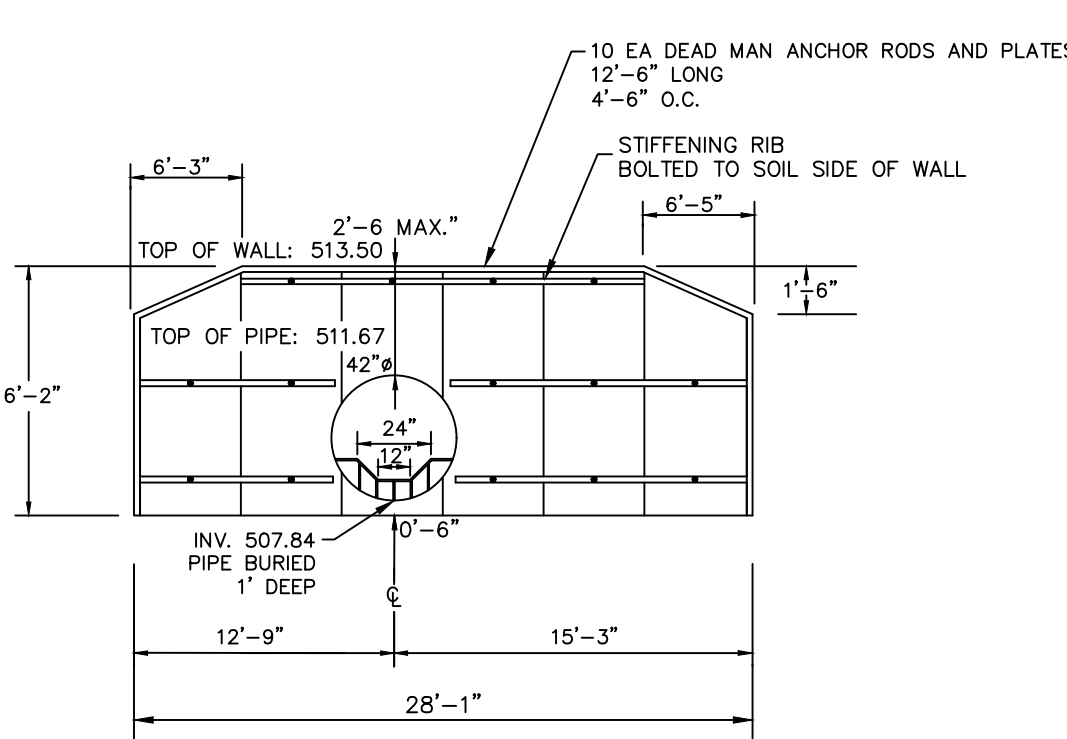
CULVERT PLAN VIEW

SCALE: NOT TO SCALE



END VIEW - INLET HEADWALL

SCALE: NOT TO SCALE



END VIEW - OUTLET HEADWALL

SCALE: NOT TO SCALE

HEADWALL DETAILS

SCALE: NOT TO SCALE

CORRUGATED ALUMINUM ALLOY PIPE AND HEADWALLS NOTES:

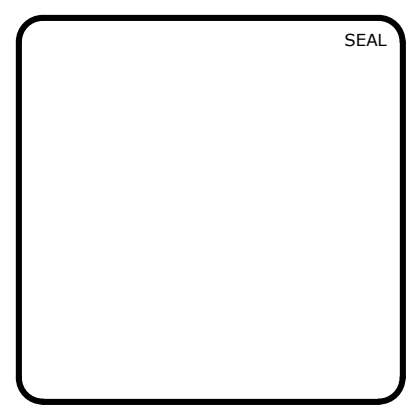
- 1.0 GENERAL:**
- THIS ITEM SHALL GOVERN THE FURNISHING AND INSTALLATION OF ALUMINUM ALLOY PIPE AND HEADWALLS FOR CULVERTS AND STORM SEWERS FOR THE TYPES, SIZES, AND DESIGNATIONS AS SHOWN ON THE PLANS AND FURTHER SPECIFIED IN THESE SPECIFICATIONS.
- 2.0 MATERIAL:**
- THE PIPE SHALL BE FABRICATED FROM AN ALUMINUM ALLOY COIL, CONFORMING TO THE CURRENT ASTM B-744 (AASHTO M-197) MATERIAL SPECIFICATION. THE MATERIALS SHALL ALSO MEET OR EXCEED THE LATEST N.C. DEPARTMENT OF TRANSPORTATION SPECIFICATIONS.
 - PIPE IS TO FULLY WELDED INSIDE AND OUT TO HEADWALLS USING TWO ROOT WELDS AND TWO FINISH WELDS ON EITHER SIDE OF THE WALL. ALL FINISH WELDS ARE TO BE GROUND TO A SMOOTH FINISH.
 - HEADWALL AND PIPE ARE TO BE REINFORCED PER AASHTO SPECIFICATIONS AND STRUCTURAL ENGINEER'S REQUIREMENTS.
 - ALL FABRICATION OF THE PRODUCT SHALL OCCUR WITHIN THE UNITED STATES.
 - SUPPLIER MUST PROVIDE ALL NECESSARY HARDWARE INCLUDING WALE BEAMS, CAPS, CONTINUOUS FLAT GASKETS, GALVANIZED STEEL TIEBACK RODS WITH DEAD MAN ANCHOR (DMA) PLATES, ANCHORS, LUGS, INSERTS, ADJUSTABLE TURNBUCKLES AND ALL OTHER MATERIALS RELATING TO THE PIPE AND HEADWALL SYSTEM NECESSARY TO COMPLETE THE ASSEMBLY.
 - THE CONTINUOUS FLAT GASKET MATERIAL TO BE USED WITH ALL CONNECTING BANDS SHALL BE 3/8" THICK AND 24" WIDE AND MADE FROM CLOSED CELL NEOPRENE RUBBER WHICH UPON ASSEMBLY PROVIDES A WATERTIGHT SEAL.
 - PIPE SECTIONS AND BANDS SHALL BE ASSEMBLED AND ALPHANUMERICALLY MATCH-MARKED FOR ALIGNMENT AT THE MANUFACTURING PLANT SITE PRIOR TO SHIPPING TO VERIFY PROPER FIT.
 - PIPE MANUFACTURER SHALL PROVIDE CERTIFICATION OF THE MEASURED DIMENSIONS OF THE PIPE, BANDS AND CONTINUOUS FLAT GASKET. CERTIFICATION MUST STATE THAT BANDS AND GASKETS HAVE BEEN PRE-FITTED AND WILL SECURELY TIGHTEN AROUND THE SUPPLIED PIPE. CERTIFICATION OF THE DIMENSIONS MUST BE SIGNED BY THE MANUFACTURER'S REPRESENTATIVE AND DATED.
- EXAMPLE:** SUPPLIED PIPE MEASURES XX INCHES IN DIAMETER, SUPPLIED BANDS AND CONTINUOUS FLAT GASKETS MEASURE XX INCHES IN LENGTH AND WILL SECURELY FASTEN PIPE SECTIONS, WITHOUT FIELD MODIFICATIONS
- SIGNATURE:**
DATE:
- 3.0 INSTALLATION:**
- 1.108 SITE INSTALLATION ASSISTANCE: A MANUFACTURER'S REPRESENTATIVE, WITH AT LEAST TWO (2) YEARS OF EXPERIENCE IN THE INSTALLATION OF THIS TYPE OF STRUCTURE, IS REQUIRED TO GIVE TECHNICAL ADVICE WITH ASSEMBLY OF THE STRUCTURE AND HEADWALLS, AS WELL AS, TO BE ON SITE DURING THE INSTALLATION AND BACKFILLING OF THE PIPE AND HEADWALLS THROUGH COMPLETION.
 2. INSTALLATION SHALL BE IN ACCORDANCE WITH AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, SECTION 26 AND THE PROJECT PLANS AND SPECIFICATIONS.
 3. BACKFILL MATERIAL: RECOMMENDED BACKFILL MATERIAL SHALL BE THE FOLLOWING:
 - 3.1. PIPE BEDDING AND WHERE WATER IS ENCOUNTERED: NCDOT #57 STONE (SECTION 1005 OF THE NCDOT STANDARD SPECIFICATIONS).
 - 3.2. OTHER BACKFILLING UP TO A MINIMUM OF 24" OVER THE TOP OF THE PIPE: NCDOT ABC STONE (SECTION 1005 OF THE NCDOT STANDARD SPECIFICATIONS).
 - 3.3. WHEN TRANSITIONING FROM #57 STONE TO ABC STONE, A MINIMUM 4 OZ. GEOTEXTILE IS REQUIRED FOR SEPARATION OF THE DIFFERENT BACKFILLING MATERIALS.
 - 3.4. CONSTRUCTION LOADS: CONSTRUCTION LOADS MAY BE HIGHER THAN FINAL DESIGN LOADS. FOLLOW MANUFACTURER'S GUIDELINES.
- 4.0 FINAL DESIGN PLANS:**
- WITHIN FIVE (5) DAYS AFTER RECEIVING PURCHASE ORDER, BIDDER WILL SUBMIT THREE (3) COPIES OF DETAILED SHOP DRAWINGS, AND ONE (1) COPY OF DESIGN CALCULATIONS FOR REVIEW AND APPROVAL. THESE DRAWINGS AND CALCULATIONS SHALL BE PROVIDED BY AN INDEPENDENT ENGINEERING FIRM AND STAMPED AND SEALED BY A NORTH CAROLINA PROFESSIONAL ENGINEER.

ALUMINUM STRUCTURAL PLATE SPECIFICATION NOTES:

- SCOPE:** THIS SPECIFICATION COVERS MANUFACTURE AND INSTALLATION OF THE ALUMINUM PLATE STRUCTURE DETAILED IN THE PLANS.
- MATERIAL:** THE ALUMINUM STRUCTURAL PLATE STRUCTURE SHALL CONSIST OF PLATES AND APPURTENANT ITEMS AS SHOWN ON THE PLANS AND SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 219 AND ASTM B746. THE CORRUGATED PLATE (AND RIBS IF REQUIRED) SHALL BE CURVED AND BOLT HOLE PUNCHED AT THE PLANT. PLATE THICKNESS AND RIB SPACINGS SHALL BE AS INDICATED ON THE PLANS. ALL MANUFACTURING PROCESS INCLUDING CORRUGATING, PUNCHING, AND CURVING, SHALL BE PERFORMED WITHIN UNITED STATES.
- BOLTS AND NUTS** SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307 AND A449 FOR STEEL FASTENERS OR ASTM F467 AND F468 FOR ALUMINUM FASTENERS.
- ASSEMBLY:** THE STRUCTURE SHALL BE ASSEMBLED IN ACCORDANCE WITH THE SHOP DRAWINGS PROVIDED BY THE MANUFACTURER AND PER THE MANUFACTURER'S RECOMMENDATIONS. BOLTS SHALL BE TIGHTENED USING AN APPLIED TORQUE OF BETWEEN 90 AND 135 FT-LBS.
- INSTALLATION:** THE STRUCTURE SHALL BE INSTALLED IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS, THE MANUFACTURER'S RECOMMENDATIONS AND THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, SECTION 26 (DIVISION II).
- BACKFILL:** THE STRUCTURE SHALL BE BACKFILLED USING CLEAN, WELL GRADED GRANULAR MATERIAL THAT MEETS THE REQUIREMENTS OF AASHTO M145 FOR SOIL CLASSIFICATION A-1, OR APPROVED EQUAL. BACKFILL MUST BE PLACED SYMMETRICALLY ON EACH SIDE OF THE STRUCTURE IN 8-INCH UNCOMPACTED LIFTS. EACH LIFT SHALL BE COMPACTED TO A MINIMUM OF 90 PERCENT DENSITY PER AASHTO T180.
- NOTES:** CONSTRUCTION LOADS THAT EXCEED HIGHWAY LOAD LIMITS ARE NOT ALLOWED ON THE STRUCTURE WITHOUT APPROVAL FOR PROJECT ENGINEER.

SUPPLIER CONTACT
POMONA PIPE PRODUCTS INC
GREENSBORO, NC
CHRIS BEATY - (336) 210-8006
OR APPROVED EQUAL

REV. NO.	DESCRIPTIONS	DATE
4	REVISIONS PER NCDOT	2018.06.05
3	REVISION PER NCDOT PWSS	2018.05.10
2	REVISIONS PER CHATHAM COUNTY EROSION CONTROL	2018.04.24
1	REVISIONS PER CHATHAM COUNTY PUBLIC WORKS	2018.04.19
0	INITIAL SUBMITTAL	2018.03.21

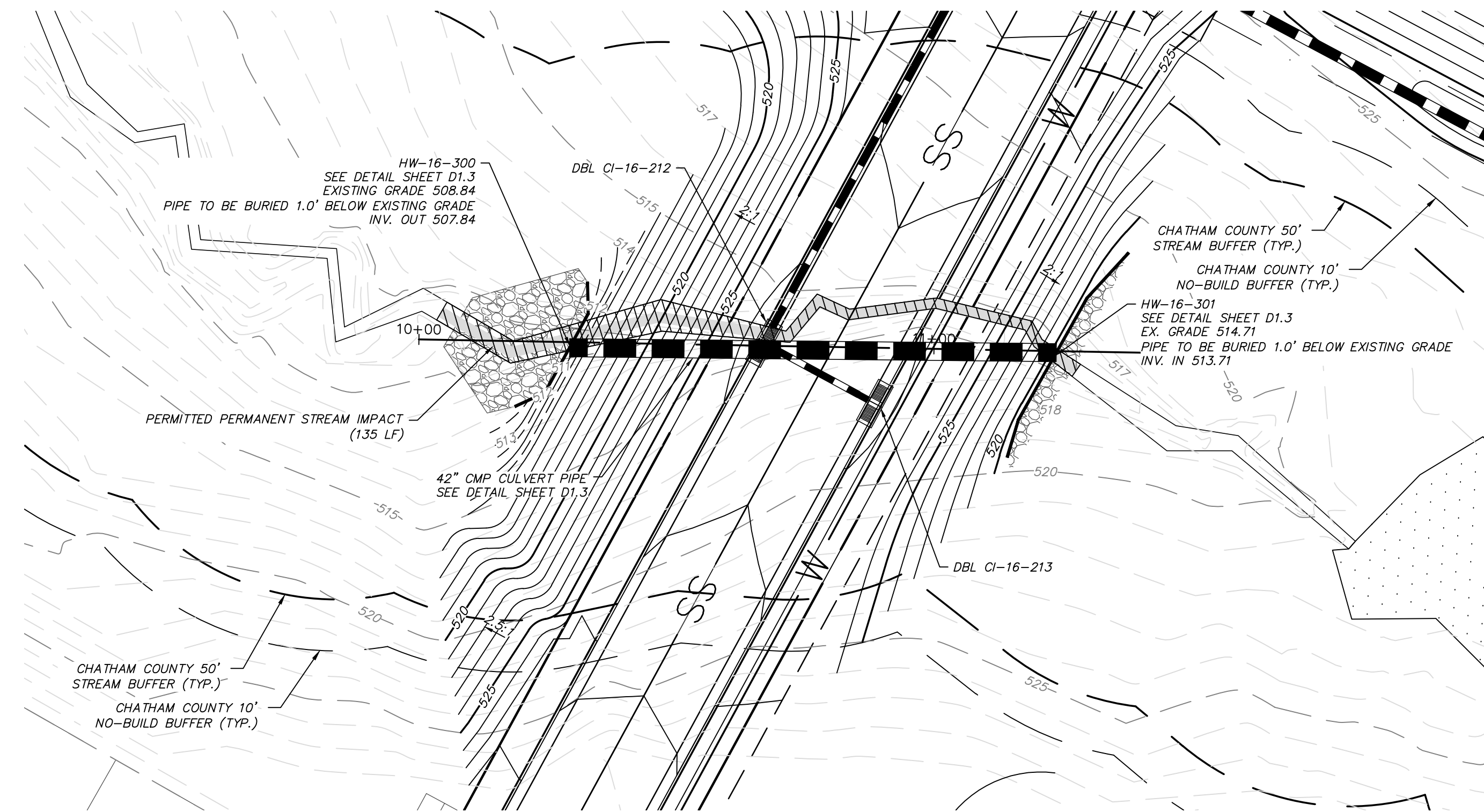


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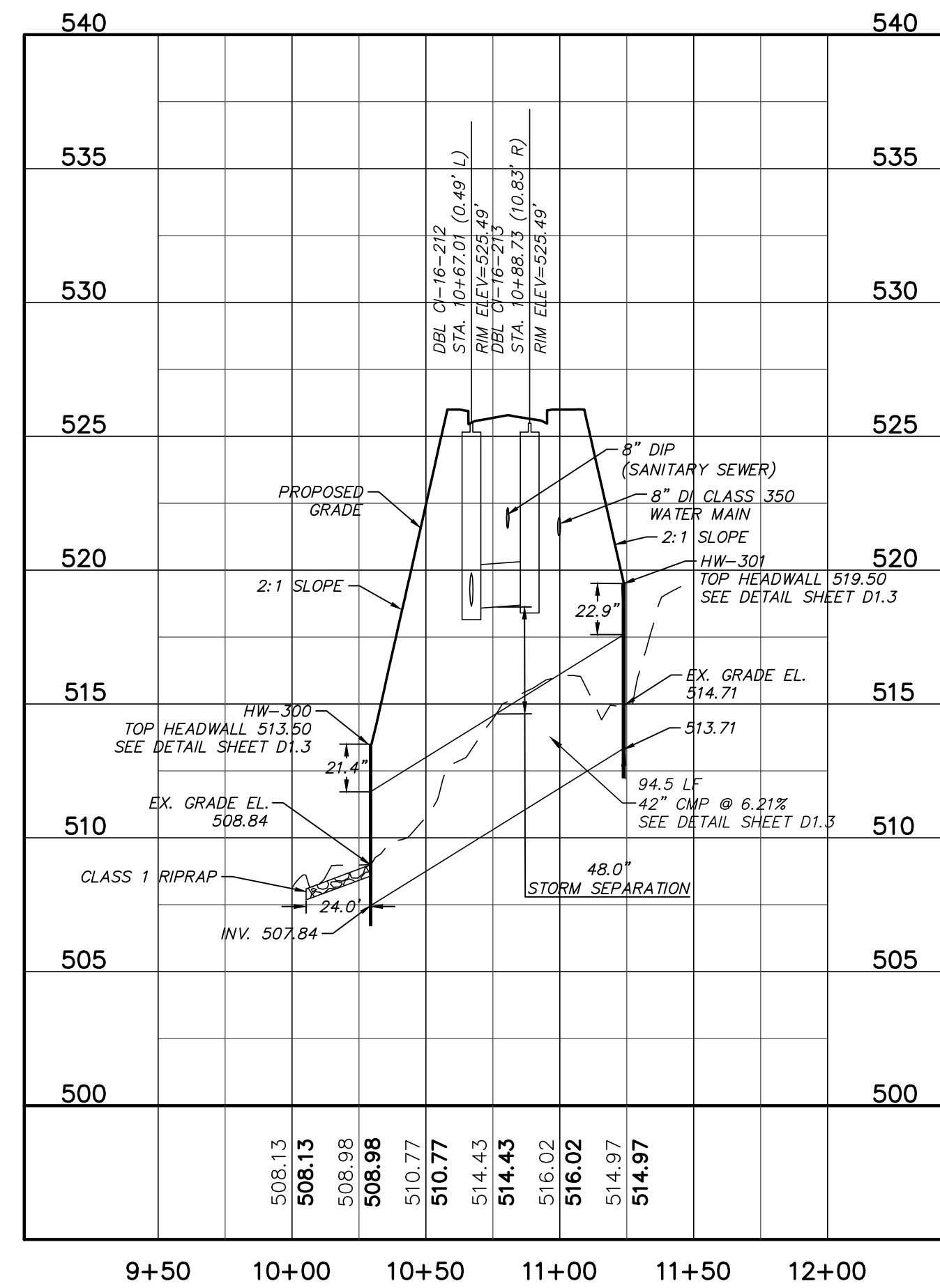
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BRIAR CHAPEL
BC PHASE 16 NORTH
CHATHAM COUNTY, NORTH CAROLINA
EROSION AND SEDIMENTATION CONTROL
DETAILS

DATE: MARCH 21, 2018	SCALE: HORIZONTAL: D1.X	HRC FILE NUMBER: D1.X
MCE PROJ. # 02735-0206	HORIZONTAL: N/A	DRAWING NUMBER: D1.3
DRAWN: BSS	VERTICAL: N/A	
DESIGNED: BSS		
CHECKED: GCA		
PROJ. MGR: CHS		
STATUS: FOR REVIEW PURPOSES ONLY	FINAL DRAWINGS	REVISION: 4

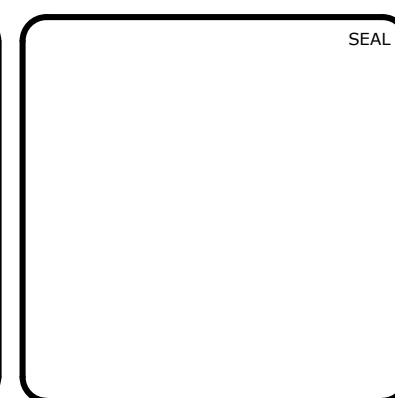


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(STA. 10+00.00 TO 11+45.00)
SCALE: 1"=20'



STREAM CROSSING PROFILE
(STA. 10+00.00 TO 11+45.00)
SCALE: (Horiz.) 1"=50'; (Vert.) 1"=5'

REV. NO.	DESCRIPTIONS	DATE
4	REVISIONS PER NCDOT	2018.06.05
3	REVISIONS PER NCDOT PWSS	2018.05.10
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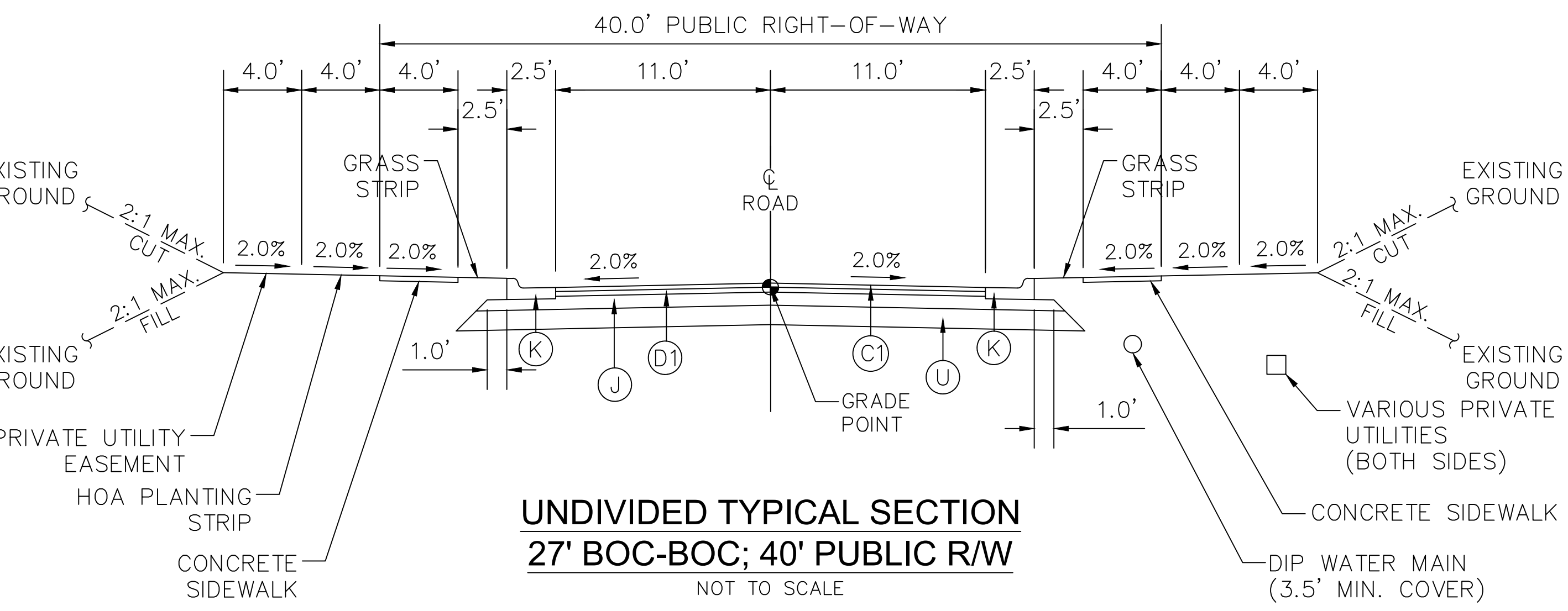
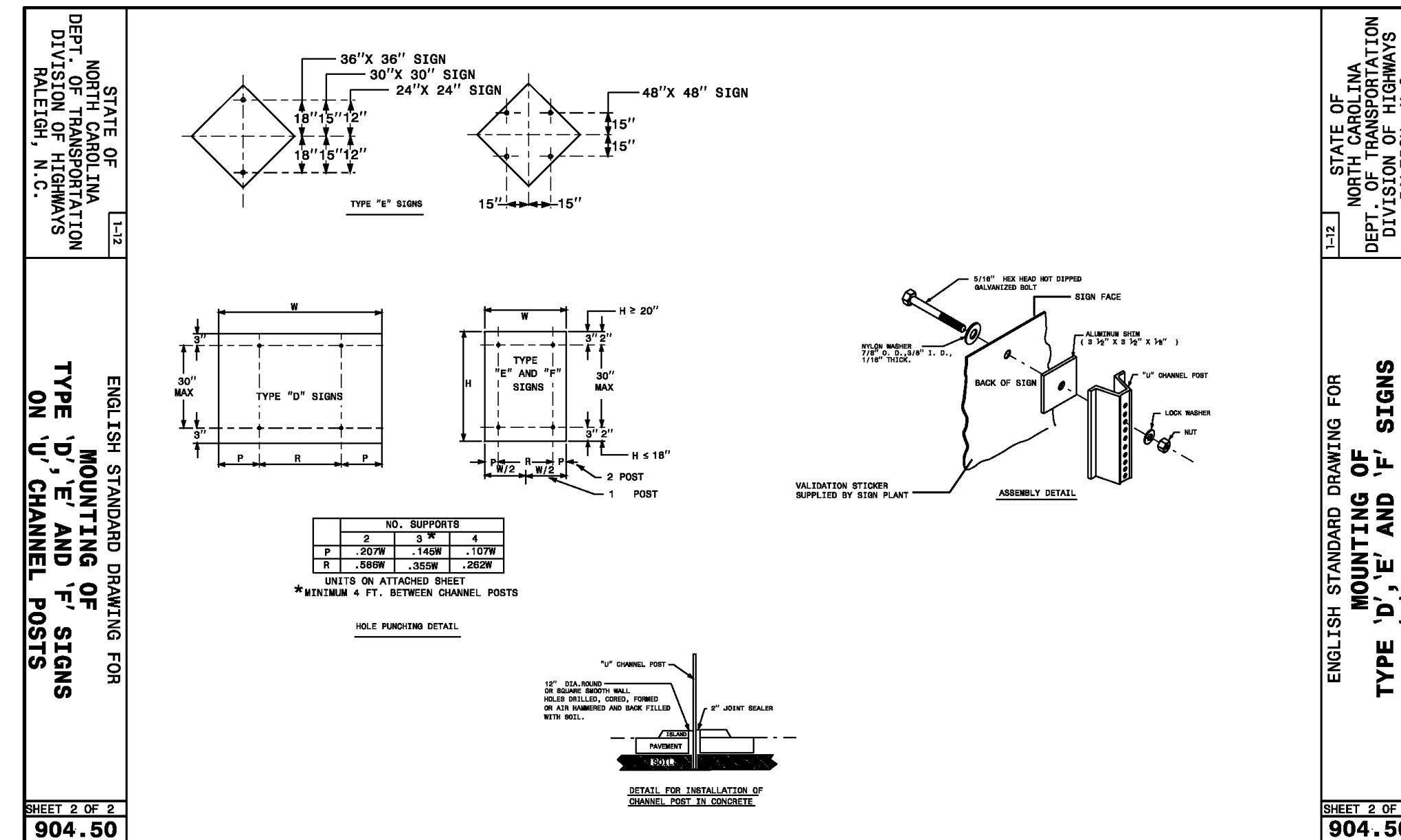
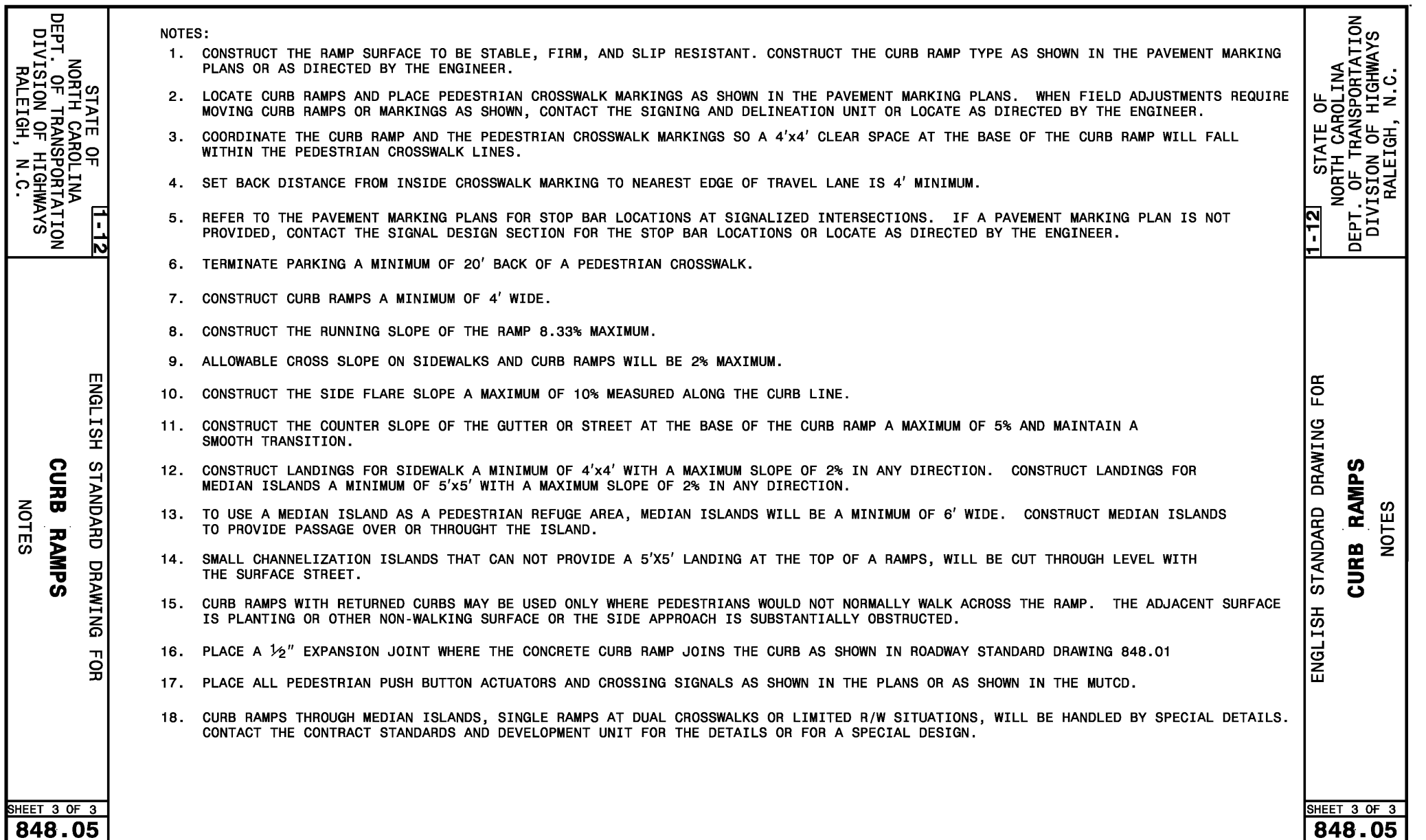
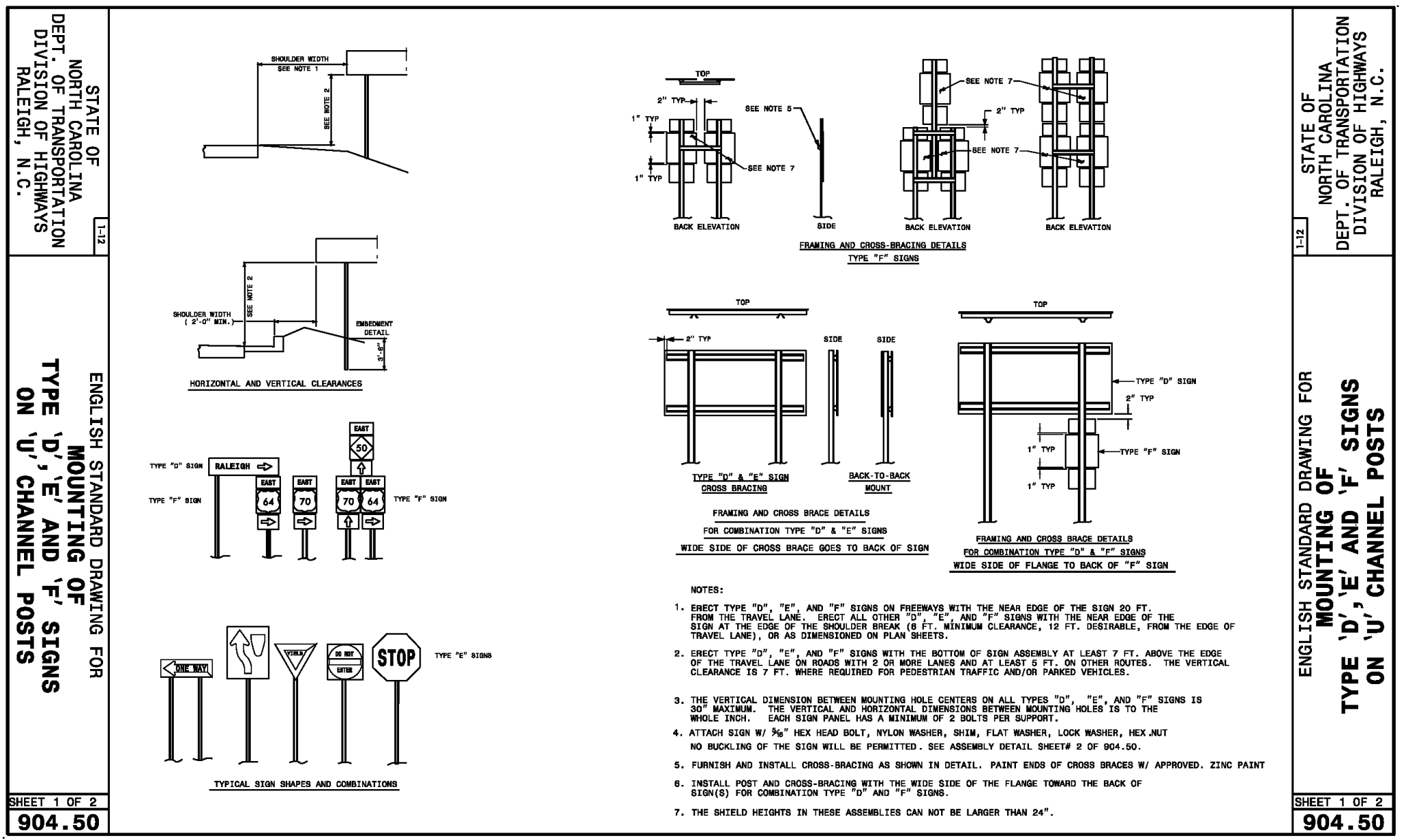
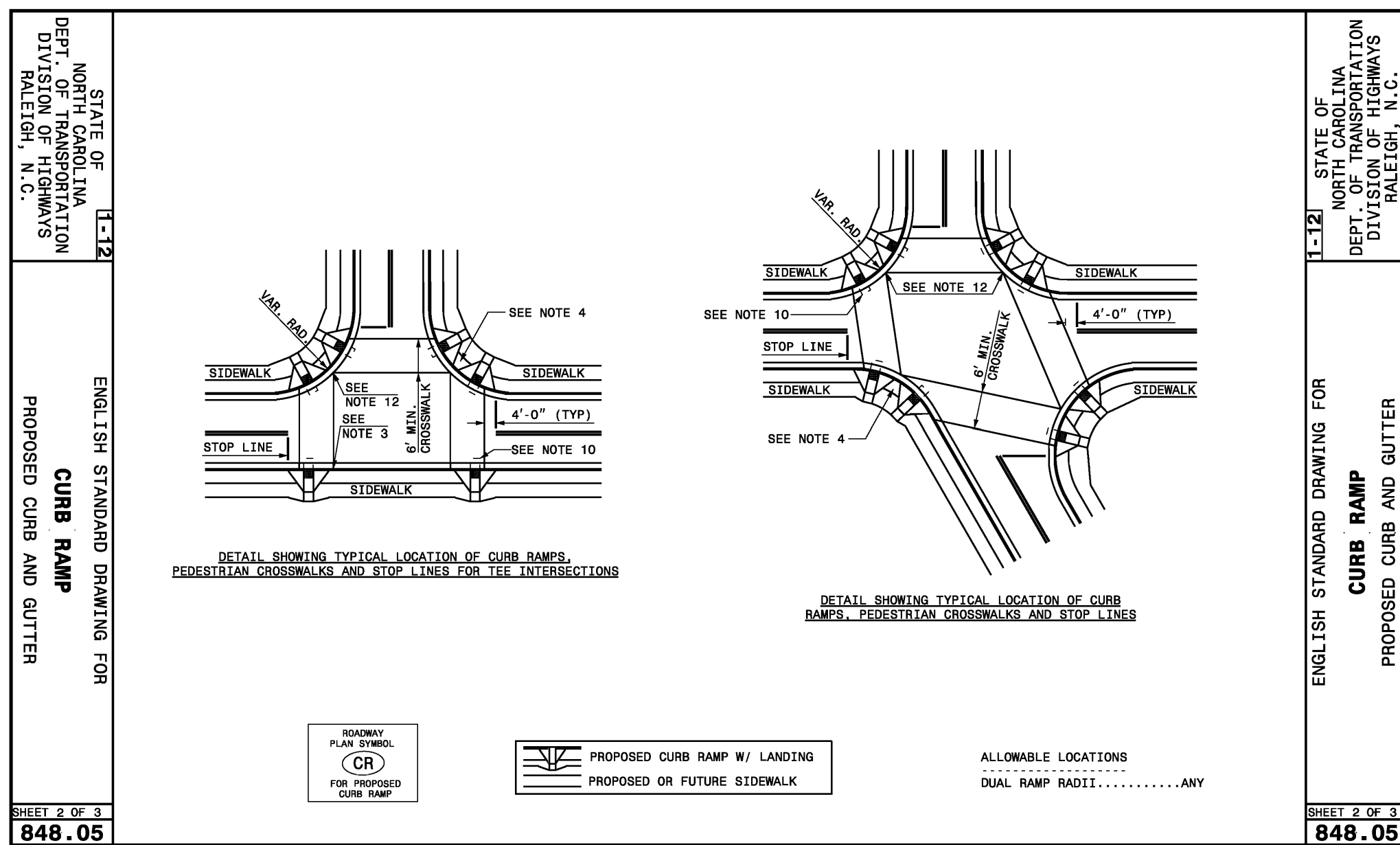
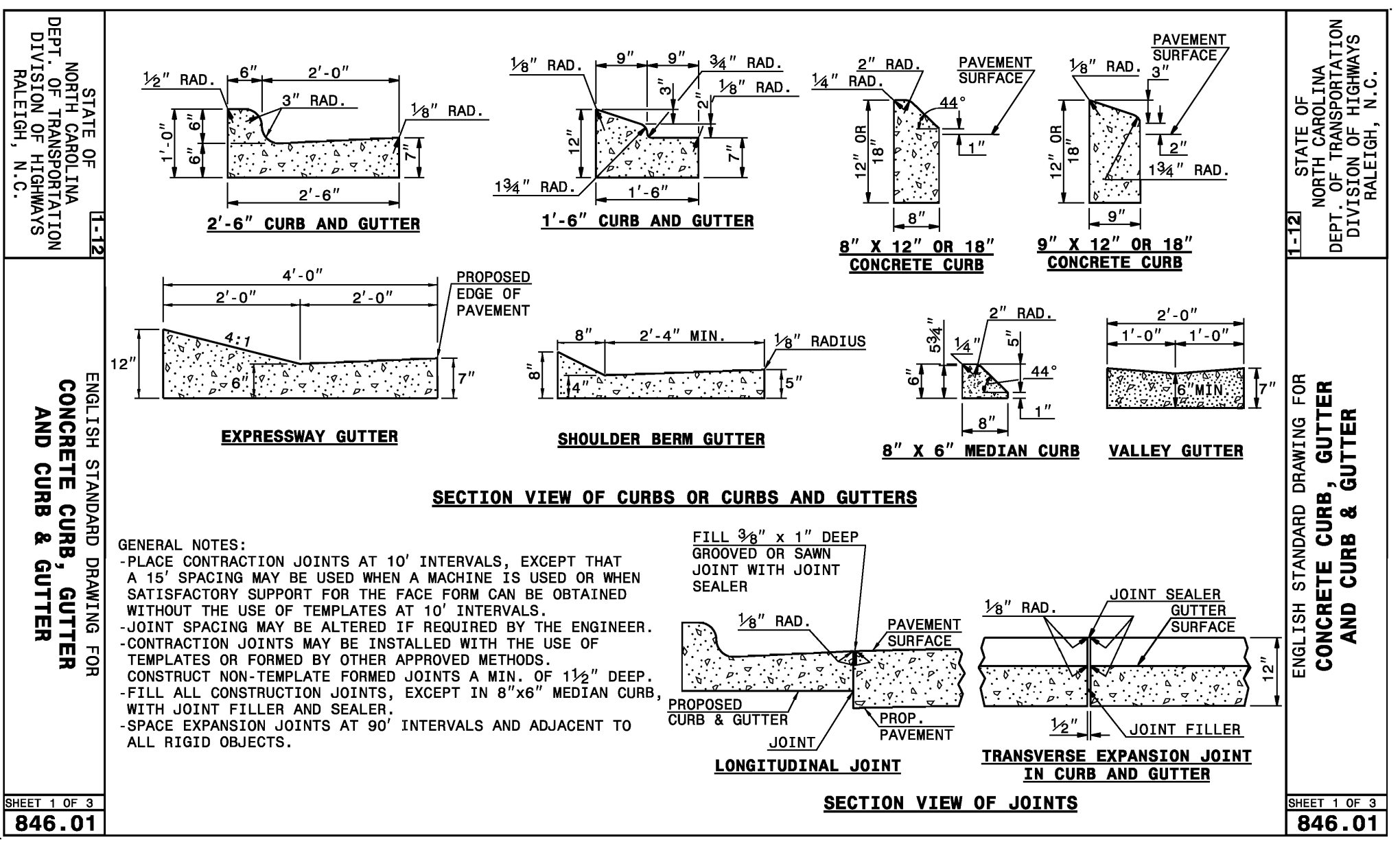
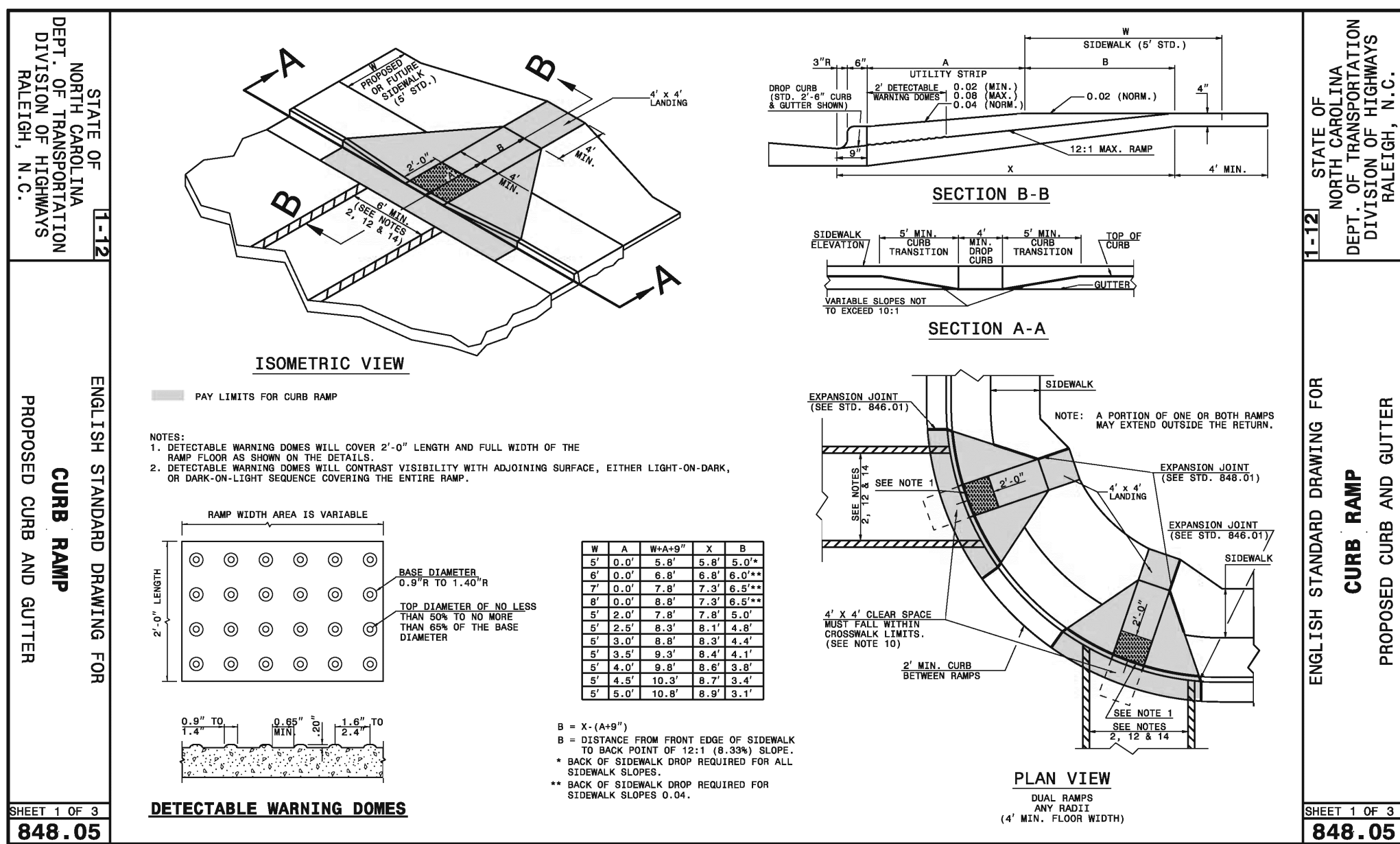
PLAN & PROFILE
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DATE:	MARCH 21, 2018
MCE PROJ. #	02735-0206
DRAWN	BSS
DESIGNED	BSS
CHECKED	GCA
PROJ. MGR.	CHS

SCALE	1" = 5'
HORIZONTAL:	AS NOTED
VERTICAL:	1" = 5'

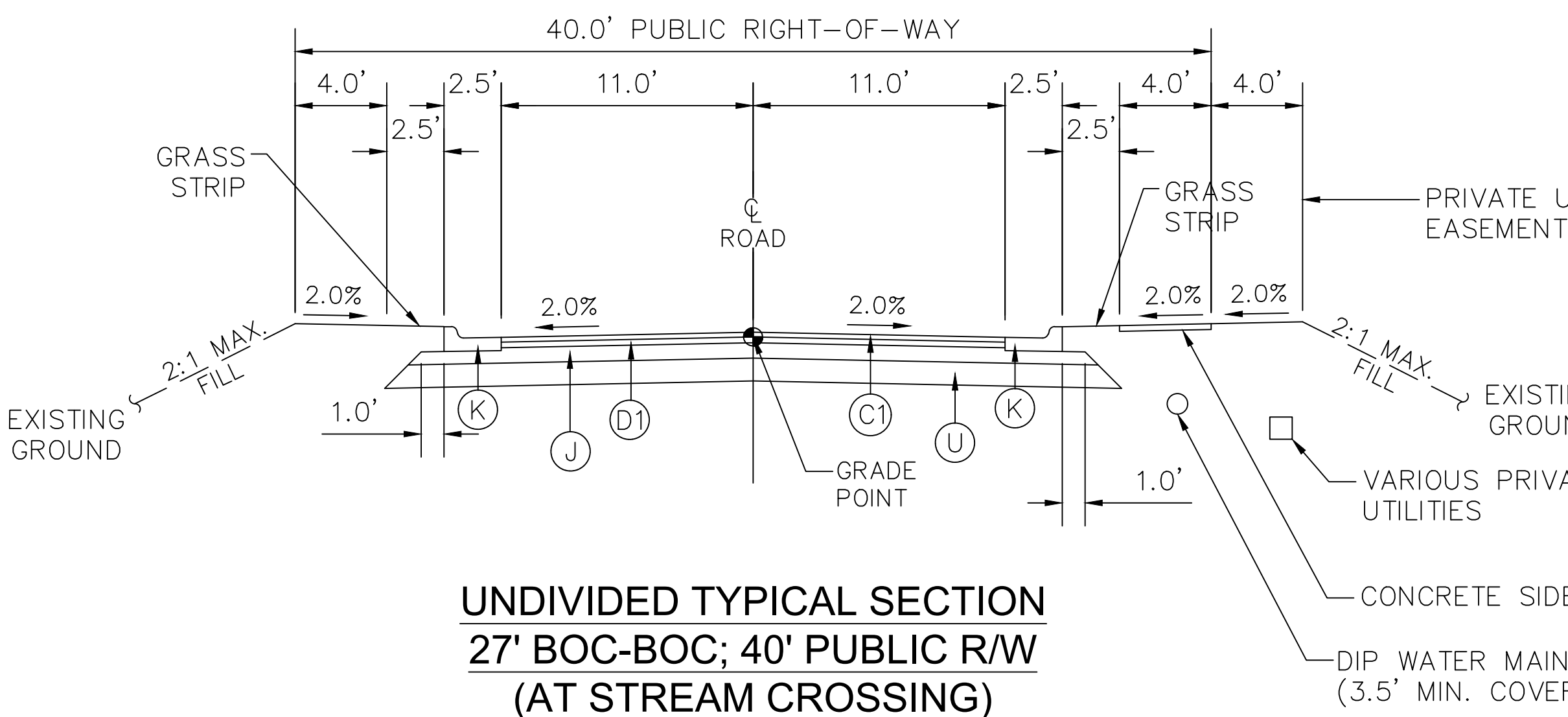
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DRAWING NUMBER	D1.4
REVISION	4

STATUS: FINAL DRAWINGS FOR REVIEW PURPOSES ONLY

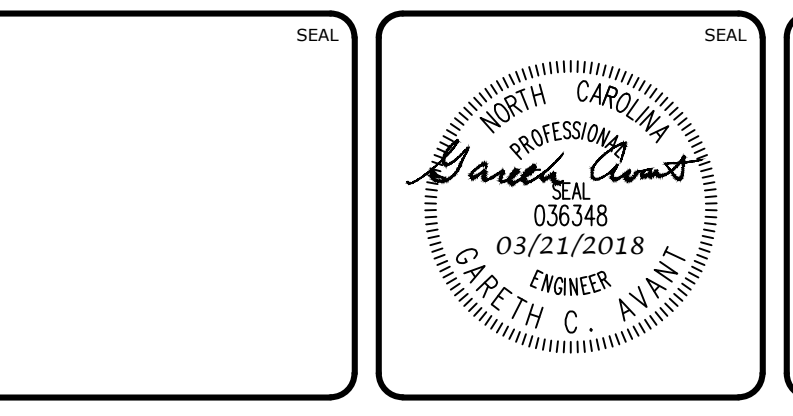


PAVEMENT SCHEDULE

(C)	1.0" SF9.5A ASPHALT SURFACE COURSE AT AN AVERAGE RATE OF 110 LBS. PER SQ. YARD.
(D)	2.0" S9.5B ASPHALT SURFACE COURSE AT AN AVERAGE RATE OF 224 LBS. PER SQ. YARD.
(J)	8" COMPACTED ABC STONE BASE COURSE
(K)	30" CURB AND GUTTER
(U)	COMPACTED SUBGRADE
(G)	GEOTEXTILE FABRIC (IF NECESSARY) COORDINATE WITH GEOTECHNICAL ENGINEER



REV. NO.	DESCRIPTION	DATE
0	INITIAL SUBMITTAL	2018.03.21
1	REVISIONS	



BRIAR CHAPEL BC PHASE 16 NORTH CHATHAM COUNTY, NORTH CAROLINA

NCDOT ROADWAY DETAILS

DATE: MARCH 21, 2018	SCALE: HORIZONTAL: N/A, VERTICAL: N/A	HMC FILE NUMBER: D2.X
MCE PROJ. #: 02735-0206	DRAWN: BSS	DRAWING NUMBER: D2.1
DESIGNED: BSS	CHECKED: GCA	
PROJ. MGR.: CHS		
STATUS: FINAL DRAWINGS FOR REVIEW PURPOSES ONLY		REVISION: 0

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR CONCRETE JUNCTION BOX (WITH OPTIONAL MANHOLE) 12" THRU 66" PIPE

GENERAL NOTES:
CHAMFER ALL EXPOSED CORNERS 1".
USE CLASS "B" CONCRETE THROUGHOUT.
OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2" KEYWAY, OR #4 BAR DOMELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.
USE FORMS TO CONSTRUCT THE BOTTOM SLAB.
IF REINFORCED CONCRETE PIPE IS SET IN BASE SLAB OF BOX, ADD TO BASE AS SHOWN ON STANDARD NO. 840.00.
PROVIDE ALL JUNCTION BOXES OVER 3' 6" IN DEPTH WITH STEPS 12" ON CENTERS IN ACCORDANCE WITH STD. NO. 840.66.
ADJUST THE STEEL, CONCRETE AND BRICK MASONRY QUANTITIES TO INCLUDE THE ADDITION OF THE MANHOLE (I.E. STAIRCASE BARS SHORTENED AND OPENING IN TOP SLAB, ADDITIONAL VARIABLE HEIGHT BRICK MASONRY, OPENING IN TOP SLAB).
MAX. DEPTH OF THIS STRUCTURE FROM TOP OF BOTTOM SLAB TO TOP ELEVATION IS 12 FEET.

DIMENSIONS OF BOX AND PIPE		REINFORCEMENT BARS "A"		CURB VARIOUS IN BOX		TOTAL QUANTITIES FOR BOX AND SLAB		DEDUCTIONS FOR ONE PIPE (CU YDS.)						
PIPE	SPAN	WIDTH	HEIGHT	NO.	LENGTH	TOP SLAB	BOTTOM SLAB	LSB.	LSB.					
D	A	B	H		E	F	G	MIN.	MAX.					
12"	2'-0"	2'-0"	2'-3"	12	3'-0"	3'-0"	3'-0"	0.167	0.167	0.186	22	0.750	0.015	0.024
18"	2'-3"	2'-3"	2'-6"	12	3'-0"	3'-3"	3'-3"	0.186	0.186	0.204	24	0.802	0.020	0.036
18"	3'-0"	2'-6"	2'-6"	14	3'-3"	3'-6"	3'-6"	0.227	0.227	0.252	30	1.066	0.033	0.048
24"	3'-0"	3'-0"	3'-3"	16	3'-6"	4'-0"	4'-0"	0.258	0.258	0.288	40	1.434	0.058	0.085
30"	3'-6"	3'-6"	3'-9"	18	4'-3"	4'-6"	4'-6"	0.375	0.375	0.426	51	1.860	0.092	0.127
36"	4'-0"	4'-0"	4'-3"	20	4'-6"	5'-0"	5'-0"	0.463	0.463	0.531	64	2.341	0.132	0.178
42"	4'-6"	4'-6"	4'-9"	22	5'-3"	5'-6"	5'-6"	0.560	0.560	0.630	77	2.878	0.160	0.243
48"	5'-0"	5'-0"	5'-3"	24	6'-0"	6'-4"	6'-4"	0.743	0.743	0.840	111	3.823	0.235	0.317
54"	5'-6"	5'-6"	5'-9"	26	6'-6"	7'-0"	7'-0"	0.865	0.865	0.984	126	4.283	0.267	0.401
60"	6'-0"	6'-0"	6'-3"	30	7'-3"	7'-6"	7'-6"	1.042	1.042	1.181	145	5.090	0.307	0.456
66"	7'-0"	7'-0"	7'-3"	32	8'-0"	8'-4"	8'-4"	1.210	1.210	1.368	169	5.817	0.444	0.668

ENGLISH STANDARD DRAWING FOR CONCRETE JUNCTION BOX (WITH OPTIONAL MANHOLE) 12" THRU 66" PIPE

SHEET 1 OF 1
840.31

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR CONCRETE GRATED DROP INLET TYPE 'B' 12" THRU 96" PIPE

GENERAL NOTES:
USE CLASS "B" CONCRETE THROUGHOUT.
PROVIDE ALL GRATED DROP INLETS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.
OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2" KEYWAY, OR #4 BAR DOMELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.
USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.
IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.
CONSTRUCT WITH PIPE GRADING MATCHING.
MAX. DEPTH OF THIS STRUCTURE FROM TOP OF BOTTOM SLAB TO TOP ELEVATION IS 12 FEET.
USE STANDARD FRAMES AND GRATES 840.22 (SLOTTED), 840.24 (SLOTTED), 840.20, 840.29, AND 840.33.
SEE STANDARD DRAWING 840.25 FOR ATTACHMENT OF FRAMES AND GRATES NOT SHOWN.
CHAMFER ALL EXPOSED CORNERS 1".
DRAWING NOT TO SCALE.

MINIMUM DIMENSIONS AND QUANTITIES FOR CONCRETE GRATED DROP INLET		CURB VARIOUS IN BOX		TOTAL QUANTITIES FOR ONE PIPE		DEDUCTIONS FOR ONE PIPE (CU YDS.)			
PIPE	SPAN	WIDTH	HEIGHT	NO.	LENGTH	TOP SLAB	BOTTOM SLAB		
D	A	B	H		E	F	G		
12"	3'-0"	2'-0"	2'-6"	0.362	0.247	0.587	0.587	0.020	0.032
15"	3'-6"	2'-0"	2'-6"	0.362	0.247	0.659	0.659	0.021	0.036
18"	3'-6"	2'-0"	3'-0"	0.362	0.247	0.720	0.720	0.023	0.045
24"	3'-6"	2'-0"	3'-6"	0.362	0.247	0.865	0.865	0.027	0.058
30"	3'-6"	2'-0"	4'-0"	0.362	0.247	0.988	0.988	0.029	0.071
36"	3'-6"	2'-0"	4'-6"	0.362	0.247	1.112	1.112	0.032	0.084

ENGLISH STANDARD DRAWING FOR CONCRETE GRATED DROP INLET TYPE 'B' 12" THRU 96" PIPE

SHEET 1 OF 1
840.18

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR CONCRETE CATCH BASIN 12" THRU 54" PIPE

GENERAL NOTES:
USE CLASS "B" CONCRETE THROUGHOUT.
PROVIDE ALL CATCH BASINS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.
OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2" KEYWAY, OR #4 BAR DOMELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.
USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.
IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.
USE TYPE "1", "2", AND "3" GRATES UNLESS OTHERWISE INDICATED.
FOR 4'-0" IN HEIGHT OR LESS USE 6" WALLS AND BOTTOM SLAB. OVER 4'-0" IN HEIGHT USE 8" WALLS AND BOTTOM SLAB. ADJUST QUANTITIES ACCORDINGLY.
CONSTRUCT WITH PIPE GRADING MATCHING.
CHAMFER ALL EXPOSED CORNERS 1".
DRAWING NOT TO SCALE.

MINIMUM DIMENSIONS AND QUANTITIES FOR CONCRETE CATCH BASIN (BASED ON MIN. HEIGHT, N. WITH NO RISER)		CURB VARIOUS IN BOX		TOTAL QUANTITIES FOR ONE PIPE		DEDUCTIONS FOR ONE PIPE (CU YDS.)		
PIPE	SPAN	WIDTH	HEIGHT	NO.	LENGTH	TOP SLAB	BOTTOM SLAB	
D	A	B	H		E	F	G	
12"	3'-0"	2'-0"	2'-6"	0.288	0.272	0.615	0.615	0.026
15"	3'-0"	2'-0"	3'-0"	0.288	0.272	0.687	0.687	0.028
18"	3'-0"	2'-0"	3'-6"	0.288	0.272	0.759	0.759	0.030
24"	3'-0"	2'-0"	4'-0"	0.288	0.272	0.831	0.831	0.032
30"	3'-0"	2'-0"	4'-6"	0.288	0.272	0.903	0.903	0.034
36"	3'-0"	2'-0"	5'-0"	0.288	0.272	0.975	0.975	0.036
42"	3'-0"	2'-0"	5'-6"	0.288	0.272	1.047	1.047	0.038
48"	3'-0"	2'-0"	6'-0"	0.288	0.272	1.119	1.119	0.040
54"	3'-0"	2'-0"	6'-6"	0.288	0.272	1.191	1.191	0.042

ENGLISH STANDARD DRAWING FOR CONCRETE CATCH BASIN 12" THRU 54" PIPE

SHEET 1 OF 2
840.02

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR MANHOLE FRAME AND COVER

SOLID COVER SHOWN PERFORATED. PERFORATED AVAILABLE IF SPECIFIED.
STATE USE OF SYSTEM ON COVER (I.E.: SEWER, STORM DRAIN, ELECTRICAL)

MINIMUM WEIGHTS - LBS.
FRAME - 180
COVER - 120
TOTAL - 300

ENGLISH STANDARD DRAWING FOR MANHOLE FRAME AND COVER

SHEET 1 OF 1
840.54

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR FRAMES AND NARROW SLOT SAG GRATES

NOTE: SEE STD. DWG. 840.25 FOR FRAME ANCHORAGE.

ENGLISH STANDARD DRAWING FOR FRAMES AND NARROW SLOT SAG GRATES

SHEET 1 OF 1
840.24

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR CONCRETE CATCH BASIN 12" THRU 54" PIPE

MINIMUM DIMENSIONS AND QUANTITIES FOR CONCRETE CATCH BASIN (BASED ON MIN. HEIGHT, N. WITH NO RISER)

DIMENSIONS OF BOX AND PIPE		CURB VARIOUS IN BOX		TOTAL QUANTITIES FOR ONE PIPE		DEDUCTIONS FOR ONE PIPE (CU YDS.)		
PIPE	SPAN	WIDTH	HEIGHT	NO.	LENGTH	TOP SLAB	BOTTOM SLAB	
D	A	B	H		E	F	G	
12"	3'-0"	2'-0"	2'-6"	0.288	0.272	0.615	0.615	0.026
15"	3'-0"	2'-0"	3'-0"	0.288	0.272	0.687	0.687	0.028
18"	3'-0"	2'-0"	3'-6"	0.288	0.272	0.759	0.759	0.030
24"	3'-0"	2'-0"	4'-0"	0.288	0.272	0.831	0.831	0.032
30"	3'-0"	2'-0"	4'-6"	0.288	0.272	0.903	0.903	0.034
36"	3'-0"	2'-0"	5'-0"	0.288	0.272	0.975	0.975	0.036
42"	3'-0"	2'-0"	5'-6"	0.288	0.272	1.047	1.047	0.038
48"	3'-0"	2'-0"	6'-0"	0.288	0.272	1.119	1.119	0.040
54"	3'-0"	2'-0"	6'-6"	0.288	0.272	1.191	1.191	0.042

ENGLISH STANDARD DRAWING FOR CONCRETE CATCH BASIN 12" THRU 54" PIPE

SHEET 2 OF 2
840.02

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR FRAME, GRATES, AND HOOD FOR USE ON STANDARD CATCH BASIN

NOTE: USE TYPE "E", "F" AND "G" GRATE UNLESS OTHERWISE NOTED.

ALIGN FRAME WITH INSIDE EDGE OF WALL TO ALLOW FOR VERTICAL ADJUSTMENT

ENGLISH STANDARD DRAWING FOR FRAME, GRATES, AND HOOD FOR USE ON STANDARD CATCH BASIN

SHEET 1 OF 2
840.03

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR FRAME, GRATES, AND HOOD FOR USE ON STANDARD CATCH BASIN

DETAIL SHOWING TYPES OF GRATES USE ACCORDING TO WATER FLOW.

ENGLISH STANDARD DRAWING FOR FRAME, GRATES, AND HOOD FOR USE ON STANDARD CATCH BASIN

SHEET 2 OF 2
840.03

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

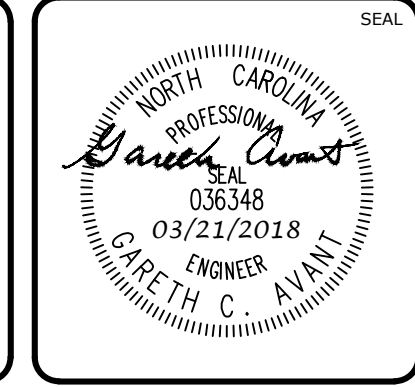
ENGLISH STANDARD DRAWING FOR TRAFFIC BEARING PRECAST DRAINAGE STRUCTURE

GENERAL NOTES:
THIS PRECAST BOX MAY BE USED FOR THE FOLLOWING STANDARDS: 840.04, 840.05, 840.14, 840.15, 840.31, 840.32, 840.34, 840.35, 840.36 AND 840.41.
INSTALL AND PAY FOR PRECAST DRAINAGE STRUCTURES IN ACCORDANCE WITH THE STANDARD SPECIFICATION SECTION 840.
USE 4000 PSI MINIMUM COMPRESSIVE STRENGTH CONCRETE.
USE ASTM A618 GR60 #5 REINFORCING STEEL. USE ASTM A186 WELDED WIRE FABRIC (WWF).
LIMIT MAXIMUM DEPTH TO TOP OF BOTTOM SLAB TO 15'-0".
PLACE LIFT HOLES ON PINS IN ACCORDANCE WITH OSHA STANDARD 1926.704.
ORIENT STRUCTURES SO THAT CORNERS WILL NOT BE CUT OR MODIFIED UNLESS ALLOWED BY DETAIL IN PLANS.
PRECAST ALL ELEMENTS TO MEET ASTM C913.
FRAME AND GRADE HEIGHT MAY BE ADJUSTED WITH CONCRETE OR BRICK IN ACCORDANCE WITH STANDARD 840.25.
PROVIDE PRECAST STRUCTURES OVER 4'-0" IN DEPTH WITH STEPS 12" ON CENTERS IN ACCORDANCE WITH STD. NO. 840.66.
WELDED WIRE FABRIC MAY BE SUBSTITUTED FOR REBAR IF THE SAME MIN. AREA OF STEEL IS PROVIDED.
SEAL JOINTS WITH AN APPROVED SEALANT (SEE SECTION 840 OF NOOD STANDARD SPECIFICATION).
LIMIT MAXIMUM STRUCTURE SIZE INSIDE CLEAR DIMENSIONS TO 6'-0" X 6'-0".
PLACE LIFT HOLES ON PINS IN ACCORDANCE WITH OSHA STANDARD 1926.704.
THE OUTSIDE PIPE DIAMETER PLUS 2" IS THE MINIMUM STRUCTURE SIZE OR THE OPENING REQUIRED FOR GRATE AND FRAME WHICHEVER IS GREATER.
ROUND MANHOLE MAY BE USED IN LIEU OF SQUARE PROVIDED 2 EXTRA #5'S ARE PLACED ON EVERY SIDE NOT ADJACENT TO A WALL. SEE STD. DWG. 840.34 FOR MANHOLE INSTALLATION.

ENGLISH STANDARD DRAWING FOR TRAFFIC BEARING PRECAST DRAINAGE STRUCTURE

SHEET 1 OF 1
840.46

REV. NO.	INITIAL SUBMITTAL	DATE	DESCRIPTIONS / REVISIONS
0		2018.03.21	

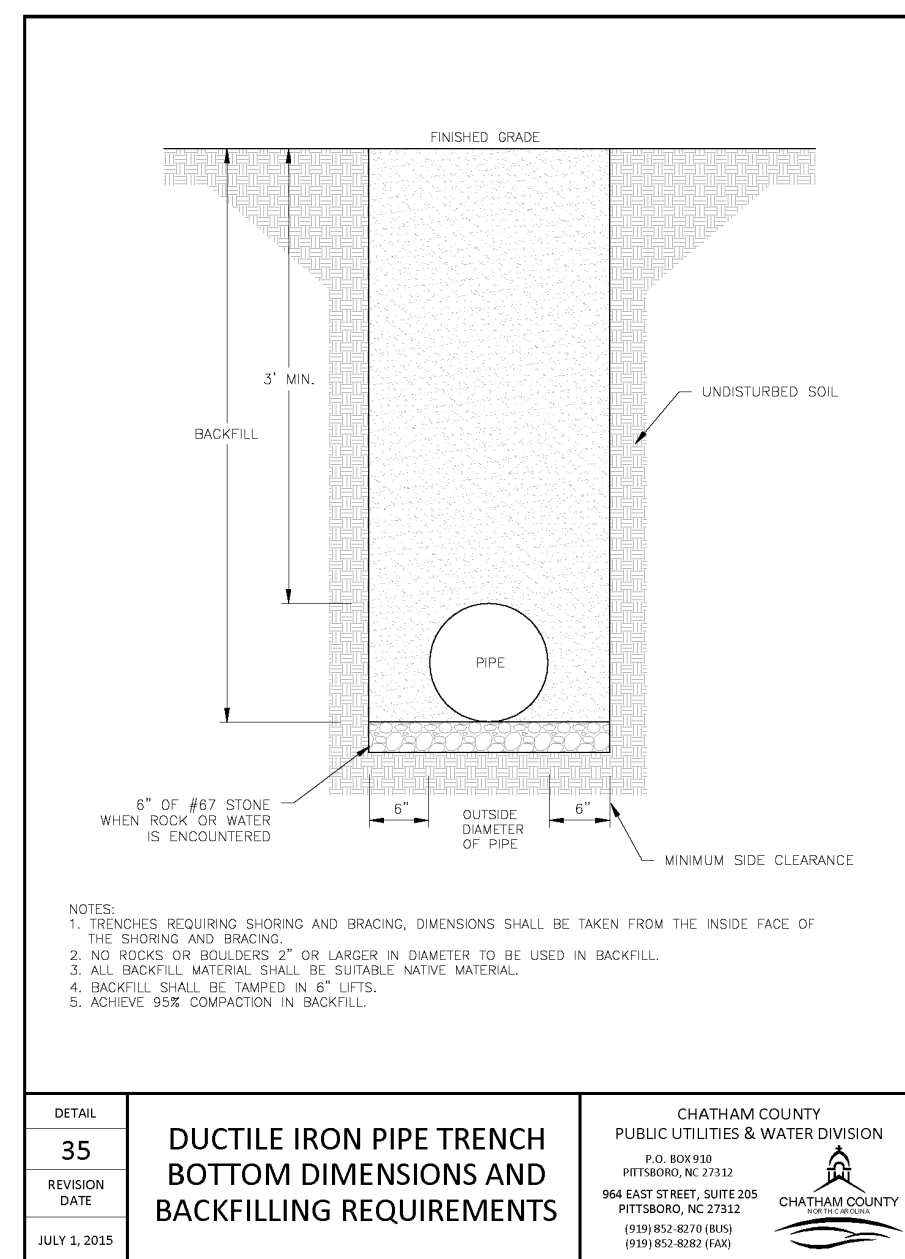


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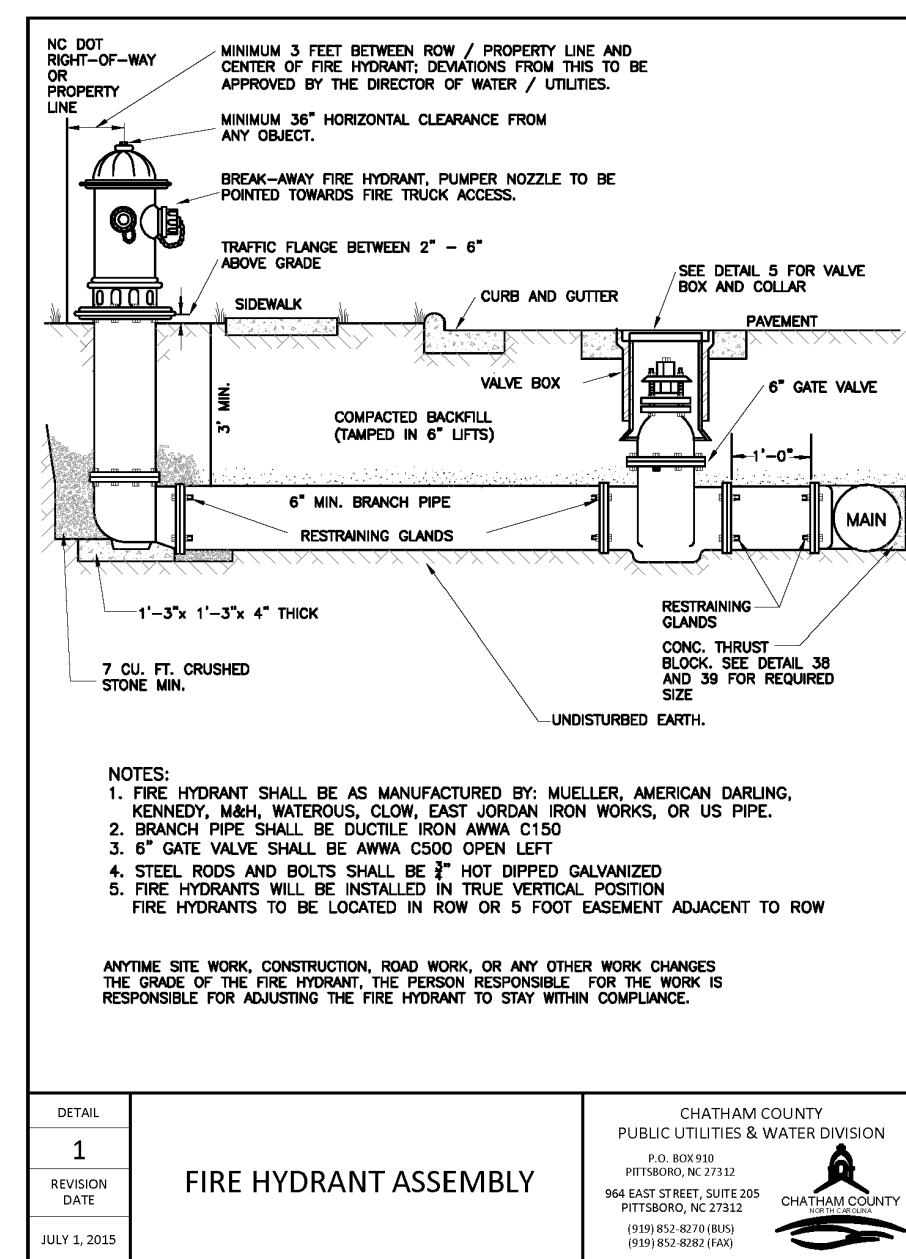
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BRIAR CHAPEL
BC PHASE 16 NORTH
CHATHAM COUNTY, NORTH CAROLINA
NCDOT DRAINAGE DETAILS

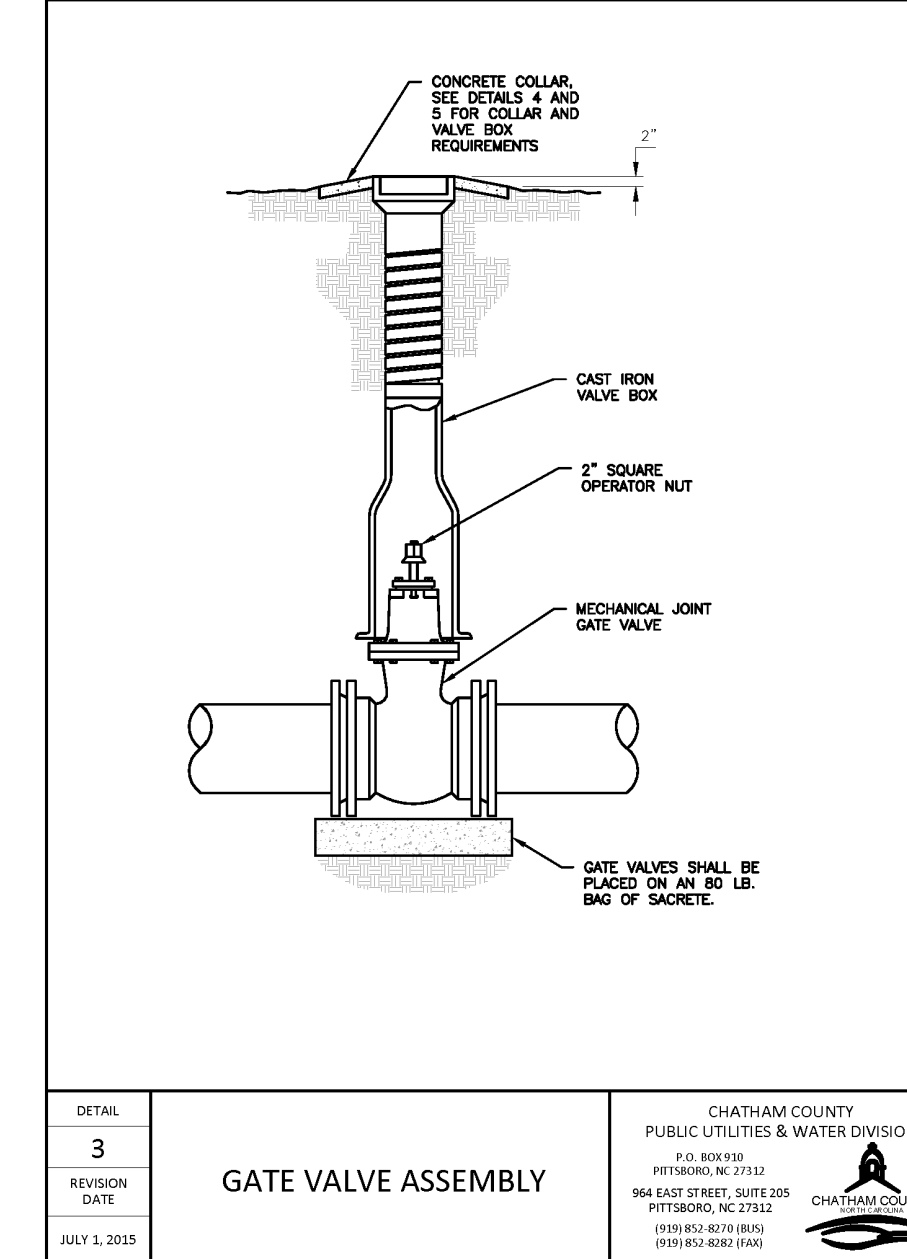
DATE: MARCH 21, 2018	SCALE: HORIZONTAL: N/A	REV. NO.:
MCE PROJ. # 02735-0206	VERTICAL: N/A	0
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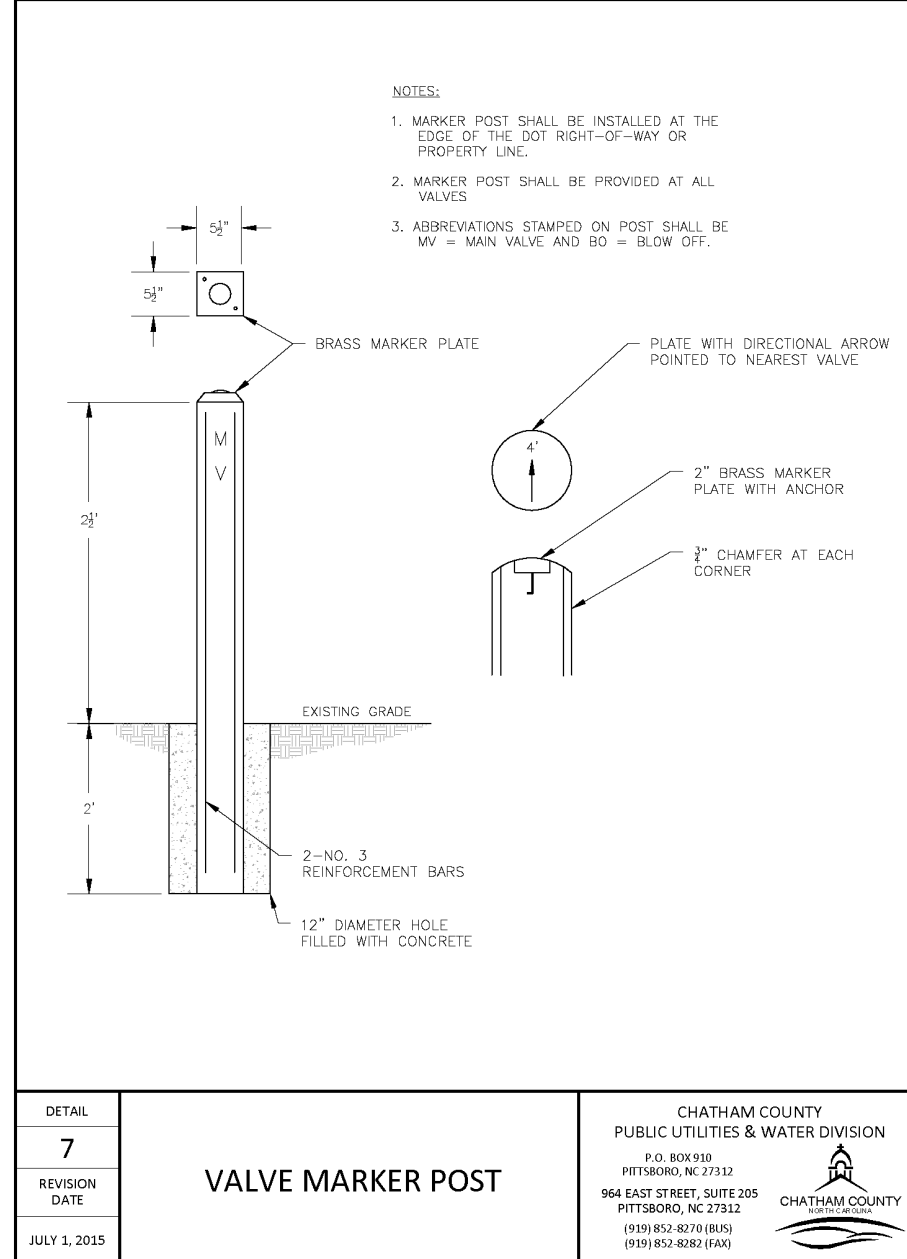
DETAIL	35	DUCTILE IRON PIPE TRENCH BOTTOM DIMENSIONS AND BACKFILLING REQUIREMENTS	CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION P.O. BOX 900 PITTSBORO, NC 27513 964 EAST STREET, SUITE 205 PITTSBORO, NC 27513 (919) 853-8070 (919) 853-8000 (919) 853-8000
REVISION	1	FIRE HYDRANT ASSEMBLY	CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION P.O. BOX 900 PITTSBORO, NC 27513 964 EAST STREET, SUITE 205 PITTSBORO, NC 27513 (919) 853-8070 (919) 853-8000 (919) 853-8000
DATE	JULY 1, 2015		



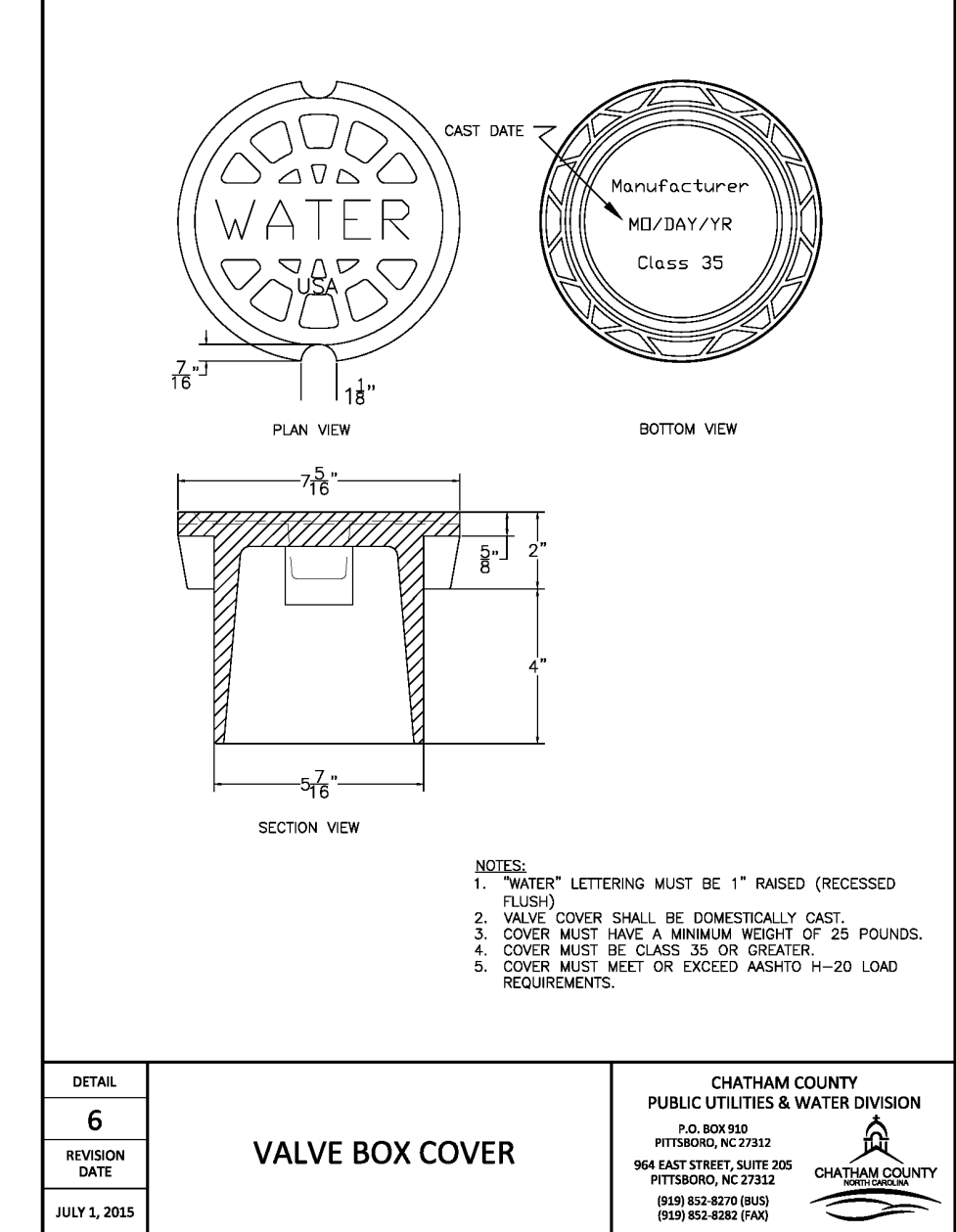
DETAIL	3	GATE VALVE ASSEMBLY	CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION P.O. BOX 900 PITTSBORO, NC 27513 964 EAST STREET, SUITE 205 PITTSBORO, NC 27513 (919) 853-8070 (919) 853-8000 (919) 853-8000
REVISION	7	VALVE MARKER POST	CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION P.O. BOX 900 PITTSBORO, NC 27513 964 EAST STREET, SUITE 205 PITTSBORO, NC 27513 (919) 853-8070 (919) 853-8000 (919) 853-8000
DATE	JULY 1, 2015		



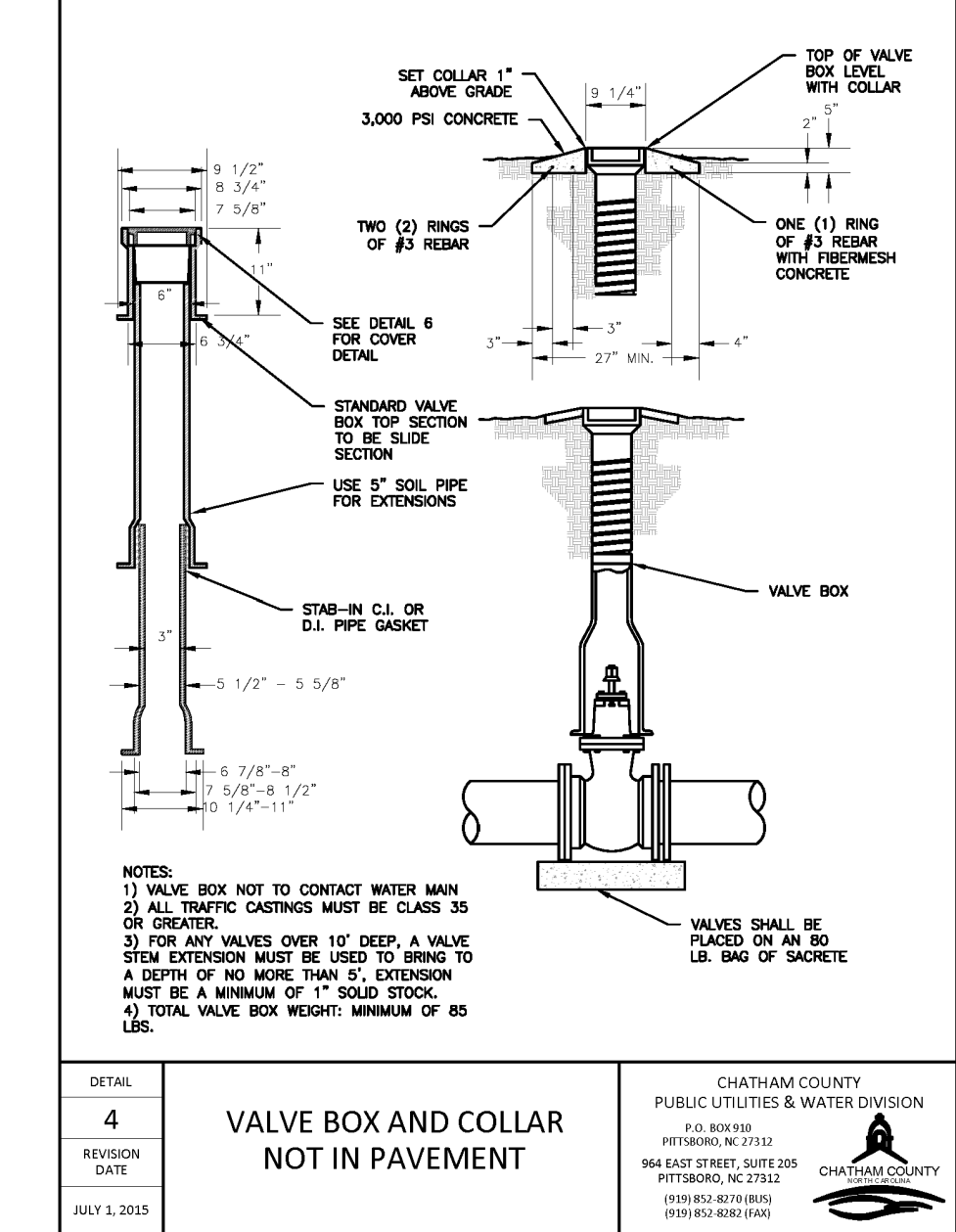
DETAIL	6	VALVE BOX COVER	CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION P.O. BOX 900 PITTSBORO, NC 27513 964 EAST STREET, SUITE 205 PITTSBORO, NC 27513 (919) 853-8070 (919) 853-8000 (919) 853-8000
REVISION	4	VALVE BOX AND COLLAR NOT IN PAVEMENT	CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION P.O. BOX 900 PITTSBORO, NC 27513 964 EAST STREET, SUITE 205 PITTSBORO, NC 27513 (919) 853-8070 (919) 853-8000 (919) 853-8000
DATE	JULY 1, 2015		



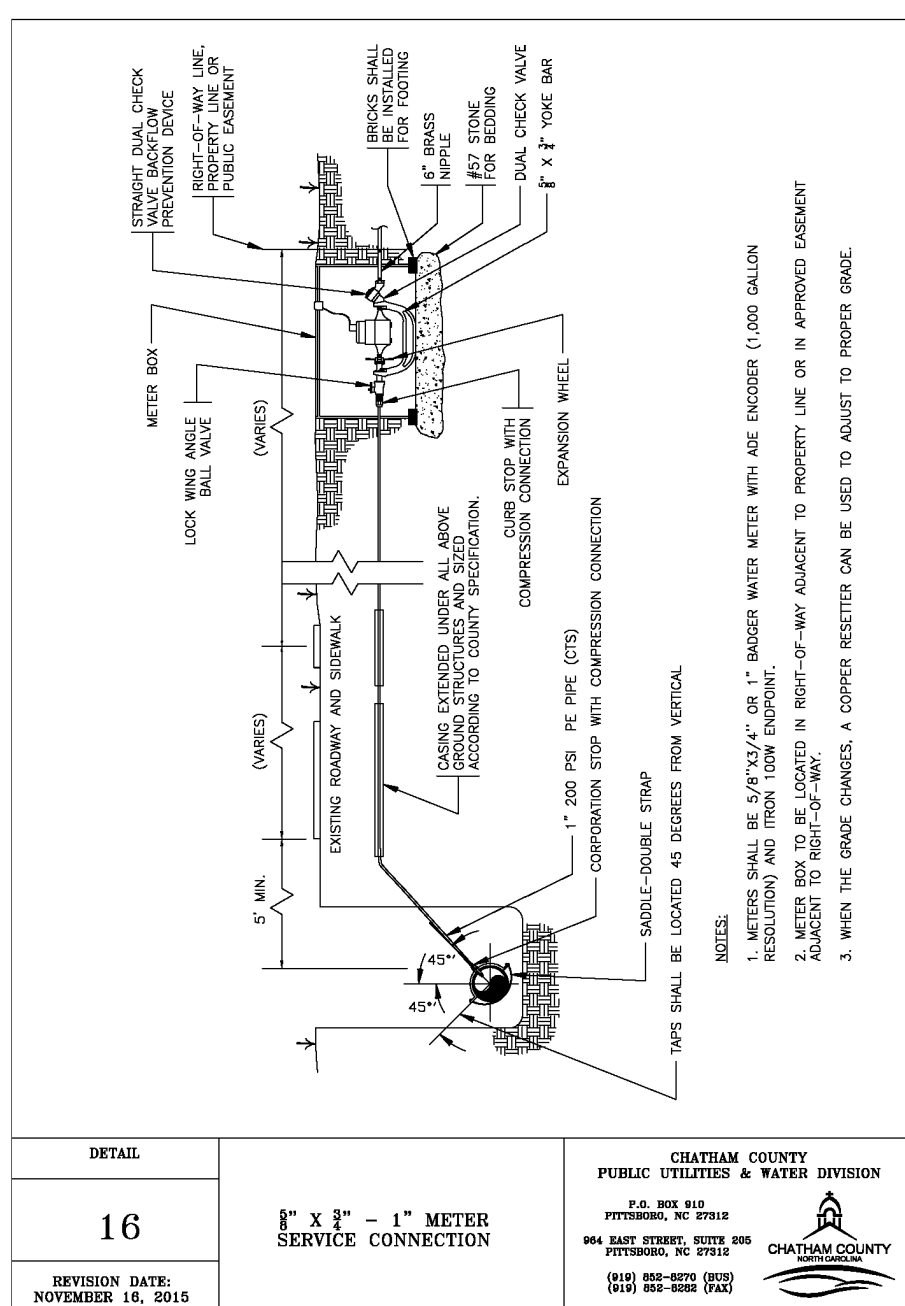
DETAIL	39	CONCRETE THRUST BLOCKING QUANTITY TABLE, 24\" - 48\" PIPE	CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION P.O. BOX 900 PITTSBORO, NC 27513 964 EAST STREET, SUITE 205 PITTSBORO, NC 27513 (919) 853-8070 (919) 853-8000 (919) 853-8000
REVISION	37	STANDARD THRUST BLOCKING QUANTITY	CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION P.O. BOX 900 PITTSBORO, NC 27513 964 EAST STREET, SUITE 205 PITTSBORO, NC 27513 (919) 853-8070 (919) 853-8000 (919) 853-8000
DATE	JULY 1, 2015		



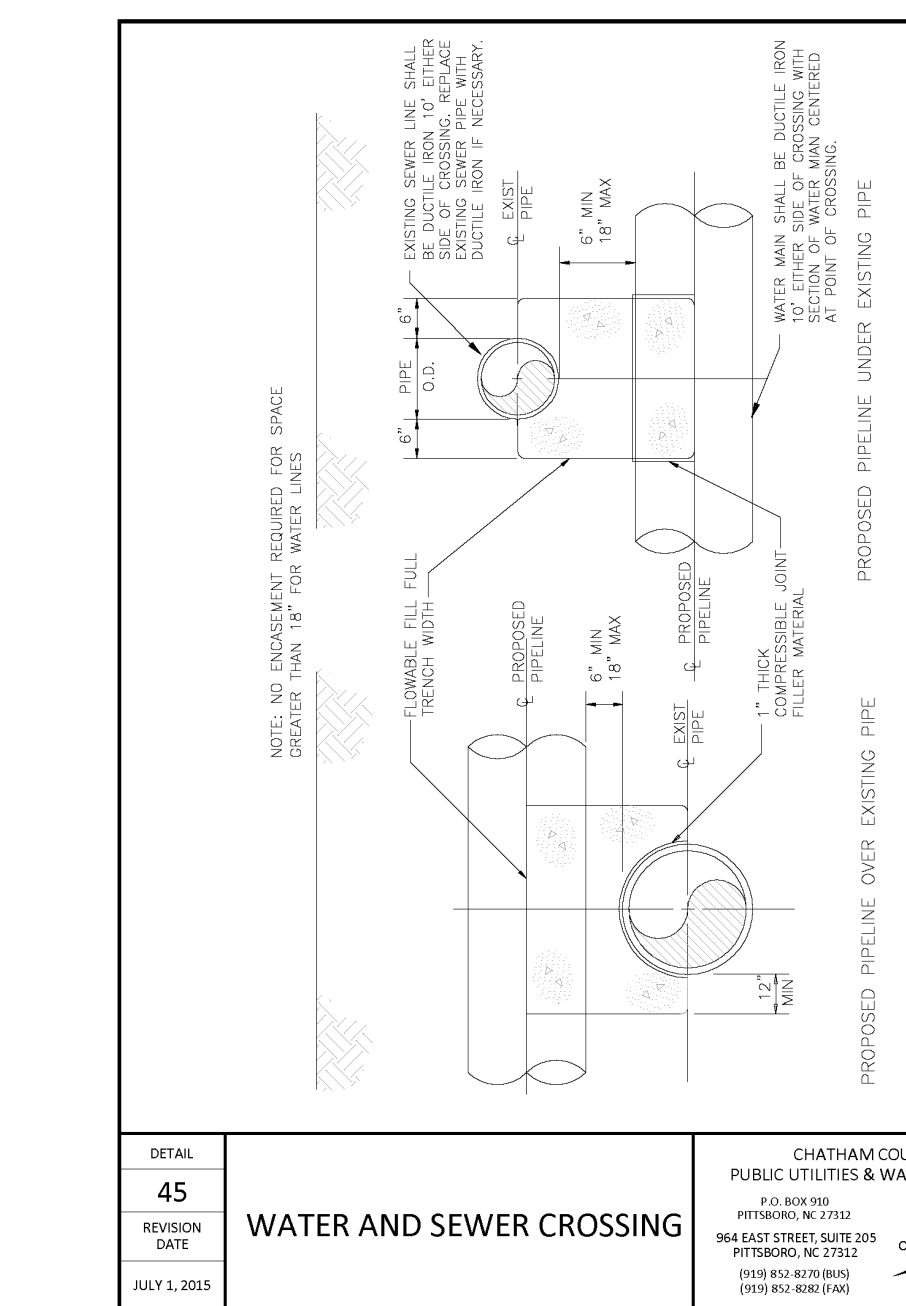
DETAIL	37	STANDARD THRUST BLOCKING QUANTITY	CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION P.O. BOX 900 PITTSBORO, NC 27513 964 EAST STREET, SUITE 205 PITTSBORO, NC 27513 (919) 853-8070 (919) 853-8000 (919) 853-8000
REVISION	38	CONCRETE THRUST BLOCKING QUANTITY TABLE, 6\" - 16\" PIPE	CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION P.O. BOX 900 PITTSBORO, NC 27513 964 EAST STREET, SUITE 205 PITTSBORO, NC 27513 (919) 853-8070 (919) 853-8000 (919) 853-8000
DATE	JULY 1, 2015		



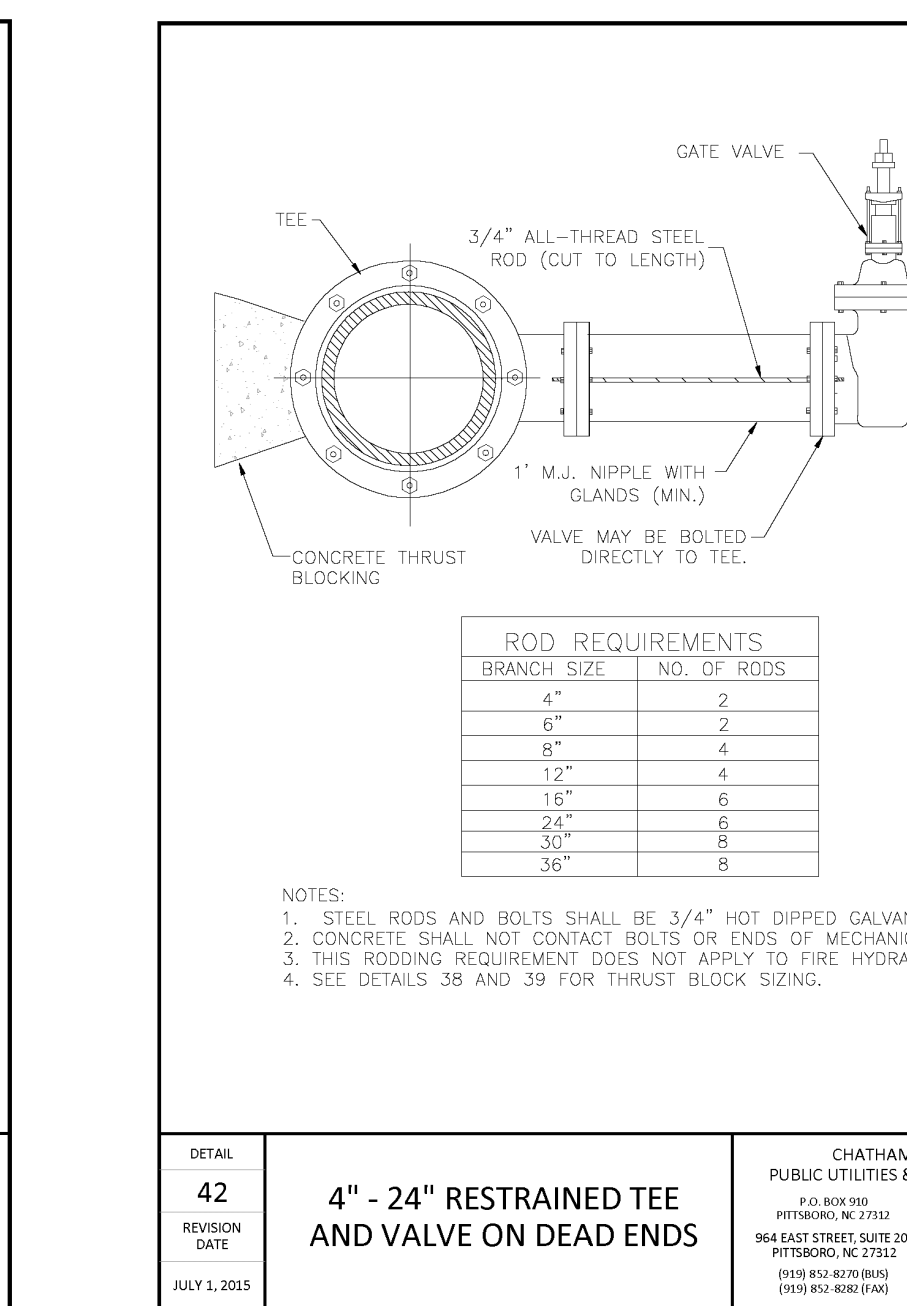
DETAIL	42	4\" - 24\" RESTRAINED TEE AND VALVE ON DEAD ENDS	CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION P.O. BOX 900 PITTSBORO, NC 27513 964 EAST STREET, SUITE 205 PITTSBORO, NC 27513 (919) 853-8070 (919) 853-8000 (919) 853-8000
REVISION	39	CONCRETE THRUST BLOCKING QUANTITY TABLE, 24\" - 48\" PIPE	CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION P.O. BOX 900 PITTSBORO, NC 27513 964 EAST STREET, SUITE 205 PITTSBORO, NC 27513 (919) 853-8070 (919) 853-8000 (919) 853-8000
DATE	JULY 1, 2015		



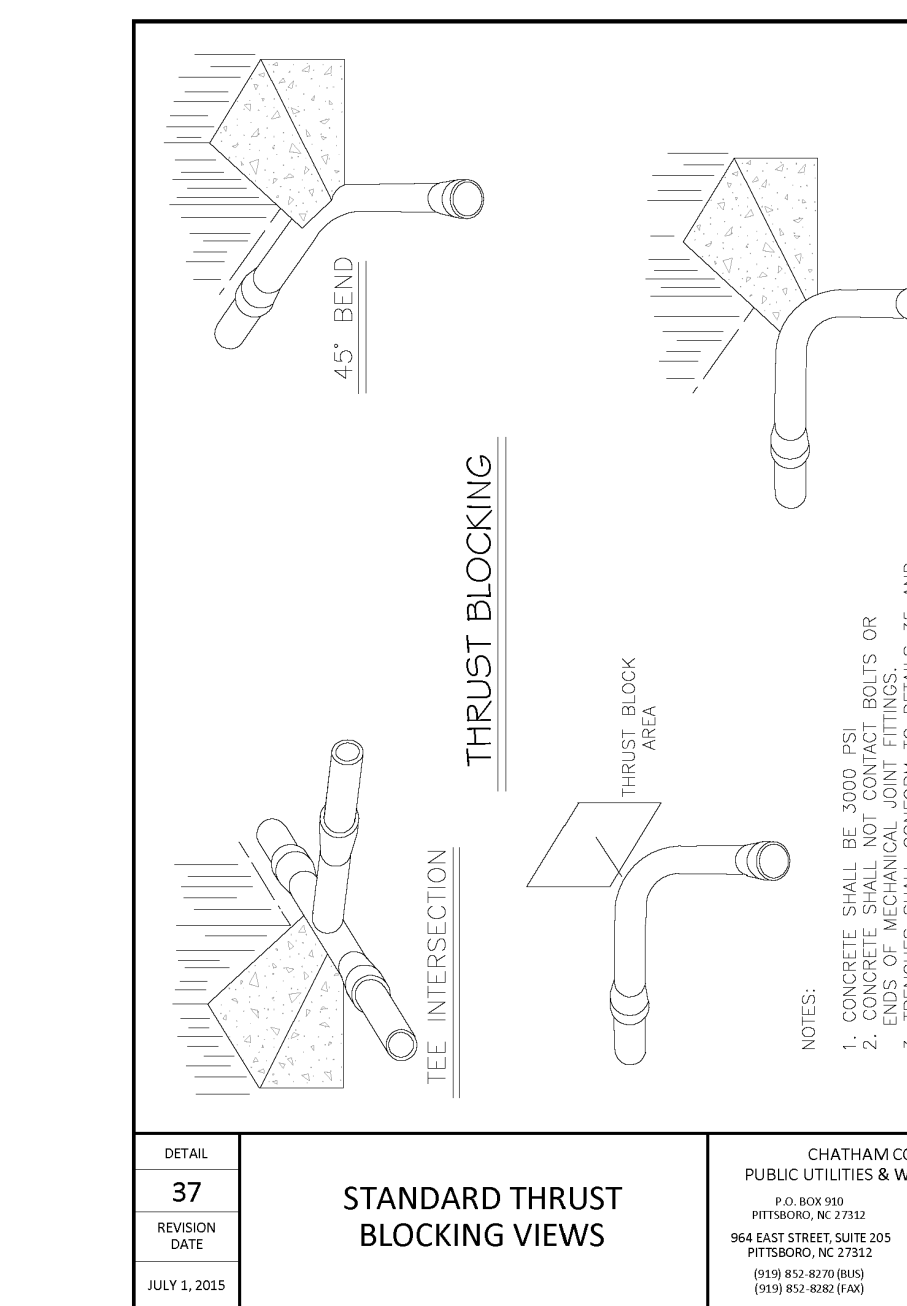
DETAIL	45	WATER AND SEWER CROSSING	CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION P.O. BOX 900 PITTSBORO, NC 27513 964 EAST STREET, SUITE 205 PITTSBORO, NC 27513 (919) 853-8070 (919) 853-8000 (919) 853-8000
REVISION	44	4\" - 24\" RESTRAINED TEE AND VALVE ON DEAD ENDS	CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION P.O. BOX 900 PITTSBORO, NC 27513 964 EAST STREET, SUITE 205 PITTSBORO, NC 27513 (919) 853-8070 (919) 853-8000 (919) 853-8000
DATE	JULY 1, 2015		



DETAIL	37	STANDARD THRUST BLOCKING QUANTITY	CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION P.O. BOX 900 PITTSBORO, NC 27513 964 EAST STREET, SUITE 205 PITTSBORO, NC 27513 (919) 853-8070 (919) 853-8000 (919) 853-8000
REVISION	38	CONCRETE THRUST BLOCKING QUANTITY TABLE, 6\" - 16\" PIPE	CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION P.O. BOX 900 PITTSBORO, NC 27513 964 EAST STREET, SUITE 205 PITTSBORO, NC 27513 (919) 853-8070 (919) 853-8000 (919) 853-8000
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DETAIL	39	CONCRETE THRUST BLOCKING QUANTITY TABLE, 24\" - 48\" PIPE	CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION P.O. BOX 900 PITTSBORO, NC 27513 964 EAST STREET, SUITE 205 PITTSBORO, NC 27513 (919) 853-8070 (919) 853-8000 (919) 853-8000
REVISION	37	STANDARD THRUST BLOCKING QUANTITY	CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION P.O. BOX 900 PITTSBORO, NC 27513 964 EAST STREET, SUITE 205 PITTSBORO, NC 27513 (919) 853-8070 (919) 853-8000 (919) 853-8000
DATE	JULY 1, 2015		

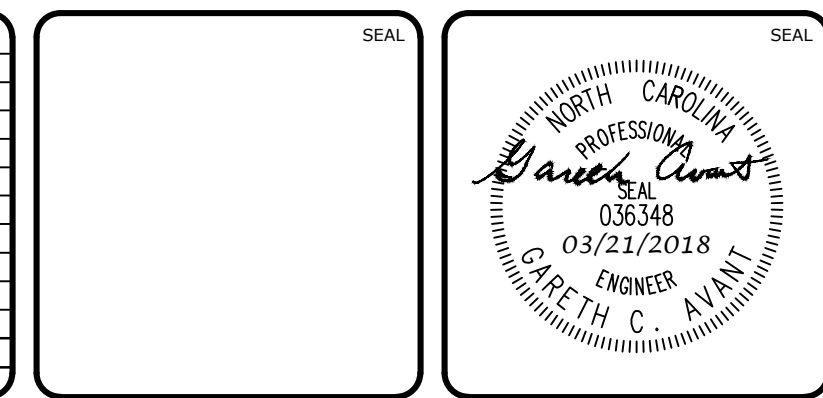


DETAIL	38	CONCRETE THRUST BLOCKING QUANTITY TABLE, 6\" - 16\" PIPE	CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION P.O. BOX 900 PITTSBORO, NC 27513 964 EAST STREET, SUITE 205 PITTSBORO, NC 27513 (919) 853-8070 (919) 853-8000 (919) 853-8000
REVISION	39	CONCRETE THRUST BLOCKING QUANTITY TABLE, 24\" - 48\" PIPE	CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION P.O. BOX 900 PITTSBORO, NC 27513 964 EAST STREET, SUITE 205 PITTSBORO, NC 27513 (919) 853-8070 (919) 853-8000 (919) 853-8000
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DETAIL	39	CONCRETE THRUST BLOCKING QUANTITY TABLE, 24\" - 48\" PIPE	CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION P.O. BOX 900 PITTSBORO, NC 27513 964 EAST STREET, SUITE 205 PITTSBORO, NC 27513 (919) 853-8070 (919) 853-8000 (919) 853-8000
REVISION	37	STANDARD THRUST BLOCKING QUANTITY	CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION P.O. BOX 900 PITTSBORO, NC 27513 964 EAST STREET, SUITE 205 PITTSBORO, NC 27513 (919) 853-8070 (919) 853-8000 (919) 853-8000
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DETAIL	38	CONCRETE THRUST BLOCKING QUANTITY TABLE, 6\" - 16\" PIPE	CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION P.O. BOX 900 PITTSBORO, NC 27513 964 EAST STREET, SUITE 205 PITTSBORO, NC 27513 (919) 853-8070 (919) 853-8000 (919) 853-8000
REVISION	39	CONCRETE THRUST BLOCKING QUANTITY TABLE, 24\" - 48\" PIPE	CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION P.O. BOX 900 PITTSBORO, NC 27513 964 EAST STREET, SUITE 205 PITTSBORO, NC 27513 (919) 853-8070 (919) 853-8000 (919) 853-8000
DATE	JULY 1, 2015		

REV. NO.	DESCRIPTION	DATE
0	INITIAL SUBMITTAL	2018.03.21



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BRIAR CHAPEL BC PHASE 16 NORTH CHATHAM COUNTY, NORTH CAROLINA
UTILITY DETAILS

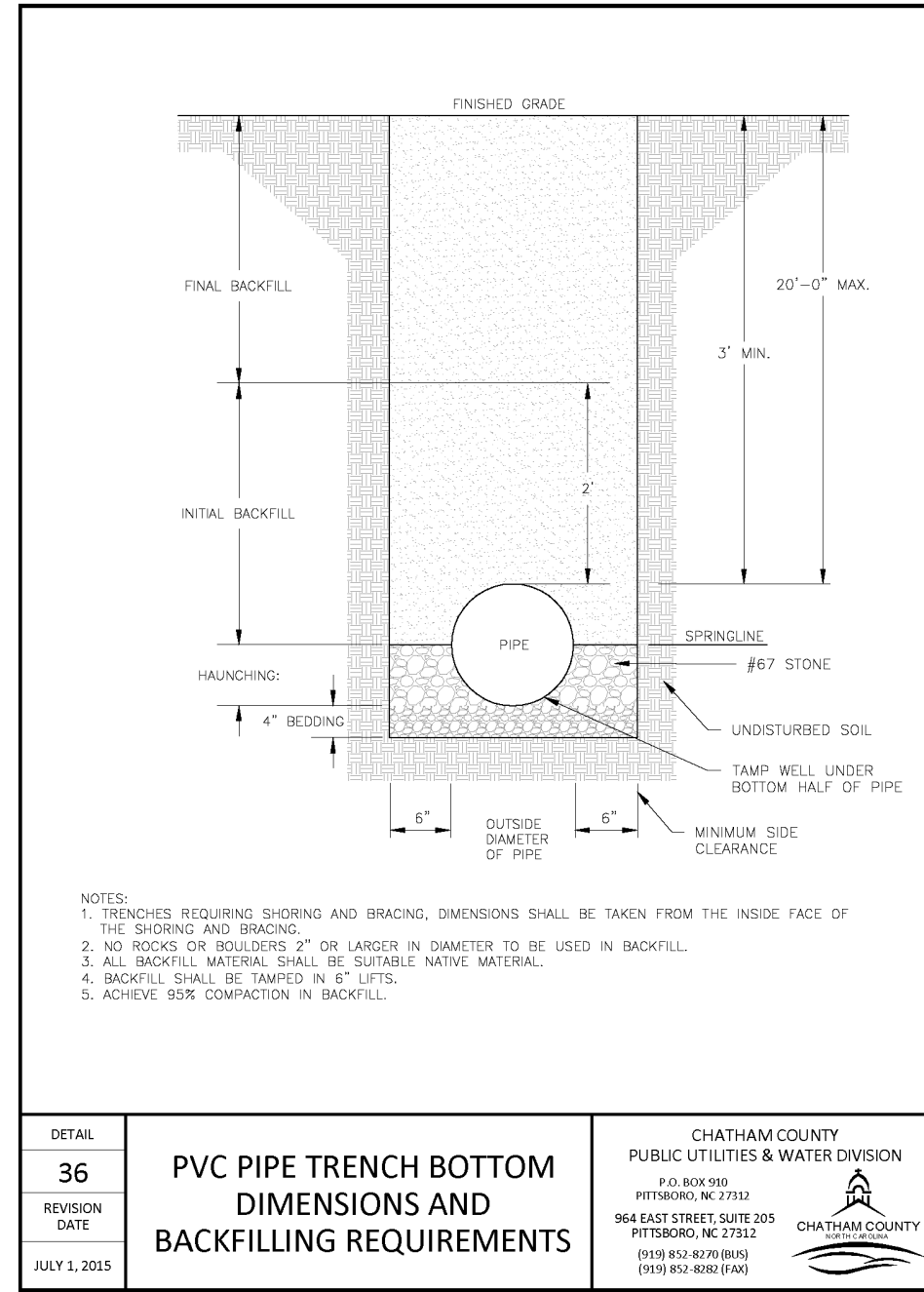
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DESIGNED:	BSS	CHECKED:	GCA		
PROJ. MGR.:	CHS				
STATUS:	FOR REVIEW PURPOSES ONLY	REVISION:	0		

DETECTABLE WARNING TAPE NOTES:

1. THE TAPE SHALL BE AN INERT, BONDED LAYER PLASTIC WITH A METALIZED FOIL CORE AND SHALL BE HIGHLY RESISTANT TO ALKALIS, ACID, OR OTHER DESTRUCTIVE CHEMICAL COMPONENTS LIKELY TO BE ENCOUNTERED IN SOILS.
2. THE TAPE SHALL BE BRIGHTLY COLORED TO CONTRAST WITH SOIL AND SHALL BEAR AN IMPRINT IDENTIFYING THE TYPE OF LINE BURIED BELOW. THE TAPE SHALL BE A MINIMUM OF 2" WIDE.
3. THE TAPE SHALL BE BURIED A MINIMUM OF 6" AND A MAXIMUM OF 12" BELOW THE GROUND SURFACE DIRECTLY ABOVE THE WATER LINE WITH PRINTED SIDE UP.

TRACER WIRE NOTES:

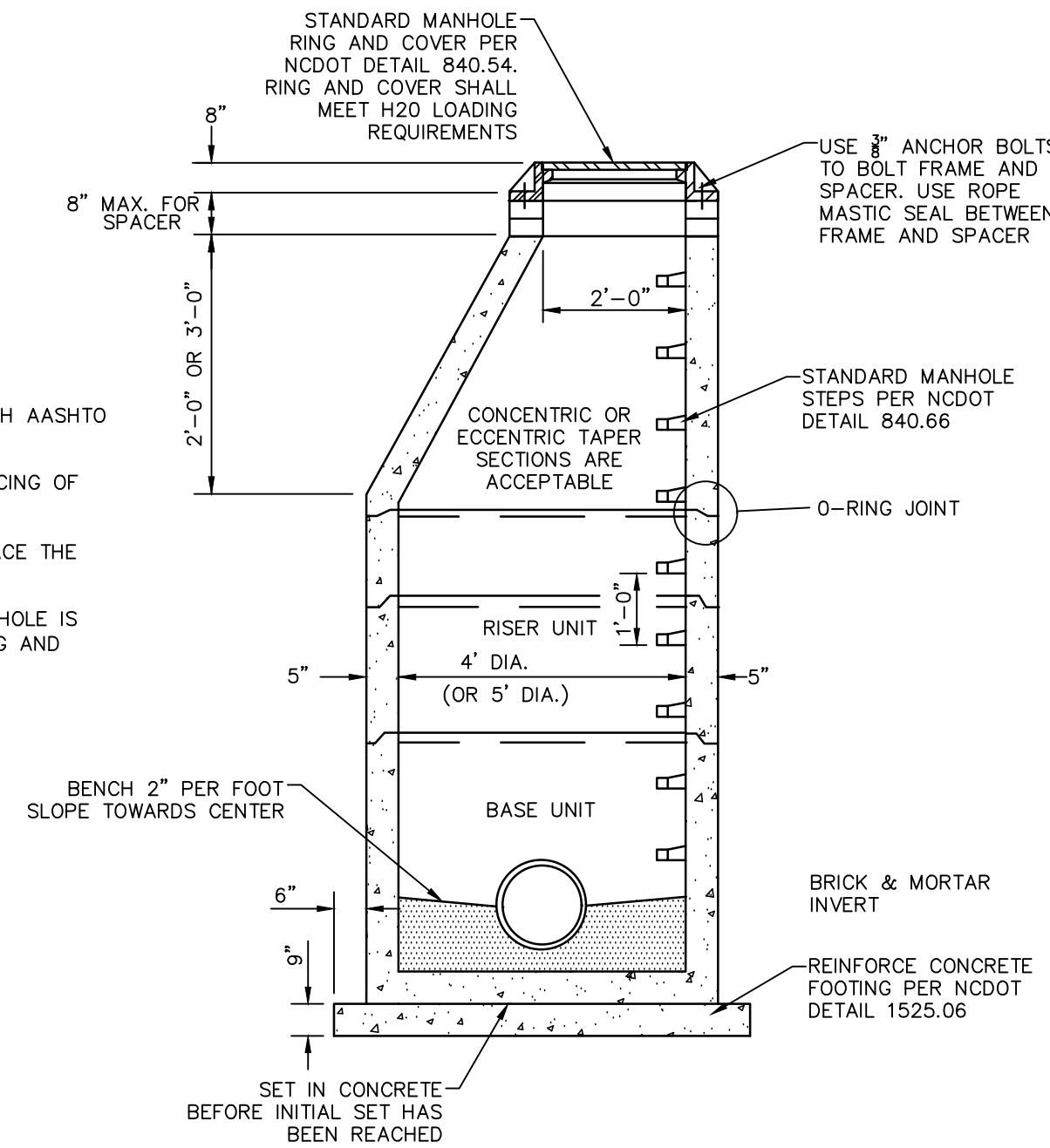
1. TRACER WIRE IS TO BE STANDARD NO. 12 GAUGE COATED COPPER WIRE.
2. LOCATION WIRE CONNECTIONS ARE TO BE A WATER TIGHT CONNECTION USING TWISTER DB PLUS WATERPROOF WIRE CONNECTORS OR AN APPROVED EQUAL.



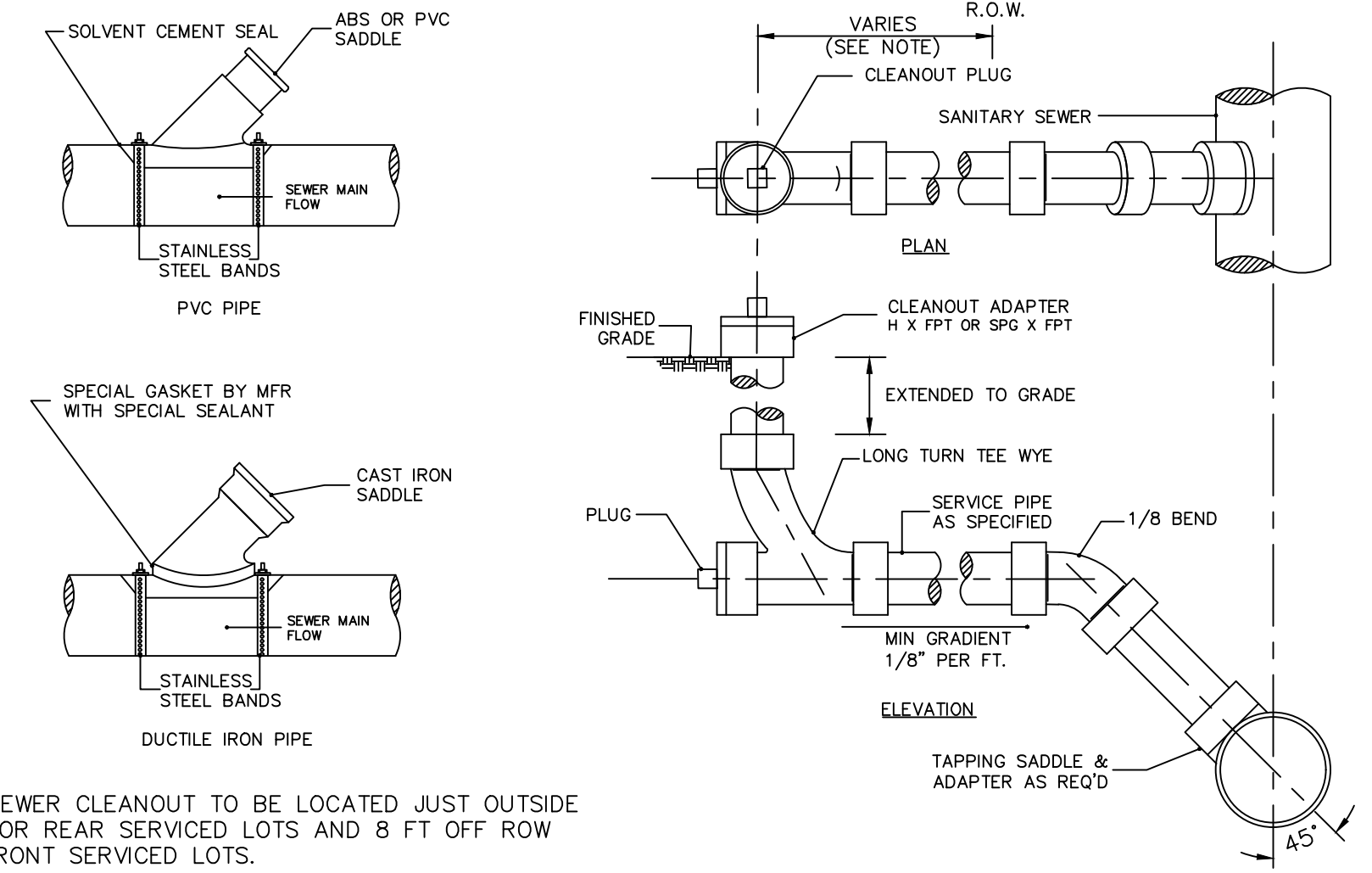
DETAIL	36	PVC PIPE TRENCH BOTTOM DIMENSIONS AND BACKFILLING REQUIREMENTS	CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION P.O. BOX 1000 WYOMING, NC 27252 904 EAST STREET, SUITE 205 WYOMING, NC 27252 (919) 852-8000 (919) 852-8000
REVISION	DATE		
	JULY 1, 2015		

NOTES:

1. PROVIDE PRECAST MANHOLE COMPONENTS WHICH COMPLY WITH AASHTO M199.
2. ASSEMBLE RISERS AND GRADE RINGS SO STES HAVE A SPACING OF 12" FROM THE TOP TO THE BOTTOM OF THE MANHOLE.
3. WHERE THE MANHOLE IS EXPOSED TO ROADWAY TRAFFIC, PLACE THE TOP OF THE MANHOLE FLUSH WITH THE GROUND.
4. REINFORCED CONCRETE FOOTING IS REQUIRED WHEN THE MANHOLE IS OVER 12" IN DEPTH OR ON A POOR SOIL BASE. THE FOOTING AND BASE SECTION MAY BE PRECAST.



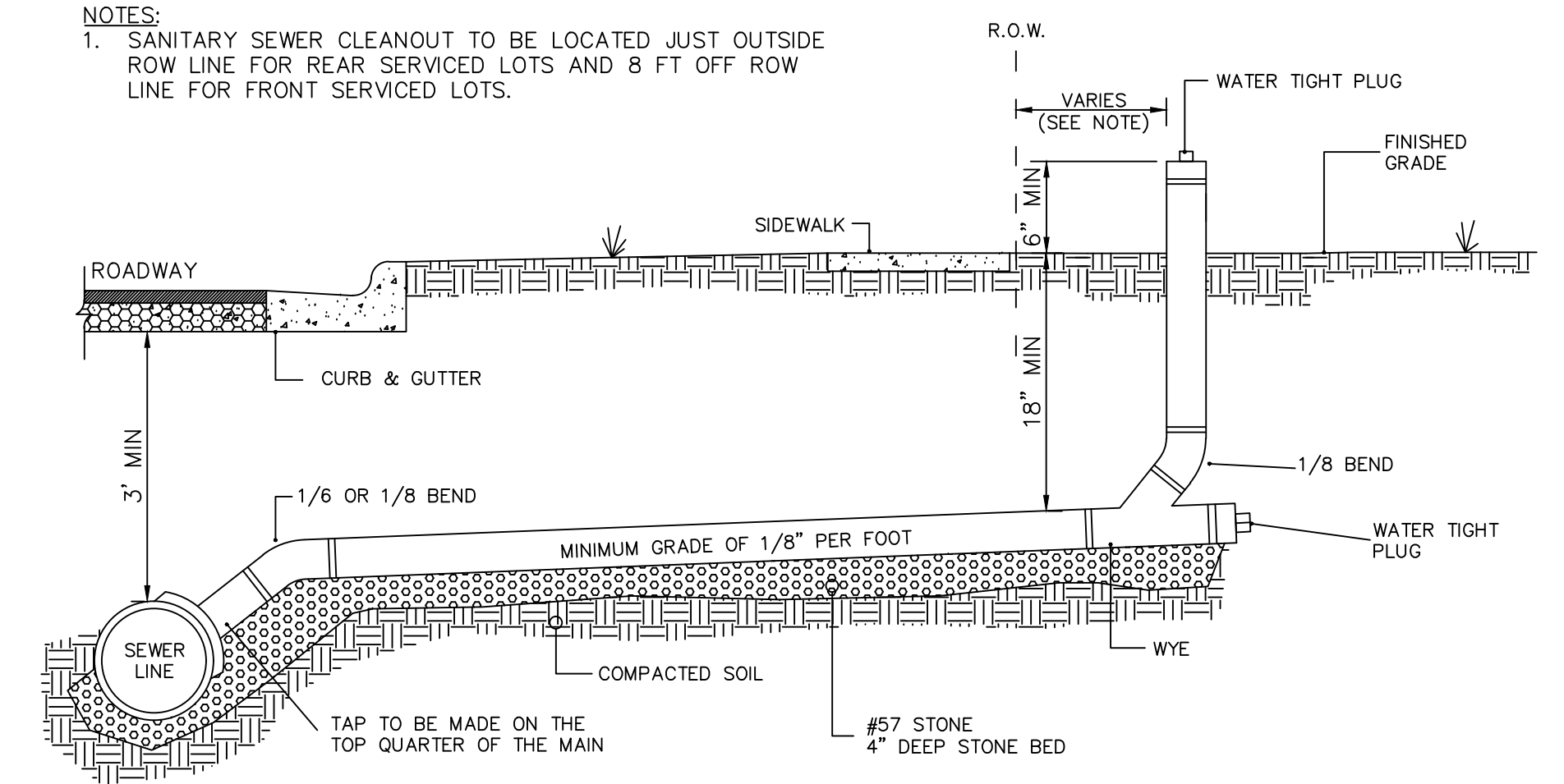
STANDARD SANITARY SEWER PRECAST CONCRETE MANHOLE
NTS



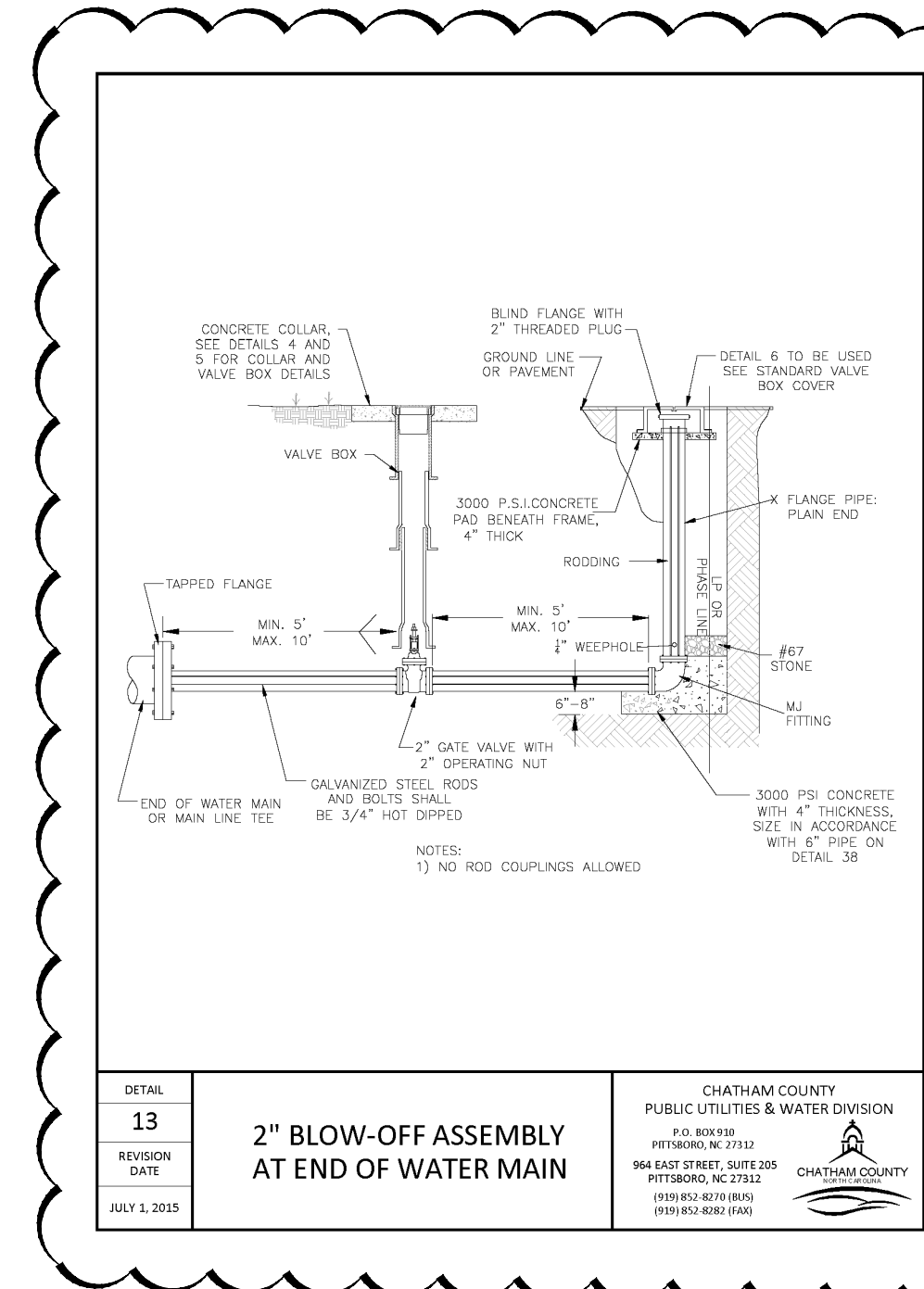
SANITARY SEWER SERVICE CONNECTIONS
NTS

NOTES:

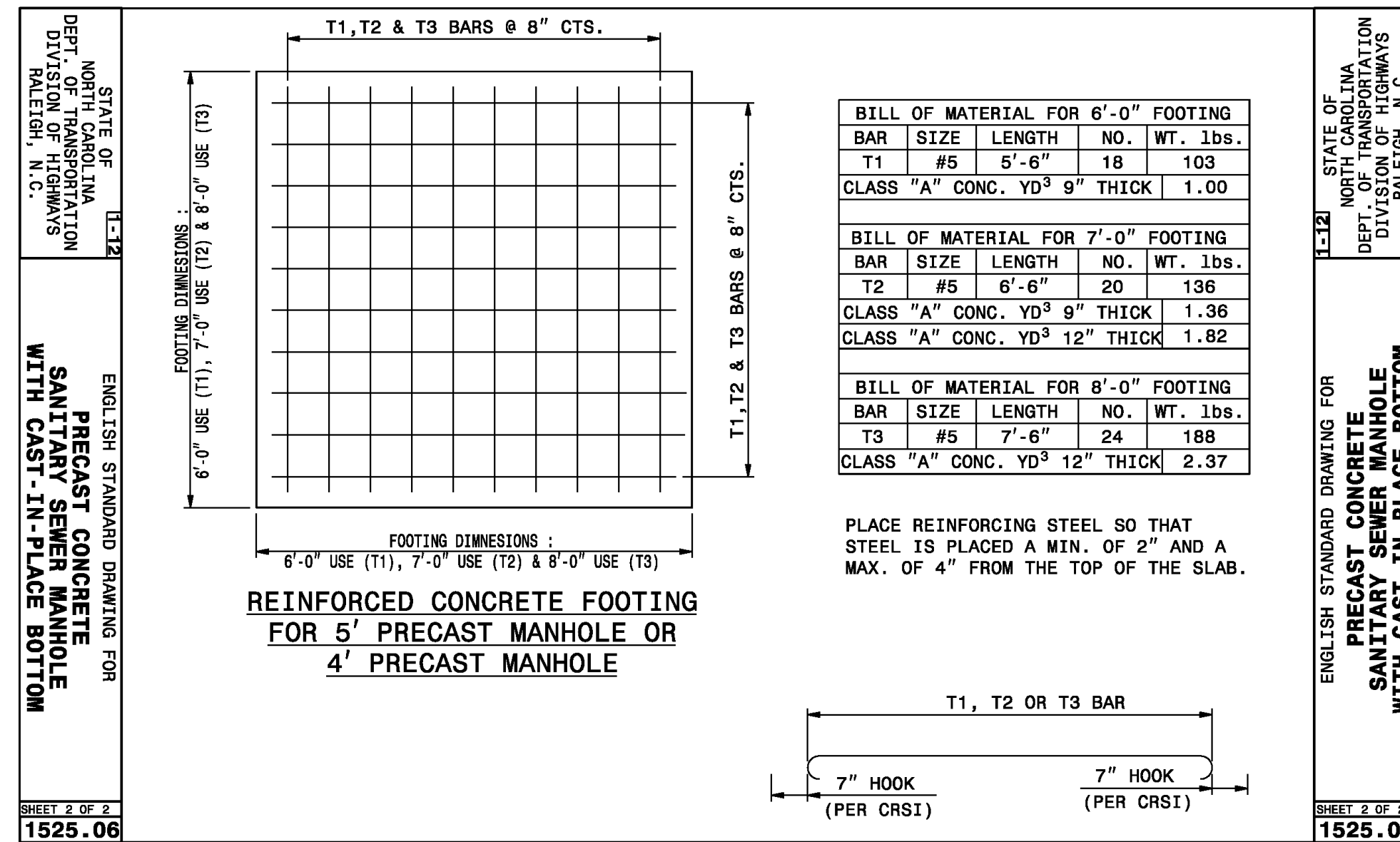
1. SANITARY SEWER CLEANOUT TO BE LOCATED JUST OUTSIDE ROW LINE FOR REAR SERVICED LOTS AND 8 FT OFF ROW LINE FOR FRONT SERVICED LOTS.



STANDARD SANITARY SEWER TAP AND SERVICE
NTS

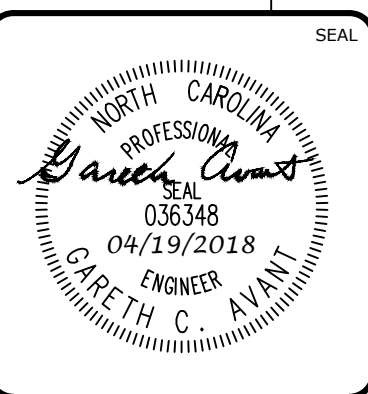
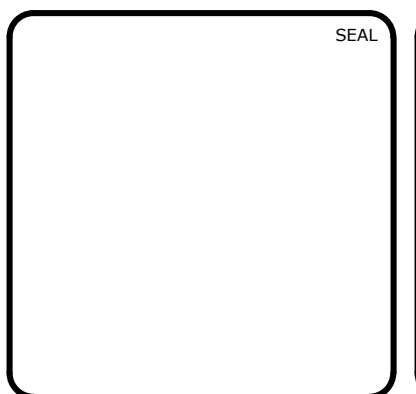


DETAIL	13	2" BLOW-OFF ASSEMBLY AT END OF WATER MAIN	CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION P.O. BOX 1000 WYOMING, NC 27252 904 EAST STREET, SUITE 205 WYOMING, NC 27252 (919) 852-8000 (919) 852-8000
REVISION	DATE		
	JULY 1, 2015		



SHEET 2 OF 2
1525.06

1	REVISIONS PER CHATHAM COUNTY PUBLIC WORKS	2018.04.19
0	INITIAL SUBMITTAL	2018.03.21
REV. NO.	DESCRIPTIONS REVISIONS	DATE

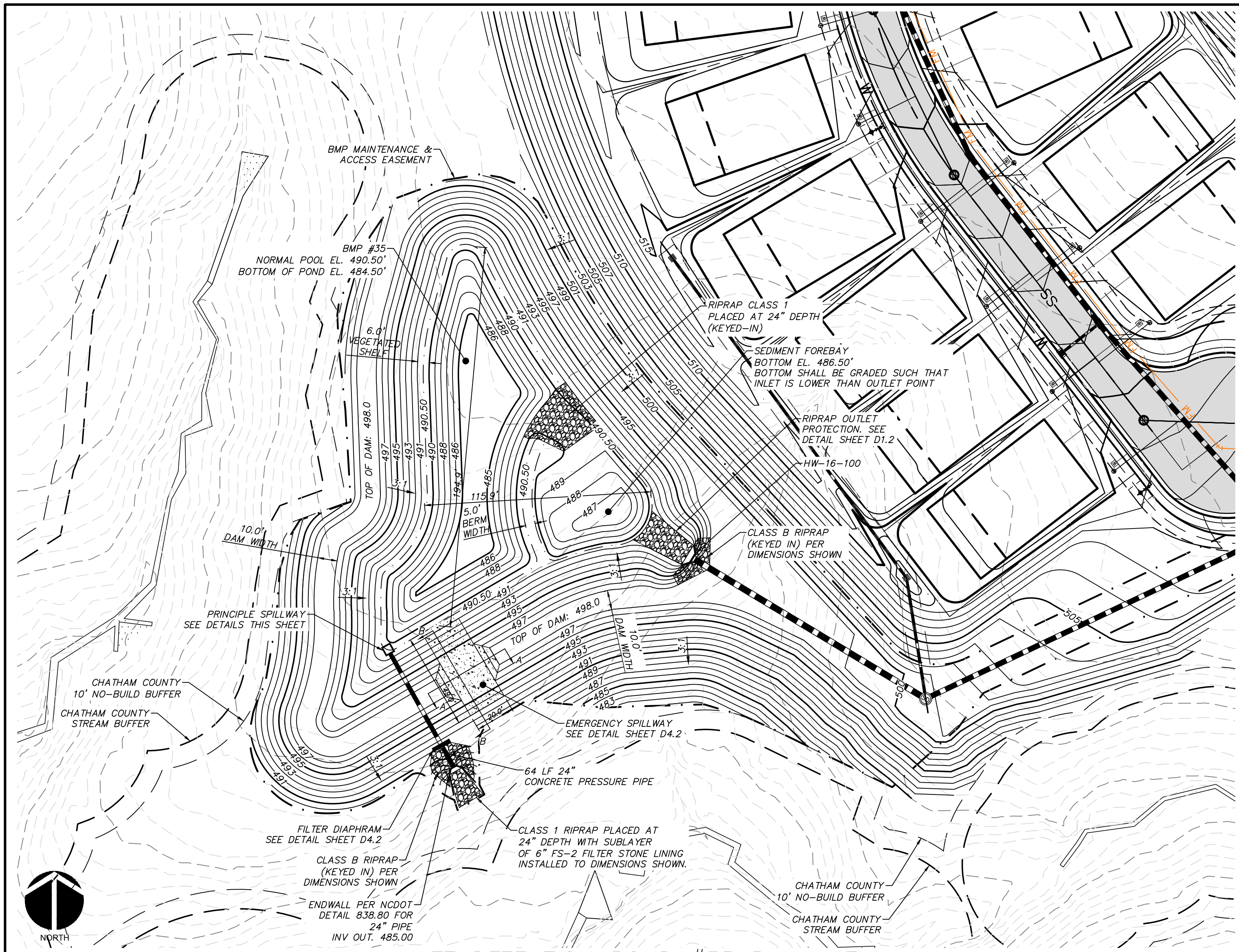


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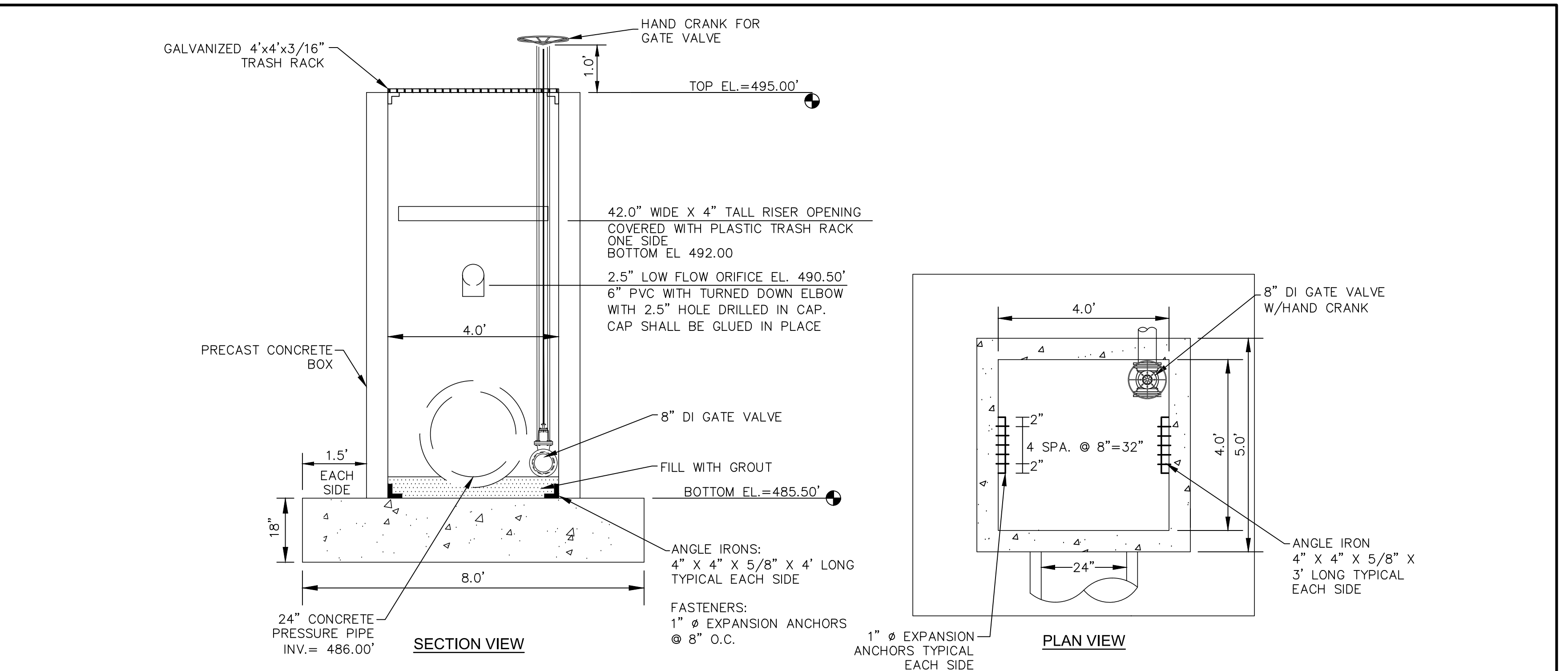
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Newland COMMUNITIES

BRIAR CHAPEL BC PHASE 16 NORTH CHATHAM COUNTY, NORTH CAROLINA
UTILITY DETAILS

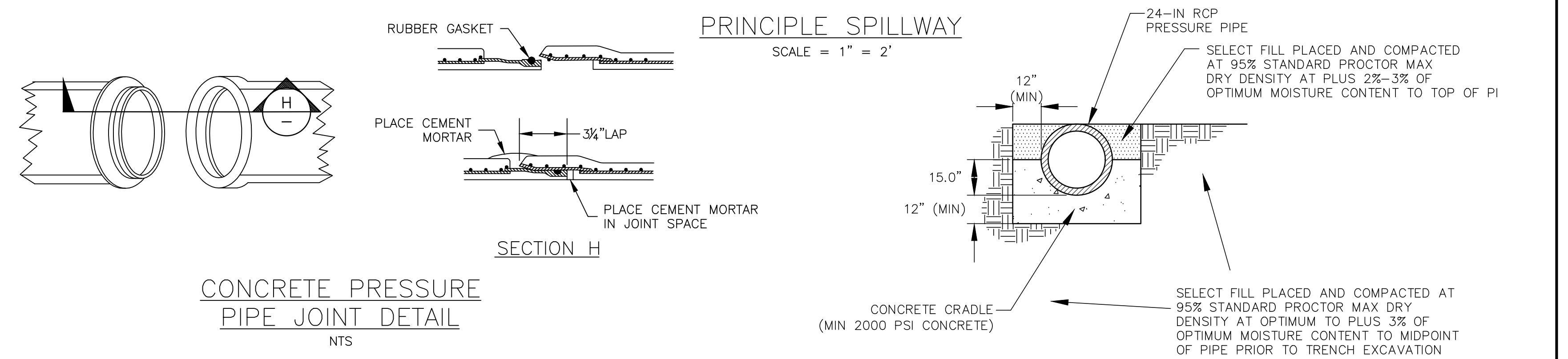
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DRAWN	BSS	VERTICAL:	D3.2
DESIGNED	BSS		
CHECKED	GCA		
PROJ. MGR.	CHS		
STATUS:	FINAL DRAWINGS	REVISION	1
	FOR REVIEW PURPOSES ONLY		



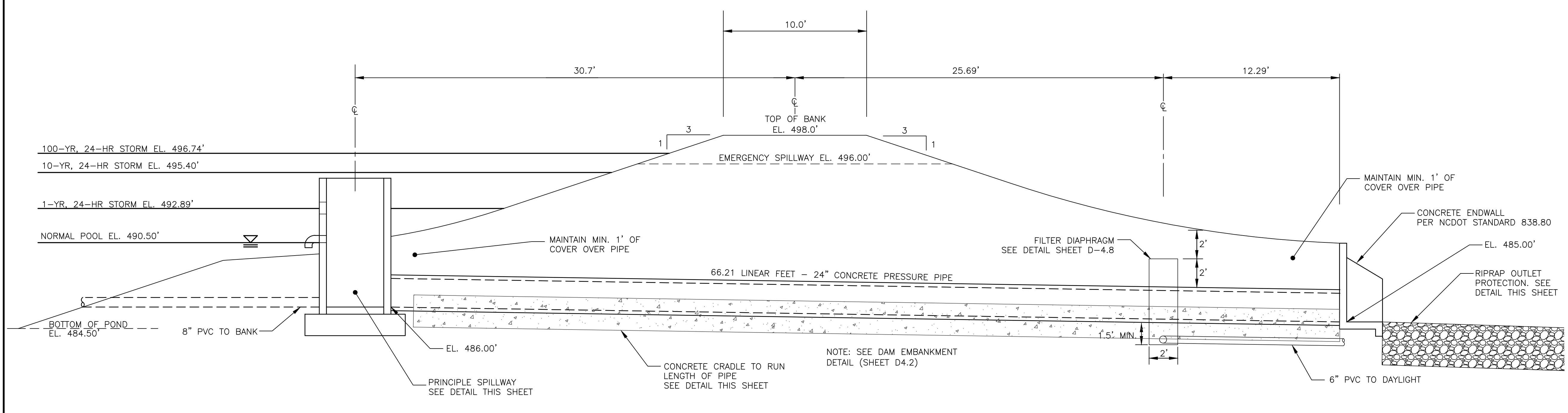
WET DETENTION POND #35 PLAN VIEW
SCALE = 1" = 40'



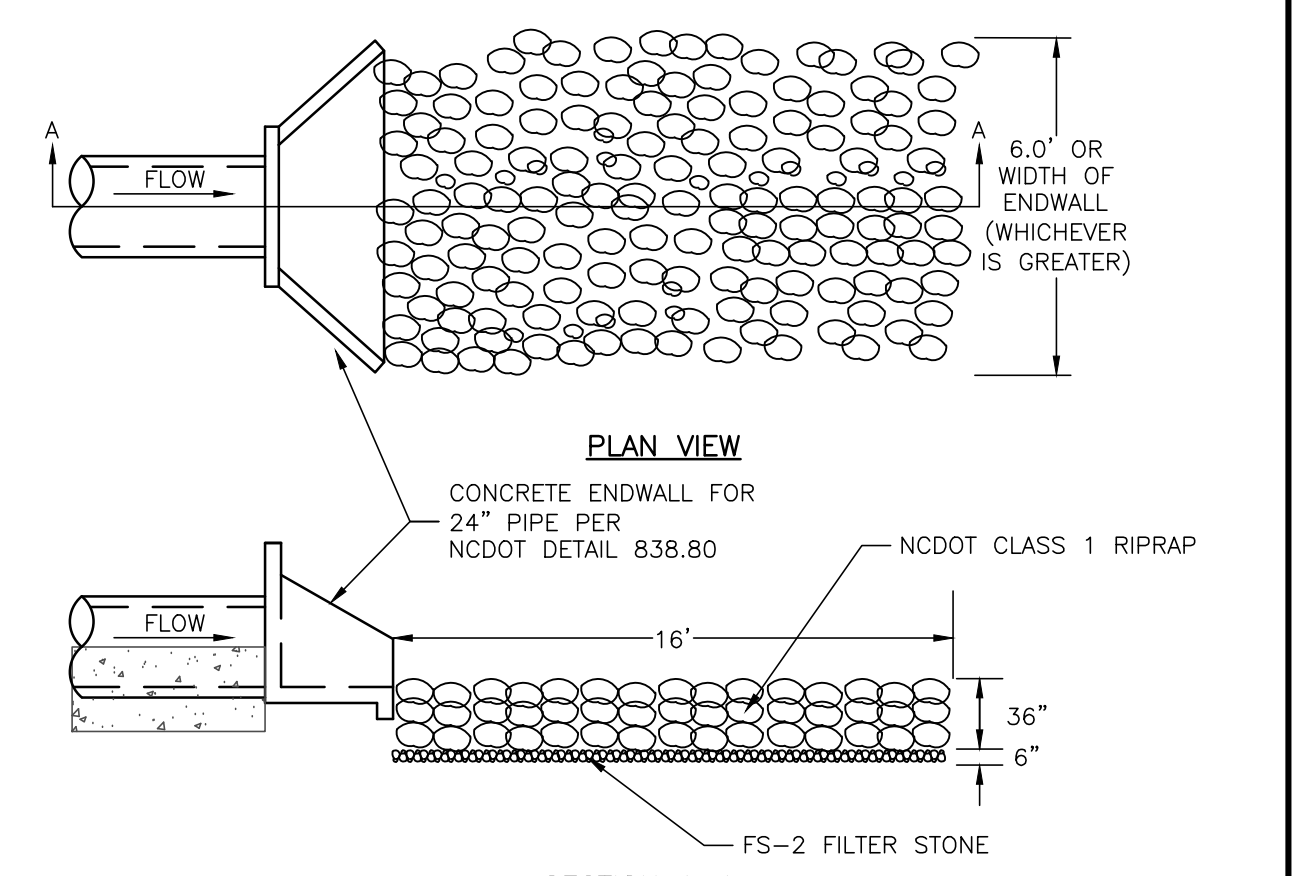
CONCRETE PRESSURE PIPE JOINT DETAIL
NTS



CONCRETE CRADLE DETAIL
NTS

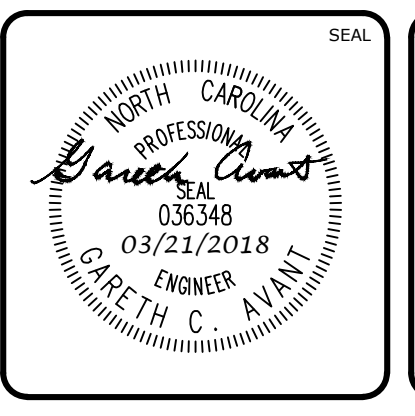
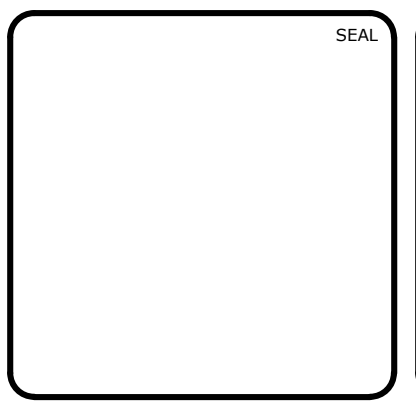


SECTION AT PRINCIPLE SPILLWAY
SCALE = NTS



RIPRAP OUTLET PROTECTION
NTS

REV. NO.	DESCRIPTION	DATE
0	INITIAL SUBMITTAL	2018.03.21



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**BRIAR CHAPEL
BC PHASE 16 NORTH
CHATHAM COUNTY, NORTH CAROLINA**
BMP #35 PLAN & DETAILS

DATE: MARCH 21, 2018	SCALE: HORIZONTAL: AS NOTED	M&C FILE NUMBER: D4.X
M&C PROJ. #: 02735-0206	VERTICAL: N/A	DRAWING NUMBER: D4.1
DRAWN: BSS		
DESIGNED: BSS		
CHECKED: GCA		
PROJ. MGR.: CHS		
STATUS: FINAL DRAWINGS FOR REVIEW PURPOSES ONLY		
REVISION: 0		