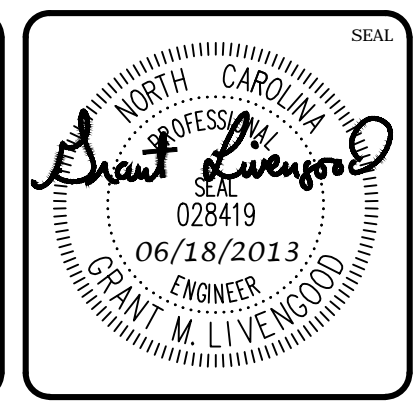
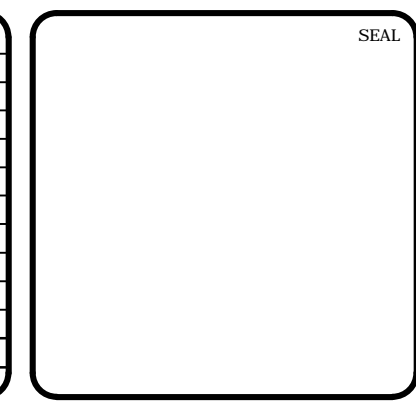


REV. NO.	DESCRIPTION	DATE
3	REVISED PER NCDOT COMMENTS	2013.06.18
2	REVISED PER CHATHAM COUNTY REVIEW	2013.06.03
1	1ST SUBMITTAL TO REVIEW AGENCIES	2013.05.21

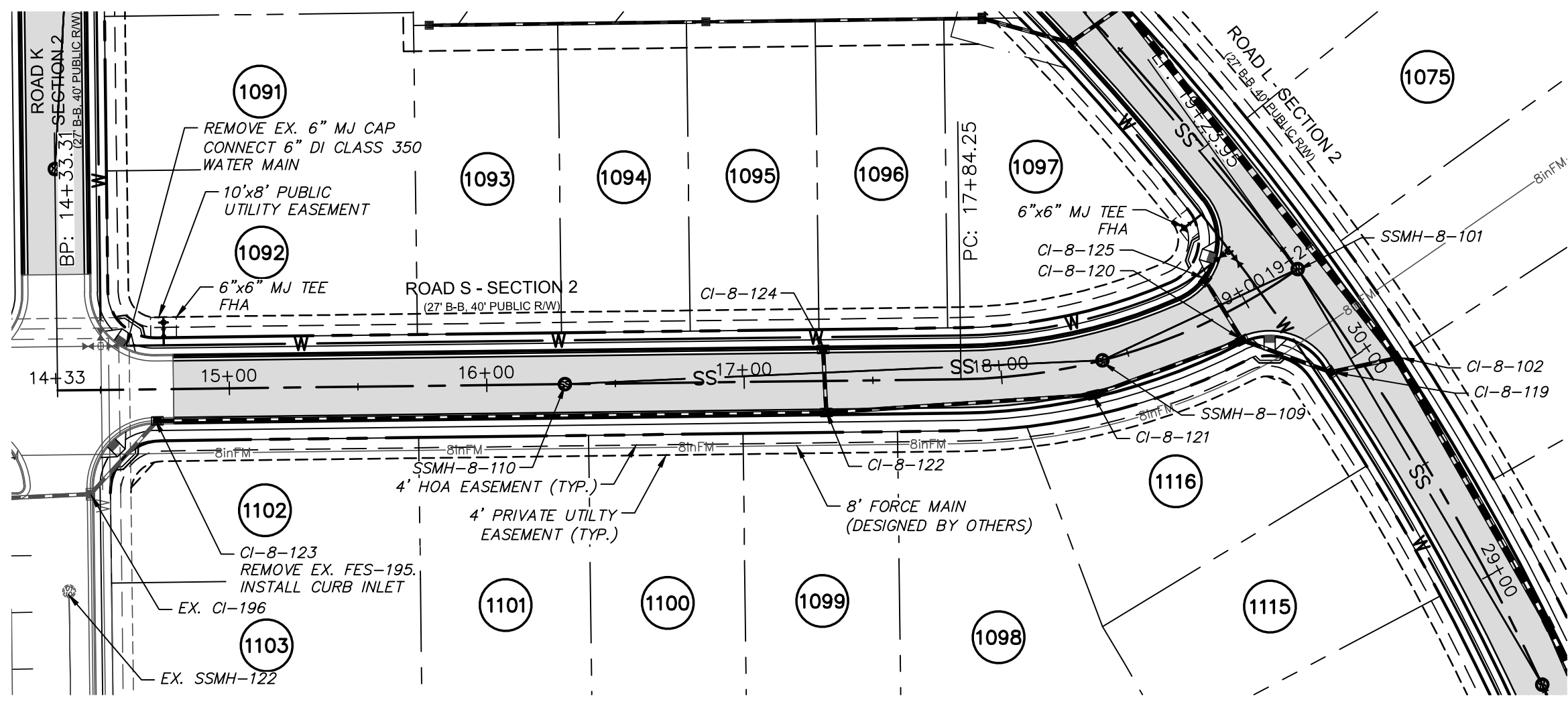


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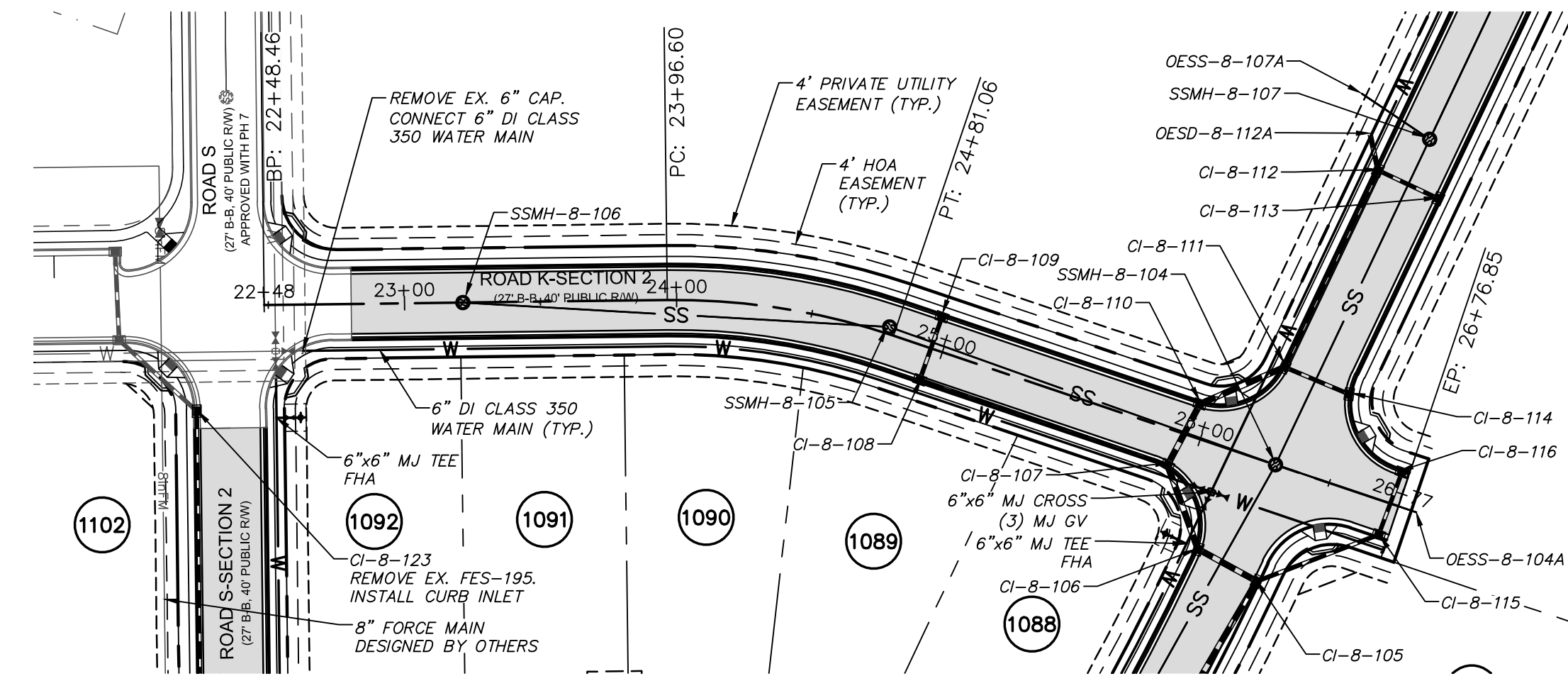
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**BRIAR CHAPEL
PHASE 8
CHATHAM COUNTY, NORTH CAROLINA
PLAN & PROFILE
ROAD L
STA. 27+22.21 TO STA. 38+45.79**

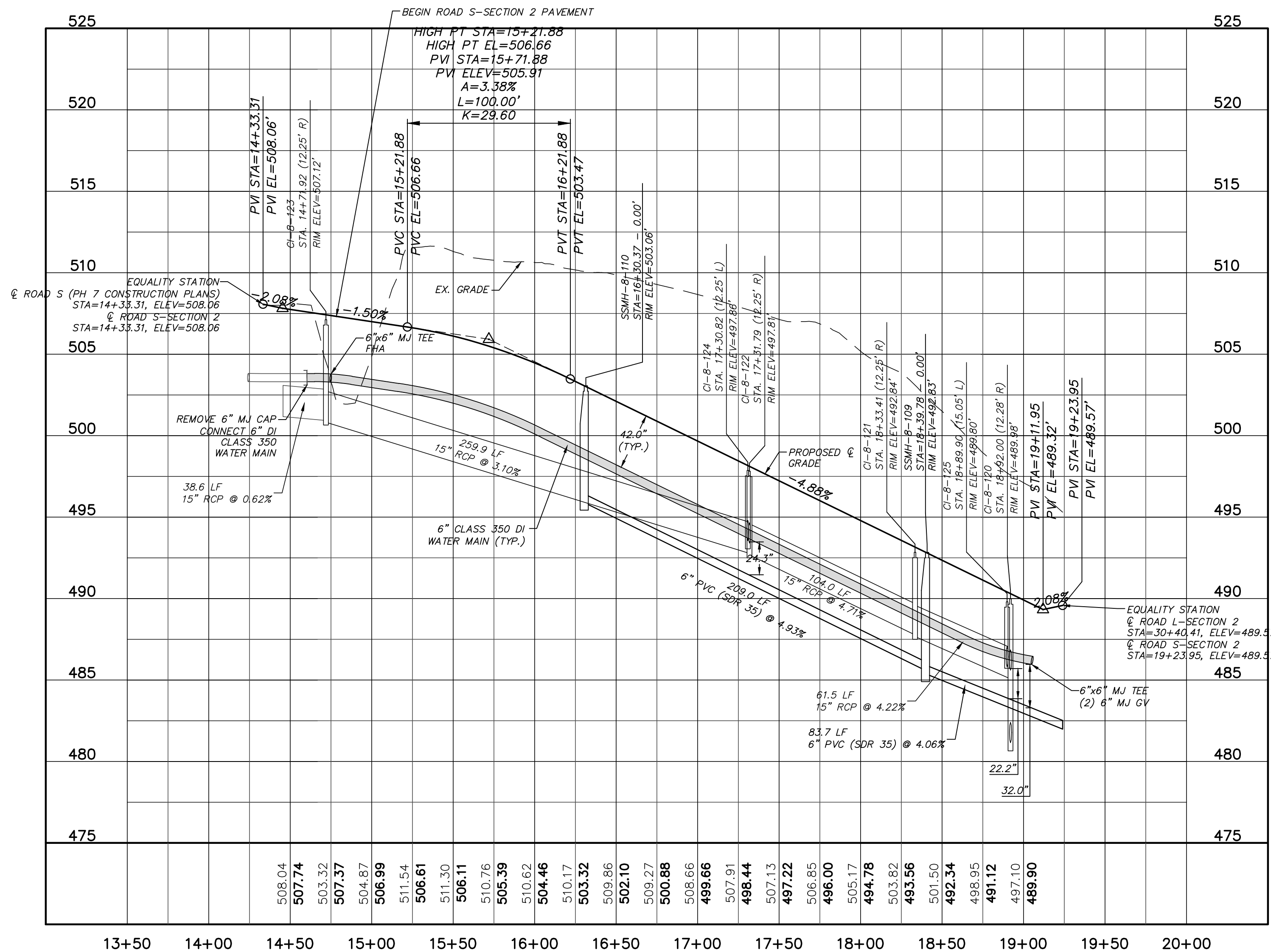
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DRAWN: GCA	PROJ. MGR: CHS	
STATUS: FINAL DRAWINGS	REVISION: 3	



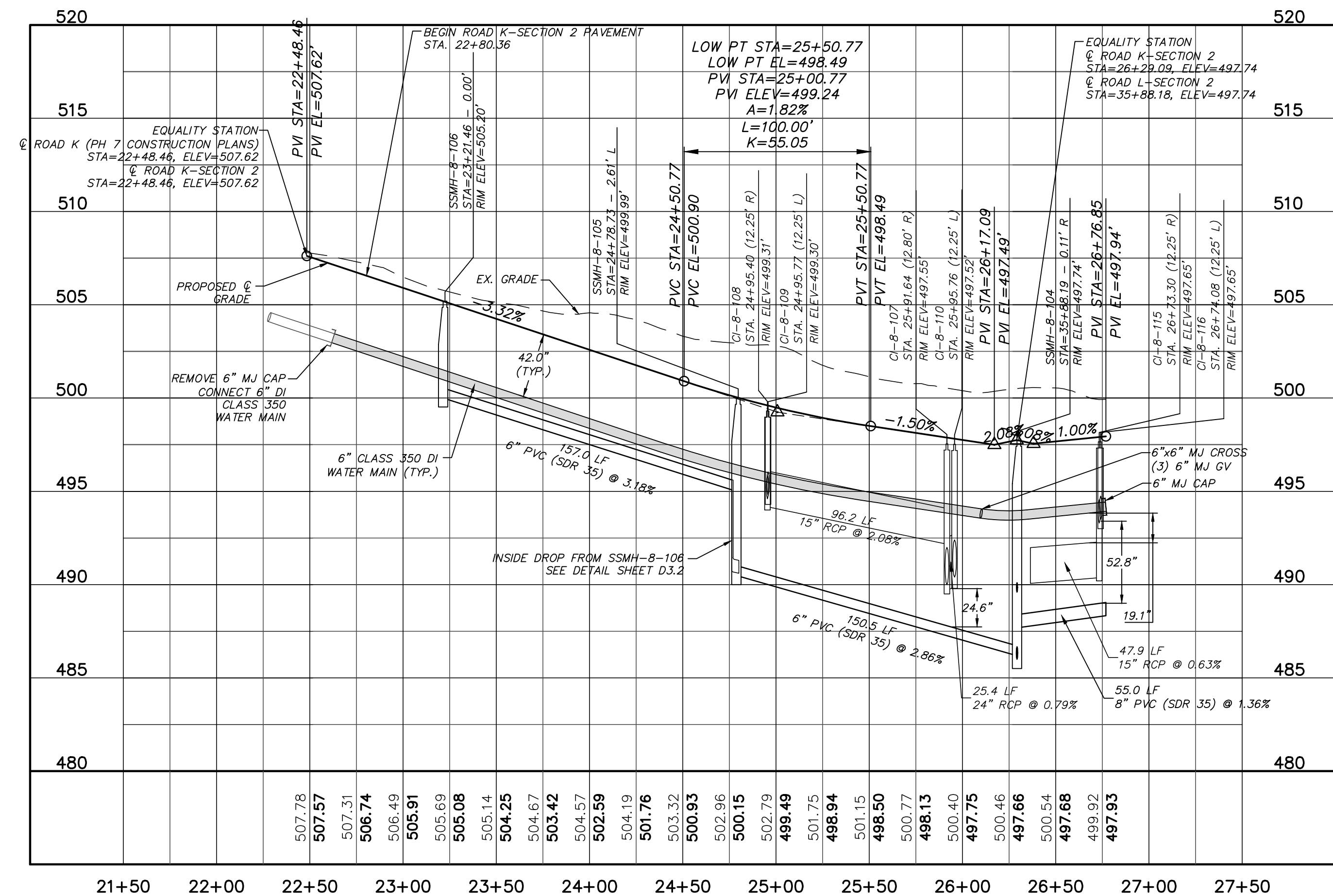
ROAD S-SECTION 2 PLAN
(27' B-B, 40' PUBLIC R/W, STA. 14+33.31 TO 19+23.95)
SCALE: 1"=50'



ROAD K-SECTION 2 PLAN
(27' B-B, 40' PUBLIC R/W, STA. 22+48.46 TO 26+76.85)
SCALE: 1"=50'

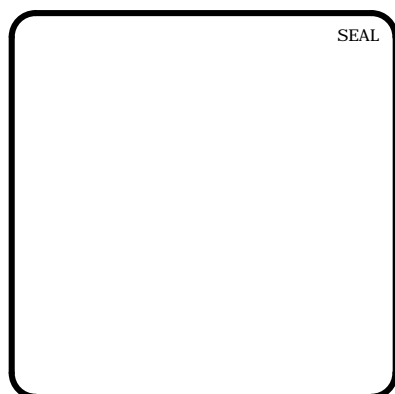


ROAD S-SECTION 2 PROFILE
(STA. 14+33.31 TO 19+23.95)
SCALE: (Horiz.) 1"=50'; (Vert.) 1"=5'



ROAD K-SECTION 2 PROFILE
(STA. 22+48.46 TO 26+76.85)
SCALE: (Horiz.) 1"=50'; (Vert.) 1"=5'

REV. NO.	DESCRIPTIONS / REVISIONS	DATE
3	REVISED PER NCDOT COMMENTS	2013.06.18
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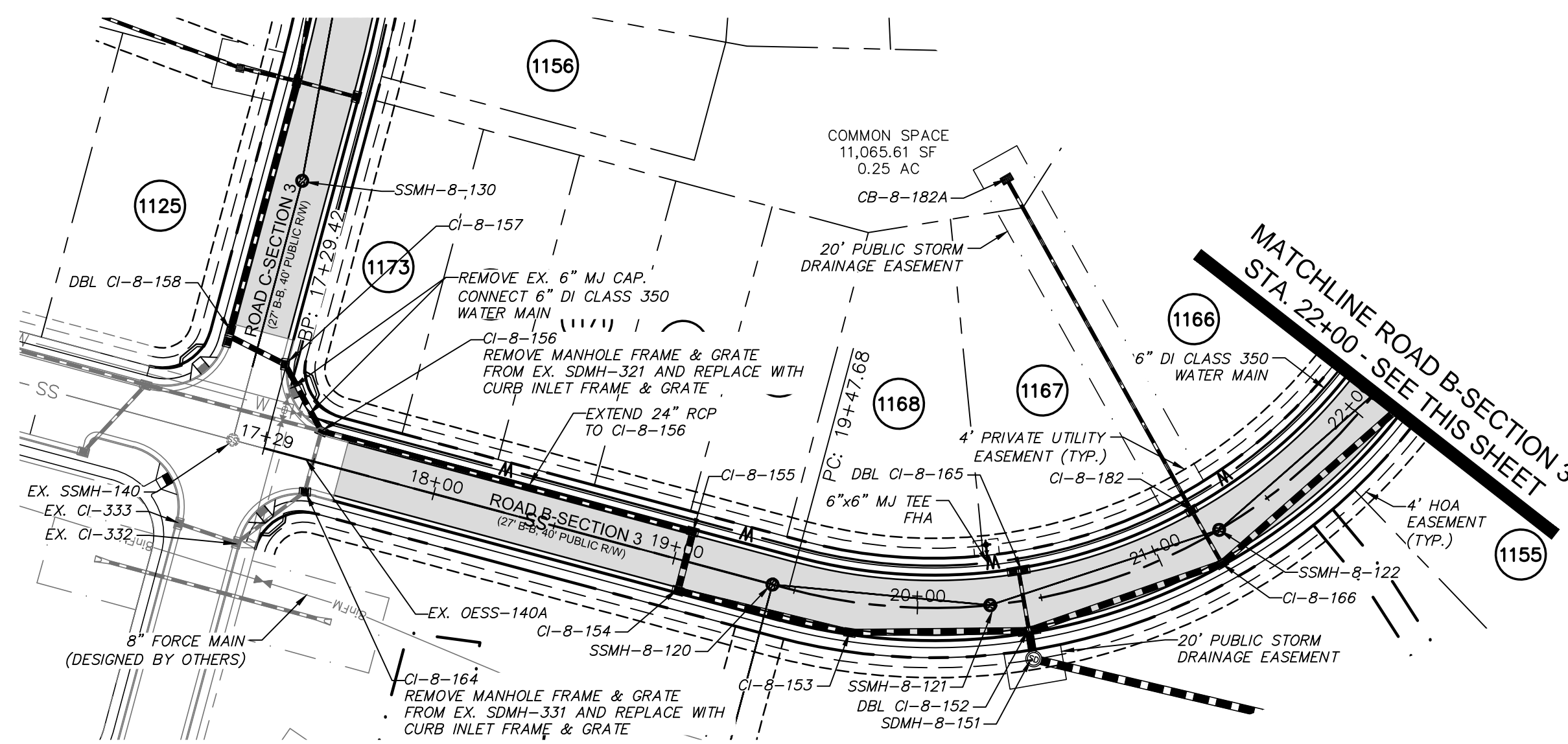


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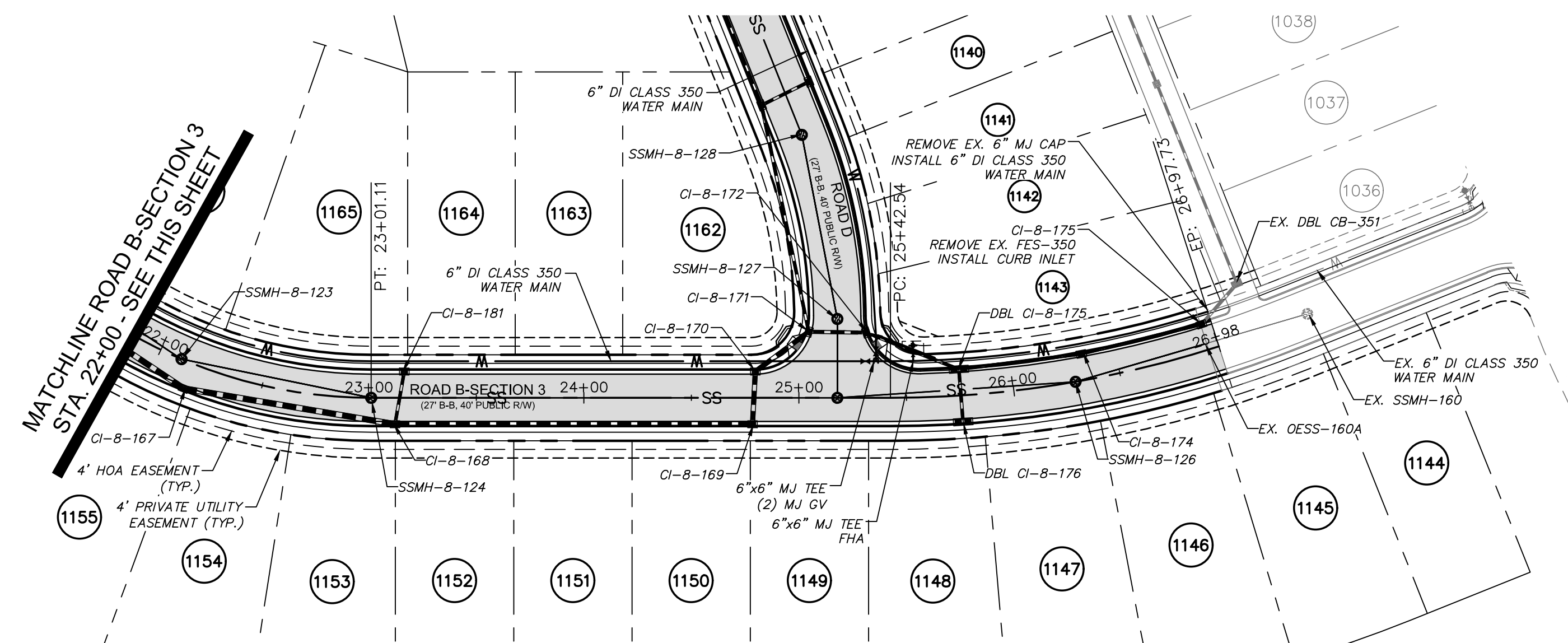
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CHATHAM COUNTY, NORTH CAROLINA**
PLAN & PROFILE
ROAD S - SECTION 2
ROAD K - SECTION 2

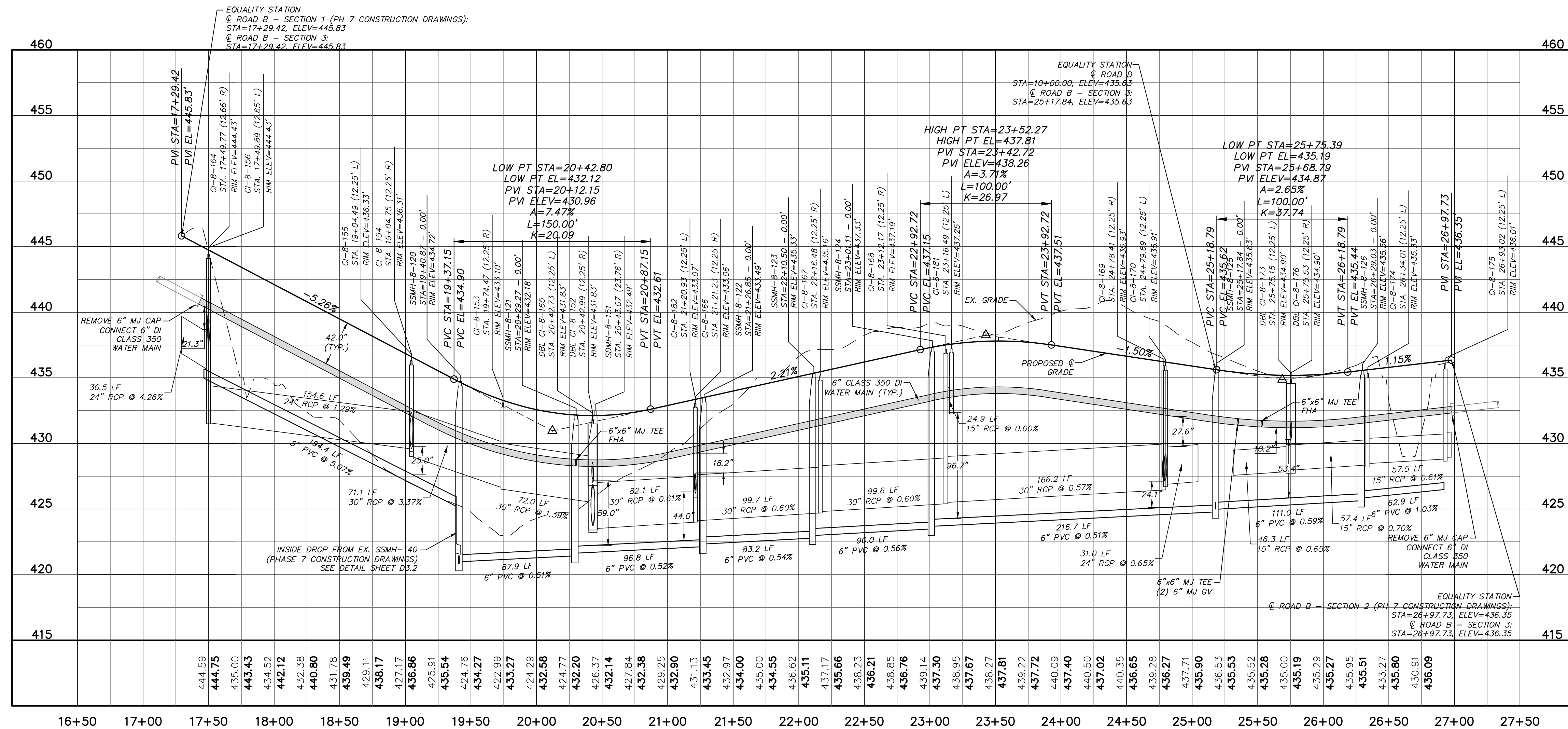
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DRAWN: GCA	STATUS: FINAL DRAWINGS	REVISION: 3
DESIGNED: GCA		
CHECKED: CHS		
PROJ. MGR.: CHS		



ROAD B-SECTION 3 PLAN
(27' B-B, 40' PUBLIC R/W, STA. 17+29.42 TO 22+00.00)
SCALE: 1"=50'

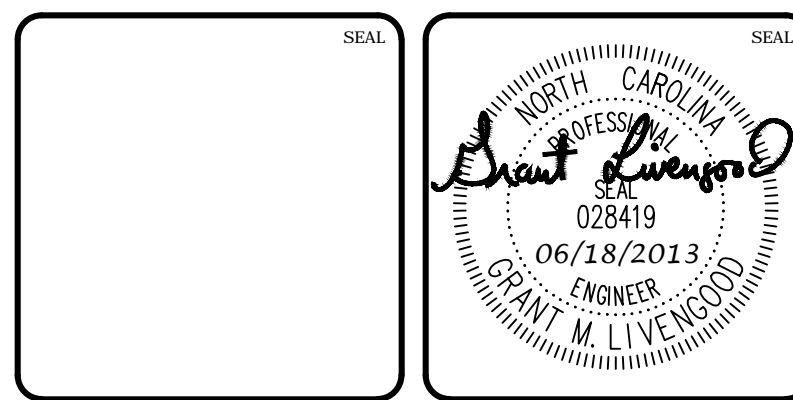


ROAD B-SECTION 3 PLAN
(27' B-B, 40' PUBLIC R/W, STA. 22+00.00 TO 26+97.73)
SCALE: 1"=50'



ROAD B-SECTION 3 PROFILE
(STA. 10+00 TO 19+20.00)
SCALE: (Horiz.) 1"=50'; (Vert.) 1"=5'

REV. NO.	DESCRIPTIONS	DATE
3	REVISED PER NCDOT COMMENTS	2013.06.18
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1	1ST SUBMITTAL TO REVIEW AGENCIES	2013.05.21

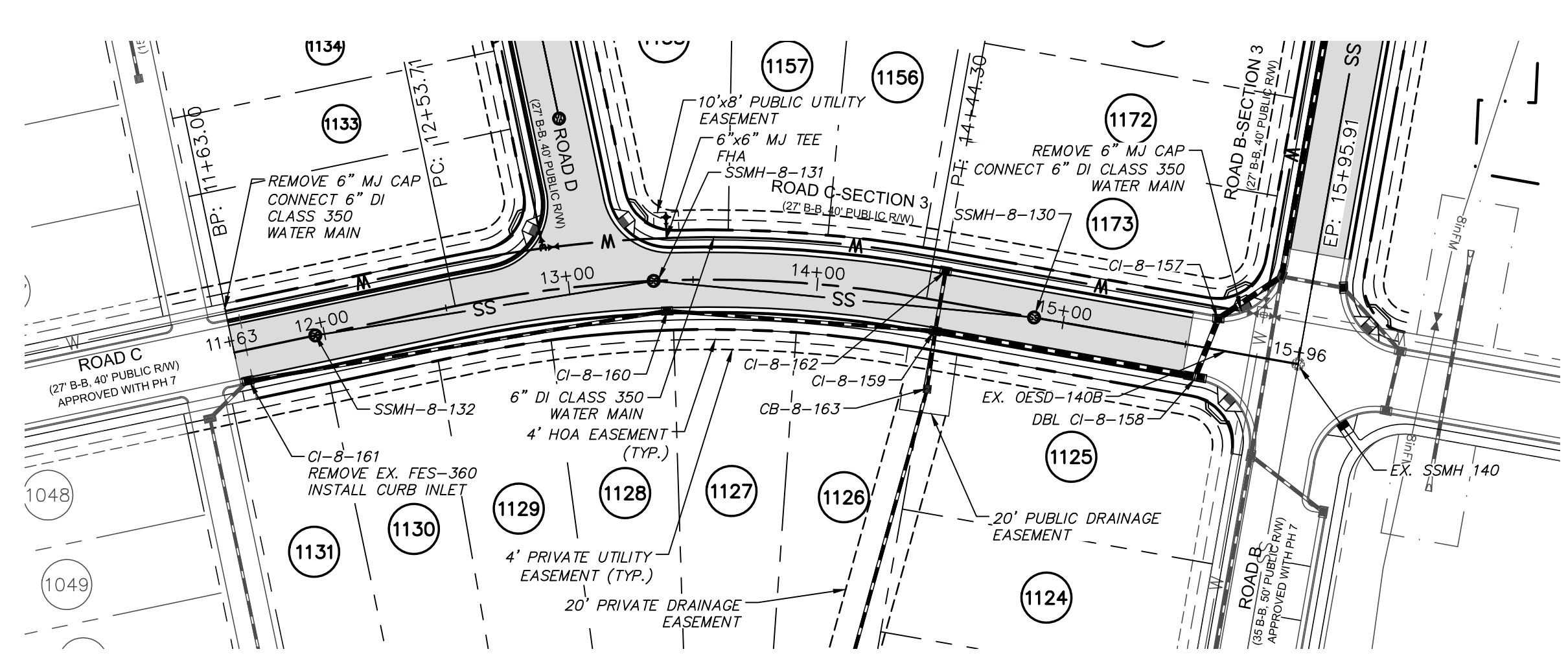


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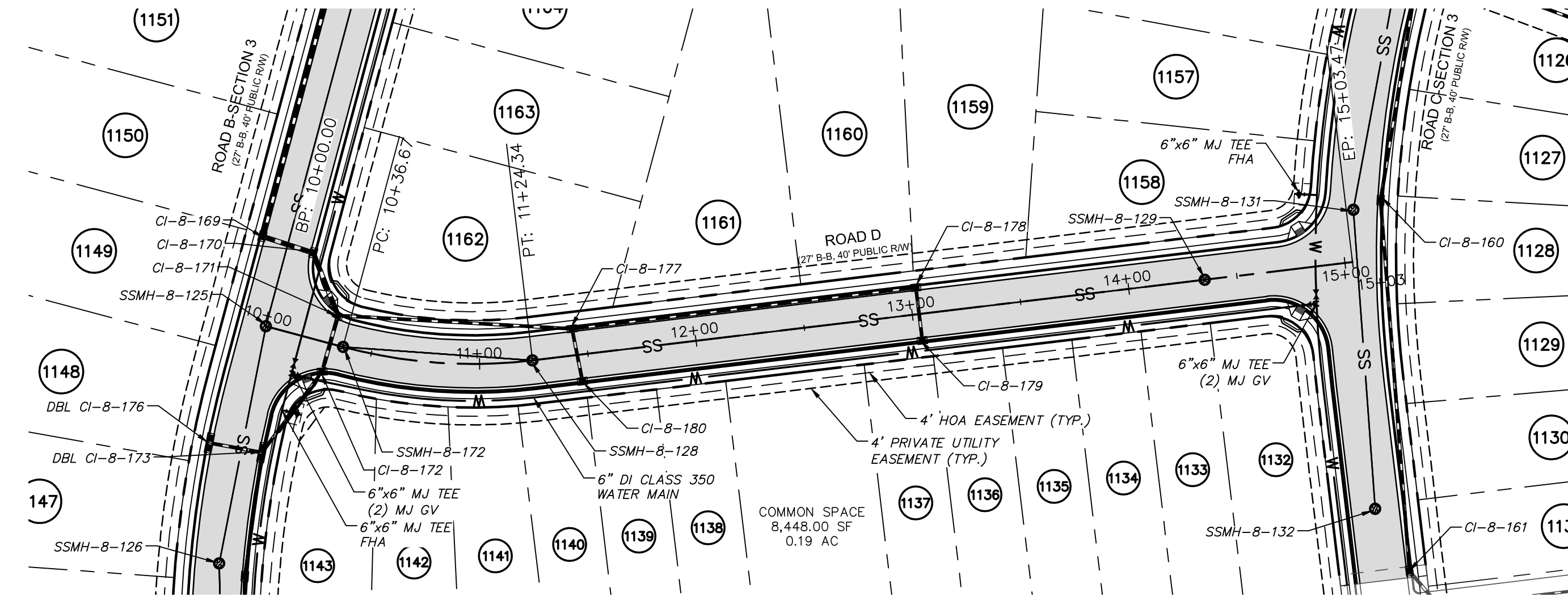
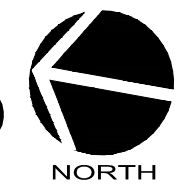
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PHASE 8
CHATHAM COUNTY, NORTH CAROLINA
PLAN & PROFILE
ROAD B-SECTION 3
STA. 17+29.42 TO STA. 26+97.73

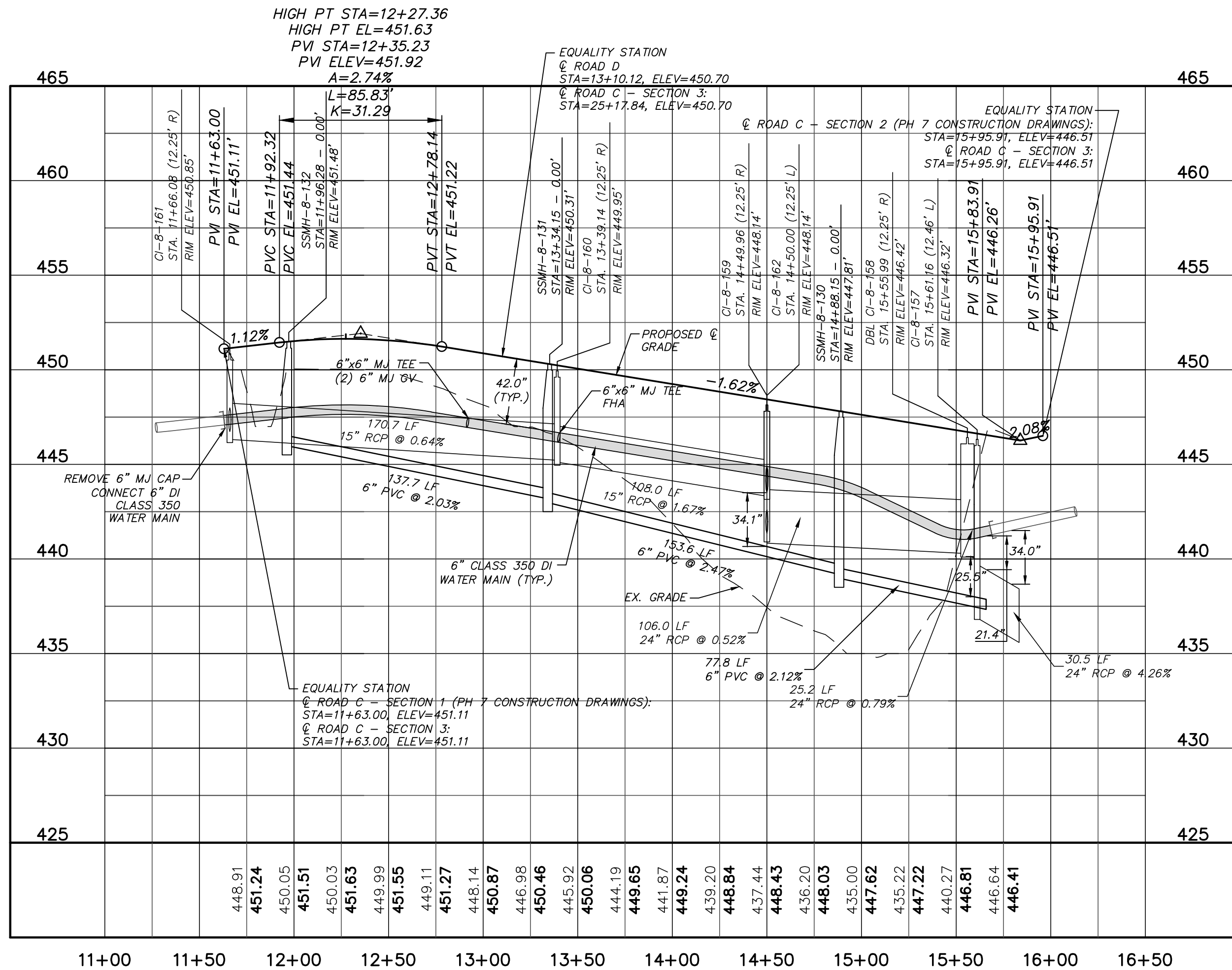
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PROJ. MGR. CHS	STATUS: FINAL DRAWINGS	REVISION: 3



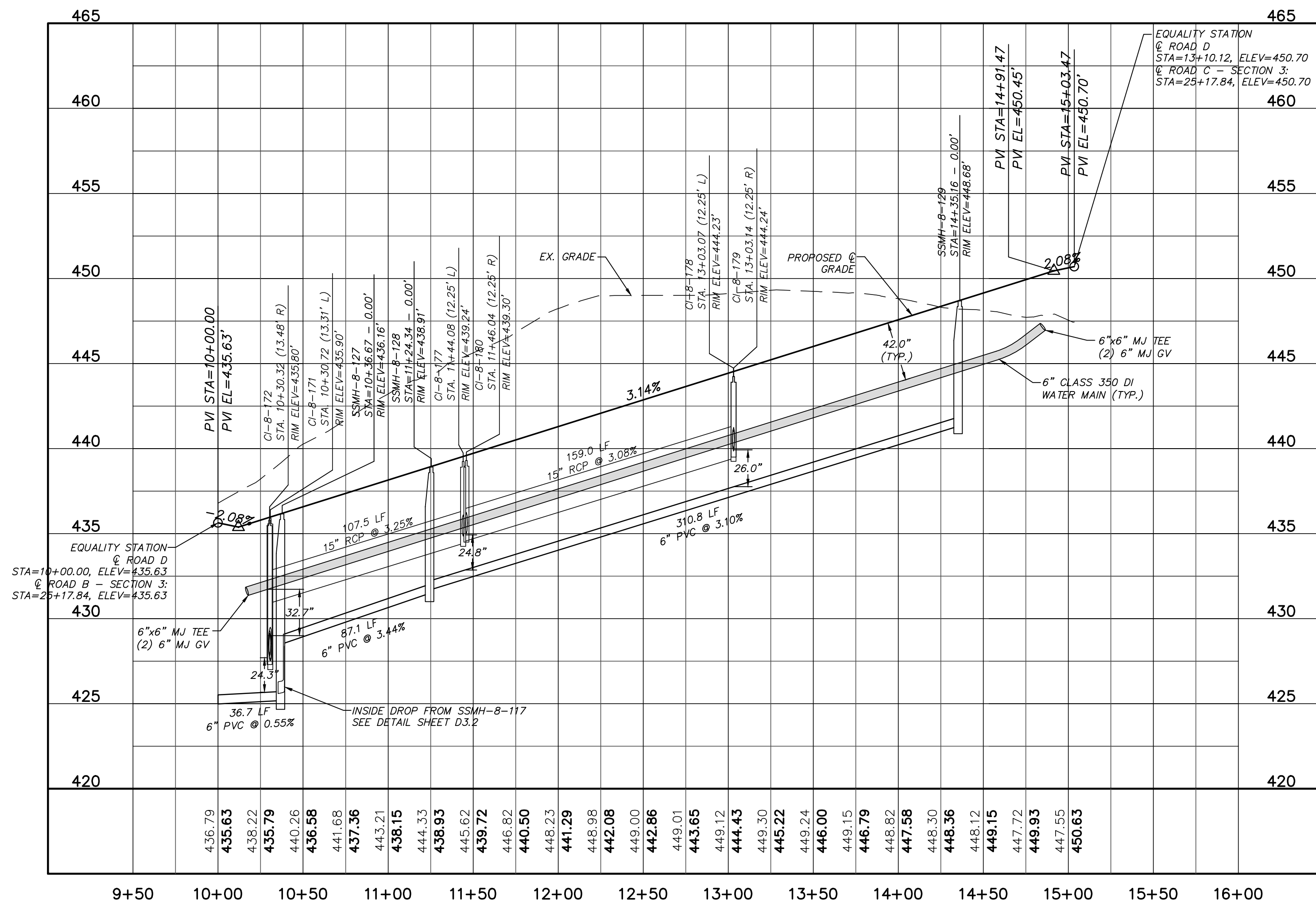
ROAD C-SECTION 3 PLAN
 (27 B-B, 40' WIDTH PUBLIC R/W, STA. 11+63.00 TO 15+95.91)
 SCALE: 1"=50'



ROAD D
 (27 B-B, 40' WIDTH PUBLIC R/W, STA. 10+00.00 TO 15+03.47)
 SCALE: 1"=50'

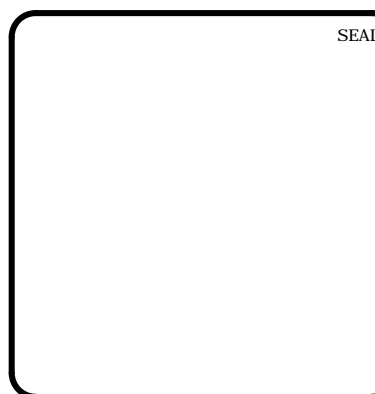


ROAD C-SECTION 3 PROFILE
 (STA. 11+63.00 TO 15+95.91)
 SCALE: (Horiz.) 1"=50'; (Vert.) 1"=5'



ROAD D PROFILE
 (STA. 10+00.00 TO 15+03.47)
 SCALE: (Horiz.) 1"=50'; (Vert.) 1"=5'

REV. NO.	DESCRIPTIONS	DATE
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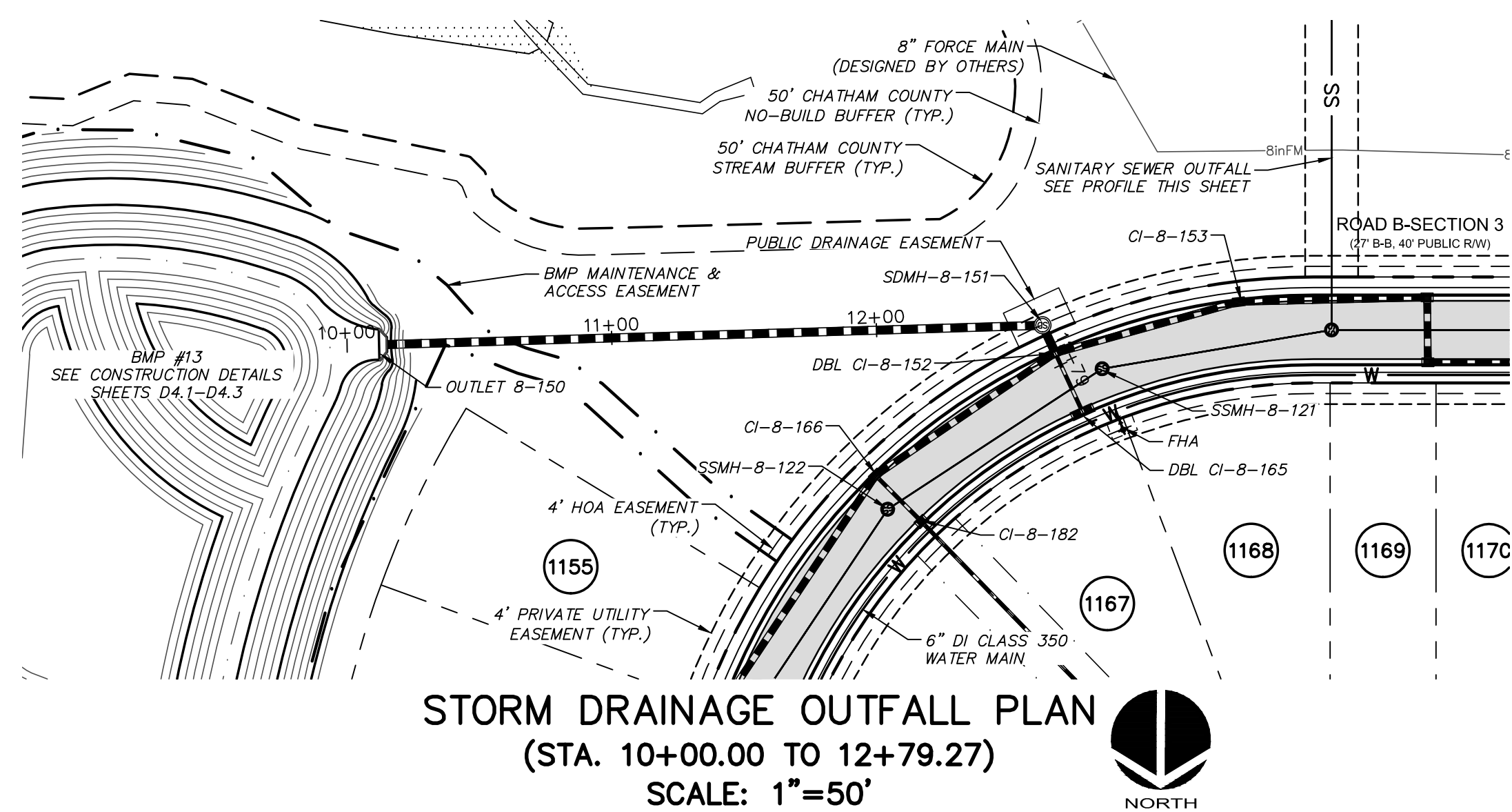


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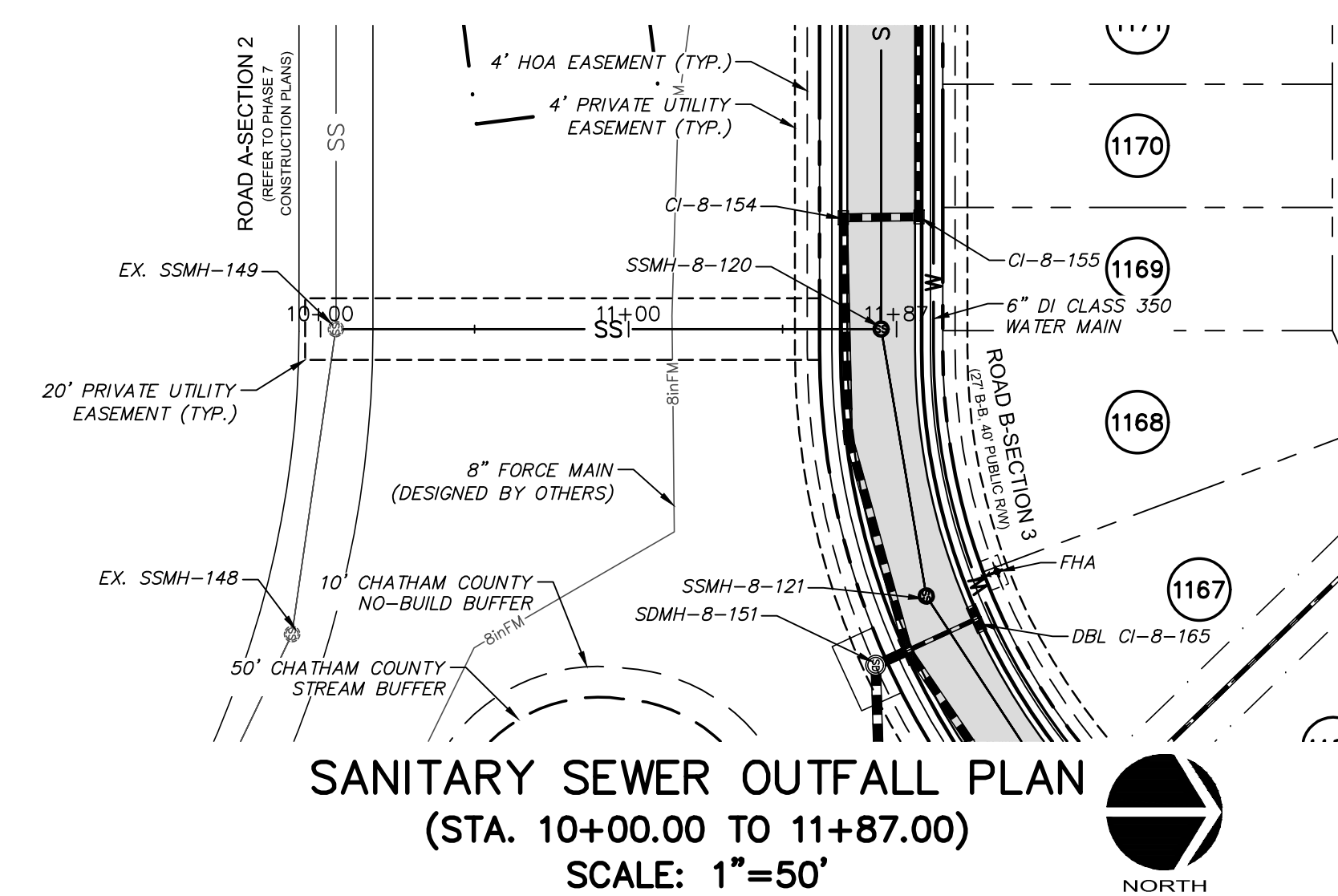
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 PLAN & PROFILE
 ROAD C-SECTION 3
 ROAD D

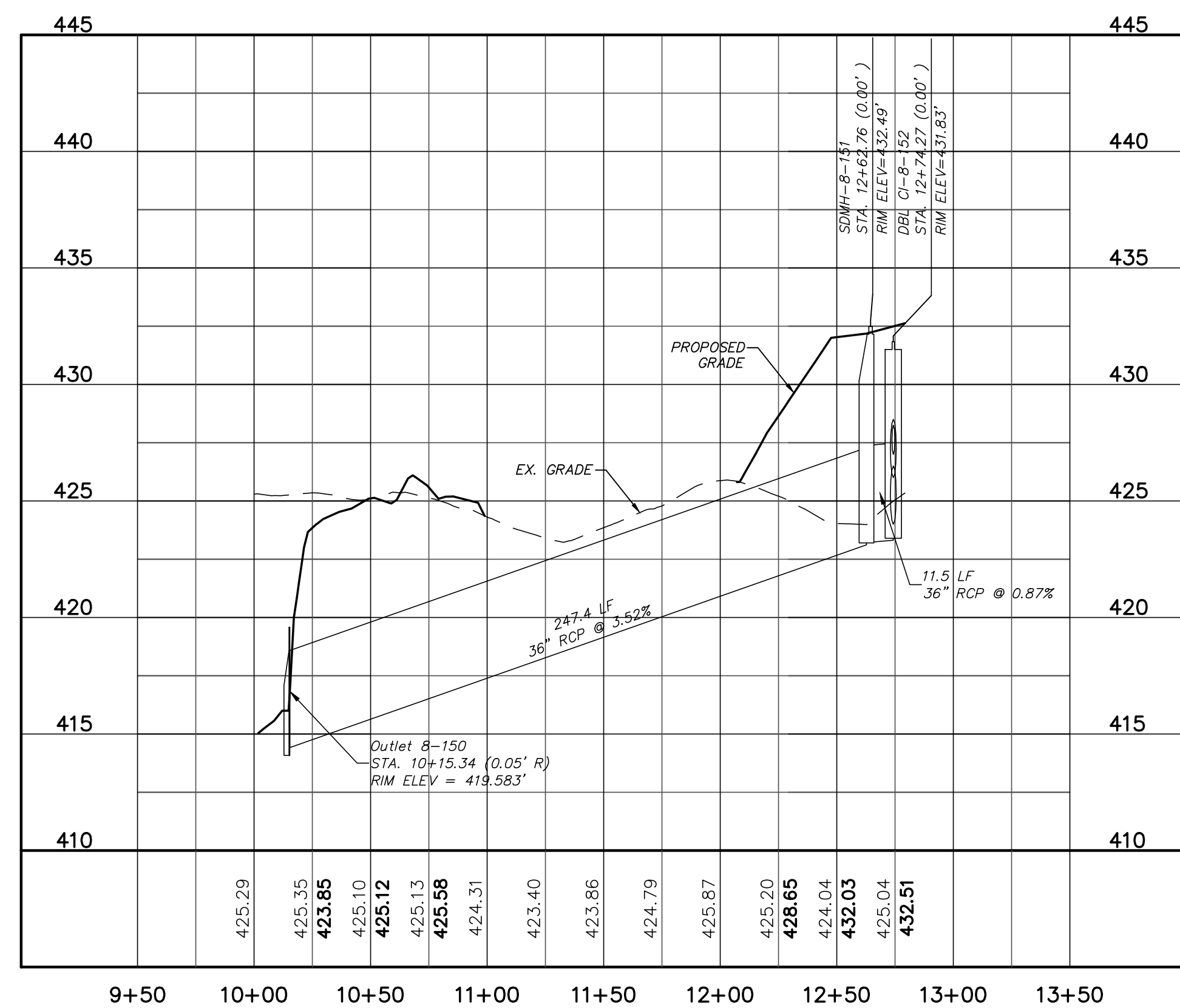
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CHECKED: CHS	STATUS: FINAL DRAWINGS
PROJ. MGR.: CHS	



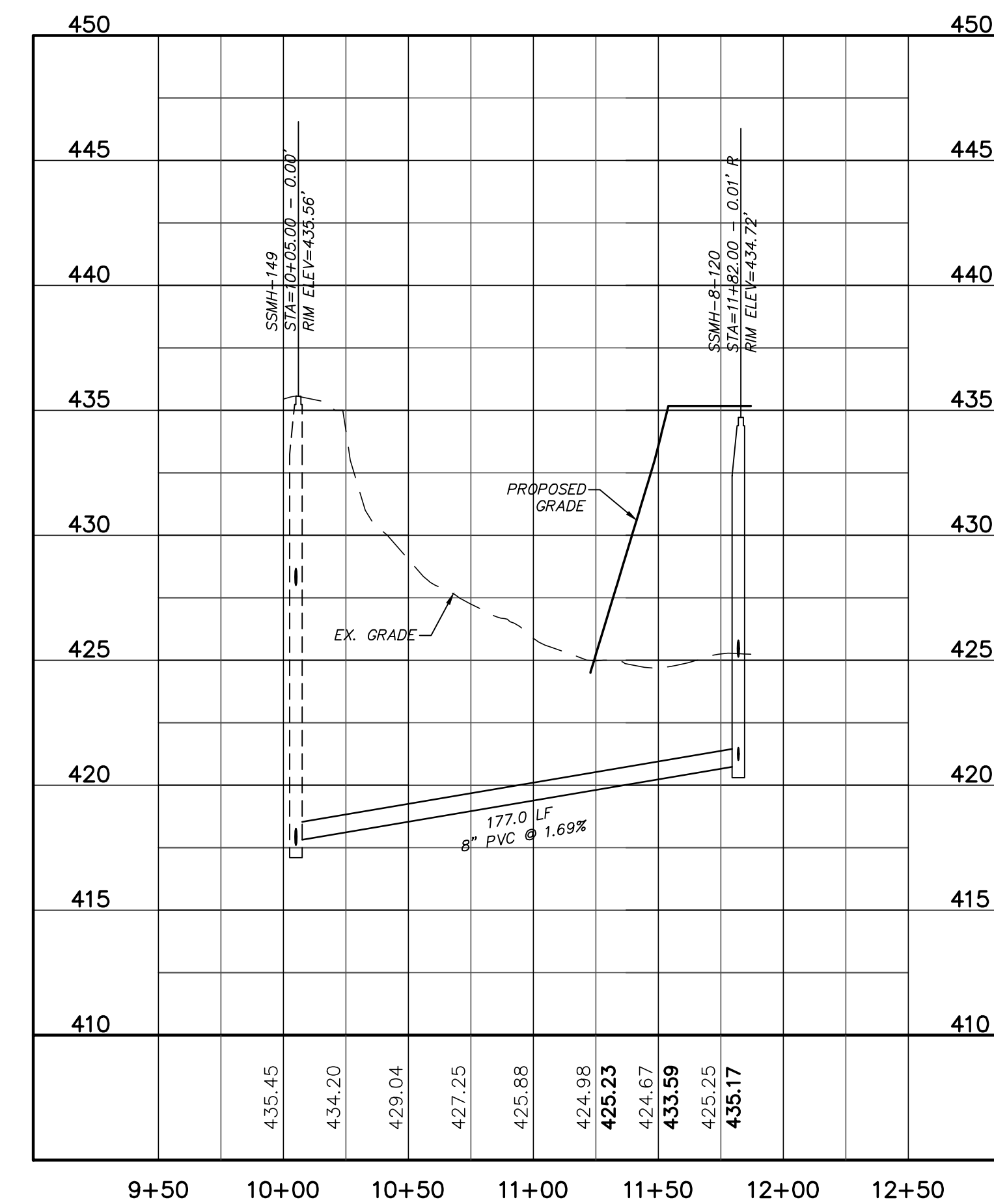
STORM DRAINAGE OUTFALL PLAN
 (STA. 10+00.00 TO 12+79.27)
 SCALE: 1"=50'



SANITARY SEWER OUTFALL PLAN
 (STA. 10+00.00 TO 11+87.00)
 SCALE: 1"=50'

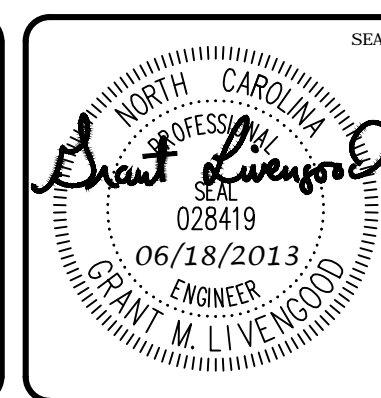
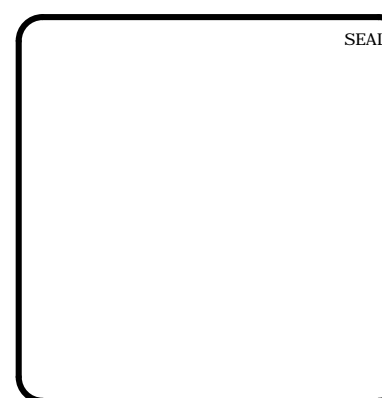


STORM DRAINAGE OUTFALL PROFILE
 (STA. 10+00.00 TO 12+79.27)
 SCALE: (Horiz.) 1"=50'; (Vert.) 1"=5'



SANITARY SEWER OUTFALL PROFILE
 (STA. 10+00.00 TO 11+87.00)
 SCALE: (Horiz.) 1"=50'; (Vert.) 1"=5'

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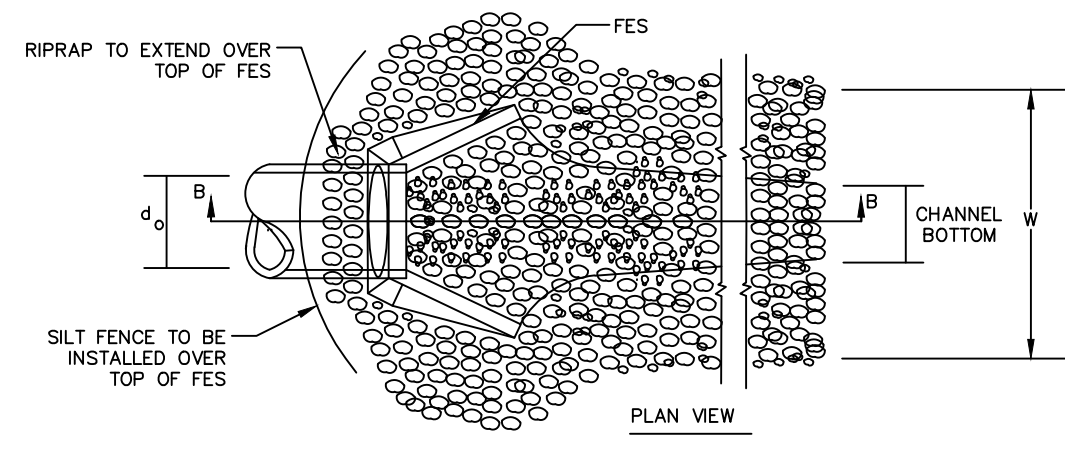


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 CHATHAM COUNTY, NORTH CAROLINA**
PLAN & PROFILE
**STORM DRAINAGE OUTFALL
 SANITARY SEWER OUTFALL**

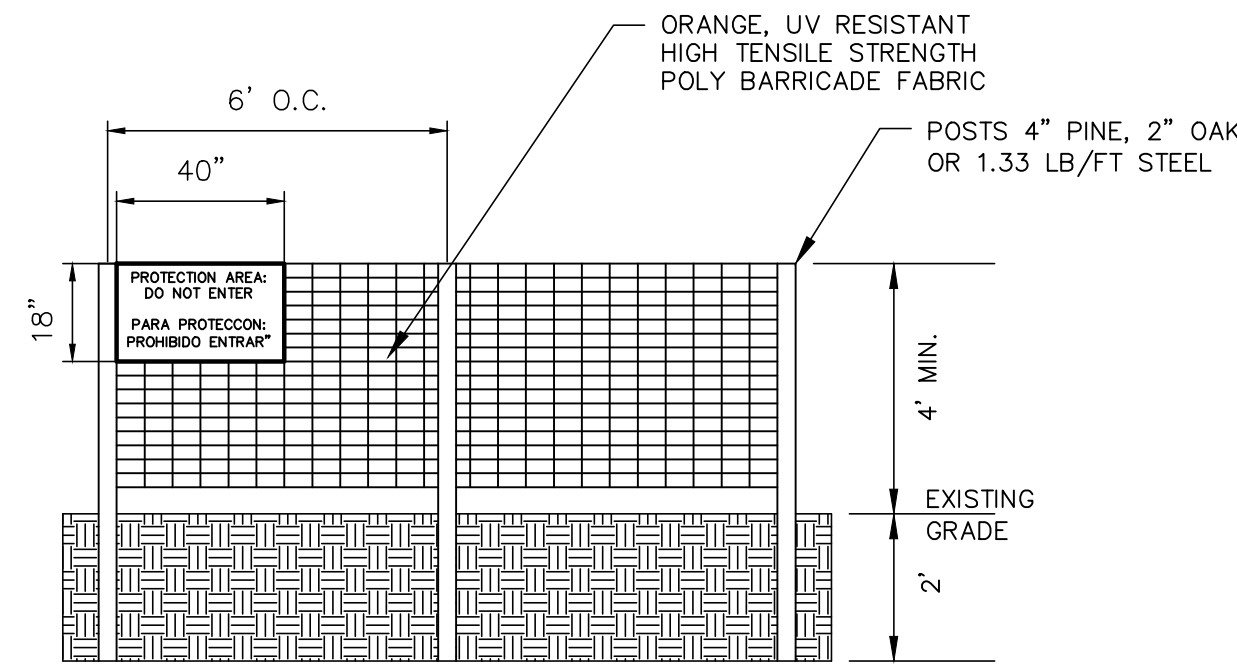
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DRAWN: GCA	VERTICAL: N/A	REVISION: 3
DESIGNED: GCA		
CHECKED: CHS		
PROJ. MGR.: CHS		
STATUS: FINAL DRAWINGS		



OUTLET NO.	Do (IN.)	La (FT.)	W (FT.)	DEPTH (IN.)	LINING CLASSIFICATION
OUTLET-8-150	36	24.0	11.5	24	CLASS 1

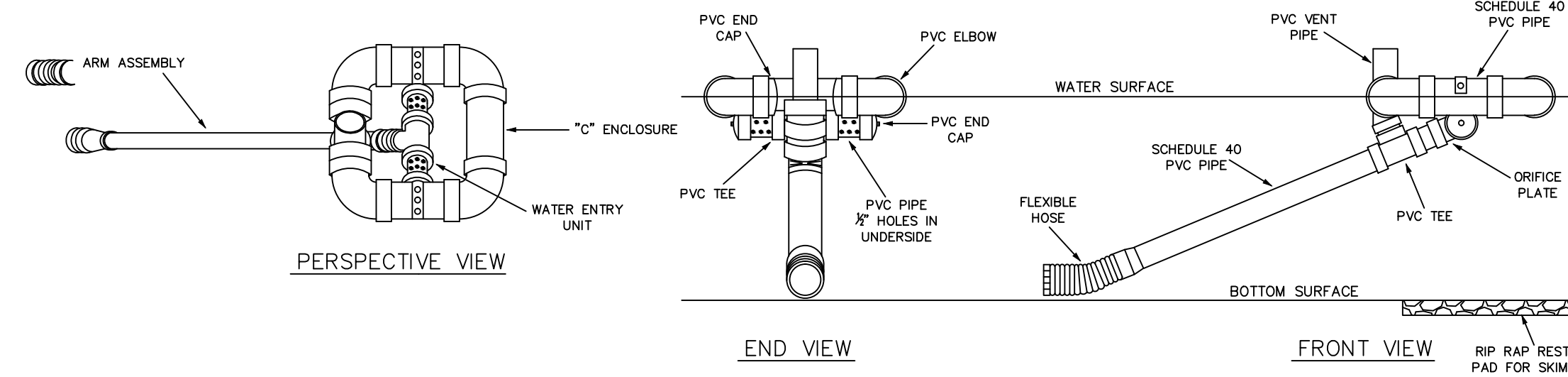
STONE CLASSIFICATIONS OF CLASS B REQUIRE A SUBLAYER OF FILTER FABRIC OR FS-2 FILTER STONE WITH A BEDDING THICKNESS OF 6".

RIPRAP OUTLET PROTECTION
NTS

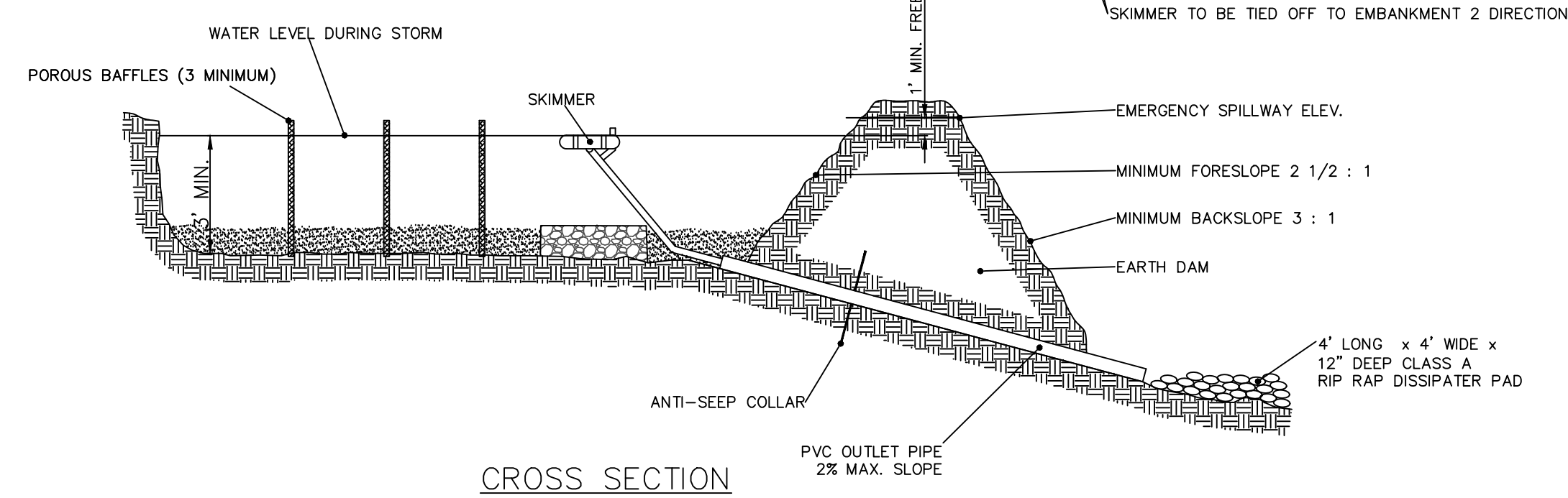
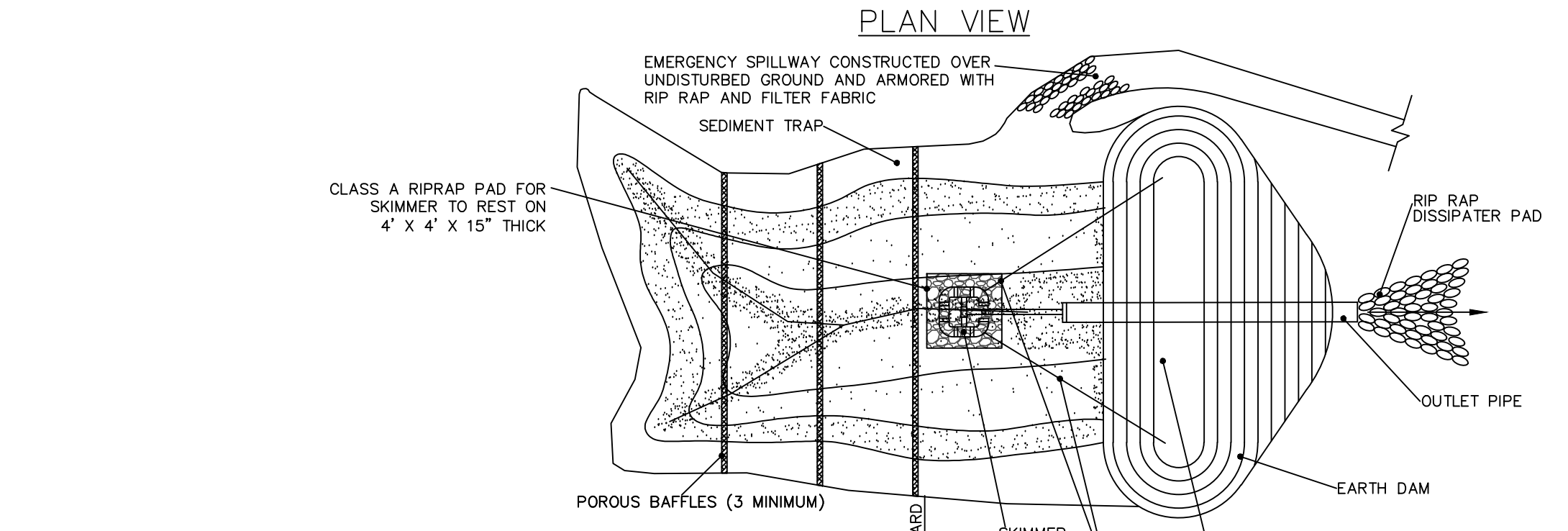


1. WARNING SIGNS TO BE MADE OF DURABLE WATERPROOF PLASTIC.
2. ALL LETTERS TO BE AT LEAST 3" HIGH, CLEARLY LEGIBLE AND SPACED APPROPRIATELY.
3. SIGNS TO BE PLACED AT EACH END OF LINER PROTECTION AREA AND 200' ON CENTER (MAX.) THEREAFTER FOR PROTECTION AREA LESS THAN 200' IN PERIMETER, PROVIDE NO LESS THAN ONE SIGN PER PROTECTION AREA AND/OR SIDE.
4. ATTACH SIGNS SECURELY TO FENCE POSTS AND FABRIC. FABRIC MUST BE ATTACHED TO APPROVED POSTS ONLY. DO NOT ATTACH TO TREES.
5. ADDITIONAL FENCING MAY BE REQUIRED BASED ON FIELD CONDITIONS.
6. FAILURE TO MAINTAIN PROTECTION FENCING MAY RESULT IN CIVIL PENALTIES.

TREE PROTECTION FENCE
NTS



SKIMMER DETAIL

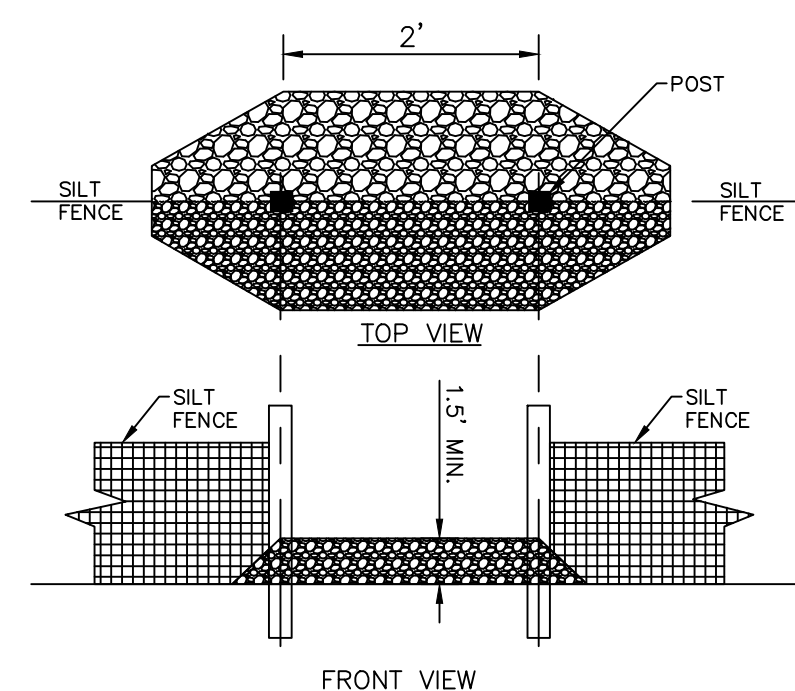


CROSS SECTION

NOTES:

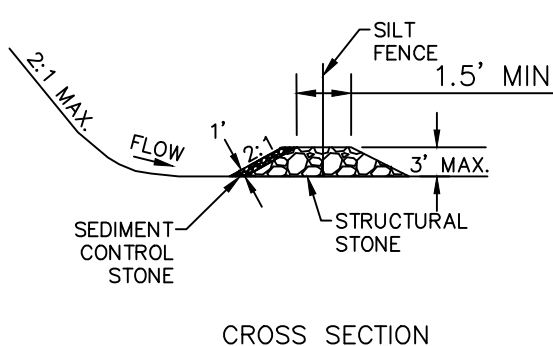
1. IF SEDIMENT IS FOUND TO BE LEAVING THE SITE, BMP #12 MAY BE RETROFITTED WITH A SKIMMER, AS DIRECTED BY THE ENGINEER IN ORDER AND IN ACCORDANCE WITH THIS DETAIL.
2. ANY EXISTING SKIMMER SEDIMENT BASINS PREVIOUSLY APPROVED SHALL MAINTAINED PER THEIR ORIGINAL DIMENSIONS AND IN ACCORDANCE WITH THIS DETAIL.

TEMPORARY SKIMMER SEDIMENT BASIN
NTS

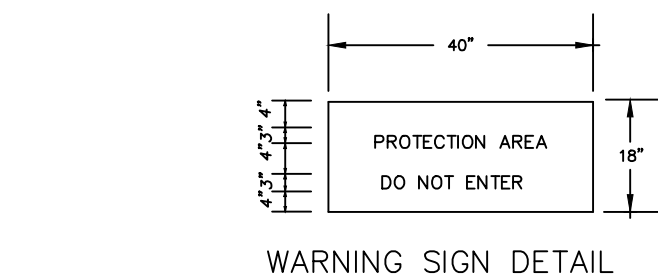


SILT FENCE OUTLET
NTS

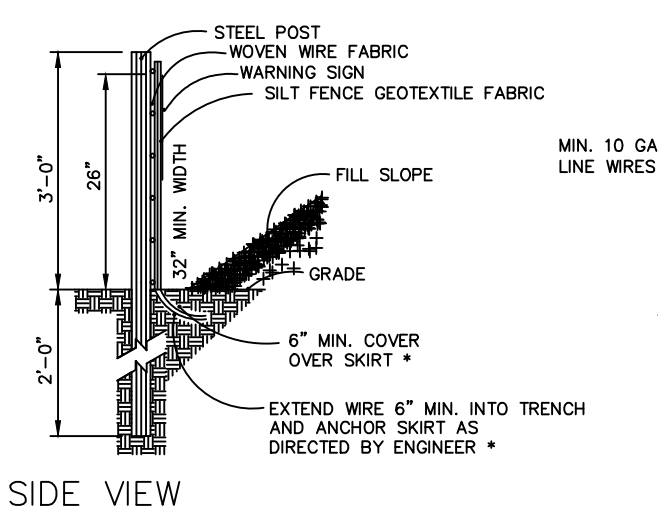
NOTE: STRUCTURAL STONE SHALL BE CLASS B STONE FOR EROSION CONTROL PURPOSES. SEDIMENT CONTROL STONE SHALL BE NO. 5 OF NO. 57 STONE.



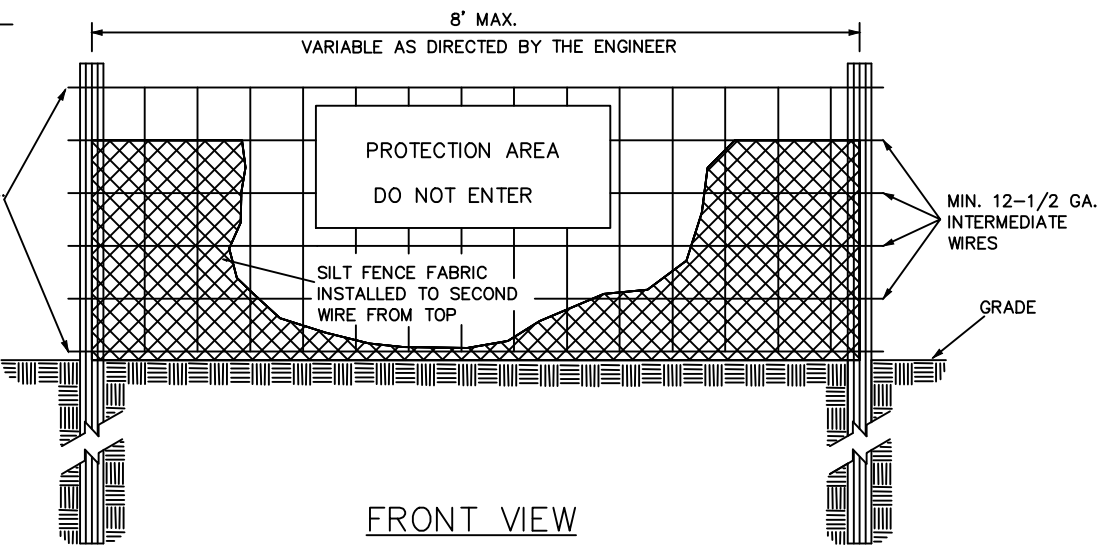
CROSS SECTION



WARNING SIGN DETAIL



SIDE VIEW



FRONT VIEW

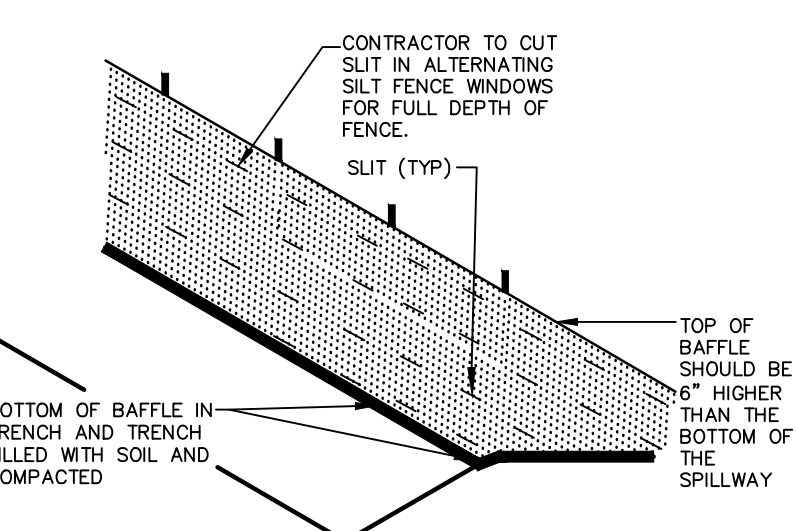
COMBINATION SILT/TREE PROTECTION FENCE
NTS

*FOR REPAIR OF SILT FENCE FAILURES, USE NO. 57 WASHED STONE. FOR ANCHOR WHEN SILT FENCE IS PROTECTING CATCH BASIN.

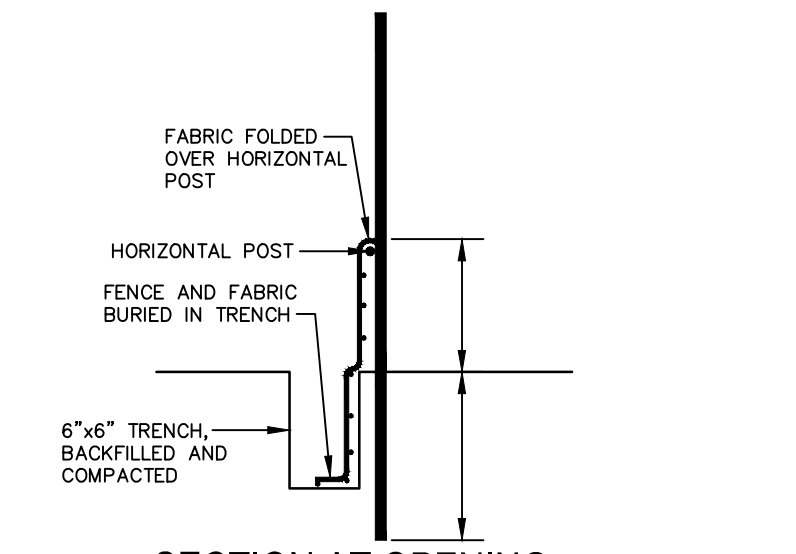
NOTES:

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

BAFFLE INSTALLATION - STEP 1



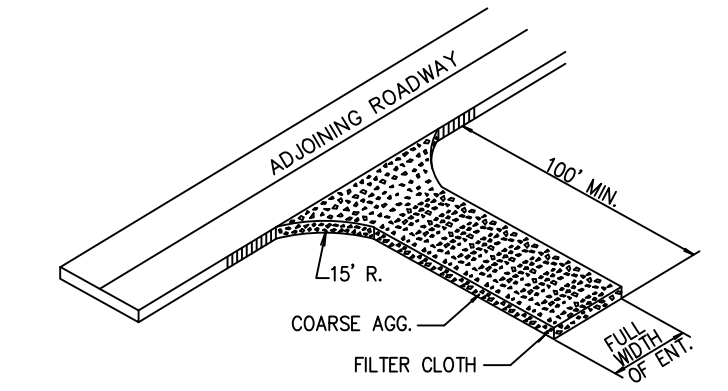
BAFFLE INSTALLATION - STEP 2



SECTION AT OPENING

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

BAFFLE INSTALLATION DETAIL

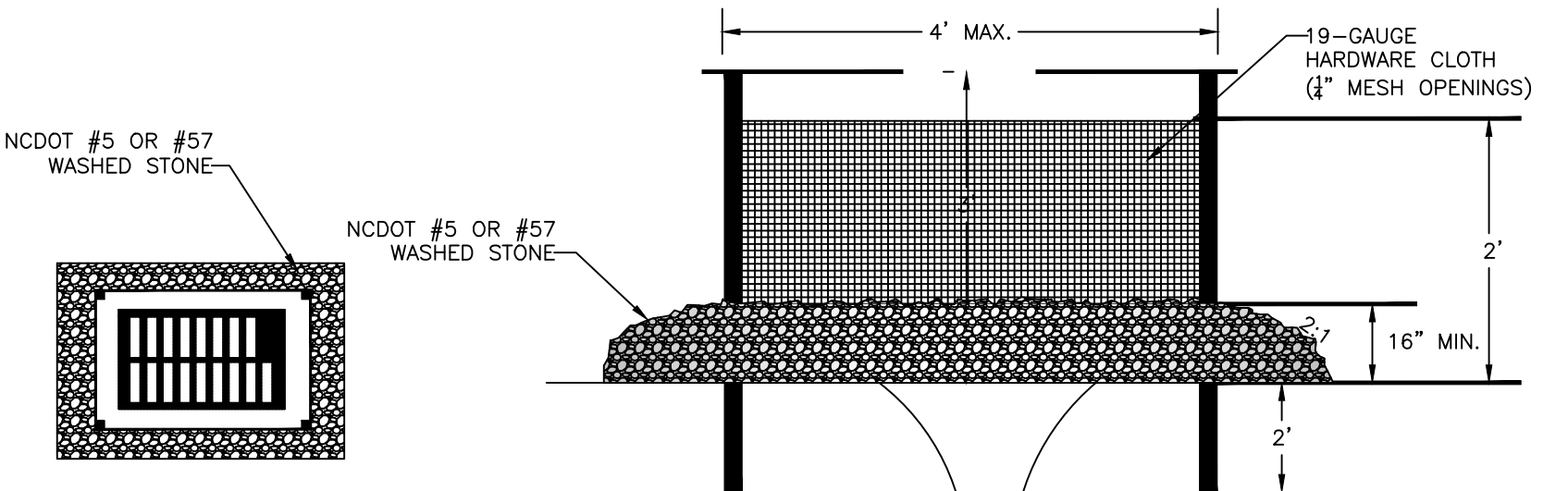


TEMPORARY CONSTRUCTION ENTRANCE
NTS

- A. COARSE AGGREGATE (2"-3" STONE) SHALL BE USED. PAD TO BE 100' X 25' X 6" D MIN. PLACE A MINIMUM OF 3" OF STONE IN A CUT SECTION TO HELP SECURE FILTER CLOTH.
- B. TURNING RADIUS SUFFICIENT TO ACCOMMODATE LARGE TRUCKS IS TO BE PROVIDED.
- C. ENTRANCES SHOULD BE LOCATED TO PROVIDE FOR MAXIMUM UTILITY BY ALL CONSTRUCTION VEHICLES.
- D. 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 CLEAN IT OUT AS NECESSARY. IMMEDIATELY REMOVE ALL OBJECTIONABLE MATERIALS SPILLED, WASHED, OR TRACKED ONTO PUBLIC ROADWAYS.
- E. TEMPORARY PADS MUST BE LOCATED ON EACH SIDE OF ADJOINING ROADWAY.

NOTES:

1. UNIFORMLY GRADE A SHALLOW DEPRESSION APPROACHING THE INLET.
2. DRIVE 5-FOOT 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-FOOT FLAP OF THE WIRE MESH UNDER THE GRAVEL FOR ANCHORING IS RECOMMENDED.
4. PLACE CLEAN GRAVEL (NC 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.



PLAN VIEW

CROSS SECTION

HARDWARE CLOTH & GRAVEL INLET PROTECTION
NTS

REV. NO.	DESCRIPTIONS	DATE
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 CHATHAM COUNTY, NORTH CAROLINA
 EROSION AND SEDIMENTATION
 CONTROL DETAILS

DATE: MAY 21, 2013	SCALE: D1.X	MISC FILE NUMBER: DRAWING NUMBER
MCE PROJ. # 02735-0092	HORIZONTAL: 1" = 50'	REVISION: 3
DRAWN: GCA	VERTICAL: N/A	
DESIGNED: GCA		
CHECKED: CHS		
PROJ. MGR. CHS		
STATUS: FINAL DRAWINGS		

RECOMMENDATIONS FOR LATE WINTER AND EARLY SPRING

SEEDING MIXTURE
 SPECIES RATE (lb./acre)
 TALL FESCUE 80
 KOBE LESPEDEZA 40

NURSE PLANTS:
 BETWEEN MAY 1 AND AUG. 15, ADD 10 lb/acre GERMAN MILLET OR 15 lb/acre SUDANGRASS. PRIOR TO MAY 1 OR AFTER AUG. 15, ADD 40 lb/ac RYE (GRAIN)

SEEDING DATES:
 BEST: AUG. 15 - SEPT. 15
 LATE WINTER: FEB. 15 - MAR. 21

POSSIBLE:
 AUG. 20 - OCT. 25
 FEB. 1 - APR. 15.

FALL IS BEST FOR TALL FESCUE AND LATER WINTER FOR LESPEDEZAS. OVERSEEDING OF KOBE LESPEDEZA OVER FALL-SEEDED TALL FESCUE IS VERY EFFECTIVE.

SOIL AMENDMENTS:
 FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 lb/acre GROUND AGRICULTURAL LIMESTONE AND 750 lb/acre 10-10-10 FERTILIZER

MULCH:
 APPLY 4,000 lb/acre STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT, NETTING OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

MAINTENANCE:
 REFERTILIZE IN THE SECOND YEAR UNLESS GROWTH IS FULLY ADEQUATE. MAY BE MOWED ONCE OR TWICE A YEAR, BUT MOWING IS NOT NECESSARY. RESEED, FERTILIZE AND MULCH DAMAGED AREAS IMMEDIATELY.

RECOMMENDATIONS FOR GRASS-LINED CHANNELS

SEEDING MIXTURE
 SPECIES RATE (lb./acre)
 TALL FESCUE 200

NURSE PLANTS:
 BETWEEN MAY 1 AND AUG. 15, ADD 10 lb/acre SUDANGRASS OR 15 lb/acre GERMAN MILLET. PRIOR TO MAY 1 OR AFTER AUG. 15, ADD 40 lb/ac RYE (GRAIN)

SEEDING DATES:
 BEST: AUG. 25 - OCT.
 POSSIBLE: FEB. - APR. 15

AVOID SEEDING FROM NOV. TO JAN. IF SEEDING MUST BE DONE AT THIS TIME, ADD 40 lb/acre RYE GRAIN AND USE A CHANNEL LINING THAT OFFERS MAXIMUM PROTECTION

SOIL AMENDMENTS:
 FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 4,000 lb/acre GROUND AGRICULTURAL LIMESTONE AND 1,000 lb/acre 10-10-10 FERTILIZER

MULCH:
 USE ROLLED EROSION CONTROL PRODUCT TO COVER THE BOTTOM OF THE CHANNELS AND DITCHES, AND STAPLE SECURELY. THE LINING SHOULD EXTEND ABOVE THE HIGHEST CALCULATED DEPTH OF FLOW. ON CHANNEL SIDE SLOPES ABOVE THIS HEIGHT, AND IN DRAINAGES NOT REQUIRING TEMPORARY LININGS, APPLY 4,000 lb/acre GRAIN STRAW, AND ANCHOR STRAW BY STAPLING NETTING OVER THE TOP.

MULCH AND ANCHORING MATERIALS MUST NOT BE ALLOWED TO WASH DOWN SLOPES WHERE THEY CAN CLOG DRAINAGE DEVICES.

MAINTENANCE:
 INSPECT AND REPAIR MULCH FREQUENTLY. REFERTILIZE IN LATE WINTER OF THE FOLLOWING YEAR; USE SOIL TESTS OR APPLY 150 lb/acre 10-10-10. MOW REGULARLY TO A HEIGHT OF 2-4 INCHES.

NOTE:
 SEE NCDENR'S EROSION AND SEDIMENT CONTROL PLANNING DESIGN MANUAL SECTION 6.11 FOR ADDITIONAL PERMANENT SEEDING OPTIONS.

PERMANENT SEEDING SCHEDULE
 NTS

RECOMMENDATIONS FOR LATE WINTER AND EARLY SPRING

SEEDING MIXTURE
 SPECIES RATE (lb./acre)
 RYE (GRAIN) 120
 ANNUAL LESPEDEZA (KOBE IN
 PIEDMONT & COASTAL PLAIN,
 KOREAN IN MOUNTAINS)

OMIT ANNUAL LESPEDEZA WHEN DURATION OF TEMPORARY COVER IS NOT TO EXTEND BEYOND JUNE

SEEDING DATES:
 MOUNTAINS (ABOVE 2,500'): FEB. 15 - MAY 15
 (BELOW 2,500'): FEB. 1 - MAY 1
 PIEDMONT: JAN. 1 - MAY 1
 COASTAL PLAIN: DEC. 1 - APR. 15

SOIL AMENDMENTS:
 FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 lb/acre GROUND AGRICULTURAL LIMESTONE AND 750 lb/acre 10-10-10 FERTILIZER

MULCH:
 APPLY 4,000 lb/acre STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT, NETTING OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

MAINTENANCE:
 REFERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RESEED, REFERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE.

RECOMMENDATIONS FOR SUMMER

SEEDING MIXTURE
 SPECIES RATE (lb./acre)
 GERMAN MILLET 40

IN THE PIEDMONT AND MOUNTAINS, A SMALL-STEMMED SUDANGRASS MAY BE SUBSTITUTED AT A RATE OF 50 lb/acre.

SEEDING DATES:
 MOUNTAINS: MAY 15 - AUG. 15
 PIEDMONT: MAY 1 - AUG. 15
 COASTAL PLAIN: APR. 15 - AUG. 15

SOIL AMENDMENTS:
 FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 lb/acre GROUND AGRICULTURAL LIMESTONE AND 750 lb/acre 10-10-10 FERTILIZER

MULCH:
 APPLY 4,000 lb/acre STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT, NETTING OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

MAINTENANCE:
 REFERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RESEED, REFERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE.

RECOMMENDATIONS FOR FALL

SEEDING MIXTURE
 SPECIES RATE (lb./acre)
 RYE (GRAIN) 120

SEEDING DATES:
 MOUNTAINS: AUG. 15 - DEC. 15
 COASTAL PLAIN AND PIEDMONT: AUG. 15 - DEC. 30

SOIL AMENDMENTS:
 FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 lb/acre GROUND AGRICULTURAL LIMESTONE AND 750 lb/acre 10-10-10 FERTILIZER

MULCH:
 APPLY 4,000 lb/acre STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT, NETTING OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

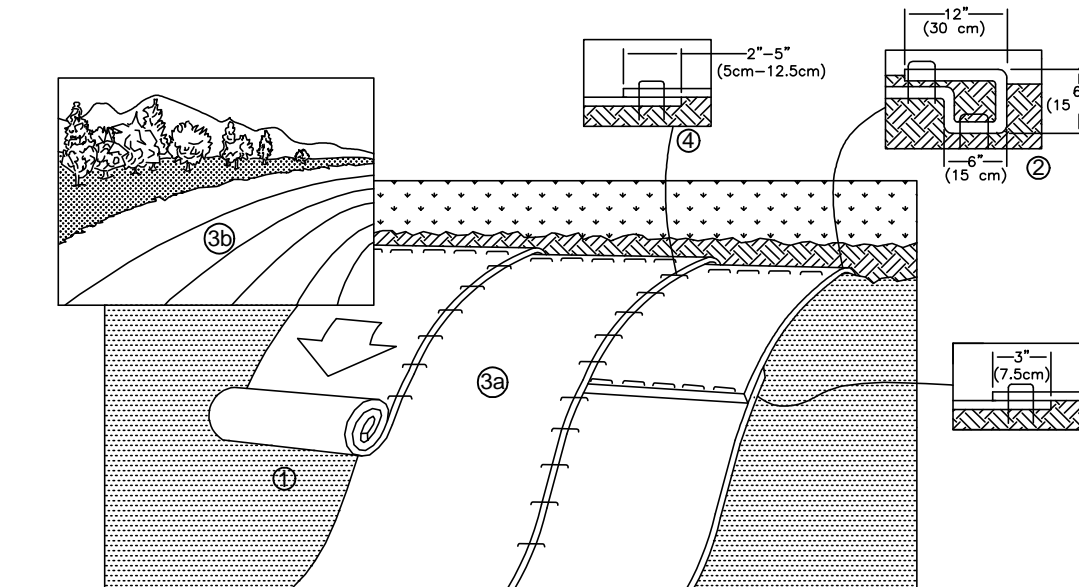
MAINTENANCE:
 REPAIR AND REFERTILIZE DAMAGED AREAS IMMEDIATELY. TOPDRESS WITH 50 lb/acre OF NITROGEN IN MARCH. IF IT IS NECESSARY TO EXTEND TEMPORARY COVER BEYOND JUNE 15, OVERSEED WITH 50 lb/acre KOBE (PIEDMONT AND COASTAL PLAIN) OR KOREAN (MOUNTAINS) LESPEDEZA IN LATE FEBRUARY OR EARLY MARCH.

TEMPORARY SEEDING SCHEDULE
 NTS

- CHISEL COMPACTED AREAS AND SPREAD TOPSOIL 3 INCHES DEEP OVER ADVERSE SOIL CONDITIONS, IF AVAILABLE.
- RIP THE ENTIRE AREA TO 6 INCHES DEPTH.
- REMOVE ALL LOOSE ROCK, ROOTS, AND OTHER OBSTRUCTIONS LEAVING SURFACE REASONABLY SMOOTH AND UNIFORM.
- APPLY AGRICULTURAL LIME, FERTILIZER, AND SUPERPHOSPHATE UNIFORMLY AND MIX WITH SOIL (SEE BELOW*).
- CONTINUE TILLAGE UNTIL A WELL - PULVERIZED, FIRM, REASONABLY UNIFORM SEEDBED IS PREPARED 4 TO 6 INCHES DEEP.
- SEED ON A FRESHLY PREPARED SEEDBED AND COVER SEED LIGHTLY WITH SEEDING EQUIPMENT OR CULTIPACK AFTER SEEDING.
- MULCH IMMEDIATELY AFTER SEEDING AND ANCHOR MULCH.
- INSPECT ALL SEEDED AREAS AND MAKE NECESSARY REPAIRS OR RESEEDINGS WITHIN THE PLANTING SEASON, IF POSSIBLE. IF STAND SHOULD BE OVER 60% DAMAGED REESTABLISH FOLLOWING ORIGINAL LIME, FERTILIZER AND SEEDING RATES.
- CONSULT CONSERVATION INSPECTOR ON MAINTENANCE TREATMENT AND FERTILIZATION AFTER PERMANENT COVER IS ESTABLISHED.

* APPLY: AGRICULTURAL LIMESTONE - 2 TONS/ACRE OR 3 TONS/ACRE IN CLAY SOILS
 FERTILIZER - 1000 LBS/ACRE (10-10-10)
 SUPERPHOSPHATE - 500 LBS/ACRE (20%)
 MULCH - 2 TONS/ACRE (SMALL GRAIN STRAW)ANCHOR - ASPHALT EMULSION AT 450 GAL./ACRE

SEEDBED PREPARATION
 NTS



- PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECPs), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
 - BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE RECPs IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH WITH APPROXIMATELY 12" (30 CM) OF RECPs EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE RECPs WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30 CM) PORTION OF RECPs BACK OVER SEED AND COMPACTED SOIL. SECURE RECPs OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30 CM) APART ACROSS THE WIDTH OF THE RECPs.
 - ROLL THE RECPs (A.) DOWN (FOR SLOPES 3:1 OR GREATER) OR (B.) HORIZONTALLY (FOR SLOPES LESS THAN 3:1) ACROSS THE SLOPE. RECPs WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECPs MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM™, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
 - THE EDGES OF PARALLEL RECPs MUST BE STAPLED WITH APPROXIMATELY 2" -5" (5 CM -12.5 CM) OVERLAP DEPENDING ON RECP'S TYPE.
 - CONSECUTIVE RECPs SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" (7.5 CM) OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" (30 CM) APART ACROSS ENTIRE RECP'S WIDTH.
- NOTE: *IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 CM) MAY BE NECESSARY TO PROPERLY SECURE THE RECPs.

**TEMPORARY STABILIZATION FOR SLOPES
 GREATER THAN 10 FEET**
 NTS

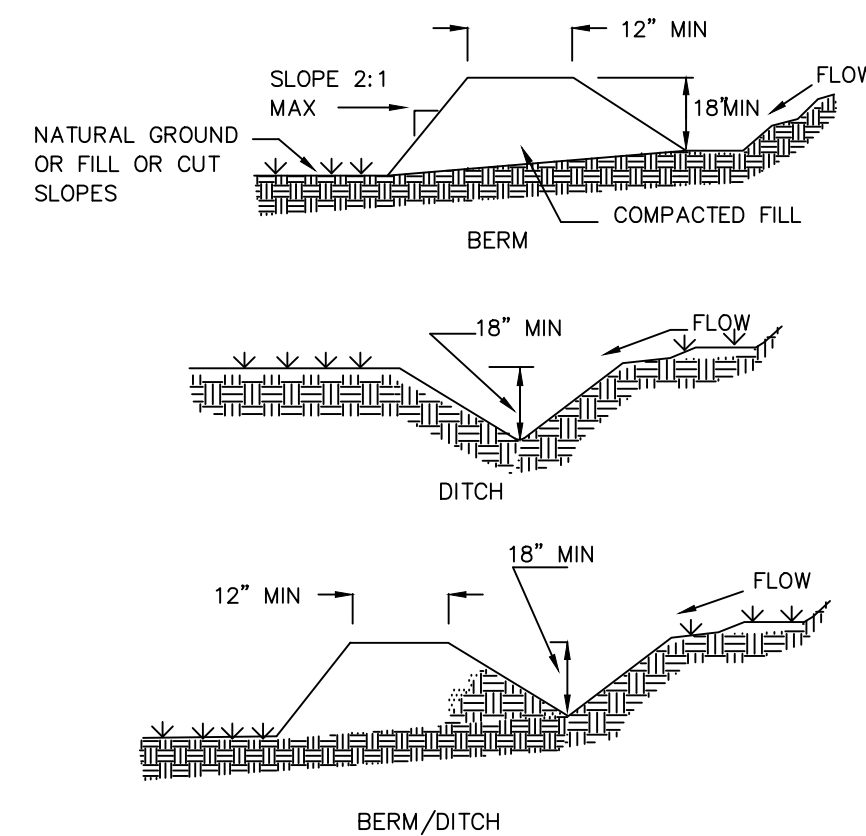
NOTES:

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.

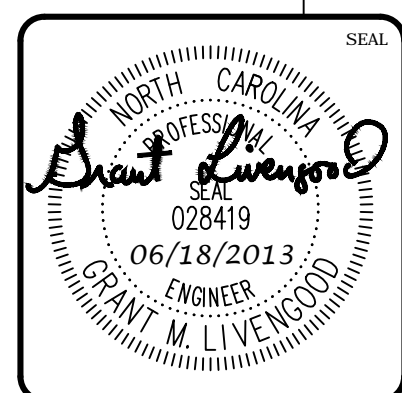
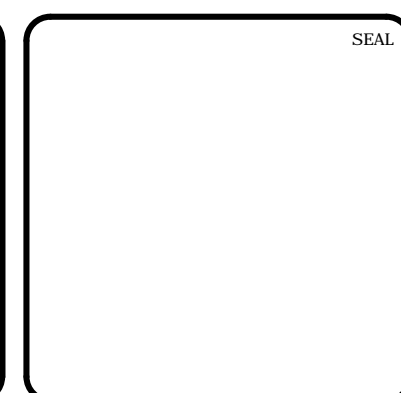
MAINTENANCE

- 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 GROUND LEVEL AND APPROPRIATELY STABILIZE IT.
- ALL TEMPORARY DIVERSIONS AND CLEAN WATER DITCHES SHALL BE MAINTAINED PER THEIR ORIGINAL DESIGN DIMENSIONS DURING PHASE 7 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

REV. NO.	DESCRIPTIONS	DATE
3	REVISED PER NCDOT COMMENTS	2013.06.18
2	REVISED PER CHATHAM COUNTY REVIEW	2013.06.03
1	1ST SUBMITTAL TO REVIEW AGENCIES	2013.05.21



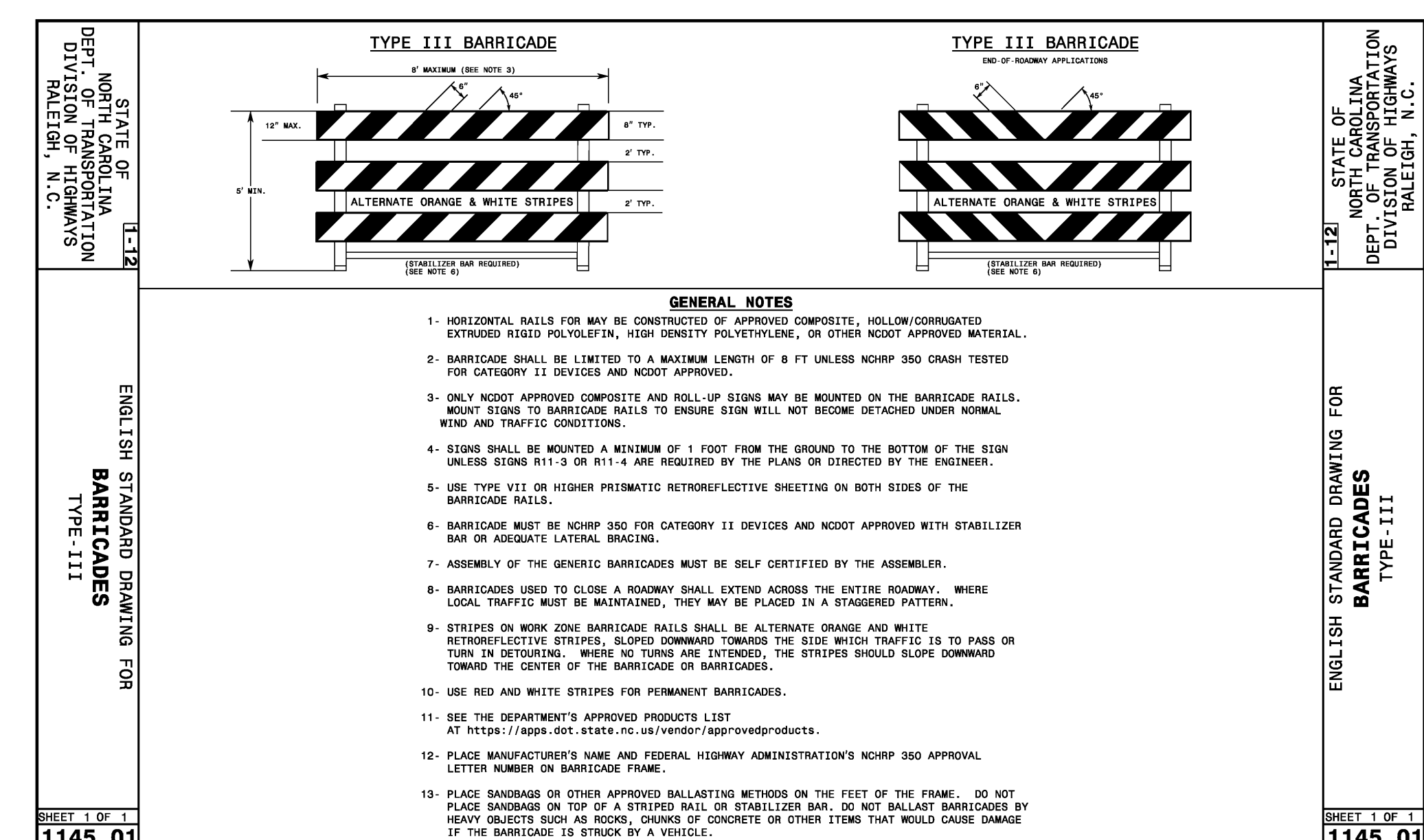
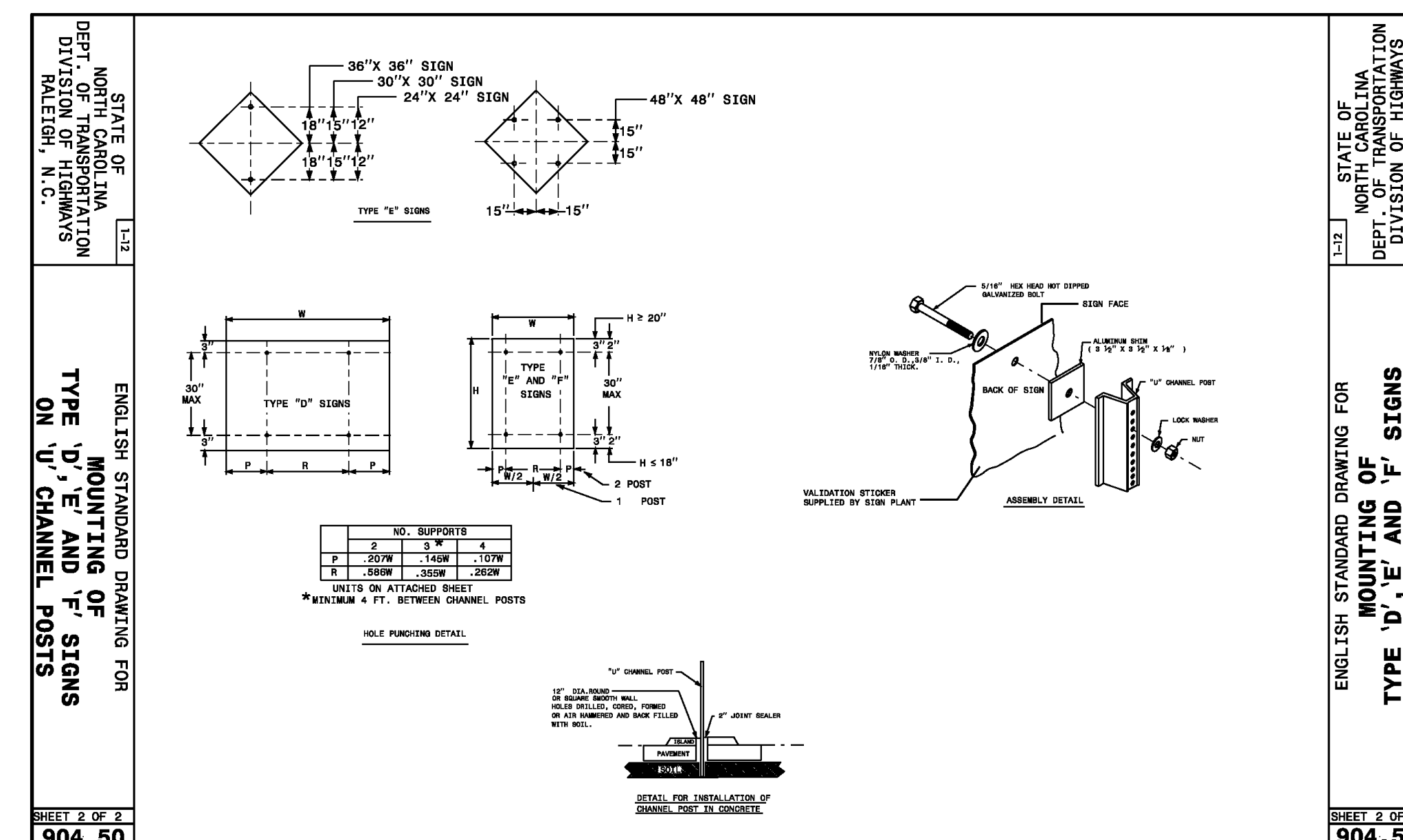
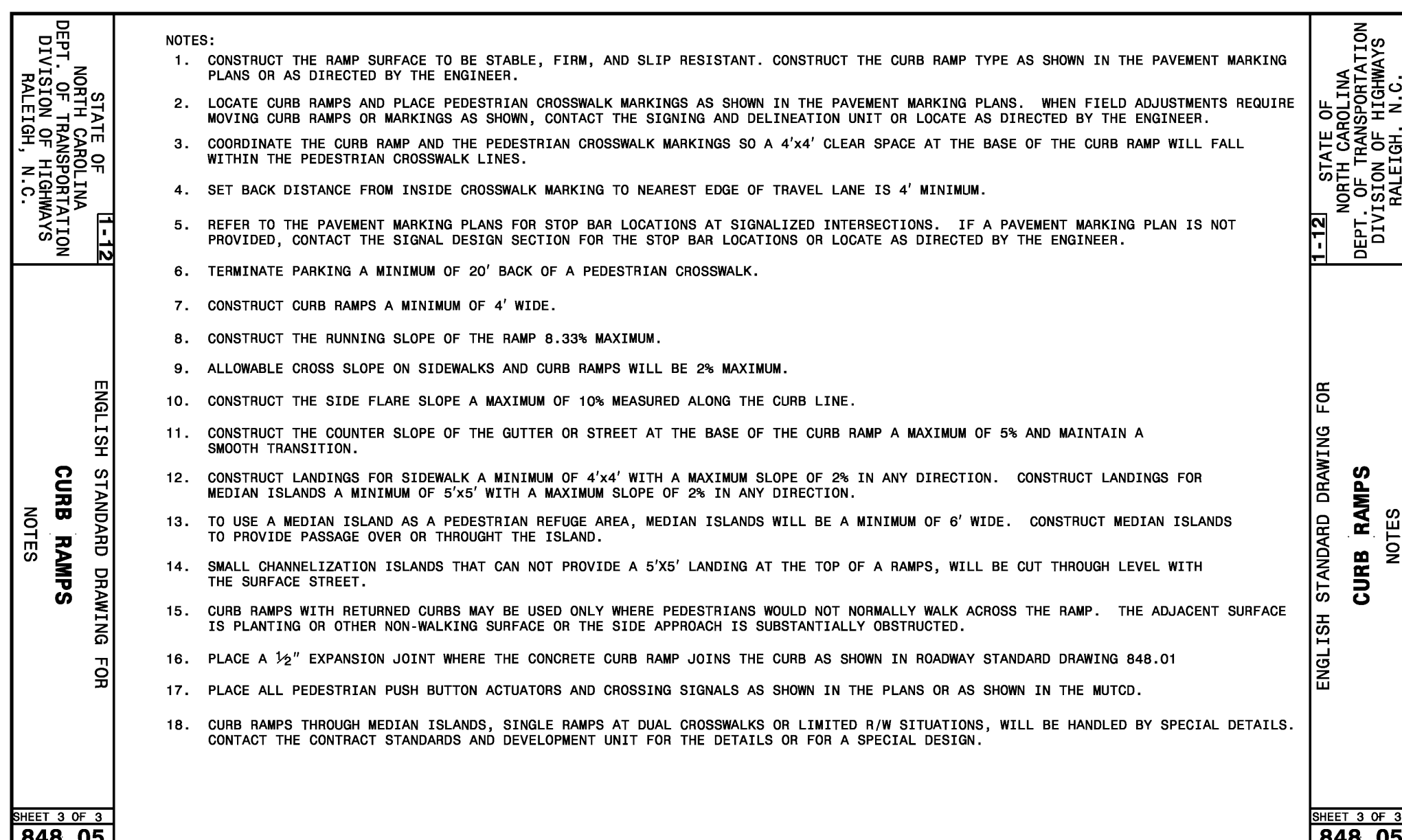
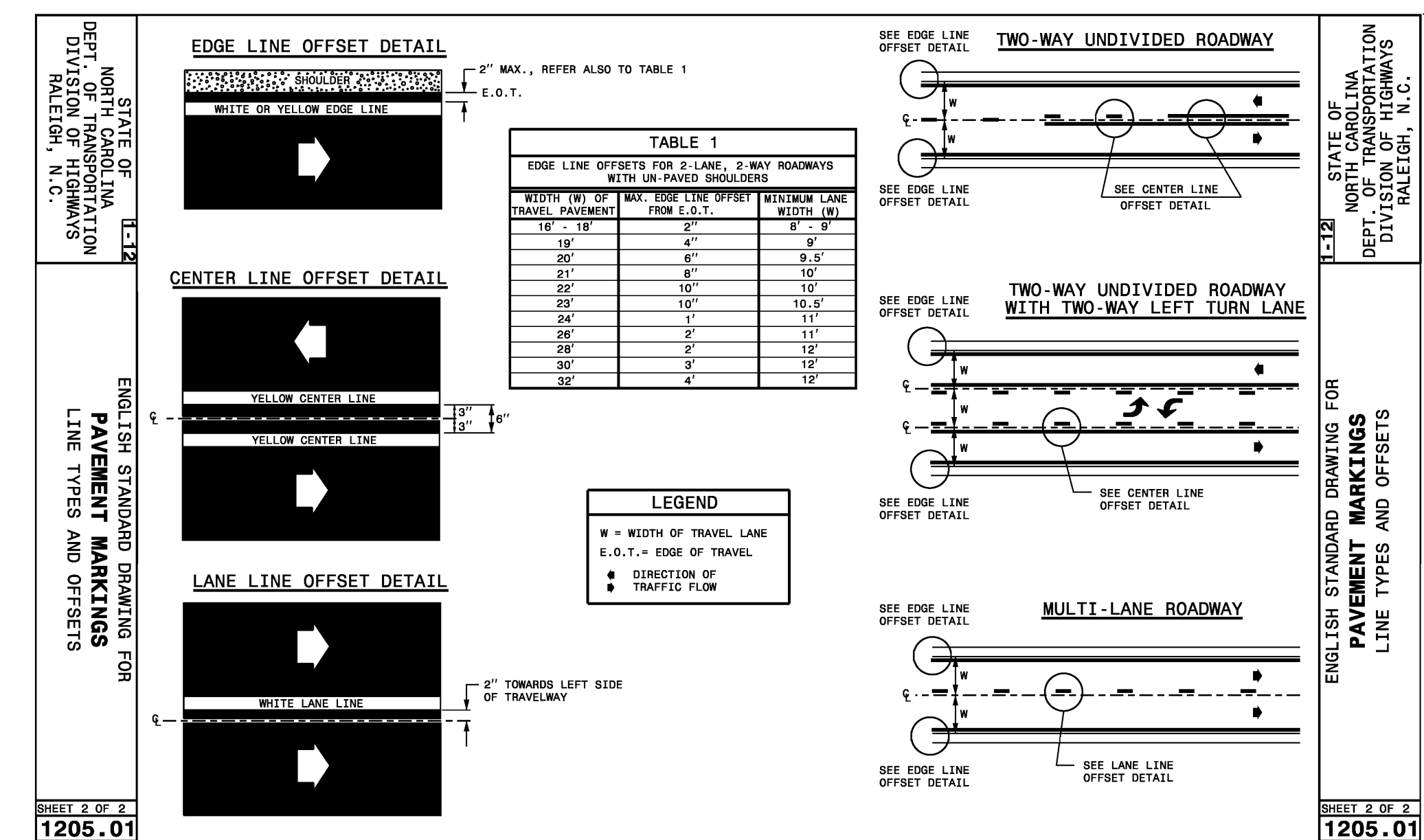
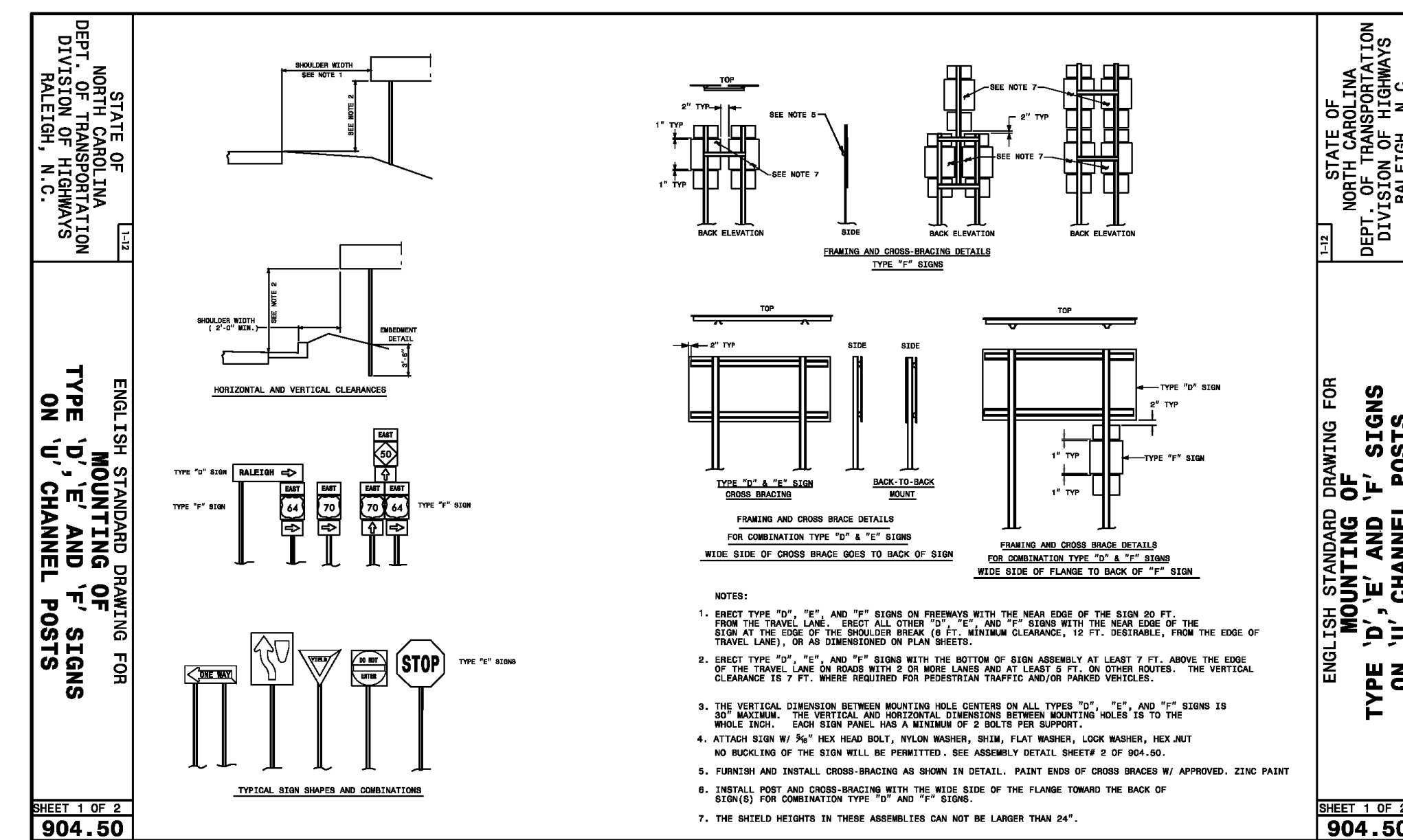
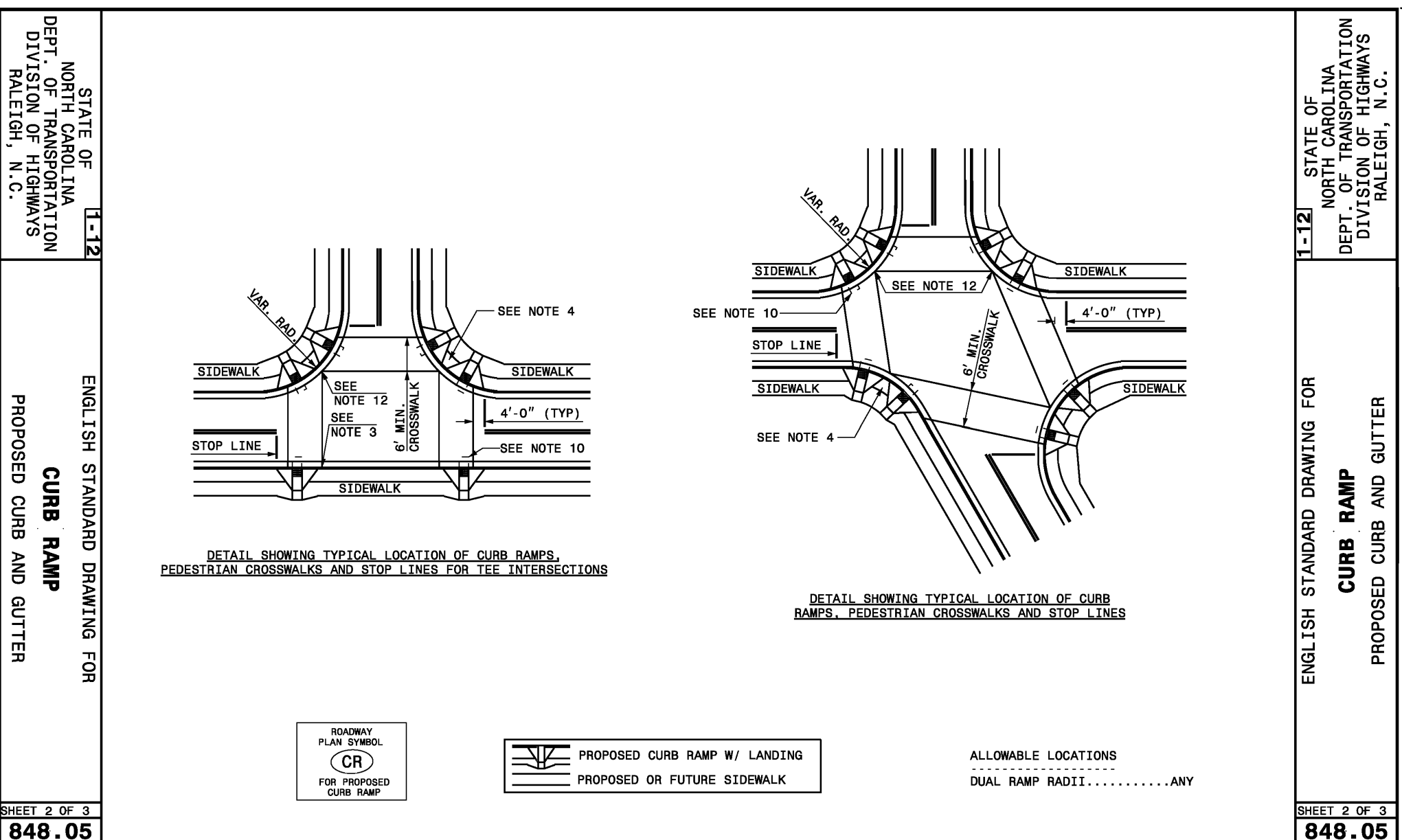
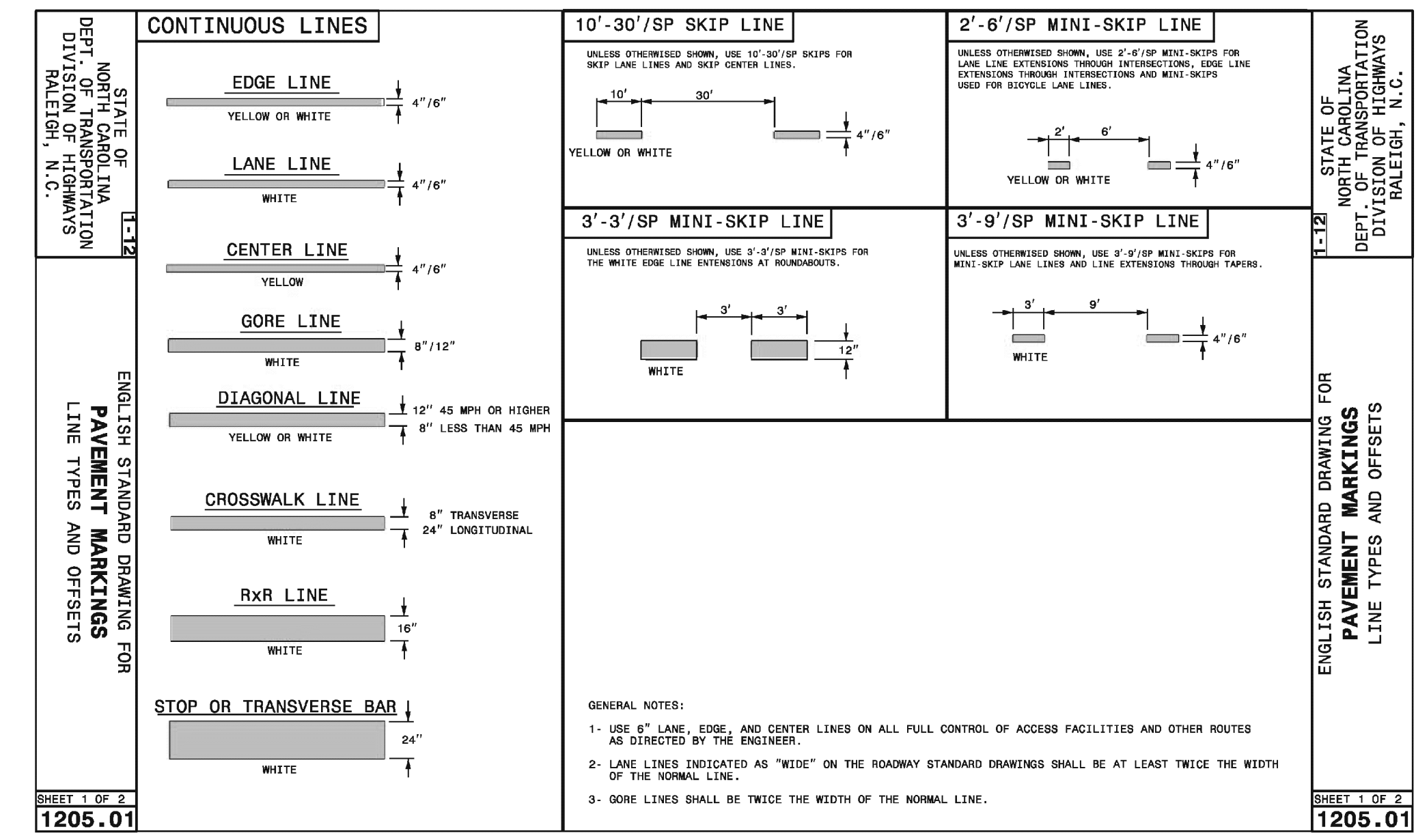
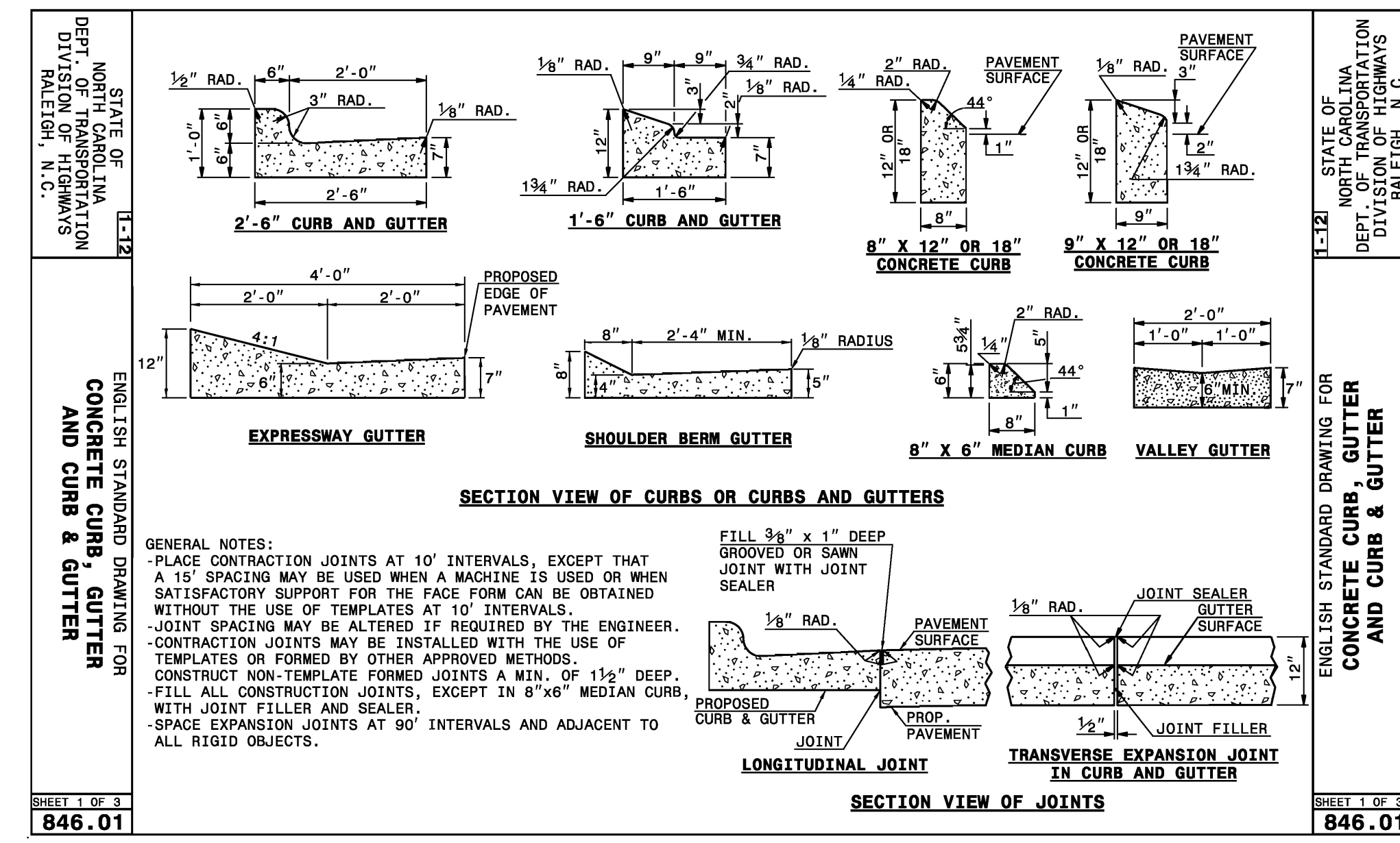
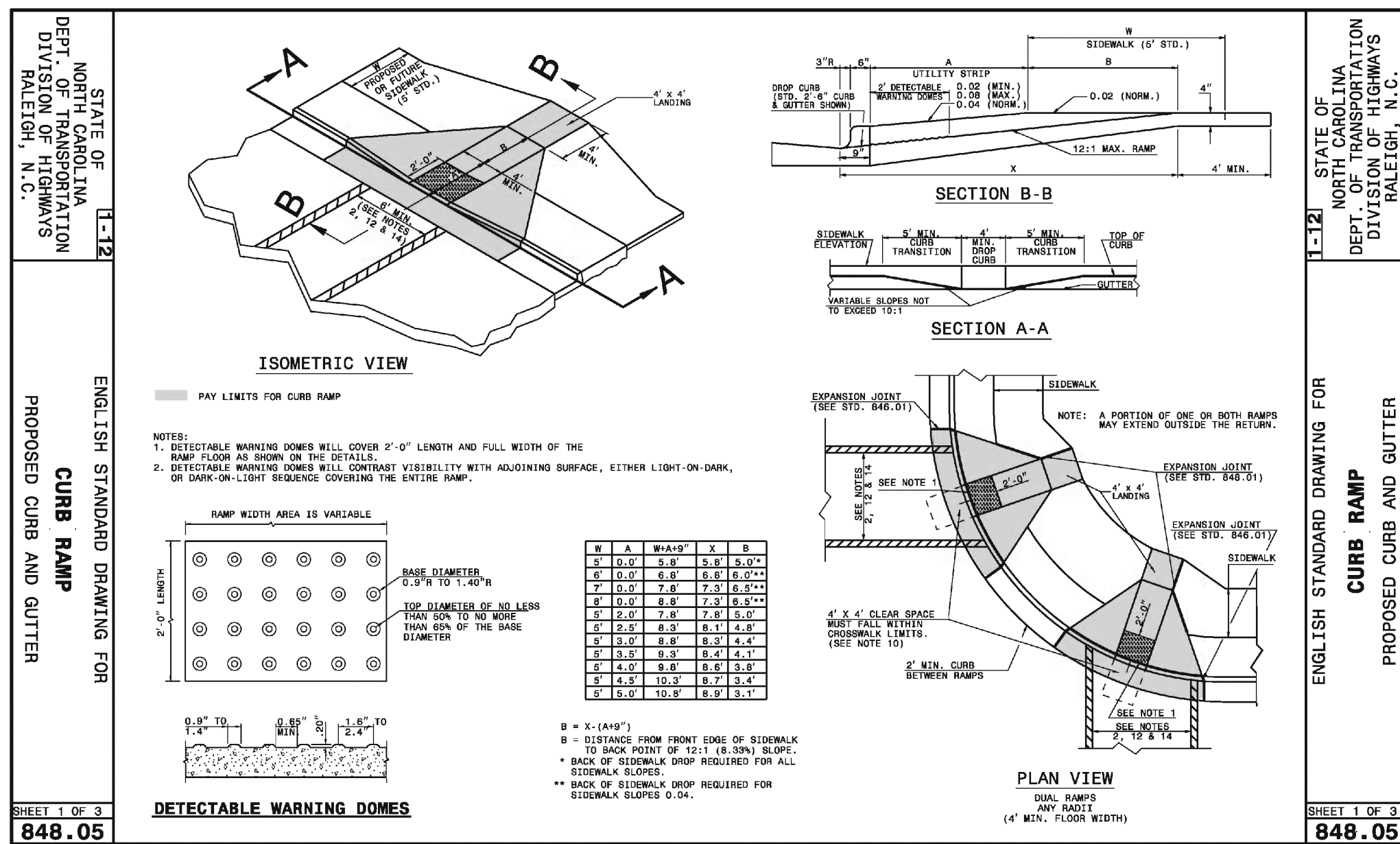
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Newland COMMUNITIES

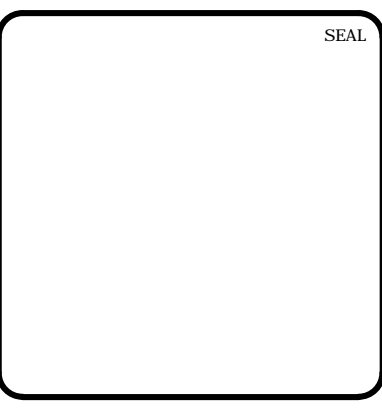
**BRIAR CHAPEL
 PHASE 8
 CHATHAM COUNTY, NORTH CAROLINA**

**EROSION AND SEDIMENTATION
 CONTROL DETAILS**

DATE: MAY 21, 2013	SCALE: D1.X	MISC. FILE NUMBER:
MCE PROJ. # 02735-0092	HORIZONTAL: 1" = 50'	DRAWING NUMBER: D1.2
DRAWN: GCA	VERTICAL: N/A	
DESIGNED: GCA		
CHECKED: CHS		
PROJ. MGR.: CHS		
STATUS: FINAL DRAWINGS	REVISION: 3	



REV. NO.	DESCRIPTIONS	DATE
3	REVISED PER NCDOT COMMENTS	2013.06.18
2	REVISED PER CHATHAM COUNTY REVIEW	2013.06.03
1	1ST SUBMITTAL TO REVIEW AGENCIES	2013.05.21



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BRIAR CHAPEL™

by **Newland COMMUNITIES**

BRIAR CHAPEL PHASE 8
CHATHAM COUNTY, NORTH CAROLINA

NCDOT ROADWAY DETAILS

DATE: MAY 21, 2013	SCALE: D2.X
MCE PROJ. # 02735-0092	DRAWING NUMBER: D2.1
DRAWN: GCA	HORIZONTAL: N/A
DESIGNED: GCA	VERTICAL: N/A
CHECKED: CHS	
PROJ. MGR: CHS	
STATUS: FINAL DRAWINGS	REVISION: 3

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 DOWELS 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. STAINLESS STEEL SHORTENED AROUND 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"		DIMENSIONS AND QUANTITIES FOR CONCRETE JUNCTION BOXES		TOTAL QUANTITIES FOR BOX AND SLAB		DEDUCTIONS FOR ONE PIPE ON PIPE	
PIPE	SPAN	WIDTH	HEIGHT	NO.	LENGTH	TOP SLAB DIMENSIONS	CUBIC YARDS IN BOX	LSB. REINF.	CU. YDS. TOTAL
12"	2'-0"	2'-0"	2'-3"	12	2'-9"	3'-0" x 3'-0"	0.167	0.167	0.166
18"	2'-0"	2'-3"	2'-6"	12	3'-0"	3'-3" x 3'-3"	0.196	0.196	0.204
24"	2'-0"	2'-6"	2'-9"	14	3'-3"	3'-6" x 3'-6"	0.227	0.227	0.232
30"	2'-0"	2'-9"	3'-0"	16	3'-6"	4'-0" x 4'-0"	0.258	0.258	0.264
36"	2'-0"	3'-0"	3'-3"	18	4'-0"	4'-3" x 4'-3"	0.293	0.293	0.300
42"	2'-0"	3'-3"	3'-6"	20	4'-3"	5'-0" x 5'-0"	0.463	0.463	0.533
48"	2'-0"	3'-6"	3'-9"	22	5'-0"	5'-6" x 5'-6"	0.560	0.560	0.707
54"	2'-0"	3'-9"	4'-0"	24	5'-6"	6'-0" x 6'-0"	0.743	0.743	1.000
60"	2'-0"	4'-0"	4'-3"	26	6'-0"	6'-6" x 6'-6"	0.865	0.865	1.28
66"	2'-0"	4'-3"	4'-6"	30	7'-3"	7'-6" x 7'-6"	1.042	1.042	1.45

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

ENGLISH STANDARD DRAWING FOR CONCRETE GRATED DROP INLET TYPE 'D' 12" THRU 36" PIPE

GENERAL NOTES:
 USE CLASS "B" CONCRETE THROUGHOUT.
 PROVIDE ALL 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 DOWELS 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 CHAMFER MATCHING.
 MAX. DEPTH OF THIS STRUCTURE FROM TOP OF BOTTOM SLAB TO TOP ELEVATION IS 12 FEET.
 SEE STANDARD DRAWING 840.25 FOR ATTACHMENT OF FRAMES AND GRATES NOT SHOWN.
 CHAMFER ALL EXPOSED CORNERS 1".
 DRAWING NOT TO SCALE.

DIMENSIONS OF BOX AND PIPE		REINFORCEMENT BARS "A"		DIMENSIONS AND QUANTITIES FOR CONCRETE GRATED DROP INLET		TOTAL QUANTITIES FOR BOX AND SLAB		DEDUCTIONS FOR ONE PIPE	
PIPE	SPAN	WIDTH	HEIGHT	NO.	LENGTH	TOP SLAB DIMENSIONS	CUBIC YARDS IN BOX	LSB. REINF.	CU. YDS. TOTAL
12"	3'-0"	2'-0"	1'-8"	0.382	0.247	0.381	0.753	0.020	0.032
18"	3'-0"	2'-0"	1'-11"	0.382	0.247	0.453	0.815	0.023	0.036
24"	3'-0"	2'-0"	2'-2"	0.382	0.247	0.515	0.877	0.023	0.048
30"	3'-0"	2'-0"	2'-5"	0.382	0.247	0.577	0.939	0.023	0.060
36"	3'-0"	2'-0"	2'-8"	0.382	0.247	0.639	1.001	0.023	0.072

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:
 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 DOWELS 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 "E", "F" AND "G" 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 CHAMFER MATCHING.
 CHAMFER ALL EXPOSED CORNERS 1".
 DRAWING NOT TO SCALE.

DIMENSIONS OF BOX AND PIPE		REINFORCEMENT BARS "A"		DIMENSIONS AND QUANTITIES FOR CONCRETE CATCH BASIN (BASED ON MIN. HEIGHT, N, WITH NO RISER)		TOTAL QUANTITIES FOR BOX AND SLAB		DEDUCTIONS FOR ONE PIPE	
PIPE	SPAN	WIDTH	HEIGHT	NO.	LENGTH	TOP SLAB DIMENSIONS	CUBIC YARDS IN BOX	LSB. REINF.	CU. YDS. TOTAL
12"	3'-0"	2'-0"	1'-8"	0.382	0.247	0.381	0.753	0.020	0.032
18"	3'-0"	2'-0"	1'-11"	0.382	0.247	0.453	0.815	0.023	0.036
24"	3'-0"	2'-0"	2'-2"	0.382	0.247	0.515	0.877	0.023	0.048
30"	3'-0"	2'-0"	2'-5"	0.382	0.247	0.577	0.939	0.023	0.060
36"	3'-0"	2'-0"	2'-8"	0.382	0.247	0.639	1.001	0.023	0.072

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

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.

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		REINFORCEMENT BARS "A"		DIMENSIONS AND QUANTITIES FOR CONCRETE CATCH BASIN (BASED ON MIN. HEIGHT, N, WITH NO RISER)		TOTAL QUANTITIES FOR BOX AND SLAB		DEDUCTIONS FOR ONE PIPE	
PIPE	SPAN	WIDTH	HEIGHT	NO.	LENGTH	TOP SLAB DIMENSIONS	CUBIC YARDS IN BOX	LSB. REINF.	CU. YDS. TOTAL
12"	3'-0"	2'-0"	1'-8"	0.382	0.247	0.381	0.753	0.020	0.032
18"	3'-0"	2'-0"	1'-11"	0.382	0.247	0.453	0.815	0.023	0.036
24"	3'-0"	2'-0"	2'-2"	0.382	0.247	0.515	0.877	0.023	0.048
30"	3'-0"	2'-0"	2'-5"	0.382	0.247	0.577	0.939	0.023	0.060
36"	3'-0"	2'-0"	2'-8"	0.382	0.247	0.639	1.001	0.023	0.072

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.

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.

REV. NO.	DESCRIPTIONS	DATE
3	REVISED PER NCDOT COMMENTS	2013.06.18
2	REVISED PER CHATHAM COUNTY REVIEW	2013.06.03
1	1ST SUBMITTAL TO REVIEW AGENCIES	2013.05.21

MCKIM & CREED

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 Raleigh, North Carolina 27606
 Phone: (919)233-8091, Fax: (919)233-8031
 F-1222

www.mckimcreed.com

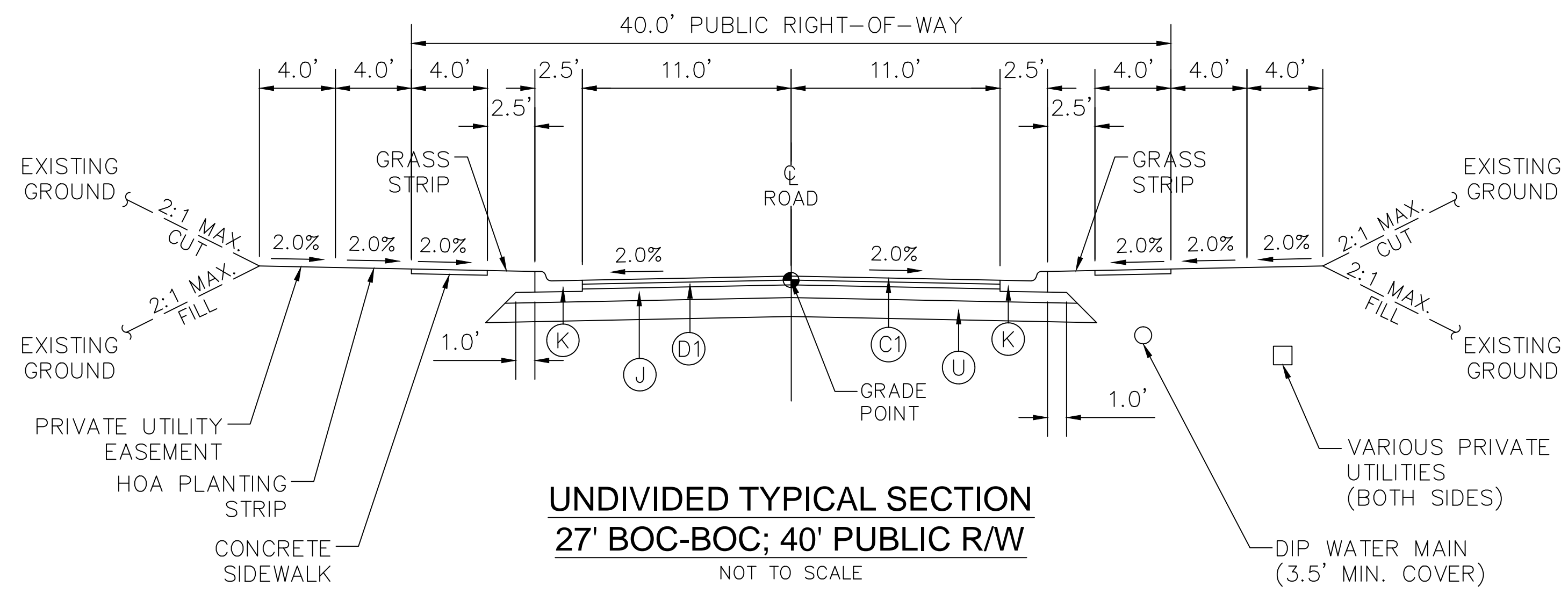
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BRIAR CHAPEL
 PHASE 8
 CHATHAM COUNTY, NORTH CAROLINA

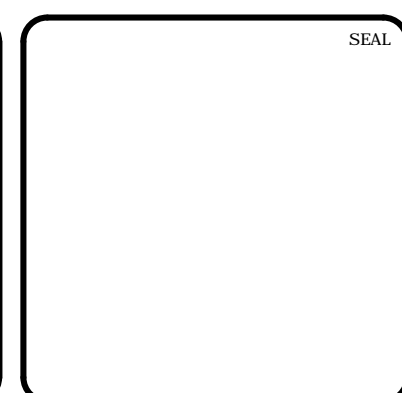
NCDOT DRAINAGE DETAILS

DATE: MAY 21, 2013	SCALE: HORIZONTAL: N/A	PROJECT NO: 02735-0092	DRAWING NO: D2.X
DRAWN: GCA	VERTICAL: N/A	DESIGNED: GCA	D2.2
CHECKED: CHS		PROJ. MGR: CHS	
STATUS: FINAL DRAWINGS	REVISION: 3		



PAVEMENT SCHEDULE	
(C1)	1.0" SF9.5A ASPHALT SURFACE COURSE AT AN AVERAGE RATE OF 110 LBS. PER SQ. YARD.
(D1)	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.	DESCRIPTIONS REVISIONS	DATE
3	REVISED PER NCDOT COMMENTS	2013.06.18
2	REVISED PER CHATHAM COUNTY REVIEW	2013.06.03
1	1ST SUBMITTAL TO REVIEW AGENCIES	2013.05.21



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 PHASE 8
 CHATHAM COUNTY, NORTH CAROLINA**

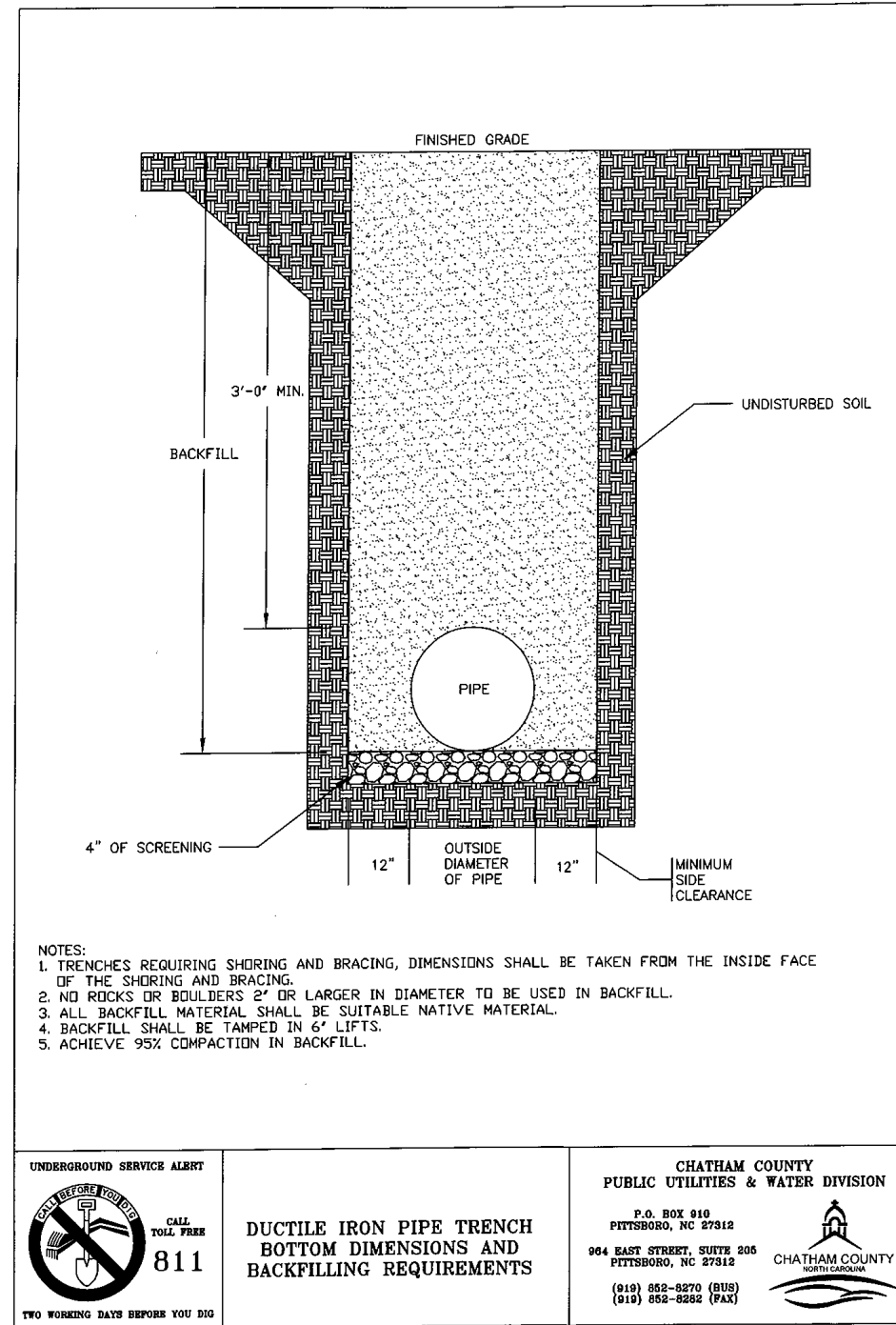
ROADWAY TYPICAL SECTIONS

DATE:	MAY 21, 2013
MCE PROJ. #	02735-0092
DRAWN	GCA
DESIGNED	GCA
CHECKED	CHS
PROJ. MGR.	CHS

SCALE	D2.X
HORIZONTAL:	N/A
VERTICAL:	N/A

M&C FILE NUMBER	D2.X
DRAWING NUMBER	D2.3

STATUS:	FINAL DRAWINGS	REVISION	3
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UNDERGROUND SERVICE ALERT

DATE: 06/18/2013

PROJECT: 02735-0092

DESCRIPTION: DUCTILE IRON PIPE TRENCH BOTTOM DIMENSIONS AND BACKFILLING REQUIREMENTS

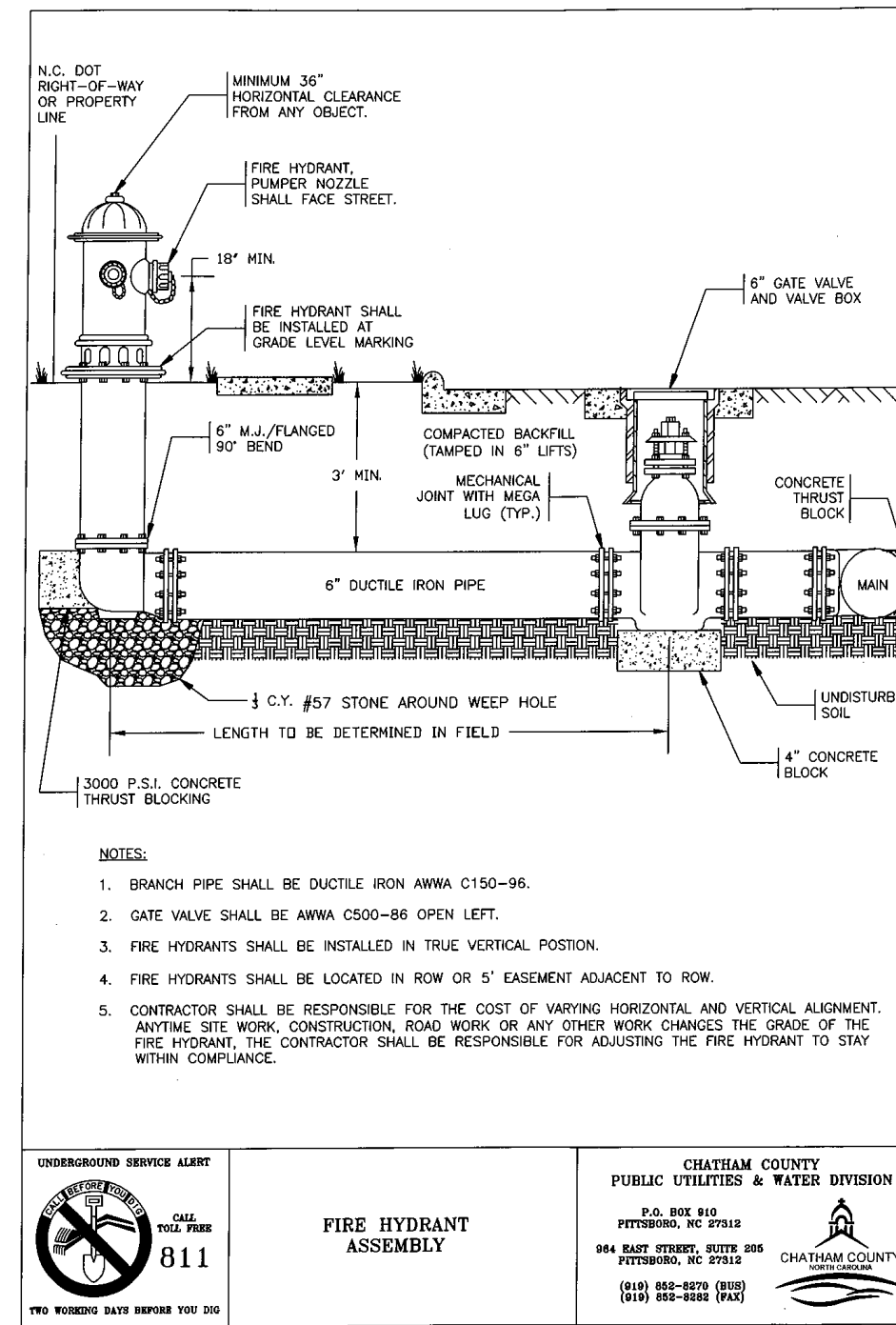
CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION

DATE: 06/18/2013

PROJECT: 02735-0092

DESCRIPTION: DUCTILE IRON PIPE TRENCH BOTTOM DIMENSIONS AND BACKFILLING REQUIREMENTS

CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION



UNDERGROUND SERVICE ALERT

DATE: 06/18/2013

PROJECT: 02735-0092

DESCRIPTION: FIRE HYDRANT ASSEMBLY

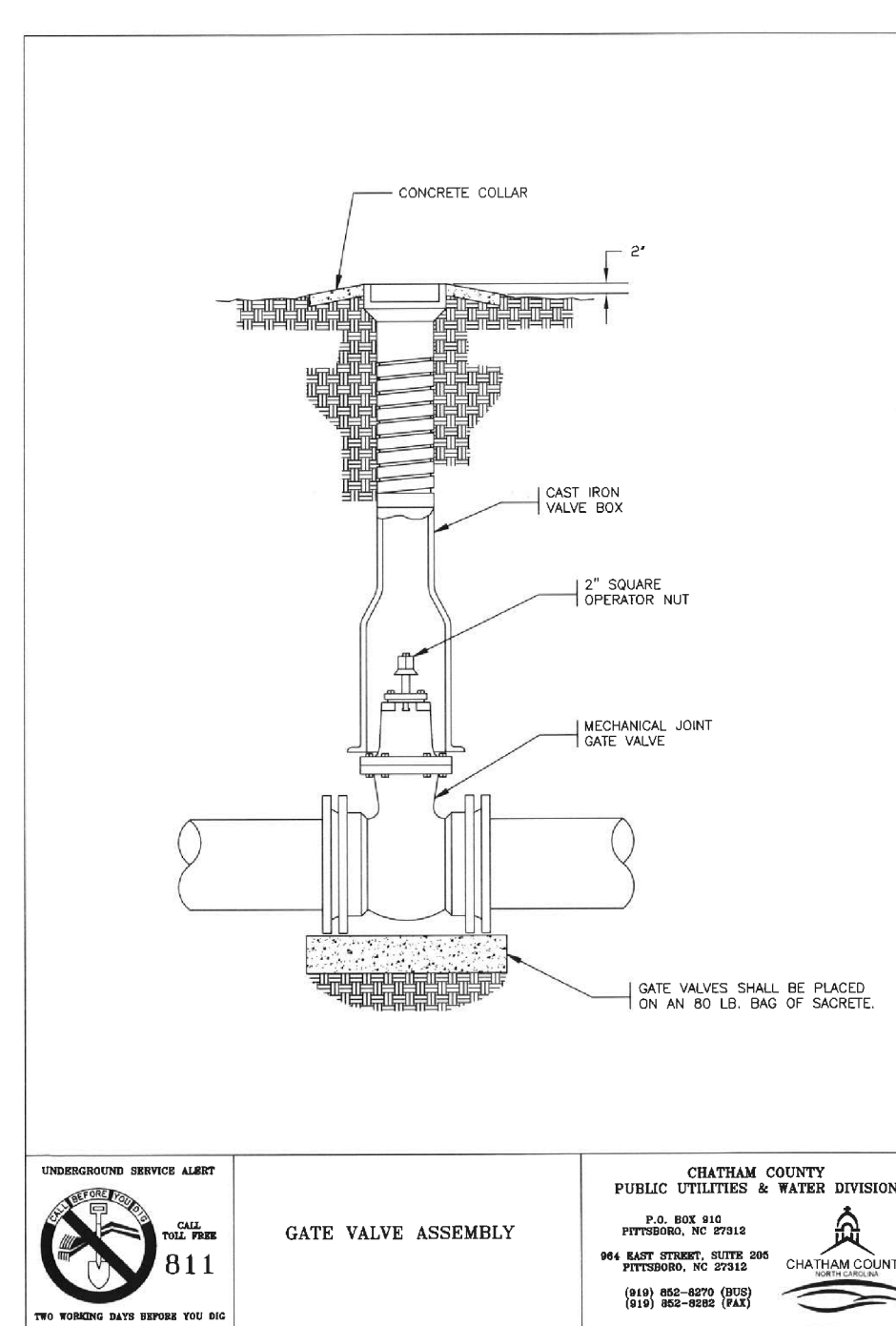
CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION

DATE: 06/18/2013

PROJECT: 02735-0092

DESCRIPTION: FIRE HYDRANT ASSEMBLY

CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION



UNDERGROUND SERVICE ALERT

DATE: 06/18/2013

PROJECT: 02735-0092

DESCRIPTION: GATE VALVE ASSEMBLY

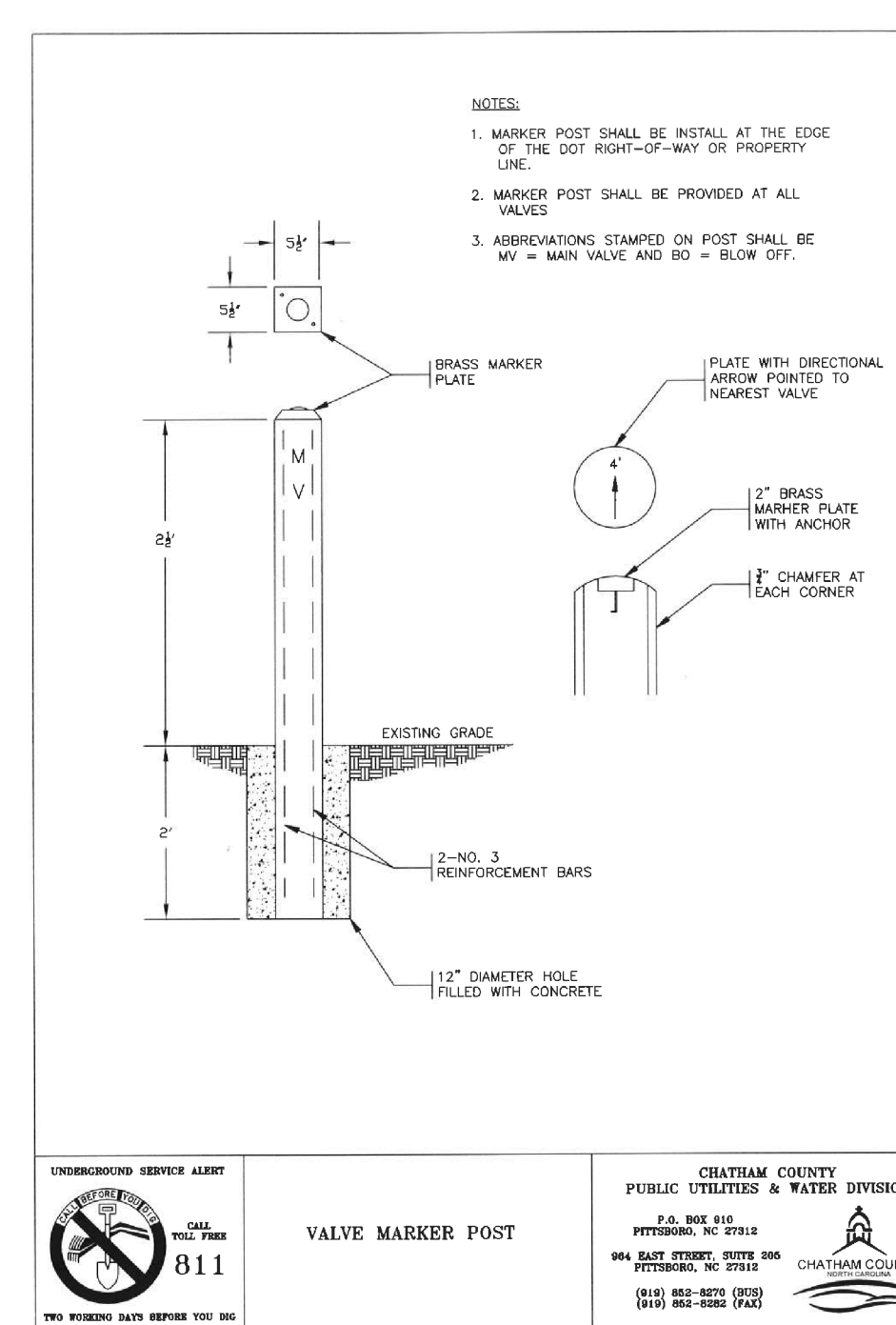
CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION

DATE: 06/18/2013

PROJECT: 02735-0092

DESCRIPTION: GATE VALVE ASSEMBLY

CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION



UNDERGROUND SERVICE ALERT

DATE: 06/18/2013

PROJECT: 02735-0092

DESCRIPTION: VALVE MARKER POST

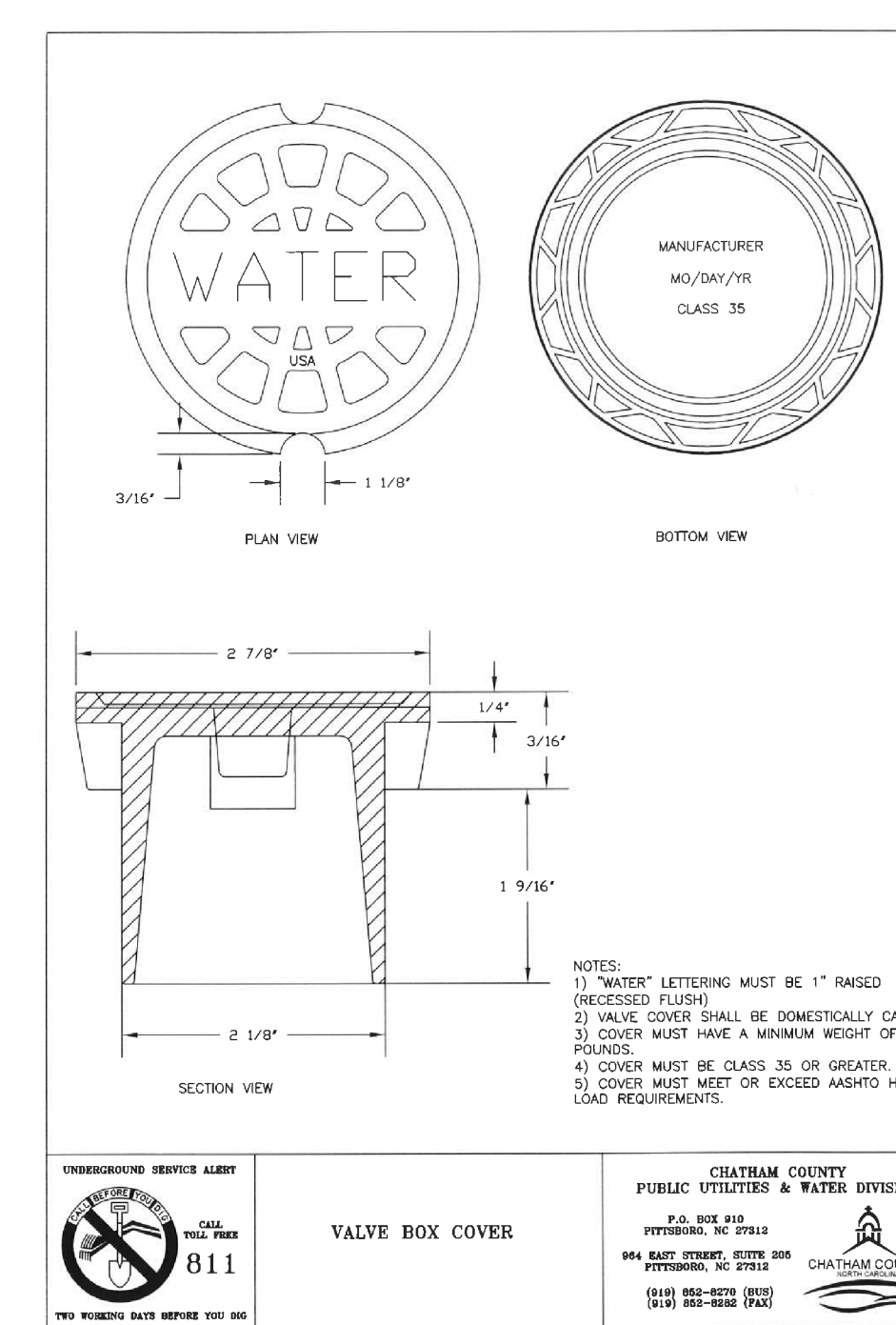
CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION

DATE: 06/18/2013

PROJECT: 02735-0092

DESCRIPTION: VALVE MARKER POST

CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION



UNDERGROUND SERVICE ALERT

DATE: 06/18/2013

PROJECT: 02735-0092

DESCRIPTION: VALVE BOX COVER

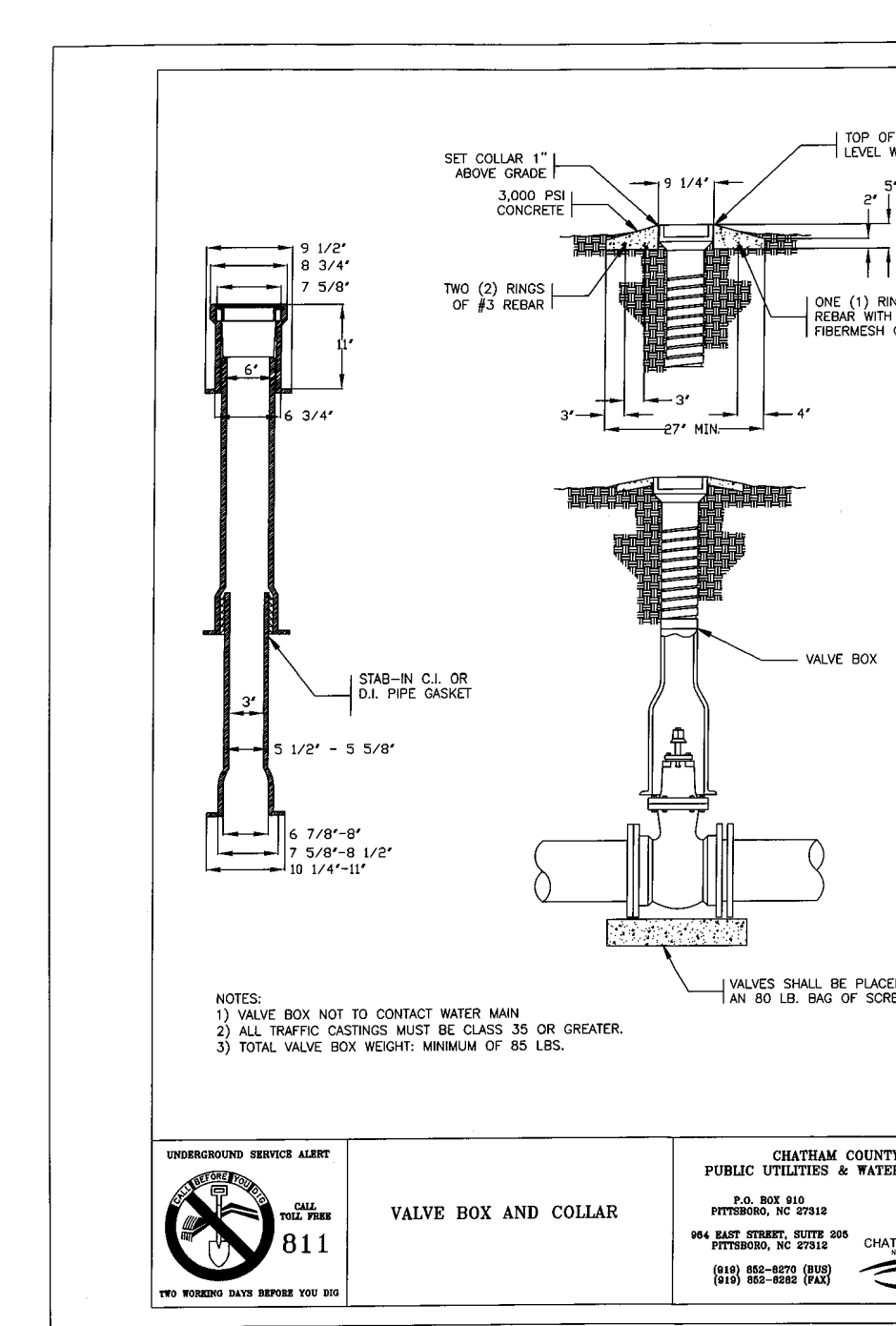
CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION

DATE: 06/18/2013

PROJECT: 02735-0092

DESCRIPTION: VALVE BOX COVER

CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION



UNDERGROUND SERVICE ALERT

DATE: 06/18/2013

PROJECT: 02735-0092

DESCRIPTION: VALVE BOX AND COLLAR

CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION

DATE: 06/18/2013

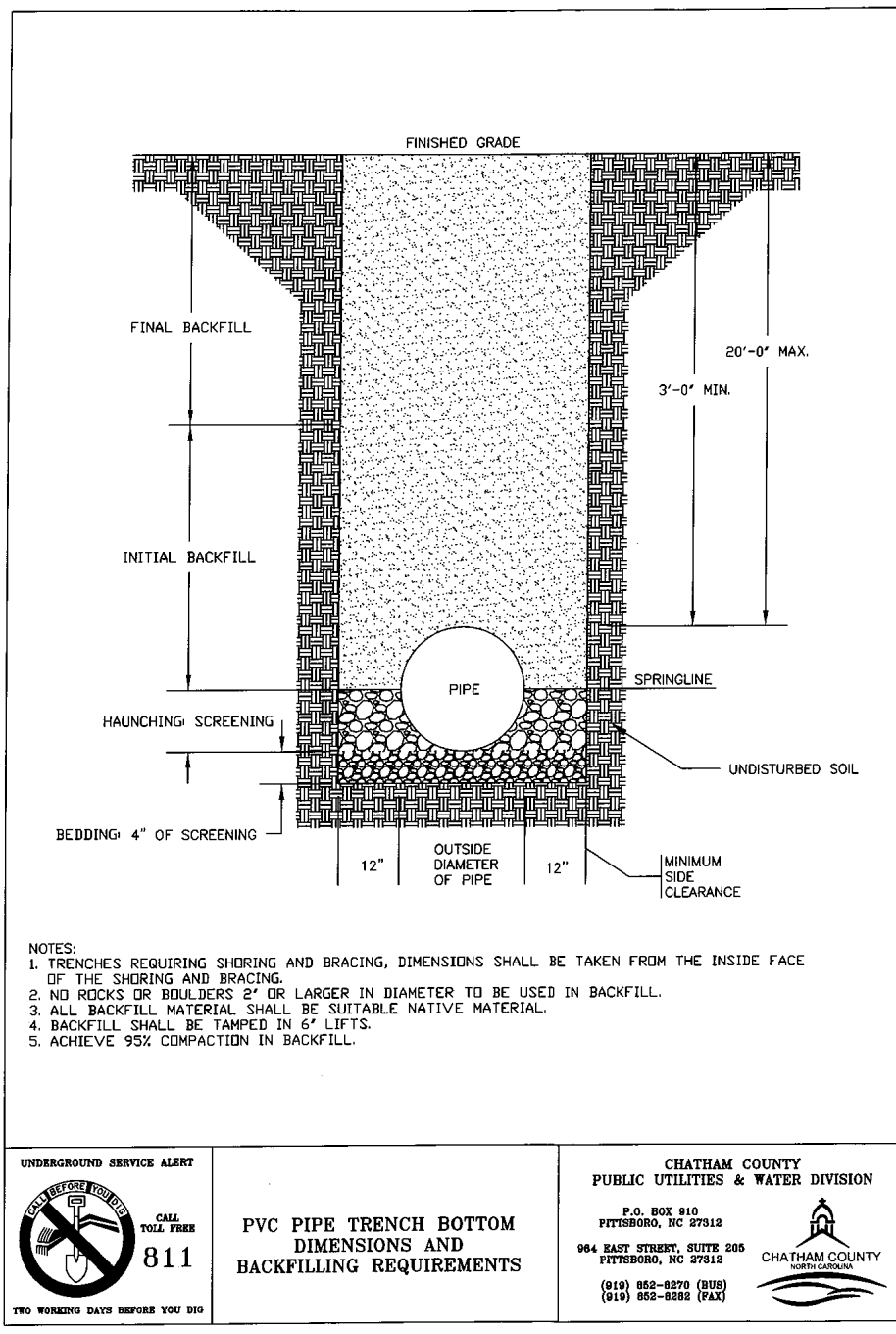
PROJECT: 02735-0092

DESCRIPTION: VALVE BOX AND COLLAR

CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION

- 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.



UNDERGROUND SERVICE ALERT

DATE: 06/18/2013

PROJECT: 02735-0092

DESCRIPTION: PVC PIPE TRENCH BOTTOM DIMENSIONS AND BACKFILLING REQUIREMENTS

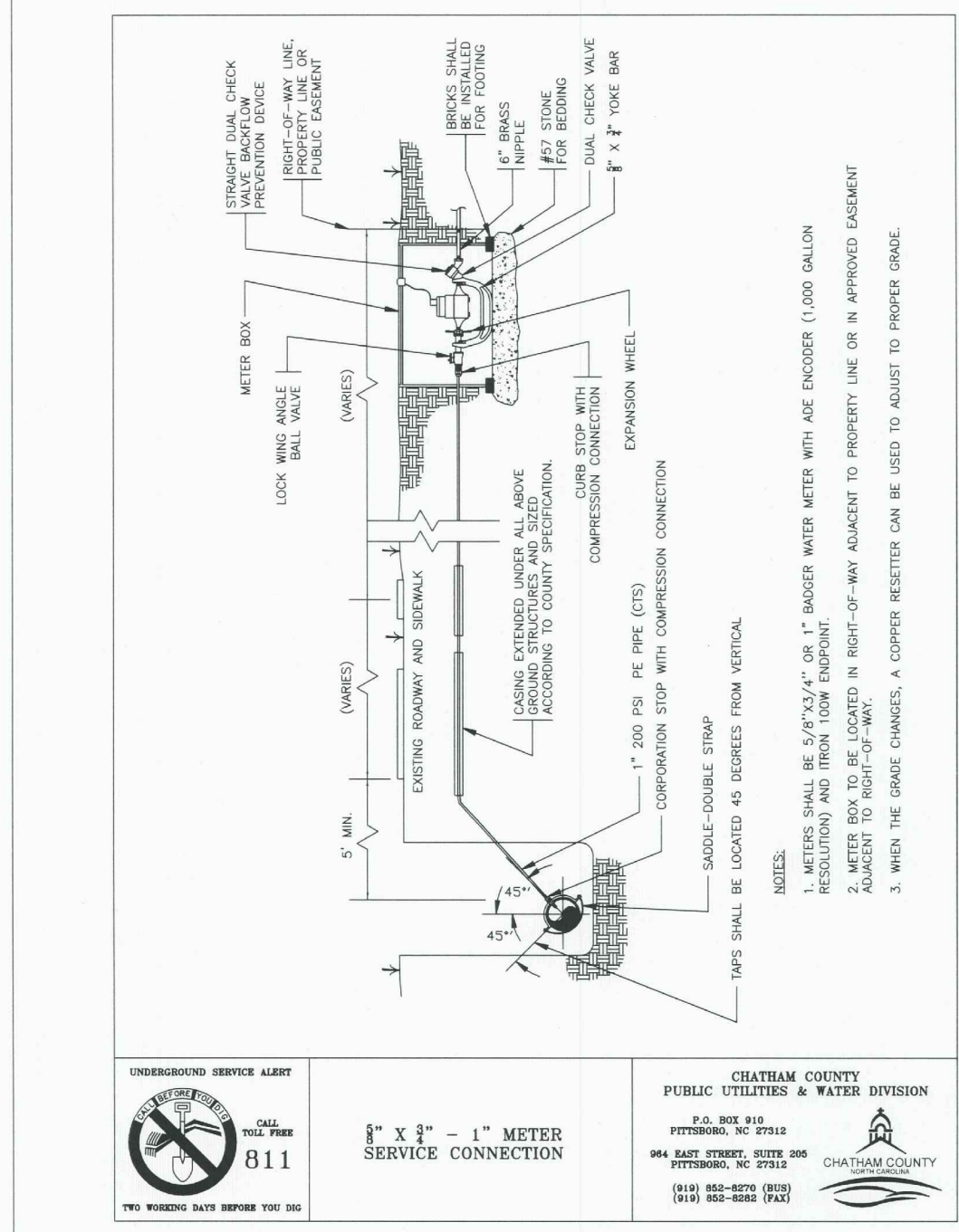
CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION

DATE: 06/18/2013

PROJECT: 02735-0092

DESCRIPTION: PVC PIPE TRENCH BOTTOM DIMENSIONS AND BACKFILLING REQUIREMENTS

CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION



UNDERGROUND SERVICE ALERT

DATE: 06/18/2013

PROJECT: 02735-0092

DESCRIPTION: 1/2\"/>

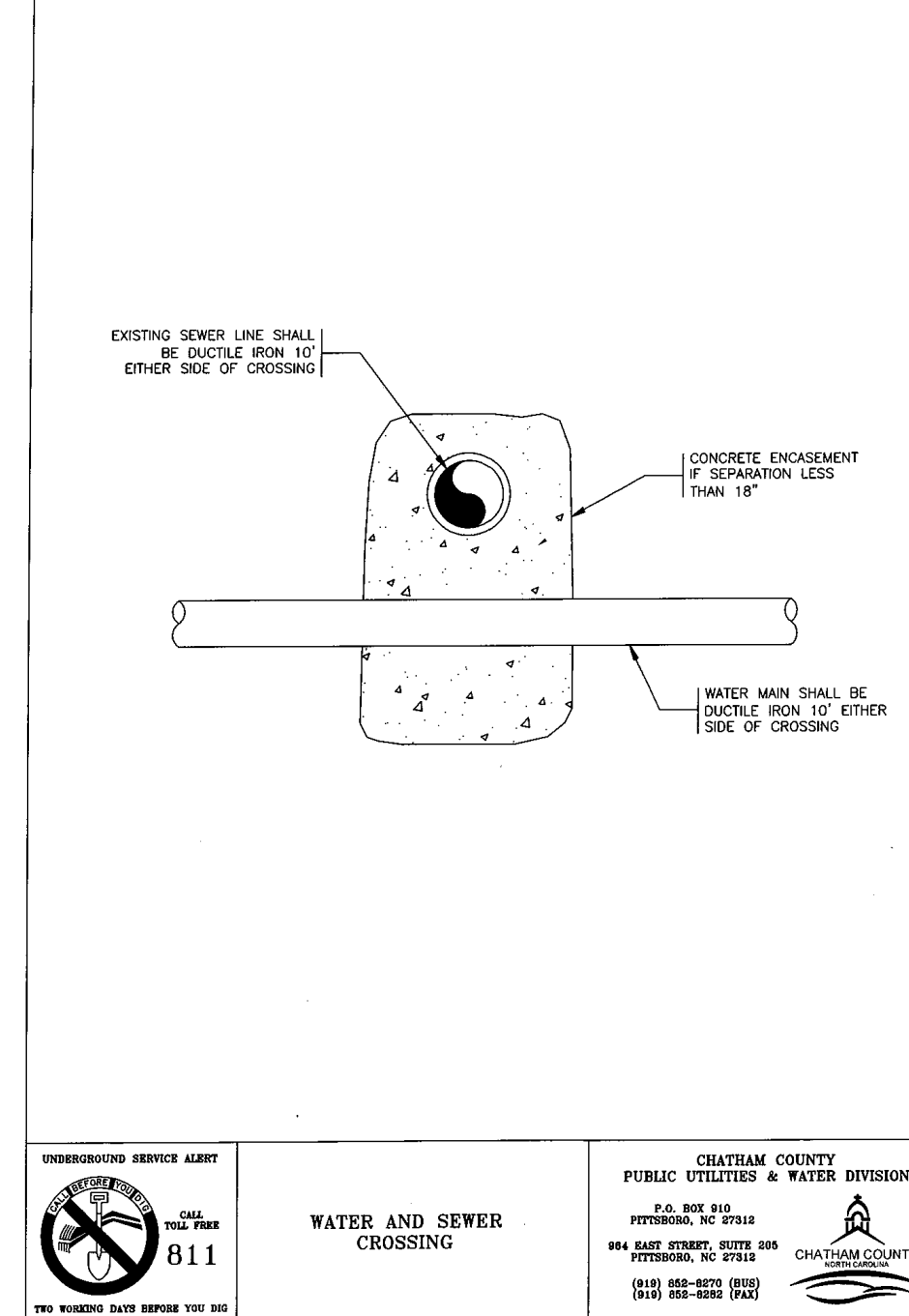
CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION

DATE: 06/18/2013

PROJECT: 02735-0092

DESCRIPTION: 1/2\"/>

CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION



UNDERGROUND SERVICE ALERT

DATE: 06/18/2013

PROJECT: 02735-0092

DESCRIPTION: WATER AND SEWER CROSSING

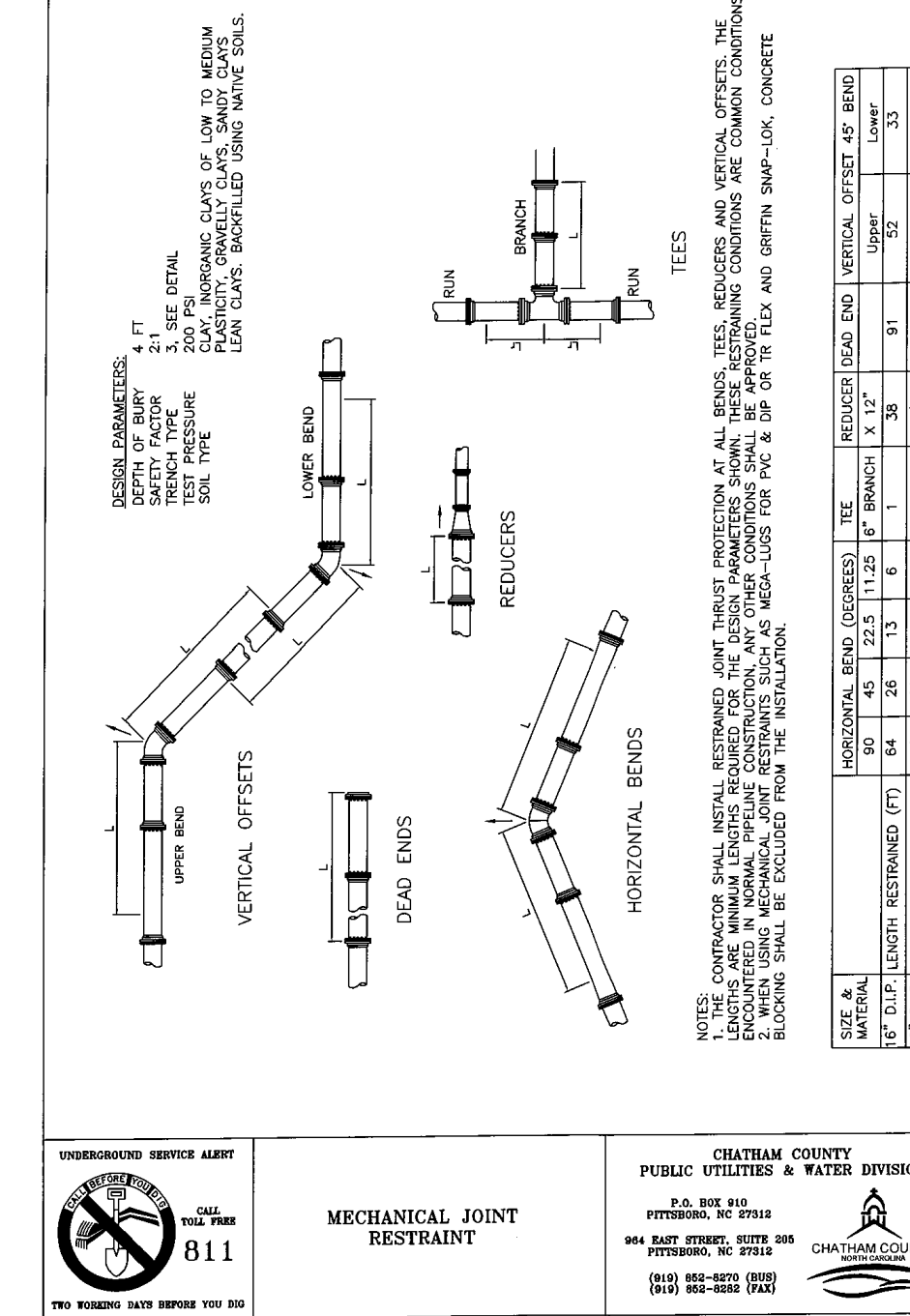
CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION

DATE: 06/18/2013

PROJECT: 02735-0092

DESCRIPTION: WATER AND SEWER CROSSING

CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION



UNDERGROUND SERVICE ALERT

DATE: 06/18/2013

PROJECT: 02735-0092

DESCRIPTION: MECHANICAL JOINT RESTRAINT

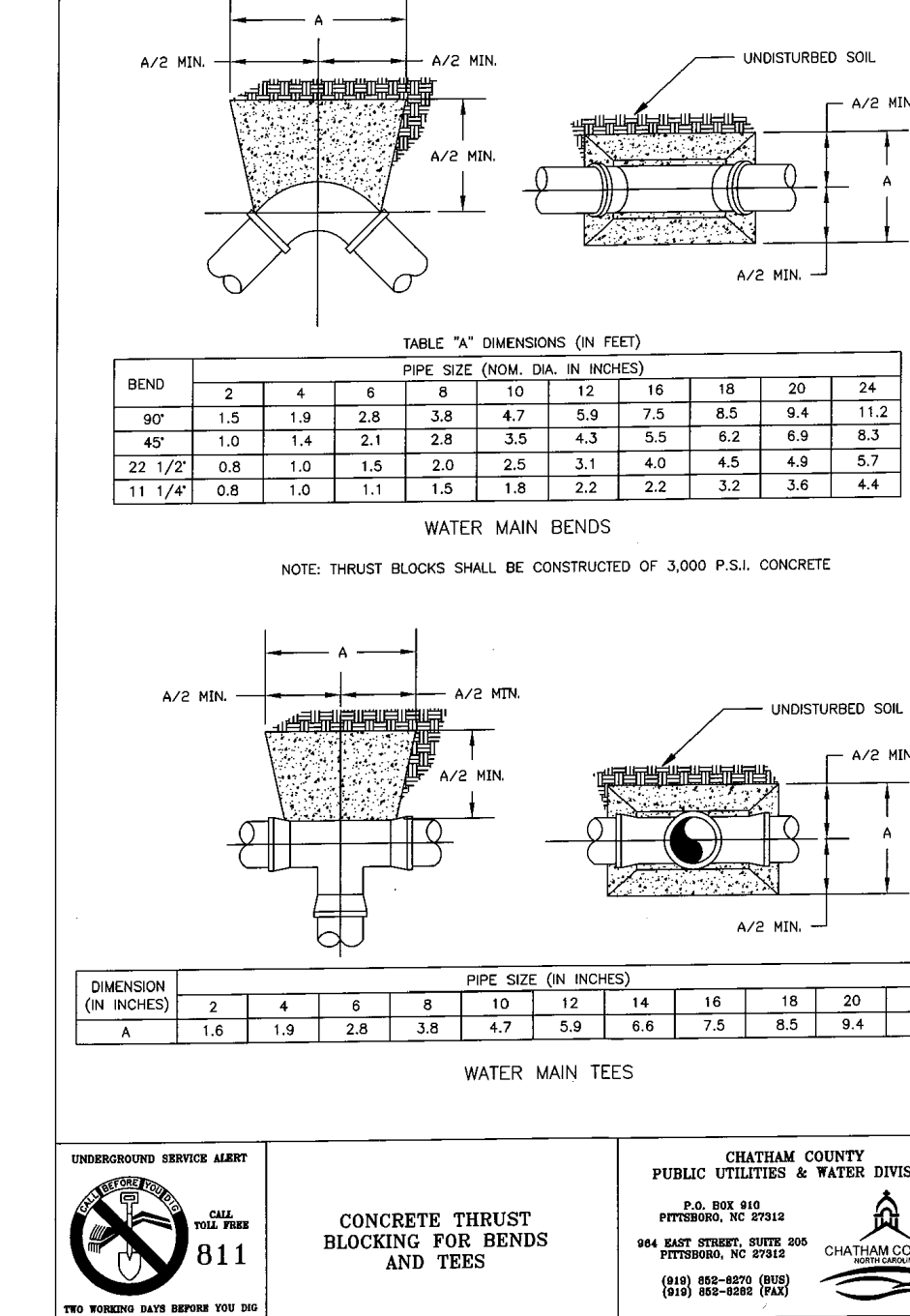
CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION

DATE: 06/18/2013

PROJECT: 02735-0092

DESCRIPTION: MECHANICAL JOINT RESTRAINT

CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION



UNDERGROUND SERVICE ALERT

DATE: 06/18/2013

PROJECT: 02735-0092

DESCRIPTION: CONCRETE THRUST BLOCKING FOR BENDS AND TEES

CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION

DATE: 06/18/2013

PROJECT: 02735-0092

DESCRIPTION: CONCRETE THRUST BLOCKING FOR BENDS AND TEES

CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION

REACTION BEARING AREAS FOR HORIZONTAL WATER PIPE BENDS
BASED ON TEST PRESSURE OF 300 P.S.I.
ALL AREAS GIVEN IN SQUARE FEET.

SIZE AND BEGREE OF BEND	STATIC THRUST IN POUNDS	MINORITIAL BEND						MAJOR BEND						
		2\"/>												
6"														
11 1/4"	1,108	1	1	1	1	1	1	1	2	1				
22 1/2"	2,207	1	2	2	1	1	1	1	3	1				
45"	4,326	2	3	3	1	1	1	2	5	1				
90"	7,996	2	4	5	1	1	1	2	8	1				
PLUG	5,655	2	3	4	1	1	1	2	6	1				
12"														
11 1/4"	1,970	1	2	1	1	1	1	1	2	1				
22 1/2"	3,922	1	2	3	1	1	1	1	4	1				
45"	7,694	2	4	5	1	1	1	2	8	1				
90"	14,215	4	8	9	2	2	4	15	2					
PLUG	10,053	3	5	6	2	2	3	10	1					
12"														
11 1/4"	4,433	2	3	3	1	1	1	2	5	1				
22 1/2"	8,826	3	5	6	2	2	3	9	1					
45"	17,312	5	9	11	3	3	5	18	2					
90"	31,983	8	16	19	4	4	8	32	4					
PLUG	22,619	6	12	14	3	3	6	23	3					
16"														
11 1/4"	7,891	2	4	5	1	1	2	8	1					
22 1/2"	15,691	4	8	10	2	2	4	16	2					
45"	30,779	8	16	19	4	4	8	31	4					
90"	56,861	15	29	35	8	8	15	57	6					
PLUG	40,213	10	21	25	5	5	10	41	5					

REACTION BEARING AREAS ARE IN SQUARE FEET MEASURED IN A VERTICAL PLANE IN THE TRENCH SIDE AT AN ANGLE OF 90° TO THE THRUST VECTOR.

USE 6" x 36" BEAMS. BEAM VALUE FOR HYDRANTS FOR ADDITIONAL SAFETY FACTOR.

UNDERGROUND SERVICE ALERT

DATE: 06/18/2013

PROJECT: 02735-0092

DESCRIPTION: CONCRETE THRUST BLOCKING QUANTITY TABLE

CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION

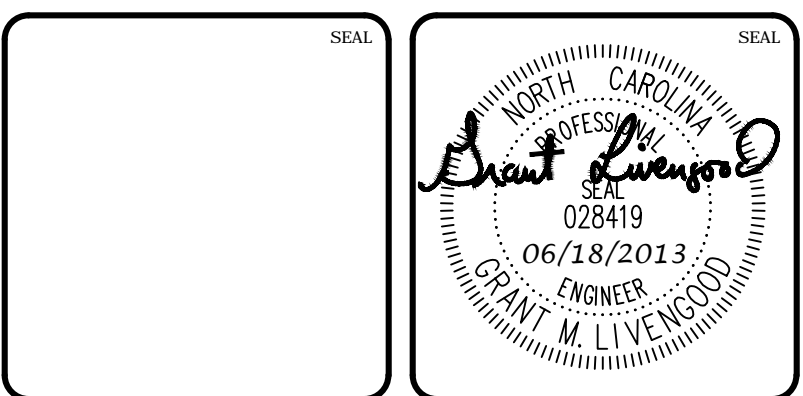
DATE: 06/18/2013

PROJECT: 02735-0092

DESCRIPTION: CONCRETE THRUST BLOCKING QUANTITY TABLE

CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION

REV. NO.	DATE	DESCRIPTIONS	REVISIONS
3	2013.06.18	REVISED PER NCDOT COMMENTS	
2	2013.06.03	REVISED PER CHATHAM COUNTY REVIEW	
1	2013.05.21	1ST SUBMITTAL TO REVIEW AGENCIES	



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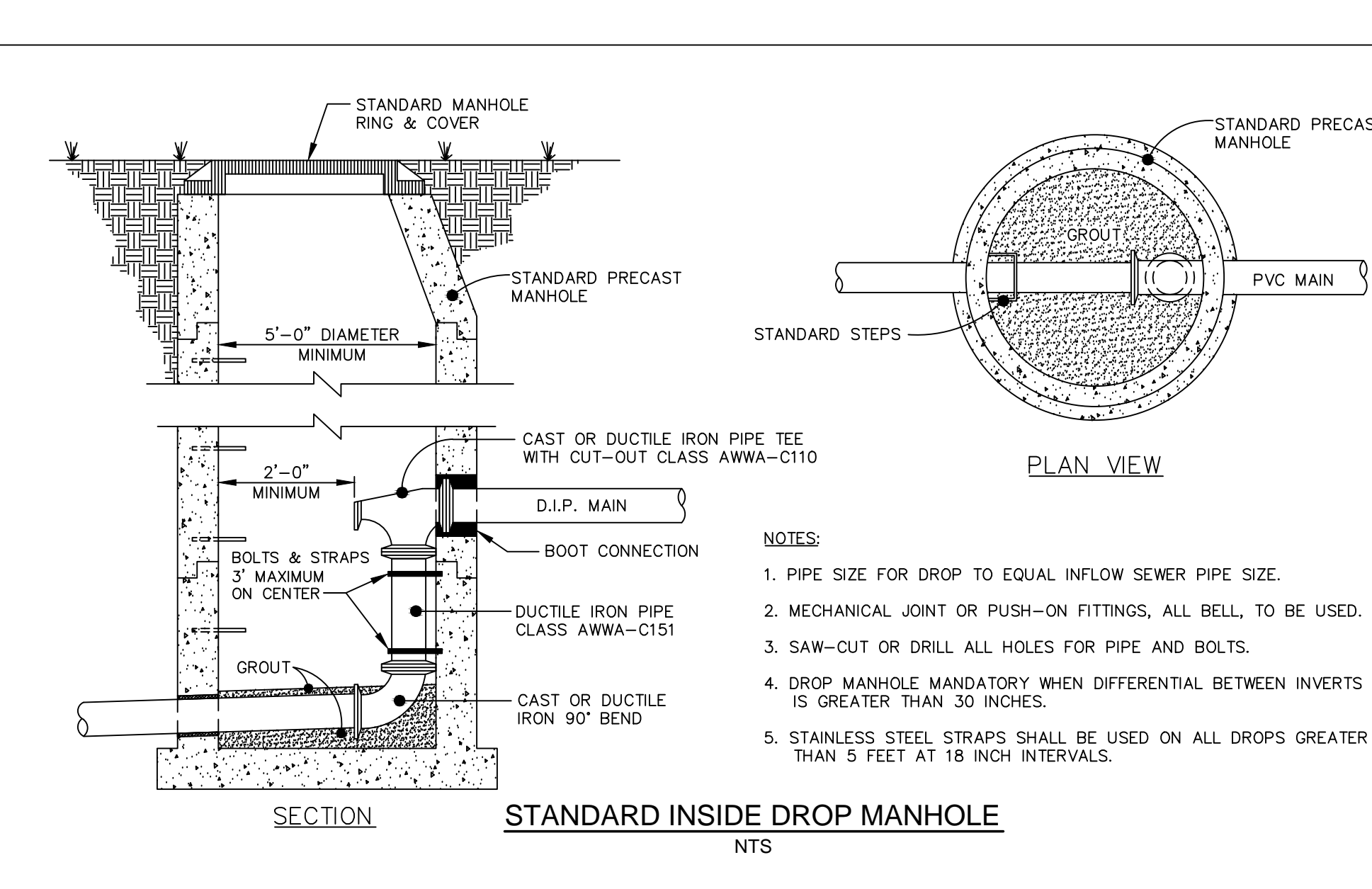
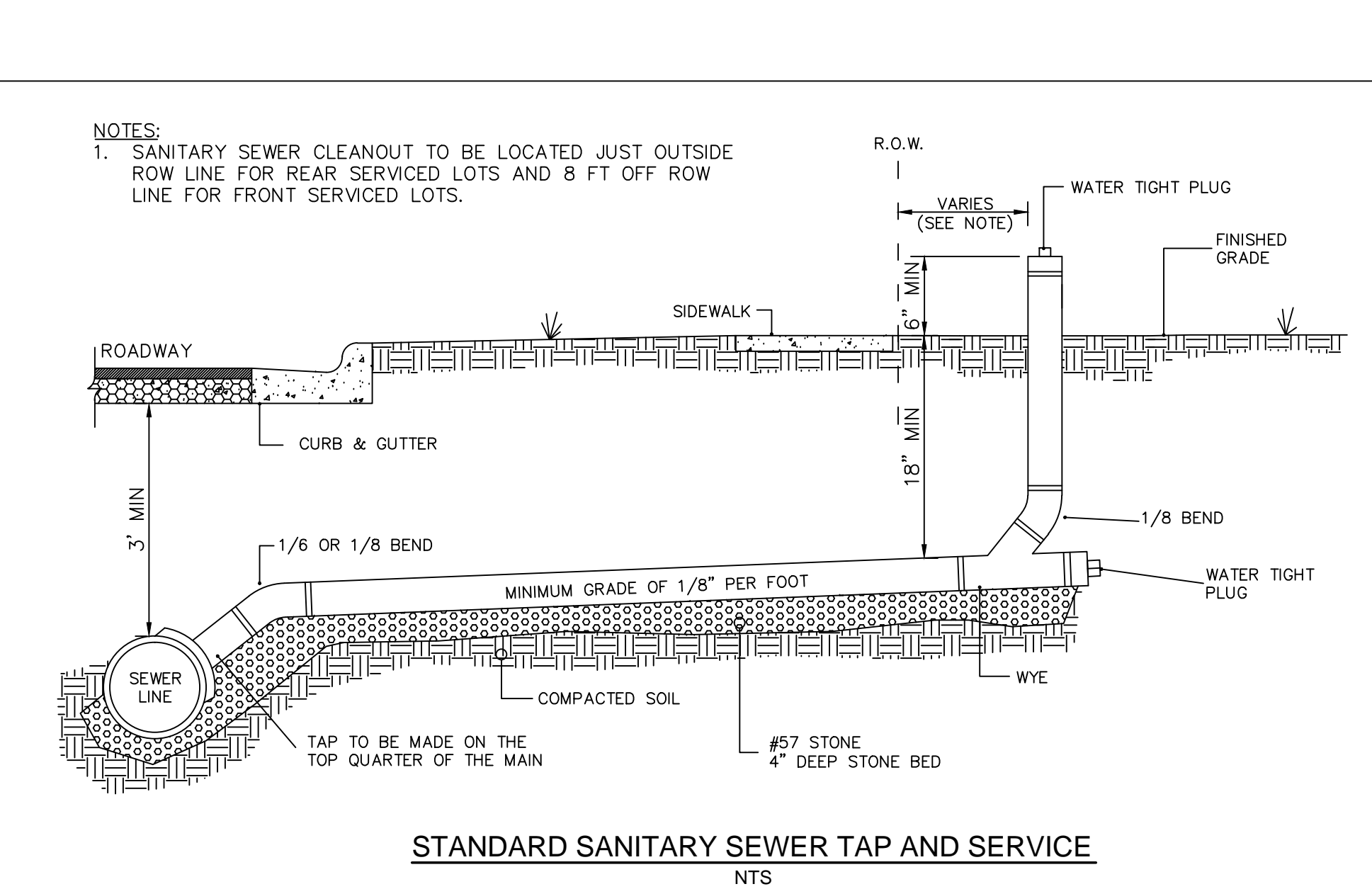
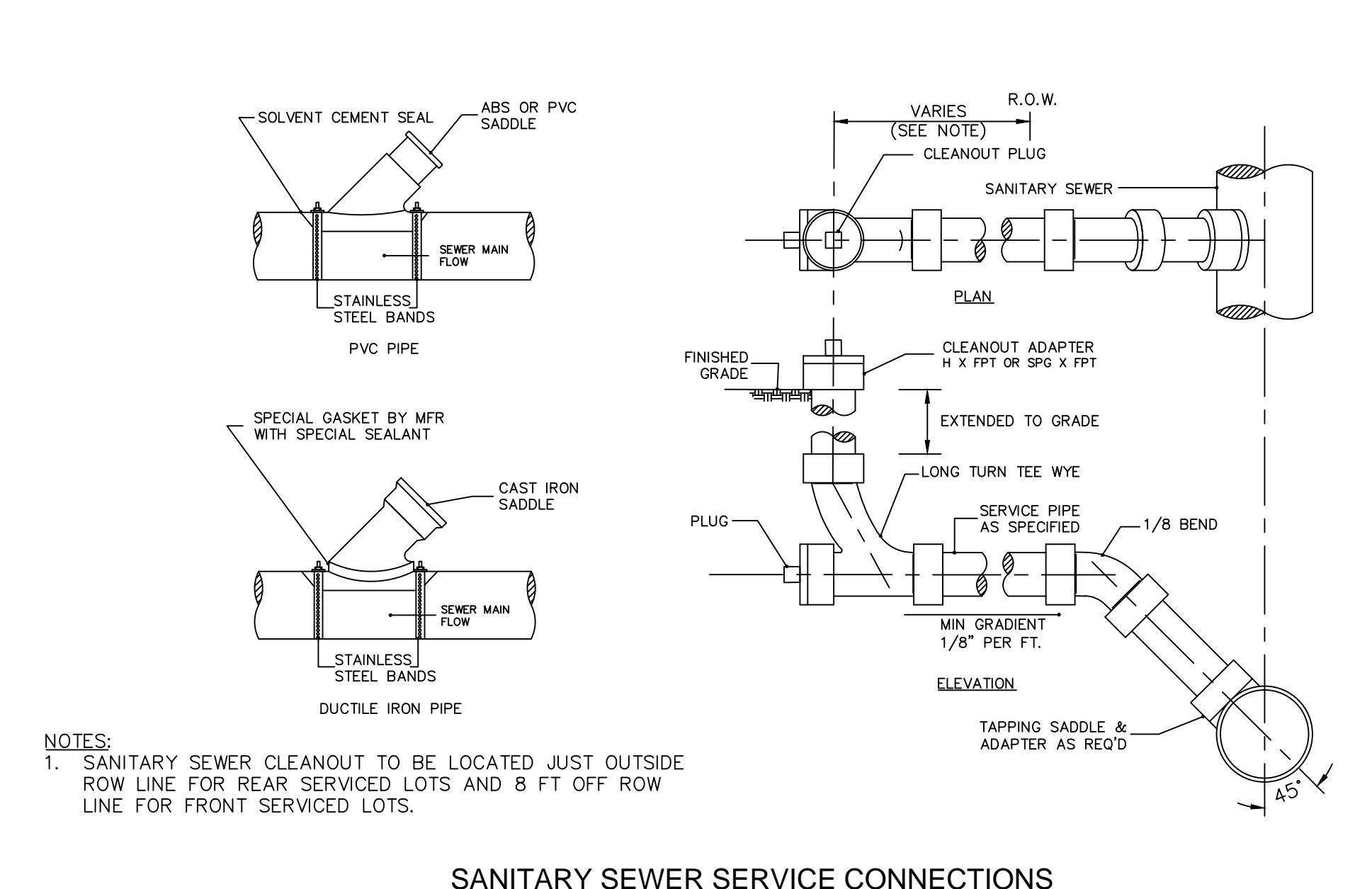
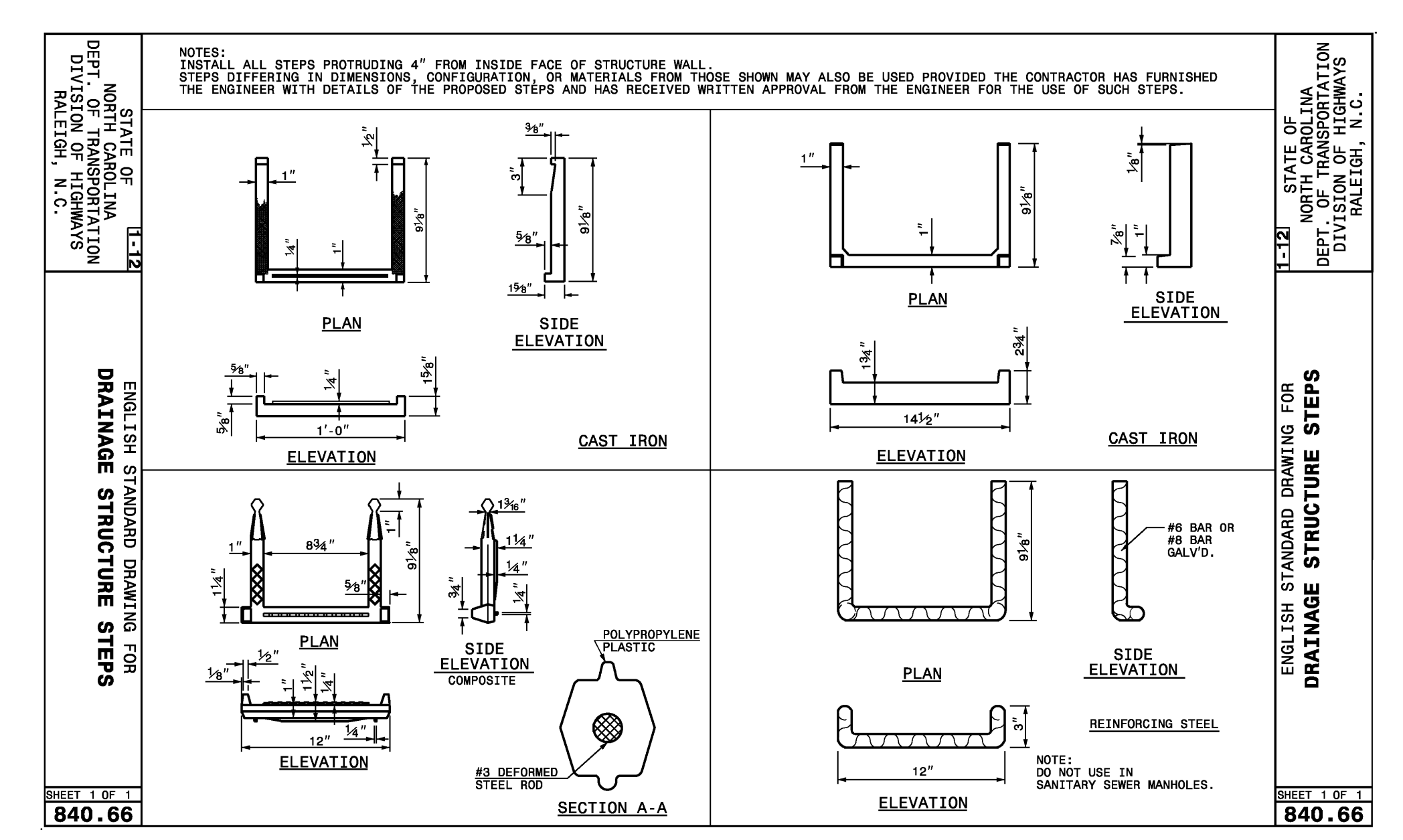
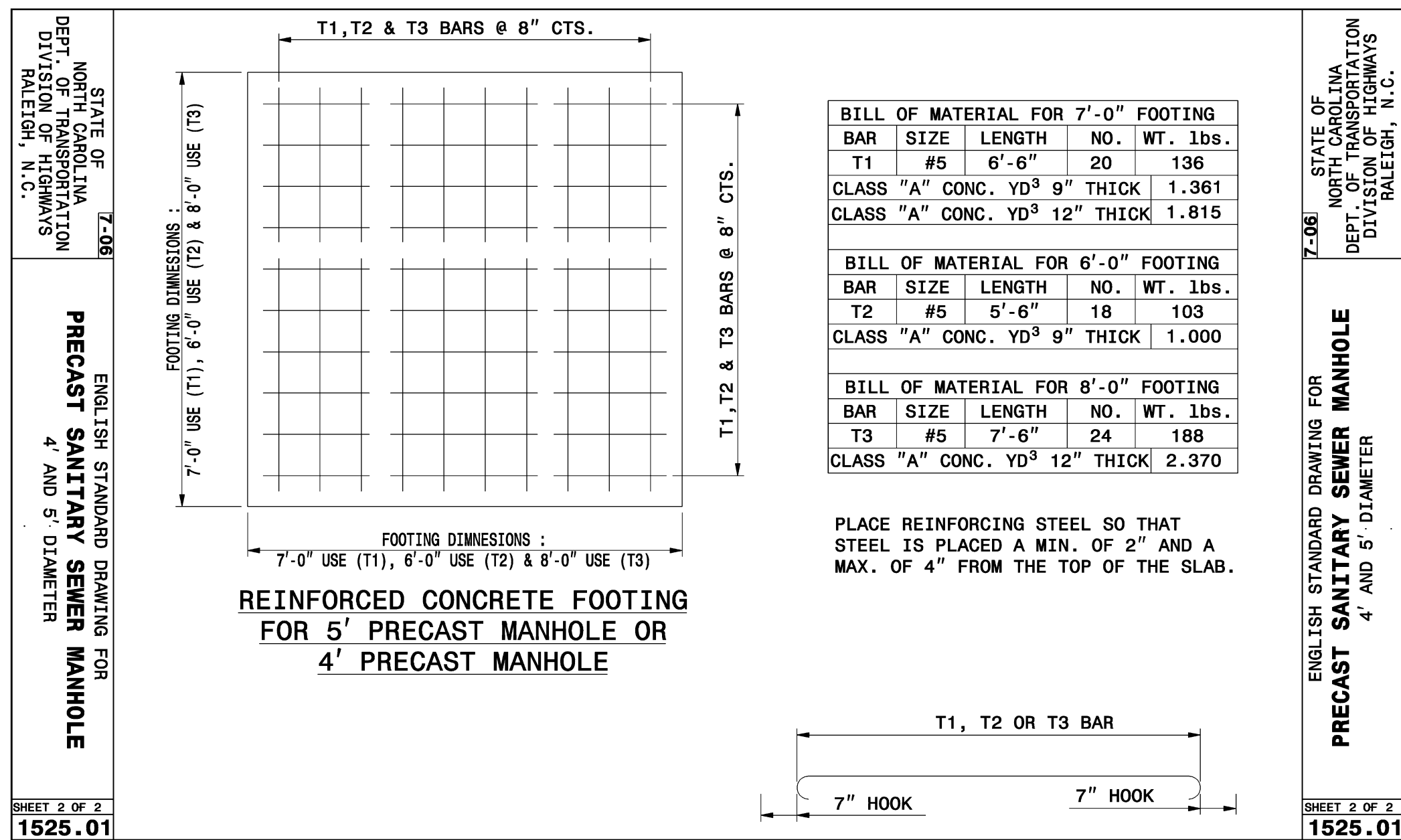
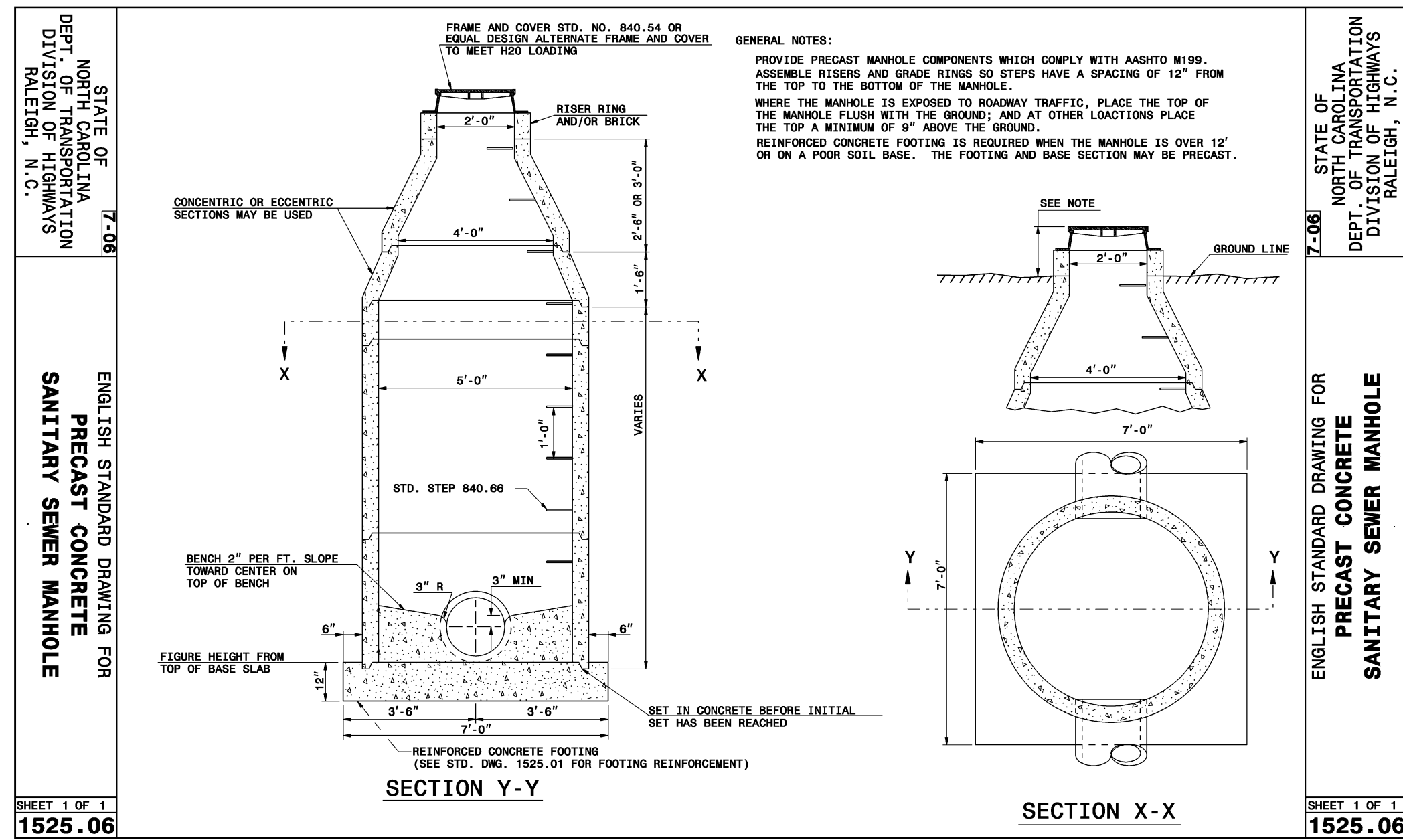
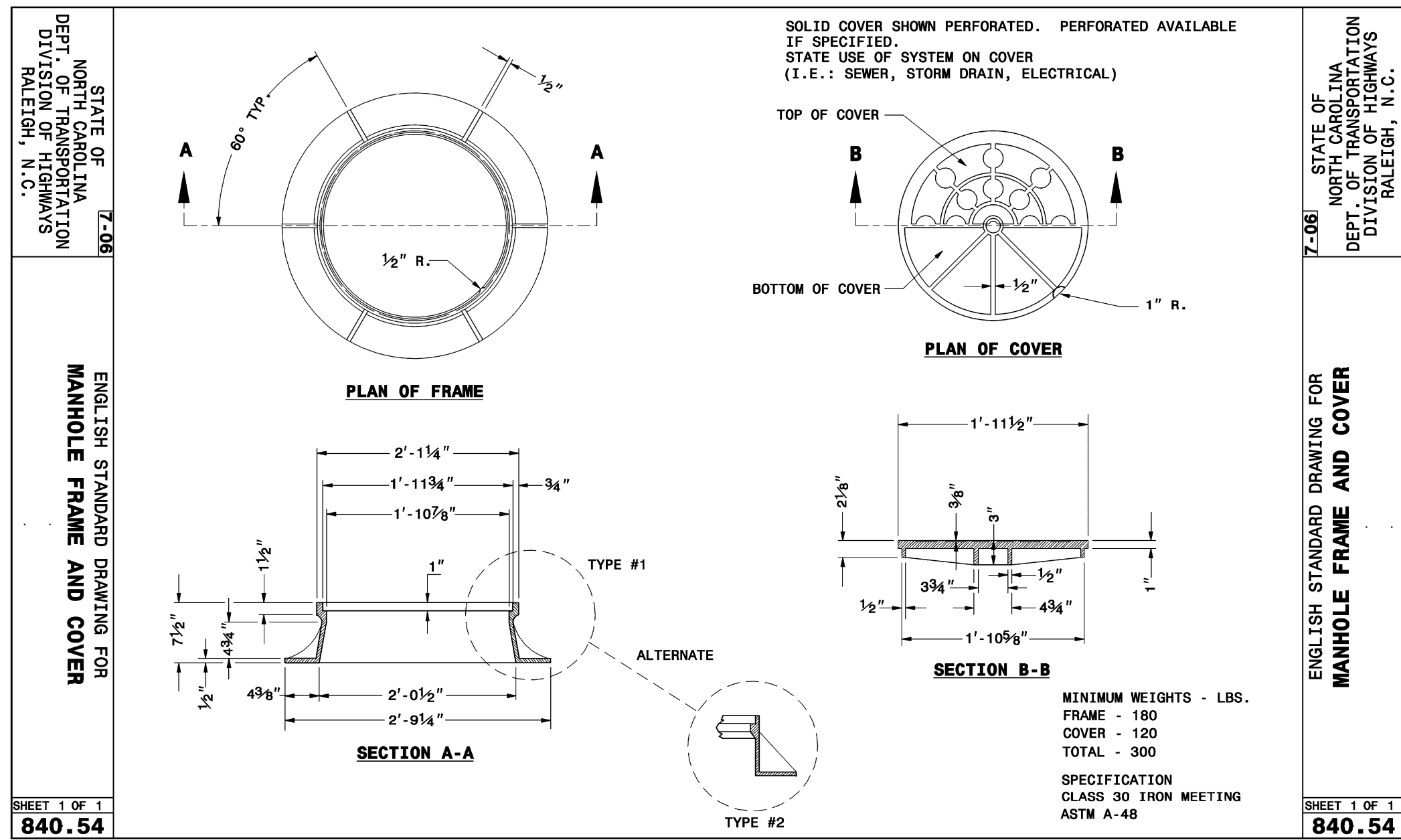
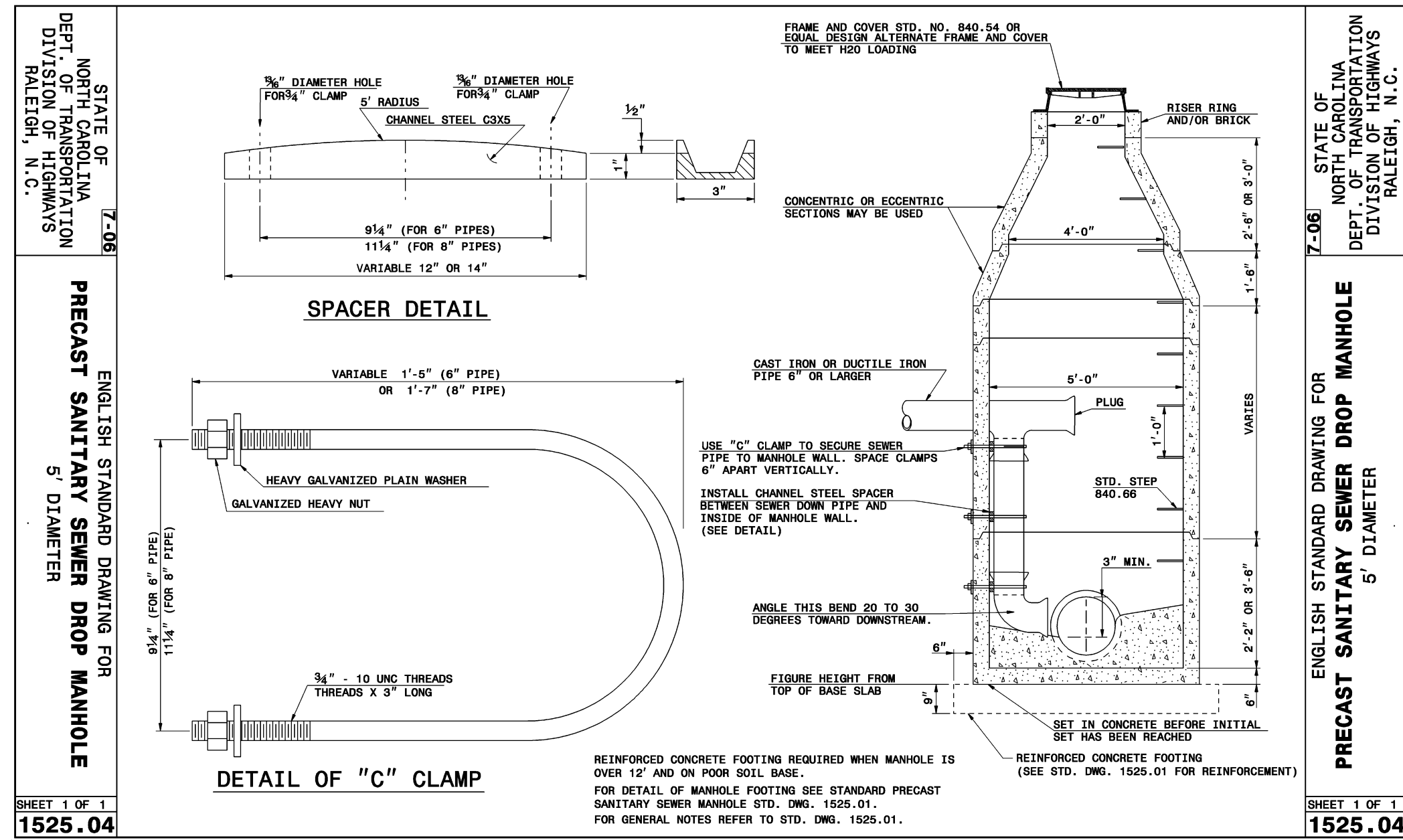
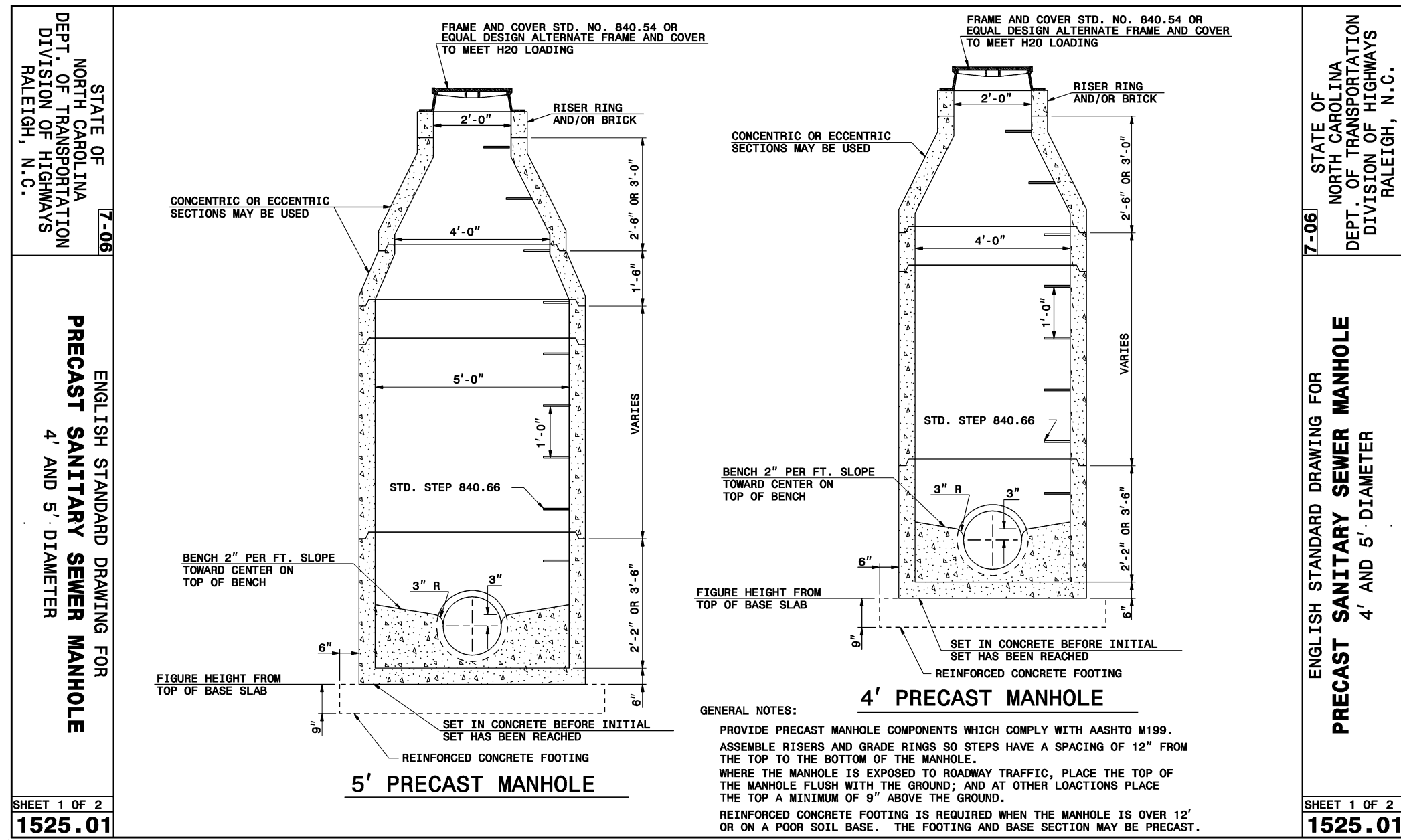
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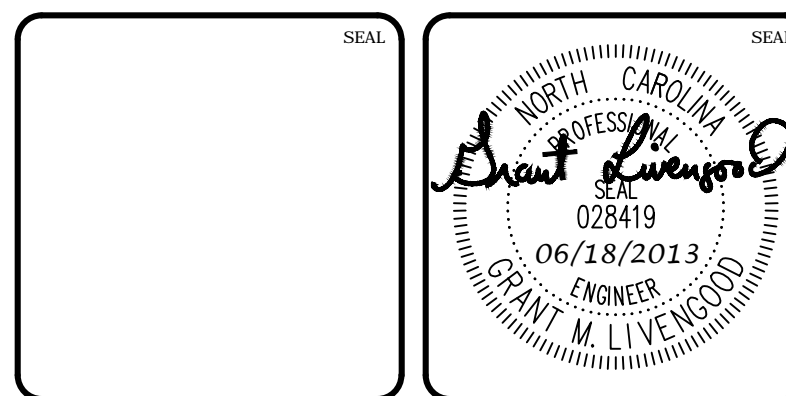
**BRIAR CHAPEL
PHASE 8
CHATHAM COUNTY, NORTH CAROLINA**

UTILITY DETAILS

DATE: MAY 21, 2013	SCALE: D3.X	MSC FILE NUMBER: D3.X
MCE PROJ. # 02735-0092	HORIZONTAL: N/A	DRAWING NUMBER: D3.1
DRAWN: GCA	VERTICAL: N/A	
DESIGNED: GCA		
CHECKED: CHS		
PROJ. MGR.: CHS		
STATUS: FINAL DRAWINGS	REVISION: 3	



REV. NO.	DESCRIPTIONS	DATE
3	REVISED PER NCDOT COMMENTS	2013.06.18
2	REVISED PER CHATHAM COUNTY REVIEW	2013.06.03
1	1ST SUBMITTAL TO REVIEW AGENCIES	2013.05.21



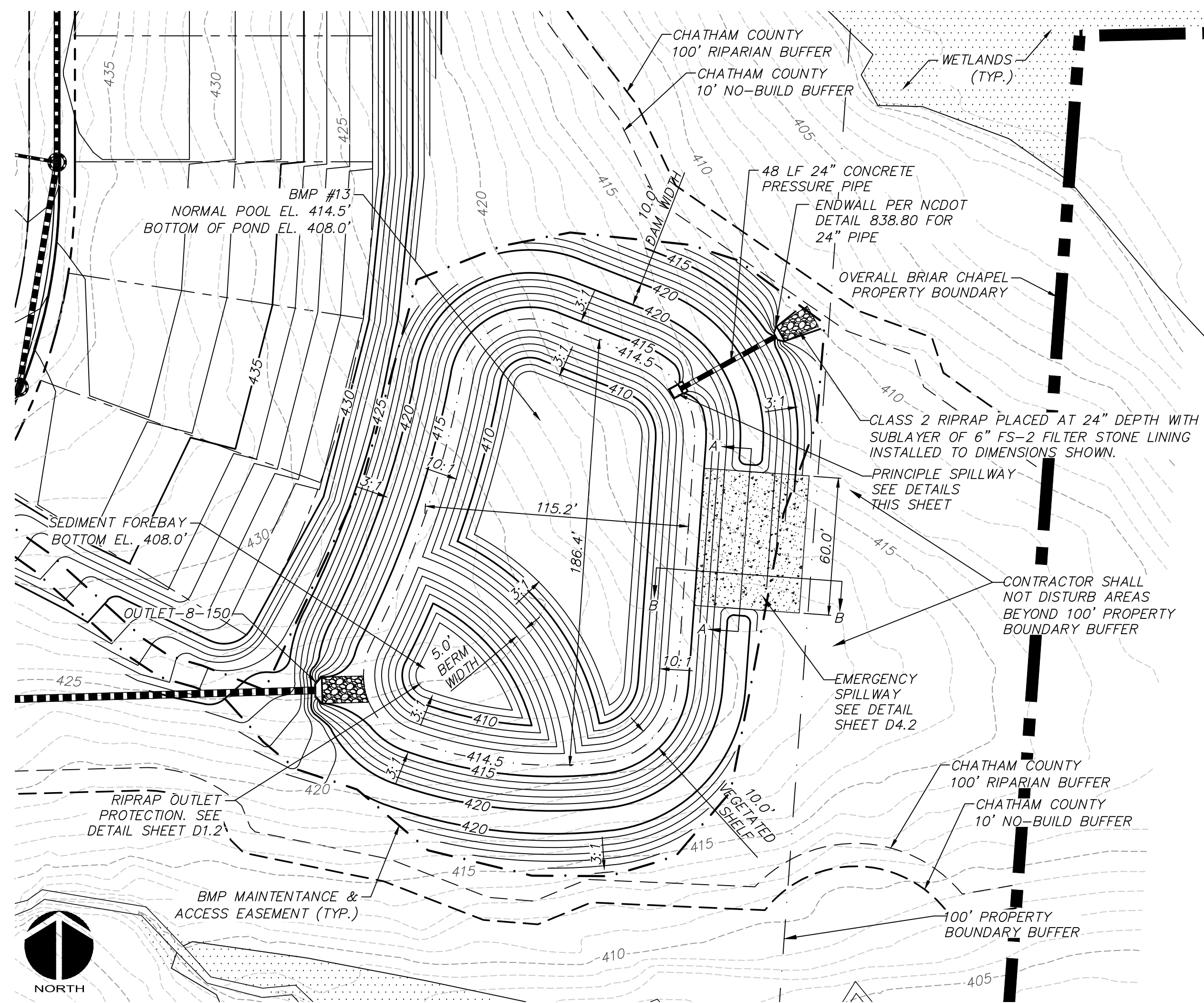
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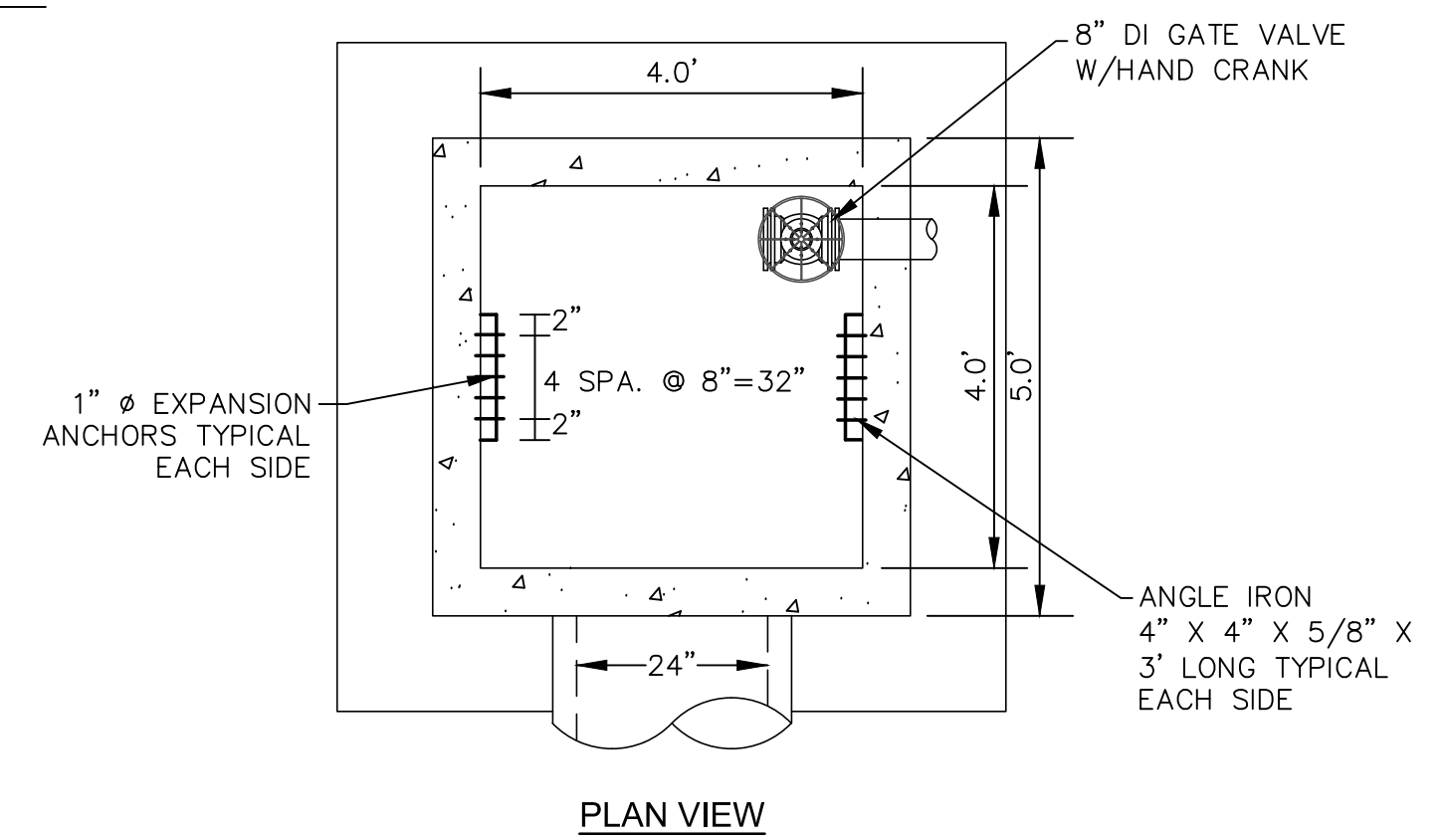
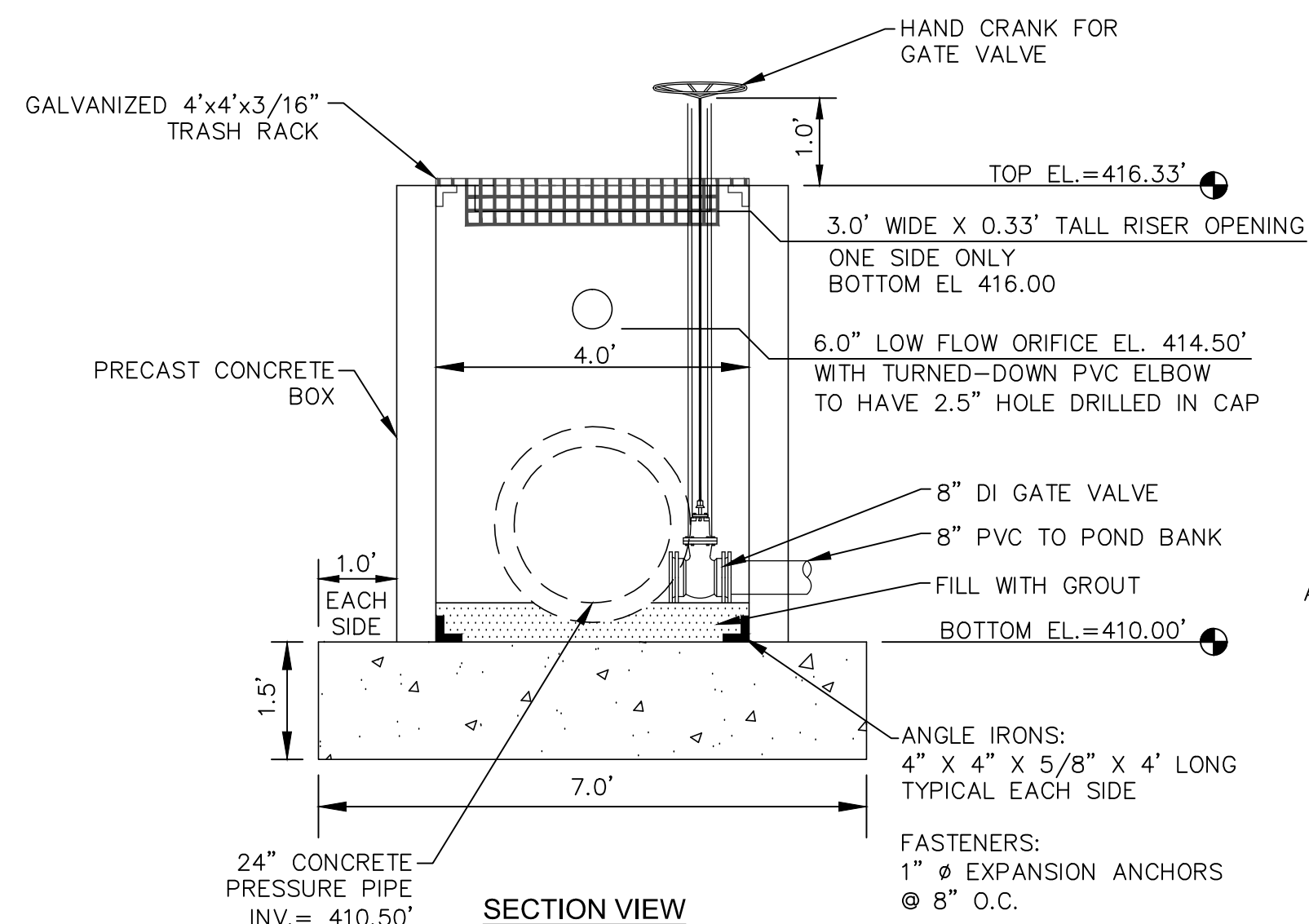
**BRIAR CHAPEL
PHASE 8
CHATHAM COUNTY, NORTH CAROLINA**

UTILITY DETAILS

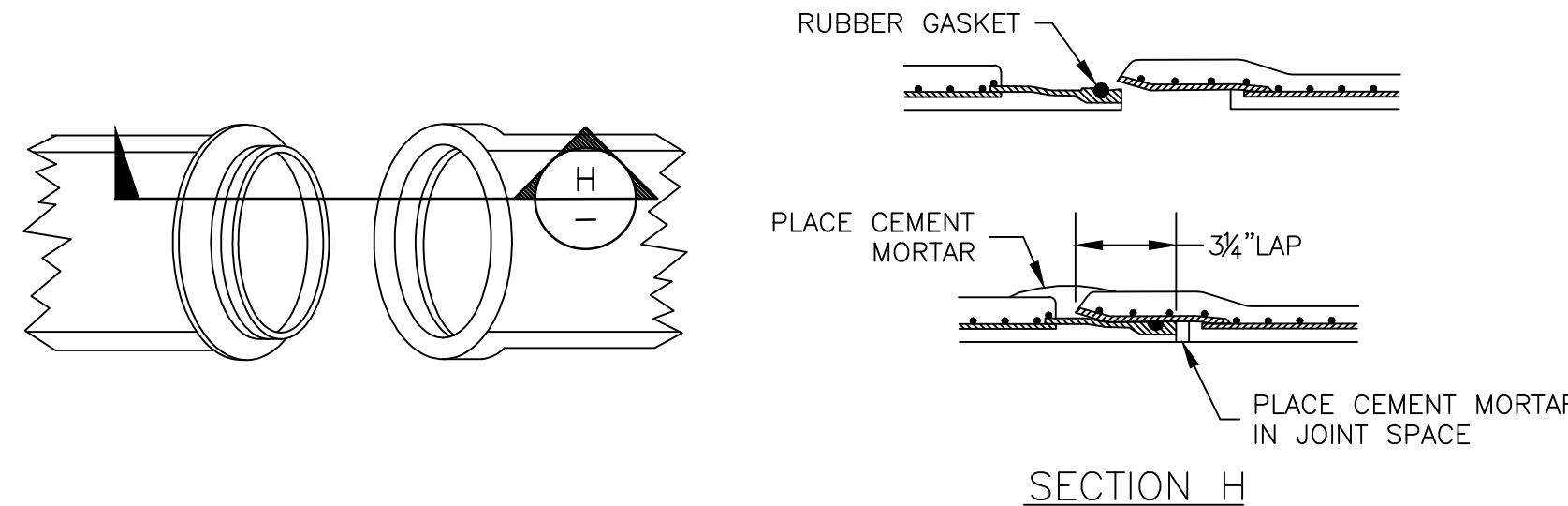
DATE: MAY 21, 2013	SCALE: D3.X	MISC FILE NUMBER: D3.2
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CHECKED: CHS		
PROJ. MGR. CHS		
STATUS: FINAL DRAWINGS	REVISION: 3	



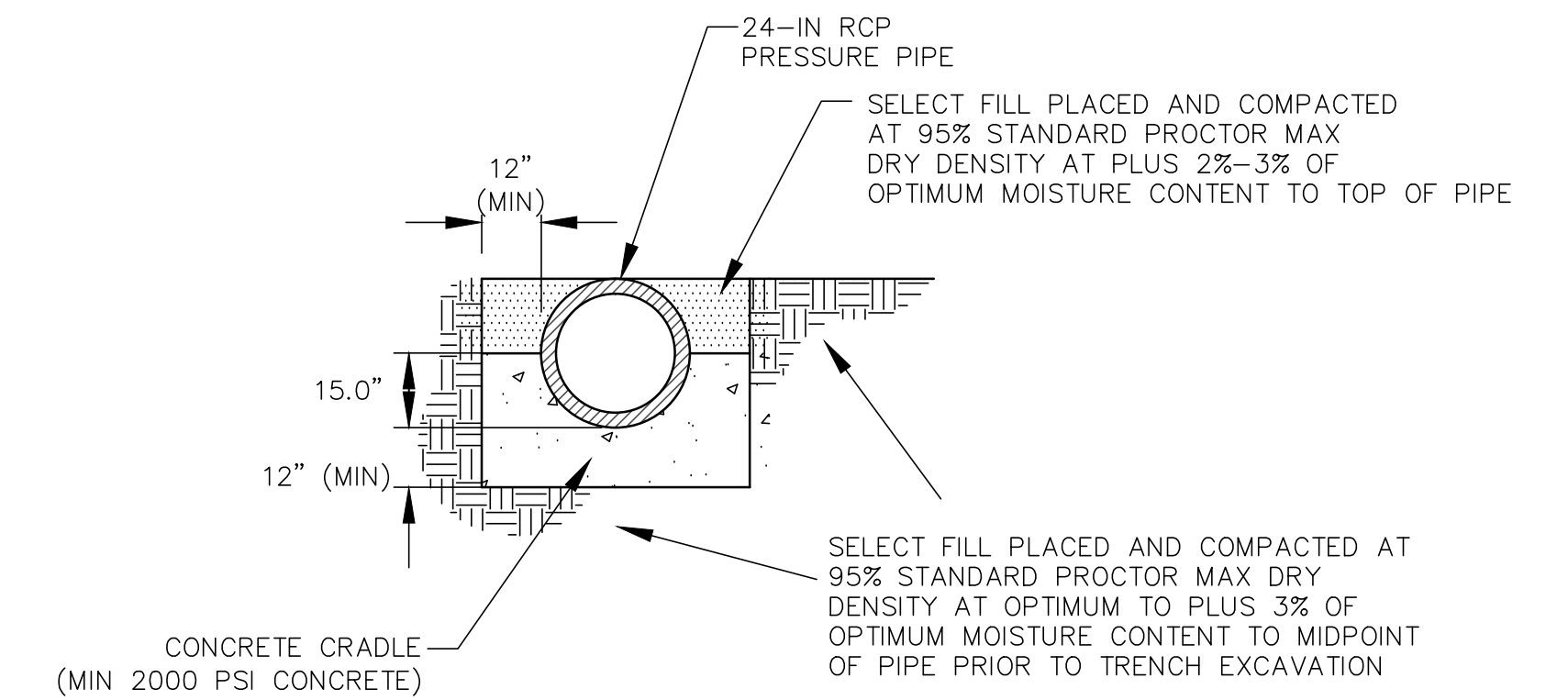
WET DETENTION POND #13 PLAN VIEW
SCALE = 1" = 40'



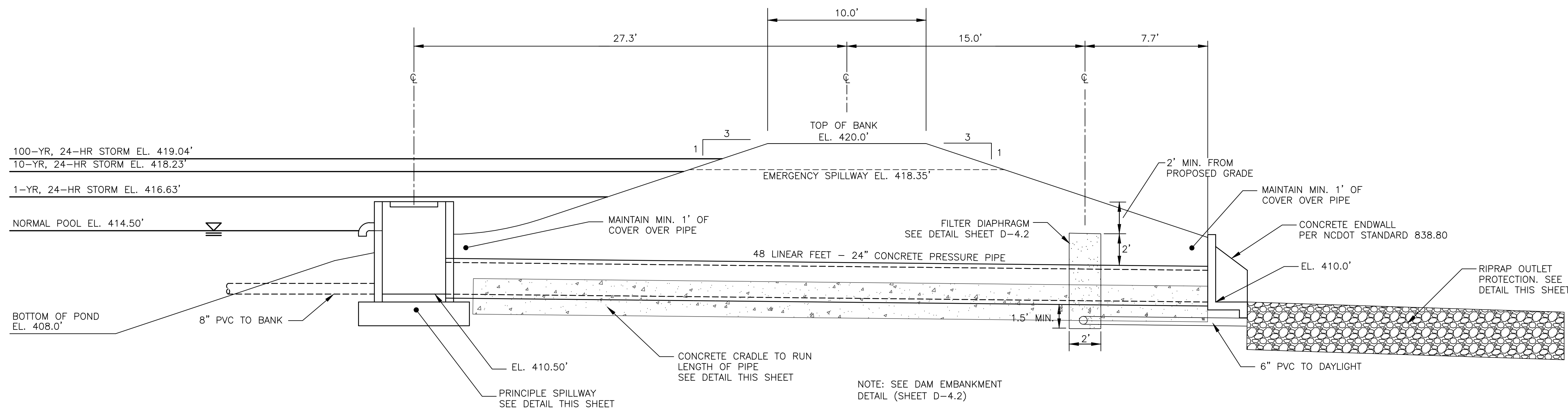
PRINCIPLE SPILLWAY
SCALE = 1" = 2'



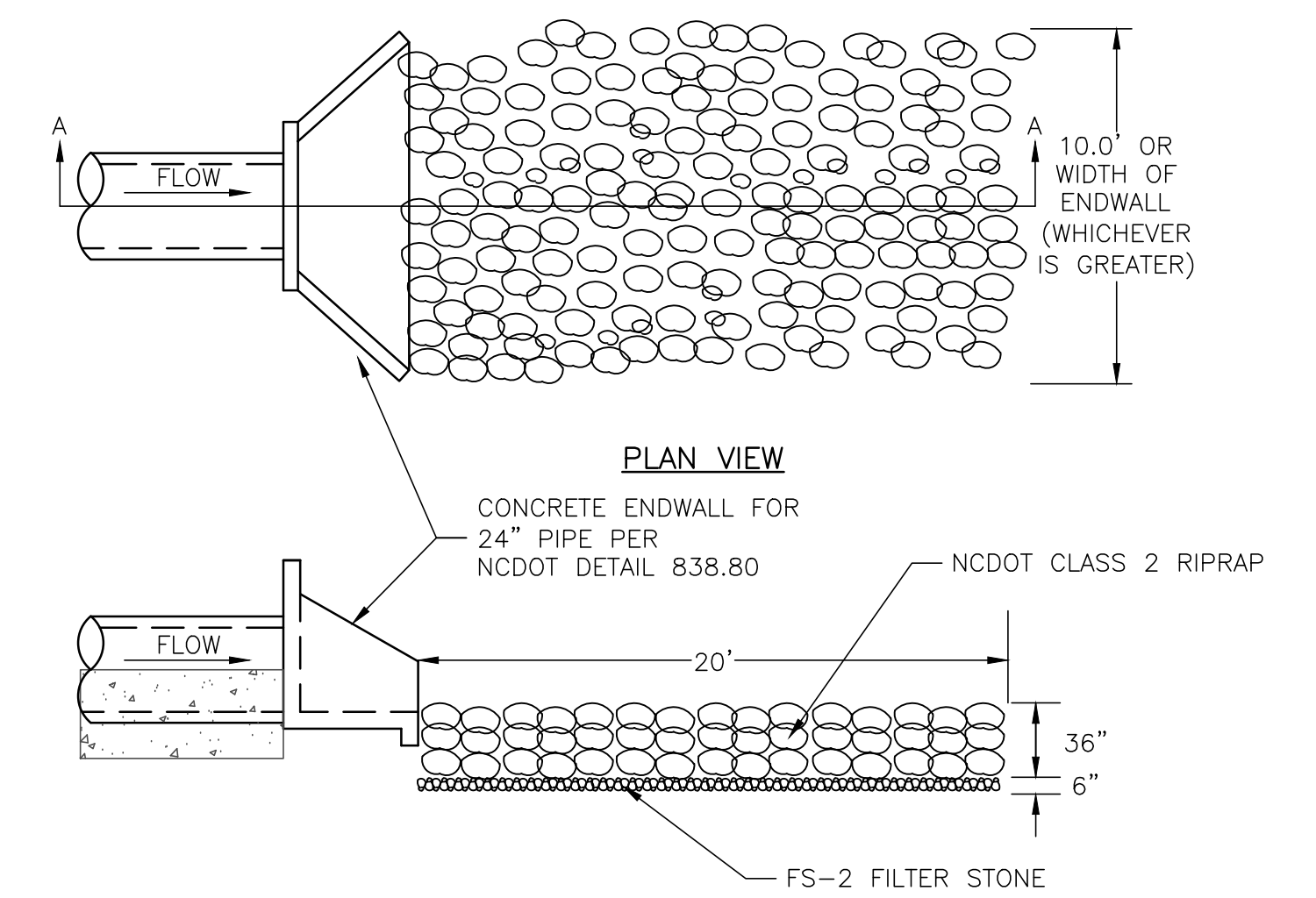
CONCRETE PRESSURE PIPE JOINT DETAIL
NTS



CONCRETE CRADLE DETAIL
NTS

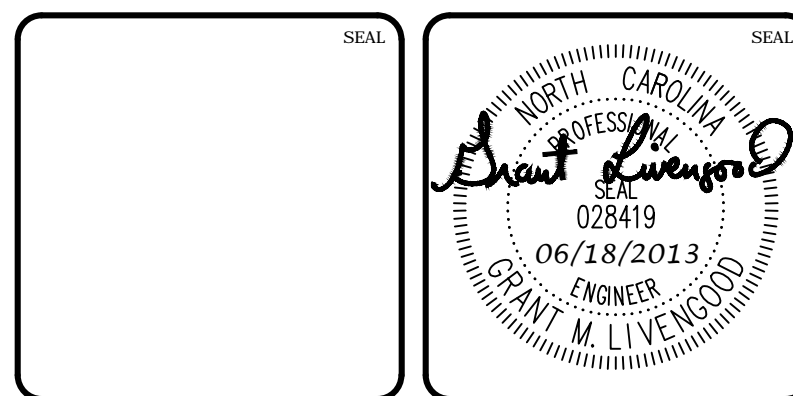


SECTION AT PRINCIPLE SPILLWAY
SCALE = 1" = 4'



SECTION A-A
RIPRAP OUTLET PROTECTION
NTS

REV. NO.	DESCRIPTIONS	DATE
3	REVISED PER NCDOT COMMENTS	2013.06.18
2	REVISED PER CHATHAM COUNTY REVIEW	2013.06.03
1	1ST SUBMITTAL TO REVIEW AGENCIES	2013.05.21

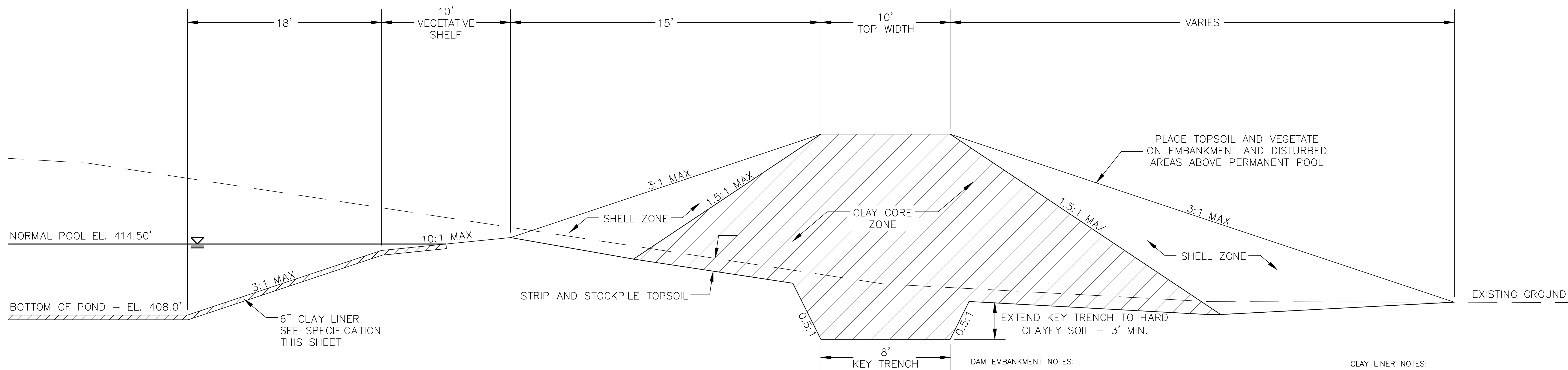


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**BRIAR CHAPEL
PHASE 8
CHATHAM COUNTY, NORTH CAROLINA**
BMP #13 PLAN & DETAILS

DATE: MAY 21, 2013	SCALE: HORIZONTAL	MISC FILE NUMBER: D4.X
MCE PROJ. # 02735-0092	HORIZONTAL: AS NOTED	DRAWING NUMBER: D4.1
DRAWN: GCA	VERTICAL: N/A	REVISION: 3
DESIGNED: GCA		
CHECKED: CHS		
PROJ. MGR: CHS		
STATUS: FINAL DRAWINGS		



DAM EMBANKMENT DETAIL

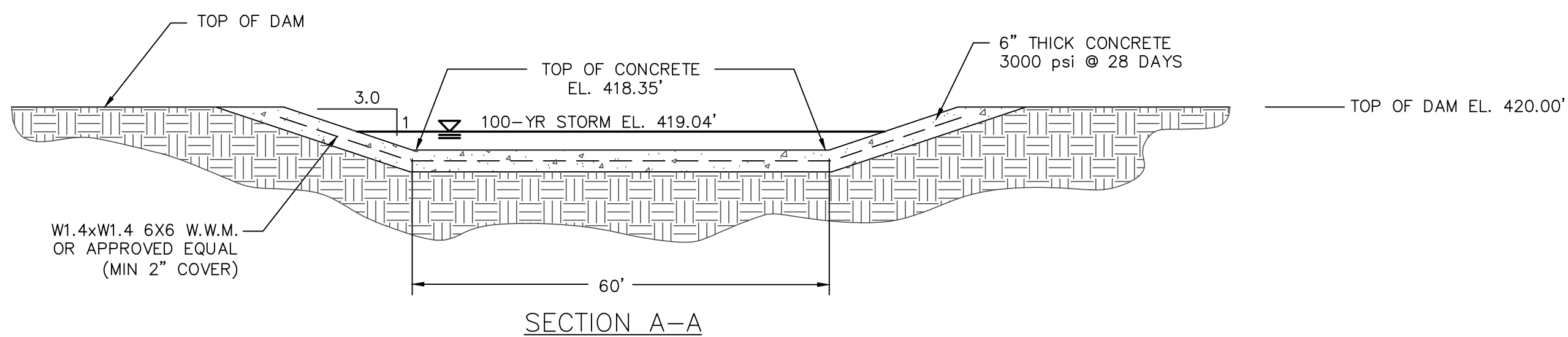
NTS

DAM EMBANKMENT NOTES:

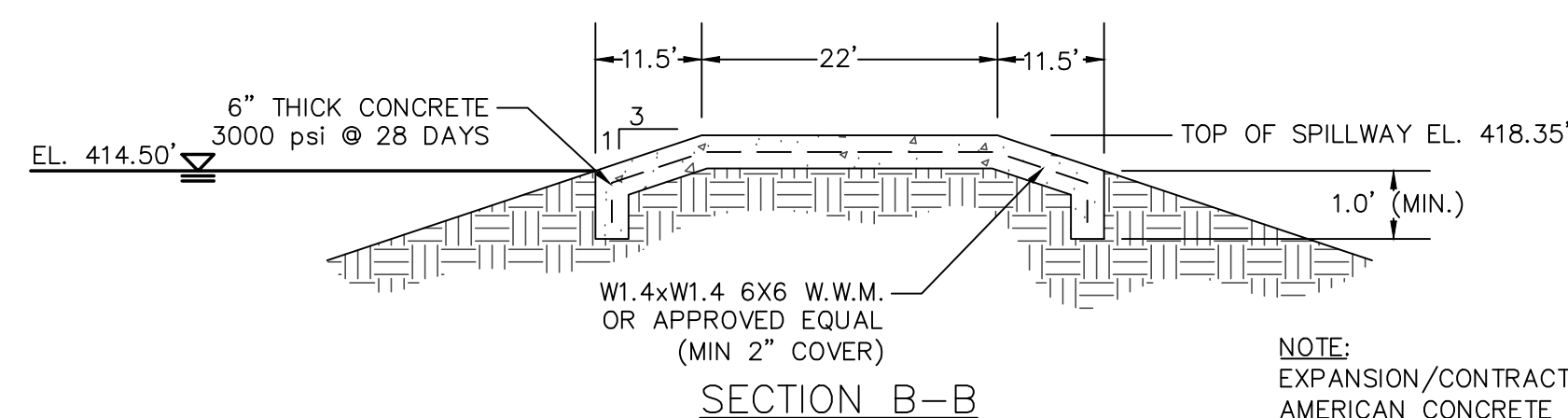
- 1) TOPSOIL BENEATH THE EMBANKMENT SHALL BE REMOVED AND STOCKPILED. THE FOUNDATION WILL BE PROOF ROLLED AND ANY SOFT OR ORGANIC MATERIALS WILL BE REMOVED.
- 2) ALL MATERIAL SHALL BE COMPACTED IN 6-8 INCH LIFTS TO 95% OF MAXIMUM STANDARD PROCTOR DRY DENSITY OR HIGHER (ASTM D-698). THE CLAY CORE ZONE WILL HAVE A MOISTURE CONTENT OF OPTIMUM TO 4 PERCENT ABOVE OPTIMUM MOISTURE CONTENT. THE SHELL ZONE FILL WILL HAVE A MOISTURE CONTENT FROM 2 PERCENT BELOW OPTIMUM MOISTURE CONTENT TO 4 PERCENT ABOVE OPTIMUM.
- 3) EMBANKMENT FILL:
SHELL ZONE: SOILS WITH LESS THAN 30% PASSING THE NO. 200 SIEVE OR A PI OF LESS THAN 10 WHEN THE PERCENTAGE OF MATERIAL PASSING THE NO. 200 SIEVE IS GREATER THAN 30 PERCENT. SOILS WHICH ARE CLASSIFIED AS CLAYS (CH OR CL) SHOULD NOT BE USED AT THE FACE OF THE SHELL ZONES.
CLAY CORE ZONE: CH, CL OR SC MATERIAL WITH A PI RANGING BETWEEN 15 AND 60
- 4) NO FILL SHALL CONTAIN ROCKS OR GRAVEL LARGER THAN 4 INCHES IN DIAMETER.
- 5) A PROFESSIONAL GEOTECHNICAL ENGINEER SHALL APPROVE ALL MATERIALS USED FOR THE EMBANKMENT AND SUPERVISE CONSTRUCTION.
- 6) ALL DISTURBED AREAS ABOVE PERMANENT POOL SHALL BE SEEDED USING THE FOLLOWING GRASS SEED MIX MANUFACTURED BY ERNST SEED COMPANY: Carolina Meadow Mix ERNMX-182

CLAY LINER NOTES:

IN ORDER TO HELP SUSTAIN THE PERMANENT POOL AND TO PREVENT WATER FROM INFILTRATING TOO QUICKLY INTO THE UNDERLYING SOIL, THE CONTRACTOR SHALL INSTALL A 6" THICK CLAY LINER ON THE BOTTOM OF THE WET DETENTION POND AREA UP TO ELEVATION 454.50. THE LINER CAN BE ACCOMPLISHED BY BLENDING EXISTING SITE SOILS WITH CLAY TO ACHIEVE A LOW PERMEABILITY MIXTURE OR BY INSTALLING A GEOSYNTHETIC LINER MADE OF A BENTOMAT CL. IF THE CONTRACTOR CHOOSES TO BLEND THE EXISTING SITE SOILS WITH CLAY, THE ONSITE GEOTECHNICAL ENGINEER SHALL DETERMINE THE AMOUNT OF CLAY TO ADD, THE DEGREE OF COMPACTION, AND WILL OVERSEE THE INSTALLATION OF THE CLAY LINER. THE MAXIMUM PERMEABILITY RATE FOR THE LINER SHALL BE 0.72 CM/DAY. THE PROPOSED MATERIAL FOR THIS LINER SHALL BE TESTED BY THE ONSITE GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT. THE RESULTS OF THIS TESTING SHALL BE SUBMITTED TO THE DESIGN ENGINEER FOR REVIEW PRIOR TO PLACEMENT. UPON COMPLETION OF LINER INSTALLATION, A LAYER OF TOPSOIL MAY BE ADDED OVER THE LINER TO PROVIDE A HEALTHY MEDIA FOR VEGETATION GROWTH.



SECTION A-A

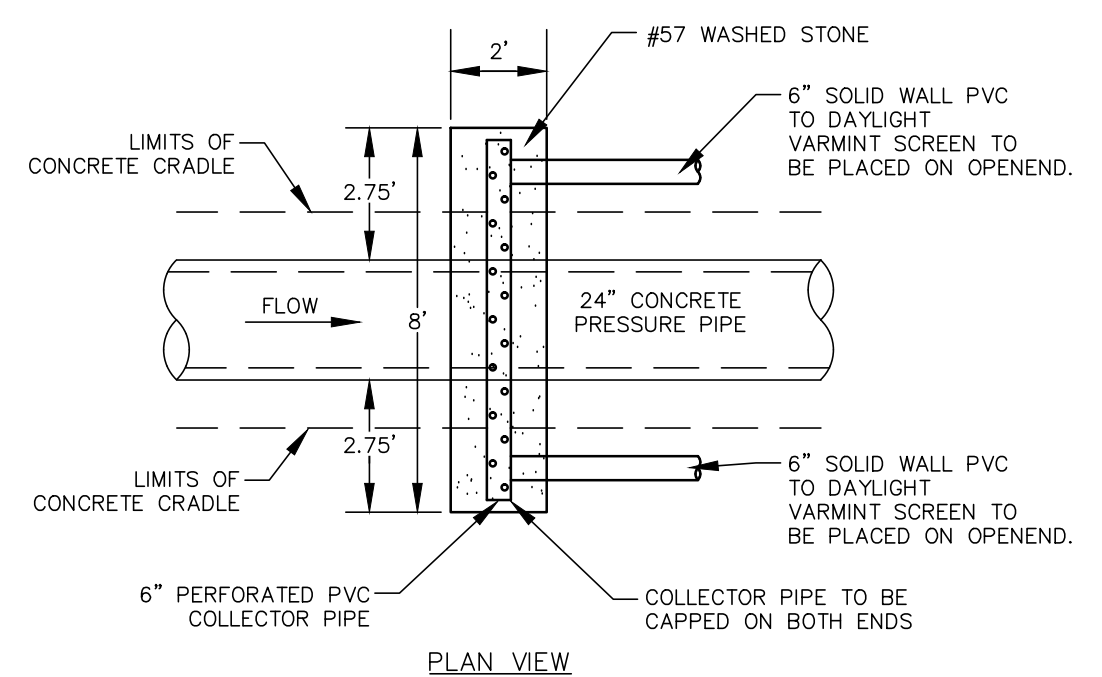


SECTION B-B

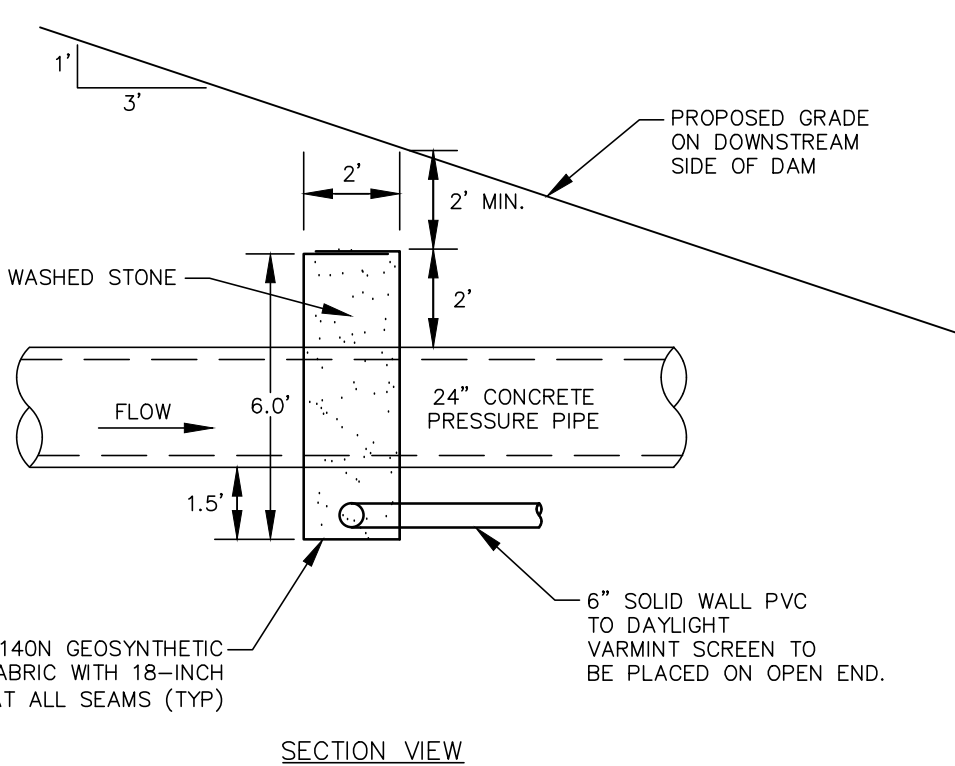
EMERGENCY SPILLWAY DETAIL

NTS

NOTE: EXPANSION/CONTRACTION JOINTS PER AMERICAN CONCRETE INSTITUTE (ACI) STANDARDS FOR SLABS ON GRADE.



PLAN VIEW



SECTION VIEW

FILTER DIAPHRAGM DETAIL

NTS

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

ENGLISH STANDARD DRAWING FOR
PRECAST CONCRETE ENDWALL
FOR SINGLE 12" THRU 72" PIPE - 90° SKEW

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

ELEVATION

SIDE

NOTES:

- THIS PRECAST ENDWALL MAY BE USED FOR THE FOLLOWING STANDARDS: 838.01, 838.11, 838.21, 838.27, 838.33, 838.39, 838.51, 838.57, 838.63 AND 838.69.
- INSTALL PRECAST ENDWALLS WITH WINGS AND PAY FOR IN ACCORDANCE WITH SPECIFICATION SECTION 838.
- USE 4000 PSI CONCRETE.
- PROVIDE ALL REINFORCING STEEL WHICH MEETS ASTM A615 FOR GRADE 60 AND WELDED WIRE FABRIC CONFORMING TO ASTM A185 WITH 2" MIN. CLEARANCE.
- PLACE LIFT HOLES OR PINS IN ACCORDANCE WITH OSHA STANDARD 1926.704.
- PIPE TO BE GROUTED INTO HEADWALL AT JOB SITE BY CONTRACTOR.
- ALL ELEMENTS PRECAST TO MEET ASTM C913.
- WELDED WIRE FABRIC MAY BE SUBSTITUTED FOR REBAR AS LONG AS THE SAME AREA OF STEEL IS PROVIDED.
- CHAMFER ALL CORNERS 1" OR HAVE A RADIUS OF 1".

NOTE: THE MINIMUM BAR SIZE SHALL BE #5 BARS AT 8" CTS. THE CONTRACTOR WILL HAVE THE OPTION TO INCREASE THIS BAR SIZE AS NEEDED.

ENDWALL DIMENSIONS						
PIPE DIA.	MINIMUM BAR SIZE	MIN./MAX.	MIN./MAX.	MIN./MAX.	MIN./MAX.	MIN./MAX.
1.0	#5 @ 8"	1.25/2.00	2.00/3.75	1.25/1.75	3.00/3.75	6.50/6.00
1.25	#5 @ 8"	1.25/2.00	3.00/3.75	1.25/2.00	3.50/3.75	6.50/6.75
1.50	#5 @ 8"	1.25/2.00	3.00/4.25	1.50/2.50	3.50/3.75	6.50/6.75
2.0	#5 @ 8"	1.50/2.50	4.00/4.75	1.75/2.50	4.00/4.25	7.50/8.25
2.5	#5 @ 8"	2.50/3.50	4.00/6.00	2.00/3.00	4.50/5.50	10.00/11.50
3.0	#5 @ 8"	3.00/3.50	5.00/6.00	2.75/3.50	5.25/5.75	11.50/11.75
3.5	#5 @ 8"	3.25/4.50	6.00/6.75	3.25/3.50	6.00/6.75	12.00/13.25
4.0	#5 @ 8"	3.50/4.50	6.50/7.00	3.25/3.50	6.50/6.75	13.00/13.25
4.5	#5 @ 8"	4.00/5.00	6.50/8.50	3.25/4.00	7.00/9.25	13.50/15.75
5.0	#5 @ 8"	4.50/5.00	7.00/8.50	3.25/4.00	7.25/9.25	13.75/15.75
6.5	#5 @ 8"	4.50/5.00	7.50/8.50	3.25/4.00	7.25/9.25	14.00/15.75
6.0	#5 @ 8"	4.50/5.00	7.50/8.50	3.25/4.00	7.75/9.25	14.75/16.75

SHEET 1 OF 1
838.80

SHEET 1 OF 1
838.80

REV. NO.	DESCRIPTIONS	DATE
3	REVISED PER NCDOT COMMENTS	2013.06.18
2	REVISED PER CHATHAM COUNTY REVIEW	2013.06.03
1	1ST SUBMITTAL TO REVIEW AGENCIES	2013.05.21

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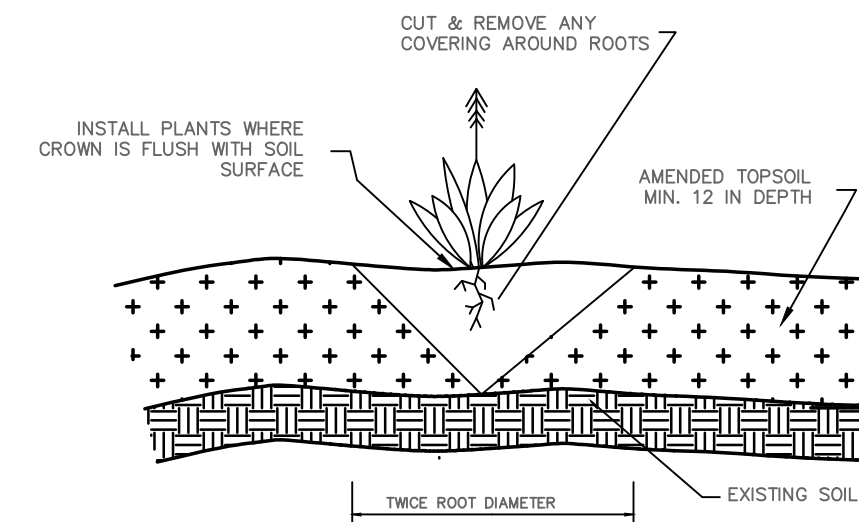
BMP #13 PLAN & DETAILS

DATE: MAY 21, 2013	SCALE: HORIZONTAL	MSC FILE NUMBER: D4.X
MCE PROJ. # 02735-0092	HORIZONTAL: AS NOTED	DRAWING NUMBER: D4.2
DRAWN: GCA	VERTICAL: N/A	
DESIGNED: GCA		
CHECKED: CHS		
PROJ. MGR. CHS		
STATUS: FINAL DRAWINGS	REVISION: 3	



WET DETENTION POND #13 PLANTING PLAN
SCALE = 1" = 30'

PLANTING SCHEDULE						
SYM.	ABB.	COMMON NAME	BOTANICAL NAME	QUANTITY	SPACING	CONTAINER SIZE AT PLANTING
SHALLOW WATER PLANTINGS						
	SF	SWEETFLAG	<i>Acorus subcordatum</i>	152	24"-30" O.C.	1 QT.
	PW	PICKERELWEED	<i>Pontederia cordata</i>	129	24"-30" O.C.	1 QT.
	BFI	BLUE FLAG IRIS	<i>Iris virginica</i>	135	24"-30" O.C.	1 QT.
	SR	SOFT RUSH	<i>Juncus effusus var. pylaei or solutus</i>	128	24"-30" O.C.	1 QT.
	TSB	THREE SQUARE BULRUSH	<i>Schoenoplectus americanus</i>	130	24"-30" O.C.	1 QT.
SHALLOW LAND PLANTINGS						
	SM	SWAMP MILKWEED	<i>Asclepias incarnata</i>	138	24"-30" O.C.	1 QT.
	CF	CARDINAL FLOWER	<i>Labellia cardinalis</i>	148	24"-30" O.C.	1 QT.
	SRM	SCARLET ROSE MALLOW	<i>Hibiscus coccineus</i>	124	24"-30" O.C.	1 QT.
	JPW	DWARF JOE PYE WEED	<i>Eupatoriadelphus dubius</i>	141	24"-30" O.C.	1 QT.
	ST	SPOTTED TRUMPETWEED	<i>Eupatoriadelphus maculatus</i>	139	24"-30" O.C.	1 QT.



GENERAL PLANTING DETAIL
NTS

GENERAL PLANTING NOTES:

1. AVOID COMPACTING TOPSOIL TO PROMOTE HEALTHY ENVIRONMENTAL CONDITIONS FOR THE PLANTS.
2. ALL PLANTS SHOULD BE PLANTED IN THE INDICATED RANGE TO ENSURE SURVIVAL.
3. SHALLOW WATER AND SHALLOW LAND AREAS TO BE PLANTED WITH BARE ROOT, PLUGS, OR CONTAINER LIVE PLANTINGS AS SPECIFIED.
4. EXCAVATE A HOLE TWICE THE DIAMETER OF ROOT BALL AND EQUAL TO THE ROOT DEPTH OF THE INDIVIDUAL PLANT. PLACE PLANT IN HOLE WITH CROWN FLUSH WITH SOIL SURFACE. BACKFILL WITH TOPSOIL AND LIGHTLY PLANT.
5. BEGIN PLANTING DURING LOCAL GROWING SEASON IN ORDER TO ENSURE THAT PLANTS HAVE ADEQUATE TIME TO ESTABLISH BEFORE WINTER MONTHS.
6. OBTAIN PLANTS FROM: COASTAL PLAIN CONSERVATION NURSERY (252-482-5707), MELLOW MARSH FARMS (919-742-1200), CURE NURSERY (919-542-6186) OR ENGINEER APPROVED SUBSTITUTE.
7. REFER TO EROSION CONTROL DETAIL SHEET D-2 FOR SEEDBED PREPARATION AND SEEDING SCHEDULES FOR AREAS NOT SPECIFIED IN THIS PLAN.

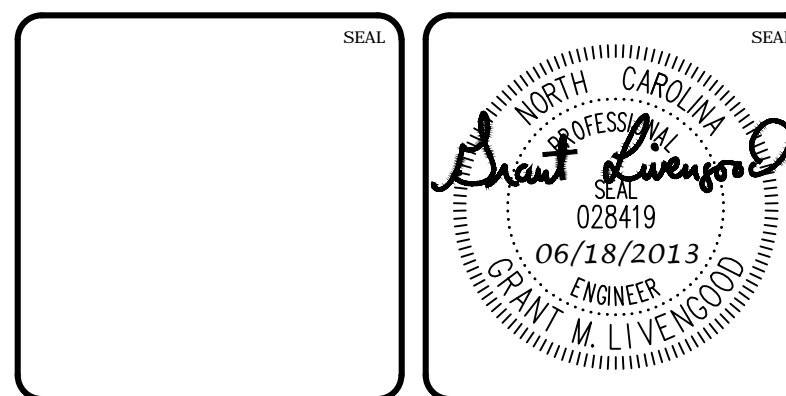
SHALLOW WATER PLANTING NOTES:

1. 70% OF PICKERELWEED SHOULD BE PLANTED WITHIN 5-6 INCHES BELOW NORMAL POOL.
2. 70% OF SWEETFLAG AND 70% OF SOUTHERN BLUE FLAG IRIS SHOULD BE PLANTED IN THE 2-3 INCHES BELOW NORMAL POOL.
3. 70% OF SOFT RUSH SHOULD BE PLANTED AT THE NORMAL POOL ELEVATION.

SHALLOW LAND PLANTING NOTES:

1. PLANTS IN THIS GROUP SHOULD NOT BE PLANTED IN AREAS THAT ARE INUNDATED FOR EXTENDED PERIODS.

REV. NO.	DATE	DESCRIPTIONS	REVISIONS
3	2013.06.18	REVISED FOR NCCAT COMMENTS	
2	2013.06.03	REVISED FOR CHATHAM COUNTY REVIEW	
1	2013.05.21	1ST SUBMITTAL TO REVIEW AGENCIES	



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BMP #13 PLAN & DETAILS

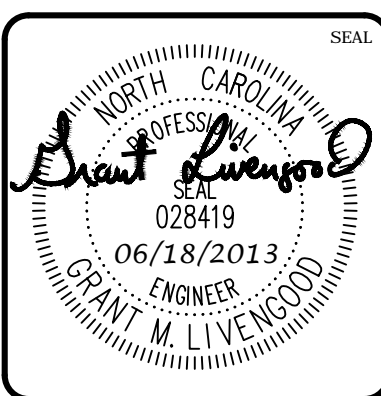
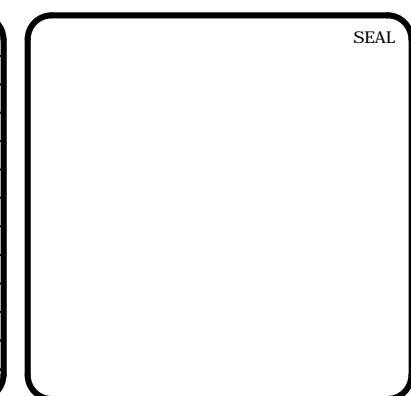
DATE: MAY 21, 2013	SCALE: D4.X	MSC FILE NUMBER: D4.X
MCE PROJ. # 02735-0092	HORIZONTAL: AS NOTED	DRAWING NUMBER: D4.3
DRAWN: GCA	VERTICAL: N/A	
DESIGNED: GCA		
CHECKED: CHS		
PROJ. MGR.: CHS		
STATUS: FINAL DRAWINGS	REVISION: 3	

SANITARY SEWER SUMMARY TABLE							
UPSTREAM STRUCTURE	DOWNSTREAM STRUCTURE	UPSTREAM INVERT	DOWNSTREAM INVERT	PIPE DIAMETER	PIPE MATERIAL	LENGTH (ft)	SLOPE
OESS-8-104A	SSMH-8-104	488.45	487.70	8"	PVC (SDR 35)	55.0	1.36%
OESS-8-107A	SSMH-8-107	493.05	492.20	6"	PVC (SDR 35)	30.0	2.83%
OESS-140A	SSMH-8-120	435.00	425.13	8"	PVC (SDR 35)	194.4	5.07%
OESS-160A	SSMH-8-126	426.50	425.85	6"	PVC (SDR 35)	62.9	1.03%
SSMH-8-100	OESS-110A	471.20	467.20	8"	PVC (SDR 35)	123.4	3.24%
SSMH-8-101	SSMH-8-100	479.60	473.30	8"	PVC (SDR 35)	187.2	3.36%
SSMH-8-102	SSMH-8-101	482.20	480.20	8"	PVC (SDR 35)	135.4	1.48%
SSMH-8-103	SSMH-8-102	484.50	483.35	8"	PVC (SDR 35)	194.7	0.59%
SSMH-8-104	SSMH-8-103	486.00	484.70	8"	PVC (SDR 35)	216.9	0.60%
SSMH-8-105	SSMH-8-104	490.50	486.20	6"	PVC (SDR 35)	150.5	2.86%
SSMH-8-106	SSMH-8-105	500.02	495.02	6"	PVC (SDR 35)	157.0	3.18%
SSMH-8-107	SSMH-8-104	492.00	489.60	6"	PVC (SDR 35)	132.2	1.82%
SSMH-8-108	SSMH-8-107	494.00	492.20	6"	PVC (SDR 35)	66.2	2.72%
SSMH-8-109	SSMH-8-101	485.40	482.00	6"	PVC (SDR 35)	83.7	4.06%
SSMH-8-110	SSMH-8-109	495.90	485.60	6"	PVC (SDR 35)	209.0	4.93%
SSMH-8-120	SSMH-149	420.80	417.80	8"	PVC (SDR 35)	177.0	1.69%
SSMH-8-121	SSMH-8-120	421.45	421.00	6"	PVC (SDR 35)	87.9	0.51%
SSMH-8-122	SSMH-8-121	422.15	421.65	6"	PVC (SDR 35)	96.8	0.52%
SSMH-8-123	SSMH-8-122	422.80	422.35	6"	PVC (SDR 35)	83.0	0.54%
SSMH-8-124	SSMH-8-123	423.50	423.00	6"	PVC (SDR 35)	90.0	0.56%
SSMH-8-125	SSMH-8-124	424.80	423.70	6"	PVC (SDR 35)	216.7	0.51%
SSMH-8-126	SSMH-8-125	425.65	425.00	6"	PVC (SDR 35)	111.0	0.59%
SSMH-8-127	SSMH-8-125	425.20	425.00	6"	PVC (SDR 35)	36.7	0.55%
SSMH-8-128	SSMH-8-127	431.50	428.50	6"	PVC (SDR 35)	87.1	3.44%
SSMH-8-129	SSMH-8-128	441.33	431.70	6"	PVC (SDR 35)	310.8	3.10%
SSMH-8-130	OESS-140B	439.00	437.35	6"	PVC (SDR 35)	77.8	2.12%
SSMH-8-131	SSMH-8-130	443.00	439.20	6"	PVC (SDR 35)	153.6	2.47%
SSMH-8-132	SSMH-8-131	446.00	443.20	6"	PVC (SDR 35)	137.7	2.03%

STORM DRAINAGE SUMMARY TABLE							
UPSTREAM STRUCTURE	DOWNSTREAM STRUCTURE	UPSTREAM INVERT	DOWNSTREAM INVERT	PIPE DIAMETER	PIPE MATERIAL	LENGTH (ft)	SLOPE
CB-8-118A	CI-8-118	485.50	485.25	15"	RCP	35.7	0.70%
CB-8-118B	CB-8-118A	493.00	490.00	12"	A-2000 PVC	107.2	2.80%
CB-8-118C	CB-8-118B	495.00	493.10	12"	A-2000 PVC	107.5	1.77%
CB-8-126A	CI-118	486.00	477.00	15"	RCP	147.2	-6.12%
CB-8-126B	CB-8-126A	490.00	486.10	12"	A-2000 PVC	108.3	-3.60%
CB-8-126C	CB-8-126B	496.00	490.10	12"	A-2000 PVC	108.5	-5.44%
CB-8-163	CI-8-159	441.50	441.35	15"	RCP	23.5	0.64%
CB-8-163A	CB-8-163	442.25	441.60	15"	RCP	127.0	0.51%
CB-8-182A	CI-8-182	435.00	426.50	15"	RCP	152.4	5.58%
CI-8-100	OESD-113A	470.70	469.00	30"	RCP	47.5	3.58%
CI-8-101	CI-8-100	476.10	471.70	30"	RCP	100.0	4.40%
CI-8-102	CI-8-101	480.50	476.20	30"	RCP	118.8	3.62%
CI-8-103	CI-8-102	484.90	480.60	30"	RCP	173.3	2.48%
CI-8-104	CI-8-103	488.10	485.80	24"	RCP	202.8	1.13%
CI-8-105	CI-8-104	489.40	488.20	24"	RCP	186.0	0.65%
CI-8-106	CI-8-105	489.70	489.50	24"	RCP	24.7	0.81%
CI-8-107	CI-8-106	490.00	489.80	24"	RCP	32.8	0.61%
CI-8-108	CI-8-107	494.50	492.50	15"	RCP	96.2	2.08%
CI-8-109	CI-8-108	494.80	494.60	15"	RCP	24.5	0.82%
CI-8-110	CI-8-107	490.30	490.10	24"	RCP	25.4	0.79%
CI-8-111	CI-8-110	490.60	490.40	24"	RCP	33.9	0.59%
CI-8-112	CI-8-111	491.60	490.70	18"	RCP	80.0	1.13%
CI-8-113	CI-8-112	494.30	494.15	15"	RCP	24.5	0.61%
CI-8-114	CI-8-111	493.85	493.50	15"	RCP	25.7	1.36%
CI-8-115	CI-8-105	490.70	490.40	15"	RCP	47.9	0.63%
CI-8-116	CI-8-115	493.50	493.30	15"	RCP	24.5	0.82%
CI-8-117	CI-8-104	490.00	489.80	15"	RCP	24.6	0.81%
CI-8-118	CI-8-103	485.15	485.00	15"	RCP	24.7	0.61%
CI-8-119	CI-8-102	480.80	480.60	15"	RCP	26.3	0.76%
CI-8-120	CI-8-119	481.15	480.90	15"	RCP	36.5	0.68%
CI-8-121	CI-8-120	488.00	485.40	15"	RCP	61.5	4.22%
CI-8-122	CI-8-121	493.00	488.10	15"	RCP	104.0	4.71%
CI-8-123	CI-8-122	501.15	493.10	15"	RCP	259.9	3.10%
CI-8-124	CI-8-122	493.55	493.40	15"	RCP	24.5	0.61%
CI-8-125	CI-8-120	485.80	485.60	15"	RCP	27.4	0.73%

STORM DRAINAGE SUMMARY TABLE							
UPSTREAM STRUCTURE	DOWNSTREAM STRUCTURE	UPSTREAM INVERT	DOWNSTREAM INVERT	PIPE DIAMETER	PIPE MATERIAL	LENGTH (ft)	SLOPE
CI-8-128	SDMH-8-127	496.30	496.12	15"	RCP	17.4	1.04%
CI-8-129	SDMH-8-127	496.30	496.12	15"	RCP	26.4	0.68%
CI-8-153	DBL CI-8-152	427.00	426.00	30"	RCP	72.0	1.39%
CI-8-154	CI-8-153	429.50	427.10	30"	RCP	71.1	3.37%
CI-8-155	CI-8-154	429.90	429.60	30"	RCP	24.5	1.22%
CI-8-156	CI-8-155	432.00	430.00	24"	RCP	154.6	1.29%
CI-8-157	CI-8-156	437.30	436.00	24"	RCP	30.5	4.26%
CI-8-159	DBL CI-8-158	441.25	440.70	24"	RCP	106.0	0.52%
CI-8-160	CI-8-159	445.45	443.65	15"	RCP	108.0	1.67%
CI-8-161	CI-8-160	446.65	445.55	15"	RCP	170.7	0.64%
CI-8-162	CI-8-159	443.65	443.50	15"	RCP	24.5	0.61%
CI-8-166	DBL CI-8-152	424.50	424.00	30"	RCP	82.1	0.61%
CI-8-167	CI-8-166	425.20	424.60	30"	RCP	99.7	0.60%
CI-8-168	CI-8-167	425.90	425.30	30"	RCP	99.6	0.60%
CI-8-169	CI-8-168	426.95	426.00	30"	RCP	166.2	0.57%
CI-8-170	CI-8-169	427.20	427.05	24"	RCP	24.5	0.61%
CI-8-171	CI-8-170	427.50	427.30	24"	RCP	31.0	0.65%
CI-8-172	CI-8-171	427.80	427.60	18"	RCP	26.8	0.75%
CI-8-174	DBL CI-8-173	428.70	428.30	15"	RCP	57.4	0.70%
CI-8-177	CI-8-171	434.75	431.25	15"	RCP	107.5	3.25%
CI-8-178	CI-8-177	439.75	434.85	15"	RCP	159.0	3.08%
CI-8-179	CI-8-178	440.00	439.85	15"	RCP	24.5	0.61%
CI-8-180	CI-8-177	435.00	434.85	15"	RCP	24.6	0.61%
CI-8-181	CI-8-168	432.75	432.60	15"	RCP	24.9	0.60%
CI-8-182	CI-8-166	426.40	426.20	15"	RCP	24.5	0.82%
DBL CI-8-152	SDMH-8-151	423.90	423.80	36"	RCP	11.5	0.87%
DBL CI-8-158	CI-8-157	440.60	440.40	24"	RCP	25.2	0.79%
DBL CI-8-165	DBL CI-8-152	427.30	427.00	15"	RCP	24.5	1.22%
DBL CI-8-173	CI-8-172	428.20	427.90	15"	RCP	46.3	0.65%
DBL CI-8-176	DBL CI-8-173	430.40	430.20	15"	RCP	24.5	0.82%
OESD-8-112A	CI-8-112	491.80	491.70	18"	RCP	13.3	0.75%
SDMH-8-151	Outlet 8-150	423.70	415.00	36"	RCP	247.4	3.52%

REV. NO.	DATE	DESCRIPTIONS	REVISIONS
3	2013.06.18	REVISED PER NCDOT COMMENTS	
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**STORM DRAINAGE &
 SANITARY SEWER TABLES**

DATE:	MAY 21, 2013
MCE PROJ. #	02735-0092
DRAWN	GCA
DESIGNED	GCA
CHECKED	CHS
PROJ. MGR.	CHS

SCALE	HORIZONTAL:	AS NOTED	VERTICAL:	N/A
MCE FILE NUMBER	D4.X	DRAWING NUMBER	D4.4	REVISION
STATUS:	FINAL DRAWINGS	REVISION	3	