

March 30, 2016

Chatham County

Subject: Subdivision Final Plan Review –Phase 10 of the Briar Chapel Subdivision off of Great Ridge Parkway near SR 1528

Newland Communities, LLC c/o Bill Mumford 13777 Ballantyne Corporate Pl, Ste. 550 Charlotte, North Carolina 28277

Dear Mr. Mumford:

The N. C. Department of Transportation, Division of Highways has reviewed the construction plans signed and sealed by Gareth Avant P.E. on January 28, 2016 as submitted to this office and approval is granted subject to the following stipulations and recommendations:

- 1. All Construction is to be in accordance with the details as shown on the plans, as well as conform to the most recent edition of the *Standard Specifications for Roads and Structures*.
- 2. A Driveway Permit is not needed for this package.
- 3. The entire proposed right of way is to be cleared and grubbed throughout the whole phase of the project. Please be aware that the areas within the sight distance quadrants are to be treated as right of way.
- 4. All soil areas within the proposed right of way and any other soil areas disturbed during construction shall be seeded and mulched immediately upon completion of roadway construction. The seeding shall be done as outlined in the seeding specification attachment.
- 5. The crossline drainage is approved as proposed on the construction plans. If, however field conditions dictate any changes, these shall be made upon approval by NCDOT. If any of the property owners desire to pipe their ditches within the proposed NCDOT right of way, please advise them that this work should conform to NCDOT specifications for this type of work (see attached). If any ditches are piped and not satisfactorily completed to NCDOT specifications, this could result in the road not being accepted for addition to the state maintained system of roads. Any ditches piped or



Phase 10 of the Briar Chapel Subdivision Final Plan Approval Plans signed and sealed by Gareth Avant P.E. January 28, 2016 Page 2 of 3

other encroachment prior to addition to the state maintained system are subject to an encroachment agreement, as are utility companies, when the road is added.

- 6. The typicals as shown in the plans, are approved.
- 7. The Division of Highways will only allow mailboxes, with non-rigid type post, such as 4" x 4" wooden or small diameter metal type on new additions. Brick columns or mailboxes on rigid stands such as block, stone or any other type deemed to be a traffic hazard will not be allowed within the right of way. This policy applies to all roads being considered for addition to the State Maintained System.
- 8. An erosion control plan shall require approval from Chatham County. The developer should forward this plan to Mr. Jim Willis, Erosion and Sediment Control Officer, 80 East, P.O. Box 130, Pittsboro, N.C. 27312, phone (919) 545-8343 for his review and approval.
- 9. As this subdivision is proposed to be public and is likely to be requested to be added to the state maintained system of roads, the developer will be responsible for providing a PE Certification, (See Attached) and testing results for base and asphalt density stating that the streets have been built in accordance with the most current "Subdivision Roads: Minimum Construction Standards" manual and with the attached approved plans. Please be advised that this PE Certification does not approve the road for addition to the State Highway System for maintenance. When the proper home density is achieved and roads have been satisfactorily maintained, the developer or property owners must submit Form SR-1, Petition for Road Addition (copy attached to this correspondence), and four (4) copies of the recorded plat to request that the road or roads be added to the State Highway system. Any maintenance problems found when the road is requested to be added must be repaired by the developer prior to the road becoming state maintained. As stated in GS 136-102.6, final acceptance by the Division of Highways of the public streets and placing them on the State highway system for maintenance shall be conclusive proof that the streets have been constructed according to the minimum standards of the Board of Transportation.
- 10. The developer shall comply with all applicable local, state, and federal environmental regulations, and shall obtain all necessary local, state, and federal environmental permits, including, but not limited to, those related to sediment control, stormwater, wetlands, streams, endangered species, and historical sites.
- 11. A properly completed Verification of Compliance with the Department of Environment and Natural Resources (DENR)(page 35, attached) must be submitted prior to the road(s) being considered for addition to the NCDOT System.
- 12. In preparing the final plat for certification by this office and subsequent recording, the following information will be incorporated:



State of North Carolina | Department of Transportation | Division 8 District 1 P.O. Box 1164 | 300 DOT Drive | Asheboro, NC 27205-1164 336-318-4000 Phase 10 of the Briar Chapel Subdivision Final Plan Approval Plans signed and sealed by Gareth Avant P.E. January 28, 2016 Page 3 of 3

- A. The sight distance quadrants at the intersections shall be shown either as a public easement or as the property line.
- B. Public easements for drainage throughout the development.
- C. All roads shall be shown as public and the right of way width shown
- D. If the plans of this subdivision change in a way that would cause a change in the classification of these roads from Local Residential to Residential Collector the developer will be responsible for upgrading roads to meet Residential Collector standards prior to addition the state maintenance system.
- E. This approval does not approve the utilities within this subdivision. Any utilities shall be submitted for approval to this office via a properly executed Encroachment Agreement to be approved at the time the roads within the subdivision are petitioned to be added to the state system for maintenance. Please note that water valves should be located a minimum of 6' from edge of pavement, fire hydrants should be behind the right of way line and all service taps should be installed prior to paving.

If you have any further questions regarding this matter, please do not hesitate to call this office at 336. 318.4000

Yours truly,

DocuSigned by: Marty C. Jellman

Marty C. Tillman District Engineer

Attachments

cc: Brandon Jones, P.E., Division Engineer Justin Bullock, P.E., Chatham County Maintenance Engineer Lynn Richardson, Chatham County Planning Chris Seamster, RLA McKim & Creed File

→ Nothing Compares

State of North Carolina | Department of Transportation | Division 8 District 1 P.O. Box 1164 | 300 DOT Drive | Asheboro, NC 27205-1164 336-318-4000



CONSTRUCTION DOCUMENTS U.S. HWY 15-501 and MANN'S CHAPEL ROAD CHATHAM COUNTY, NORTH CAROLINA

COUNTY AND AGENCY CONTACTS

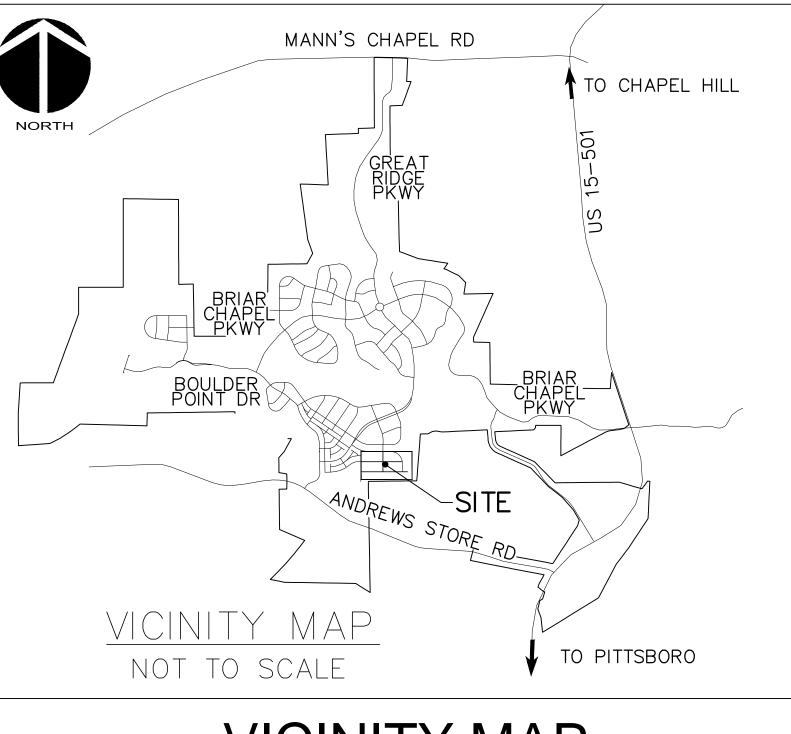
- A. Chatham County Planning Department Dunlap Building 80 East Street Pittsboro, NC 27312 (919) 542-8204 phone Contact: Jason Sullivan Email: jason.sullivan@chathamnc.org
- B. Chatham County **Environmental Services** Dunlap Building 80 East Street Pittsboro, NC 27312 (919) 542-0945 phone Contact: Dan LaMontagne, PE Email: dan.lamontagne@chathamnc.org
- C. Chatham County Soil Erosion and Sedimentation Control Dunlap Building 80 East Street Pittsboro, NC 27312 (919) 545-8339 phone Contact: Rachael Thorn Email: rachael.thorn@chathamnc.org
- D. Chatham County Public Works 964 East Street, 2nd Floor, Suite 205 Pittsboro, NC 27312 (919) 545-8530 phone Contact: Larry Bridges Email: larry.bridges@chathamnc.org

- E. NCDOT Division 8. District 1 300 DOT Drive P.O. Box 1164 Asheboro, NC 27204
- (336) 318-4000 phone Contact: Justin Richardson, PE Email: jrichardson@ncdot.gov
- F. NCDENR Division of Water Quality 512 N. Salisbury St Archdale Building, 9th Floor Raleigh, NC 27604 (919) 807-6373 phone Contact: Boyd Devane Email: boyd.devane@ncdenr.gov
- G. NCDENR Division of Environmental Health Public Water Supply Section 1634 Mail Service Center Raleigh, NC 27699-1634 (919) 707-9064 phone Contact: Shashi Bhatta Email: shashi.bhatta@ncdenr.gov
- H. NCDENR Division of Water Quality Surface Water Protection 3800 Barrett Drive Raleigh, NC 27609 (919) 791-4200 phone Contact: Danny Smith Email: danny.smith@ncdenr.gov



BRIAR CHAPEL PHASE 10

DATE: DECEMBER 4, 2015 REVISED: JANUARY 28, 2016



VICINITY MAP NTS

PROJECT DATA

NAME OF PROJECT

BRIAR CHAPEL - PHASE 10 CHATHAM COUNTY, NORTH CAROLINA

OWNER:

NNP BRIAR (CHAPEL, LLC
16 WINDY KN	IOLL CIRCLE
CHAPEL HILL	, NC 27516
PHONE:	(919) 951
FAX:	(919) 240
CONTACT:	LEE BOW
EMAIL:	lbowman@

PREPARED BY:

McKIM & C	REED
1730 VAR	SITY DRIVE, SU
RALEIGH,	NORTH CAROL
PHONE:	(919) 233
FAX:	(919) 233
CONTACT	: GARETH
EMAIL:	gavant@r

PROJECT AREA: 19.20 ACRES

These improvements shall be constructed in accordance with the following plans, and the Standard Specifications of NCDOT and Chatham County.



1730 Varsity Drive, Suite 500 Raleigh, North Carolina 27606 Phone: (919)233-8091, Fax: (919)233-8031 F-1222

www.mckimcreed.com

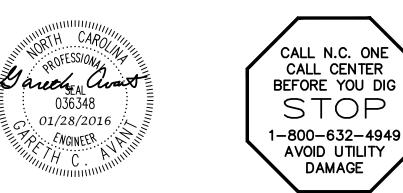
Newland communities

1-0700)-4963 VMAN @newlandco.com

UITE 500 LINA 27606 3-8091 3-8031 I AVANT, PE mckimcreed.com

SHEET INDEX

C0.1	COVER SHEET
C0.2	EXISTING CONDITIONS/DEMOLITION PLAN
C1.0	SITE PLAN
C2.0	UTILITY PLAN
C3.1	STAGE 1 GRADING, DRAINAGE, & EROSION CONTROL PLAN
C3.2	STAGE 2 GRADING, DRAINAGE, & EROSION CONTROL PLAN
C4.1	PLAN & PROFILE ROAD A - STA 18+55 TO STA 28+67
C4.2	PLAN & PROFILE ROAD C - STA 10+00 TO STA 16+02 ALLEY FG-3 - STA 10+00 TO STA 15+71
C4.3	PLAN & PROFILE ROAD F - STA 10+00 TO STA 21+39
C4.4	PLAN & PROFILE ROAD G - STA 10+00 TO STA 22+94
C4.5	PLAN & PROFILE STORM OUTFALL - STA 10+00 TO STA 13+64
D1.1	EROSION AND SEDIMENTATION CONTROL DETAILS
D1.2	EROSION AND SEDIMENTATION CONTROL DETAILS
D2.1	NCDOT ROADWAY DETAILS
D2.2	NCDOT DRAINAGE DETAILS
D2.3	GUARDRAIL DETAILS
D3.1	UTILITY DETAILS
D3.2	UTILITY DETAILS
D4.1	BMP #25 PLAN & DETAILS
D4.2	BMP #25 PLAN & DETAILS
D4.3	BMP #25 PLAN & DETAILS
D4.4	STORM DRAINAGE & SANITARY SEWER TABLES



FINAL DRAWINGS

FOR REVIEW PURPOSES ONLY

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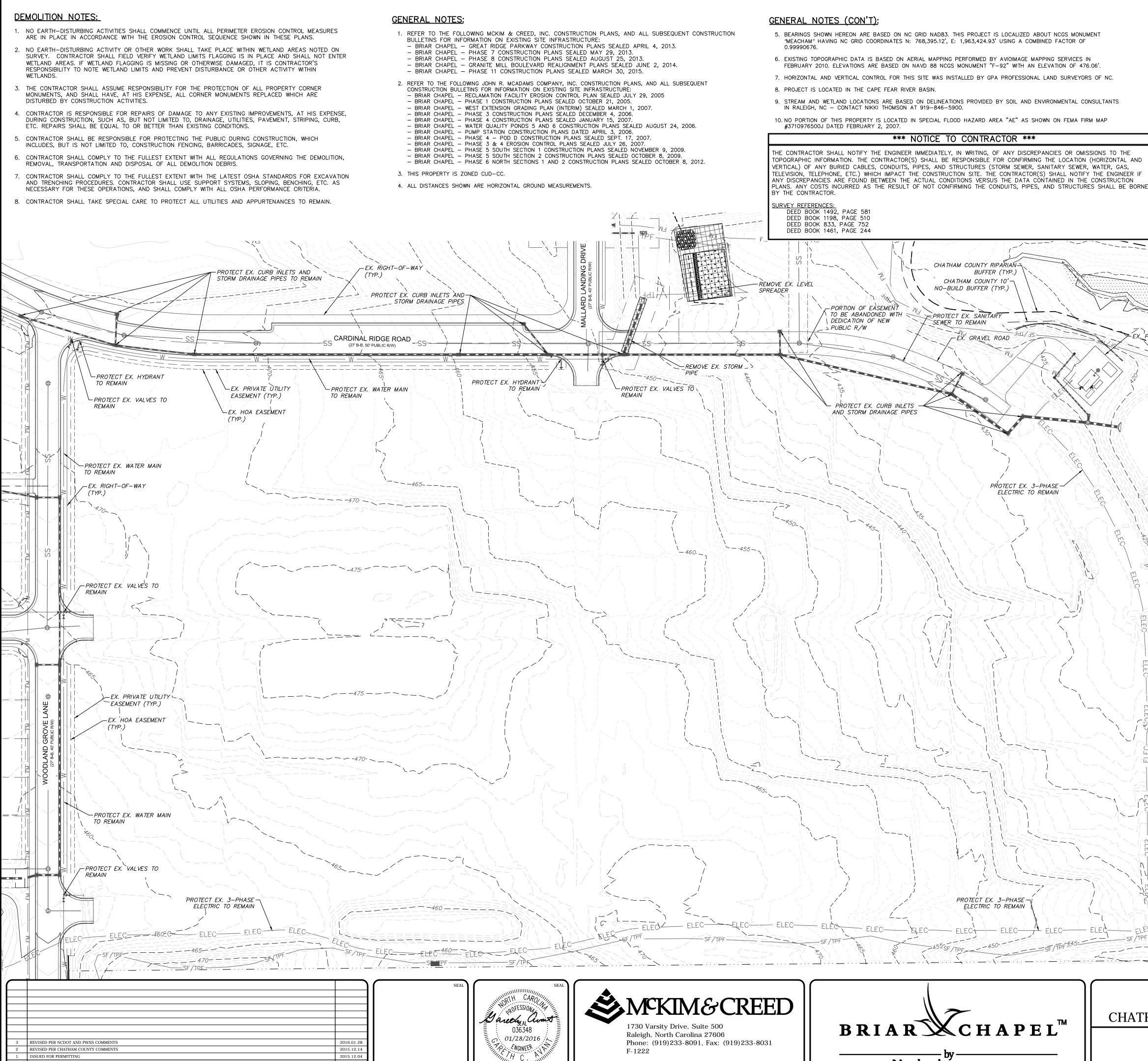
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- NO EARTH-DISTURBING ACTIVITY OR OTHER WORK SHALL TAKE PLACE WITHIN WETLAND AREAS NOTED ON WETLAND AREAS. IF WETLAND FLAGGING IS MISSING OR OTHERWISE DAMAGED, IT IS CONTRACTOR'S RESPONSIBILITY TO NOTE WETLAND LIMITS AND PREVENT DISTURBANCE OR OTHER ACTIVITY WITHIN WETLANDS.
- MONUMENTS, AND SHALL HAVE, AT HIS EXPENSE, ALL CORNER MONUMENTS REPLACED WHICH ARE DISTURBED BY CONSTRUCTION ACTIVITIES.
- ETC. REPAIRS SHALL BE EQUAL TO OR BETTER THAN EXISTING CONDITIONS.
- INCLUDES, BUT IS NOT LIMITED TO, CONSTRUCTION FENCING, BARRICADES, SIGNAGE, ETC.
- REMOVAL, TRANSPORTATION AND DISPOSAL OF ALL DEMOLITION DEBRIS.
- AND TRENCHING PROCEDURES. CONTRACTOR SHALL USE SUPPORT SYSTEMS, SLOPING, BENCHING, ETC. AS NECESSARY FOR THESE OPERATIONS, AND SHALL COMPLY WITH ALL OSHA PERFORMANCE CRITERIA.

DESCRIPTIONS

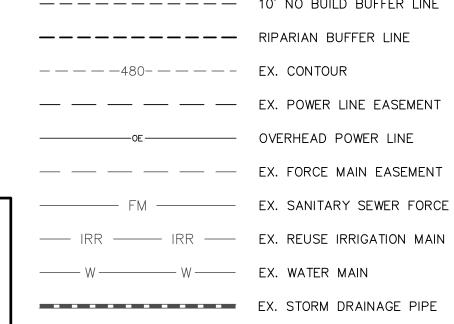
REVISIONS



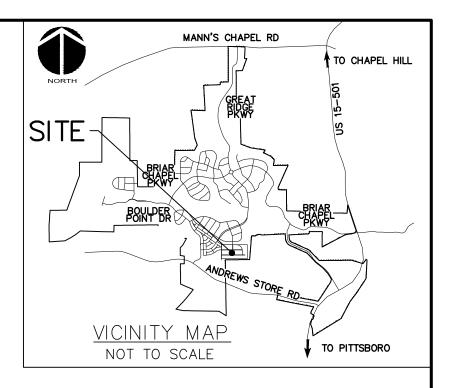
www.mckimcreed.com

Newland communities

LEGEND:



--- --- 10' NO BUILD BUFFER LINE OVERHEAD POWER LINE - FM - EX. SANITARY SEWER FORCE MAIN



_____SF/TPF== ----**`____** ____ ____ >-----BRIAR CHAPEL \sim PROPERTY BOUNDARY BRIAR CHAPEL 100 VIEWSHED BUFFER

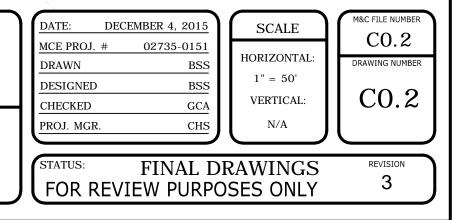


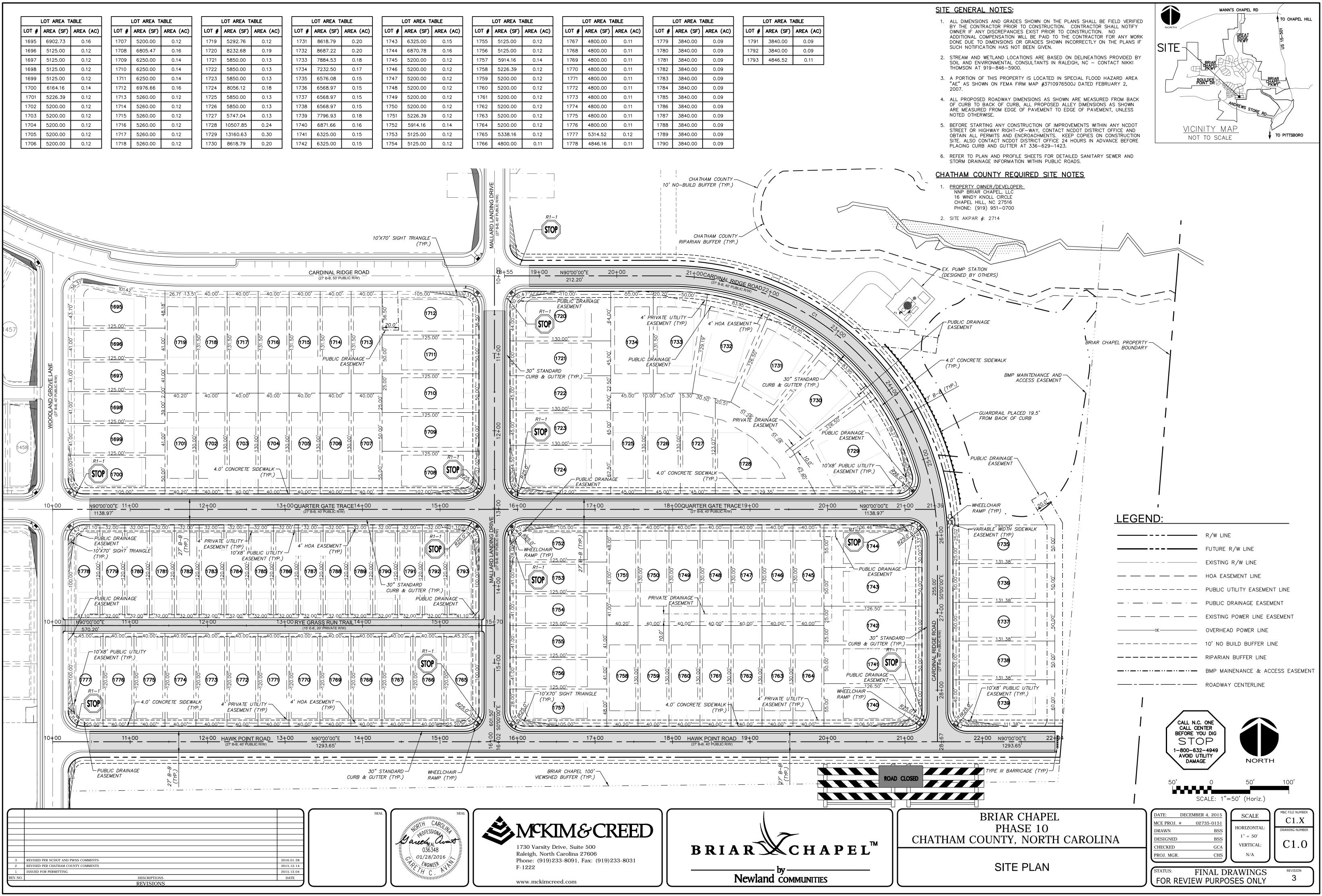


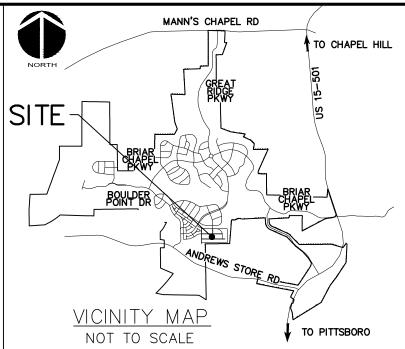
SCALE: 1"=50' (Horiz.)

BRIAR CHAPEL
PHASE 10
ATHAM COUNTY, NORTH CAROLINA

EXISTING CONDITIONS/ DEMOLITION PLAN







UTILITY NOTES:

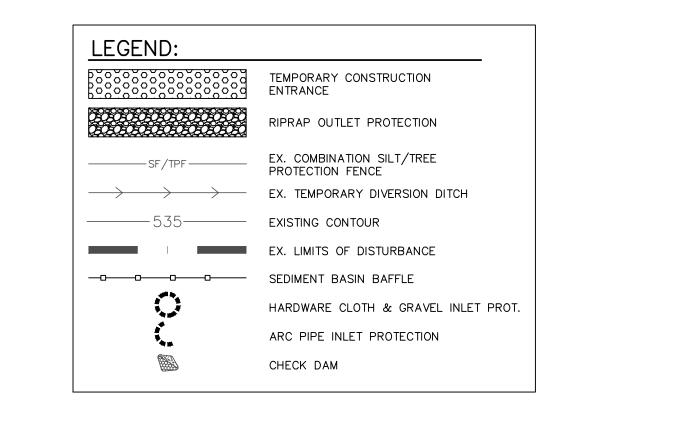
- OF PIPE AT THE LOCATION WHERE INSTALLED.
- (2) THE WATER MAIN IS LAID IN THE SAME TRENCH AS THE SEWER WITH THE WATER MAIN LOCATED AT ONE SIDE ON A BENCH OF UNDISTURBED EARTH, AND WITH THE ELEVATION OF THE BOTTOM OF THE WATER MAIN AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER.
- ELEVATION THAT THE BOTTOM OF THE WATER MAIN IS AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER, UNLESS LOCAL CONDITIONS OR BARRIERS PREVENT AN 18-INCH VERTICAL SEPARATION - IN WHICH CASE BOTH THE WATER MAIN AND SEWER SHALL BE CONSTRUCTED OF DUCTILE IRON AND WITH JOINTS THAT ARE EQUIVALENT TO WATER MAIN STANDARDS FOR A DISTANCE OF 10 FEET ON EACH SIDE OF THE POINT OF CROSSING.
- WHERE A WATER MAIN CROSSES UNDER A SANITARY SEWER, BOTH THE WATER MAIN AND SEWER SHALL BE CONSTRUCTED OF DUCTILE IRON AND WITH JOINTS EQUIVALENT TO WATER MAIN STANDARDS FOR A DISTANCE OF 10 FEET ON EACH SIDE OF THE POINT OF CROSSING. A SECTION OF WATER MAIN PIPE SHALL BE CENTERED AT THE POINT OF CROSSING.
- 18" MIN. VERTICAL CLEARANCE CANNOT BE MET BETWEEN STORMWATER AND WATER.

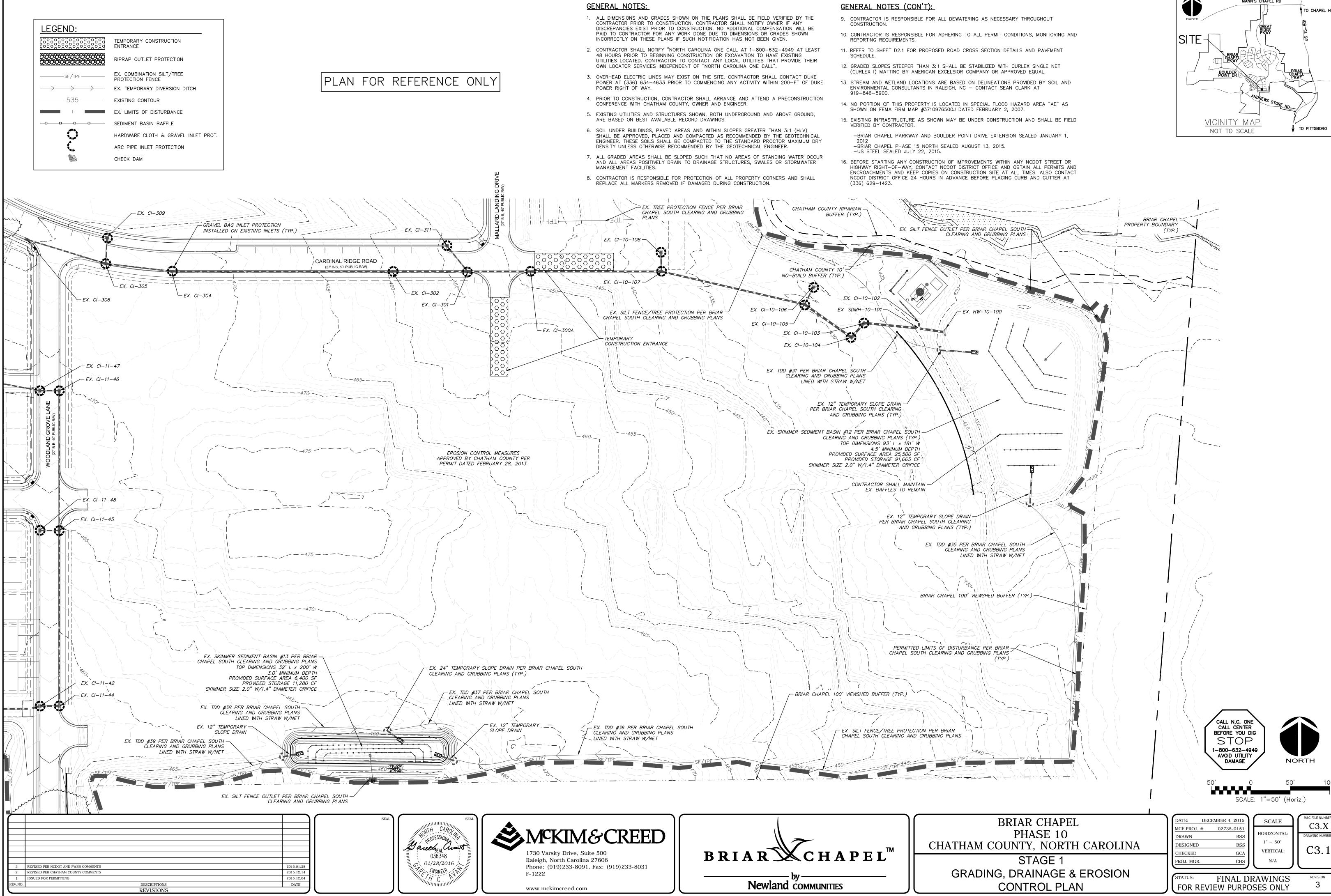
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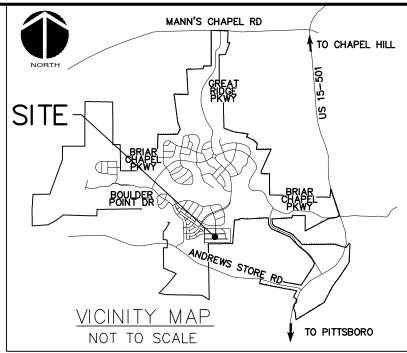
- 3/4".

- AGENT THEREOF.









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-57	(1696)	(1719)	(718)	(717) (716)	(715)	(714)	(713)		$\begin{array}{cccc} x. & cl - 301 \\ cl - 10- \\ cl - 55 \\ cl - 26 \\$
	EX. CI-11-47			APPLY RECH OR GREATER	P ON SLOPES 3 R (TYP.)			460	
	EX. CI-11-47			2.					(7710)
, FLANE	1699				470			465	(709
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h.uz)	CI-10-28								
	EX. CI-11-48								
	CI-10-27				475 				<u>CI-10</u> -19
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	CB-10-30 CB-10-29		JTH CLEARING AN	ID GRUBBING PLANS"	') (TYP.) \ ₁				CB-10-2
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8. BEGIN FINAL GRADING OPERATIONS FOR ROADWAY.

GRAVEL INLET PROTECTION AS SHOWN ON PLANS.

9. AS ELEVATIONS ARE BROUGHT TO FINAL GRADES AND STORM PIPING IS INSTALLED

IN ROADWAY SECTIONS, CONTRACTOR SHALL INSTALL HARDWARE CLOTH AND

STAGE 2 CONSTRUCTION SEQUENCE:

THE INTENT OF THE CONSTRUCTION SEQUENCE IS TO PROVIDE THE CONTRACTOR

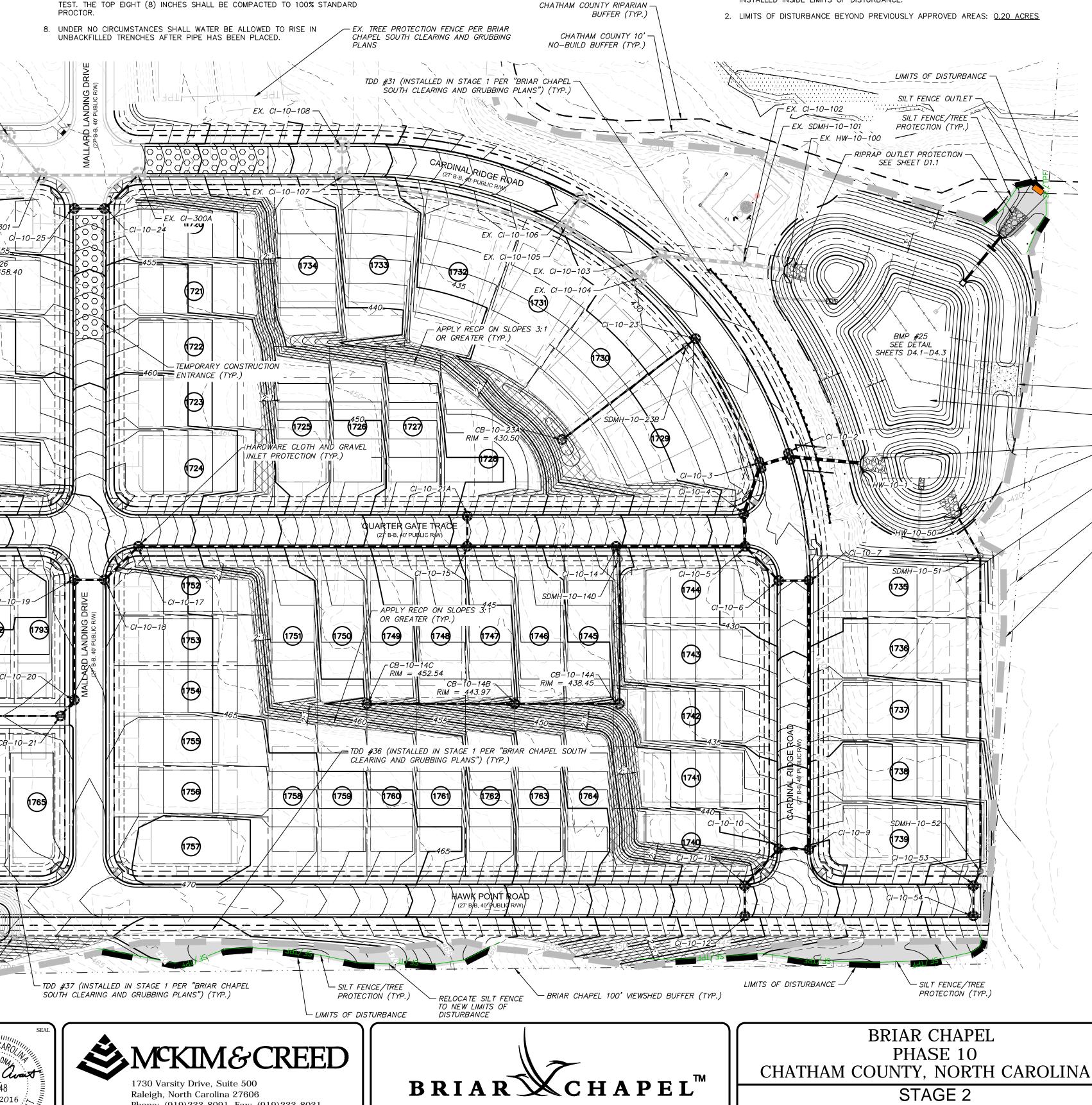
WITH A GENERAL GUIDE FOR CONSTRUCTION PURPOSES. THIS SEQUENCE IS NOT

INTENDED TO OUTLINE ALL CONSTRUCTION ACTIVITIES ON THIS PROJECT.

STORM DRAINAGE NOTES:

- 1. STORM DRAINAGE PIPES SHALL BE:
- RCP/CLASS III FOR STORM DRAINAGE INSIDE PUBLIC RIGHT-OF-WAY OR CONNECTING INTO STRUCTURE INSIDE PUBLIC RIGHT-OF-WAY IN ACCORDANCE WITH NCDOT STANDARDS UNLESS NOTED OTHERWISE.
- 2. ALL CONCRETE SHALL MEET A MINIMUM 3,000 PSI COMPRESSIVE STRENGTH.
- TED TO 3. ALL PIPE IN STORM DRAIN STRUCTURES SHALL BE STRUCK EVEN WITH INSIDE WALL
 - 4. THE INTERIOR SURFACES OF ALL STORM DRAINAGE STRUCTURES SHALL BE POINTED UP AND SMOOTHED TO AN ACCEPTABLE STANDARD USING MORTAR MIXED TO MANUFACTURER'S SPECIFICATIONS.
 - 5. ALL BACKFILL SHALL BE NON-PLASTIC IN NATURE, FREE FROM ROOTS, VEGETATION MATTER. WASTE CONSTRUCTION MATERIAL OR OTHER OBJECTIONABLE MATERIAL. UTILIZED MATERIAL SHALL BE CAPABLE OF BEING COMPACTED BY MECHANICAL MEANS AND SHALL HAVE NO TENDENCY TO FLOW OR BEHAVE IN A PLASTIC MANNER UNDER THE TAMPING BLOWS OR PROOF ROLLING.
 - 6. MATERIALS DEEMED AS UNSUITABLE FOR BACKFILL PURPOSES BY THE OWNER'S REPRESENTATIVE SHALL BE REMOVED AND REPLACED WITH SUITABLE MATERIAL.
 - 7. BACKFILLING OF TRENCHES SHALL BE ACCOMPLISHED IMMEDIATELY AFTER PIPE IS LAID. THE FILL AROUND THE PIPE SHALL BE THOROUGHLY COMPACTED TO 95% OF THE MAXIMUM DRY DENSITY OBTAINABLE WITH THE STANDARD PROCTOR TEST. THE TOP EIGHT (8) INCHES SHALL BE COMPACTED TO 100% STANDARD

- 9. ALL FLARED END SECTIONS DISCHARGING INTO WATER QUALITY PONDS WILL HAVE A CONCRETE PAD POURED UNDERNEATH THE FLARED END SECTION IN ACCORDANCE WITH PROVIDED CONSTRUCTION DETAILS.
- 10. RIM ELEVATIONS OF STORM DRAIN STRUCTURES SHALL BE FIELD VERIFIED. 11. STORM DRAINAGE WITHIN PRIVATE EASEMENTS TO BE OWNED, OPERATED AND
- MAINTAINED BY HOME OWNER'S ASSOCIATION OR AGENT THEREOF. 12. LENGTHS SHOWN FOR STORM DRAINAGE PIPES ARE MEASURED FROM CENTER
- OF STORM STRUCTURES AND TO ENDS OF FLARED END SECTIONS. SLOPES CALCULATED ARE BASED ON THIS LENGTH. 13. CB DENOTES CATCH BASINS TO BE INSTALLED IN THE CENTERS OF PAVED
- ALLEYS AND NON-PAVED AREAS. REFER TO NCDOT DETAILS 840.19 AND 840.24 ON SHEET D-2.2 FOR NON-PAVED AREAS AND NCDOT DETAIL 840.35 FOR TRAFFIC BEARING DROP INLETS.
- 14. CI DENOTES CURB INLETS TO BE INSTALLED IN THE CURB LINES OF ROADWAYS. REFER TO NCDOT DETAILS 840.02 AND 840.03 ON SHEET D-2.2. 15. DRAINAGE STRUCTURES CB-10-30, CB-10-30A, CB-10-30B AND CB-10-21, CB-10-21A ARE TRAFFIC BEARING DROP INLETS.



F-1222

Phone: (919)233-8091, Fax: (919)233-8031

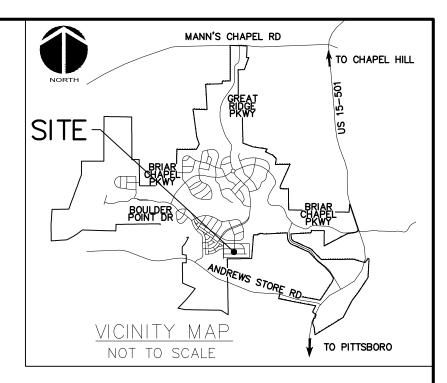
SELF INSPECTION NOTICE:

NOTIFICATION OF LAND RESOURCES SEDIMENT AND EROSION CONTROL SELF-INSPECTION PROGRAM: THE SEDIMENTATION POLLUTION CONTROL ACT WAS AMENDED IN 2006 TO REQUIRE THAT PERSONS RESPONSIBLE FOR LAND-DISTURBING ACTIVITIES INSPECT A PROJECT AFTER EACH PHASE OF THE PROJECT TO MAKE SURE THAT THE APPROVED EROSION AND SEDIMENTATION CONTROL PLAN IS BEING FOLLOWED. RULES DETAILING THE DOCUMENTATION OF THESE INSPECTIONS TOOK EFFECT OCTOBER 1, 2010. THE SELF-INSPECTION PROGRAM IS SEPARATE FROM THE WEEKLY SELF-MONITORING PROGRAM OF THE NPDES STORMWATER PERMIT FOR CONSTRUCTION ACTIVITIES. THE FOCUS OF THE SELF-INSPECTION REPORT IS THE INSTALLATION AND MAINTENANCE OF EROSION AND SEDIMENTATION CONTROL MEASURES ACCORDING TO THE APPROVED PLAN. THE INSPECTIONS MUST BE CONDUCTED AFTER EACH PHASE OF THE PROJECT, AND CONTINUED UNTIL PERMANENT GROUND COVER IS ESTABLISHED IN ACCORDANCE WITH NCGS 113A-54.1 AND 15A NCAC 4B.0131. THE SELF-INSPECTION REPORT FORM IS AVAILABLE AS AN EXCEL SPREADSHEET FROM HTTP://WWW.DLR.ENR.STATE.NC.US/PAGES/SEDIMENTATION_NEW.HTML. IF YOU HAVE QUESTIONS OR CANNOT ACCESS THE FORM, PLEASE CONTACT THIS OFFICE AT (919)

LIMITS OF DISTURBANCE NOTES:

1. SILT FENCE AND TREE PROTECTION FENCE LINES ALSO DELINEATE THE LIMITS OF DISTURBANCE. ALL SILT FENCING OR TREE PROTECTION FENCING SHALL BE INSTALLED INSIDE LIMITS OF DISTURBANCE.

STAGE 2 **GRADING, DRAINAGE & EROSION** CONTROL PLAN



NPDES GROUNDCOVER STABILIZATION TIMEFRAMES

SITE AREA DESCRIPTION	STABILIZATION	TIMEFRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES, SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	14 DAYS FOR SLOPES 10' OR LESS IN LENGTH AND NOT STEEPER THAN 2:1
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HQW ZONES

- EMERGENCY SPILLWAY TO REMAIN WITHIN LIMITS OF DISTURBANCE

- SKIMMER SEDIMENT BASIN #12 (INSTALLED IN STAGE 1 PER "BRIAR CHAPEL SOUTH CLEARING AND GRUBBING PLANS") (TYP.) - RIPRAP OUTLET PROTECTION SEE SHEET D1.1

SOUTH CLEARING AND GRUBBING PLANS") (TYP.)

- BRIAR CHAPEL 100' VIEWSHED BUFFER (TYP.)

- PERMITTED LIMITS OF DISTURBANCE (TYP.)

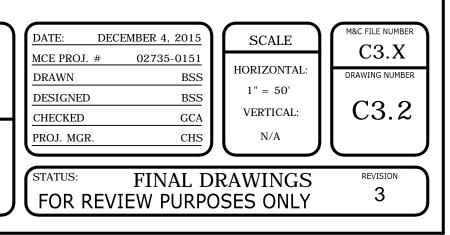
LEGEND:

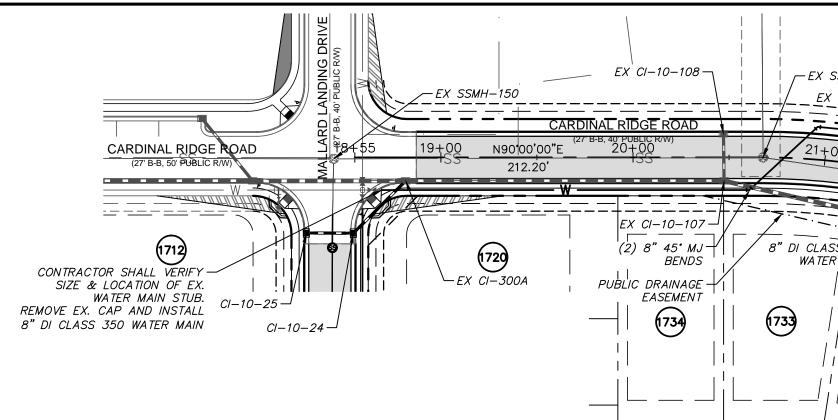
TEMPORARY CONSTRUCTION ENTRANCE
RIPRAP OUTLET PROTECTION
ADDITIONAL DISTURBED AREA
COMBINATION SILT/TREE PROTECTION FENCE
TEMPORARY DIVERSION DITCH
EXISTING CONTOUR
PROPOSED CONTOUR
EX. LIMITS OF DISTURBANCE
NEW LIMITS OF DISTURBANCE
SEDIMENT BASIN BAFFLE
HARDWARE CLOTH & GRAVEL INLET
ARC PIPE INLET PROTECTION
CHECK DAM

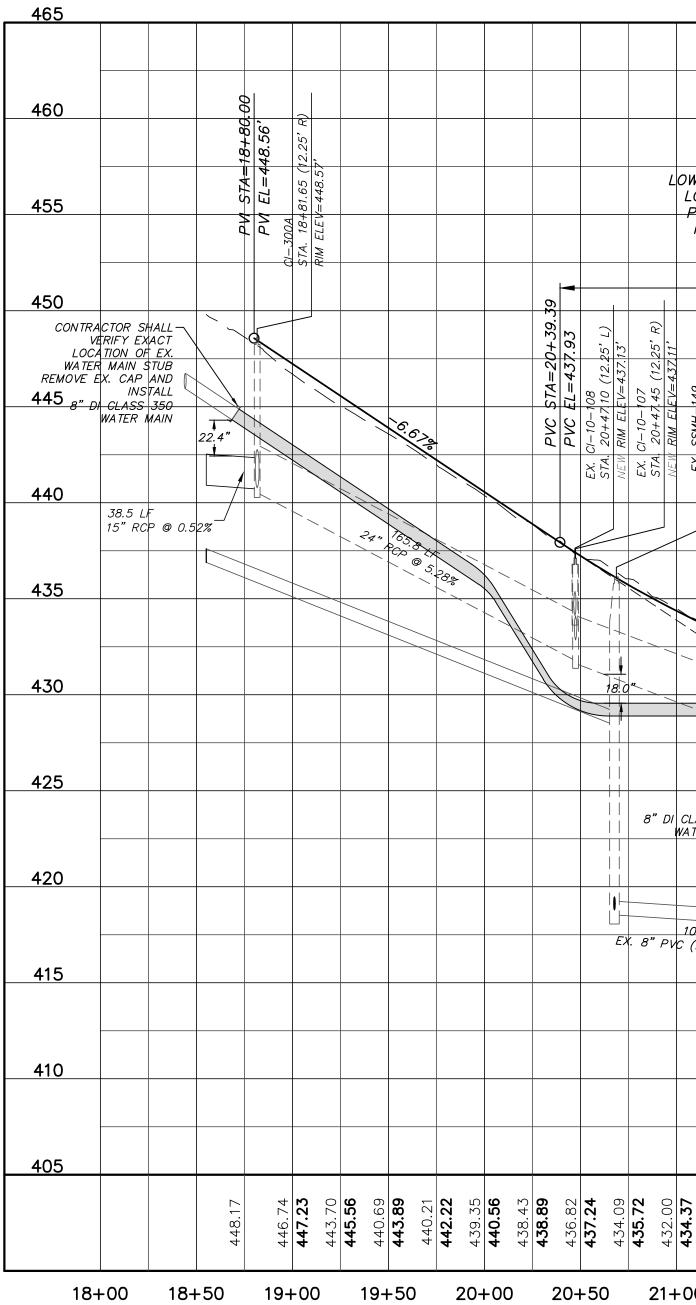


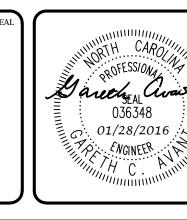
& GRAVEL INLET PROT.

SCALE: 1"=50' (Horiz.)



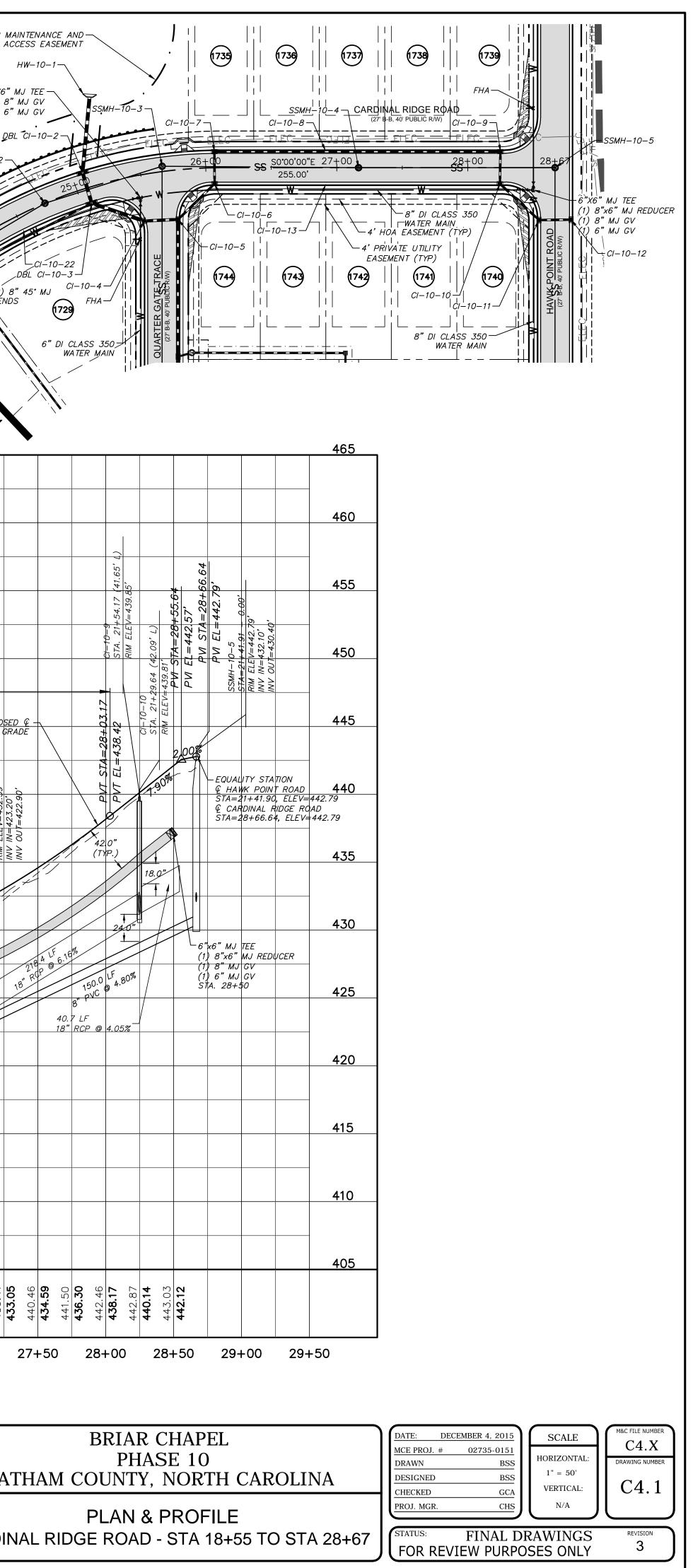


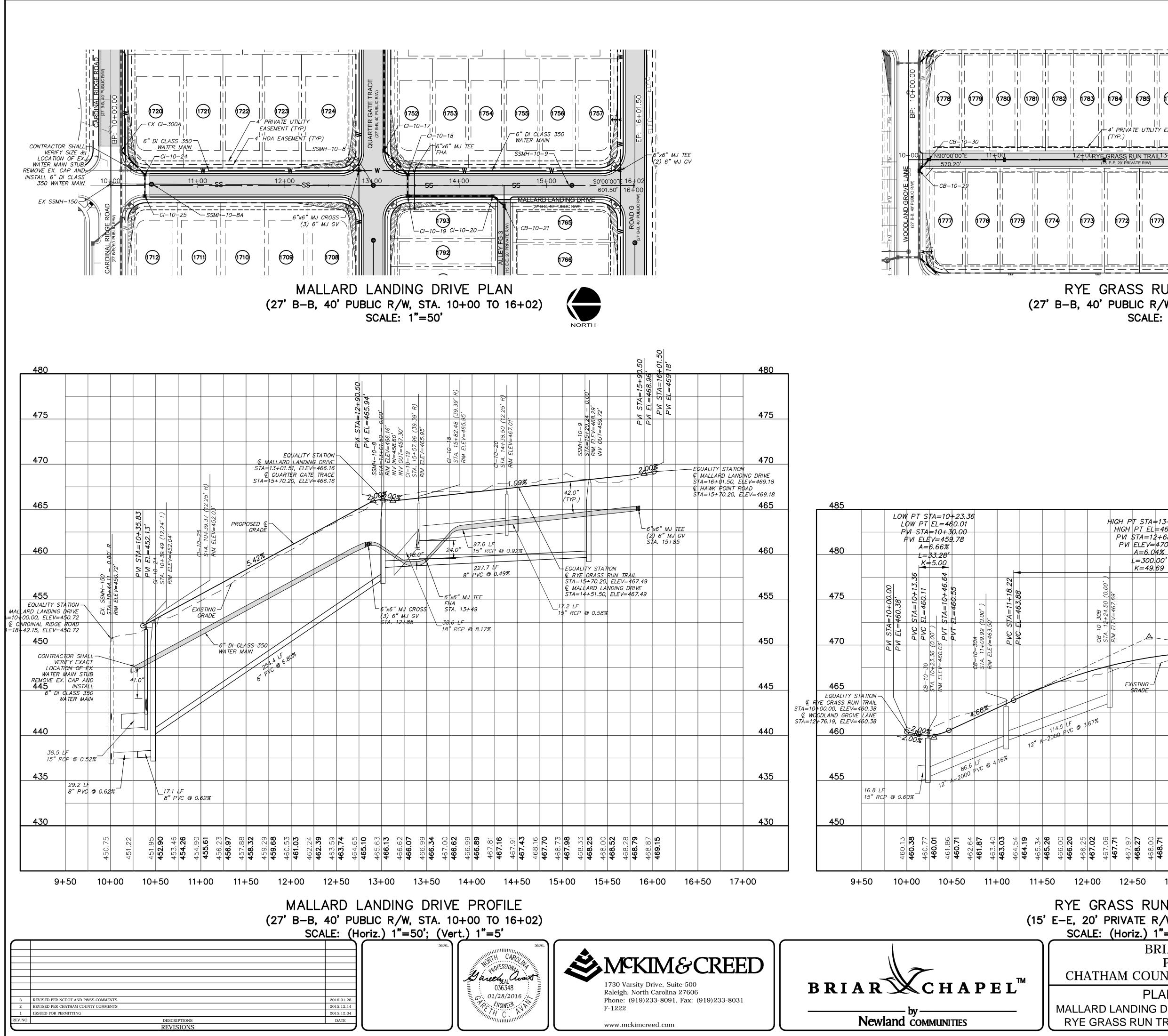




3	REVISED PER NCDOT AND PWSS COMMENTS	2016.01.28
2	REVISED PER CHATHAM COUNTY COMMENTS	2015.12.14
1	ISSUED FOR PERMITTING	2015.12.04
REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

SSMH-149 X SSMH-148 X SSMH-1	CURVE #	# RADIUS 346.50'		CHORD BEARING	CHORD LENGTH 490.02'	DELTA 90°00'00"			BMP MA. ACC
10'X8' PUBLIC UTILITY = EASEMENT (TYP) 100 10'X8' PUBLIC UTILITY = EASEMENT (TYP) 10 10'X8' PUBLIC UTILITY = EASEMENT (TYP) 10 10'X8' PUBLIC UTILITY = EASEMENT (TYP) 10 10 10 10 10 10 10 10 10 10	CA	RDIN	UBLIC R)GE RO/ /W, STA. E: 1"=50'				SO OPTIMIE	8"X6" A (1) 8" (1) 6" DBL SSMH-10-2
	V=428	INV 0UT=417.66 INV 0UT=417.46' C/-10-23 C/-10-23 STA. 23+87.60 (12.23' R) RIM EIEV=427.54'	$PC EL=24\pm 53.17$	SSMH-10-2 STA=24+73.57 - 0.00' RIM ELEV=426.72' INV IN=418.95' INV OUT=418.75' INV OUT=418.75' STA. 25+07.72 (12.24' R) DBL 0(-10-3 STA. 25+07.72 (12.24' R)	DBL GI-10-2 DBL GI-10-2 STA. 25+08.01 (12.25' L) RIM ELEV=426.30' SSMH-10-3 SIA=25+67.07 - 3.99' L		T STA=25- PT EL=42 STA=26+22 ELEV=424 A=9.25% L=350.00' K=37.85 EX. GRADE EX. GRADE	6.59 8.17	<i>Bit is a series of the series</i>
	428.32 <i>4</i> 29.34 429.34	#71.23 #71.12 #73.65 #73.65 #73.65 #73.65 #73.65 #73.65 #73.65 #73.65 #73.65 #73.65 #73.65 #73.65 #73.65 #73.65 #73.65 #74.65	430.55 HERE 9 MET: 8 421.38 426.98 426.98	432.15 432.15 432.64 432.64 432.64 432.64 432.64 432.64 432.64 432.64 432.64 432.64 432.64 432.65 432.65 432.65 432.75	426.65 426.65 426.87 426.87 426.87 426.87 426.87	427.26 434.67 427.81	435.44 428.53 436.31	429.41	438.37 438.37 431.67 439.41 433.05
-00 21+50 22+00 22+50 23+00 23- CARDINA (27' B–B, 40' PU SCALE: (I SEAL	UBLIC <u>Horiz</u> .)	R/W, 1"=5	ROAD STA. 18 50'; (Ver	PROFILI (+55 TO 2) (t.) 1"=5'	28+67)			+50 M	27+00 CHAT CARDIN





	(7772	 		77) 		770			1769			1768			1767			(76						MALLARD LANDING DRIVE	(27' 🗠 8, 40' PUBLIC R/W)									
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CB-10-30B STA. 12+24.50 (0.	LEV=467.69'												CTA-14110	=468	10-21A	14+45.98 FI FV-468					CB-10-21 STA 15-41			PVC EL=4			- Q						475	5
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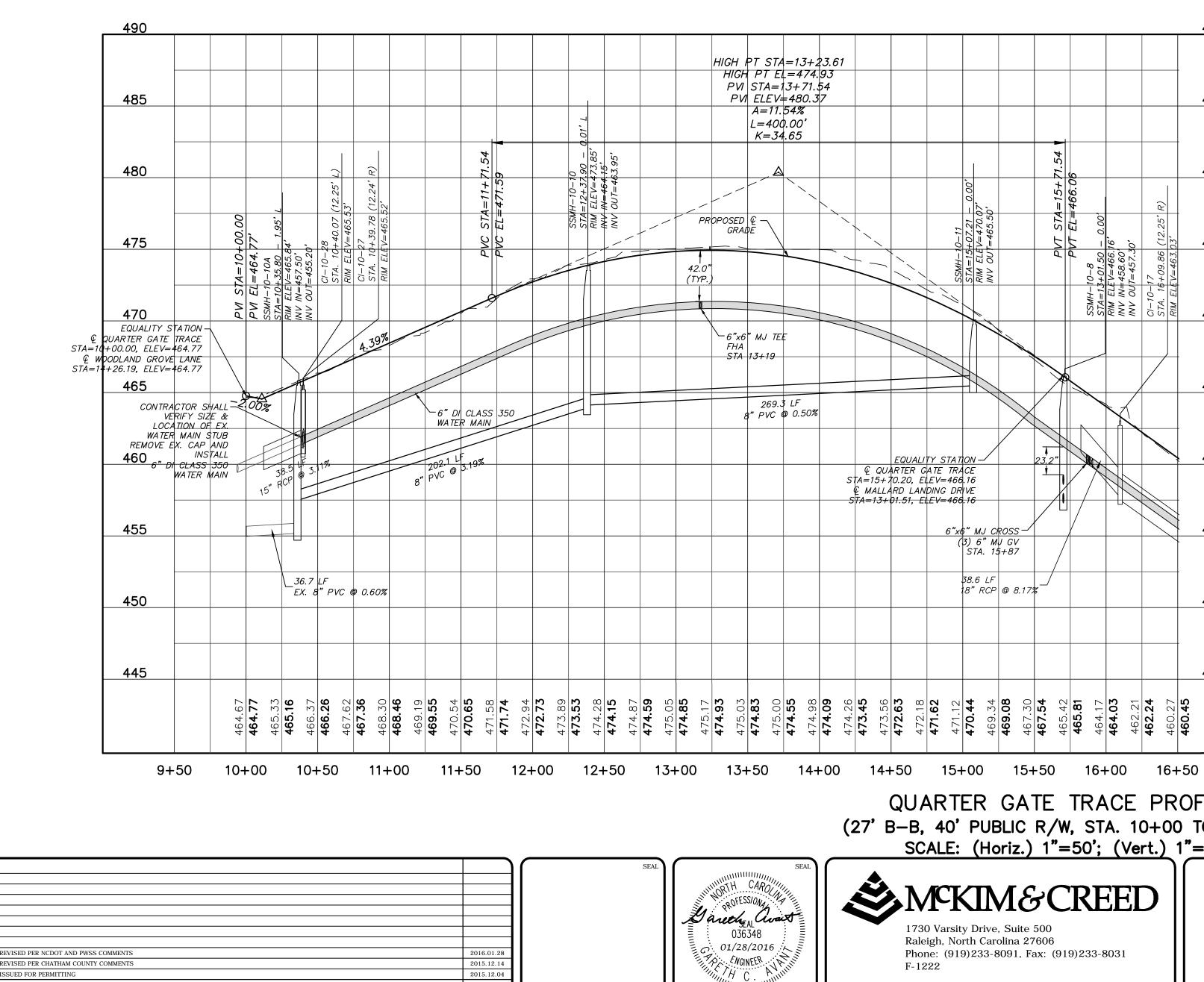
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+4' PRIVATE UTILITY EASEMENT

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(1787)

CONTRACTOR SHALL— VERIFY SIZE & LOCATION OF EX. WATER MAIN STUB. REMOVE EX. CAP AND INSTALL 6" DI CLASS 350 WATER MAIN	BP: 10+00.00	(1099) (1099)		' ' ' ' ' ' ' ' ' ' ' (705) (706) ' (1) (705) (706) ' (1) (705) (706) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) <
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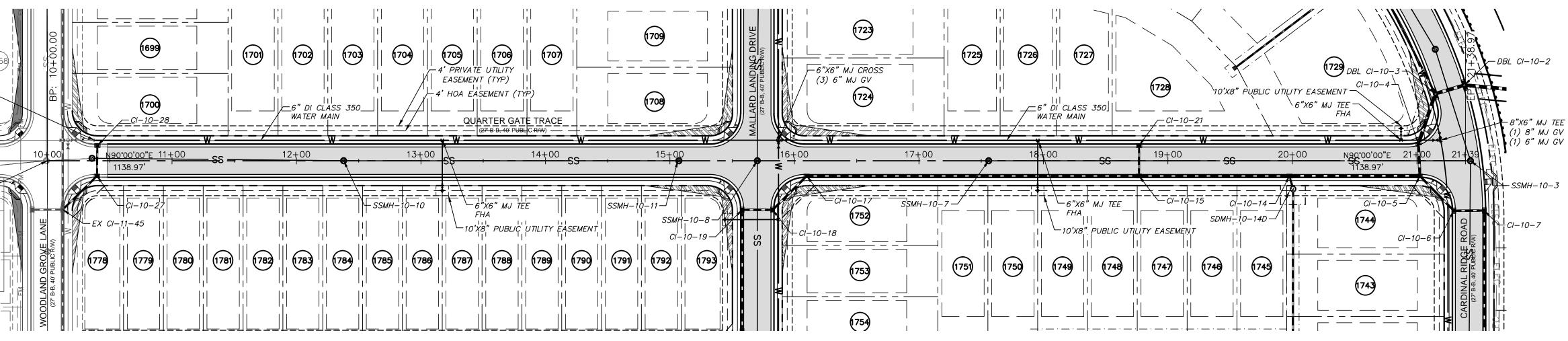
2015.12.04

DATE

REVISED PER CHATHAM COUNTY COMMENT

DESCRIPTIONS REVISIONS

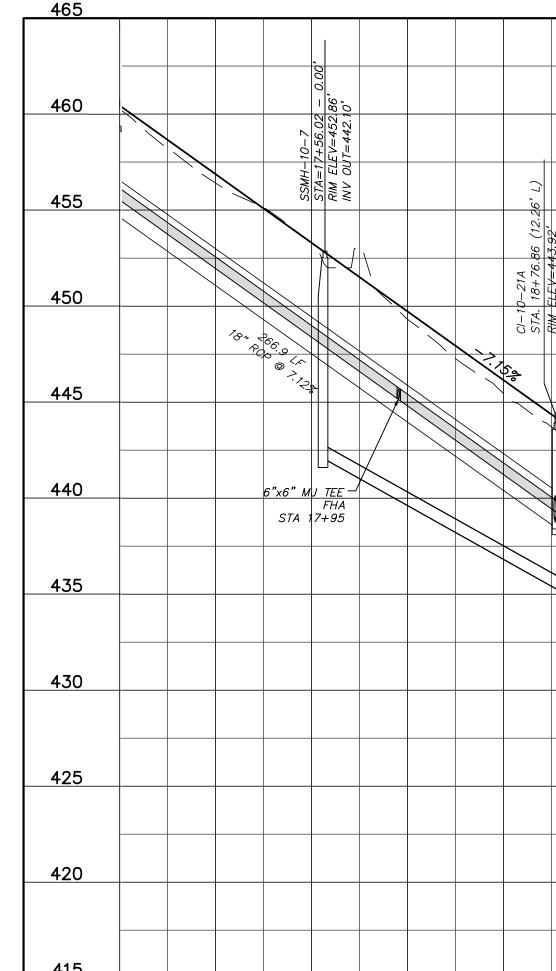
ISSUED FOR PERMITTING



QUARTER GATE TRACE PLAN (27' B-B, 40' PUBLIC R/W, STA. 10+00 TO 21+39) SCALE: 1"=50'

54

www.mckimcreed.com



76.

480 20 STA=15+ EL=466.0 <u>HH-10-11</u> =15+07.21 ELEV=470. OUT=465.5</u> SSMH-10-8 STA=13+01.50 - 0.0 RIM ELEV=466.16' INV IN=458.60' INV OUT=457.30' CI-10-17 CI-10-17 STA.16+09.86 (12.2 RIM ELEV=463.03' PVT PVT 475 SSMI STA= RIM INV 470 465 460 EQUALITY STATION – QUARTER GATE TRACE STA=15+70.20, ELEV=466.16 QMALLARD LANDING DRIVE STA=13+01.51, ELEV=466.16 23.2" 455 <u>6"x6" MJ CROSS</u> (3) 6" MJ GV STA. 15+87 38.6 LF 18" RCP @ 8.17% 415 450 445 410 460.27 460.45 458.66 458.66 456.41 456.41 456.87 455.08 455.08 455.08 455.08 455.08 455.08 455.02 455.02 455.02 453.02 449.31 449.31 449.31 447.27 447.93 445.45 446.14 16+50 17+00 17+50 18+00 18+50 QUARTER GATE TRACE PROFILE (27' B-B, 40' PUBLIC R/W, STA. 10+00 TO 21+39) SCALE: (Horiz.) 1"=50'; (Vert.) 1"=5' SMCKIM&CREED BRIAR CHAPEL CHA 1730 Varsity Drive, Suite 500 Raleigh, North Carolina 27606 Phone: (919)233-8091, Fax: (919)233-8031 F-1222 QUART Newland communities

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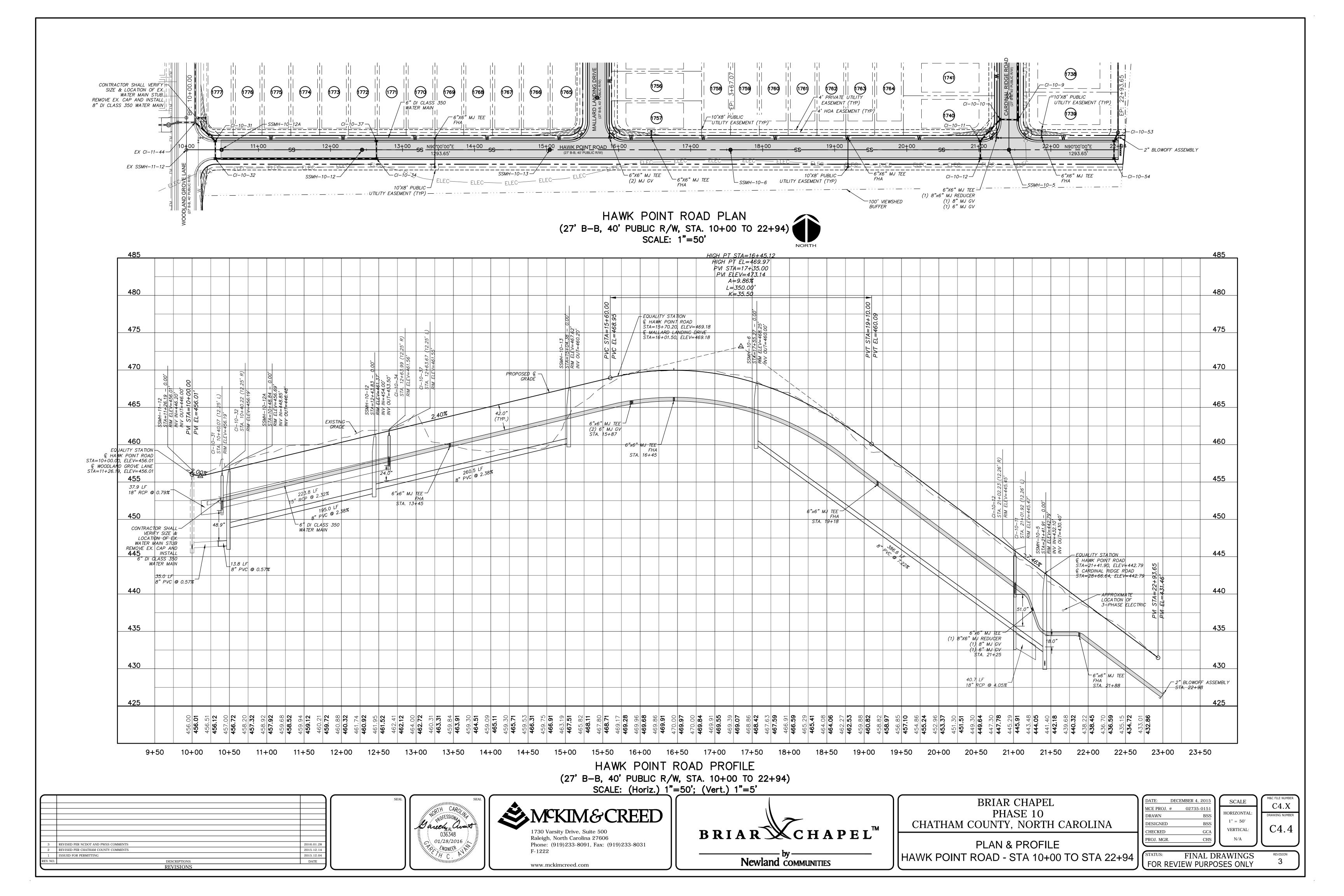
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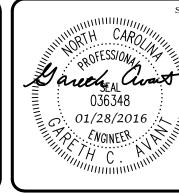
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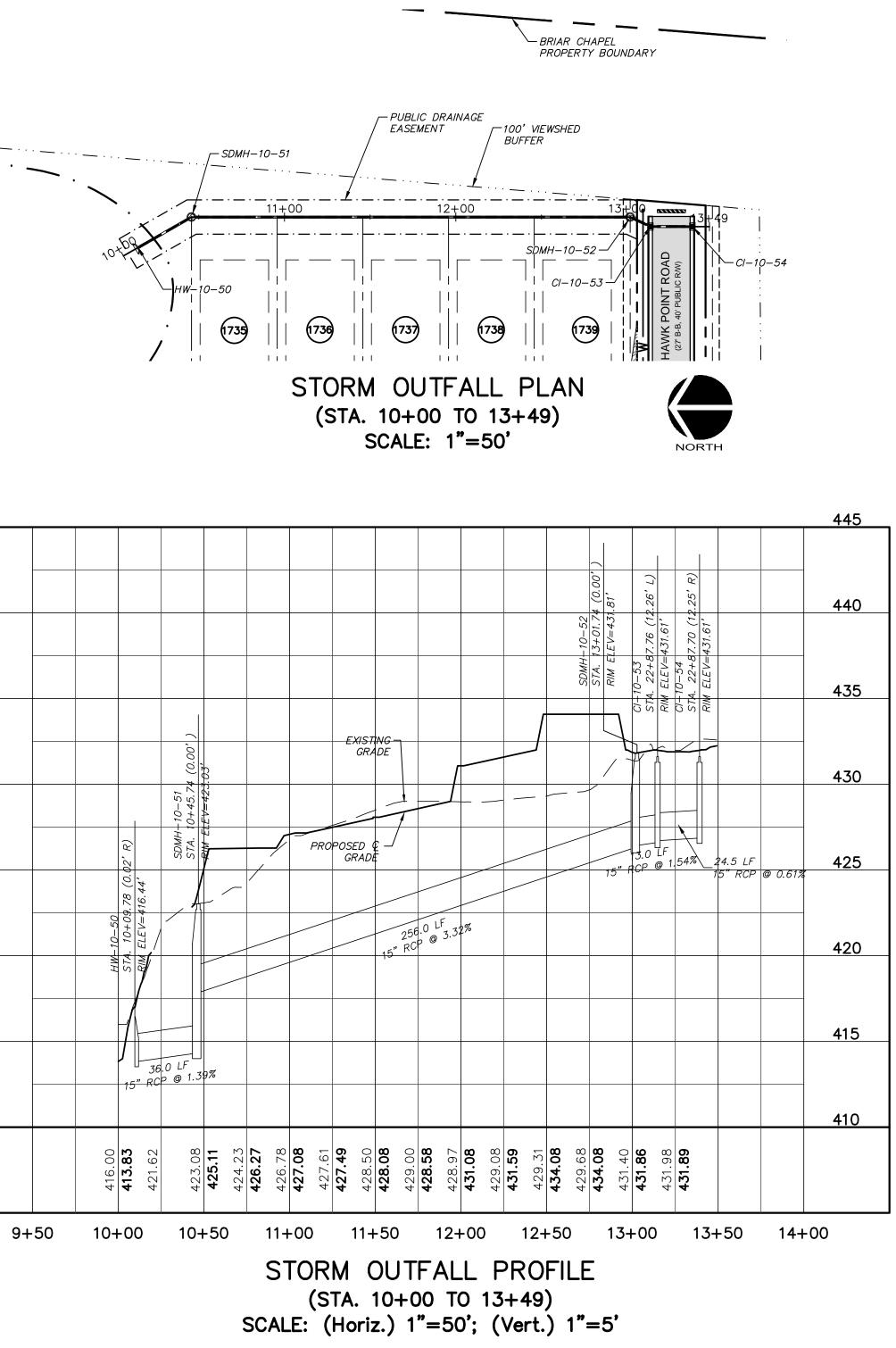
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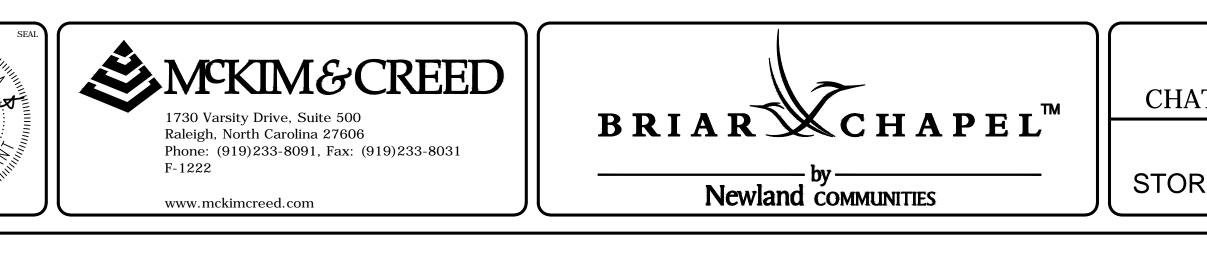


445	
440	
435	
430	
425	
420	
415	
410	

			SEA
3	REVISED PER NCDOT AND PWSS COMMENTS	2016.01.28	
2	REVISED PER CHATHAM COUNTY COMMENTS	2015.12.14	
1	ISSUED FOR PERMITTING	2015.12.04	
EV.NO.	DESCRIPTIONS	DATE	
	REVISIONS		l







BRIAR CHAPEL PHASE 10 CHATHAM COUNTY, NORTH CAROLINA

PLAN & PROFILE	
RM OUTFALL - STA 10+00 TO STA 13+	-49

DATE: DE	ECEMBER 4, 2015	SCALE	M&C FILE NUMBE
MCE PROJ. # DRAWN DESIGNED CHECKED PROJ. MGR.	02735-0151 BSS BSS GCA CHS	HORIZONTAL: 1" = 50' VERTICAL: N/A	C4.5 DRAWING NUMBE C4.5
STATUS: FOR RE	FINAL DI /IEW PURPO	RAWINGS SES ONLY	REVISION

RECOMMENDATIONS FOR LATE WINTER AND EARLY SPRING

SEEDING MIXTURE <u>SPECIES</u> TALL FESCUE

<u>RATE (Ib/acre)</u> 80 40

KOBE LESPEDEZA

SEEDING DATES:

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

 BEST
 POSSIBLE

 FALL
 AUG. 15 - SEPT. 15
 AUG. 20 - OCT. 25

 LATE WINTER:
 FEB. 15 - MAR. 21
 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 Ib/acre GROUND AGRICULTURAL LIMESTONE AND 750 Ib/acre 10-10-10 FERTILIZER

MULCH: APPLY 4.000 Ib/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 Ib/acre SUDANGRASS OR 15 Ib/acre GERMAN MILLET. PRIOR TO MAY 1 OR AFTER AUG. 15, ADD 40 Ib/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 Ib/acre RYE GRAIN AND USE A CHANNEL LINING THAT OFFERS MAXIMUM PROTECTION

SOIL AMENDMENTS:

FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 4,000 Ib/acre GROUND AGRICULTURAL LIMESTONE AND 1,000 Ib/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

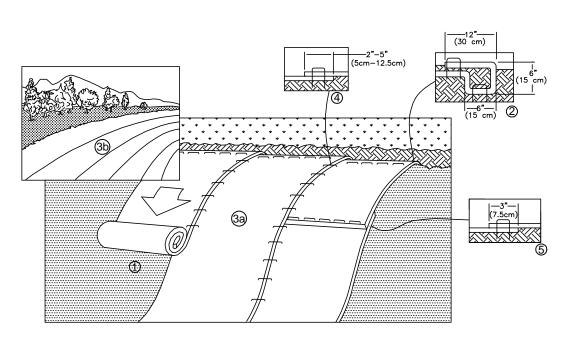
FLOW. ON CHANNEL SIDE SLOPES ABOVE THIS HEIGHT, AND IN DRAINAGES NOT REQUIRING TEMPORARY LININGS, APPLY 4,000 Ib/acre GRAIN STRAW, AND ANCHOR STRAW BY STAPLING NETTING OVER THE TOP.

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 Ib/acre 10-10-10. MOW REGULARLY TO A HEIGHT OF 2-4 INCHES.

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





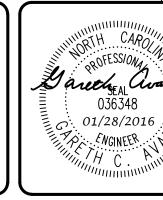
1. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECPS), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.

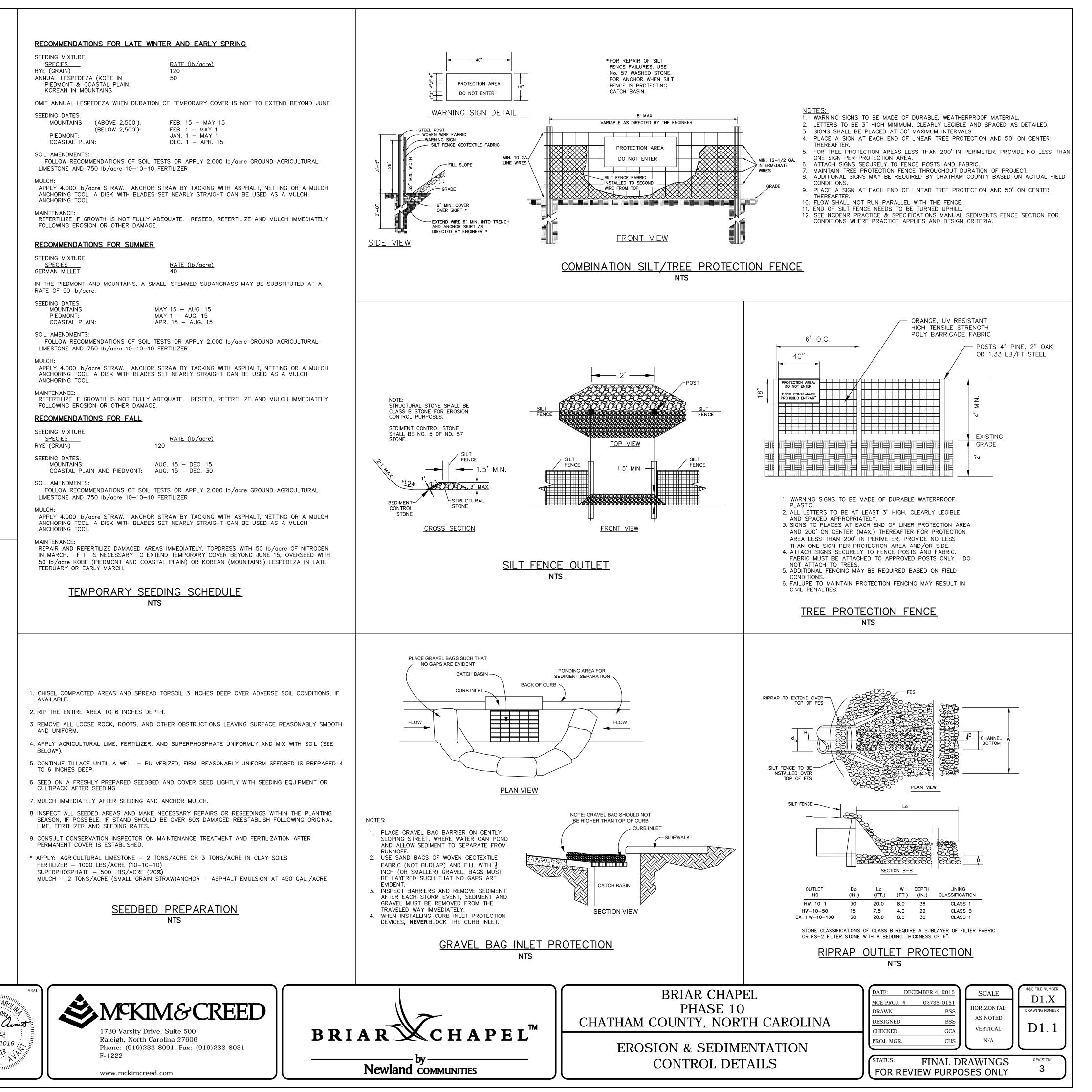
- 2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE RECPS IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH WITH APPROXIMATELY 12" (30 CM) OF RECPS EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE RECPS WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) APART IN THE BOTTOM OF THE TRENCH. 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.
- 3. 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.
- 4. THE EDGES OF PARALLEL RECPS MUST BE STAPLED WITH APPROXIMATELY 2" -5" (5 CM -12.5 CM) OVERLAP DEPENDING ON RECP'S TYPE.
- 5. 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.

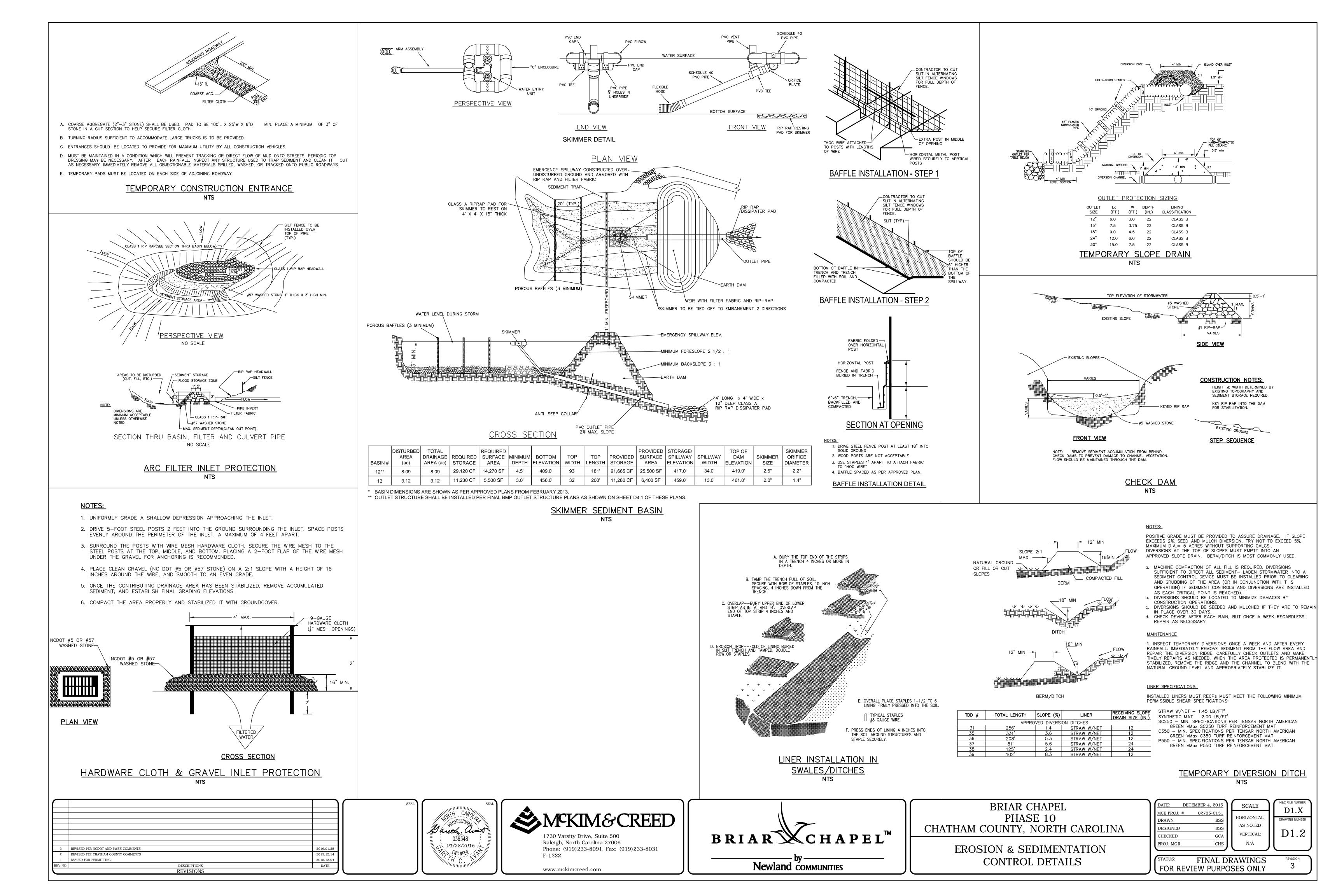
NOTE: *IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 CM) MAY BE NECESSARY TO PROPERLY SECURE THE RECPS.

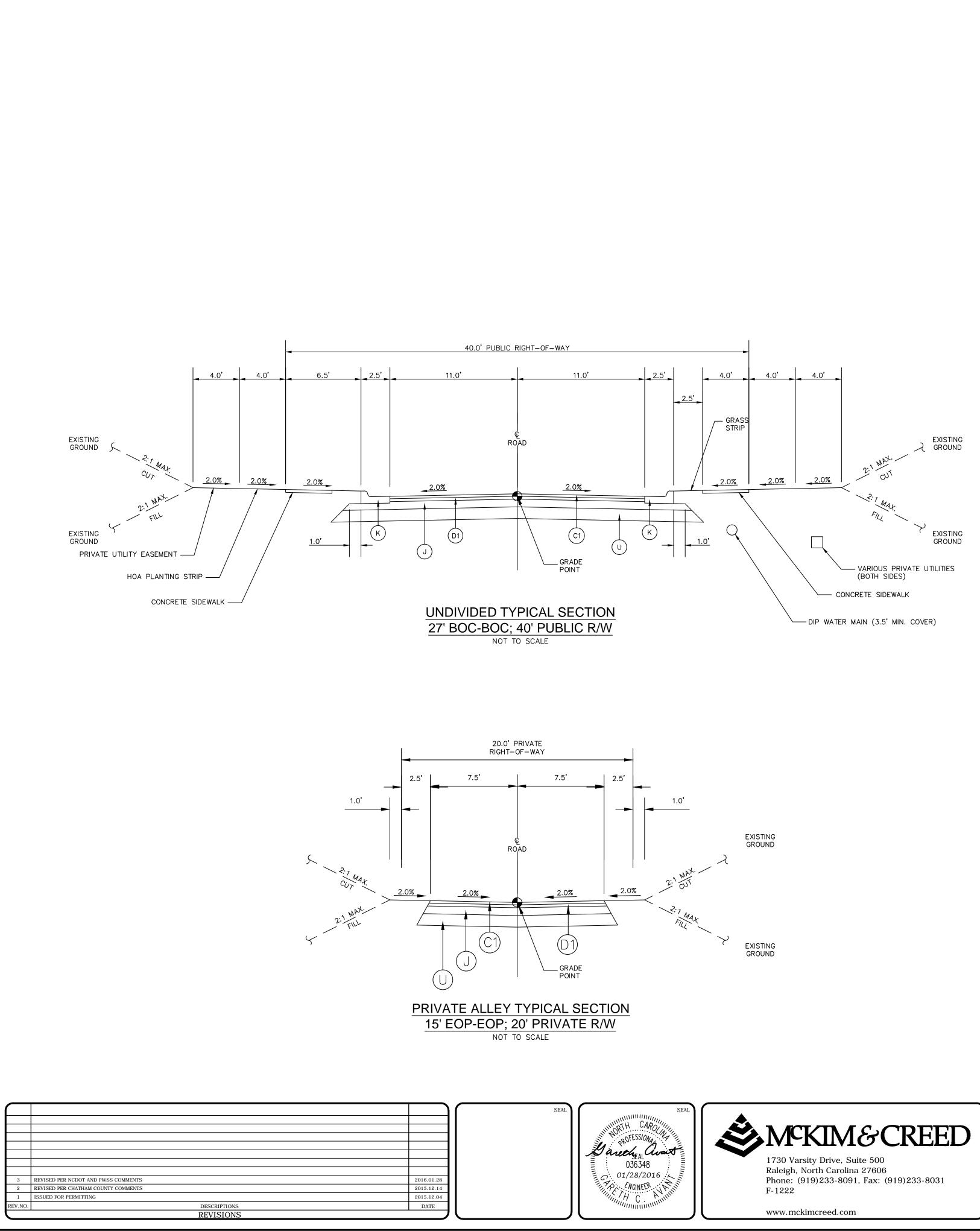
TEMPORARY STABILIZATION FOR SLOPES GREATER THAN 10 FEET NTS

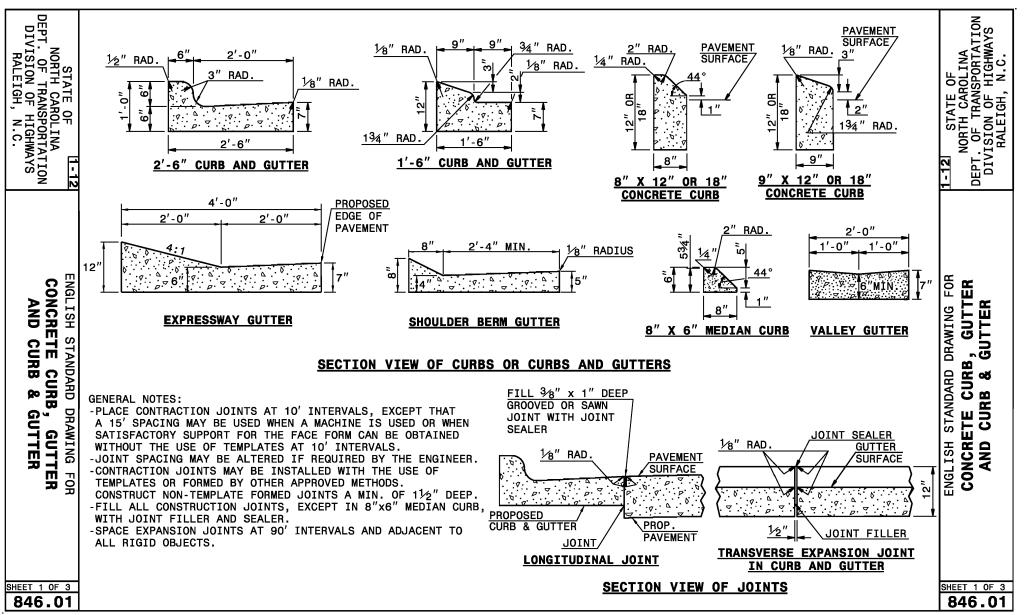
3	REVISED PER NCDOT AND PWSS COMMENTS	2016.01.28
2	REVISED PER CHATHAM COUNTY COMMENTS	2015.12.14
1	ISSUED FOR PERMITTING	2015.12.04
REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	







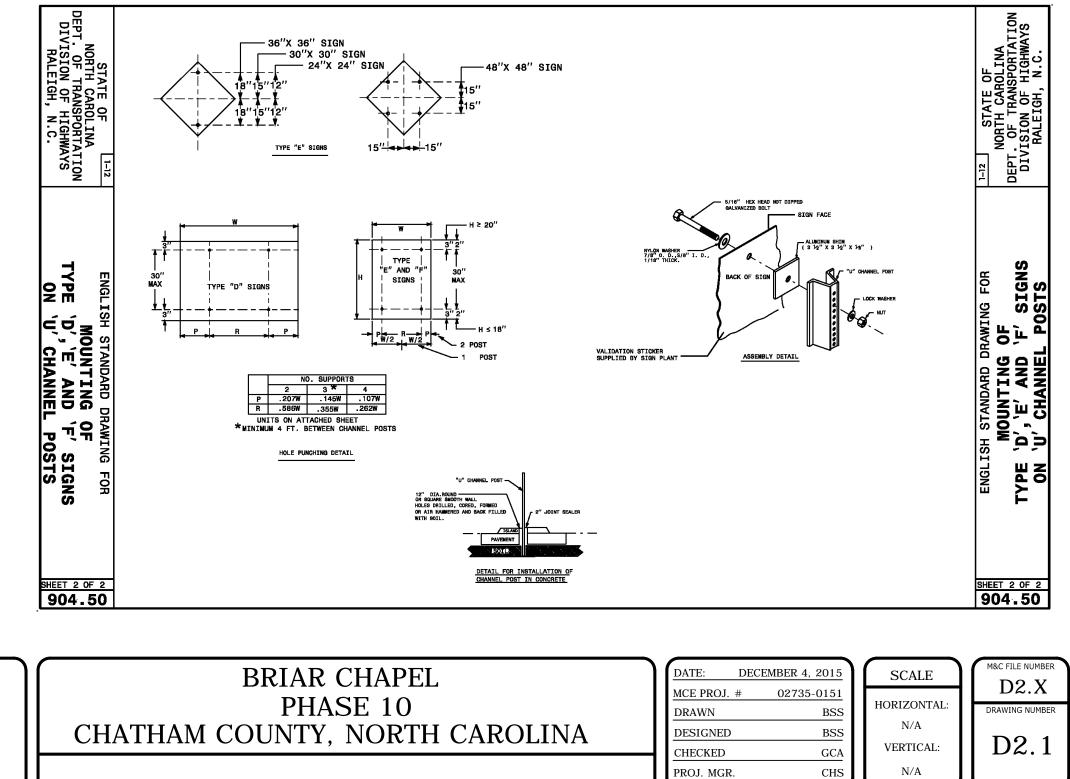






lé é 🚽	TYPE ON
MOUNTING OF ',`E' AND `F' SIGNS ' CHANNEL POSTS	MOUNTING OF 'D','E' AND 'F' 'U' CHANNEL P

SHEET 1 OF 2 904.50



- 1.0'		
2:1 MAX.	EXISTING GROUND	
2: CUT S: 1 MAX. FILL	EXISTING GROUND	



Newland communities

PAVEMENT SCHEDULE

1.0" SF9.5A ASPHALT SURFACE COURSE

2.0" S9.5B ASPHALT SURFACE COURSE

8" COMPACTED ABC STONE BASE COURSE

GEOTEXTILE FABRIC (IF NECESSARY)

COORDINATE WITH GEOTECHNICAL ENGINEER

30" CURB AND GUTTER

COMPACTED SUBGRADE

AT AN AVERAGE RATE OF 110 LBS. PER SQ. YARD.

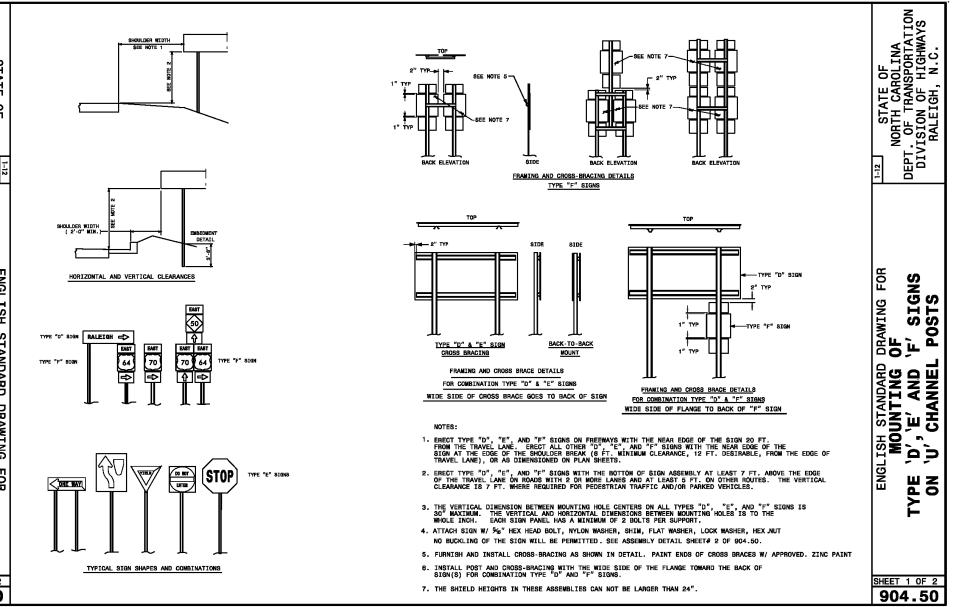
AT AN AVERAGE RATE OF 224 LBS. PER SQ. YARD

(C1)

(J)

(к)

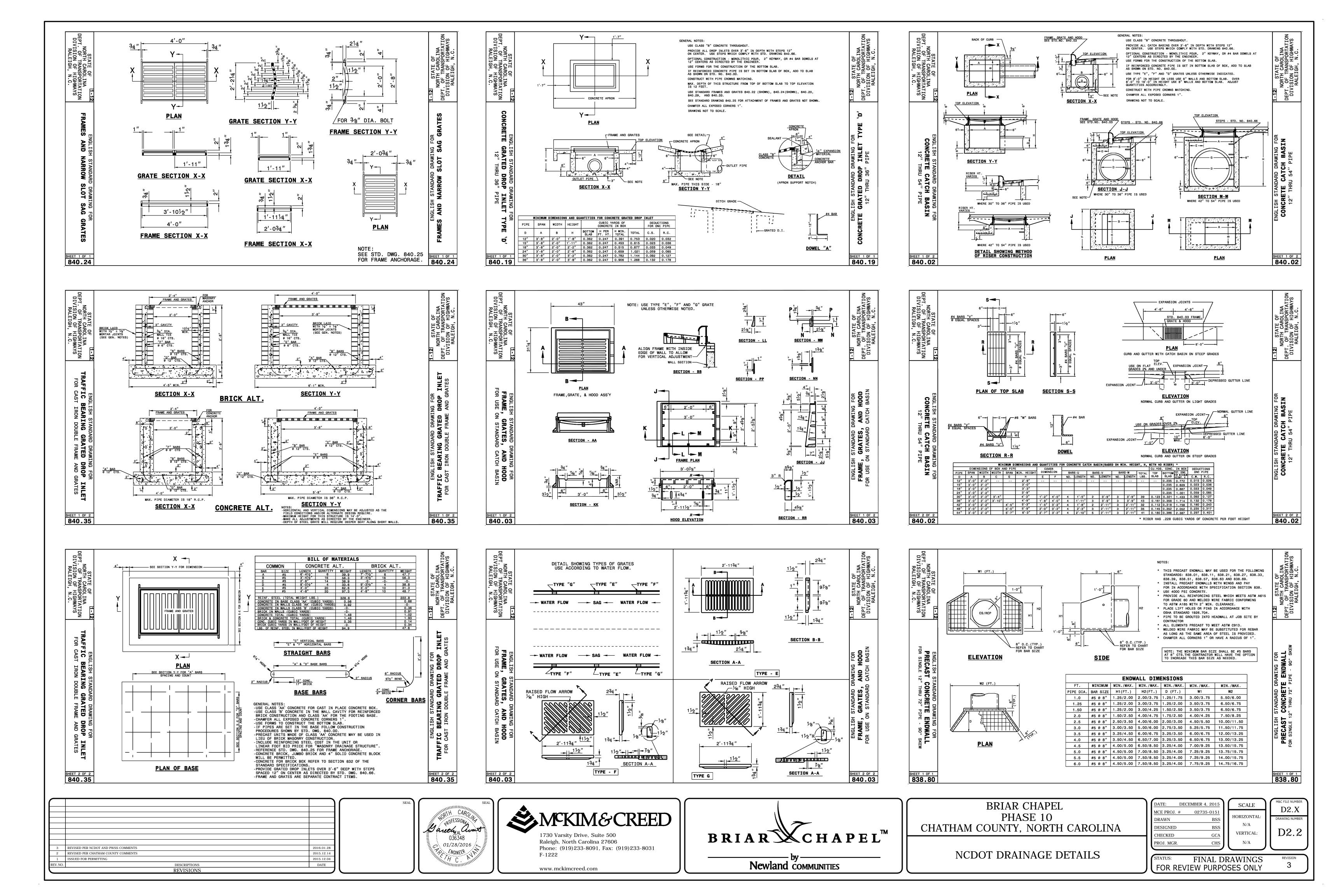
(U)

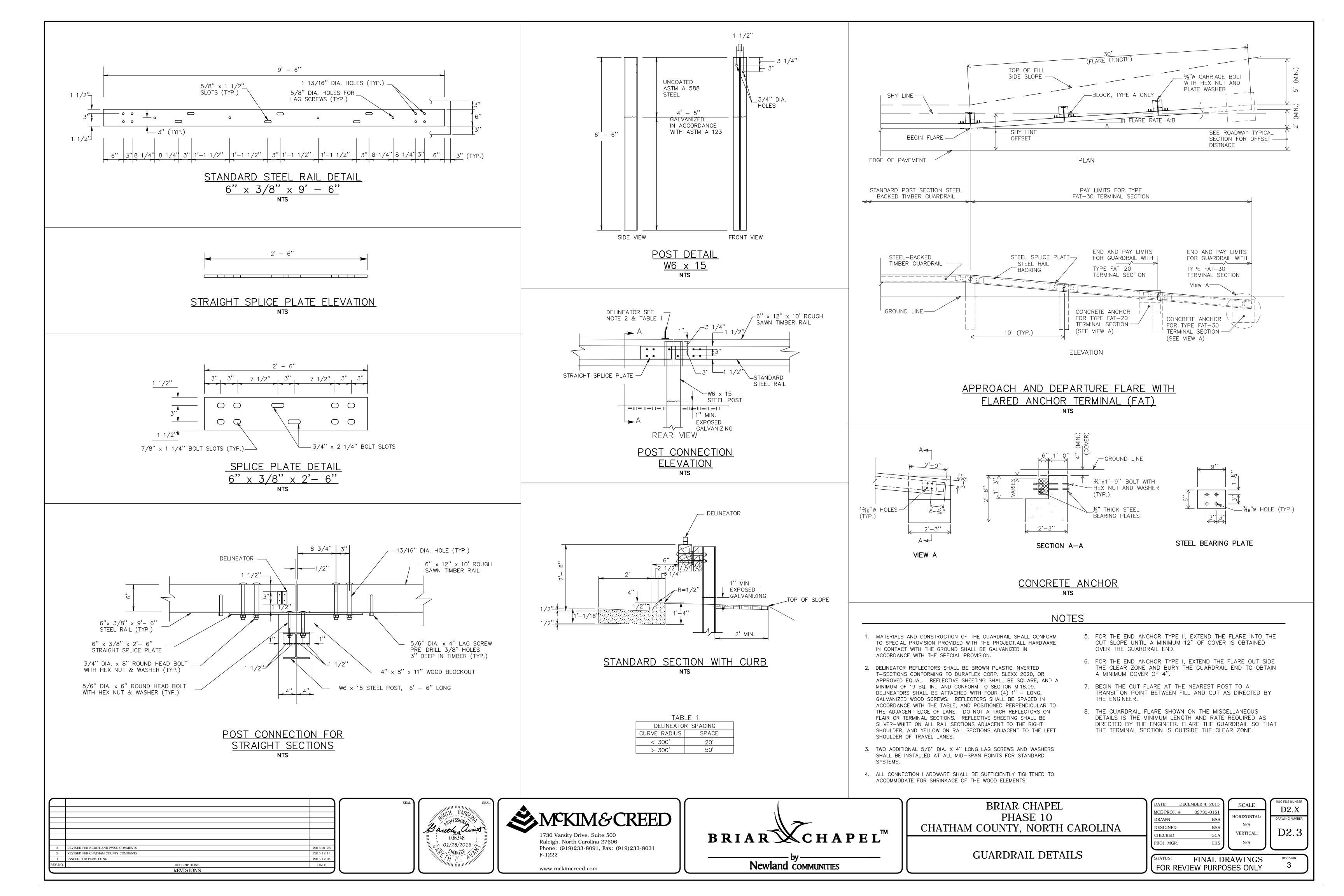


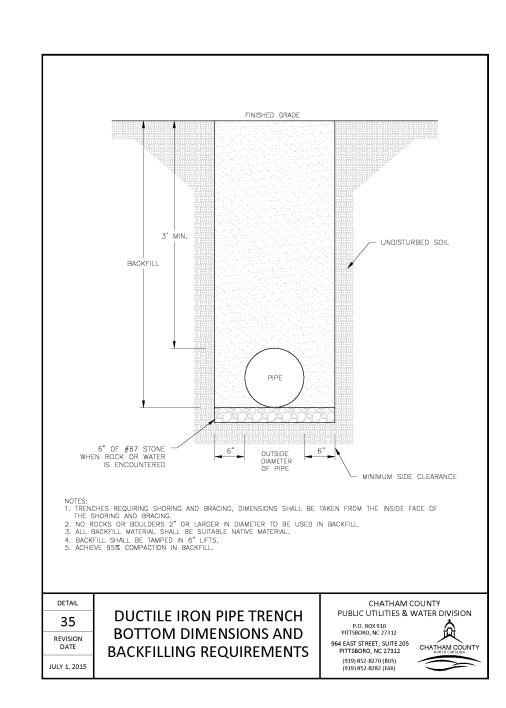
NCDOT ROADWAY DETAILS

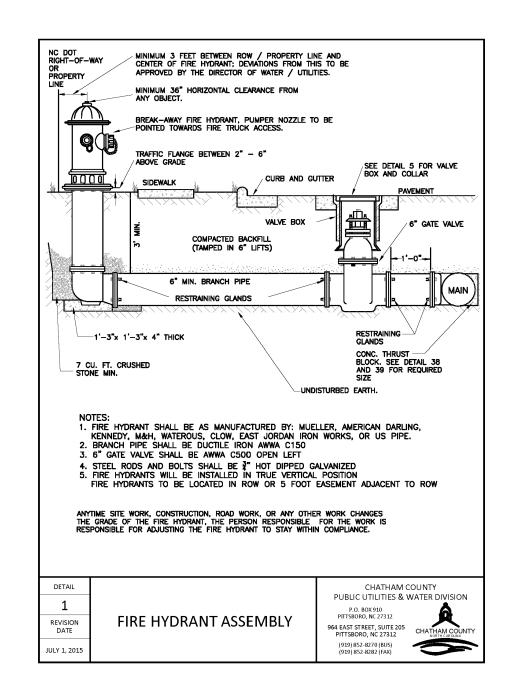


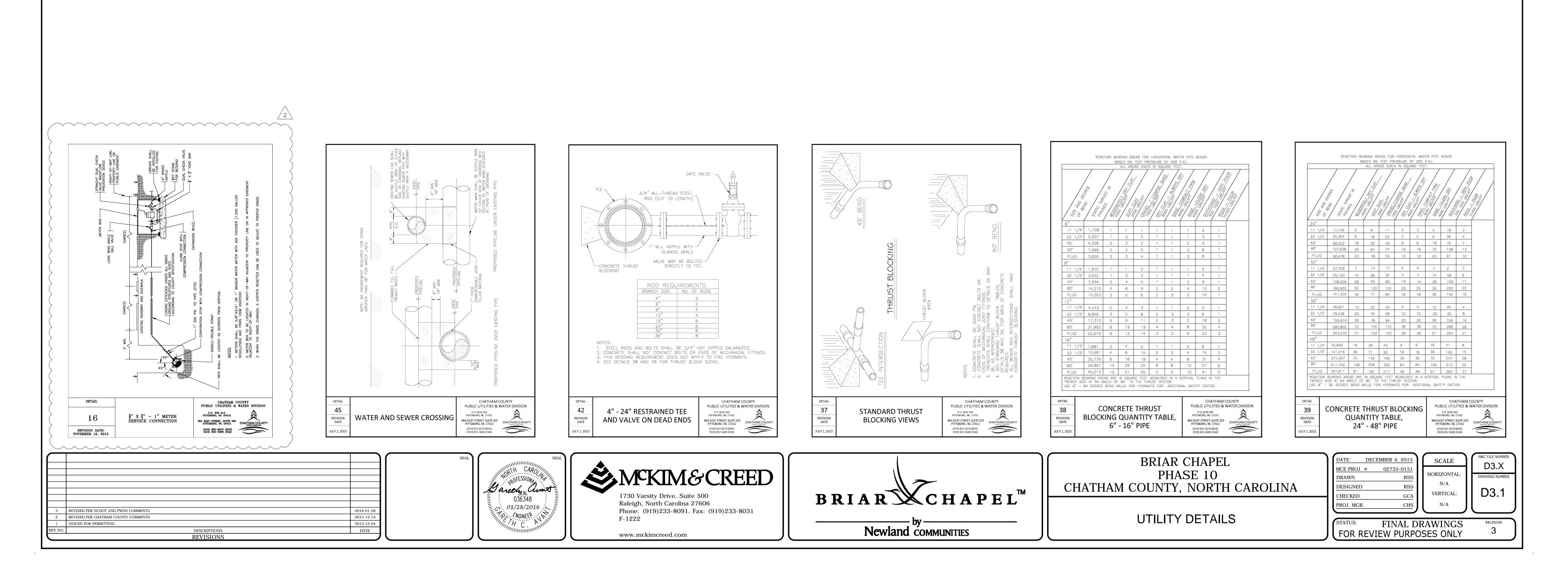
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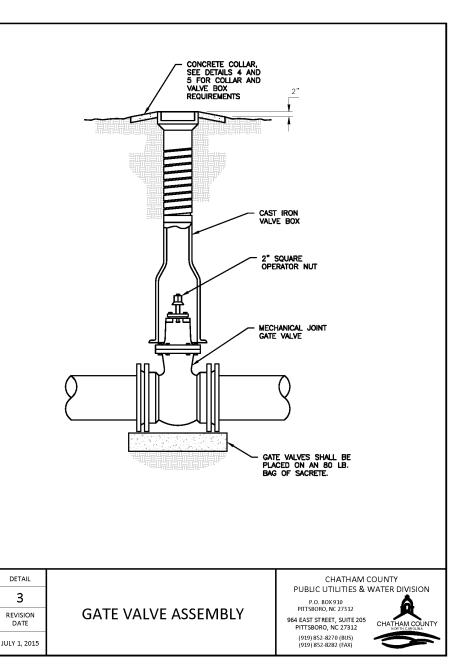


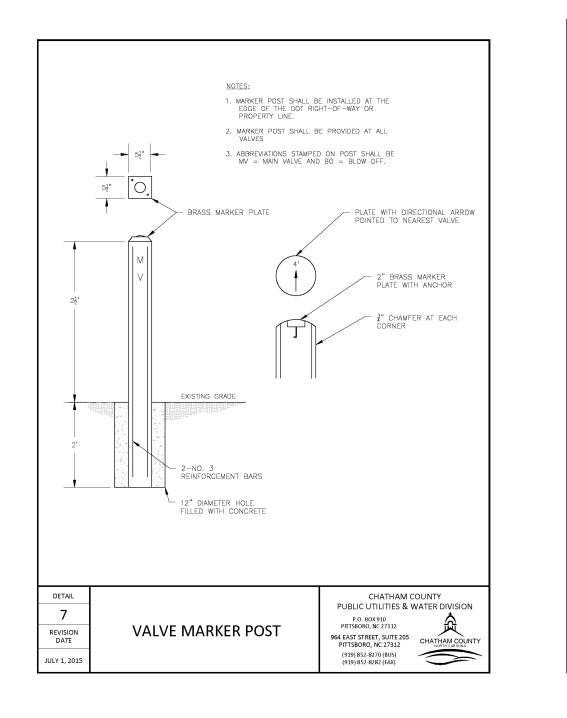


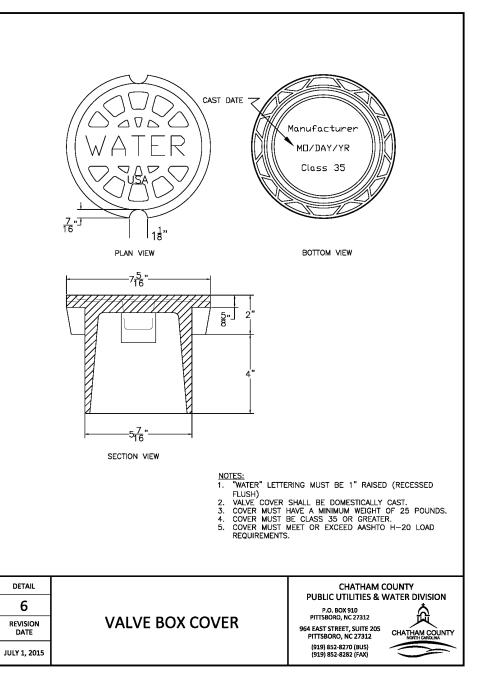


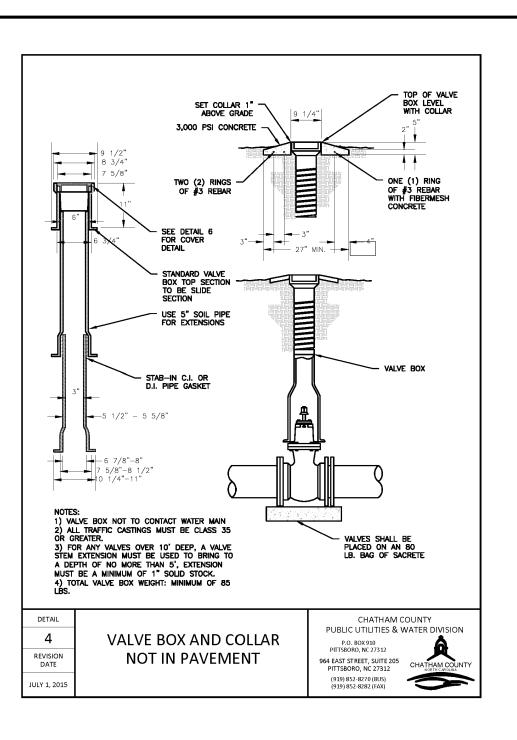








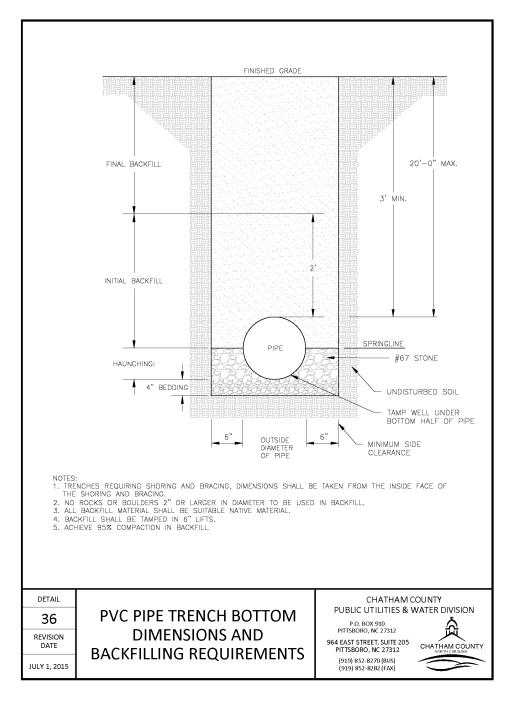




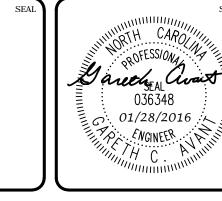
- DETECTABLE WARNING TAPE NOTES:
- 1. THE TAPE SHALL BE AN INERT, BONDED LAYER PLASTIC WITH A METALIZED FOIL CORE AND SHALL BE HIGHLY RESISTANT TO ALKALIS, ACID, OR OTHER DESTRUCTIVE CHEMICAL COMPONENTS LIKELY TO BE ENCOUNTERED IN SOILS.
- 2. THE TAPE SHALL BE BRIGHTLY COLORED TO CONTRAST WITH SOIL AND 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

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.

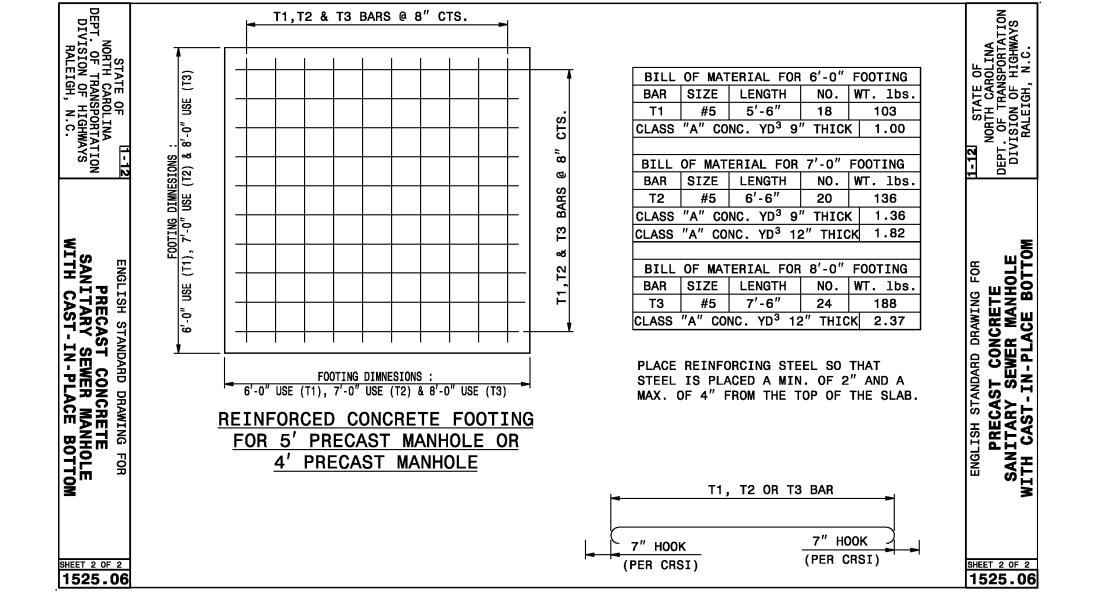


3	REVISED PER NCDOT AND PWSS COMMENTS	2016.01.28
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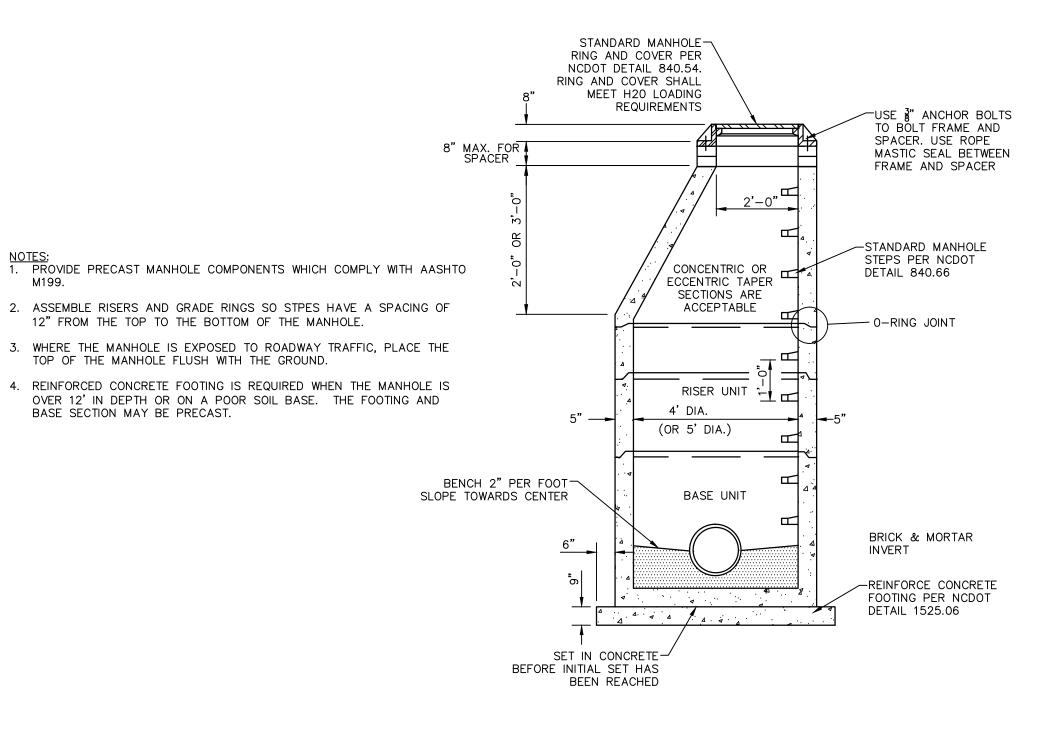


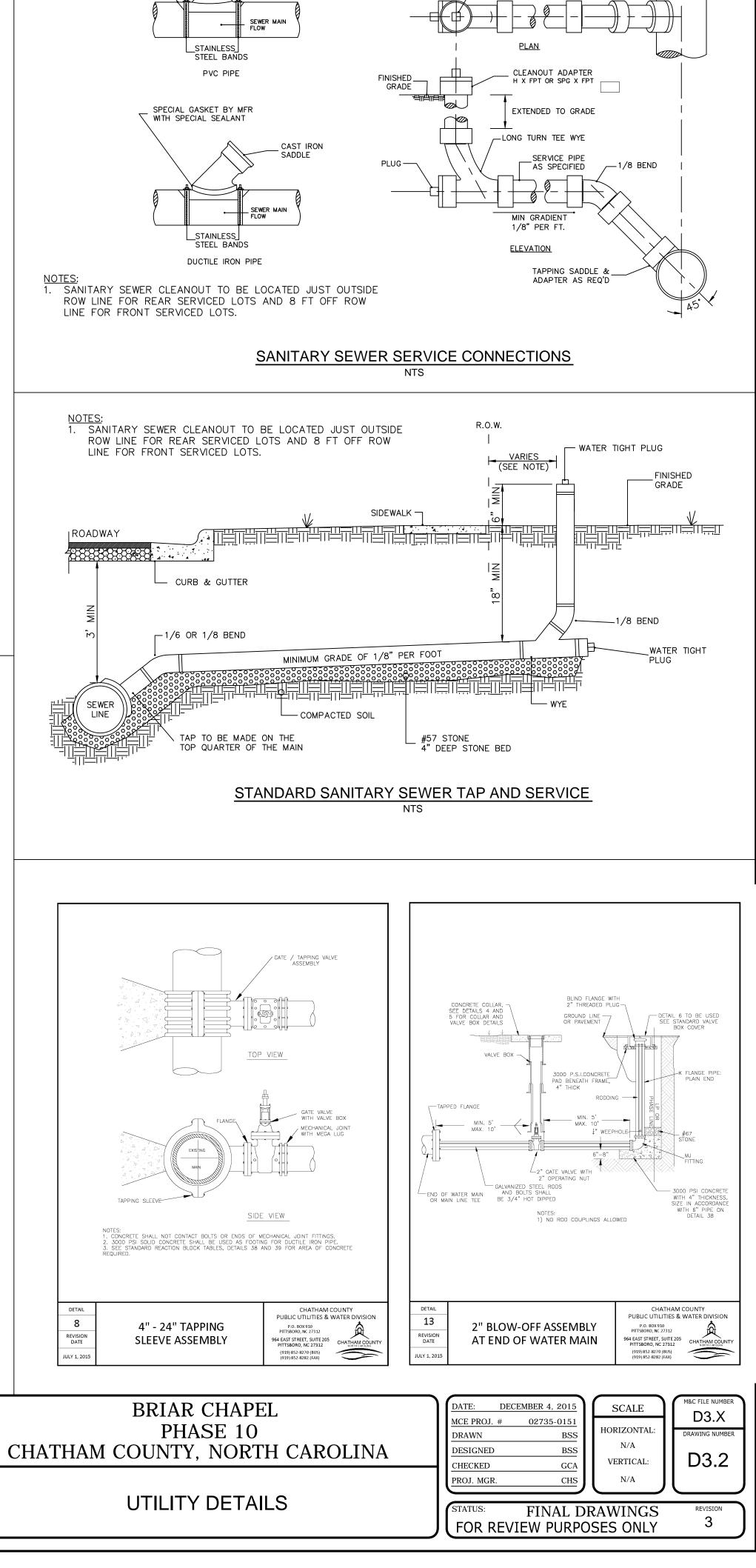
M199.





STANADARD SANITARY SEWER PRECAST CONCRETE MANHOLE NTS





R.O.W.

SANITARY SEWER -

VARIES

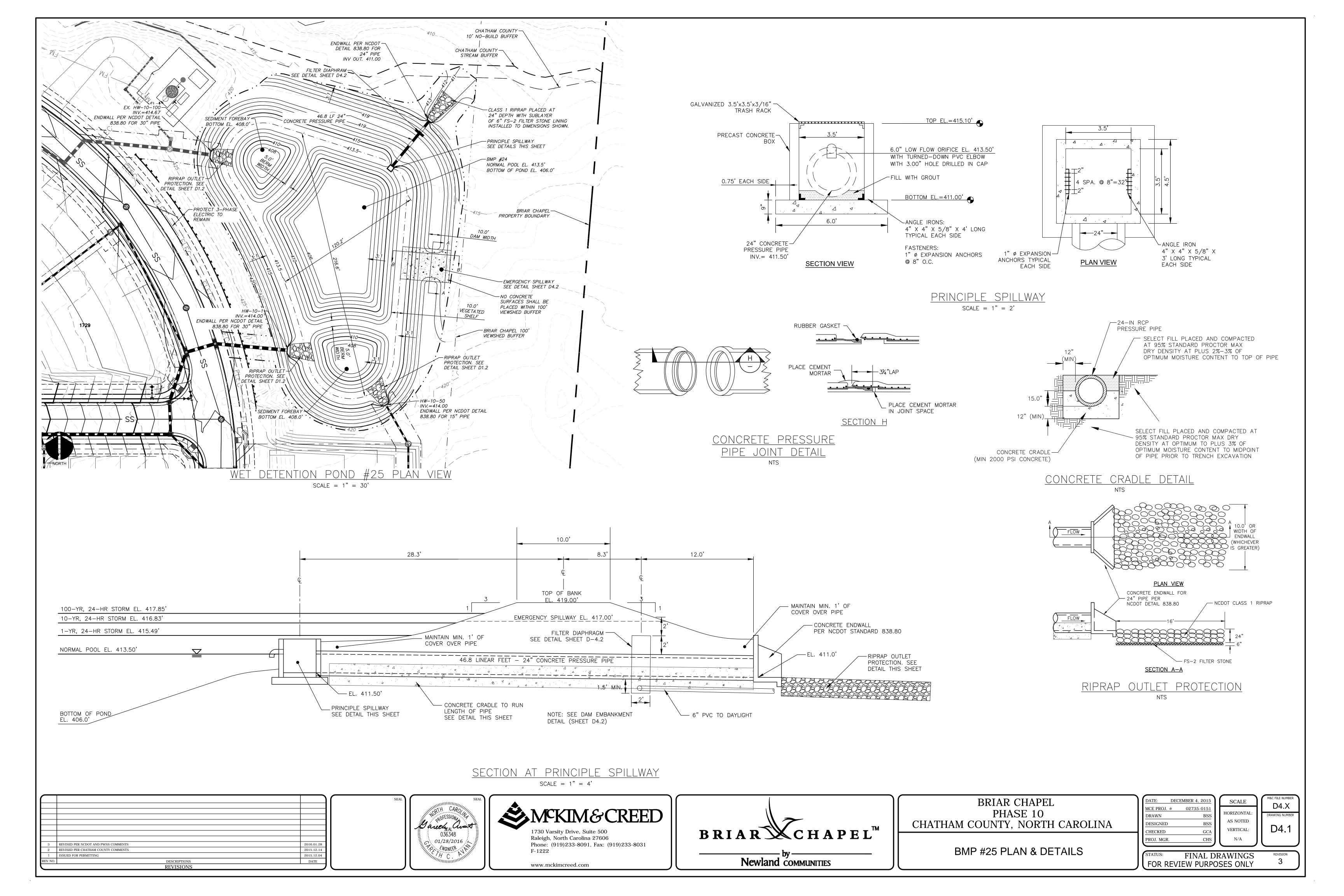
(SEE NOTE)

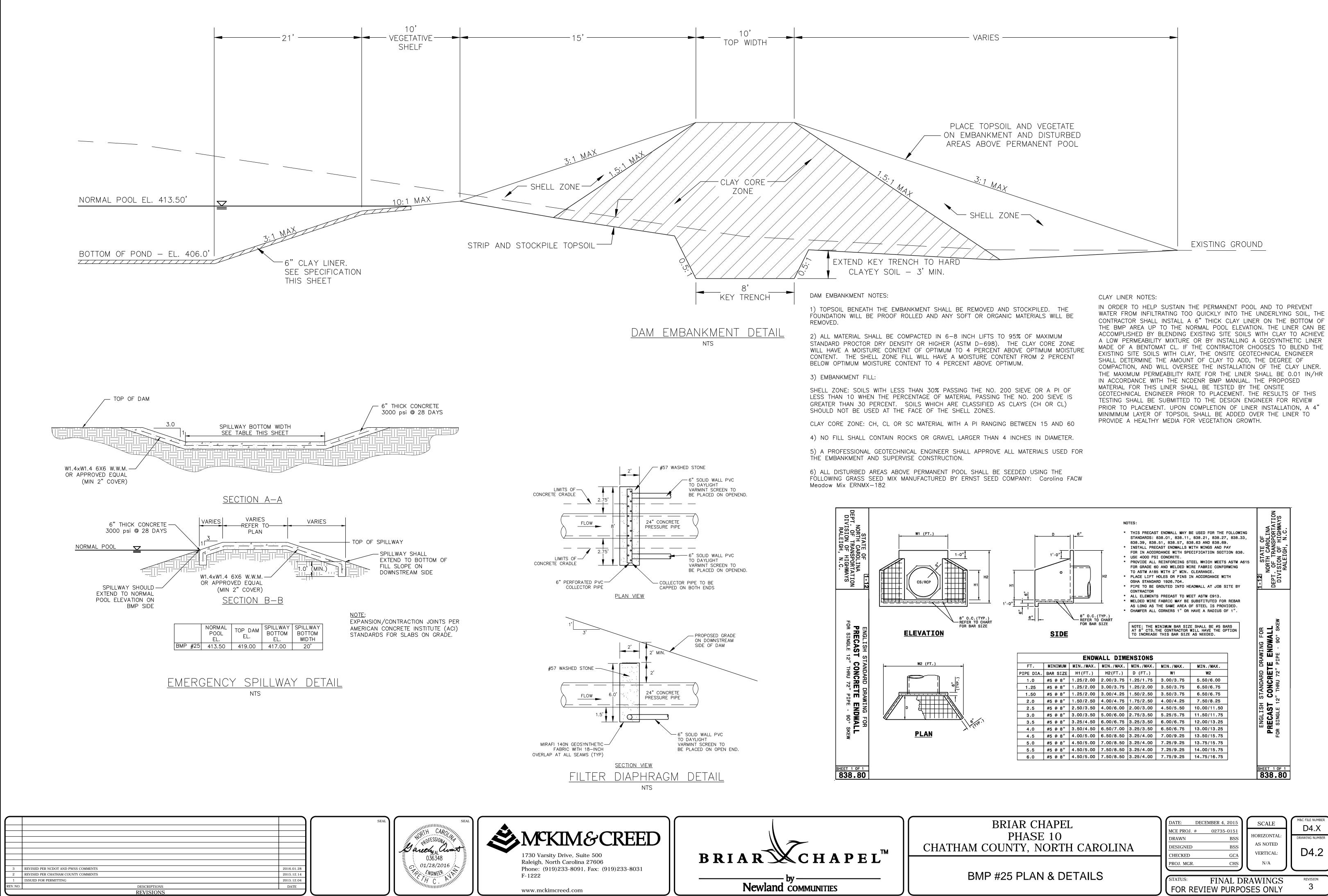
CLEANOUT PLUG

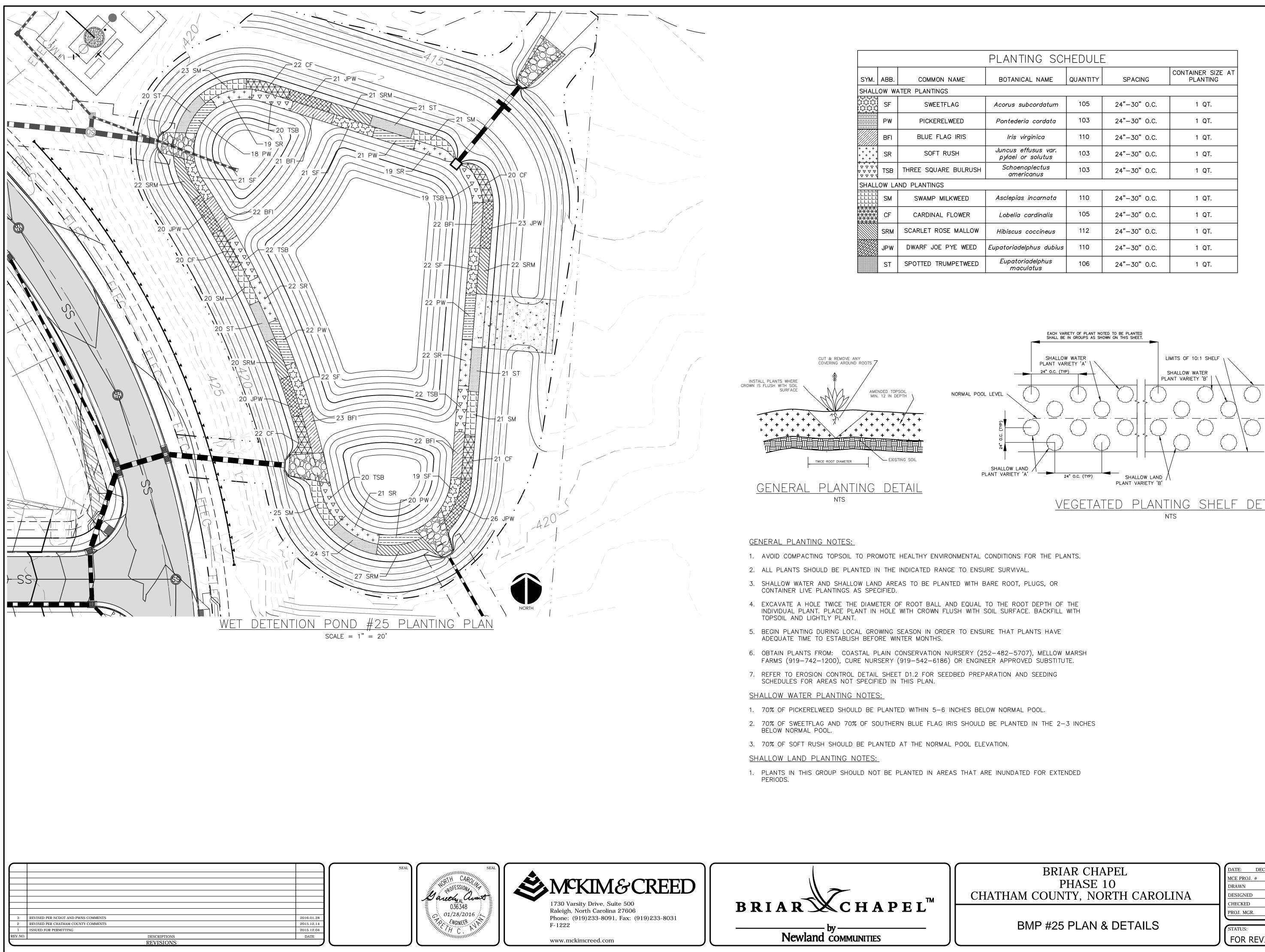
ABS OR PVC

SADDLE

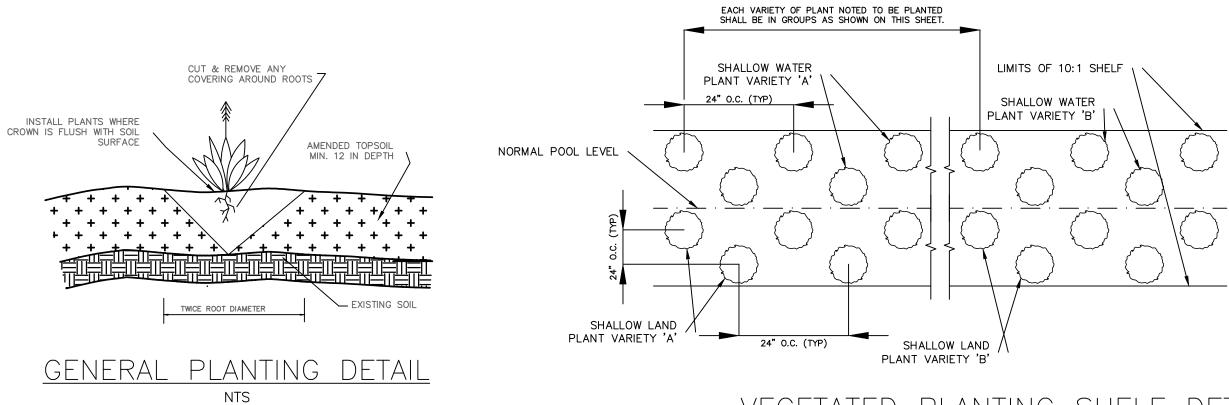
SOLVENT CEMENT SEAL







	PLANTING SCHEDULE								
SYM.	SYM. ABB. COMMON NAME BOTANICAL NAME QUANTITY SPACING CONTAINER SIZ								
SHALL	SHALLOW WATER PLANTINGS								
	Acorus subcordatum 105 24"-30" O.C. 1 QT.								
	PW	PICKERELWEED	Pontederia cordata	103	24"-30" O.C.	1 QT.			
	BFI	BLUE FLAG IRIS	Iris virginica	110	24"-30" O.C.	1 QT.			
+ + + + + + + + + + + + + + + + + + +	SR	SOFT RUSH	Juncus effusus var. pylaei or solutus	103	24"-30" O.C.	1 QT.			
	TSB	THREE SQUARE BULRUSH	Schoenoplectus americanus	103	24"-30" O.C.	1 QT.			
SHALL	LOW LA	ND PLANTINGS							
	SM	SWAMP MILKWEED	Asclepias incarnata	110	24"-30" O.C.	1 QT.			
	CF	CARDINAL FLOWER	Lobelia cardinalis	105	24"-30" O.C.	1 QT.			
	SRM	SCARLET ROSE MALLOW	Hibiscus coccineus	112	24"-30" O.C.	1 QT.			
	JPW	DWARF JOE PYE WEED	Eupatoriadelphus dubius	110	24"-30" O.C.	1 QT.			
	ST	SPOTTED TRUMPETWEED	Eupatoriadelphus maculatus	106	24"-30" O.C.	1 QT.			



NOTES: 1. CONTINUE PLANTING SCHEME SHOWN FOR EACH OF THE 5 PLANT VARIETIES NOTED BELOW AROUND ENTIRE LENGTH OF THE SHALLOW WATER PLANTING ZONE

2. CONTINUE PLANTING SCHEME SHOWN FOR EACH OF THE 5 PLANT VARIETIES NOTED BELOW AROUND ENTIRE LENGTH OF THE SHALLOW LAND PLANTING

3. OTHER SPECIES WITH SIMILAR GROWTH HABITS "STORMWATER BEST MANAGEMENT PRACTICES

ZONE

AND MAY BE APPROVED AS LISTED IN THE MANUAL" TABLE 9-1.

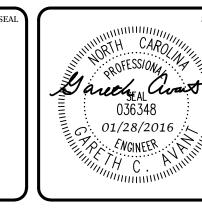
VEGETATED PLANTING SHELF DETAIL

BRIAR CHAPEL	
PHASE 10	
HAM COUNTY, NORTH CAROLINA	
	_

DATE: DECI MCE PROJ. #	EMBER 4, 2015 02735-0151	SCALE	M&C FILE NUMBER
DRAWN	BSS	HORIZONTAL:	DRAWING NUMBER
DESIGNED	BSS	AS NOTED	
CHECKED	GCA	VERTICAL:	D4.3
PROJ. MGR.	CHS	N/A	l
STATUS:	FINAL DI	RAWINGS	REVISION
I FOR REVI	EW PURPO	SES ONLY	3

STORM DRAINAGE SUMMARY TABLE							
UPSTREAM STRUCTURE	DOWNSTREAM STRUCTURE	UPSTREAM INVERT	DOWNSTREAM INVERT	PIPE DIAMETER	PIPE MATERIAL	LENGTH (ft)	SLOPE
CB-10-14A	SDMH-10-14D	434.10	430.30	15"	RCP	117.3	3.24%
CB-10-14B	CB-10-14A	440.00	434.20	15"	RCP	85.0	6.82%
CB-10-14C	CB-10-14B	448.50	440.10	15"	RCP	120.0	7.00%
CB-10-21	CI-10-20	462.80	462.70	15"	RCP	17.2	0.58%
CB-10-21A	CB-10-21	464.00	462.90	12"	A-2000 PVC	100.7	1.09%
CB-10-23A	SDMH-10-23B	427.00	423.40	15"	RCP	125.4	2.87%
CB-10-26	CI-302	454.95	454.65	15"	RCP	51.4	0.58%
CB-10-30	CI-10-29	455.30	455.20	15"	RCP	16.8	0.60%
CB-10-30A	CB-10-30	459.00	455.40	12"	A-2000 PVC	86.6	4.16%
CB-10-30B	CB-10-30A	463.60	459.40	12"	A-2000 PVC	114.5	3.67%
CI-10-4	DBL CI-10-3	416.70	415.35	30"	RCP	42.2	3.20%
CI-10-5	CI-10-4	416.95	416.80	24"	RCP	26.0	0.58%
CI-10-6	CI-10-5	417.25	417.05	18"	RCP	39.0	0.51%
CI-10-7	CI-10-6	417.50	417.35	18"	RCP	24.5	0.61%
CI-10-9	CI-10-7	431.05	417.60	18"	RCP	218.4	6.16%
CI-10-10	CI-10-9	431.30	431.15	18"	RCP	24.5	0.61%
CI-10-11	CI-10-10	433.05	431.40	18"	RCP	40.7	4.05%
CI-10-12	CI-10-11	440.10	439.95	18"	RCP	24.5	0.61%
CI-10-14	CI-10-5	429.55	422.10	24"	RCP	104.7	7.11%
CI-10-15	CI-10-14	438.60	430.00	18"	RCP	120.9	7.12%
CI-10-17	CI-10-15	457.70	438.70	18"	RCP	266.9	7.12%

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UPSTREAM STRUCTURE	DOWNSTREAM STRUCTURE	UPSTREAM INVERT	DOWNSTREAM INVERT	PIPE DIAMETER	PIPE MATERIAL	LENGTH (ft)	SLOPE
CI-10-18	CI-10-17	461.05	457.90	18"	RCP	38.6	8.17%
CI-10-19	CI-10-18	461.30	461.15	18"	RCP	24.5	0.61%
CI-10-20	CI-10-19	462.60	461.70	15"	RCP	97.6	0.92%
CI-10-21A	CI-10-15	438.90	438.75	15"	RCP	24.5	0.61%
CI-10-23	DBL CI-10-3	420.10	419.50	15"	RCP	115.3	0.52%
CI-10-24	CI-300A	441.10	440.90	15"	RCP	38.5	0.52%
CI-10-25	CI-10-24	442.85	442.70	15"	RCP	24.5	0.61%
CI-10-27	CI-11-45	461.00	459.80	15"	RCP	38.5	3.11%
CI-10-28	CI-10-27	461.25	461.10	15"	RCP	24.5	0.61%
CI-10-31	CI-11-44	451.10	450.80	18"	RCP	37.9	0.79%
CI-10-32	CI-10-31	451.35	451.20	15"	RCP	24.5	0.61%
CI-10-34	CI-10-32	456.95	451.75	15"	RCP	223.8	2.32%
CI-10-37	CI-10-34	457.20	457.05	15"	RCP	24.5	0.61%
CI-10-53	SDMH-10-52	426.80	426.60	15"	RCP	13.0	1.54%
CI-10-54	CI-10-53	427.05	426.90	15"	RCP	24.5	0.61%
DBL CI-10-2	HW-10-1	415.00	414.00	30"	RCP	57.6	1.74%
DBL CI-10-3	DBL CI-10-2	415.25	415.10	30"	RCP	24.5	0.61%
SDMH-10-14D	CI-10-14	430.20	430.00	15"	RCP	10.9	1.84%
SDMH-10-23B	CI-10-23	420.70	420.60	15"	RCP	10.4	0.96%
SDMH-10-51	HW-10-50	414.50	414.00	15"	RCP	36.0	1.39%
SDMH-10-52	SDMH-10-51	426.50	418.00	15"	RCP	256.0	3.32%

STORM DRAINAGE SUMMARY TABLE

STORM DRAINAGE RIM TABLE				
STRUCTURE	RIM ELEVATION			
CB-10-14A	438.45			
CB-10-14B	443.97			
CB-10-14C	452.54			
CB-10-21	467.14			
CB-10-21A	468.41			
CB-10-23A	430.50			
CB-10-26	458.40			
CB-10-30	10-30 460.03			
CB-10-30A	463.50			
CB-10-30B	467.69			
CI-10-4	428.09			
CI-10-5	427.79			
CI-10-6	427.69			
CI-10-7	427.69			
CI-10-9	439.85			
CI-10-10	439.81			
CI-10-11	445.47			
CI-10-12	445.45			
CI-10-14	435.28			
CI-10-15	443.93			
CI-10-17	463.03			

SANITARY SEWER SUMMARY TABLE							
UPSTREAM STRUCTURE	DOWNSTREAM STRUCTURE	UPSTREAM INVERT	DOWNSTREAM INVERT	PIPE DIAMETER	PIPE MATERIAL	LENGTH (ft)	SLOPE
SSMH-10-1	EX. SSMH-147	417.46	416.95	8"	PVC	102.2	0.50%
SSMH-10-2	SSMH-10-1	418.75	417.66	8"	PVC	94.4	1.16%
SSMH-10-3	SSMH-10-2	420.20	418.95	8"	PVC	93.8	1.33%
SSMH-10-4	SSMH-10-3	422.90	420.50	8"	PVC	150.0	1.60%
SSMH-10-5	SSMH-10-4	430.40	423.20	8"	PVC	150.0	4.80%
SSMH-10-6	SSMH-10-5	460.00	432.10	8"	PVC	386.6	7.22%
SSMH-10-7	SSMH-10-3	442.10	420.40	8"	PVC	387.0	5.61%
SSMH-10-8	SSMH-10-8A	457.30	440.00	8"	PVC	254.4	6.80%
SSMH-10-8A	OESS-150B	437.66	437.55	8"	PVC	17.1	0.62%
SSMH-10-9	SSMH-10-8	459.72	458.60	8"	PVC	227.7	0.49%
SSMH-10-10	SSMH-10-10A	463.95	457.50	8"	PVC	202.1	3.19%
SSMH-10-11	SSMH-10-10	465.50	464.15	8"	PVC	269.3	0.50%
SSMH-10-12	SSMH-10-12A	453.50	448.85	8"	PVC	195.0	2.38%
SSMH-10-12A	OESS-11-13	446.48	446.40	8"	PVC	13.8	0.57%
SSMH-10-13	SSMH-10-12	460.20	454.00	8"	PVC	260.5	2.38%



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$\mathbf{BRIAR} \times \mathbf{CHAPEL}^{M}$	
Newland COMMUNITIES	

STORM DRAINAGE RIM TABLE				
STRUCTURE	RIM ELEVATION			
CI-10-18	465.95			
CI-10-19	465.95			
CI-10-20	467.01			
CI-10-21A	443.92			
CI-10-23	427.54			
CI-10-24	452.04			
CI-10-25	452.03			
CI-10-27	465.52			
CI-10-28	465.53			
CI-10-29	459.98			
CI-10-31	456.19			
CI-10-32	456.19			
CI-10-34	461.56			
CI-10-37	461.55			
CI-10-53	431.61			
CI-10-54	431.61			
DBL CI-10-2	426.30			
DBL CI-10-3	426.30			
HW-10-1	417.79			
HW-10-50	416.44			
SDMH-10-14D	435.56			

STORM DRAINAGE RIM TABLE

STRUCTURE	RIM ELEVATION	
SDMH-10-23B	428.30	
SDMH-10-51	423.03	
SDMH-10-52	431.81	

BRIAR CHAPEL PHASE 10 CHATHAM COUNTY, NORTH CAROLINA

STORM DRAINAGE & SANITARY SEWER TABLES

DATE:DECEMBER 4, 2015MCE PROJ. #02735-0151DRAWNBSSDESIGNEDBSSCHECKEDGCAPROJ. MGR.CHS	SCALE HORIZONTAL: N/A VERTICAL: N/A	M&C FILE NUMBER D4.4 DRAWING NUMBER D4.4
STATUS: FINAL D	REVISION	
FOR REVIEW PURPO	3	