



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAT MCCRORY
GOVERNOR

DIVISION OF HIGHWAYS

ANTHONY J. TATA
SECRETARY

September 10, 2014

Chatham County

Subject: Subdivision Final Plan Review – Phase 11 – 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 Grant Livengood P.E. on September 9, 2014 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 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:
 - 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

13. 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.
14. 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,



Jeff B. Loflin, PE
District Engineer

Attachments

cc: Rob W. Stone II, P.E., Division Engineer
Justin Bullock, P.E., Chatham County Maintenance Engineer
Lynn Richardson, Chatham County Planning
Chris Seamster, RLA McKim & Creed
File



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAT MCCRORY
GOVERNOR

DIVISION OF HIGHWAYS

ANTHONY J. TATA
SECRETARY

PROFESSIONAL ENGINEER CERTIFICATION
SUBDIVISIONS AND COMMERCIAL DRIVEWAYS
DIVISION 8, DISTRICT 1

DATE: _____

COUNTY: _____

SUBDIVISION NAME: _____

STREET NAMES From Sta. No. To Sta. No. _____

This is to certify that the above listed roads have been constructed in accordance with the approved plans and all aspects of the most current Subdivision Roads: Minimum Construction Standards manual.

NAME: _____

SIGNATURE: _____

NC PE LICENSE #: _____

Professional Engineer Seal

**North Carolina Department of Transportation
Division of Highways
Petition for Road Addition**

ROADWAY INFORMATION: (Please Print/Type)

County: _____ Road Name: _____
(Please list additional street names and lengths on the back of this form.)

Subdivision Name: _____ Length (miles): _____

Number of occupied homes having street frontage: _____ Located (miles): _____

miles N S E W of the intersection of Route _____ and Route _____ .
(Check one) (SR, NC, US) (SR, NC, US)

We, the undersigned, being property owners and/or developers of _____ in _____ County, do hereby request the Division of Highways to add the above described road.

CONTACT PERSON: Name and Address of First Petitioner. (Please Print/Type)

Name: _____ Phone Number: _____

Street Address: _____

Mailing Address: _____

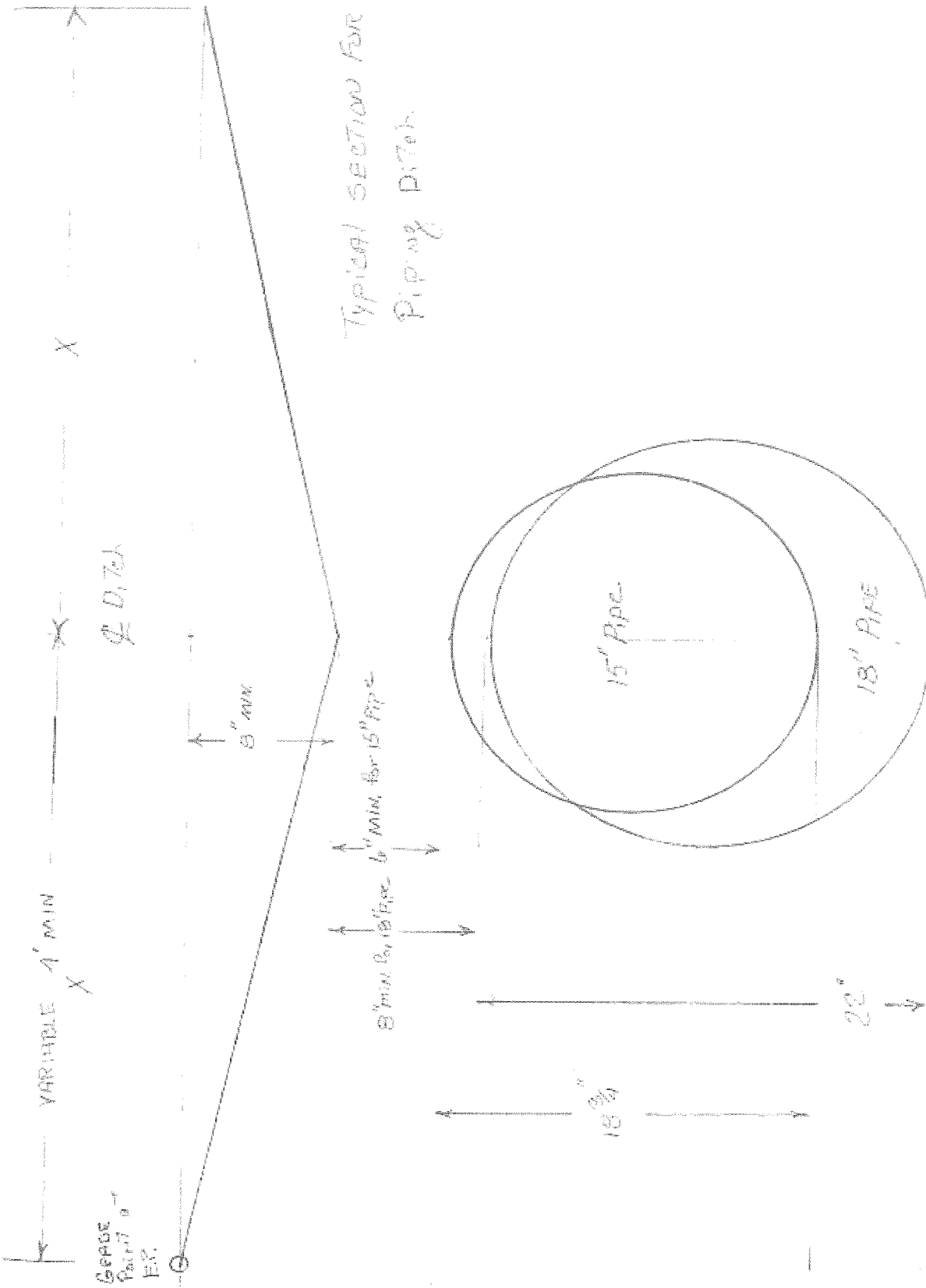
PROPERTY OWNERS

Name

Mailing Address

Telephone

<u>Name</u>	<u>Mailing Address</u>	<u>Telephone</u>



POSSIBLE SUPPLIERS FOR
GRATES AND FRAMES

SOUTHERN FOUNDRY
P.O. BOX 186
APEX, N.C. 27502
(919) 362-7744

NORFOLK CAST, INC.
P.O. BOX 328
NORFOLK, VA. 23501

VULCAN FOUNDRY CORP.
P.O. BOX 905
DENHAM SPRINGS, LA.
1(800)626-4653

US FOUNDRY
8351 N. W. 93RD ST
MEDLEY, FLA. 33166
(305) 885-0301 FAX (305) 844-3253

SUPER CAST, INC.
1104 US HWY. 117 BYPASS, S.
GOLDSBORO, N.C. 27530
(919) 736-9010 FAX (919) 736-0290

BUNCH PATTERN WORKS, INC.
P.O. BOX 267 HWY 308 N.
LEWISTON-WOODVILLE, N.C. 27849

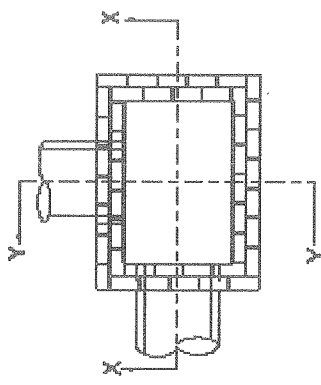
CAPITAL FOUNDRY OF VIRGINIA, INC.
P.O. BOX 2212
VIRGINIA BEACH, VIRGINIA 23450

EMPORIA FOUNDRY, INC.
620 REESE STREET
EMPORIA, VIRGINIA 23847

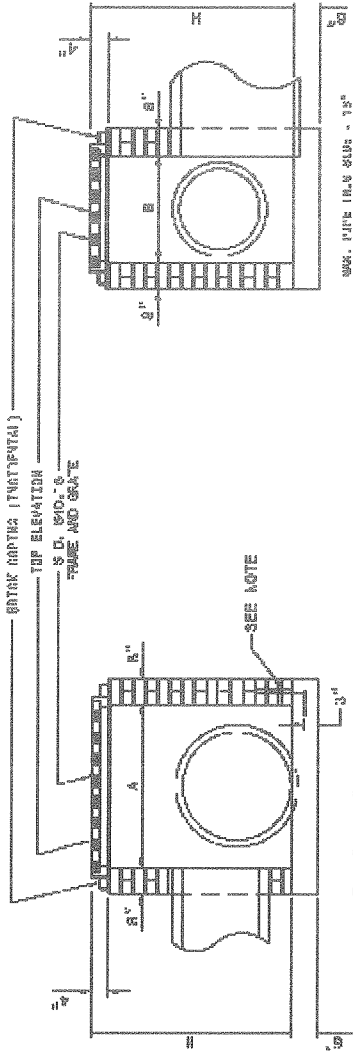
ENNIS ENTERPRISES
P.O. BOX 931
WILMINGTON, N.C. 28402
(910) 371-9323

GENERAL NOTES:

- MORTAR JOINTS 1/2" +/- 1/8" THICK.
- USE CLASS "B" CONCRETE THROUGHOUT.
- USE FORMER FOR CONSTRUCTION OF THE BOTTOM SLAB.
- USE #4 BAR CORNERS AT 12" SPACING.
- DEDUCT FOR PIPE(S) FROM TOTAL CU. YDS. OF BRICK MASONRY.
- PROVIDE ALL CATCH BASINS OVER 3'-0" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.06.
- USE BRICK OF CONCRETE BLOCK WHICH COMPLIES WITH THE REQUIREMENTS OF SECTION 840 OF THE STANDARD SPECIFICATIONS.
- IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.
- FOR 3'-0" IN HEIGHT OR LESS, USE 8" WALL. OVER 3'-0" IN HEIGHT, USE 12" WALL TO 2'-0" FROM TOP OF WALL AND 8" WALL FOR THE REMAINING 3'-0" HEIGHTS TO BE ADJUSTED ACCORDINGLY.
- CONSTRUCT WITH PIPE CORNERS MATCHING.
- SEE STANDARD DRAWING 840.25 FOR ATTACHMENT OF FRAMES AND GRATES.
- DO NOT USE BRICK MASONRY DROP INLET IN LOCATIONS SUBJECT TO TRAFFIC.
- CHAMFER ALL EXPOSED CORNERS 1".
- DRAWING NOT TO SCALE.



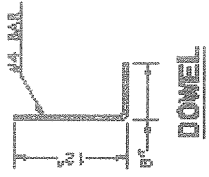
PLAN
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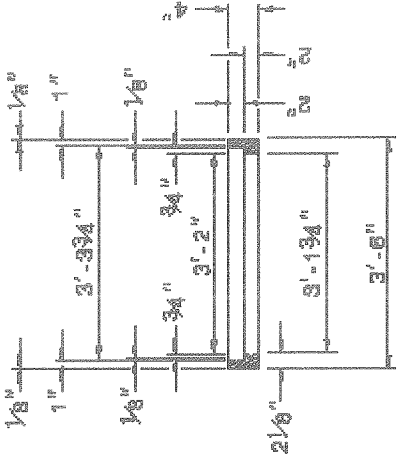
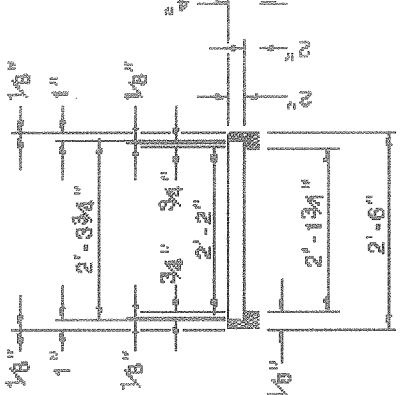
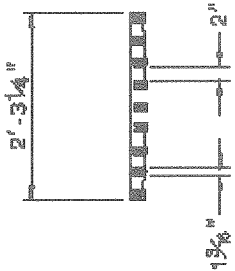
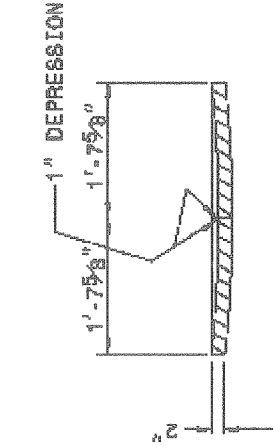
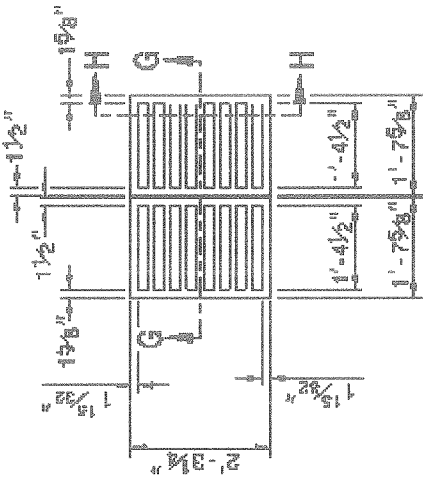
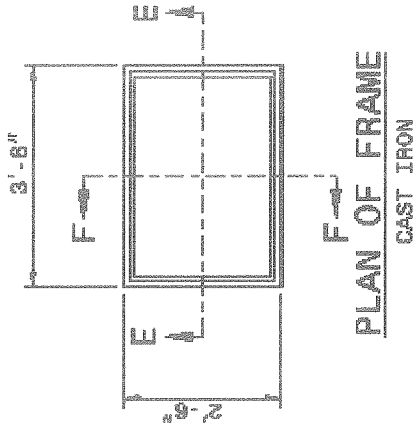


SECTION X-X

DIMENSIONS AND QUANTITIES FOR DROP INLET (BASED ON MIN. HEIGHT, H)

PIPE	DIMENSIONS OF BOX & PIPE		CUBIC YARDS CONCRETE		CUBIC YARDS BRICK MASONRY		DEDUCTIONS FOR ONE PIPE	
	SPAN	WIDTH	MIN. HEIGHT	BOTTOM SLAB	WALL PER FOOT HT.	TOTAL BRICK MASONRY PER FT. HEIGHT, H	C.S.	R.C.
12"	3'-0"	2'-0"	2'-0"	0.268	0.313	3.622	0.091	0.032
15"	/	/	2'-6"	0.268	0.313	3.600	0.261	0.047
18"	/	/	2'-6"	0.268	0.313	3.678	0.074	0.068
24"	/	/	3'-0"	0.268	0.313	3.355	0.078	0.118
30"	/	/	3'-6"	0.268	0.313	0.991	0.122	0.170





**VERIFICATION OF COMPLIANCE WITH
ENVIRONMENTAL REGULATIONS**

(Check Appropriate Box)

- Permits from the N.C. Department of Environment and Natural Resources and the U.S. Army Corp of Engineers are not required for this project. However, all applicable federal and state regulations have been followed.

- The required permits from the N.C. Department of Environment and Natural Resources and the U.S. Army Corp of Engineers have been obtained for this project. Copies of permits and Completion Certificates are attached.

- All applicable NPDES Stormwater Permit requirements have been met for this project. (The applicant should contact the N.C. Division of Water Quality in Raleigh to determine if a stormwater permit is required.)

- The project is in compliance with all applicable sedimentation and erosion control laws and regulations.

Project Name: _____

Township: _____

County: _____

Project Engineer: _____

Phone No.: _____

Project Contact: _____

Applicants Name: _____

P.E. SEAL

Date Submitted: _____

(Reference Page 11, Item 10)

11/07/2003

ATTACHMENT "A"

Seeding and mulching shall be in accordance with Section 880 of the North Carolina Standard Specifications for Roads and Structures, except that Articles 880-8(B) shall not apply. Final determination of soil type shall be made by the Engineer. The following rates in pounds per acre shall apply:

<u>SANDY SOIL</u>	<u>CLAY SOIL</u>
50# - KY 31 Tall Fescue or Alta Tall Fescue	100# - KY 31 Tall Fescue or Alta Tall Fescue
5# - Centipede	15# - Kenblue Bluegrass
50# - Pensacola Bahiagrass	500# - Fertilizer
500# - Fertilizer	4000# - Limestone
4000# - Limestone	

Add 10# Kobe or Korean Lespedeza and 10# Millet to the above mixture from May 1 to August 31.

On cut and fill slopes 2:1 or steeper, add 30# Sericea Lespedeza from January 1 to December 31.

Fertilizer shall be 10-20-20 analysis. Upon written approval of the Engineer, a different analysis of fertilizer may be used provided the 1-2-2 ratio is maintained and the rate of application adjusted to provide the same amount of plant food as a 10-20-20 analysis.

BRIAR CHAPEL

PHASE 11

PRELIMINARY PLAT SUBMITTAL

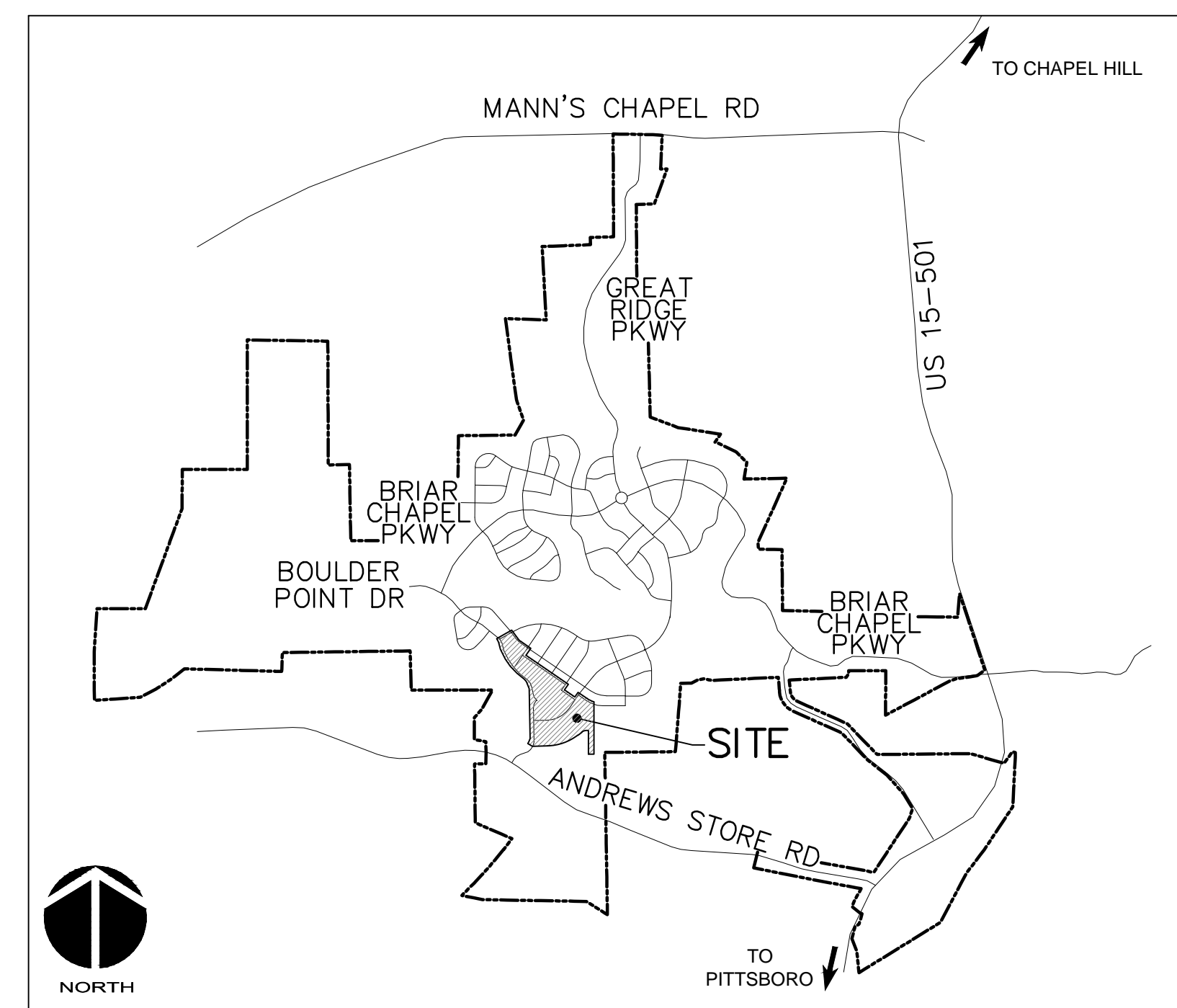
U.S. HWY 15-501 and MANN'S CHAPEL ROAD

CHATHAM COUNTY, NORTH CAROLINA

DATE: SEPTEMBER 9, 2014

COUNTY AND AGENCY CONTACTS

- | | |
|--|--|
| <p>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</p> <p>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</p> <p>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</p> <p>D. Chatham County
Public Works
964 East Street, 2nd Floor, Suite 205
Pittsboro, NC 27312
(919) 542-8270 phone
Contact: Leonard McBryde, III
Email: leonard.mcbride@chathamnc.org</p> | <p>E. NCDOT
Division 8, District 1
300 DOT Drive
P.O. Box 1164
Asheboro, NC 27204
(336) 318-4000 phone
Contact: Jeff B. Loflin, PE
Email: jloflin@ncdot.gov</p> <p>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</p> <p>G. NCDENR
Division of Environmental Health
Public Water Supply Section
1634 Mail Service Center
Raleigh, NC 27699-1634
(919) 707-9074 phone
Contact: Richard Dickie
Email: richard.dickie@ncdenr.gov</p> <p>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</p> |
|--|--|



VICINITY MAP

NTS

PROJECT DATA

NAME OF PROJECT:
PHASE 11
CHATHAM COUNTY, NORTH CAROLINA

OWNER:
NNP BRIAR CHAPEL, LLC
16 WINDY KNOLL CIRCLE
CHAPEL HILL, NC 27516
PHONE: (919) 951-0700
FAX: (919) 240-4963
CONTACT: LEE BOWMAN
EMAIL: lbowman@newlandco.com

PREPARED BY:
MCKIM & CREED
1730 VARSITY DRIVE, SUITE 500
RALEIGH, NORTH CAROLINA 27606
PHONE: (919) 233-8091
FAX: (919) 233-8031
CONTACT: GRANT LIVENGOOD, PE
EMAIL: glivengood@mckimcreed.com

PROJECT AREA: 34.37 AC

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

SHEET INDEX

C0.1	COVER SHEET
C0.2	EXISTING CONDITIONS/DEMOLITION PLAN
C1.0	OVERALL SITE PLAN
C1.1	SECTION 1 - SITE PLAN
C1.2	SECTION 2 - SITE PLAN
C2.1	UTILITY PLAN
C2.2	UTILITY PLAN
C3.1	STAGE 1 EROSION CONTROL PLAN
C3.2	GRADING, DRAINAGE & STAGE 2 EROSION CONTROL PLAN - SECTION 1
C3.3	GRADING, DRAINAGE & STAGE 2 EROSION CONTROL PLAN - SECTION 2
C4.1	PLAN & PROFILE WILD INDIGO LANE - SECTION 1, SALT CEDAR LANE - SECTION 2
C4.2	PLAN & PROFILE ALLEY JN-1, ALLEY JN-2
C4.3	PLAN & PROFILE ALLEY JN-3, FARMBROOK LANE
C4.4	PLAN & PROFILE ALLEY LS-2, ALLEY LS-3
C4.5	PLAN & PROFILE LANTERN HILL TRACE
C4.6	PLAN & PROFILE ALLEY NS-2
C4.7	PLAN & PROFILE ALLEY NS-3, ALLEY NS-4
C4.7A	PLAN & PROFILE GRANITE MILL BLVD REALIGNMENT
C4.8	PLAN & PROFILE WOODLAND GROVE LANE
C4.9	PLAN & PROFILE QUARTER GATE TRACE
C4.10	PLAN & PROFILE OLD SPRING ROAD, WILD INDIGO WAY - SECTION 2
C4.11	PLAN & PROFILE ALLEY HA-1, OLD COACH ROAD
C4.12	PLAN & PROFILE ALLEY HA-3, ALLEY HA-4
C4.13	PLAN & PROFILE STORM OUTFALL 1, STORM OUTFALL 2, SEWER CONNECTION
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	ROADWAY TYPICAL SECTIONS
D3.1	UTILITY DETAILS
D3.2	UTILITY DETAILS
D4.1	BMP #17 PLAN AND DETAILS
D4.2	BMP #17 PLAN AND DETAILS
D4.3	BMP #17 PLAN AND DETAILS
D4.4	STORM DRAINAGE AND SANITARY SEWER TABLES

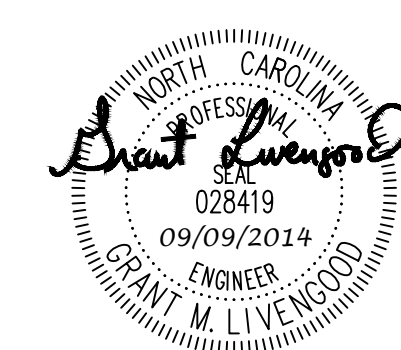


by
Newland COMMUNITIES

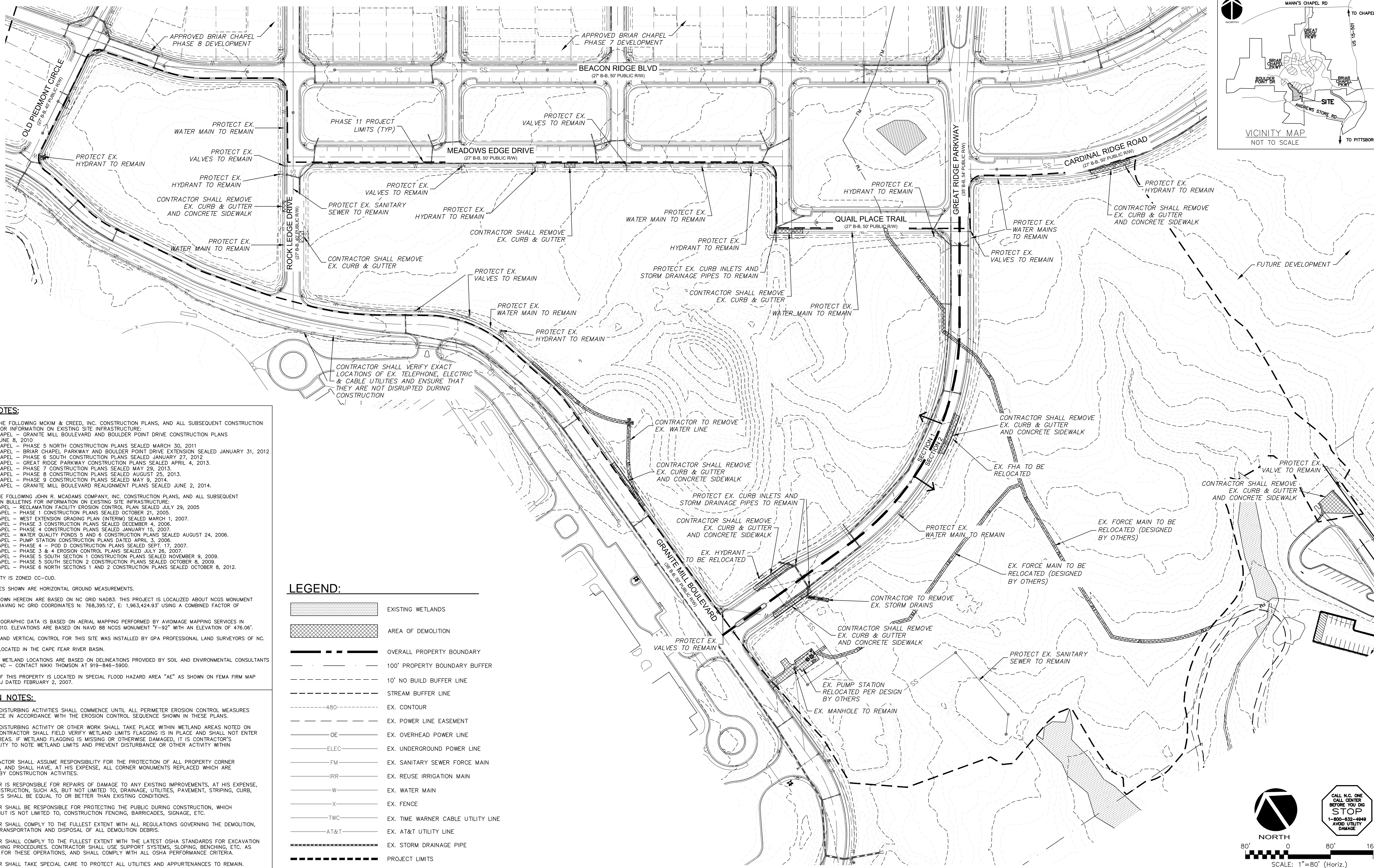


1730 Varsity Drive, Suite 500
Raleigh, North Carolina 27606
Phone: (919)233-8091, Fax: (919)233-8031
F-1222

www.mckimcreed.com



ISSUED FOR
CONSTRUCTION



GENERAL NOTES:

- REFER TO THE FOLLOWING MCKIM & CREED, INC. CONSTRUCTION PLANS, AND ALL SUBSEQUENT CONSTRUCTION BULLETINS FOR INFORMATION ON EXISTING SITE INFRASTRUCTURE:
 - BRIAR CHAPEL - GRANITE MILL BOULEVARD AND BOULDER POINT DRIVE CONSTRUCTION PLANS SEALED JUNE 8, 2010
 - BRIAR CHAPEL - PHASE 5 NORTH CONSTRUCTION PLANS SEALED MARCH 30, 2011
 - BRIAR CHAPEL - BRIAR CHAPEL PARKWAY AND BOULDER POINT DRIVE EXTENSION SEALED JANUARY 31, 2012
 - BRIAR CHAPEL - PHASE 6 SOUTH CONSTRUCTION PLANS SEALED JANUARY 27, 2012
 - BRIAR CHAPEL - GREAT RIDGE PARKWAY CONSTRUCTION PLANS SEALED APRIL 4, 2013
 - BRIAR CHAPEL - PHASE 7 CONSTRUCTION PLANS SEALED MAY 29, 2013
 - BRIAR CHAPEL - PHASE 8 CONSTRUCTION PLANS SEALED AUGUST 25, 2013
 - BRIAR CHAPEL - PHASE 9 CONSTRUCTION PLANS SEALED MAY 9, 2014
 - BRIAR CHAPEL - GRANITE MILL BOULEVARD REALIGNMENT PLANS SEALED JUNE 2, 2014
- REFER TO THE FOLLOWING JOHN R. MCADAMS COMPANY, INC. CONSTRUCTION PLANS, AND ALL SUBSEQUENT CONSTRUCTION BULLETINS FOR INFORMATION ON EXISTING SITE INFRASTRUCTURE:
 - BRIAR CHAPEL - RECLAMATION FACILITY EROSION CONTROL PLAN SEALED JULY 29, 2005
 - BRIAR CHAPEL - PHASE 1 CONSTRUCTION PLANS SEALED OCTOBER 21, 2005
 - BRIAR CHAPEL - WEST EXTENSION GRADING PLAN (INTERIM) SEALED MARCH 1, 2007
 - BRIAR CHAPEL - PHASE 3 CONSTRUCTION PLANS SEALED DECEMBER 4, 2006
 - BRIAR CHAPEL - PHASE 4 CONSTRUCTION PLANS SEALED JANUARY 15, 2007
 - BRIAR CHAPEL - WATER QUALITY PONDS 5 AND 6 CONSTRUCTION PLANS SEALED AUGUST 24, 2006
 - BRIAR CHAPEL - PUMP STATION CONSTRUCTION PLANS DATED APRIL 3, 2008
 - BRIAR CHAPEL - PHASE 4 - POD D CONSTRUCTION PLANS SEALED SEPT. 17, 2007
 - BRIAR CHAPEL - PHASE 3 & 4 EROSION CONTROL PLANS SEALED JULY 26, 2007
 - BRIAR CHAPEL - PHASE 5 SOUTH SECTION 1 CONSTRUCTION PLANS SEALED NOVEMBER 9, 2009
 - BRIAR CHAPEL - PHASE 5 SOUTH SECTION 2 CONSTRUCTION PLANS SEALED OCTOBER 8, 2009
 - BRIAR CHAPEL - PHASE 6 NORTH SECTIONS 1 AND 2 CONSTRUCTION PLANS SEALED OCTOBER 8, 2012
- THIS PROPERTY IS ZONED CC-CUD.
- ALL DISTANCES SHOWN ARE HORIZONTAL GROUND MEASUREMENTS.
- BEARINGS SHOWN HEREON ARE BASED ON NC GRID NAD83. THIS PROJECT IS LOCALIZED ABOUT NCGS MONUMENT "MEACHAM" HAVING NC GRID COORDINATES N: 768,395.12', E: 1,963,424.93' USING A COMBINED FACTOR OF 0.99990676.
- EXISTING TOPOGRAPHIC DATA IS BASED ON AERIAL MAPPING PERFORMED BY AVOIDANCE MAPPING SERVICES IN FEBRUARY 2010. ELEVATIONS ARE BASED ON NAVD 88 NCGS MONUMENT "F-92" WITH AN ELEVATION OF 476.06'.
- HORIZONTAL AND VERTICAL CONTROL FOR THIS SITE WAS INSTALLED BY GPA PROFESSIONAL LAND SURVEYORS OF NC.
- PROJECT IS LOCATED IN THE CAPE FEAR RIVER BASIN.
- STREAM AND WETLAND LOCATIONS ARE BASED ON DELINEATIONS PROVIDED BY SOIL AND ENVIRONMENTAL CONSULTANTS IN RALEIGH, NC - CONTACT NIKKI THOMSON AT 919-846-5900.
- A PORTION OF THIS PROPERTY IS LOCATED IN SPECIAL FLOOD HAZARD AREA "AE" AS SHOWN ON FEMA FIRM MAP #3710976500J DATED FEBRUARY 2, 2007.

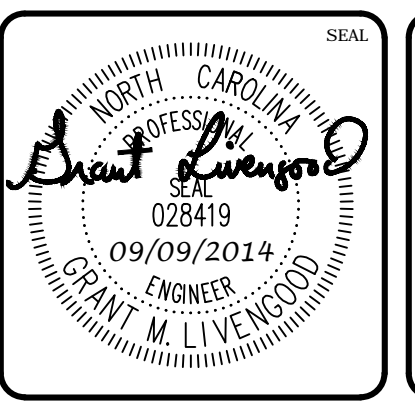
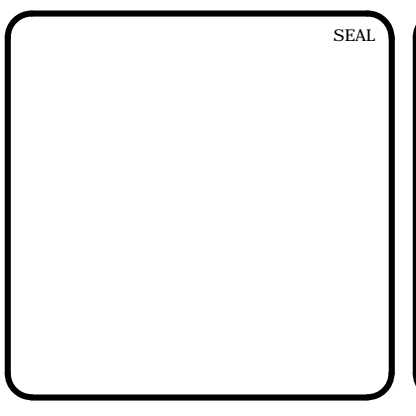
DEMOLITION NOTES:

- NO EARTH-DISTURBING ACTIVITIES SHALL COMMENCE UNTIL ALL PERIMETER EROSION CONTROL MEASURES ARE IN PLACE IN ACCORDANCE WITH THE EROSION CONTROL SEQUENCE SHOWN IN THESE PLANS.
- NO EARTH-DISTURBING ACTIVITY OR OTHER WORK SHALL TAKE PLACE WITHIN WETLAND AREAS NOTED ON SURVEY. CONTRACTOR SHALL FIELD VERIFY WETLAND LIMITS FLAGGING IS IN PLACE AND SHALL NOT ENTER 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.
- THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR THE PROTECTION OF ALL PROPERTY CORNER MONUMENTS, AND SHALL HAVE, AT HIS EXPENSE, ALL CORNER MONUMENTS REPLACED WHICH ARE DISTURBED BY CONSTRUCTION ACTIVITIES.
- CONTRACTOR IS RESPONSIBLE FOR REPAIRS OF DAMAGE TO ANY EXISTING IMPROVEMENTS, AT HIS EXPENSE, DURING CONSTRUCTION, SUCH AS, BUT NOT LIMITED TO, DRAINAGE, UTILITIES, PAVEMENT, STRIPING, CURB, ETC. REPAIRS SHALL BE EQUAL TO OR BETTER THAN EXISTING CONDITIONS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING THE PUBLIC DURING CONSTRUCTION, WHICH INCLUDES, BUT IS NOT LIMITED TO, CONSTRUCTION FENCING, BARRICADES, SIGNAGE, ETC.
- CONTRACTOR SHALL COMPLY TO THE FULLEST EXTENT WITH ALL REGULATIONS GOVERNING THE DEMOLITION, REMOVAL, TRANSPORTATION AND DISPOSAL OF ALL DEMOLITION DEBRIS.
- CONTRACTOR SHALL COMPLY TO THE FULLEST EXTENT WITH THE LATEST OSHA STANDARDS FOR EXCAVATION AND TRENCHING PROCEDURES. CONTRACTOR SHALL USE SUPPORT SYSTEMS, SLOPING, BENCHING, ETC. AS NECESSARY FOR THESE OPERATIONS, AND SHALL COMPLY WITH ALL OSHA PERFORMANCE CRITERIA.
- CONTRACTOR SHALL TAKE SPECIAL CARE TO PROTECT ALL UTILITIES AND APPURTENANCES TO REMAIN.

LEGEND:

- EXISTING WETLANDS
- AREA OF DEMOLITION
- OVERALL PROPERTY BOUNDARY
- 100' PROPERTY BOUNDARY BUFFER
- 10' NO BUILD BUFFER LINE
- STREAM BUFFER LINE
- 480'
- EX. CONTOUR
- EX. POWER LINE EASEMENT
- EX. OVERHEAD POWER LINE
- EX. UNDERGROUND POWER LINE
- EX. SANITARY SEWER FORCE MAIN
- EX. REUSE IRRIGATION MAIN
- EX. WATER MAIN
- EX. FENCE
- EX. TIME WARNER CABLE UTILITY LINE
- EX. AT&T UTILITY LINE
- EX. STORM DRAINAGE PIPE
- PROJECT LIMITS

REV. NO.	DESCRIPTIONS / REVISIONS	DATE
2	REVISED PER NCDOT & DWR-PVSS COMMENTS/ISSUED FOR CONSTRUCTION	2014.09.09
1	SUBMITTAL TO REVIEW AGENCIES	2014.06.27

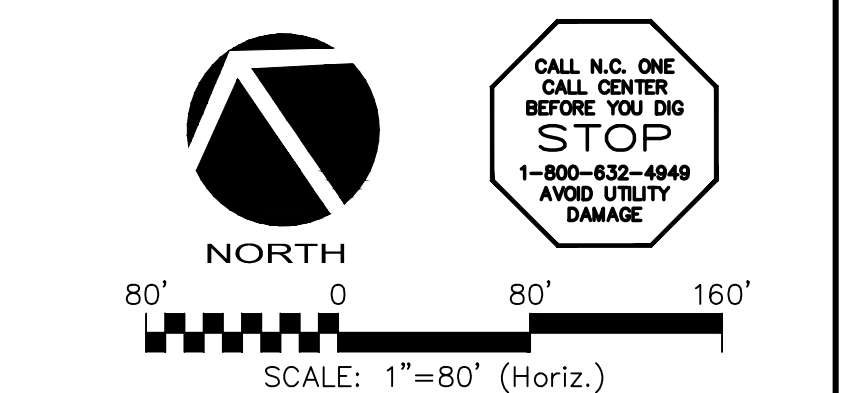
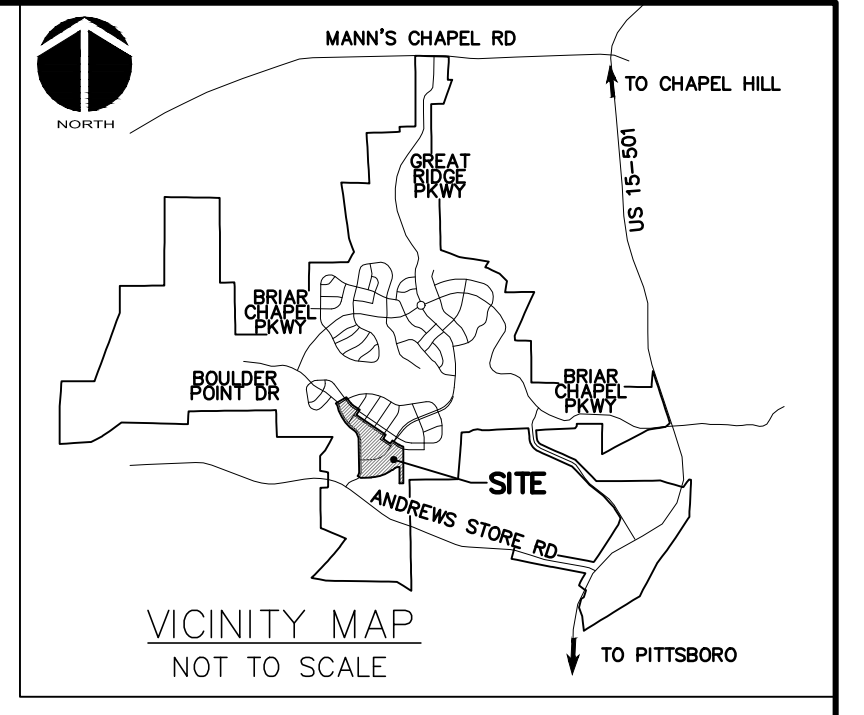


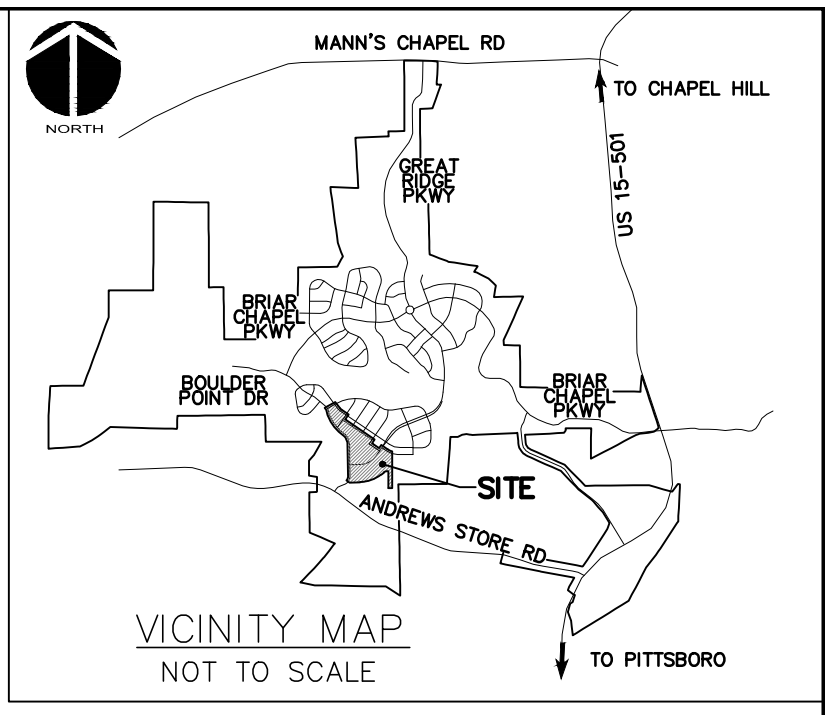
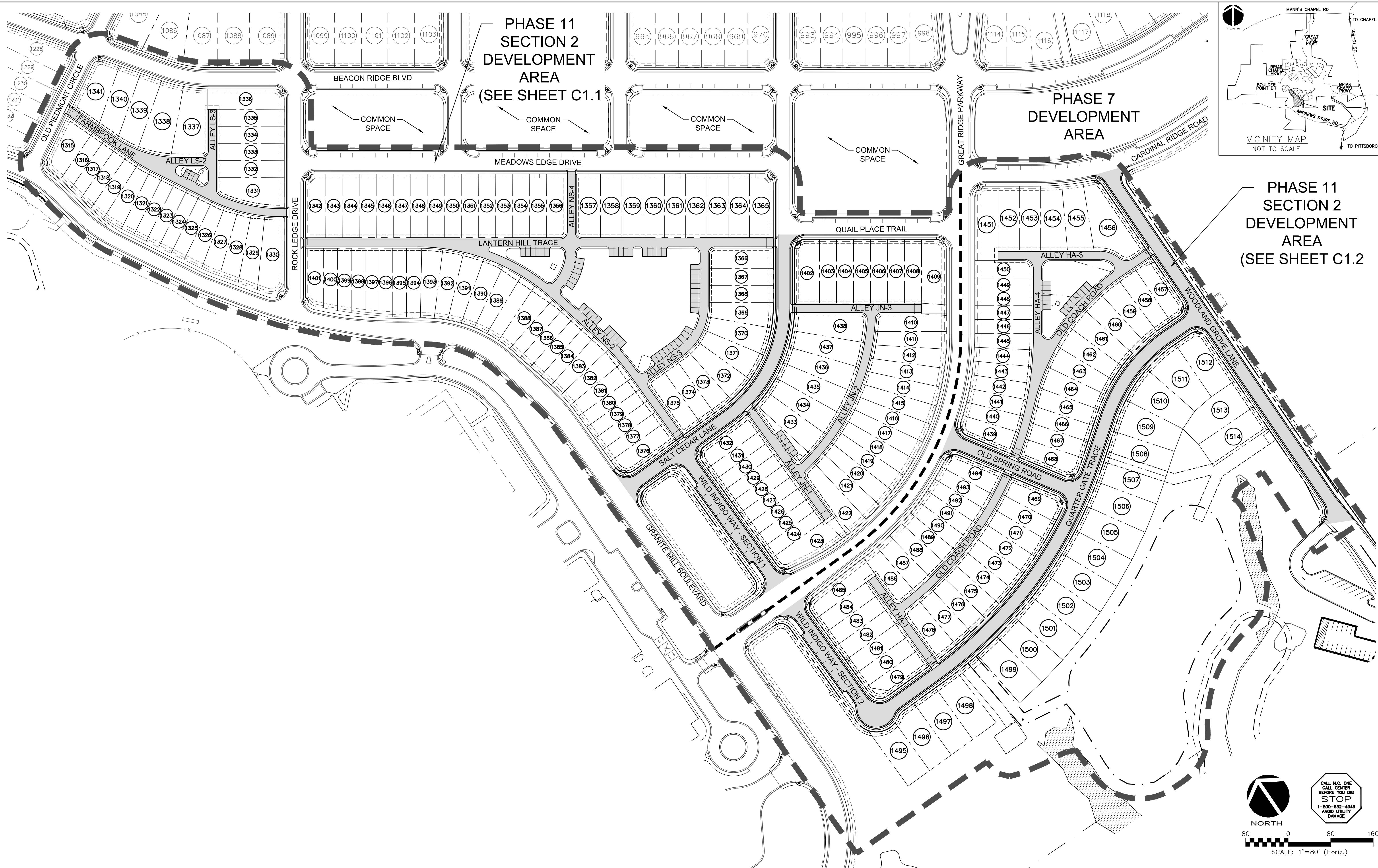
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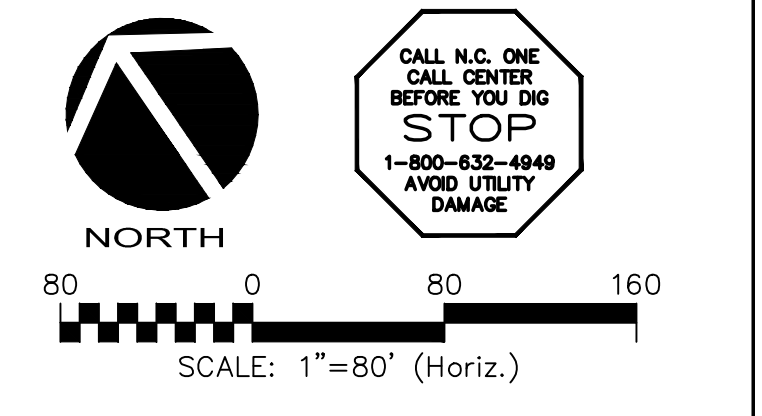
**BRIAR CHAPEL
 PHASE 11
 CHATHAM COUNTY, NORTH CAROLINA**
EXISTING CONDITIONS/DEMOLITION PLAN

DATE: JUNE 27, 2014	SCALE: AS NOTED	HORIZONTALLY: N/A	VERTICALLY: N/A	PROJECT NUMBER: CR101
MCE PROJ. #: 02735-0109	DESIGNED: GCA	CHECKED: CHS	PROJ. MGR.: CHS	DRAWING NUMBER: C0.2
STATUS: ISSUED FOR CONSTRUCTION				REVISION: 2

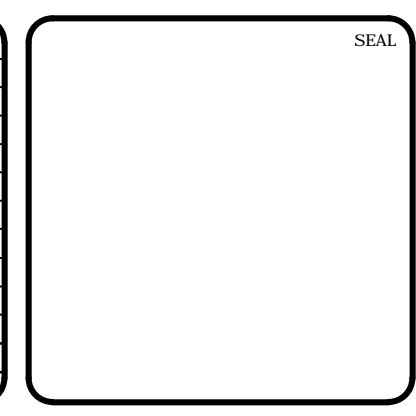




PHASE 11
SECTION 2
DEVELOPMENT
AREA
(SEE SHEET C1.2)



REV. NO.	DESCRIPTIONS	DATE
2	REVISED PER NCDOT & DWE-PWS COMMENTS ISSUED FOR CONSTRUCTION	2014.09.09
1	SUBMITTAL TO REVIEW AGENCIES	2014.06.27
	REVISIONS	



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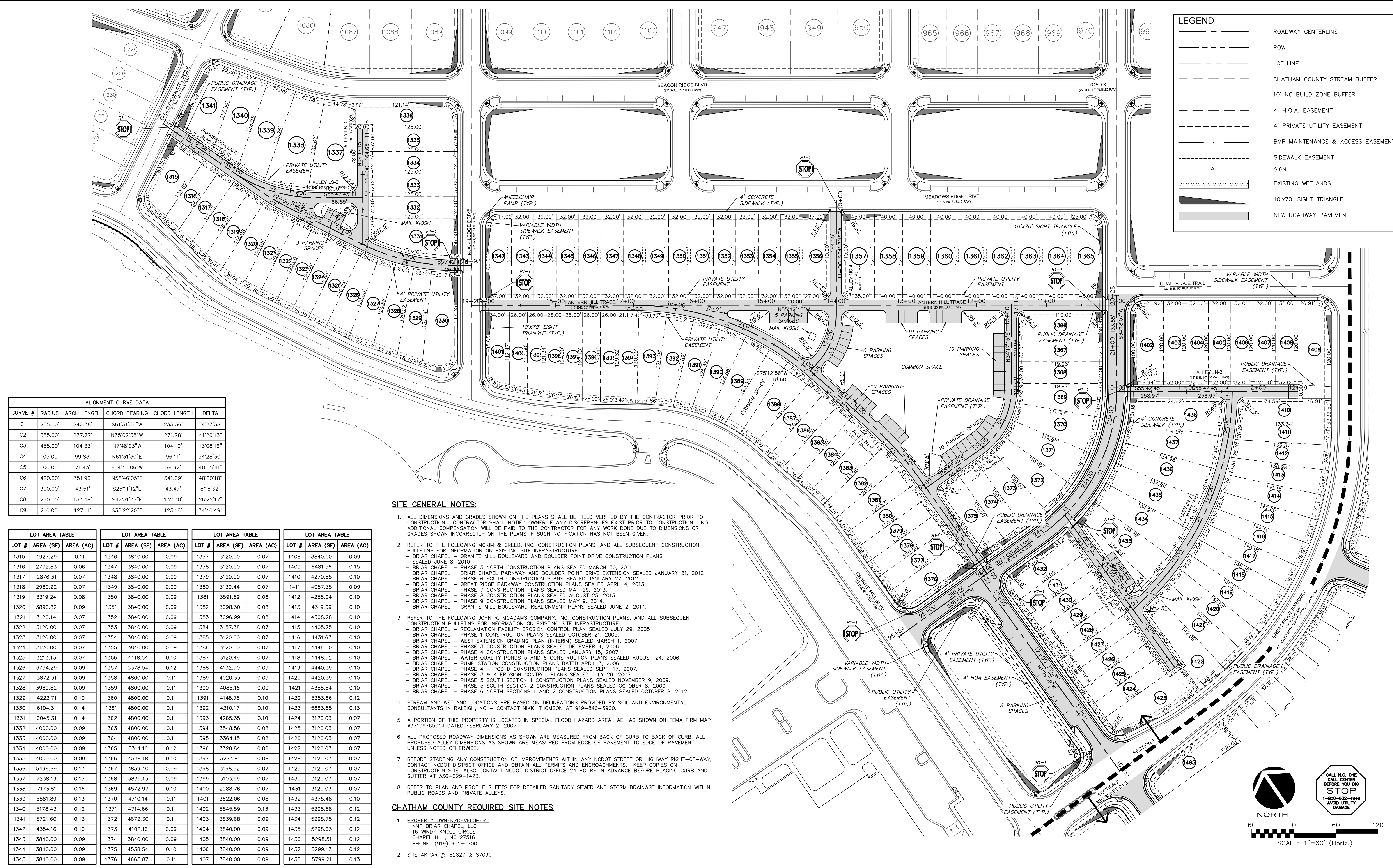
**BRIAR CHAPEL
 PHASE 11
 CHATHAM COUNTY, NORTH CAROLINA**

OVERALL SITE PLAN

DATE: JUNE 27, 2014	SCALE: HORIZONTAL: AS NOTED	HMC FILE NUMBER: CR101
MCE PROJ. #: 02735-0109	VERTICAL: N/A	DRAWING NUMBER: C1.0
DRAWN: GCA		
DESIGNED: GCA		
CHECKED: CHS		
PROJ. MGR: CHS		
STATUS: ISSUED FOR CONSTRUCTION	REVISION: 2	

LEGEND

- ROADWAY CENTERLINE
- ROW
- LOT LINE
- CHATHAM COUNTY STREAM BUFFER
- 10' NO BUILD ZONE BUFFER
- 4' H.O.A. EASEMENT
- 4' PRIVATE UTILITY EASEMENT
- BMP MAINTENANCE & ACCESS EASEMENT
- SIDEWALK EASEMENT
- SIGN
- EXISTING WETLANDS
- 10'x70' SIGHT TRIANGLE
- NEW ROADWAY PAVEMENT



ALIGNMENT CURVE DATA

CURVE #	RADIUS	ARCH LENGTH	CHORD BEARING	CHORD LENGTH	DELTA
C1	255.00'	242.38'	S61°31'56"W	233.36'	54°27'38"
C2	385.00'	277.77'	N35°02'38"W	271.78'	41°20'13"
C3	455.00'	104.33'	N7°48'23"W	104.10'	13°08'16"
C4	105.00'	99.83'	N61°31'30"E	96.11'	54°28'30"
C5	100.00'	71.43'	S54°45'06"W	69.92'	40°55'41"
C6	420.00'	351.90'	N58°46'05"E	341.69'	48°00'18"
C7	300.00'	43.51'	S25°11'12"E	43.47'	8°18'32"
C8	290.00'	133.48'	S42°31'37"E	132.30'	26°22'17"
C9	210.00'	127.11'	S38°22'20"E	125.18'	34°40'49"

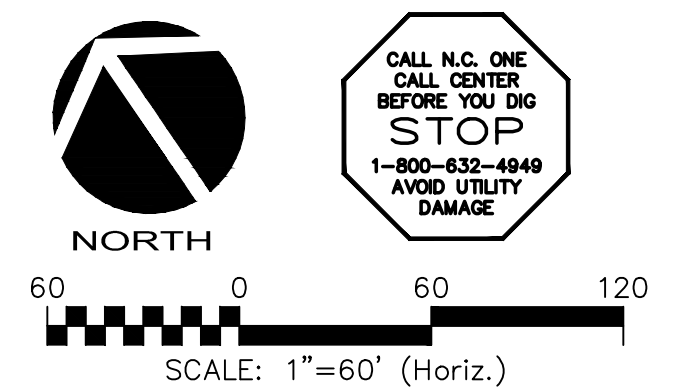
LOT AREA TABLE		LOT AREA TABLE		LOT AREA TABLE		LOT AREA TABLE	
LOT #	AREA (SF)	AREA (AC)	LOT #	AREA (SF)	AREA (AC)	LOT #	AREA (SF)
1315	4927.29	0.11	1346	3840.00	0.09	1377	3120.00
1316	2772.83	0.06	1347	3840.00	0.09	1378	3120.00
1317	2876.31	0.07	1348	3840.00	0.09	1379	3120.00
1318	2980.22	0.07	1349	3840.00	0.09	1380	3130.44
1319	3319.24	0.08	1350	3840.00	0.09	1381	3591.59
1320	3890.82	0.09	1351	3840.00	0.09	1382	3698.30
1321	3120.14	0.07	1352	3840.00	0.09	1383	3696.99
1322	3120.00	0.07	1353	3840.00	0.09	1384	3157.38
1323	3120.00	0.07	1354	3840.00	0.09	1385	3120.00
1324	3120.00	0.07	1355	3840.00	0.09	1386	3120.00
1325	3213.13	0.07	1356	4418.54	0.10	1387	3120.49
1326	3774.29	0.09	1357	5378.54	0.12	1388	4132.90
1327	3872.31	0.09	1358	4800.00	0.11	1389	4020.33
1328	3989.82	0.09	1359	4800.00	0.11	1390	4085.16
1329	4222.71	0.10	1360	4800.00	0.11	1391	4148.76
1330	6104.31	0.14	1361	4800.00	0.11	1392	4210.17
1331	6045.31	0.14	1362	4800.00	0.11	1393	4265.35
1332	4000.00	0.09	1363	4800.00	0.11	1394	3548.56
1333	4000.00	0.09	1364	4800.00	0.11	1395	3364.15
1334	4000.00	0.09	1365	5314.16	0.12	1396	3328.84
1335	4000.00	0.09	1366	4538.18	0.10	1397	3273.81
1336	5496.69	0.13	1367	3839.40	0.09	1398	3198.92
1337	7238.19	0.17	1368	3839.13	0.09	1399	3103.99
1338	7173.81	0.16	1369	4572.97	0.10	1400	2988.76
1339	5581.89	0.13	1370	4710.14	0.11	1401	3622.06
1340	5178.43	0.12	1371	4714.66	0.11	1402	5545.59
1341	5721.60	0.13	1372	4672.30	0.11	1403	3839.68
1342	4354.16	0.10	1373	4102.16	0.09	1404	3840.00
1343	3840.00	0.09	1374	3840.00	0.09	1405	3840.00
1344	3840.00	0.09	1375	4538.54	0.10	1406	3840.00
1345	3840.00	0.09	1376	4665.87	0.11	1407	3840.00

SITE GENERAL NOTES:

- ALL DIMENSIONS AND GRADES SHOWN ON THE PLANS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY OWNER IF ANY DISCREPANCIES EXIST PRIOR TO CONSTRUCTION. NO ADDITIONAL COMPENSATION WILL BE PAID TO THE CONTRACTOR FOR ANY WORK DONE DUE TO DIMENSIONS OR GRADES SHOWN INCORRECTLY ON THE PLANS IF SUCH NOTIFICATION HAS NOT BEEN GIVEN.
- REFER TO THE FOLLOWING MCKIM & CREED, INC. CONSTRUCTION PLANS, AND ALL SUBSEQUENT CONSTRUCTION BULLETINS FOR INFORMATION ON EXISTING SITE INFRASTRUCTURE:
 - BRIAR CHAPEL - GRANITE MILL BOULEVARD AND BOULDER POINT DRIVE CONSTRUCTION PLANS SEALED JUNE 8, 2010
 - BRIAR CHAPEL - PHASE 5 NORTH CONSTRUCTION PLANS SEALED MARCH 30, 2011
 - BRIAR CHAPEL - BRIAR CHAPEL PARKWAY AND BOULDER POINT DRIVE EXTENSION SEALED JANUARY 31, 2012
 - BRIAR CHAPEL - PHASE 6 SOUTH CONSTRUCTION PLANS SEALED JANUARY 27, 2012
 - BRIAR CHAPEL - GREAT RIDGE PARKWAY CONSTRUCTION PLANS SEALED APRIL 4, 2013.
 - BRIAR CHAPEL - PHASE 7 CONSTRUCTION PLANS SEALED MAY 29, 2013.
 - BRIAR CHAPEL - PHASE 8 CONSTRUCTION PLANS SEALED AUGUST 25, 2013.
 - BRIAR CHAPEL - PHASE 9 CONSTRUCTION PLANS SEALED MAY 9, 2014.
 - BRIAR CHAPEL - GRANITE MILL BOULEVARD REALIGNMENT PLANS SEALED JUNE 2, 2014.
- REFER TO THE FOLLOWING JOHN R. MCADAMS COMPANY, INC. CONSTRUCTION PLANS, AND ALL SUBSEQUENT CONSTRUCTION BULLETINS FOR INFORMATION ON EXISTING SITE INFRASTRUCTURE:
 - BRIAR CHAPEL - RECLAMATION FACILITY EROSION CONTROL PLAN SEALED JULY 29, 2005
 - BRIAR CHAPEL - PHASE 1 CONSTRUCTION PLANS SEALED OCTOBER 21, 2005.
 - BRIAR CHAPEL - WEST EXTENSION GRADING PLAN (INTERIM) SEALED MARCH 1, 2007.
 - BRIAR CHAPEL - PHASE 3 CONSTRUCTION PLANS SEALED DECEMBER 4, 2006.
 - BRIAR CHAPEL - PHASE 4 CONSTRUCTION PLANS SEALED JANUARY 15, 2007.
 - BRIAR CHAPEL - WATER QUALITY PONDS 5 AND 6 CONSTRUCTION PLANS SEALED AUGUST 24, 2006.
 - BRIAR CHAPEL - PUMP STATION CONSTRUCTION PLANS DATED APRIL 3, 2006.
 - BRIAR CHAPEL - PHASE 4 - POD D CONSTRUCTION PLANS SEALED SEPT. 17, 2007.
 - BRIAR CHAPEL - PHASE 3 & 4 EROSION CONTROL PLANS SEALED JULY 26, 2007.
 - BRIAR CHAPEL - PHASE 5 SOUTH SECTION 1 CONSTRUCTION PLANS SEALED NOVEMBER 9, 2009.
 - BRIAR CHAPEL - PHASE 5 SOUTH SECTION 2 CONSTRUCTION PLANS SEALED OCTOBER 8, 2009.
 - BRIAR CHAPEL - PHASE 6 NORTH SECTIONS 1 AND 2 CONSTRUCTION PLANS SEALED OCTOBER 8, 2012.
- STREAM AND WETLAND LOCATIONS ARE BASED ON DELINEATIONS PROVIDED BY SOIL AND ENVIRONMENTAL CONSULTANTS IN RALEIGH, NC - CONTACT NIKKI THOMSON AT 919-846-5900.
- A PORTION OF THIS PROPERTY IS LOCATED IN SPECIAL FLOOD HAZARD AREA "AE" AS SHOWN ON FEMA FIRM MAP #3710976500J DATED FEBRUARY 2, 2007.
- ALL PROPOSED ROADWAY DIMENSIONS AS SHOWN ARE MEASURED FROM BACK OF CURB TO BACK OF CURB, ALL PROPOSED ALLEY DIMENSIONS AS SHOWN ARE MEASURED FROM EDGE OF PAVEMENT TO EDGE OF PAVEMENT, UNLESS NOTED OTHERWISE.
- BEFORE STARTING ANY CONSTRUCTION OF IMPROVEMENTS WITHIN ANY NCDOT STREET OR HIGHWAY RIGHT-OF-WAY, CONTACT NCDOT DISTRICT OFFICE AND OBTAIN ALL PERMITS AND ENCROACHMENTS. KEEP COPIES ON CONSTRUCTION SITE. ALSO CONTACT NCDOT DISTRICT OFFICE 24 HOURS IN ADVANCE BEFORE PLACING CURB AND GUTTER AT 336-629-1423.
- REFER TO PLAN AND PROFILE SHEETS FOR DETAILED SANITARY SEWER AND STORM DRAINAGE INFORMATION WITHIN PUBLIC ROADS AND PRIVATE ALLEYS.

CHATHAM COUNTY REQUIRED SITE NOTES

- PROPERTY OWNER/DEVELOPER:
NNP BRIAR CHAPEL, LLC
16 WINDY KNOLL CIRCLE
CHAPEL HILL, NC 27516
PHONE: (919) 951-0700
- SITE AKPAR #: 82827 & 87090



REV. NO.	DESCRIPTIONS	DATE
2	REVISED PER NCDOT & DWG-PWSS COMMENTS ISSUED FOR CONSTRUCTION	2014.09.09
1	SUBMITTAL TO REVIEW AGENCIES	2014.06.27

SEAL

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1730 Varsity Drive, Suite 500
Raleigh, North Carolina 27606
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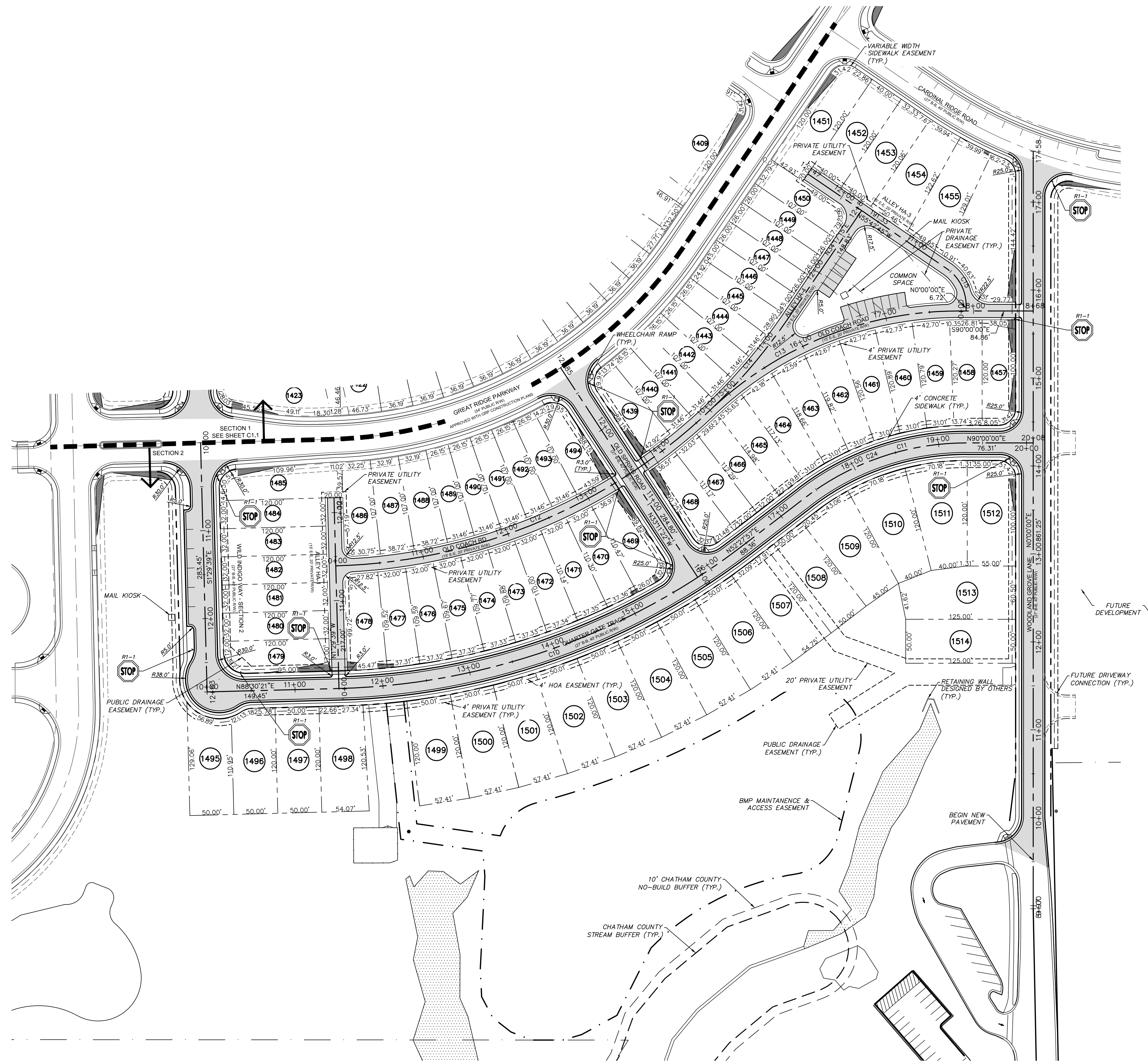
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by **Newland COMMUNITIES**

**BRIAR CHAPEL
PHASE 11 - SECTION 1
CHATHAM COUNTY, NORTH CAROLINA**

SECTION 1 SITE PLAN

DATE: JUNE 27, 2014	SCALE: HORIZONTAL: AS NOTED; VERTICAL: N/A	PROJECT NUMBER: CR101
MCE PROJ #: 02735-0109	DRAWN: GCA	DRAWING NUMBER: C1.1
DESIGNED: GCA	CHECKED: CHS	REVISION: 2
PROJ. MGR: CHS	STATUS: ISSUED FOR CONSTRUCTION	



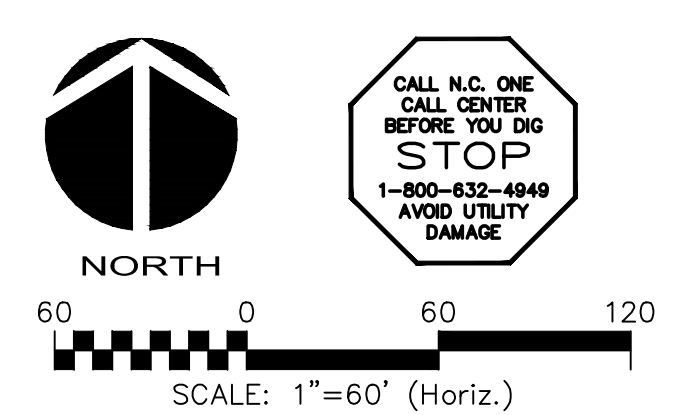
LEGEND

- ROADWAY CENTERLINE
- ROW
- LOT LINE
- CHATHAM COUNTY STREAM BUFFER
- 10' NO BUILD ZONE BUFFER
- 4' H.O.A. EASEMENT
- 4' PRIVATE UTILITY EASEMENT
- BMP MAINTENANCE & ACCESS EASEMENT
- SIDEWALK EASEMENT
- SIGN
- EXISTING WETLANDS
- 10'x70' SIGHT TRIANGLE
- NEW ROADWAY PAVEMENT

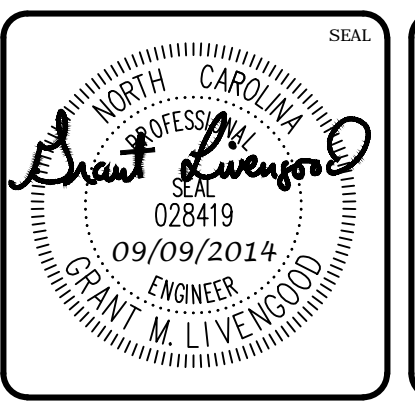
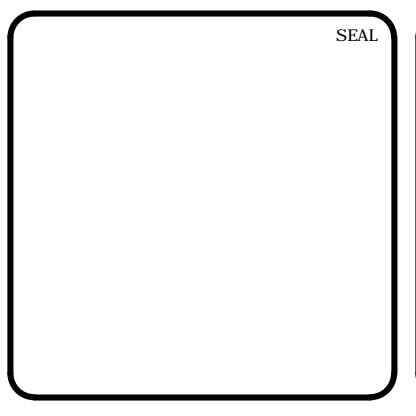
LOT AREA TABLE			LOT AREA TABLE			LOT AREA TABLE			LOT AREA TABLE		
LOT #	AREA (SF)	AREA (AC)	LOT #	AREA (SF)	AREA (AC)	LOT #	AREA (SF)	AREA (AC)	LOT #	AREA (SF)	AREA (AC)
1439	3950.42	0.09	1459	4443.41	0.10	1479	4305.87	0.10	1499	6428.51	0.15
1440	3082.28	0.07	1460	4456.59	0.10	1480	3840.00	0.09	1500	6428.51	0.15
1441	3082.28	0.07	1461	4451.71	0.10	1481	3840.00	0.09	1501	6428.51	0.15
1442	3082.28	0.07	1462	4428.86	0.10	1482	3840.00	0.09	1502	6428.51	0.15
1443	3082.28	0.07	1463	4388.36	0.10	1483	3840.00	0.09	1503	6428.51	0.15
1444	3082.28	0.07	1464	4313.80	0.10	1484	3840.00	0.09	1504	6428.51	0.15
1445	3058.72	0.07	1465	3925.19	0.09	1485	5081.49	0.12	1505	6428.51	0.15
1446	2782.00	0.06	1466	3632.30	0.08	1486	3901.05	0.09	1506	6428.51	0.15
1447	2782.00	0.06	1467	3571.21	0.08	1487	3793.78	0.09	1507	6274.78	0.14
1448	2782.00	0.06	1468	4410.72	0.10	1488	3793.78	0.09	1508	6000.00	0.14
1449	2782.00	0.06	1469	4557.55	0.10	1489	3082.28	0.07	1509	6541.17	0.15
1450	3459.72	0.08	1470	3828.06	0.09	1490	3082.28	0.07	1510	6650.80	0.15
1451	5918.67	0.14	1471	3821.97	0.09	1491	3082.28	0.07	1511	6807.47	0.16
1452	4800.00	0.11	1472	3816.41	0.09	1492	3082.28	0.07	1512	6514.16	0.15
1453	4800.14	0.11	1473	3811.38	0.09	1493	3082.28	0.07	1513	7332.33	0.17
1454	5465.59	0.13	1474	3806.89	0.09	1494	4015.46	0.09	1514	6250.00	0.14
1455	5618.34	0.13	1475	3802.96	0.09	1495	5685.52	0.13			
1456	9111.43	0.21	1476	3799.59	0.09	1496	5906.51	0.14			
1457	4479.84	0.10	1477	3796.79	0.09	1497	6000.00	0.14			
1458	4151.69	0.10	1478	4522.31	0.10	1498	6248.92	0.14			

ALIGNMENT CURVE DATA

CURVE #	RADIUS	ARCH LENGTH	CHORD BEARING	CHORD LENGTH	DELTA
C10	790.00'	496.92'	N70°29'09"E	488.77'	36°02'24"
C11	300.00'	196.53'	N71°13'58"E	193.03'	37°32'03"
C12	644.00'	471.38'	N67°25'21"E	460.93'	41°56'17"
C13	410.00'	311.61'	N68°13'36"E	304.17'	43°32'47"
C14	644.00'	136.75'	N40°22'14"E	136.49'	12°09'58"
C15	50.00'	48.62'	N27°51'22"W	46.73'	55°42'45"



REV. NO.	DESCRIPTIONS	DATE
2	REVISED PER NCDOT & DWR-PWSS COMMENTS/ISSUED FOR CONSTRUCTION	2014.09.09
1	SUBMITTAL TO REVIEW AGENCIES	2014.08.27



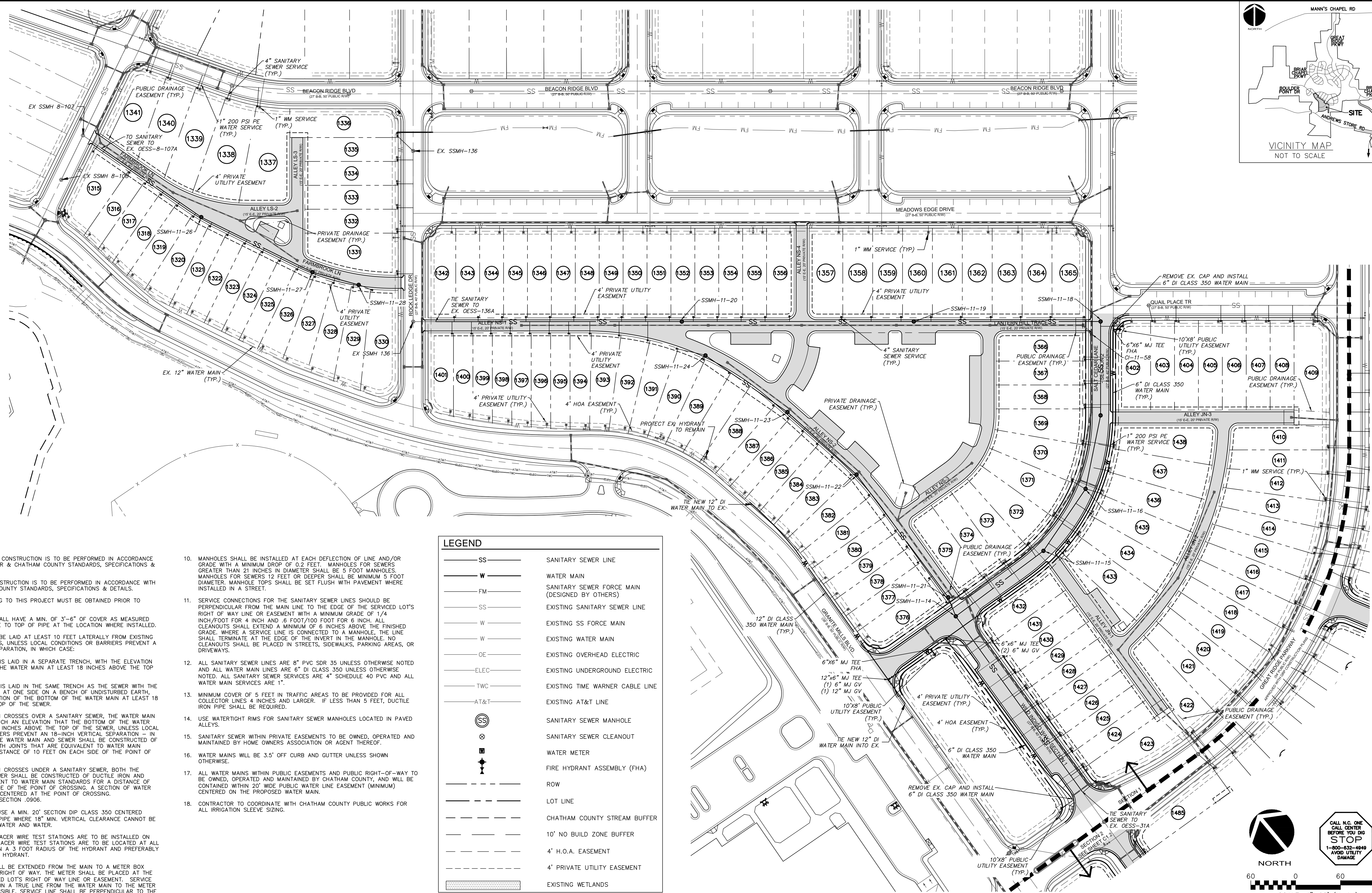
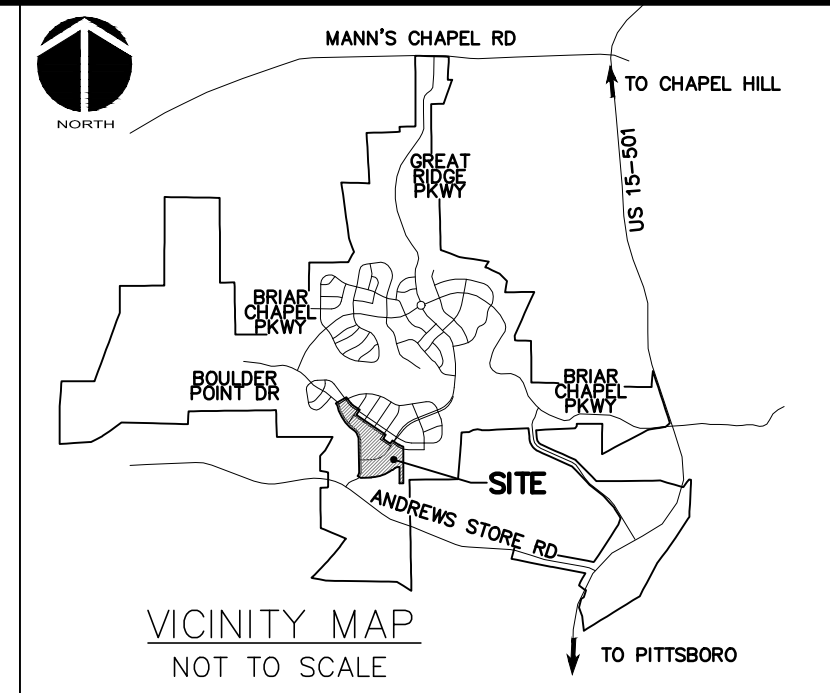
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**BRIAR CHAPEL
 PHASE 11 - SECTION 2
 CHATHAM COUNTY, NORTH CAROLINA**

SECTION 2 SITE PLAN

DATE: JUNE 27, 2014	SCALE: HORIZONTAL: AS NOTED	PROJECT NUMBER: CR101
MCE PROJ. #: 02735-0109	VERTICAL: N/A	DRAWING NUMBER: C1.2
DRAWN: GCA		
DESIGNED: GCA		
CHECKED: CHS		
PROJ. MGR.: CHS		
STATUS: ISSUED FOR CONSTRUCTION	REVISION: 2	

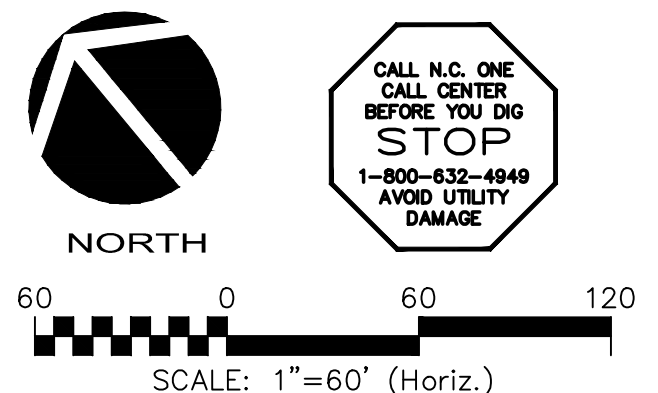


- UTILITY NOTES:**
- ALL SANITARY SEWER CONSTRUCTION IS TO BE PERFORMED IN ACCORDANCE WITH CURRENT NCENR & CHATHAM COUNTY STANDARDS, SPECIFICATIONS & DETAILS.
 - ALL WATER MAIN CONSTRUCTION IS TO BE PERFORMED IN ACCORDANCE WITH CURRENT CHATHAM COUNTY STANDARDS, SPECIFICATIONS & DETAILS.
 - ALL PERMITS RELATING TO THIS PROJECT MUST BE OBTAINED PRIOR TO CONSTRUCTION.
 - ALL WATER MAINS SHALL HAVE A MIN. OF 3'-6" OF COVER AS MEASURED FROM FINISHED GRADE TO TOP OF PIPE AT THE LOCATION WHERE INSTALLED.
 - WATER MAINS SHALL BE LAID AT LEAST 10 FEET LATERALLY FROM EXISTING OR PROPOSED SEWERS, UNLESS LOCAL CONDITIONS OR BARRIERS PREVENT A 10-FOOT LATERAL SEPARATION, IN WHICH CASE:
 - THE WATER MAIN IS LAID IN A SEPARATE TRENCH, WITH THE ELEVATION OF THE BOTTOM OF THE WATER MAIN AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER; OR
 - 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.
 - WHERE A WATER MAIN CROSSES OVER A SANITARY SEWER, THE WATER MAIN SHALL BE LAID AT SUCH AN 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. SEE NCAC 15A, 18C, SECTION .0906.
 - CONTRACTOR SHALL USE A MIN. 20' SECTION DIP CLASS 350 CENTERED UNDER STORMWATER PIPE WHERE 18" MIN. VERTICAL CLEARANCE CANNOT BE MET BETWEEN STORMWATER AND WATER.
 - TRACER WIRE AND TRACER WIRE TEST STATIONS ARE TO BE INSTALLED ON ALL WATER MAINS. TRACER WIRE TEST STATIONS ARE TO BE LOCATED AT ALL FIRE HYDRANTS WITHIN A 3 FOOT RADIUS OF THE HYDRANT AND PREFERABLY TO THE REAR OF THE HYDRANT.
 - WATER SERVICES SHALL BE EXTENDED FROM THE MAIN TO A METER BOX LOCATED WITHIN THE RIGHT OF WAY. THE METER SHALL BE PLACED AT THE EDGE OF THE SERVICED LOT'S RIGHT OF WAY LINE OR EASEMENT. SERVICE LINE SHALL BE RUN ON A TRUE LINE FROM THE WATER MAIN TO THE METER BOX, AND WHERE POSSIBLE, SERVICE LINE SHALL BE PERPENDICULAR TO THE MAIN LINE. NO WATER BOXES OR VAULTS SHALL BE PLACED IN STREETS, SIDEWALKS, PARKING AREAS, OR DRIVEWAYS.
 - MANHOLES SHALL BE SPACED A MAXIMUM DISTANCE OF 400 FEET APART.

- MANHOLES SHALL BE INSTALLED AT EACH DEFLECTION OF LINE AND/OR GRADE WITH A MINIMUM DROP OF 0.2 FEET. MANHOLES FOR SEWERS GREATER THAN 21 INCHES IN DIAMETER SHALL BE 5 FOOT MANHOLES. MANHOLES FOR SEWERS 12 FEET OR DEEPER SHALL BE MINIMUM 5 FOOT DIAMETER. MANHOLE TOPS SHALL BE SET FLUSH WITH PAVEMENT WHERE INSTALLED IN A STREET.
- SERVICE CONNECTIONS FOR THE SANITARY SEWER LINES SHOULD BE PERPENDICULAR FROM THE MAIN LINE TO THE EDGE OF THE SERVICED LOT'S RIGHT OF WAY LINE OR EASEMENT WITH A MINIMUM GRADE OF 1/4 INCH/FOOT FOR 4 INCH AND .6 FOOT/100 FOOT FOR 6 INCH. ALL CLEANOUTS SHALL EXTEND A MINIMUM OF 6 INCHES ABOVE THE FINISHED GRADE. WHERE A SERVICE LINE IS CONNECTED TO A MANHOLE, THE LINE SHALL TERMINATE AT THE EDGE OF THE INVERT IN THE MANHOLE. NO CLEANOUTS SHALL BE PLACED IN STREETS, SIDEWALKS, PARKING AREAS, OR DRIVEWAYS.
- ALL SANITARY SEWER LINES ARE 8" PVC SDR 35 UNLESS OTHERWISE NOTED AND ALL WATER MAIN LINES ARE 6" DI CLASS 350 UNLESS OTHERWISE NOTED. ALL SANITARY SEWER SERVICES ARE 4" SCHEDULE 40 PVC AND ALL WATER MAIN SERVICES ARE 1".
- MINIMUM COVER OF 5 FEET IN TRAFFIC AREAS TO BE PROVIDED FOR ALL COLLECTOR LINES 4 INCHES AND LARGER. IF LESS THAN 5 FEET, DUCTILE IRON PIPE SHALL BE REQUIRED.
- USE WATERTIGHT RIMS FOR SANITARY SEWER MANHOLES LOCATED IN PAVED ALLEYS.
- SANITARY SEWER WITHIN PRIVATE EASEMENTS TO BE OWNED, OPERATED AND MAINTAINED BY HOME OWNERS ASSOCIATION OR AGENT THEREOF.
- WATER MAINS WILL BE 3.5' OFF CURB AND GUTTER UNLESS SHOWN OTHERWISE.
- ALL WATER MAINS WITHIN PUBLIC EASEMENTS AND PUBLIC RIGHT-OF-WAY TO BE OWNED, OPERATED AND MAINTAINED BY CHATHAM COUNTY, AND WILL BE CONTAINED WITHIN 20' WIDE PUBLIC WATER LINE EASEMENT (MINIMUM) CENTERED ON THE PROPOSED WATER MAIN.
- CONTRACTOR TO COORDINATE WITH CHATHAM COUNTY PUBLIC WORKS FOR ALL IRRIGATION SLEEVE SIZING.

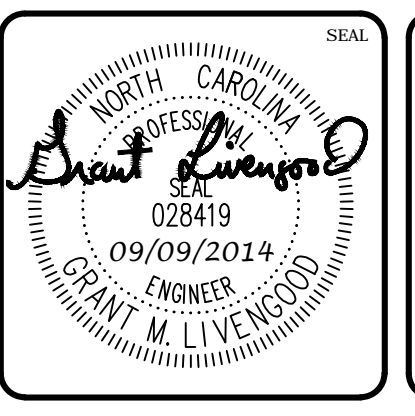
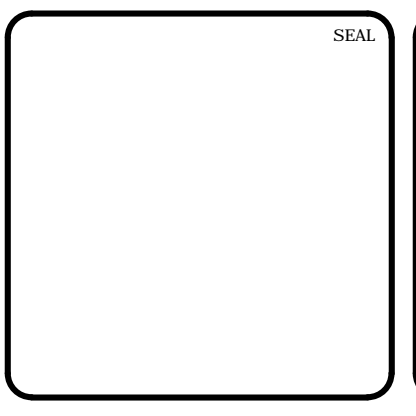
LEGEND

SS	SANITARY SEWER LINE
W	WATER MAIN
FM	SANITARY SEWER FORCE MAIN (DESIGNED BY OTHERS)
SS	EXISTING SANITARY SEWER LINE
W	EXISTING SS FORCE MAIN
W	EXISTING WATER MAIN
OE	EXISTING OVERHEAD ELECTRIC
ELEC	EXISTING UNDERGROUND ELECTRIC
TWC	EXISTING TIME WARNER CABLE LINE
AT&T	EXISTING AT&T LINE
SS	SANITARY SEWER MANHOLE
⊗	SANITARY SEWER CLEANOUT
⊕	WATER METER
⊕	FIRE HYDRANT ASSEMBLY (FHA)
—	ROW
---	LOT LINE
---	CHATHAM COUNTY STREAM BUFFER
---	10' NO BUILD ZONE BUFFER
---	4' H.O.A. EASEMENT
---	4' PRIVATE UTILITY EASEMENT
---	EXISTING WETLANDS



CALL N.C. ONE CALL CENTER BEFORE YOU DIG STOP 1-800-632-4649 AVOID UTILITY DAMAGE

REV. NO.	DESCRIPTIONS	DATE
2	REVISED PER NCDOT & DWR-PWSS COMMENTS ISSUED FOR CONSTRUCTION	2014.09.09
1	SUBMITTAL TO REVIEW AGENCIES	2014.06.27



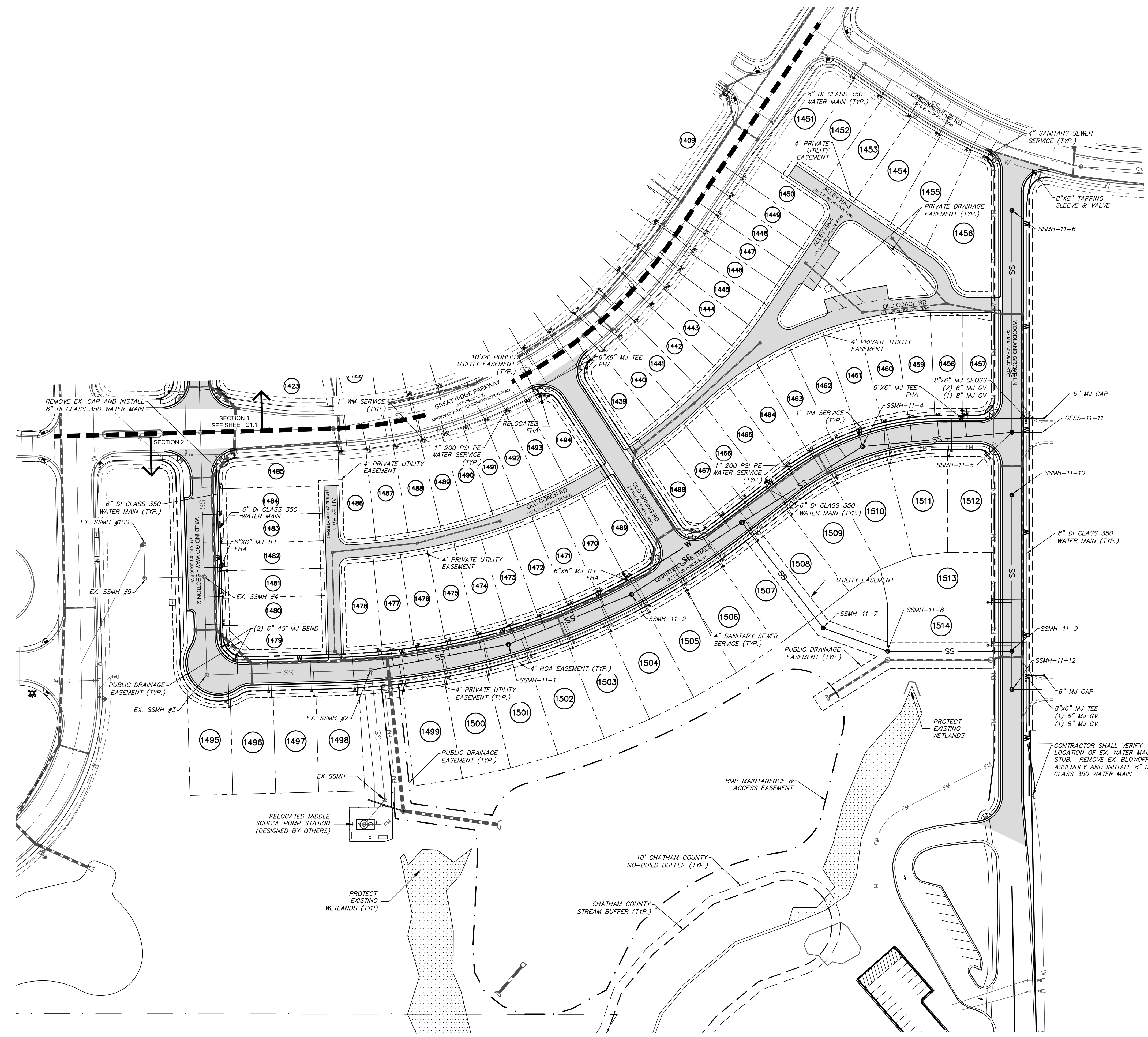
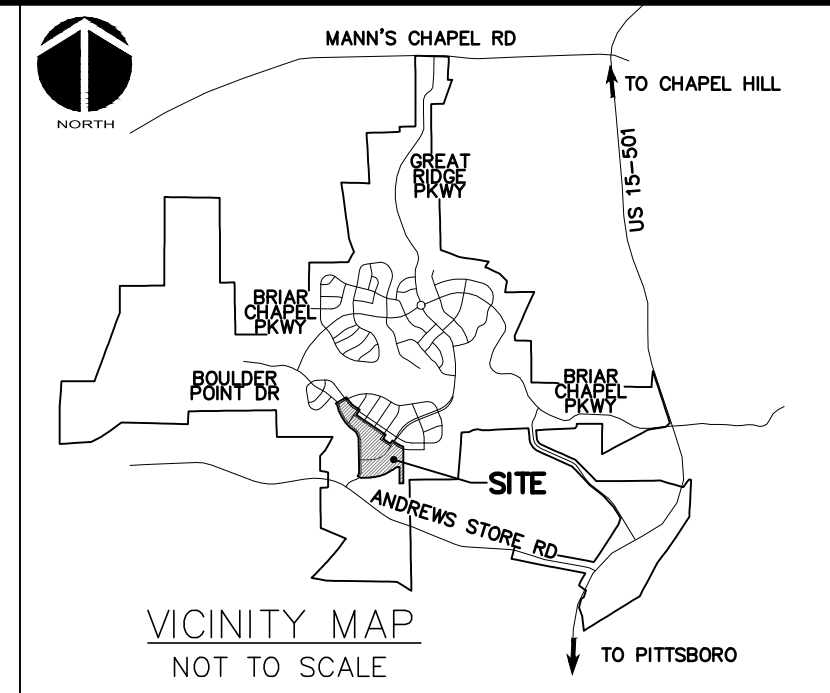
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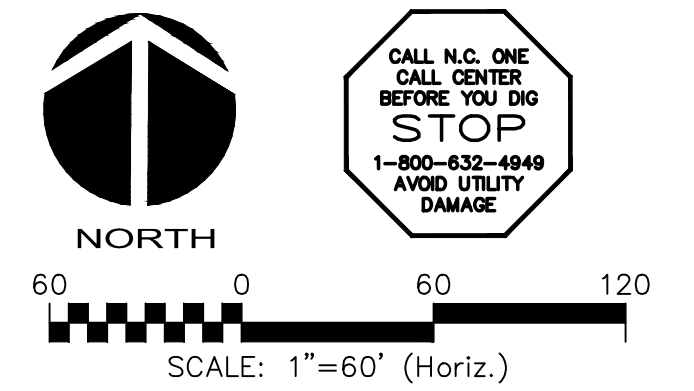
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 PHASE 11 - SECTION 1
 CHATHAM COUNTY, NORTH CAROLINA**

UTILITY PLAN

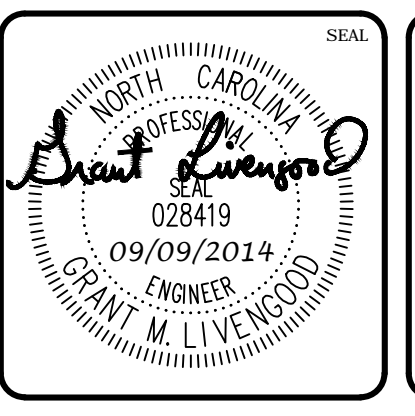
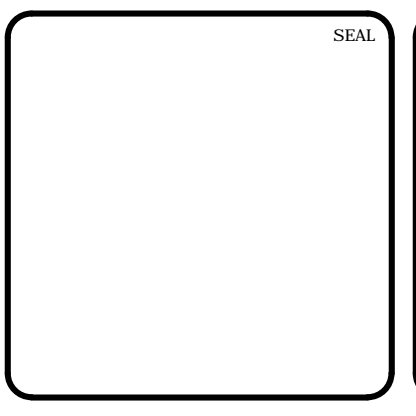
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DRAWN: GCA		
DESIGNED: GCA		
CHECKED: CHS		
PROJ. MGR: CHS		
STATUS: ISSUED FOR CONSTRUCTION	REVISION: 2	



LEGEND	
SS	SANITARY SEWER LINE
W	WATER MAIN
FM	SANITARY SEWER FORCE MAIN (DESIGNED BY OTHERS)
SS	EXISTING SANITARY SEWER LINE
W	EXISTING SS FORCE MAIN
W	EXISTING WATER MAIN
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TWC	EXISTING TIME WARNER CABLE LINE
AT&T	EXISTING AT&T LINE
⊙	SANITARY SEWER MANHOLE
⊗	SANITARY SEWER CLEANOUT
⊕	WATER METER
⊕	FIRE HYDRANT ASSEMBLY (FHA)
---	ROW
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---	CHATHAM COUNTY STREAM BUFFER
---	10' NO BUILD ZONE BUFFER
---	4' H.O.A. EASEMENT
---	4' PRIVATE UTILITY EASEMENT
---	EXISTING WETLANDS



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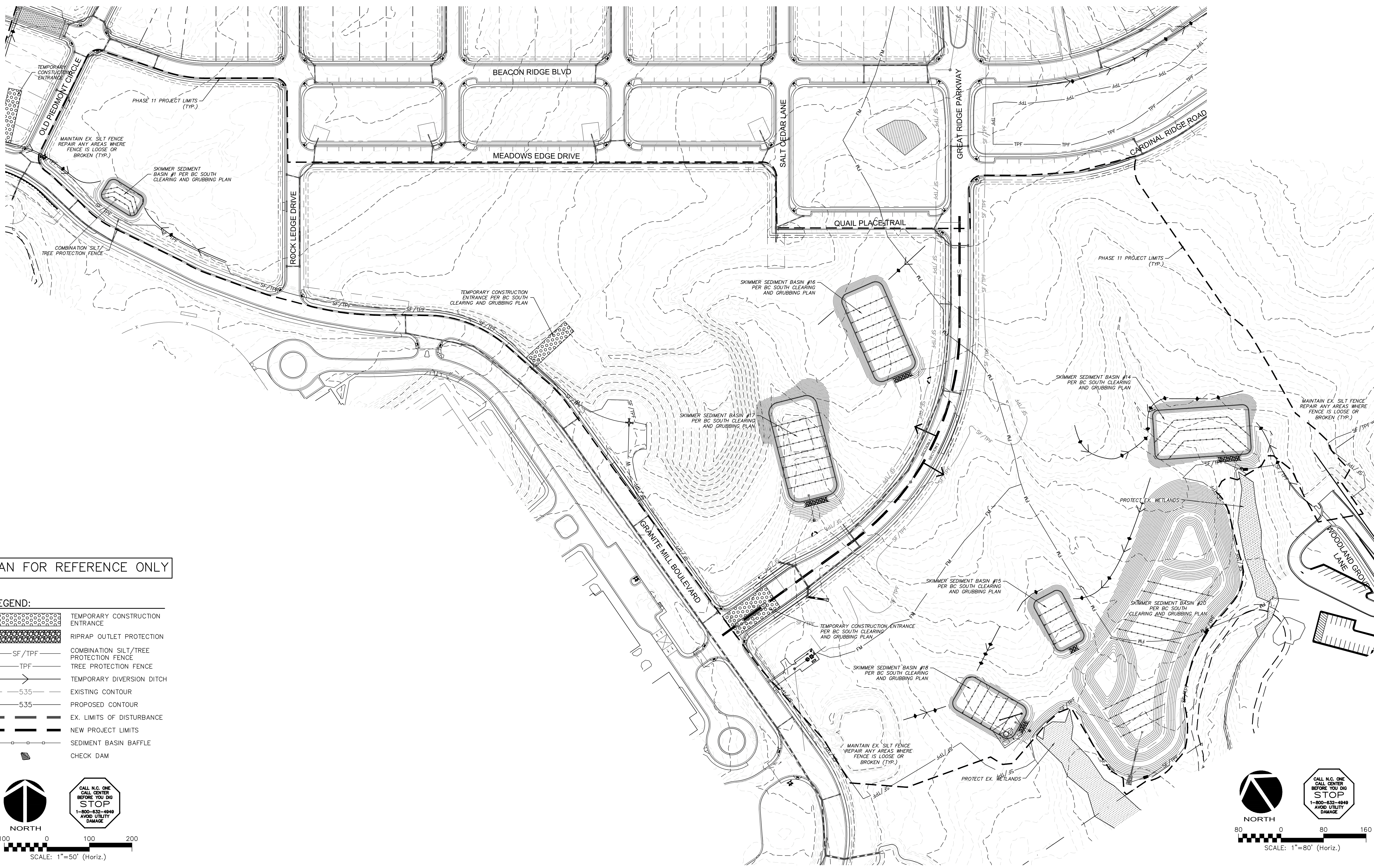
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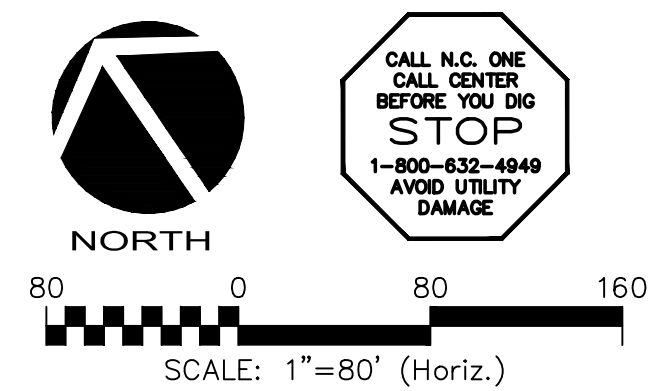
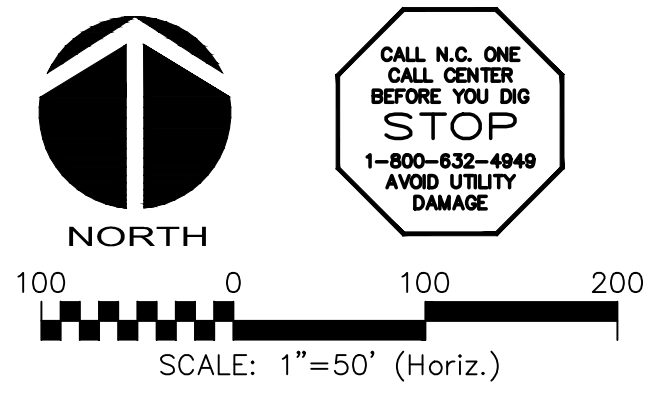
UTILITY PLAN

DATE: JUNE 27, 2014	SCALE: AS NOTED	M&C FILE NUMBER: C2.X
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DESIGNED: GCA		
CHECKED: CHS		
PROJ. MGR.: CHS		
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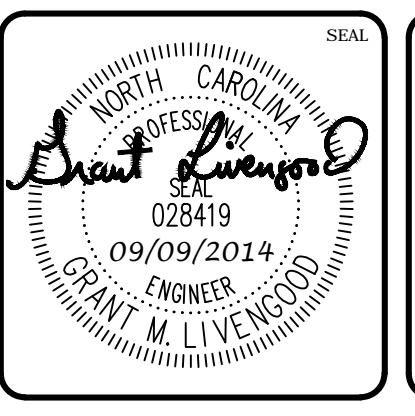
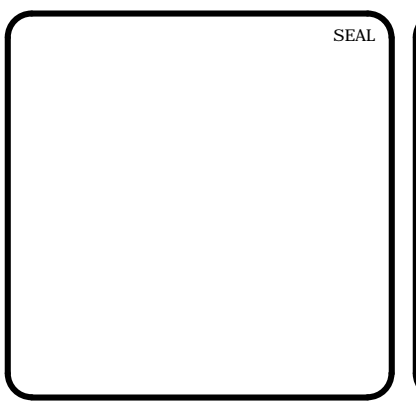


PLAN FOR REFERENCE ONLY

- LEGEND:**
- TEMPORARY CONSTRUCTION ENTRANCE
 - RIPRAP OUTLET PROTECTION
 - COMBINATION SILT/TREE PROTECTION FENCE
 - TREE PROTECTION FENCE
 - TEMPORARY DIVERSION DITCH
 - EXISTING CONTOUR
 - PROPOSED CONTOUR
 - EX. LIMITS OF DISTURBANCE
 - NEW PROJECT LIMITS
 - SEDIMENT BASIN BAFFLE
 - CHECK DAM



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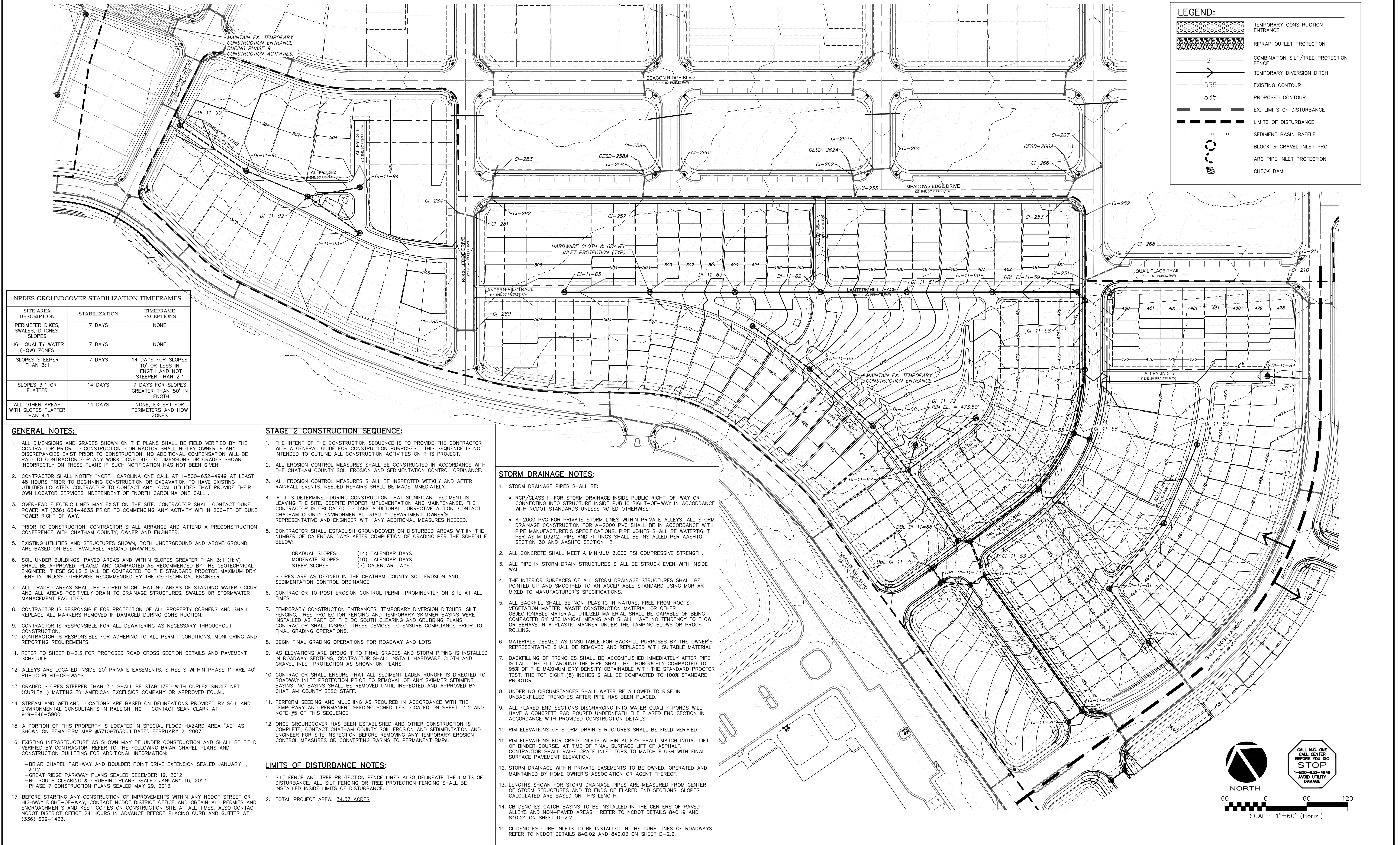
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CHATHAM COUNTY, NORTH CAROLINA**

**STAGE 1
EROSION CONTROL PLAN**

DATE: JUNE 27, 2014	SCALE: HORIZONTAL: AS NOTED	MFC FILE NUMBER: C3.X
MCE PROJ. #: 02735-0109	VERTICAL: N/A	DRAWING NUMBER: C3.1
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STATUS: ISSUED FOR CONSTRUCTION		REVISION: 2



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

- GENERAL NOTES:**
- ALL DIMENSIONS AND GRADES SHOWN ON THE PLANS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY OWNER IF ANY DISCREPANCIES EXIST PRIOR TO CONSTRUCTION. NO ADDITIONAL COMPENSATION WILL BE PAID TO CONTRACTOR FOR ANY WORK DONE DUE TO DIMENSIONS OR GRADES SHOWN INCORRECTLY ON THESE PLANS IF SUCH NOTIFICATION HAS NOT BEEN GIVEN.
 - CONTRACTOR SHALL NOTIFY "NORTH CAROLINA ONE CALL AT 1-800-632-4849 AT LEAST 48 HOURS PRIOR TO BEGINNING CONSTRUCTION OR EXCAVATION TO HAVE EXISTING UTILITIES LOCATED. CONTRACTOR TO CONTACT ANY LOCAL UTILITIES THAT PROVIDE THEIR OWN LOCATOR SERVICES INDEPENDENT OF "NORTH CAROLINA ONE CALL".
 - OVERHEAD ELECTRIC LINES MAY EXIST ON THE SITE. CONTRACTOR SHALL CONTACT DUKE POWER AT (336) 634-4633 PRIOR TO COMMENCING ANY ACTIVITY WITHIN 200'-FT OF DUKE POWER RIGHT OF WAY.
 - PRIOR TO CONSTRUCTION, CONTRACTOR SHALL ARRANGE AND ATTEND A PRECONSTRUCTION CONFERENCE WITH CHATHAM COUNTY, OWNER AND ENGINEER.
 - EXISTING UTILITIES AND STRUCTURES SHOWN, BOTH UNDERGROUND AND ABOVE GROUND, ARE BASED ON BEST AVAILABLE RECORD DRAWINGS.
 - SOIL UNDER BUILDINGS, PAVED AREAS AND WITHIN SLOPES GREATER THAN 3:1 (H:V) SHALL BE APPROVED, PLACED AND COMPACTED AS RECOMMENDED BY THE GEOTECHNICAL ENGINEER. THESE SOILS SHALL BE COMPACTED TO THE STANDARD PROCTOR MAXIMUM DRY DENSITY UNLESS OTHERWISE RECOMMENDED BY THE GEOTECHNICAL ENGINEER.
 - ALL GRADED AREAS SHALL BE SLOPED SUCH THAT NO AREAS OF STANDING WATER OCCUR AND ALL AREAS POSITIVELY DRAIN TO DRAINAGE STRUCTURES, SWALES OR STORMWATER MANAGEMENT FACILITIES.
 - CONTRACTOR IS RESPONSIBLE FOR PROTECTION OF ALL PROPERTY CORNERS AND SHALL REPLACE ALL MARKERS REMOVED IF DAMAGED DURING CONSTRUCTION.
 - CONTRACTOR IS RESPONSIBLE FOR ALL DEWATERING AS NECESSARY THROUGHOUT CONSTRUCTION.
 - CONTRACTOR IS RESPONSIBLE FOR ADHERING TO ALL PERMIT CONDITIONS, MONITORING AND REPORTING REQUIREMENTS.
 - REFER TO SHEET D-2.3 FOR PROPOSED ROAD CROSS SECTION DETAILS AND PAVEMENT SCHEDULE.
 - ALLEYS ARE LOCATED INSIDE 20' PRIVATE EASEMENTS. STREETS WITHIN PHASE 11 ARE 40' PUBLIC RIGHT-OF-WAYS.
 - GRADED SLOPES STEEPER THAN 3:1 SHALL BE STABILIZED WITH CURLEX SINGLE NET (CURLEX I) MATTING BY AMERICAN EXCELSIOR COMPANY OR APPROVED EQUAL.
 - STREAM AND WETLAND LOCATIONS ARE BASED ON DELINEATIONS PROVIDED BY SOIL AND ENVIRONMENTAL CONSULTANTS IN RALEIGH, NC - CONTACT SEAN CLARK AT 919-846-5900.
 - A PORTION OF THIS PROPERTY IS LOCATED IN SPECIAL FLOOD HAZARD AREA "AE" AS SHOWN ON FEMA FIRM MAP #3710976500J DATED FEBRUARY 2, 2007.
 - EXISTING INFRASTRUCTURE AS SHOWN MAY BE UNDER CONSTRUCTION AND SHALL BE FIELD VERIFIED BY CONTRACTOR. REFER TO THE FOLLOWING BRIAR CHAPEL PLANS AND CONSTRUCTION BULLETINS FOR ADDITIONAL INFORMATION:
 - BRIAR CHAPEL PARKWAY AND BOULDER POINT DRIVE EXTENSION SEALED JANUARY 1, 2012
 - GREAT RIDGE PARKWAY PLANS SEALED DECEMBER 19, 2012
 - BIG SOUTH CLEARING & GRUBBING PLANS SEALED JANUARY 16, 2013
 - PHASE 7 CONSTRUCTION PLANS SEALED MAY 29, 2013.
 - BEFORE STARTING ANY CONSTRUCTION OF IMPROVEMENTS WITHIN ANY NCDOT STREET OR HIGHWAY RIGHT-OF-WAY, CONTACT NCDOT DISTRICT OFFICE AND OBTAIN ALL PERMITS AND ENCROACHMENTS AND KEEP COPIES ON CONSTRUCTION SITE AT ALL TIMES. ALSO CONTACT NCDOT DISTRICT OFFICE 24 HOURS IN ADVANCE BEFORE PLACING CURB AND GUTTER AT (336) 629-1423.

- 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.
 - ALL EROSION CONTROL MEASURES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CHATHAM COUNTY SOIL EROSION AND SEDIMENTATION CONTROL ORDINANCE.
 - ALL EROSION CONTROL MEASURES SHALL BE INSPECTED WEEKLY AND AFTER RAINFALL EVENTS. NEEDED REPAIRS SHALL BE MADE IMMEDIATELY.
 - IF IT IS DETERMINED DURING CONSTRUCTION THAT SIGNIFICANT SEDIMENT IS LEAVING THE SITE, DESPITE PROPER IMPLEMENTATION AND MAINTENANCE, THE CONTRACTOR IS OBLIGATED TO TAKE ADDITIONAL CORRECTIVE ACTION. CONTACT CHATHAM COUNTY ENVIRONMENTAL QUALITY DEPARTMENT, OWNER'S REPRESENTATIVE AND ENGINEER WITH ANY ADDITIONAL MEASURES NEEDED.
 - CONTRACTOR SHALL ESTABLISH GROUNDCOVER ON DISTURBED AREAS WITHIN THE NUMBER OF CALENDAR DAYS AFTER COMPLETION OF GRADING PER THE SCHEDULE BELOW:

GRADUAL SLOPES:	(14) CALENDAR DAYS
MODERATE SLOPES:	(10) CALENDAR DAYS
STEEP SLOPES:	(7) CALENDAR DAYS
 - SLOPES ARE AS DEFINED IN THE CHATHAM COUNTY SOIL EROSION AND SEDIMENTATION CONTROL ORDINANCE.
 - CONTRACTOR TO POST EROSION CONTROL PERMIT PROMINENTLY ON SITE AT ALL TIMES.
 - TEMPORARY CONSTRUCTION ENTRANCES, TEMPORARY DIVERSION DITCHES, SILT FENCING, TREE PROTECTION FENCING AND TEMPORARY SKIMMER BASINS SHALL BE INSTALLED AS PART OF THE BC SOUTH CLEARING AND GRUBBING PLANS. CONTRACTOR SHALL INSPECT THESE DEVICES TO ENSURE COMPLIANCE PRIOR TO FINAL GRADING OPERATIONS.
 - BEGIN FINAL GRADING OPERATIONS FOR ROADWAY AND LOTS
 - AS ELEVATIONS ARE BROUGHT TO FINAL GRADES AND STORM PIPING IS INSTALLED IN ROADWAY SECTIONS, CONTRACTOR SHALL INSTALL HARDWARE CLOTH AND GRAVEL INLET PROTECTION AS SHOWN ON PLANS.
 - CONTRACTOR SHALL ENSURE THAT ALL SEDIMENT LADEN RUNOFF IS DIRECTED TO ROADWAY INLET PROTECTION PRIOR TO REMOVAL OF ANY SKIMMER SEDIMENT BASINS. NO BASINS SHALL BE REMOVED UNTIL INSPECTED AND APPROVED BY CHATHAM COUNTY SESC STAFF.
 - PERFORM SEEDING AND MULCHING AS REQUIRED IN ACCORDANCE WITH THE TEMPORARY AND PERMANENT SEEDING SCHEDULES LOCATED ON SHEET D1.2 AND NOTE #9 OF THIS SEQUENCE.
 - ONCE GROUNDCOVER HAS BEEN ESTABLISHED AND OTHER CONSTRUCTION IS COMPLETE, CONTACT CHATHAM COUNTY SOIL EROSION AND SEDIMENTATION AND ENGINEER FOR SITE INSPECTION BEFORE REMOVING ANY TEMPORARY EROSION CONTROL MEASURES OR CONVERTING BASINS TO PERMANENT BMPs.

- LIMITS OF DISTURBANCE NOTES:**
- 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.
 - TOTAL PROJECT AREA: 34.37 ACRES.

- STORM DRAINAGE NOTES:**
- 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.
 - A-2000 PVC FOR PRIVATE STORM LINES WITHIN PRIVATE ALLEYS. ALL STORM DRAINAGE CONSTRUCTION FOR A-2000 PVC SHALL BE IN ACCORDANCE WITH PIPE MANUFACTURER'S SPECIFICATIONS. PIPE JOINTS SHALL BE WATERTIGHT PER ASTM D3212. PIPE AND FITTINGS SHALL BE INSTALLED PER AASHTO SECTION 30 AND AASHTO SECTION 12.
 - ALL CONCRETE SHALL MEET A MINIMUM 3,000 PSI COMPRESSIVE STRENGTH.
 - ALL PIPE IN STORM DRAIN STRUCTURES SHALL BE STRUCK EVEN WITH INSIDE WALL.
 - 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.
 - 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.
 - MATERIALS DEEMED AS UNSUITABLE FOR BACKFILL PURPOSES BY THE OWNER'S REPRESENTATIVE SHALL BE REMOVED AND REPLACED WITH SUITABLE MATERIAL.
 - 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 PROCTOR.
 - UNDER NO CIRCUMSTANCES SHALL WATER BE ALLOWED TO RISE IN UNBACKFILLED TRENCHES AFTER PIPE HAS BEEN PLACED.
 - 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.
 - RIM ELEVATIONS OF STORM DRAIN STRUCTURES SHALL BE FIELD VERIFIED.
 - RIM ELEVATIONS FOR GRATE INLETS WITHIN ALLEYS SHALL MATCH INITIAL LIFT OF BINDER COURSE. AT TIME OF FINAL SURFACE LIFT OF ASPHALT, CONTRACTOR SHALL RAISE GRATE INLET TOPS TO MATCH FLUSH WITH FINAL SURFACE PAVEMENT ELEVATION.
 - STORM DRAINAGE WITHIN PRIVATE EASEMENTS TO BE OWNED, OPERATED AND MAINTAINED BY HOME OWNER'S ASSOCIATION OR AGENT THEREOF.
 - 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.
 - 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.
 - 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.

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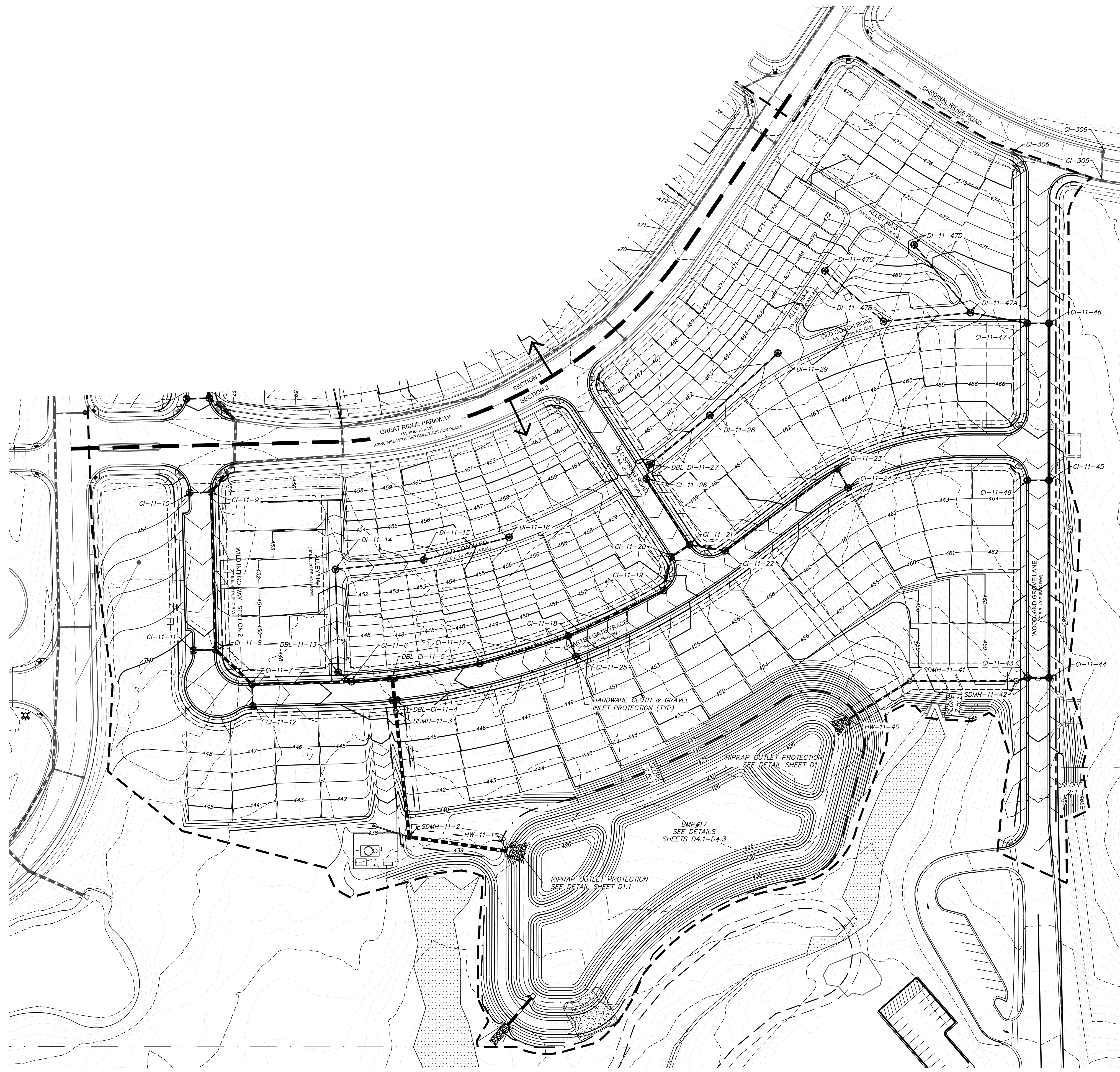
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**BRIAR CHAPEL
PHASE 11 - SECTION 1
CHATHAM COUNTY, NORTH CAROLINA**

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

DATE: JUNE 27, 2014	SCALE: HORIZONTAL: AS NOTED	HMC FILE NUMBER: C3.X
MCE PROJ. #: 02735-0109	VERTICAL: N/A	DRAWING NUMBER: C3.2
DRAWN: GCA		
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LEGEND:

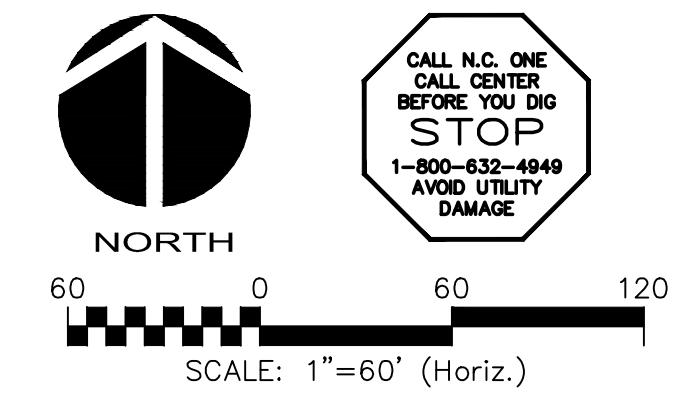
	TEMPORARY CONSTRUCTION ENTRANCE
	RIPRAP OUTLET PROTECTION
	SILT FENCE
	TEMPORARY DIVERSION DITCH
	EXISTING CONTOUR
	PROPOSED CONTOUR
	EX. LIMITS OF DISTURBANCE
	LIMITS OF DISTURBANCE
	SEDIMENT BASIN BAFFLE
	BLOCK & GRAVEL INLET PROT.
	ARC PIPE INLET PROTECTION
	CHECK DAM

- RETAINING WALL NOTES:**
- RETAINING WALL DESIGN IS BY OTHERS. OWNER SHALL PROCURE A QUALIFIED RETAINING WALL DESIGNER FOR THE PROJECT. RETAINING WALL INFORMATION SHOWN ON THESE PLANS ARE FOR LOCATION AND GRADE INFORMATION ONLY. OWNER RESPONSIBLE FOR PROVIDING NECESSARY INFORMATION TO WALL DESIGNER AS REQUIRED FOR PROPER DESIGN OF RETAINING WALLS.
 - TOP GRADE OF WALL AND BOTTOM GRADE OF WALL SPECIFIED IN PLANS ARE INTENDED TO BE THE FINISHED PAVEMENT OR EARTH GRADE. THE WALL DESIGNER SHALL ADJUST SHOP DRAWING WALL ELEVATIONS FOR THE TOP AND BOTTOM OF WALL TO MEET SPECIFIC PRODUCT DESIGN CRITERIA AND WALL GEOMETRY AS NECESSARY TO ACHIEVE DESIRED FINISHED GRADES. THE HORIZONTAL WALL LOCATION AS SHOWN IS THE FINISHED LOCATION OF THE BOTTOM OF WALL. THE WALL DESIGNER SHALL COORDINATE WITH THE ENGINEER TO VERIFY WHETHER CONFLICTS EXIST. THE WALL DESIGNER SHALL NOTIFY THE ENGINEER IN CASE OF ANY CONFLICTS, INCLUDING BUT NOT LIMITED TO EXISTING OR PROPOSED UTILITIES, WALL BATTER, GEORID PLACEMENT, ETC. IF ANY ASPECT OF WALL PLACEMENT CAN NOT BE ACCOMPLISHED, ALL WORK RELATED TO THE RETAINING WALL CONSTRUCTION SHALL BE ACCOMPLISHED WITHIN THE BOUNDARIES OF THE PROJECT PROPERTY, WITHOUT IMPACTING BUFFERS.
 - IT IS THE RESPONSIBILITY OF THE OWNER AND WALL DESIGNER TO ASSURE THAT THE REQUIRED SOIL BEARING PRESSURE, SUBSURFACE DRAINAGE AND SURFACE DRAINAGE ARE ACHIEVED AS RELATED TO THE RETAINING WALL DESIGN. THIS SHOULD BE VERIFIED BY A GEOTECHNICAL ENGINEER. SPECIAL ATTENTION IS REQUIRED TO ENSURE BEARING CAPACITY HAS BEEN ACHIEVED AT LOCATIONS WHERE PIPE PENETRATIONS ARE TO OCCUR. IT SHALL BE THE RESPONSIBILITY OF THE CLIENT TO PROVIDE QUALITY CONTROL / QUALITY ASSURANCE TESTING ASSOCIATED WITH THE WALL CONSTRUCTION. THE GEOTECHNICAL ENGINEER OR WALL DESIGNER SHALL PROVIDE ANY CERTIFICATIONS AS MAY BE REQUIRED TO SHOW COMPLIANCE WITH ORIGINAL DESIGN DOCUMENTS AS RELATED TO THE WALL DESIGN AND CONSTRUCTION.

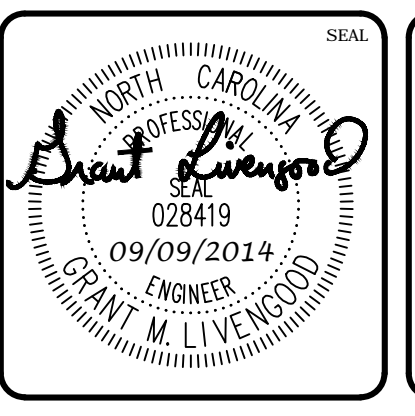
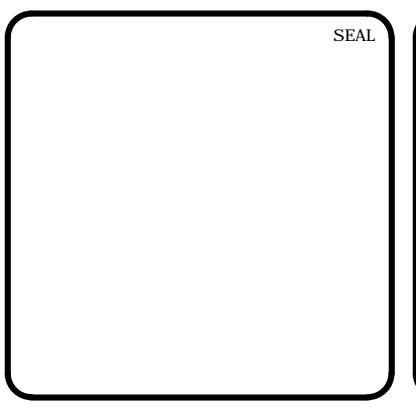
SELF INSPECTION NOTICE:

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](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) 791-4200.



REV. NO.	DESCRIPTIONS	DATE
2	REVISED PER NCDOT & DWR-PWSS COMMENTS/ISSUED FOR CONSTRUCTION	2014.09.09
1	SUBMITTAL TO REVIEW AGENCIES	2014.06.27



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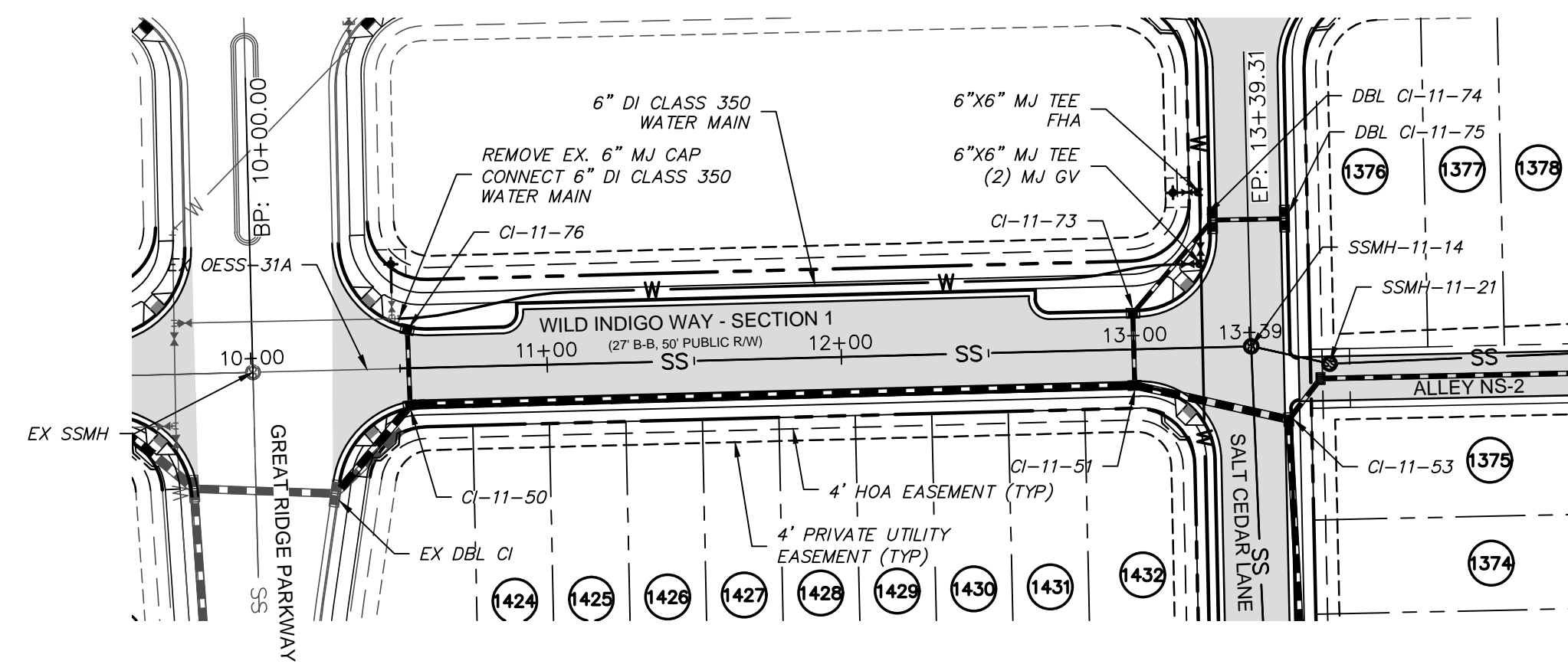
BRIAR CHAPEL™

by **Newland COMMUNITIES**

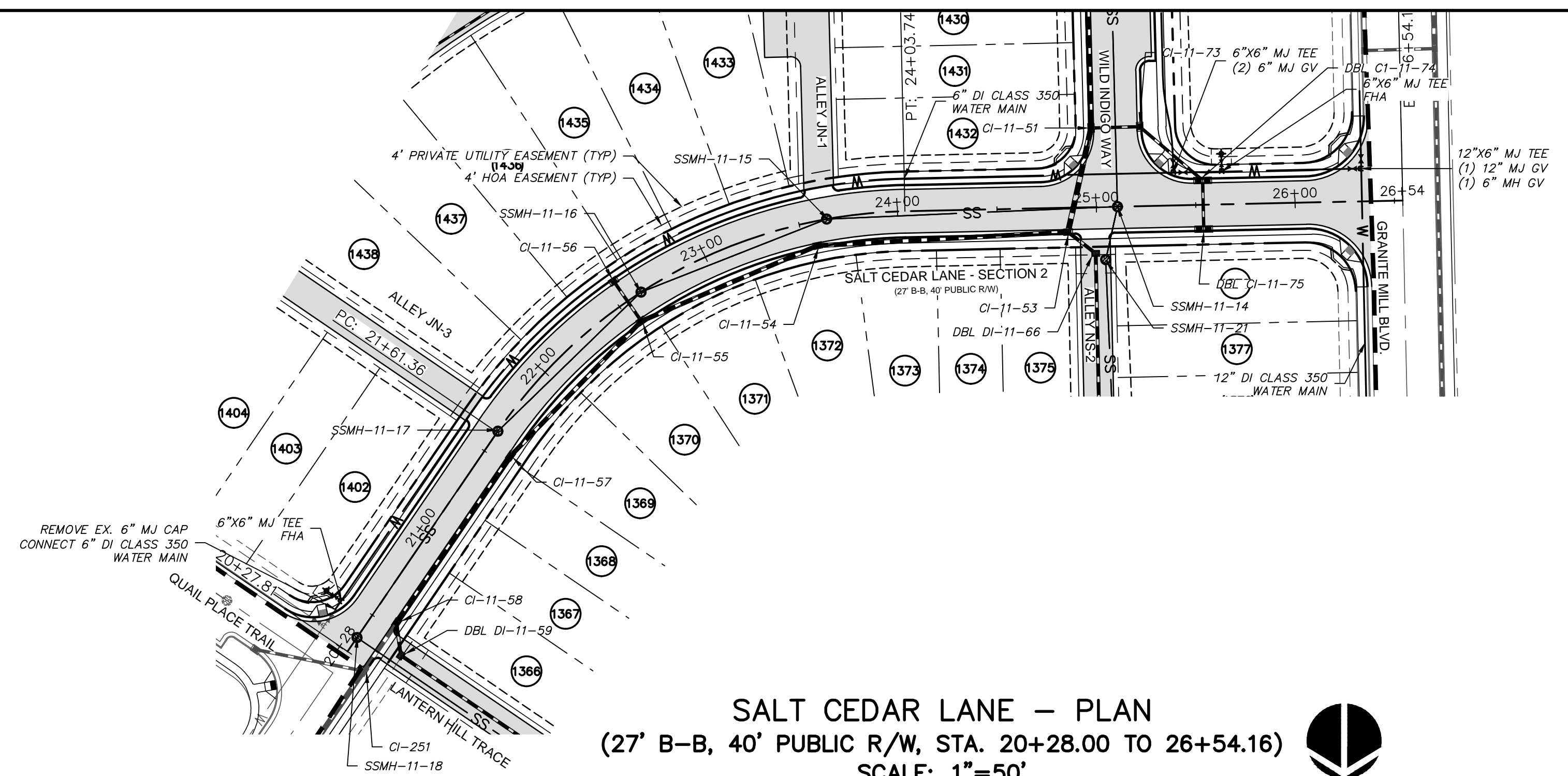
**BRIAR CHAPEL
PHASE 11 - SECTION 2
CHATHAM COUNTY, NORTH CAROLINA**

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

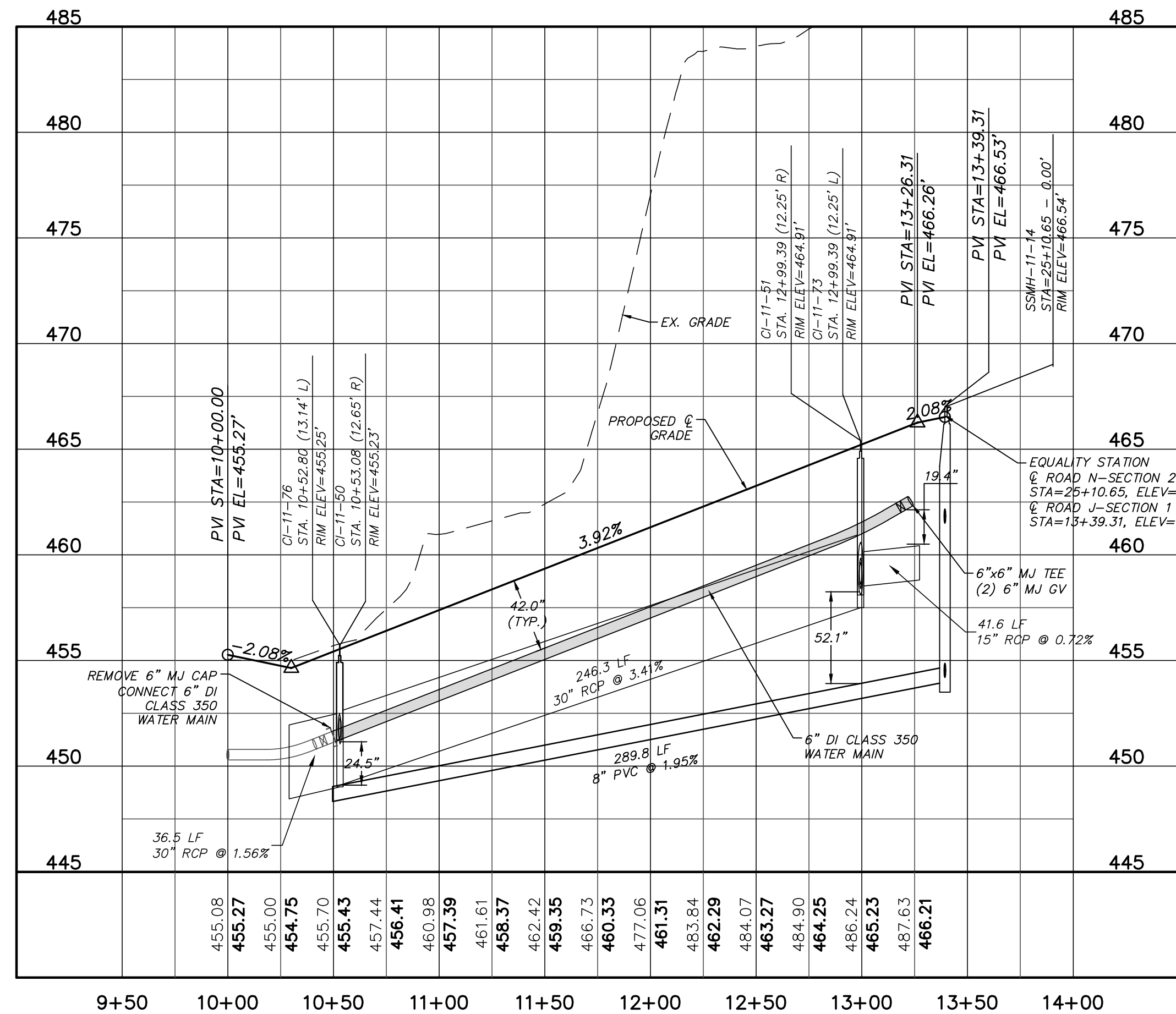
DATE: JUNE 27, 2014	SCALE: HORIZONTAL: AS NOTED, VERTICAL: N/A	HBC FILE NUMBER: C3.X
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DESIGNED: GCA	CHECKED: CHS	PROJ. MGR.: CHS
STATUS: ISSUED FOR CONSTRUCTION	REVISION: 2	



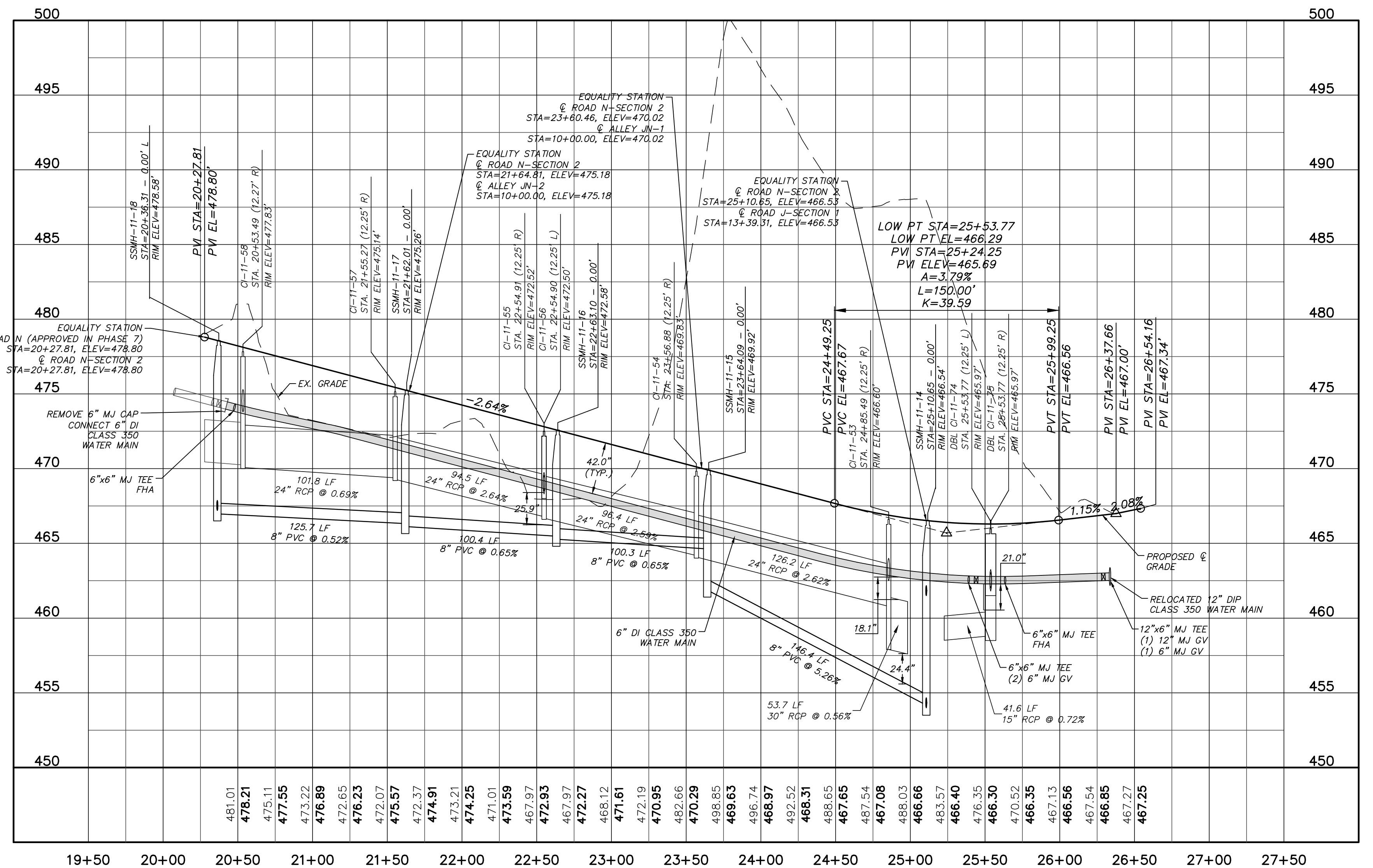
WILD INDIGO WAY - SECTION 1 PLAN
 (27' B-B, 50' PUBLIC R/W, STA. 10+00.00 TO 13+39.00)
 SCALE: 1"=50'



SALT CEDAR LANE - PLAN
 (27' B-B, 40' PUBLIC R/W, STA. 20+28.00 TO 26+54.16)
 SCALE: 1"=50'

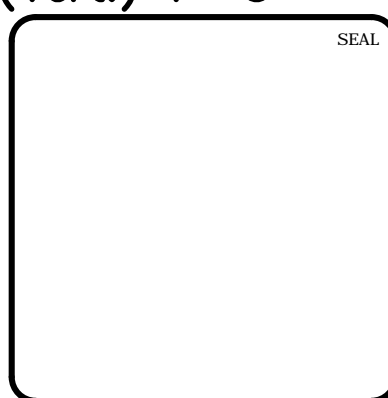


WILD INDIGO WAY - SECTION 1 PROFILE
 (27' B-B, 50' PUBLIC R/W, STA. 10+00.00 TO 13+39.00)
 SCALE: (Horiz.) 1"=50'; (Vert.) 1"=5'



SALT CEDAR LANE - PROFILE
 (27' B-B, 40' PUBLIC R/W, STA. 20+28.00 TO 26+54.16)
 SCALE: (Horiz.) 1"=50'; (Vert.) 1"=5'

REV. NO.	DESCRIPTION	DATE
2	REVISED PER NCDOT & DWR PWSS COMMENTS ISSUED FOR CONSTRUCTION	2014.09.08
1	1ST SUBMITTAL TO REVIEW AGENCIES	2014.08.20

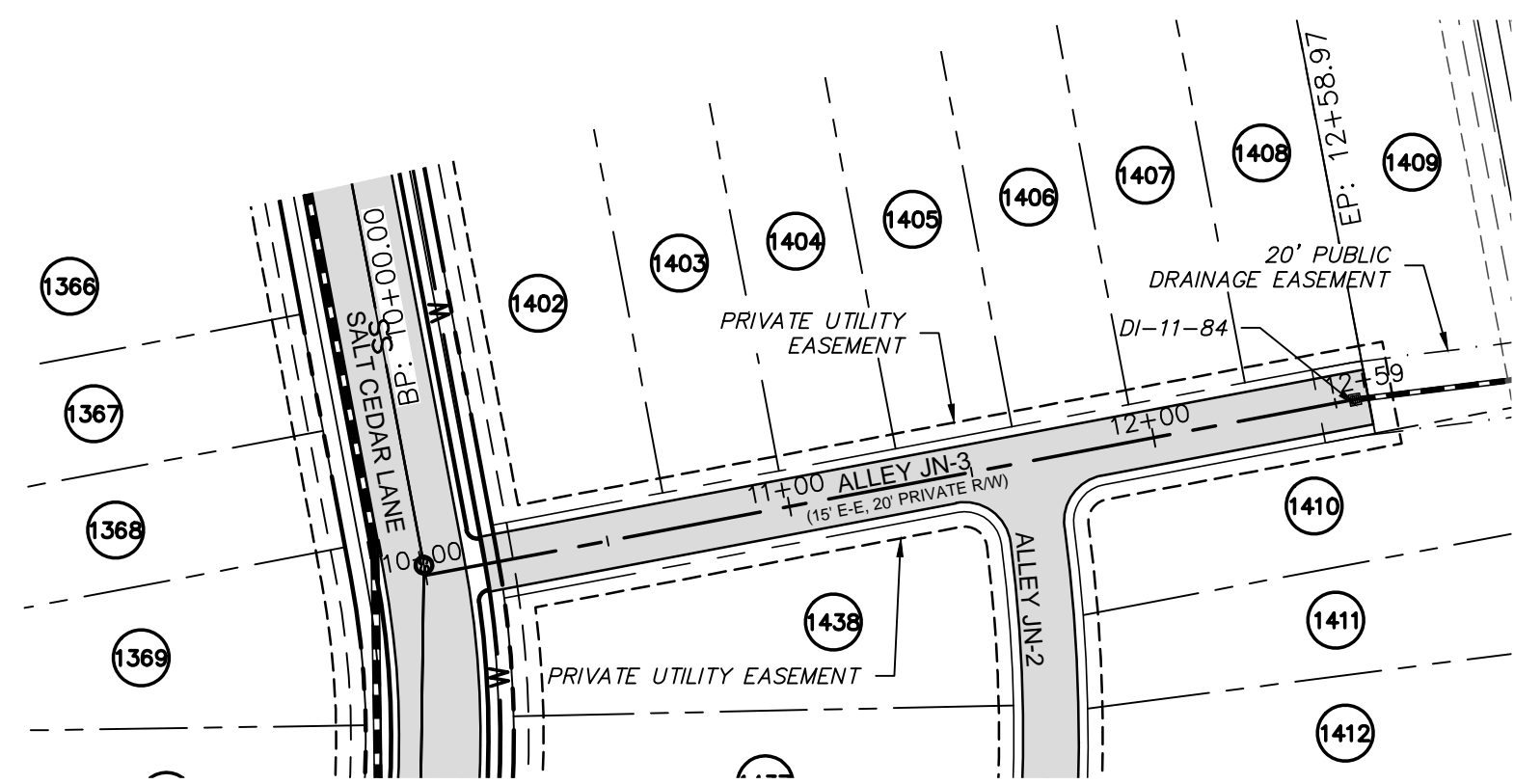


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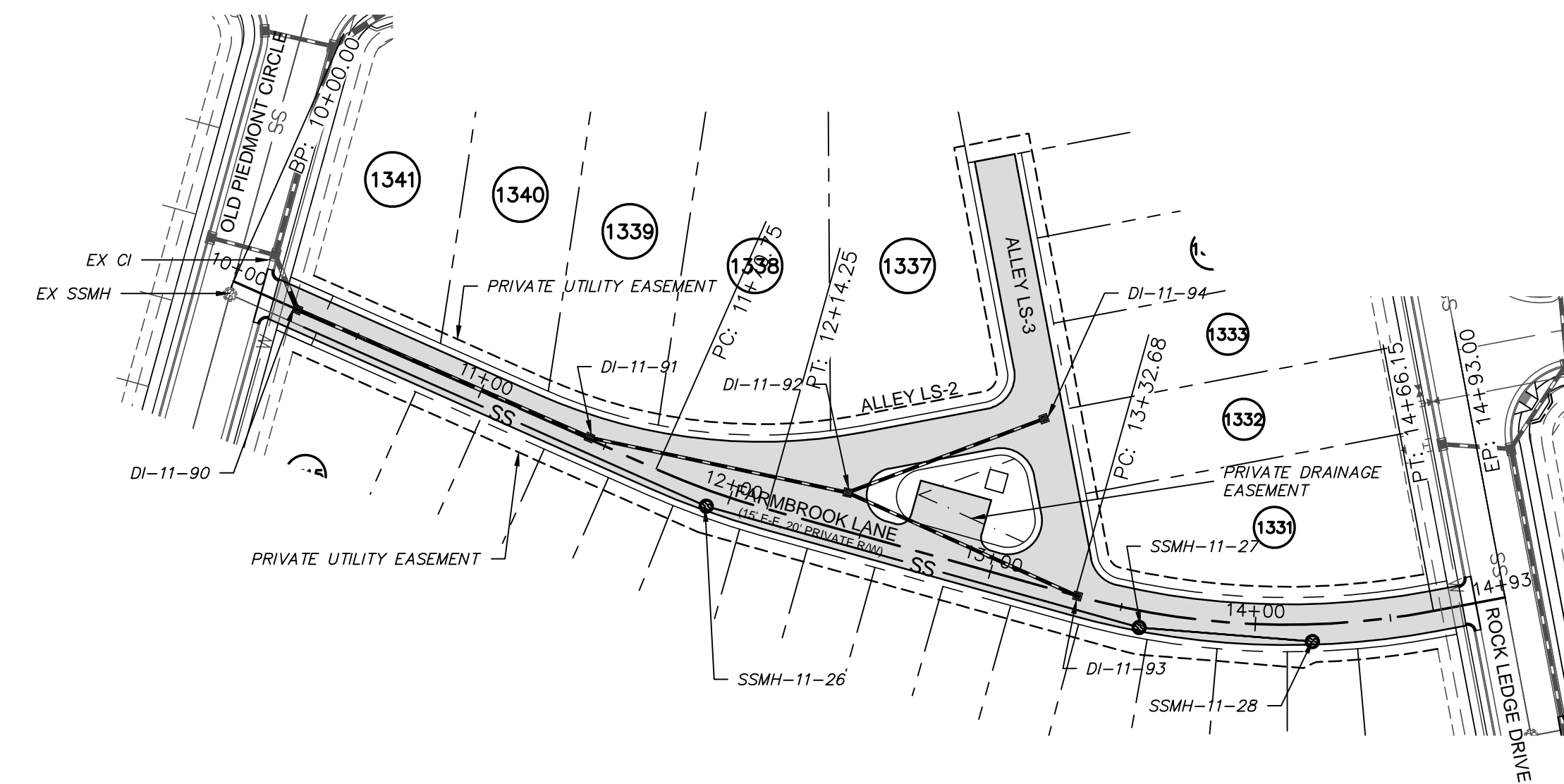
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BRIAR CHAPEL
 PHASE 11 - SECTION 1
 CHATHAM COUNTY, NORTH CAROLINA
 PLAN & PROFILE
 WILD INDIGO LANE - SECTION 1
 SALT CEDAR LANE

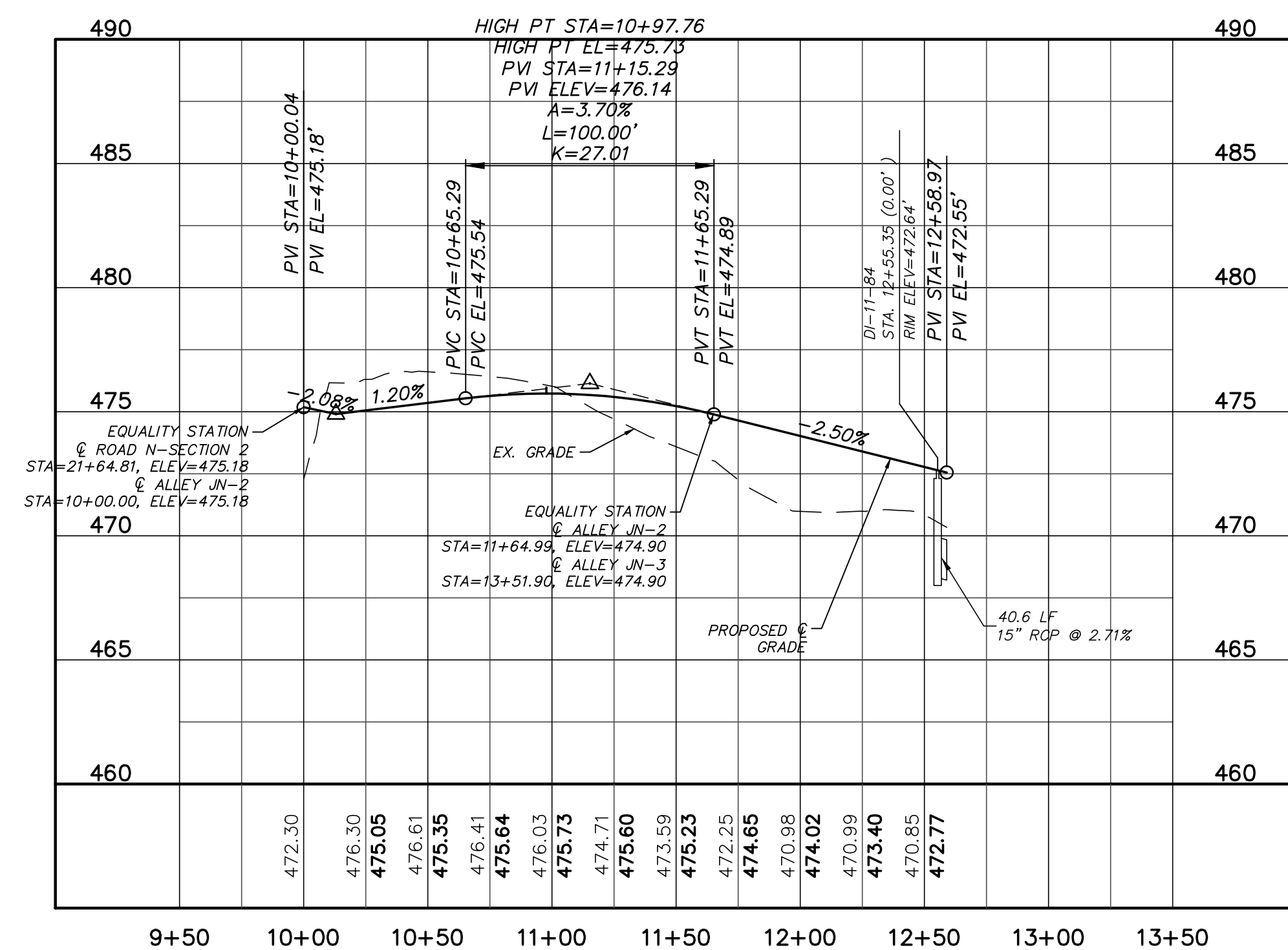
DATE: JUNE 27, 2014	SCALE: 1"=50'	PAC FILE NUMBER: C4.X
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DRAWN: GCA	VERTICAL: N/A	
DESIGNED: GCA		
CHECKED: CHS		
PROJ. MGR: CHS		
STATUS: ISSUED FOR CONSTRUCTION	REVISION: 2	



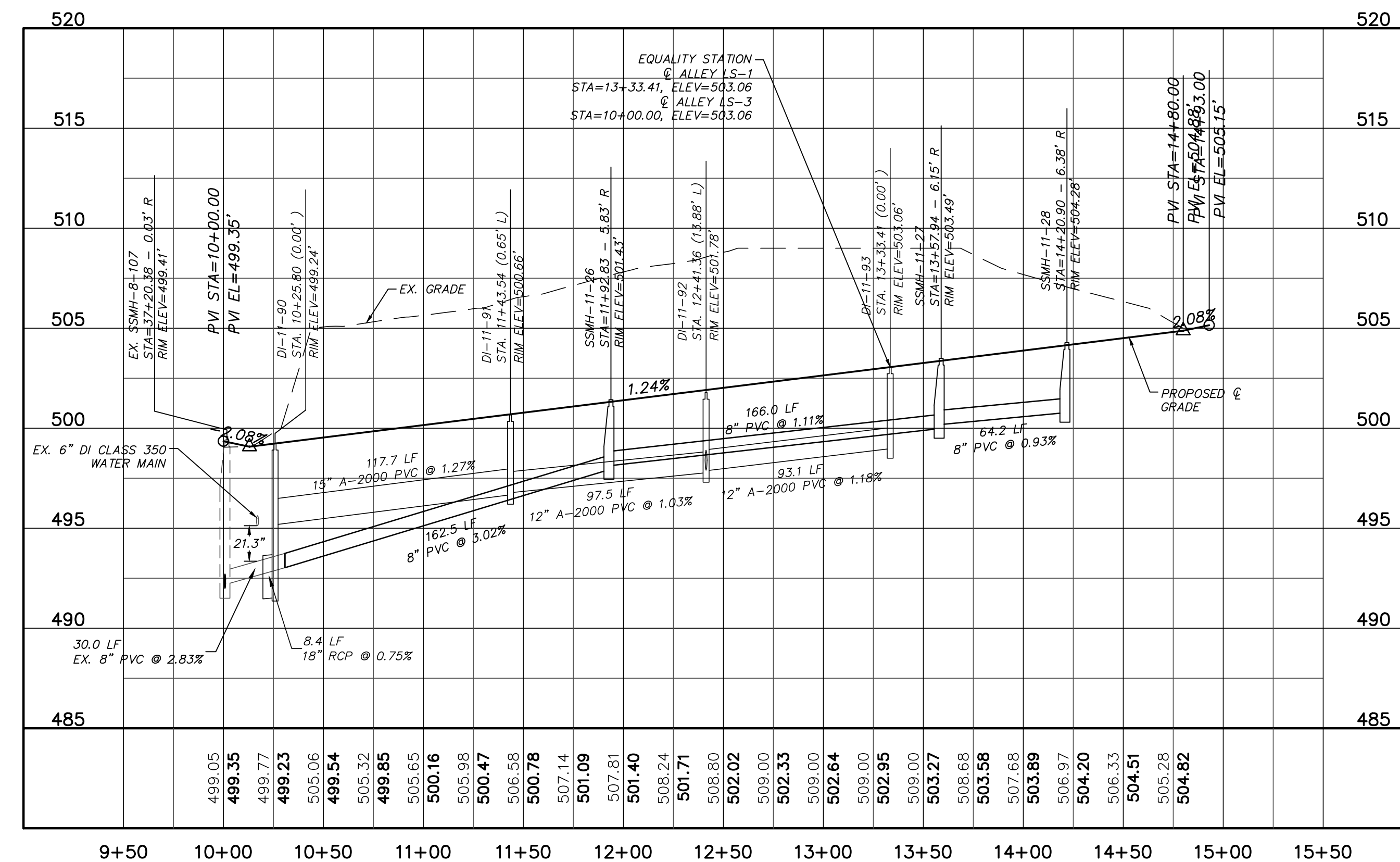
ALLEY JN-3 PLAN
(15' E-E, 20' PRIVATE R/W, STA. 10+00.00 TO 12+59.00)
SCALE: 1"=50'



FARBROOK LANE PLAN
(15' E-E, 20' PRIVATE R/W, STA. 10+00.00 TO 14+93.00)
SCALE: 1"=50'

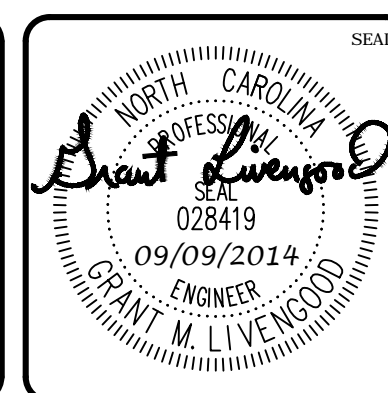
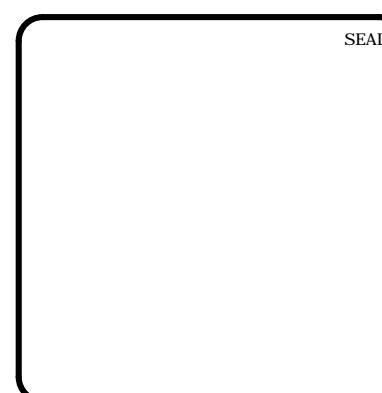


ALLEY JN-3 PROFILE
(15' E-E, 20' PRIVATE R/W, STA. 10+00.00 TO 12+59.00)
SCALE: (Horiz.) 1"=50'; (Vert.) 1"=5'



FARBROOK LANE PROFILE
(15' E-E, 20' PRIVATE R/W, STA. 10+00.00 TO 14+93.00)
SCALE: (Horiz.) 1"=50'; (Vert.) 1"=5'

REV. NO.	DESCRIPTIONS	DATE
2	REVISED PER NCDOT @ DWR-PWS COMMENTS ISSUED FOR CONSTRUCTION	2014.09.09
1	1ST SUBMITTAL TO REVIEW AGENCIES	2014.08.20



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CHATHAM COUNTY, NORTH CAROLINA**

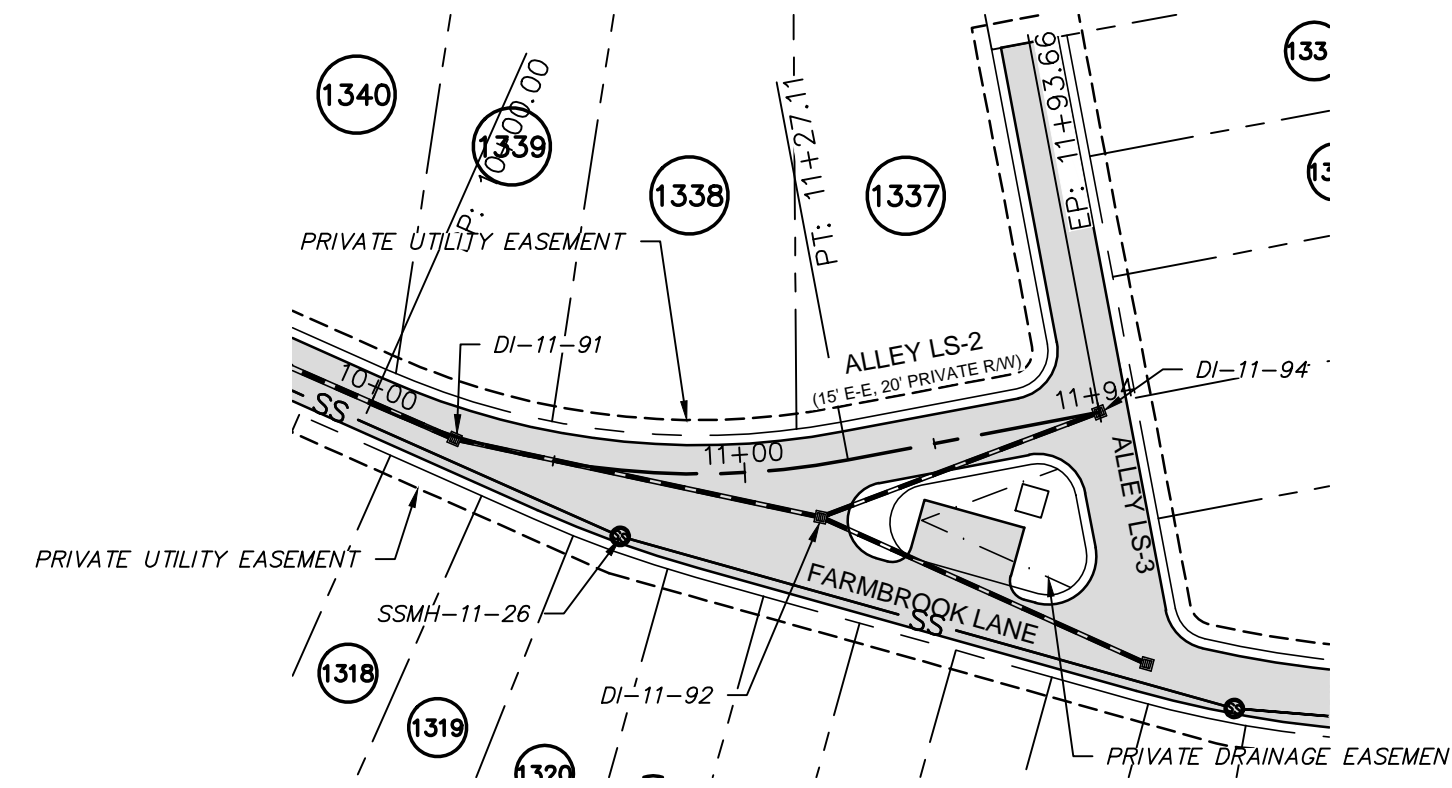
**PLAN & PROFILE
ALLEY JN-3, FARBROOK LANE**

DATE:	JUNE 27, 2014
MCE PROJ. #	02735-0109
DRAWN	GCA
DESIGNED	GCA
CHECKED	CHS
PROJ. MGR.	CHS

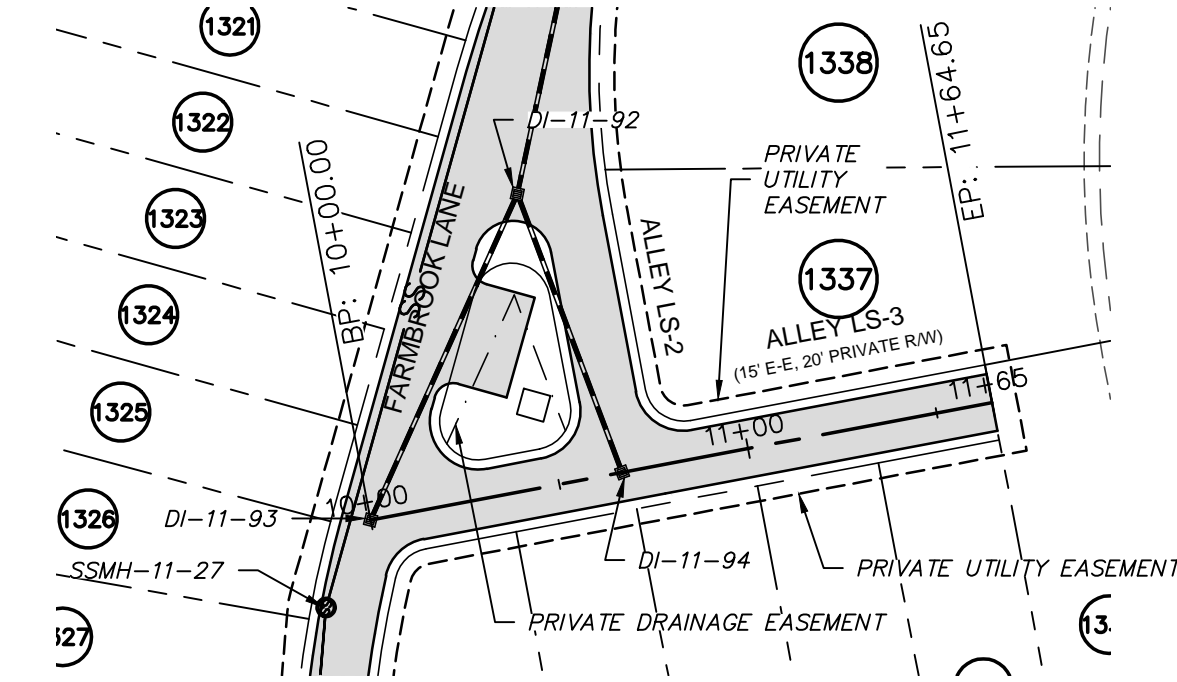
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HORIZONTAL:	1" = 50'
VERTICAL:	N/A

FILE NUMBER	C4.X
DRAWING NUMBER	C4.3
REVISION	2

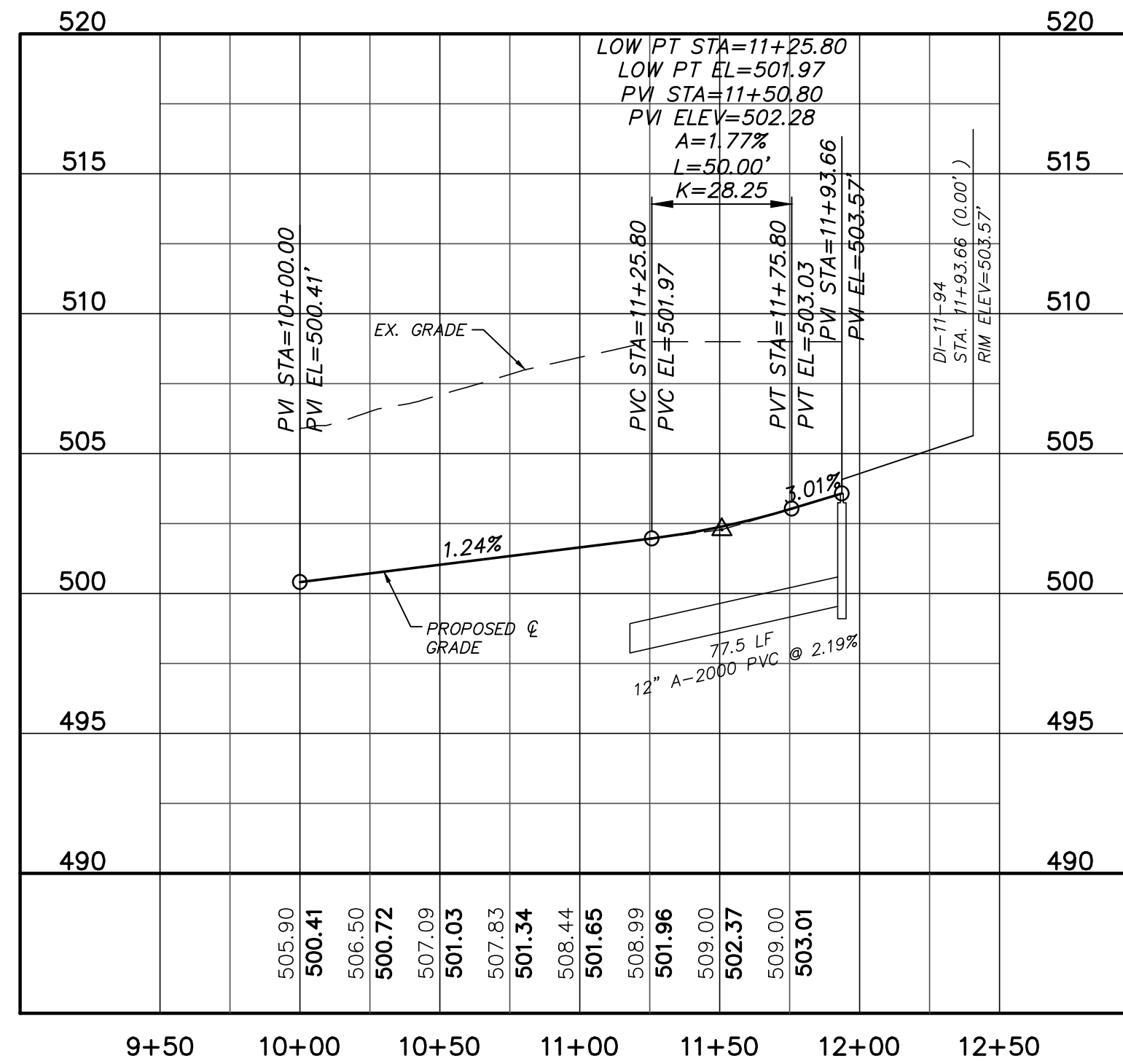
STATUS: ISSUED FOR CONSTRUCTION



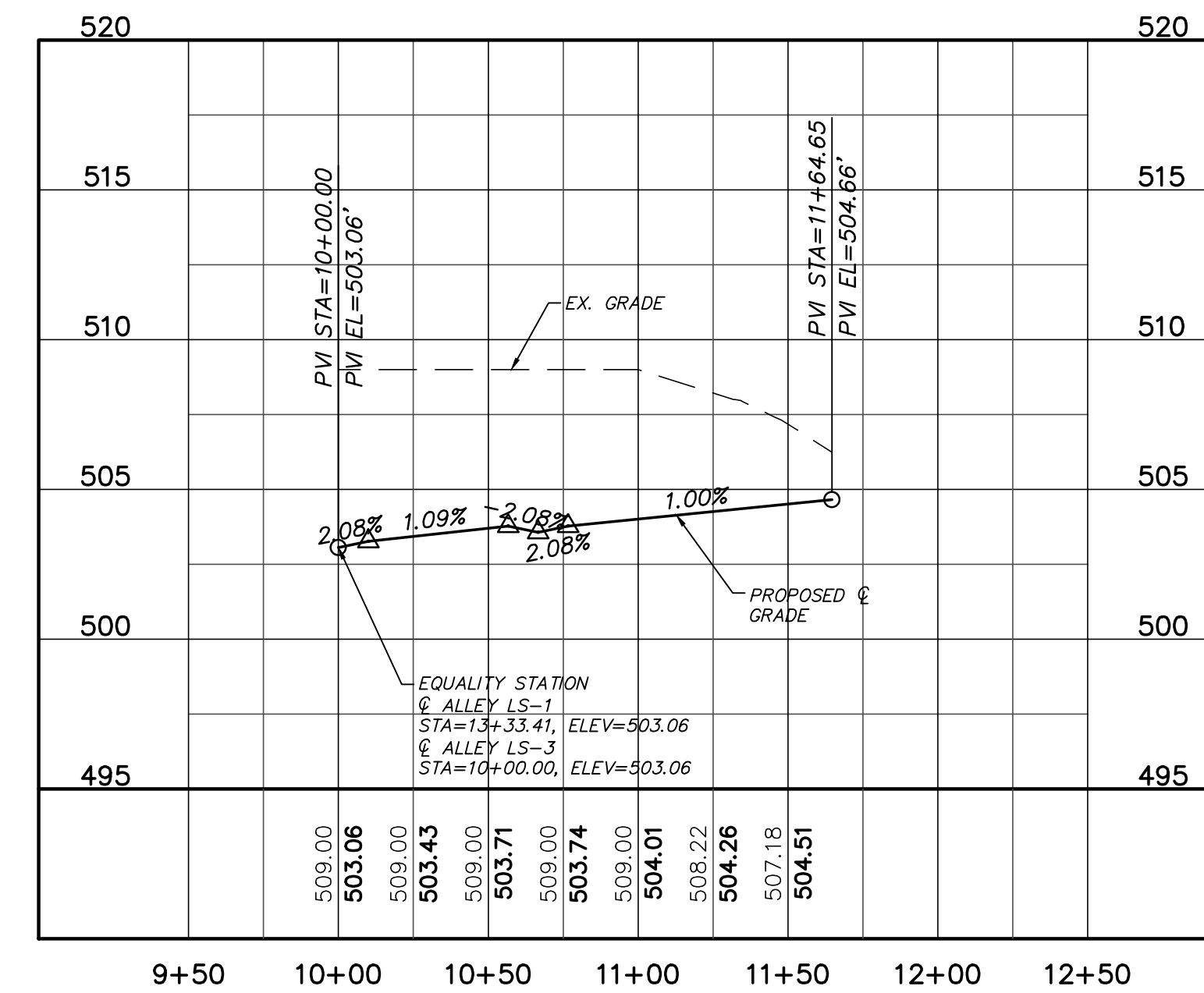
ALLEY LS-2 PLAN
 (15' E-E, 20' PRIVATE R/W, STA. 10+00.00 TO 11+94.00)
 SCALE: 1"=50'



ALLEY LS-3 PLAN
 (15' E-E, 20' PRIVATE R/W, STA. 10+00.00 TO 11+65.00)
 SCALE: 1"=50'

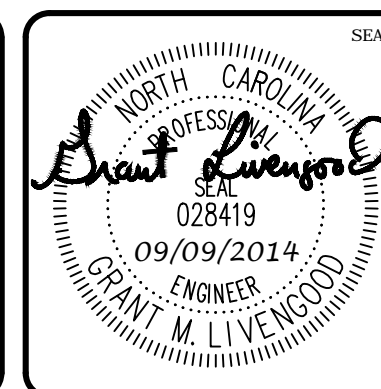
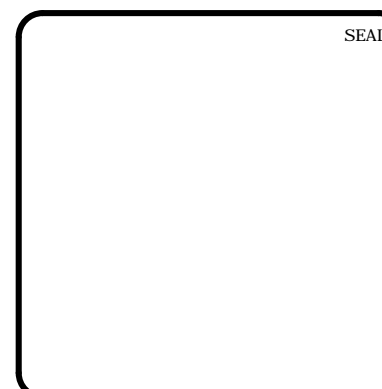


ALLEY LS-2 PROFILE
 (15' E-E, 20' PRIVATE R/W, STA. 10+00.00 TO 11+94.00)
 SCALE: (Horiz.) 1"=50'; (Vert.) 1"=5'



ALLEY LS-3 PROFILE
 (15' E-E, 20' PRIVATE R/W, STA. 10+00.00 TO 11+65.00)
 SCALE: (Horiz.) 1"=50'; (Vert.) 1"=5'

REV. NO.	DESCRIPTIONS / REVISIONS	DATE
2	REVISED PER NCDOT @ DWR PWSS COMMENTS ISSUED FOR CONSTRUCTION	2014.09.09
1	1ST SUBMITTAL TO REVIEW AGENCIES	2014.06.20

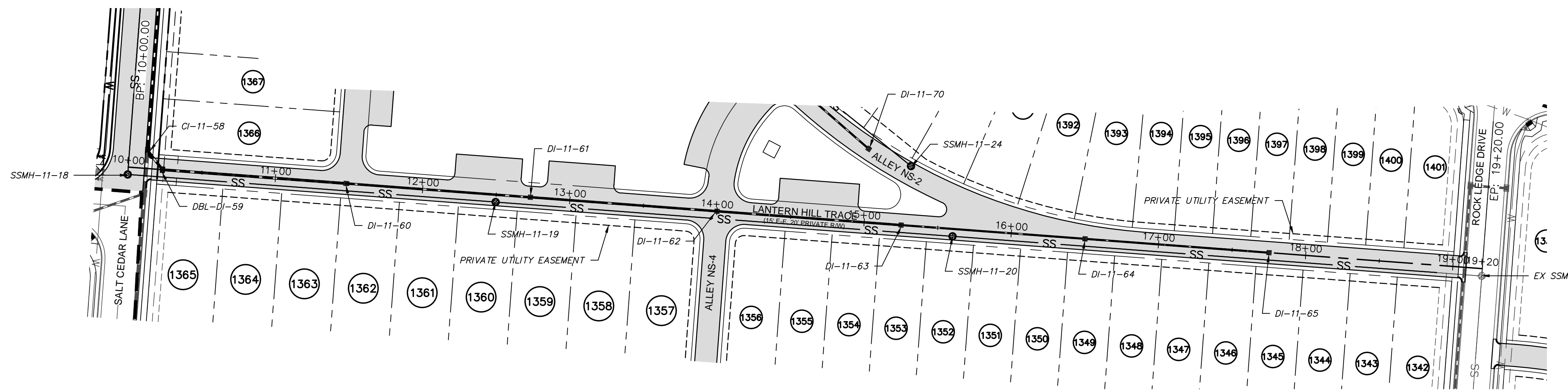


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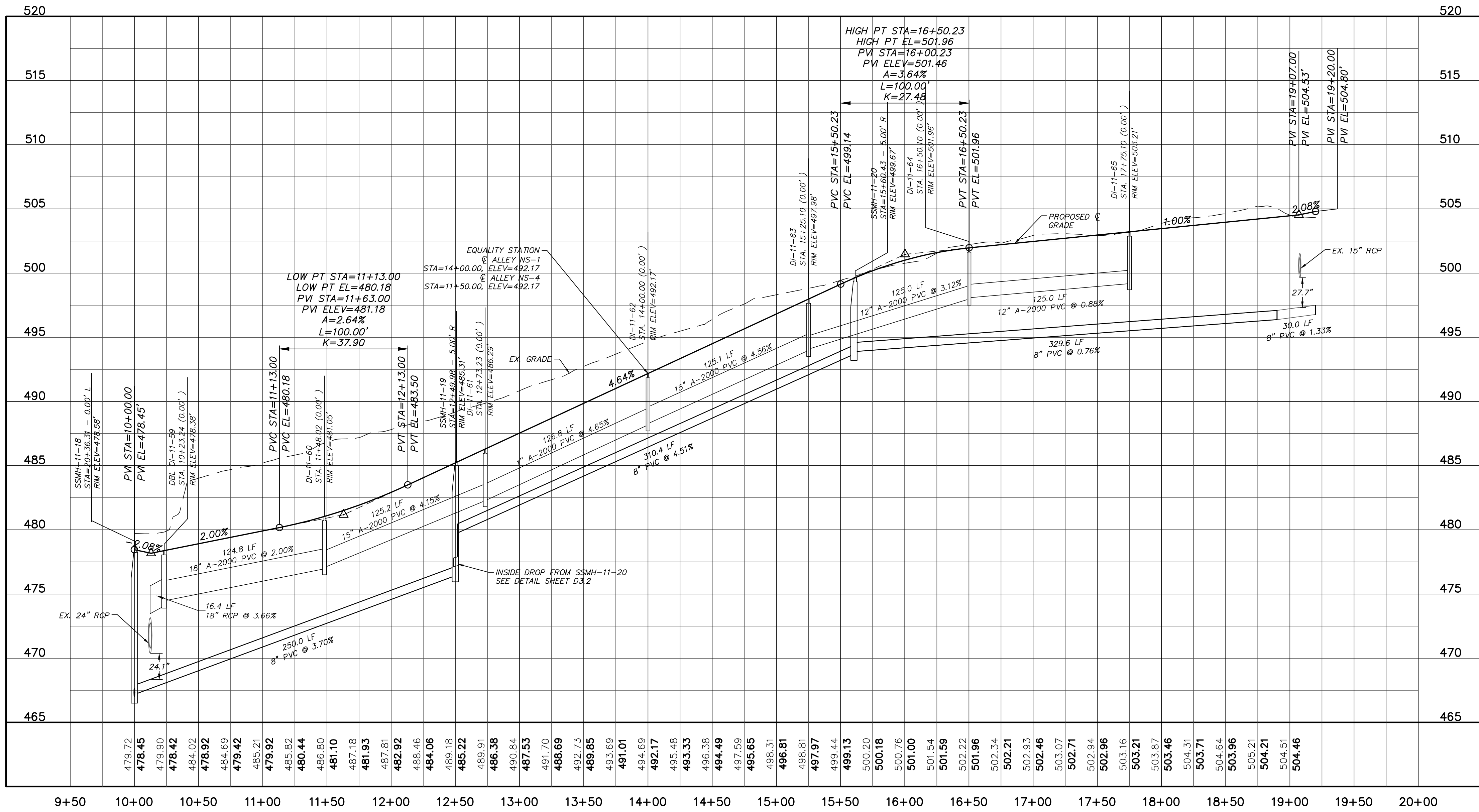
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**BRIAR CHAPEL
 PHASE 11 - SECTION 1
 CHATHAM COUNTY, NORTH CAROLINA**
**PLAN & PROFILE
 ALLEY LS-2, ALLEY LS-3**

DATE: JUNE 27, 2014	SCALE: 1"=50'	PAC FILE NUMBER: C4.X
MCE PROJ. # 02735-0109	HORIZONTAL: 1"=50'	DRAWING NUMBER: C4.4
DRAWN: GCA	VERTICAL: N/A	REVISION: 2
DESIGNED: GCA		
CHECKED: CHS		
PROJ. MGR.: CHS		
STATUS: ISSUED FOR CONSTRUCTION		

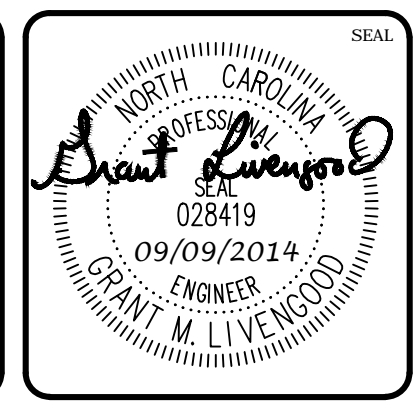
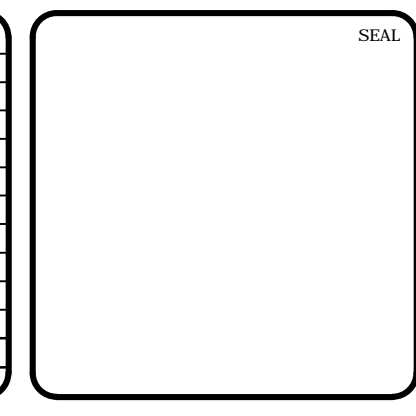


LANTERN HILL TRACE PLAN
 (15' E-E, 20' PRIVATE R/W, STA. 10+00.00 TO 19+20.00)
 SCALE: 1"=50'



LANTERN HILL TRACE PROFILE
 (15' E-E, 20' PRIVATE R/W, STA. 10+00.00 TO 19+20.00)
 SCALE: (Horiz.) 1"=50'; (Vert.) 1"=5'

REV. NO.	DESCRIPTION	DATE
2	REVISED PER NCDOT & DWR PWSS COMMENTS ISSUED FOR CONSTRUCTION	2014.09.09
1	1ST SUBMITTAL TO REVIEW AGENCIES	2014.06.20



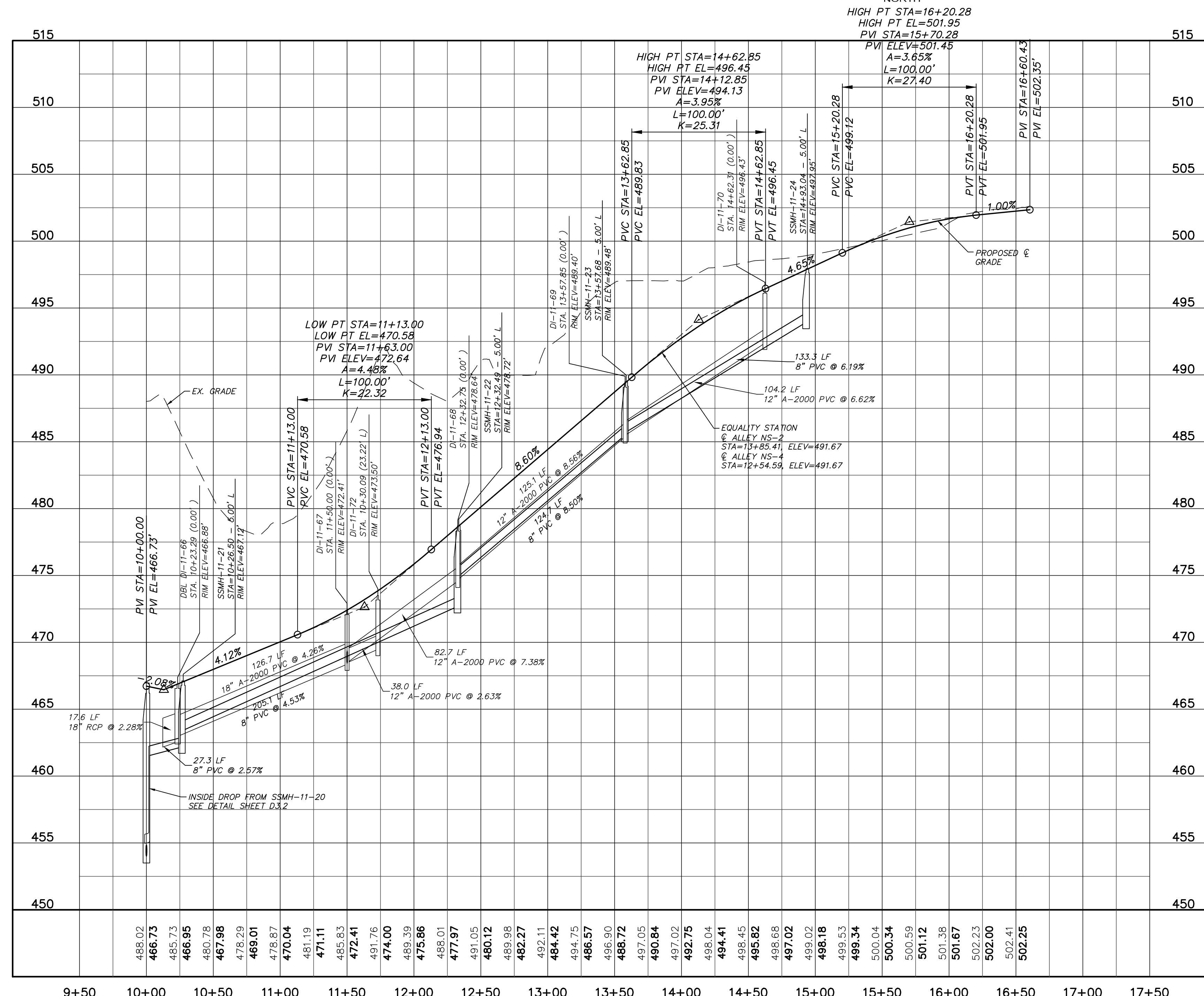
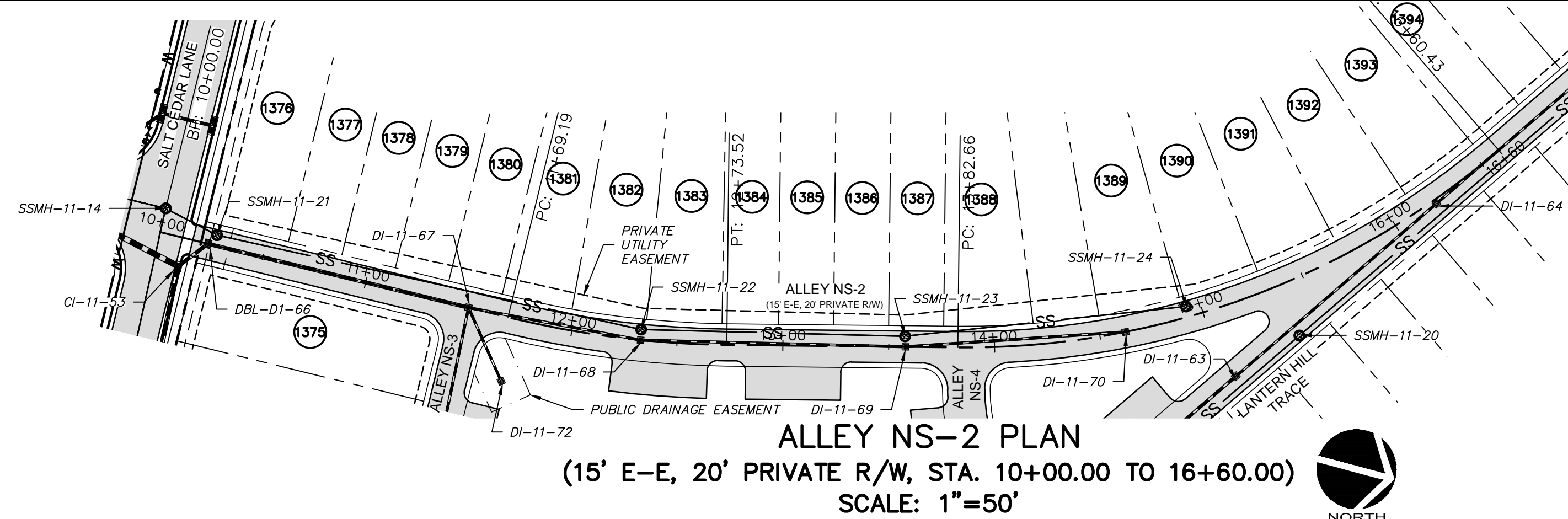
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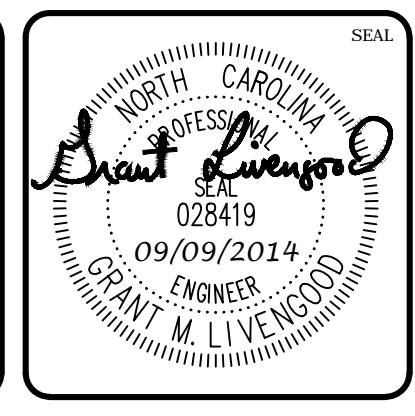
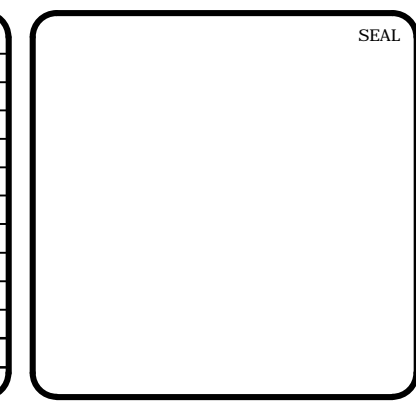
**BRIAR CHAPEL
 PHASE 11 - SECTION 1
 CHATHAM COUNTY, NORTH CAROLINA**

**PLAN & PROFILE
 LANTERN HILL TRACE**

DATE: JUNE 27, 2014	SCALE: 1"=50'	FILE NUMBER: C4.X
MCE PROJ. # 02735-0109	HORIZONTAL: 1"=50'	DRAWING NUMBER: C4.5
DRAWN: GCA	VERTICAL: N/A	
DESIGNED: GCA		
CHECKED: CHS		
PROJ. MGR.: CHS		
STATUS: ISSUED FOR CONSTRUCTION	REVISION: 2	



REV. NO.	DESCRIPTIONS	DATE
2	REVISED PER NCDOT @ DWR. PWSS COMMENTS- ISSUED FOR CONSTRUCTION	2014.09.09
1	1ST SUBMITTAL TO REVIEW AGENCIES	2014.08.20



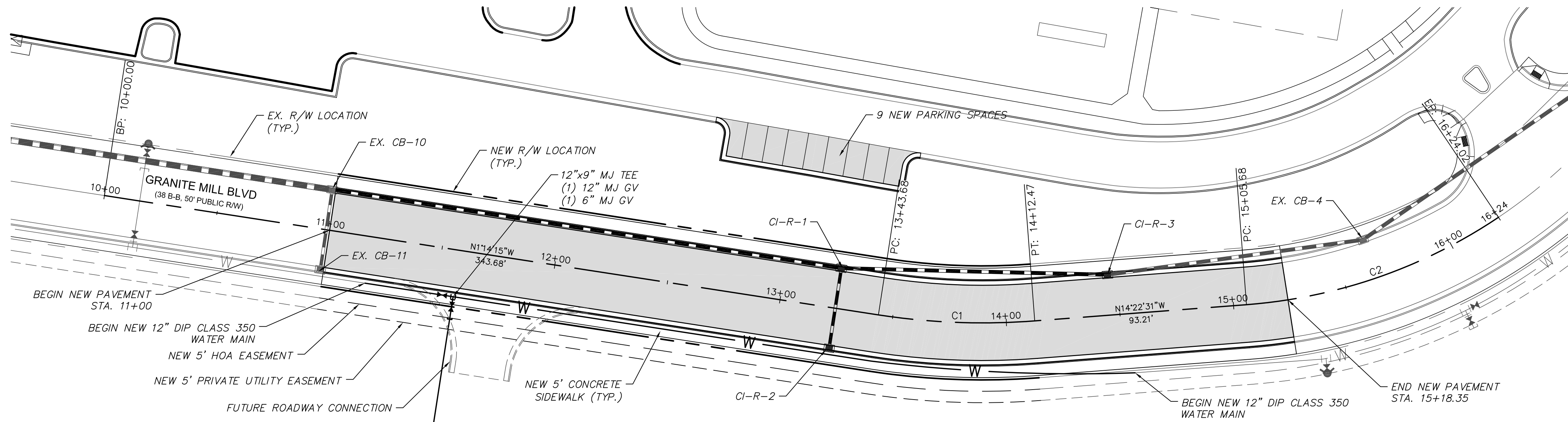
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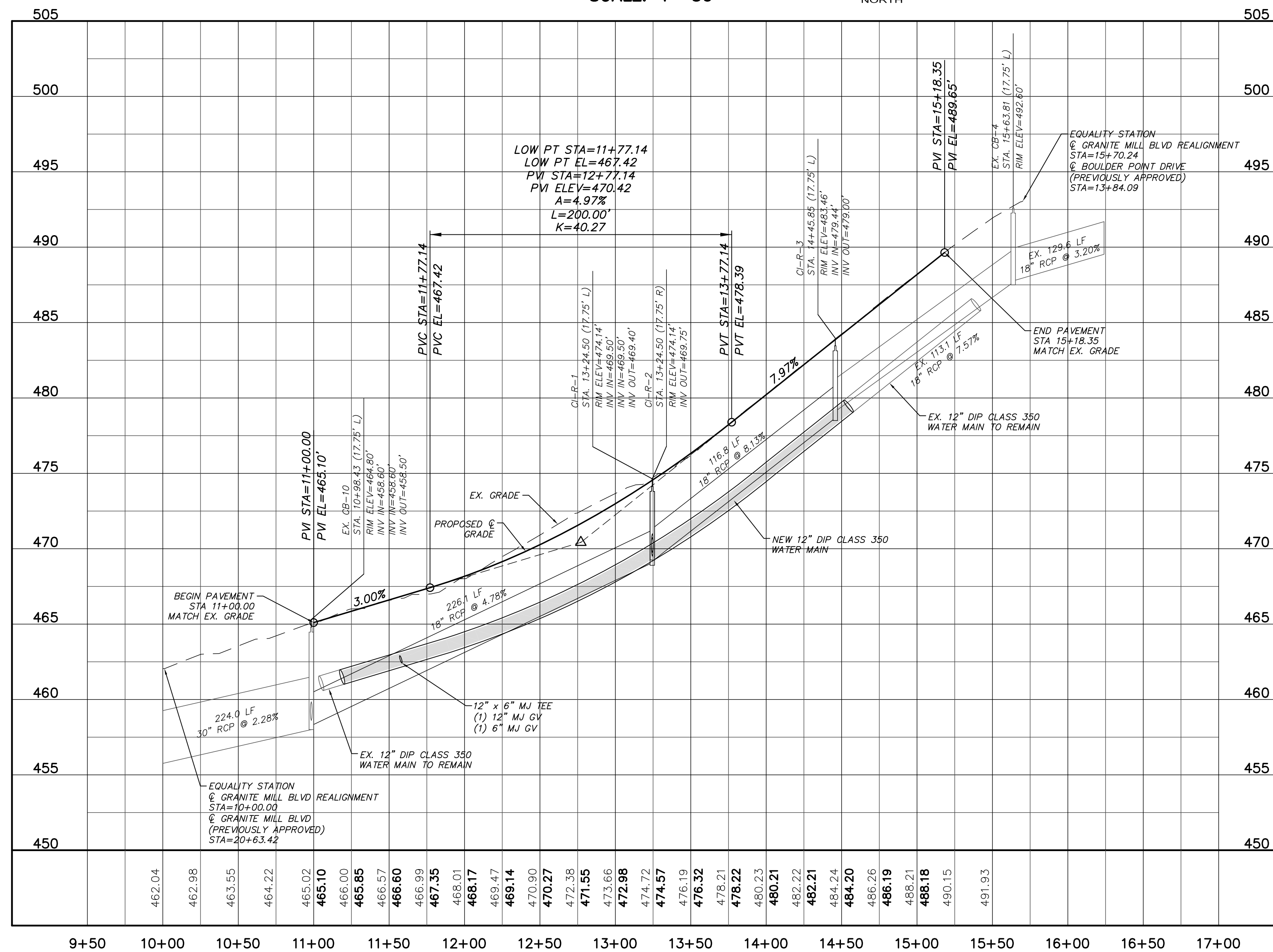
**BRIAR CHAPEL
PHASE 11 - SECTION 1
CHATHAM COUNTY, NORTH CAROLINA**

**PLAN & PROFILE
ALLEY NS-2**

DATE: JUNE 27, 2014	SCALE: 1"=50'	PAC FILE NUMBER: C4.X
MCE PROJ. # 02735-0109	HORIZONTAL: 1"=50'	DRAWING NUMBER: C4.6
DRAWN: GCA	VERTICAL: N/A	
DESIGNED: GCA		
CHECKED: CHS		
PROJ. MGR.: CHS		
STATUS: ISSUED FOR CONSTRUCTION	REVISION: 2	



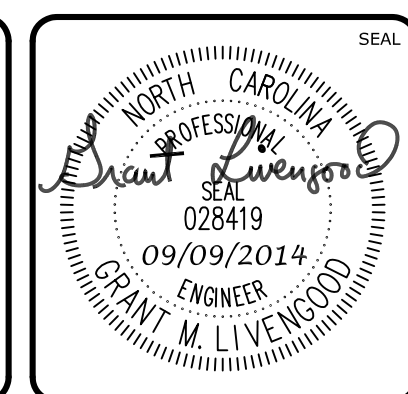
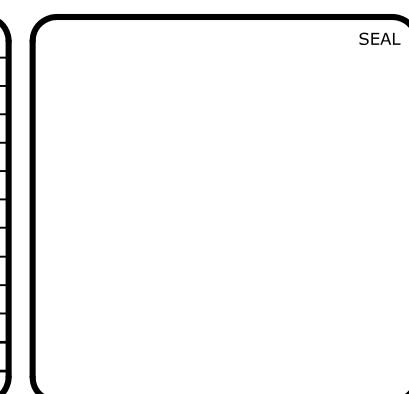
GRANITE MILL BLVD REALIGNMENT
 (STA. 10+00.00 TO 15+24.02)
 SCALE: 1"=30'



ALIGNMENT CURVE DATA						
CURVE #	RADIUS	LENGTH	TANGENT	BEARING	CHORD	DELTA
C1	300.00'	68.79'	34.55'	N7°48'23"W	68.64'	13°08'16"
C2	230.00'	118.35'	60.51'	N29°06'58"W	117.04'	29°28'52"

GRANITE MILL BLVD REALIGNMENT
 (STA. 10+00.00 TO 15+24.02)
 SCALE: (Horiz.) 1"=50'; (Vert.) 1"=5'

REV. NO.	DESCRIPTIONS	DATE
2	REVISED PER NCDOT @ DWR-PWSS COMMENTS/ISSUED FOR CONSTRUCTION	2014.09.09
1	1ST SUBMITTAL TO REVIEW AGENCIES	2014.06.26



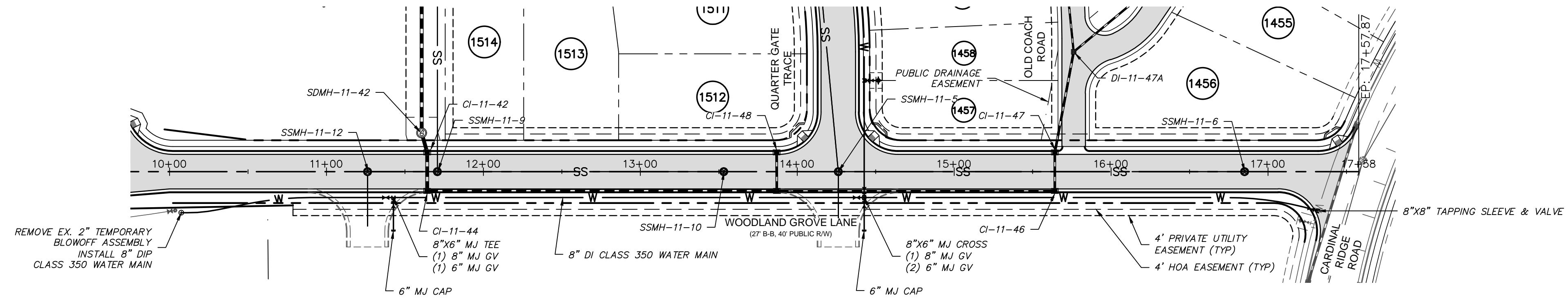
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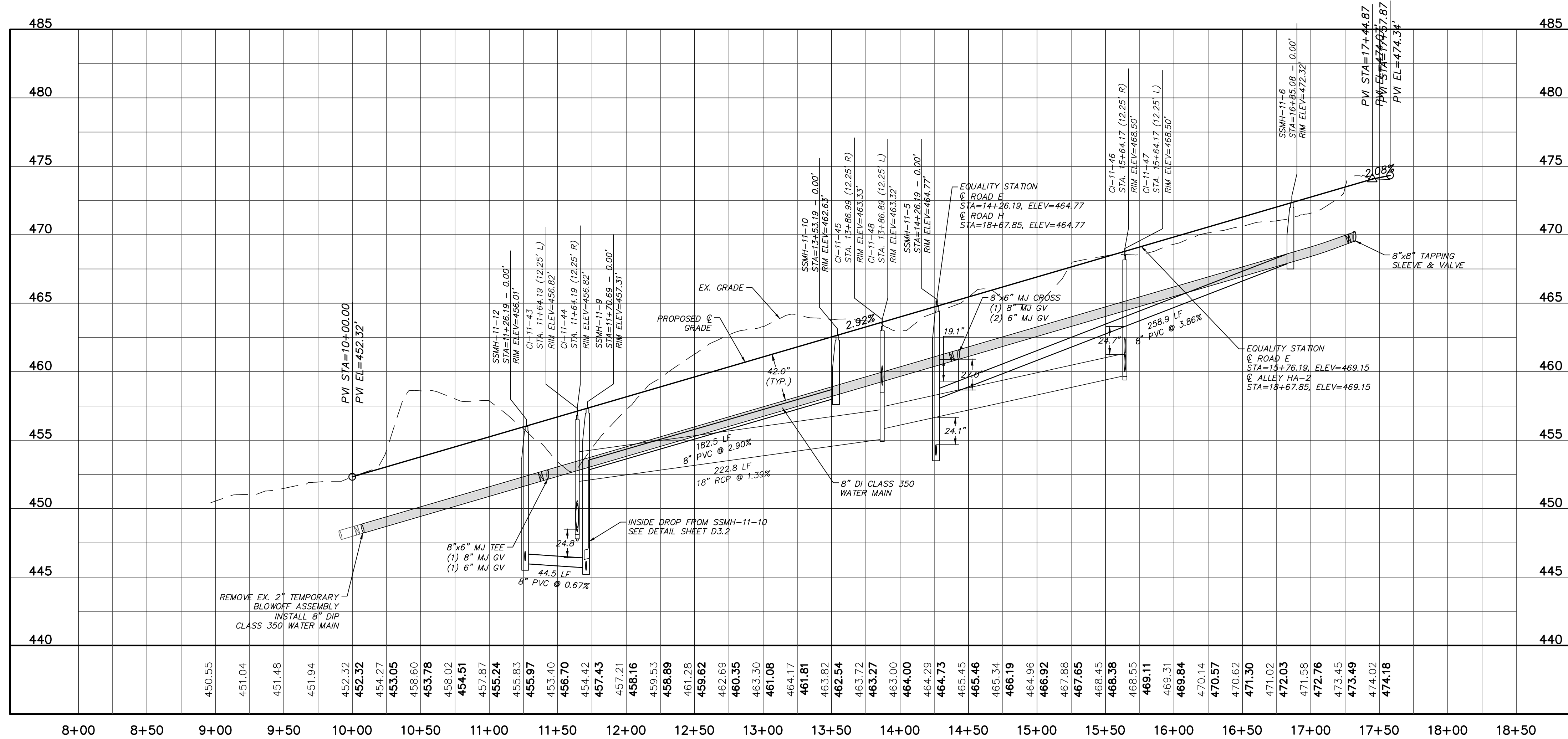
**BRIAR CHAPEL
 PHASE 11 - SECTION 1
 CHATHAM COUNTY, NORTH CAROLINA**

**PLAN & PROFILE
 GRANITE MILL BOULEVARD REALIGNMENT**

DATE:	JUNE 27, 2014	SCALE:	1" = 50'	P&C FILE NUMBER:	C4.X
MCE PROJ. #	02735-0109	HORIZONTAL:	1" = 50'	DRAWING NUMBER:	C4.7A
DRAWN:	GCA	VERTICAL:	N/A		
DESIGNED:	GCA				
CHECKED:	CHS				
PROJ. MGR.:	CHS				
STATUS:	ISSUED FOR CONSTRUCTION	REVISION:	2		

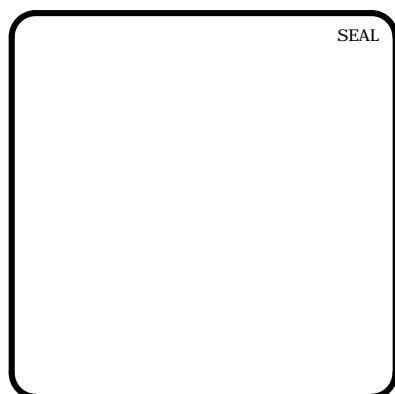


WOODLAND GROVE LANE PLAN
 (27' B-B, 40' PUBLIC R/W, STA. 10+0.00 TO 17+58.00)
 SCALE: 1"=50'



WOODLAND GROVE LANE PROFILE
 (27' B-B, 40' PUBLIC R/W, STA. 10+0.00 TO 17+58.00)
 SCALE: (Horiz.) 1"=50'; (Vert.) 1"=5'

REV. NO.	DESCRIPTIONS	DATE
2	REVISED PER NCDOT @ DWR-PWSS COMMENTS-ISSUED FOR CONSTRUCTION	2014.09.09
1	SUBMITTAL TO REVIEW AGENCIES	2014.06.20



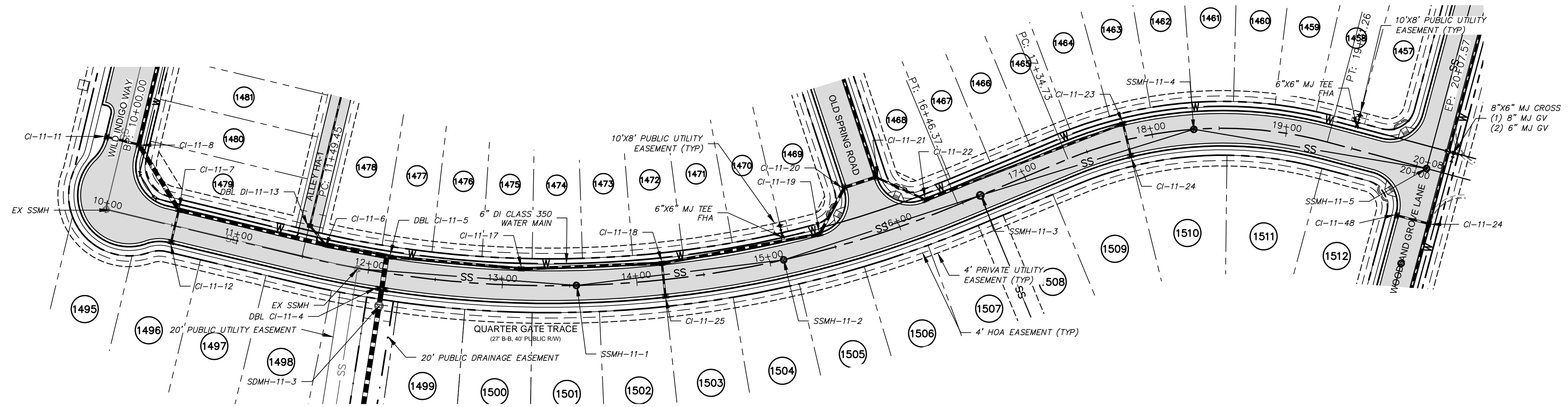
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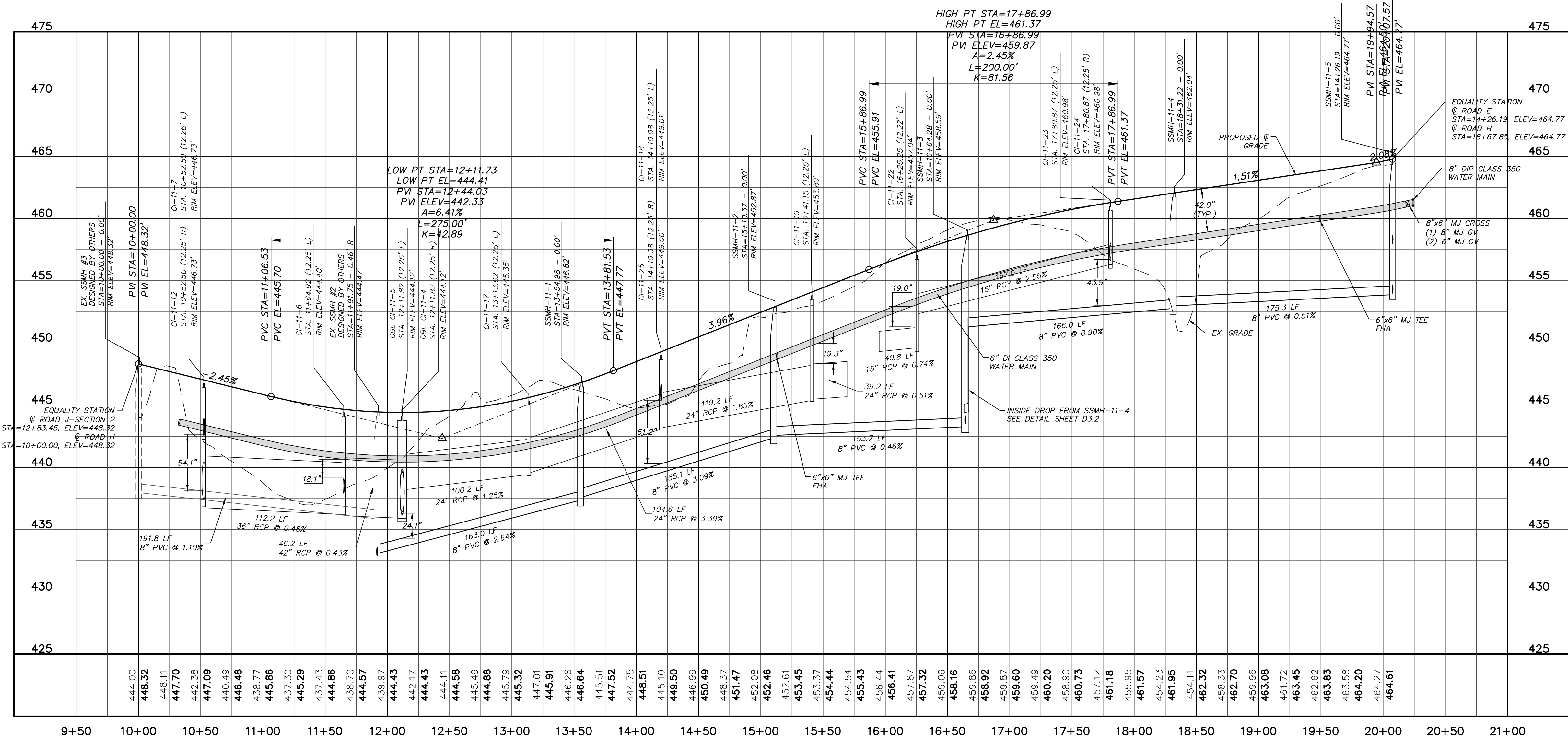
**BRIAR CHAPEL
 PHASE 11 - SECTION 2
 CHATHAM COUNTY, NORTH CAROLINA**

**PLAN & PROFILE
 WOODLAND GROVE LANE**

DATE: JUNE 27, 2014	SCALE: 1"=50'	PAC FILE NUMBER: C4.X
MCE PROJ. # 02735-0109	HORIZONTAL: 1"=50'	DRAWING NUMBER: C4.8
DRAWN: GCA	VERTICAL: N/A	
DESIGNED: GCA		
CHECKED: CHS		
PROJ. MGR: CHS		
STATUS: ISSUED FOR CONSTRUCTION		REVISION: 2

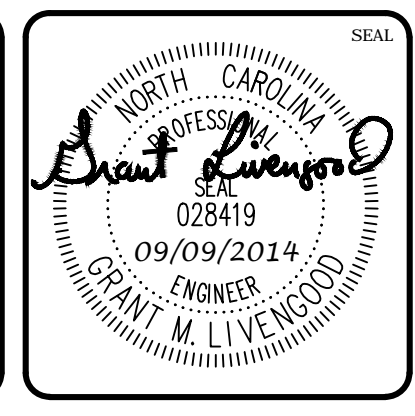
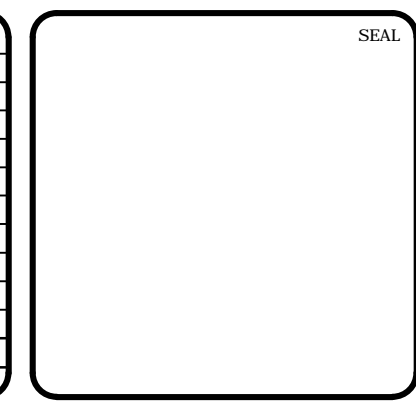


QUARTER GATE TRACE PLAN
 (27' B-B, 40' PUBLIC R/W, STA. 10+0.00 TO 20+08.00)
 SCALE: 1"=50'



QUARTER GATE TRACE PROFILE
 (27' B-B, 40' PUBLIC R/W, STA. 10+0.00 TO 20+08.00)
 SCALE: (Horiz.) 1"=50'; (Vert.) 1"=5'

REV. NO.	DESCRIPTION	DATE
2	REVISED PER NCDOT & DWR PWSS COMMENTS ISSUED FOR CONSTRUCTION	2014.09.09
1	SUBMITTAL TO REVIEW AGENCIES	2014.08.20



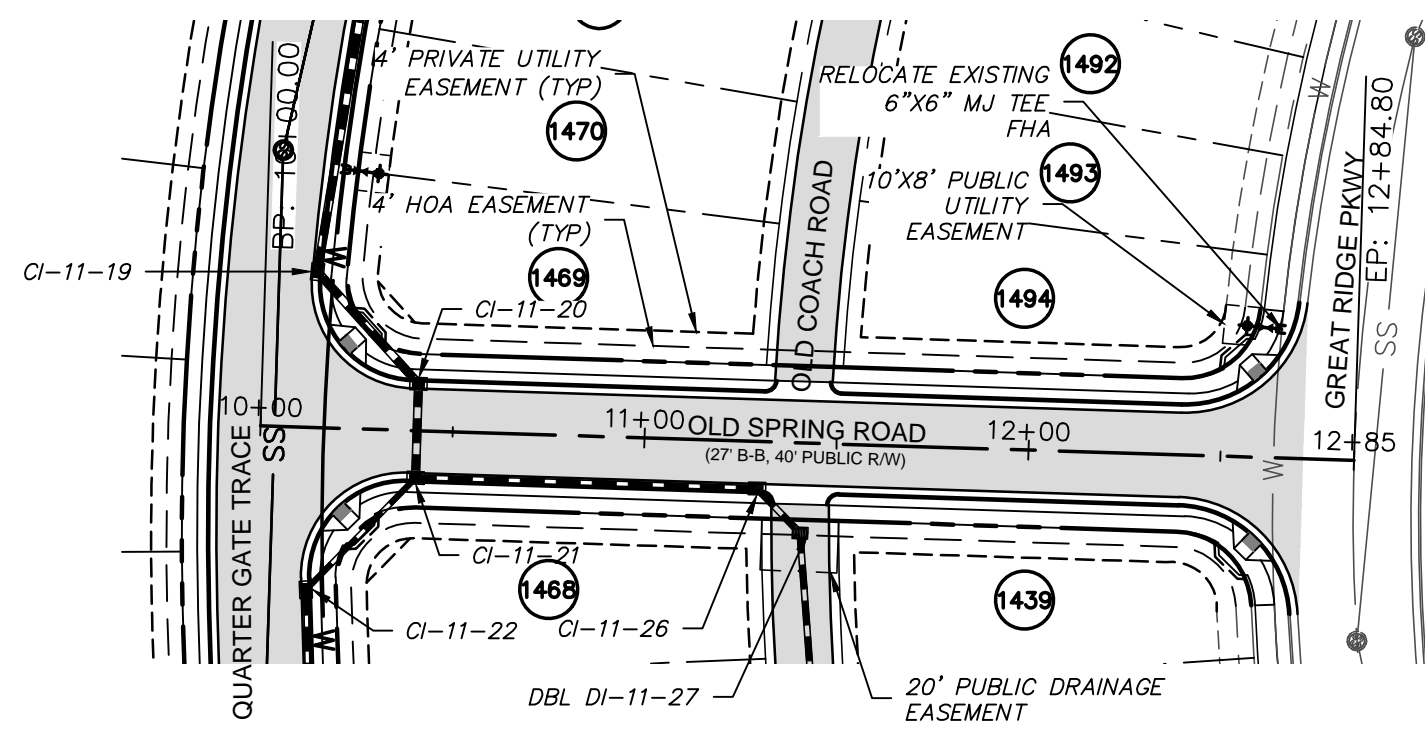
MCKIM & CREED
 1730 Varsity Drive, Suite 500
 Raleigh, North Carolina 27606
 Phone: (919) 233-8091, Fax: (919) 233-8031
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BRIAR CHAPEL™
 by
Newland COMMUNITIES

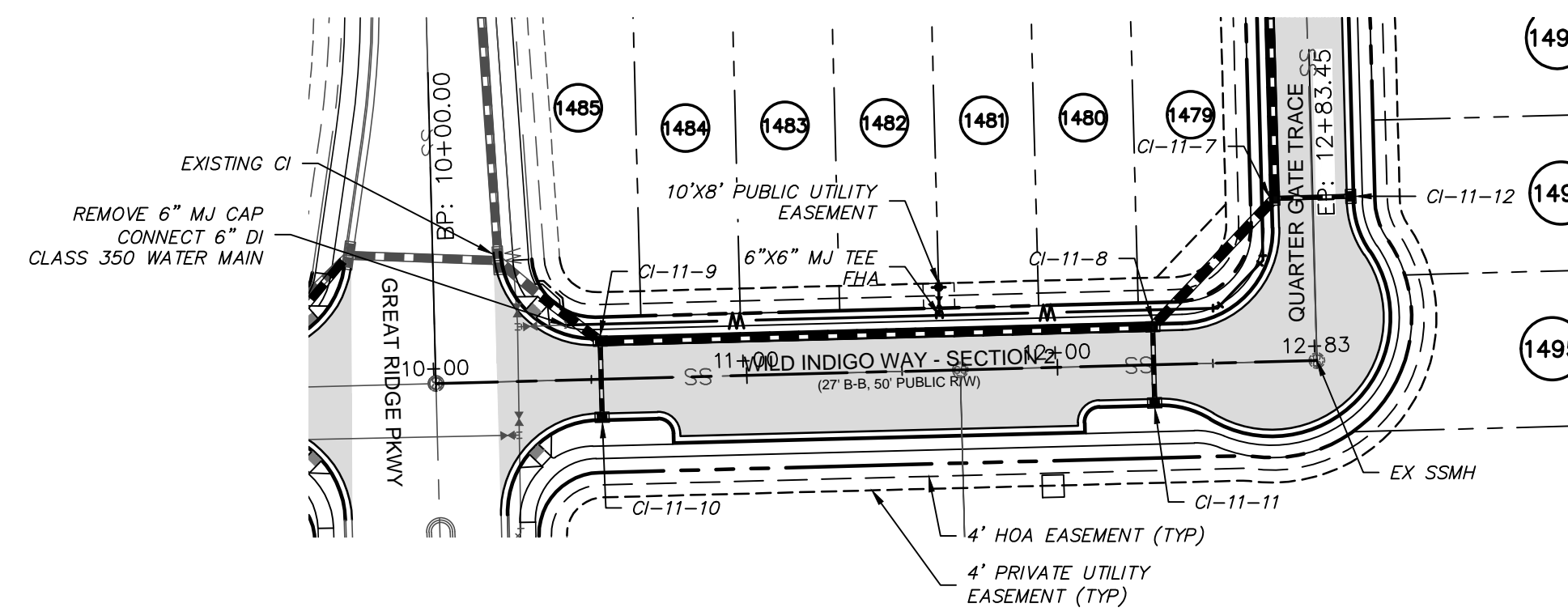
**BRIAR CHAPEL
 PHASE 11 - SECTION 2
 CHATHAM COUNTY, NORTH CAROLINA**

**PLAN & PROFILE
 QUARTER GATE TRACE**

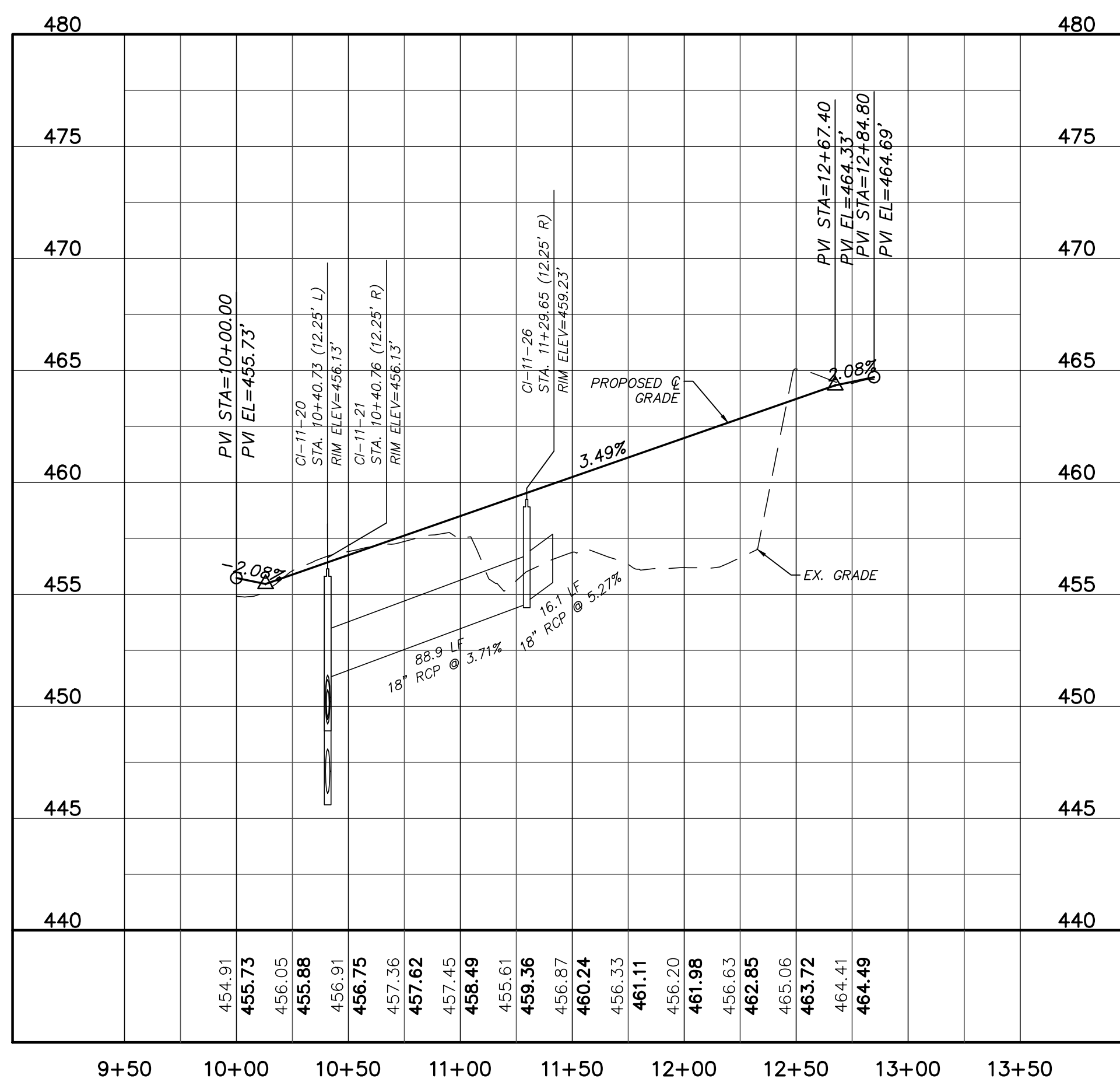
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DRAWN: GCA	VERTICAL: N/A	
DESIGNED: GCA		
CHECKED: CHS		
PROJ. MGR: CHS		
STATUS: ISSUED FOR CONSTRUCTION	REVISION: 2	



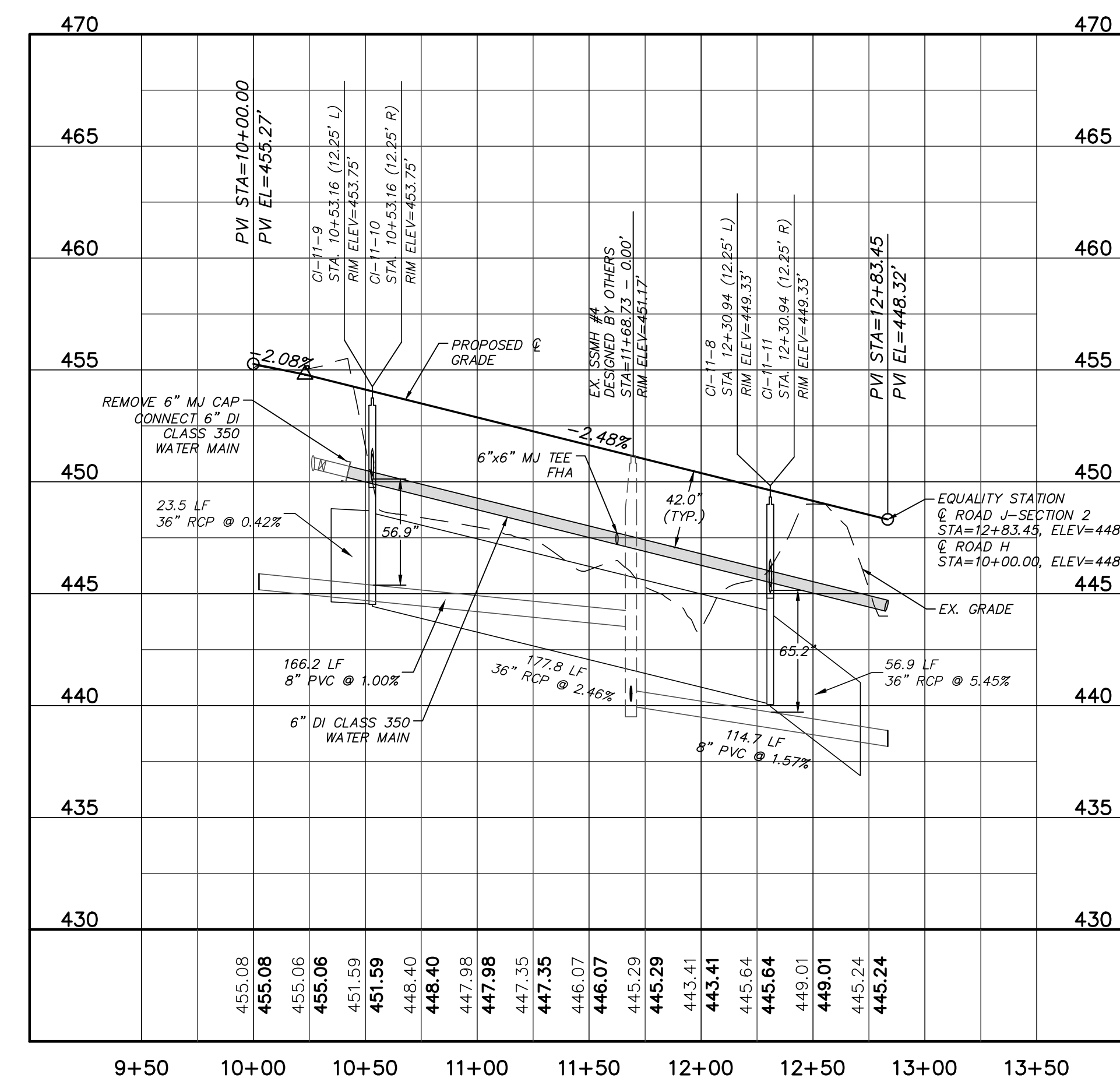
OLD SPRING ROAD PLAN
 (27' B-B, 40' PUBLIC R/W, STA. 10+0.00 TO 12+85.00)
 SCALE: 1"=50'



WILD INDIGO WAY - SECTION 2 PLAN
 (27' B-B, 50' PUBLIC R/W, STA. 10+0.00 TO 12+83.00)
 SCALE: 1"=50'

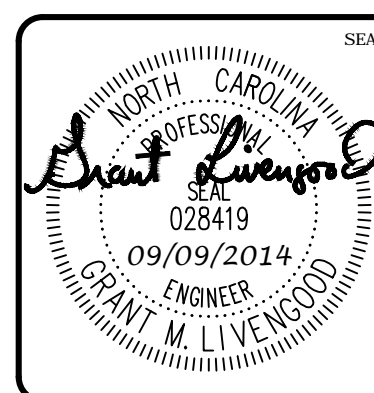
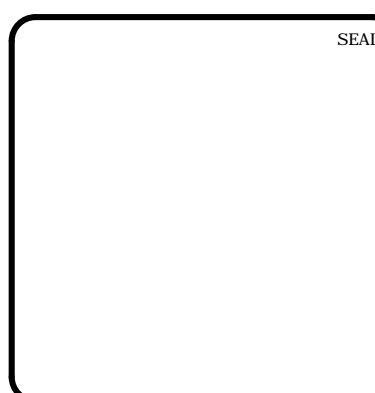


OLD SPRING ROAD PROFILE
 (27' B-B, 40' PUBLIC R/W, STA. 10+0.00 TO 12+85.00)
 SCALE: (Horiz.) 1"=50'; (Vert.) 1"=5'



WILD INDIGO WAY - SECTION 2 PROFILE
 (27' B-B, 50' PUBLIC R/W, STA. 10+0.00 TO 12+83.00)
 SCALE: (Horiz.) 1"=50'; (Vert.) 1"=5'

REV. NO.	DESCRIPTION	DATE
2	REVISED PER NCDOT @ DWR-PWS COMMENTS ISSUED FOR CONSTRUCTION	2014.09.09
1	SUBMITTAL TO REVIEW AGENCIES	2014.08.20



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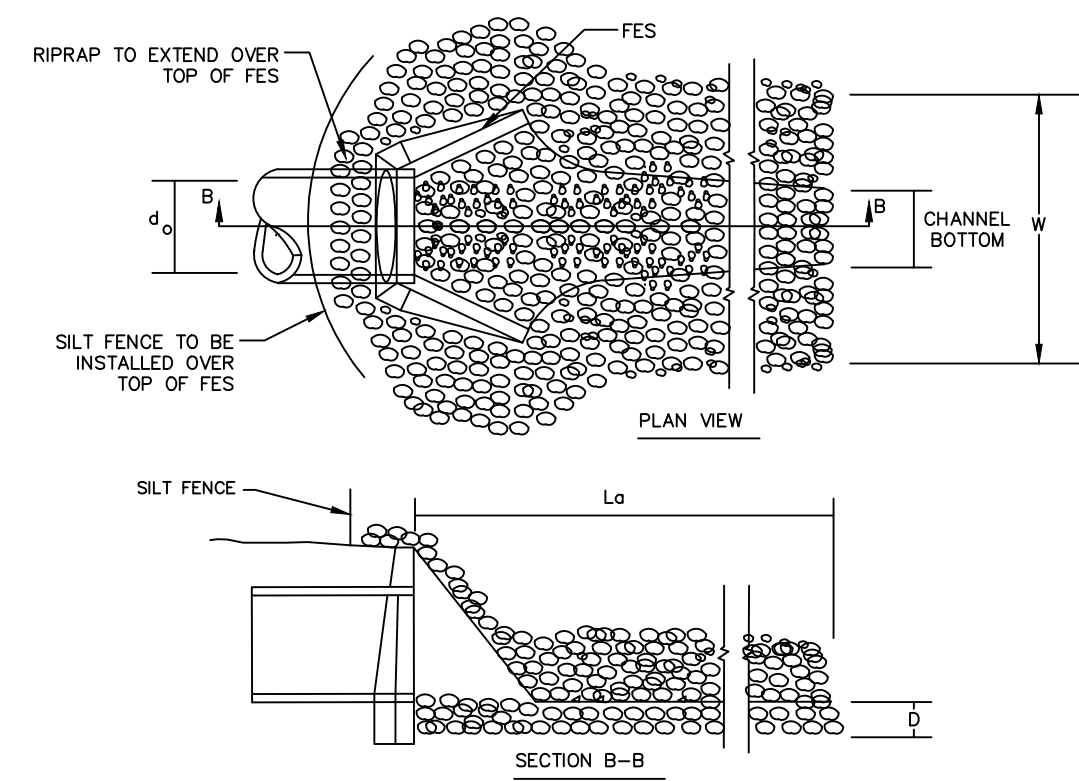
**BRIAR CHAPEL
 PHASE 11 - SECTION 2
 CHATHAM COUNTY, NORTH CAROLINA
 PLAN & PROFILE
 OLD SPRING ROAD, WILD INDIGO WAY -
 SECTION 2**

DATE:	JUNE 27, 2014
MCE PROJ. #	02735-0109
DRAWN	GCA
DESIGNED	GCA
CHECKED	CHS
PROJ. MGR.	CHS

SCALE:	1" = 50'
HORIZONTAL:	1" = 50'
VERTICAL:	N/A

DATE:	JUNE 27, 2014
MCE PROJ. #	02735-0109
DRAWN	GCA
DESIGNED	GCA
CHECKED	CHS
PROJ. MGR.	CHS

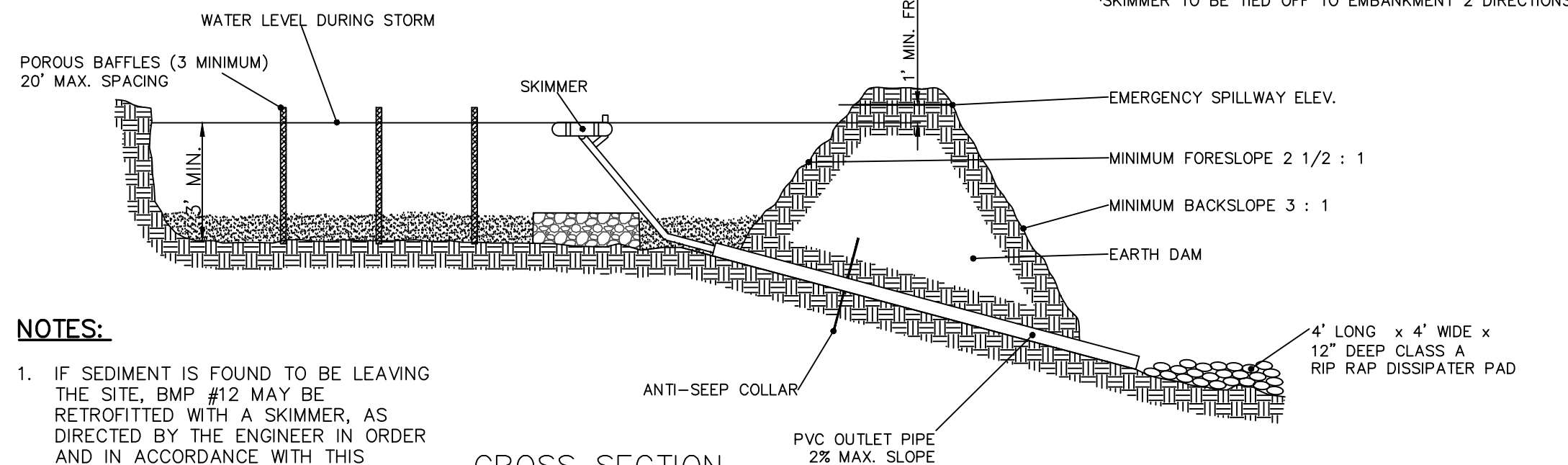
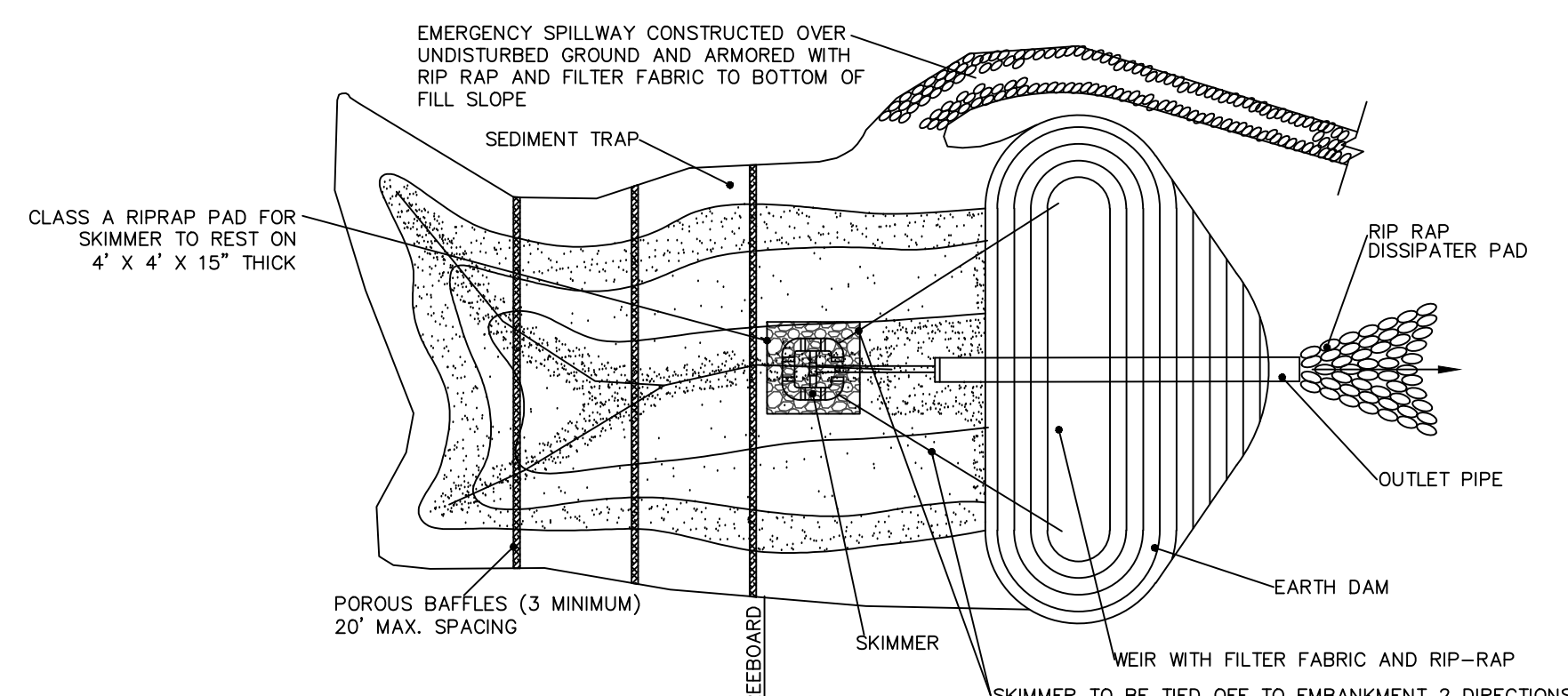
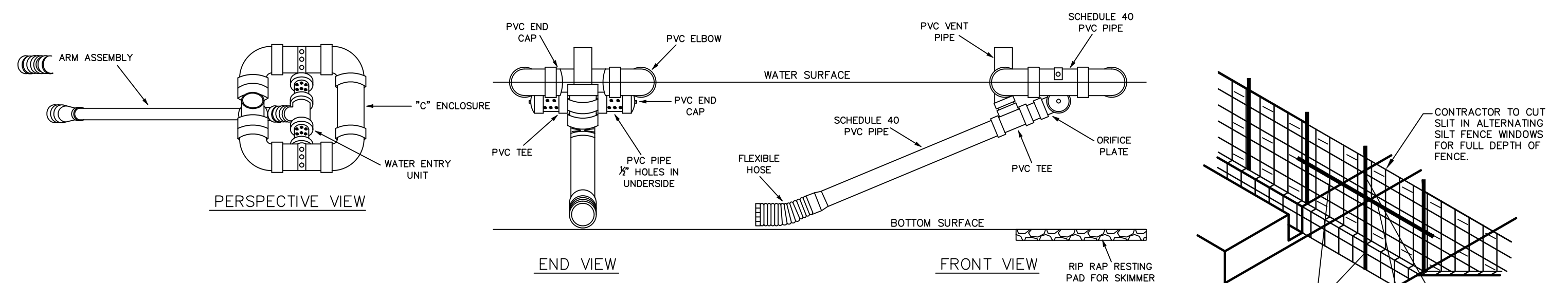
ISSUED FOR CONSTRUCTION



OUTLET NO.	Do (IN.)	Lo (FT.)	W (FT.)	DEPTH (IN.)	RIPRAP CLASSIFICATION
HW-11-1	42	28.0	11.0	24	CLASS 1
HW-11-40	24	16.0	6.0	24	CLASS 1

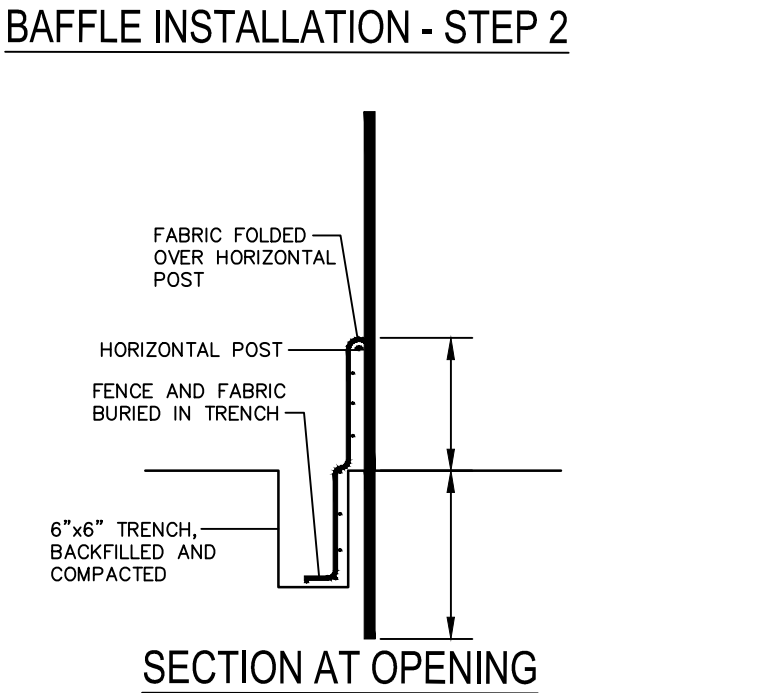
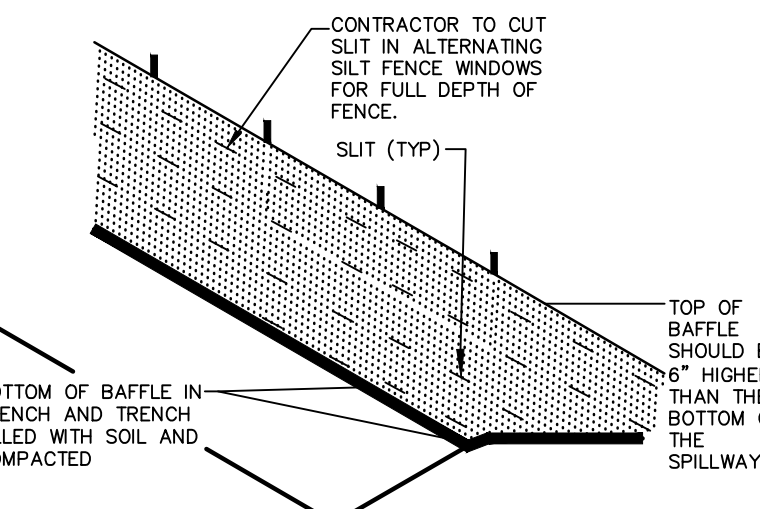
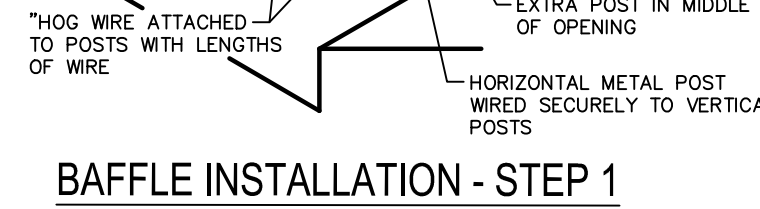
STONE CLASSIFICATIONS OF CLASS B OR LARGER REQUIRE A SUBLAYER OF FILTER FABRIC OR FS-2 FILTER STONE WITH A BEDDING THICKNESS OF 6".

RIPRAP OUTLET PROTECTION
NTS



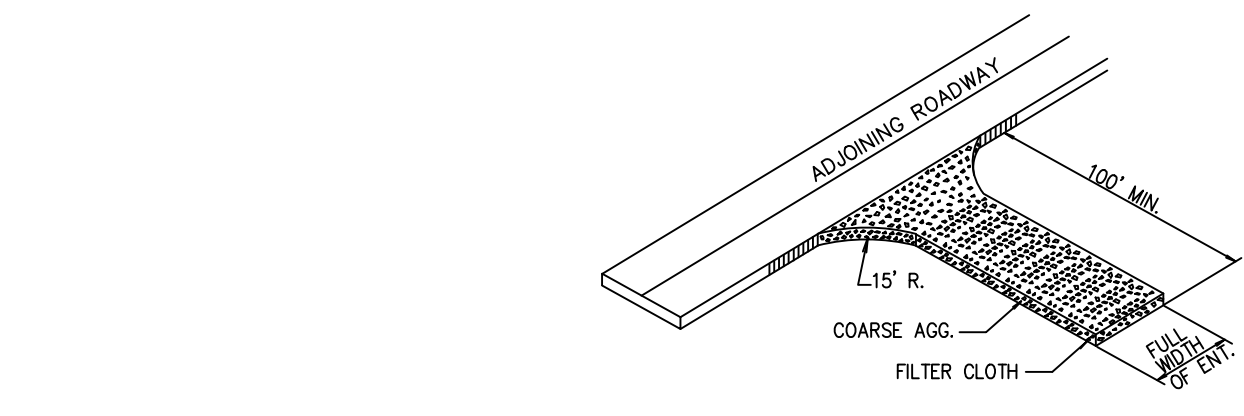
- NOTES:**
- IF SEDIMENT IS FOUND TO BE LEAVING THE SITE, BMP #12 MAY BE RETROFITTED WITH A SKIMMER, AS DIRECTED BY THE ENGINEER IN ORDER AND IN ACCORDANCE WITH THIS DETAIL.
 - ANY EXISTING SKIMMER SEDIMENT BASINS PREVIOUSLY APPROVED SHALL MAINTAINED PER THEIR ORIGINAL DIMENSIONS AND IN ACCORDANCE WITH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

TEMPORARY SKIMMER SEDIMENT BASIN
NTS



- NOTES:**
- DRIVE STEEL FENCE POST AT LEAST 16" INTO SOLID GROUND
 - WOOD POSTS ARE NOT ACCEPTABLE
 - USE STAPLES 1" APART TO ATTACH FABRIC TO "HOG WIRE"
 - BAFFLE SPACED AS PER APPROVED PLAN.

BAFFLE INSTALLATION DETAIL

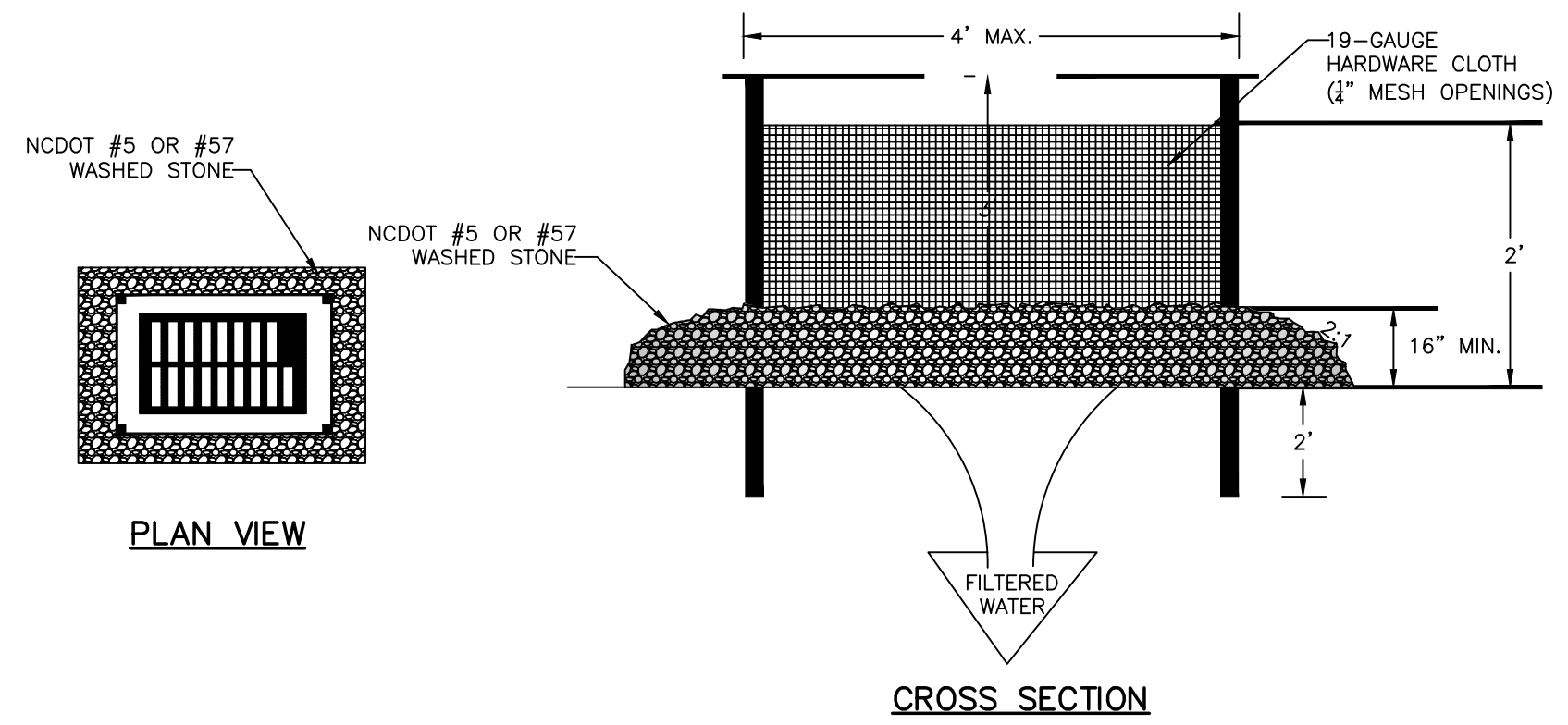


- COARSE AGGREGATE (2"-3" STONE) SHALL BE USED. PAD TO BE 100'L X 25'W X 6"D MIN. PLACE A MINIMUM OF 3" OF STONE IN A CUT SECTION TO HELP SECURE FILTER CLOTH.
- TURNING RADIUS SUFFICIENT TO ACCOMMODATE LARGE TRUCKS IS TO BE PROVIDED.
- ENTRANCES SHOULD BE LOCATED TO PROVIDE FOR MAXIMUM UTILITY BY ALL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

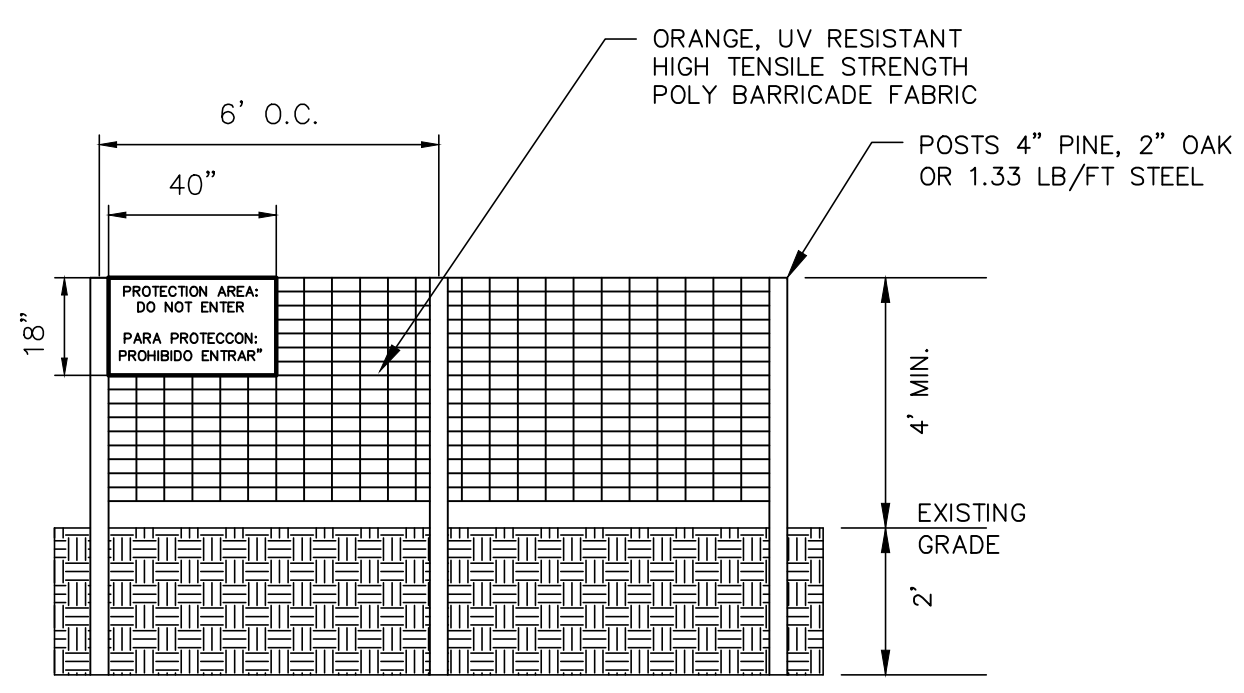
TEMPORARY CONSTRUCTION ENTRANCE
NTS

NOTES:

- UNIFORMLY GRADE A SHALLOW DEPRESSION APPROACHING THE INLET.
- 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.
- 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.
- 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.
- ONCE THE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED, REMOVE ACCUMULATED SEDIMENT, AND ESTABLISH FINAL GRADING ELEVATIONS.
- COMPACT THE AREA PROPERLY AND STABILIZED IT WITH GROUND COVER.

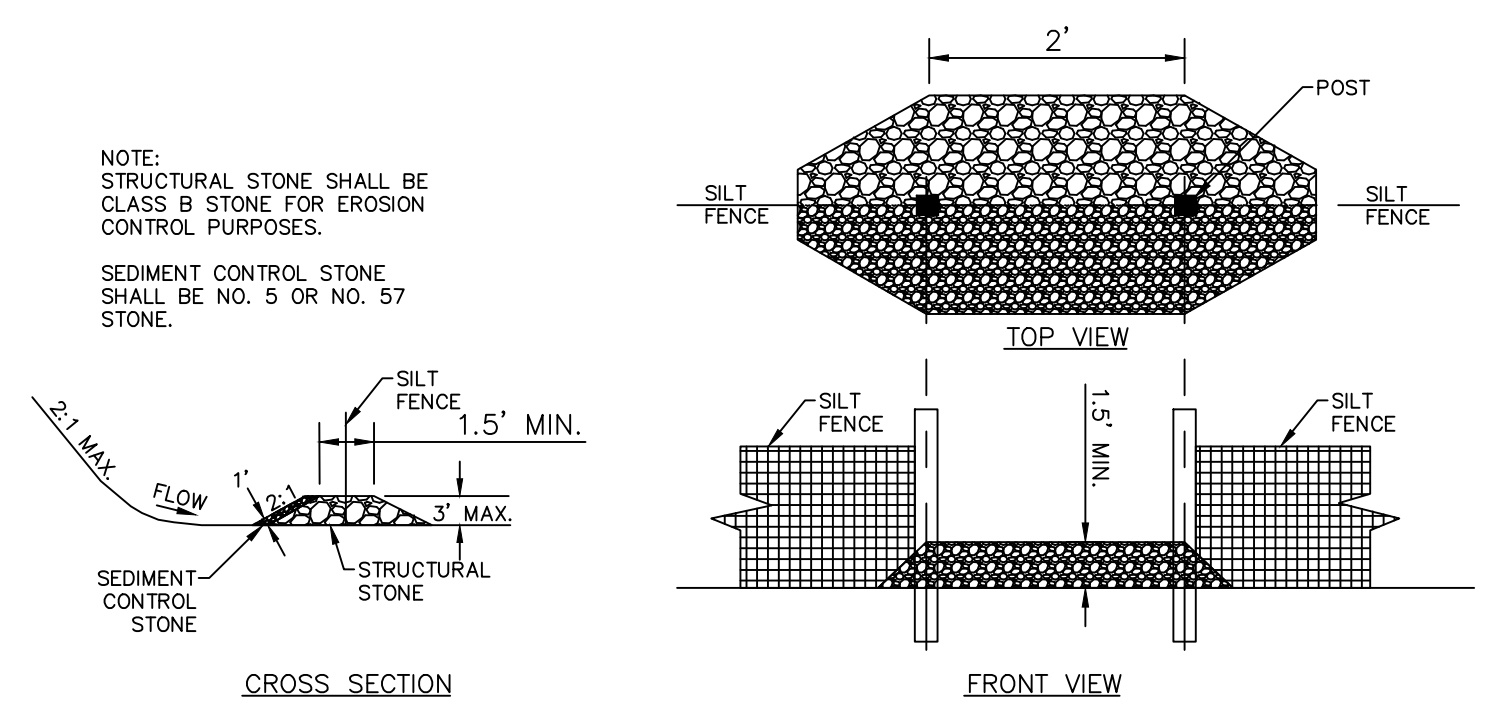


HARDWARE CLOTH & GRAVEL INLET PROTECTION
NTS

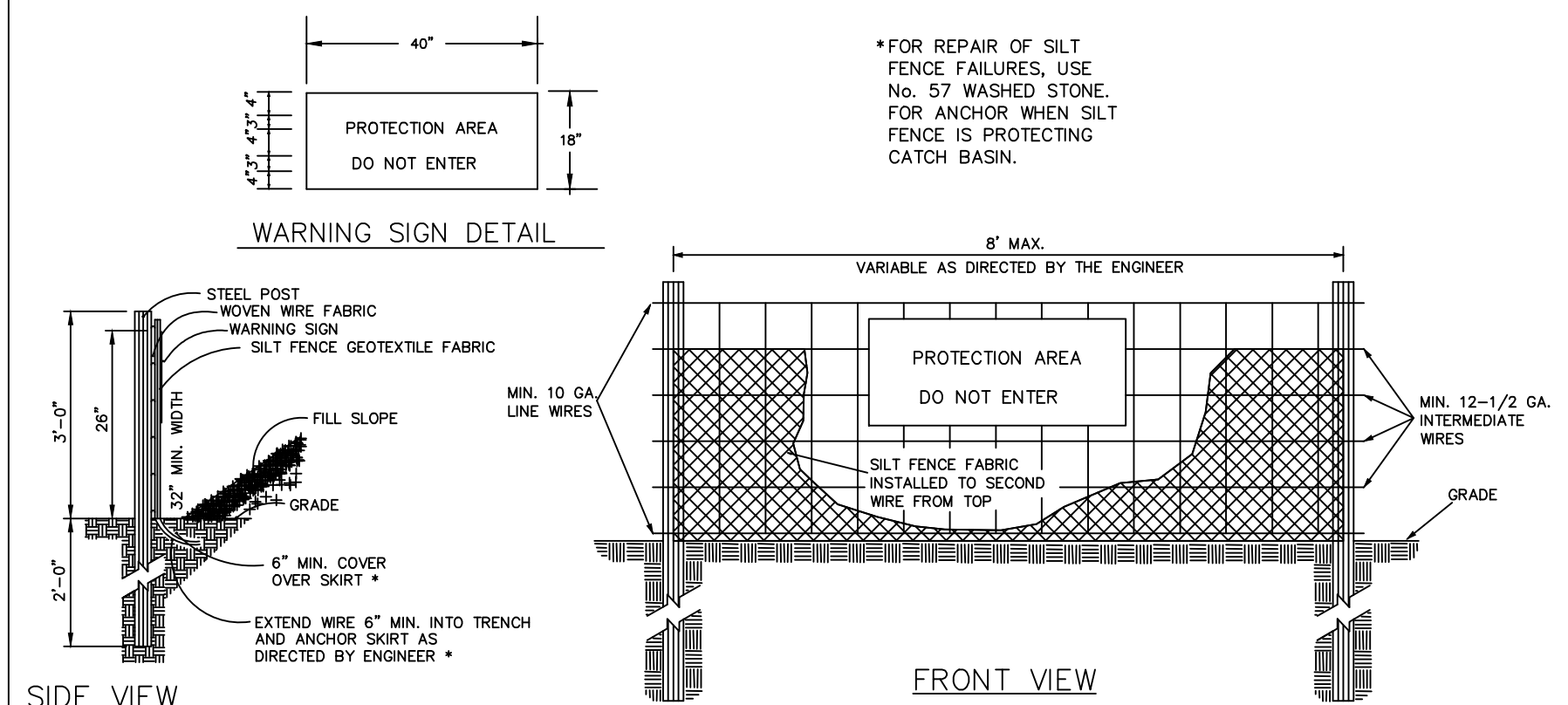


- WARNING SIGNS TO BE MADE OF DURABLE WATERPROOF PLASTIC.
- ALL LETTERS TO BE AT LEAST 3" HIGH, CLEARLY LEGIBLE AND SPACED APPROPRIATELY.
- SIGNS TO BE PLACED AT EACH END OF LINER PROTECTION AREA AND 200' ON CENTER (MAX.) THEREAFTER FOR PROTECTION AREA LESS THAN 200' IN PERIMETER, PROVIDE NO LESS THAN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

TREE PROTECTION FENCE
NTS



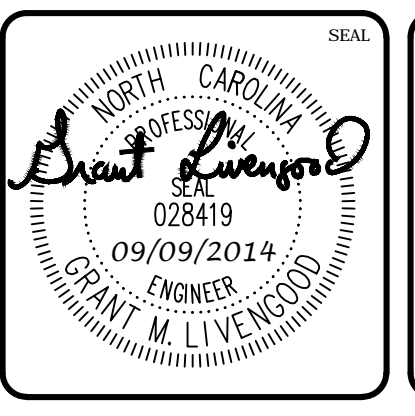
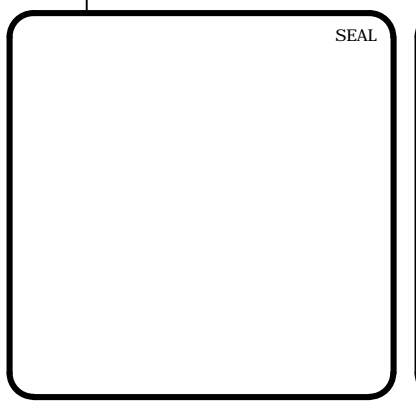
SILT FENCE OUTLET
NTS



COMBINATION SILT/TREE PROTECTION FENCE
NTS

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

REV. NO.	DESCRIPTIONS/REVISIONS	DATE
2	REVISED PER NCDOT & DWR PWSS COMMENTS/ISSUED FOR CONSTRUCTION	2014.06.09
1	SUBMITTAL TO REVIEW AGENCIES	2014.06.27



MCKIM & CREED
1730 Varsity Drive, Suite 500
Raleigh, North Carolina 27606
Phone: (919)233-8091, Fax: (919)233-8031
F-1222
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BRIAR CHAPEL™
by **Newland COMMUNITIES**

BRIAR CHAPEL PHASE 11
CHATHAM COUNTY, NORTH CAROLINA
EROSION AND SEDIMENTATION CONTROL DETAILS

DATE: JUNE 27, 2014	SCALE: HORIZONTAL: N/A	MISC FILE NUMBER: D1.X
MCE PROJ. # 02735-0109	VERTICAL: N/A	DRAWING NUMBER: D1.1
DRAWN: GCA		
DESIGNED: GCA		
CHECKED: CHS		
PROJ. MGR: CHS		
STATUS: ISSUED FOR CONSTRUCTION	REVISION: 2	

RECOMMENDATIONS FOR LATE WINTER AND EARLY SPRING

SEEDING MIXTURE
 SPECIES: TALL FESCUE RATE (lb./acre) 80
 KOBÉ 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: FALL AUG. 15 - SEPT. 15
 LATE WINTER: FEB. 15 - MAR. 21
 POSSIBLE: FALL AUG. 20 - OCT. 25
 LATE WINTER: FEB. 1 - APR. 15.

FALL IS BEST FOR TALL FESCUE AND LATE WINTER FOR LESPEDEZAS. OVERSEEDING OF KOBÉ 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, REFERTILIZE AND MULCH DAMAGED AREAS IMMEDIATELY.

RECOMMENDATIONS FOR GRASS-LINED CHANNELS

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

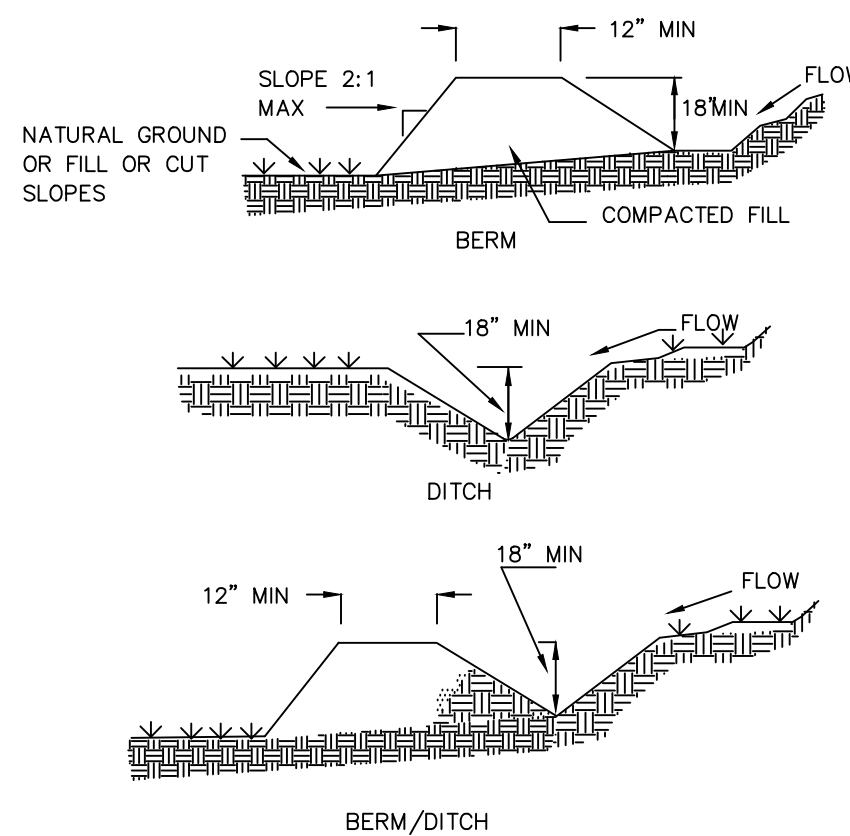
NOTES:

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.

- a. 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).
- b. 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.
- c. CHECK DEVICE AFTER EACH RAIN, BUT ONCE A WEEK REGARDLESS. REPAIR AS NECESSARY.

MAINTENANCE

- 1. 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.
- 2. ALL TEMPORARY DIVERSION AND CLEAN WATER DITCHES SHALL BE MAINTAINED PER THEIR ORIGINAL DESIGN DIMENSIONS DURING CONSTRUCTION ACTIVITIES. ANY DITCHES THAT REQUIRE REMOVAL OR RELOCATION SHALL RECEIVE APPROVAL FROM CHATHAM COUNTY EROSION CONTROL INSPECTOR.



TEMPORARY DIVERSION/CLEAN WATER DIVERSION DITCH
 NTS

RECOMMENDATIONS FOR LATE WINTER AND EARLY SPRING

SEEDING MIXTURE
 SPECIES: RYE (GRAIN) RATE (lb./acre) 120
 ANNUAL LESPEDEZA (KOBÉ IN PIEDMONT & COASTAL PLAIN, KOREAN IN MOUNTAINS) 50

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: GERMAN MILLET RATE (lb./acre) 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: RYE (GRAIN) RATE (lb./acre) 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.

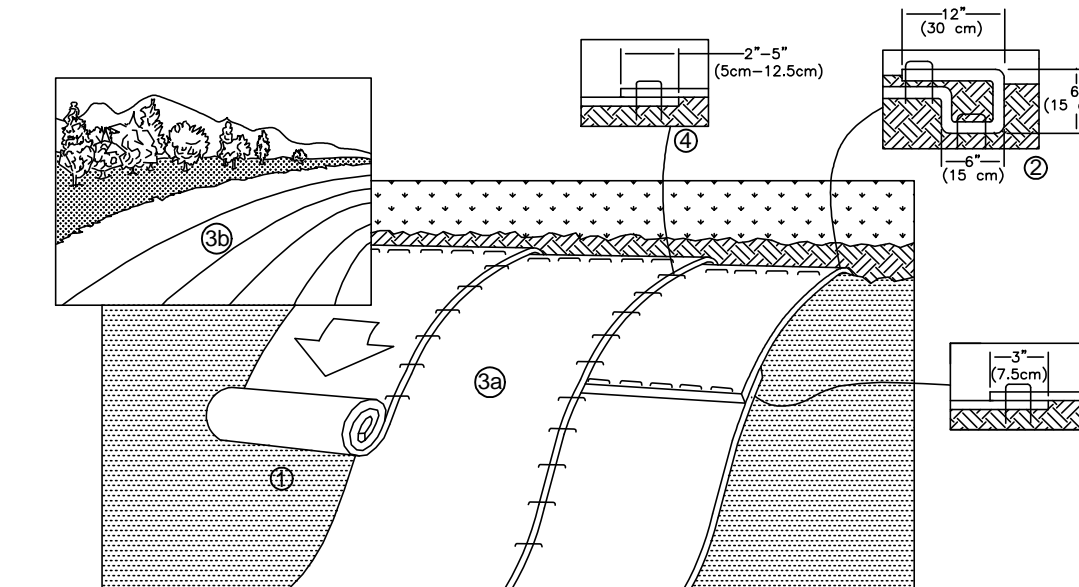
MAINTENANCE:
 REPAIR AND REFERTILIZE DAMAGED AREAS IMMEDIATELY. TOPDRESS WITH 50 lb/acre OF NITROGEN IN MARCH. IF IT IS NECESSARY TO EXTEND TEMPORARY COVER BEYOND JUNE 15, OVERSEED WITH 50 lb/acre KOBÉ (PIEDMONT AND COASTAL PLAIN) OR KOREAN (MOUNTAINS) LESPEDEZA IN LATE FEBRUARY OR EARLY MARCH.

TEMPORARY SEEDING SCHEDULE
 NTS

- 1. CHISEL COMPACTED AREAS AND SPREAD TOPSOIL 3 INCHES DEEP OVER ADVERSE SOIL CONDITIONS, IF AVAILABLE.
- 2. RIP THE ENTIRE AREA TO 6 INCHES DEPTH.
- 3. REMOVE ALL LOOSE ROCK, ROOTS, AND OTHER OBSTRUCTIONS LEAVING SURFACE REASONABLY SMOOTH AND UNIFORM.
- 4. APPLY AGRICULTURAL LIME, FERTILIZER, AND SUPERPHOSPHATE UNIFORMLY AND MIX WITH SOIL (SEE BELOW*).
- 5. CONTINUE TILLAGE UNTIL A WELL - PULVERIZED, FIRM, REASONABLY UNIFORM SEEDBED IS PREPARED 4 TO 6 INCHES DEEP.
- 6. SEED ON A FRESHLY PREPARED SEEDBED AND COVER SEED LIGHTLY WITH SEEDING EQUIPMENT OR CULTIPACK AFTER SEEDING.
- 7. MULCH IMMEDIATELY AFTER SEEDING AND ANCHOR MULCH.
- 8. 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.
- 9. 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

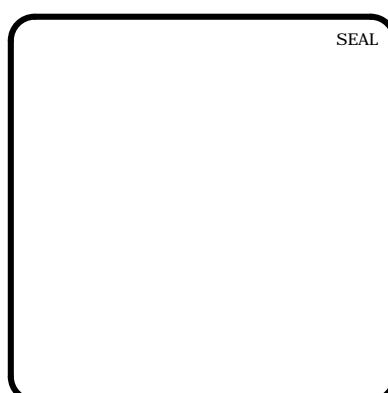
SEEDBED PREPARATION
 NTS



- 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

REV. NO.	DESCRIPTIONS	DATE
2	REVISED PER NCDOT & DWR PWSS COMMENTS ISSUED FOR CONSTRUCTION	2014.09.09
1	SUBMITTAL TO REVIEW AGENCIES	2014.06.27



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 PHASE 11
 CHATHAM COUNTY, NORTH CAROLINA**

**EROSION AND SEDIMENTATION
 CONTROL DETAILS**

DATE: JUNE 27, 2014	SCALE: D1.X	MISC. FILE NUMBER: D1.2
MCE PROJ. # 02735-0109	HORIZONTAL: N/A	
DRAWN: GCA	VERTICAL: N/A	
DESIGNED: GCA		
CHECKED: CHS		
PROJ. MGR.: CHS		
STATUS: ISSUED FOR CONSTRUCTION	REVISION: 2	

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

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

GENERAL NOTES:
CHAMFER ALL EXPOSED CORNERS 1".
USE CLASS "B" CONCRETE THROUGHOUT.
OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2" KEYWAY, OR #4 BAR DOMELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.
USE FORMS TO CONSTRUCT THE BOTTOM SLAB.
IF REINFORCED CONCRETE PIPE IS SET IN BASE SLAB OF BOX, ADD TO BASE AS SHOWN ON STANDARD NO. 840.00.
PROVIDE ALL JUNCTION BOXES OVER 3' 6" IN DEPTH WITH STEPS 12" ON CENTERS IN ACCORDANCE WITH STD. NO. 840.66.
ADJUST THE STEEL, CONCRETE AND BRICK MASONRY QUANTITIES TO INCLUDE THE ADDITION OF THE MANHOLE (I.E. DIAGONAL BARS 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 ONE BOX AND SLAB		DEDUCTIONS FOR ONE PIPE (Q.U.V.S.)					
PIPE	SPAN	WIDTH	HEIGHT	NO.	LENGTH	TOP SLAB DIMENSIONS	CUBIC YARDS IN BOX	LSB. REINF. MIN. "M"	C.S. R.C.				
12"	2'-0"	2'-0"	2'-3"	12	3'-0"	3'-0" x 3'-0"	0.167	0.167	0.166	22	0.750	0.015	0.024
18"	2'-3"	2'-3"	2'-6"	12	3'-0"	3'-3" x 3'-3"	0.196	0.196	0.204	24	0.802	0.020	0.036
18"	3'-0"	2'-6"	2'-6"	14	3'-3"	3'-6" x 3'-6"	0.227	0.227	0.232	30	1.066	0.033	0.048
24"	3'-0"	3'-0"	3'-3"	16	3'-9"	4'-0" x 4'-0"	0.298	0.298	0.259	40	1.434	0.059	0.085
30"	3'-6"	3'-6"	3'-9"	18	4'-3"	4'-6" x 4'-6"	0.375	0.375	0.296	51	1.960	0.092	0.127
36"	4'-0"	4'-0"	4'-3"	20	4'-9"	5'-0" x 5'-0"	0.463	0.463	0.333	64	2.341	0.132	0.178
42"	4'-6"	4'-6"	4'-9"	22	5'-3"	5'-6" x 5'-6"	0.560	0.560	0.370	77	2.878	0.180	0.243
48"	5'-0"	5'-0"	5'-3"	24	5'-9"	6'-0" x 6'-0"	0.673	0.673	0.407	111	3.623	0.235	0.317
54"	5'-6"	5'-6"	5'-9"	26	6'-3"	6'-6" x 6'-6"	0.800	0.800	0.444	126	4.283	0.297	0.401
60"	6'-0"	6'-0"	6'-3"	30	7'-3"	7'-6" x 7'-6"	1.042	1.042	0.481	145	5.090	0.367	0.495
66"	7'-0"	7'-0"	7'-3"	32	7'-10"	8'-0" x 8'-0"	1.210	1.210	0.516	169	5.917	0.444	0.589

SHEET 1 OF 1
840.31

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

ENGLISH STANDARD DRAWING FOR CONCRETE GRATED DROP INLET TYPE '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 DOMELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.
USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.
IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.
CONSTRUCT WITH PIPE CHAMFER MATCHING.
MAX. DEPTH OF THIS STRUCTURE FROM TOP OF BOTTOM SLAB TO TOP ELEVATION IS 12 FEET.
USE STANDARD FRAMES AND GRATES 840.22 (SHOWN), 840.24 (SHOWN), 840.20, 840.29, AND 840.33.
SEE STANDARD DRAWING 840.25 FOR ATTACHMENT OF FRAMES AND GRATES NOT SHOWN.
CHAMFER ALL EXPOSED CORNERS 1".
DRAWING NOT TO SCALE.

DIMENSIONS OF BOX AND PIPE		REINFORCEMENT BARS "A"		DIMENSIONS AND QUANTITIES FOR CONCRETE GRATED DROP INLET		TOTAL QUANTITIES FOR ONE PIPE		DEDUCTIONS FOR ONE PIPE	
PIPE	SPAN	WIDTH	HEIGHT	NO.	LENGTH	TOP SLAB DIMENSIONS	CUBIC YARDS OF CONCRETE IN BOX	LSB. REINF. MIN. "M"	C.S. R.C.
12"	3'-0"	2'-0"	1'-8"	0.382	0.247	0.381	0.753	0.050	0.032
15"	3'-6"	2'-0"	1'-11"	0.382	0.247	0.453	0.915	0.053	0.036
18"	3'-0"	2'-0"	1'-5"	0.382	0.247	0.515	0.977	0.053	0.048
24"	3'-6"	2'-0"	2'-8"	0.382	0.247	0.659	1.021	0.059	0.085
30"	3'-6"	2'-0"	3'-2"	0.382	0.247	0.782	1.144	0.068	0.107
36"	3'-6"	2'-0"	3'-8"	0.382	0.247	0.905	1.266	0.132	0.178

SHEET 1 OF 1
840.19

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 DOMELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.
USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.
IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.
USE TYPE "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 ONE PIPE		DEDUCTIONS FOR ONE PIPE	
PIPE	SPAN	WIDTH	HEIGHT	NO.	LENGTH	TOP SLAB DIMENSIONS	CUBIC YARDS IN BOX	LSB. REINF. MIN. "M"	C.S. R.C.
12"	3'-0"	2'-0"	1'-8"	0.285	0.272	0.272	0.615	0.026	0.026
15"	3'-6"	2'-0"	1'-11"	0.285	0.272	0.329	0.659	0.036	0.036
18"	3'-0"	2'-0"	1'-5"	0.285	0.272	0.381	0.687	0.033	0.048
24"	3'-6"	2'-0"	2'-8"	0.285	0.272	0.453	0.711	0.039	0.085
30"	3'-6"	2'-0"	3'-2"	0.285	0.272	0.515	0.735	0.048	0.127
36"	3'-6"	2'-0"	3'-8"	0.285	0.272	0.577	0.759	0.059	0.178

SHEET 1 OF 2
840.02

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

ENGLISH STANDARD DRAWING FOR MANHOLE FRAME AND COVER

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

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

SHEET 1 OF 1
840.54

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

ENGLISH STANDARD DRAWING FOR FRAMES AND NARROW SLOT SAG GRATES

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

SHEET 1 OF 1
840.24

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

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

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

DIMENSIONS OF BOX AND PIPE		REINFORCEMENT BARS "A"		DIMENSIONS AND QUANTITIES FOR CONCRETE CATCH BASIN (BASED ON MIN. HEIGHT, N, WITH NO RISER)		TOTAL QUANTITIES FOR ONE PIPE		DEDUCTIONS FOR ONE PIPE	
PIPE	SPAN	WIDTH	HEIGHT	NO.	LENGTH	TOP SLAB DIMENSIONS	CUBIC YARDS IN BOX	LSB. REINF. MIN. "M"	C.S. R.C.
12"	3'-0"	2'-0"	1'-8"	0.285	0.272	0.272	0.615	0.026	0.026
15"	3'-6"	2'-0"	1'-11"	0.285	0.272	0.329	0.659	0.036	0.036
18"	3'-0"	2'-0"	1'-5"	0.285	0.272	0.381	0.687	0.033	0.048
24"	3'-6"	2'-0"	2'-8"	0.285	0.272	0.453	0.711	0.039	0.085
30"	3'-6"	2'-0"	3'-2"	0.285	0.272	0.515	0.735	0.048	0.127
36"	3'-6"	2'-0"	3'-8"	0.285	0.272	0.577	0.759	0.059	0.178

SHEET 2 OF 2
840.02

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

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

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

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

SHEET 1 OF 2
840.03

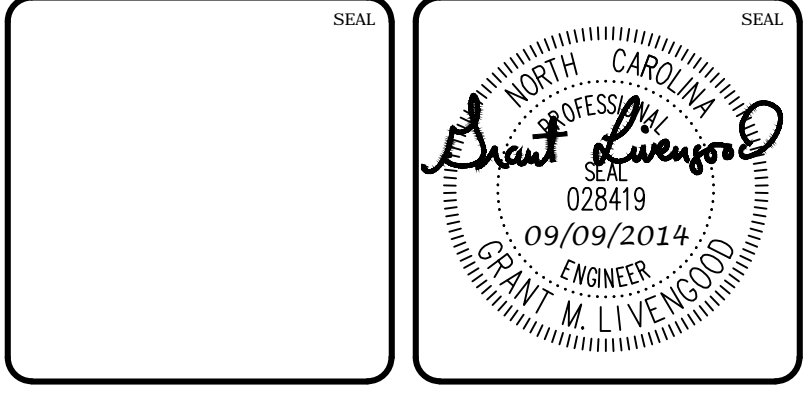
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

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

DETAIL SHOWING TYPES OF GRATES USE ACCORDING TO WATER FLOW.

SHEET 2 OF 2
840.03

REV. NO.	DESCRIPTIONS	DATE
2	REVISED PER NCDOT & DWR-PVSS COMMENTS/ISSUED FOR CONSTRUCTION	2014.06.09
1	SUBMITTAL TO REVIEW AGENCIES	2014.06.27



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1730 Varsity Drive, Suite 500
Raleigh, North Carolina 27606
Phone: (919)233-8091, Fax: (919)233-8031
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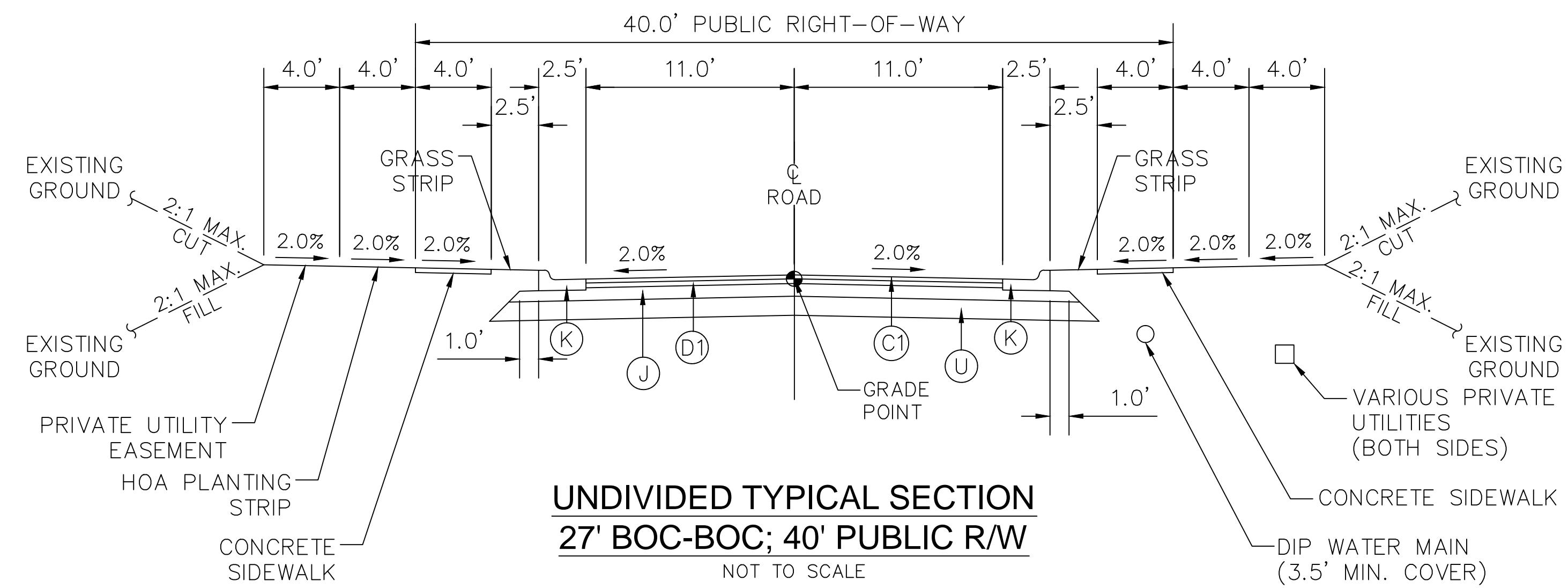
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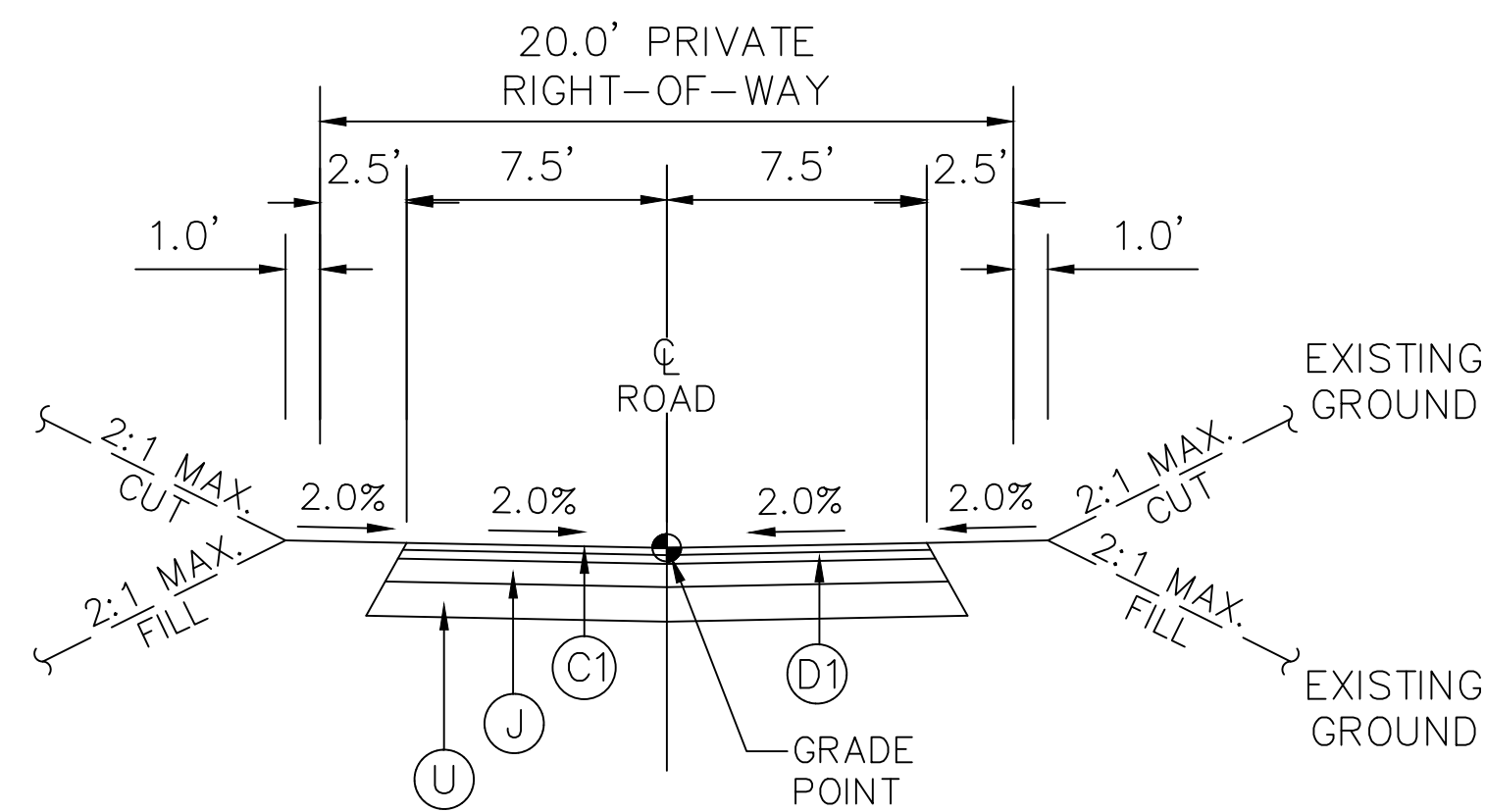
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DATE: JUNE 27, 2014	SCALE: HORIZONTAL: N/A	HMC FILE NUMBER: D2.X
MCE PROJ. #: 02735-0109	VERTICAL: N/A	DRAWING NUMBER: D2.2
DRAWN: GCA	STATUS: ISSUED FOR CONSTRUCTION	REVISION: 2
DESIGNED: GCA		
CHECKED: CHS		
PROJ. MGR: CHS		



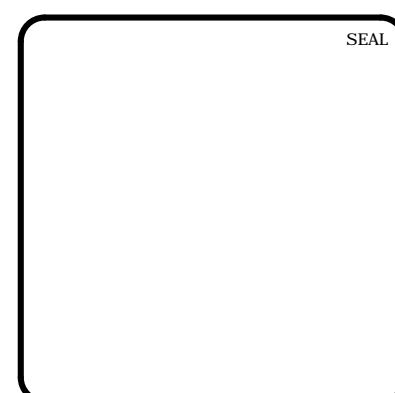
UNDIVIDED TYPICAL SECTION
27' BOC-BOC; 40' PUBLIC R/W
 NOT TO SCALE

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



PRIVATE ALLEY TYPICAL SECTION
15' EOP-EOP; 20' PRIVATE R/W
 NOT TO SCALE

REV. NO.	DESCRIPTIONS	DATE
2	REVISED PER NCDOT & DW-PS&S COMMENTS/ISSUED FOR CONSTRUCTION	2014.09.09
1	SUBMITTAL TO REVIEW AGENCIES	2014.06.27
	REVISIONS	



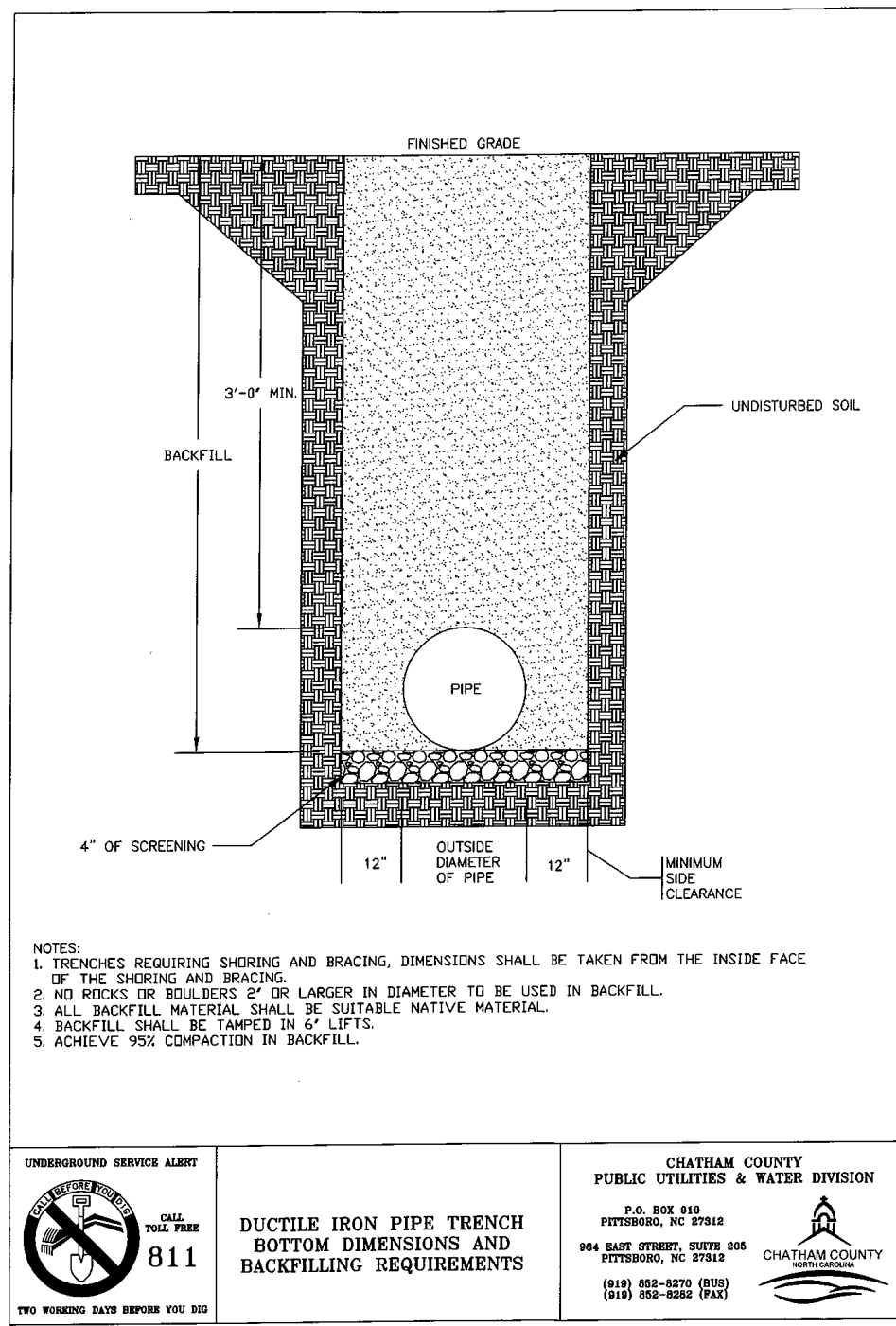
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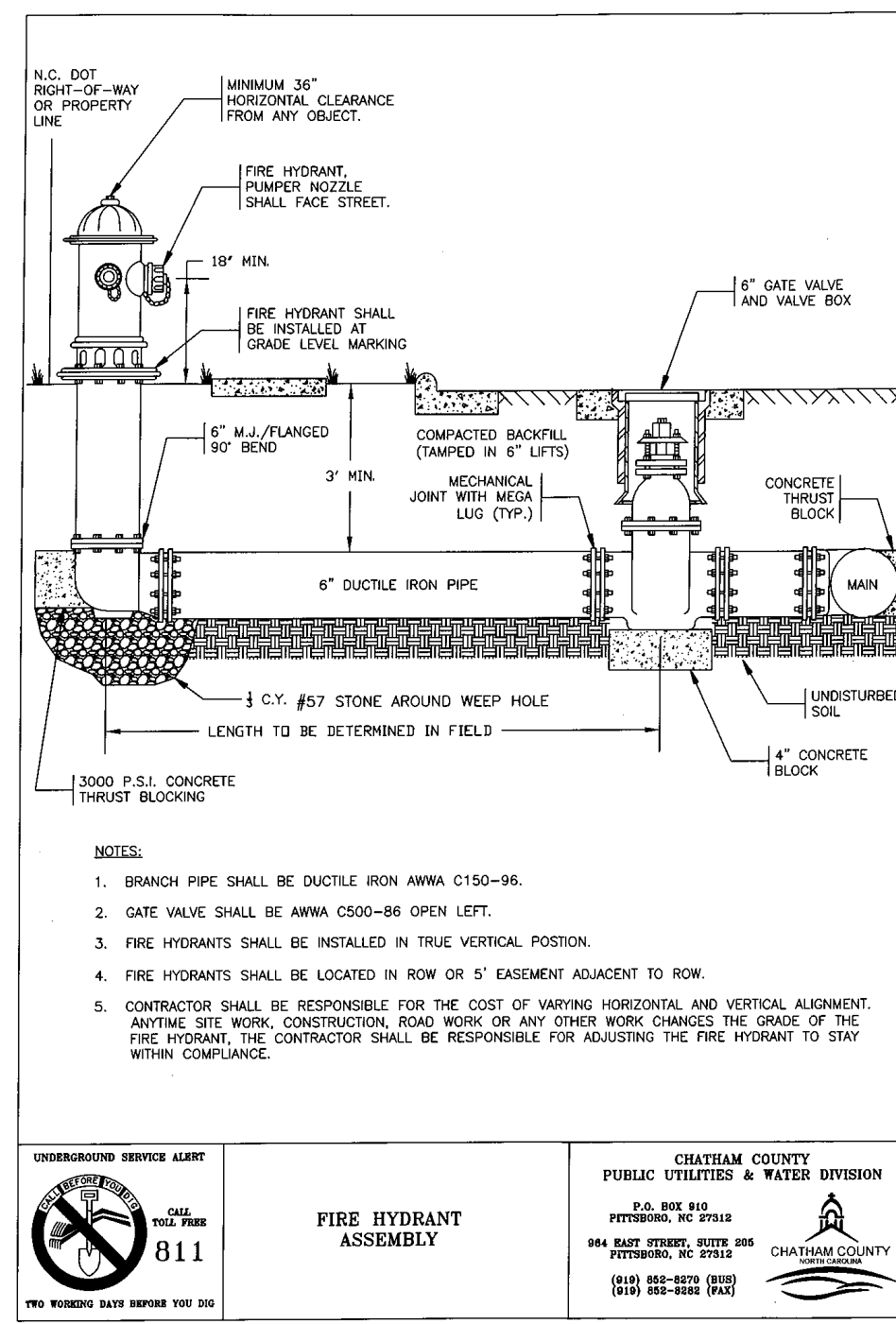
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PHASE 11
CHATHAM COUNTY, NORTH CAROLINA
ROADWAY TYPICAL SECTIONS

DATE: JUNE 27, 2014	SCALE: N/A	M&C FILE NUMBER: D2.X
MCE PROJ. # 02735-0109	HORIZONTAL: N/A	DRAWING NUMBER: D2.3
DRAWN: GCA	VERTICAL: N/A	
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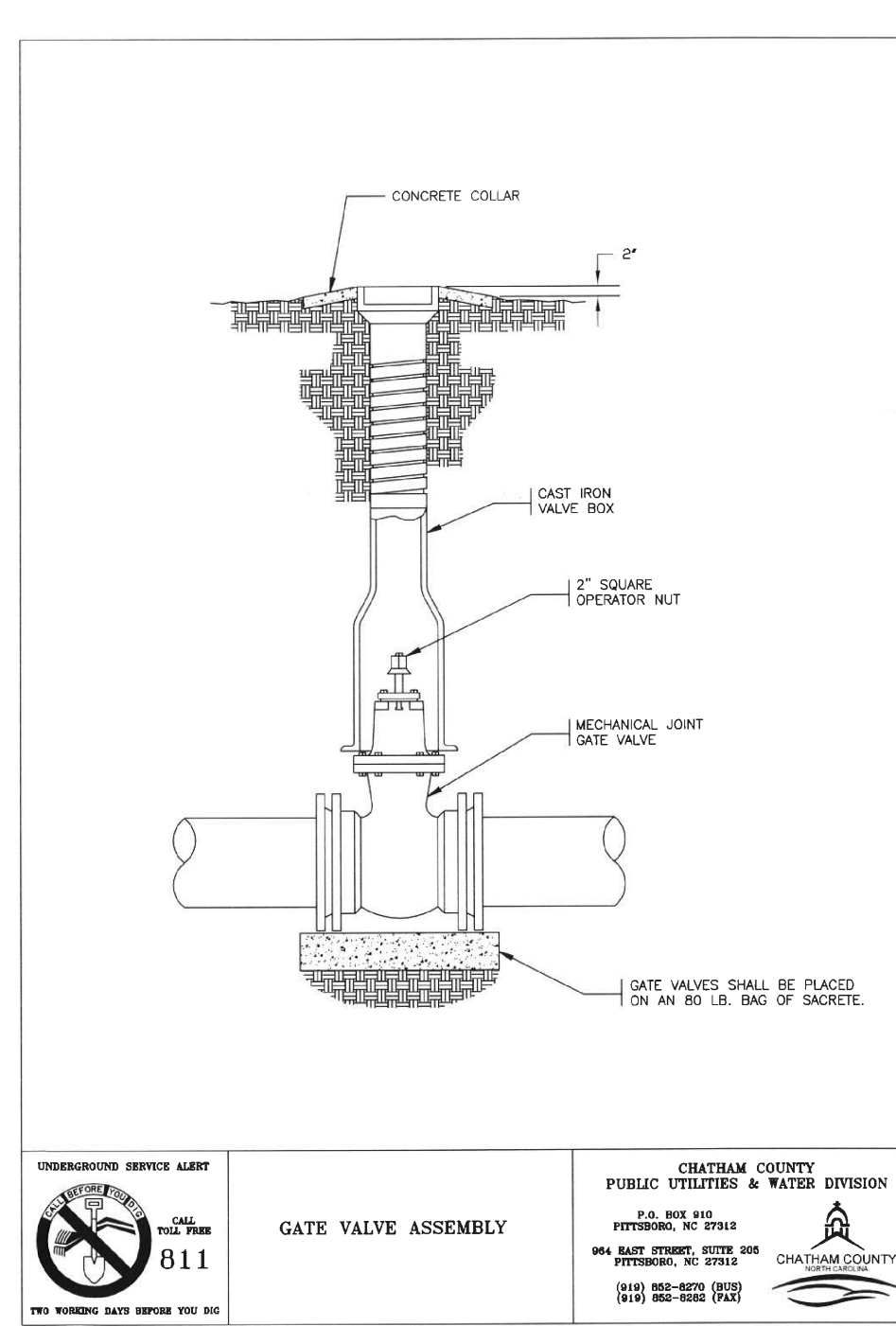
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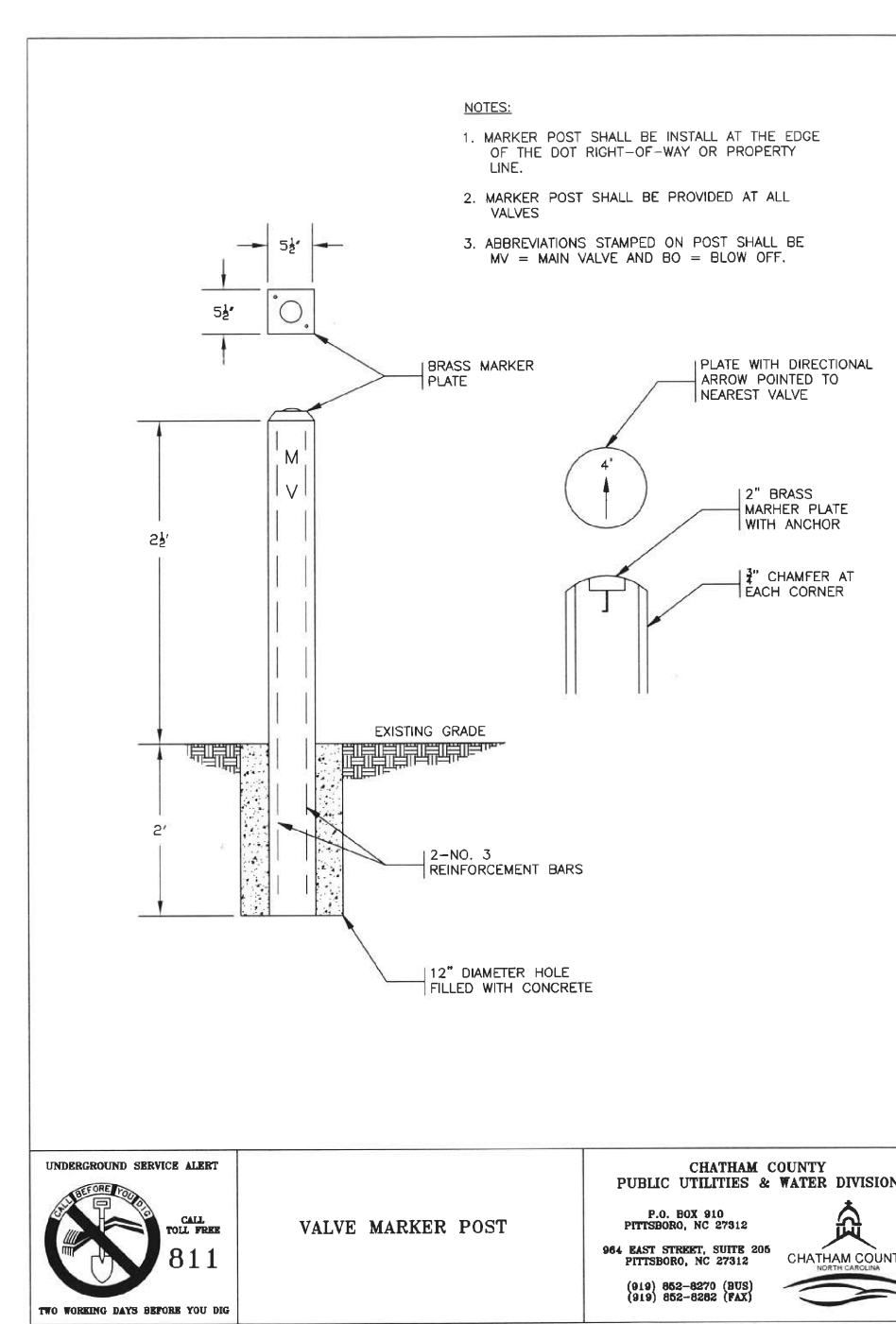
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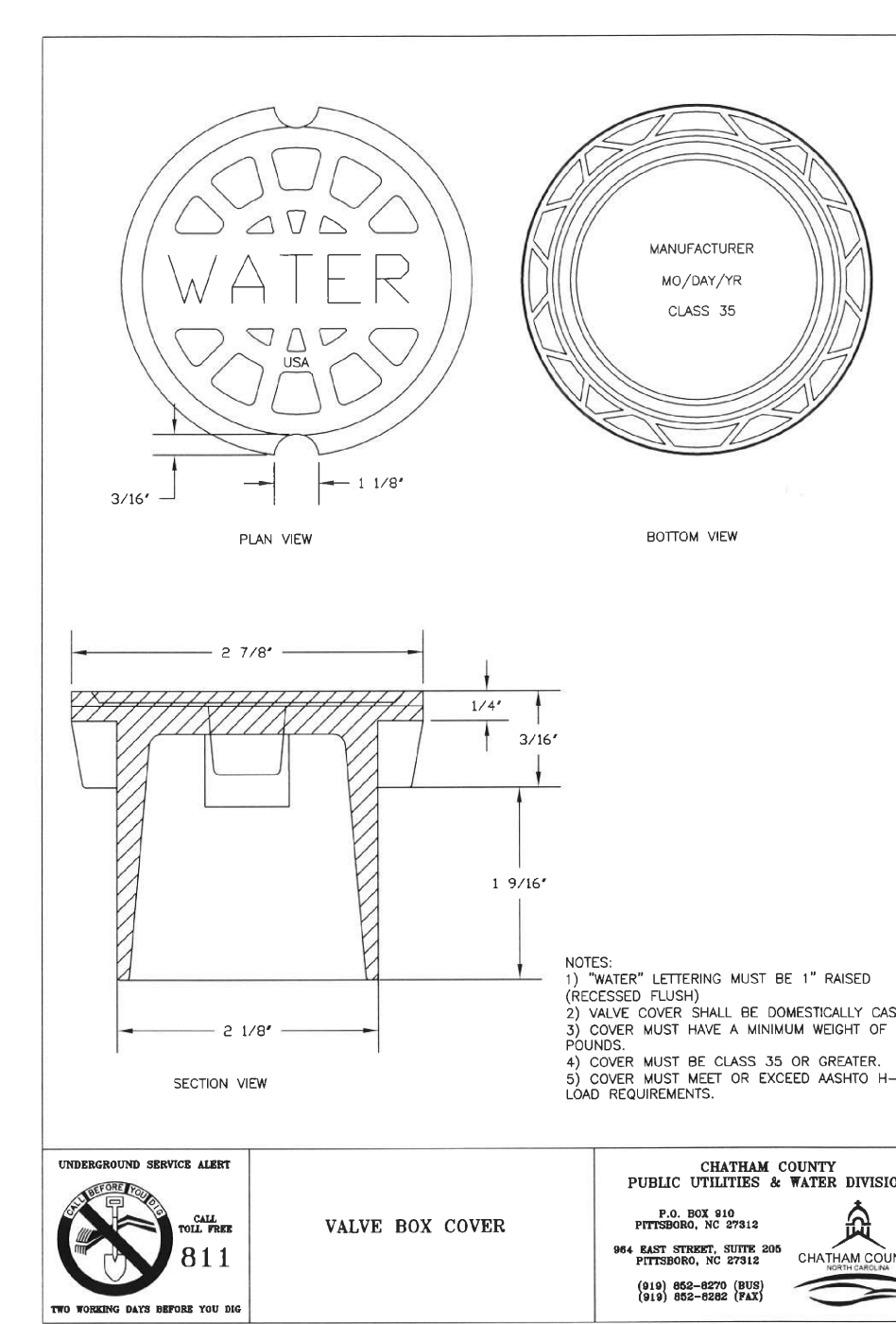
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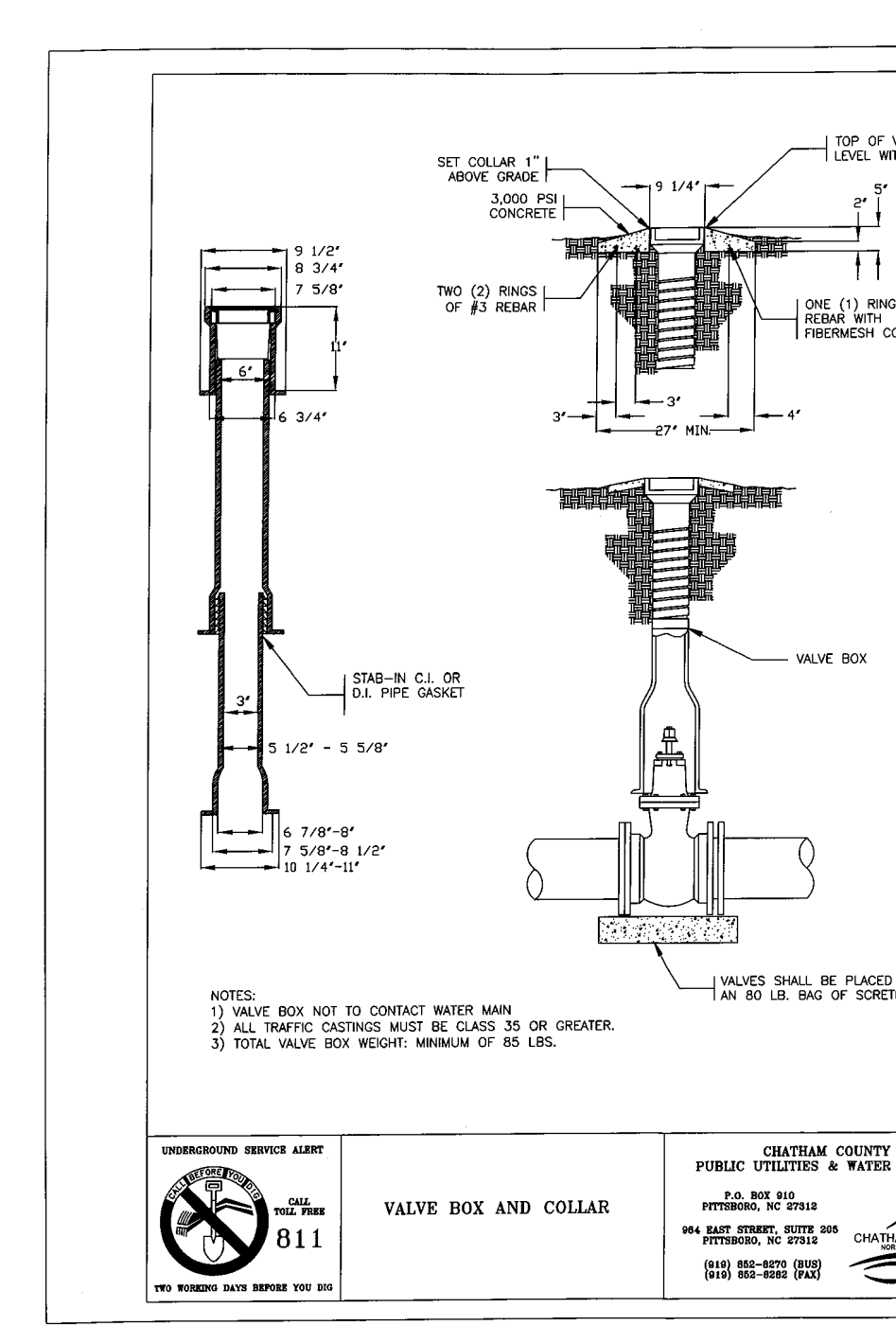
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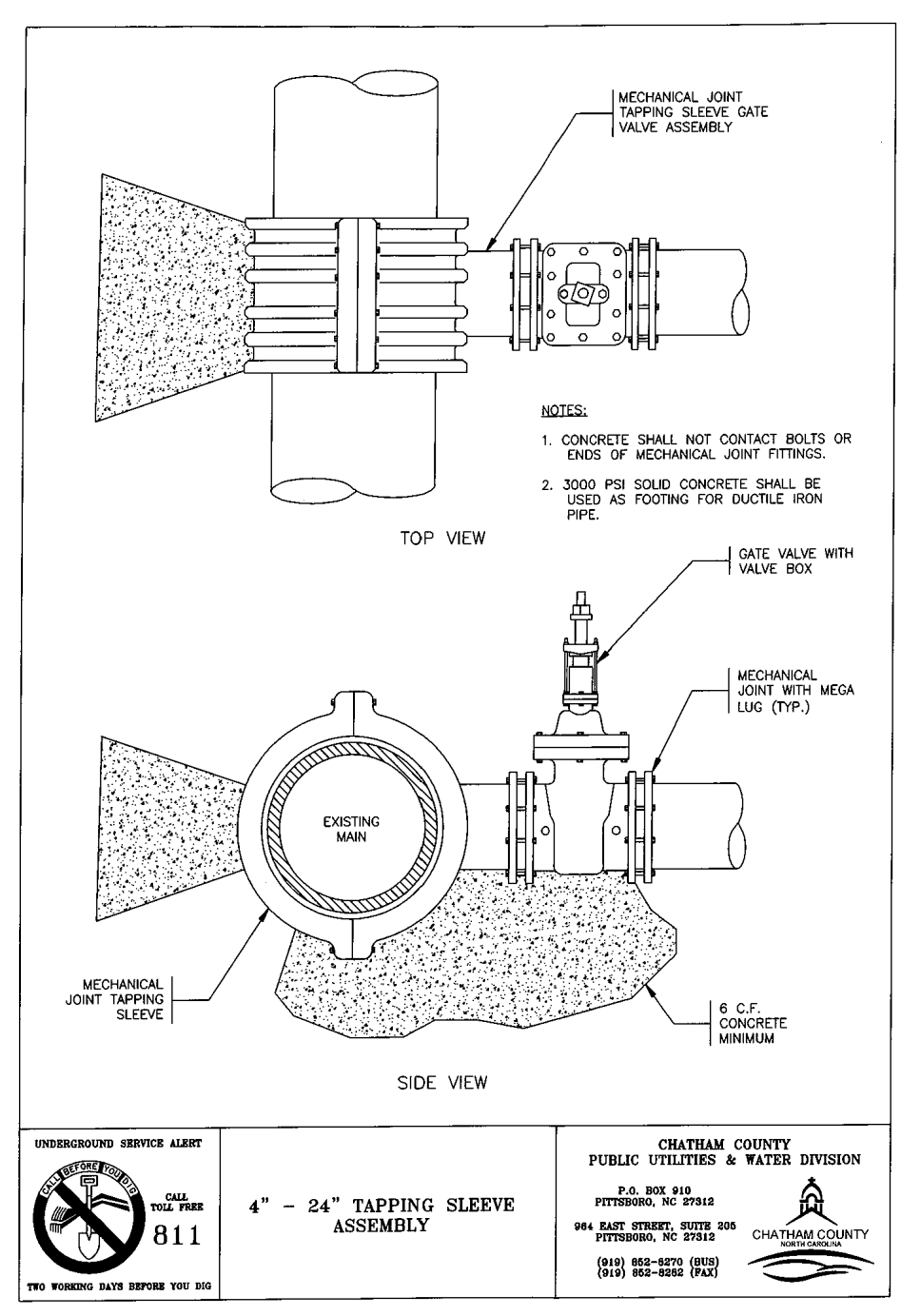
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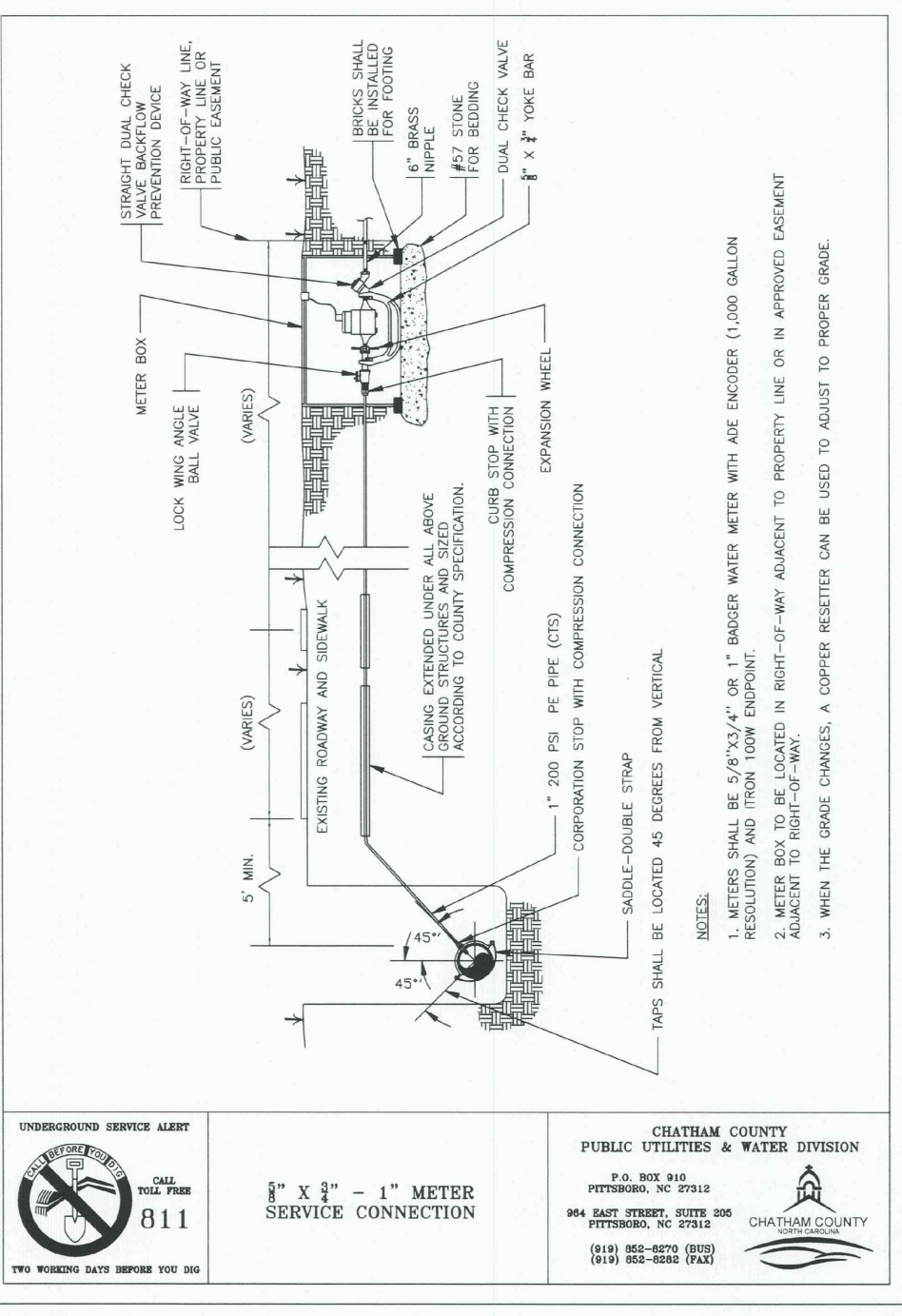
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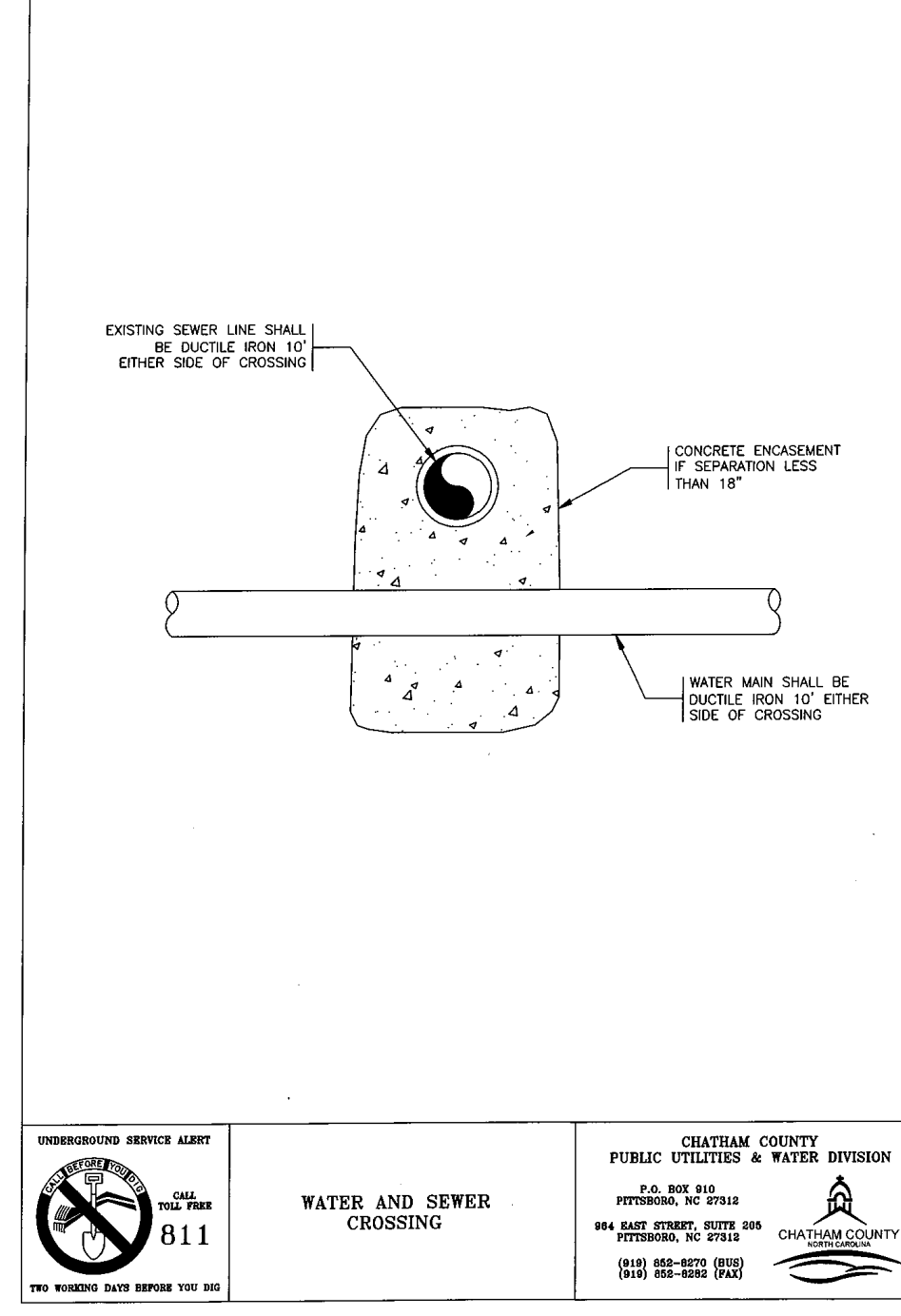
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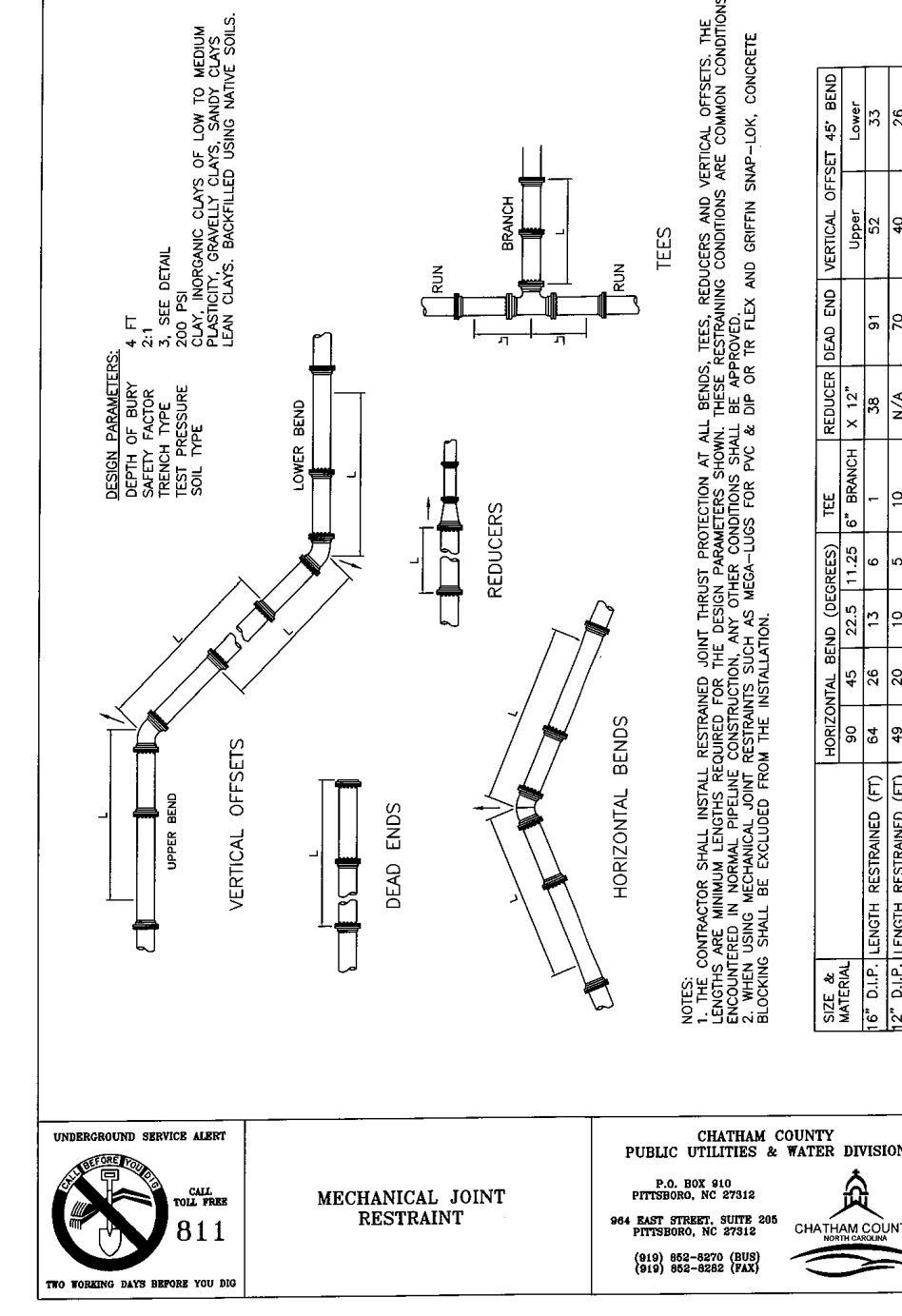
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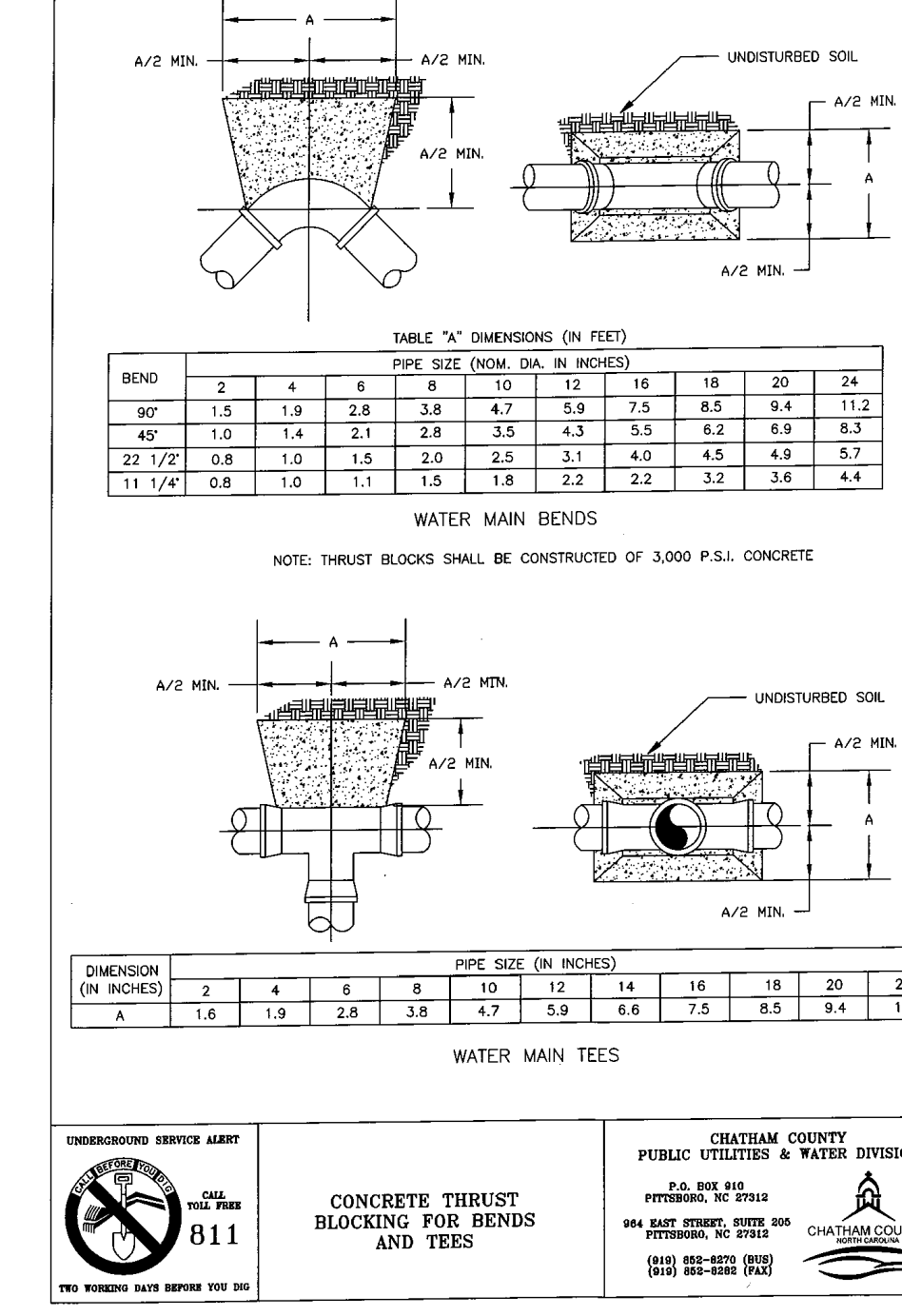
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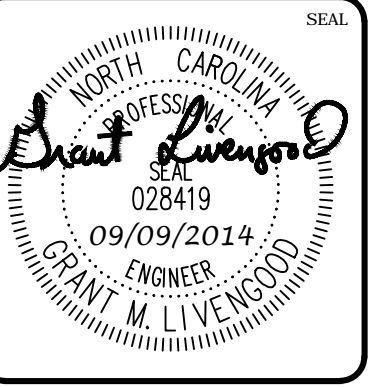
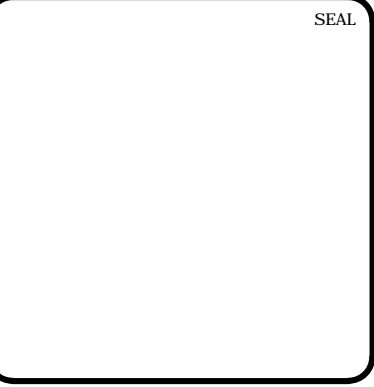


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REACTION BEARING AREAS FOR HORIZONTAL WATER PIPE BENDS
 BASED ON TEST PRESSURE OF 200 P.S.I.
 ALL AREAS GIVEN IN SQUARE FEET

SIZE AND BEGREE	STATIC THRUST IN POUNDS	MATERIALS	CONCRETE	ASPH/FLY	ASPH/FLY	ASPH/FLY	ASPH/FLY	ASPH/FLY	ASPH/FLY	ASPH/FLY
6"										
8"										
10"										
12"										
14"										
16"										
18"										
20"										
24"										

REV. NO.	DESCRIPTION	DATE
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 1730 Varsity Drive, Suite 500
 Raleigh, North Carolina 27606
 Phone: (919)233-8091, Fax: (919)233-8031
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BRIAR CHAPEL™
 by Newland COMMUNITIES

BRIAR CHAPEL PHASE 11
 CHATHAM COUNTY, NORTH CAROLINA
 UTILITY DETAILS

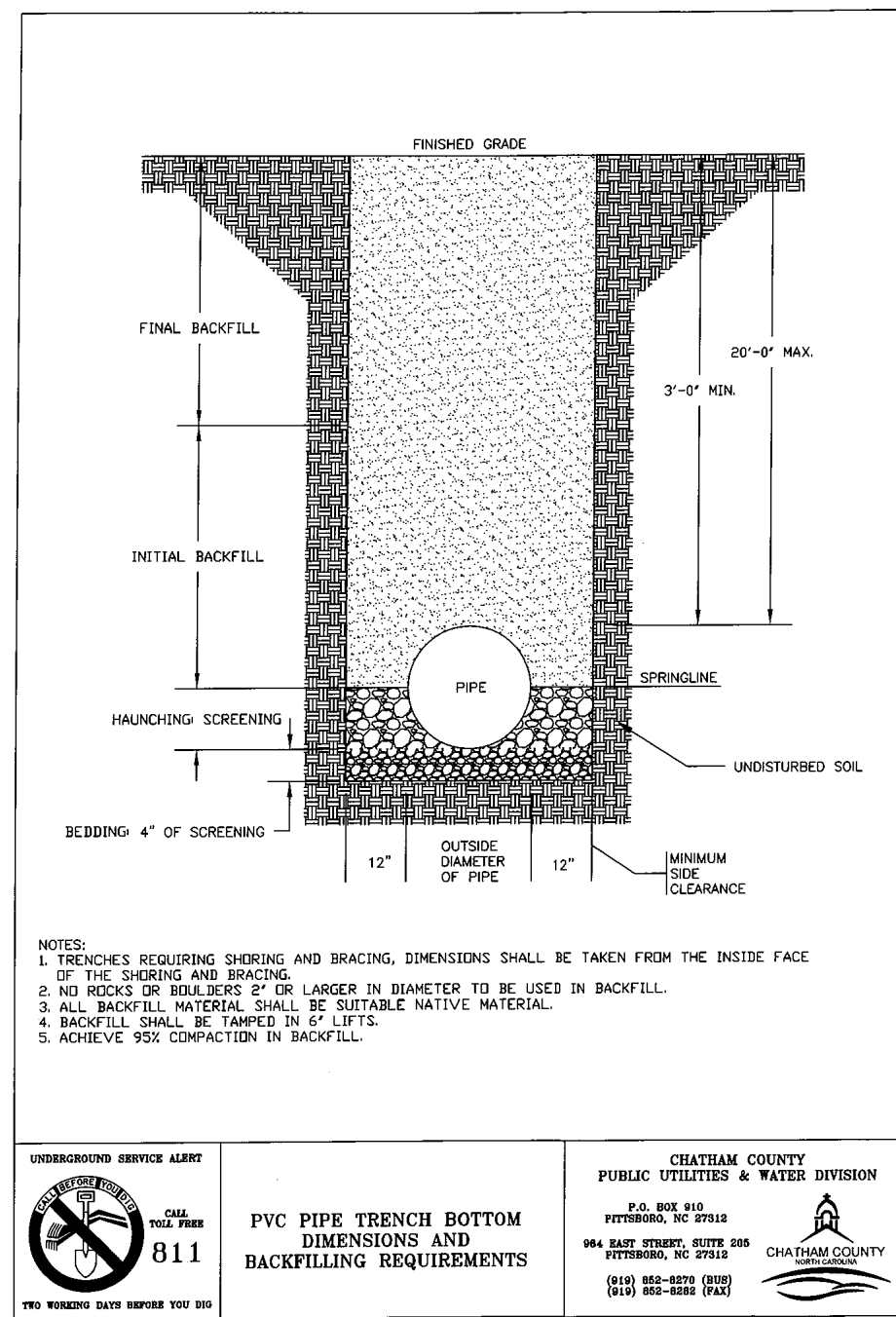
DATE: JUNE 27, 2014
 MCE PROJ. #: 02735-0109
 DRAWN: GCA
 DESIGNED: GCA
 CHECKED: CHS
 PROJ. MGR: CHS
 SCALE: HORIZONTAL: N/A, VERTICAL: N/A
 MFC FILE NUMBER: D3.X
 DRAWING NUMBER: D3.1
 STATUS: ISSUED FOR CONSTRUCTION
 REVISION: 2

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.

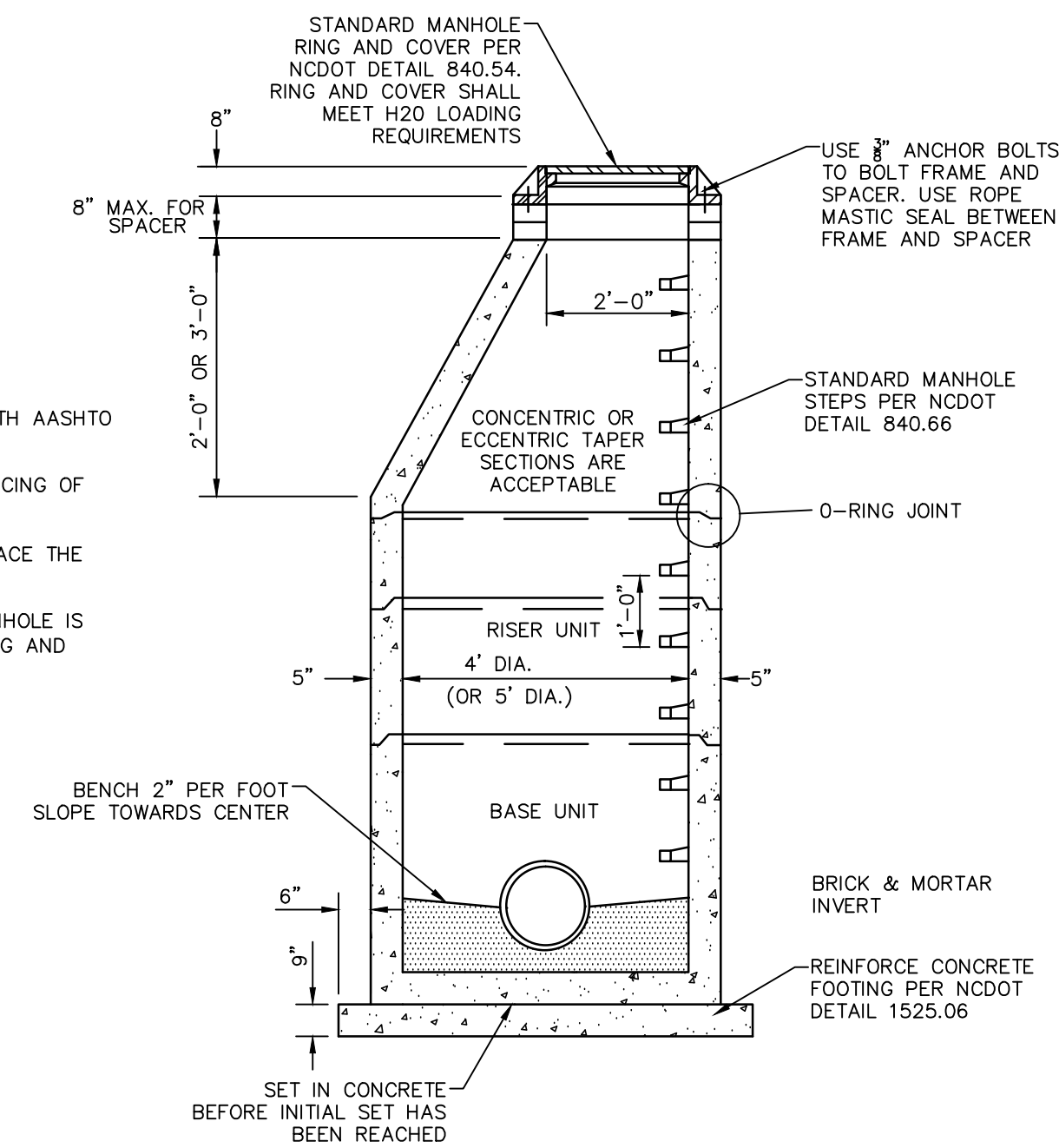
TRACER WIRE NOTES:

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.



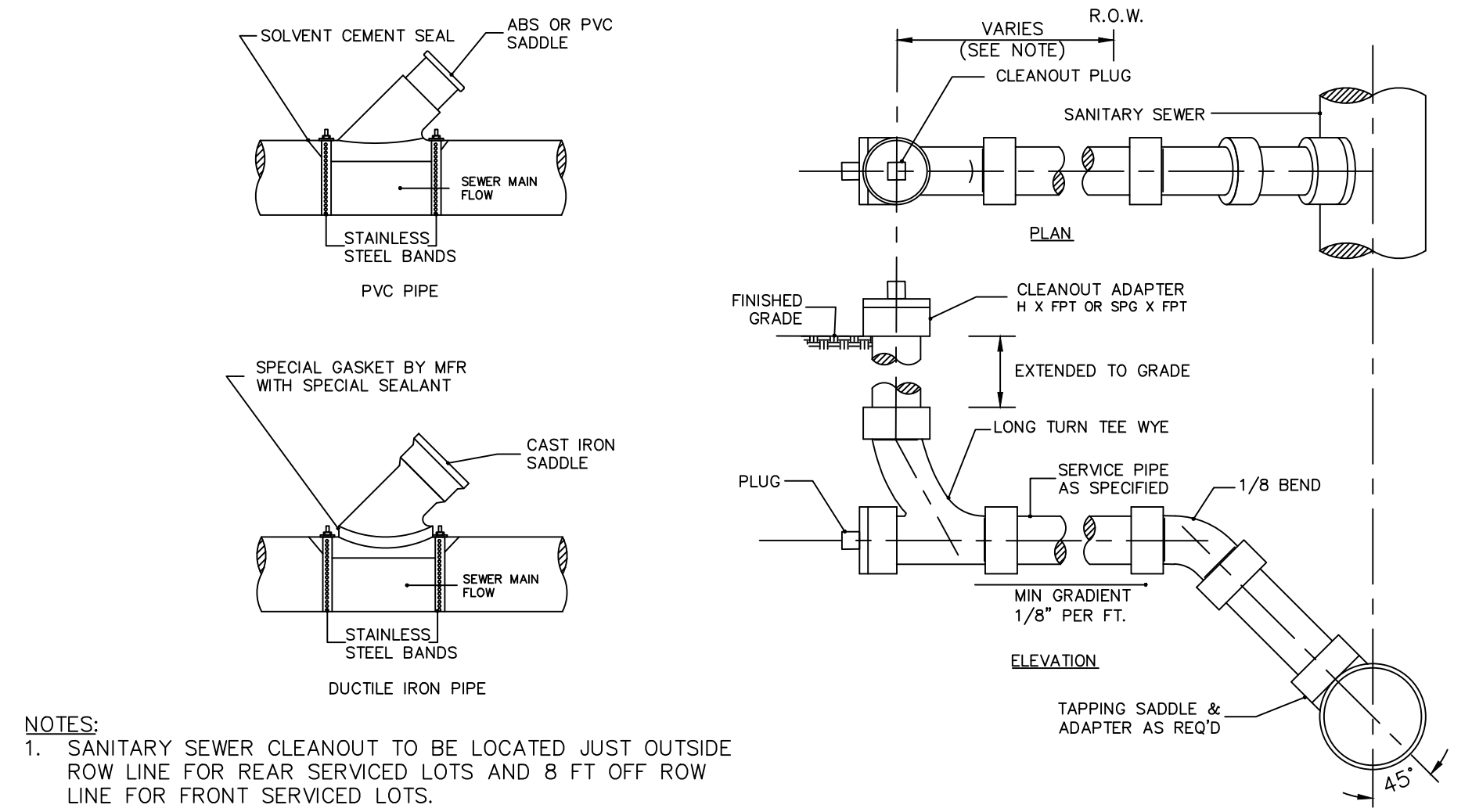
- NOTES:**
1. TRENCHES REQUIRING SHERING AND BRACING, DIMENSIONS SHALL BE TAKEN FROM THE INSIDE FACE OF THE SHERING AND BRACING.
 2. NO ROCKS OR BODIES OF LIMB LARGER IN DIAMETER TO BE USED IN BACKFILL.
 3. ALL BACKFILL MATERIAL SHALL BE SUITABLE NATIVE MATERIAL.
 4. BACKFILL SHALL BE TAMPED IN 6" LIFTS.
 5. ACHIEVE 95% COMPACTION IN BACKFILL.

<p>CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION</p>	<p>PVC PIPE TRENCH BOTTOM DIMENSIONS AND BACKFILLING REQUIREMENTS</p>	<p>DATE: 09/09/2014 DRAWN: GCA DESIGNED: GCA CHECKED: CHS PROJ. MGR: CHS</p>
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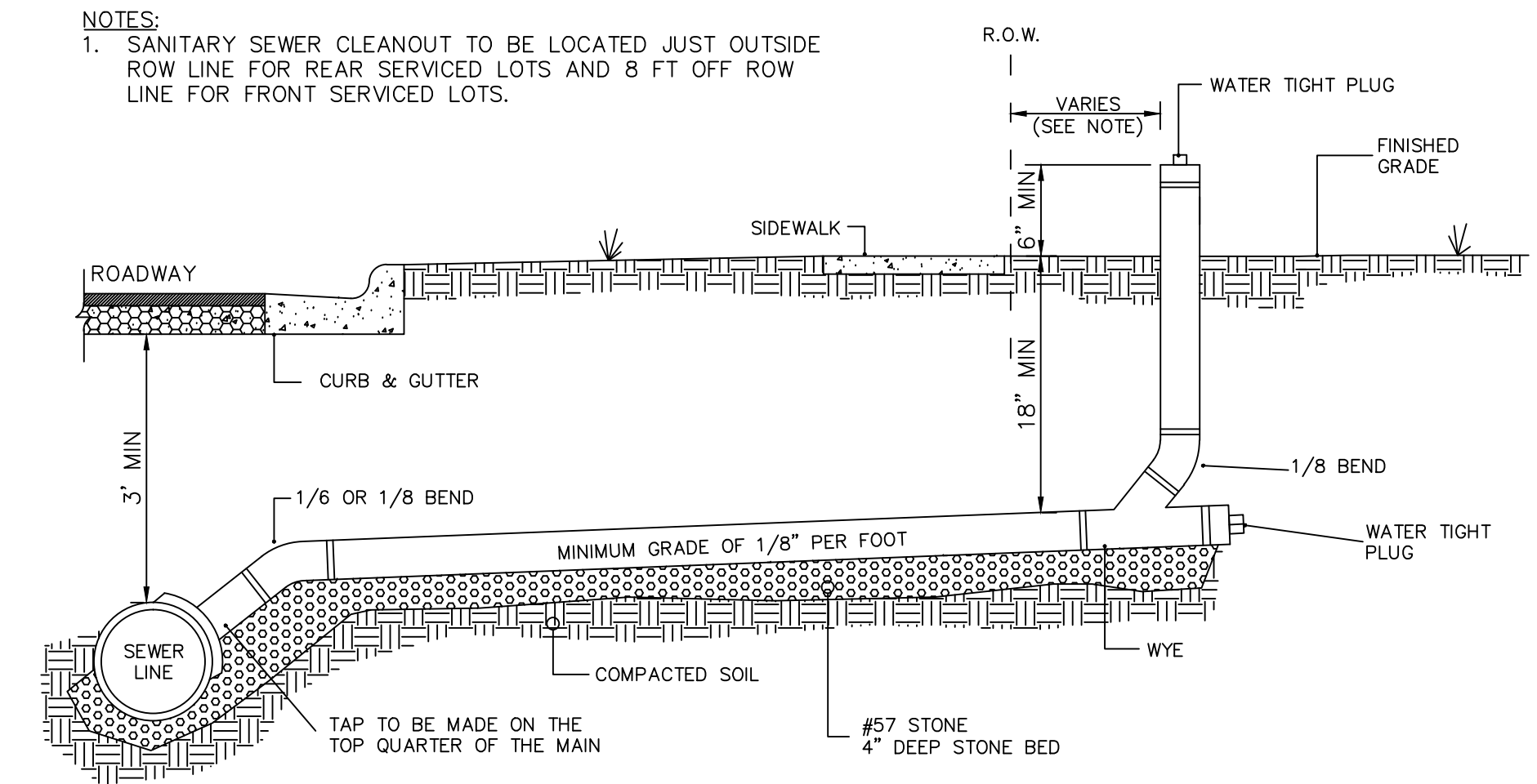


- NOTES:**
1. PROVIDE PRECAST MANHOLE COMPONENTS WHICH COMPLY WITH AASHTO M199.
 2. ASSEMBLE RISERS AND GRADE RINGS SO STES HAVE A SPACING OF 12" FROM THE TOP TO THE BOTTOM OF THE MANHOLE.
 3. WHERE THE MANHOLE IS EXPOSED TO ROADWAY TRAFFIC, PLACE THE TOP OF THE MANHOLE FLUSH WITH THE GROUND.
 4. REINFORCED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

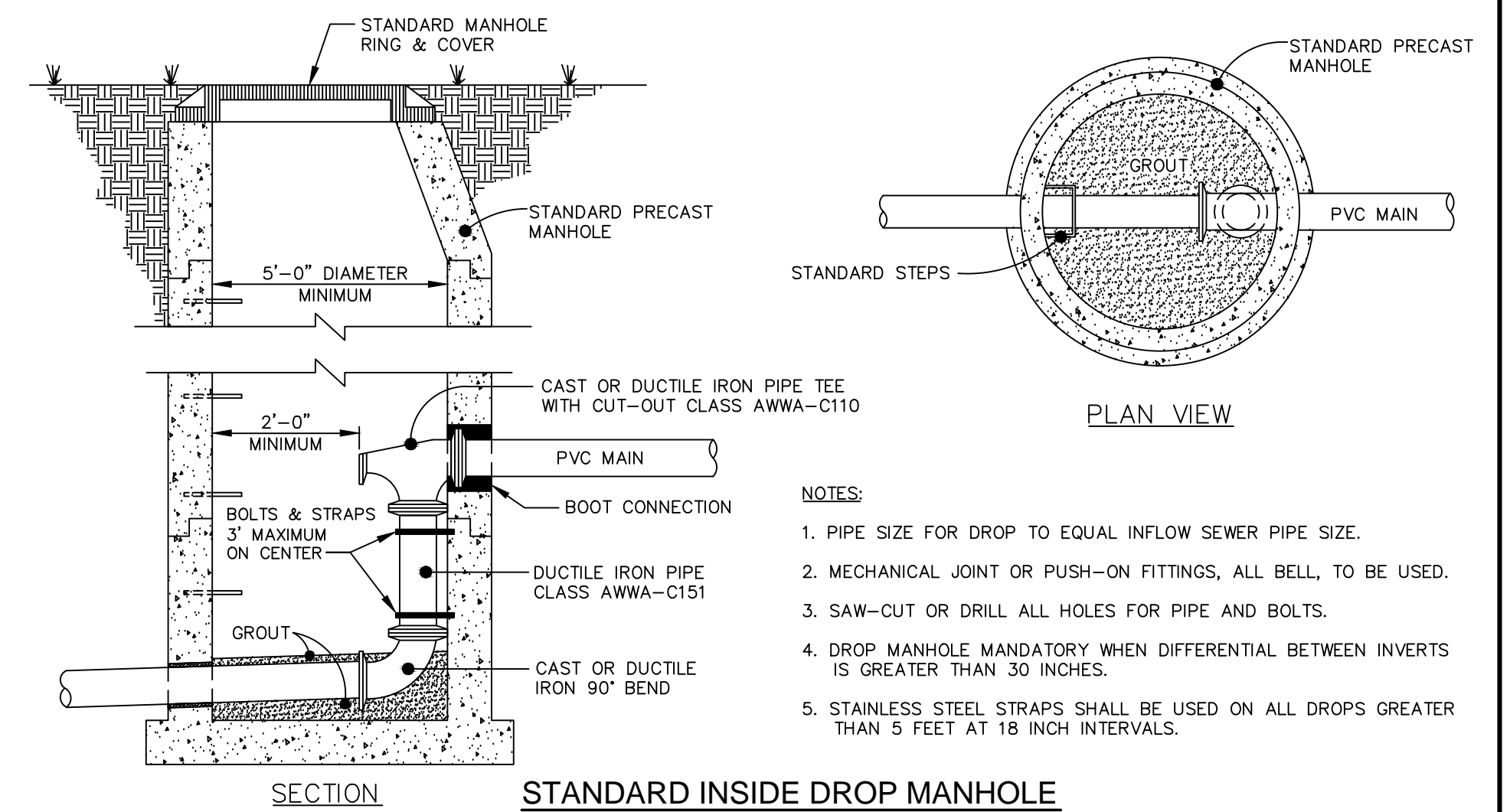
**STANADARD SANITARY SEWER
PRECAST CONCRETE MANHOLE**
NTS



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



STANDARD SANITARY SEWER TAP AND SERVICE
NTS



- NOTES:**
1. PIPE SIZE FOR DROP TO EQUAL INFLOW SEWER PIPE SIZE.
 2. MECHANICAL JOINT OR PUSH-ON FITTINGS, ALL BELL, TO BE USED.
 3. SAW-CUT OR DRILL ALL HOLES FOR PIPE AND BOLTS.
 4. DROP MANHOLE MANDATORY WHEN DIFFERENTIAL BETWEEN INVERTS IS GREATER THAN 30 INCHES.
 5. STAINLESS STEEL STRAPS SHALL BE USED ON ALL DROPS GREATER THAN 5 FEET AT 18 INCH INTERVALS.

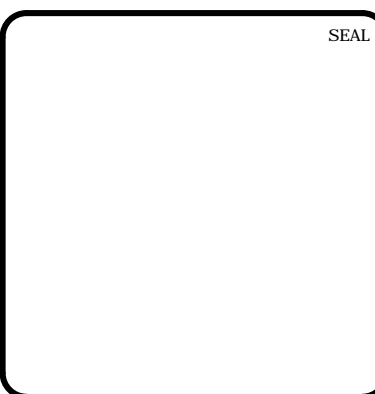
STANDARD INSIDE DROP MANHOLE
NTS

<p>STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION RALEIGH, N.C.</p>	<p>ENGLISH STANDARD DRAWING FOR PRECAST CONCRETE SANITARY SEWER MANHOLE WITH CAST-IN-PLACE BOTTOM</p>	<p>REINFORCED CONCRETE FOOTING FOR 5' PRECAST MANHOLE OR 4' PRECAST MANHOLE</p>	<p>STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION RALEIGH, N.C.</p>
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<p>BILL OF MATERIAL FOR 6'-0" FOOTING</p>			
BAR SIZE	LENGTH	NO.	WT. lbs.
T1	#5	5'-6"	18
<p>CLASS "A" CONC. YD³ 9" THICK 1.00</p>			
<p>BILL OF MATERIAL FOR 7'-0" FOOTING</p>			
BAR SIZE	LENGTH	NO.	WT. lbs.
T2	#5	6'-6"	20
<p>CLASS "A" CONC. YD³ 9" THICK 1.36</p>			
<p>CLASS "A" CONC. YD³ 12" THICK 1.82</p>			
<p>BILL OF MATERIAL FOR 8'-0" FOOTING</p>			
BAR SIZE	LENGTH	NO.	WT. lbs.
T3	#5	7'-6"	24
<p>CLASS "A" CONC. YD³ 12" THICK 2.37</p>			

PLACE REINFORCING STEEL SO THAT STEEL IS PLACED A MIN. OF 2" AND A MAX. OF 4" FROM THE TOP OF THE SLAB.

REV. NO.	DESCRIPTIONS	DATE
2	REVISED PER NCDOT & DWR PWSS COMMENTS/ISSUED FOR CONSTRUCTION	2014.09.09
1	SUBMITTAL TO REVIEW AGENCIES	2014.06.27



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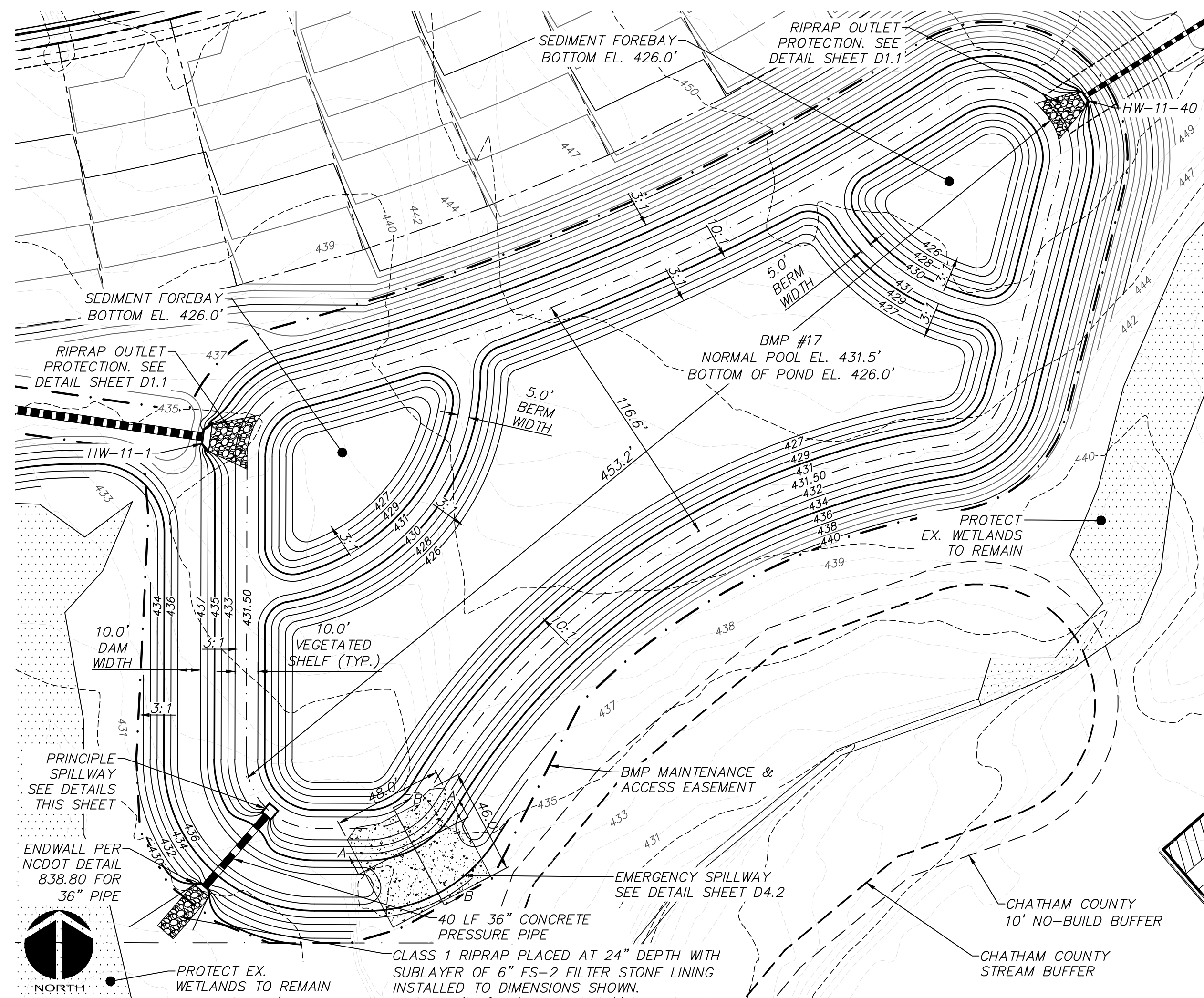
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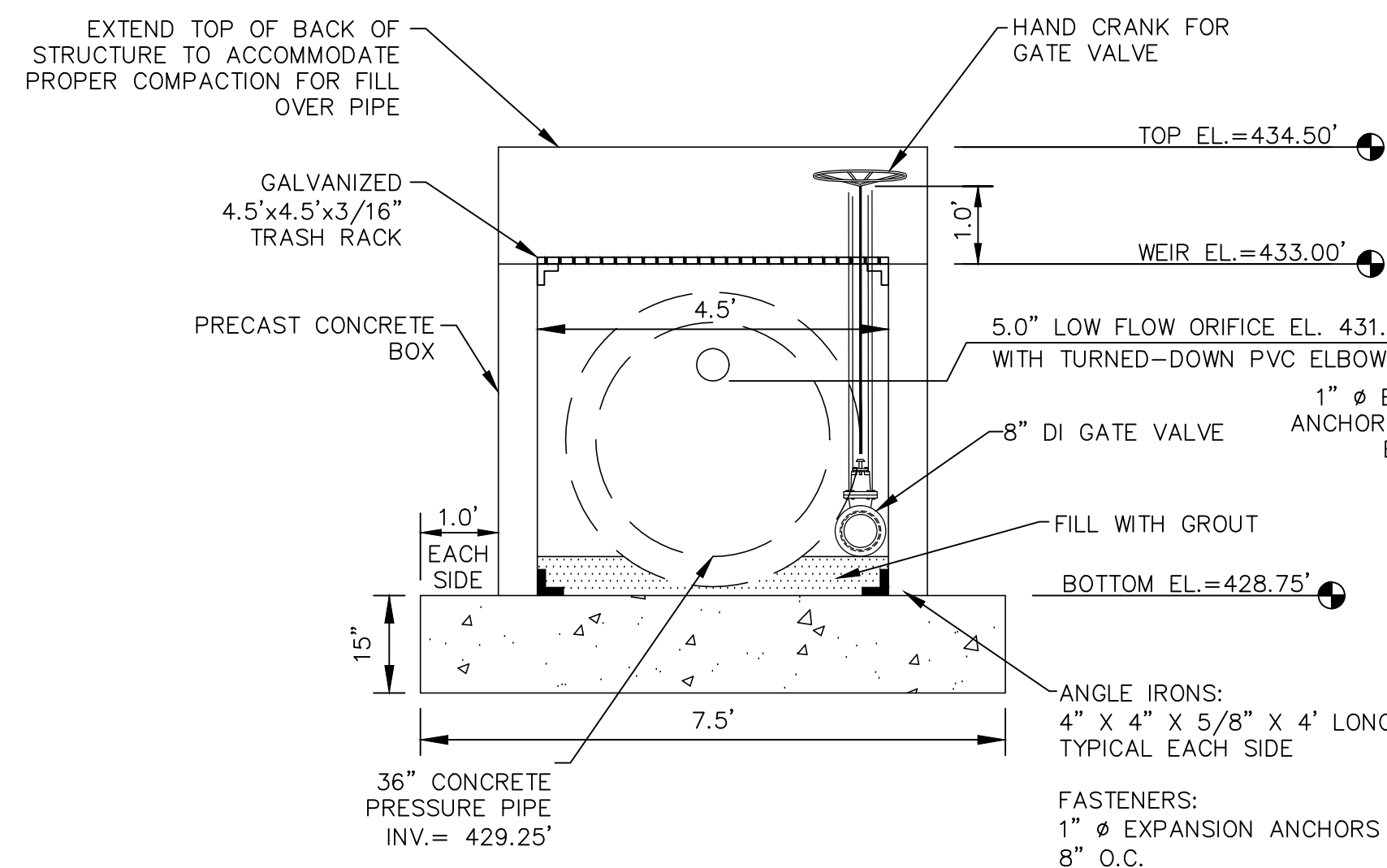
**BRIAR CHAPEL
PHASE 11
CHATHAM COUNTY, NORTH CAROLINA**

UTILITY DETAILS

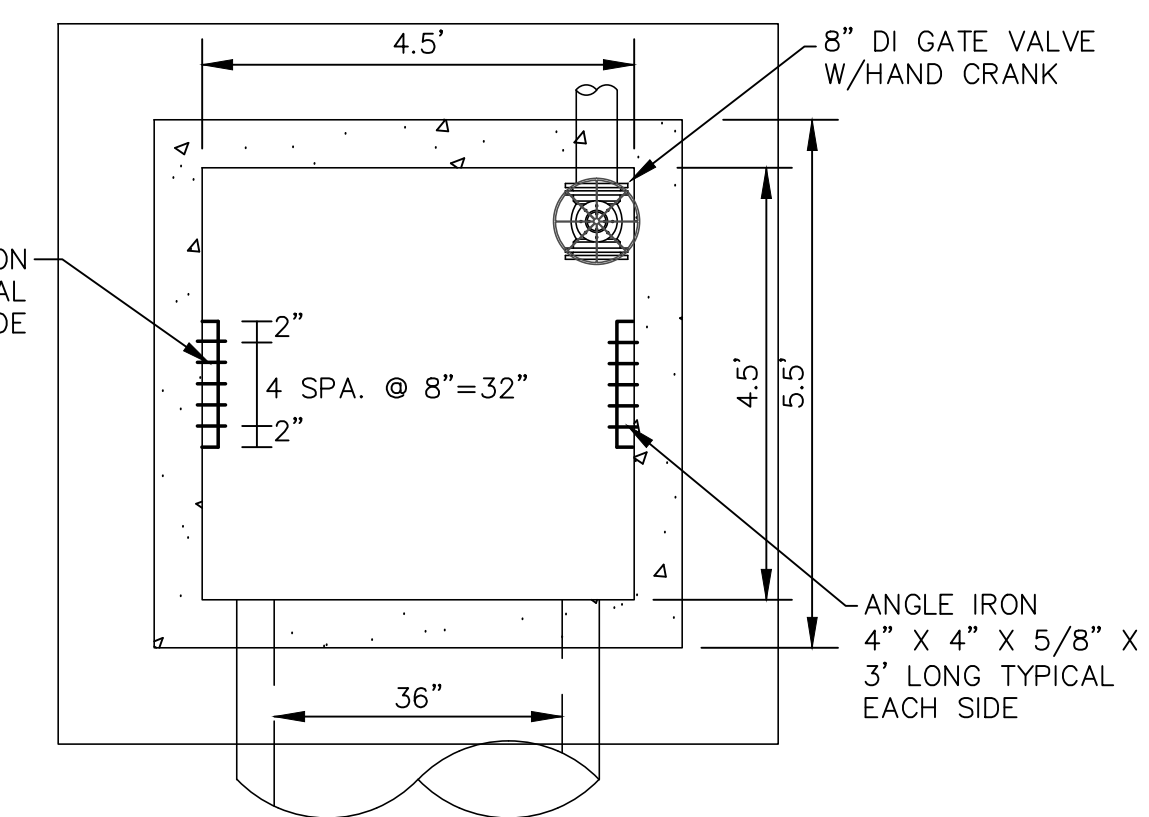
DATE: JUNE 27, 2014	SCALE: HORIZONTAL: N/A	MFC FILE NUMBER: D3.X
MCE PROJ. #: 02735-0109	VERTICAL: N/A	DRAWING NUMBER: D3.2
DRAWN: GCA		
DESIGNED: GCA		
CHECKED: CHS		
PROJ. MGR: CHS		
STATUS: ISSUED FOR CONSTRUCTION	REVISION: 2	



WET DETENTION POND #17 PLAN VIEW
SCALE = 1" = 40'

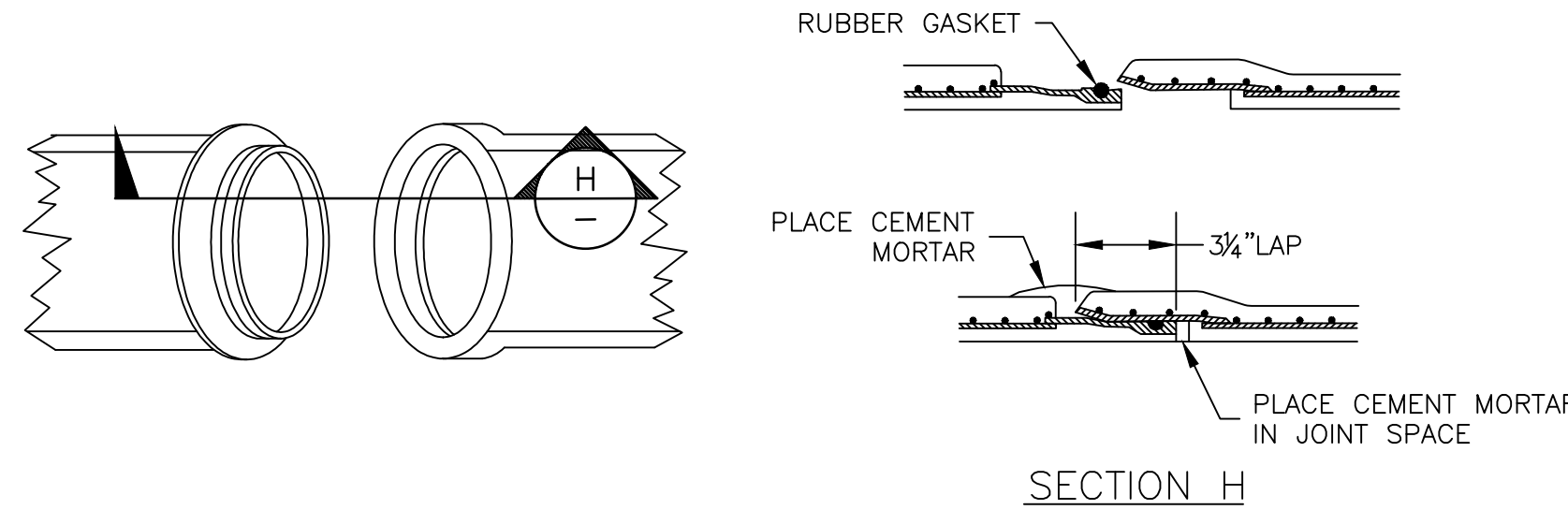


SECTION VIEW

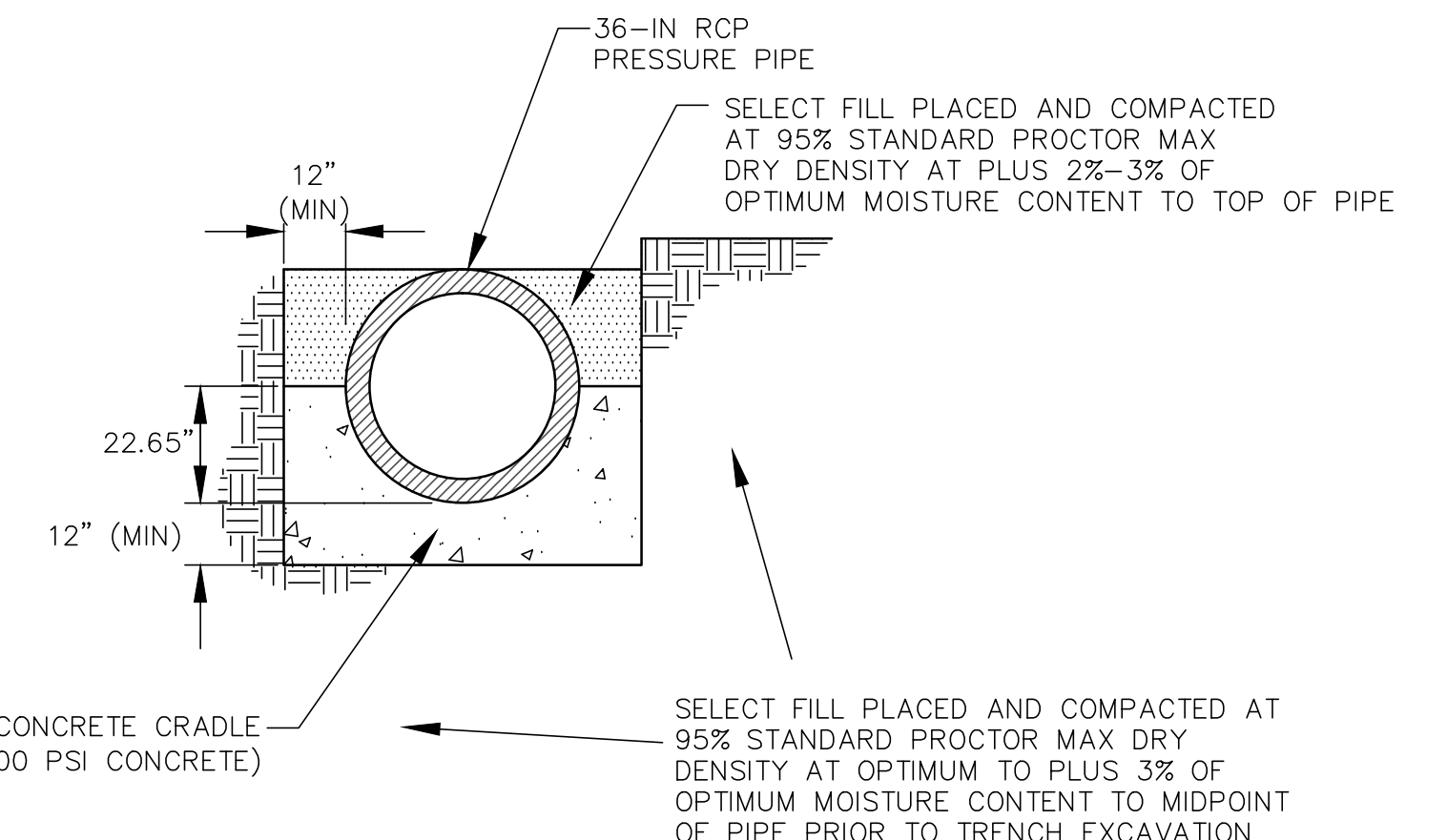


PLAN VIEW

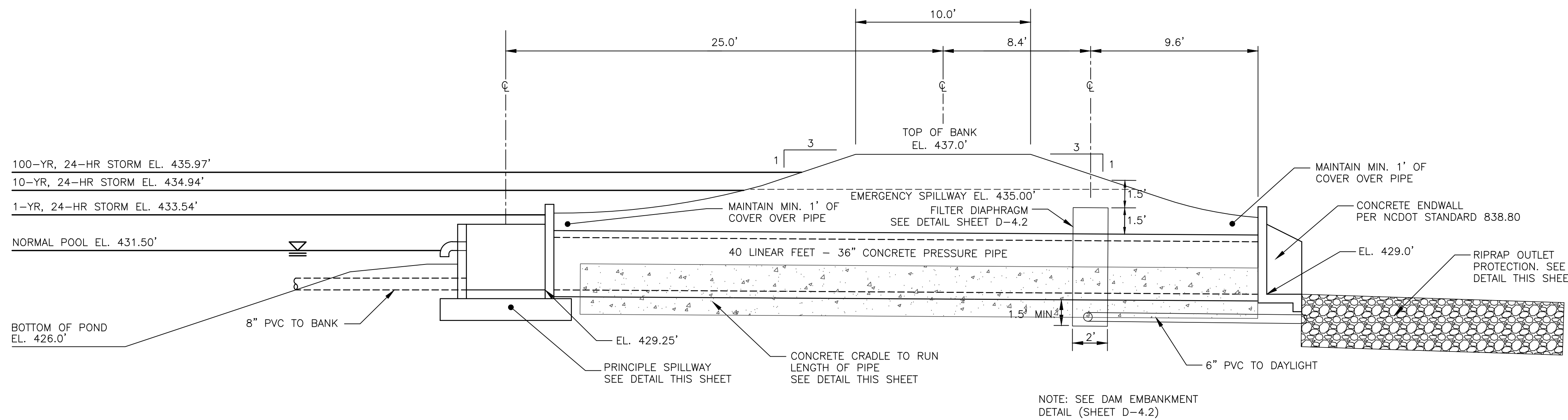
PRINCIPLE SPILLWAY
SCALE = 1" = 2'



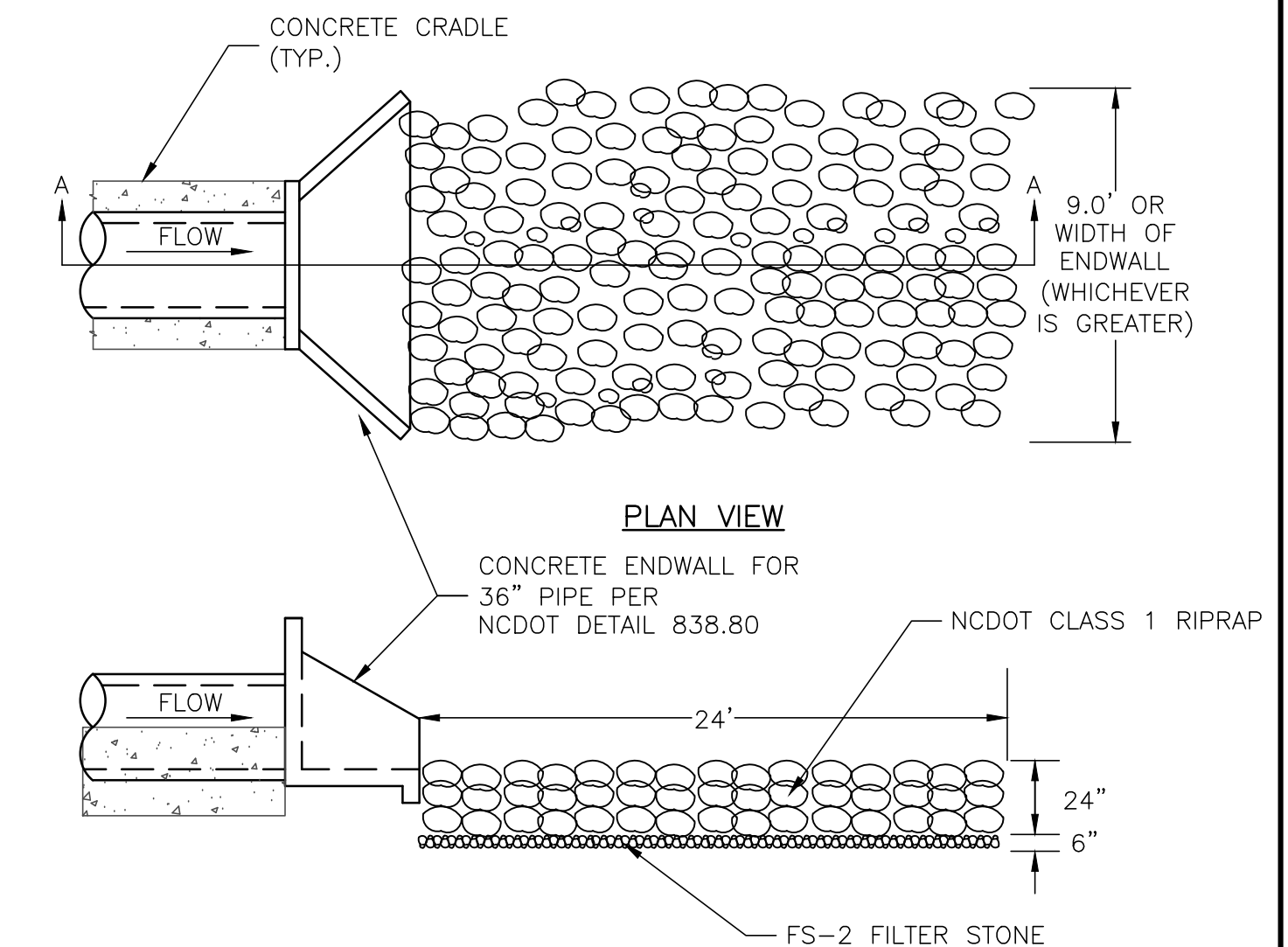
CONCRETE PRESSURE PIPE JOINT DETAIL
NTS



CONCRETE CRADLE DETAIL
NTS

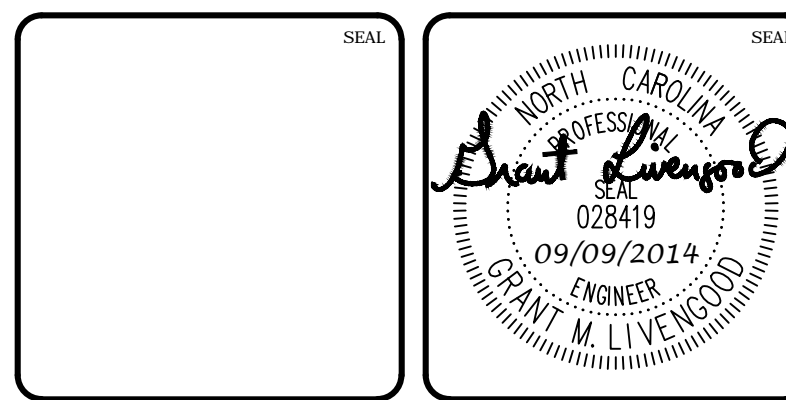


SECTION AT PRINCIPLE SPILLWAY
SCALE = 1" = 4'



SECTION A-A
RIPRAP OUTLET PROTECTION
NTS

REV. NO.	DATE	DESCRIPTIONS	REVISIONS
2	2014.09.09	REVISED PER NCDOT & DWB PWSS COMMENTS ISSUED FOR CONSTRUCTION	
1	2014.06.27	SUBMITTAL TO REVIEW AGENCIES	



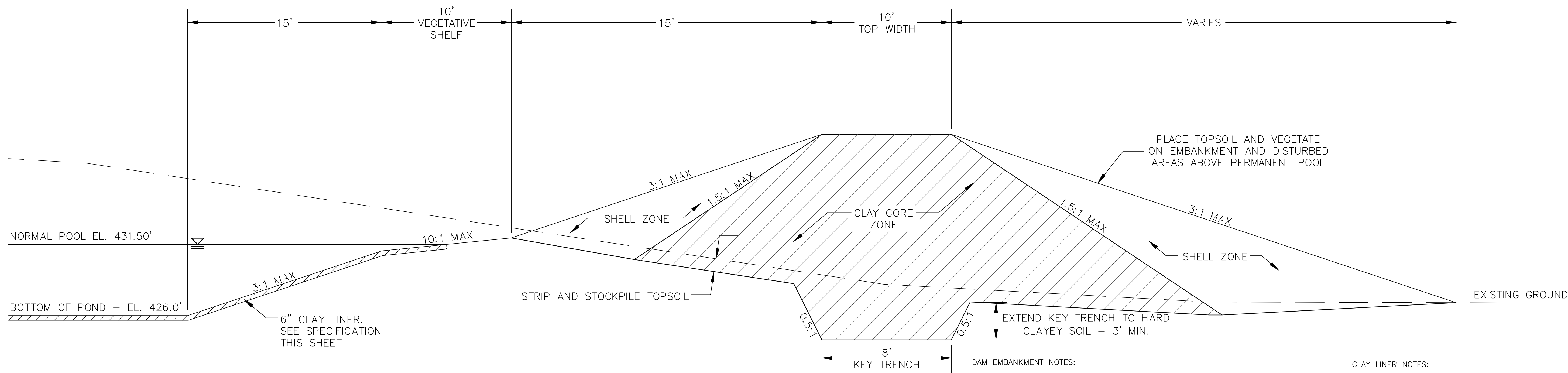
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PHASE 11 - SECTION 2
CHATHAM COUNTY, NORTH CAROLINA**

BMP #17 PLAN & DETAILS

DATE: JUNE 27, 2014	SCALE: HORIZONTAL	MSC FILE NUMBER: D4.X
MCE PROJ. # 02735-0109	HORIZONTAL: AS NOTED	DRAWING NUMBER: D4.1
DRAWN: GCA	VERTICAL: N/A	REVISION: 2
DESIGNED: GCA		
CHECKED: CHS		
PROJ. MGR.: CHS		
STATUS: ISSUED FOR CONSTRUCTION		



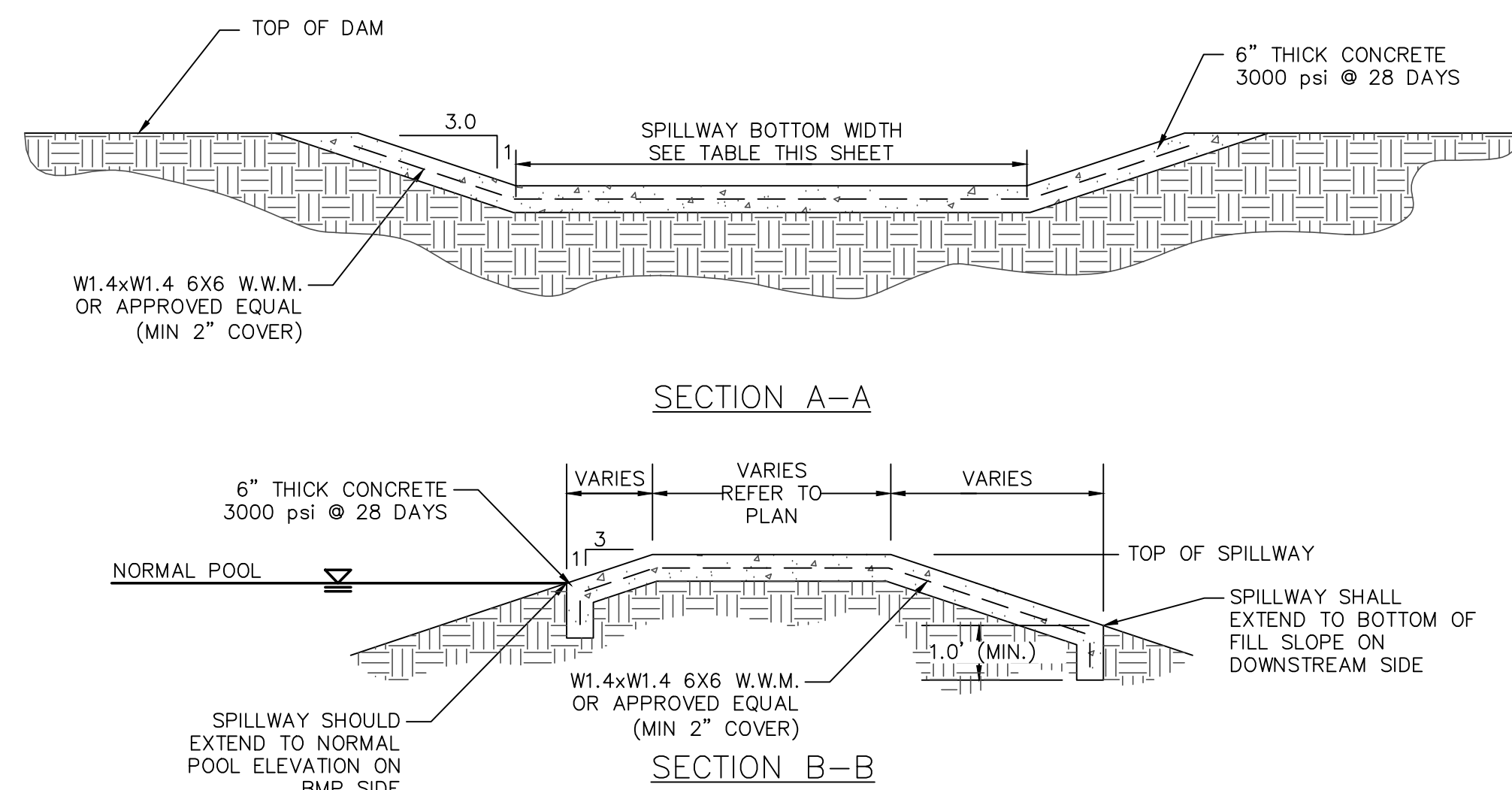
DAM EMBANKMENT DETAIL
NTS

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 Facw Meadow Mix ERNMX-182

CLAY LINER NOTES:

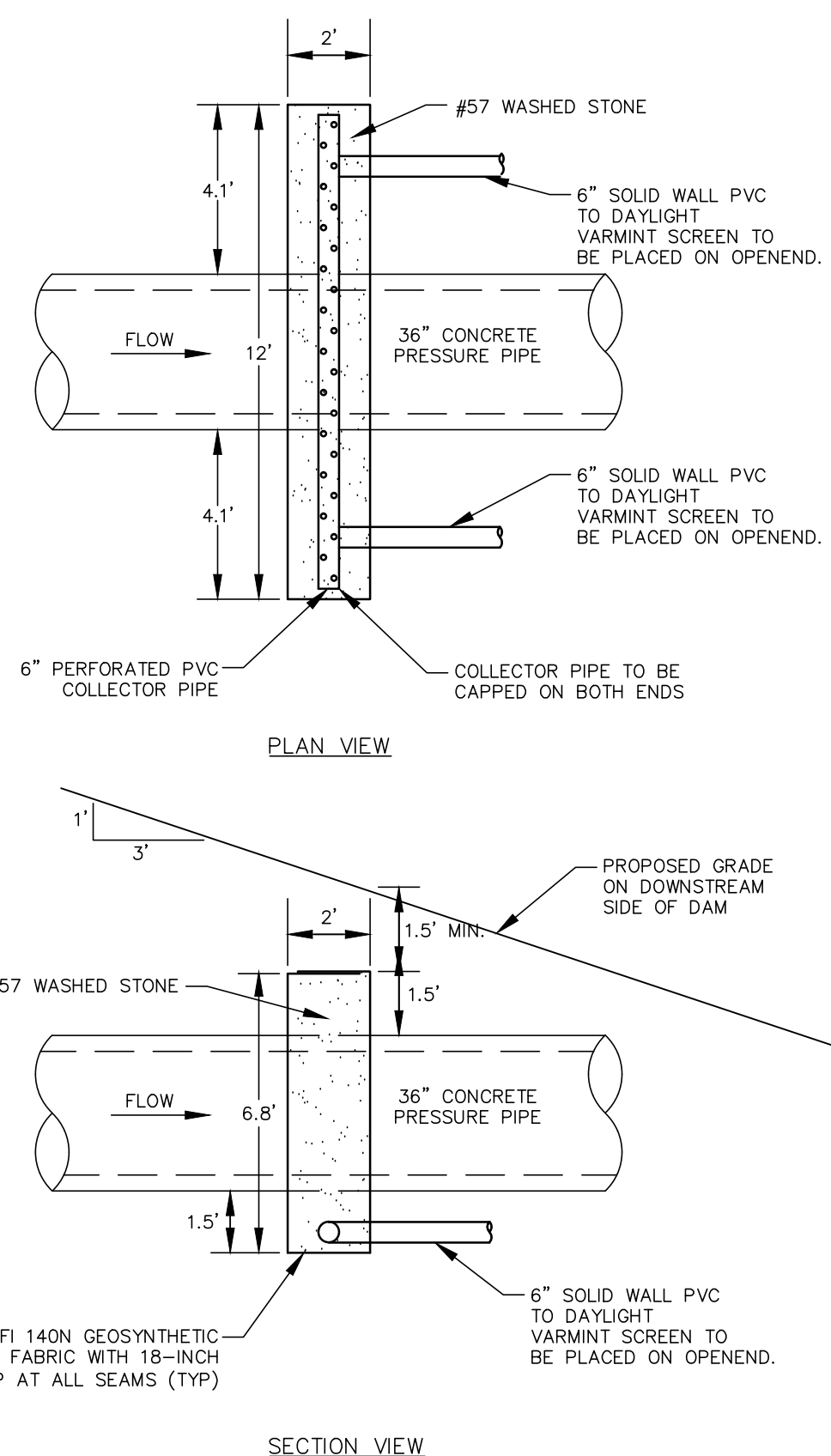
IN ORDER TO HELP SUSTAIN THE PERMANENT POOL AND TO PREVENT WATER FROM INFILTRATING TOO QUICKLY INTO THE UNDERLYING SOIL, THE CONTRACTOR SHALL INSTALL A 6" THICK CLAY LINER ON THE BOTTOM OF THE WET DETENTION POND AREA UP TO ELEVATION 454.50. THE LINER CAN BE ACCOMPLISHED BY BLENDING EXISTING SITE SOILS 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.



EMERGENCY SPILLWAY DETAIL
NTS

BMP #17	NORMAL POOL EL.	TOP DAM EL.	SPILLWAY BOTTOM EL.	SPILLWAY BOTTOM WIDTH
	431.50	437.00	435.00	40'

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



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

ENDWALL DIMENSIONS

PIPE DIA.	MINIMUM BAR SIZE	MIN./MAX. H1 (FT.)	MIN./MAX. H2 (FT.)	MIN./MAX. D (FT.)	MIN./MAX. W1	MIN./MAX. W2
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

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.

SHEET 1 OF 1
838.80

SHEET 1 OF 1
838.80

REV. NO.	DATE	DESCRIPTIONS	REVISIONS
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MCE PROJ. # 02735-0109
DRAWN: GCA
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PROJ. MGR. CHS

SCALE: HORIZONTAL AS NOTED
VERTICAL: N/A

MSC FILE NUMBER: **D4.X**
DRAWING NUMBER: **D4.2**

STATUS: ISSUED FOR CONSTRUCTION
REVISION: 2

SECTION 1

SANITARY SEWER SUMMARY TABLE							
UPSTREAM STRUCTURE	DOWNSTREAM STRUCTURE	UPSTREAM INVERT	DOWNSTREAM INVERT	PIPE DIAMETER	PIPE MATERIAL	LENGTH (ft)	SLOPE
EX. OESS-135A	SSMH-11-20	496.40	493.90	8"	PVC (SDR 35)	329.6	0.76%
SSMH-11-14	EX. OESS-31A	454.00	448.35	8"	PVC (SDR 35)	289.8	1.95%
SSMH-11-15	SSMH-11-14	461.90	454.20	8"	PVC (SDR 35)	146.4	5.26%
SSMH-11-16	SSMH-11-15	465.30	464.65	8"	PVC (SDR 35)	100.3	0.65%
SSMH-11-17	SSMH-11-16	466.15	465.50	8"	PVC (SDR 35)	100.4	0.65%
SSMH-11-18	SSMH-11-17	467.00	466.35	8"	PVC (SDR 35)	125.7	0.52%
SSMH-11-19	SSMH-11-18	476.45	467.20	8"	PVC (SDR 35)	250.0	3.70%
SSMH-11-20	SSMH-11-19	493.70	479.70	8"	PVC (SDR 35)	310.4	4.51%
SSMH-11-21	SSMH-11-14	462.20	461.50	8"	PVC (SDR 35)	27.3	2.57%
SSMH-11-22	SSMH-11-21	472.70	463.40	8"	PVC (SDR 35)	205.1	4.53%
SSMH-11-23	SSMH-11-22	485.50	474.90	8"	PVC (SDR 35)	124.7	8.50%
SSMH-11-24	SSMH-11-23	493.95	485.70	8"	PVC (SDR 35)	133.3	6.19%

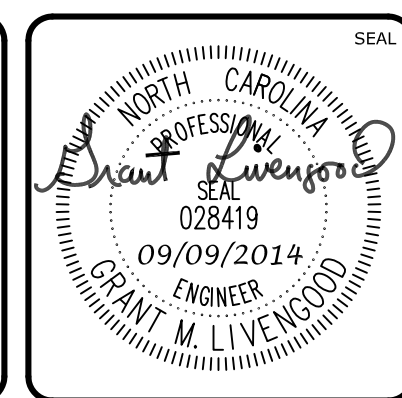
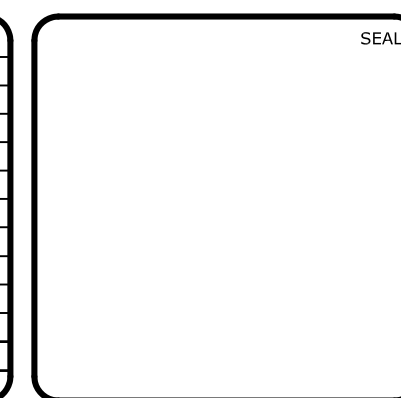
STORM DRAINAGE SUMMARY TABLE							
UPSTREAM STRUCTURE	DOWNSTREAM STRUCTURE	UPSTREAM INVERT	DOWNSTREAM INVERT	PIPE DIAMETER	PIPE MATERIAL	LENGTH (ft)	SLOPE
CI-11-50	EX. DBL CI-52	449.52	448.95	30"	RCP	36.5	1.56%
CI-11-51	CI-11-50	458.00	449.60	30"	RCP	246.3	3.41%
CI-11-53	CI-11-51	458.40	458.10	30"	RCP	53.7	0.56%
CI-11-54	CI-11-53	464.50	461.20	24"	RCP	126.2	2.62%
CI-11-55	CI-11-54	467.10	464.60	24"	RCP	96.4	2.59%
CI-11-56	CI-11-55	468.50	468.30	15"	RCP	24.5	0.82%
CI-11-57	CI-11-55	469.70	467.20	24"	RCP	94.5	2.64%
CI-11-58	CI-11-57	470.50	469.80	24"	RCP	101.8	0.69%
CI-11-73	CI-11-51	458.60	458.40	15"	RCP	24.5	0.82%
CI-11-76	CI-11-50	451.25	451.05	15"	RCP	25.8	0.78%
DBL CI-11-74	CI-11-73	459.00	458.70	15"	RCP	41.6	0.72%
DBL CI-11-75	DBL CI-11-74	462.00	461.80	15"	RCP	24.5	0.82%
DBL DI-11-59	CI-11-58	474.40	473.80	18"	RCP	16.4	3.66%
DBL DI-11-66	CI-11-53	462.90	462.50	18"	RCP	17.6	2.28%
DI-11-60	DBL DI-11-59	477.00	474.50	18"	A-2000 PVC	124.8	2.00%
DI-11-61	DI-11-60	482.30	477.10	15"	A-2000 PVC	125.2	4.15%
DI-11-62	DI-11-61	488.20	482.30	15"	A-2000 PVC	126.8	4.65%
DI-11-63	DI-11-62	494.00	488.30	15"	A-2000 PVC	125.1	4.56%
DI-11-64	DI-11-63	498.00	494.10	12"	A-2000 PVC	125.0	3.12%
DI-11-65	DI-11-64	499.20	498.10	12"	A-2000 PVC	125.0	0.88%
DI-11-67	DBL DI-11-66	468.40	463.00	18"	A-2000 PVC	126.7	4.26%
DI-11-68	DI-11-67	474.60	468.50	12"	A-2000 PVC	82.7	7.38%
DI-11-69	DI-11-68	485.40	474.70	12"	A-2000 PVC	125.1	8.56%
DI-11-70	DI-11-69	492.40	485.50	12"	A-2000 PVC	104.2	6.62%
DI-11-71	DI-11-67	472.00	468.40	12"	A-2000 PVC	125.3	2.87%
DI-11-72	DI-11-67	469.50	468.50	12"	A-2000 PVC	38.0	2.63%
DI-11-80	EX. CI 54	455.70	454.45	15"	RCP	60.7	2.06%
DI-11-81	DI-11-80	459.60	455.80	12"	A-2000 PVC	98.2	3.87%
DI-11-82	DI-11-81	463.60	459.70	12"	A-2000 PVC	125.0	3.12%
DI-11-83	DI-11-82	467.70	463.70	12"	A-2000 PVC	125.0	3.20%
DI-11-84	EX. OESD 57A	468.50	467.40	15"	RCP	40.6	2.71%

SECTION 2

SANITARY SEWER SUMMARY TABLE							
UPSTREAM STRUCTURE	DOWNSTREAM STRUCTURE	UPSTREAM INVERT	DOWNSTREAM INVERT	PIPE DIAMETER	PIPE MATERIAL	LENGTH (ft)	SLOPE
OESS-11-11	SSMH-11-5	454.20	454.00	8"	PVC (SDR 35)	35.0	0.57%
OESS-11-13	SSMH-11-12	446.40	446.20	8"	PVC (SDR 35)	35.0	0.57%
SSMH-11-1	EX. SSMH #2	437.40	433.10	8"	PVC (SDR 35)	163.0	2.64%
SSMH-11-2	SSMH-11-1	442.40	437.60	8"	PVC (SDR 35)	155.1	3.09%
SSMH-11-3	SSMH-11-2	443.30	442.60	8"	PVC (SDR 35)	153.7	0.46%
SSMH-11-4	SSMH-11-3	452.80	451.30	8"	PVC (SDR 35)	166.0	0.90%
SSMH-11-5	SSMH-11-4	453.90	453.00	8"	PVC (SDR 35)	175.3	0.51%
SSMH-11-6	SSMH-11-5	468.00	458.00	8"	PVC (SDR 35)	258.9	3.86%
SSMH-11-7	SSMH-11-3	444.15	443.50	8"	PVC (SDR 35)	155.4	0.42%
SSMH-11-8	SSMH-11-7	444.70	444.35	8"	PVC (SDR 35)	80.0	0.44%
SSMH-11-9	SSMH-11-8	445.50	444.90	8"	PVC (SDR 35)	145.0	0.41%
SSMH-11-10	SSMH-11-9	458.10	452.80	8"	PVC (SDR 35)	182.5	2.90%
SSMH-11-12	SSMH-11-9	446.00	445.70	8"	PVC (SDR 35)	44.5	0.67%

STORM DRAINAGE SUMMARY TABLE							
UPSTREAM STRUCTURE	DOWNSTREAM STRUCTURE	UPSTREAM INVERT	DOWNSTREAM INVERT	PIPE DIAMETER	PIPE MATERIAL	LENGTH (ft)	SLOPE
CI-11-6	DBL CI-11-5	436.70	436.50	42"	RCP	46.2	0.43%
CI-11-7	CI-11-6	437.34	436.80	36"	RCP	112.2	0.48%
CI-11-8	CI-11-7	440.55	437.45	36"	RCP	56.9	5.45%
CI-11-9	CI-11-8	445.02	440.65	36"	RCP	177.8	2.46%
CI-11-10	CI-11-9	450.25	450.05	15"	RCP	24.5	1.02%
CI-11-11	CI-11-8	445.30	445.00	15"	RCP	24.5	1.22%
CI-11-12	CI-11-7	442.75	442.50	15"	RCP	24.5	1.02%
CI-11-17	DBL CI-11-5	439.85	438.60	24"	RCP	100.2	1.25%
CI-11-18	CI-11-17	443.50	439.95	24"	RCP	104.6	3.39%
CI-11-19	CI-11-18	445.80	443.60	24"	RCP	119.2	1.85%
CI-11-20	CI-11-19	446.10	445.90	24"	RCP	39.2	0.51%
CI-11-21	CI-11-20	449.40	449.20	24"	RCP	24.5	0.82%
CI-11-22	CI-11-21	449.80	449.50	15"	RCP	40.8	0.74%
CI-11-23	CI-11-22	456.50	452.50	15"	RCP	157.0	2.55%
CI-11-24	CI-11-23	456.80	456.60	15"	RCP	24.5	0.82%
CI-11-25	CI-11-18	445.50	445.30	15"	RCP	24.5	0.82%
CI-11-26	CI-11-21	454.90	451.60	18"	RCP	88.9	3.71%
CI-11-43	SDMH-11-42	448.30	448.00	24"	RCP	12.9	2.33%
CI-11-44	CI-11-43	448.60	448.40	24"	RCP	24.5	0.82%
CI-11-45	CI-11-44	455.40	452.30	18"	RCP	222.8	1.39%
CI-11-46	CI-11-45	459.90	456.00	15"	RCP	177.2	2.20%
CI-11-47	CI-11-46	460.15	460.00	15"	RCP	24.5	0.61%
CI-11-48	CI-11-45	459.20	459.00	15"	RCP	24.5	0.82%
DBL CI-11-4	SDMH-11-3	436.15	436.05	42"	RCP	12.7	0.78%
DBL CI-11-5	DBL CI-11-4	436.40	436.25	42"	RCP	24.5	0.61%
DBL DI-11-13	CI-11-6	438.10	437.90	15"	RCP	18.4	1.09%
DBL DI-11-27	CI-11-26	455.85	455.00	18"	RCP	16.1	5.27%
DI-11-14	DBL DI-11-13	446.90	441.10	12"	A-2000 PVC	116.0	5.00%
DI-11-15	DI-11-14	449.45	447.00	12"	A-2000 PVC	100.0	2.45%
DI-11-16	DI-11-15	452.00	449.55	12"	A-2000 PVC	99.7	2.46%
DI-11-28	DBL DI-11-27	457.50	455.95	18"	A-2000 PVC	88.6	1.75%
DI-11-29	DI-11-28	459.40	457.60	15"	A-2000 PVC	103.9	1.73%
DI-11-47A	CI-11-47	461.65	461.25	15"	RCP	65.2	0.61%
DI-11-47B	DI-11-47A	462.30	461.75	12"	A-2000 PVC	98.7	0.56%
DI-11-47C	DI-11-47B	463.40	462.40	12"	A-2000 PVC	87.4	1.14%
DI-11-47D	DI-11-47A	466.70	461.75	12"	A-2000 PVC	99.4	4.98%
EX. OESS-51	CI-11-9	445.22	445.12	36"	RCP	23.5	0.42%
SDMH-11-2	HW 11-1	433.20	432.50	42"	RCP	111.1	0.63%
SDMH-11-3	SDMH-11-2	435.95	433.30	42"	RCP	142.6	1.86%
SDMH-11-41	HW-11-40	439.00	432.50	24"	RCP	81.5	7.98%
SDMH-11-42	SDMH-11-41	447.90	445.00	24"	RCP	120.3	2.41%

REV. NO.	DESCRIPTION	DATE
2	REVISED PER NCDOT & DWR-PWSS COMMENTS/ISSUED FOR CONSTRUCTION	2014.09.09
1	SUBMITTAL TO REVIEW AGENCIES	2014.06.27



MCKIM & CREED
 1730 Varsity Drive, Suite 500
 Raleigh, North Carolina 27606
 Phone: (919)233-8091, Fax: (919)233-8031
 F-1222
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**STORM DRAINAGE &
 SANITARY SEWER TABLES**

DATE: JUNE 27, 2014	SCALE: D4.X
MCE PROJ. # 02735-0109	HORIZONTAL: N/A
DRAWN: GCA	VERTICAL: N/A
DESIGNED: GCA	REVISION: 2
CHECKED: CHS	ISSUED FOR CONSTRUCTION
PROJ. MGR.: CHS	