

SITE DEVELOPMENT PLANS FOR: Bragg Road Development Company, LLC

716 Bragg Drive
Wilmington, NC 28412
(Permit # _____)



Know what's below.
Call before you dig.

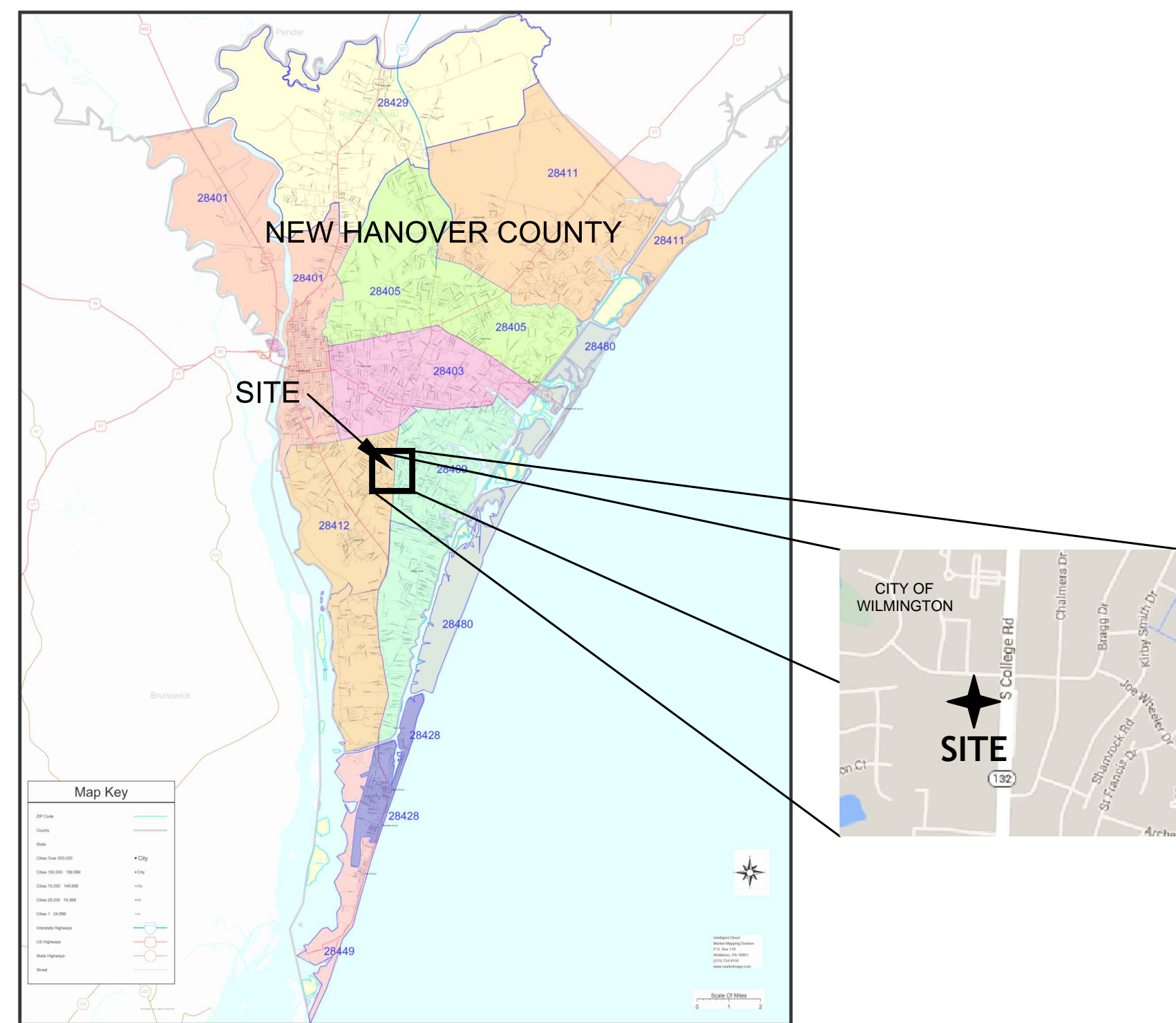
Approved Construction Plan
Name _____ Date _____
Planning _____
Traffic _____
Fire _____

CITY OF WILMINGTON
NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date: _____ Permit # _____
Signed: _____

For each open utility cut of City streets, a 5325 permit shall be required from the City prior to occupancy and/or project acceptance.

- City of Wilmington Standard Notes**
- Prior to any clearing, grading or construction activity, tree protection fencing shall be installed around protected trees or groves of trees. No construction workers, tools, materials, or vehicles are permitted within the tree protection fencing.
 - Any trees and/or areas designated to be protected must be properly barricaded with fencing and protected throughout construction to insure that no clearing, grading or staging of materials will occur in those areas.
 - No equipment is allowed on site until all tree protection fencing and silt fencing is installed and approved. Protective fencing is to be maintained throughout the duration of the project, and contractors shall receive adequate instruction on tree protection methods.
 - All pavement markings in public rights-of-way and for driveways are to be thermoplastic and meet City and/or NCDOT standards.
 - Once streets are open to traffic, contact Traffic Engineering regarding the installation of traffic and street name signs. Proposed street names must be approved prior to installation of street name signs.
 - Traffic control devices (including signs and pavement markings) in areas open to public traffic are to meet MUTCD (Manual on Uniform Traffic Control Devices) standards.
 - Contact Traffic Engineering at 910-341-7888 to ensure that all traffic signal facilities and equipment are shown on the plan.
 - Call Traffic Engineering at 910-341-7888 forty-eight (48) hours prior to any excavation in the right-of-way.
 - Traffic Engineering must approve of pavement marking prior to actual striping.
 - All parking stall markings and lane arrows within the parking areas shall be white.
 - All traffic control signs and markings off the right-of-way are to be maintained by the property owner in accordance with MUTCD Standards.
 - Stop signs and street signs to remain in place during construction.
 - Tactile warning mats will be installed on all wheelchair ramps.
 - A utility cut permit is required for each open cut of a city street.
 - Any broken or missing sidewalk panels, driveway panels, and curbing will be replaced.
 - Contact Traffic Engineering at 910-341-7888 to discuss street lighting options.
 - Water and sewer service shall meet Cape Fear Public Utility Authority (CFPUA) details and specifications.
 - Project shall comply with CFPUA Cross Connection Control requirements. Water meter(s) cannot be released until all requirements are met and the State has given their final approval. Call 910-343-3910 for information.
 - If the contractor desires CFPUA water for construction, he shall apply in advance for this service and must provide a reduced pressure zone (RPZ) backflow prevention device on the developer's side of the water meter box.
 - Any irrigation system supplied by CFPUA water shall comply with the CFPUA Cross Connection Control regulations. Call 910-343-3910 for information.
 - Any irrigation system shall be equipped with a rain and freezer sensor.
 - Any backflow prevention devices required by the CFPUA will need to be on the list of approved devices by USCFCCHHR or ASSE.
 - Contractor to field verify existing water and sewer service locations, sizes and materials prior to construction. Engineer to be notified of any conflicts.
 - Contractor shall maintain all-weather access for emergency vehicles at all times during construction.
 - Underground fire line(s) must be permitted and inspected by the Wilmington Fire Department from the public right-of-way to the building. Contact the Wilmington Fire Department Division of Fire and Life Safety at 910-341-0696.
 - No obstructions are permitted in the space between thirty (30) inches and ten (10) feet above the ground within the triangular sight distance.
 - Contact the North Carolina One Call Center at 1-800-632-4949 prior to doing any digging, clearing, or grading

LOCATION MAP



SITE CONTACTS

PLANNING / PERMIT COORDINATOR

AGENCY: City of Wilmington Planning
ADDRESS: 305 Chestnut Street
Wilmington, NC 28402
PHONE: 910-341-3257
CONTACT: Jeff Walton
EMAIL: jeff.walton@wilmingtonnc.gov

LANDSCAPING

AGENCY: City of Wilmington Planning
ADDRESS: 305 Chestnut Street
Wilmington, NC 28402
PHONE: 910-341-3257
CONTACT: Jeff Walton
EMAIL: jeff.walton@wilmingtonnc.gov

FIRE DISTRICT

AGENCY: City of Wilmington Fire Department
ADDRESS: 801 Market Street
Wilmington, NC 28401-4730
PHONE: 910-343-3917
CONTACT: Captain Chris Elrod
EMAIL: chris.elrod@wilmingtonnc.gov

STORMWATER

AGENCY: City of Wilmington, Engineering
ADDRESS: 102 N. Third St., PO Box 1810
Wilmington, NC 28402
PHONE: 910-341-5856
CONTACT: Rob Gordon
EMAIL: rob.gordon@wilmingtonnc.gov

TRAFFIC ENGINEERING

AGENCY: City of Wilmington/Wilmington MPO
ADDRESS: 305 Chestnut Street, 4th Floor
Wilmington, NC 28402-1810
PHONE: 910-341-4677
CONTACT: Dave Brent
EMAIL: dave.brent@wilmingtonnc.gov

WATER

AGENCY: Cape Fear Public Utility Authority
ADDRESS: 235 Government Center Drive
Wilmington, NC 28403
PHONE: 910-332-6620
CONTACT: Bernice Johnson
EMAIL: bernice.johnson@cfpuia.org

SEWER

AGENCY: Cape Fear Public Utility Authority
ADDRESS: 235 Government Center Drive
Wilmington, NC 28403
PHONE: 910-332-6620
CONTACT: Bernice Johnson
EMAIL: bernice.johnson@cfpuia.org

ELECTRIC - TRANSMISSION

AGENCY: Duke Energy - Asset Protection
ADDRESS: 8645 Trade Street
Leland, NC 28451
PHONE: 910-520-3911
CONTACT: Bill Wilder
EMAIL: Bill.Wilder@duke-energy.com

ELECTRIC - DISTRIBUTION

AGENCY: Duke Energy - Distribution Engineering
ADDRESS: 404 Raleigh Street
Wilmington, NC 28412
PHONE: 910-604-2547
CONTACT: Mark A. Hatfield
EMAIL: mark.hatfield@duke-energy.com

N.C.D.O.T.

AGENCY: NC Dept. of Transportation
ADDRESS: 300 Division Dr.
Wilmington, NC 28401
PHONE: 910-251-2655
CONTACT: Anthony Law
EMAIL: alaw@ncdot.gov

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*BOUNDARY & TOPOGRAPHIC SURVEY (BY ROBERT SESSOMS & ASSOCIATES, PLLC)

DESIGNER'S CERTIFICATION:

I hereby certify that these plans have been prepared in accordance with the latest Wilmington Standards and Specifications for Storm Water Management and Chapter 20 of the Code of Ordinances of the City of Wilmington.

JASON S. HENDERSON, P.E., BLUEWATER CIVIL DESIGN, PLLC - NCPE# 031306 DATE **7-23-2015**

OWNER'S CERTIFICATION:

I/We hereby certify that any clearing, grading, construction or development, or all of these, will be done pursuant to these plans and that the applicable Stormwater Management conditions and requirements of the City of Wilmington, the State of North Carolina and the Federal Government and its agencies are hereby made part of these plans.

DATE

DEVELOPER

COMPANY: Bragg Drive Development Company, LLC
ADDRESS: 3920 Magazine Street
New Orleans, LA 70115
PHONE: 864.271.3894
CONTACT: Gordon Kolb, Jr.
EMAIL: gordo@ghkinc.com

CIVIL ENGINEER

COMPANY: Bluewater Civil Design, PLLC
ADDRESS: 19 Washington Park - Suite 100
Greenville, SC 29601
PHONE: 864.326.4204
CONTACT: Jason S. Henderson, P.E.
EMAIL: jason@bluewatercivil.com

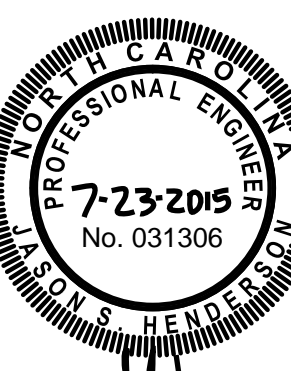
SURVEYOR

COMPANY: Robert Sessoms & Associates, PLLC
ADDRESS: 4033 Chandler Drive
Wilmington, NC 28412
PHONE: 910-352-8846
CONTACT: Robert Sessoms
EMAIL: rsessoms@rssurveying.com

ARCHITECT

COMPANY: Jared Ducote Architect
ADDRESS: 600 South Barracks Street, Suite 210-6
Pensacola, FL 32502
PHONE: 850-439-1552
CONTACT: Jared Ducote
EMAIL: jared@tbsarch.com

Approved Construction Plan
Name _____ Date _____
Planning _____
Traffic _____
Fire _____



Bluewater Civil Design, PLLC
NC-P-0868

REVISION	DATE	ISSUE	COMMENT
A	2-3-2015	ISSUED FOR PERMITS	
B	2-25-2015	REVISED PER COMMENTS	
C	4-2-2015	REVISED PER NEW HANOVER COMMENTS	
D	4-16-2015	100% TENANT SUBMITTAL	
E	4-30-2015	REVISED PER NCDOT/WILMINGTON COMMENTS	
F	6-2-2015	REVISED PER CITY & TENANT COMMENTS	
G	7-15-2015	REVISED PER TENANT COMMENTS	
H	7-22-2015	REVISED PER CITY COMMENTS	
...

TITLE SHEET

C001

SURVEYORS CERTIFICATE

I, ROBERT G. SESSOMS, A PROFESSIONAL LAND SURVEYOR, LICENSE NO. L-4659, IN AND FOR THE STATE OF NORTH CAROLINA AND LEGALLY DOING BUSINESS IN NEW HANOVER COUNTY, DOES HEREBY CERTIFY TO GRAY BROS HOLDINGS, LLC, PUBLIX SUPER MARKETS, INC., A FLORIDA CORPORATION ("PUBLIX"), CHICAGO TITLE INSURANCE COMPANY, G.H.K. DEVELOPMENTS, INC., BRAGG ROAD DEVELOPMENT COMPANY, LLC AND THEIR RESPECTIVE SUCCESSORS AND ASSIGNS:

- (1) THE ACCOMPANYING SURVEY ("SURVEY") REPRESENTS A TRUE AND CORRECT SURVEY MADE BY ME BASED ON FIELD OBSERVATIONS IN APRIL & SEPTEMBER 2014 AS WELL AS MAY 2015, OF THE LAND THEREIN PARTICULARLY DESCRIBED;
(2) THE SURVEY AND THE INFORMATION, COURSES AND DISTANCES SHOWN THEREON ARE CORRECT;
(3) TITLE LINES AND LINES OF ACTUAL POSSESSION ARE THE SAME;
(4) THE LAND DESCRIBED IN THE SURVEY IS THE SAME AS DESCRIBED IN THE TITLE INSURANCE COMMITMENT DESCRIBED BELOW;
(5) THE AREA OF THE SUBJECT PROPERTY AND THE SIZE, LOCATION AND TYPE OF BUILDINGS AND IMPROVEMENTS AND ANY OTHER MATTERS SITUATED ON THE SUBJECT PROPERTY ARE AS SHOWN AND ALL BUILDINGS AND IMPROVEMENTS ARE WITHIN THE BOUNDARY LINES AND APPLICABLE SETBACK LINES OF THE PROPERTY;
(6) THERE ARE NO VIOLATIONS OF ZONING ORDINANCES, RESTRICTIONS OR OTHER RULES AND REGULATIONS WITH REFERENCE TO THE LOCATION OF SAID BUILDINGS AND IMPROVEMENTS;
(7) THERE ARE NO EASEMENTS OR USES AFFECTING THIS PROPERTY APPEARING FROM A CAREFUL PHYSICAL INSPECTION OF SAME, OTHER THAN THOSE SHOWN AND DEPICTED ON THE SURVEY;
(8) THERE ARE NO ENCROACHMENTS ON THE ADJOINING PROPERTIES, STREETS, OR ALLEYS BY ANY OF SAID BUILDINGS, STRUCTURES AND IMPROVEMENTS, OTHER THAN AS SHOWN ON THE SURVEY;
(9) THERE ARE NO PARTY WALLS OR VISIBLE ENCROACHMENTS ON SAID DESCRIBED PROPERTY BY STREETS, ALLEYS OR BUILDINGS, STRUCTURES OR OTHER IMPROVEMENTS SITUATED ON THE ADJOINING PROPERTY, EXCEPT AS SHOWN ON THE SURVEY;
(10) ALL UTILITY SERVICES REQUIRED FOR THE OPERATION OF THE PREMISES EITHER ENTER THE PREMISES THROUGH ADJOINING PUBLIC STREETS, OR THE SURVEY SHOWS THE POINT OF ENTRY AND LOCATION OF ANY UTILITIES THAT PASS THROUGH OR ARE LOCATED ON ADJOINING LAND;
(11) THE SURVEY SHOWS THE LOCATION AND DIRECTION OF ALL VISIBLE STORM DRAINAGE SYSTEMS FOR THE COLLECTION AND DISPOSAL OF ALL ROOF AND SURFACE DRAINAGE, ALONG WITH THE DIRECTION OF THE DRAINAGE FLOW;
(12) ANY DISCHARGE INTO STREAMS, RIVERS OR OTHER CONVEYANCE SYSTEM IS SHOWN ON THE SURVEY;
(13) THE SUBJECT PROPERTY DOES NOT LIE WITHIN A SPECIAL FLOOD HAZARD AREA ("SFHA") AS DEFINED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY; THE PROPERTY LIES WITHIN ZONE(S) X OF THE FLOOD INSURANCE RATE MAP IDENTIFIED AS COMMUNITY PANEL NO. 37203135000 BEARING AN EFFECTIVE DATE OF APRIL 3, 2006. IF THE SUBJECT PROPERTY DOES LIE WITHIN A SPECIAL FLOOD HAZARD AREA THE FLOOR ELEVATIONS OF ALL IMPROVEMENTS ON THE SUBJECT PROPERTY ARE AS SHOWN ON THE SURVEY;
(14) THE SUBJECT PROPERTY HAS ACCESS TO AND FROM A DULY DEDICATED AND ACCEPTED PUBLIC STREET OR HIGHWAY, BRAGG DRIVE (60' PUBLIC R/W) & SOUTH COLLEGE ROAD/HWY 132 (200' PUBLIC R/W);
(15) [EXCEPT AS SHOWN ON THE SURVEY,] THE SUBJECT PROPERTY DOES NOT SERVE ANY ADJOINING PROPERTY FOR DRAINAGE, UTILITIES, OR INGRESS OR EGRESS OR ANY OTHER PURPOSE; AND
(16) THE RECORD DESCRIPTION OF THE SUBJECT PROPERTY FORMS A MATHEMATICALLY CLOSED FIGURE.
(17) THE TOTAL NUMBER OF STRIPED PARKING SPACES LOCATED ON THE SUBJECT PROPERTY IS 0. THIS NUMBER MEETS THE MINIMUM REQUIREMENTS FOR THE SUBJECT PROPERTY AS REQUIRED BY [N/A], WHICH SETS FORTH THE FOLLOWING PARKING REQUIREMENTS:
(18) THE LAND DESCRIBED IN THIS SURVEY IS IN THE CB ZONING DISTRICT AND THE CURRENT USE ON THE LAND HEREIN DESCRIBED IS A PERMITTED USE IN THAT ZONING DISTRICT.
(19) AREAS DEVOTED OR RESTRICTED IN RECIPROCAL EASEMENT AGREEMENTS, AND ALL OTHER MATTERS VISIBLE ON THE GROUND OR OF RECORD (AS REFLECTED IN THE BELOW REFERENCED TITLE COMMITMENT AND SHOWN WITH THE APPROPRIATE RECORDING REFERENCE), OR OF WHICH THE UNDERSIGNED HAS OTHERWISE BEEN ADVISED AS LOCATED ON, ENCUMBERING OR APPURTENANT TO THE PROPERTY.

TO PUBLIX SUPER MARKETS, INC., A FLORIDA CORPORATION ("PUBLIX"), CHICAGO TITLE INSURANCE COMPANY, G.H.K. DEVELOPMENTS, INC., BRAGG ROAD DEVELOPMENT COMPANY, LLC.

THIS SURVEY IS MADE IN ACCORDANCE WITH THE "MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/ACSM LAND TITLE SURVEYS" JOINTLY ESTABLISHED AND ADOPTED BY AMERICAN LAND TITLE ASSOCIATION ("ALTA"), AMERICAN CONGRESS ON SURVEYING AND MAPPING ("ACSM") AND NATIONAL SOCIETY OF PROFESSIONAL SURVEYORS ("NSPS") IN 2011 AND INCLUDES ITEMS 1, 2, 3, 4, 6, 7(A), 7(B)(1), 7(C), 8, 9, 10, 11(B), 13, 14, 15, 16, AND 20(A) OF TABLE A THEREOF. PURSUANT TO THE ACCURACY STANDARDS AS ADOPTED BY ALTA, ACSM, AND NSPS AND IN EFFECT ON THE DATE OF THIS CERTIFICATION, THE UNDERSIGNED FURTHER CERTIFIES THAT THE SURVEY MEASUREMENTS WERE MADE IN ACCORDANCE WITH THE "MINIMUM ANGLE DISTANCE, AND CLOSURE REQUIREMENTS FOR SURVEY MEASUREMENTS WHICH CONTROL LAND BOUNDARIES FOR ALTA/ACSM LAND TITLE SURVEYS".

ROBERT G. SESSOMS
PROFESSIONAL LAND SURVEYOR
LICENSE NUMBER L-4659

ALTA/ACSM LAND TITLE SURVEY OF

PROPOSED TRACT ONE
GRAY BROS. TRACTS

CONSISTING OF TRACTS A, B, C & D
TRACT A - DEED BOOK 5822, PAGE 1893
TRACT B - DEED BOOK 5822, PAGE 1916
TRACT C - DEED BOOK 5822, PAGE 1906

TRACT D - WESTERN 150' OF TRACT DESCRIBED IN DEED BOOK 5236, PAGE 209

CITY OF WILMINGTON
NEW HANOVER COUNTY NORTH CAROLINA

SCHEDULE A PROPERTY DESCRIPTIONS

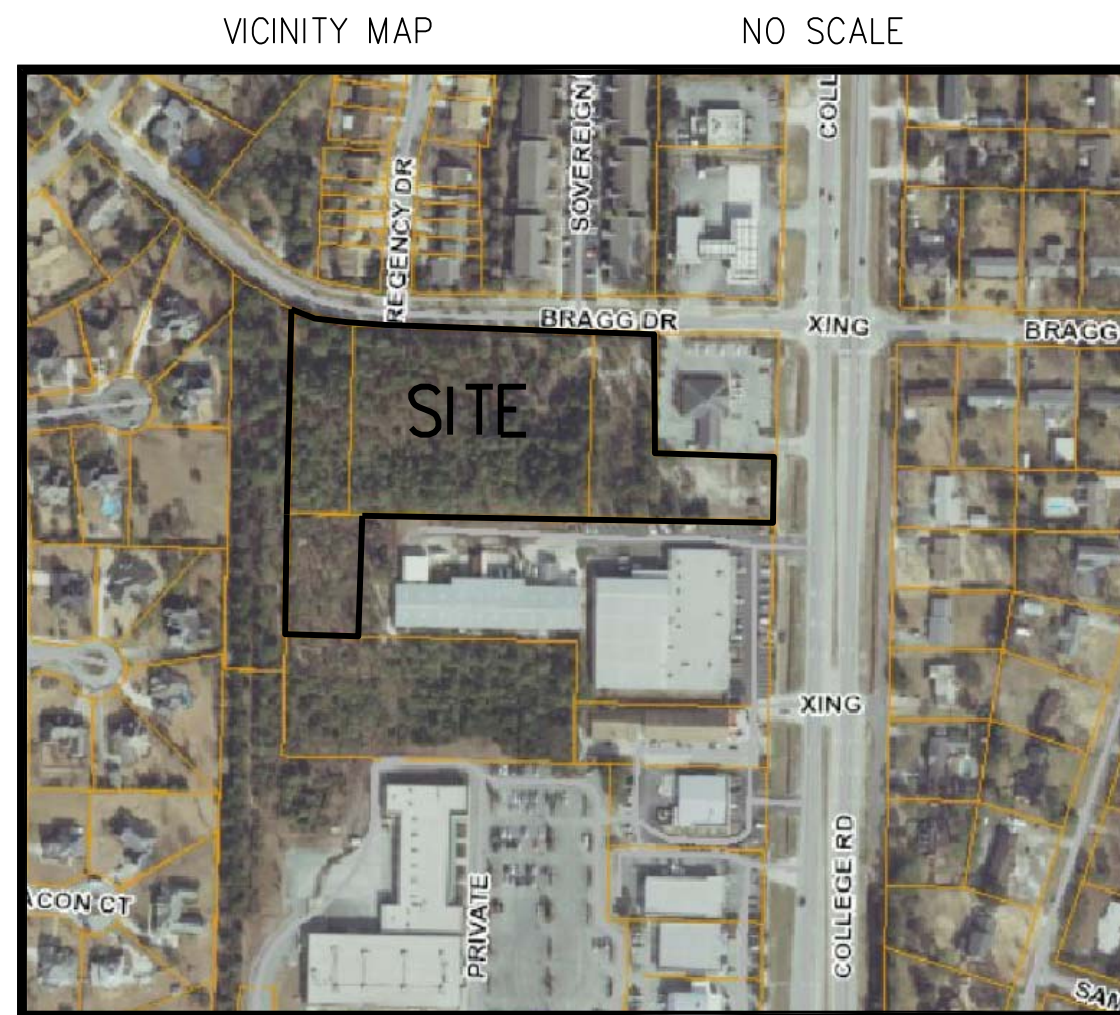
TRACT A - PARCEL ID R06610-006-002-000
BEGINNING AT A CONCRETE MONUMENT IN THE SOUTHERN LINE OF BRAGG DRIVE (STATE ROAD #1234, 60 FOOT RIGHT OF WAY) THAT IS NORTH 84 DEGREES 51 MINUTES WEST ALONG SAID LINE 300 FEET FROM THE WESTERN LINE OF SOUTH COLLEGE ROAD (NC HIGHWAY 132, 200 FOOT RIGHT OF WAY), SAID INTERSECTION POINT BEING SOUTH 5 DEGREES 09 MINUTES WEST 30 FEET FROM A POINT IN THE CENTERLINE OF BRAGG DRIVE THAT IS NORTH 84 DEGREES 51 MINUTES WEST ALONG SAID CENTERLINE 200 FEET FROM A CONCRETE MONUMENT IN THE EASTERN LINE OF SOUTH COLLEGE ROAD. SAID MONUMENT BEING SHOWN ON THE MAP OF PINE VALLEY ESTATES, SECTION 8 RECORDED IN MAP BOOK 7 AT PAGE 94 OF THE NEW HANOVER COUNTY REGISTRY, RUNNING THENCE FROM SAID BEGINNING POINT SOUTH 5 DEGREES 09 MINUTES WEST AND PARALLEL WITH SOUTH COLLEGE ROAD 300 FEET TO A CONCRETE MONUMENT, THENCE NORTH 84 DEGREES 51 MINUTES WEST AND PARALLEL WITH BRAGG DRIVE 400 FEET TO A CONCRETE MONUMENT, THENCE NORTH 5 DEGREES 09 MINUTES EAST PARALLEL WITH SOUTH COLLEGE ROAD 305.50 FEET TO A CONCRETE MONUMENT IN THE SOUTHERN LINE OF BRAGG DRIVE, THENCE EASTWARDLY ALONG THE SOUTHERN LINE OF BRAGG DRIVE AS IT CURVES TO THE NORTH TO A CONCRETE MONUMENT AT THE EASTERN END OF THE CURVE, SAID MONUMENT BEING SOUTH 80 DEGREES 18 MINUTES EAST 69.47 FEET FROM THE PRECEDING POINT, THENCE SOUTH 84 DEGREES 51 MINUTES EAST ALONG THE SOUTHERN LINE OF BRAGG DRIVE 330.75 FEET TO THE POINT OF BEGINNING, THE SAME CONTAINING 2.76 ACRES AND BEING A PORTION OF THE TRASK LANDS AT PINE VALLEY ESTATES.

TRACT B - PARCEL ID R06600-001-019-000
TO ARRIVE AT THE TRUE POINT OF BEGINNING COMMENCE AT THE INTERSECTION OF THE WESTERLY RIGHT OF WAY OF NC HIGHWAY 132 (200 FOOT RIGHT OF WAY), ALSO KNOWN AS SOUTH COLLEGE ROAD, WITH THE SOUTHERLY RIGHT OF WAY LINE OF BRAGG DRIVE (60 FOOT RIGHT OF WAY), AS SHOWN ON A MAP OF SECTION 26-B, PINE VALLEY ESTATES RECORDED IN MAP BOOK 23 AT PAGE 91 OF THE NEW HANOVER COUNTY REGISTRY, GO THENCE NORTH 84 DEGREES 48 MINUTES WEST 629.65 FEET ALONG THE SOUTHERLY RIGHT OF WAY OF BRAGG DRIVE TO A POINT AT THE EASTERLY END OF A CURVE HAVING A RADIUS OF 409.16 FEET, GO THENCE WITH THE ARC OF SAID CURVE AND ALONG THE SOUTHERLY RIGHT OF WAY OF BRAGG DRIVE AS IT CURVES TO THE NORTH TO THE TRUE POINT OF BEGINNING THAT IS NORTH 80 DEGREES 11 MINUTES 30 SECONDS WEST A CHORD DISTANCE OF 70.58 FEET FROM THE PRECEDING POINT, RUNNING THENCE FROM SAID BEGINNING POINT SOUTH 5 DEGREES 12 MINUTES WEST 305.67 FEET TO THE WESTERLY LINE OF THE WILSON TRACT, RECORDED IN DEED BOOK 910 AT PAGES 71 AND 72 OF SAID REGISTRY AS SHOWN ON SAID RECORDED MAP TO A POINT, LAST SAID POINT BEING IN THE NORTHERLY LANE OF LOT 1 AS SHOWN ON SAID RECORDED MAP, THENCE NORTH 84 DEGREES 48 MINUTES WEST 100 FEET WITH THE NORTHERLY LINE OF SAID LOT 1 TO A CONCRETE MONUMENT AT THE NORTHWESTERLY CORNER OF SAID LOT 1. SAID CONCRETE MONUMENT ALSO BEING IN THE EASTERLY LINE OF A 100 FOOT ACCESS EASEMENT AS SHOWN ON SAID RECORDED MAP, THENCE NORTH 5 DEGREES 12 MINUTES EAST 334.37 FEET WITH THE EASTERLY LINE OF SAID 100 FOOT ACCESS EASEMENT TO A POINT IN THE SOUTHERLY RIGHT OF WAY OF BRAGG DRIVE, LAST POINT BEING ON SAID CURVE HAVING A RADIUS OF 409.16 FEET, THENCE WITH THE ARC OF SAID CURVE AND WITH THE SOUTHERLY RIGHT OF WAY LINE OF BRAGG DRIVE AS IT CURVES TO THE NORTH TO THE POINT OF BEGINNING THAT IS SOUTH 68 DEGREES 47 MINUTES EAST A CHORD DISTANCE OF 104.04 FEET FROM THE PRECEDING POINT.

THE ABOVE DESCRIBED TRACT CONTAINS 0.73 ACRES. THE SAME BEING THAT TRACT SHOWN AS "EASEMENT" WHICH LIES NORTH OF LOT 1, EAST OF A 100 FOOT ACCESS EASEMENT, SOUTH OF BRAGG DRIVE AND WEST OF THE WILSON TRACT AS SHOWN ON SAID MAP OF SECTION 26-B, PINE VALLEY ESTATES RECORDED IN MAP BOOK 23 AT PAGE 91 OF THE NEW HANOVER COUNTY REGISTRY AND IS THE VERY SAME TRACT IDENTIFIED AS THE FOURTH TRACT CONVEYED TO VIRGINIA C. TRASK ET AL. BY DEED RECORDED IN BOOK 2241, PAGE 485 OF THE NEW HANOVER COUNTY REGISTRY.

TRACT C - PARCEL ID R06600-001-005-000
BEGINNING AT A POINT IN THE SOUTHERN LINE OF BRAGG DRIVE THAT IS NORTH 84 DEGREES 51 MINUTES WEST ALONG SAID LINE 200 FEET FROM ITS INTERSECTION WITH THE WESTERN LINE OF SOUTH COLLEGE ROAD, RUNNING THENCE SOUTH 05 DEGREES 09 MINUTES WEST AND PARALLEL WITH SOUTH COLLEGE ROAD 200 FEET, THENCE SOUTH 84 DEGREES 51 MINUTES EAST AND PARALLEL WITH BRAGG DRIVE 200 FEET TO A POINT IN THE WESTERN LINE OF SOUTH COLLEGE ROAD, THENCE SOUTH 05 DEGREES 09 MINUTES WEST ALONG THE WESTERN LINE OF SOUTH COLLEGE ROAD 100 FEET, THENCE NORTH 84 DEGREES 51 MINUTES WEST AND PARALLEL WITH BRAGG DRIVE 300 FEET, THENCE NORTH 05 DEGREES 09 MINUTES EAST AND PARALLEL WITH SOUTH COLLEGE ROAD 300 FEET TO A POINT IN THE SOUTHERN LINE OF BRAGG DRIVE, THENCE SOUTH 84 DEGREES 51 MINUTES EAST ALONG THE SOUTHERN LINE OF BRAGG DRIVE 100 FEET TO THE POINT OF BEGINNING. SAID TRACT BEING A PORTION OF THE PROPERTY DESCRIBED IN THE DEED DATED DECEMBER 30, 1986 AND RECORDED IN BOOK 803 AT PAGE 22 IN THE OFFICE OF THE REGISTER OF DEEDS OF NEW HANOVER COUNTY. SAID TRACT ALSO DEPICTED AS AN "EASEMENT" ON THE MAP OF SECTION 26-B, PINE VALLEY ESTATES, RECORDED IN MAP BOOK 23 AT PAGE 91 ON THE OFFICE OF THE REGISTER OF DEEDS OF NEW HANOVER COUNTY. SAID TRACT ALSO DEPICTED AS "EASEMENT" (MAP BOOK 23, PAGE 91) ON THE MAP OF SECTION 26-C, PINE VALLEY ESTATES, RECORDED IN MAP BOOK 37 AT PAGE 17, IN THE OFFICE OF THE REGISTER OF DEEDS OF NEW HANOVER COUNTY.

TRACT D
BEGINNING AT A POINT LOCATED IN THE EASTERN LINE OF 100 FOOT ACCESS EASEMENT DEPICTED ON MAP BOOK 23 AT PAGE 91 OF THE NEW HANOVER COUNTY REGISTRY, SAID EXISTING IRON PIPE BEING LOCATED SOUTH 01 DEGREES 18 MINUTES 34 SECONDS WEST 334.37 FEET FROM THE EASTERN LINE OF THE 100 ACCESS EASEMENT AND THE SOUTHERNMOST LINE OF BRAGG DRIVE (60' PUBLIC RIGHT OF WAY); SAID BEGINNING POINT ALSO BEING THE NORTHWESTERMOST CORNER OF A TRACT OF LAND OWNED BY GRAY BROS. HOLDINGS, LLC AS DESCRIBED IN DEED BOOK 5236 AT PAGE 209 OF THE NEW HANOVER COUNTY REGISTRY; RUNNING THENCE FROM SAID BEGINNING POINT IN AN EASTERLY DIRECTION ALONG THE NORTHERN LINE OF THE GRAY BROS. HOLDINGS, LLC TRACT SOUTH 88 DEGREES 40 MINUTES 02 SECONDS FOR 150 FEET TO AN IRON ROD SET IN SAID NORTHERN LINE; RUNNING THENCE SOUTH 01 DEGREES 19 MINUTES 58 SECONDS WEST FOR A DISTANCE OF 200.08 FEET TO AN IRON ROD SET IN THE SOUTHERN LINE OF THE GRAY BROS. HOLDINGS LLC TRACT; RUNNING THENCE IN A WESTERLY DIRECTION ALONG THE SOUTHERN LINE OF THE GRAY BROS. HOLDINGS LLC TRACT NORTH 88 DEGREES 44 MINUTES 15 SECONDS WEST 150 FEET TO AN EXISTING IRON PIPE LOCATED IN THE EASTERN LINE OF THE ABOVE MENTIONED 100' ACCESS EASEMENT; SAID EXISTING PIPE MARKING THE SOUTHWESTERMOST CORNER OF THE GRAY BROS. HOLDINGS LLC TRACT; RUNNING THENCE IN A NORTHERLY DIRECTION AND ALONG THE EASTERN LINE OF THE 100' ACCESS EASEMENT NORTH 01 DEGREE 19 MINUTES 30 SECONDS EAST 200.03 FEET TO THE POINT OF BEGINNING; THE FOREGOING BEING THE WESTERMOST 150 FEET OF THE GRAY BROS. HOLDINGS LLC TRACT DESCRIBED IN DEED BOOK 5236 AT PAGE 209 OF THE NEW HANOVER COUNTY REGISTRY.



PROPERTY DATA

E - NOW OR FORMERLY ELIZABETH B. CAMERON KAREN F. CAMERON ROBERT F. CAMERON JR. DEED BOOK 1164, PAGE 533
F - NOW OR FORMERLY GRAY BROS. HOLDINGS, LLC. DEED BOOK 5236, PAGE 209 MAP BOOK 39, PAGE 5

REFERENCES

ALL REFERENCE INFORMATION AS SHOWN AND LABELED ON MAP
TITLE REPORT (14-15932RA) ISSUED BY CHICAGO TITLE COMPANY, LLC ON JULY 17, 2014 @ 8:00A.M. REVISED ON SEPTEMBER 16, 2014. REVISED ON JUNE 11, 2015.

GPS CONTROL DATA

HUB & TACK 1
NORTHING - 158787.763
EASTING - 2334545.100
ELEV - 49.687
HUB & TACK 2
NORTHING - 158781.227
EASTING - 2335355.363
ELEV - 49.984
SCALE FACTOR - 1.00004543

COMBINED PROPERTY DESCRIPTION

BEGINNING AT AND EXISTING IRON PIPE LOCATED IN THE WESTERN RIGHT OF WAY OF SOUTH COLLEGE ROAD (200 FOOT RIGHT OF WAY) SAID POINT BEING LOCATED SOUTH 01 DEGREES 18 MINUTES AND 34 SECONDS WEST AND 200 FEET FROM THE INTERSECTION OF THE WESTERN RIGHT OF WAY OF SOUTH COLLEGE ROAD AND THE SOUTHERN RIGHT OF WAY OF BRAGG DRIVE (60 FOOT RIGHT OF WAY), THENCE CONTINUING ALONG THE WESTERN RIGHT OF WAY OF SOUTH COLLEGE ROAD SOUTH 10 DEGREES 18 MINUTES 34 SECONDS WEST FOR A DISTANCE OF 100 FEET TO AN EXISTING CONCRETE MONUMENT, THENCE LEAVING THE RIGHT OF WAY OF SOUTH COLLEGE ROAD NORTH 88 DEGREES 41 MINUTES 24 SECONDS WEST FOR A DISTANCE OF 650 FEET TO AN IRON ROD SET, THENCE SOUTH 01 DEGREES 19 MINUTES 58 SECONDS WEST FOR A DISTANCE OF 200.08 FEET TO AN IRON ROD SET, THENCE NORTH 88 DEGREES 44 MINUTES 15 SECONDS WEST 150 FEET TO AN EXISTING IRON PIPE LOCATED IN THE EASTERN LINE OF 100' ACCESS EASEMENT AS SHOWN ON MAP BOOK 23 AT PAGE 91 OF THE NEW HANOVER COUNTY REGISTRY, THENCE ALONG THE EASTERN LINE OF SAID EASEMENT NORTH 01 DEGREES 19 MINUTES 30 SECONDS EAST 200.03 FEET TO AN EXISTING IRON REBAR; THENCE CONTINUING ALONG EASTERN LINE OF 100' ACCESS EASEMENT NORTH 01 DEGREES 18 MINUTES 34 SECONDS EAST FOR A DISTANCE OF 334.37 FEET TO AN EXISTING IRON PIPE IN THE SOUTHERN RIGHT OF WAY OF BRAGG DRIVE, THENCE ALONG THE SOUTHERN RIGHT OF WAY OF BRAGG DRIVE AND WITH A CURVE TO THE LEFT TO A POINT, SAID CURVE HAVING A CHORD BEARING OF SOUTH 77 DEGREES 16 MINUTES 57 SECONDS EAST A CHORD DISTANCE OF 173.79 FEET AND A RADIUS OF 439.67 FEET, THENCE CONTINUING ALONG BRAGG DRIVE RIGHT OF WAY SOUTH 88 DEGREES 41 MINUTES 26 SECONDS EAST FOR A DISTANCE OF 429.65 FEET TO AN EXISTING IRON REBAR, THENCE LEAVING THE RIGHT OF WAY OF BRAGG DRIVE SOUTH 01 DEGREES 18 MINUTES 34 SECONDS WEST FOR A DISTANCE OF 200 FEET TO AN EXISTING IRON REBAR, THENCE SOUTH 88 DEGREES 41 MINUTES AND 26 SECONDS EAST FOR A DISTANCE OF 200 FEET TO AN EXISTING IRON REBAR BEING THE POINT OF BEGINNING IN THE WESTERN RIGHT OF WAY OF SOUTH COLLEGE ROAD, CONTAINING 5.32 ACRES MORE OR LESS.

LEGEND

- EIP - EXISTING IRON PIPE
EIR - EXISTING IRON REBAR
ECM - EXISTING CONCRETE MONUMENT
IRS - IRON REBAR SET
DB - DEED BOOK
MB - MAP BOOK
PC - PAGE
R/W - RIGHT OF WAY
TRF - TRANSFORMER PAD
TCB - TRAFFIC CONTROL BOX
TCP - TRAFFIC CONTROL POLE
SSMH - SANITARY SEWER MANHOLE
SDMH - STORM DRAIN MANHOLE
DI - DROP INLET
PV - POWER POLE
WV - WATER VALVE
LP - LIGHT POLE
TRANS - TRANSFORMER
FH - FIRE HYDRANT
WM - WATER METER
P - PINE TREE
O - OAK TREE
MG - MAGNOLIA TREE
HL - HOLLY TREE

SURVEY NOTES

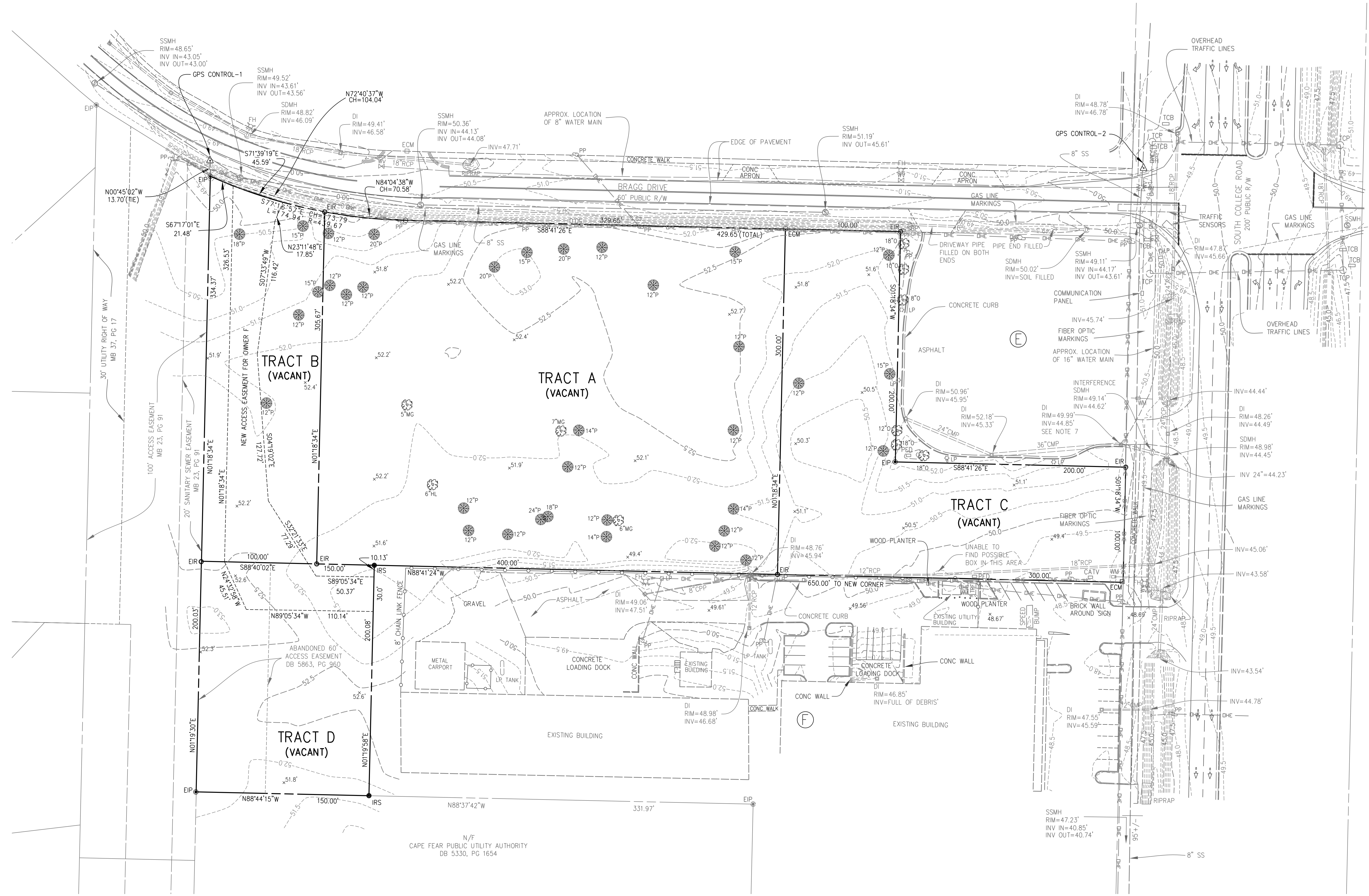
- 1. SURVEY WAS PERFORMED IN APRIL 2014, SEPTEMBER 2014 AND MAY 2015.
2. ALL DISTANCES SHOWN ARE HORIZONTAL GROUND.
3. GPS CONTROL AS SHOWN WAS PROVIDED BY GEONNOVATION, PC AND WAS RECORDED USING VRS NETWORK.
4. PARCEL SUBJECT TO ANY RESTRICTIONS OR EASEMENTS OF RECORD NOT SHOWN ON THIS SURVEY.
5. ALTA OPTIONAL TABLE A ITEM 15 WAS A LINE ITEM REQUESTED BY THE CLIENT, HOWEVER NO LASER SCANNING OR PHOTGRAMMETRIC MAPPING WAS PERFORMED FOR THIS SURVEY.
6. AREA OF FOUR PARCELS, AS SURVEYED, IS 231,977 SQ.FT. (5.32 ACRES +/-).
7. SDMH HAS VERTICAL 12" CPP WHICH HAS A TOP ELEVATION OF 47.44'.
8. SURVEYOR MAKES NO GUARANTEE AS TO THE ELEVATION OF ANY UNDERGROUND FEATURES SHOWN HEREON. ELEVATIONS SHOWN FOR UNDERGROUND FEATURES ARE BASED UPON FIELD MEASUREMENTS AT THE TIME OF THE SURVEY AND WERE RECORDED AS ACCURATELY AS CONDITIONS ALLOWED.
9. ALL ELEVATIONS SHOWN ARE IN NAVD 88 VERTICAL DATUM.
10. WATERLINE SHOWN WITHIN BRAGG DRIVE AND SOUTH COLLEGE ROAD RIGHT OF WAY WAS INPUT FROM FIELD LOCATIONS AND MAP PROVIDED TO SURVEYOR BY CAPE FEAR PUBLIC UTILITY AUTHORITY.
11. PIPE SIZES SHOWN ON SANITARY SEWER AND WATERLINES WITHIN BRAGG DRIVE AND SOUTH COLLEGE ROAD RIGHT OF WAY WAS PROVIDED TO SURVEYOR BY CAPE FEAR PUBLIC UTILITY AUTHORITY.
12. ALL UNDERGROUND UTILITIES SHOWN ON MAP HEREON ARE BASED UPON VISIBLE EVIDENCE AND INFORMATION PROVIDED BY OTHERS. SURVEYOR MAKES NO GRANTEE AS TO ACTUAL SIZE AND LOCATION OF ANY UNDERGROUND UTILITY SHOWN ON THIS MAP.

SCHEDULE B-II EXCEPTIONS

12. ACCESS EASEMENT TO BE RECORDED AT LATER DATE, AS SHOWN ON MAP.

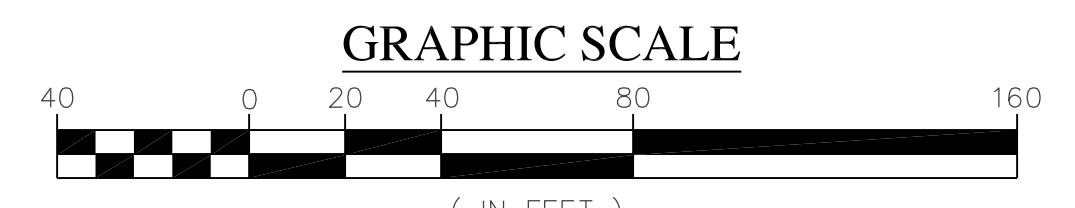
PRELIMINARY

Scale 1" = 40', Date 06/15/2015, Drawn by RGS, RSA PROJECT #14.153, Robert Sessoms & Associates, PLLC Professional Land Surveyors, NC License # P-0884, 4055 CHANDLER DRIVE, WILMINGTON, NC 28405, PH - 910-352-8846, EMAIL - RSSESSOMS@SURVEYING.COM



PRELIMINARY

SEE SHEET 1 FOR NOTES AND CERTIFICATIONS



ROBERT G. SESSOMS
 PROFESSIONAL LAND SURVEYOR
 LICENSE NUMBER L-4659

SCALE 1" = 40'		Robert Sessoms & Associates, PLLC Professional Land Surveyors NC LICENSE # P-0884 1055 CHANDLER DRIVE WILMINGTON, NC 28405 PH - 910-352-8846 EMAIL - RSSESSOMERSURVEYING.COM
DATE 06/15/2015		
DRAWN BY RGS		
RSA PROJECT #14.153		

BRAGG DRIVE 60' PUBLIC R/W

Project Number: 2014-090
 DWG Name: 2014-090 D1.dwg
 Drawing Scale: AS NOTED
 Date of Project: 10-21-2014
 Engineer of Record:
 Jason Henderson, P.E.
 South Carolina PE# 21406
 Georgia PE# 03571
 North Carolina PE# 03106
 Alabama PE# 03504
 Louisiana PE# 38891
 Virginia PE# 60203118

blue WATER
 civil design, PLLC
 bluewatercivil.com
 19 Washington Park Suite 100 • Greenville, SC 29601
 www.bluewatercivil.com • info@bluewatercivil.com

Certificates of Authorization:
 SC C04212 - GA PE#005865
 NC P0868 - AL CA4065E

BRAGG ROAD DEV. COMPANY, LLC
 716 Bragg Drive
 Wilmington, NC 28412

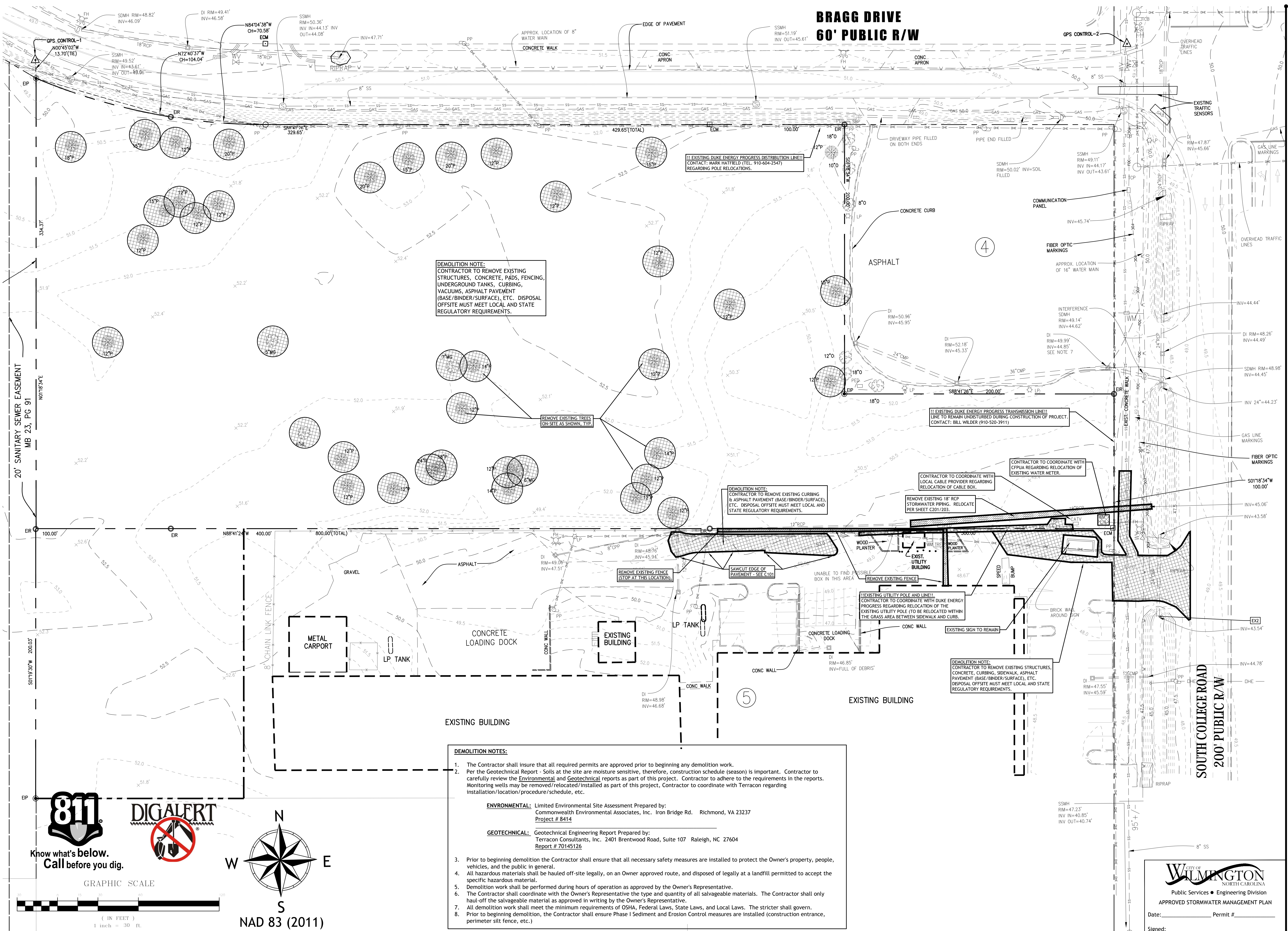


Bluewater Civil Design, PLLC
 NC-P-0868

PLAN REVISION	ISSUE DATE	ISSUE COMMENT
A	2-3-2015	ISSUED FOR PERMITS
B	2-25-2015	REVISED PER COMMENTS
C	4-2-2015	REVISED PER NEW HANDOVER COMMENTS
D	4-16-2015	100% TENANT SUBMITTAL
E	4-30-2015	REVISED PER HCOOT/WILMINGTON COMMENTS
F	6-2-2015	REVISED PER CITY & TENANT COMMENTS
G	7-15-2015	REVISED PER TENANT COMMENTS
H	7-22-2015	REVISED PER CITY COMMENTS

DEMOLITION PLAN

C002



DEMOLITION NOTE:
 CONTRACTOR TO REMOVE EXISTING STRUCTURES, CONCRETE, PADS, FENCING, UNDERGROUND TANKS, CURBING, VACUUMS, ASPHALT PAVEMENT (BASE/BINDER/SURFACE), ETC. DISPOSAL OFFSITE MUST MEET LOCAL AND STATE REGULATORY REQUIREMENTS.

EXISTING DUKE ENERGY PROGRESS DISTRIBUTION LINE!!
 CONTRACT: MARK HATFIELD (TEL. 910-604-2547) REGARDING POLE RELOCATIONS.

EXISTING DUKE ENERGY PROGRESS TRANSMISSION LINE!!
 LINE TO REMAIN UNDISTURBED DURING CONSTRUCTION OF PROJECT.
 CONTACT: BILL WILDER (910-520-3911)

DEMOLITION NOTE:
 CONTRACTOR TO REMOVE EXISTING CURBING & ASPHALT PAVEMENT (BASE/BINDER/SURFACE), ETC. DISPOSAL OFFSITE MUST MEET LOCAL AND STATE REGULATORY REQUIREMENTS.

CONTRACTOR TO COORDINATE WITH LOCAL CABLE PROVIDER REGARDING RELOCATION OF CABLE BOX.

REMOVE EXISTING 18" RCP STORMWATER PIPING. RELOCATE PER SHEET C201/203.

CONTRACTOR TO COORDINATE WITH CPPLA REGARDING RELOCATION OF EXISTING WATER METER.

REMOVE EXISTING FENCE (STOP AT THIS LOCATION).

SANICUT EDGE OF PAVEMENT - SEE C101

REMOVE EXISTING FENCE

EXISTING UTILITY POLE AND LINE!!
 CONTRACTOR TO COORDINATE WITH DUKE ENERGY PROGRESS REGARDING RELOCATION OF THE EXISTING UTILITY POLE (TO BE RELOCATED WITHIN THE GRASS AREA BETWEEN SIDEWALK AND CURB).

DEMOLITION NOTE:
 CONTRACTOR TO REMOVE EXISTING STRUCTURES, CONCRETE, CURBING, SIDEWALK, ASPHALT PAVEMENT (BASE/BINDER/SURFACE), ETC. DISPOSAL OFFSITE MUST MEET LOCAL AND STATE REGULATORY REQUIREMENTS.

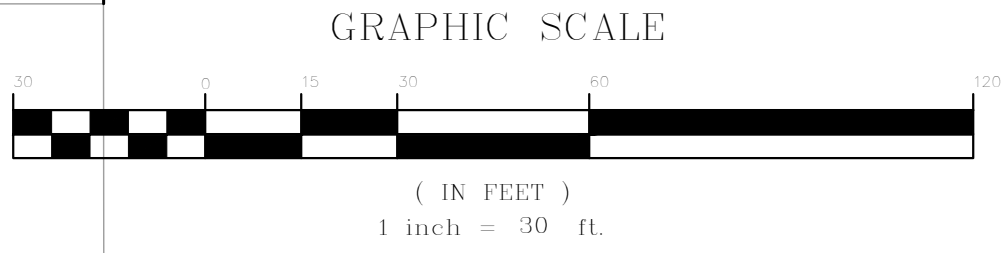
DEMOLITION NOTES:

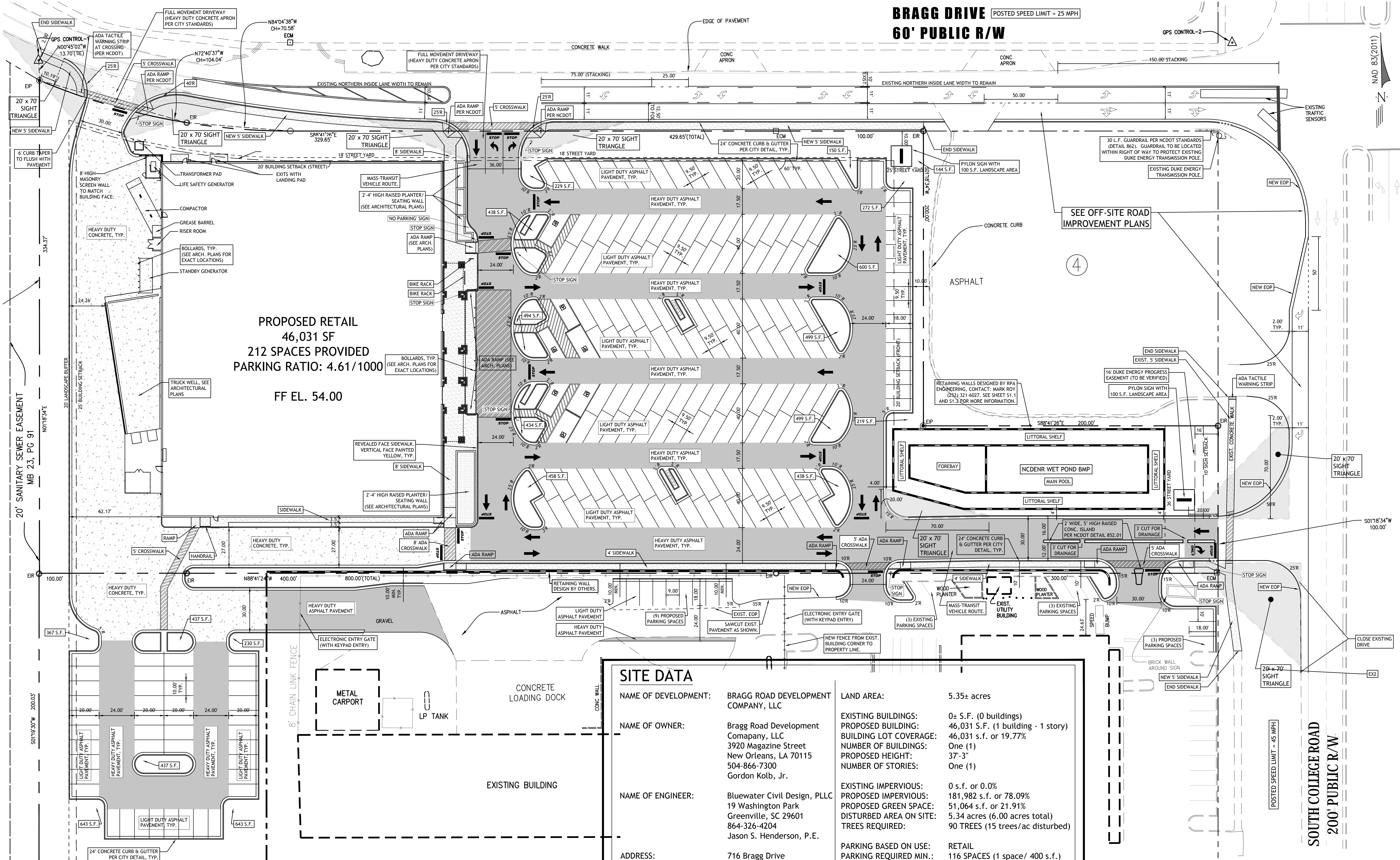
- The Contractor shall ensure that all required permits are approved prior to beginning any demolition work.
- Per the Geotechnical Report - Soils at the site are moisture sensitive, therefore, construction schedule (season) is important. Contractor to carefully review the Environmental and Geotechnical reports as part of this project. Contractor to adhere to the requirements in the reports. Monitoring wells may be removed/relocated/installed as part of this project, Contractor to coordinate with Terracon regarding installation/location/procedure/schedule, etc.

ENVIRONMENTAL: Limited Environmental Site Assessment Prepared by:
 Commonwealth Environmental Associates, Inc. Iron Bridge Rd. Richmond, VA 23237
 Project # 8414

GEOTECHNICAL: Geotechnical Engineering Report Prepared by:
 Terracon Consultants, Inc. 2401 Brentwood Road, Suite 107 Raleigh, NC 27604
 Report # 70145126

- Prior to beginning demolition the Contractor shall ensure that all necessary safety measures are installed to protect the Owner's property, people, vehicles, and the public in general.
- All hazardous materials shall be hauled off-site legally, on an Owner approved route, and disposed of legally at a landfill permitted to accept the specific hazardous material.
- Demolition work shall be performed during hours of operation as approved by the Owner's Representative.
- The Contractor shall coordinate with the Owner's Representative the type and quantity of all salvageable materials. The Contractor shall only haul-off the salvageable material as approved in writing by the Owner's Representative.
- All demolition work shall meet the minimum requirements of OSHA, Federal Laws, State Laws, and Local Laws. The stricter shall govern.
- Prior to beginning demolition, the Contractor shall ensure Phase I Sediment and Erosion Control measures are installed (construction entrance, perimeter silt fence, etc.)





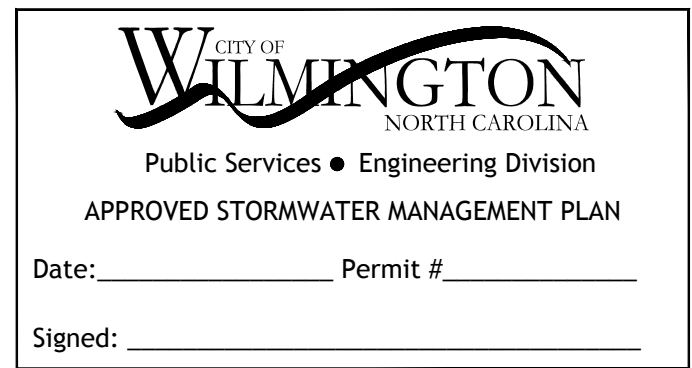
PROPOSED RETAIL
 46,031 SF
 212 SPACES PROVIDED
 PARKING RATIO: 4.61/1000
 FF EL. 54.00

SITE DATA

NAME OF DEVELOPMENT:	BRAGG ROAD DEVELOPMENT COMPANY, LLC	LAND AREA:	5.35± acres
NAME OF OWNER:	Bragg Road Development Company, LLC 3920 Magazine Street New Orleans, LA 70115 504-866-7300 Gordon Kolb, Jr.	EXISTING BUILDINGS:	0± S.F. (0 buildings)
NAME OF ENGINEER:	Bluewater Civil Design, PLLC 19 Washington Park Greenville, SC 29601 864-326-4204 Jason S. Henderson, P.E.	PROPOSED BUILDING:	46,031 S.F. (1 building - 1 story)
ADDRESS:	716 Bragg Drive Wilmington, NC 28412	BUILDING LOT COVERAGE:	46,031 s.f. or 19.77%
PID:	R06600-001-005-000 R06610-006-002-000 R06600-001-019-000 P.O. R06610-006-014-000	NUMBER OF BUILDINGS:	One (1)
ZONING:	CB Community Business	PROPOSED HEIGHT:	37'-3"
SETBACKS REQ'D:	20' front- 20' corner side - 10' rear - 0' interior side	NUMBER OF STORIES:	One (1)
SETBACKS PROP'D:	309' front- 20' corner side - 82' rear - 37' interior side	EXISTING IMPERVIOUS:	0 s.f. or 0.0%
		PROPOSED IMPERVIOUS:	181,982 s.f. or 78.09%
		PROPOSED GREEN SPACE:	51,064 s.f. or 21.91%
		DISTURBED AREA ON SITE:	5.34 acres (6.00 acres total)
		TREES REQUIRED:	90 TREES (15 trees/ac disturbed)
		PARKING BASED ON USE:	RETAIL
		PARKING REQUIRED MIN.:	116 SPACES (1 space/ 400 s.f.)
		PARKING REQUIRED MAX.:	232 SPACES (1 space/ 200 s.f.)
		PROPOSED PARKING:	212 SPACES
		HANDICAP PARKING REQ'D:	7 SPACES
		HANDICAP PARKING PROV'D:	7 SPACES
		BICYCLE PARKING REQ'D:	15 SPACES
		BICYCLE PARKING PROV'D:	16 SPACES
		CAMA Land Use:	Urban
		EXISTING FLOW NEEDS:	0 GPD (WATER & SEWER)
		PROPOSED FLOW NEEDS:	5,984 GPD (WATER & SEWER)

CURBING NOTE:
 ALL CURBING ON PRIVATE PROPERTY SHALL BE 24" CONCRETE CURB AND GUTTER PER CITY OF WILMINGTON STANDARD DETAIL SD 7-01.

ADA RAMP NOTE:
 TACTILE WARNING MATS ARE TO BE INSTALLED ON ALL ADA RAMP.



ARCHITECTURAL NOTE:
 CONTRACTOR TO REFER TO ARCHITECTURAL PLANS FOR EXACT DIMENSIONS OF BUILDING, SIDEWALKS ADJACENT TO BUILDING, COLUMN LOCATIONS, DOOR/ENTRY LOCATIONS, BOLLARDS, COMPACTORS, ELECTRICAL/MECHANICAL EQUIPMENT, TRUCK WELL, ROOF DRAIN DOWNSPOUTS, AND ALL UTILITY CONNECTIONS.

BUILDING FOOTING NOTE:
 IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE BETWEEN THE CIVIL PLANS / ARCHITECTURAL PLANS / STRUCTURAL PLANS REGARDING THE GROUND ELEVATIONS DIRECTLY EXTERNAL OF THE BUILDING IN RELATION TO THE STRUCTURAL BUILDING FOOTINGS.

SITE LIGHTING NOTE:
 SEE SITE LIGHTING PLAN (E-101) FOR ALL POLE LOCATIONS, FIXTURE AND PHOTOMETRIC INFORMATION. POLE LOCATIONS ARE SHOWN ON THIS PLAN FOR INFORMATION ONLY.

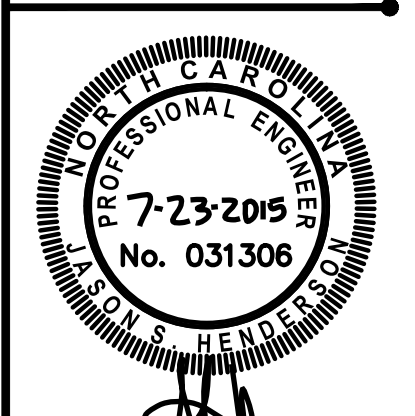
SITE LANDSCAPING NOTE:
 SEE LANDSCAPE PLANS FOR ALL PERMANENT VEGETATION REQUIREMENTS/INFORMATION. I.E. SOD, TREES, SHRUBS, MULCHING, ETC.

Project Number: 2014-090
 DWG Name: 2014-090 D1.dwg
 Drawing Scale: AS NOTED
 Date of Project: 10-21-2014
 Engineer of Record:
 Jason Henderson, P.E.
 South Carolina REG 21466
 Georgia REG 03571
 North Carolina REG 03106
 Alabama REG 03704
 Louisiana REG 38891
 Virginia REG 60203118

bluewater
 civil design, PLLC
 bluewatercivil.com • info@bluewatercivil.com
 19 Washington Park Suite 100 • Greenville, SC 29601
 www.bluewatercivil.com • info@bluewatercivil.com

BRAGG ROAD DEV. COMPANY, LLC
 716 Bragg Drive
 Wilmington, NC 28412

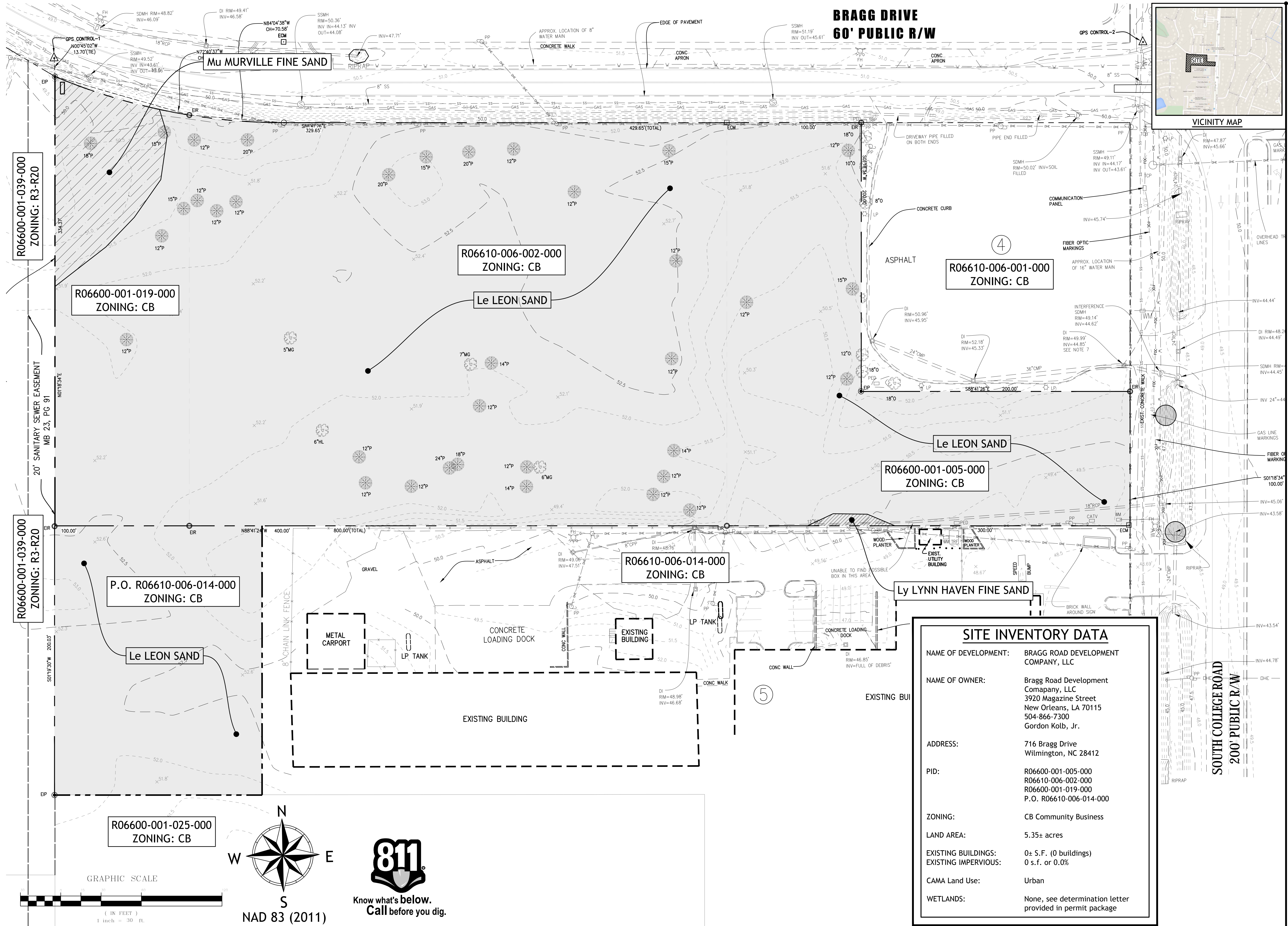
Approved Construction Plan
 Name: _____
 Date: _____
 Planning: _____
 Traffic: _____
 Fire: _____



Bluewater Civil Design, PLLC
 NC-P-0868

PLAN REVISION	ISSUE DATE	ISSUE COMMENT
A	2-3-2015	ISSUED FOR PERMITS
B	2-25-2015	REVISED PER COMMENTS
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D	4-16-2015	100% TENANT SUBMITTAL
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F	6-2-2015	REVISED PER CITY & TENANT COMMENTS
G	7-15-2015	REVISED PER TENANT COMMENTS
H	7-22-2015	REVISED PER CITY COMMENTS

SITE PLAN
 C101



SITE INVENTORY DATA

NAME OF DEVELOPMENT:	BRAGG ROAD DEVELOPMENT COMPANY, LLC
NAME OF OWNER:	Bragg Road Development Company, LLC 3920 Magazine Street New Orleans, LA 70115 504-866-7300 Gordon Kolb, Jr.
ADDRESS:	716 Bragg Drive Wilmington, NC 28412
PID:	R06600-001-005-000 R06610-006-002-000 R06600-001-019-000 P.O. R06610-006-014-000
ZONING:	CB Community Business
LAND AREA:	5.35± acres
EXISTING BUILDINGS:	0± S.F. (0 buildings)
EXISTING IMPERVIOUS:	0 s.f. or 0.0%
CAMA Land Use:	Urban
WETLANDS:	None, see determination letter provided in permit package

Project Number: 2014-090
 DWG Name: 2014-090 D1 - Site Inventory.dwg
 Drawing Scale: as noted
 Date of Project: 10-21-2014
 Engineer of Record:
 Jason Henderson, P.E.
 South Carolina Reg. #2426
 Georgia Reg. #03511
 North Carolina Reg. #01196
 Alabama Reg. #12054
 Louisiana Reg. #8895
 Virginia Reg. #62020138

blue WATER
 civil design
 bluewater civil design, PLLC
 19 Washington Park Suite 100 • Greenville, SC 29601
 www.bluewatercivil.com • info@bluewatercivil.com

Certificates of Authorization:
 SC C04212 - GA PE005865
 NC P0868 - AL CA4065E

BRAGG ROAD DEV. COMPANY, LLC
 716 Bragg Drive
 Wilmington, NC 28412

PROFESSIONAL ENGINEER
 7-23-2015
 No. 031306
 JASON HENDERSON, P.E.

Bluewater Civil Design, PLLC
 NC-P-0868

PLAN REVISION	ISSUE DATE	ISSUE COMMENT
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F	6-2-2015	REVISED PER CITY & TENANT COMMENTS
G	7-15-2015	REVISED PER TENANT COMMENTS
H	7-22-2015	REVISED PER CITY COMMENTS
...

SITE INVENTORY PLAN

C102

**BRAGG DRIVE
60' PUBLIC R/W**

Project Number: 2014-090
 DWG Name: 2014-090 D1.dwg
 Drawing Scale: AS NOTED
 Date of Project: 10-21-2014
 Engineer of Record:
 Jason Henderson, P.E.
 South Carolina REG 21465
 Georgia REG 03571
 North Carolina REG 03106
 Alabama REG 37054
 Louisiana REG 38891
 Virginia REG 60203118

bluewater
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 19 Washington Park Suite 100 • Greenville, SC 29601
 www.bluewatercivil.com

BRAGG ROAD DEV.
COMPANY, LLC
 716 Bragg Drive
 Wilmington, NC 28412

Approved Construction Plan
 Name _____
 Date _____
 Planning _____
 Traffic _____
 Fire _____

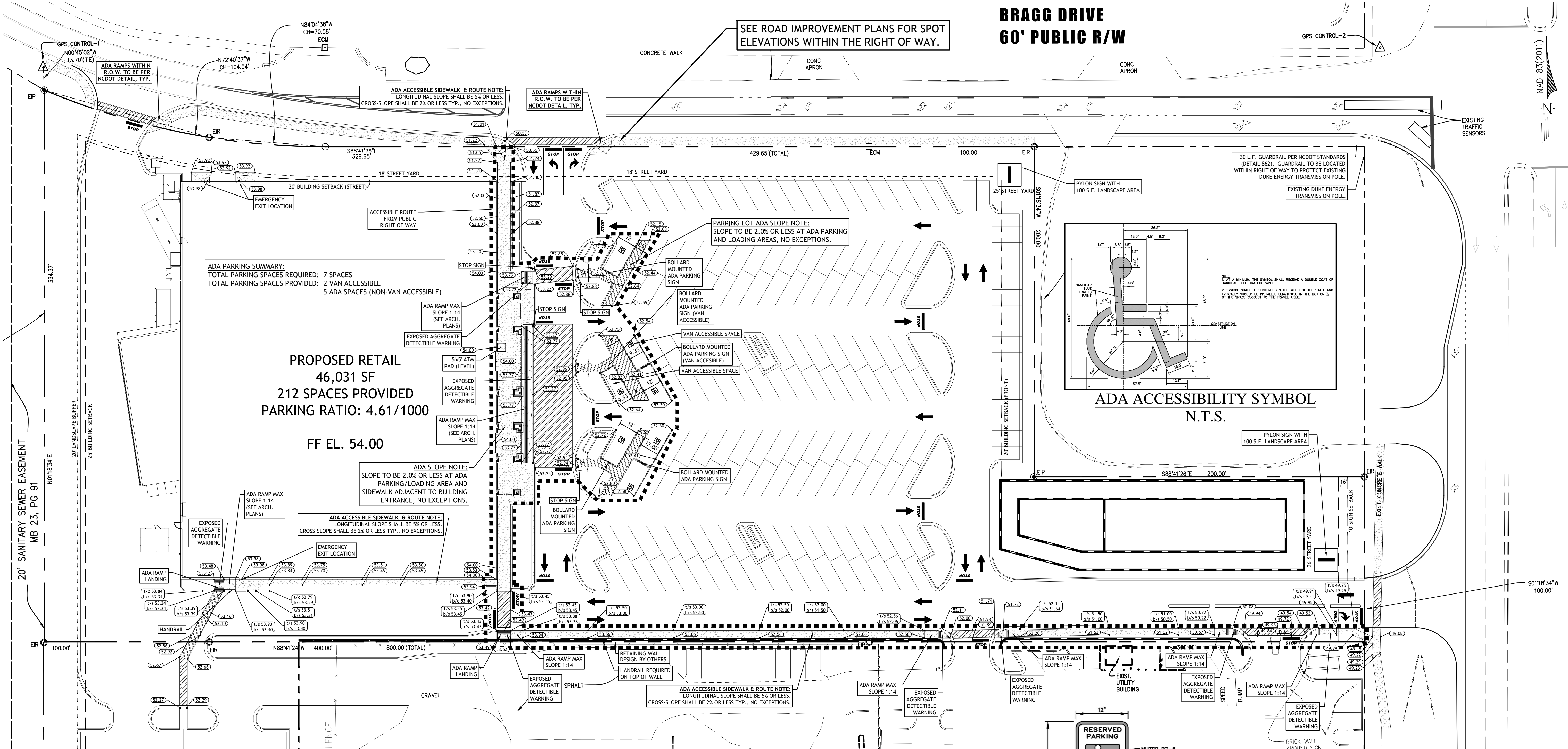


Bluewater Civil Design, PLLC
 NC-P-0868

PLAN REVISION	ISSUE DATE	ISSUE COMMENT
A	2-3-2015	ISSUED FOR PERMITS
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E	4-30-2015	REVISED PER NCDOT/WILMINGTON COMMENTS
F	6-2-2015	REVISED PER CITY & TENANT COMMENTS
G	7-15-2015	REVISED PER TENANT COMMENTS
H	7-22-2015	REVISED PER CITY COMMENTS

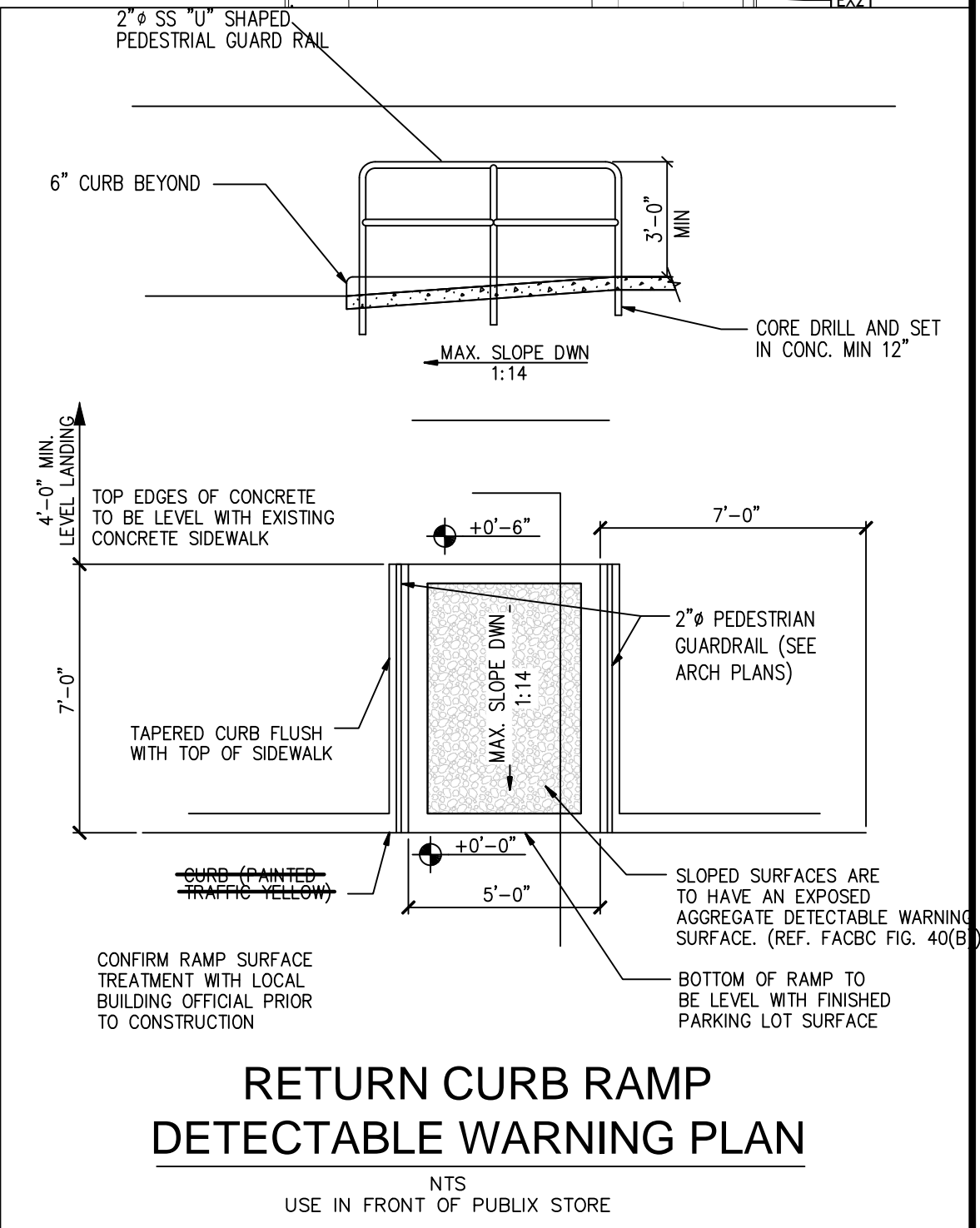
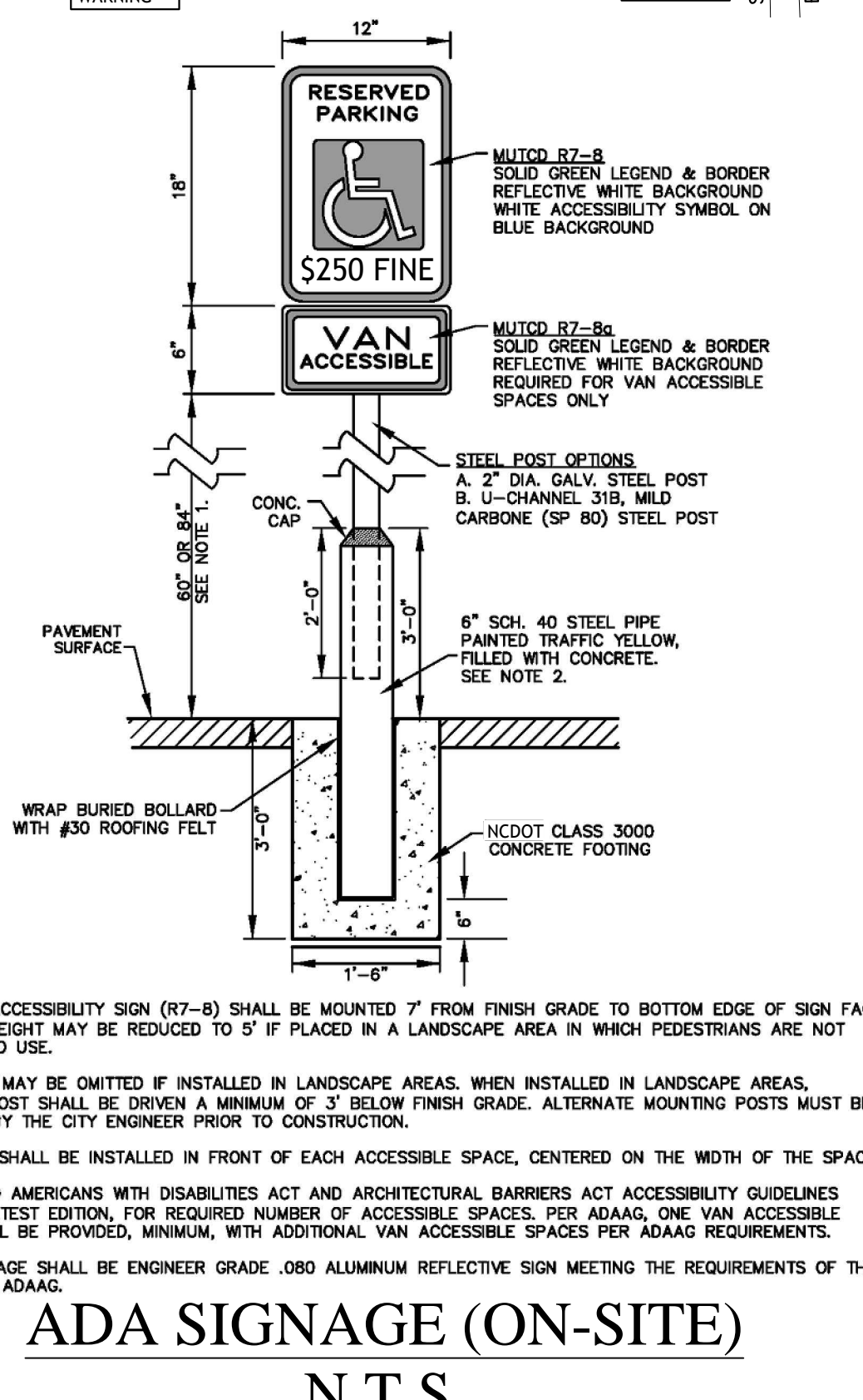
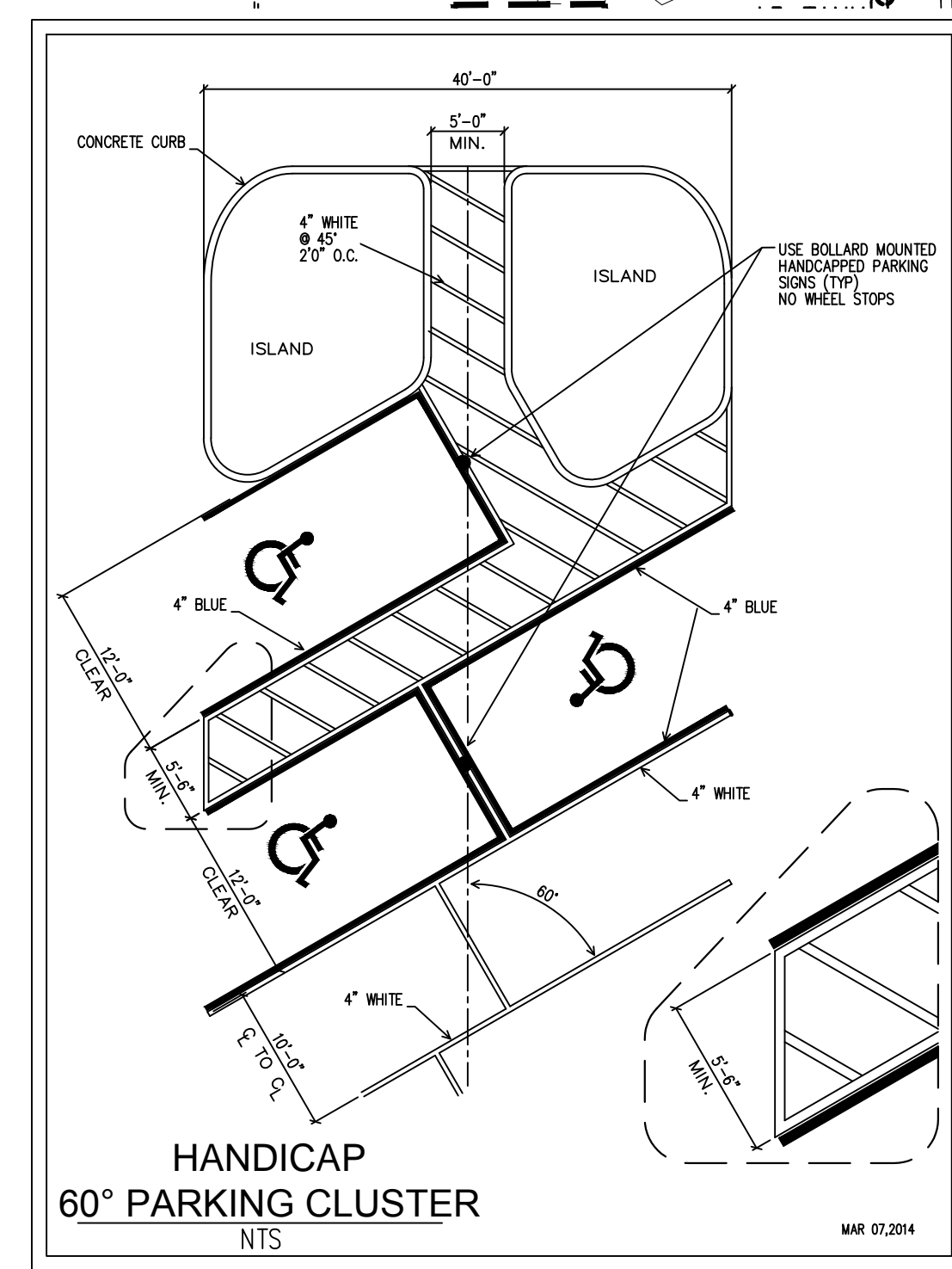
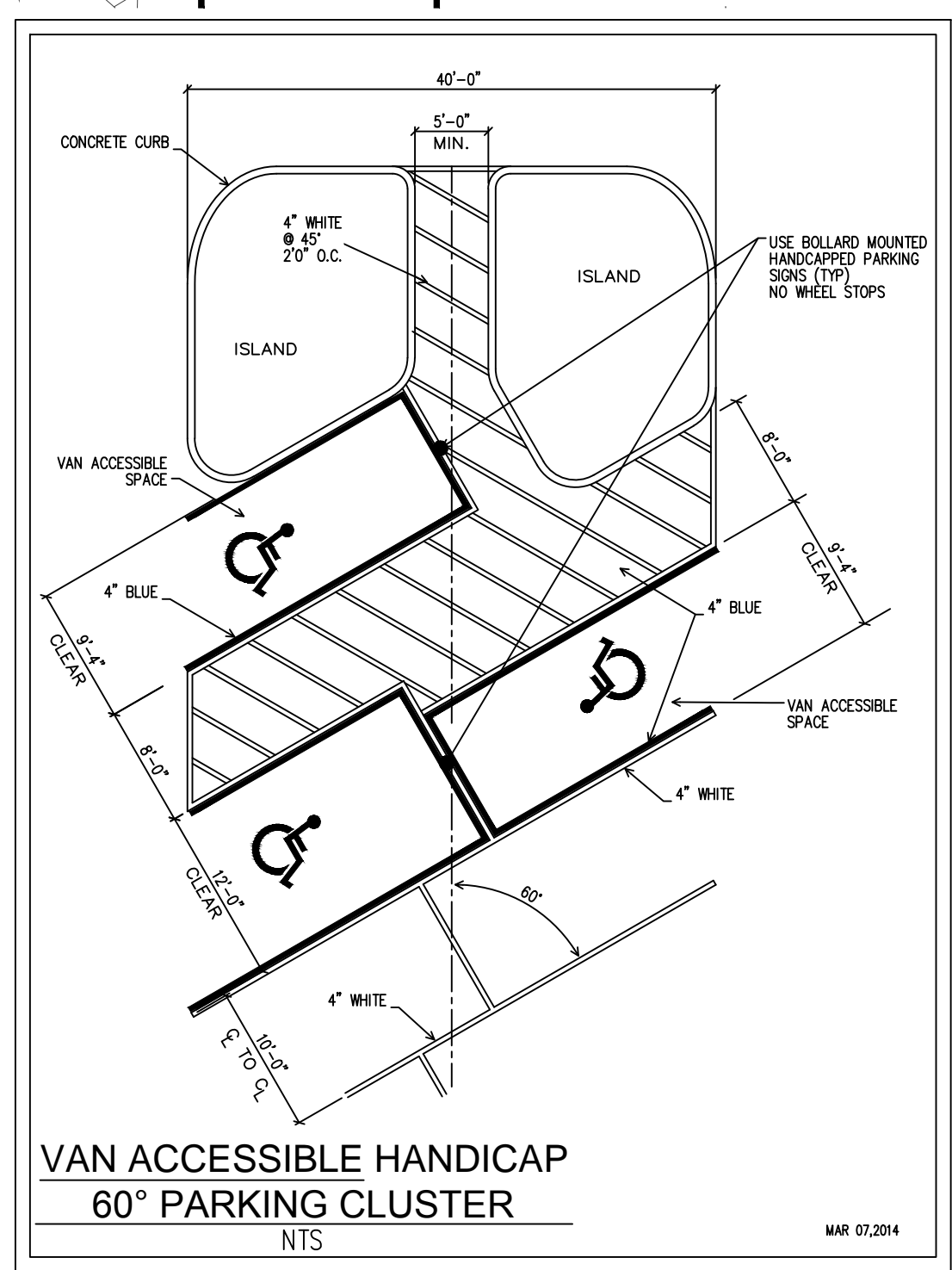
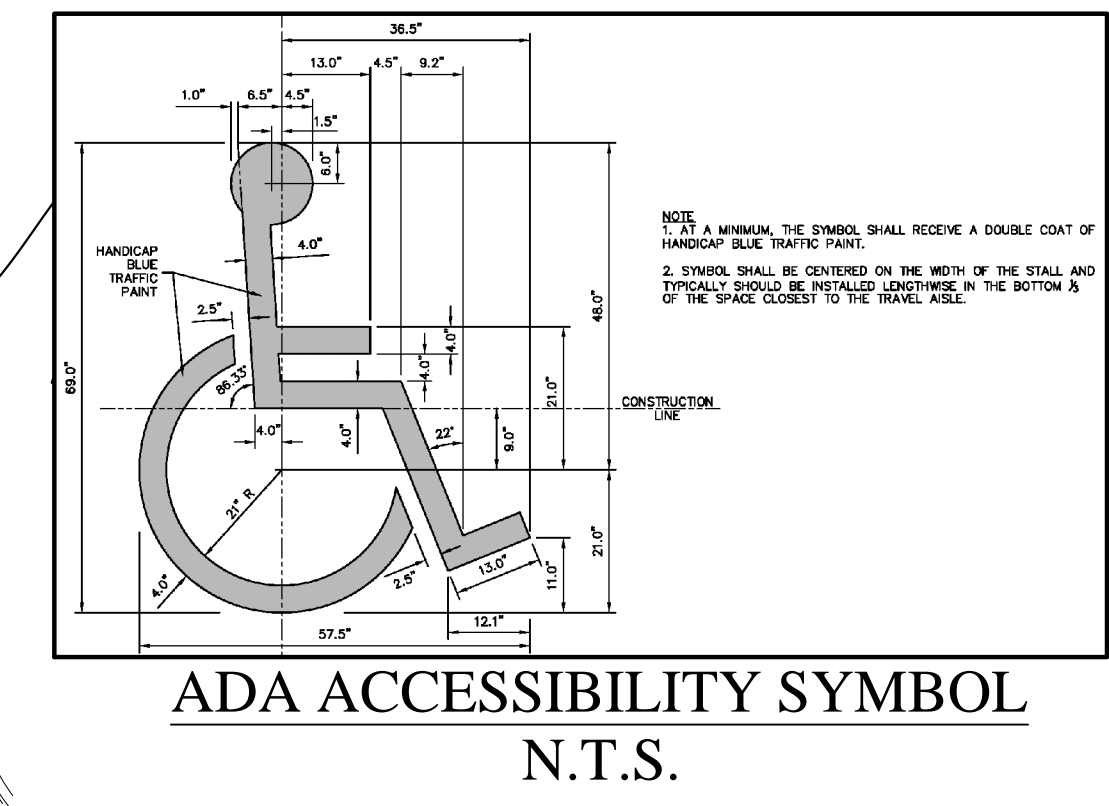
ACCESSIBILITY PLAN

C103



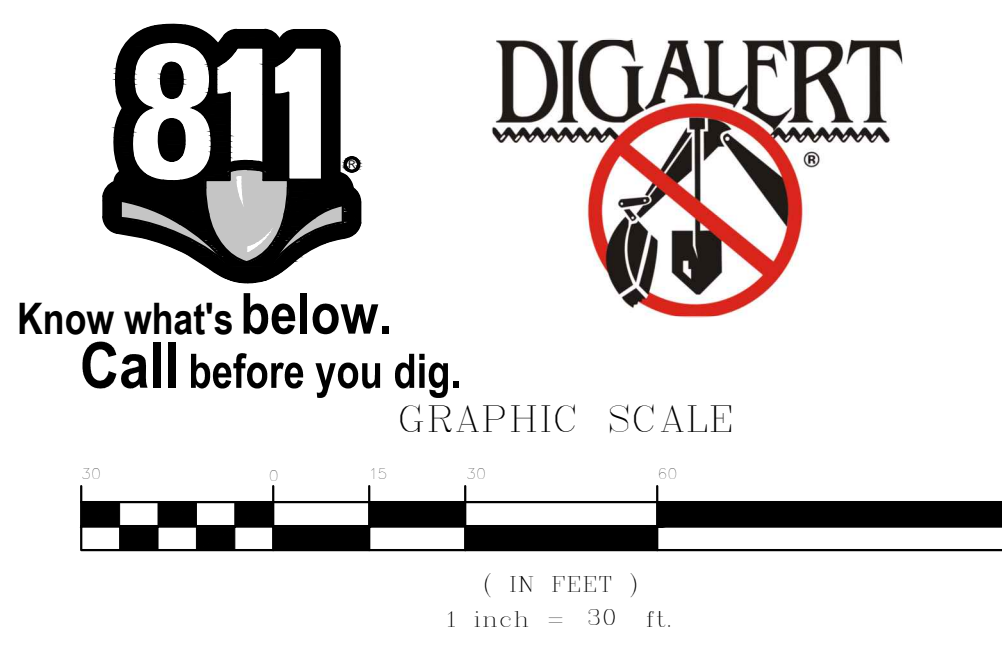
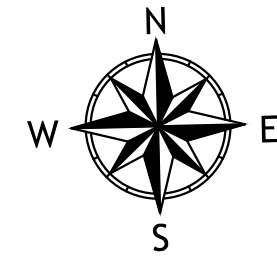
ADA PARKING SUMMARY:
 TOTAL PARKING SPACES REQUIRED: 7 SPACES
 TOTAL PARKING SPACES PROVIDED: 2 VAN ACCESSIBLE
 TOTAL PARKING SPACES PROVIDED: 5 ADA SPACES (NON-VAN ACCESSIBLE)

PROPOSED RETAIL
 46,031 SF
 212 SPACES PROVIDED
 PARKING RATIO: 4.61/1000
 FF EL. 54.00



CURBING NOTE:
 ALL CURBING ON PRIVATE PROPERTY SHALL BE 24" CONCRETE CURB AND GUTTER PER CITY OF WILMINGTON STANDARD DETAIL SD 7-01.
NCDOT RIGHT OF WAY - ADA RAMP NOTE:
 TACTILE WARNING MATS ARE TO BE INSTALLED ON ALL ADA RAMP WITHIN NCDOT RIGHT OF WAY.
ON-SITE ADA RAMP NOTE:
 ON-SITE ADA RAMP TO HAVE EXPOSED AGGREGATED DETECTABLE WARNING SURFACE (SEE ARCHITECTURAL PLANS FOR DETAIL), TYP.

CITY OF WILMINGTON
 NORTH CAROLINA
 Public Services • Engineering Division
 APPROVED STORMWATER MANAGEMENT PLAN
 Date: _____ Permit # _____
 Signed: _____



**BRAGG DRIVE
60' PUBLIC R/W**

Project Number: 2014-090
 DWG Name: 2014-090 D1.dwg
 Drawing Scale: as noted
 Date of Project: 10-21-2014
 Engineer of Record:
 Jason Henderson, P.E.
 South Carolina PE# 21406
 Georgia PE# 03171
 North Carolina PE# 031306
 Alabama PE# 031004
 Louisiana PE# 38891
 Virginia PE# 60203118

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 bluewater civil design, PLLC
 19 Washington Park Suite 100 • Greenville, SC 29601
 www.bluewatercivil.com • info@bluewatercivil.com

Certificates of Authorization:
 SC C04212 - GA PEF005865
 NC P0868 - AL CA4065E

**BRAGG ROAD DEV.
 COMPANY, LLC**
 716 Bragg Drive
 Wilmington, NC 28412

Approved Construction Plan
 Name _____
 Date _____
 Planning _____
 Traffic _____
 Fire _____

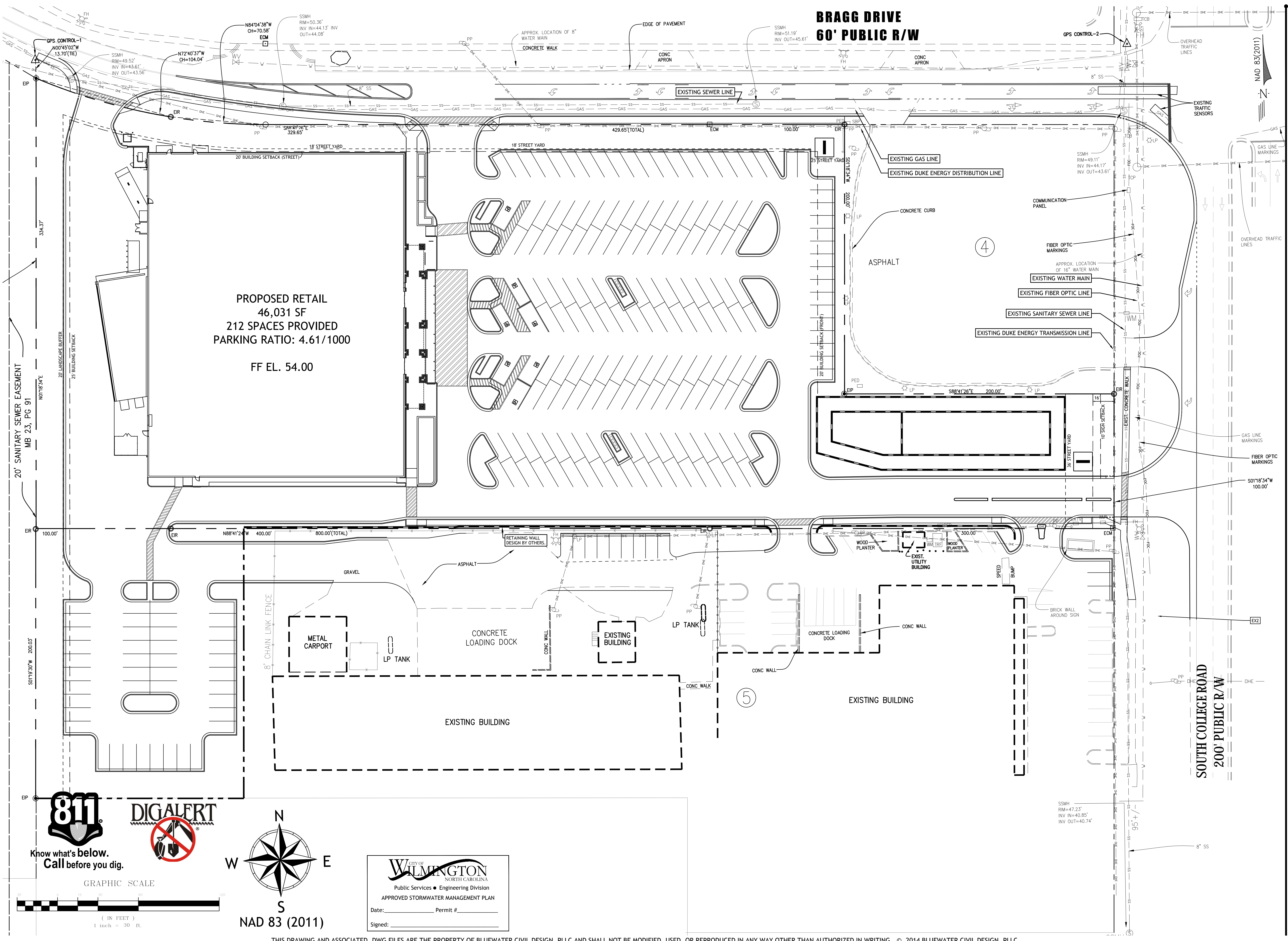


Bluewater Civil Design, PLLC
 NC-P-0868

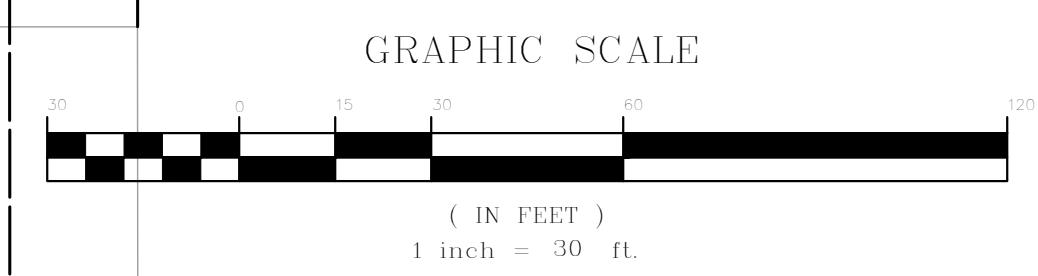
PLAN REVISION	ISSUE DATE	ISSUE COMMENT
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G	7-15-2015	REVISED PER TENANT COMMENTS
H	7-22-2015	REVISED PER CITY COMMENTS

**SITE PLAN /
 EXISTING UTILITY
 OVERLAY**

C104



**PROPOSED RETAIL
 46,031 SF
 212 SPACES PROVIDED
 PARKING RATIO: 4.61/1000
 FF EL. 54.00**



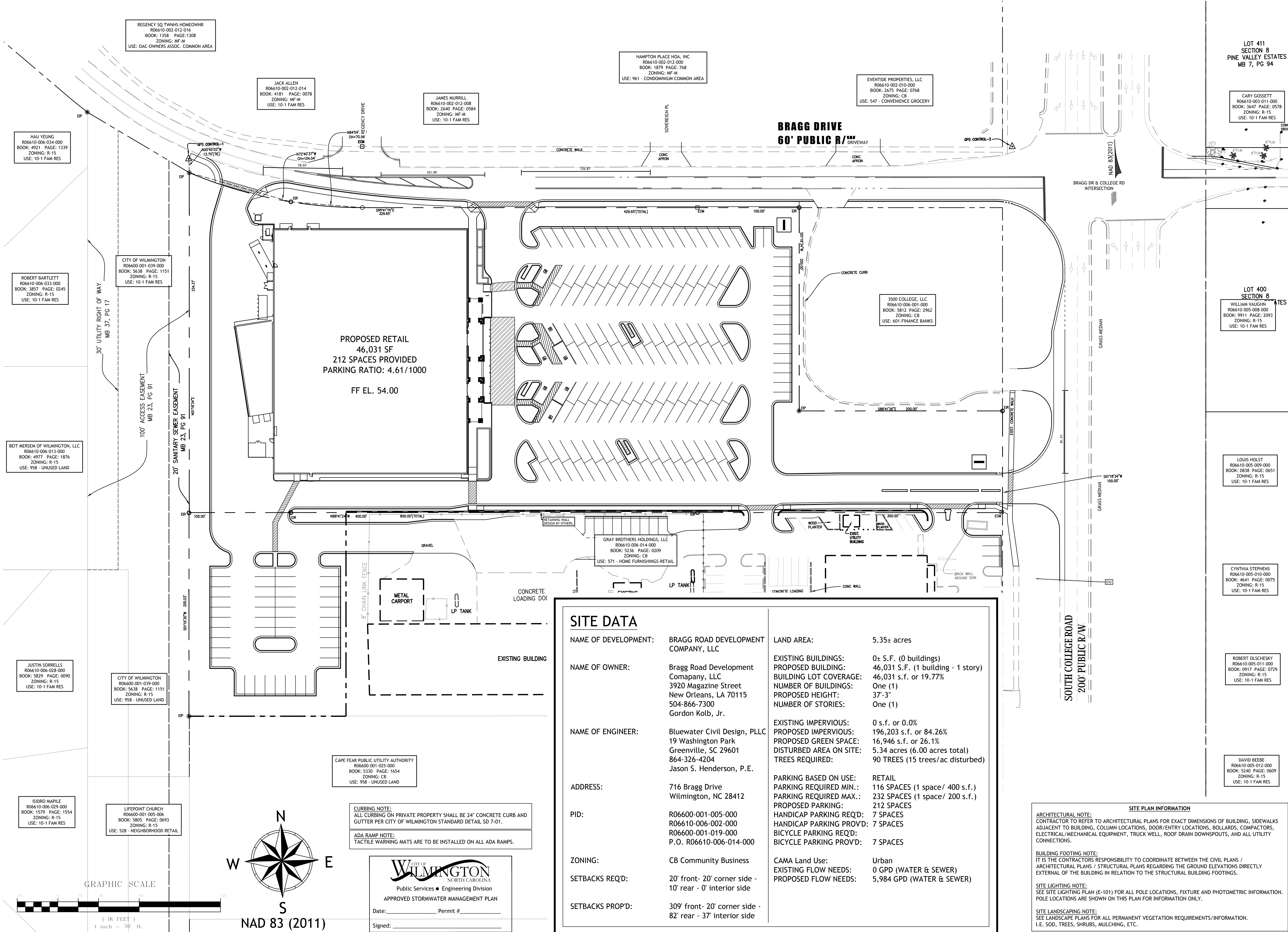
CITY OF WILMINGTON
 NORTH CAROLINA
 Public Services • Engineering Division
 APPROVED STORMWATER MANAGEMENT PLAN
 Date: _____ Permit # _____
 Signed: _____

PLAN REVISION	ISSUE DATE	ISSUE COMMENT
A	2-3-2015	ISSUED FOR PERMITS
B	2-25-2015	REVISED PER COMMENTS
C	4-2-2015	REVISED PER NEW HANDOVER COMMENTS
D	4-16-2015	100% TENANT SUBMITTAL
E	4-30-2015	REVISED PER HCDOT/WILMINGTON COMMENTS
F	6-2-2015	REVISED PER CITY & TENANT COMMENTS
G	7-15-2015	REVISED PER CITY COMMENTS
H	7-22-2015	REVISED PER CITY COMMENTS

DAVID BEEBE
 R06610-005-012-000
 BOOK: 5240 PAGE: 0609
 ZONING: R-15
 USE: 10-1 FAM RES

ADJACENT PROPERTY INFORMATION PLAN

C106



SITE DATA

NAME OF DEVELOPMENT:	BRAGG ROAD DEVELOPMENT COMPANY, LLC	LAND AREA:	5.35± acres
NAME OF OWNER:	Bragg Road Development Company, LLC 3920 Magazine Street New Orleans, LA 70115 504-866-7300 Gordon Kolb, Jr.	EXISTING BUILDINGS:	0± S.F. (0 buildings)
NAME OF ENGINEER:	Bluewater Civil Design, PLLC 19 Washington Park Greenville, SC 29601 Jason S. Henderson, P.E.	PROPOSED BUILDING:	46,031 S.F. (1 building - 1 story)
ADDRESS:	716 Bragg Drive Wilmington, NC 28412	BUILDING LOT COVERAGE:	46,031 s.f. or 19.77%
PID:	R06600-001-005-000 R06610-006-002-000 R06600-001-019-000 P.O. R06610-006-014-000	NUMBER OF BUILDINGS:	One (1)
ZONING:	CB Community Business	PROPOSED HEIGHT:	37'-3"
SETBACKS REQ'D:	20' front- 20' corner side - 10' rear - 0' interior side	NUMBER OF STORIES:	One (1)
SETBACKS PROPD:	309' front- 20' corner side - 82' rear - 37' interior side	EXISTING IMPERVIOUS:	0 s.f. or 0.0%
		PROPOSED IMPERVIOUS:	196,203 s.f. or 84.26%
		PROPOSED GREEN SPACE:	16,946 s.f. or 26.1%
		DISTURBED AREA ON SITE:	5.34 acres (6.00 acres total)
		TREES REQUIRED:	90 TREES (15 trees/ac disturbed)
		PARKING BASED ON USE:	RETAIL
		PARKING REQUIRED MIN.:	116 SPACES (1 space/ 400 s.f.)
		PARKING REQUIRED MAX.:	232 SPACES (1 space/ 200 s.f.)
		PROPOSED PARKING:	212 SPACES
		HANDICAP PARKING REQ'D:	7 SPACES
		HANDICAP PARKING PROVD:	7 SPACES
		BICYCLE PARKING REQ'D:	7 SPACES
		BICYCLE PARKING PROVD:	7 SPACES
		CAMA Land Use:	Urban
		EXISTING FLOW NEEDS:	0 GPD (WATER & SEWER)
		PROPOSED FLOW NEEDS:	5,984 GPD (WATER & SEWER)

ARCHITECTURAL NOTE:
 CONTRACTOR TO REFER TO ARCHITECTURAL PLANS FOR EXACT DIMENSIONS OF BUILDING, SIDEWALKS ADJACENT TO BUILDING, COLUMN LOCATIONS, DOOR/ENTRY LOCATIONS, BOLLARDS, COMPACTORS, ELECTRICAL/MECHANICAL EQUIPMENT, TRUCK WELL, ROOF DRAIN DOWNSPOUTS, AND ALL UTILITY CONNECTIONS.

BUILDING FOOTING NOTE:
 IT IS THE CONTRACTORS RESPONSIBILITY TO COORDINATE BETWEEN THE CIVIL PLANS / ARCHITECTURAL PLANS / STRUCTURAL PLANS REGARDING THE GROUND ELEVATIONS DIRECTLY EXTERNAL OF THE BUILDING IN RELATION TO THE STRUCTURAL BUILDING FOOTINGS.

SITE LIGHTING NOTE:
 SEE SITE LIGHTING PLAN (E-101) FOR ALL POLE LOCATIONS, FIXTURE AND PHOTOMETRIC INFORMATION. POLE LOCATIONS ARE SHOWN ON THIS PLAN FOR INFORMATION ONLY.

SITE LANDSCAPING NOTE:
 SEE LANDSCAPE PLANS FOR ALL PERMANENT VEGETATION REQUIREMENTS/INFORMATION. I.E. SOD, TREES, SHRUBS, MULCHING, ETC.

CAPE FEAR PUBLIC UTILITY AUTHORITY
 R06600-001-025-000
 BOOK: 5330 PAGE: 1654
 ZONING: CB
 USE: 958 - UNUSED LAND

CURBING NOTE:
 ALL CURBING ON PRIVATE PROPERTY SHALL BE 24" CONCRETE CURB AND GUTTER PER CITY OF WILMINGTON STANDARD DETAIL SD 7-01.

ADA RAMP NOTE:
 TACTILE WARNING MATS ARE TO BE INSTALLED ON ALL ADA RAMPS.

CITY OF WILMINGTON
 R06600-001-039-000
 BOOK: 5638 PAGE: 1151
 ZONING: R-15
 USE: 958 - UNUSED LAND

LIFEPPOINT CHURCH
 R06600-001-005-006
 BOOK: 5805 PAGE: 0693
 ZONING: R-15
 USE: 528 - NEIGHBORHOOD RETAIL

ISIDRO MAPILE
 R06610-006-029-000
 BOOK: 1579 PAGE: 1554
 ZONING: R-15
 USE: 10-1 FAM RES

JUSTIN SORRELLS
 R06610-006-028-000
 BOOK: 5829 PAGE: 0090
 ZONING: R-15
 USE: 10-1 FAM RES

BETT HERSEN OF WILMINGTON, LLC
 R06610-006-013-000
 BOOK: 4977 PAGE: 1876
 ZONING: R-15
 USE: 958 - UNUSED LAND

ROBERT BARTLETT
 R06610-006-033-000
 BOOK: 3857 PAGE: 0245
 ZONING: R-15
 USE: 10-1 FAM RES

CITY OF WILMINGTON
 R06600-001-039-000
 BOOK: 5638 PAGE: 1151
 ZONING: R-15
 USE: 10-1 FAM RES

ROBERT BARTLETT
 R06610-006-033-000
 BOOK: 3857 PAGE: 0245
 ZONING: R-15
 USE: 10-1 FAM RES

HAU YEUNG
 R06610-006-034-000
 BOOK: 4921 PAGE: 1339
 ZONING: R-15
 USE: 10-1 FAM RES

JACK ALLEN
 R06610-002-012-014
 BOOK: 4181 PAGE: 0078
 ZONING: MF-M
 USE: 10-1 FAM RES

JAMES MURRILL
 R06610-002-012-008
 BOOK: 2640 PAGE: 0584
 ZONING: MF-M
 USE: 10-1 FAM RES

HAMPTON PLACE HOA, INC
 R06610-002-012-000
 BOOK: 1879 PAGE: 768
 ZONING: MF-M
 USE: 961 - CONDOMINIUM COMMON AREA

EVENTIDE PROPERTIES, LLC
 R06610-002-010-000
 BOOK: 2675 PAGE: 0768
 ZONING: CB
 USE: 547 - CONVENIENCE GROCERY

CARY COSSETT
 R06610-003-011-000
 BOOK: 3647 PAGE: 0578
 ZONING: R-15
 USE: 10-1 FAM RES

WILLIAM VAUGHN
 R06610-005-008-000
 BOOK: 9911 PAGE: 2093
 ZONING: R-15
 USE: 10-1 FAM RES

LOUIS HOLST
 R06610-005-009-000
 BOOK: 0838 PAGE: 0651
 ZONING: R-15
 USE: 10-1 FAM RES

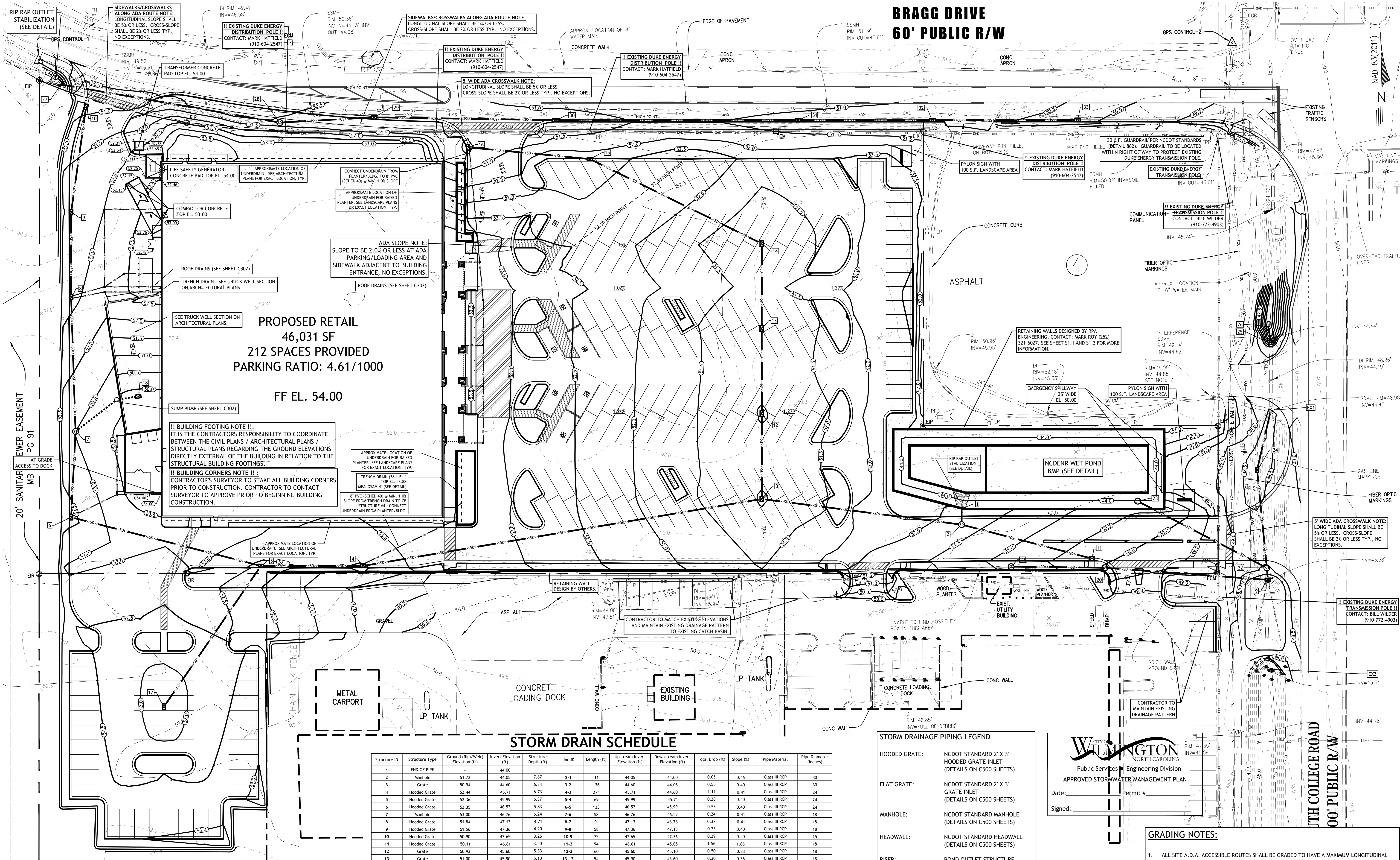
CYNTHIA STEPHENS
 R06610-005-010-000
 BOOK: 4641 PAGE: 0075
 ZONING: R-15
 USE: 10-1 FAM RES

ROBERT OLSCHESKY
 R06610-005-011-000
 BOOK: 0917 PAGE: 0729
 ZONING: R-15
 USE: 10-1 FAM RES

GRAPHIC SCALE
 1 inch = 30 ft

WILMINGTON
 NORTH CAROLINA
 Public Services • Engineering Division
 APPROVED STORMWATER MANAGEMENT PLAN
 Date: _____ Permit # _____
 Signed: _____

NAD 83 (2011)



PROPOSED RETAIL
 46,031 SF
 212 SPACES PROVIDED
 PARKING RATIO: 4.61/1000
 FF EL. 54.00

!! BUILDING FOOTING NOTE !!:
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!! BUILDING CORNERS NOTE !!:
 CONTRACTOR'S SURVEYOR TO STAKE ALL BUILDING CORNERS PRIOR TO CONSTRUCTION. CONTRACTOR TO CONTACT SURVEYOR TO APPROVE PRIOR TO BEGINNING BUILDING CONSTRUCTION.

STORM DRAIN SCHEDULE

Structure ID	Structure Type	Ground (Rim/Weir) Elevation (ft)	Invert Elevation (ft)	Structure Depth (ft)	Line ID	Length (ft)	Upstream Invert Elevation (ft)	Downstream Invert Elevation (ft)	Total Drop (ft)	Slope (%)	Pipe Material	Pipe Diameter (inches)
1	END OF PIPE	44.00	44.00	...	...	...	...	...	...	...	...	...
2	Manhole	51.72	44.05	7.67	2-1	11	44.05	44.00	0.05	0.46	Class III RCP	30
3	Grate	50.94	44.60	6.34	3-2	136	44.60	44.05	0.55	0.40	Class III RCP	30
4	Hooded Grate	52.44	45.71	6.73	4-3	274	45.71	44.60	1.11	0.41	Class III RCP	24
5	Hooded Grate	52.36	45.99	6.37	5-4	69	45.99	45.71	0.28	0.40	Class III RCP	24
6	Hooded Grate	52.35	46.52	5.83	6-5	133	46.52	45.99	0.53	0.40	Class III RCP	24
7	Manhole	53.00	46.76	6.24	7-6	58	46.76	46.52	0.24	0.41	Class III RCP	18
8	Hooded Grate	51.84	47.13	4.71	8-7	91	47.13	46.76	0.37	0.41	Class III RCP	18
9	Hooded Grate	51.56	47.36	4.20	9-8	58	47.36	47.13	0.23	0.40	Class III RCP	18
10	Hooded Grate	50.90	47.65	3.25	10-9	72	47.65	47.36	0.29	0.40	Class III RCP	15
11	Hooded Grate	50.11	46.61	3.50	11-2	94	46.61	45.05	1.56	1.66	Class III RCP	18
12	Grate	50.93	45.60	5.33	12-3	60	45.60	45.10	0.50	0.30	Class III RCP	18
13	Grate	51.00	45.00	6.00	13-4	54	45.00	45.00	0.00	0.30	Class III RCP	18
14	Grate	51.00	46.20	4.80	14-13	59	46.20	45.90	0.30	0.51	Class III RCP	18
15	Hooded Grate	51.70	46.75	4.95	15-14	131	46.75	46.20	0.55	0.42	Class III RCP	18
16	Hooded Grate	50.30	47.09	3.21	16-15	83	47.09	46.75	0.34	0.41	Class III RCP	18
17	Grate	51.64	48.14	3.50	17-16	116	48.14	47.09	1.05	1.85	Class III RCP	18
18	Grate	49.75	47.25	2.50	18-17	81	47.25	46.80	0.45	1.00	Class III RCP	18
19	Grate	47.48	43.58	3.90	19-EX2	61	43.58	43.54	0.04	0.07	Existing CMP	24
20	Manhole	50.50	44.79	5.71	20-19	111	44.79	43.58	1.21	1.09	Class III RCP	18
21	Manhole	51.33	45.48	5.85	21-20	64	45.48	44.79	0.69	1.08	Class III RCP	18
22	Manhole	48.46	43.64	4.82	22-19	8	43.64	43.58	0.06	0.73	Class III RCP	24
23	Riser	49.25	44.00	5.25	23-22	99	44.00	43.64	0.36	0.36	Class III RCP O-RING	18
24	Grate	48.00	44.14	3.86	24-22	67	44.14	43.64	0.50	0.75	Class III RCP	24
EX1	Manhole	48.98	44.45	4.53	EX1-24	41	44.45	44.14	0.31	0.75	Class III RCP	24
25	Manhole	47.50	44.44	3.06	25-24	12	44.44	44.44	0.16	1.34	Class III RCP	24
26	END OF PIPE	44.60	44.60	...	...	...	...	...	...	...	...	...
27	Headwall	47.16	47.16	...	...	...	...	...	...	...	...	...
28	Manhole	51.20	47.38	3.82	28-27	151	47.38	47.16	0.22	0.15	Class III RCP	18
29	Hooded Grate	50.63	47.48	3.15	29-28	64	47.48	47.38	0.10	0.16	Class IV RCP	18
30	Hooded Grate	50.74	47.67	3.07	30-29	123	47.67	47.48	0.19	0.15	Class IV RCP	15
31	Hooded Grate	50.86	47.91	2.95	31-30	145	47.91	47.67	0.24	0.15	Class IV RCP	15
32	Hooded Grate	50.61	48.05	2.56	32-31	91	48.05	47.91	0.14	0.15	Class IV RCP	15
33	Hooded Grate	50.15	48.20	1.95	33-32	98	48.20	48.05	0.15	0.15	Class IV RCP	15

STORM DRAINAGE PIPING LEGEND

- HOODED GRATE:** NCDOT STANDARD 2' X 3' HOODED GRATE INLET (DETAILS ON C500 SHEETS)
- FLAT GRATE:** NCDOT STANDARD 2' X 3' GRATE INLET (DETAILS ON C500 SHEETS)
- MANHOLE:** NCDOT STANDARD MANHOLE (DETAILS ON C500 SHEETS)
- HEADWALL:** NCDOT STANDARD HEADWALL (DETAILS ON C500 SHEETS)
- RISER:** POND OUTLET STRUCTURE (SEE POND DETAILS)

STORM DRAINAGE NOTES:

- PIPES ON SITE AND WITHIN NCDOT RIGHT OF WAY HAVE BEEN DESIGNED FOR THE 10-YEAR STORM EVENT AT A 5 MIN. DURATION (INTENSITY = 7.23 IN./HR.).
- ALL PIPE ON-SITE & WITHIN NCDOT RIGHT OF WAY TO BE REINFORCED CONCRETE PIPE (RCP).
- ALL STORM DRAINAGE STRUCTURES AND PIPE SHALL CONFORM TO NCDOT LATEST DETAILS AND STANDARDS.
- ALL PIPE JOINTS SHALL BE WRAPPED WITH A FILTER FABRIC IN 18-INCH WIDE SECTIONS UTILIZING, AT A MINIMUM, FABRIC WITH A MASS PER UNIT AREA OF (ENGLISH MEASURE) 5.0 OUNCES PER SQUARE YARD AND A THICKNESS OF 60 MILS - OR - (METRIC MEASURE) 170.0 GRAMS PER SQUARE METER AND A THICKNESS OF 1.5 MILLIMETERS.
- ALL PIPE LENGTHS SHOWN ON THE STORM DRAINAGE TABLE ARE APPROXIMATE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE ACTUAL FIELD LENGTH.
- ALL PIPES SHALL BE REINFORCED CONCRETE PIPE (RCP) PIPE PER NCDOT STANDARDS, SEE SCHEDULE FOR CLASS INFORMATION.
- "DROP" STRUCTURE INDICATED WHERE TWO (2) OR MORE PIPES DISCHARGE INTO SAME STRUCTURE AT DIFFERENT ELEVATIONS.
- WEEP HOLES ON CATCH BASINS TO BE PROVIDED PER DETAILS ON SHEET C511.



Public Services Engineering Division
 APPROVED STORMWATER MANAGEMENT PLAN
 Date: _____ Permit # _____
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GRADING NOTES:

- ALL SITE A.D.A. ACCESSIBLE ROUTES SHALL BE GRADED TO HAVE A MAXIMUM LONGITUDINAL SLOPE OF 5.00% (1:20) AND A MAXIMUM CROSS-SLOPE OF 2.00%.
- ALL SITE A.D.A. PARKING SPACES SHALL BE GRADED TO HAVE A MAXIMUM SLOPE IN ANY DIRECTION OF 2.00%.
- MINIMUM SLOPE IN ANY AREA SHALL BE 1.5%.
- MAXIMUM SLOPE IN ANY PARKING SPACE SHALL BE 5.00%.
- THE RETAINING WALLS ON THE CIVIL PLANS ARE SHOWN TO INDICATE HEIGHTS AND LOCATION. THE STRUCTURAL DESIGN AND DETAILING OF THE WALL MATERIAL AND CONSTRUCTION SHALL BE BY OTHERS. THIS DRAWING IS NOT TO BE USED BY THE CONTRACTOR AS CERTIFIED CONSTRUCTION DRAWING FOR RETAINING WALL CONSTRUCTION.
- ALL FILL/CUT SLOPES SHOWN ON THE SITE SHALL BE 3:1 OR AS INDICATED ON THE PLAN.
- CUT SLOPES IN ROCK MAY BE LEFT EXPOSED IF APPROVED BY THE OWNER'S REPRESENTATIVE.
- THE CONTRACTOR SHALL GRADE AROUND ALL LANDSCAPE ISLANDS TO PROVIDE POSITIVE DRAINAGE AROUND THE ISLAND AT A MINIMUM 1.00% SLOPE.
- THE CONTRACTOR SHALL COORDINATE ALL EXCAVATION WITH THE GEOTECHNICAL TESTING COMPANY. COMPACTION SHALL BE PER THE GEOTECHNICAL REPORT FOR THIS SPECIFIC PROJECT.
- THE CONTRACTOR SHALL INCLUDE IN PRICE ALL CUT/FILL NECESSARY TO COMPLETE THE PROJECT AS DESIGNED. UNIT PRICES SHALL BE PROVIDED FOR MASS ROCK EXCAVATION, TRENCH ROCK EXCAVATION, HAUL OFF, AND HAUL IN AND DEWATERING.

811 DIGALERT
 Know what's below. Call before you dig.
 GRAPHIC SCALE
 1 inch = 30 ft
 NAD 83 (2011)

Project Number: 2014-090
 DWG Name: 2014-090 D1.dwg
 Drawing Scale: AS NOTED
 Date of Project: 10-21-2014
 Engineer of Record: Jason Henderson, P.E.
 South Carolina PE# 2146
 Georgia PE# 03571
 North Carolina PE# 01306
 Alabama PE# 02504
 Louisiana PE# 38891
 Virginia PE# 6020318

bluewater civil design, PLLC
 bluewater civil design, PLLC
 19 Washington Park Suite 100 • Greenville, SC 29601
 www.bluewatercivil.com • info@bluewatercivil.com

Certificates of Authorization:
 SC C0412 - GA PE#005865
 NC P0688 - AL CA4065E

BRAGG ROAD DEV. COMPANY, LLC
 716 Bragg Drive
 Wilmington, NC 28412

Approved Construction Plan
 Name: _____
 Date: _____
 Planning: _____
 Title: _____
 Fire: _____

PROFESSIONAL ENGINEER
 NORTH CAROLINA
 7-23-2015
 No. 031306
 JASON HENDERSON

Bluewater Civil Design, PLLC
 NC-P-0868

PLANNING REVISION
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 H 7-22-2015 REVISED PER CITY COMMENTS

GRADING & DRAINAGE PLAN
C201

BRAGG DRIVE 60' PUBLIC R/W

Project Number: 2014-090
 DWG Name: 2014-090 D1.dwg
 Drawing Scale: AS NOTED
 Date of Project: 10-21-2014
 Engineer of Record:
 Jason Henderson, P.E.
 South Carolina PE# 2146
 Georgia PE# 03717
 North Carolina PE# 01306
 Alabama PE# 01704
 Louisiana PE# 38891
 Virginia PE# 60023118

bluewater
 civil design, PLLC
 bluewatercivil.com • info@bluewatercivil.com
 19 Washington Park Suite 100 • Greenville, SC 29601

BRAGG ROAD DEV. COMPANY, LLC
 716 Bragg Drive
 Wilmington, NC 28412

Approved Construction Plan
 Name _____
 Date _____
 Planning _____
 Traffic _____
 Fire _____

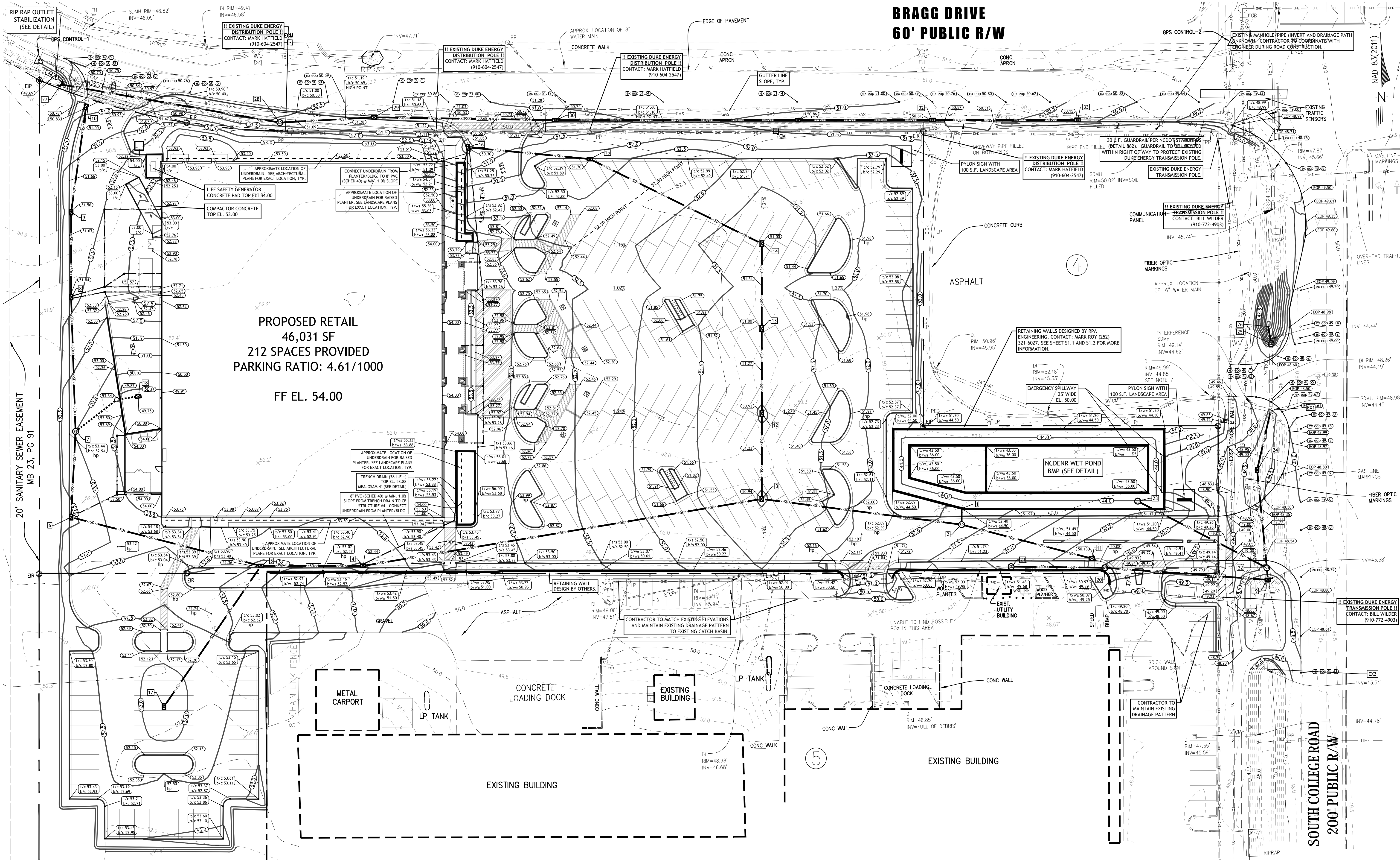


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 NC-P-0868

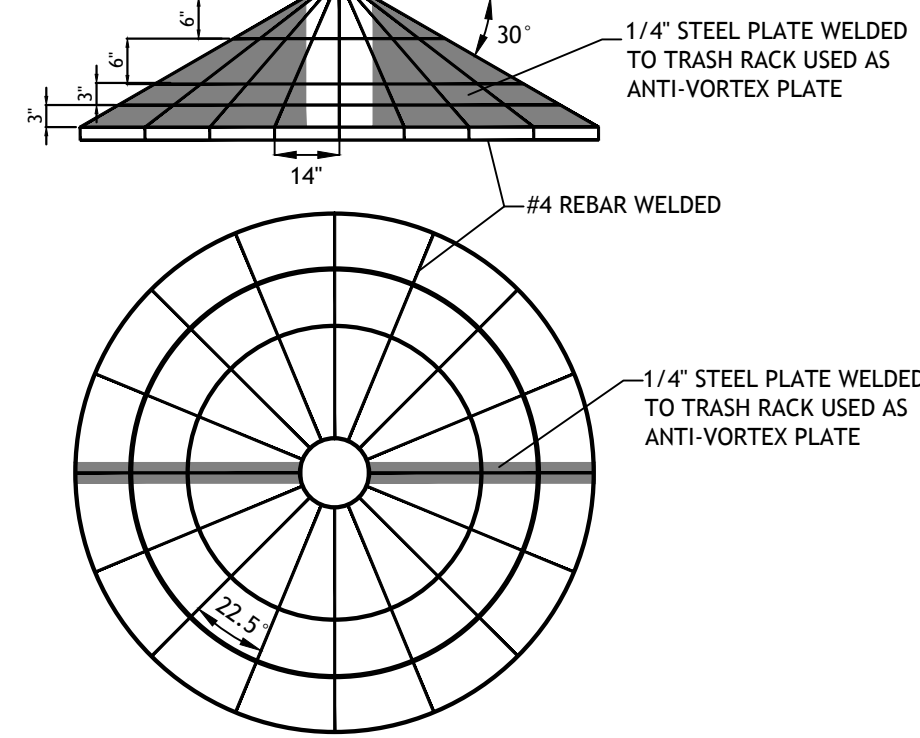
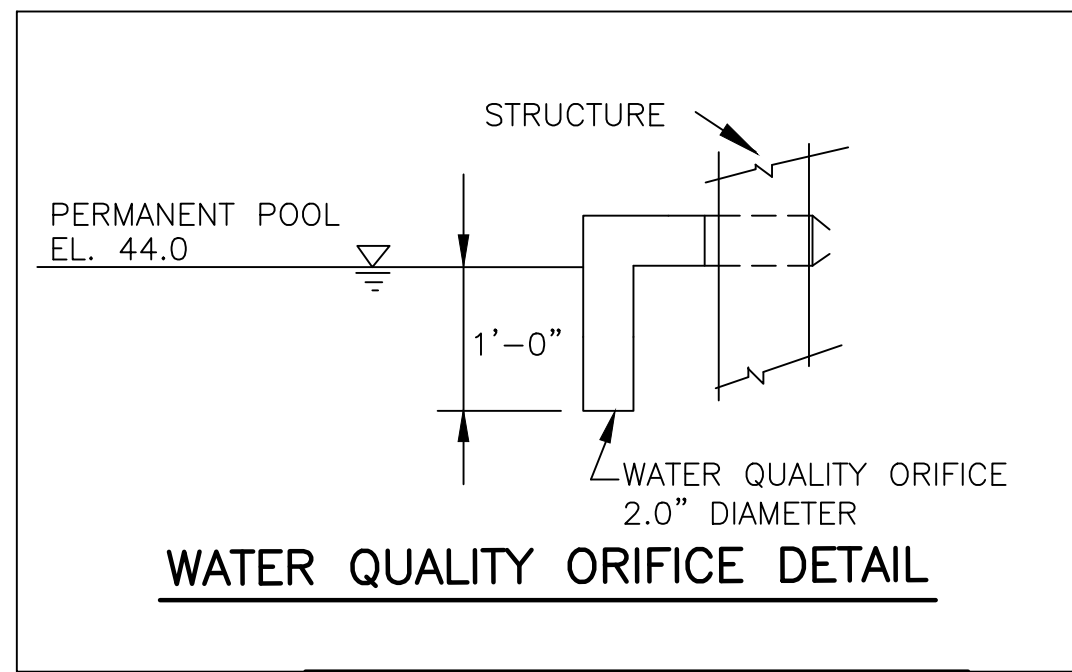
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SPOT ELEVATIONS PLAN

C201-A



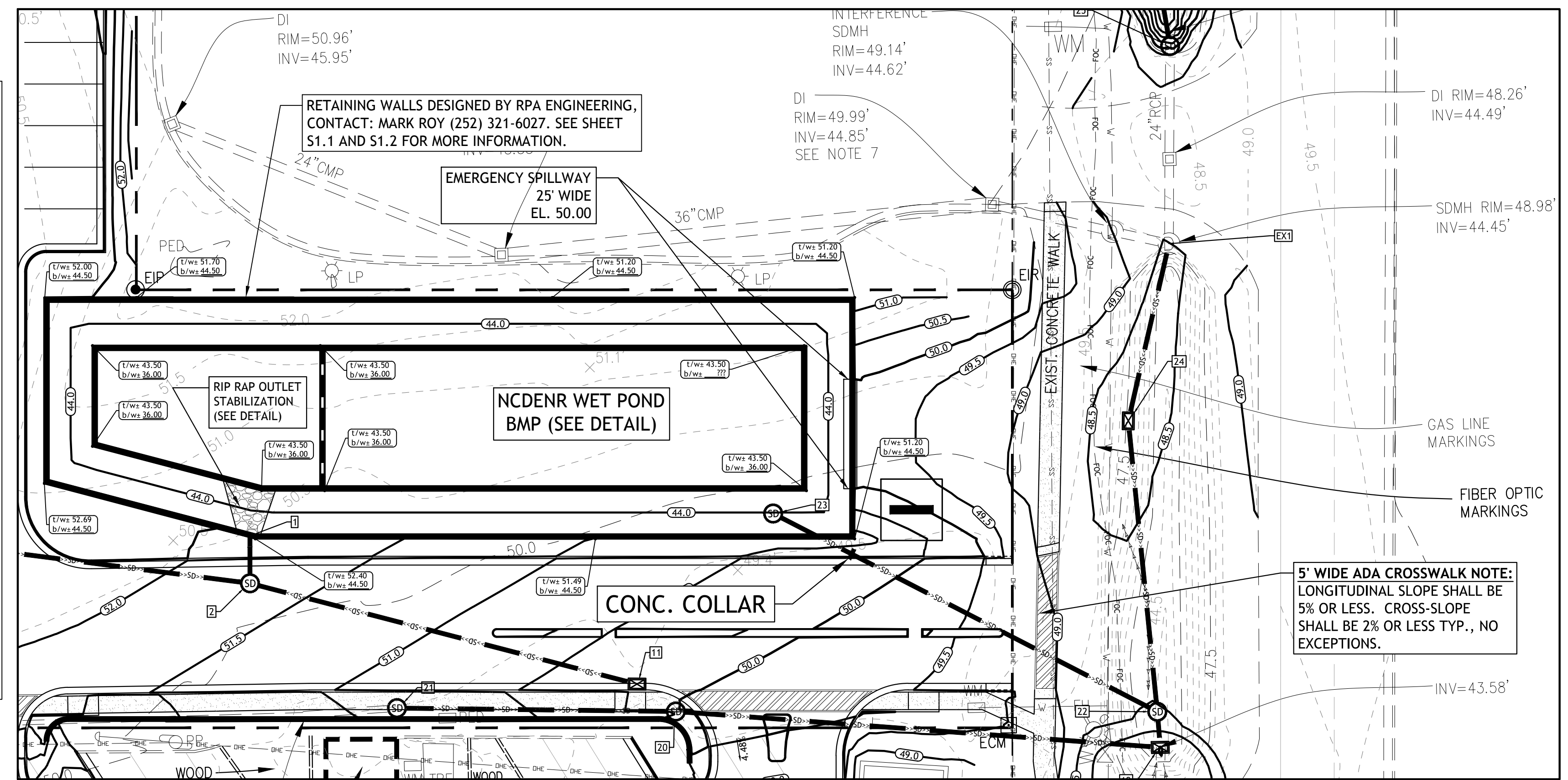
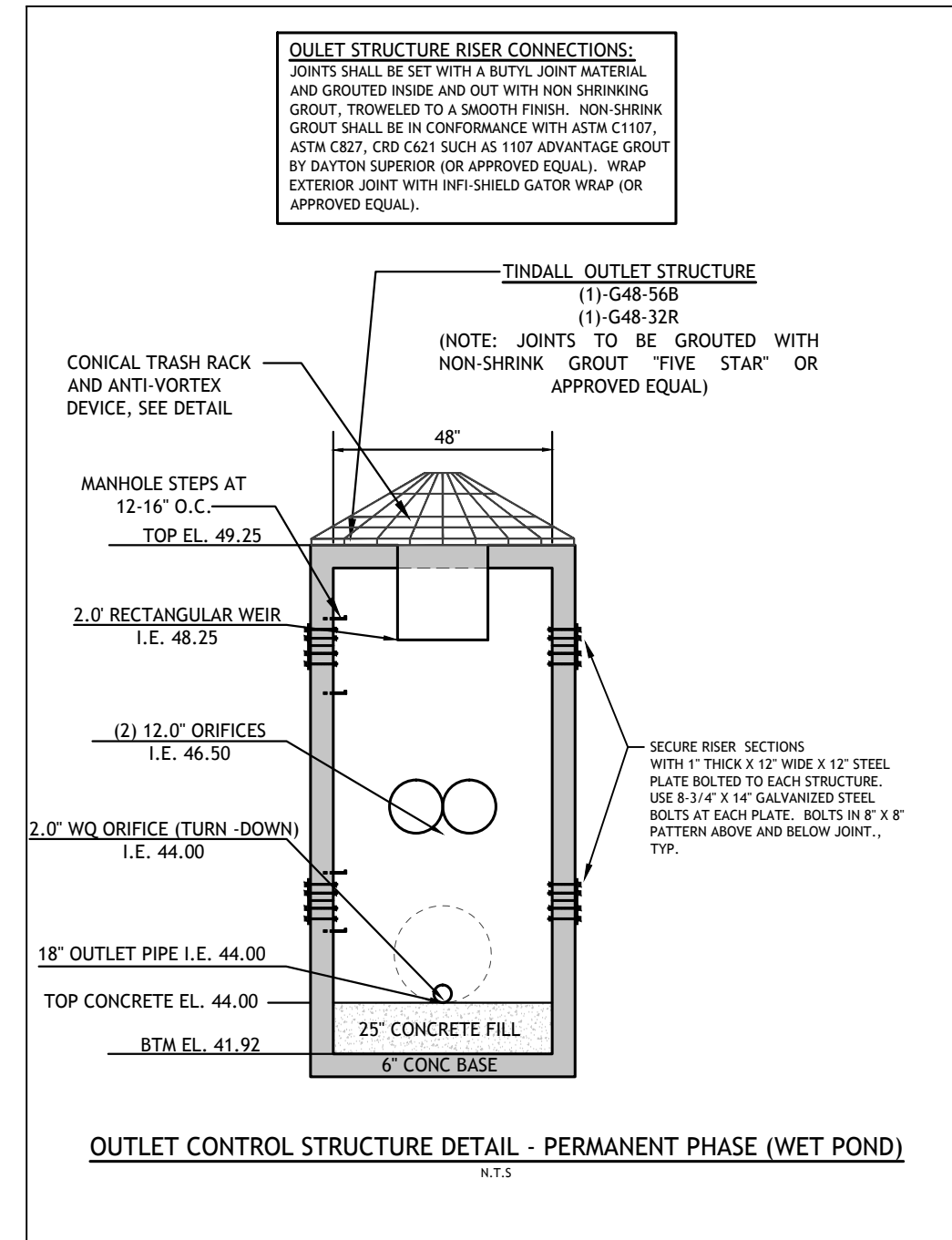
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 (IN FEET)
 1 inch = 30 ft



NOTE: PRE-FABRICATED EQUIVALENTS MUST BE APPROVED.

**TYPICAL CONICAL TRASH RACK
W/ ANTI-VORTEX DEVICE**

N.T.S

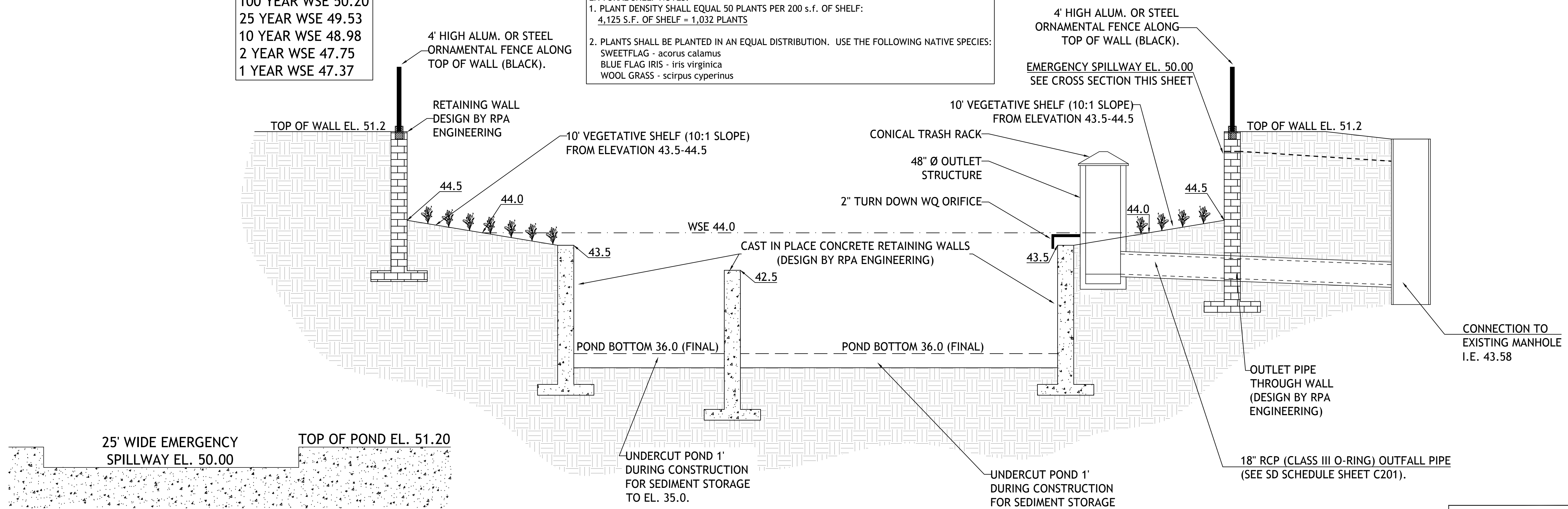


NCDNR WET POND BMP PLAN VIEW

1" = 20'

100 YEAR WSE 50.20
25 YEAR WSE 49.53
10 YEAR WSE 48.98
2 YEAR WSE 47.75
1 YEAR WSE 47.37

LITTORAL SHELF NOTES:
1. PLANT DENSITY SHALL EQUAL 50 PLANTS PER 200 s.f. OF SHELF:
4,125 S.F. OF SHELF = 1,032 PLANTS
2. PLANTS SHALL BE PLANTED IN AN EQUAL DISTRIBUTION. USE THE FOLLOWING NATIVE SPECIES:
SWEETFLAG - acorus calamus
BLUE FLAG IRIS - iris virginica
WOOL GRASS - scirpus cyperinus



EMERGENCY SPILLWAY DETAIL

NTS

NCDNR WET POND BMP DETAIL

NTS

WILMINGTON
NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date: _____ Permit # _____
Signed: _____

Project Number: 2014-090
DWG Name: 2014-090 D1.dwg
Drawing Scale: AS NOTED
Date of Project: 10-21-2014
Engineer of Record:
Jason Henderson, P.E.
South Carolina PE# 22466
North Carolina PE# 031306
Alabama PE# 37054
Louisiana PE# 38895
Virginia PE# 60203318

bluewater
civil design, PLLC
bluewatercivil.com • info@bluewatercivil.com
19 Washington Park Suite 100 • Greenville, SC 29601

Certificates of Authorization:
SC C04212 - GA PE#005865
NC P0868 - AL CA4065E

BRAGG ROAD DEV.
COMPANY, LLC
716 Bragg Drive
Wilmington, NC 28412

Approved Construction Plan
Name _____
Date _____
Planning _____
Traffic _____
Fire _____

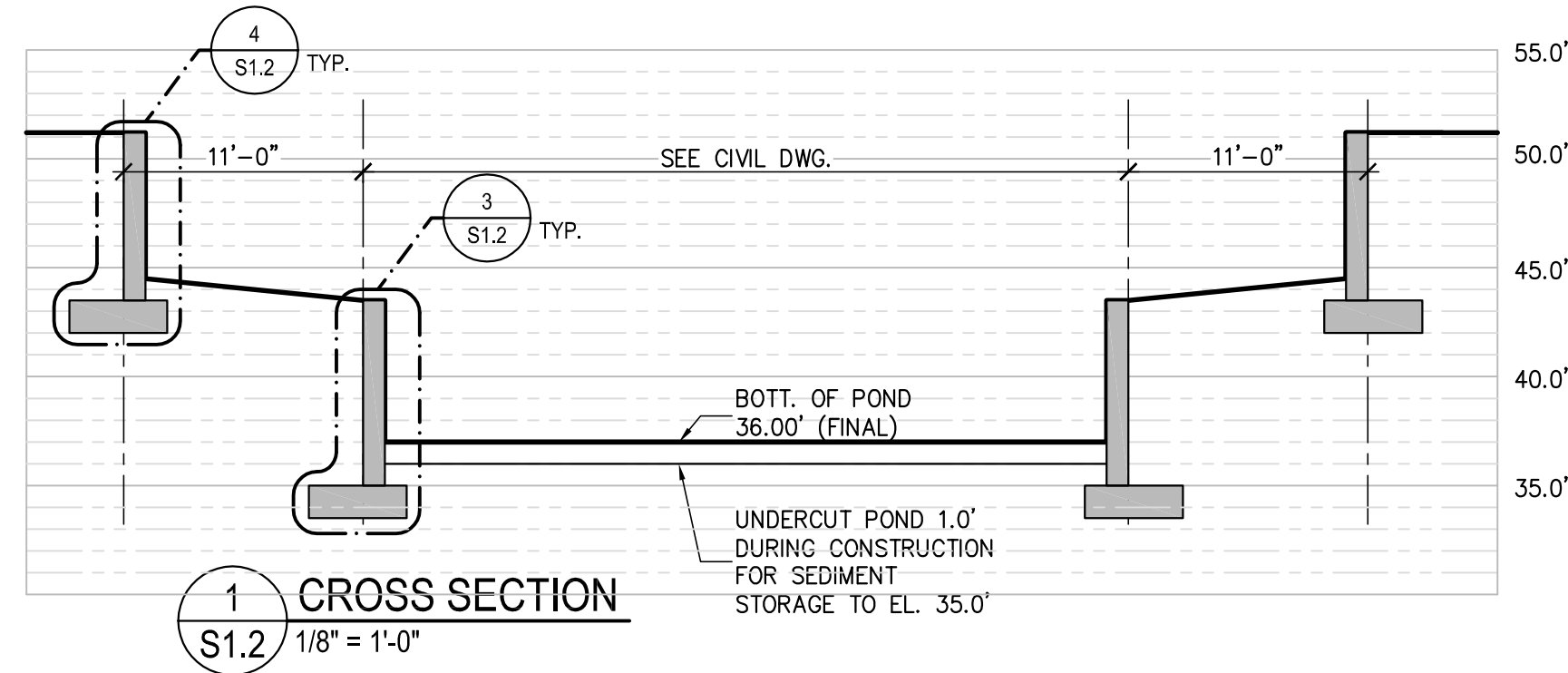
PROFESSIONAL ENGINEER
7-23-2015
No. 031306
NORTH CAROLINA
JASON HENDERSON

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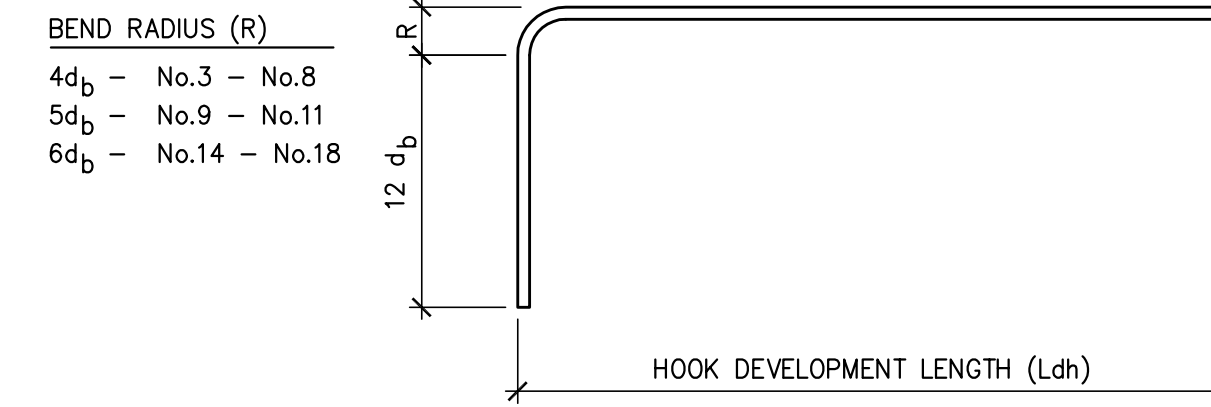
WET POND BMP
PLAN & DETAILS

C201-B



CONCRETE REBAR SPLICE SCHEDULE

BAR SIZE	LAP LENGTH (in.)	
	f'c = 3000 psi	f'c = 4000 psi
#4	29	25
#5	36	31
#6	43	37
#7	63	54
#8	72	61
#9	80	69
#10	89	76



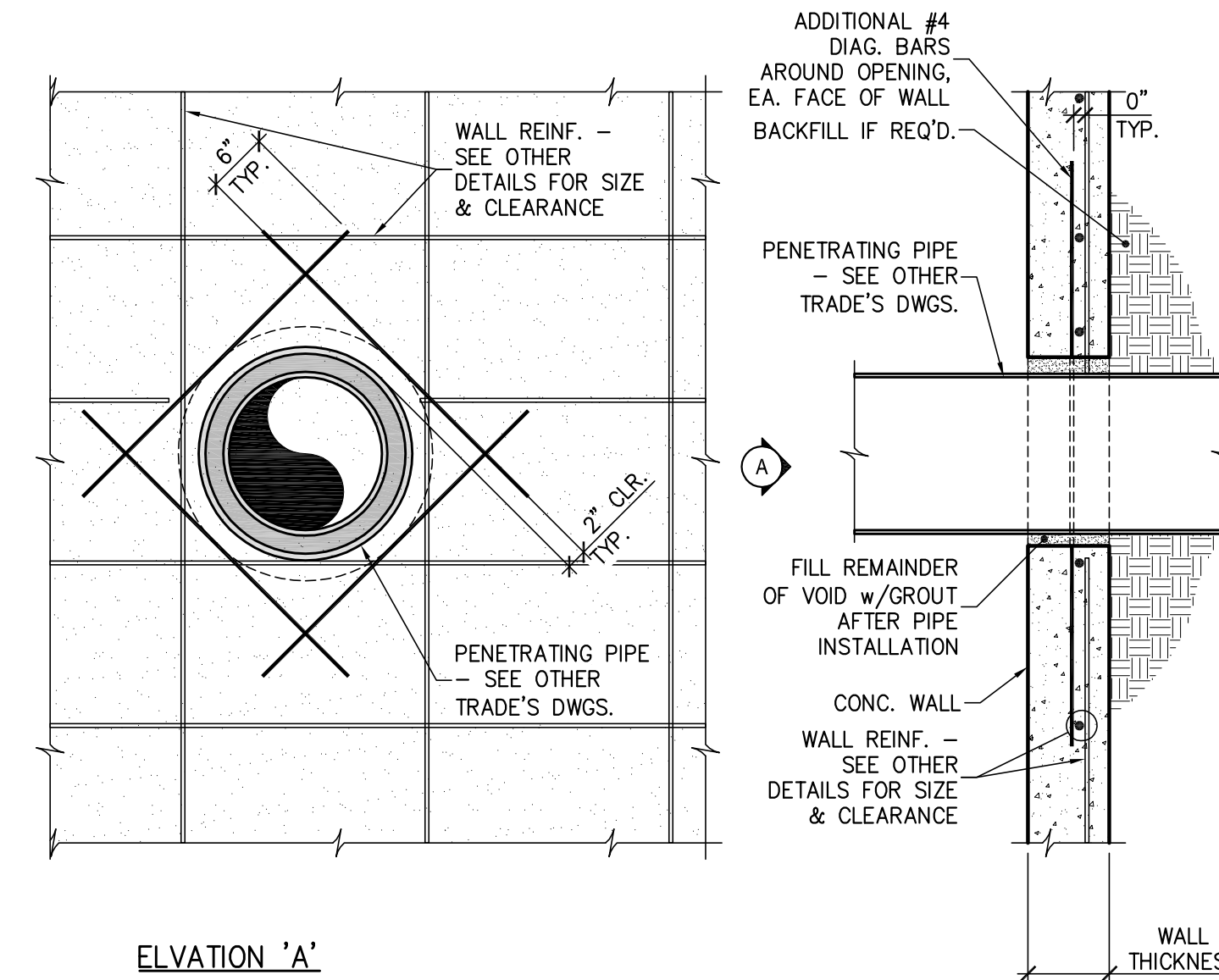
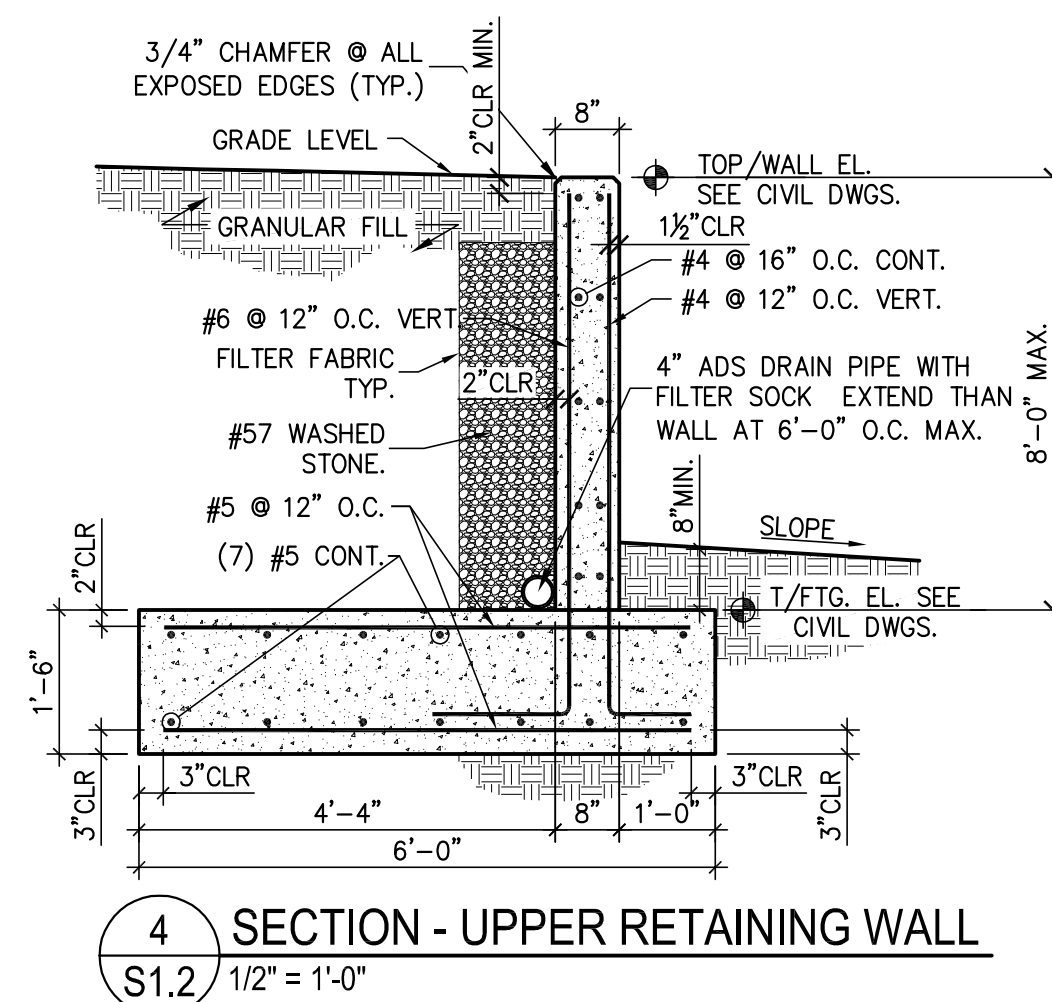
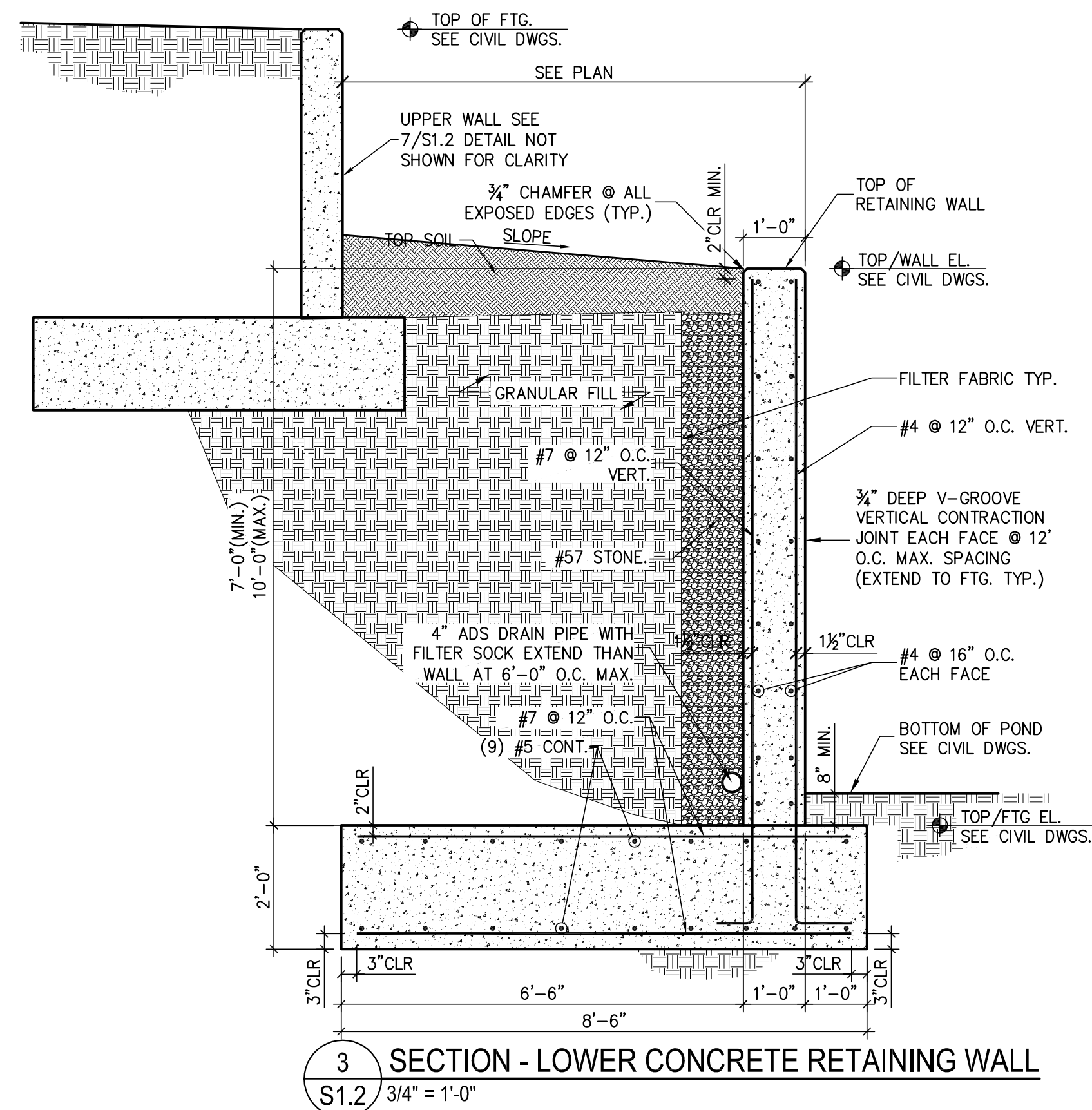
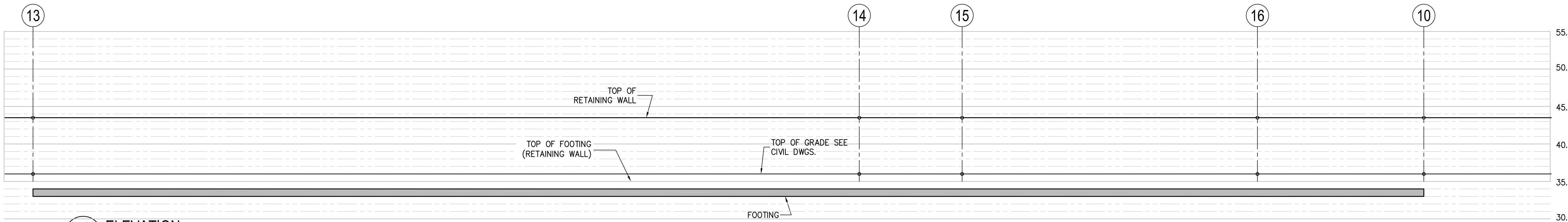
STANDARD HOOKS IN TENSION (PER ACI 318-02)

BAR SIZE	HOOK DEVELOPMENT LENGTH Ldh (INCHES)	
	f'c 3000 psi	f'c 4000 psi
#3	9	7
#4	11	10
#5	14	12
#6	17	15
#7	19	17
#8	22	19
#9	25	22
#10	28	24
#11	31	27

- NOTES:**
- CONCRETE IS NORMAL WEIGHT CONCRETE. IF LIGHTWEIGHT CONCRETE IS USED, MULTIPLY LENGTHS IN TABLE BY 1.3.
 - BAR YIELD STRENGTH (f_y) IS 60 KSI. SIDE COVER REQUIREMENTS OF ACI SECTION 12.5.3 ARE ASSUMED TO NOT BE MET.
 - TIE OR STIRRUP REQUIREMENTS OF ACI SECTION 12.5.3 ARE ASSUMED TO NOT BE MET.
 - REDUCTION OF EXCESS REINFORCEMENT IS NOT TAKEN. HOOK DEVELOPMENT LENGTH IS VALID FOR 180° HOOKS ALSO.
- d_b = BAR DIAMETER

GENERAL STRUCTURAL NOTES:

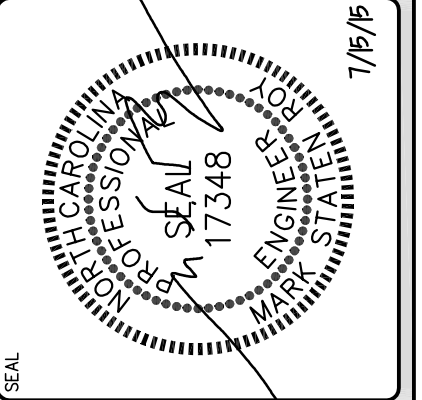
- 1. GENERAL NOTES**
- METHODS, PROCEDURES AND SEQUENCES OF CONSTRUCTION ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO MAINTAIN AND INSURE THE INTEGRITY OF THE STRUCTURE AT ALL STAGES OF CONSTRUCTION.
 - VERIFY WALL LOCATIONS AND ORIENTATION WITH CIVIL DRAWINGS AND LOT SETBACK REQUIREMENTS BEFORE ANY CONSTRUCTION IS STARTED ON PROJECT.
 - BACKFILL BEHIND WALLS IS ASSUMED TO BE COMPACTED SANDY MATERIAL WITH 120 PCF UNIT WEIGHT.
- 2. FOUNDATION**
- ALL FOOTINGS SHALL BE ON UNDISTURBED SOIL OR 98% COMPACTED FILL PER ASTM D698.
 - NO FOOTINGS OR SLABS SHALL BE POURED INTO OR AGAINST SUB GRADE CONTAINING FREE WATER, FROST, ICE OR LOOSE MATERIAL.
 - EXCAVATIONS FOR FOOTINGS SHALL HAVE THE SIDES AND BOTTOMS TEMPORARILY LINED WITH 6 MIL. POLYETHYLENE IF PLACEMENT OF CONCRETE DOES NOT OCCUR WITHIN 24 HR. OF THE EXCAVATION OF THE FOOTING.
 - ADVERSE FOUNDATION CONDITIONS NOTED DURING CONSTRUCTION SUCH AS SOFT SOILS, ORGANIC MATTER, ETC., SHALL BE REPORTED TO THE ENGINEER BEFORE FURTHER CONSTRUCTION IS ATTEMPTED.
 - IF UNDERMINING OF FOOTINGS OCCURS, FILL VOIDS WITH LEAN CONCRETE MIX. DO NOT ATTEMPT TO REPLACE AND RECOMPACT SOIL.
- 3. CONCRETE**
- ALL PLACED CONCRETE, SHALL HAVE NORMAL WEIGHT COARSE AGGREGATES, AND SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 3000 PSI AT 28 DAYS.
 - NO CALCIUM CHLORIDE SHALL BE USED IN ANY CONCRETE.
 - CHAMFER ALL EXPOSED EXTERNAL CORNERS OF CONCRETE WITH 3/4" x 45 DEGREE CHAMFER, UNLESS OTHERWISE NOTED.
 - HORIZONTAL FOOTING AND HORIZONTAL WALL REINFORCING SHALL BE CONTINUOUS, AND SHALL HAVE 90 DEGREE BENDS AND EXTENSIONS, OR CORNER BARS OF EQUIVALENT SIZE LAPPED, WITH A CLASS B TENSION SPLICE, AT CORNERS AND INTERSECTIONS. TOP BAR CRITERIA SHALL APPLY IF 12" OR MORE OF FRESH CONCRETE IS PLACED BELOW BAR.
 - ALL DOWELS SHALL MATCH SIZE AND NUMBER OF MAIN REINFORCING, UNLESS OTHERWISE NOTED ON THE DRAWINGS.
 - SEE CIVIL DRAWINGS FOR ADDITIONAL WALL / SLAB OPENINGS NOT SHOWN ON THE STRUCTURAL DRAWINGS.
 - ALL REINFORCING SHALL CONFORM TO ASTM A615, GRADE 60.
 - DETAIL AND FABRICATE REINFORCING STEEL IN ACCORDANCE WITH THE ACI DETAILING MANUAL.
 - IN-PLACE REINFORCING STEEL, SHALL BE REVIEWED BY THE ENGINEER PRIOR TO PLACEMENT OF CONCRETE.
 - AT CORNERS AND INTERSECTIONS, PROVIDE BARS OF THE SAME NUMBER AND SIZE AS THE LONGITUDINAL BARS IN THE FOOTING.



SECTION / ELEVATION - 12" OR LARGER PIPE PENETRATION THRU CONC. WALL

- NOTE:**
- SEE CIVIL DRAWING FOR SIZE AND LOCATION OF PIPE PENETRATION THRU CONCRETE RETAINING WALL.
 - SEE S1.2 FOR STRUCTURAL NOTES AND MORE INFO.

RPA ENGINEERING, P.A.
Structural Engineering Solutions
Engineering License Certificate No. C-2734
102 Regency Blvd.
Suite A1
Greenville, NC 27834
Phone : 252-321-6027
Fax : 252-355-2179



G.H.K. DEVELOPMENTS INC.
BRAGG ROAD DEVELOPMENT
BRAGG DRIVE
WILMINGTON, NORTH CAROLINA

DRAWING TITLE
RETAINING WALL SECTIONS, ELEV STRUCTURAL NOTES AND SCHEDULES

PROJ. NO.
2015166

DATE
07.15.2015

DRAWN
GBP

CHECKED
MSR

APPROVED
MSR

SHEET NO.
S1.2

**BRAGG DRIVE
60' PUBLIC R/W**

Project Number: 2014-090
 DWG Name: 2014-090 D1.dwg
 Drawing Scale: AS NOTED
 Date of Project: 10-21-2014
 Engineer of Record:
 Jason Henderson, P.E.
 South Carolina REG 21406
 Georgia REG 03714
 North Carolina REG 03106
 Alabama REG 32004
 Louisiana REG 38891
 Virginia REG 60203118

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 civil design
 bluewater civil design, PLLC
 19 Washington Park Suite 100 • Greenville, SC 29601
 www.bluewatercivil.com • info@bluewatercivil.com

Certificates of Authorization:
 SC CM0412 - GA PEF005865
 NC P0868 - AL CA4065E

**BRAGG ROAD DEV.
 COMPANY, LLC**
 716 Bragg Drive
 Wilmington, NC 28412

Approved Construction Plan
 Name _____ Date _____
 Planning _____
 Traffic _____
 Fire _____

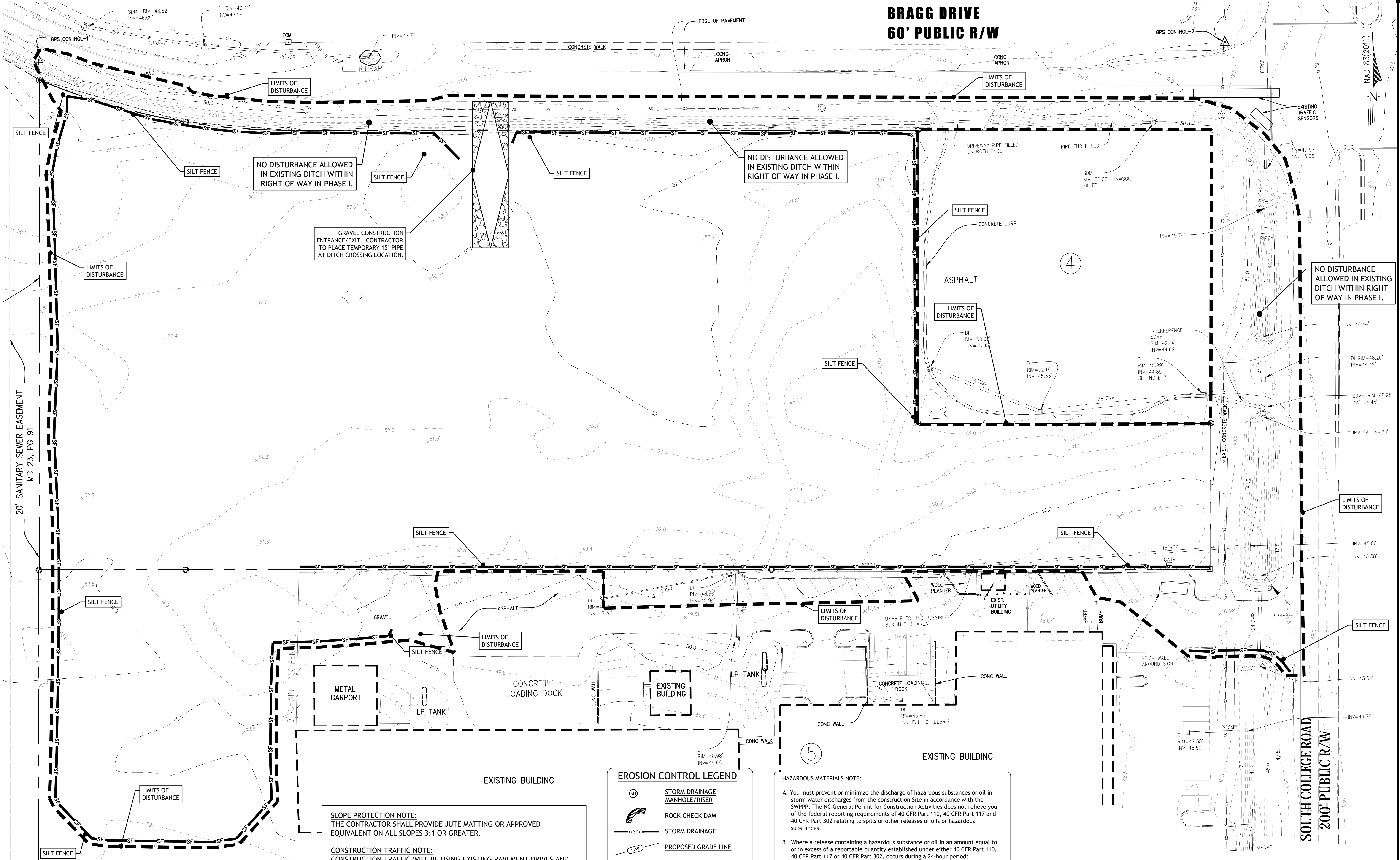


Bluewater Civil Design, PLLC
 NC-P-0868

PLAN REVISION	ISSUE DATE	ISSUE COMMENT
A	2-3-2015	ISSUED FOR PERMITS
B	2-25-2015	REVISED PER COMMENTS
C	4-2-2015	REVISED PER NEW HANDOVER COMMENTS
D	4-16-2015	100% TENANT SUBMITTAL
E	4-30-2015	REVISED PER HCDOT/WILMINGTON COMMENTS
F	6-2-2015	REVISED PER CTR #1 TENANT COMMENTS
G	7-15-2015	REVISED PER TENANT COMMENTS
H	7-22-2015	REVISED PER CITY COMMENTS

PHASE I EROSION CONTROL PLAN - PERIMETER

C202



SLOPE PROTECTION NOTE:
 THE CONTRACTOR SHALL PROVIDE JUTE MATTING OR APPROVED EQUIVALENT ON ALL SLOPES 3:1 OR GREATER.

CONSTRUCTION TRAFFIC NOTE:
 CONSTRUCTION TRAFFIC WILL BE USING EXISTING PAVEMENT DRIVES AND SHALL INSURE THAT THEY ARE NOT TRACKING SEDIMENT OFF-SITE. CONTRACTOR SHALL MONITOR AND WASH OFF TIRES IF REQUIRED.

MAINTENANCE STATEMENT:
 EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES. IF FULL IMPLEMENTATION OF THE APPROVED PLAN DOES NOT PROVIDE FOR EFFECTIVE EROSION CONTROL, ADDITIONAL EROSION CONTROL AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE.

DUST CONTROL:
 THE CONTRACTOR SHALL USE ALL REASONABLE MEANS (e.g. WATER TRUCK, TARPS, MULCH, GRASSING, ETC.) NECESSARY TO REDUCE DUST DURING DEMOLITION AND CONSTRUCTION.

EROSION CONTROL LEGEND

- STORM DRAINAGE MANHOLE/RISER
- ROCK CHECK DAM
- STORM DRAINAGE
- PROPOSED GRADE LINE
- SILT FENCE
- HARDWARE CLOTH & GRAVEL INLET PROTECTION
- DISTURBED LIMITS
- DIVERSION SWALE/BERM
- CONSTRUCTION ENTRANCE
- DOUBLE STACKED SEDIMENT TUBE
- SKIMMER DEVICE
- SLOPE MATTING (CURLEX II)

HAZARDOUS MATERIALS NOTE:

A. You must prevent or minimize the discharge of hazardous substances or oil in storm water discharges from the construction site in accordance with the SWPPP. The NC General Permit for Construction Activities does not relieve you of the federal reporting requirements of 40 CFR Part 110, 40 CFR Part 117 and 40 CFR Part 302 relating to spills or other releases of oils or hazardous substances.

B. Where a release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity established under either 40 CFR Part 110, 40 CFR Part 117 or 40 CFR Part 302, occurs during a 24-hour period:

- You must notify the NCDENR's Emergency Response Section at 800-258-0368 and the National Response Center (NRC) (800) 424-8802 in accordance with the requirements of 40 CFR Part 110, 40 CFR Part 117 and 40 CFR Part 302 as soon as Site staff have knowledge of the discharge; and
- You must modify the SWPPP as required under Subpart 3.11 within 14 calendar days of knowledge of the release to: provide a description of the release, the circumstances leading to the release, and the date of the release. In addition, you must review your SWPPP to identify measures to prevent the reoccurrence of such releases and to respond to such releases, and you must modify your SWPPP where appropriate.

GENERAL EROSION CONTROL NOTE:
 ALL EROSION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED PER N.C.D.E.N.R. BMP MANUAL. THE CONTRACTOR SHALL REFERENCE THE STORMWATER POLLUTION PREVENTION MANUAL (SWPPP) FOR ALL EROSION CONTROL PROCEDURES ON SITE.

DISTURBANCE NOTE:
 STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, BUT IN NO CASE MORE THAN FOURTEEN (14) DAYS AFTER WORK HAS CEASED.

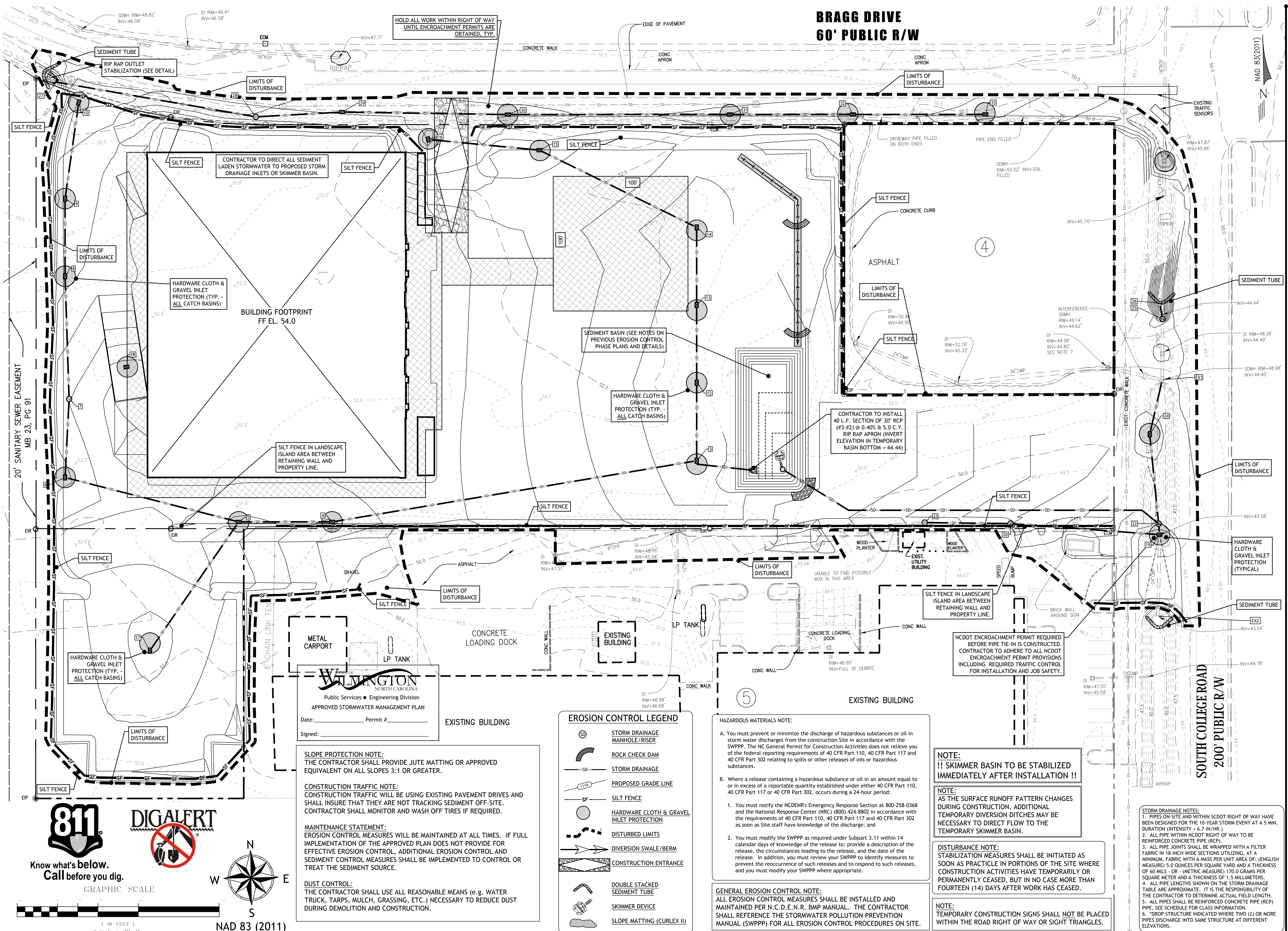
NOTE:
 TEMPORARY CONSTRUCTION SIGNS SHALL NOT BE PLACED WITHIN THE ROAD RIGHT OF WAY OR SIGHT TRIANGLES.

811
 Know what's below.
 Call before you dig.

DIGALERT

GRAPHIC SCALE
 (IN FEET)
 1 inch = 30 ft.

NAD 83 (2011)



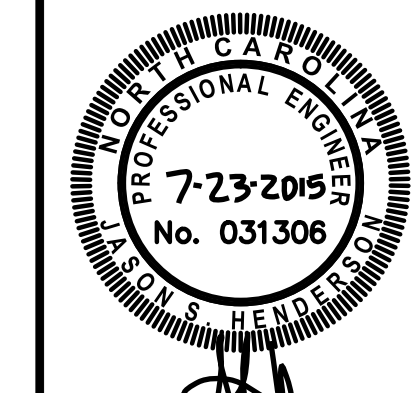
**BRAGG DRIVE
60' PUBLIC R/W**

Project Number: 2014-090
 DWG Name: 2014-090 D1.dwg
 Drawing Scale: AS NOTED
 Date of Project: 10-21-2014
 Engineer of Record:
 Jason Henderson, P.E.
 South Carolina PE# 21406
 Georgia PE# 03571
 North Carolina PE# 01306
 Alabama PE# 32054
 Louisiana PE# 38891
 Virginia PE# 60203138

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 19 Washington Park Suite 100 • Greenville, SC 29601
 www.bluewatercivil.com • info@bluewatercivil.com

BRAGG ROAD DEV. COMPANY, LLC
 716 Bragg Drive
 Wilmington, NC 28412

Approved Construction Plan
 Name: _____ Date: _____
 Planning: _____
 Traffic: _____
 Fire: _____

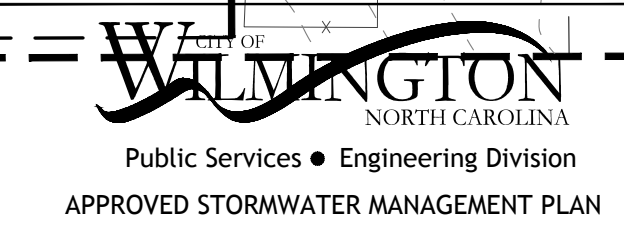


Bluewater Civil Design, PLLC
 NC-P-0868

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G	7-15-2015	REVISED PER TENANT COMMENTS
H	7-22-2015	REVISED PER CITY COMMENTS

PHASE II-B EROSION CONTROL PLAN

C204



Date: _____ Permit # _____
 Signed: _____

SLOPE PROTECTION NOTE:
 THE CONTRACTOR SHALL PROVIDE JUTE MATTING OR APPROVED EQUIVALENT ON ALL SLOPES 3:1 OR GREATER.

CONSTRUCTION TRAFFIC NOTE:
 CONSTRUCTION TRAFFIC WILL BE USING EXISTING PAVEMENT DRIVES AND SHALL INSURE THAT THEY ARE NOT TRACKING SEDIMENT OFF-SITE. CONTRACTOR SHALL MONITOR AND WASH OFF TIRES IF REQUIRED.

MAINTENANCE STATEMENT:
 EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES. IF FULL IMPLEMENTATION OF THE APPROVED PLAN DOES NOT PROVIDE FOR EFFECTIVE EROSION CONTROL, ADDITIONAL EROSION CONTROL AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE.

DUST CONTROL:
 THE CONTRACTOR SHALL USE ALL REASONABLE MEANS (e.g. WATER TRUCK, TARPS, MULCH, GRASSING, ETC.) NECESSARY TO REDUCE DUST DURING DEMOLITION AND CONSTRUCTION.

EROSION CONTROL LEGEND

- STORM DRAINAGE MANHOLE/RISER
- ROCK CHECK DAM
- STORM DRAINAGE
- PROPOSED GRADE LINE
- SILT FENCE
- HARDWARE CLOTH & GRAVEL INLET PROTECTION
- DISTURBED LIMITS
- DIVERSION SWALE/BERM
- CONSTRUCTION ENTRANCE
- DOUBLE STACKED SEDIMENT TUBE
- SKIMMER DEVICE
- SLOPE MATTING (CURLEX II)

HAZARDOUS MATERIALS NOTE:

A. You must prevent or minimize the discharge of hazardous substances or oil in storm water discharges from the construction site in accordance with the SWPPP. The NC General Permit for Construction Activities does not relieve you of the federal reporting requirements of 40 CFR Part 110, 40 CFR Part 117 and 40 CFR Part 302 relating to spills or other releases of oils or hazardous substances.

B. Where a release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity established under either 40 CFR Part 110, 40 CFR Part 117 or 40 CFR Part 302, occurs during a 24-hour period:

- You must notify the NCDENR's Emergency Response Section at 800-258-0368 and the National Response Center (NRC) (800) 424-8802 in accordance with the requirements of 40 CFR Part 110, 40 CFR Part 117 and 40 CFR Part 302 as soon as Site staff have knowledge of the discharge; and
- You must modify the SWPPP as required under Subpart 3.11 within 14 calendar days of knowledge of the release to provide a description of the release, the circumstances leading to the release, and the date of the release. In addition, you must review your SWPPP to identify measures to prevent the recurrence of such releases and to respond to such releases, and you must modify your SWPPP where appropriate.

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 ALL EROSION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED PER N.C.D.E.N.R. BMP MANUAL. THE CONTRACTOR SHALL REFERENCE THE STORMWATER POLLUTION PREVENTION MANUAL (SWPPP) FOR ALL EROSION CONTROL PROCEDURES ON SITE.

NOTE:
 !! SKIMMER BASIN TO BE STABILIZED IMMEDIATELY AFTER INSTALLATION !!

NOTE:
 AS THE SURFACE RUNOFF PATTERN CHANGES DURING CONSTRUCTION, ADDITIONAL TEMPORARY DIVERSION DITCHES MAY BE NECESSARY TO DIRECT FLOW TO THE TEMPORARY SKIMMER BASIN.

DISTURBANCE NOTE:
 STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, BUT IN NO CASE MORE THAN FOURTEEN (14) DAYS AFTER WORK HAS CEASED.

NOTE:
 TEMPORARY CONSTRUCTION SIGNS SHALL NOT BE PLACED WITHIN THE ROAD RIGHT OF WAY OR SIGHT TRIANGLES.

STORM DRAINAGE NOTES:

- PIPES ON-SITE AND WITHIN SCDDOT RIGHT OF WAY HAVE BEEN DESIGNED FOR THE 10-YEAR STORM EVENT AT A 5 MIN. DURATION (INTENSITY = 6.7 IN/HR.)
- ALL PIPE WITHIN NCDOT RIGHT OF WAY TO BE REINFORCED CONCRETE PIPE (RCP).
- ALL PIPE JOINTS SHALL BE WRAPPED WITH A FILTER FABRIC IN 18-INCH WIDE SECTIONS UTILIZING, AT A MINIMUM, FABRIC WITH A MASS PER UNIT AREA OF (ENGLISH MEASURE) 5.0 OUNCES PER SQUARE YARD AND A THICKNESS OF 60 MILS - OR - (METRIC MEASURE) 170.0 GRAMS PER SQUARE METER AND A THICKNESS OF 1.5 MILLIMETERS.
- ALL PIPE LENGTHS SHOWN ON THE STORM DRAINAGE TABLE ARE APPROXIMATE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE ACTUAL FIELD LENGTHS.
- ALL PIPES SHALL BE REINFORCED CONCRETE PIPE (RCP) PIPE, SEE SCHEDULE FOR CLASS INFORMATION.
- *DROP STRUCTURE INDICATED WHERE TWO (2) OR MORE PIPES DISCHARGE INTO SAME STRUCTURE AT DIFFERENT ELEVATIONS.

811 DIGALERT
 Know what's below. Call before you dig.
 GRAPHIC SCALE
 (IN FEET)
 1 inch = 30 ft.
 NAD 83 (2011)

BRAGG DRIVE 60' PUBLIC R/W

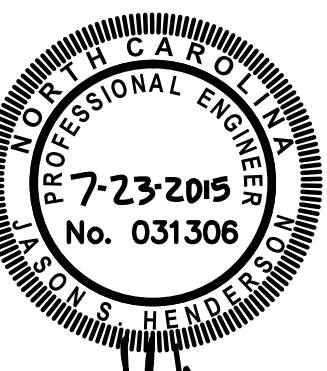
Project Number: 2014-090
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 Virginia PE# 60203118

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 www.bluewatercivil.com • info@bluewatercivil.com

Certificates of Authorization:
 SC C04212 - GA PEF005865
 NC P0688 - AL CA4065E

BRAGG ROAD DEV. COMPANY, LLC
 716 Bragg Drive
 Wilmington, NC 28412

Approved Construction Plan
 Name _____ Date _____
 Planning _____
 Traffic _____
 Fire _____

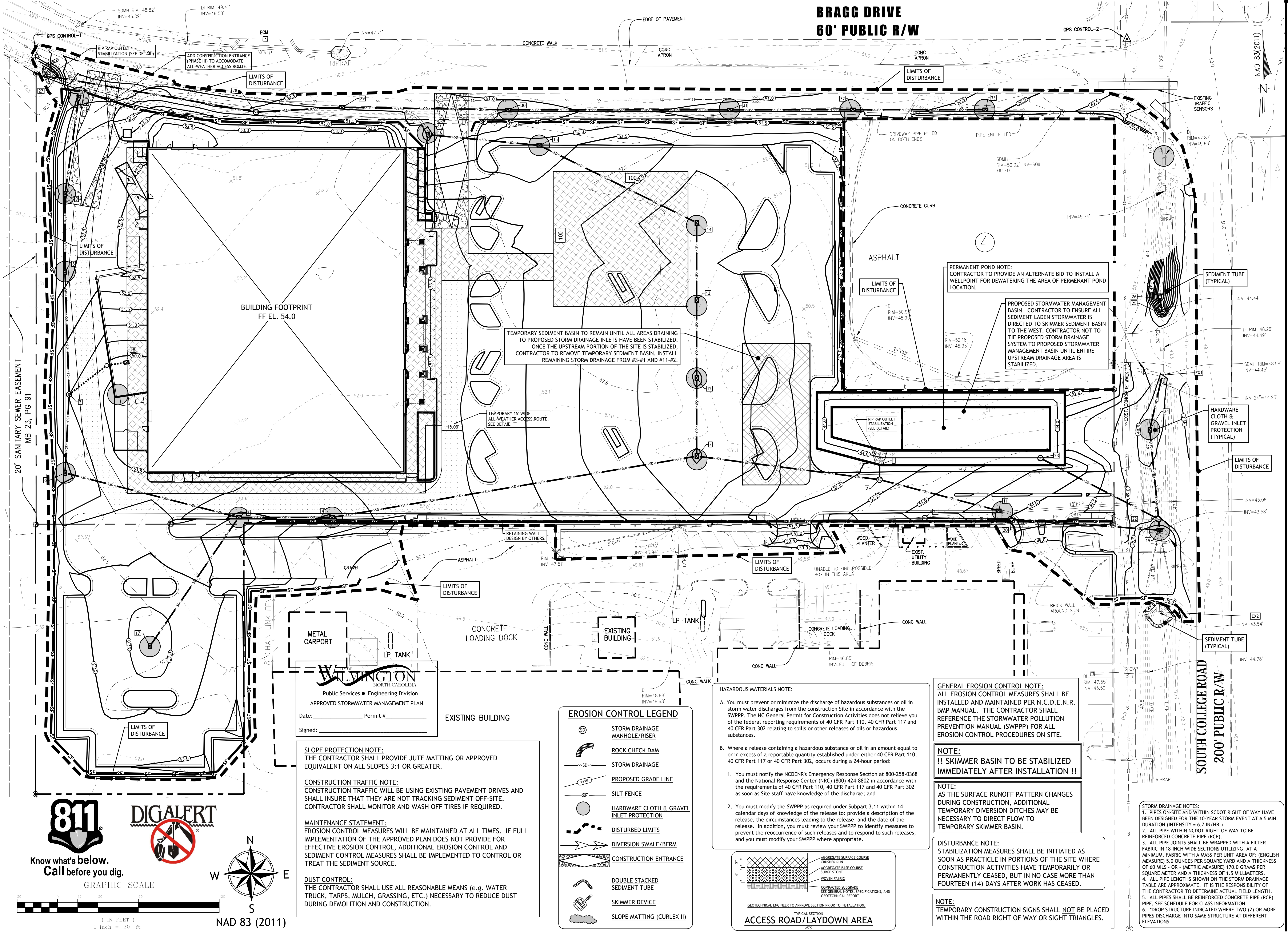


Bluewater Civil Design, PLLC
 NC-P-0868

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PHASE III EROSION CONTROL PLAN

C205



TEMPORARY SEDIMENT BASIN TO REMAIN UNTIL ALL AREAS DRAINING TO PROPOSED STORM DRAINAGE INLETS HAVE BEEN STABILIZED. ONCE THE UPSTREAM PORTION OF THE SITE IS STABILIZED, CONTRACTOR TO REMOVE TEMPORARY SEDIMENT BASIN, INSTALL REMAINING STORM DRAINAGE FROM #3-#1 AND #11-#2.

PERMANENT POND NOTE:
 CONTRACTOR TO PROVIDE AN ALTERNATE BID TO INSTALL A WELLPOINT FOR DEWATERING THE AREA OF PERMANENT POND LOCATION.

PROPOSED STORMWATER MANAGEMENT BASIN. CONTRACTOR TO ENSURE ALL SEDIMENT LADEN STORMWATER IS DIRECTED TO SKIMMER SEDIMENT BASIN TO THE WEST. CONTRACTOR NOT TO THE PROPOSED STORM DRAINAGE SYSTEM TO PROPOSED STORMWATER MANAGEMENT BASIN UNTIL ENTIRE UPSTREAM DRAINAGE AREA IS STABILIZED.

SLOPE PROTECTION NOTE:
 THE CONTRACTOR SHALL PROVIDE JUTE MATTING OR APPROVED EQUIVALENT ON ALL SLOPES 3:1 OR GREATER.

CONSTRUCTION TRAFFIC NOTE:
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DUST CONTROL:
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- EROSION CONTROL LEGEND**
- STORM DRAINAGE MANHOLE/RISER
 - ROCK CHECK DAM
 - STORM DRAINAGE
 - PROPOSED GRADE LINE
 - SILT FENCE
 - HARDWARE CLOTH & GRAVEL INLET PROTECTION
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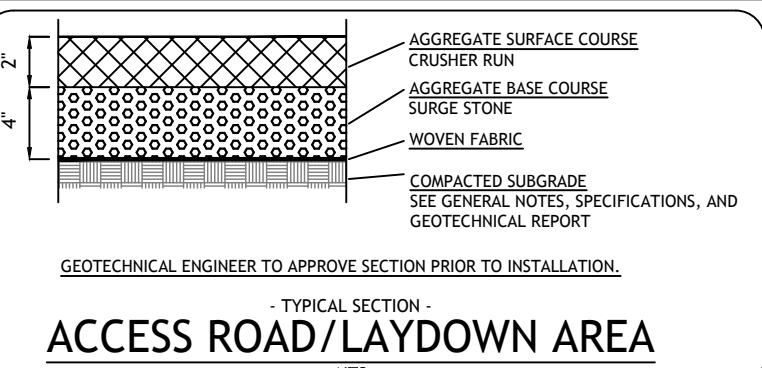
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NOTE:
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NOTE:
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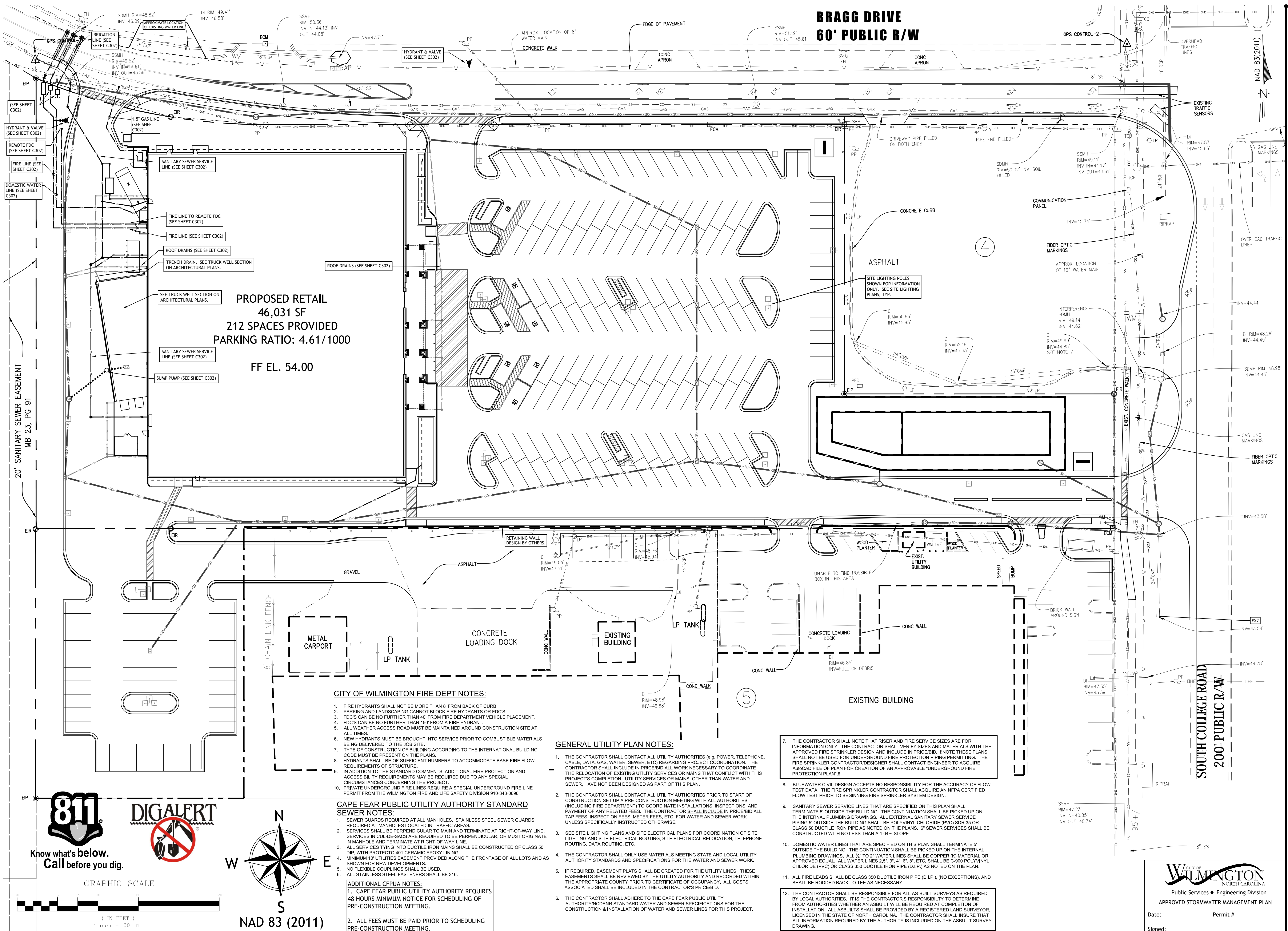
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- *DROP STRUCTURE INDICATED WHERE TWO (2) OR MORE PIPES DISCHARGE INTO SAME STRUCTURE AT DIFFERENT ELEVATIONS.

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 NAD 83 (2011)



**BRAGG DRIVE
60' PUBLIC R/W**

**SOUTH COLLEGE ROAD
200' PUBLIC R/W**

**PROPOSED RETAIL
46,031 SF
212 SPACES PROVIDED
PARKING RATIO: 4.61/1000**

FF EL. 54.00

CITY OF WILMINGTON FIRE DEPT NOTES:

1. FIRE HYDRANTS SHALL NOT BE MORE THAN 8' FROM BACK OF CURB.
2. PARKING AND LANDSCAPING CANNOT BLOCK FIRE HYDRANTS OR FDC'S.
3. FDC'S CAN BE NO FURTHER THAN 40' FROM FIRE DEPARTMENT VEHICLE PLACEMENT.
4. FDC'S CAN BE NO FURTHER THAN 150' FROM A FIRE HYDRANT.
5. ALL WEATHER ACCESS ROAD MUST BE MAINTAINED AROUND CONSTRUCTION SITE AT ALL TIMES.
6. NEW HYDRANTS MUST BE BROUGHT INTO SERVICE PRIOR TO COMBUSTIBLE MATERIALS BEING DELIVERED TO THE JOB SITE.
7. TYPE OF CONSTRUCTION OF BUILDING ACCORDING TO THE INTERNATIONAL BUILDING CODE MUST BE PRESENT ON THE PLANS.
8. HYDRANTS SHALL BE OF SUFFICIENT NUMBERS TO ACCOMMODATE BASE FIRE FLOW REQUIREMENTS OF STRUCTURE.
9. IN ADDITION TO THE STANDARD COMMENTS, ADDITIONAL FIRE PROTECTION AND ACCESSIBILITY REQUIREMENTS MAY BE REQUIRED DUE TO ANY SPECIAL CIRCUMSTANCES CONCERNING THE PROJECT.
10. PRIVATE UNDERGROUND FIRE LINES REQUIRE A SPECIAL UNDERGROUND FIRE LINE PERMIT FROM THE WILMINGTON FIRE AND LIFE SAFETY DIVISION 910-343-0696.

GENERAL UTILITY PLAN NOTES:

1. THE CONTRACTOR SHALL CONTACT ALL UTILITY AUTHORITIES (e.g. POWER, TELEPHONE, CABLE, DATA, GAS, WATER, SEWER, ETC) REGARDING PROJECT COORDINATION. THE CONTRACTOR SHALL INCLUDE IN PRICE/BID ALL WORK NECESSARY TO COORDINATE THE RELOCATION OF EXISTING UTILITY SERVICES OR MAINS THAT CONFLICT WITH THIS PROJECT'S COMPLETION. UTILITY SERVICES OR MAINS, OTHER THAN WATER AND SEWER, HAVE NOT BEEN DESIGNED AS PART OF THIS PLAN.
2. THE CONTRACTOR SHALL CONTACT ALL UTILITY AUTHORITIES PRIOR TO START OF CONSTRUCTION SET UP A PRE-CONSTRUCTION MEETING WITH ALL AUTHORITIES (INCLUDING FIRE DEPARTMENT) TO COORDINATE INSTALLATIONS, INSPECTIONS, AND PAYMENT OF ANY RELATED FEES. THE CONTRACTOR SHALL INCLUDE IN PRICE/BID ALL TAP FEES, INSPECTION FEES, METER FEES, ETC. FOR WATER AND SEWER WORK UNLESS SPECIFICALLY INSTRUCTED OTHERWISE.
3. SEE SITE LIGHTING PLANS AND SITE ELECTRICAL PLANS FOR COORDINATION OF SITE LIGHTING AND SITE ELECTRICAL ROUTING, SITE ELECTRICAL RELOCATION, TELEPHONE ROUTING, DATA ROUTING, ETC.
4. THE CONTRACTOR SHALL ONLY USE MATERIALS MEETING STATE AND LOCAL UTILITY AUTHORITY STANDARDS AND SPECIFICATIONS FOR THE WATER AND SEWER WORK.
5. IF REQUIRED, EASEMENT PLATS SHALL BE CREATED FOR THE UTILITY LINES. THESE EASEMENTS SHALL BE REVIEWED BY THE UTILITY AUTHORITY AND RECORDED WITHIN THE APPROPRIATE COUNTY PRIOR TO CERTIFICATE OF OCCUPANCY. ALL COSTS ASSOCIATED SHALL BE INCLUDED IN THE CONTRACTOR'S PRICE/BID.
6. THE CONTRACTOR SHALL ADHERE TO THE CAPE FEAR PUBLIC UTILITY AUTHORITY (CFPUA) STANDARD WATER AND SEWER SPECIFICATIONS FOR THE CONSTRUCTION & INSTALLATION OF WATER AND SEWER LINES FOR THIS PROJECT.

7. THE CONTRACTOR SHALL NOTE THAT RISER AND FIRE SERVICE SIZES ARE FOR INFORMATION ONLY. THE CONTRACTOR SHALL VERIFY SIZES AND MATERIALS WITH THE APPROVED FIRE SPRINKLER DESIGN AND INCLUDE IN PRICE/BID. IN THESE PLANS SHALL NOT BE USED FOR UNDERGROUND FIRE PROTECTION PIPING PERMITTING. THE FIRE SPRINKLER CONTRACTOR/DESIGNER SHALL CONTACT ENGINEER TO ACQUIRE AutoCAD FILE OF PLAN FOR CREATION OF AN APPROVABLE "UNDERGROUND FIRE PROTECTION PLAN".

8. BLUEWATER CIVIL DESIGN ACCEPTS NO RESPONSIBILITY FOR THE ACCURACY OF FLOW TEST DATA. THE FIRE SPRINKLER CONTRACTOR SHALL ACQUIRE AN NPPA CERTIFIED FLOW TEST PRIOR TO BEGINNING FIRE SPRINKLER SYSTEM DESIGN.

9. SANITARY SEWER SERVICE LINES THAT ARE SPECIFIED ON THIS PLAN SHALL TERMINATE 5' OUTSIDE THE BUILDING. THE CONTINUATION SHALL BE PICKED UP ON THE INTERNAL PLUMBING DRAWINGS. ALL EXTERNAL SANITARY SEWER SERVICE PIPING 5' OUTSIDE THE BUILDING SHALL BE POLYVINYL CHLORIDE (PVC) SDR 35 OR CLASS 50 DUCTILE IRON PIPE (DIP) AS NOTED ON THE PLANS. 6" SEWER SERVICES SHALL BE CONSTRUCTED WITH NO LESS THAN A 1.0% SLOPE.

10. DOMESTIC WATER LINES THAT ARE SPECIFIED ON THIS PLAN SHALL TERMINATE 5' OUTSIDE THE BUILDING. THE CONTINUATION SHALL BE PICKED UP ON THE INTERNAL PLUMBING DRAWINGS. ALL 1/2" TO 2" WATER LINES SHALL BE COPPER (K) MATERIAL OR APPROVED EQUAL. ALL WATER LINES 2.5", 3", 4", 6", 8", ETC. SHALL BE C-900 POLYVINYL CHLORIDE (PVC) OR CLASS 350 DUCTILE IRON PIPE (D.I.P.) AS NOTED ON THE PLAN.

11. ALL FIRE LEADS SHALL BE CLASS 350 DUCTILE IRON PIPE (D.I.P.), (NO EXCEPTIONS), AND SHALL BE RODDED BACK TO TEE AS NECESSARY.

12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL AS-BUILT SURVEYS AS REQUIRED BY LOCAL AUTHORITIES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE FROM AUTHORITIES WHETHER AN ASBUILT WILL BE REQUIRED AT COMPLETION OF INSTALLATION. ALL ASBUILT SHALL BE PROVIDED BY A REGISTERED LAND SURVEYOR LICENSED IN THE STATE OF NORTH CAROLINA. THE CONTRACTOR SHALL INSURE THAT ALL INFORMATION REQUIRED BY THE AUTHORITY IS INCLUDED ON THE ASBUILT SURVEY DRAWING.

CAPE FEAR PUBLIC UTILITY AUTHORITY STANDARD SEWER NOTES:

1. SEWER GUARDS REQUIRED AT ALL MANHOLES. STAINLESS STEEL SEWER GUARDS REQUIRED AT MANHOLES LOCATED IN TRAFFIC AREAS.
2. SERVICES SHALL BE PERPENDICULAR TO MAIN AND TERMINATE AT RIGHT-OF-WAY LINE. SERVICES IN CUL-DE-SACS ARE REQUIRED TO BE PERPENDICULAR, OR MUST ORIGINATE IN MANHOLE AND TERMINATE AT RIGHT-OF-WAY LINE.
3. ALL SERVICES TYING INTO DUCTILE IRON MAINS SHALL BE CONSTRUCTED OF CLASS 50 DIP, WITH PROTECTO 401 CERAMIC EPOXY LINING.
4. MINIMUM 10' UTILITIES EASEMENT PROVIDED ALONG THE FRONTAGE OF ALL LOTS AND AS SHOWN FOR NEW DEVELOPMENTS.
5. NO FLEXIBLE COUPLINGS SHALL BE USED.
6. ALL STAINLESS STEEL FASTENERS SHALL BE 316.

ADDITIONAL CFPUA NOTES:

1. CAPE FEAR PUBLIC UTILITY AUTHORITY REQUIRES 48 HOURS MINIMUM NOTICE FOR SCHEDULING OF PRE-CONSTRUCTION MEETING.
2. ALL FEES MUST BE PAID PRIOR TO SCHEDULING PRE-CONSTRUCTION MEETING.

Project Number: 2014-090
 DWG Name: 2014-090 D1.dwg
 Drawing Scale: AS NOTED
 Date of Project: 10-21-2014
 Engineer of Record:
 Jason Henderson, P.E.
 South Carolina PE# 21406
 Georgia PE# 03571
 North Carolina PE# 01306
 Alabama PE# 01504
 Louisiana PE# 38891
 Virginia PE# 6020318

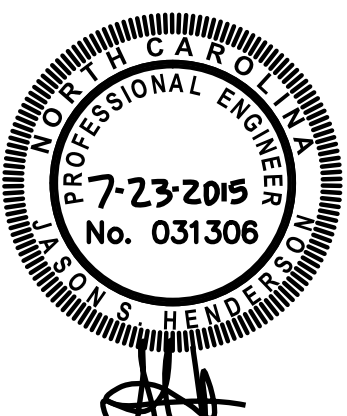
bluewater
 civil design, PLLC
 bluewater civil design, PLLC
 19 Washington Park Suite 100 • Greenville, SC 29601
 www.bluewatercivil.com • info@bluewatercivil.com

Certificates of Authorization:
 SC 04212 - GA PE005865
 NC P0868 - AL CA4065E

BRAGG ROAD DEV. COMPANY, LLC
 716 Bragg Drive
 Wilmington, NC 28412

Approved Construction Plan

Name	Date
Planning	
Traffic	
Fire	



Bluewater Civil Design, PLLC
 NC-P-0868

PLAN REVISION	ISSUE DATE	ISSUE COMMENT
A	2-3-2015	ISSUED FOR PERMITS
B	2-25-2015	REVISED PER COMMENTS
C	4-2-2015	REVISED PER NEW HANDOVER COMMENTS
D	4-16-2015	100% TENANT SUBMITTAL
E	4-30-2015	REVISED PER NCDOT/WILMINGTON COMMENTS
F	6-2-2015	REVISED PER CITY & TENANT COMMENTS
G	7-15-2015	REVISED PER TENANT COMMENTS
H	7-22-2015	REVISED PER CITY COMMENTS

OVERALL UTILITY PLAN

C301

GENERAL NOTES FOR SITEWORK

- The Contractor shall call 811 Utility Locate Service prior to start of any construction activity.
- Survey:
 - Survey Information provided by Robert Sessoms & Associates, PLLC (910-352-8846). The Contractor shall verify all benchmarks, easements, the location and invert elevation of all underground utilities within the construction area, verify property corners, and verify topography before any construction is begun.
 - The Contractor shall contact all utility companies prior to excavation to locate for all buried cables and underground utilities in the construction area or utilities that will be impacted by construction.
- Permits:
 - The Contractor shall have copies of any necessary encroachment and construction permits prior to entering any right-of-way or beginning construction.
 - Permits typically required include but are not limited to: State NPDES Coverage, Local Issuing Authority Grading Permit, DOT Encroachment Permits (Access and utility taps), State or Local Water Authority water extension permit, State or Local Sewer Authority sewer extension permit, Fire Marshall approval, and Local Municipality Zoning and Site Plan Approval.
 - The Contractor shall immediately notify the Owner's Representative when notices or verbal instructions are received from regulatory authorities, inspectors, or similar. The Contractor shall proceed with work associated with such notices or instructions once approved to do so by the Owner's Representative or as required by law.
- Safety:
 - By Law, the Contractor shall comply with all OSHA regulations, including safety protocol, safety gear, safety education, etc.
 - The Contractor is exclusively responsible for the conditions of the site, including safety of all persons and property throughout the term of the project construction, 24 hrs per day / 7 days per week.
 - The Engineer's review of the Contractor's work product and performance will not include review of the Contractor's safety programs. Such reviews are to be by OSHA Inspectors and the Owner's Representative.
 - The Contractor is responsible for providing and maintaining all necessary traffic control devices during construction. Under no circumstances shall equipment be loaded or off-loaded on an open roadway. If such activity is required the Contractor shall coordinate shutting down the road with the appropriate DOT and utilize appropriate traffic control warning devices.
- SWPPP:
 - The Contractor is responsible for reviewing the requirements in the SWPPP drawings and maintaining all records as required by Local, State, and Federal Laws.
 - The SWPPP manual/plans shall be kept on-site in a secure location accessible to the inspector at all times during construction.
 - The Contractor shall post a 24-Hour Contact and phone # and rain gauge at the job site.
- Pre-construction Meeting:
 - The Contractor shall immediately contact the state or local issuing authority, utility companies, etc. and set up a pre-construction conference at the Contractor's office.
 - The Contractor shall make sure the Engineer of Record, Owner, Inspector, Superintendent, and any relevant erosion control sub-contractor are in attendance.
 - The Contractor shall develop an attendance sign in sheet and keep minutes of the meeting with the SWPPP.
- Tree Protection:
 - The Contractor shall protect trees that are noted to remain on the plans or as marked in the field by Owner's Representative. Trees that are to be protected shall have a protective fencing installed around the critical root zone (1' for every 1" DBH) and shall not disturb the root zone of such trees unless approved to do so in writing by the Owner's Representative.
 - The Contractor shall remove all trees and vegetation that interfere with new construction not noted to be protected. Remove debris from site or burn in accordance with local laws.
 - The Contractor shall be responsible for obtaining all necessary dumping or burning permits.
- Earthwork:
 - The Contractor shall grade the site to the lines and grades shown and shall proof-roll and test compaction on all areas.
 - The Contractor shall retain the services of a testing company to test all areas to insure they meet the minimum compaction requirements as noted in these notes or as required by the Owner's Geotechnical Engineer's report.
 - The Grading Contractor shall proof-roll the construction area. All soft spots shall be undercut and re-compacted with suitable structural fill material and re-tested. Proof-rolling shall be observed by a qualified Geotechnical Engineer or Engineering Technician.
 - All proposed elevations shown are finish grade elevation and the Grading Contractor shall deduct quantities from the finished grades as required due to depth of pavement sections, sidewalks, turf areas with topsoil, building foundations, etc. to develop the true finished sub-grade.
 - Any topsoil in the construction area shall be stripped to a depth as required (see Geotechnical Report for referenced depths) and stockpiled as directed by the Owner's Representative. Topsoil shall be re-used on-site unless approved otherwise.
 - The Contractor shall reference the Geotechnical Report for compaction requirements.
 - All excavation shall be "Classified Excavation". Excavation shall be "Classified" as "Common Excavation" or "Rock Excavation". Rock Excavation is removing material that has been observed by the testing company to only be removed by blasting or with an air hammer. Common Excavation is removing of materials by means of ripping and do not fall in the category of rock excavation as defined above (includes boulders, typical weathered rock, etc.)
 - The classification of soils include: topsoil, fill material, unsuitable material, and rock excavation. The classification of soils is the responsibility of the geotechnical soil testing firm.
 - Rock Excavation is classified as:
 - 8.9.A. Massive rock excavation - Material of 1 c.y., or more unable to be excavated with a single tooth ripper drawn by a crawler tractor having a minimum draw bar rated at not less than 53,000 pounds (Caterpillar D-8 or equivalent).
 - 8.9.B. Trench excavation - Material of 1/2 c.y. or more which cannot be excavated with a power shovel having the capacity of at least that of a Caterpillar 225.
 - Fill material (including off site borrow) shall be from a source approved by the soil testing company and shall be free of roots, organics and boulders larger than 1 cubic foot. Fill shall be placed in 10' lifts and compacted as specified. The fill shall meet the specifications as required by the testing company or as indicated in the Geotechnical Report.
 - All existing paved areas to be replaced with fill area shall be scarified prior to placement of any fill material.
 - All slopes steeper than 4:1 receiving fill shall be plowed and scarified to enhance the bonding of new fill with existing surfaces.
 - The Grading Contractor shall include in contract price the total cost and unit price for all cut/fill necessary for earthwork balance including any necessary material hauling and hauling off material.
 - The wetting/drying of soils to achieve specified compaction shall be included in the Grading Contractor's contract price.
 - All private roads and parking lots shall have a minimum 5'-0" wide grassed shoulder with a maximum 2.0% cross slope. All public roads shall have a 6'-0" wide grassed shoulder with a maximum 2.0% cross slope.
 - Tolerances for final constructed grades shall be plus or minus 0.05 feet. The final graded surface under all building slabs shall be within a tolerance of 3/8" when measured with a 10' straight edge. All designated ADA accessible paths shall have a maximum 2.00% (1:50) cross-slope and maximum 5.00% (1:20) running slope, no exceptions. All designated ADA accessible parking spaces and landings (including 4' area out from all doorways) shall have a maximum 2.00% (1:50) slope in any direction, no exceptions. All designated ADA accessible ramps shall have a maximum slope of 8.33% (1:12), no exceptions.
- Storm Drainage:
 - Reinforced Concrete Pipe (RCP) shall conform to ASTM C 76, latest edition. RCP with cover less than 15' and greater than 2' shall be CLASS II bell and spigot type and installed with flexible plastic (Bitumen) gaskets at all joints, unless otherwise noted. All other depths of cover shall be CLASS IV or V as noted. Gaskets shall comply with AASHTO M-198 751, Type B, and shall be installed in strict accordance with pipe manufacturer's recommendations.
 - All corrugated plastic pipe shall meet the requirements of AASHTO M-294, Type S, shall be smooth interior with annular corrugated exterior. HDPE, ADG, N-12, or approved equal. All joints shall be bell and spigot and shall meet the requirements of AASHTO M-294, shall be watertight, meeting the requirements of ASTM D 3212. The gaskets shall be made of Polyisoprene meeting the requirements of ASTM F 477. Installation shall conform to AASHTO M-294, ASTM D-2321, and manufacturer's installation procedures. The maximum cover allowed over the top of CCP is 15'.
- Utilities:
 - All water shall be per the approved drawing and the latest standards and specifications of the local water authority. The Contractor shall coordinate construction with the local water authority, including schedule & laydown areas. Any deviation from the approved plan shall be brought to the attention of the Engineer of Record and the appropriate inspector immediately. Deviations from the approved plan shall not be installed unless approved in writing by the local water authority.
 - Sanitary sewer lines and appurtenances shall be installed per the approved drawing and latest standards and specs of the local sewer authority.
 - The Contractor shall insure they have the proper approvals from the City of Wilmington & NCDENR prior to installation of any domestic water, fire water, or sanitary sewer system.
 - All utility trenches shall be thoroughly compacted as required by the local authority and tested to prevent settlement and damage to future pavement and structures.
 - The Contractor shall be responsible for relocating any existing utilities necessary for site construction, including all permits and fees. The Contractor is responsible for contacting all utility companies and including in his price all fees, charges, expenses, etc. in his cost to the Owner.
- Pavement:
 - All paving work (materials and construction) shall comply with NCDOT standards and specifications for Hot-mixed Asphalt Pavement. (See Pavement Section Details for depths of layers).
 - All pavement shall be installed on a finished and well-drained sub-grade compacted as specified in previous notes.
 - Base course material for asphalt pavement shall be stone aggregate base course (ABC) and compacted to 100% modified proctor.
 - Concrete pavement shall consist of a base course with stone aggregate base course compacted to 100% modified proctor. The concrete shall be poured with WWF. Concrete shall be broom finished and jointed as required.
 - Concrete curb and gutter ON-SITE AND OUTSIDE OF NCDOT RIGHT OF WAY shall be per ON-SITE 24" Curb and Gutter per City of Wilmington Standards.
 - Concrete curb and gutter WITHIN NCDOT RIGHT OF WAY shall be NCDOT STANDARD 30" wide with standard curb constructed with 4,000 PSI concrete with expansion joints and contraction joints installed to comply with state DOT standard specification for materials and construction of curb and gutter.
 - All parking lot striping shall be per State D.O.T. specifications with two (2) coats of paint applied. The bases of all light poles, all bollards, and the face of all structures are to be painted TYPICAL YELLOW. The Contractor is responsible for providing fire lane striping and signage meeting all local requirements. Parking lot striping shall be reflective paint (see site plan for color). Stop bars, directional arrows, and parcel pickup are to be reflective paint (see site plan for color). All ADA striping shall be reflective ADA blue.
- Erosion Control and Drainage:
 - All areas outside paving limits and building foundations shall have a minimum 4" layer of topsoil added and permanently grassed in accordance with state seeding specifications or landscaped per the Landscape Plan if applicable.
 - The Grading Contractor shall maintain positive drainage away from buildings at all times. The Contractor shall bring to the attention of the Engineer any areas that may not drain properly during construction.
 - The sequence of work shall conform to the erosion control narrative.
 - Sediment controls during construction shall comply with all local, state, and federal laws and regulations. After all sitework is completed and grassing established, the Grading Contractor shall remove all silt from the site and legally dispose of all silt off-site at no additional cost to the Owner, or bury on-site in non-structural area.
 - No work shall begin on site until approval from the City of Wilmington & New Hanover County, a NCDENR NPDES permit has been issued, and a pre-construction meeting has been completed with the City of Wilmington, the Owner, and the Engineer.
- General:
 - The Contractor shall review the plans and specifications carefully and shall immediately notify the Engineer for a review if any discrepancies are discovered at the site or on the drawings.
 - All reference to state standards and specifications are made from the North Carolina Department of Transportation Standard Specifications for Roads and Bridges, latest edition and Roadway Standard Drawings, latest edition.
 - All dimensions shown on the drawings are measured as shown and from outside face of building wall or face of curb line, unless otherwise noted. Curb and Gutter is shown as three (3) lines (outside edge of gutter, face of curb, and back of curb).
 - All retaining wall design shall be per Architectural Plan or separate Structural Engineer's design notes and details. The Civil Plans shall not be considered plans for retaining wall construction.
 - The General Contractor is responsible for posting all required bonds that General Contractors are allowed to post.
 - If any conflicts between the notes, details, specifications, and drawings occur then by rule the stricter shall govern.

STANDARD EROSION AND SEDIMENT CONTROL NOTES

Startup

- Sediment and erosion control devices shall be installed and functioning prior to beginning any project earth disturbing activities.
- Soil stabilization shall be achieved on any area of a site where land-disturbing activities have temporarily or permanently ceased according to the following schedule:
 - All perimeter dikes, swales, ditches, perimeter slopes and all slopes steeper than 3 horizontal to 1 vertical (3:1) shall be provided temporary or permanent stabilization with ground cover as soon as practicable but in any event within 7 calendar days from the last land-disturbing activity.
 - All other disturbed areas shall be provided temporary or permanent stabilization with ground cover as soon as practicable but in any event within 14 calendar days from the last land-disturbing activity.
- To secure the project site, locate limits of construction, protect areas that are to remain undisturbed, and prevent migration of construction debris, orange construction fencing shall be installed around areas not requiring silt fencing. Any accumulation of construction debris on public roadways or adjacent properties shall be removed within 24 hours. Care shall be taken when installing construction fencing to not obscure oncoming traffic at intersections, adjacent driveways and the project construction entrance.

Inspections and Maintenance

- All sediment and erosion control devices shall be inspected every seven (7) days minimum or after every rain event. Damaged or ineffective devices shall be repaired or replaced, as necessary.
- All sediment and erosion controls shall be inspected, at the specified inspection frequency, until construction is complete and the site is permanently stabilized.
- All erosion control devices shall be properly maintained during all phases of construction until the completion of all construction activities and all disturbed areas have been permanently stabilized. Additional control devices may be required during construction in order to control erosion and/or offsite sedimentation. All temporary control devices shall be removed once construction is complete and the site is permanently stabilized.
- All existing and new storm water structures, affected by this project, shall be inspected and maintained clean of accumulated demolition debris or sediments. The inspection and maintenance of these structures shall be accomplished on the same schedule as the sediment and erosion control devices.
- Disposal of all recovered sediments and construction debris shall be in accordance with all applicable City, State and Federal Regulations.
- All erosion and sediment control plans and documentation (e.g., certification statements, inspection records, and maintenance records) shall be available on site during construction. All plans and documents shall be updated as required per NPDES General Permit.

Best Management Practices (BMPs)

- A stabilized construction entrance shall be installed and maintained on the project site. Storm water inlet protection shall be provided for all inlets (upstream and downstream) within 50 ft. of the construction entrance (on both sides of the public roadway).
- During the course of construction activities erosion and sediment controls shall be used to prevent; sediment accumulation on public roadways (including street gutters), sediment laden runoff from entering into existing storm water system inlets or depositing on adjacent properties, and airborne dust migration off-site. Any accumulation of sediment from the project site on public roadways or adjacent properties shall be removed within 24 hours.

or

The contractor must take necessary action to minimize the tracking of mud onto the paved roadway construction areas. The contractor shall daily remove mud/soil from pavement, as may be required.
- Provide silt fence and/or other control devices, as may be required, to control soil erosion during utility construction. All disturbed areas shall be cleaned, graded, and stabilized immediately after the utility installation.
- Silt fencing shall be placed no closer than 5 ft. downhill from the toe of any fill area.
- Temporary stockpiling of useable or waste materials for more than fourteen (14) days shall have appropriate erosion and sediment control measures installed. Temporary stockpiles shall be placed away from storm water inlet structures, adjacent property and public roadways.
- Litter, construction debris, oils, fuels, building products with significant potential for impact (such as stockpiles of freshly treated lumber), and construction chemicals that could be exposed to storm water must be prevented from becoming a pollutant source in storm water discharges.
- Temporary diversion berms and/or ditches will be provided as needed during construction to protect areas from upslope runoff and/or to divert sediment laden water to appropriate traps or stable outlets.
- If necessary, slopes which exceed eight (8) vertical feet should be stabilized with synthetic or vegetative mats, in addition to hydro seeding. It may be necessary to install temporary slope drains during construction. Temporary berms may be needed until the slope is brought to grade.
- Cat track or surface roughening is required for all slopes greater than 4:1 prior to seeding and lying of synthetic or vegetative mats. Cat tracking or surface roughening shall produce a surface with furrows running cross slope, parallel with slope contours, and perpendicular to surface runoff.

Close-out

- The site shall be considered permanently stabilized when all surface disturbing activities are complete and either of the two following criteria are met:
 - A uniform (e.g., evenly disturbed, without large bare areas) perennial vegetative cover with a density of 70% of the native background vegetative cover for the area has been established on all unpaved areas and areas not covered by permanent structures, or
 - Equivalent permanent stabilization measures (such as riprap, gabions, or geotextiles) have been employed.
- Upon completion of construction activities and meeting the conditions of permanent stabilization a Notice of Termination (NOT) shall be submitted to N.C.D.E.N.R. Wilmington Regional Office and a copy of the submitted NOT shall be sent to the City of Wilmington and New Hanover County.

ENVIRONMENTAL / GEOTECHNICAL NOTE:

Per the Environmental / Geotechnical Report - Soils at the site are moisture sensitive, therefore, construction schedule (season) is important. Demolition Debris may be present to varying degrees across the site and undercutting of existing soils may be required. Contractor to carefully review the Environmental and Geotechnical reports as part of this project. Contractor to adhere to the requirements in the reports. Monitoring wells may be removed/relocated/installed as part of this project, Contractor to coordinate with Geotech Engineer regarding installation/location/procedure/schedule, etc.

ENVIRONMENTAL: Limited Environmental Site Assessment Prepared by: Commonwealth Environmental Associates, Inc. Iron Bridge Rd. Richmond, VA 23237 Project # 8414

GEOTECHNICAL: Geotechnical Engineering Report Prepared by: Terracon Consultants, Inc. 2401 Brentwood Road, Suite 107 Raleigh, NC 27604 Report # 70145126

NCDENR - SEDIMENT CONTROL NOTES

Ground Stabilization

- Soil stabilization shall be achieved on any area of a site where land-disturbing activities have temporarily or permanently ceased according to the following schedule:
 - All perimeter dikes, swales, ditches, perimeter slopes and all slopes steeper than 3 horizontal to 1 vertical (3:1) shall be provided temporary or permanent stabilization with ground cover as soon as practicable but in any event within 7 calendar days from the last land-disturbing activity.
 - All other disturbed areas shall be provided temporary or permanent stabilization with ground cover as soon as practicable but in any event within 14 calendar days from the last land-disturbing activity.
- Conditions - In meeting the stabilization requirements above, the following conditions or exemptions shall apply:
 - Extensions of time may be approved by the permitting authority based on weather or other site-specific conditions that make compliance impracticable.
 - All slopes 50' in length or greater shall apply the ground cover within 7 days except when the slope is flatter than 4: 1. Slopes less than 50' shall apply ground cover within 14 days except when slopes are steeper than 3:1, the 7 day-requirement applies.
 - Any sloped area flatter than 4: 1 shall be exempt from the 7-day ground cover requirement.
 - Slopes 10' or less in length shall be exempt from the 7-day ground cover requirement except when the slope is steeper than 2: 1.
 - Although stabilization is usually specified as ground cover, other methods, such as chemical stabilization, may be allowed on a case-by-case basis.
 - For portions of projects within the Sediment Control Commission-defined "High Quality Water Zone" (I5A NCAC 04A.0105), stabilization with ground cover shall be achieved as soon as practicable but in any event on all areas of the site within 7 calendar days from the last land disturbing act.
 - Portions of a site that are lower in elevation than adjacent discharge locations and are not expected to discharge during construction may be exempt from the temporary ground cover requirements if identified on the approved E&S Plan or added by the permitting authority.

Self Inspection and Reporting Requirements

Minimum self inspection and reporting requirements are as follows unless otherwise approved in writing by the Division of Water Quality.

- A rain gauge shall be maintained in good working order on the site unless another rain monitoring device has been approved by the Division of Water Quality.
- A written record of the daily rainfall amounts shall be retained and all records shall be made available to Division of Water Quality or authorized agent upon request. If no daily rain gauge observations are made during weekend or holiday periods, and no individual-day rainfall information is available, the cumulative rain measurement for those un-attended days will determine if a site inspection is needed. (Note: if no rainfall occurred, the permittee must record "zero").
- Erosion and sedimentation control measures shall be inspected to ensure that they are operating correctly. Inspection records must be maintained for each inspection event and for each measure. At a minimum, inspection of measures must occur at the frequency indicated below:
 - All erosion and sedimentation control measures must be inspected by or under the direction of the permittee at least once every seven calendar days, and
 - All erosion and sediment control measures must be inspected by or under the direction of the permittee within 24 hours after any storm event of greater than 0.50 inches of rain per 24 hour period.
- Once land disturbance has begun on the site, stormwater runoff discharge outfalls shall be inspected by observation for erosion, sedimentation and other storm water discharge characteristics such as clarity, floating solids, and oil sheens. Inspections of the outfalls shall be made at least once every seven calendar days and within 24 hours after any storm event of greater than 0.50 inches of rain per 24 hour period.
- Inspections are only required to be made during normal business hours. When adverse weather conditions would cause the safety of the inspection personnel to be in jeopardy, the inspection can be delayed until it is deemed safe to perform these duties. (Times when inspections were delayed because of safety issues should be noted in the Inspection Record.) If the inspection cannot be done on that day, it must be completed on the following business day.
- Twenty-four Hour Reporting for visible sediment deposition

- The permittee shall report to the Division of Water Quality central office or the appropriate regional office any visible sediment being deposited in any stream or wetland or any noncompliance which may endanger health or the environment. (See Section VIII of this permit for contact information.) Any information shall be provided orally or electronically within 24 hours from the time the permittee became aware of the circumstances.
 - A written submission shall be provided to the appropriate regional office of the Division of Water Quality within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the sediment deposition and actions taken to address the cause of the deposition. The Division of Water Quality staff may waive the requirement for a written report on a case-by-case basis.
- Records of inspections made during the previous 30 days shall remain on the site and available for agency inspectors at all times during normal working hours, unless the Division of Water Quality provides a site-specific exemption based on unique site conditions that make this requirement not practical. Older records must be maintained for a period of three years after project completion and made available upon request. The records must provide the details of each inspection including observations, and actions taken in accordance with this permit. The permittee shall record the required rainfall and monitoring observations on the Inspection Record form provided by the Division or a similar inspection form that is inclusive of all of the elements contained in the Division's form. Use of electronically-available records, in lieu of the required paper copies for inspection will be allowed if shown to provide equal access and utility as the hard-copy records.

- Inspection records must include, at a minimum, the following:
 - Control Measure Inspections: Inspection records must include at a minimum:
 - 1) identification of the measures inspected,
 - 2) date and time of the inspection,
 - 3) name of the person performing the inspection,
 - 4) indication of whether the measures were operating properly,
 - 5) description of maintenance needs for the measure,
 - 6) corrective actions take, and
 - 7) date of actions taken, as well as the date and amounts of rainfall received.
 - Stormwater Discharge Inspections: Inspection records must include at a minimum:
 - 1) identification of the discharge outfall inspected,
 - 2) date and time of the inspection,
 - 3) name of the person performing the inspection,
 - 4) evidence of indicators of stormwater pollution such as oil sheen, floating or suspended solids or discoloration,
 - 5) indication of visible sediment leaving the site,
 - 6) actions taken to correct/prevent sedimentation, and
 - 7) date of actions taken.
 - Visible Sedimentation Found Outside the Site Limits: Inspection records must include:
 - 1) an explanation as to the actions taken to control future releases,
 - 2) actions taken to clean up or stabilize the sediment that has left the site limits, and
 - 3) the date of actions taken.
 - Visible Sedimentation Found in Streams or Wetlands: All inspections should include evaluation of streams or wetlands onsite or offsite (where accessible) to determine if visible sedimentation has occurred.
- Visible Stream Turbidity - If the discharge from a site results in an increase in visible stream turbidity, inspection records must record that evidence and actions taken to reduce sediment contributions. Sites discharging to streams named on the state's 303(d) list as impaired for sediment-related causes may be required to perform additional monitoring, inspections or application of more-stringent management practices if it is determined that the additional requirements are needed to assure compliance with the federal or state impaired-waters conditions. If a discharge covered by this permit enters a stream segment that is listed on the Impaired Stream List for sediment-related causes, and a Total Maximum Daily Load (TMDL) has been prepared for those pollutants, the permittee must implement measures to ensure that the discharge of pollutants from the site is consistent with the assumptions and meets the requirements of the approved TMDL. The Division of Water Quality 303(d) list can be found at: http://h2o.enr.state.nc.us/tmdl/General_303d.htm/

EROSION CONTROL NOTES

SITE INFORMATION:

- Existing Condition: Undeveloped, Wooded Site
- Proposed Condition: COMMERCIAL USE - PAVEMENT & BUILDING
- Proposed Work: EXCAVATION & FILLING
- Existing Soils: Le (Leon Sand), Ly (Lynn Haven fine Sand), Mu (Murville fine sand)
- BMPs Shown on Plan: INLET PROTECTION, SILT FENCE, SKIMMER BASIN, CHECK DAMS, CONSTRUCTION ENTRANCE
- Disturbed Area: 6.00± - ACRES FOR RE-DEVELOPMENT

EROSION CONTROL SEQUENCE (for Contractor):

Phase I - Sheet C202:

- Schedule a Pre-Construction Meeting at the site with the Owner, Engineer, and any local inspectors at least 72 hrs prior to commencement of construction.
- Install the permit box on-site.
- Clearly mark the limits of disturbance.
- Install construction entrance, install BMPs, and install any perimeter silt fence BMP protection prior to demolition activities.
- Establish main Construction Entrance/ Exit during demolition off Bragg Dr.
- Contractor to obtain all required demolition permit prior to beginning demolition (city of Wilmington, CFPUA, utilities/duke energy/tree removal, etc.).
- Continuously maintain all BMPs throughout construction. Remove accumulated sediment from BMPs and clean-out Sediment Basins as noted on plans. NOTE: Contractor's price for work shall be all inclusive for installing and maintaining BMPs as shown on drawings.

Note:

Maintenance of Sediment and Erosion Control Measures must continue until the site is permanently stabilized until the controls are removed.

Phase II-A - Sheet C203:

- Install Skimmer Sediment Basin 1 and required storm drainage as indicated on sheet C203.
- Install dewatering diversion ditches and direct stormwater runoff to skimmer sediment basin 1.
- Begin topsoil stripping as noted. Topsoil shall be re-used in grass or landscape areas and on slopes after rough grading operations.
- Construct Building Laydown area and Staging area around the proposed building pad.
- Continuously maintain all BMPs throughout construction. Remove accumulated sediment from BMPs and clean-out Sediment Basin as noted on plans. NOTE: Contractor's price for work shall be all inclusive for installing and maintaining BMPs as shown drawings.

Phase II-B - Sheet C204:

- Inspect and maintain sediment basin 1 (Constructed in Phase II).
- Install storm drainage, utilities, etc. as grade allows.
- Install Hardware Cloth & Gravel Inlet protection at all catch basins as they are constructed.
- Install temporary ditches/swales to divert stormwater to catch basins as shown on sheets C203.
- Install rock check dams as soon as ditch/swale grades are reached.
- Begin Rough Grading. Temporary or Permanent grassing shall be established on areas disturbed with no activity for 7 days. Continuously remove accumulated silt/sediment from BMPs.
- Install Retaining Walls (See design by geotechnical engineer).
- Install Slope Matting on all slopes 3:1 or steeper.
- Install Rip Rap Aprons in sediment pond #1 immediately as the corresponding headwalls are installed.
- Continuously maintain all BMPs throughout construction. Remove accumulated sediment from BMPs and clean-out Sediment Basin as noted on plans. NOTE: Contractor's price for work shall be all inclusive for installing and maintaining BMPs as shown drawings.

Phase III - Sheet C205:

- Inspect and maintain sediment basin 1 (Constructed in Phase II).
- Finalize Fine Grading and construct curb & gutter.
- Place stone as soon as possible on all areas to be paved and building pads.
- Respread topsoil (4" min.) evenly on unimproved areas and areas with no impervious surfaces proposed including all slopes.
- Place slope matting (Tensar RECP per detail) on all slopes as noted on the Phase III Erosion Control Plan.
- Permanently grass all areas not to be paved or built upon (ie outpads) or that receives landscaping/mulch. Establish 100% coverage with 70% density.
- Finalize all paving and grassing to achieve final stabilization.
- Remove silt/sediment from all BMPs (including sediment pond #1) and dispose of legally or on-site as approved by the soil testing company.
- Construct WET POND BMP.
- Once site is finalized with 100% grass coverage and 70% density contact local inspector and Engineer of Record for closeout inspection.
- Address any punchlist items from closeout inspection.
- Remove temporary BMPs once site is accepted for closeout by local issuing authority.
- Contact Engineer and schedule final walkthrough. Engineer will coordinate with Owner to apply for NOT (Stormwater).

CONTRACTOR TO PERFORM SELF INSPECTION ON ALL SEDIMENT AND EROSION CONTROL MEASURES AFTER EACH PHASE OF CONSTRUCTION TO ENSURE THE EROSION CONTROL & SEDIMENTATION PLANS ARE BEING FOLLOWED. COMPLETE THE SELF-INSPECTION REPORT (OBTAIN FROM NCDENR WEBSITE) AND PROVIDE TO OWNER AND ENGINEER.



Know what's below.
Call before you dig.

WILMINGTON
NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date: _____ Permit # _____
Signed: _____

Project Number: 2014-090

DWG Name: 2014-090 Details.dwg

Drawing Scale: AS NOTED

Date of Project: 10-21-2014

Engineer of Record:

Jason Henderson, P.E.
South Carolina PEF 2296
Georgia PEF 02071
North Carolina PEF 031306
Alabama PEF 32054

blue WATER
civil design, PLLC
bluewatercivil.com
19 Washington Park Suite 100 • Greenville, SC 29601
www.bluewatercivil.com • info@bluewatercivil.com

Certificates of Authorization:
SC 04212 - GA PEF05865
NC P0668 - AL CA4065E

BRAGG ROAD DEV.
COMPANY, LLC
716 Bragg Drive
Wilmington, NC 28412

Approved Construction Plan	Name	Date	Planning	Traffic	Fire



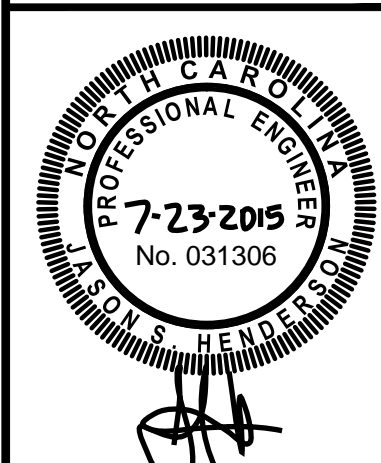
Bluewater Civil Design, PLLC
NC-P-0868

PLAN REVISION	ISSUE DATE	ISSUE
A	2-3-2015	ISSUED FOR PERMITS
B	2-25-2015	REVISED PER COMMENTS
C	4-2-2015	REVISED PER NEW HANDOVER COMMENTS
D	4-16-2015	100% TENANT SUBMITTAL
E	4-30-2015	REVISED PER HCDOT/WILMINGTON COMMENTS
F	6-2-2015	REVISED PER CITY TENANT COMMENTS
G	7-15-2015	REVISED PER TENANT COMMENTS
H	7-22-2015	REVISED PER CITY COMMENTS
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NOTES & DETAILS

C501

Approved Construction Plan
 Name _____ Date _____
 Planning _____
 Traffic _____
 Fire _____



Bluewater Civil Design, PLLC
 NC-P-0868

PLAN REVISION	ISSUE DATE	ISSUE COMMENT
A	2-3-2015	ISSUED FOR PERMITS
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H	7-22-2015	REVISED PER CITY COMMENTS
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NOTES & DETAILS

C502

SECTION 2930 – SEEDING AND LANDSCAPING

1.1 INTRODUCTION
 This section covers the furnishing of all labor, equipment, material and any other items necessary for landscaping of all areas of the site disturbed by construction operations and all earth surfaces of embankments including rough and fine grading, topsoil if required, fertilizer, lime, seeding and mulching. The Contractor shall adapt his operations to variations in weather or soil conditions as necessary for successful establishment and growth of grasses or legumes.

1.2 CATALOG CUT SUBMITTALS
 Contractor shall submit 4 copies of catalog cuts to Engineer for review for all materials that are required to complete the work as described in the associated plans. Engineer will retain two sets of original submittals and return two sets to the Contractor with the appropriate response annotated.

1.3 STORAGE AND HANDLING
 Contractor shall take all prudent and customary measures to ensure that all materials stay moisture free and are not degraded by storage or handling. All lime and fertilizer shall be kept free from hardening or caking and if this occurs they shall be pulverized to their original state. All seed shall be further protected such that it is not subjected to heat or rodents. If degradation occurs and the materials no longer hold the mineral values advertised then they shall be removed from the site and new materials applied.

1.4 MATERIALS
A. Lime
 The quality of lime and all operations in connection with the furnishing of this material shall comply with the requirements of the North Carolina Lime Law and regulations adopted by the NC- Board of Agriculture.
 Lime shall be agriculture grade ground dolomite limestone. It shall contain not less than 85% of the calcium and magnesium carbonates and shall be of such fineness that at least 90% will pass a No. 10 sieve and at least 50% will pass a No. 100 sieve.

B. Fertilizer
 The quality of fertilizer and all operations in connection with the furnishing of this material shall comply with the requirements of the North Carolina Fertilizer Law and regulations adopted by the NC- Board of Agriculture.
 Fertilizer shall be 10-10-10 grades. Upon written approval of the Engineer a different grade of fertilizer may be used, provided the rate of application is adjusted to provide the same amounts of plant food.

Section 2930-1

1.5 PREPERATION
A. Protection of Existing Vegetation
 The Contractor shall not remove or damage vegetation, which is outside the Clearing Limits established by the Owner/Engineer or as displayed on the plans. All trees that are damaged and scheduled to remain shall be repaired in an acceptable manner promptly to prevent progressive deterioration. Vegetation which is scheduled to be replaced or is damaged beyond repair during construction operations shall be replaced with a similar size and species. Where this is not feasible the property owner shall be compensated for the vegetation damaged. Damage incurred during construction operations and due to insufficient protection shall be paid at the Contractors expense.
 Existing vegetation not indicated for removal shall be protected against unnecessary cutting, breaking or skimming of roots, skinning or bruising of bark or smothering of vegetation by placing stockpiles of excavated material against the trunk or excessively over roots within the drip line. Vegetation shall also be protected against excessive vehicle or foot traffic within the drip line.
 Roots cut during excavation shall be properly protected by either asphalt sealing or in some cases wrapping exposed roots in wet burlap to prevent drying.

B. Grading
 Rough grading of the area shall be achieved as soon as the excavated area is backfilled and compacted. Rough grading shall be defined as all material restored which is required to bring the area to finish grade and acceptable surface drainage for storm water which provides for water to flow from the site in such a manner as that it does not place unusual risk to unsuspecting users of adjacent areas or inhabitants.
 Fine grading of the area shall be achieved in a timely manner after completion of rough grading of the area. Fine grading shall consist of shaping final contours to ensure proper drainage and removing all debris or construction waste materials to provide an acceptable appearance. Construction area subject to finish grading shall have soil loosened to a depth of not less than 6 inches in a manner approved by the Engineer to promote seed growth. All finish landscaping shall be completed on a section-by-section basis where it is reasonable to expect completion of landscaping.
 All grading, landscaping, and erosion control measures shall be properly pursued and maintained in order to maintain and acceptable appearance of the project. If such time occurs as this perception is degraded then the Engineer may suspend progress on the project until the issues are appropriately addressed.

Section 2930-3

C. Surface and Bed Preparation
 The Contractor shall smooth or shape surface contours outside the project site when such contours are detrimental to the seedbed preparation or will pose foreseeable problems with future maintenance of the area. The Engineer shall direct the Contractor to what extent outside areas shall be affected or the Contractor may elect to work with individual property owners with written verification delivered to the Engineer/Owner of the agreement with the property owner's signature.

1.c Level Areas and Slopes Less than 2:1
 The construction area shall have soil loosened to a depth not less than 6 inches and shall be free from all debris, clods and all other irregularities which would prohibit a smooth, shaped finish grade. Top 3 inches of soil shall be worked to a clod free finish suitable for planting seed.

2.c Slopes Greater Than 2:1
 The construction area shall have soil loosened and acceptable for vegetation growth but the surface shall be free from all debris, clods and other irregularities. The surface may be track finished, scarified, grooved or punctured so as to provide a place for seed and other planting material to lodge. In the case of such slopes the Engineer may allow partial completion of the slope sections at different times to promote stabilization. If the vegetation growth is acceptable the Engineer may allow this to remain as the permanent ground cover.
 The Contractor shall not pursue the finished preparation of surface areas to be landscaped if the soil is frozen, marginally wet or when the Engineer deems it unsuitable for working conditions.

D. Rate of Application
 Seed shall be applied by means of Broadcast Spreader, Hydro-Seeder or other previously approved method. In no case shall seed, lime, or fertilizer be spread by hand. The rates of application for seed, lime and fertilizer shall be as follows, unless a variance is permitted by the Engineer in writing prior to performing work.

1.d Limestone
 In the absence of a soil test performed at the Contractors expense and given to the Engineer on letterhead from the testing laboratory, Limestone shall be applied at the rate of 2000 lb/ acre.

Section 2930-4

2.d Fertilizer
 In the absence of a soil test performed at the Contractors expense and given to the Engineer on letterhead from the testing laboratory, Fertilizer shall be applied at the rate of 1000 lb/ acre. Fertilizer shall be 10-10-10 grade, unless a variance is permitted by the Engineer in writing prior to performing work. A second application at 500-lb/ acre shall be applied to the area when the grass has reached a blade height of 3 inches or 45 days which ever comes first.

3.d Seed
 The type and rate of application shall vary at different times of the year and shall be applied at the rate and type appropriate for the time of year. All rates of application are measured in pounds per acre.

a. Fall and Winter (Sept. 1 to May 1)
 85 pounds of Ky-31 tall fescue mixed with 15 pounds of rye grain.

b. Spring and Summer (May 1 to September 1)
 100 pounds of Ky-31 tall fescue mixed with 10 pounds of rye grain.

c. Cut of Fill slopes greater than 2:1
 The application rate on cut or fill slopes greater than 2:1 shall include the appropriate mix above for the time of year along with; 40 lb/acre of sericea lespedeza (hulled in spring or summer and unhulled in fall and winter) and either 15 pounds of Sudan grass in spring and summer or 25 pounds of rye cereal per acre in fall and winter.

4.d Mulch
 Mulch shall be straw mulch applied at a rate of approximately 3000 pounds per acre. Straw shall be applied at such rate necessary to thoroughly cover and protect all finish grading, seed, lime and fertilizer but not smother the maturation of seed.

E. Application
 Application of all limestone, fertilizer, seed and mulch shall be completed immediately following final preparation of the seed bed and shall not be pursued during a time when the Engineer deems weather to be non-conducive for seed growth, i.e. ground wet, frozen, etc. Lime, fertilizer and seed shall be distributed uniformly over the prepared seedbed at the specific rate of application and then harrowed, raked, or otherwise thoroughly worked or mixed into the seedbed. Immediately following the covering operation, the seedbed shall be properly compacted as directed in the manner and degree approved by the Engineer.

Section 2930-5

NEW HANOVER COUNTY BMP MAINTENANCE NOTES:

- Maintenance Plan**
- All erosion and sediment control measures will be checked for stability and operation following every runoff-producing rainfall, but in no case, less than once every week and within 24 hours of every half inch rainfall.
 - All points of egress will have construction entrances that will be periodically top-dressed with an additional 2 inches of #4 stone to maintain proper depth. They will be maintained in a condition to prevent mud or sediment from leaving the site. Immediately remove objectionable material spilled washed or tracked onto the construction entrance or roadways.
 - Sediment will be removed from hardware cloth and gravel inlet protection, block and gravel inlet protection, rock doughnut inlet protection and rock pipe inlet protection when the designed storage capacity has been half filled with sediment. Rock will be cleaned or replaced when the sediment pool no longer drains as designed. Debris will be removed from the rock and hardware cloth to allow proper drainage. Silt sacks will be emptied once a week and after every rain event. Sediment will be removed from around beaver dams, dandy sacks and socks once a week and after every rain event.
 - Diversion ditches will be cleaned out immediately to remove sediment or obstructions from the flow area. The diversion ridges will also be repaired. Swales must be temporarily stabilized within 21 calendar days of cease of any phase of activity associated with a swale.
 - Sediment will be removed from behind the sediment fence when it becomes half filled. The sediment fence will be repaired as necessary to maintain a barrier. Stakes must be steel. Stake spacing will be 6 feet max. with the use of extra strength fabric, without wire backing. Stake spacing will be 8 feet max. when standard strength fabric and wire backing are used. If rock filters are designed at low points in the sediment fence the rock will be repaired or replaced if it becomes half full of sediment, no longer drains as designed or is damaged.
 - Sediment will be removed from sediment traps when the designed storage capacity has been half filled with sediment. The rock will be cleaned or replaced when the sediment pool no longer drains or when the rock is dislodged. Baffles will be repaired or replaced if they collapse, tear, decompose or become ineffective. They will be replaced promptly. Sediment will be removed when deposits reach half the height of the 1st baffle.
 - Sediment will be removed from the sediment basin when the design storage capacity has been half filled with sediment. Rock will be cleaned or replaced when the sediment pool no longer drains or if the rock is dislodged. Baffles will be repaired or replaced if they collapse, tear, decompose or become ineffective. They will be replaced promptly. Sediment will be removed from baffles when deposits reach half the height of the 1st baffle. Floating skimmers will be inspected weekly and will be kept clean.
 - All seeded areas will be fertilized, reseeded as necessary and mulched according to specifications in the vegetative plan to maintain a vigorous, dense vegetative cover. All slopes will be stabilized within 21 calendar days. All other areas will be stabilized within 15 working days.
 - Flocculants will be used to address turbidity issues. The pumps, tanks, hoses and injection systems will be checked for problems or turbid discharges daily.

TEMPORARY AND PERMANENT SEEDING NOTES

- The Contractor shall follow the "Supplemental Technical Specification Z-3" except for any specification on payment or submittals to the Resident Construction Engineer (RCE). The Engineer of Record or Owner's Representative shall be substituted for the RCE.
- All disturbed areas not receiving pavement, mulch, or landscaping shall be permanently grassed per these specifications.
- All disturbed areas with no activity for more than 14 days shall be temporarily grassed per these specifications.
- The Contractor shall include in his contract price to the Owner all costs necessary to permanently grass the site meeting the definition of "stabilized" as defined by the NPDES General Permit (100% coverage and 70% density) or as may be required by the local issuing authority if stricter. It is the Contractor's responsibility to know these requirements and estimate the cost to meet these requirements.
- All topsoil stripped from the site shall be spread over areas to be grassed and landscaped to a uniform depth as to use all native topsoil.

Section 2930-6

When a hydraulic seeder is used for application of seed and fertilizer, the seed shall not remain in water containing fertilizer for more than 1 hour prior to application unless otherwise permitted by the Engineer.

The Engineer may permit modifications to the requirements for covering or compacting lime, fertilizer and seed in the prepared seedbed if the Contractor requests modification due to height, steepness of slope or non-conductive soil conditions. Modifications may be considered if the case of: Slopes greater than 2:1 and Slopes where surface is to rocky to successfully permit compaction or covering of the seedbed. Modifications may be permitted to include reduction of application rates and reduction or elimination of compaction requirements.

All equipment normal and prudent for the preparation of seedbed and uniform distribution of lime, fertilizer and seed shall be approved by the Engineer prior to use on the project. In the event of malfunctioning or improperly maintained equipment, the Engineer reserves the right to suspend work on the project until such time as the equipment is restored to good repair and properly operational.

F. Mulching
 Mulch shall be spread uniformly over all seeded areas at a rate of 1 1/2 to 2 tons per acre in a continuous, uniform blanket. Mulch shall be spread by hand or by approved mechanical shredder or blower which will provide a uniform blanket. An acceptable application shall be one that completely covers the ground but still allows some sunlight to penetrate and air to circulate while providing effective soil moisture conservation and reduced erosion. Mulching operation shall be pursued immediately following final seedbed preparation.
 Tack or other approved binding material shall be applied over top of mulch in all necessary areas to ensure mulch will be held in place during adverse conditions. The rate and method of application shall be completed as directed by the Engineer.
 The Contractor shall implement sufficient precautions to prevent mulch from entering drainage structures through displacement by wind, water or other causes. The Contractor shall remove completely any blockage to drainage structures, which may occur.

G. Maintenance
 Grassed areas shall be accepted when a 95% cover of permanent grasses is achieved and weeds are not the dominant foliage. The Contractor shall keep all grassed areas in good condition, reseeding and mowing if and when necessary as directed by the Engineer. A good lawn shall be established over the entire project area and shall be maintained by the Contractor in an approved manner and kept in an approved condition until final acceptance.

Section 2930-6

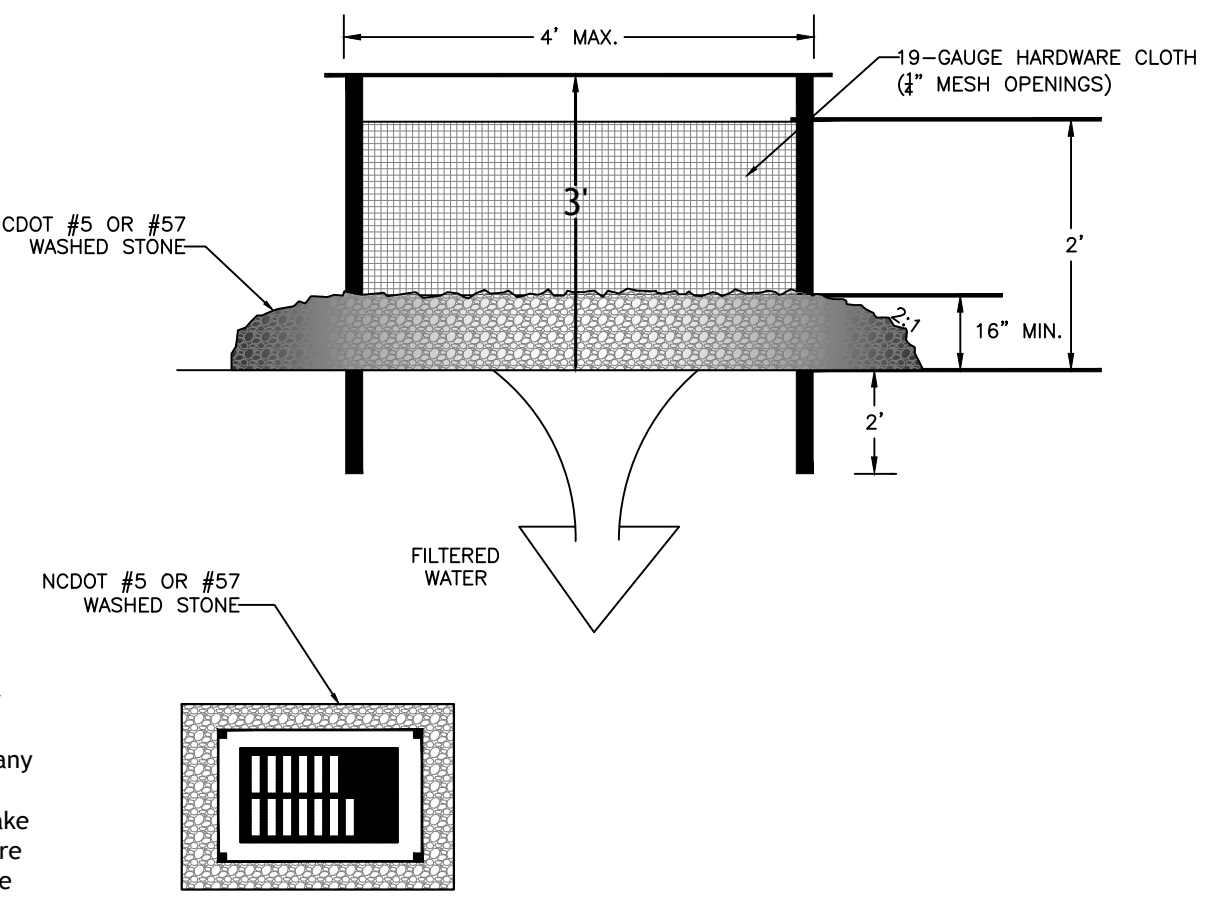
Section 2930-7

WILMINGTON
 NORTH CAROLINA
 Public Services • Engineering Division
 APPROVED STORMWATER MANAGEMENT PLAN
 Date: _____ Permit # _____
 Signed: _____

PLAN REVISION	ISSUE DATE	ISSUE COMMENT
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B	2-25-2015	REVISED PER COMMENTS
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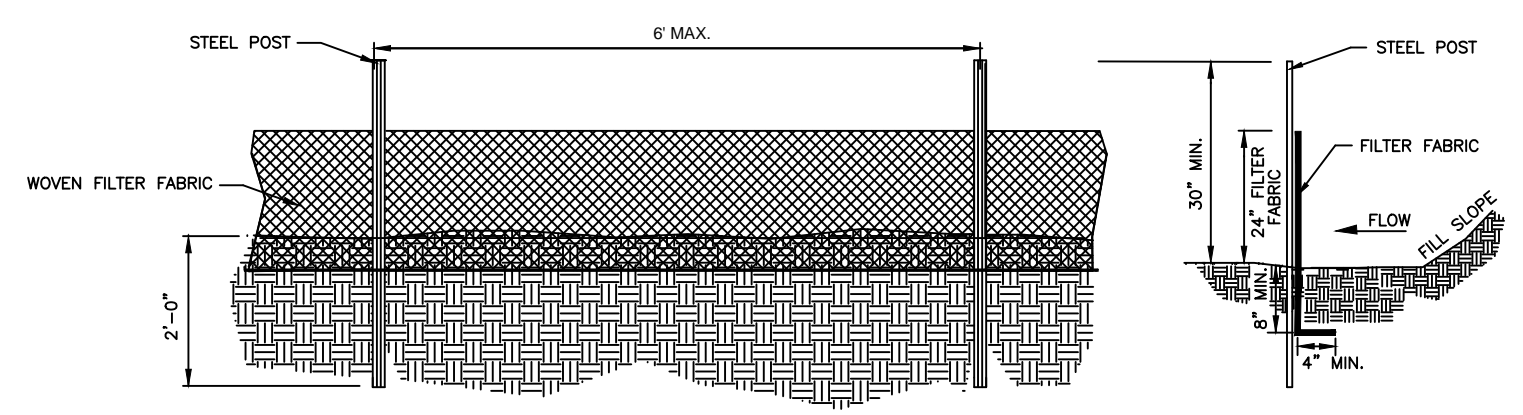
- GENERAL NOTES:**
- UNIFORMLY GRADE A SHALLOW DEPRESSION APPROACHING THE INLET.
 - DRIVE 6-FOOT STEEL POSTS 2 FEET INTO THE GROUND SURROUNDING THE INLET. SPACE POSTS EQUALLY AROUND THE PERIMETER OF THE INLET, A MAXIMUM OF 4 FEET APART.
 - SURROUND THE POSTS WITH WIRE MESH HARDWARE CLOTH. SECURE THE WIRE MESH TO THE STEEL POSTS AT THE TOP, MIDDLE, AND BOTTOM. PLACE A 2-FOOT FLAP OF THE WIRE MESH UNDER THE GRAVEL FOR ANCHORING IS RECOMMENDED.
 - PLACE CLEAN GRAVEL (NO DOT #5 OR #57 STONE) ON A 2:1 SLOPE WITH A HEIGHT OF 18 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 STABILIZE IT WITH GROUND COVER.

MAINTENANCE:
 Inspect inlets at least weekly and after each significant (1/2 inch or greater) rainfall event. Clear the mesh wire of any debris or other objects to provide adequate flow for subsequent rains. Take care not to damage or undercut the wire mesh during sediment removal. Replace stone as needed.



HARDWARE CLOTH AND GRAVEL INLET PROTECTION

NOT TO SCALE

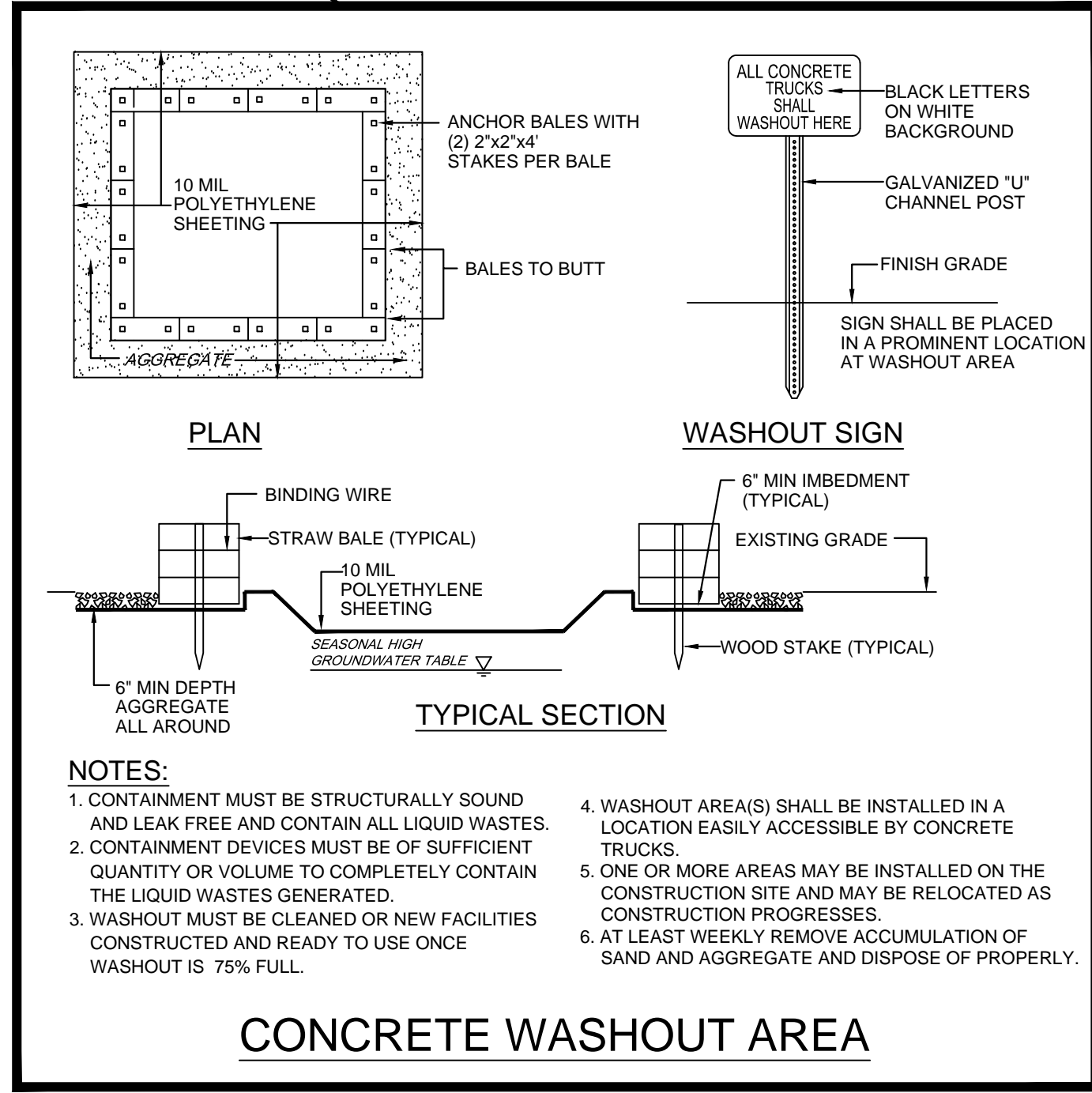


- GENERAL NOTES:**
- WOVEN FILTER FABRIC BE USED WHERE SILT FENCE IS TO REMAIN FOR A PERIOD OF MORE THAN 30 DAYS.
 - STEEL POSTS SHALL BE 5'-0" IN HEIGHT AND BE OF THE SELF-FASTENER ANGLE STEEL TYPE.
 - TURN SILT FENCE UP SLOPE AT ENDS.
 - ORANGE SAFETY FENCE IS REQUIRED AT BACK OF SILT FENCE WHEN GRADING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

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

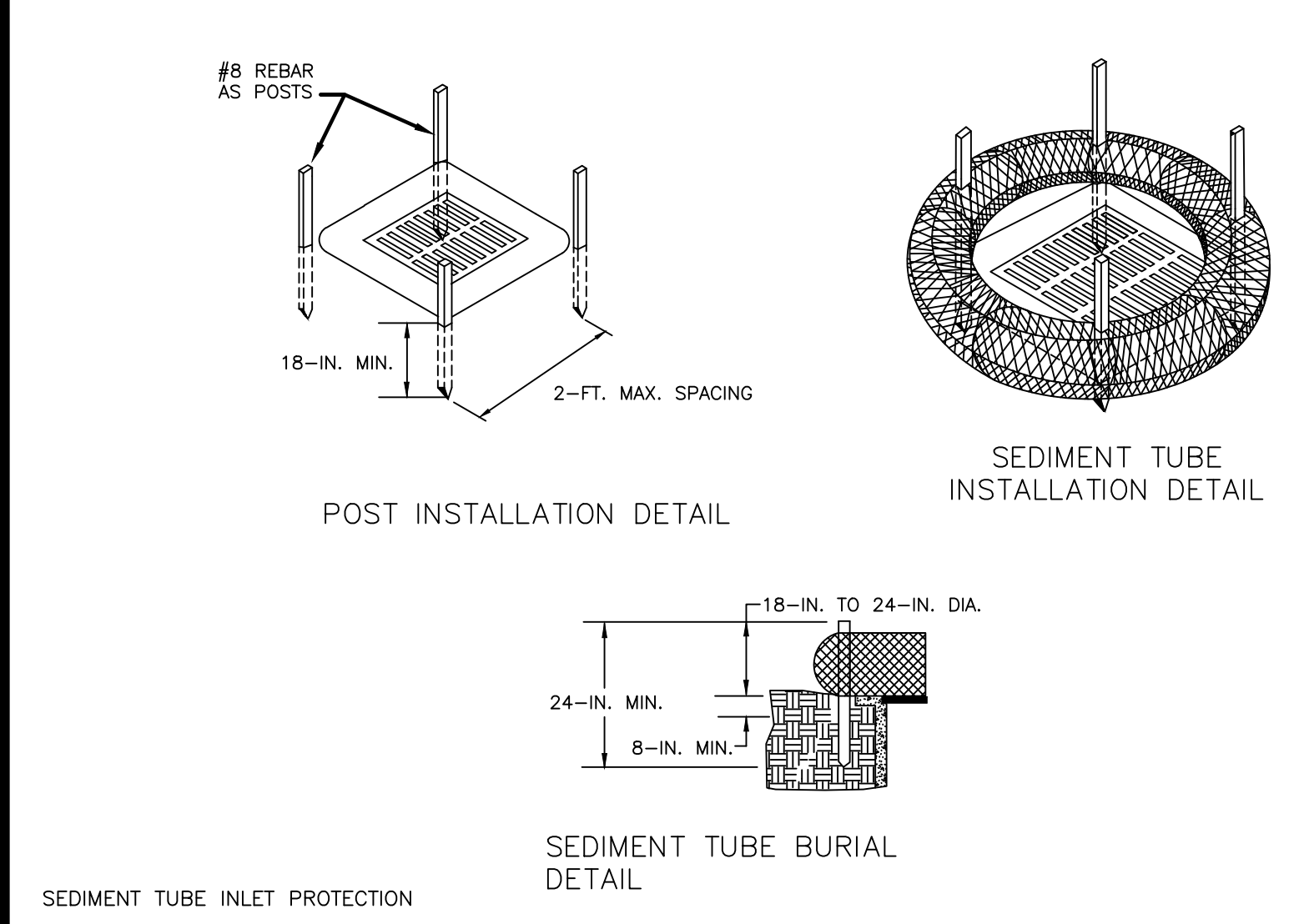
TEMPORARY SILT FENCE

NOT TO SCALE



CONCRETE WASHOUT AREA

- NOTES:**
- CONTAINMENT MUST BE STRUCTURALLY SOUND AND LEAK FREE AND CONTAIN ALL LIQUID WASTES.
 - CONTAINMENT DEVICES MUST BE OF SUFFICIENT QUANTITY OR VOLUME TO COMPLETELY CONTAIN THE LIQUID WASTES GENERATED.
 - WASHOUT MUST BE CLEANED OR NEW FACILITIES CONSTRUCTED AND READY TO USE ONCE WASHOUT IS 75% FULL.
 - WASHOUT AREA(S) SHALL BE INSTALLED IN A LOCATION EASILY ACCESSIBLE BY CONCRETE TRUCKS.
 - ONE OR MORE AREAS MAY BE INSTALLED ON THE CONSTRUCTION SITE AND MAY BE RELOCATED AS CONSTRUCTION PROGRESSES.
 - AT LEAST WEEKLY REMOVE ACCUMULATION OF SAND AND AGGREGATE AND DISPOSE OF PROPERLY.



SEDIMENT TUBE INLET PROTECTION

Materials
 Sediment tubes for Type A Inlet Structure Filters exhibit the following properties:
 Produced by a Manufacturer experienced in sediment tube manufacturing.
 Composed of compacted geotextiles, curled excelsior wood, natural coconut fibers, hardwood mulch or a mix of these materials enclosed by a flexible netting material. Straw, straw fiber, straw bales, pine needles, and leaf mulch are not allowed under this specification. Utilizes outer netting that consists of seamless, high-density polyethylene photodegradable materials treated with ultraviolet stabilizers or a seamless, high-density polyethylene non-degradable materials. Diameter ranging from 18-inches to 24-inches. Curled excelsior wood, or natural coconut rolled erosion control products (RECPs) that are rolled up to create a sediment tube are not allowed under this specification. Select applicable Sediment Tubes from the SCDOT approved products list.

Use #8 REBAR posts that meet the following minimum physical requirements:

Installation:
 Remove all rocks, clods, vegetation or other obstructions so installed sediment tubes have direct contact with the underlying soil or surface. Install sediment tubes by laying them flat on the ground. Construct a small trench to a depth that is 20% of the sediment tube diameter. Lay the sediment tube in the trench and compact the upstream sediment tube soil interface. Do not completely bury sediment tubes during installation. Lap the ends of adjacent sediment tubes a minimum of 6-inches to prevent flow and sediment from passing through the field joint. Never stack sediment tubes on top of one another. Install sediment tubes using REBAR stakes a minimum of 48-inches in length placed on 2-foot centers. Intertwine the stakes with the outer mesh on the downstream side, and drive the stakes in the ground to a minimum depth of 24-inches leaving with 12-inches of stake above the exposed sediment tube.

Inspection and Maintenance:
 Inspect every seven calendar days and within 24-hours after each rainfall event that produces 1/2-inches or more of precipitation. Inspect sediment tubes after installation for gaps under the tubes and for gaps between joints of adjacent ends of sediment tubes. Repair rills, gullies, and all undercutting near sediment tubes. Remove and/or replace installed sediment tubes as required to adapt to changing construction site conditions. Remove all sediment tubes from the site when the functional longevity is exceeded as determined by the Engineer, Inspector or Manufacturer's Representative. Dispose of sediment tubes in regular means as non-hazardous, inert material.

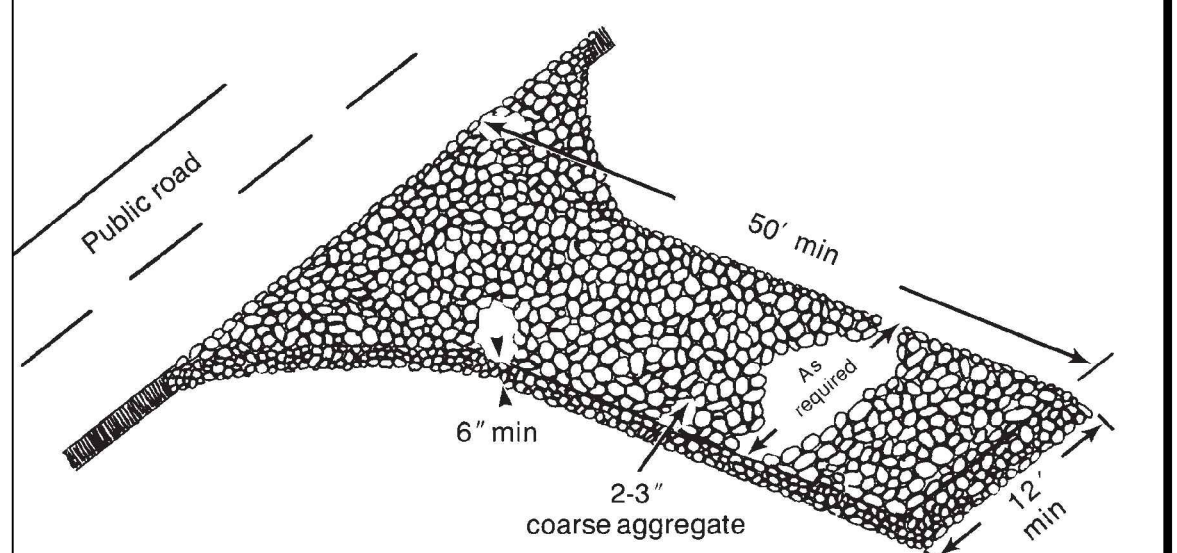
TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT

Definition A gravelled area or pad located at points where vehicles enter and leave a construction site.

Purpose To provide a buffer area where vehicles can drop their mud and sediment to avoid transporting it onto public roads, to control erosion from surface runoff, and to help control dust.

Conditions Where Practice Applies Whenever traffic will be leaving a construction site and moving directly onto a public road or other paved off-site area. Construction plans should limit traffic to properly constructed entrances.

Design Criteria **Aggregate Size**—Use 2-3 inch washed stone.
Dimensions of gravel pad—
 Thickness: 6 inches minimum
 Width: 12-foot minimum or full width at all points of the vehicular entrance and exit area, whichever is greater
 Length: 50-foot minimum
Location—Locate construction entrances and exits to limit sediment from leaving the site and to provide for maximum utility by all construction vehicles (Figure 6.06a). Avoid steep grades, and entrances at curves in public roads.



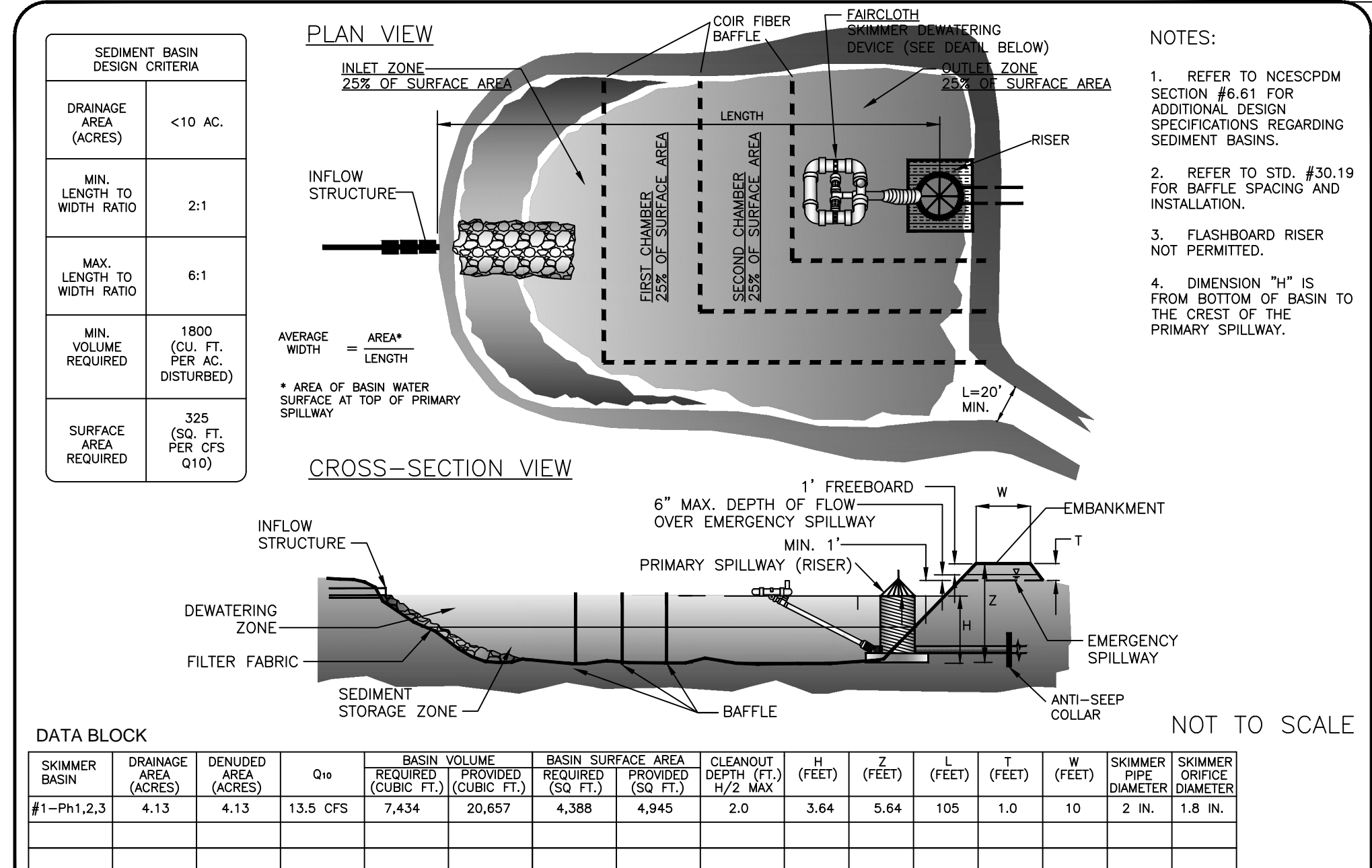
Washing—If conditions at the site are such that most of the mud and sediment are not removed by vehicles traveling over the gravel, the tires should be washed. Washing should be done on an area stabilized with crushed stone that drains into a sediment trap or other suitable disposal area. A wash rack may also be used to make washing more convenient and effective.

- Construction Specifications**
- Clear the entrance and exit area of all vegetation, roots, and other objectionable material and properly grade it.
 - Place the gravel to the specific grade and dimensions shown on the plans, and smooth it.
 - Provide drainage to carry water to a sediment trap or other suitable outlet.
 - Use geotextile fabrics because they improve stability of the foundation in locations subject to seepage or high water table.

Maintenance Maintain the gravel pad in a condition to prevent mud or sediment from leaving the construction site. This may require periodic topdressing with 2-inch stone. 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.

References *Runoff Conveyance Measures*
 6.30, Grass-lined Channels
Sediment Traps and Barriers
 6.60, Temporary Sediment Trap

WILMINGTON
 NORTH CAROLINA
 Public Services • Engineering Division
 APPROVED STORMWATER MANAGEMENT PLAN
 Date: _____ Permit # _____
 Signed: _____

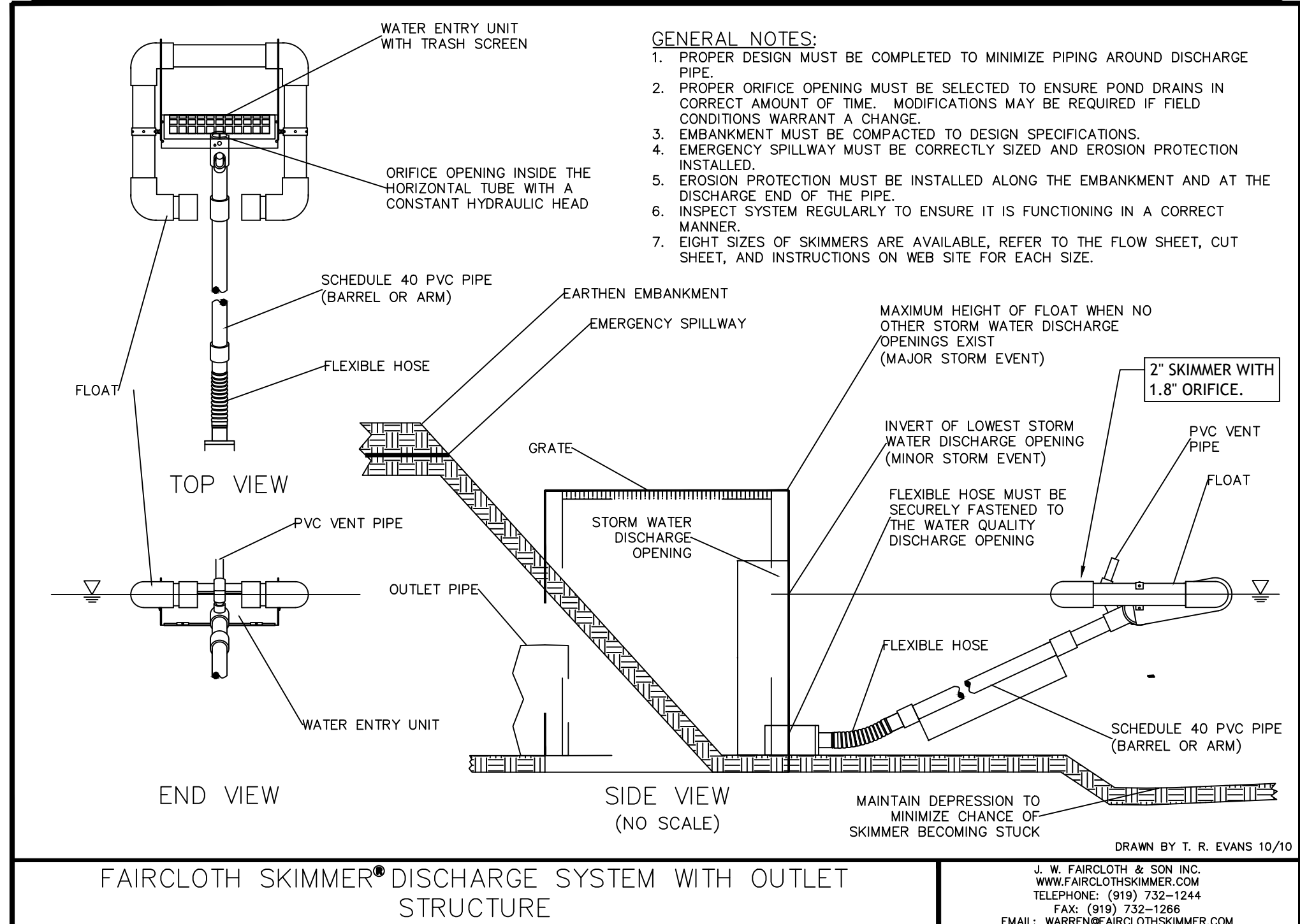


SKIMMER SEDIMENT BASIN

GENERAL NOTES:

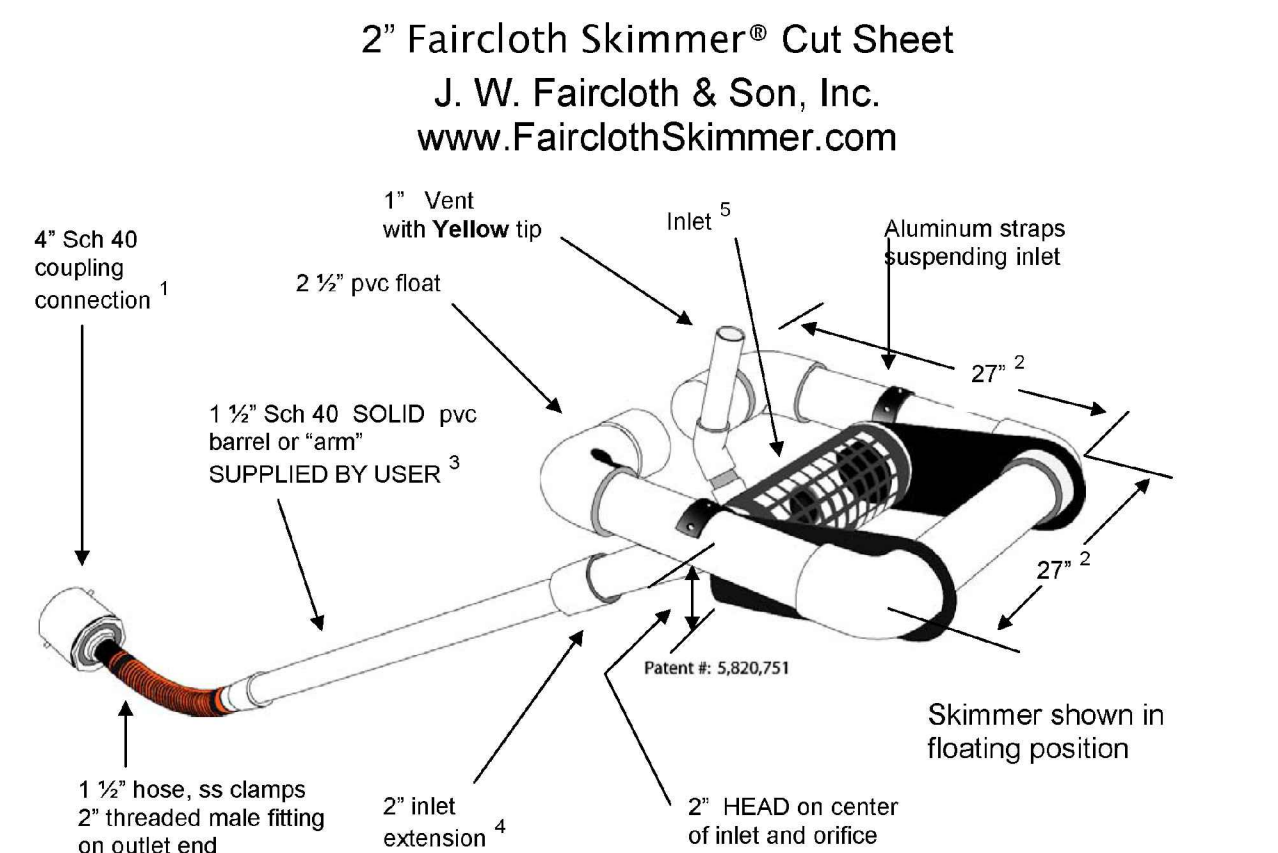
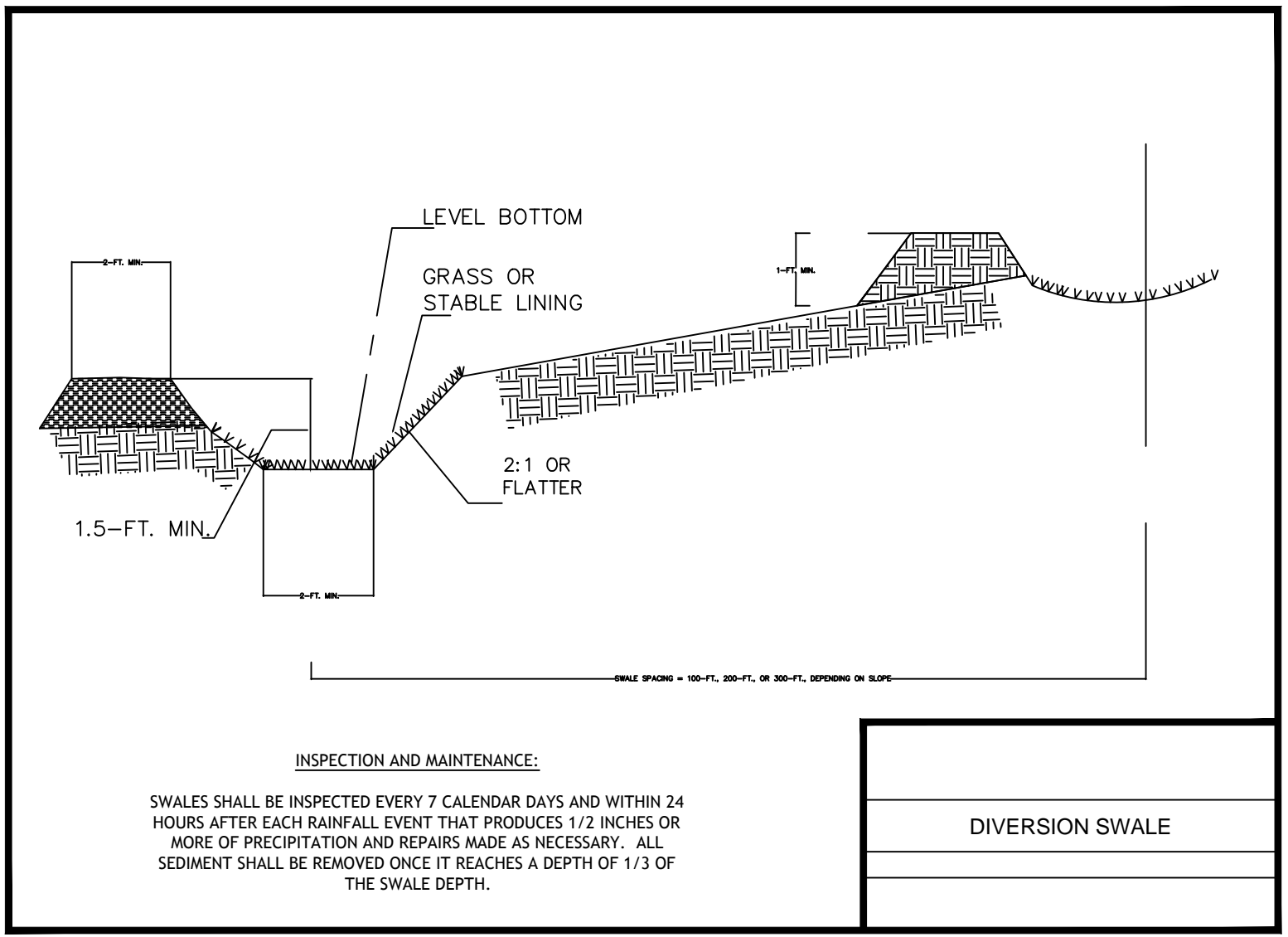
- AREA UNDER EMBANKMENT SHALL BE CLEARED, GRUBBED, AND STRIPPED OF ANY VEGETATION AND ROOT MATERIAL. THE BASIN AREA SHALL BE CLEARED.
- THE FILL MATERIAL FOR THE EMBANKMENT SHALL BE FREE OF ROOTS OR OTHER WOODY VEGETATION AS WELL AS OVERSIZED STONES, ROCKS, ORGANIC MATERIAL OR OTHER OBJECTIONABLE MATERIAL.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

GENERAL NOTES—SEDIMENT BASINS



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Date: _____ Permit # _____
Signed: _____



- Skimmer can be attached to a straight 4" sch 40 pipe through the dam but the pipe may need to be anchored to the bottom at the connection so it is secure. Coupling can be removed and hose attached to outlet using the threaded 2" fitting. Typical methods used: on a metal structure a steel stubout welded on the side at the bottom side with a 2" threaded coupling or reducers; on a concrete structure with a hole or orifice at the bottom, use a steel plate with a hole cut in it and coupling welded to it that will fit over the hole in the concrete and bolted to the structure with sealant; grout a 4" pvc pipe in a hole in the concrete to connect the skimmer.
- Dimensions are approximate, not intended as plans for construction.
- Barrel (solid, not foam core pipe) should be 1.4 times the depth of water with a minimum length of 6' so the inlet can be pulled to the side for maintenance. If more than 8' long weight may have to be added to inlet to counter the increased buoyancy.
- Inlet tapers down from 2" maximum inlet to a 1 1/2" barrel and hose. Barrel is smaller to reduce buoyancy and tendency to lift inlet but is sufficient for flow through inlet because of slope. The inlet orifice can be reduced using the plug and cutter provided to control the outflow rate.
- Inlet is 4" pipe between the straps with aluminum screen door for access to the inlet and orifice inside.
- Capacity: 3,283 cubic feet per day maximum with 2" inlet and 2" head. Inlet can be reduced by installing a smaller orifice using the plug and cutter provided to adjust flow rate for the particular basin volume and drawdown time required.
- Shipped assembled. User glues inlet extension and barrel, installs vent, cuts orifice in plug and attaches to outlet pipe or structure. Includes flexible hose, rope, orifice cutter, etc.

2inchCut TM 11-07 November 14, 2007

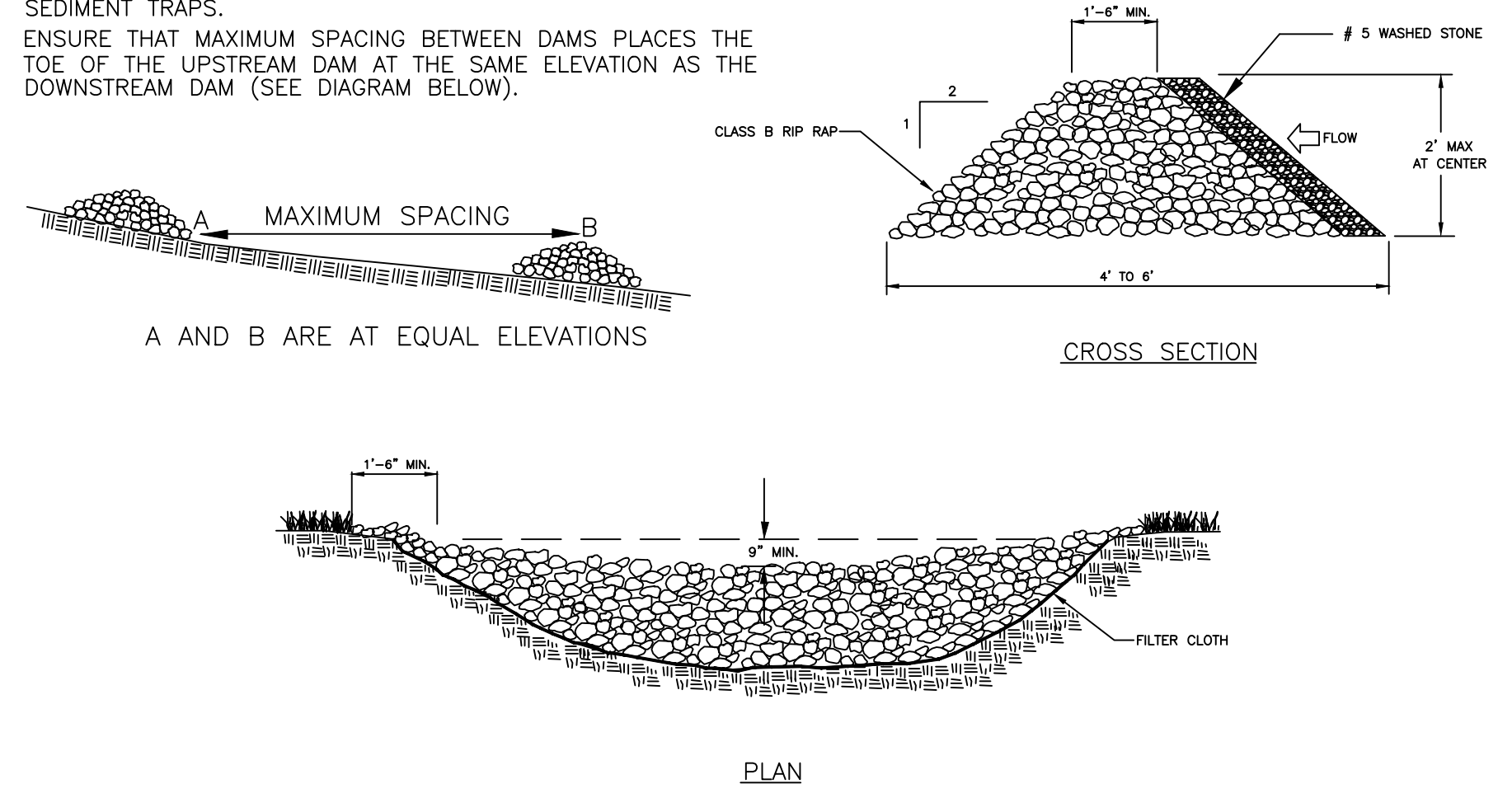
STD. & SPEC. #	TITLE	SPECIAL REQUIREMENTS & NOTES
6.17	ROLLED EROSION CONTROL PRODUCTS	—
6.51	HARDWARE CLOTH & GRAVEL INLET PROTECTION	—
6.60	TEMPORARY SEDIMENT TRAP	WEIR TOP WIDTH 10' MIN., BOTTOM 7' MIN.
6.61	SEDIMENT BASIN	FLASH BOARD RISER NOT PERMITTED
6.64	SKIMMER SEDIMENT BASIN	1ST BAFFLE: COIR FIBER 2ND BAFFLE: COIR FIBER 3RD BAFFLE: COIR FIBER

THE STANDARDS & SPECIFICATIONS SHOWN ARE FROM THE "NORTH CAROLINA EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL" (NCSCSDM) PREPARED BY NC DEPT. OF ENVIRONMENT AND NATURAL RESOURCES (NCDENR).

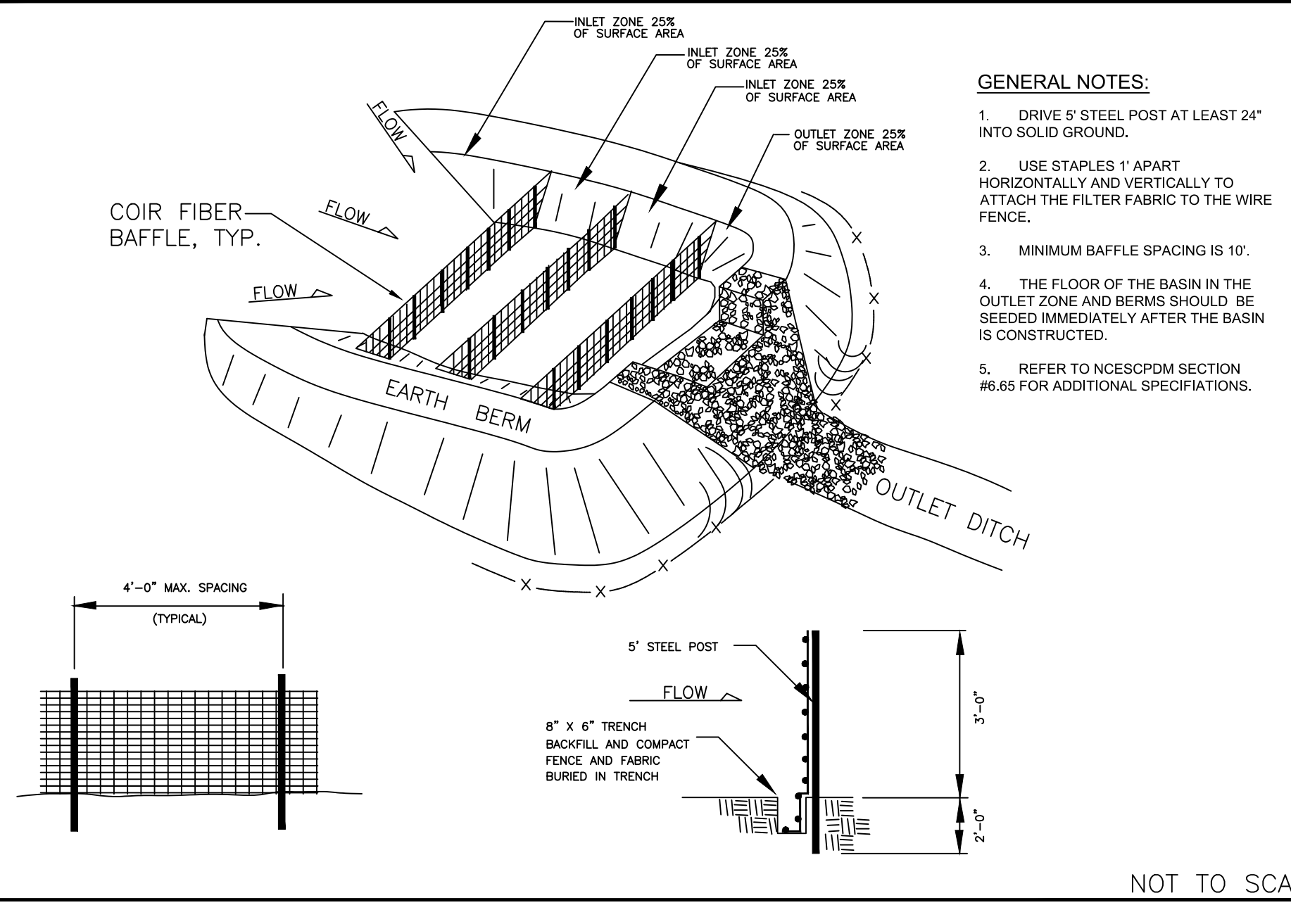
SPECIAL EROSION CONTROL REQUIREMENTS & NOTES

GENERAL NOTES:

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



TEMPORARY ROCK CHECK DAM



Project Number: 2014-090
DWG Name: 2014-090 Details.dwg
Drawing Scale: as noted
Date of Project: 10-21-2014
Engineer of Record:
Jason Henderson, P.E.
South Carolina P.E. #2406
Georgia P.E. #20711
North Carolina P.E. #13306
Alabama P.E. #2054

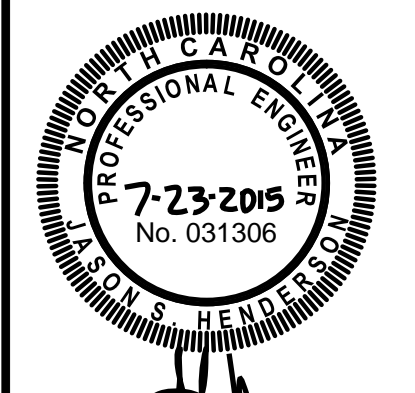
bluewater civil design, PLLC
bluewatercivil.com • info@bluewatercivil.com
19 Washington Park Suite 100 • Greenville, SC 29601
www.bluewatercivil.com

Certificates of Authorization:
SC C04212 - GA PEF005865
NC P0868 - AL CA4065E

BRAGG ROAD DEV. COMPANY, LLC
716 Bragg Drive
Wilmington, NC 28412

Approved Construction Plan

Name _____ Date _____
Planning _____
Traffic _____
Fire _____



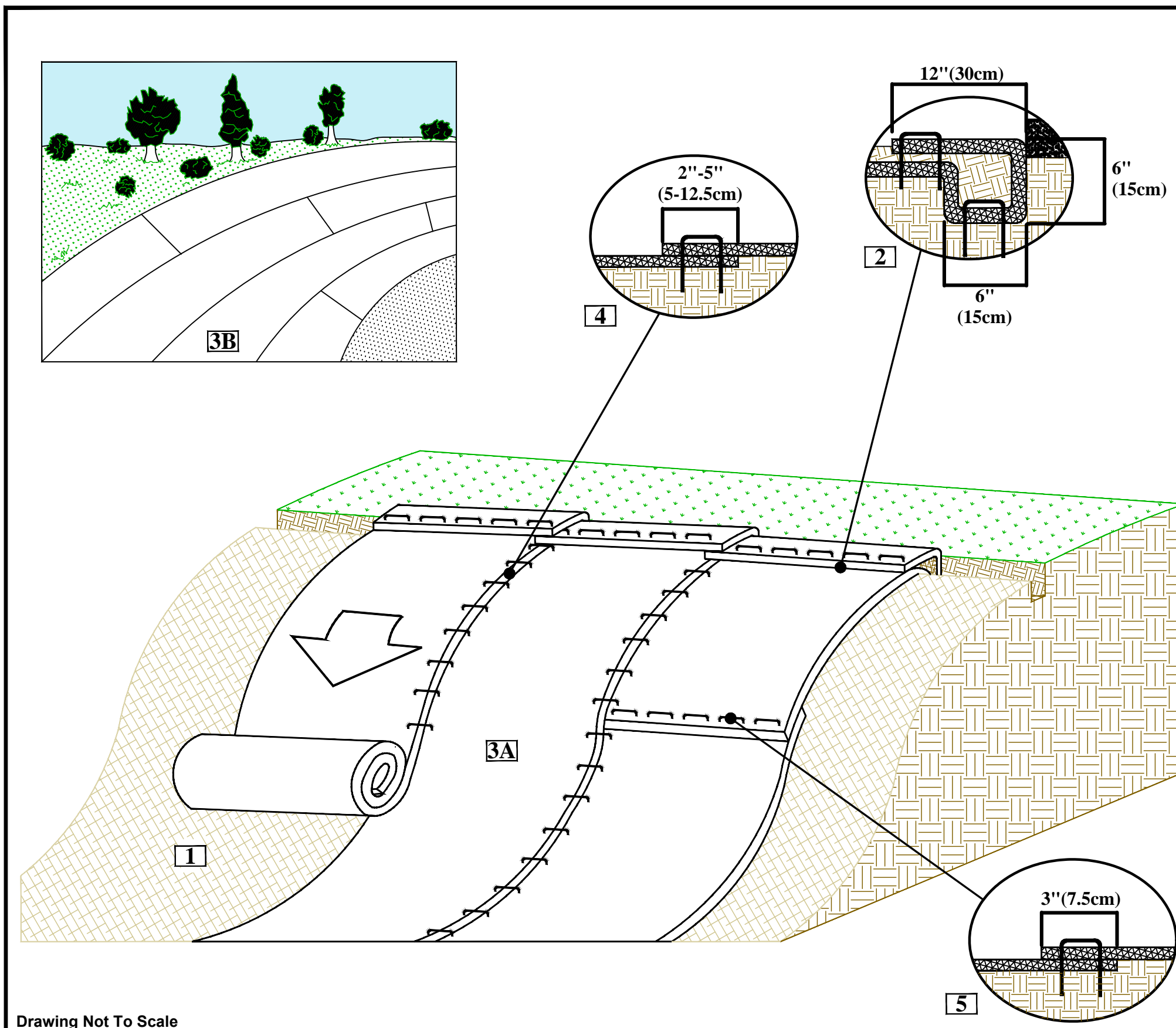
Bluewater Civil Design, PLLC
NC-P-0868

PLAN REVISION	ISSUE DATE	ISSUE COMMENT
A	2-3-2015	ISSUED FOR PERMITS
B	2-25-2015	REVISED PER COMMENTS
C	4-2-2015	REVISED PER NEW HANDOVER COMMENTS
D	4-16-2015	100% TENANT SUBMITTAL
E	4-30-2015	REVISED PER HCCOT/WILMINGTON COMMENTS
F	6-2-2015	REVISED PER CITY & TENANT COMMENTS
G	7-15-2015	REVISED PER TENANT COMMENTS
H	7-22-2015	REVISED PER CITY COMMENTS
...

NOTES & DETAILS

C504

PLAN REVISION	ISSUE DATE	ISSUE COMMENT
A	2-3-2015	ISSUED FOR PERMITS
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E	4-30-2015	REVISED PER HCOOT/WILMINGTON COMMENTS
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G	7-15-2015	REVISED PER TENTANT COMMENTS
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...



SLOPE INSTALLATION DETAIL

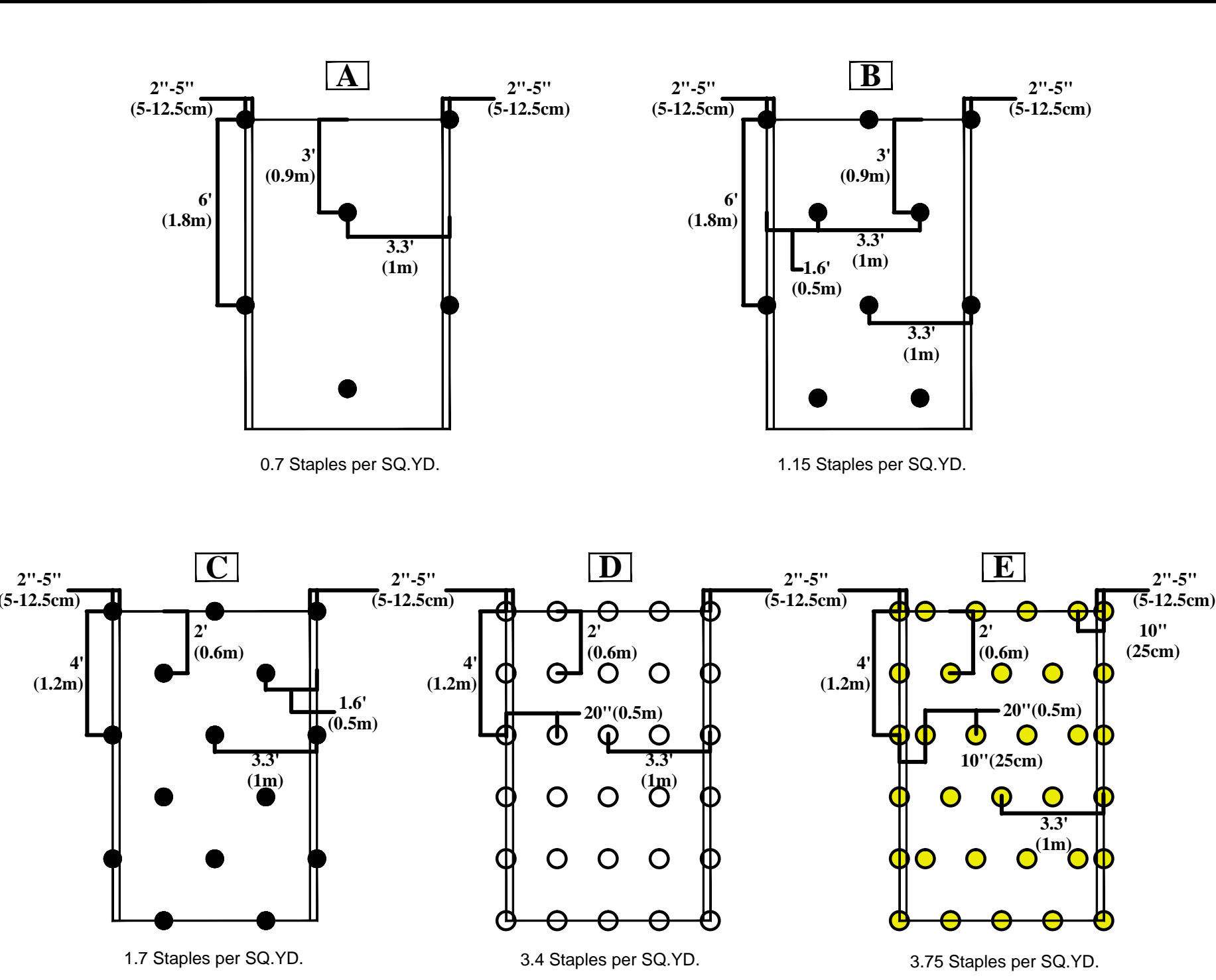
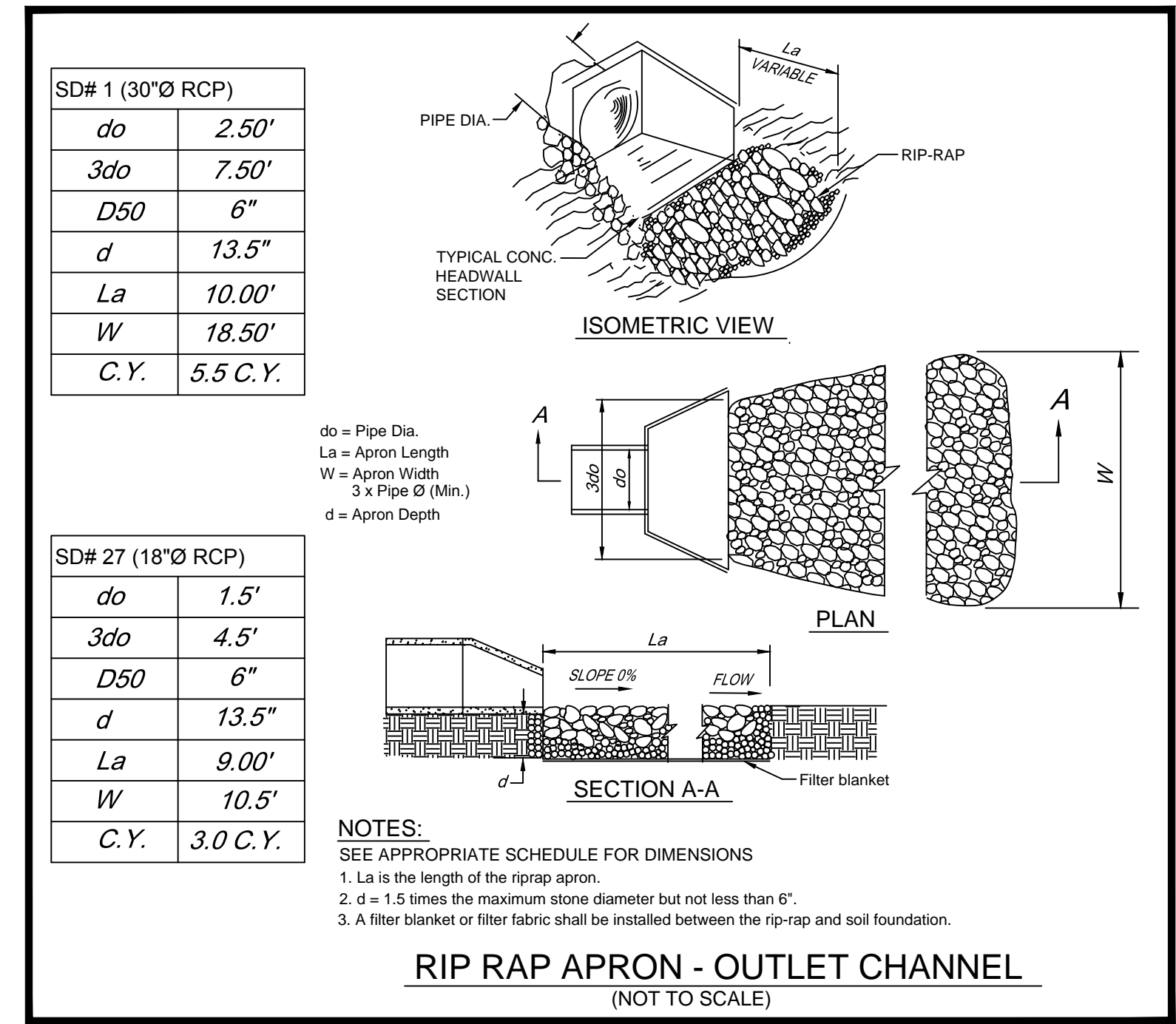
1. Prepare soil before installing rolled erosion control products (RECPs), including any necessary application of lime, fertilizer, and seed.
2. Begin at the top of the slope by anchoring the RECPs in a 6"(15cm) deep X 6"(15cm) wide trench with approximately 12" (30cm) of RECPs extended beyond the up-slope portion of the trench. Anchor the RECPs with a row of staples/stakes approximately 12" (30cm) apart in the bottom of the trench. Backfill and compact the trench after stapling. Apply seed to the compacted soil and fold the remaining 12"(30cm) portion of RECPs back over the seed and compacted soil. Secure RECPs over compacted soil with a row of staples/stakes spaced approximately 12"(30cm) apart across the width of the RECPs.
3. Roll the RECPs (A) down or (B) horizontally 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.
4. The edges of parallel RECPs must be stapled with approximately 2" - 5" (5-12.5cm) overlap depending on the RECPs type.
5. Consecutive RECPs spliced down the slope must be end over end (Shingle style) with an approximate 3"(7.5cm) overlap. Staple through overlapped area, approximately 12"(30cm) apart across entire RECPs width.

Drawing Not To Scale

Tensor. NORTH AMERICAN GREEN
 5401 St. Wendel - Cynthia Rd. PH: 800-722-2040
 Poseyville, IN 47633 www.nagreen.com

Disclaimer:
 The information presented herein is general design information only. For specific applications, consult an independent professional for further design guidance.

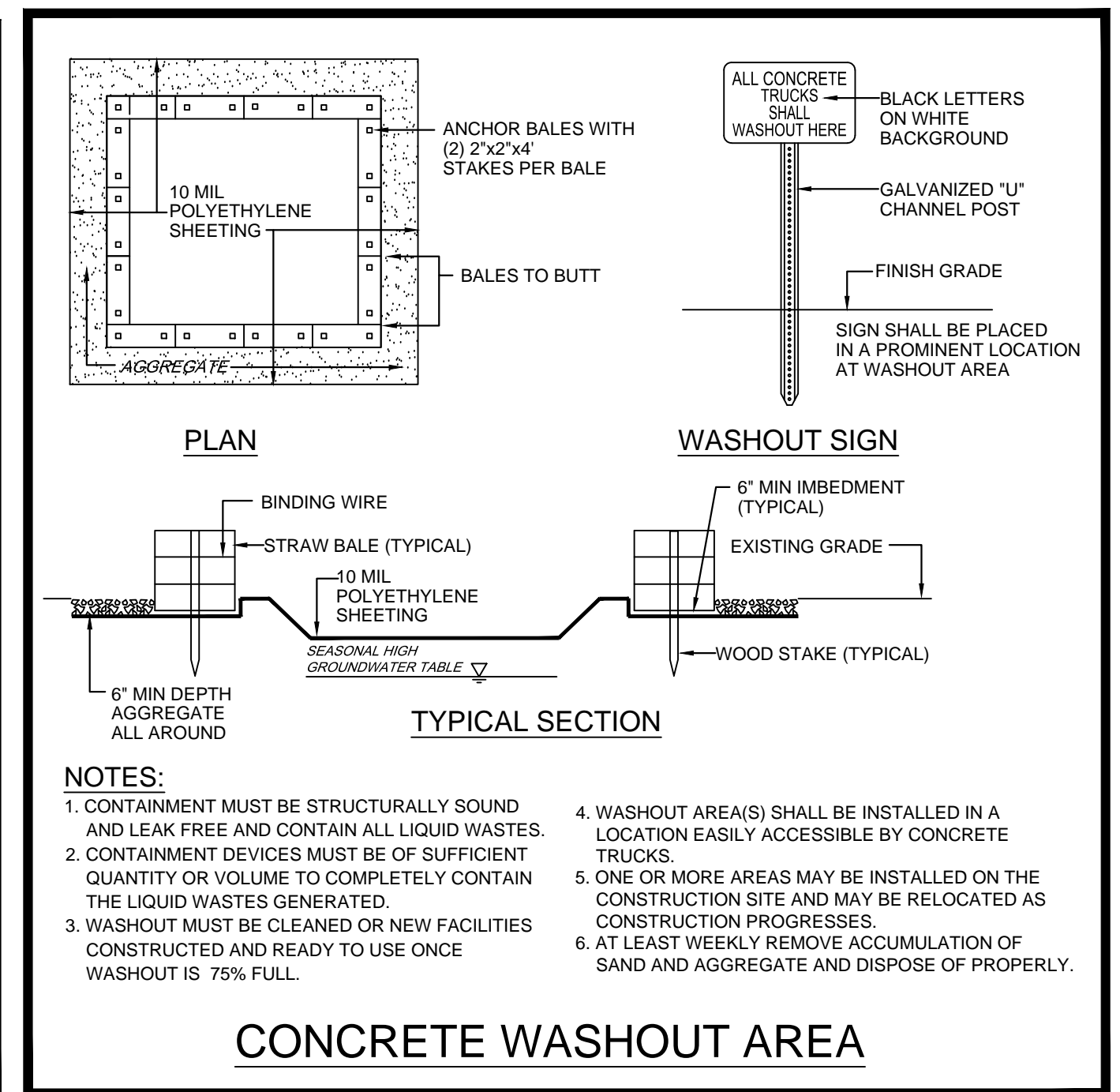
Drawn on: 3-16-11

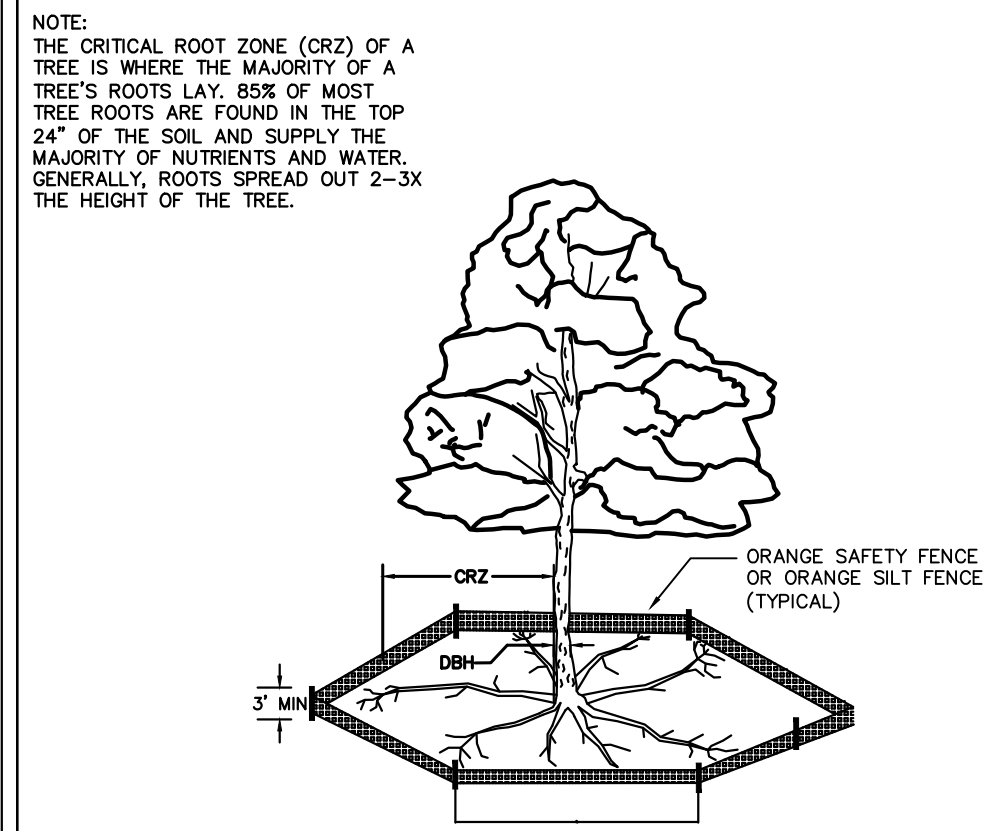
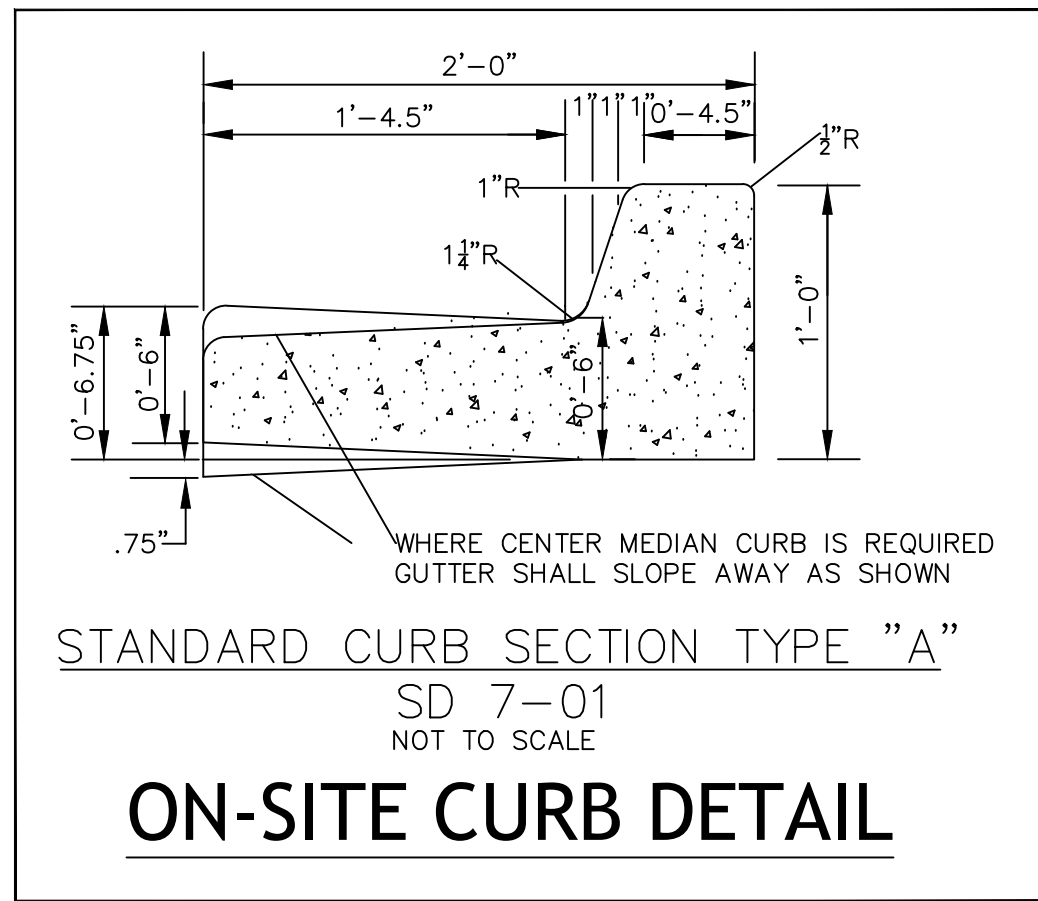


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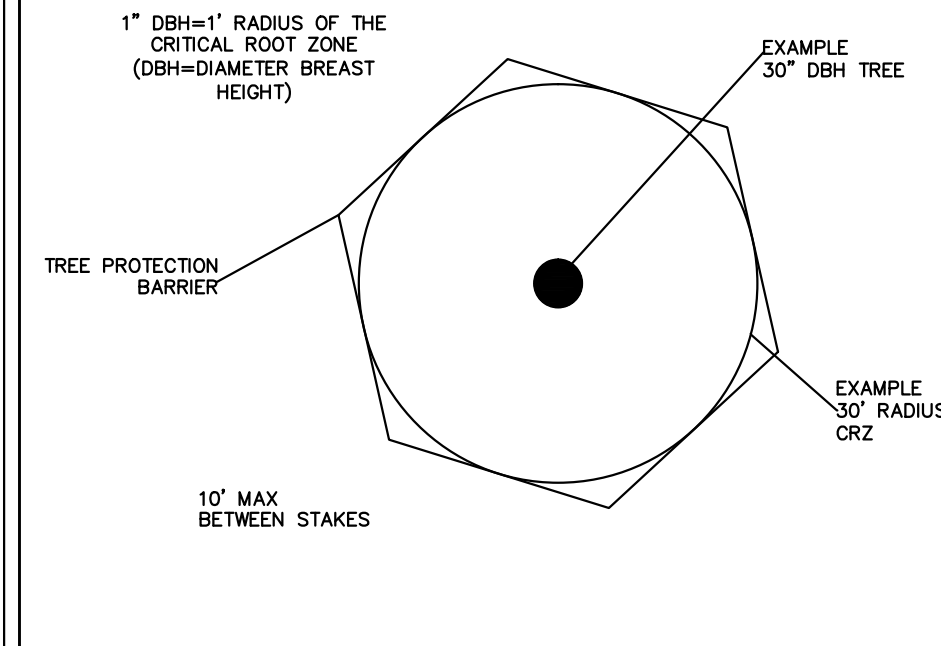
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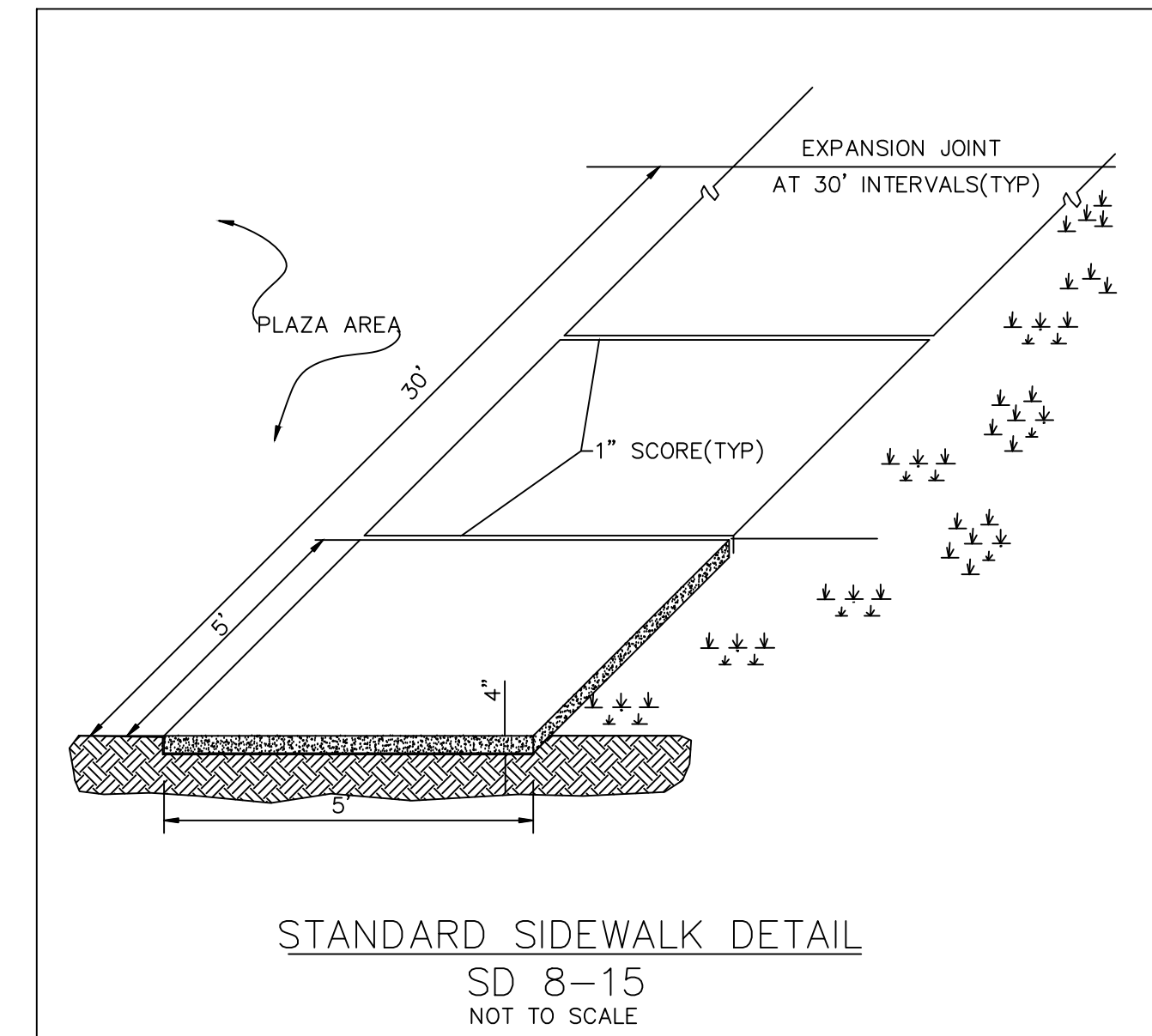


- NOTES:
1. PROTECT CRITICAL ROOT ZONE (CRZ) OF TREES PRIOR TO CONSTRUCTION. CLEARLY MARK THE TREES AND ERECT A PROTECTIVE BARRIER AT THE CRZ. BARRIER SHALL BE MAINTAINED UNTIL CONSTRUCTION IS COMPLETE.
 2. CRZ RADIUS IS 1 FT PER INCH OF TREE DIAMETER AT BREAST HEIGHT (DBH).
 3. WHERE SIDEWALKS AND PATHWAYS PASS WITHIN CRZ, EXTRA CARE SHALL BE TAKEN TO AVOID DAMAGE TO THE ROOTS. ALTERNATE CONSTRUCTION METHODS, SUCH AS A REINFORCED SIDEWALK, SHALL BE IMPLEMENTED AS NECESSARY.
 4. FOR ALL TREES, CUTTING OF LARGE STRUCTURAL ROOTS LOCATED NEAR THE BASE OF THE TRUNK IS PROHIBITED. DO NOT COMPACT SOIL BENEATH TREES. NO VEHICLE SHALL BE ALLOWED TO PARK UNDER TREES. NO HEAVY MATERIALS SHALL BE STORED BENEATH TREES. DAMAGING THE BARK WITH LAWNMOWERS, CONSTRUCTION EQUIPMENT, OR ANYTHING ELSE IS PROHIBITED. CONTRACTOR SHALL REPAIR DAMAGE TO TREES.
 5. FAILING TO INSTALL OR MAINTAIN PROTECTION MEASURES MAY RESULT IN A STOP WORK ORDER AND FINE OF \$500/DAY. DISTURBANCE OTHER THAN THAT ALLOWED ON THE APPROVED PLAN WILL REQUIRE OWNER TO POST A LETTER OF CREDIT FOR 3 YRS FOR TREE MITIGATION.

DATE: NOV. 2011	STANDARD DETAIL	<p>CITY OF WILMINGTON ENGINEERING PO BOX 1810 WILMINGTON, NC 28402 (910) 341-7807</p>	SD 15-09
DRAWN BY: JSR	TREE PROTECTION DURING CONSTRUCTION		SHEET 1 of 2
CHECKED BY: BDK, P.E.			
SCALE: NOT TO SCALE			



DATE: NOV. 2011	STANDARD DETAIL	<p>CITY OF WILMINGTON ENGINEERING PO BOX 1810 WILMINGTON, NC 28402 (910) 341-7807</p>	SD 15-09
DRAWN BY: JSR	TREE PROTECTION DURING CONSTRUCTION		SHEET 2 of 2
CHECKED BY: BDK, P.E.			
SCALE: NOT TO SCALE			



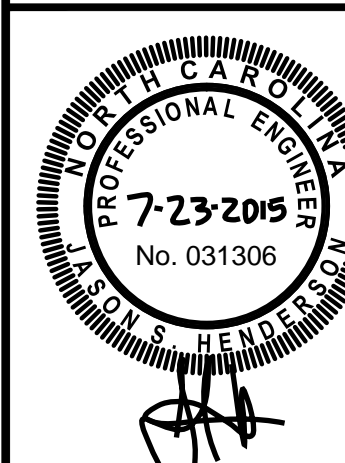
Project Number: 2014-090
DWG Name: 2014-090 Details.dwg
Drawing Scale: AS NOTED
Date of Project: 10-21-2014
Engineer of Record:
Jason Henderson, P.E.
South Carolina PEF 22484
Georgia PEF 62071
North Carolina PEF 031306
Alabama PEF 52054

bluewater
civil design, PLLC
19 Washington Park Suite 100 • Greenville, SC 29601
www.bluewatercivil.com • info@bluewatercivil.com

Certificates of Authorization:
SC C04212 - GA PEF005865
NC P0868 - AL CA40656

BRAGG ROAD DEV. COMPANY, LLC
716 Bragg Drive
Wilmington, NC 28412

Approved Construction Plan	Name _____	Date _____
	Planning _____	Traffic _____
	Fire _____	

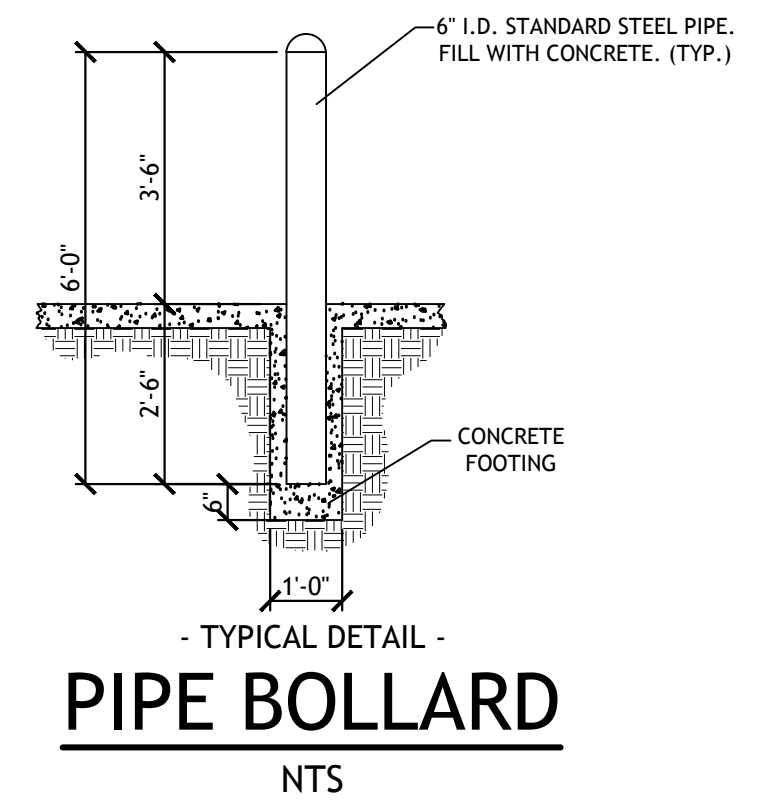


Bluewater Civil Design, PLLC
NC-P-0868

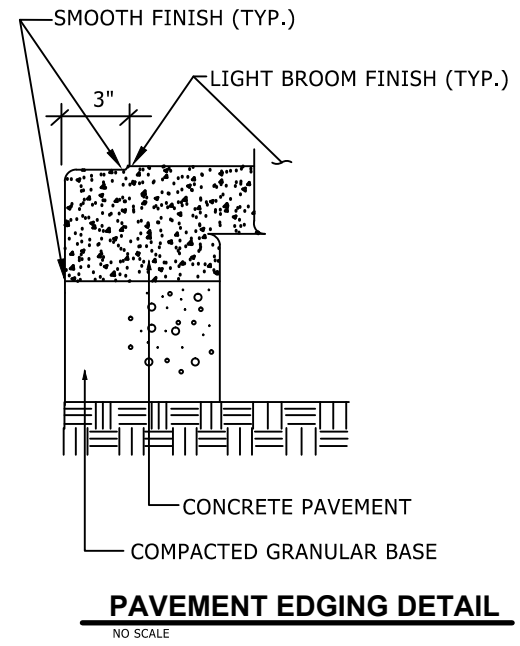
PLAN REVISION	ISSUE DATE	ISSUE COMMENT
A	2-3-2015	ISSUED FOR PERMITS
B	2-25-2015	REVISED PER COMMENTS
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WILMINGTON
NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date: _____ Permit # _____
Signed: _____

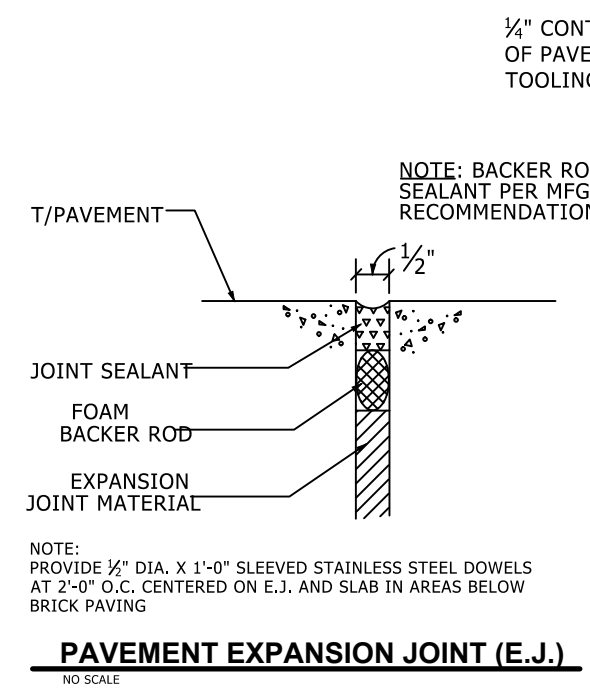
NOTES & DETAILS
C506



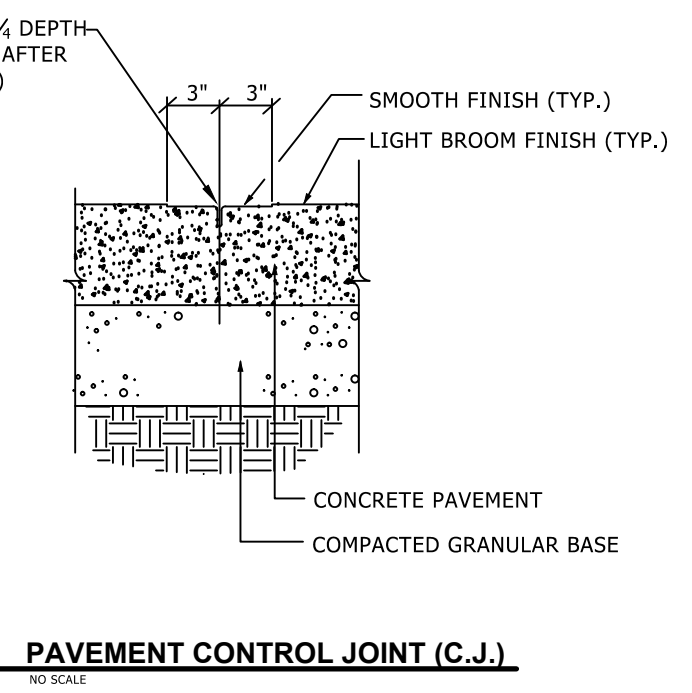
- TYPICAL DETAIL -
PIPE BOLLARD
NTS



PAVEMENT EDGING DETAIL
NO SCALE

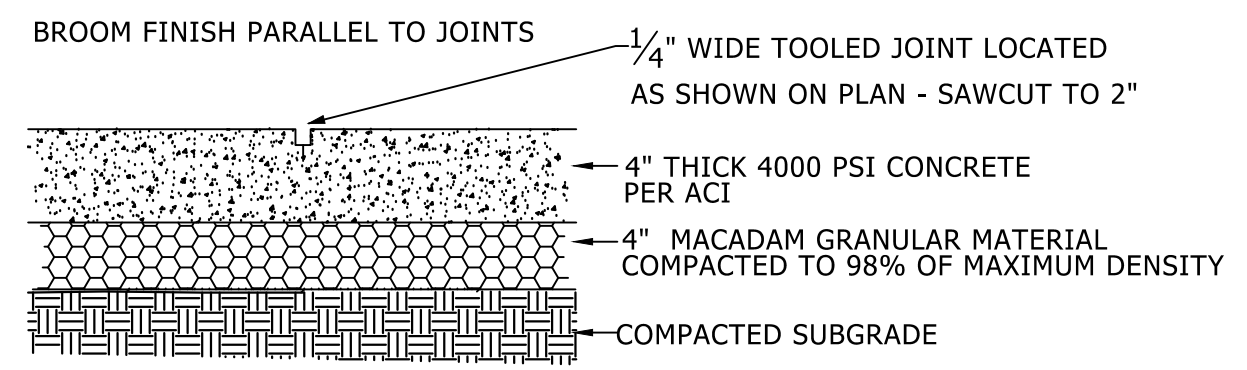


PAVEMENT EXPANSION JOINT (E.J.)
NO SCALE



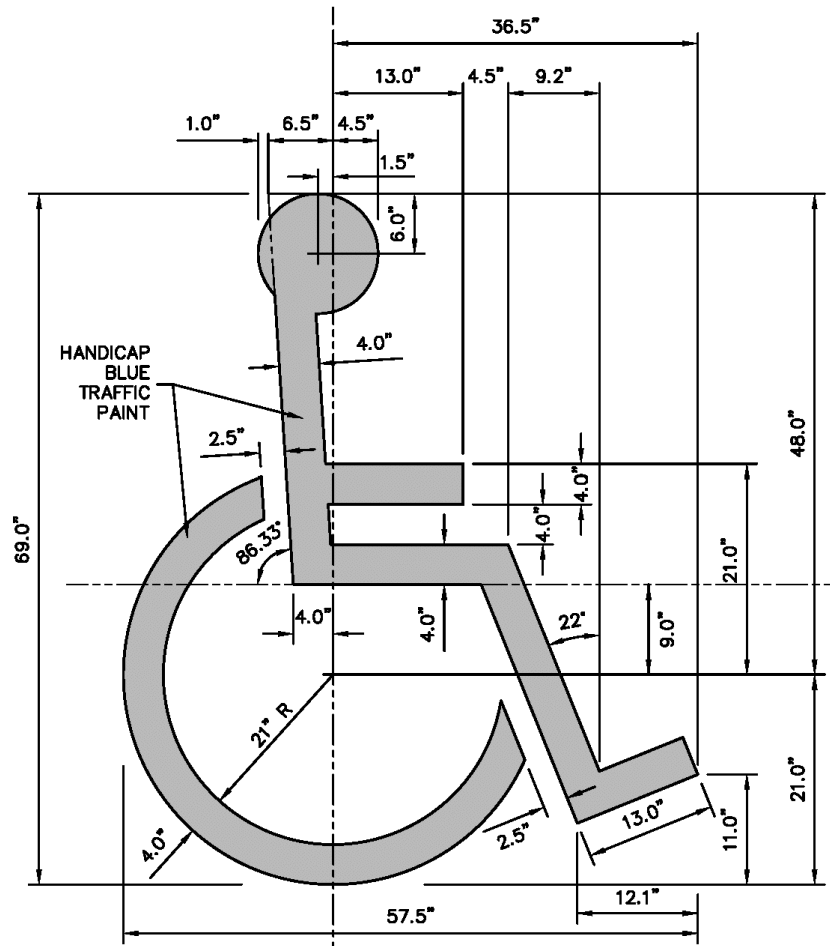
PAVEMENT CONTROL JOINT (C.J.)
NO SCALE

- TYPICAL DETAIL -
CONCRETE SIDEWALK FINISHES (ON-SITE)
NTS



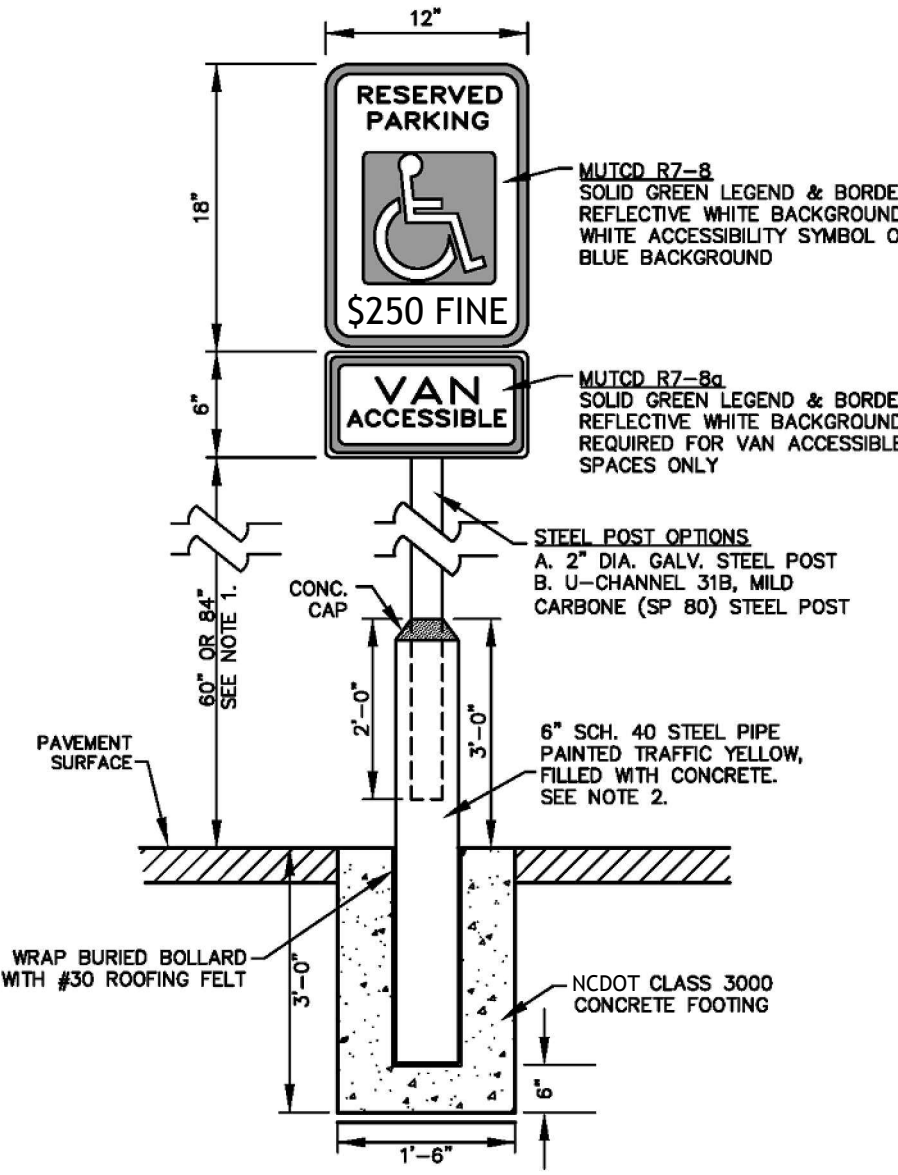
NOTES:
EXPANSION JOINTS SHALL BE INSTALLED SUCH THAT NO SINGLE DIMENSION EXCEEDS 40 FT AND ALSO AREA BETWEEN EXPANSION JOINTS NOT TO EXCEED 250 SQ.FT. SEAL ALL EXPANSION JOINTS.
1/2" EXPANSION PAPER SHALL BE PLACED AT ALL LOCATIONS THAT NEW SIDEWALK ABUTS CONCRETE CURB, EXISTING SIDEWALK, LIGHTPOLE BASES AND RETAINING WALLS.
SEAL ALL EXPANSION JOINTS.
SNAP-CAP EXPANSION JOINT STRIPS CAN BE USED ON ALL EXPANSION JOINTS.

- TYPICAL DETAIL -
CONCRETE SIDEWALK (ON-SITE)
NTS



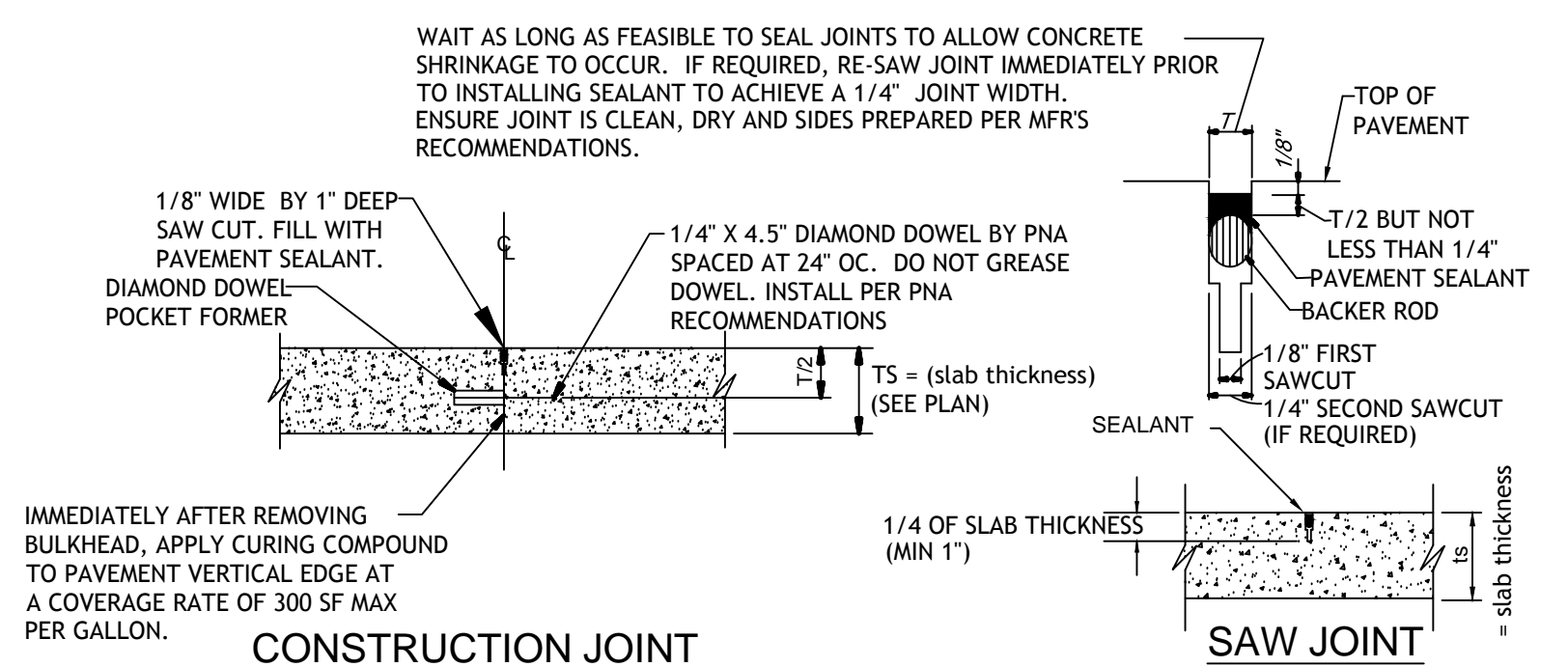
ADA ACCESSIBILITY SYMBOL
N.T.S.

NOTE
1. AT A MINIMUM, THE SYMBOL SHALL RECEIVE A DOUBLE COAT OF HANDICAP BLUE TRAFFIC PAINT.
2. SYMBOL SHALL BE CENTERED ON THE WIDTH OF THE STALL AND TYPICALLY SHOULD BE INSTALLED LENGTHWISE IN THE BOTTOM 1/3 OF THE SPACE CLOSEST TO THE TRAVEL AISLE.

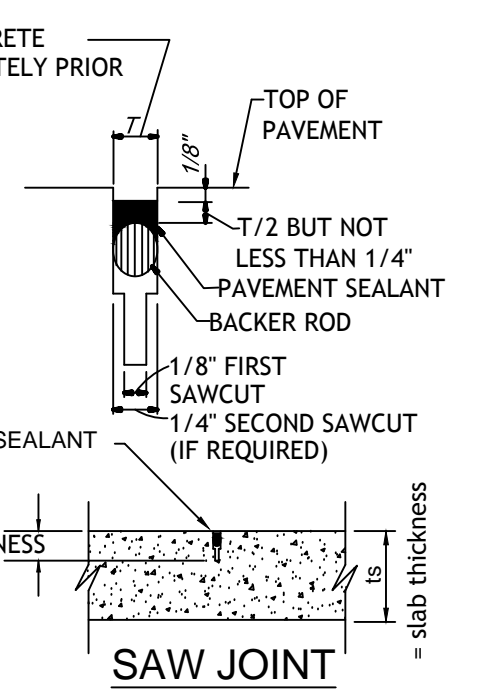


NOTE
1. 12"x18" ACCESSIBILITY SIGN (R7-8) SHALL BE MOUNTED 7" FROM FINISH GRADE TO BOTTOM EDGE OF SIGN FACE. MOUNTING HEIGHT MAY BE REDUCED TO 5" IF PLACED IN A LANDSCAPE AREA IN WHICH PEDESTRIANS ARE NOT EXPECTED TO USE.
2. BOLLARD MAY BE OMITTED IF INSTALLED IN LANDSCAPE AREAS. WHEN INSTALLED IN LANDSCAPE AREAS, MOUNTING POST SHALL BE DRIVEN A MINIMUM OF 3" BELOW FINISH GRADE. ALTERNATE MOUNTING POSTS MUST BE APPROVED BY THE CITY ENGINEER PRIOR TO CONSTRUCTION.
3. SIGNAGE SHALL BE INSTALLED IN FRONT OF EACH ACCESSIBLE SPACE, CENTERED ON THE WIDTH OF THE SPACE.
4. REFER TO AMERICANS WITH DISABILITIES ACT AND ARCHITECTURAL BARRIERS ACT ACCESSIBILITY GUIDELINES (ADAAG), LATEST EDITION, FOR REQUIRED NUMBER OF ACCESSIBLE SPACES. PER ADAAG, ONE VAN ACCESSIBLE SPACE SHALL BE PROVIDED, MINIMUM, WITH ADDITIONAL VAN ACCESSIBLE SPACES PER ADAAG REQUIREMENTS.
5. ALL SIGNAGE SHALL BE ENGINEER GRADE .080 ALUMINUM REFLECTIVE SIGN MEETING THE REQUIREMENTS OF THE MUTED AND ADAAG.

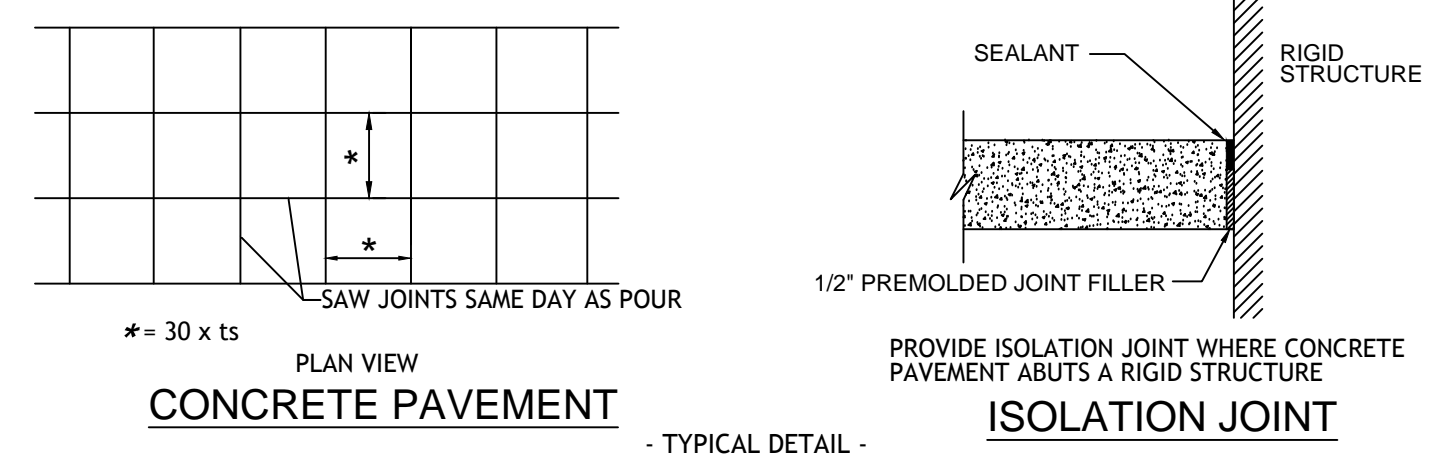
ADA SIGNAGE (ON-SITE)
N.T.S.



CONSTRUCTION JOINT



SAW JOINT



PLAN VIEW
CONCRETE JOINTING (ON-SITE)
NTS

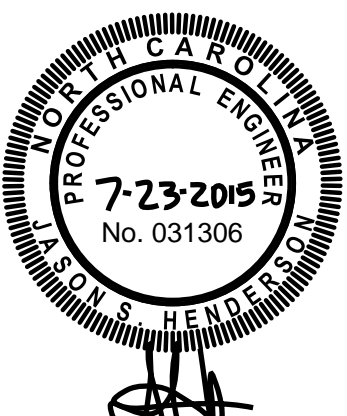
Project Number: 2014-090
DWG Name: 2014-090 Details.dwg
Drawing Scale: AS NOTED
Date of Project: 10-21-2014
Engineer of Record:
Jason Henderson, P.E.
South Carolina PE# 2388
Georgia PE# 63071
North Carolina PE# 031306
Alabama PE# 32054

blue WATER
civil design, PLLC
bluewater civil design, PLLC
19 Washington Park Suite 100 • Greenville, SC 29601
www.bluewatercivil.com • info@bluewatercivil.com

Certificates of Authorization:
SC C04212 - GA PE#005865
NC P0868 - AL CA4065E

BRAGG ROAD DEV. COMPANY, LLC
716 Bragg Drive
Wilmington, NC 28412

Approved Construction Plan
Name _____ Date _____
Planning _____ Traffic _____ Fire _____



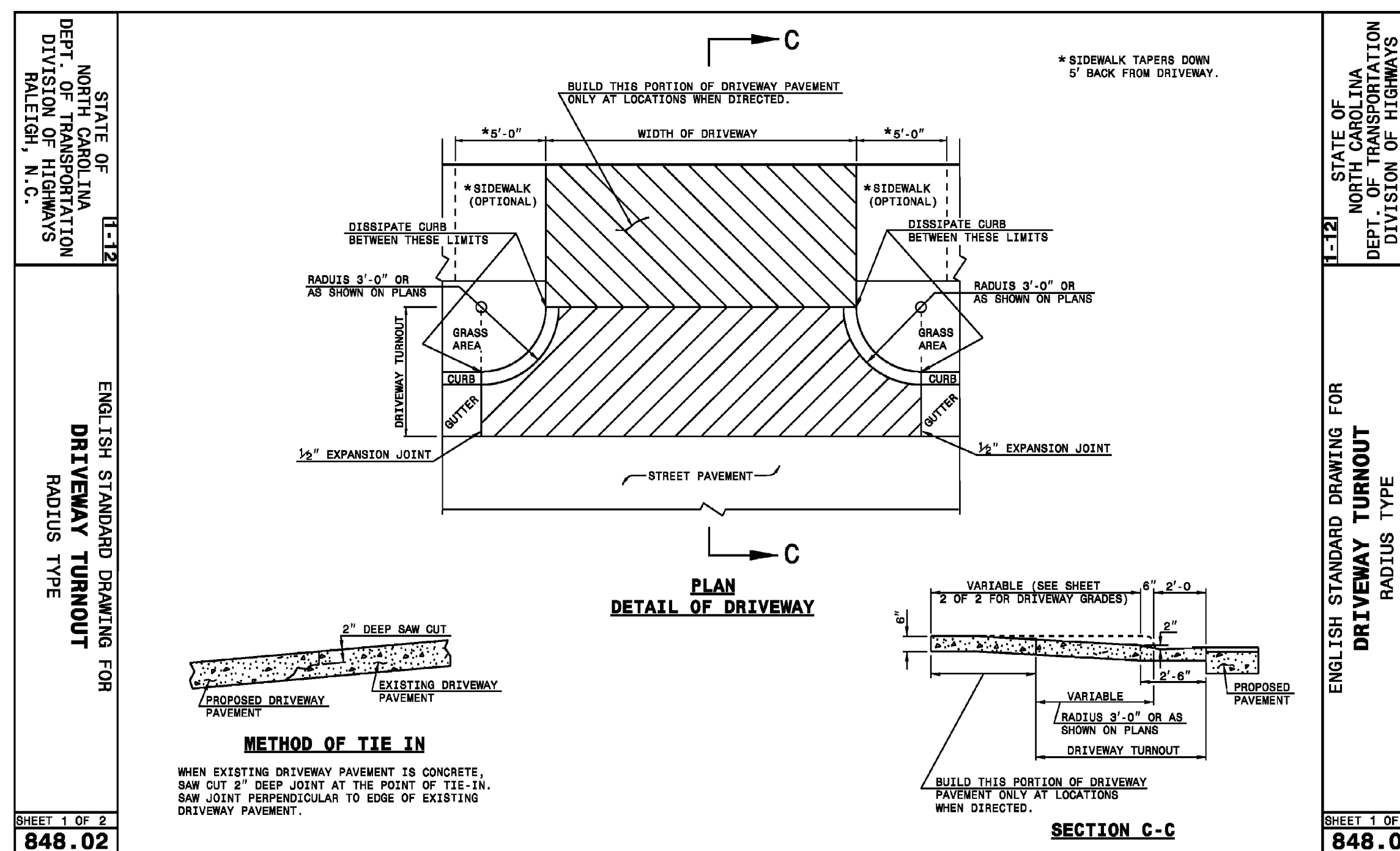
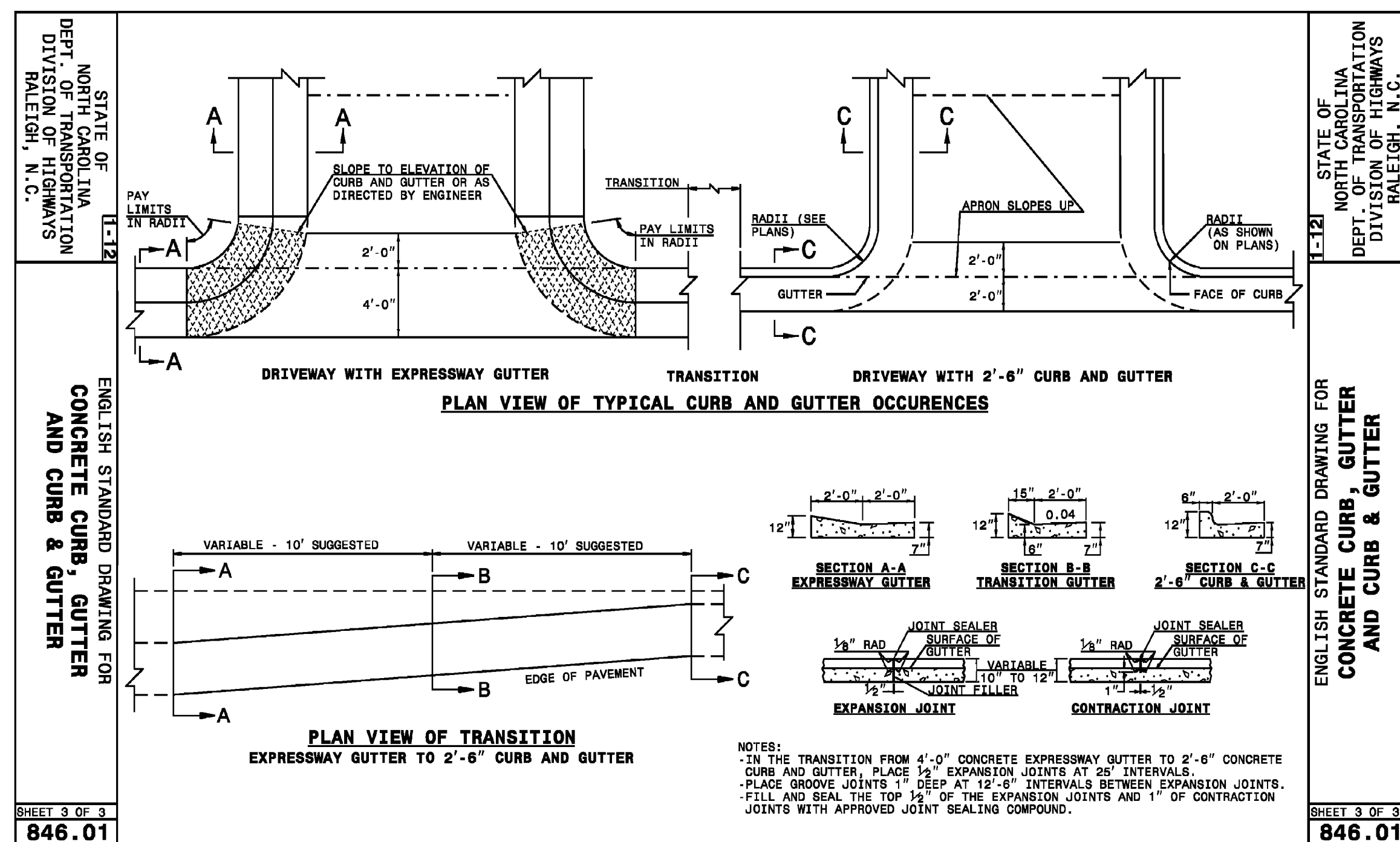
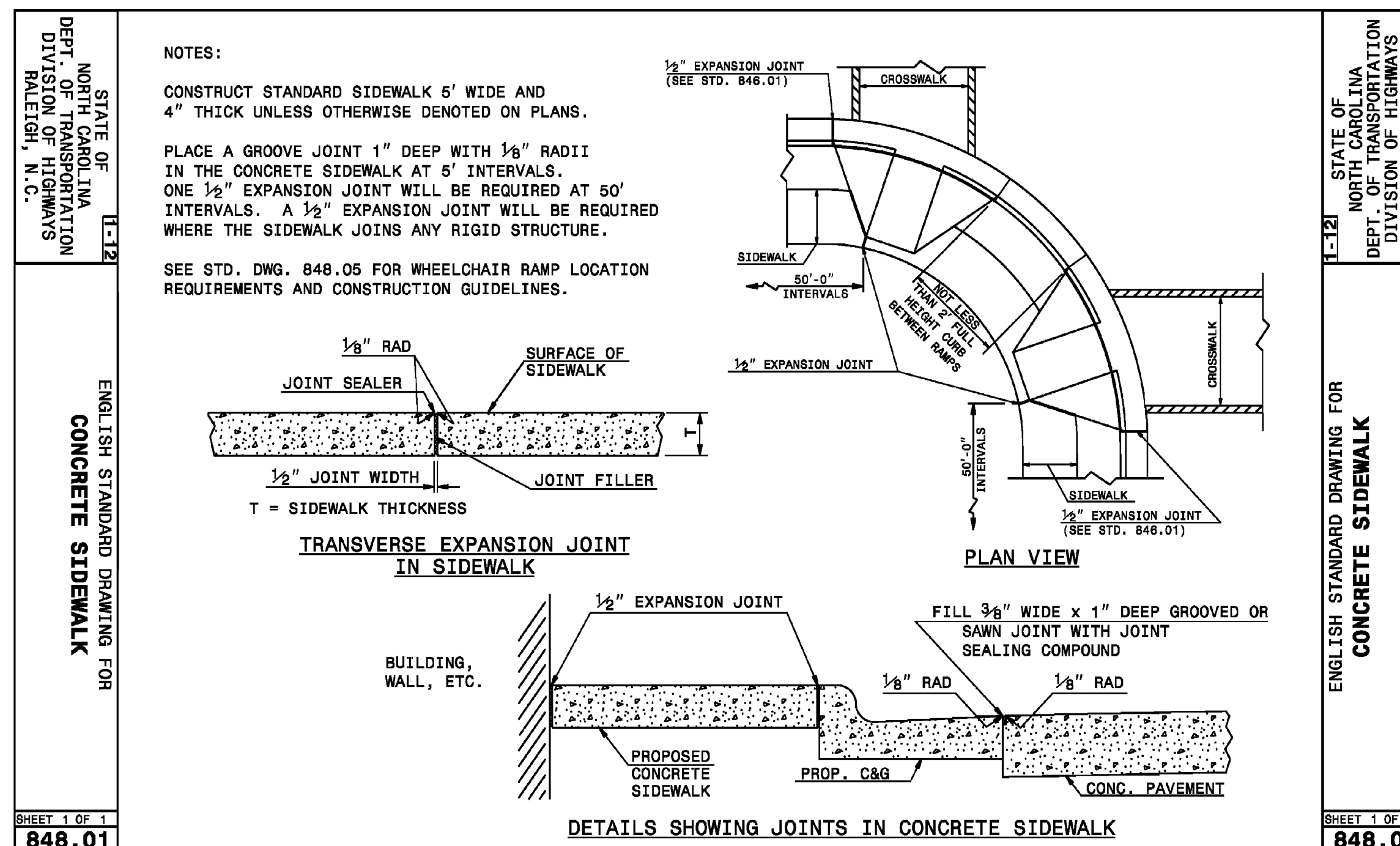
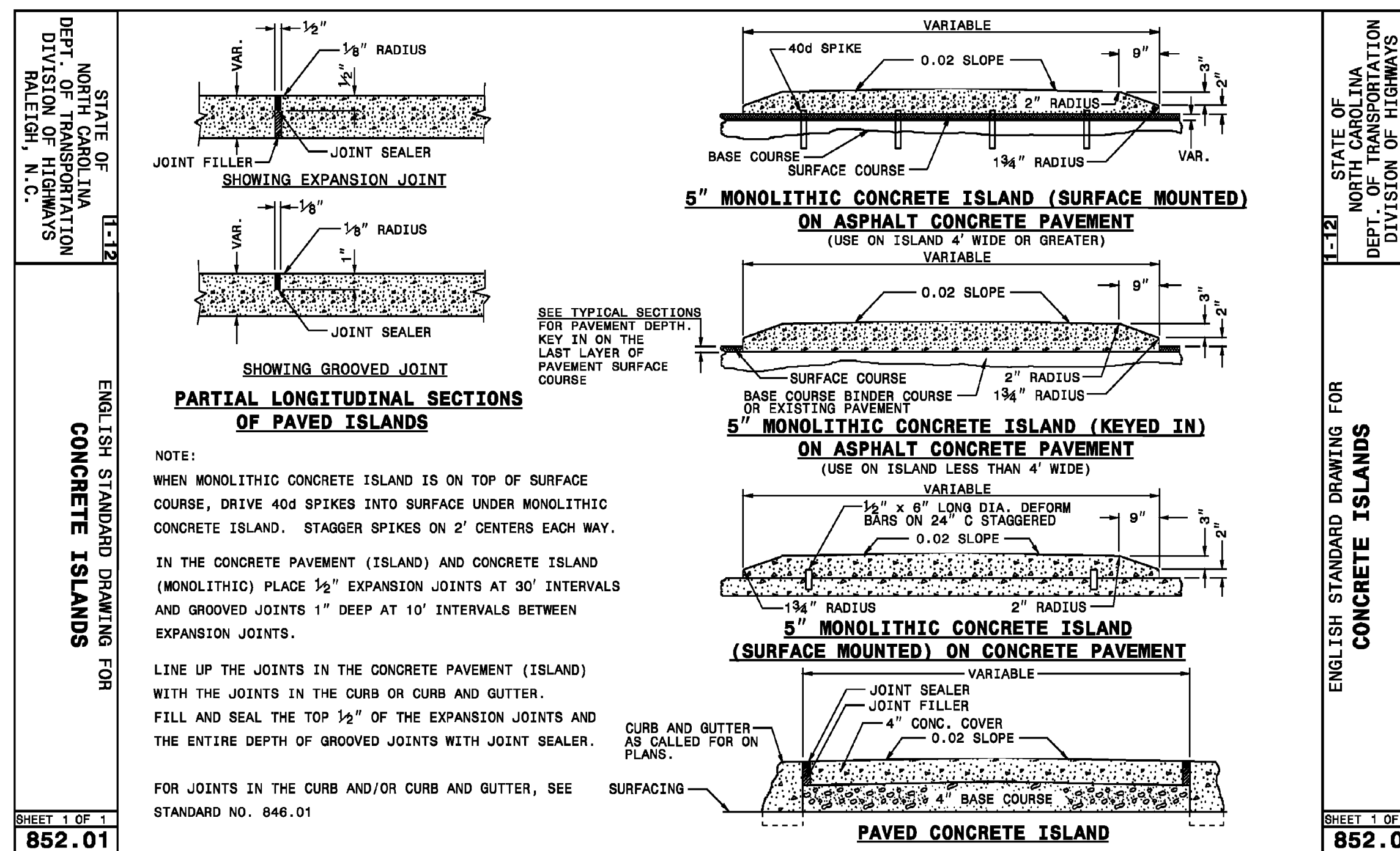
Bluewater Civil Design, PLLC
NC-P-0868

PLAN REVISION	ISSUE DATE	ISSUE COMMENT
A	2-3-2015	ISSUED FOR PERMITS
B	2-25-2015	REVISED PER COMMENTS
C	4-2-2015	REVISED PER NEW HANDOVER COMMENTS
D	4-16-2015	100% TENANT SUBMITTAL
E	4-30-2015	REVISED PER HCOOT/WILMINGTON COMMENTS
F	6-2-2015	REVISED PER CITY & TENANT COMMENTS
G	7-15-2015	REVISED PER TENANT COMMENTS
H	7-22-2015	REVISED PER CITY COMMENTS
...

WILMINGTON
NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date: _____ Permit # _____
Signed: _____

NOTES & DETAILS

C507



MEADRAIN® Select

MEAEASY 100 Complete

Clear Width: 4" Interior
Total Width: 5.3"
Material: Fiberglass
Grating: Galvanized steel slotted grating included
Fall Options: Available without fall
Locking System: SNAP
Load Class: A

Product Description	Length (inches)	Product #	lbs/unit
Meaeasy 100	39.4	141687	8.1

Formed bottom outlet recess 4"

TRENCH DRAIN
NTS

WILMINGTON NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date: _____ Permit # _____
Signed: _____

Project Number: 2014-090
DWG Name: 2014-090 Details.dwg
Drawing Scale: AS NOTED
Date of Project: 10-21-2014
Engineer of Record:
Jason Henderson, P.E.
South Carolina PEF 22906
Georgia PEF 63071
North Carolina PEF 031306
Alabama PEF 32054

bluewater
civil design, PLLC
bluewatercivil.com • info@bluewatercivil.com
19 Washington Park Suite 100 • Greenville, SC 29601
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Certificates of Authorization:
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BRAGG ROAD DEV. COMPANY, LLC
716 Bragg Drive
Wilmington, NC 28412

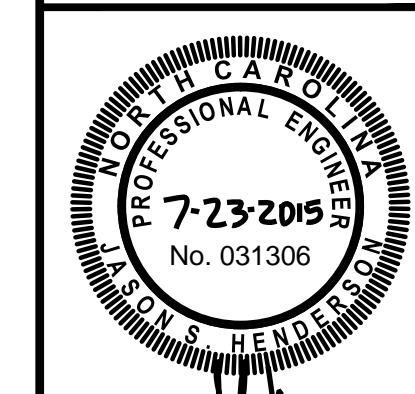
Approved Construction Plan

Name: _____ Date: _____

Planning: _____

Traffic: _____

Fire: _____



Bluewater Civil Design, PLLC
NC-P-0868

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G	7-15-2015	REVISED PER TENANT COMMENTS
H	7-22-2015	REVISED PER CITY COMMENTS

NOTES & DETAILS
C509

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

ELEVATION

SIDE

NOTES:

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

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

ENDWALL DIMENSIONS							
PIPE DIA.	MINIMUM BAR SIZE	MIN./MAX. H1 (FT.)	MIN./MAX. H2 (FT.)	MIN./MAX. D (FT.)	MIN. W1	MIN. W2	MIN. / MAX.
1.0	#5 @ 8"	1.25/2.00	2.00/3.75	1.25/1.75	3.00/3.75	6.50/6.00	
1.25	#5 @ 8"	1.25/2.00	3.00/3.75	1.25/2.00	3.50/3.75	6.50/6.75	
1.50	#5 @ 8"	1.25/2.00	3.00/4.25	1.50/2.50	3.50/3.75	6.50/6.75	
2.0	#5 @ 8"	1.50/2.50	4.00/4.75	1.75/2.50	4.00/4.25	7.50/8.25	
2.5	#5 @ 8"	2.50/3.50	4.00/6.00	2.00/3.00	4.50/5.50	10.00/11.50	
3.0	#5 @ 8"	3.00/3.50	5.00/6.00	2.75/3.50	5.25/5.75	11.50/11.75	
3.5	#5 @ 8"	3.25/4.50	6.00/6.75	3.25/3.50	6.00/6.75	12.00/13.25	
4.0	#5 @ 8"	3.50/4.50	6.50/7.00	3.25/3.50	6.50/6.75	13.00/13.25	
4.5	#5 @ 8"	4.00/5.00	6.50/8.50	3.25/4.00	7.00/9.25	13.50/15.75	
5.0	#5 @ 8"	4.50/5.00	7.00/8.50	3.25/4.00	7.25/9.25	13.75/15.75	
5.5	#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	14.75/18.75	

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

SHEET 1 OF 1
838.80

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

PLAN

SECTION - AA

SECTION - BB

SECTION - LL

SECTION - MM

SECTION - NN

SECTION - PP

SECTION - KK

HOOD ELEVATION

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

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

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

SHEET 1 OF 2
840.03

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

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

DETAIL SHOWING TYPES OF GRATES USE ACCORDING TO WATER FLOW.

SECTION A-A

SECTION B-B

SECTION C-C

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

SHEET 2 OF 2
840.03

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

ENGLISH STANDARD DRAWING FOR
DROP INLET FRAME AND GRATES
FOR USE WITH STD. DWS S 840.14 AND 840.15

SECTION G-G

SECTION H-H

PLAN OF GRATING

PLAN OF FRAME

SECTION E-E

SECTION F-F

ENGLISH STANDARD DRAWING FOR
DROP INLET FRAME AND GRATES
FOR USE WITH STD. DWS S 840.14 AND 840.15

SHEET 1 OF 1
840.16

Project Number: 2014-090
DWG Name: 2014-090 Details.dwg
Drawing Scale: AS NOTED
Date of Project: 10-21-2014
Engineer of Record:
Jason Henderson, P.E.
South Carolina PEF 22946
Georgia PEA 62071
North Carolina PEF 031306
Alabama PEF 32054

bluewater civil design, PLLC
19 Washington Park Suite 100 • Greenville, SC 29601
www.bluewatercivil.com • info@bluewatercivil.com

Certificates of Authorization:
SC C04212 - GA PEF005865
NC P0668 - AL CA40656

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

SHEET 1 OF 2
840.03

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

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

SECTION A-A

SECTION B-B

SECTION C-C

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

SHEET 2 OF 2
840.03

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

ENGLISH STANDARD DRAWING FOR
DROP INLET FRAME AND GRATES
FOR USE WITH STD. DWS S 840.14 AND 840.15

SECTION G-G

SECTION H-H

PLAN OF GRATING

PLAN OF FRAME

SECTION E-E

SECTION F-F

ENGLISH STANDARD DRAWING FOR
DROP INLET FRAME AND GRATES
FOR USE WITH STD. DWS S 840.14 AND 840.15

SHEET 1 OF 1
840.16

BRAGG ROAD DEV.
COMPANY, LLC
716 Bragg Drive
Wilmington, NC 28412

Approved Construction Plan
Name _____ Date _____
Planning _____
Traffic _____
Fire _____

Professional Engineer
7-23-2015
No. 031306

Bluewater Civil Design, PLLC
NC-P-0868

PLAN REVISION	ISSUE DATE	ISSUE COMMENT
A	2-3-2015	ISSUED FOR PERMITS
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H	7-22-2015	REVISED PER CITY COMMENTS
...
...
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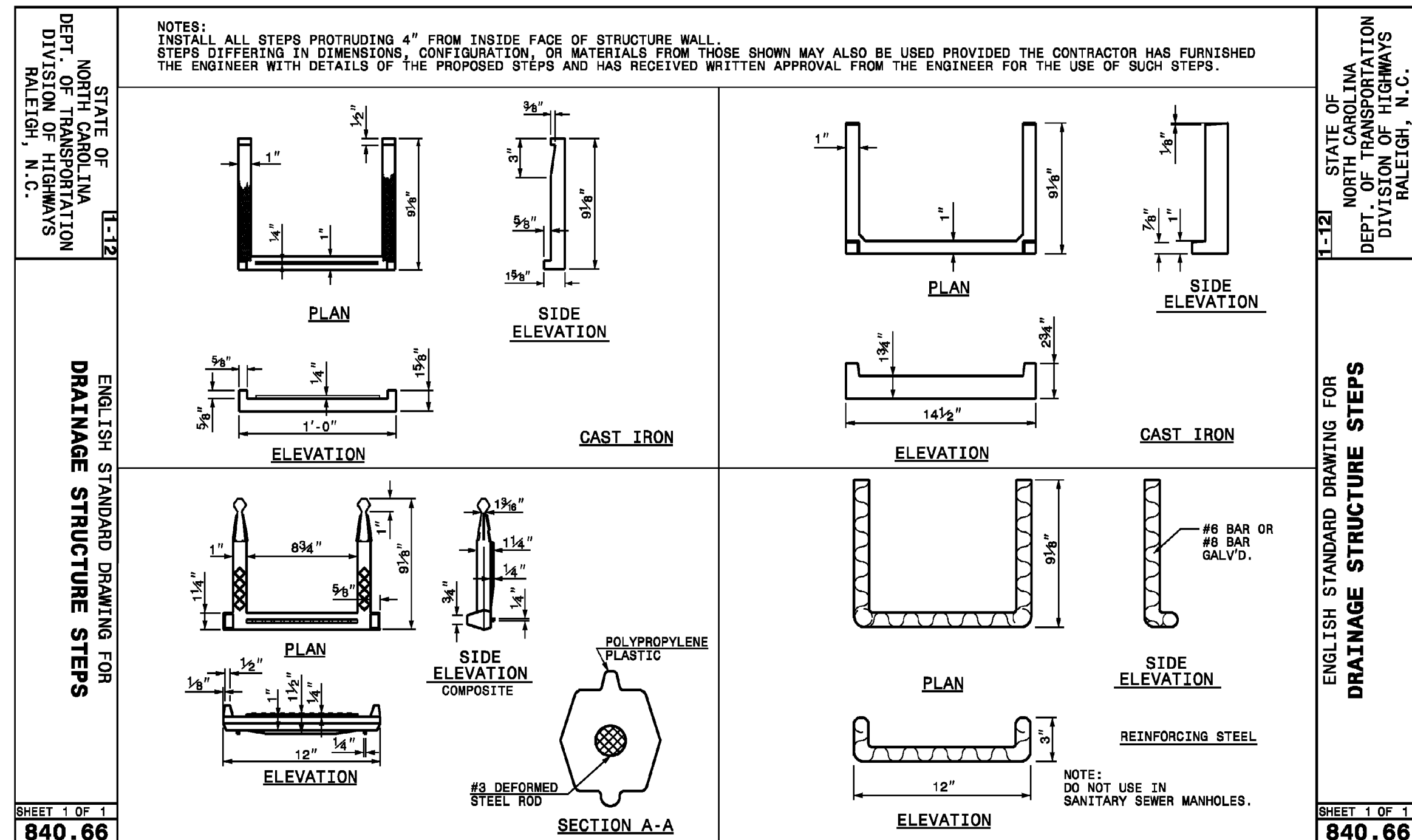
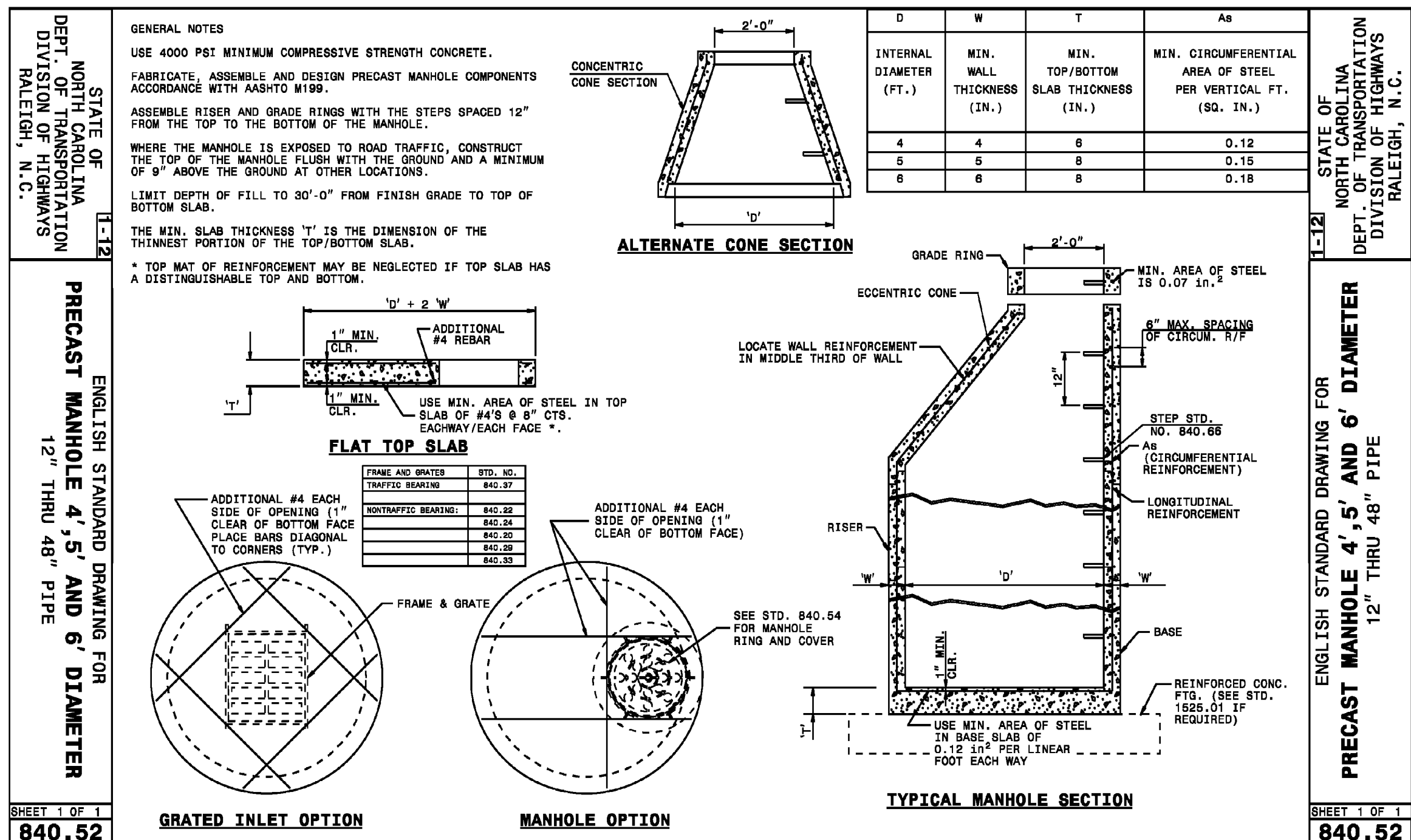
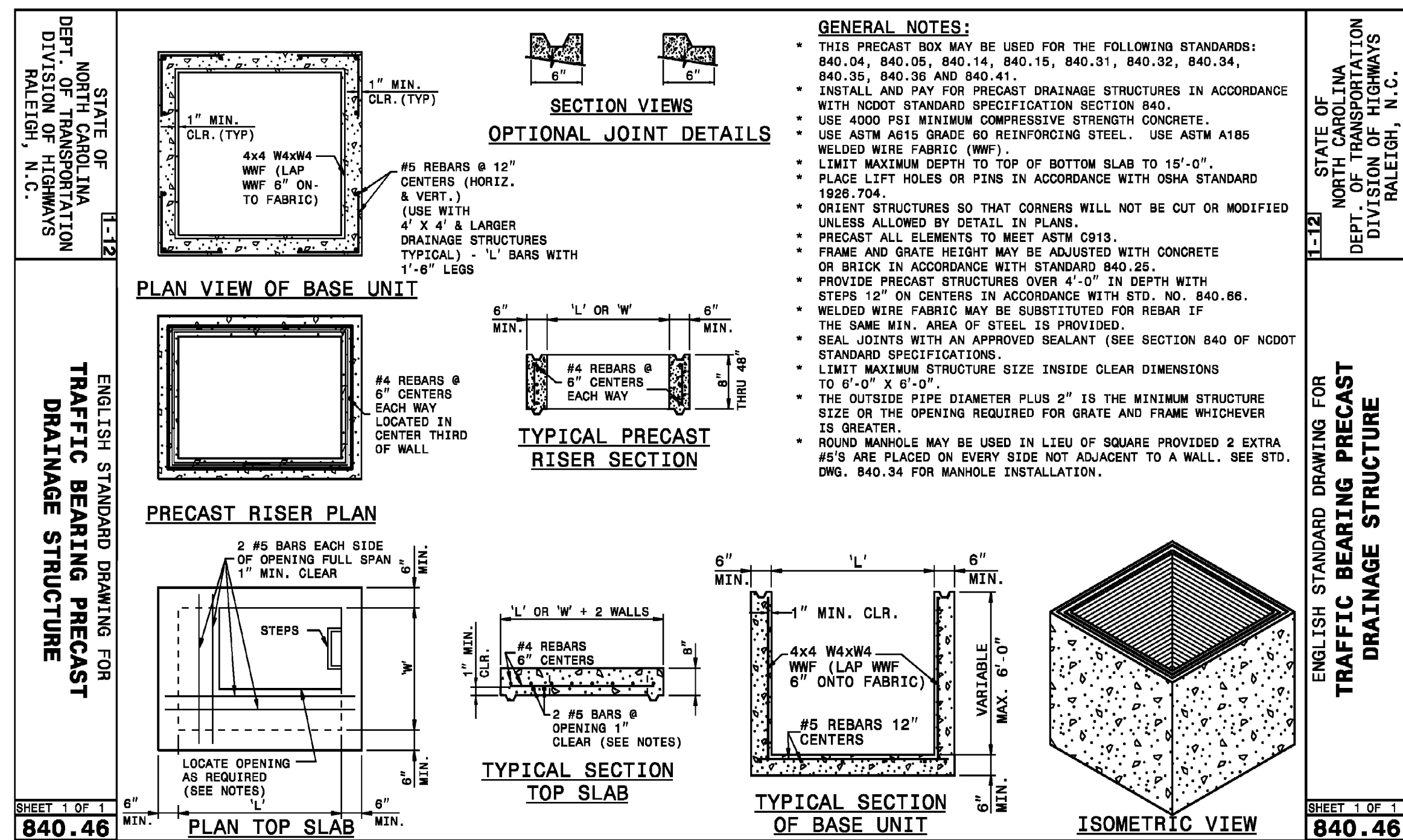
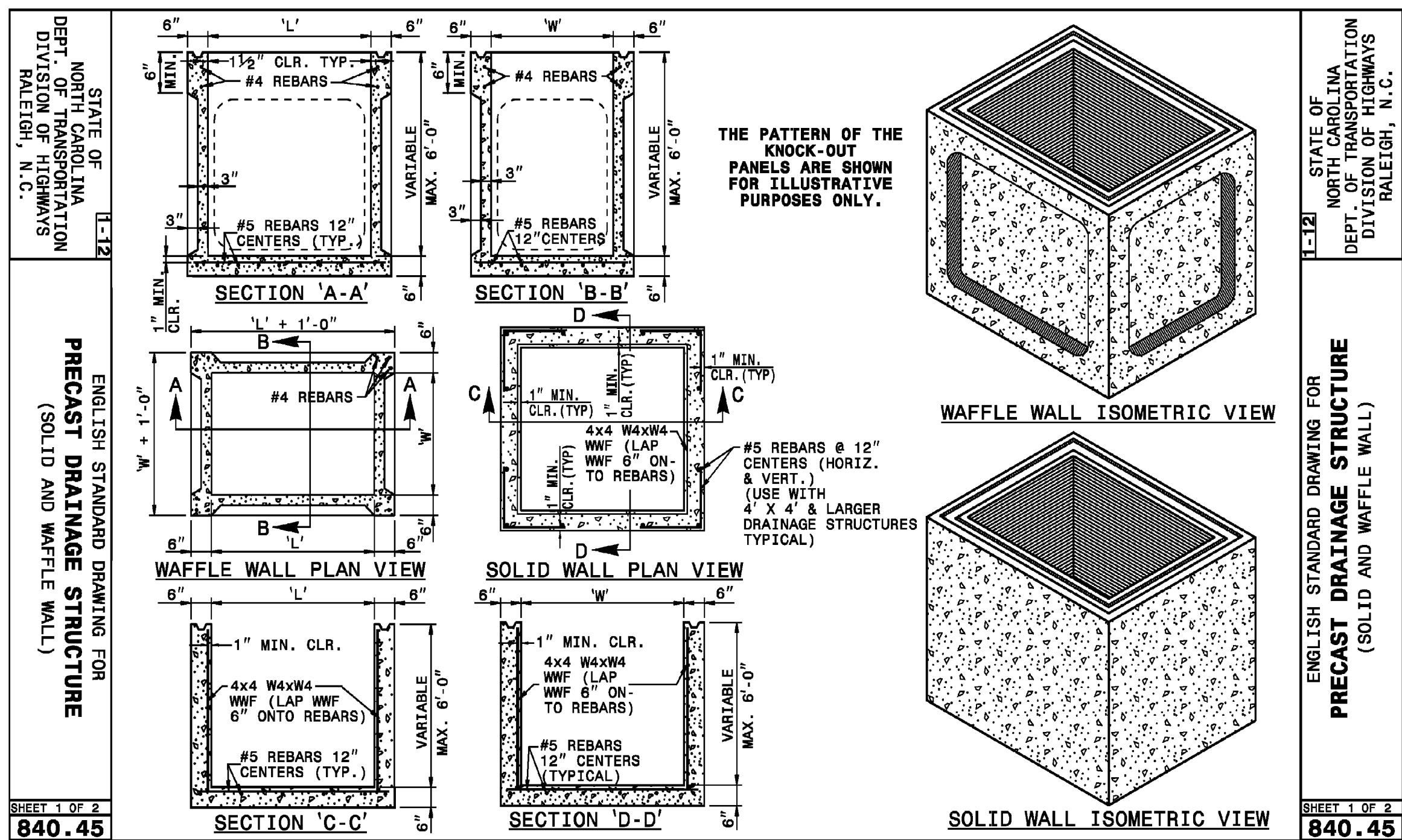
NOTES & DETAILS

APPROVED STORMWATER MANAGEMENT PLAN

Date: _____ Permit # _____

Signed: _____

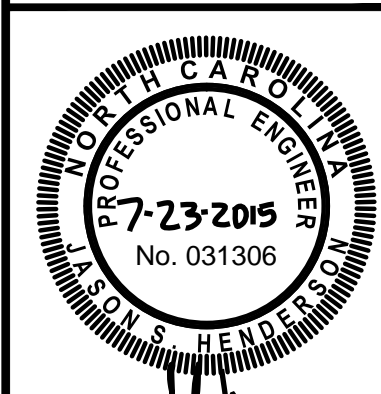
C511



Approved Construction Plan

Name _____ Date _____

Planning _____ Traffic _____ Fire _____

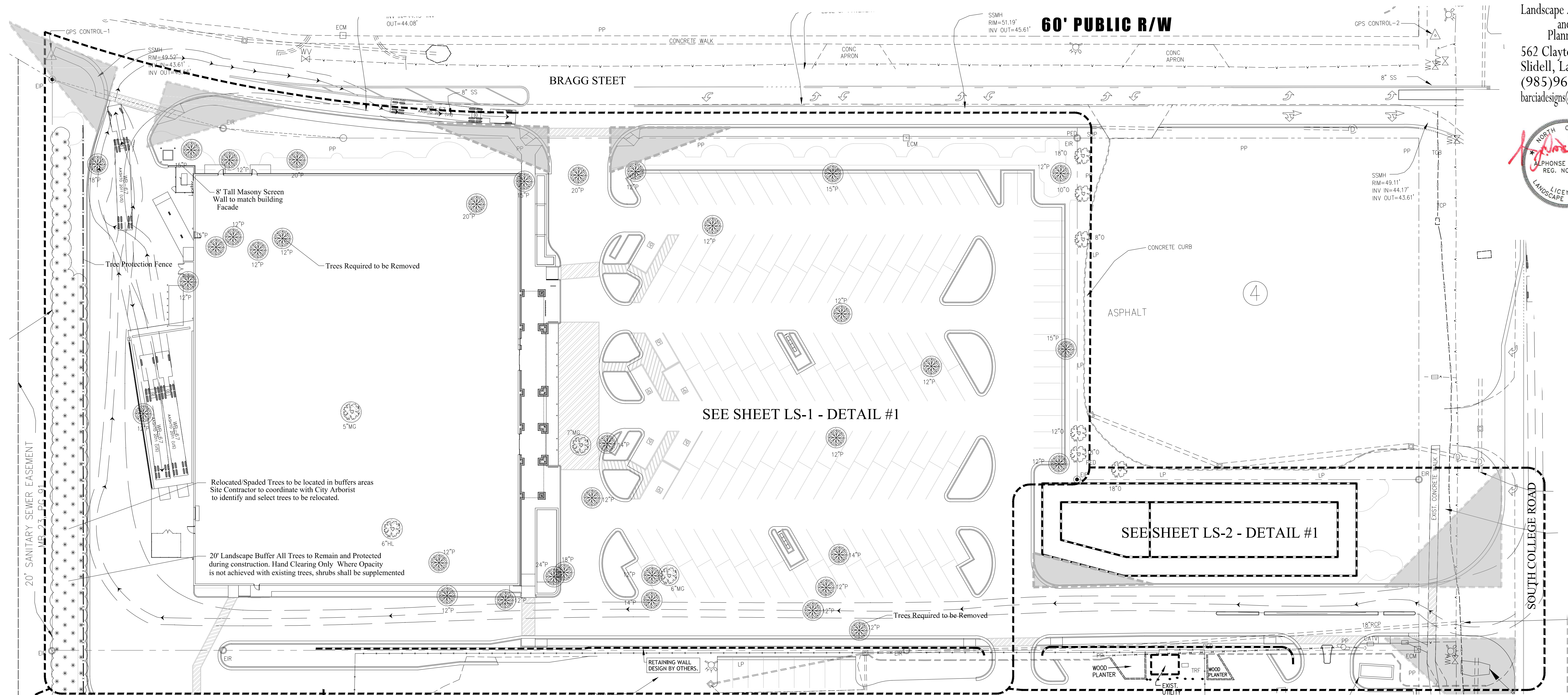
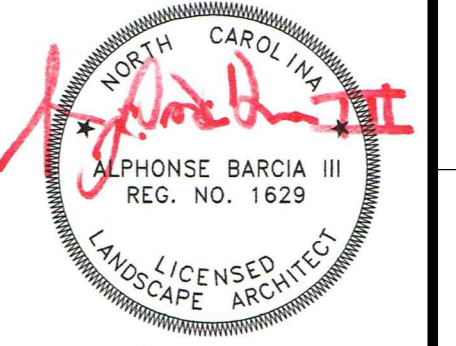


Bluewater Civil Design, PLLC
NC-P-0868

REVISION	ISSUE DATE	ISSUE COMMENT
A	2-3-2015	ISSUED FOR PERMITS
B	2-25-2015	REVISED PER COMMENTS
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G	7-15-2015	REVISED PER TENANT COMMENTS
H	7-22-2015	REVISED PER CITY COMMENTS
...

NOTES & DETAILS

C513



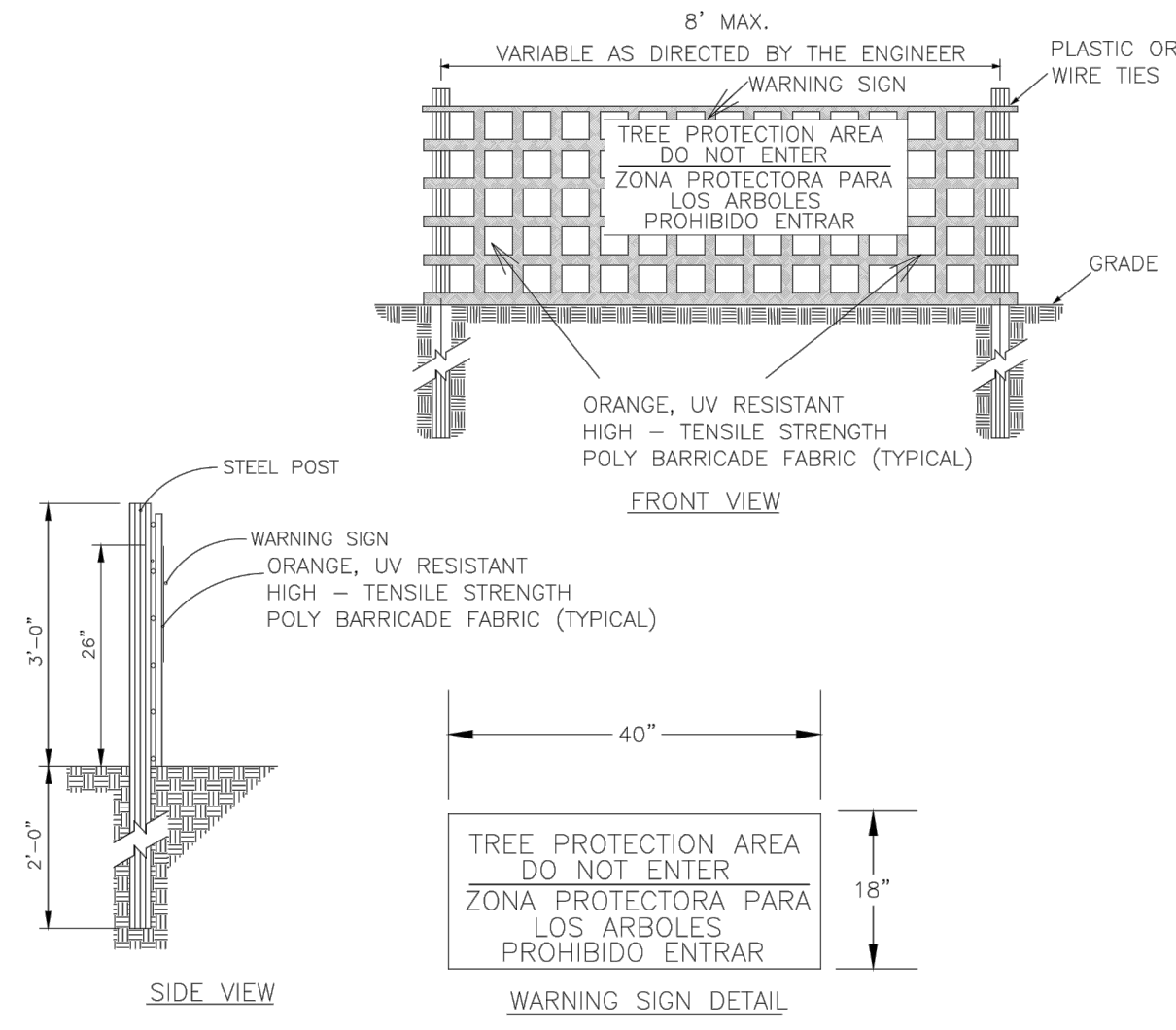
SEE SHEET LS-1 - DETAIL #1

SEE SHEET LS-2 - DETAIL #1

SEE SHEET LS-2 - DETAIL #2

LANDSCAPE REQUIREMENTS

Street Yard Landscaping	Calculations	Tree's Required	Tree's Provided	Notes
Bragg Street	$618 \cdot 30 \cdot 36 \cdot 18 / 600 = 16.56$ $16 \times 6 =$	16 Canopy or 48 Understory trees 96 Shrubs	46 Understory trees 223 Assorted Shrubs 304 A. Grass	Understory trees provided due to powerlines restrictions Shrub Planting to screen parking lot from street
College Road	$100 \cdot 30 \cdot 36 / 600 = 4.2$ $4 \times 6 =$	4 Canopy or 12 Understory trees 24 Shrubs	9 Understory trees 50 Assorted Shrubs	Understory trees provided due to powerlines restrictions
Parking Lot Landscaping				
Interior Area Landscape (Front)	$\pm 68,000sf / 20\% / 707 =$	19 Canopy Trees Required	13 Canopy and 7 Understory 475 Shrubs 120 Groundcover	Understory trees used along the front building Multi-level Shrubs used in planter islands
Interior Area Landscape (Rear)	$\pm 18,000sf / 20\% / 707 =$	5 Canopy Trees Required	8 Canopy Trees 0 Shrubs	
Perimeter Planting	$1,246 \cdot 30 \cdot 24 \cdot 30 / 27 =$	43 Trees Required	10 Canopy and 23 Understory 169 Shrubs 1800 Groundcover	Shrub Planting to screen parking lot
Foundation Planting (Front)	$242 \times 20 = 4,978sf / 12\% =$	598 sf Landscape Area Required	742 sf Landscape Area Provided 5 Understory trees 121 Shrubs	3' ht. Masonry planter to match building
Foundation Planting (Side)	$192 \times 20 = 3,840sf / 12\% =$	460 sf Landscape Area Required	589 sf Landscape Area Provided 57 Shrubs	
Buffer Yards				
Rear abutting Residential	550sf Rear to remain 153sf Side to remain	20' wide planting strip All existing trees to remain. Hand Clearing Only. Where existing buffer area that does not meet the trees buffer requirement. Landscape Contractor will be required to use existing trees on site to meet requirement. Contractor will coordinate with city arborist to select trees that are suitable to be relocated/spaded. Where Opacity is not achieved with existing trees, shrubs shall be supplemented		



NOTES:

- THE TREE PROTECTION FENCING SHALL NOT BE VIOLATED FOR THE ENTIRE DURATION OF THE PROJECT WITHOUT APPROVAL FROM URBAN FORESTRY STAFF.
- 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 100' IN PERIMETER, PROVIDE NO LESS THAN TWO SIGNS PER PROTECTION AREA.
- ATTACH SIGNS SECURELY TO FENCE POSTS AND FABRIC. MAINTAIN TREE PROTECTION FENCE AND SIGNS THROUGHOUT DURATION OF PROJECT.
- TREE PROTECTION FENCING AND SIGNAGE SHALL BE REMOVED AFTER CONSTRUCTION.
- ADDITIONAL SIGNS MAY BE REQUIRED BY CITY OF WILMINGTON, BASED ON ACTUAL FIELD CONDITIONS.

NO.	DATE	BY	REVISIONS

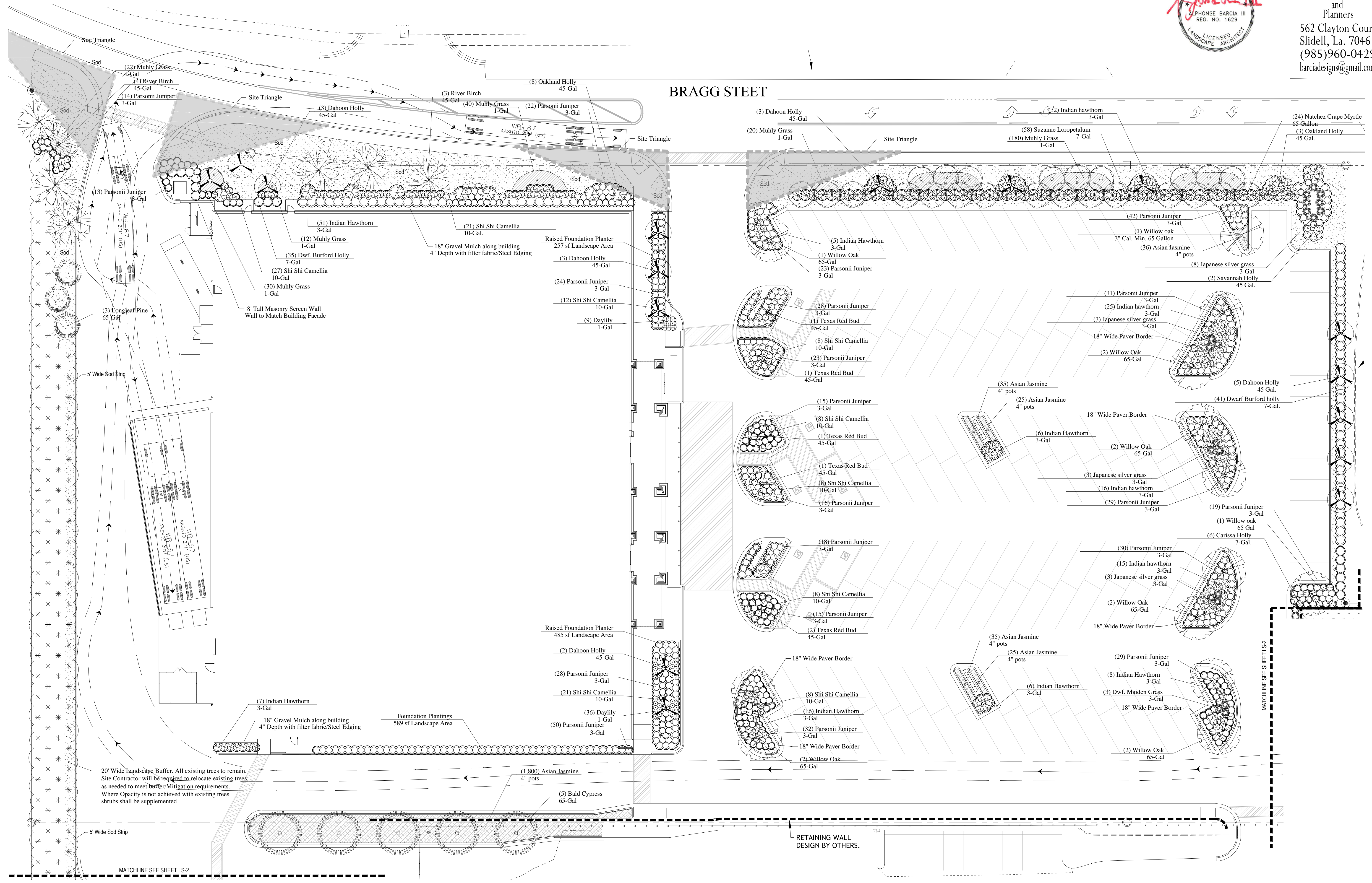
LANDSCAPE REQUIREMENTS/EXISTING TREE PLAN
 PBX-14-00387
 CADD PLOT:
 LANDSCAPE BASE 7-22-15.DWG
 DRAWN BY:
 DATE: 7/22/2015
 REVIEWED:
 BRAGG ROAD DEVELOPMENT
 SOUTH COLLEGE ROAD & BRAGG DRIVE
 WILMINGTON, NORTH CAROLINA



Alphonse Barcia
 Landscape Architects
 and
 Planners
 562 Clayton Court
 Slidell, La. 70461
 (985)960-0429
 barciadesigns@gmail.com

jared ducoite architect
 600 South Barracks Street, Suite 210-6
 Pensacola, Florida 32502
 850/439-1552 (P)
 850/439-1554 (F)

BRAGG STEET



I HEREBY CERTIFY THAT THIS PLAN AND SPECIFICATION WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF N. CAROLINA AS SIGNED BY MY HAND AND SEAL.

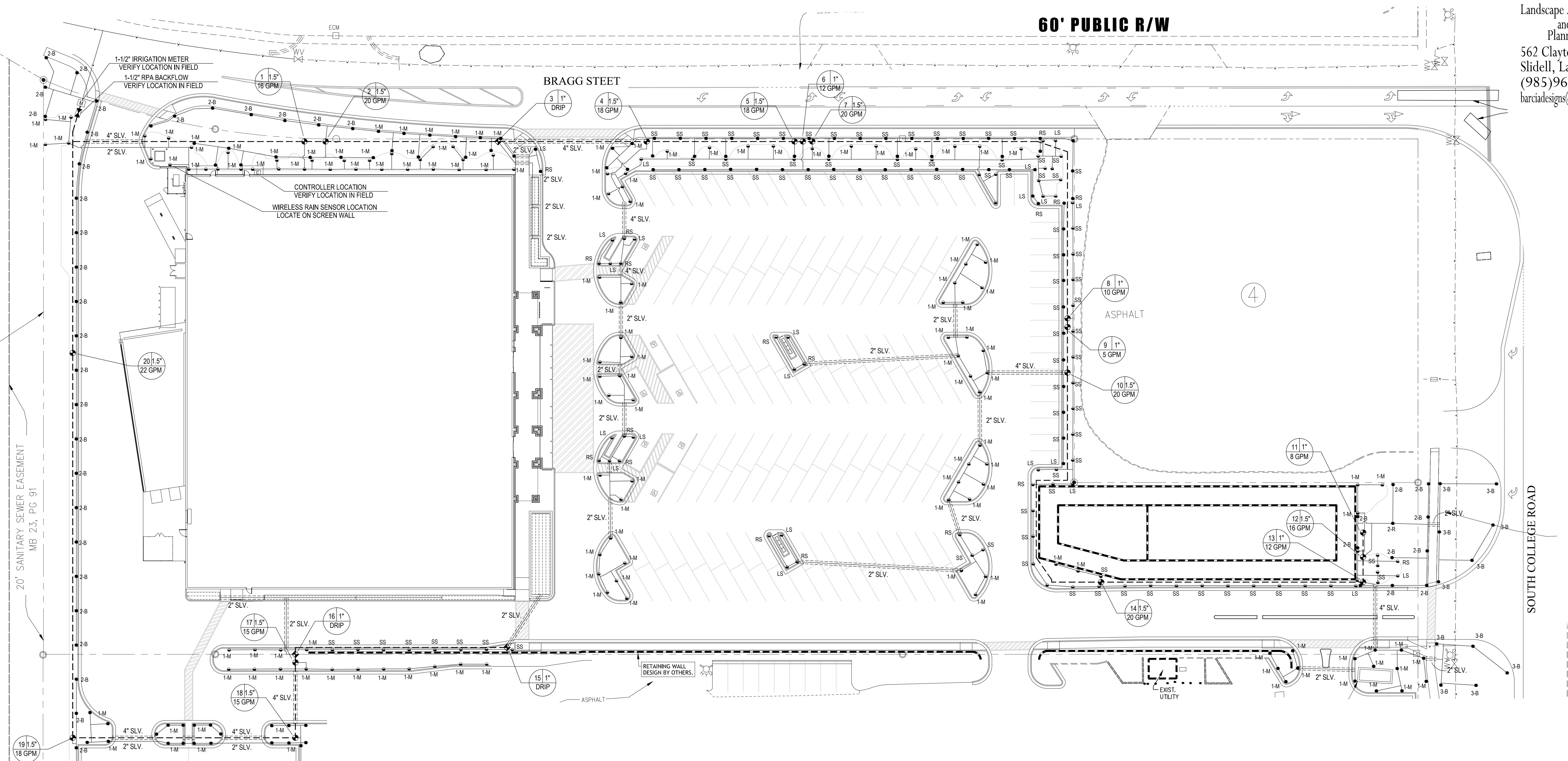
NO.	DATE	BY	DESCRIPTION

1 LANDSCAPE PLANTING PLAN
 SCALE: 1" = 20'-0"

LANDSCAPE PLANTING PLAN
 PBX-14-00387
BRAGG ROAD DEVELOPMENT
 SOUTH COLLEGE ROAD & BRAGG DRIVE
 WILMINGTON, NORTH CAROLINA

CADD PLOT: LANDSCAPE BASE 7-22-15.DWG
 DRAWN BY:
 DATE: 7/22/2015
 REVIEWED:

LS-1



20' SANITARY SEWER EASEMENT
 NB 23, PG 91

60' PUBLIC R/W

BRAGG STREET

SOUTH COLLEGE ROAD

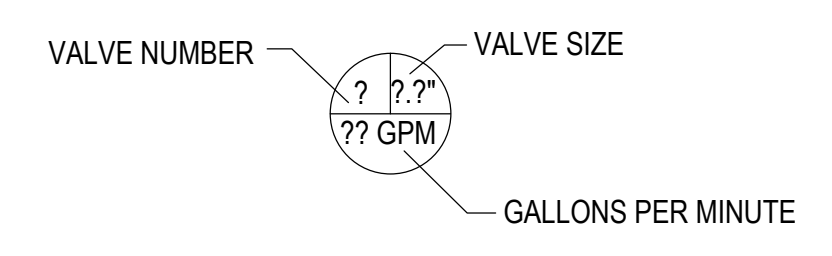
- IRRIGATION LEGEND:**
- [M] IRRIGATION WATER METER
1 1/2" SIZE
 - [B] IRRIGATION BACKFLOW (IN LOCKABLE ENCLOSURE)
1 1/2" RPA
 - [C] IRRIGATION CONTROLLER
RAINBIRD ESP-SERIES MODULAR W/IT WIRELESS RAIN SENSOR
 - MAIN LINE (ALL MAIN LINE IS TO BE 2")
PVC SCH 40
 - - - LATERAL LINE (SIZE LATERAL NOT TO EXCEED 5LFS)
PVC CLASS 200
 - IRRIGATION SLEEVE (SEE PLAN FOR SIZES)
PVC SCH 40
 - [S] SOLENOID VALVE IN A 10" AMETEK BOX
RAINBIRD PGA SERIES
 - [D] DRIP SOLENOID VALVE IN A 18" BY 24" AMETEK BOX
RAINBIRD XCZ-PRB-100-COM SERIES
 - [H] BED SPRAYS
HUNTER PROS-12 W/HUNTER MP RPTATOR ROTARY NOZZLE
 - [T] TURF SPRAYS
HUNTER PROS-04 W/HUNTER MP ROTATOR ROTARY NOZZLE
 - [L] LANDSCAPE DRIPLINE
RAINBIRD DRIPLINE LD-09-24 (9 GPH / 24" O.C.)
MAXIMUM RUN 400LF @ 40 PSI

NOZZLE ABBREVIATIONS:

TAG	NOZZLE SERIES	ARC	NOZZLE COLOR
1-M	MP1000	90° to 210°	MAROON
1-L	MP1000	210° to 270°	LIGHT BLUE
1-O	MP1000	360° FULL CIRCLE	OLIVE
2-B	MP2000	90° to 210°	BLACK
2-G	MP2000	210° to 270°	GREEN
2-R	MP2000	360° FULL CIRCLE	RED
3-B	MP3000	90° to 210°	BLUE
3-Y	MP3000	210° to 270°	YELLOW
3-G	MP3000	360° FULL CIRCLE	GREY
LS	MPLC515	5X15 LEFT STRIP	BLUE
RS	MPRC515	5X15 RIGHT STRIP	YELLOW
SS	MPS530	5X30 CENTER STRIP	GREY

REFER TO MANUFACTURER FOR FLOW RATES

- NOTES:**
- THE CONTRACTOR IS RESPONSIBLE FOR ALL APPLICATIONS, FEES, INSPECTIONS AND FILING OF METER AND BACKFLOW PREVENTER. BACKFLOW PREVENTER INSTALLATION SHALL ABIDE BY ALL LOCAL CODES.
 - THE CONTRACTOR SHALL MAKE FIELD ADJUSTMENTS OF THE IRRIGATION SYSTEM ACCORDING TO ACTUAL METER LOCATION, TO ENSURE 100% COVERAGE, AND TO PREVENT OVERSPRAY ONTO SIDEWALKS, ROADWAYS AND STRUCTURES. ALL NOZZLES SHALL BE ADJUSTED IN THE FIELD ACCORDING TO THE ACTUAL CONDITIONS. ADJUST PATTERN AND DISTANCE OF ALL NOZZLES.
 - THE CONTRACTOR SHALL CONSULT WITH THE LANDSCAPE INSTALLER FOR INITIAL PROGRAMMING OF THE IRRIGATION CONTROLLERS.
 - ALL MAINLINE PIPE TO BE INSTALLED A MINIMUM OF 18" BELOW FINISH GRADE AND ALL LATERAL LINES TO BE INSTALLED A MINIMUM OF 12" BELOW FINISH GRADE.
 - HAND TRENCH UNDER THE DRIP LINE OF ANY EXISTING TREES, OR ALTER IRRIGATION LINES TO AVOID THE DRIP LINE OF EXISTING TREES.
 - THE CONTRACTOR SHALL VERIFY THE PRESSURE AND FLOW AT THE POC. THE SYSTEM IS DESIGNED TO OPERATE WITH A STATIC PRESSURE OF 55-65 PSI AND A MINIMUM FLOW OF 50 GPM. ANY DEVIATIONS FROM THESE SPECIFICATIONS MAY REQUIRE REDESIGN OF THE IRRIGATION SYSTEM. THE CONTRACTOR SHALL PRESENT ANY ALTERNATE DESIGNS TO THE LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO ALTERING THE ORIGINAL DESIGN.
 - ONCE THE IRRIGATION SYSTEM HAS BEEN INSTALLED, THE CONTRACTOR SHALL PROVIDE THE OWNER WITH FOUR (4) COPIES OF AS-BUILT PLANS AT THE SAME SCALE AS THE ORIGINAL PLANS.



1 IRRIGATION PLAN
 SCALE: 1" = 30'-0"

I HEREBY CERTIFY THAT THIS PLAN AND SPECIFICATION WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A duly LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF FLORIDA AS SIGNIFIED BY MY HAND AND SEAL.

NO.	DATE	BY	DESCRIPTION

IRRIGATION PLAN
 PBX-14-00387
 BRAGG ROAD DEVELOPMENT
 SOUTH COLLEGE ROAD & BRAGG DRIVE
 WILMINGTON, NORTH CAROLINA
 CADD PLOT:
 LANDSCAPE, BASE 7-22-15.DWG
 DRAWN BY:
 DATE: 7/22/2015
 REVIEWED:

SECTION 02810- LANDSCAPE IRRIGATION

1.0 GENERAL

1.1 DESCRIPTION OF WORK:

- A. Furnish all labor, materials, equipment and services necessary for the complete installation of a landscape irrigation system to provide 100% coverage of the landscape areas identified on the plans as specified. The work includes, but is not limited to:
 1. Trenching, backfill and compaction for irrigation lines.
 2. Automatically controlled landscape irrigation system: Backflow prevention; water tap; water meter; pressure regulator; drain valves and isolation gate valves; piping and sleeves under paving and sidewalks; repair of paving, main and lateral lines; electrical valves and wiring; valve boxes and controllers; sprinklers, couplings, connectors and fittings.
 3. Test all systems and make operation.
 4. Submit Record Drawings.
 5. One-year Guarantee Period.

1.2 QUALITY CONTROL:

- A. Installer Qualifications: Firms experienced in the successful installation of a minimum of five projects within the past five years similar in scope, quality, and contract value to that indicated for this project. Firm shall have sufficient manpower, equipment and financial resources to complete the Work of the Section.
- B. The Owner and the Landscape Architect reserve the right to reject any and all materials and workmanship which they deem to be not in accordance with the Specifications. Rejected materials and work shall be removed from site immediately and replaced with that of the specified quality.
- C. Applicable Standards:
 - D2241-Poly (Vinyl Chloride) (PVC) Plastic Pipe, SDR19, Class 200 and 160.
 - D1785-Poly (Vinyl Chloride) (PVC) Plastic Pipe, Schedule 40.
 - D2464-Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Threaded, Schedule 40.
 - D2466-Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Socket Type, Schedule 40.
 - D2664-Solvent Cements for Poly (Vinyl Chloride) (PVC) Plastic Pipe and Fittings.

D. Applicable Codes:

- 1. Most current edition of Uniform Plumbing Code.
- 2. Applicable Building Code.
- 3. All applicable local codes and ordinances.
- 4. National Electrical Code.
- 5. Should Specification's requirements differ from local requirements, consider Contract Document requirements to be minimum acceptable and comply with any more stringent local requirements.

E. Permits and Fees:

- 1. Obtain all permits and pay required fees to any agency having jurisdiction over the work.
- 2. Arrange inspections required by local ordinances during the course of construction.
- 3. Upon completion of the work, furnish satisfactory evidence to show that all work has been installed in accordance with the ordinances and code requirements.

1.3 SUBMITTALS:

- A. Product Data: Include pressure rating, rated capacity, settings, and electrical data of selected models for the following:
 1. Valves: Include above ground and underground; general-duty, manual and automatic control, and quick-coupler types.
 2. Valve boxes.
 3. Sprinklers.
 4. Specialties: Include emitters, drip tubes, and other devices.
 5. Controllers: Include wiring diagrams.
- B. Record Drawings:
 1. Prepare and submit a reproducible Record Drawing showing the complete layout of the main line pipe, controller location, valve locations, and all sprinkler head locations. Record Drawings shall also indicate and show all materials, and manufacturer's name and catalog number and name.

1.5 SITE INSPECTION

- A. Become familiar with all site conditions.
- B. Locate all existing utilities prior to start of construction.
- C. Make necessary adjustments in the layout as may be required, (1) to connect to existing stubouts (should such stubs not be located exactly as shown) or (2) to work around existing work. Such adjustments shall be made with no increase in cost to the Owner.

1.6 PROTECTION OF EXISTING CONDITIONS:

- A. Take necessary precautions to protect site conditions to remain.
- B. Should damage be incurred, repair the work to its original condition at no additional cost to the Owner.

2.0 PRODUCTS

2.1 PIPE AND FITTINGS:

- A. Pipe sizes shall conform to those shown on the drawings. No substitutions of smaller pipe sizes will be permitted, but substitutions of larger size may be approved. All pipe damaged or rejected because of defects shall be removed or the site at the time of said rejection.
- B. All Piping three inch (3") and larger will be equipped with gaskets.
- C. All fittings for pipes three inches (3") or larger will be equipped with gaskets.
- D. All piping downstream of electric valves, sizes (3) inches and smaller, shall be rigid unplasticized PVC-Class 200 PSI working pressure extruded from virgin parent material of the type specified on the drawings. The pipe shall be homogenous throughout and free from visible cracks, holes, foreign materials, blisters, wrinkles and permanently marked with the manufacturer's name, material size, and schedule type. Pipe must bear the NSF seal.

- E. All mainline piping and underground piping under continuous pressure shall be rigid unplasticized PVC-Class 200 PSI working pressure extruded from virgin parent material of the type specified on the drawings. The pipe shall be homogenous throughout and free from visible cracks, holes, and foreign materials, blisters, wrinkles and dents.
- F. All plastic fittings to be installed shall be molded fittings manufactured of the same material as the pipe and shall be suitable for solvent weld, slip joint ring tight seal, or screwed connections NO fitting made of other material shall be used except as hereinafter specified.
- G. Slip fitting socket tapers shall be so sized that a dry unsoftened pipe end conforming to these special provisions can be inserted no more than halfway into the socket. Plastic saddle and flange fittings will not be permitted. Only schedule 80 pipe may be threaded.

2.2 SLEEVES:

- A. All sleeves shall be Schedule 40 PVC or stronger. All sleeves are required at every crossing indicated on drawings. (Size Noted)
- B. All sleeves shall be installed under proposed pavement areas prior to subgrade and base construction.
- C. Sleeves shall have a minimum horizontal separation of 18" and a maximum of twenty-four (24) inch clearance below bottom of curb.
- D. The location of all sleeves shown on the plans is schematic. The contractor shall make any adjustments necessary to accommodate existing vegetation, utilities, or other existing conditions.
- E. If the road crossings are designated as being bore locations the bore must be ample size to accommodate the size sleeve specified.

2.3 CONTROL SYSTEM:

- A. The automatic controllers shall be made by the same manufacturer as valves.
- B. Install Rain Check or Mini-Click type shut off device to override the control timer in the event of rain.
- C. 120-volt power shall be supplied by General Contractor as part of the electrical panel installation.

2.4 CONTROL WIRE:

- A. Control wire shall be type UF, UL approved, for direct burial and shall be gauge 14 or larger for the control wire and gauge 14 or larger for performance wire.
- B. Joining of underground wires shall be made with watertight connectors in valve boxes. No splicing between boxes is acceptable. Only use 3M DBRY-6 waterproof connectors.
- C. All wire connectors in valve boxes.

2.5 IRRIGATION VALVES:

- A. Zone Control Valves
 1. Globe-type diaphragm valves of normally closed design, with PVC bodies and covers. Operation accomplished by means of an integrally mounted heavy-duty 24 volt AC solenoid complying with National Electrical Code, Class II Circuit, solenoid coil potted in epoxy resin within a plastic-coated stainless steel housing. Solenoids shall be completely waterproof, suitable for direct underground burial. Provide a flow stem adjustment in each valve.

2.6 VALVE BOXES:

- A. All valves shall be installed in thermoplastic valve access boxes of the size required to permit access to the valve. Valve boxes shall include black thermoplastic locking covers. Manufacturer: Ametek or approved equal.
- B. All valve boxes shall be installed on at least a two (2) cubic foot gravel base to provide foundation and drainage.
- C. All valve box elevations shall be 1/2" below finished grade.

2.7 THRUST BLOCKS:

- A. Place one cubic ft. of concrete for each inch of pipe diameter for thrust block. Thrust shall not allow vertical or horizontal movement of pipe in any direction unless otherwise noted on design. Thrust blocking shall be provided on all piping three (3) inch diameter and larger.

2.8 SURGE PROTECTION: Contractor to provide electrical surge protection for the system controller.

2.9 BACKFLOW PREVENTION: As determined by Municipality/Local regulations.

2.10 PRESSURE REGULATOR: As determined by Contractor.

3.0 EXECUTION

3.1 EXCAVATION AND BACKFILL:

- A. Trenches for pipe sprinkler lines shall be excavated of sufficient depth and width to permit proper handling and installation by any other method the Contractor may desire if approved by the Owner, pipe manufacturer, and Designer. The backfill shall be thoroughly compacted and evened off with the adjacent soil level. Selected fill dirt or sand shall be used if soil conditions are rocky. In rocky areas the trenching depth shall be two (2) inches below normal trenching depth to allow for this bedding. The fill dirt or sand shall be used in filling (4) inches above the pipe. The remainder of the backfill shall contain no lumps or rocks larger than three (3) inches. The top twelve (12) inches of backfill shall be topsoil, free of rocks, subsoil, or trash. Any open trenches or partially backfilled trenches left overnight or left unsupervised shall be barricaded to prevent undue hazard to the public space.
- B. The Contractor shall backfill in six (6) inch compacted lifts as needed to bring the soil to its original density.

3.2 INSTALLATION OF PLASTIC PIPE:

- A. Plastic pipe shall be installed in a manner that permits expansion and contraction as recommended by the manufacturer.
- B. Plastic pipe shall be cut with a handsaw or hacksaw with the assistance of a square in sawing vice or in a manner so as to ensure a square cut. Burns at cut ends shall be removed prior to installation so that a smooth unobstructed flow will be obtained.
- C. All plastic-to-plastic joints shall be solvent weld joints or slip seal joints. Only the solvent recommended for the pipe and fittings shall be installed as outlined and instructed by the pipe manufacturer. The Contractor shall assume full responsibility for the correct installation.
- D. The joints shall be allowed to set at least twenty-four (24) hours before pressure is applied to the system on PVC pipe.

3.3 CONTROLLER AND ELECTRICAL CONNECTIONS:

- A. All electrical connections shall conform to the National Electrical Code, latest edition.
- B. Control wires installed beneath walks, drives, or other permanent surfaces shall be placed in sleeves.
- C. Wires shall be spliced only at valve boxes.
- D. Leave twenty-four (24) inch loop of wire at each valve for expansion/contraction and servicing.
- E. Controllers and valves shall be from the same company e.g. (Rain Bird, Toro or approved equal).
- F. 120 VAC electrical power supply to the controller location shall be supplied by others.

3.4 FLUSHING AND TESTING:

- A. After all new sprinkler piping and risers are in place and connected for a given section and all necessary division work has been completed and prior to the installation of sprinkler heads all control valves shall be opened and a full head of water used to flush out the system.
- B. Sprinkler main shall be tested under normal water pressure for a period of twelve (12) hours. If leaks occur, repair and repeat the test. Give Landscape Architect forty-eight hours notice prior to testing.
- C. Testing of the system shall be performed after completion of the entire installation and any necessary repairs shall be made at the Contractor's expense to put the system in good working order before final payment by the Owner.
- D. Adjustment of the sprinkler heads and automatic equipment will be done by the Contractor upon completion of installation to provide optimum performance. Minor adjustments during the guarantee period will be made by the Owner.
- E. After completion, testing, and acceptance of the system, the Contractor will instruct the Owner's personnel in the operation and maintenance of the system.

4.0 ACCEPTANCE AND GUARANTEE

4.1 SUBSTANTIAL COMPLETION:

- A. Submit request for inspection for Substantial completion to the Landscape Architect at least forty-eight hours prior to anticipated date of inspection and testing (refer to Paragraph 3.3 TESTING, herein).
- B. Submit Record Drawings and Maintenance Manual to the Landscape Architect with request for inspection (refer to Paragraph 3.4 FLUSHING AND TESTING, herein).
- C. Review the work jointly with the Owner and Landscape Architect for Substantial Completion.
- D. Upon completion of repairs and replacements found necessary at time of review, the Owner and Landscape Architect will confirm the date of Substantial Completion of the work.
- E. The date of Substantial Completion will constitute the beginning date of the One-Year Guarantee.

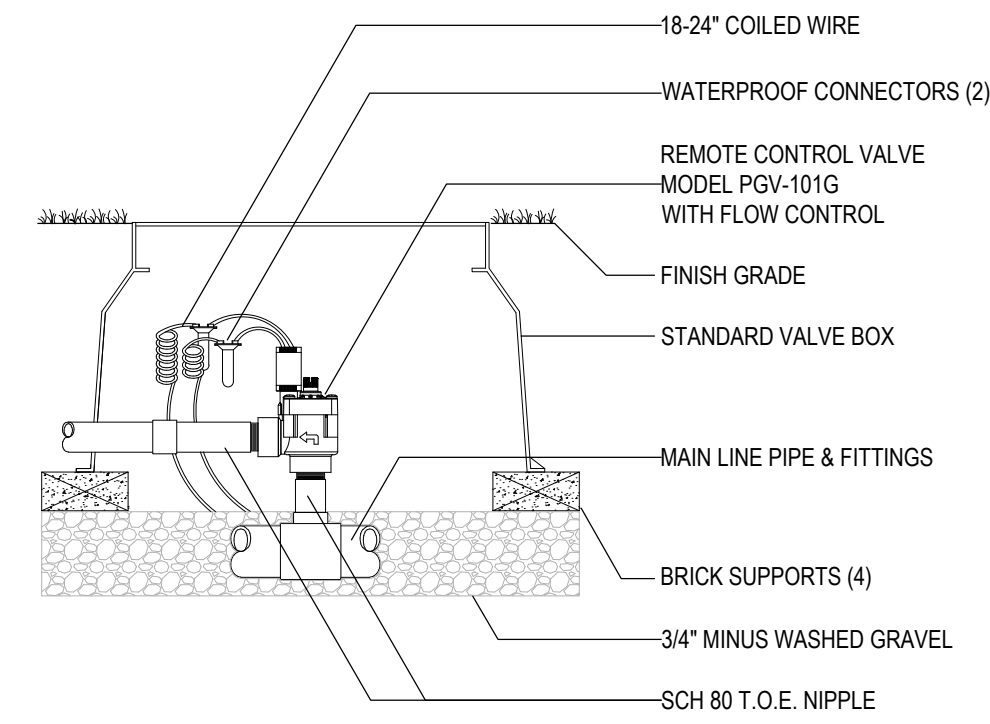
4.2 GUARANTEE:

- A. Guarantee all work, products, equipment, and materials for one(1) year, beginning at Date of Substantial Completion.
- B. During the period of the Guarantee, replace immediately, with no additional compensation, all work not functioning correctly; make adjustments as necessary to maintain complete coverage; make good any other damage, loss, destruction, or failure. Repairs and replacements shall be done promptly and at no additional cost to the Owner.
- C. Repair damage to grade, plants, and other work or property as necessitated due to irrigation defects, repairs, replacement or adjustment.
- D. If the replacement is not acceptable during or at the end of the Guarantee Period, the owner may elect either subsequent replacement or credit. Replacement products shall have a similar one-year guarantee from time of replacement.
- E. Guarantee applies to all losses with the exception of those due to Acts of God, vandalism, or Owner neglect, as determined by the Landscape Architect.

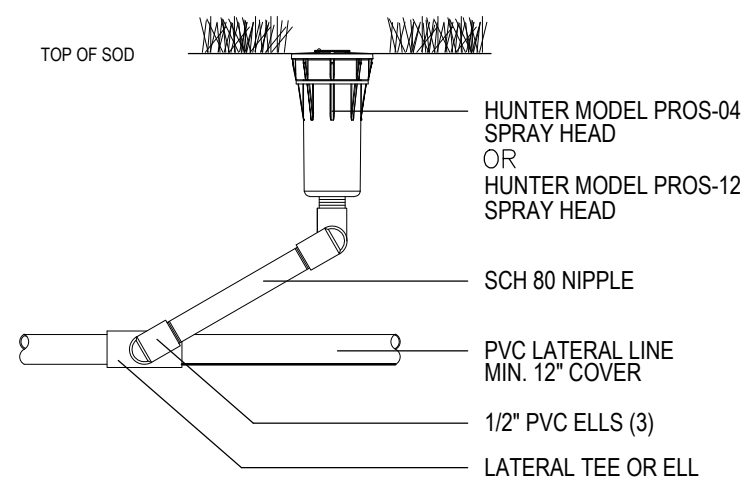
4.3 FINAL INSPECTION AND ACCEPTANCE:

- A. At end of Guarantee Period and upon request for inspection, jointly review all guaranteed work for Final Acceptance.
- B. Submit written request for inspection for Final Acceptance to the Landscape Architect at least two weeks prior to anticipated date of inspection; include list of work provisionally accepted and list of work replace during Guarantee Period.
- C. Upon completion by the Contractor of all required repairs and replacements, the Owner

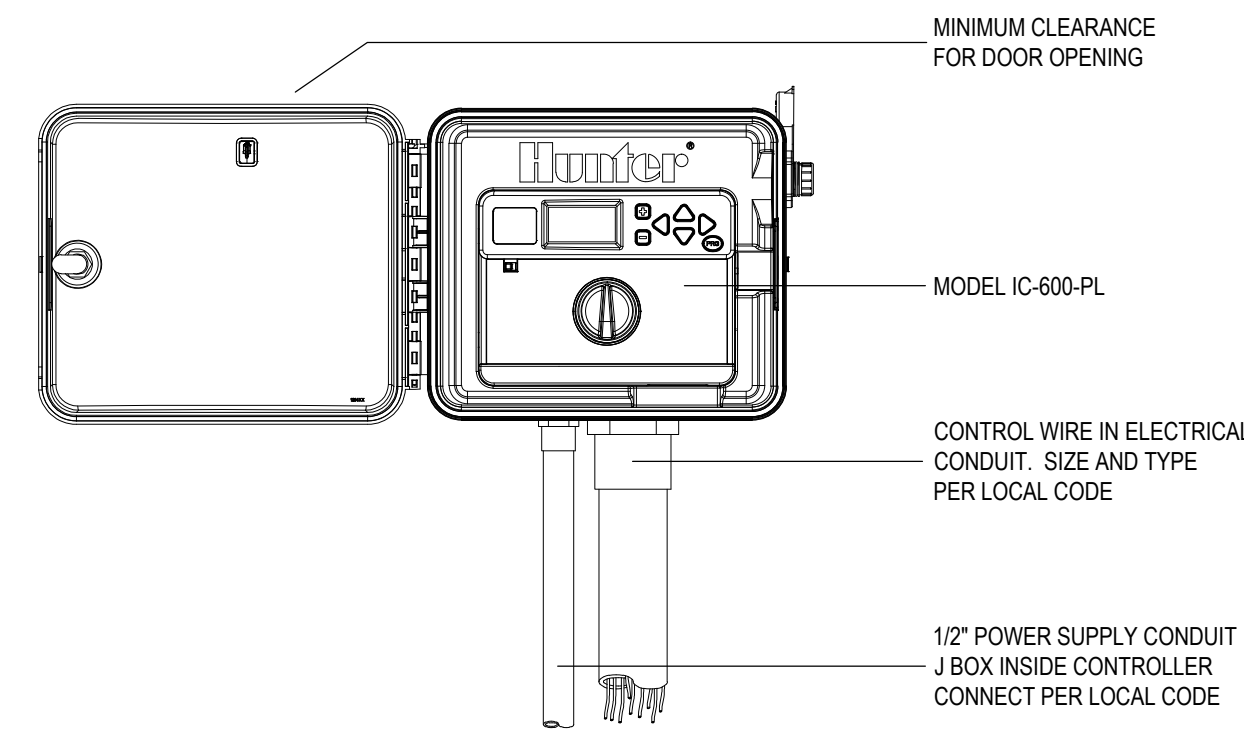
END OF SECTION 02810.



3 IRRIGATION VALVE DETAIL
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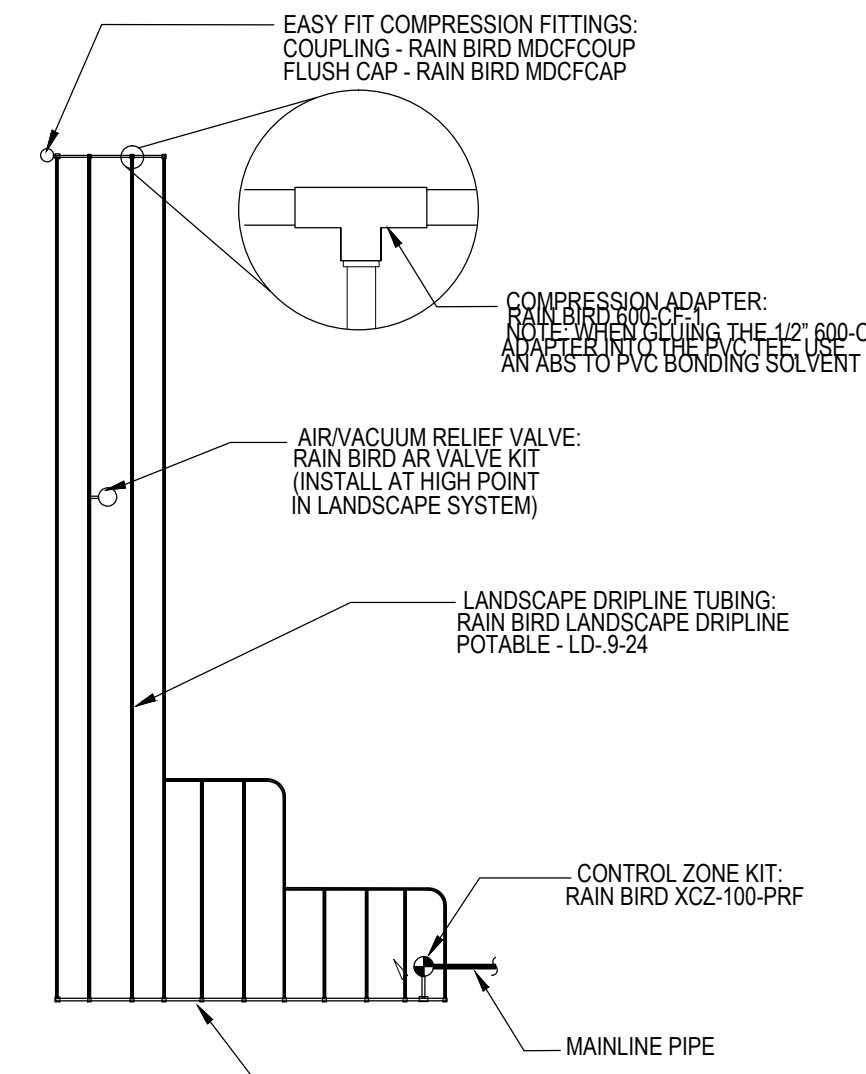


5 SPRAY HEAD DETAIL
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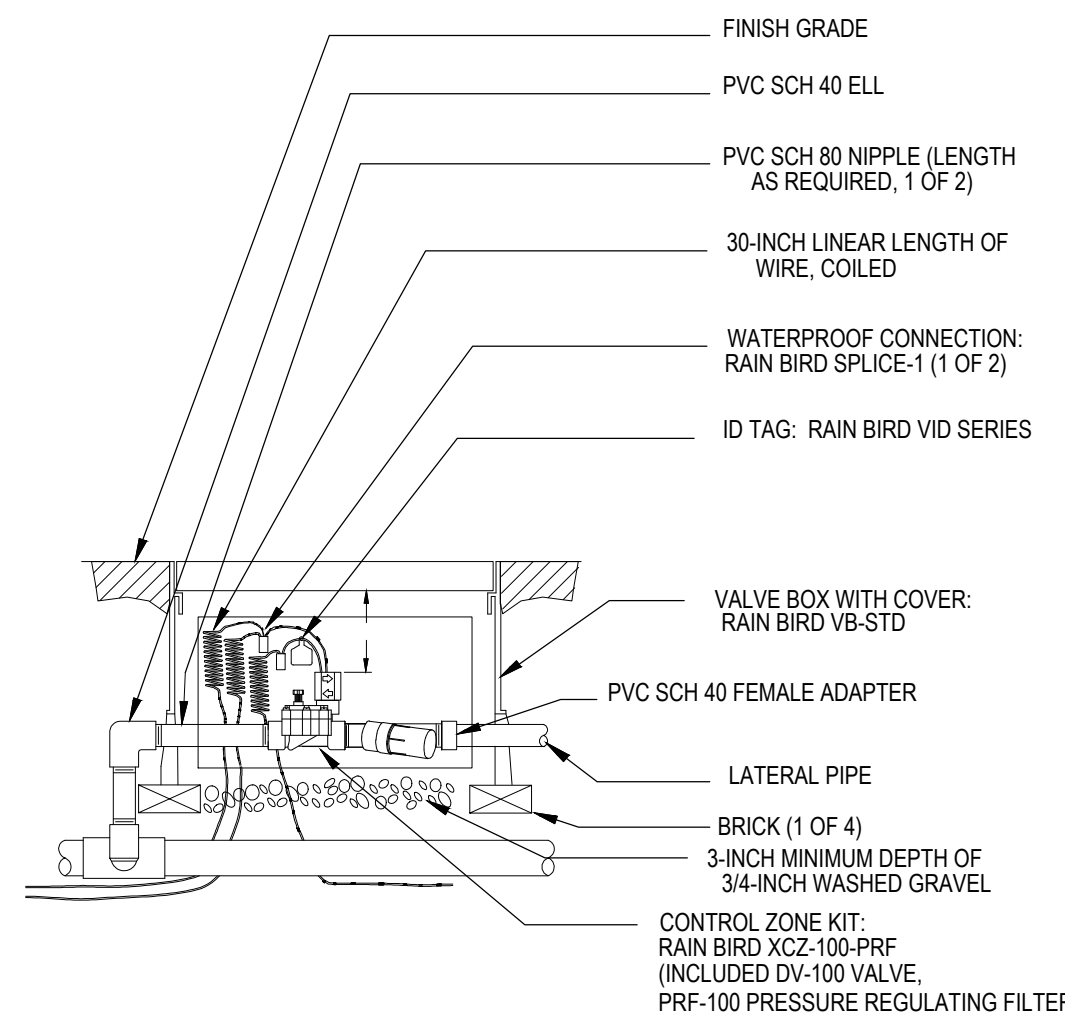


NOTE: ADD EXPANSION MODULES AS REQUIRED. ADD WIRELESS RAIN SENSOR.

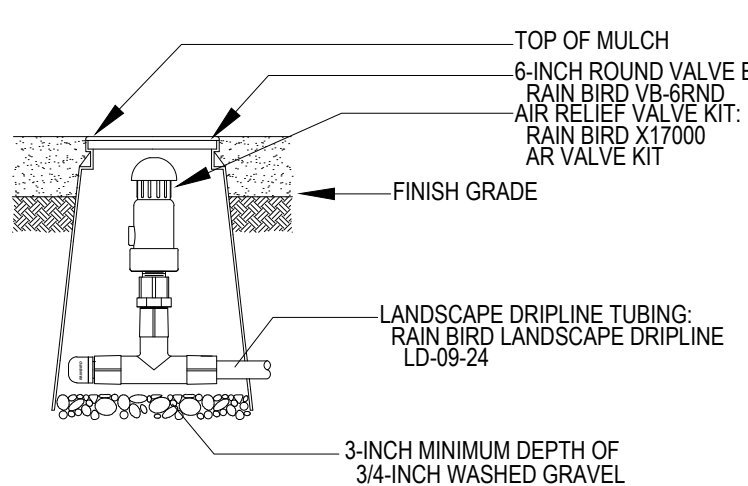
7 IRRIGATION CONTROLLER DETAIL
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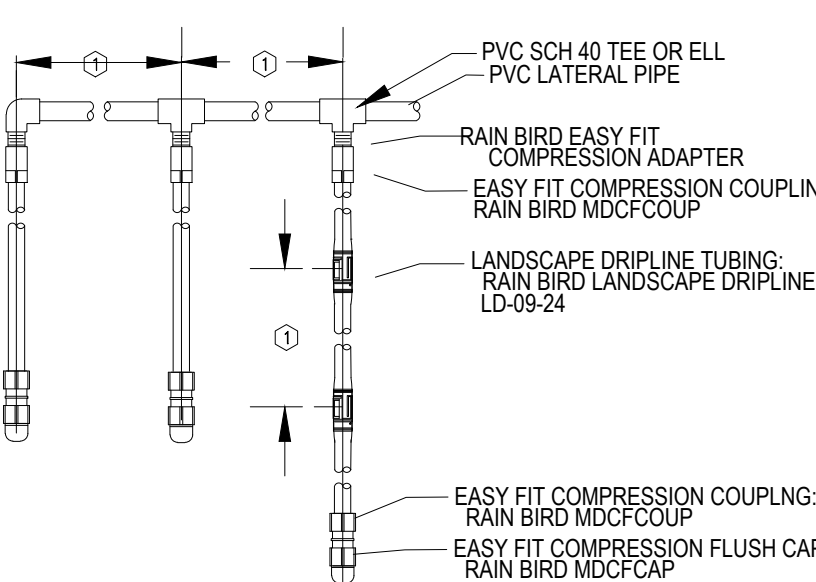
4 LANDSCAPE DRIPLINE TUBING LAYOUT
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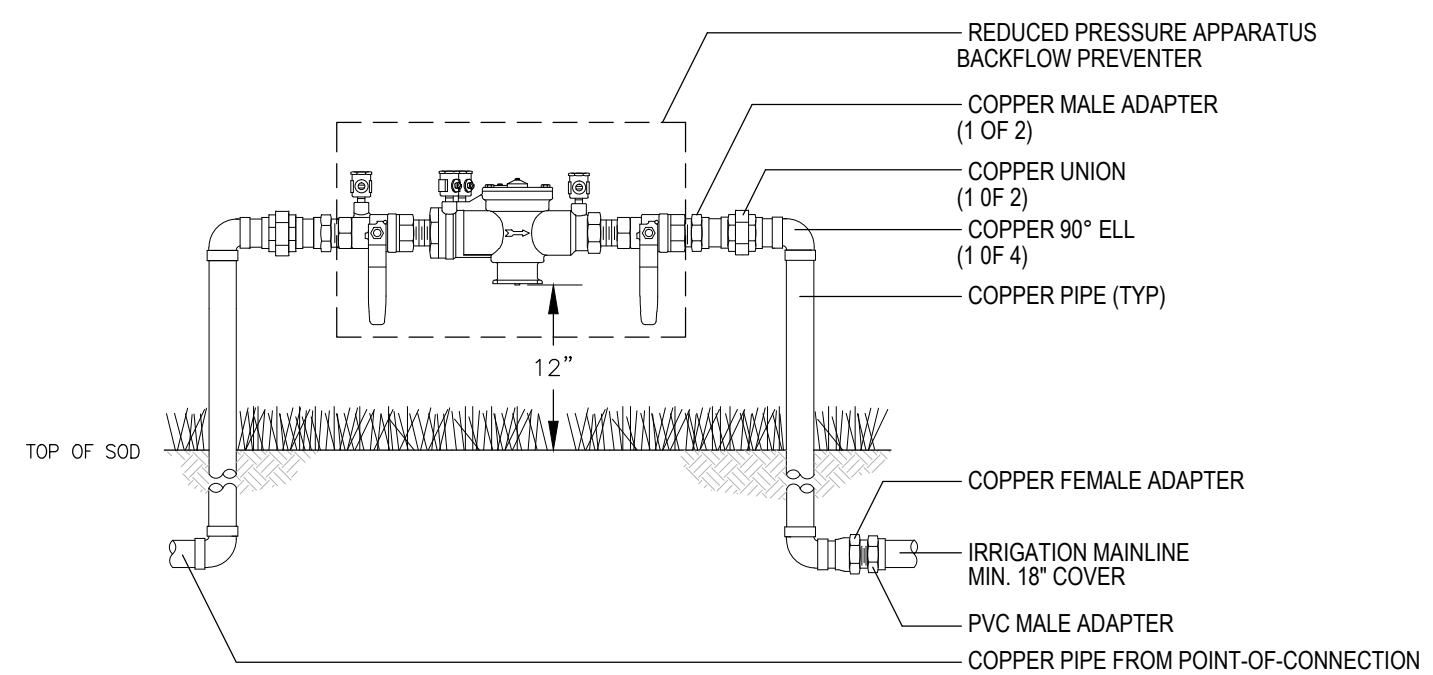
6 DRIPLINE VALVE DETAIL
N.T.S.



8 AIR RELIEF VALVE DETAIL
N.T.S.

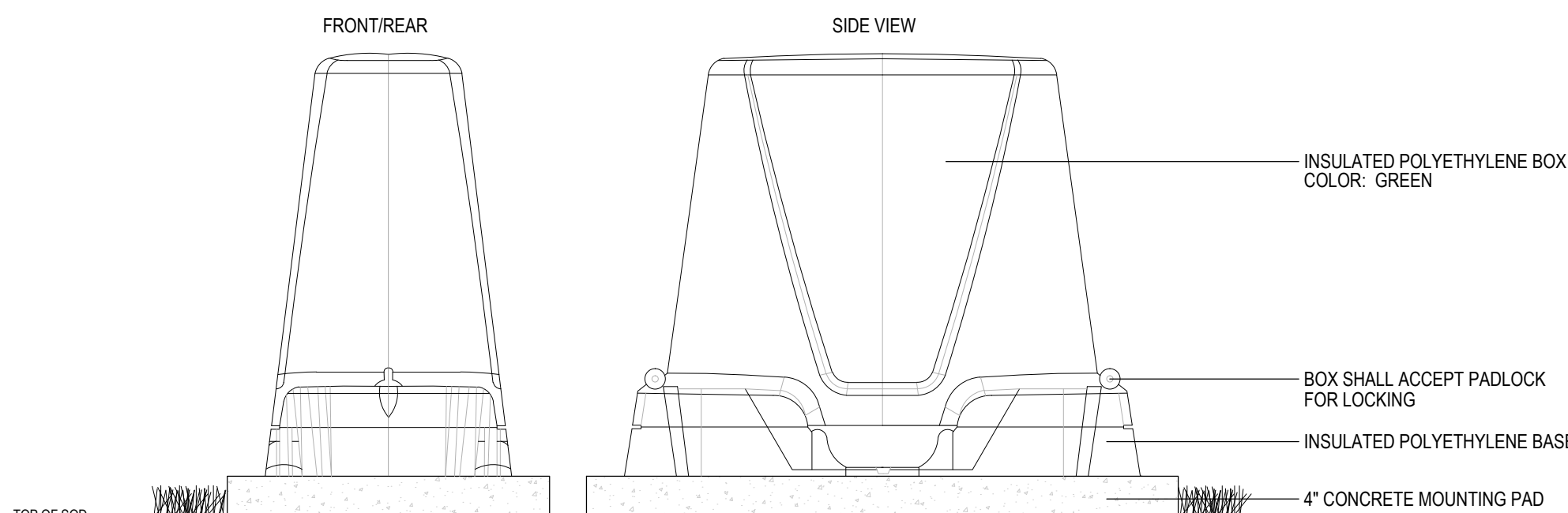


9 LANDSCAPE DRIPLINE LATERALS
N.T.S.



NOTE:
1. INSTALL BACKFLOW PREVENTER AS REQUIRED BY LOCAL CODES AND HEALTH DEPARTMENT. CONTRACTOR RESPONSIBLE FOR ALL FILING, FEES AND INSPECTIONS ASSOCIATED WITH THE BACKFLOW PREVENTER. VERIFY LOCAL REQUIREMENTS PRIOR TO INSTALLATION.

1 BACKFLOW PREVENTER
N.T.S.



NOTES:
1. ANCHOR TO 4\"/>

2 BACKFLOW PREVENTER COVER
N.T.S.

Alphonse Barcia

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and
Planners
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barciadesigns@gmail.com

jared ducoite architect
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Pensacola, Florida 32502
850/439-1552 (F)
850/439-1554 (D)

I HEREBY CERTIFY THAT THIS PLAN AND SPECIFICATION WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A duly LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF N. CAROLINA AS SIGNED BY MY HAND AND SEAL.

NO.	DATE	BY	REVISIONS

IRRIGATION SPECS AND DETAILS
PBX-14-00387

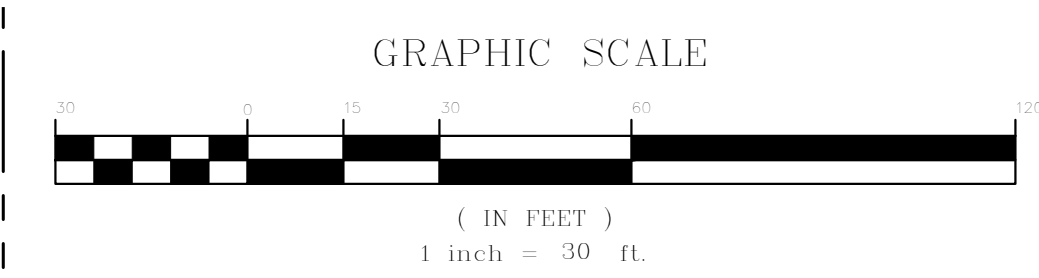
BRAGG ROAD DEVELOPMENT
SOUTH COLLEGE ROAD & BRAGG DRIVE
WILMINGTON, NORTH CAROLINA

CADD PLOT:
LANDSCAPE, BASE, 7-22-15.DWG
DRAWN BY:
DATE: 7/22/2015
REVIEWED:

IR-2



Know what's below.
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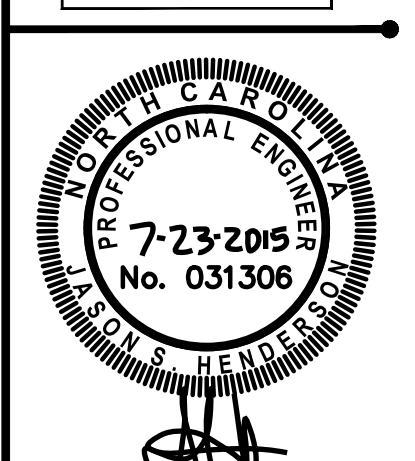


Project Number: 2014-090
DWG Name: 2014-090 D1.dwg
Drawing Scale: AS NOTED
Date of Project: 10-21-2014
Engineer of Record:
Jason Henderson, P.E.
South Carolina REG 21406
Georgia REG 03571
North Carolina REG 03106
Alabama REG 12054
Louisiana REG 38891
Virginia REG 60203318

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19 Washington Park Suite 100 • Greenville, SC 29601

BRAGG ROAD DEV. COMPANY, LLC
716 Bragg Drive
Wilmington, NC 28412

Approved Construction Plan
Name: _____ Date: _____
Planning: _____
Traffic: _____
Fire: _____

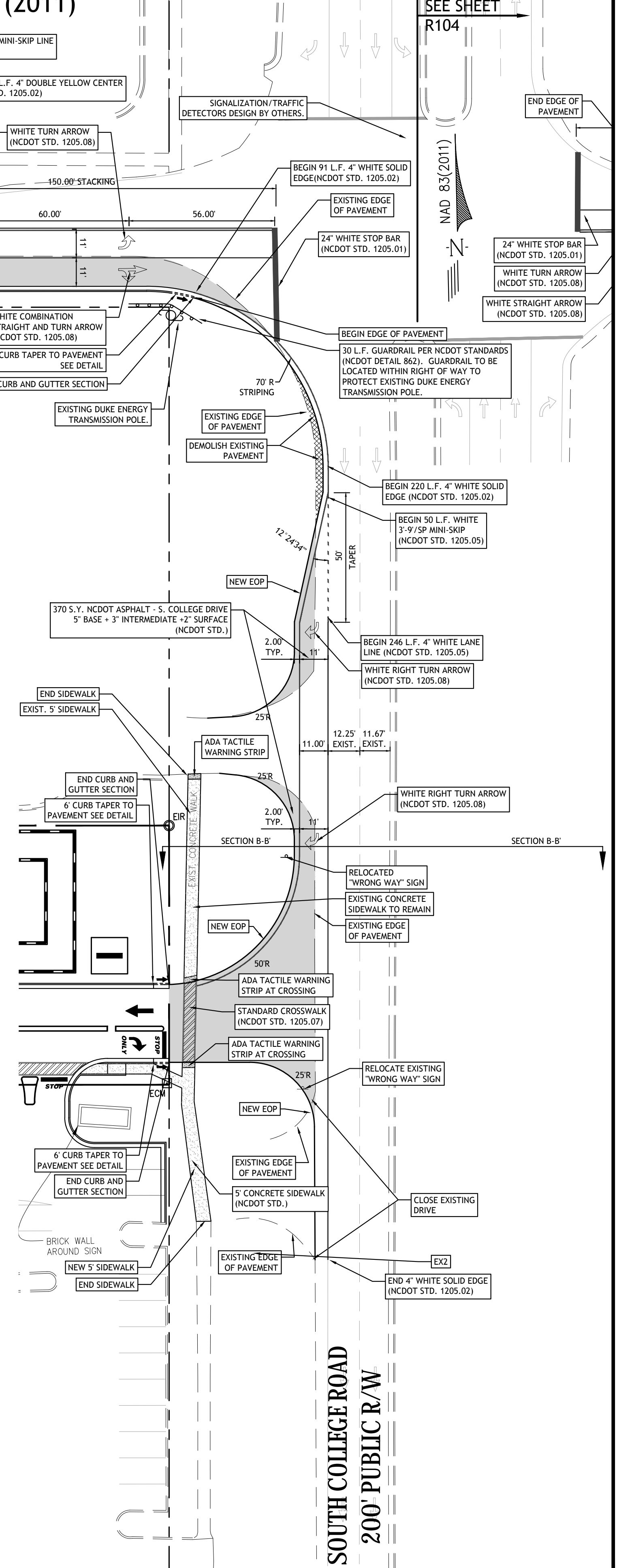
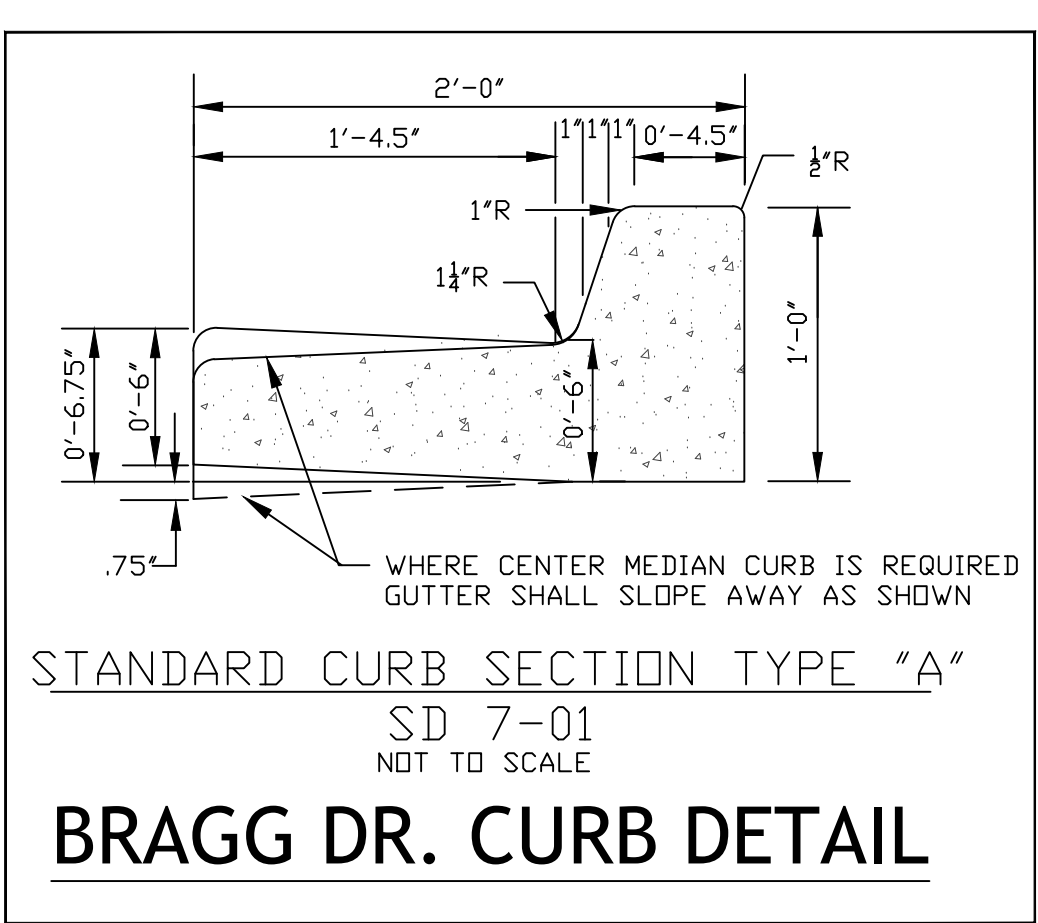
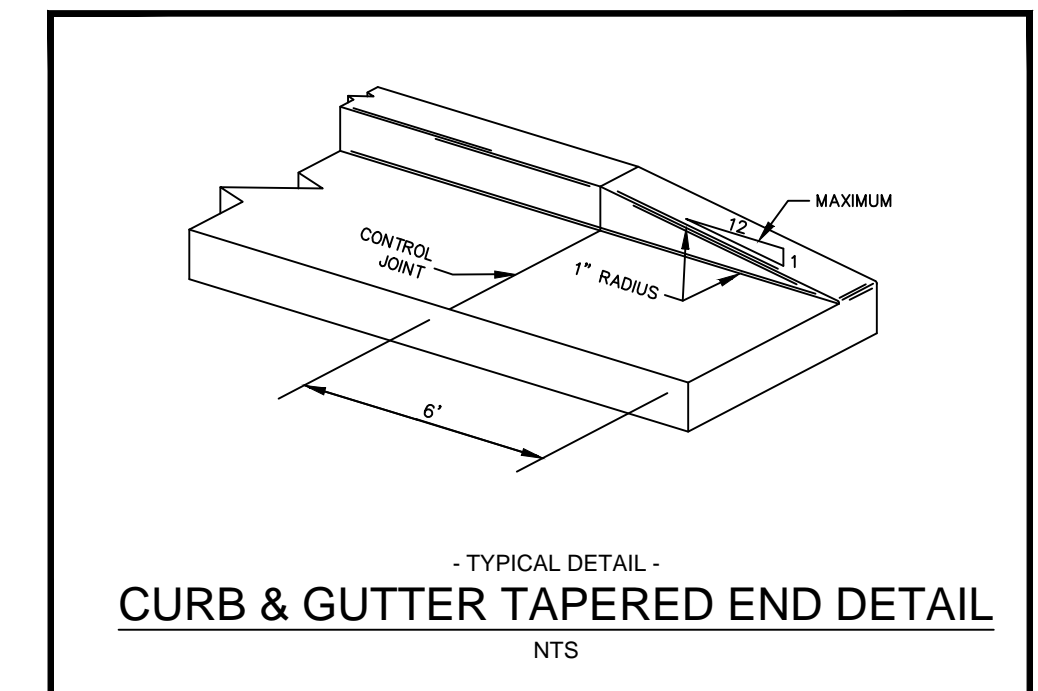
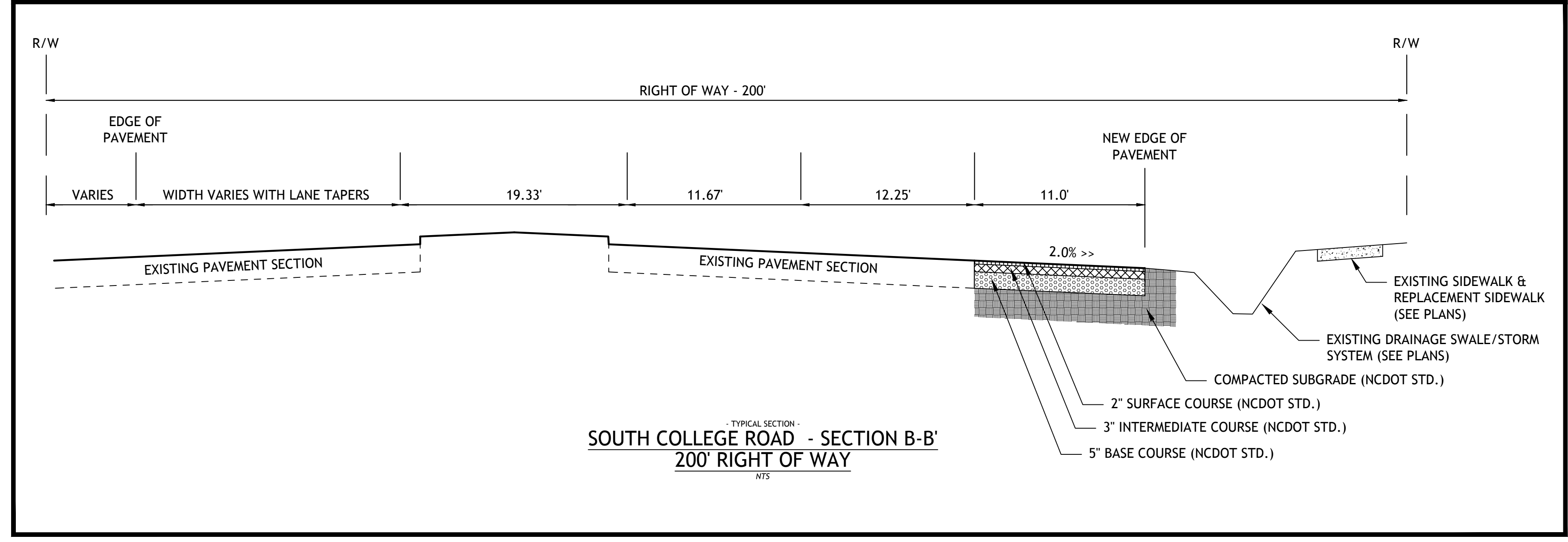
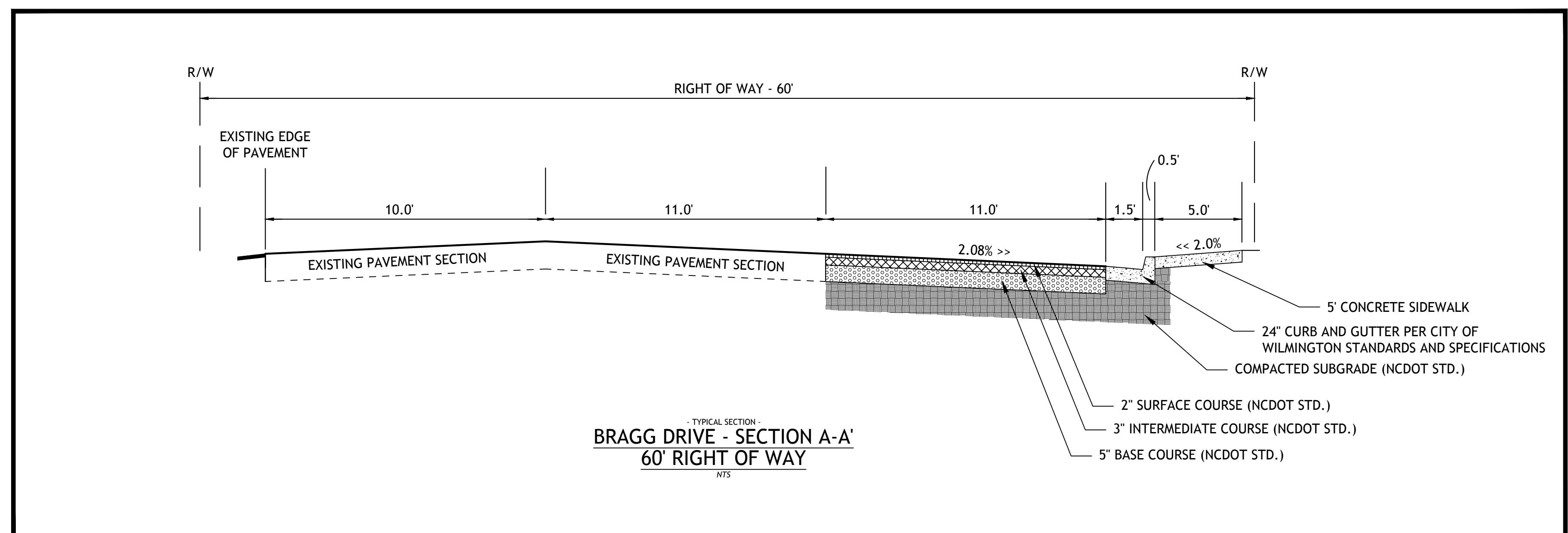
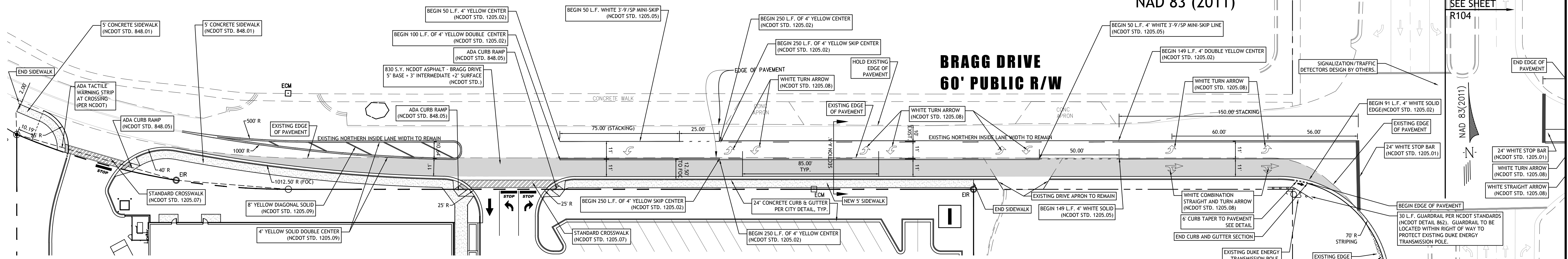


Bluewater Civil Design, PLLC
NC-P-0868

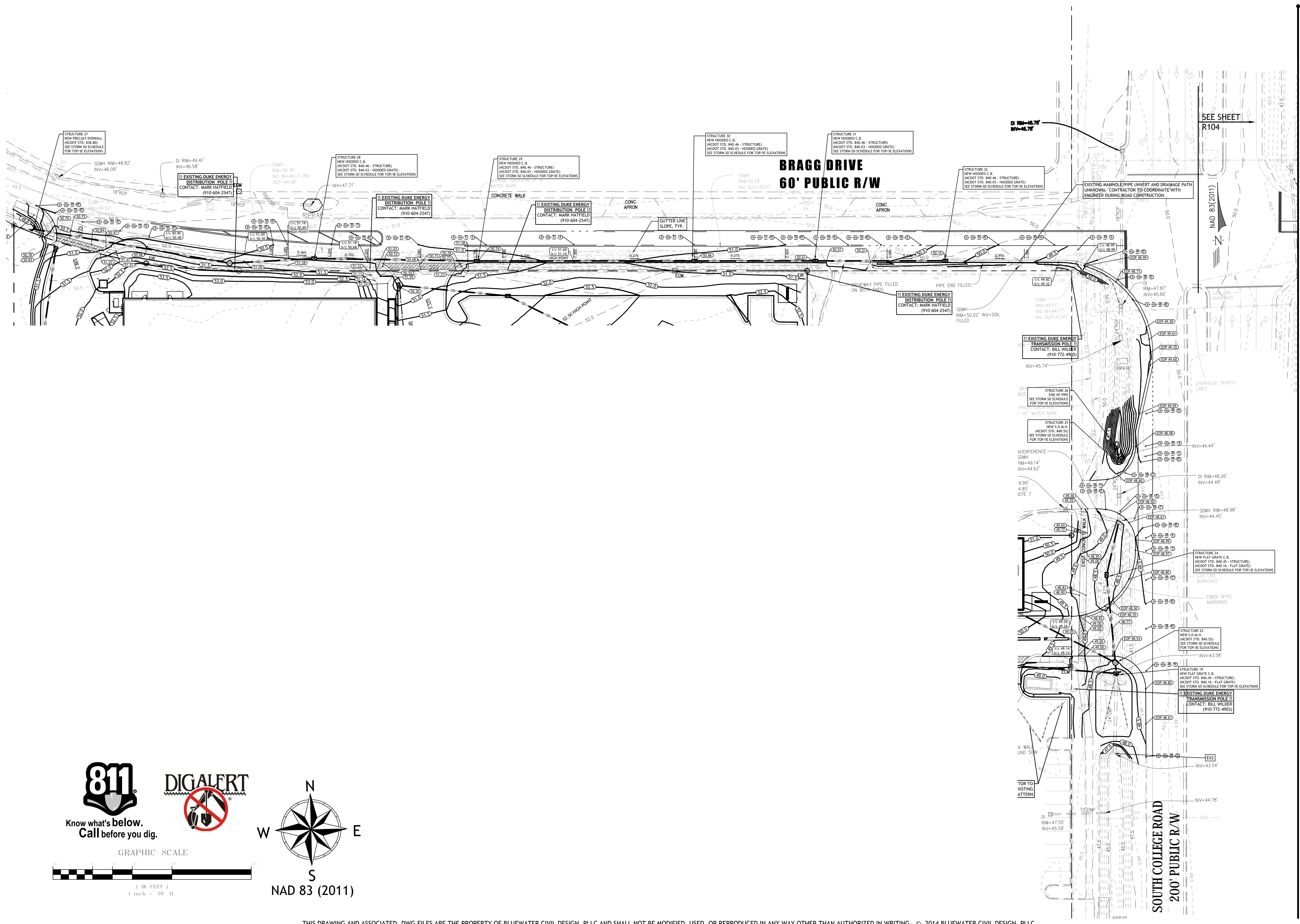
PLAN REVISION	ISSUE DATE	ISSUE COMMENT
A	2-3-2015	ISSUED FOR PERMITS
B	2-25-2015	REVISED PER COMMENTS
C	4-2-2015	REVISED PER NEW HANDOVER COMMENTS
D	4-16-2015	100% TENANT SUBMITTAL
E	4-30-2015	REVISED PER NCDOT/WILMINGTON COMMENTS
F	6-2-2015	REVISED PER CITY & TENANT COMMENTS
G	7-15-2015	REVISED PER TENANT COMMENTS
H	7-22-2015	REVISED PER CITY COMMENTS
...

ROAD IMPROVEMENTS: LAYOUT/PAVEMENT/MARKINGS

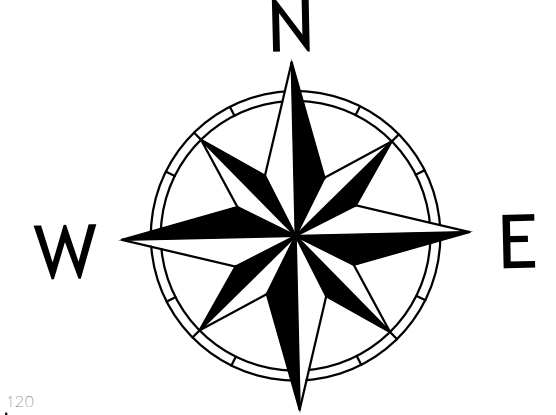
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PLAN REVISION	ISSUE DATE	ISSUE COMMENT
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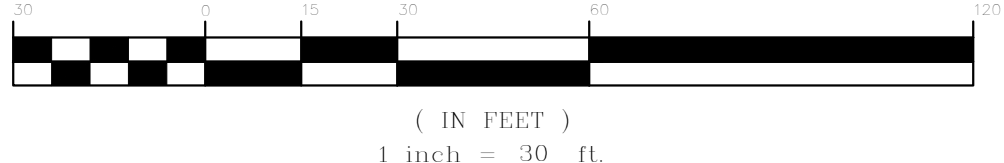


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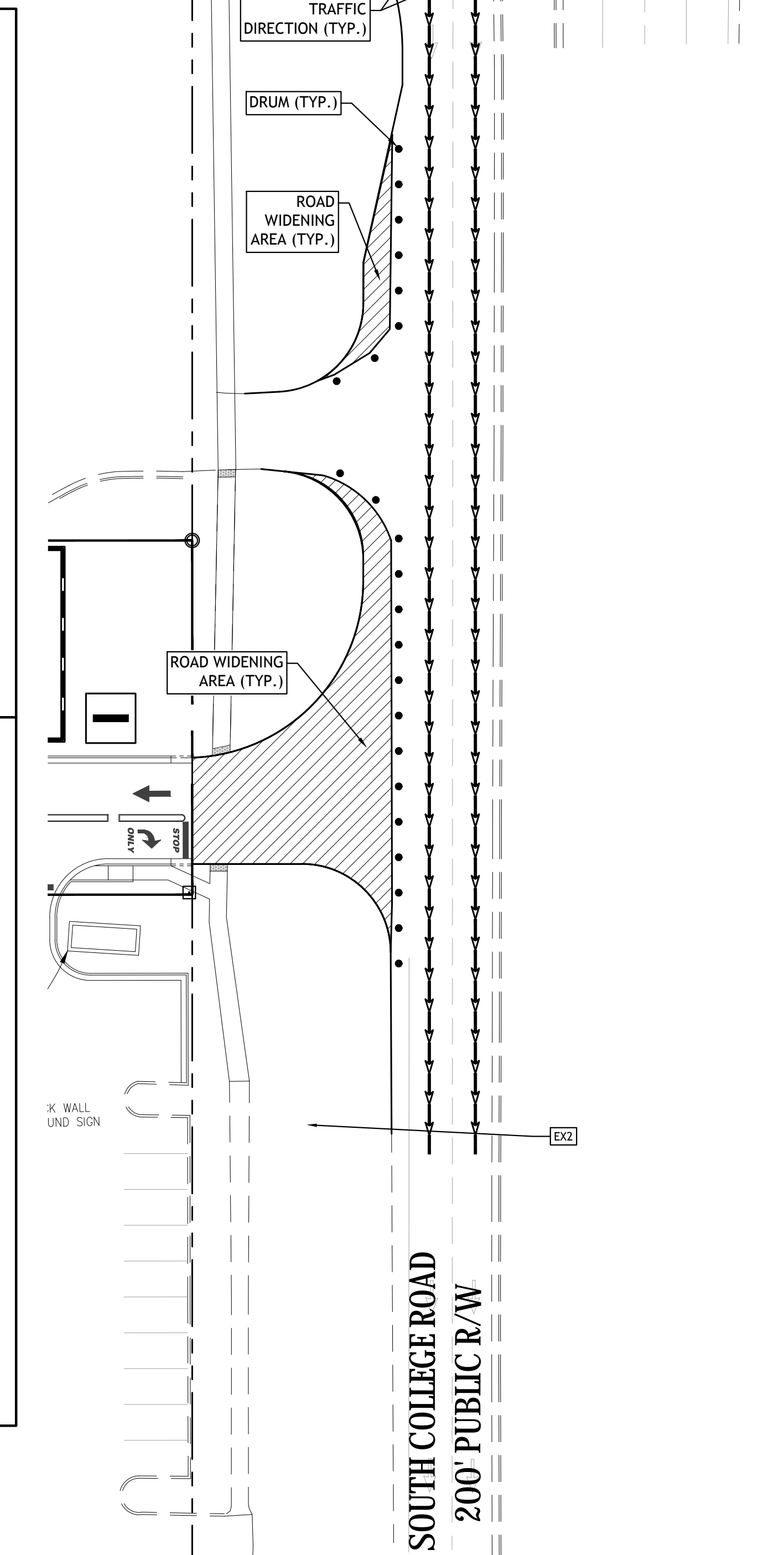
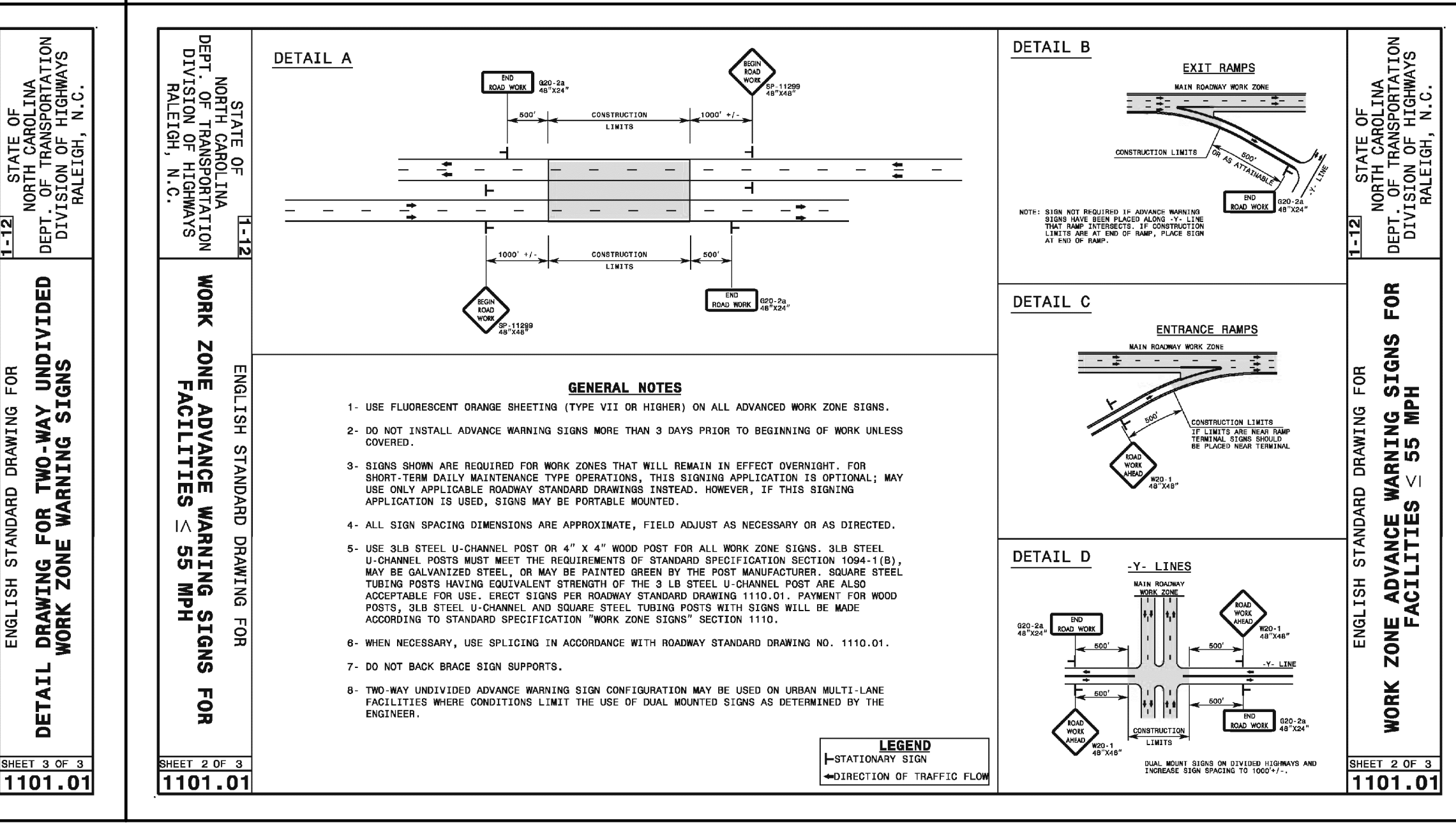
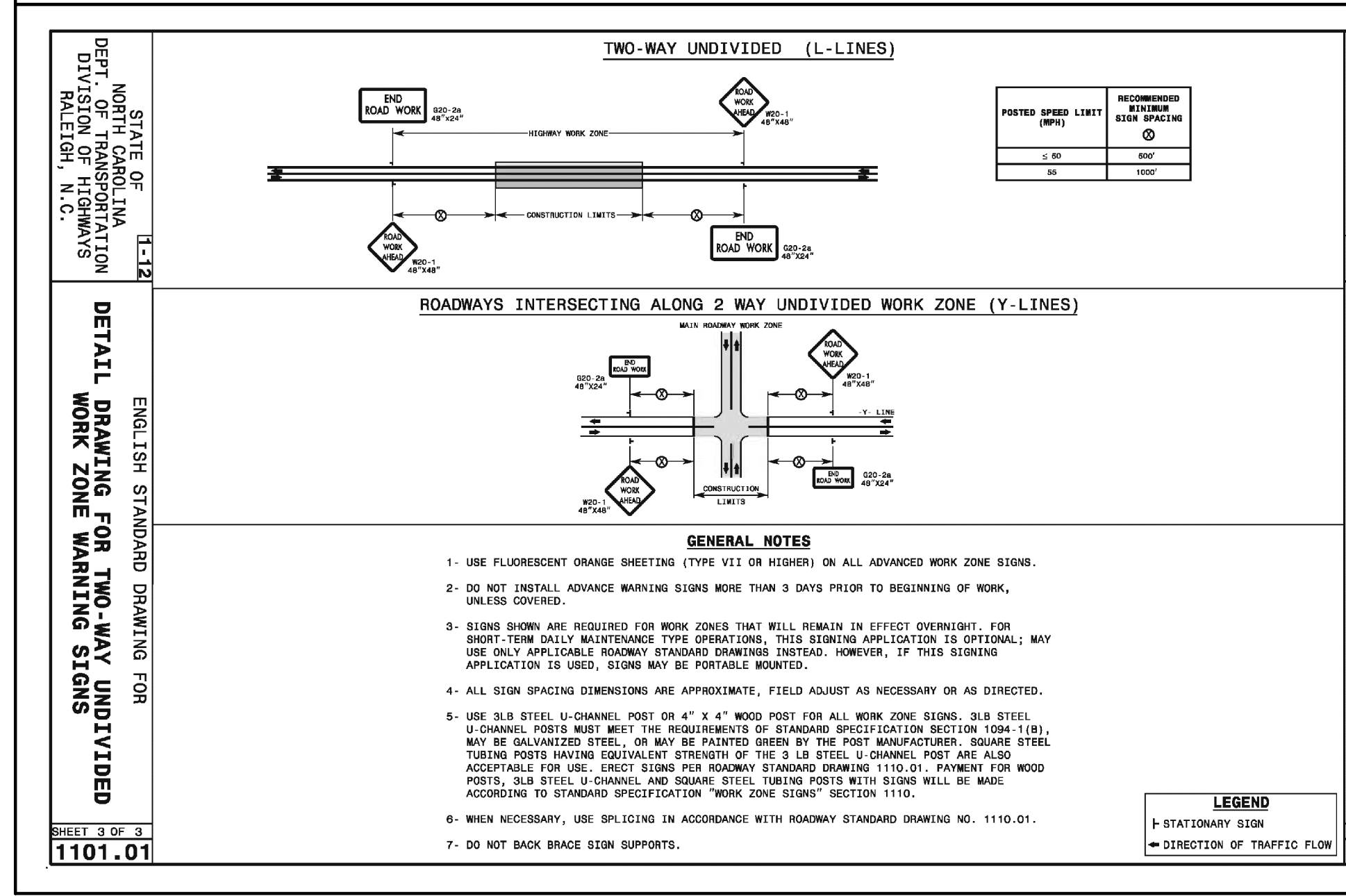
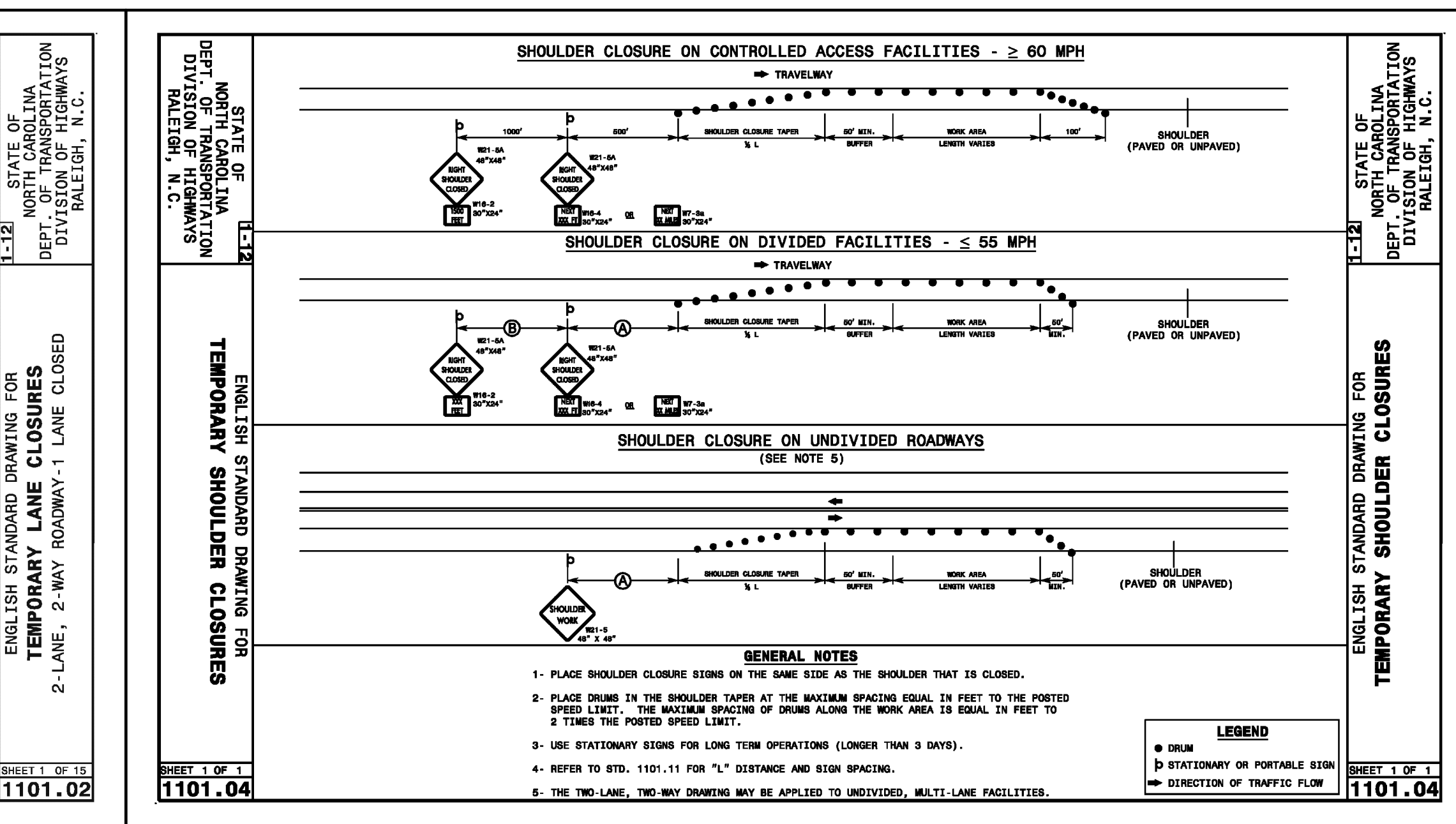
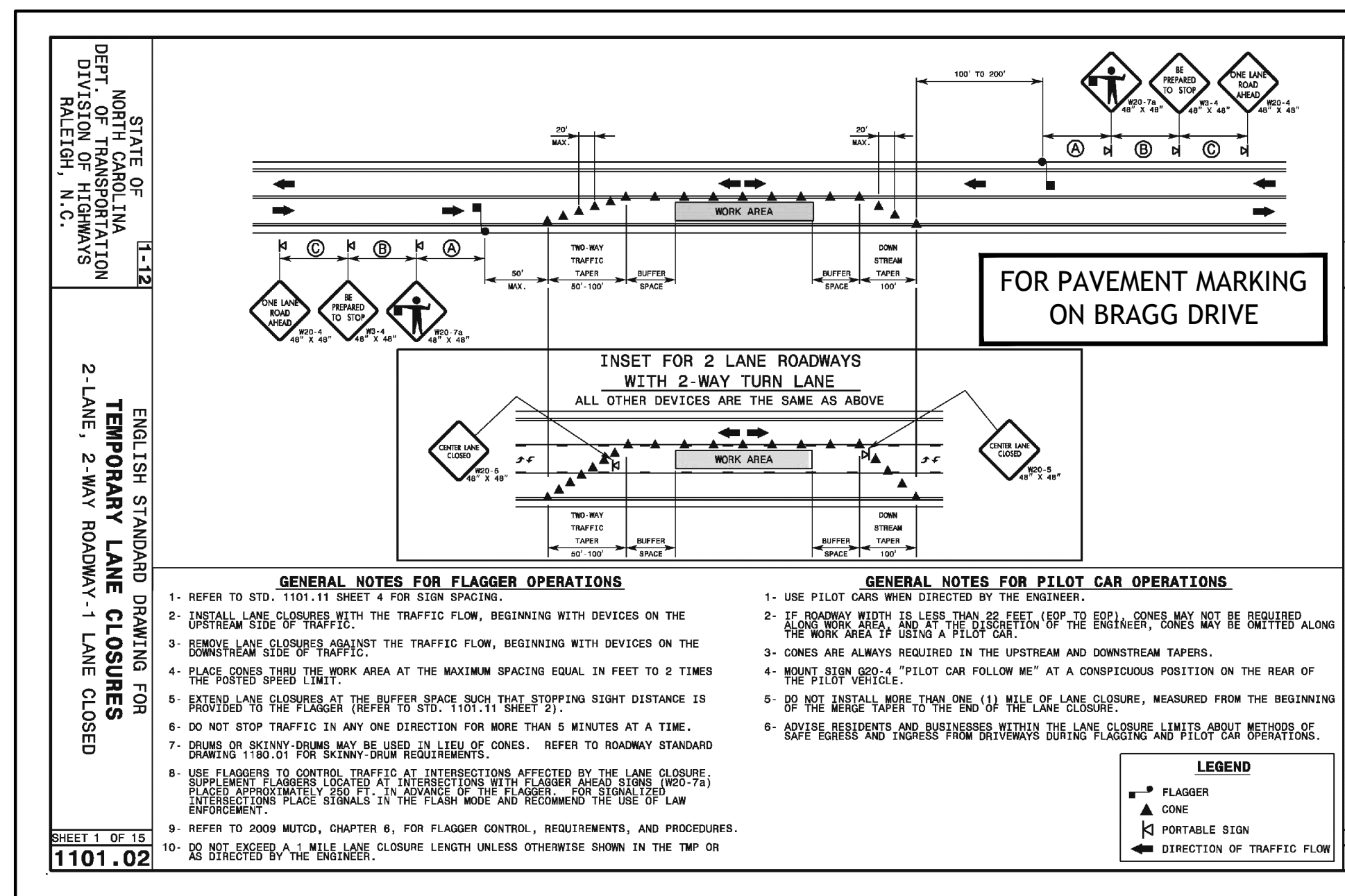
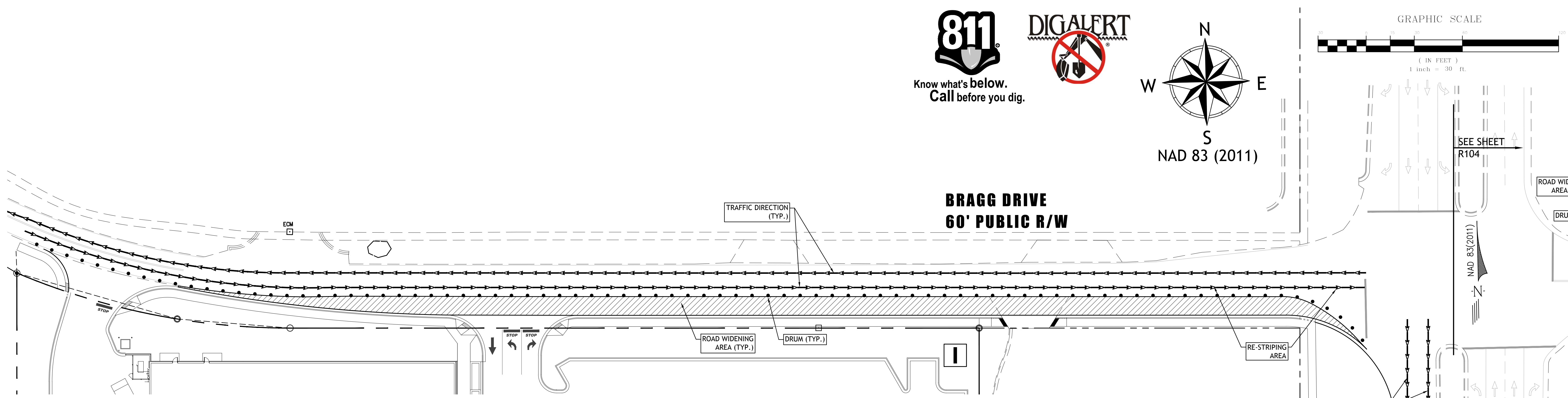
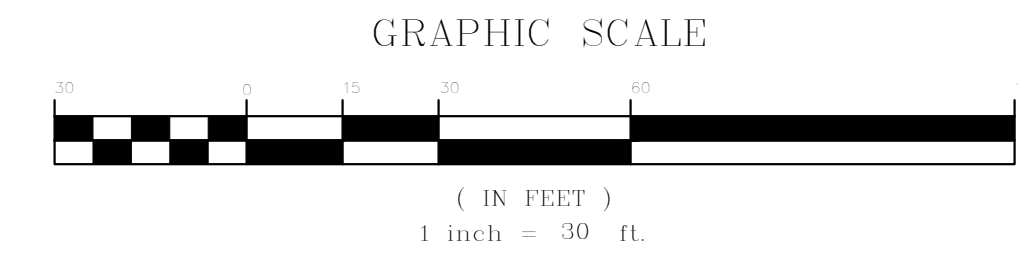
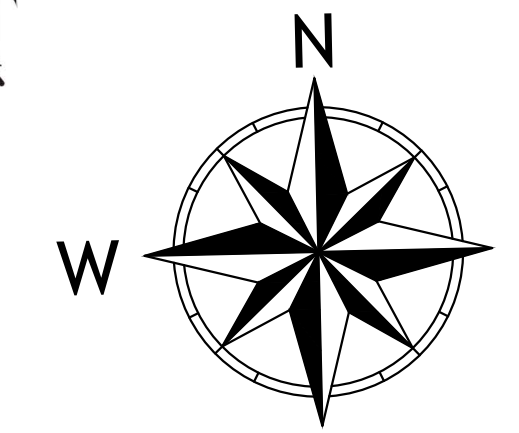
NAD 83 (2011)

GRAPHIC SCALE





Know what's below.
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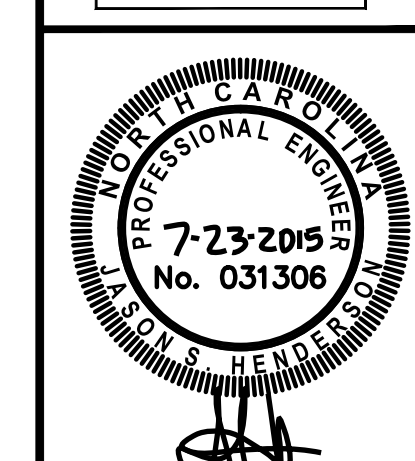


Project Number: 2014-090
DWG Name: 2014-090 D1.dwg
Drawing Scale: AS NOTED
Date of Project: 10-21-2014
Engineer of Record:
Jason Henderson, P.E.
South Carolina PE# 21406
Georgia PE# 03571
North Carolina PE# 03106
Alabama PE# 0504
Louisiana PE# 38891
Virginia PE# 60203118

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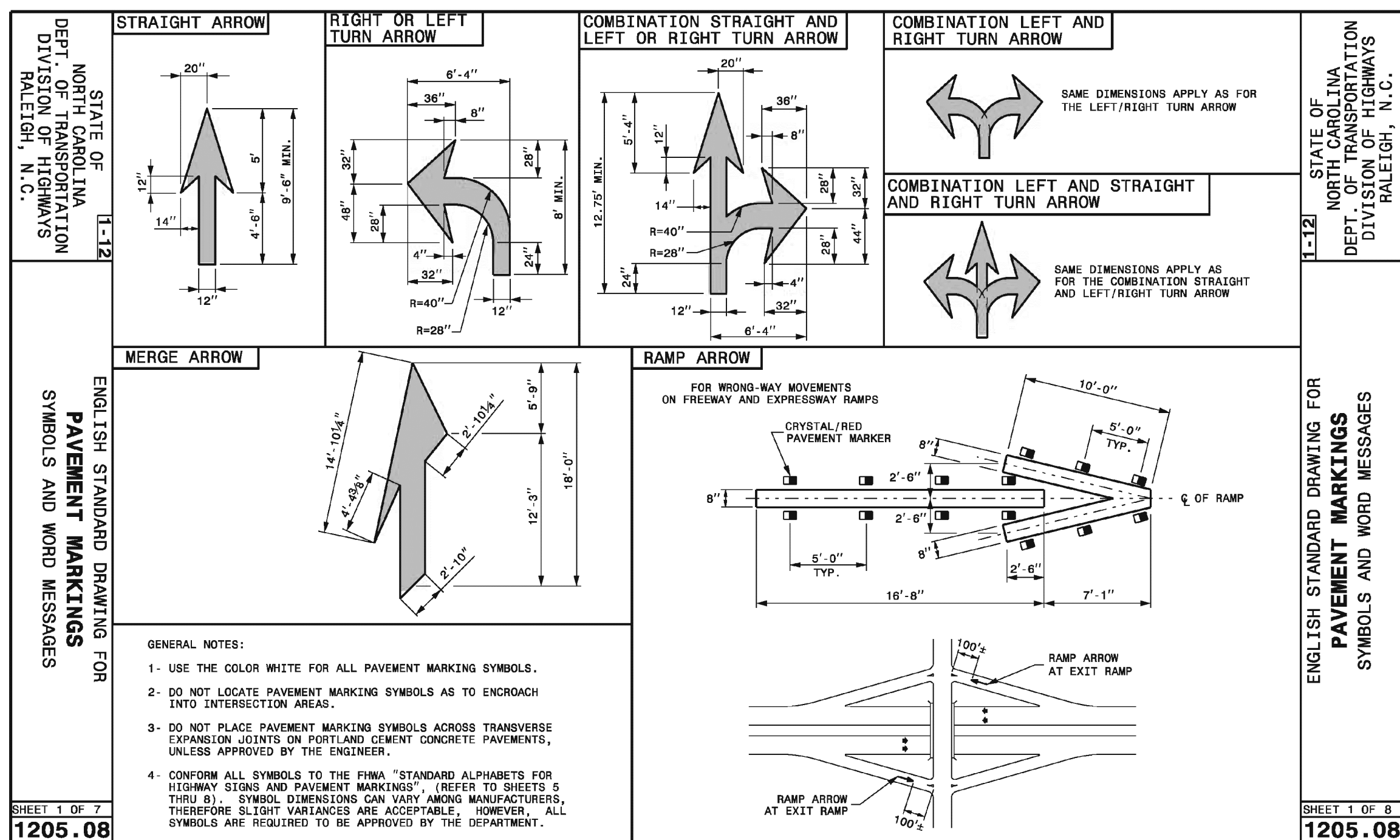
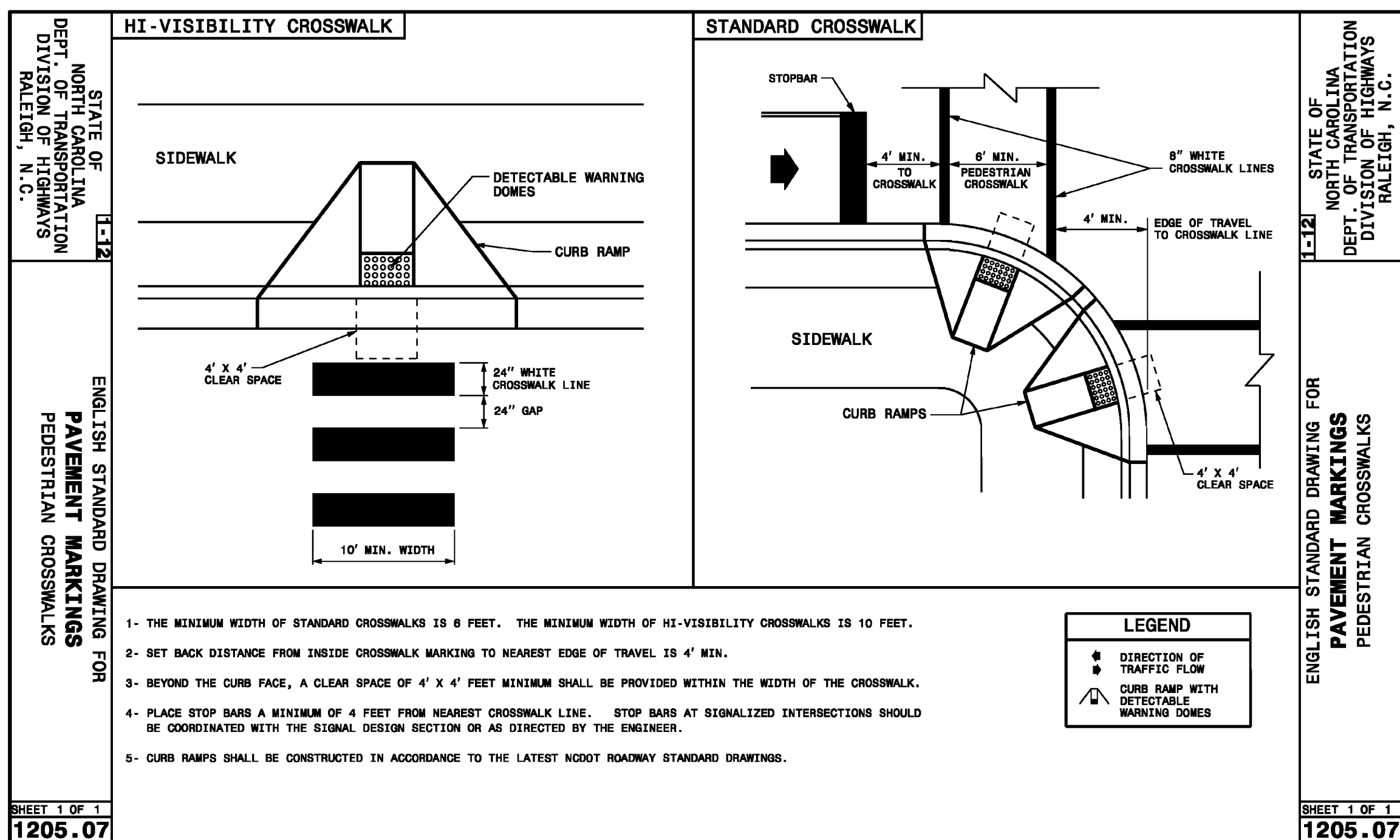
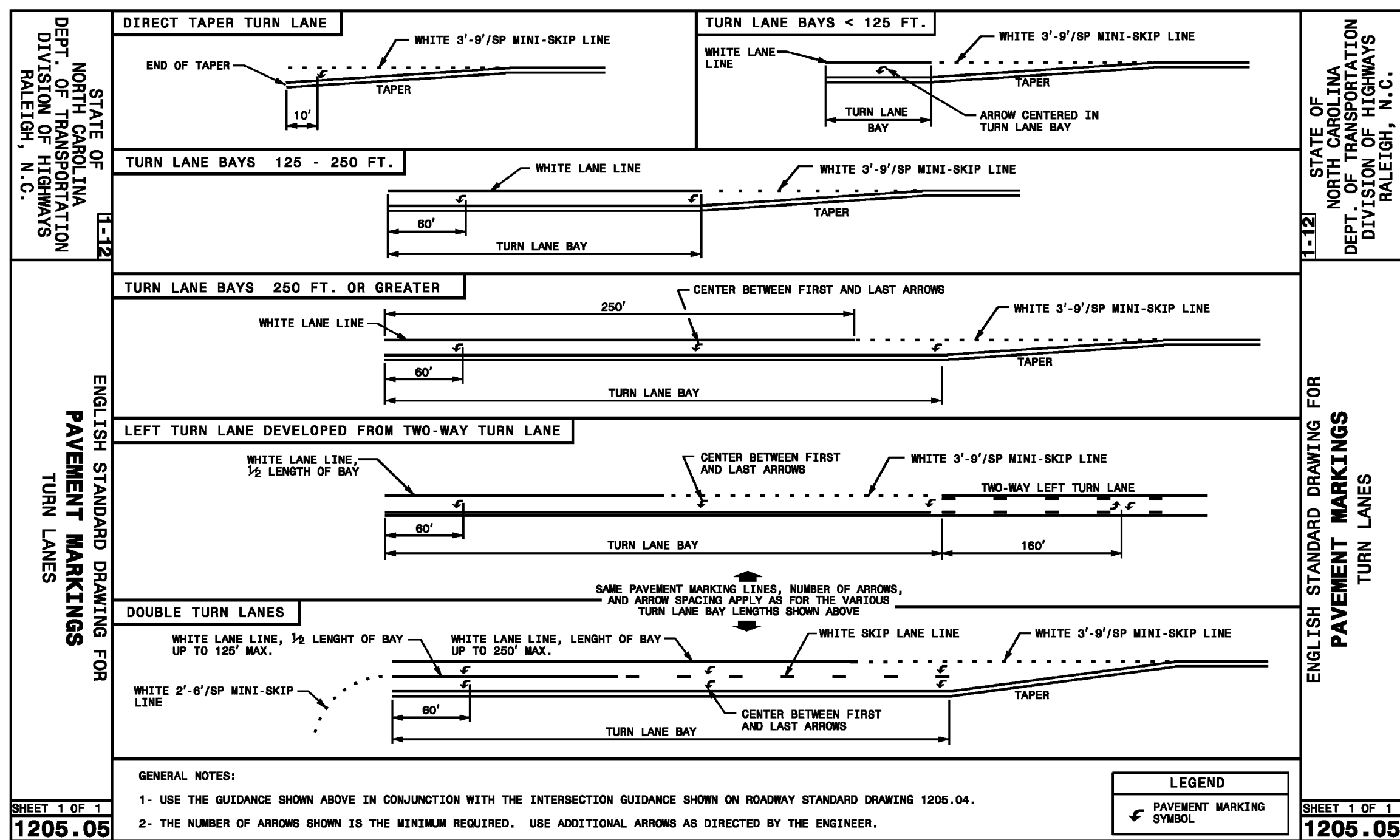
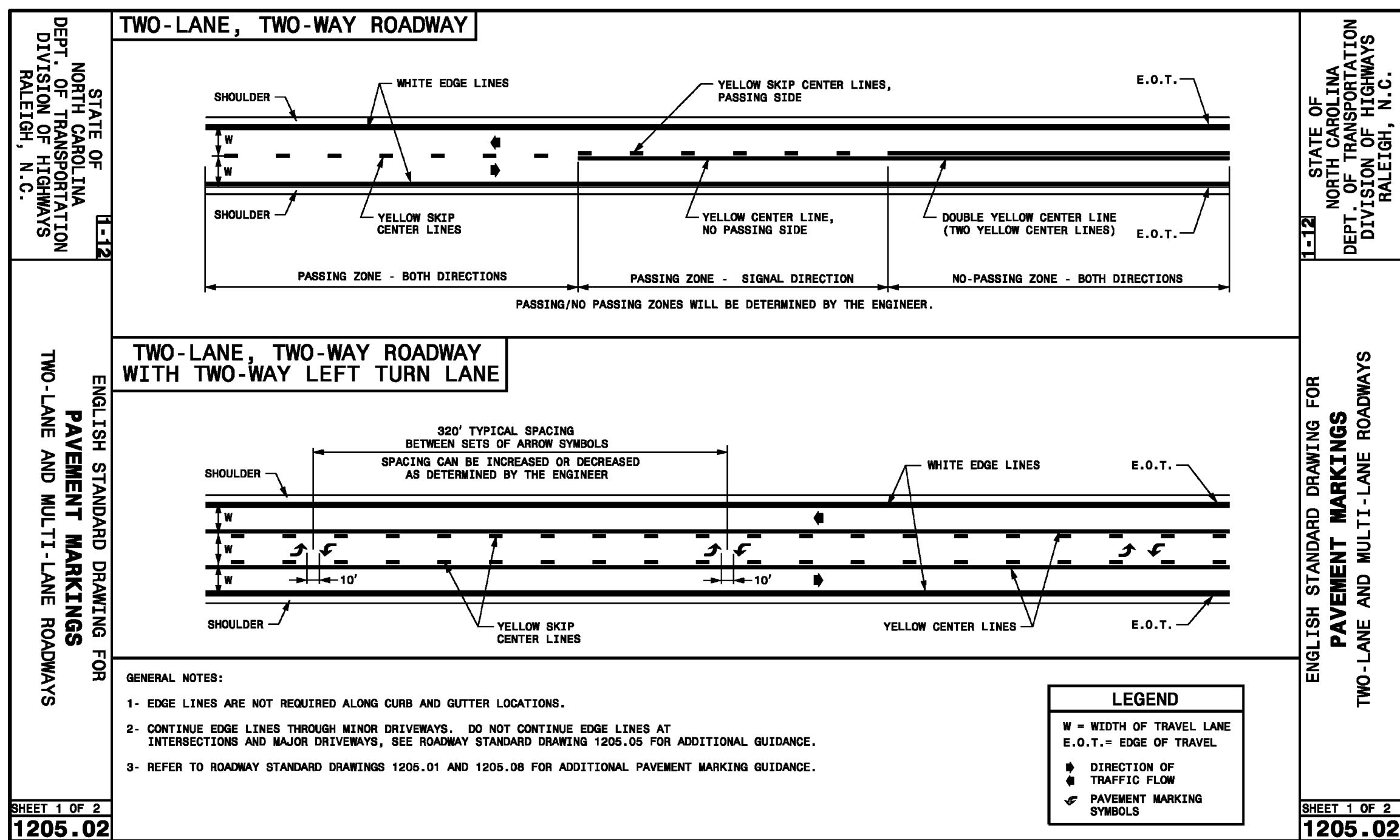
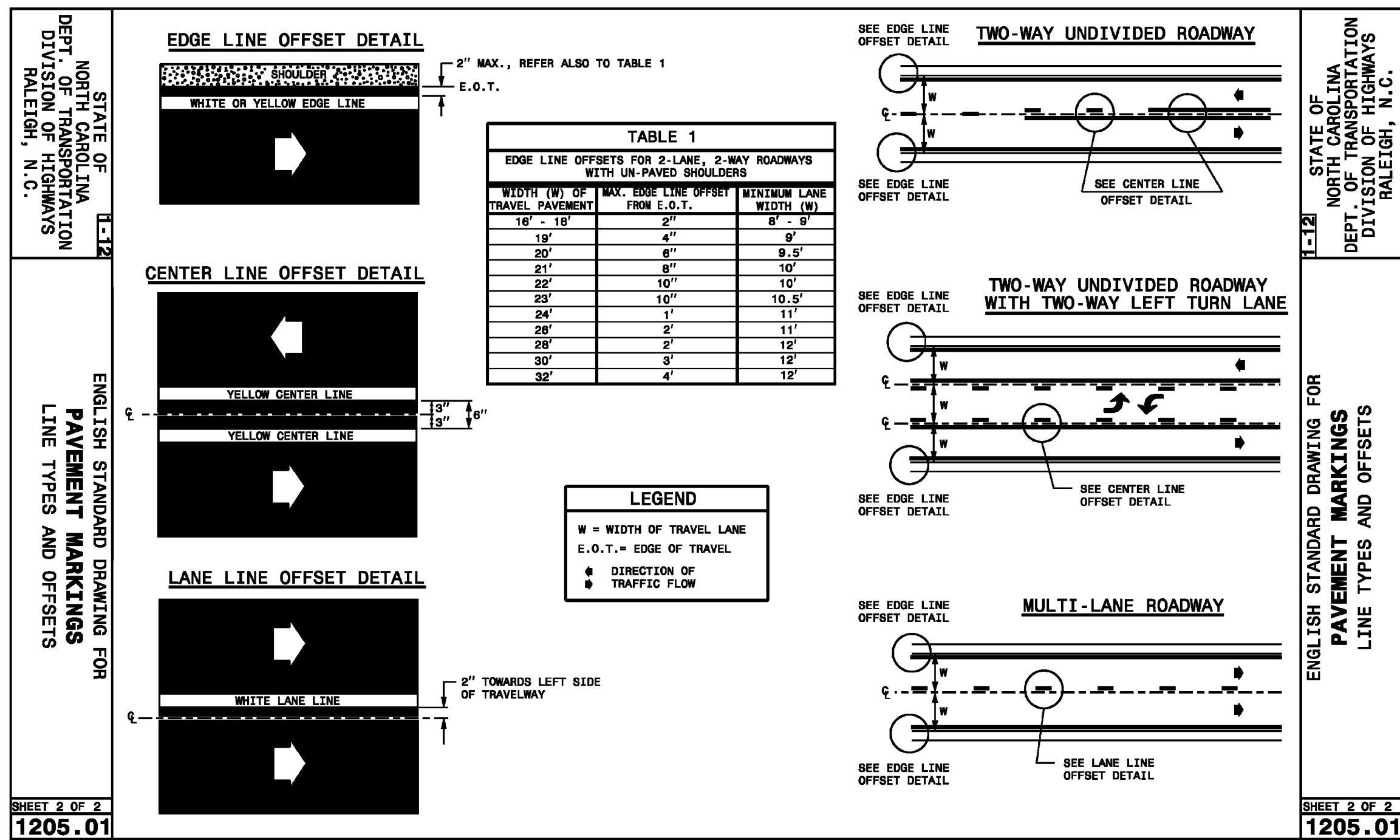
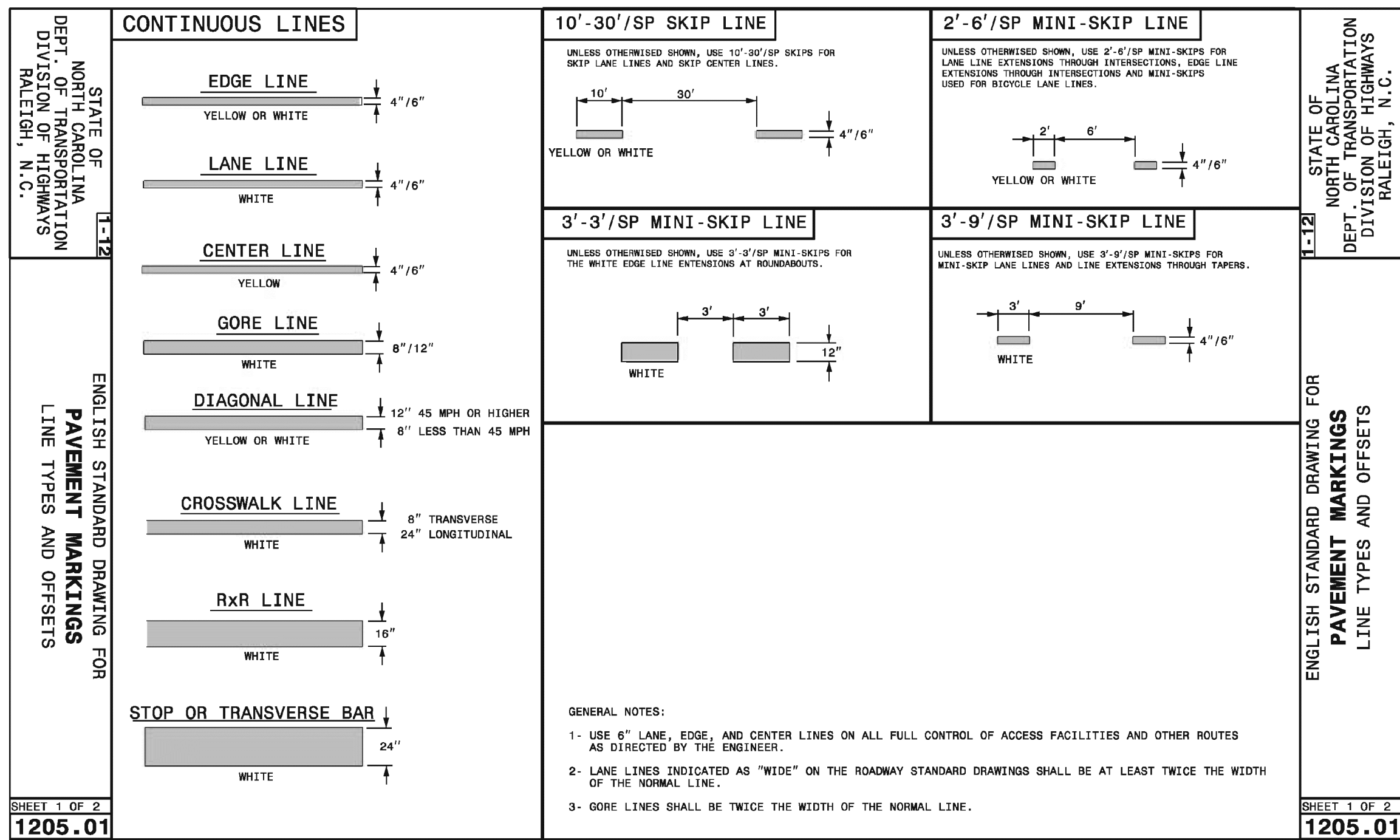
Approved Construction Plan
Name: _____
Date: _____
Planning: _____
Traffic: _____
Fire: _____



Bluewater Civil Design, PLLC
NC-P-0868

PLAN REVISION	ISSUE DATE	ISSUE COMMENT
A	2-3-2015	ISSUED FOR PERMITS
B	2-25-2015	REVISED PER COMMENTS
C	4-2-2015	REVISED PER NEW HANDOVER COMMENTS
D	4-16-2015	100% TENANT SUBMITTAL
E	4-30-2015	REVISED PER HCDOT/WILMINGTON COMMENTS
F	6-2-2015	REVISED PER CITY B TENANT COMMENTS
G	7-15-2015	REVISED PER TENANT COMMENTS
H	7-22-2015	REVISED PER CITY COMMENTS

ROAD IMPROVEMENTS:
TRAFFIC CONTROL
R103



CITY OF WILMINGTON
NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date: _____ Permit # _____
Signed: _____

Project Number: 2014-090
DWG Name: 2014-090 Details.dwg
Drawing Scale: AS NOTED
Date of Project: 10-21-2014
Engineer of Record:
Jason Henderson, P.E.
South Carolina P.E. 2246
Georgia P.E. 62071
North Carolina P.E. 031306
Alabama P.E. 32054

bluewater
civil design, PLLC
bluewatercivil.com • info@bluewatercivil.com
19 Washington Park Suite 100 • Greenville, SC 29601
www.bluewatercivil.com

Certificates of Authorization:
SC 004212 - GA PEF005865
NC P0688 - AL CA4065E

BRAGG ROAD DEV. COMPANY, LLC
716 Bragg Drive
Wilmington, NC 28412

Approved Construction Plan

Name: _____ Date: _____

Planning: _____ Traffic: _____ Fire: _____

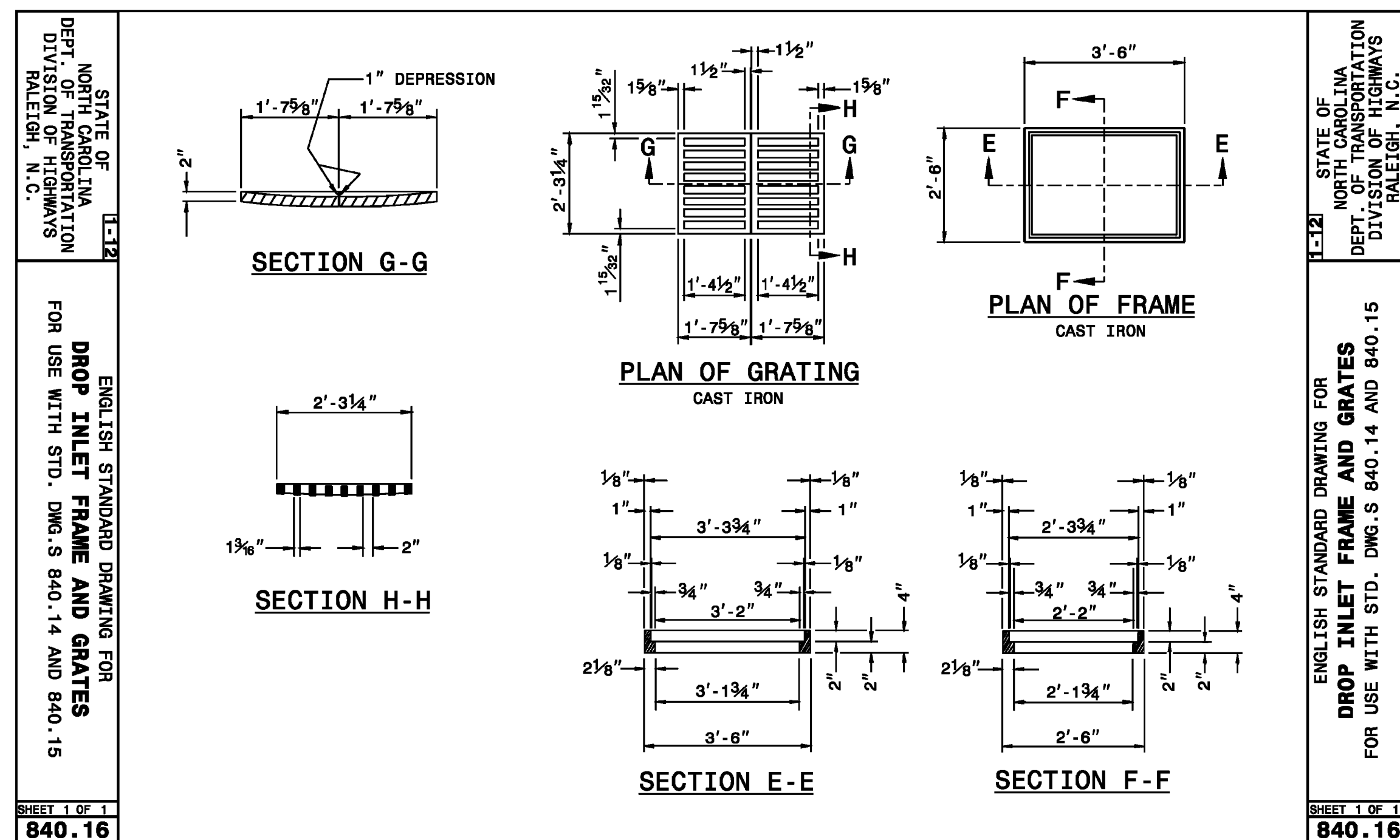
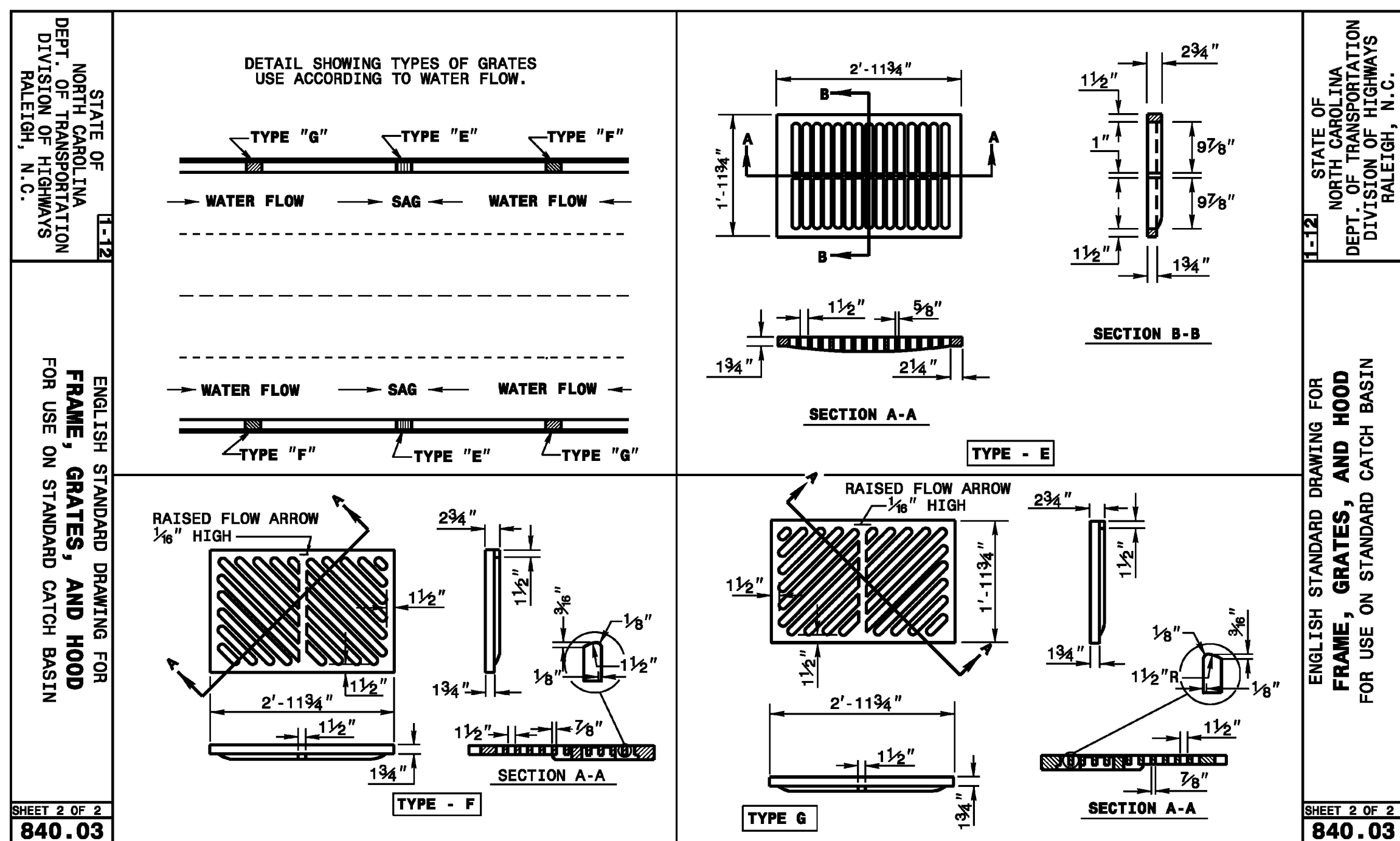
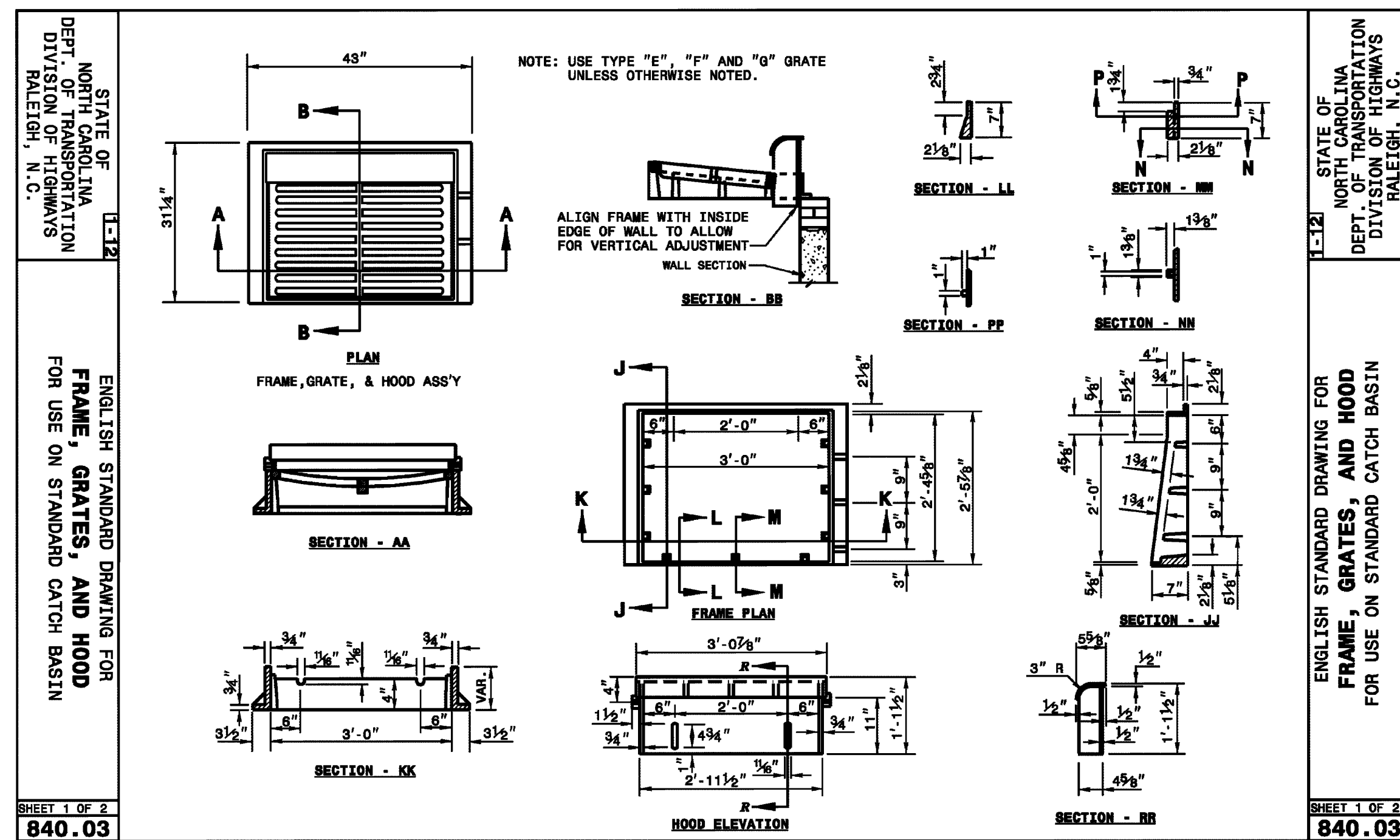
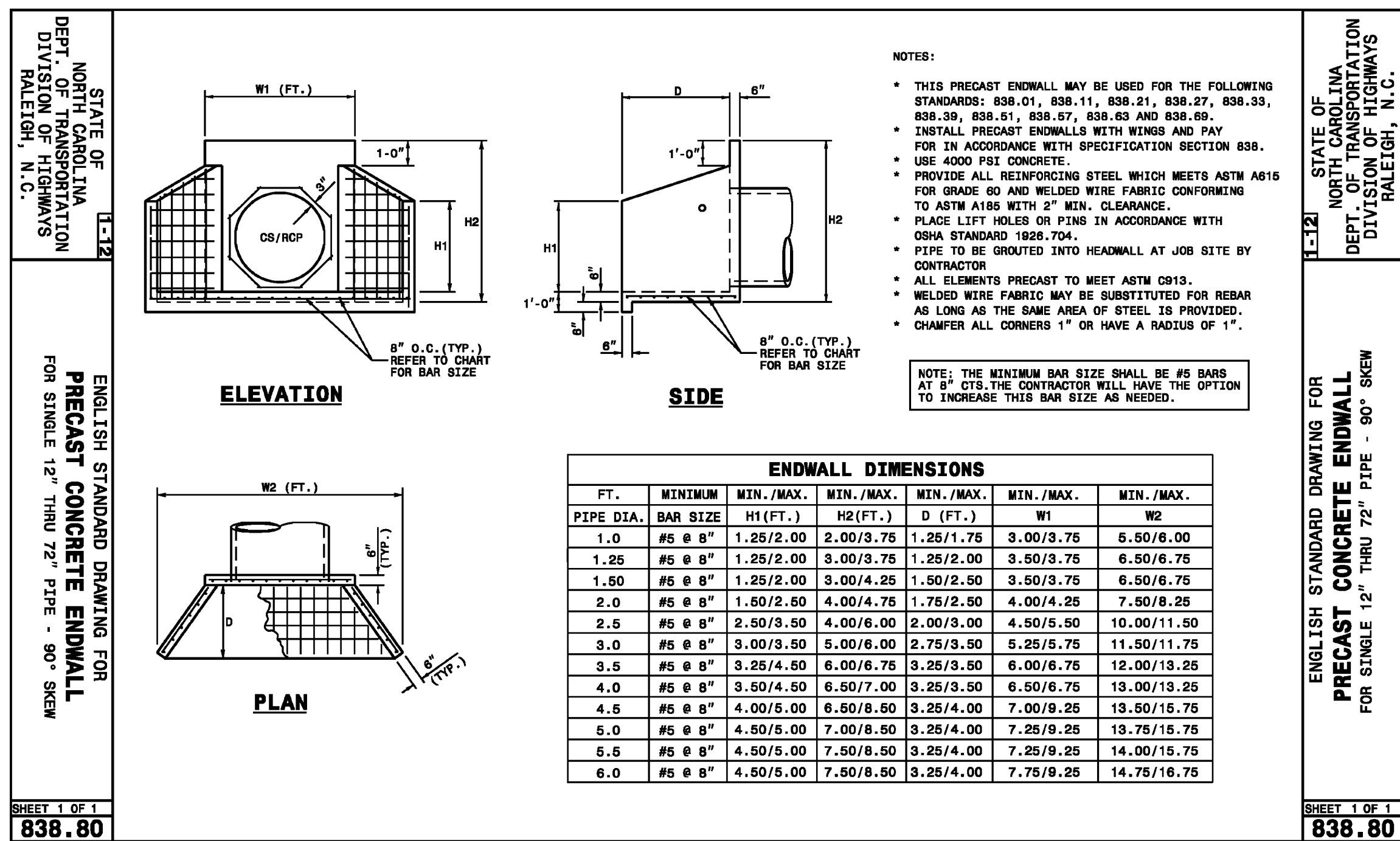
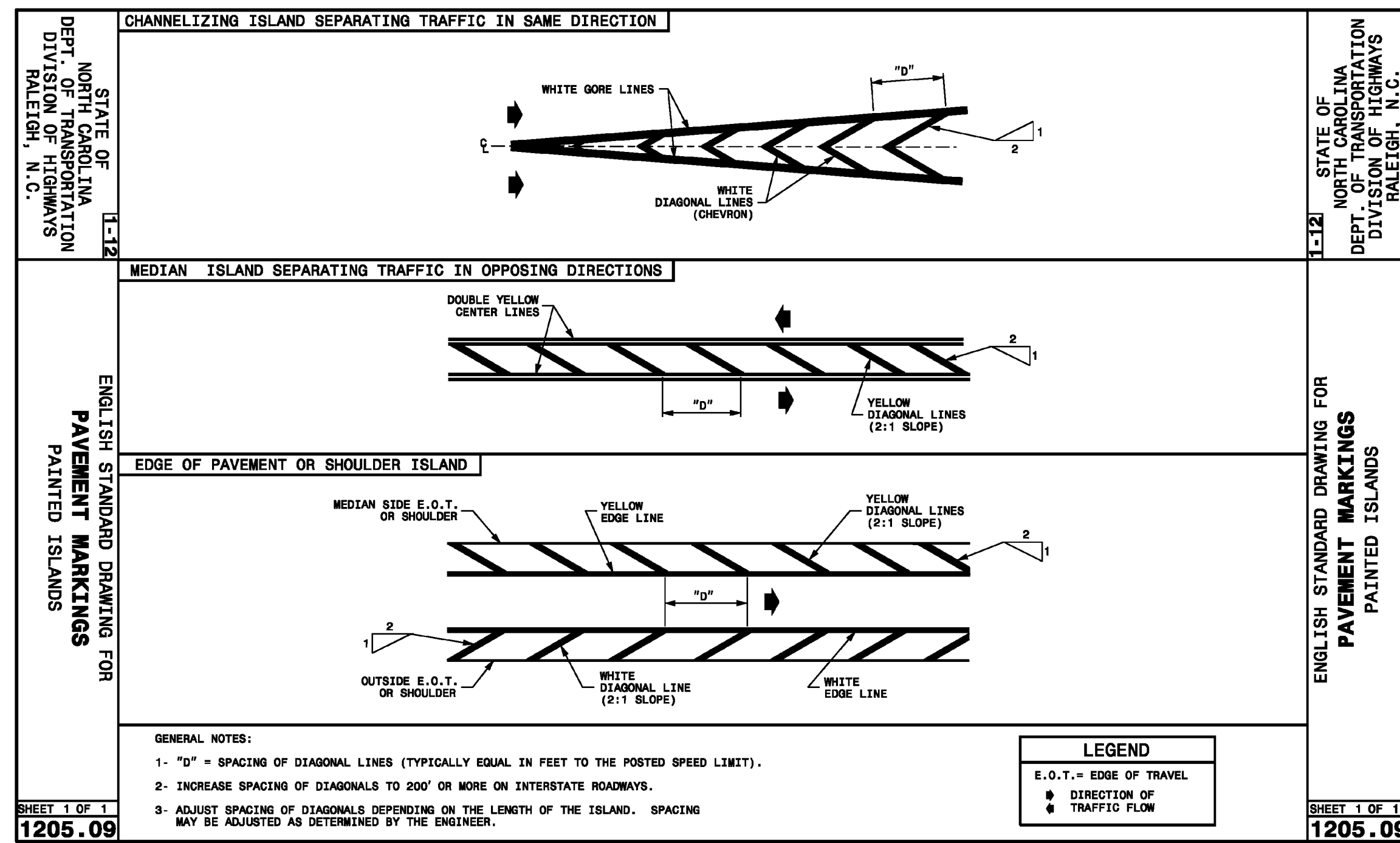
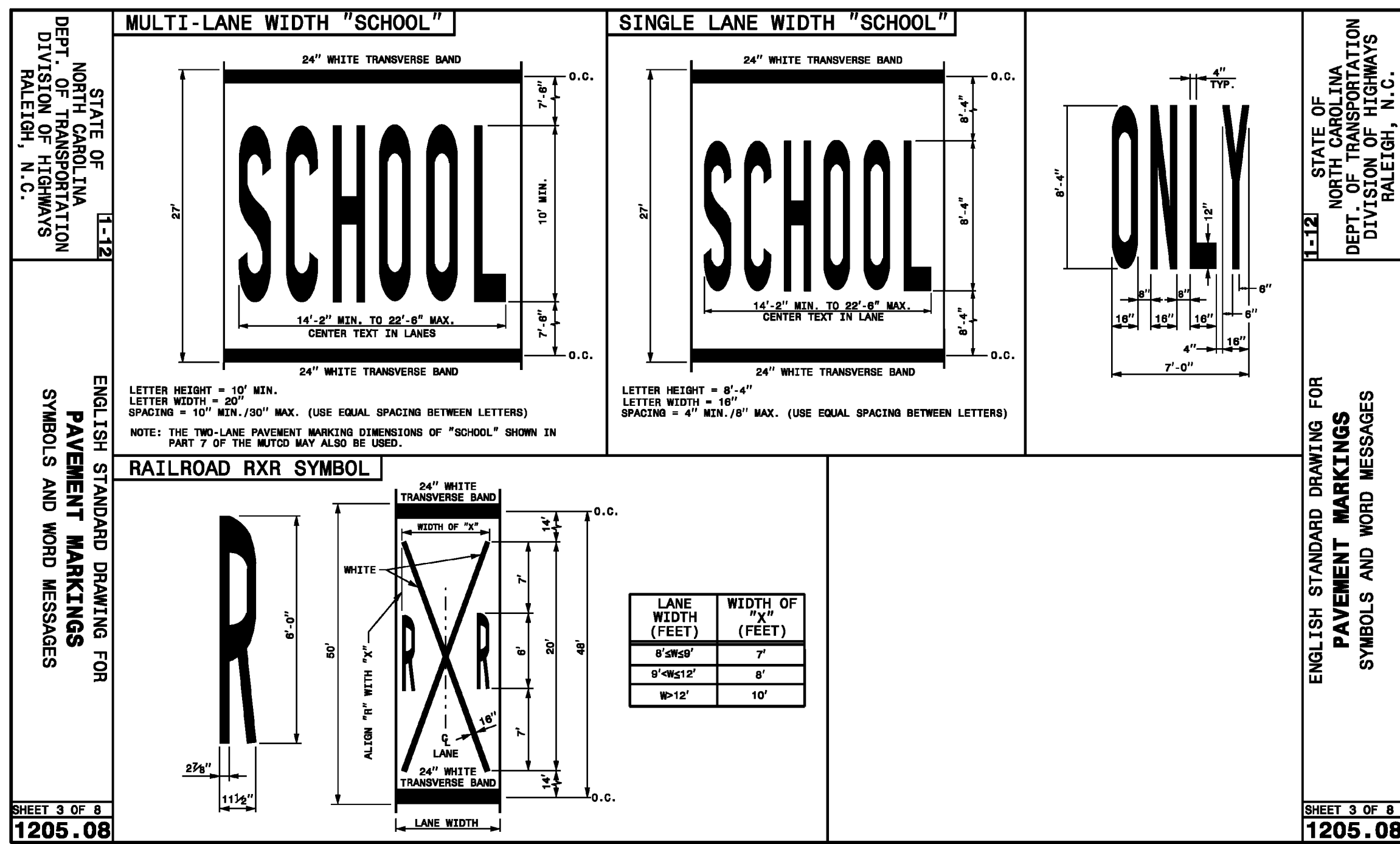


Bluewater Civil Design, PLLC
NC-P-0868

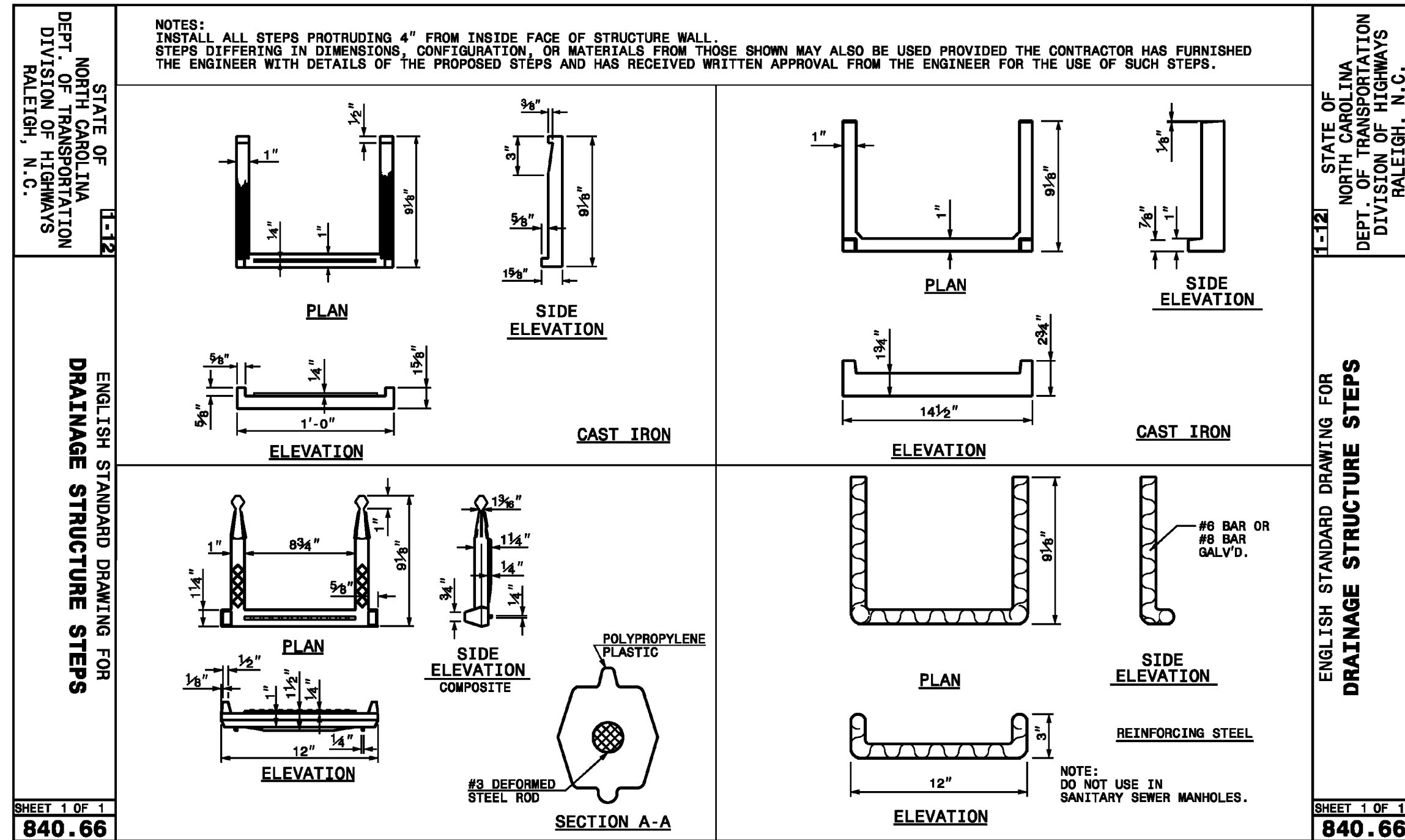
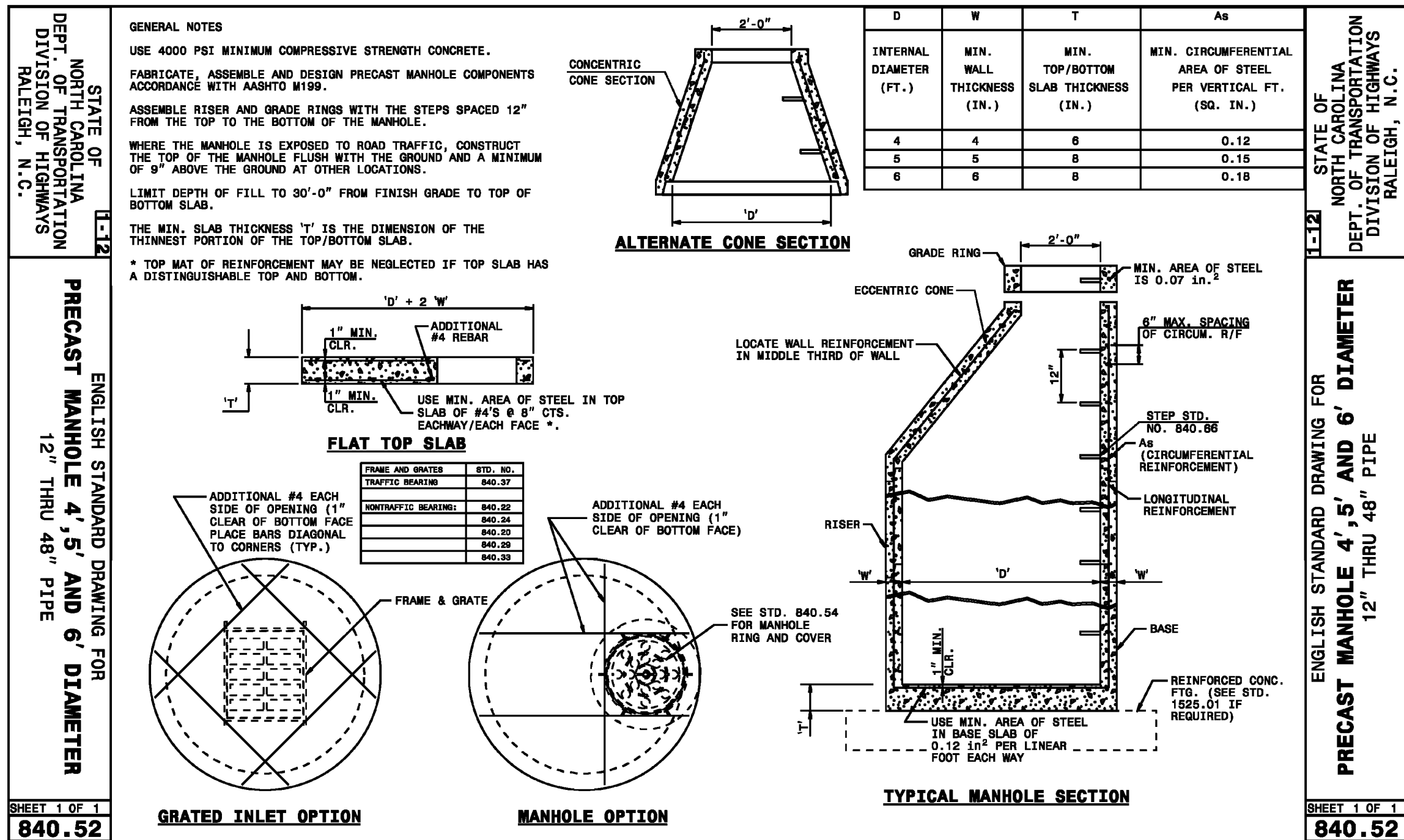
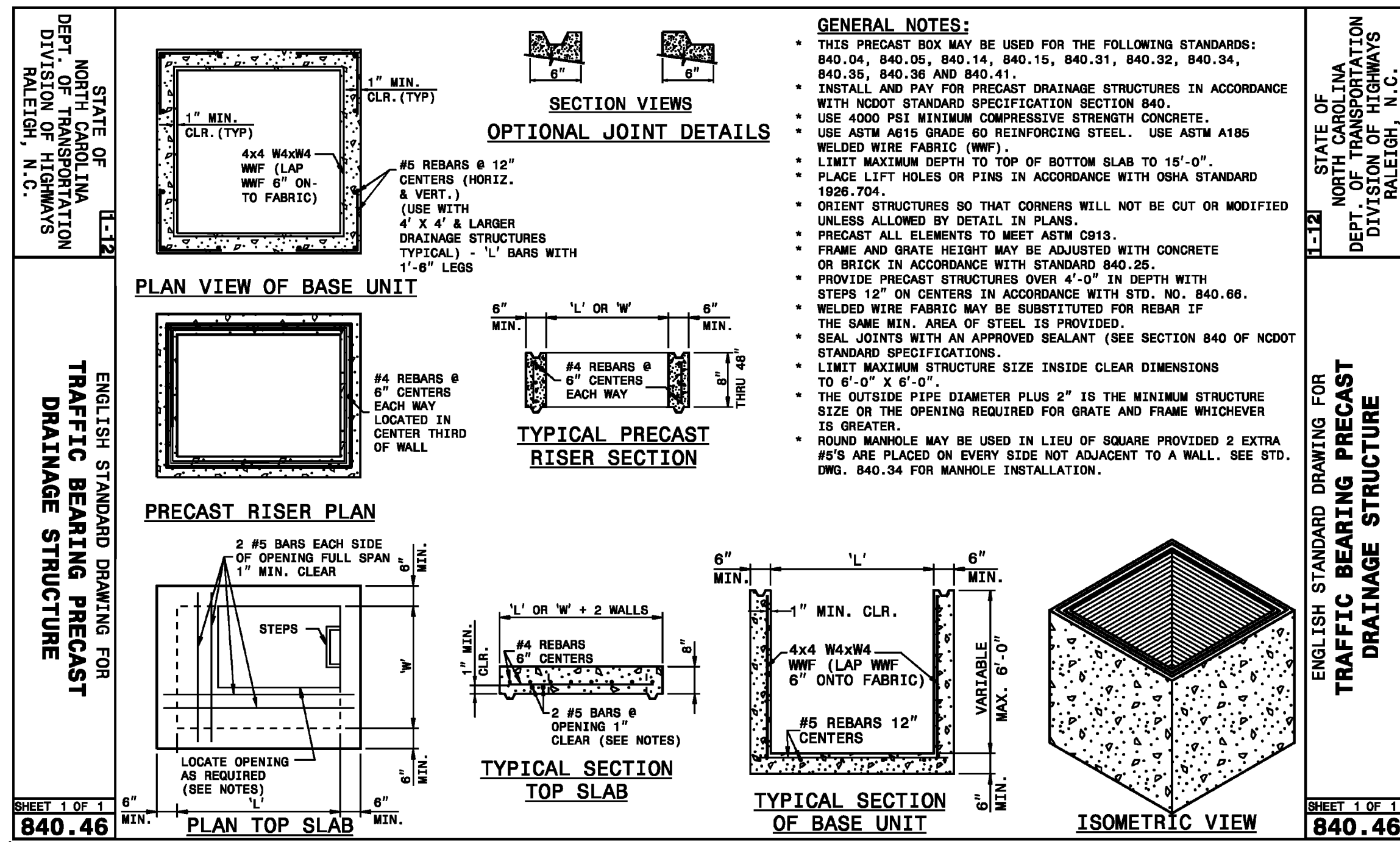
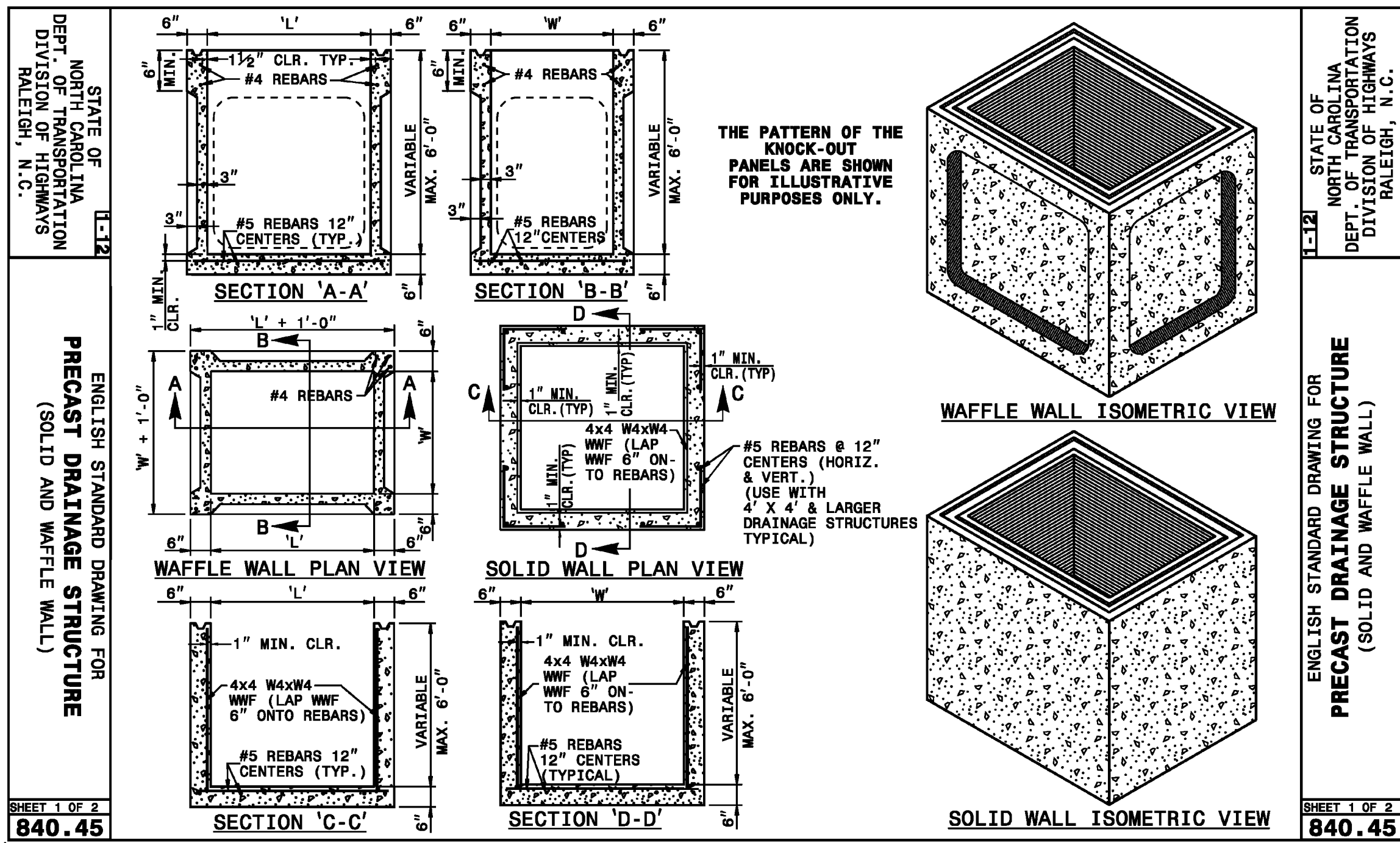
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ROAD IMPROVEMENTS DETAILS

R105



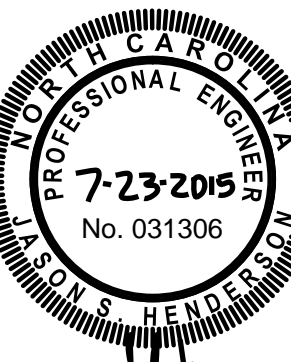
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Approved Construction Plan

Name _____ Date _____

Planning _____ Traffic _____ Fire _____



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G	7-15-2015	REVISED PER TENANT COMMENTS
H	7-22-2015	REVISED PER CITY COMMENTS
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