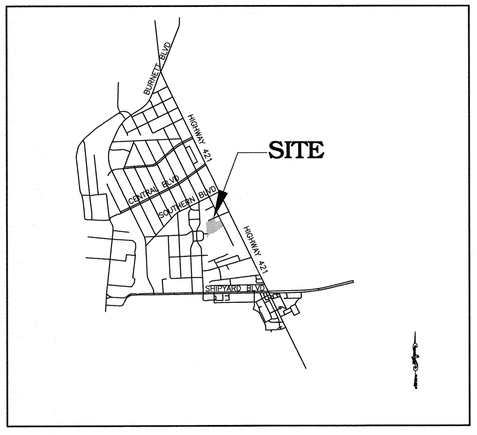
WILMINGTON SUNSET PARK 115kV SUBSTATION

SITE PLAN AND CONSTRUCTION DRAWINGS FOR:
WILMINGTON SUNSET PARK SUBSTATION
WILMINGTON, NORTH CAROLINA
PROJECT NUMBER: DKE-17010

SITE DATA TABLE	
PROJECT NAME:	WILMINGTON SUNSET PARK 115kV SUBSTATION
PHYSICAL ADDRESS:	317 BORDEAUX AVENUE WILMINGTON, NC 28401
OWNER/DEVELOPER:	DUKE ENERGY PROGRESS 410 S. WILMINGTON ST. RALEIGH, NC 27601 (919) 546-6123
PARCEL ID NUMBER:	PIN NUMBER: 06013-021-004-000
TOTAL PARCEL & IMPERVIOUS AREA:	4.53 AC (3.57 AC DISTURBED) EXISTING SITE IMPERVIOUS AREA: 3,679 SF/0.08 AC (1.8% PARCEL AREA) PROPOSED SITE IMPERVIOUS AREA: 28,903 SF/0.66 AC (14.6% PARCEL AREA) NET IMPERVIOUS AREA INCREASE: 25,224 SF/0.60 AC (12.8% PARCEL AREA)
PROPOSED HEIGHT:	10'
EXISTING BUILDING SQUARE FOOTAGE:	0
PROPOSED BUILDING SQUARE FOOTAGE:	432 SF
REQUIRED PARKING:	NONE
WETLANDS:	N/A
ZONING:	O&I-1
WATERSHED:	GREENFIELD LAKE - C;SW (CAPE FEAR RIVER BASIN)
CAMA LAND USE:	URBAN
FLOOD ZONE:	ZONE X PER FEMA MAP # 3720312600J REVISION 4/3/06
SURVEYOR:	ESP ASSOCIATES P.A. 211 RACINE DRIVE, SUITE 101 WILMINGTON, NORTH CAROLINA 28403 (910) 313-6648
ENGINEER:	MCADAMS 2905 MERIDIAN PKWY DURHAM, NC 27713 (919) 361-5000
SETBACKS REQUIRED PROPOSED	FRONT: 20' SIDE: 20' REAR: 20' FRONT: 20' SIDE: 20' REAR: 20'



VICINITY MAP
NTS

CONSTRUCTION DRAWINGS

NEW HANOVER COUNTY, NORTH CAROLINA
PROJECT NUMBER: DKE-17010

DATE: MAY 15, 2017
REVISED: SEPTEMBER 15, 2017
REVISED: NOVEMBER 7, 2017

LATITUDE: 34.1983
LONGITUDE: -77.9392
DUKE PROJECT NUMBER: 140606H03

OWNER:
DUKE ENERGY PROGRESS
410 S. WILMINGTON STREET
RALEIGH, NC 27601
CONTACT: PETER SOKALSKI
EMAIL: PETER.SOKALSKI@DUKE-ENERGY.COM
PHONE: (919) 546-6123

SHEET INDEX

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Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

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

CONTRACTOR SHALL NOTIFY "NC811" (811) OR (1-800-632-4949) AT LEAST 3 FULL BUSINESS DAYS PRIOR TO BEGINNING CONSTRUCTION OR EXCAVATION TO HAVE EXISTING UTILITIES LOCATED. CONTRACTOR SHALL CONTACT ANY LOCAL UTILITIES THAT PROVIDE THEIR OWN LOCATOR SERVICES INDEPENDENT OF "NC811". REPORT ANY DISCREPANCIES TO THE ENGINEER IMMEDIATELY.

NORTH CAROLINA PROFESSIONAL SEAL 033840 ENGINEER CURTIS M. BLAZIER

THE JOHN R. McADAMS COMPANY, INC.
2905 Meridian Parkway
Durham, North Carolina 27713
License No.: C-0293
(800) 733-5646 ▪ McAdamsCo.com
Contact: Daryl Riggins
Riggins@mcadamsco.com

McADAMS

FINAL DRAWING - NOT RELEASED FOR CONSTRUCTION

X:\Projects\DKE\DKE-17010\Land\Construction Drawings\Current Drawings\DKE17010-CS1.dwg, 11/7/2017 12:46:00 PM, Blazier, Curt

ESP Associates, P.A.
211 Racine Drive, Suite 101
Wilmington, NC 28403
910-313-6648
www.espassociates.com
Telefax-910-313-6823
License: C-0587

NC GRID
NAD83/(NSRS2011)/
NAVD 88
CGF:1.000044671

I, DWIGHT E. ASHLEY, CERTIFY THAT THIS PLAT WAS DRAWN UNDER MY SUPERVISION FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION (DEED DESCRIPTION, RECORDED IN BOOK 938, PAGE 477 AS SHOWN); THAT THE BOUNDARIES NOT SURVEYED ARE INDICATED AS BROKEN LINES; THAT THE RATIO OF PRECISION OR POSITIONAL ACCURACY AS CALCULATED IS 1:10000+; AND THAT THIS PLAT MEETS THE REQUIREMENTS OF THE STANDARDS OF PRACTICE FOR LAND SURVEYING IN NORTH CAROLINA (21 NCAC 56.1600); THAT THIS PLAT WAS PREPARED IN ACCORDANCE WITH G.S. 47-30 AS AMENDED.

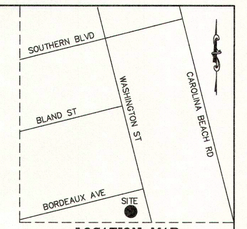
WITNESS MY ORIGINAL SIGNATURE, REGISTRATION NUMBER AND SEAL THIS

23RD DAY OF JUNE, A.D., 2017.

THIS SURVEY IS OF AN EXISTING PARCEL OR PARCELS OF LAND AND DOES NOT CREATE A NEW STREET OR CHANGE AN EXISTING STREET.

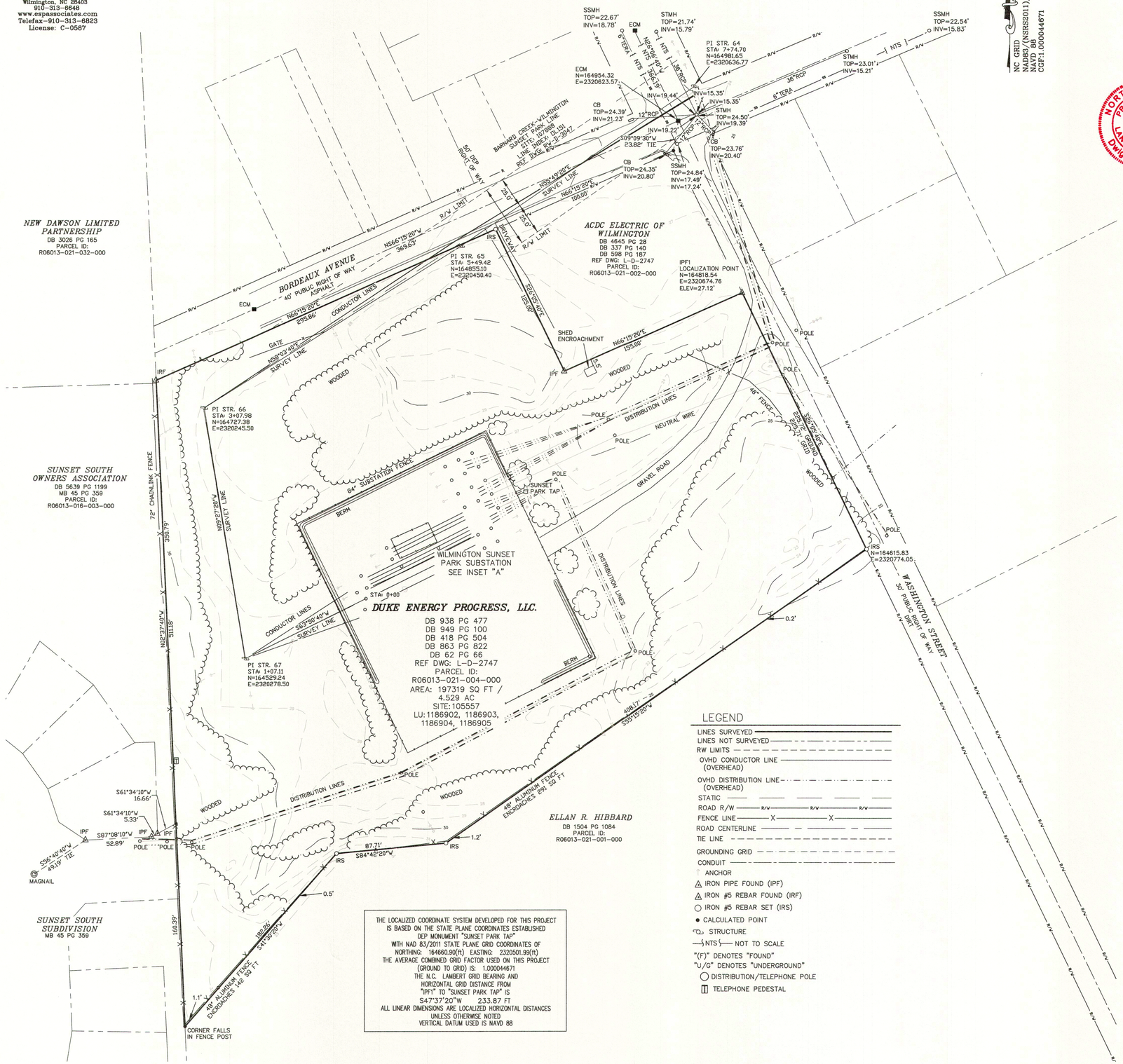
PROFESSIONAL LAND SURVEYOR L-5263 DATE 6/23/2017

NORTH CAROLINA PROFESSIONAL SEAL L-5263 LAND SURVEYOR Dwight E. Ashley



LOCATION MAP
NOT TO SCALE

NOTES:
1. SURVEYED AND MAPPED FOR DUKE ENERGY PROGRESS, LLC.
2. SURVEYED AND MAPPED BY ESP ASSOCIATES, PA.
3. ALL AREAS COMPUTED BY COORDINATE COMPUTATION METHOD
4. THIS SURVEY WAS EXECUTED WITHOUT THE BENEFIT OF A FULL TITLE REPORT AND IS SUBJECT TO ANY EASEMENTS, RIGHT OF WAY OR ENCUMBRANCES A FULL TILE REPORT MAY REVEAL
5. ALL DISTANCES SHOWN HEREON ARE HORIZONTAL GROUND. US SURVEY FOOT DISTANCES UNLESS OTHERWISE NOTED.
6. THIS PARCEL LIES WITHIN FEMA FLOOD ZONE X (UNSHADED) AS REFERENCED FROM DFIRM PANELS 3720312600K EFFECTIVE DATE 8-29-2014.
7. THE PURPOSE OF THIS MAP IS TO DEPICT BOUNDARY LOCATION AND TOPOGRAPHIC FEATURES OF THE EXISTING WILMINGTON SUNSET PARK SUBSTATION SITE.
8. NO SUE RECORD INVESTIGATION WAS PERFORMED WITH THIS SURVEY, UNDERGROUND UTILITIES MARKED AS FOUND DURING FIELD SURVEY
9. CONTOUR INTERVAL=1.0'
10. SEE SHEET 2 OF 2 FOR TREE SPECIES AND SIZE

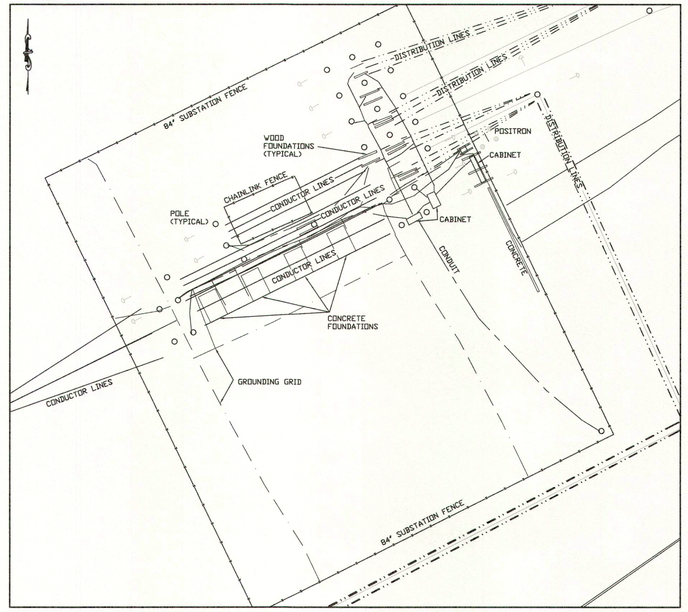


LEGEND

- LINES SURVEYED
- LINES NOT SURVEYED
- RW LIMITS
- OVHD CONDUCTOR LINE (OVERHEAD)
- OVHD DISTRIBUTION LINE (OVERHEAD)
- STATIC
- ROAD R/W
- FENCE LINE
- ROAD CENTERLINE
- TIE LINE
- GROUNDING GRID
- CONDUIT
- ANCHOR
- IRON PIPE FOUND (IPF)
- IRON #5 REBAR FOUND (IRF)
- IRON #5 REBAR SET (IRS)
- CALCULATED POINT
- STRUCTURE
- NTS NOT TO SCALE
- "(F)" DENOTES "FOUND"
- "U/G" DENOTES "UNDERGROUND"
- DISTRIBUTION/TELEPHONE POLE
- TELEPHONE PEDESTAL

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED DEP MONUMENT "SUNSET PARK TAP" WITH NAD 83/2011 STATE PLANE GRID COORDINATES OF NORTHING: 164660.90(ft) EASTING: 2320501.99(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 1.000044671 THE N.C. LAMBERT GRID BEARING AND HORIZONTAL GRID DISTANCE FROM "IPF1" TO "SUNSET PARK TAP" IS S47°37'20"W 233.87 FT ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES UNLESS OTHERWISE NOTED VERTICAL DATUM USED IS NAVD 88

INSET "A"
SUBSTATION DETAIL
SCALE: 1" = 30'



SITE: 105557 FOR SOURCE OF TITLE REFER TO DBK. 938 PG. 477

DUKE ENERGY PROGRESS, LLC.
WILMINGTON SUNSET PARK SUBSTATION
BOUNDARY & TOPOGRAPHIC SURVEY OF:
WILMINGTON SUNSET PARK SUBSTATION
WILMINGTON TOWNSHIP
NEW HANOVER COUNTY, NORTH CAROLINA

BOOK: 20170623 CREW: JRB
DATE: 6/23/17 DRAWN BY: DEA
SCALE: 1"= 40' SCALE IN FEET R.O.P. = 1:10000+
LAND UNIT: 1186902, 1186903, 1186904, 1186905 MAP: 105557-456497

DUKE ENERGY
400 S. TRYON STREET
PO BOX 1007
CHARLOTTE N.C. 28201-1007
TELEPHONE NO. (704)382-2361

ESP Associates. P.A.
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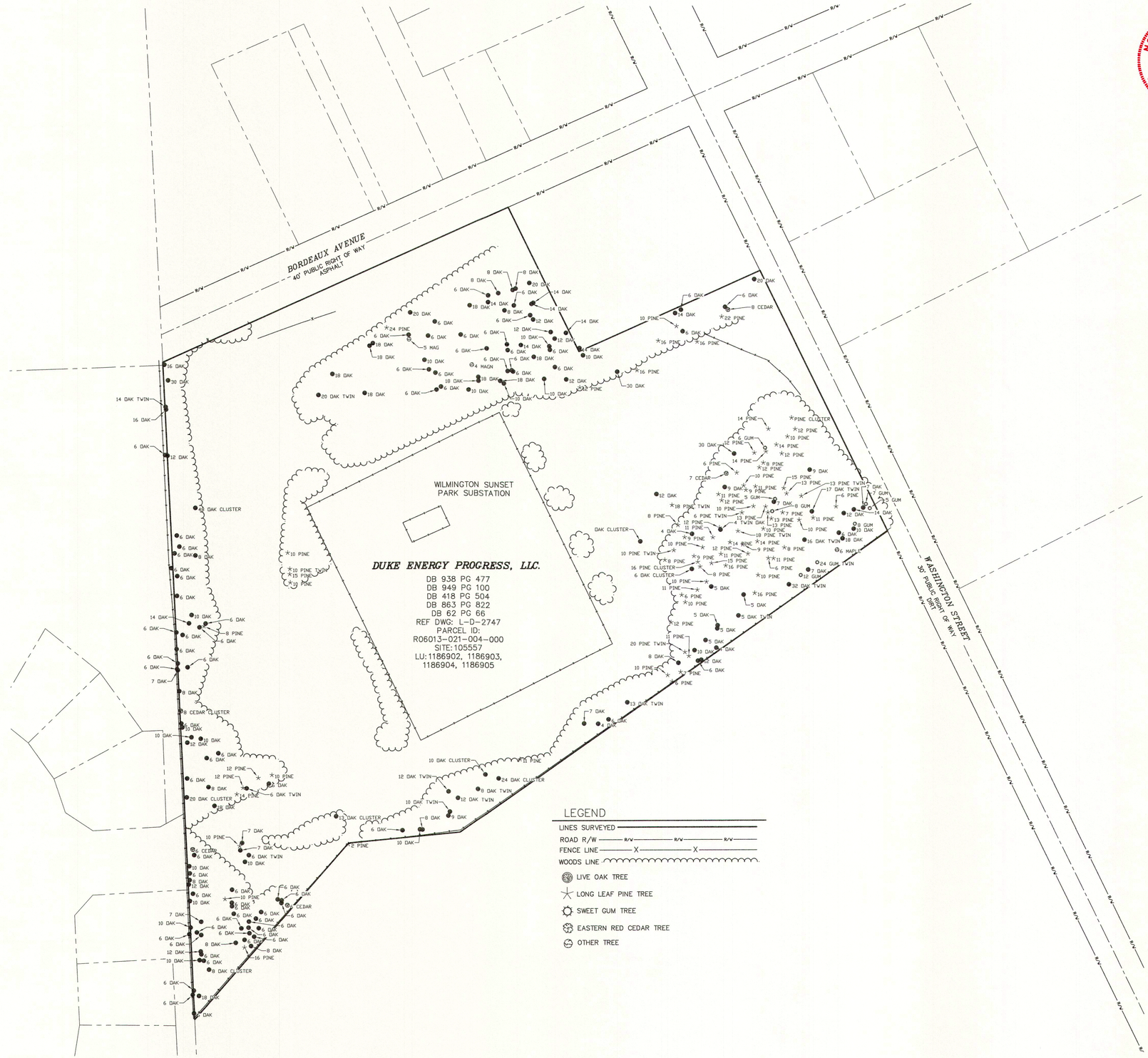
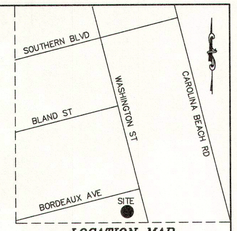
License: C-0587





LOCATION MAP
NOT TO SCALE

NORTH CAROLINA PROFESSIONAL SEAL L-5263 LAND SURVEYOR DWIGHT E. ASHLEY

NC GRID
NAD83(NSRS2011)//
NAVD 88
CGF:1.0000446671

SITE: 105557

FOR SOURCE OF TITLE REFER TO DBK. 938 PG. 477

DUKE ENERGY PROGRESS, LLC.
WILMINGTON SUNSET PARK SUBSTATION

TREE SURVEY OF:
WILMINGTON SUNSET PARK SUBSTATION

WILMINGTON TOWNSHIP
NEW HANOVER COUNTY, NORTH CAROLINA

BOOK: 20170623
DATE: 6/23/17
SCALE: 1"= 40'

20 0 20 40 80
SCALE IN FEET

CREW: JRB
DRAWN BY: DEA
R.O.P. = 1:10000+

LAND UNIT: 1186902, 1186903, 1186904, 1186905

MAP: 105557-456497

DUKE ENERGY

400 S. TRYON STREET
P.O. BOX 1007
CHARLOTTE N.C. 28201-1007
TELEPHONE NO. (704)382-2361

CITY OF WILMINGTON STANDARD NOTES

1. 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.
2. 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.
3. 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.
4. ALL PAVEMENT MARKINGS IN PUBLIC RIGHTS-OF-WAY AND FOR DRIVEWAYS ARE TO BE THERMOPLASTIC AND MEET CITY AND/OR NCDOT STANDARDS.
5. 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.
6. 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.
7. CONTACT TRAFFIC ENGINEERING AT 910-341-7888 TO ENSURE THAT ALL TRAFFIC SIGNAL FACILITIES AND EQUIPMENT ARE SHOWN ON THE PLAN.
8. CALL TRAFFIC ENGINEERING AT 910-341-7888 FORTY-EIGHT (48) HOURS PRIOR TO ANY EXCAVATION IN THE RIGHT-OF-WAY.
9. TRAFFIC ENGINEERING MUST APPROVE OF PAVEMENT MARKING PRIOR TO ACTUAL STRIPING.
10. ALL PARKING STALL MARKINGS AND LANE ARROWS WITHIN THE PARKING AREAS SHALL BE WHITE.
11. ALL TRAFFIC CONTROL SIGNS AND MARKINGS OFF THE RIGHT-OF-WAY ARE TO BE MAINTAINED BY THE PROPERTY OWNER.
12. STOP SIGNS AND STREET SIGNS TO REMAIN IN PLACE DURING CONSTRUCTION.
13. TACTILE WARNING MATS WILL BE INSTALLED ON ALL WHEELCHAIR RAMPS.
14. A UTILITY CUT PERMIT IS REQUIRED FOR EACH OPEN CUT OF A CITY STREET.
15. ANY BROKEN OR MISSING SIDEWALK PANELS, DRIVEWAY PANELS, AND CURBING WILL BE REPLACED.
16. CONTACT TRAFFIC ENGINEERING AT 910-341-7888 TO DISCUSS STREET LIGHTING OPTIONS.
17. WATER AND SEWER SERVICE SHALL MEET CAPE FEAR PUBLIC UTILITY AUTHORITY (CFPUA) DETAILS AND SPECIFICATIONS.
18. 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.
19. 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.
20. ANY IRRIGATION SYSTEM SUPPLIED BY CFPUA WATER SHALL COMPLY WITH THE CFPUA CROSS CONNECTION CONTROL REGULATIONS. CALL 919-343-3910 FOR INFORMATION.
21. ANY IRRIGATION SYSTEM SHALL BE EQUIPPED WITH A RAIN AND FREEZER SENSOR.
22. ANY BACKFLOW PREVENTION DEVICES REQUIRED BY THE CFPUA WILL NEED TO BE ON THE LIST OF APPROVED DEVICES BY USCFCCCHR OR ASSE.
23. CONTRACTOR TO FIELD VERIFY EXISTING WATER AND SEWER SERVICE LOCATIONS, SIZES AND MATERIALS PRIOR TO CONSTRUCTION. ENGINEER TO BE NOTIFIED OF ANY CONFLICTS.
24. CONTRACTOR SHALL MAINTAIN ALL-WEATHER ACCESS FOR EMERGENCY VEHICLES AT ALL TIMES DURING CONSTRUCTION.
25. 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.
26. NO OBSTRUCTIONS ARE PERMITTED IN THE SPACE BETWEEN THIRTY (30) INCHES AND TEN (10) FEET ABOVE THE GROUND WITHIN THE TRIANGULAR SIGHT DISTANCE.
27. CONTACT THE NORTH CAROLINA ONE CALL CENTER AT 1-800-632-4949 PRIOR TO DOING ANY DIGGING, CLEARING, OR GRADING
28. EXTERIOR LIGHTING MUST BE INSTALLED SO AS NOT TO SHINE ONTO ADJACENT RESIDENTIALLY USED PROPERTY.

EROSION CONTROL NARRATIVE

DUKE ENERGY PROGRESS
WILMINGTON SUNSET PARK 115 KV SUBSTATION EXPANSION
RECEIVING STREAM – GREENFIELD LAKE
RIVER BASIN – CAPE FEAR
CLASSIFICATION – C,SW

PROJECT NUMBER: DKE-17010
DESIGNED BY: CURT BLAZIER, PE

PROJECT DESCRIPTION

THE PROPOSED PROJECT CONSISTS OF THE CONSTRUCTION OF A NEW TWO TRANSFORMER BANK SUBSTATION AND THE DEMOLITION OF THE EXISTING SUBSTATION. THE PROJECT WILL INCLUDE A STORMWATER MANAGEMENT FACILITY AND WILL COMPLY WITH CITY OF WILMINGTON ORDINANCE RUNOFF AND PEAK FLOW REGULATIONS. THIS SUBSTATION PROJECT IS BEING IMPLEMENTED TO MEET CURRENT AND FUTURE VOLTAGE LOAD DEMANDS IN THE SURROUNDING AREAS.

SEEDBED PREPARATION

AREAS TO BE SEEDED TO BE SCARIFIED 4" DEEP. A FIRM, WELL PULVERIZED, UNIFORM SEEDBED SHOULD BE PROVIDED. FERTILIZER SHALL BE PLACED DURING SCARIFICATION AS FOLLOWS:

LIME: 45 LBS / 1,000 SF
PHOSPHOROUS: 20 LBS / 1,000 SF
FERTILIZER: 17 LBS / 1,000 SF

PER NORTH CAROLINA SOIL AND SEDIMENTATION LAW, A VEGETATIVE GROUNDCOVER SUFFICIENT TO PERMANENTLY RESTRAIN EROSION SHALL BE RE-ESTABLISHED WITHIN 21 CALENDAR DAYS AFTER COMPLETION OF ANY PHASE OF GRADING. PERMANENT GROUNDCOVER FOR ALL DISTURBED AREAS WITHIN 15 WORKING DAYS OR 90 CALENDAR DAYS (WHICHEVER IS SHORTER) FOLLOWING COMPLETION OF CONSTRUCTION OR DEVELOPMENT.

TEMPORARY AND PERMANENT SEEDING SCHEDULE

SEE DETAIL ON SHEET 10 FOR SEASONAL RATES, APPLICATION PROCEDURES, AND MAINTENANCE NOTES.

EROSION CONTROL NOTES

1. EROSION AND SEDIMENT CONTROL DEVICES MUST BE INSTALLED AND INSPECTED PRIOR TO ANY GRADING ON SITE. THE CONTRACTOR SHALL CALL FOR A INSPECTION ONCE INITIAL MEASURES ARE IN PLACE.
2. SEDIMENT/EROSION CONTROL DEVICES MUST BE CHECKED AFTER EACH STORM EVENT. EACH DEVICE IS TO BE MAINTAINED OR REPLACED IF SEDIMENT ACCUMULATION HAS REACHED ONE HALF THE CAPACITY OF THE DEVICE.
3. THE PERMANENT STORM DRAINAGE SWALES ARE TO BE MATTED IMMEDIATELY UPON CONSTRUCTION.
4. A COPY OF THE APPROVED EROSION CONTROL PLAN MUST BE ON FILE AT THE JOB SITE AT ALL TIMES.
5. INSTALL A RAIN GAUGE (6" CAPACITY OR GREATER) ONSITE.
6. CONSTRUCTION, MAINTENANCE, AND REMOVAL OF ALL EROSION CONTROL DEVICES ARE THE RESPONSIBILITY OF THE GRADING CONTRACTOR UNLESS OTHERWISE NOTED.
7. ANY GRADING BEYOND THE DENUDED LIMITS SHOWN ON THE PLAN IS A VIOLATION OF THE EROSION CONTROL PERMIT AND IS SUBJECT TO A FINE.
8. DISTURBED AREAS MUST BE STABILIZED AS SOON AS POSSIBLE AND NO LATER THAN 14 DAYS. TEMPORARY SEEDING IS NECESSARY TO ACHIEVE EROSION CONTROL ON LARGE DENUDED AREAS AND ESPECIALLY WHEN SPECIFICALLY REQUIRED AS PART OF THE CONSTRUCTION SEQUENCE ON THE PLAN. ALL GRADED SLOPES STEEPER THAN 3:1 MUST BE SEEDED & MULCHED AND TACKIFIER PLACED WITHIN 7 DAYS OF COMPLETION OF GRADING. ALL REMAINING DISTURBED AREAS ARE TO BE SEEDED AND MULCHED WITHIN 14 DAYS. SEE THE GROUND STABILIZATION CHART FOR ADDITIONAL REQUIREMENTS.
9. ADDITIONAL MEASURES TO CONTROL EROSION AND SEDIMENT MAY BE REQUIRED BY CITY OF WILMINGTON AND/OR A REPRESENTATIVE OF THE NCDEQ DEMLR DEPARTMENT.
10. PROTECTION OF EXISTING VEGETATION: AT THE START OF GRADING INVOLVING THE STRIPPING OF TOPSOIL OR LOWERING OF EXISTING GRADE AROUND A TREE, A CLEAN, SHARP, VERTICAL CUT SHALL BE MADE AT THE EDGE OF THE TREE SAVE AREA AT THE SAME TIME AS OTHER EROSION CONTROL MEASURES ARE INSTALLED. THE TREE PROTECTION FENCING SHALL BE INSTALLED ON THE SIDE OF THE CUT FARTHEST AWAY FROM THE TREE TRUNK AND SHALL REMAIN IN PLACE UNTIL ALL CONSTRUCTION IN THE VICINITY OF THE TREES IS COMPLETE. NO STORAGE OF MATERIALS, FILL, OR EQUIPMENT AND NO TRESPASSING SHALL BE ALLOWED WITHIN THE BOUNDARY OF THE PROTECTED AREA AND SHALL BE POSTED ON THE PROTECTION FENCE. A PROTECTION FENCE CONSTRUCTED OF MATERIAL RESISTANT TO DEGRADATION BY SUN, WIND, AND MOISTURE FOR THE DURATION OF THE CONSTRUCTION, SHALL BE INSTALLED AT THE SAME TIME AS THE EROSION CONTROL MEASURES AND SHALL BE IN PLACE UNTIL ALL CONSTRUCTION IN THE VICINITY OF THE TREES IS COMPLETE.
11. INSTALLATION AND MAINTENANCE OF ALL PROPOSED SEDIMENTATION & EROSION CONTROL MEASURES IS REQUIRED. THE CONTRACTOR MAY BE ALLOWED, WITH PRIOR APPROVAL FROM THE OWNER, TO COORDINATE CHANGES TO THE PLAN WITH THE ON-SITE NCDEQ DEMLR INSPECTOR AND THE ENGINEER OR THE OWNER'S REPRESENTATIVE.
12. CONTRACTOR WILL FIELD LOCATE SILT FENCE OUTLETS AT LOW POINTS IN SILT FENCE AS REQUIRED TO PROVIDE RELIEF FROM CONCENTRATED FLOWS.
13. ALL DIMENSIONS AND GRADES SHOWN ON THE PLANS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE OWNER IF ANY DISCREPANCIES EXIST PRIOR TO PROCEEDING WITH CONSTRUCTION FOR NECESSARY PLAN OR GRADE CHANGES. NO EXTRA COMPENSATION SHALL BE PAID TO THE CONTRACTOR FOR ANY WORK DONE DUE TO DIMENSIONS OR GRADES SHOWN INCORRECTLY ON THESE PLANS IF SUCH NOTIFICATION HAS NOT BEEN GIVEN.
14. REQUIRED TREE PROTECTION FENCING SHALL BE INSTALLED PRIOR TO BEGINNING LAND DISTURBANCE.
15. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO KEEP ALL DIRT OFF PAVED ROADS. HEAVY MATS MAY BE USED IN LIEU OF ROCK CONSTRUCTION ENTRANCES AS DETERMINED BY THE ON-SITE INSPECTOR.
16. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO KEEP ALL SEDIMENT ON SITE AND ENSURE NO SEDIMENT LEAVES THE LIMITS OF DISTURBANCE OF THE PROJECT. THIS MAY REQUIRE INSTALLATION OF ADDITIONAL EROSION CONTROL MEASURES ABOVE AND BEYOND WHAT IS SHOWN ON THE PLANS. IF ENVIRONMENTAL OR SITE CONDITIONS WARRANT ADDITIONAL EROSION CONTROL MEASURES, CONTRACTOR SHALL OBTAIN PRIOR APPROVAL FROM DEP REPRESENTATIVE. EROSION CONTROL MEASURES DAMAGED OR REQUIRED DUE TO CONTRACTOR ACTIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. ALL EROSION CONTROL MEASURES SHALL BE PROPERLY MAINTAINED THROUGHOUT CONSTRUCTION AT NO ADDITIONAL COST TO DEP.
17. ALL CONSTRUCTION DEBRIS SHALL BE TESTED AND DISPOSED OF OFF-SITE IN A STATE PERMITTED LINED LANDFILL.
18. IMMEDIATE CLEANUP OF ANY MATERIAL BEING PLACED ON THE ROADWAY AS WELL AS IMMEDIATE SEEDING/COVER PLACED ON DISTURBED GROUND BETWEEN THE SILT FENCE AND SIDEWALK IS REQUIRED.

MAINTENANCE PLAN

1. 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. ANY NEEDED REPAIRS SHALL BE MADE IMMEDIATELY TO MAINTAIN ALL MEASURES AS DESIGNED.
2. SEDIMENT FENCES SHALL BE INSPECTED AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. REPAIRS SHALL BE MADE IMMEDIATELY. SEDIMENT DEPOSITS SHALL BE REMOVED AS NEEDED TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAINFALL EVENT, AND TO REDUCE PRESSURE ON THE FENCE. FENCING MATERIALS AND SEDIMENT DEPOSITS SHALL BE REMOVED, AND THE AREA BROUGHT TO GRADE FOLLOWING STABILIZATION OF UPGRADIENT DISTURBED AREAS.

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

BUILDING WASTES HANDLING
• NO PAINT OR LIQUID WASTES IN STREAM OR STORM DRAINS
• DEDICATED AREAS FOR DEMOLITION, CONSTRUCTION AND OTHER WASTES MUST BE LOCATED 50' FROM STORM DRAINS AND STREAMS UNLESS NO REASONABLE ALTERNATIVES AVAILABLE.
• EARTHEN-MATERIAL STOCKPILES MUST BE LOCATED 50' FROM STORM DRAINS AND STREAMS UNLESS NO REASONABLE ALTERNATIVES AVAILABLE.
• CONCRETE MATERIALS MUST BE CONTROLLED TO AVOID CONTACT WITH SURFACE WATER, WETLANDS, OR BUFFERS.

SITE NOTES

1. LOCATION AND TOPOGRAPHICAL INFORMATION WAS TAKEN FROM AN ACTUAL FIELD SURVEY PERFORMED BY ESP ASSOCIATES P.A., DATED 01/12/2017. REFERENCE DATUM IS NAD 83 (2011) HORIZONTAL AND NAVD 88 FOR VERTICAL.
2. PROPERTY LIES WITHIN FEMA ZONE X (OUTSIDE 500 YEAR FLOOD PLAIN) AS PER FEMA FIRM COMMUNITY PANEL NO. 3720312600J, REVISED DATE 04-03-06.
3. PROJECT SITE IS LOCATED IN THE CAPE FEAR RIVER BASIN.
4. ALL MATERIALS, CONSTRUCTION, WORKMANSHIP SHALL MEET CITY OF WILMINGTON, DUKE ENERGY PROGRESS, LLC (DEP), AND NCDOT (WHERE APPLICABLE) SPECIFICATIONS, STANDARDS AND DESIGN.
5. CONTRACTOR SHALL COMPLY WITH ALL PERTINENT PROVISIONS OF THE 'MANUAL OF ACCIDENT PREVENTION IN CONSTRUCTION' ISSUED BY AGC OF AMERICA, INC., AND THE SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION ISSUED BY THE U.S. DEPARTMENT OF LABOR.
6. NOT ALL EXISTING UTILITIES ARE SHOWN. LOCATIONS SHOWN ARE APPROXIMATE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ACCURATELY LOCATE BOTH HORIZONTALLY AND VERTICALLY ALL EXISTING UTILITIES PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY SC811 OR THEIR SUCCESSOR AT 888-721-7877 PRIOR TO EXCAVATION. CONTRACTOR SHALL NOTIFY DUKE ENERGY PROGRESS, INC. IMMEDIATELY IN THE EVENT OF ENCOUNTERING ANY UNDERGROUND OBSTACLE REQUIRING DEVIATION FROM THE PLAN. COST TO REPAIR DAMAGED UTILITIES SHALL BE BORNE BY THE CONTRACTOR.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OF ANY PAVEMENT OR EXISTING UTILITIES THAT MAY BE DAMAGED DUE TO CONSTRUCTION ACTIVITY. EXERCISE CAUTION.
8. SHOULD ANY GROUNDING BE CUT OR UNEARTHED, THE GROUNDING WILL NEED TO BE REPAIRED AND RECONNECTED. THE GROUNDING SHOULD BE BETWEEN 18" TO 24" DEPTH.
9. ALL UTILITIES SHALL BE PROTECTED AND REMAIN ACTIVE UNLESS OTHERWISE NOTED. CONTRACTOR SHALL NOT DISTURB UTILITY POLES, GUY WIRES, OR ANCHORS WITHOUT PERMISSION FOR DUKE ENERGY PROGRESS, INC.
10. EXISTING IMPROVEMENTS SLATED TO REMAIN THAT ARE DAMAGED DURING CONSTRUCTION SHALL BE REPLACED/RESTORED TO THEIR ORIGINAL CONDITION OR TO THE SATISFACTION OF THE OWNER BY THE CONTRACTOR RESPONSIBLE FOR THE DAMAGE.
11. FOUNDATIONS, FENCES AND LIGHTING BY OTHERS.
12. STRUCTURE LOCATIONS WERE PROVIDED BY DUKE ENERGY PROGRESS (DEP) AND ARE FOR REFERENCE ONLY. THESE DRAWINGS ARE FOR SITE GRADING, SUBSTATION PAD, AND ACCESS ROAD CONSTRUCTION ONLY AND SHALL NOT BE USED FOR LINE OR STRUCTURE CONSTRUCTION.
13. ALL SITE WORK SHALL CONFORM TO DUKE ENERGY STANDARDS AND SPECIFICATIONS.
14. DISTRIBUTION LINES ARE NOT SHOWN FOR CLARITY AT THIS TIME.
15. ALL CONSTRUCTION DEBRIS SHALL BE TESTED AND DISPOSED OF OFF-SITE IN A STATE PERMITTED LINED LANDFILL OR AS DIRECTED BY DEP REPRESENTATIVE.
16. DRIVEWAYS OF EXISTING LOTS ACROSS BORDEAUX AVENUE TO REMAIN OPEN DURING CONSTRUCTION.
17. ALL PROPOSED VEGETATION WITHIN SIGHT DISTANCE TRIANGLES SHALL NOT INTERFERE WITH CLEAR VISUAL SIGHT LINES FROM 30 INCHES TO 10 FEET.
18. EXTERIOR LIGHTING MUST BE INSTALLED SO AS NOT TO SHINE ONTO ADJACENT PROPERTIES OF RESIDENTIAL USE/ZONING.
19. EXISTING OVERHEAD UTILITY POWER POLE TO REMAIN UNDISTURBED DURING SIDEWALK INSTALLATION ALONG BORDEAUX AVENUE. CONTRACTOR TO ADJUST CONCRETE FORMS AS NECESSARY TO WORK AROUND EXISTING POLE.
20. NO TIE-INS TO PUBLIC UTILITIES NECESSARY FOR THIS PROJECT.
21. ALL PROPOSED VEGETATION WITHIN SIGHT TRIANGLES SHALL NOT INTERFERE WITH CLEAR VISUAL SIGHT LINES FROM 30"-10'.

GRADING NOTES

1. CONTRACTOR SHALL CALL "NC811" 811 OR (800-632-4949) AT LEAST 3 FULL BUSINESS DAYS PRIOR TO MOBILIZATION TO HAVE EXISTING UTILITIES LOCATED. REPORT ANY DISCREPANCIES TO THE ENGINEER.
2. CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN WORKING UNDER, AROUND, AND/OR ADJACENT TO EXISTING POWER LINES.
3. STORM DRAINAGE PIPE SHALL BE CLASS IV RCP MIN. UNLESS OTHERWISE NOTED.
4. PROPOSED DRIVEWAY SHALL BE 12 INCHES OF COMPACTED ABC STONE.
5. PROPOSED SUBSTATION SUBGRADE SHALL BE COMPACTED ABC. THE DEPTH OF THIS LAYER WILL VARY DEPENDING ON EXISTING SUBSTATION STONE GRADE. FINAL STONE WITHIN SUBSTATION FENCE SHALL BE AN ADDITIONAL 3" OF CLEAN #57 OVER 3" ABC (TOTAL OF 6" ADDITIONAL STONE).
6. PROPOSED CONTOURS AND SPOT ELEVATIONS ARE FINISHED GRADE ELEVATIONS (TOP OF STONE, TOP OF GRASS, ETC) UNLESS OTHERWISE NOTED.
7. ALL SOILS SHALL BE COMPACTED TO AT LEAST 95% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY OR AS SPECIFIED IN THE GEOTECHNICAL REPORT, THE MORE STRINGENT SHALL APPLY.
8. FILL PLACEMENT SHOULD BE INITIATED AT THE TOE OF THE SLOPE, AND BENCHES SHALL BE CUT INTO EXISTING SOILS TO PROVIDE A HORIZONTAL SURFACE FOR COMPACTION. SLOPES SHALL BE OVERBUILT AND CUT BACK TO THE REQUIRED GRADE, LEAVING THE EXPOSED FACE WELL COMPACTED. VEGETATION SHALL BE ESTABLISHED AS SOON AS PRACTICAL ALONG ALL SLOPES. RAINWATER SHALL BE DIVERTED AWAY FROM THE CREST OF SLOPES TO REDUCE EROSION.
9. CONTRACTOR TO REFER TO GEOTECHNICAL REPORT FOR GUIDANCE IN SITEWORK COMPLETED BY S&ME, INC. DATED 4/10/17.
10. CUT MATERIAL SHALL BE STOCKPILED IN AREAS ON-SITE WHERE POSSIBLE. EXCESS MATERIAL THAT CANNOT BE SPOILED ON-SITE SHALL BE REMOVED AND DISPOSED OF PROPERLY OFFSITE.

STORM READY RESPONSIBILITIES

1. LEAVE ALL SITES WITH LAND DISTURBING ACTIVITY IN A "STORM READY STATE". CONTRACTORS SHOULD CONDUCT EXTRA INSPECTIONS TO ENSURE BMPS ARE IN PLACE BEFORE THEY LEAVE THE PROJECT SITE FOR THE DAY.
2. ENSURE SEDIMENT BASINS OR CONTAINMENTS HAVE ENOUGH FREEBOARD TO ACCOMMODATE HEAVY RAINS WITHOUT OVERFLOWING.
3. ONCE THE RAIN PASSES, ENSURE OPERATORS INSPECT AND DRAIN CONTAINMENTS AS NECESSARY. IF COLLECTED WATER IS SIGNIFICANTLY TURBID, CONSIDER A SLOW RELEASE RATE TO MINIMIZE ANY WATER QUALITY IMPACTS.
4. ALSO, ONCE THE RAIN PASSES, INSPECT THE SITE AND ANY EROSION CONTROL MEASURES TO ENSURE THERE HAVE NO SEDIMENT RELEASES. REPAIR AND RETURN TO DESIGN CONDITION ANY EROSION CONTROL MEASURES OR BMPS.
5. IF THERE IS POTENTIAL FOR GUSTY OR HIGH WINDS, MAKE SURE THAT ALL PORTABLE EQUIPMENT IS PROPERLY STORED OR TIED DOWN. THIS INCLUDES LIGHT EQUIPMENT OR SIMILAR EQUIPMENT WHICH COULD BLOW OVER IF THE MAST IS NOT LOWERED AS WELL AS PORTABLE TOILETS THAT COULD TIP OVER IF NOT TIED DOWN OR SECURED.

Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

NORTH CAROLINA PROFESSIONAL SEAL 033840 ENGINEER CURTIS M. BLAZIER

McADAMS

FINAL DRAWING - NOT RELEASED FOR CONSTRUCTION

THE JOHN R. McADAMS COMPANY, INC.
2905 Meridian Parkway
Durham, North Carolina 27713
License No.: C-0293
(800) 733-5646 ▪ McAdamsCo.com

DUKE ENERGY. PROGRESS

WILMINGTON SUNSET PARK 115 KV SUBSTATION
317 BORDEAUX AVENUE, WILMINGTON NC 27601
PROJECT NOTES

NO.	DATE	REVISION	BY	CK.	APP.
	-	-	-	-	-
2	2017-11-07	REVISED PER CITY OF WILMINGTON COMMENTS	JB	CB	-
1	2017-09-15	REVISED PER CITY OF WILMINGTON COMMENTS	JB	CB	-

LOCATION: WILMINGTON, NC
SCALE: NTS SCALE RATIO: 1:1 PRJ. NO. DKE-17010
DRAWN: JB CHK. --- APP. -
DATE: 05-15-17 DWG. NO. 70818, SHEET 4 OF 18

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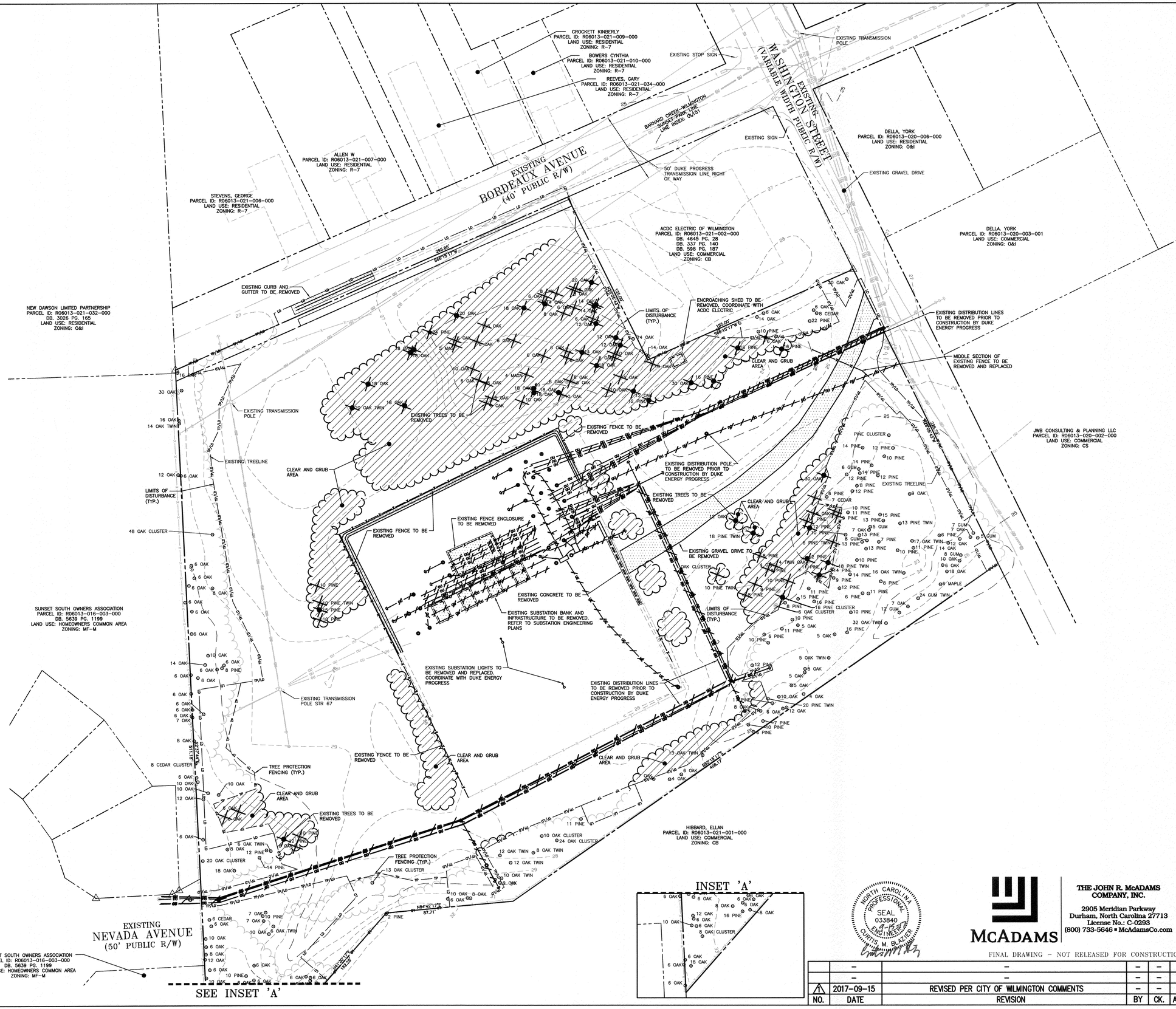

DEMOLITION LEGEND

TREE	TREE OR OTHER VEGETATION TO BE REMOVED
TREE	TREE 12" AND OVER TO BE REMOVED
UTILITY	UNDERGROUND UTILITY TO BE REMOVED
	AREA TO BE REMOVED (SIDEWALK, CURB AND GUTTER, STRUCTURES, ASPHALT, CONCRETE PAVING, ETC.)
	AREA TO CLEAR AND GRUB

NOTE: SEE PLAN FOR DETAILED DEMOLITION PROCEDURES, SEQUENCING AND SPECIFICATIONS.

DEMOLITION NOTES:

1. IN ACCORDANCE WITH 40 CFR, PART 61, SUBPART M, A THOROUGH INSPECTION SHALL BE CONDUCTED FOR ASBESTOS-CONTAINING MATERIALS, PRIOR TO CONDUCTING A RENOVATION OR DEMOLITION ACTIVITY OF AN EXISTING STRUCTURE. THE ASBESTOS INSPECTION MUST BE CONDUCTED BY A NORTH CAROLINA ACCREDITED ASBESTOS INSPECTOR. ALL REGULATED AND/OR FRIABLE ASBESTOS-CONTAINING MATERIALS IDENTIFIED DURING THE SURVEY, WHICH WILL BE DISTURBED, MUST BE PROPERLY REMOVED BY ACCREDITED INDIVIDUALS BEFORE BEGINNING THE RENOVATION OR DEMOLITION ACTIVITY. IF REGULATED AND/OR FRIABLE ASBESTOS CONTAINING MATERIALS TO BE REMOVED EXCEED 160 SQUARE FEET, 260 LINEAR FEET OR 35 CUBIC FEET, A PERMIT SHALL BE APPLIED FOR THROUGH THE NORTH CAROLINA DEPARTMENT OF HEALTH AND HUMAN SERVICES.
2. ALL MATERIAL TO BE DEMOLISHED SHALL BE REMOVED FROM THE SITE AND DISPOSED OF AT A PERMITTED SITE IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL LAWS.

NOTES:

1. ALL PINES LOCATED ON SITE ARE LONG LEAF PINES.
2. TREE CONVERSATION TABLE IS SHOWN ON SHEET 17.

Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

NC GRID (NAD 83)

GRAPHIC SCALE
30 0 15 30 60
1 inch = 30 ft.

NORTH CAROLINA PROFESSIONAL SEAL 033840 ENGINEER CURTIS M. BLAZER 9-15-17

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NO.	DATE	REVISION	BY	CK.	APP.
–	–	–	–	–	–
–	–	–	–	–	–
1	2017-09-15	REVISED PER CITY OF WILMINGTON COMMENTS	–	–	–

DUKE ENERGY. PROGRESS

WILMINGTON SUNSET PARK 115 KV SUBSTATION
317 BORDEAUX AVENUE, WILMINGTON NC 27601
DEMOLITION PLAN

LOCATION: WILMINGTON, NC
SCALE: 1"=30' SCALE RATIO: 1:1 PRJ. NO. DKE-17010
DRAWN: JB CHK. ---- APP. –
DATE: 05-15-17 DWG. NO. 70818, SHEET 5 OF 18

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SITE LEGEND

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- LOT LINE
- ROAD SHOULDER
- CENTERLINE
- OU — OU — OVERHEAD UTILITY
- UE — UE — UNDERGROUND ELECTRIC
- TREELINE
- X — X — FENCE LINE
- ABC STONE
- ACCESSIBLE RAMPS (TYPE A, TYPE B, TYPE C)

EXISTING BORDEAUX AVENUE (40' PUBLIC R/W)

EXISTING WASHINGTON STREET (VARIABLE WIDTH PUBLIC R/W)

CROCKETT KINBERLY
PARCEL ID: R06013-021-009-000
LAND USE: RESIDENTIAL
ZONING: R-7

BOWERS CYNTHIA
PARCEL ID: R06013-021-010-000
LAND USE: RESIDENTIAL
ZONING: R-7

REEVES, GARY
PARCEL ID: R06013-021-034-000
LAND USE: RESIDENTIAL
ZONING: R-7

EXISTING STOP SIGN

BARNARD CREEK-WILMINGTON SUNSET PARK LINE INDEX: 01-151

50' DUKE PROGRESS TRANSMISSION LINE RIGHT OF WAY

EXISTING SIGN

ALLEN W
PARCEL ID: R06013-021-007-000
LAND USE: RESIDENTIAL
ZONING: R-7

STEVENS, GEORGE
PARCEL ID: R06013-021-006-000
LAND USE: RESIDENTIAL
ZONING: R-7

DELLA, YORK
PARCEL ID: R06013-020-006-000
LAND USE: RESIDENTIAL
ZONING: O&I

NEW DAWSON LIMITED PARTNERSHIP
PARCEL ID: R06013-021-032-000
DB. 3026 PG. 165
LAND USE: RESIDENTIAL
ZONING: O&I

211.5' NEW SIDEWALK

EXISTING POLE NOT TO BE DISTURBED DURING SIDEWALK INSTALLATION

5' CONCRETE SIDEWALK

ACDC ELECTRIC OF WILMINGTON
PARCEL ID: R06013-021-002-000
DB. 4645 PG. 28
DB. 337 PG. 140
DB. 598 PG. 187
LAND USE: COMMERCIAL
ZONING: CB

2000 SF TEMPORARY STOCKPILE AREA

7' R/W DEDICATION

20'X70' SIGHT DISTANCE TRIANGLE

24" STANDARD CURB AND GUTTER TO BE INSTALLED AFTER CONSTRUCTION COMPLETION. TIE TO EXISTING CURB AND GUTTER.

EXISTING FENCE

SECONDARY GRAVEL PAD
6" COMPACTED ABC STONE OVER FILTER FABRIC

5' R/W DEDICATION

20'X70' SIGHT DISTANCE TRIANGLE

CITY OF WILMINGTON STD. COMMERCIAL DRIVEWAY DETAIL (SHEET 17)

EXISTING TRANSMISSION POLE

UNDERGROUND ELECTRIC LINE TO BE INSTALLED BY DUKE ENERGY PROGRESS PRIOR TO CONSTRUCTION

NEW CHAIN-LINK FENCE

EXISTING FENCE CORNER POINT

NEW 7' CHAIN-LINK FENCE WITH 1' BARBED WIRE

EXISTING TREELINE

3" #57 STONE ON 3" ABC STONE SUBSTATION PAD (SEE DETAIL, SHEET 16)

20' ABC GRAVEL SHOULDER (SEE DETAIL, SHEET 16)

NEW 24' ACCESS GATE

20' TOWN OF WILMINGTON ZONING BUFFER

79.5'

SUNSET SOUTH OWNERS ASSOCIATION
PARCEL ID: R06013-016-003-000
DB. 5639 PG. 1199
LAND USE: HOMEOWNERS COMMON AREA
ZONING: MF-M

ACCESS ROAD "B" (12" ABC STONE)

NEW GATE AND FENCE

DELLA, YORK
PARCEL ID: R06013-020-003-001
LAND USE: COMMERCIAL
ZONING: O&I

20'X70' SIGHT DISTANCE TRIANGLE

EMERGENCY VEHICLE ACCESS

APPROXIMATE CENTERLINE

JWB CONSULTING & PLANNING LLC
PARCEL ID: R06013-020-002-000
LAND USE: COMMERCIAL
ZONING: CS

ENLARGED RADIUS TO PROVIDE TURNAROUND FOR ALL WEATHER ACCESS FOR EMERGENCY VEHICLES

ACCESS ROAD "A" (12" ABC STONE)

6" UNCOMPACTED STONE (3" #57 STONE ON 3" ABC STONE)

PROPOSED TREELINE

EXISTING CHAIN-LINK FENCE

UNDERGROUND ELECTRIC LINE TO BE INSTALLED BY DUKE ENERGY PROGRESS PRIOR TO CONSTRUCTION

BASELINE EAST-WEST

EXISTING TRANSMISSION POLE STR 67

NEW TRANSMISSION POLE STR 68 WITH GUY WIRES

BASELINE NORTH-SOUTH

HIBBARD, ELLAN
PARCEL ID: R06013-021-001-000
LAND USE: COMMERCIAL
ZONING: CB

EXISTING NEVADA AVENUE (50' PUBLIC R/W)

IMPERVIOUS AS SHOWN

EXISTING SITE IMPERVIOUS: 3,679 SF/0.08 AC. (1.8% PARCEL AREA)
PROPOSED SITE IMPERVIOUS 28,903 SF/0.21 AC. (14.6% PARCEL AREA)
NET IMPERVIOUS AREA INCREASE: 25,224 SF/0.13 AC. (12.8% PARCEL AREA)

WARNING:
OVERHEAD POWER IN VICINITY OF WORK AREA. CONTRACTOR SHALL USE CAUTION WHILE WORKING AROUND ENERGIZED POWER LINES.

Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

GRAPHIC SCALE
30 0 15 30 60
1 inch = 30 ft.

NORTH CAROLINA PROFESSIONAL SEAL 033840 ENGINEER CURTIS M. BLAZIER

McADAMS

FINAL DRAWING - NOT RELEASED FOR CONSTRUCTION

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License No.: C-0293
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DUKE ENERGY. PROGRESS

WILMINGTON SUNSET PARK 115 KV SUBSTATION
317 BORDEAUX AVENUE, WILMINGTON NC 27601
SITE PLAN

NO.	DATE	REVISION	BY	CK.	APP.
-	-	-	-	-	-
2	2017-11-07	REVISED PER CITY OF WILMINGTON COMMENTS	JB	CB	-
1	2017-09-15	REVISED PER CITY OF WILMINGTON COMMENTS	JB	CB	-

LOCATION: WILMINGTON, NC
SCALE: 1"=30' SCALE RATIO: 1:1 PRJ. NO. DKE-17010
DRAWN: JB CHK. ---- APP. _
DATE: 05-15-17 DWG. NO. 70818, SHEET 6 OF 18

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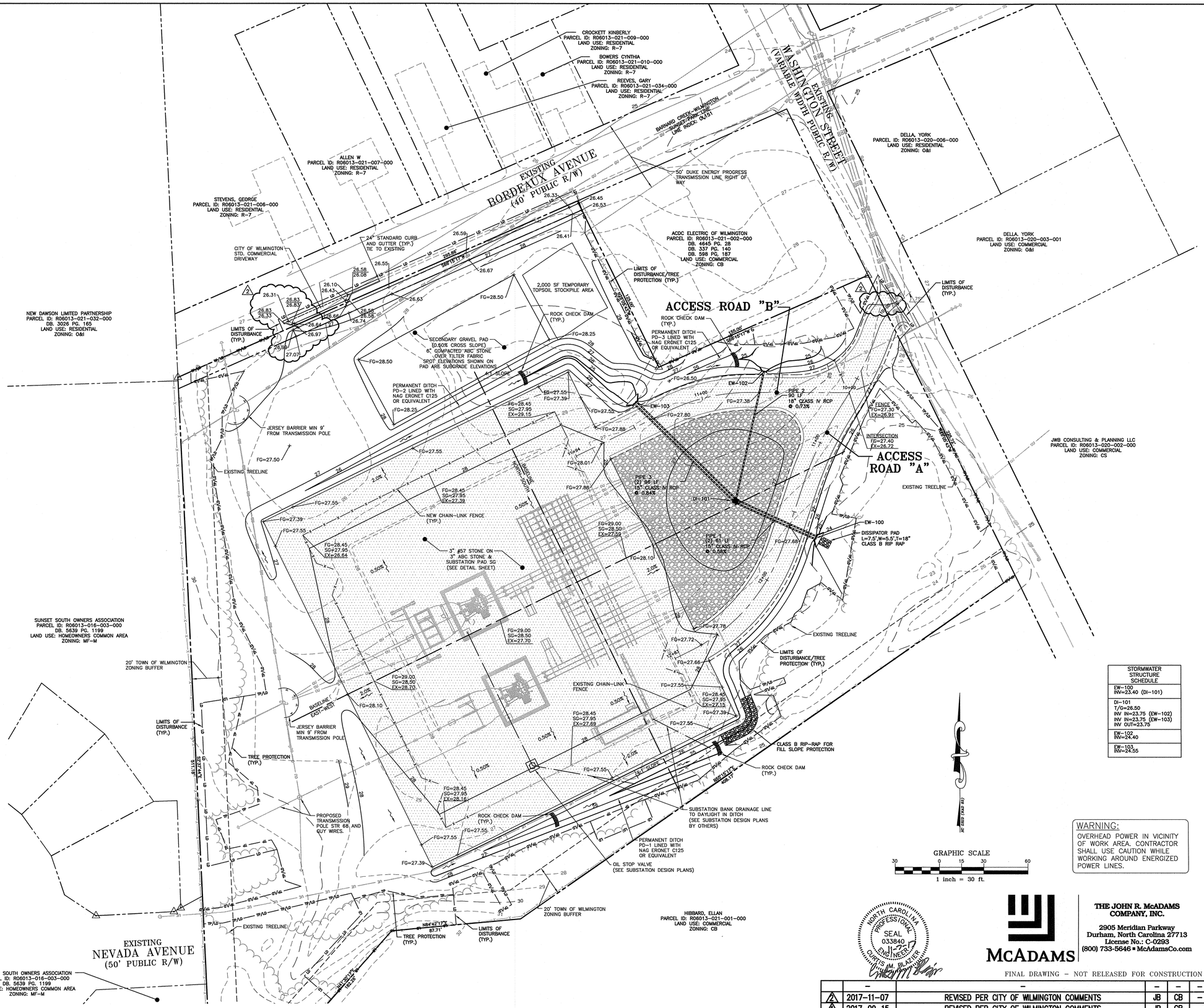

GRADING LEGEND

- FLARED END SECTION
- ENDWALL SECTION
- CATCH BASIN
- DROP INLET
- JUNCTION BOX
- DRAINAGE FLOW ARROW
- + FG=250.00 — FINISHED GRADE SPOT ELEVATIONS
- PAD SPOT ELEVATION
  - FG=30.00 — FINISHED GRADE ELEVATION
  - SG=29.50 — SUB GRADE ELEVATION
  - EX=28.16 — EXISTING GRADE ELEVATION
- CURB SPOT ELEVATION
  - 27.00 — TOP OF CURB ELEVATION
  - 26.50 — BOTTOM OF CURB ELEVATION
- STORM DRAINAGE
- TP/LD — TP/LD — LIMITS OF DISTURBANCE
- PROPOSED TREELINE
- 250 — MAJOR CONTOUR
- 252 — MINOR CONTOUR
- 250 — EXISTING MAJOR CONTOUR
- 252 — EXISTING MINOR CONTOUR
- ROAD SHOULDER
- STONE CHECK DAM

EARTHWORK VOLUMES:
CUT: 1,757 CU. YD.
FILL: 2,518 CU. YD.
NET (UNADJUSTED): 761 CU. YD. (FILL/IMPORT)
NET (ADJUSTED): 199 CU. YD. (CUT/EXPORT)
*** EARTHWORK VOLUMES ARE ESTIMATED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL VOLUMES AND QUANTITIES.

PERMANENT DITCH SUMMARY				
DITCH #	SECTION			TEMPORARY LINER
	SIDES	LONGITUDINAL (FT/FT)	DEPTH (FT)	
PD-1	4:1	0.011	1.25 MIN	C125
PD-2	4:1	0.006	1.50 MIN	C125
PD-3	4:1	0.029	1.00 MIN	C125

STORMWATER STRUCTURE SCHEDULE
EW-100 INV=23.40 (DI-101)
DI-101 T/G=26.50 INV IN=23.75 (EW-102) INV IN=23.75 (EW-103) INV OUT=23.75
EW-102 INV=24.40
EW-103 INV=24.55

WARNING:
OVERHEAD POWER IN VICINITY OF WORK AREA. CONTRACTOR SHALL USE CAUTION WHILE WORKING AROUND ENERGIZED POWER LINES.

Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

NORTH CAROLINA PROFESSIONAL SEAL 033840 ENGINEER CURTIS M. BLAZIER

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DUKE ENERGY. PROGRESS

WILMINGTON SUNSET PARK 115 KV SUBSTATION
317 BORDEAUX AVENUE, WILMINGTON NC 27601
GRADING AND STORM DRAINAGE PLAN

NO.	DATE	REVISION	BY	CK.	APP.
–	–	–	–	–	–
2	2017-11-07	REVISED PER CITY OF WILMINGTON COMMENTS	JB	CB	–
1	2017-09-15	REVISED PER CITY OF WILMINGTON COMMENTS	JB	CB	–

LOCATION: WILMINGTON, NC
SCALE: 1"=30' SCALE RATIO: 1:1 PRJ. NO. DKE-17010
DRAWN: JB CHK. --- APP. –
DATE: 05-15-17 DWG. NO. 70818, SHEET 7 OF 18

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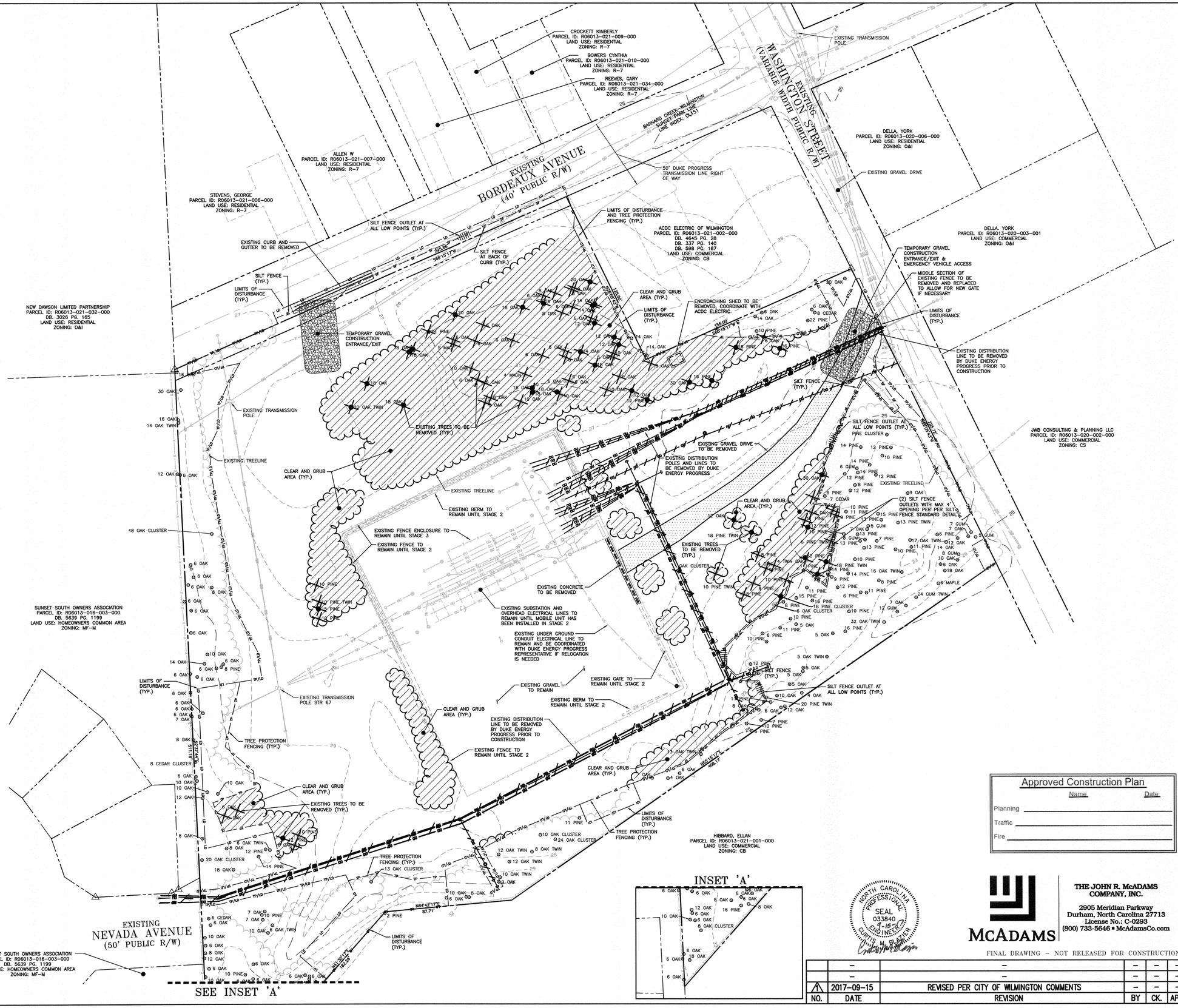

EROSION CONTROL LEGEND

- SILT FENCE OUTLET
- SF — SF — SF — SILT FENCE
- TP — TP — TP — TREE PROTECTION FENCE
- LD — LD — LIMITS OF DISTURBANCE
- WOODED AREA
- CONSTRUCTION ENTRANCE/EXIT
- TREE — TREE OR OTHER VEGETATION TO BE REMOVED
- TREE — TREE 12" AND OVER TO BE REMOVED
- UTIL — UTIL — UTILITY TO BE REMOVED
- AREA TO BE REMOVED (SIDEWALK, CURB AND GUTTER, STRUCTURES, ASPHALT, CONCRETE PAVING, ETC.)
- AREA TO CLEAR AND GRUB

NOTE: SEE PLAN FOR DETAILED DEMOLITION PROCEDURES, SEQUENCING AND SPECIFICATIONS.

CONSTRUCTION SEQUENCE – STAGE 1

1. CALL THE DESIGNATED NCDEQ EROSION CONTROL INSPECTOR AT (910) 796-7215 TO SCHEDULE AND HOLD A PRE-CONSTRUCTION MEETING.
2. DO NOT PROCEED WITH LAND DISTURBANCE ACTIVITIES WITHOUT AN APPROVED SEDIMENT AND EROSION CONTROL PLAN.
3. ONLY DISTURB AREAS NECESSARY TO INSTALL PERIMETER MEASURES. MAINTAIN DEVICES AS NEEDED IN ACCORDANCE WITH THE EROSION CONTROL NOTES ON SHEET 4.
4. INSTALL PERIMETER SILT FENCE, SILT FENCE OUTLETS, AND CONSTRUCTION ENTRANCES. OBTAIN GRADING PERMIT. DEMO AND REMOVE ANY FEATURES TO ALLOW FOR INSTALLATION OF CONSTRUCTION ENTRANCES (CURB, GUTTER, ETC.)
5. BEGIN DEMOLITION OF EXISTING SITE FEATURES AND BEGIN CLEARING AND GRUBBING OF SURROUNDING VEGETATION AS SHOWN ON THIS SHEET.
6. THE EXISTING SUBSTATION IS TO BE LEFT UNDISTURBED DURING THIS STAGE AND SHOULD NOT BE PLACED OFFLINE FOR ANY REASON.
7. CONTRACTOR IS TO ENSURE SUBSTATION IS FENCED AT ALL TIMES AFTER CONSTRUCTION ACTIVITIES ARE COMPLETED FOR THE DAY. IF PERMANENT FENCING HAS BEEN REMOVED THE CONTRACTOR IS TO UTILIZE TEMPORARY FENCING THAT IS ADEQUATE ENOUGH TO PREVENT PUBLIC ACCESS TO THE SUBSTATION PAD AT THE END OF EACH WORKDAY.
8. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN 14 DAYS OF INACTIVITY.
9. PRIOR TO COMMENCING STAGE 2, CALL THE DESIGNATED NCDEQ EROSION CONTROL INSPECTOR AT (910) 796-7215 FOR AN INSPECTION. IF APPROVED, COMMENCE WITH STAGE 2.

EROSION CONTROL MAINTENANCE PLAN

1. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CHECKED BY THE SITE CONTRACTOR FOR STABILITY AND OPERATION FOLLOWING EVERY RUNOFF-PRODUCING RAINFALL BUT IN NO CASE LESS THAN ONCE EVERY WEEK. ANY NEEDED REPAIRS SHALL BE MADE IMMEDIATELY TO MAINTAIN ALL MEASURES AS DESIGNED.
2. SEDIMENT FENCES SHALL BE INSPECTED AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. REPAIRS SHALL BE MADE IMMEDIATELY. SEDIMENT DEPOSITS SHALL BE REMOVED AS NEEDED TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAINFALL EVENT, AND TO REDUCE PRESSURE ON THE FENCE. FENCING MATERIALS AND SEDIMENT DEPOSITS SHALL BE REMOVED, AND THE AREA BROUGHT TO GRADE FOLLOWING STABILIZATION OF UPGRADIENT DISTURBED AREAS.

GRAPHIC SCALE
30 0 15 30 60
1 inch = 30 ft.

Approved Construction Plan

Name Date

Planning _____

Traffic _____

Fire _____

NORTH CAROLINA PROFESSIONAL SEAL 033840 ENGINEER CURTIS M. PLAY

McADAMS

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FINAL DRAWING – NOT RELEASED FOR CONSTRUCTION

NO.	DATE	REVISION	BY	CK.	APP.
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–	–	–	–	–	–
1	2017-09-15	REVISED PER CITY OF WILMINGTON COMMENTS	–	–	–

DUKE ENERGY. PROGRESS

WILMINGTON SUNSET PARK 115 KV SUBSTATION
317 BORDEAUX AVENUE, WILMINGTON NC 27601
SEDIMENT & EROSION CONTROL PLAN – STAGE 1

LOCATION: WILMINGTON, NC
SCALE: 1"=30' SCALE RATIO: 1:1 PRJ. NO. DKE-17010
DRAWN: JB CHK. --- APP. –
DATE: 05-15-17 DWG. NO. 70818, SHEET 8 OF 18

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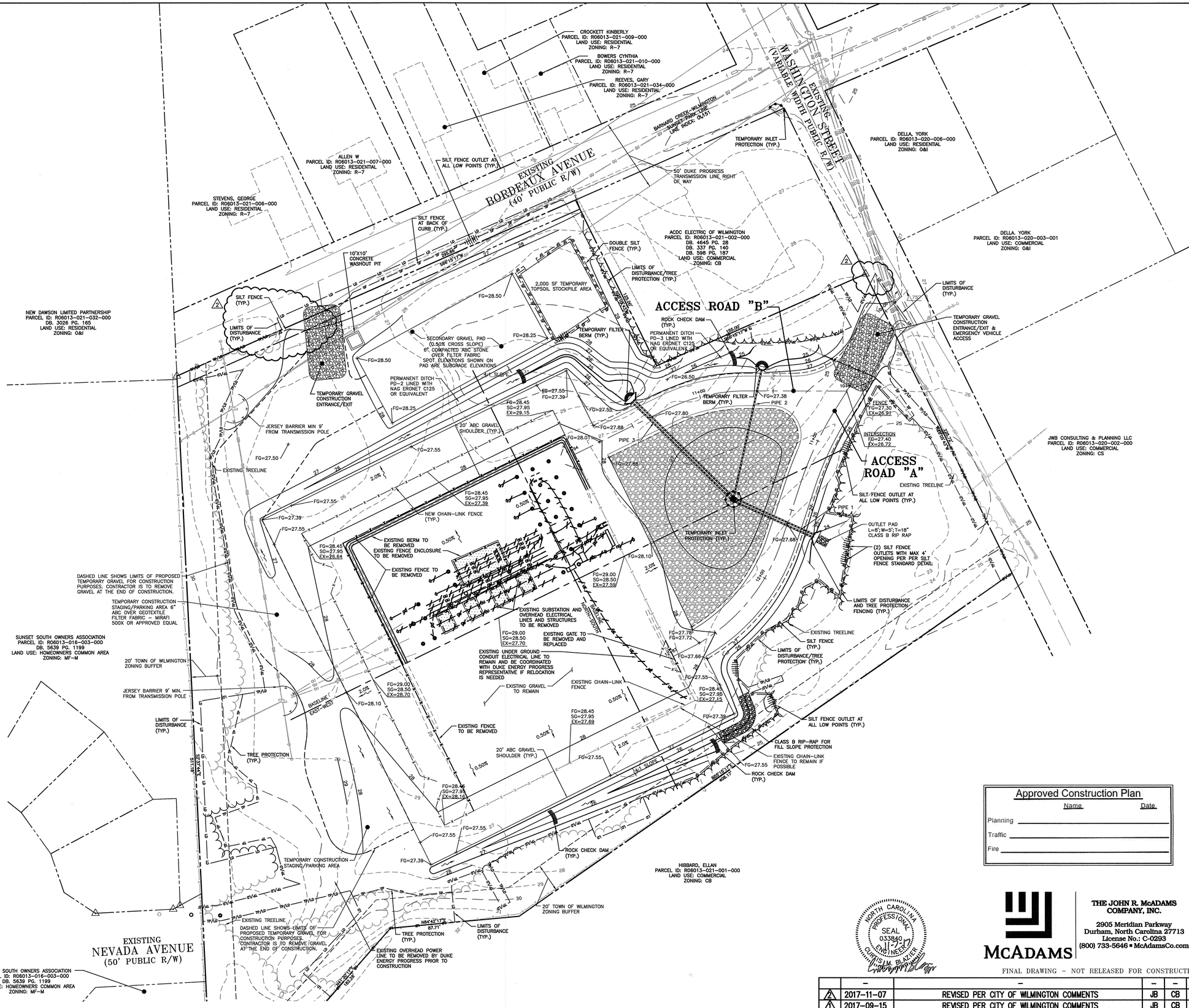


EROSION CONTROL LEGEND

- SILT FENCE OUTLET
- FILTER BERM
- ROCK CHECK DAM
- INLET PROTECTION
- SF — SF — SF — SILT FENCE
- TP — TP — TP — TREE PROTECTION FENCE
- LD — LD — LIMITS OF DISTURBANCE
- WOODED AREA
- CONSTRUCTION ENTRANCE/EXIT
- UTILITY TO BE REMOVED
- AREA TO BE REMOVED (SIDEWALK, CURB AND GUTTER, STRUCTURES, ASPHALT, CONCRETE PAVING, ETC.)

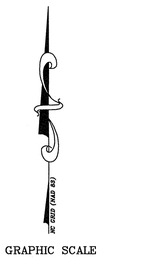
DISTURBED AREA = 3.57 AC.

CONSTRUCTION SEQUENCE – STAGE 2

1. PENDING STAGE 1 IS COMPLETE AND ALL APPROVAL AND INSPECTIONS HAVE TAKEN PLACE PROCEED WITH STAGE 2.
2. GENERAL SITE GRADING SHALL COMMENCE BEGINNING WITH THE CONSTRUCTION OF A SECONDARY GRAVEL SUBSTATION PAD AND ASSOCIATED ADJACENT ABC STONE DRIVE. TEMPORARY CONSTRUCTION STAGING/PARKING AREA TO BE CONSTRUCTED ADJOINING DRIVE.
3. ONCE THE SECONDARY GRAVEL SUBSTATION PAD, DRIVE, AND TEMPORARY STAGING PARKING AREAS ARE COMPLETE THE CONTRACTOR IS TO COORDINATE WITH DUKE ENERGY PROGRESS REGARDING THE INSTALLATION OF THE MOBILE SUBSTATION UNIT.
4. ONCE THE MOBILE SUBSTATION UNIT IS ONLINE AND A DUKE ENERGY PROGRESS REPRESENTATIVE CONFIRMS THE EXISTING SUBSTATION IS OFFLINE THE CONTRACTOR MAY PROCEED WITH REMOVING SITE FEATURES WITHIN THE EXISTING SUBSTATION PAD AREA.
5. THE REMAINING GENERAL SITE GRADING SHALL COMMENCE INCLUDING THE CONSTRUCTION OF ACCESS ROAD "A", ACCESS ROAD "B" AND THE PROPOSED SUBSTATION PAD. DURING GRADING AND CONSTRUCTION OF ACCESS ROAD "A" AND ACCESS ROAD "B" INSTALL THE STORM DRAINAGE PIPES 1, 2 AND 3 ALONG WITH THEIR ASSOCIATED STRUCTURES. THE CONTRACTOR IS TO USE INLET PROTECTION AS SHOWN ON THESE PLANS AND ON ANY EXPOSED PIPES BEFORE LEAVING AT THE END OF EACH WORK DAY.
4. CONTRACTOR TO UTILIZE THE TOPSOIL STOCKPILE AREA TO STORE TOPSOIL MATERIAL THROUGHOUT GRADING ACTIVITIES. TOPSOIL AREA TO BE WRAPPED IN TWO ROWS OF SILT FENCE.
5. CONTRACTOR IS TO ENSURE SUBSTATION IS FENCED AT ALL TIMES AFTER CONSTRUCTION ACTIVITIES ARE COMPLETED FOR THE DAY. IF PERMANENT FENCING HAS BEEN REMOVED THE CONTRACTOR IS TO UTILIZE TEMPORARY FENCING THAT IS ADEQUATE ENOUGH TO PREVENT PUBLIC ACCESS TO THE SUBSTATION PAD AT THE END OF EACH WORKDAY.
6. CONTRACTOR IS TO INSTALL ROCK CHECK DAMS IN PERMANENT DITCHES AS SHOWN ON THE PLAN.
7. ONCE THE EXISTING SUBSTATION BANK HAS BEEN REMOVED AND PAD GRADING IS COMPLETE NOTIFY THE DUKE ENERGY PROGRESS REPRESENTATIVE. THE SUBSTATION CONTRACTOR WILL BE RESPONSIBLE FOR INSTALLING THE LAST LIFTS OF ABC AND #57 STONE AS WELL AS THE INSTALLATION OF THE NEW SUBSTATIONS (SEE STAGE 3 FOR LAYOUT).
8. CONTRACTOR IS TO CONTINUE TO MONITOR, MAINTAIN, AND INSPECT ALL EROSION CONTROL DEVICES TO ENSURE NO VIOLATIONS WILL OCCUR.
9. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN 14 DAYS OF INACTIVITY.
10. PRIOR TO COMMENCING STAGE 3, CALL THE DESIGNATED NCDEQ EROSION CONTROL INSPECTOR AT (910) 796-7215 FOR AN INSPECTION. IF APPROVED, COMMENCE WITH STAGE 3.

EROSION CONTROL MAINTENANCE PLAN

1. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CHECKED BY THE SITE CONTRACTOR FOR STABILITY AND OPERATION FOLLOWING EVERY RUNOFF-PRODUCING RAINFALL BUT IN NO CASE LESS THAN ONCE EVERY WEEK. ANY NEEDED REPAIRS SHALL BE MADE IMMEDIATELY TO MAINTAIN ALL MEASURES AS DESIGNED.
2. SEDIMENT FENCES SHALL BE INSPECTED AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. REPAIRS SHALL BE MADE IMMEDIATELY. SEDIMENT DEPOSITS SHALL BE REMOVED AS NEEDED TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAINFALL EVENT, AND TO REDUCE PRESSURE ON THE FENCE. FENCING MATERIALS AND SEDIMENT DEPOSITS SHALL BE REMOVED, AND THE AREA BROUGHT TO GRADE FOLLOWING STABILIZATION OF UPGRADIENT DISTURBED AREAS.



GRAPHIC SCALE
30 0 15 30 60
1 inch = 30 ft.

Approved Construction Plan		
	Name	Date
Planning		
Traffic		
Fire		

NORTH CAROLINA PROFESSIONAL SEAL 033840 ENGINEER CURTIS M. BLAZIER 11-7-17

McADAMS

THE JOHN R. McADAMS COMPANY, INC.
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Durham, North Carolina 27713
License No.: C-0293
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FINAL DRAWING – NOT RELEASED FOR CONSTRUCTION

DUKE ENERGY. PROGRESS

WILMINGTON SUNSET PARK 115 KV SUBSTATION
317 BORDEAUX AVENUE, WILMINGTON NC 27601
SEDIMENT & EROSION CONTROL PLAN – STAGE 2

NO.	DATE	REVISION	BY	CK.	APP.
–	–	–	–	–	–
2	2017-11-07	REVISED PER CITY OF WILMINGTON COMMENTS	JB	CB	–
1	2017-09-15	REVISED PER CITY OF WILMINGTON COMMENTS	JB	CB	–

LOCATION: WILMINGTON, NC
SCALE: 1"=30' SCALE RATIO: 1:1 PRJ. NO. DKE-17010
DRAWN: JB CHK. ---- APP. _
DATE: 05-15-17 DWG. NO. 70818, SHEET 9 OF 18

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EROSION CONTROL LEGEND

- SILT FENCE OUTLET
- FILTER BERM
- ROCK CHECK DAM
- INLET PROTECTION
- SF — SF — SF — SILT FENCE
- TP — TP — TP — TREE PROTECTION FENCE
- LD — LD — LIMITS OF DISTURBANCE
- WOODED AREA
- CONSTRUCTION ENTRANCE/EXIT

DISTURBED AREA = 3.57 AC.

CONSTRUCTION SEQUENCE – STAGE 3

1. PENDING STAGE 2 IS COMPLETE AND ALL APPROVAL AND INSPECTIONS HAVE TAKEN PLACE PROCEED WITH STAGE 3.
2. CONTRACTOR IS TO ENSURE SUBSTATION IS FENCED AT ALL TIMES AFTER CONSTRUCTION ACTIVITIES ARE COMPLETED FOR THE DAY. IF PERMANENT FENCING HAS BEEN REMOVED THE CONTRACTOR IS TO UTILIZE TEMPORARY FENCING THAT IS ADEQUATE ENOUGH TO PREVENT PUBLIC ACCESS TO THE SUBSTATION PAD AT THE END OF EACH WORKDAY.
3. ONCE INSTALLATION OF PROPOSED SUBSTATION BANKS #1 & #2 AND ALL ASSOCIATED STRUCTURES ARE COMPLETE, CONTACT THE DUKE ENERGY PROGRESS REPRESENTATIVE FOR AN INSPECTION. ONCE APPROVED BY THE DUKE ENERGY PROGRESS REPRESENTATIVE THE NEW SUBSTATION BANKS SHOULD BE PUT ONLINE AND THE TEMPORARY MOBILE SUBSTATION SHOULD BE TAKEN OFFLINE.
4. ONCE THE TEMPORARY MOBILE SUBSTATION HAS BEEN TAKEN OFFLINE IT IS TO BE REMOVED FROM THE SITE AND THE TEMPORARY CONSTRUCTION/ PARKING AREA AND THE TEMPORARY CONSTRUCTION ENTRANCE SHOULD NOW BE REMOVED. THE SECONDARY PAD IS TO REMAIN. ONCE THE TEMPORARY GRAVEL AREAS ARE REMOVED THE CONTRACTOR IS TO RESEED THE AREA TO PROVIDE TEMPORARY AND PERMANENT STABILIZATION.
5. CONSTRUCT PERMANENT DRIVEWAY AT BORDEAUX AVENUE. CONSTRUCT CURB AND GUTTER AND CONCRETE SIDEWALK. IMMEDIATE CLEANUP OF ANY MATERIAL BEING PLACED ON THE ROADWAY IS REQUIRED. PLACE SILT FENCE ALONG THE BACK OF CURB AS SHOWN ON THESE PLANS TO PREVENT SEDIMENT LAYDEN RUNOFF FROM ENTERING THE ROADWAY. CONTRACTOR IS TO USE WADDLES OR OTHER EROSION CONTROL DEVICES IF SEDIMENT IN THE ROADWAY OR GUTTER FLOW LINES BECOMES AN ISSUE. CONTRACTOR IS TO CLEAN GUTTER LINES ALONG BORDEAUX AVENUE OF SEDIMENT AND DEBRIS AFTER EACH RAINFALL EVENT.
6. REMOVE WASHOUT PIT.
7. CONTRACTOR TO REMOVE TEMPORARY JERSEY BARRIERS.
8. CONTRACTOR IS TO CONTINUE TO MONITOR, MAINTAIN, AND INSPECT ALL EROSION CONTROL DEVICES TO ENSURE NO VIOLATIONS WILL OCCUR.
9. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN 14 DAYS OF INACTIVITY.
10. WHEN CONSTRUCTION IS COMPLETE AND ALL AREAS ARE STABILIZED COMPLETELY, CALL THE DESIGNATED NCDEQ EROSION CONTROL INSPECTOR AT (910) 796–7215 FOR AN INSPECTION.
11. IF SITE IS APPROVED BY THE NCDEQ INSPECTOR, REMOVE TEMPORARY CONSTRUCTION ENTRANCES AND CONSTRUCT PERMANENT ENTRANCES TO WASHINGTON ST. AND BORDEAUX ST. SEED OUT AND OR GRAVEL ANY REMAINING BARE AREAS SHOWN TO BE GRAVEL ON THESE PLANS.
12. REMOVE SILT FENCING, INLET PROTECTION, ETC.
13. UPON COMPLETION OF STAGE 3, CALL THE DESIGNATED NCDEQ EROSION CONTROL INSPECTOR AT (910) 796–7215 FOR FINAL INSPECTION.

EROSION CONTROL MAINTENANCE PLAN

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GRAPHIC SCALE
30 0 15 30 60
1 inch = 30 ft.

Approved Construction Plan		
	Name	Date
Planning		
Traffic		
Fire		

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NORTH CAROLINA PROFESSIONAL SEAL 033840 ENGINEER CURTIS M. BLAZIER 11-7-17

FINAL DRAWING – NOT RELEASED FOR CONSTRUCTION

DUKE ENERGY. PROGRESS

WILMINGTON SUNSET PARK 115 KV SUBSTATION
317 BORDEAUX AVENUE, WILMINGTON NC 27601
SEDIMENT & EROSION CONTROL PLAN – STAGE 3

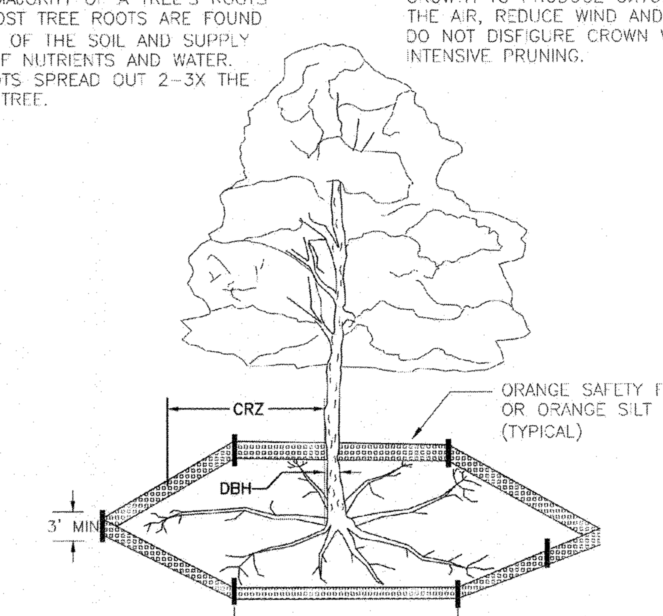
NO.	DATE	REVISION	BY	CK.	APP.
–	–	–	–	–	–
2	2017–11–07	REVISED PER CITY OF WILMINGTON COMMENTS	JB	CB	–
1	2017–09–15	REVISED PER CITY OF WILMINGTON COMMENTS	JB	CB	–

LOCATION: WILMINGTON, NC
SCALE: 1"=30' SCALE RATIO: 1:1 PRJ. NO. DKE–17010
DRAWN: JB CHK. ---- APP. –
DATE: 05–15–17 DWG. NO. 70818, SHEET 10 OF 18

X:\Projects\DKE–17010\Land\Construction Drawings\Current Drawings\DKE17010–EC3.dwg, 11/10/2017 1:00:07 PM, Blazier, Curt

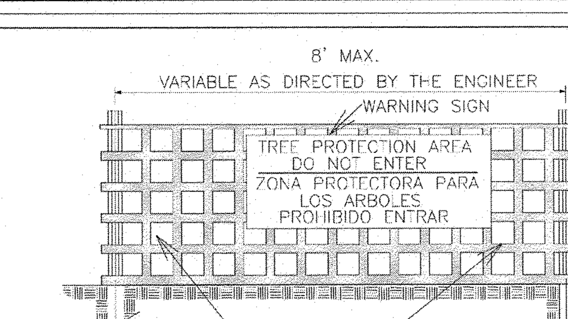
NOTE:
THE CRITICAL ROOT ZONE (CRZ) OF A TREE IS WHERE THE MAJORITY OF A TREE'S ROOTS LAY. 85% OF MOST TREE ROOTS ARE FOUND IN THE TOP 24" OF THE SOIL AND SUPPLY THE MAJORITY OF NUTRIENTS AND WATER. GENERALLY, ROOTS SPREAD OUT 2-3X THE HEIGHT OF THE TREE.

NOTE:
CROWN OF THE TREE IS NEEDED FOR LEAF GROWTH TO PRODUCE OXYGEN, FILTER THE AIR, REDUCE WIND AND SOFTEN NOISE. DO NOT DISFIGURE CROWN WITH INTENSIVE PRUNING.

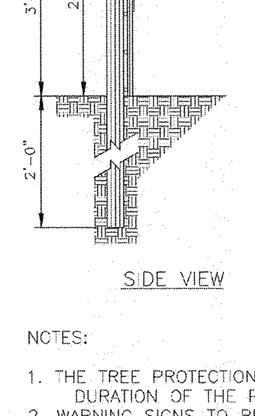


NOTES:
1. PROTECT CRITICAL ROOT ZONE (CRZ) OF TREES PRIOR TO CONSTRUCTION. CLEARLY MARK THE TREES AND ERECT A PROTECTIVE BARRIER AT THE CRZ. BARRIER SHALL BE MAINTAINED UNTIL CONSTRUCTION IS COMPLETE.
2. CRZ RADIUS IS 1 FT PER INCH OF TREE DIAMETER AT BREAST HEIGHT (DBH).
3. IF CONSTRUCTION OCCURS WITHIN THE CRZ, AT LEAST 12" OF MULCH AND/OR LOGGING MATTS SHALL BE PLACED WHERE MACHINERY MANEUVERS TO REDUCE SOIL COMPACTION IN THIS ZONE.
4. 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.
5. 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 MATERIALS OR EQUIPMENT SHALL BE STORED BENEATH TREES. DAMAGING THE BARK WITH LAWNMOWERS, CONSTRUCTION EQUIPMENT, OR ANYTHING ELSE IS PROHIBITED. CONTRACTOR SHALL REPAIR DAMAGE TO TREES.
6. FAILING TO INSTALL OR MAINTAIN PROTECTION MEASURES SHALL 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: JAN, 2015	STANDARD DETAIL	CITY OF WILMINGTON NORTH CAROLINA
DRAWN BY JSR	TREE PROTECTION DURING CONSTRUCTION	CITY OF WILMINGTON ENGINEERING PO BOX 1810 WILMINGTON, NC 28402 (910) 341-7807
CHECKED BY RDG, P.E.		
SCALE NOT TO SCALE	SHEET 1 of 2	SD 15-09



FRONT VIEW



SIDE VIEW

40"

TREE PROTECTION AREA
DO NOT ENTER
ZONA PROTECTORA PARA
LOS ARBOLES
PROHIBIDO ENTRAR

18"

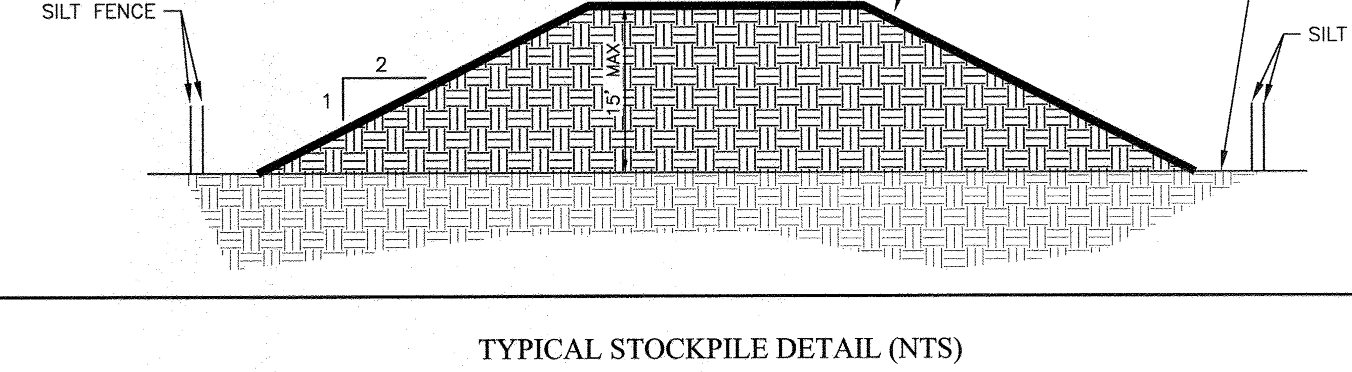
WARNING SIGN DETAIL

NOTES:
1. THE TREE PROTECTION FENCING SHALL NOT BE VIOLATED FOR THE ENTIRE DURATION OF THE PROJECT WITHOUT APPROVAL FROM URBAN FORESTRY STAFF.
2. WARNING SIGNS TO BE MADE OF DURABLE, WEATHERPROOF MATERIAL. LETTERS TO BE 3" HIGH, MINIMUM, CLEARLY LEGIBLE AND SPACED AS DETAILED.
3. 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.
4. ATTACH SIGNS SECURELY TO FENCE POSTS AND FABRIC. MAINTAIN TREE PROTECTION FENCE AND SIGNS THROUGHOUT DURATION OF PROJECT.
5. TREE PROTECTION FENCING AND SIGNAGE SHALL BE REMOVED AFTER CONSTRUCTION.
6. ADDITIONAL SIGNS MAY BE REQUIRED BY CITY OF WILMINGTON, BASED ON ACTUAL FIELD CONDITIONS.

DATE: JAN, 2015	STANDARD DETAIL	CITY OF WILMINGTON NORTH CAROLINA
DRAWN BY JSR	TREE PROTECTION DURING CONSTRUCTION	CITY OF WILMINGTON ENGINEERING PO BOX 1810 WILMINGTON, NC 28402 (910) 341-7807
CHECKED BY RDG, P.E.		
SCALE NOT TO SCALE	SHEET 2 of 2	SD 15-09

NOTES:

1. STOCKPILE HEIGHT TO NOT EXCEED 15'.



TYPICAL STOCKPILE DETAIL (NTS)

NPDES Stormwater Discharge Permit for Construction Activities (NCGO1) — NCDENR/Division of Water Quality

NEW STABILIZATION TIMEFRAMES
(Effective Aug. 3, 2011)

SITE AREA DESCRIPTION	STABILIZATION	TIMEFRAME EXCEPTIONS
Perimeter dikes, swales, ditches, slopes	7 days	None
High Quality Water (HQW) Zones	7 days	None
Slopes steeper than 3:1	7 days	If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed.
Slopes 3:1 or flatter	14 days	7 days for slopes greater than 50' in length.
All other areas with slopes flatter than 4:1	14 days	None, except for perimeters and HQW Zones.

TYPICAL SEEDING SCHEDULE FOR COASTAL AREAS

1. LIME, SEED, AND FERTILIZER SHALL BE APPLIED WITH NECESSARY EQUIPMENT TO GIVE UNIFORM DISTRIBUTION OF THESE MATERIALS. THE KINDS OF MATERIALS TO BE APPLIED PER ACRE:

TEMPORARY SEEDING

DATE	TYPE	PLANTING RATE	FERTILIZER 10-10-10 BLEND	LIMESTONE	STRAW MULCH
DEC. 1 - APR. 15	RYE (GRAIN) KOBE LESPEDEZA*	120 LBS/ACRE 60 LBS/ACRE	750 LBS/ACRE	2000 LBS/ACRE	4000 LBS/ACRE
APR. 15 - AUG. 15	GERMAN MILLET	40 LBS/ACRE	750 LBS/ACRE	2000 LBS/ACRE	4000 LBS/ACRE
AUG. 15 - DEC. 30	RYE (GRAIN)	120 LBS/ACRE	1000 LBS/ACRE	2000 LBS/ACRE	4000 LBS/ACRE

PERMANENT SEEDING

DATE	TYPE	PLANTING RATE	FERTILIZER** 10-10-10 BLEND	LIMESTONE**	STRAW MULCH
APR. 1 - JULY 15 FEB. 1 - MAR. 31	PENSACOLA-BAHIA GRASS	50 LBS/ACRE ONLY AS DIRECTED BY DEP	1000 LBS/ACRE	3500 LBS/ACRE	4000 LBS/ACRE
	CENTIPEDEGRASS	20 LBS/ACRE			
	COMMON BERMUDAGRASS	20 LBS/ACRE			
	SERICEA LESPEDEZA	50 LBS/ACRE (OUTSIDE EDGE OF GRADE & NON-TRAVELED AREAS)			
	TRIPLE A TALL FESCUE	80 LBS/ACRE			

*OMIT KOBE LESPEDEZA WHEN DURATION OF TEMPORARY COVER IS NOT TO EXTEND BEYOND JUNE.
**QUANTITY OF FERTILIZER AND LIME SHALL BE COMFIRMED BY SOILS TEST.

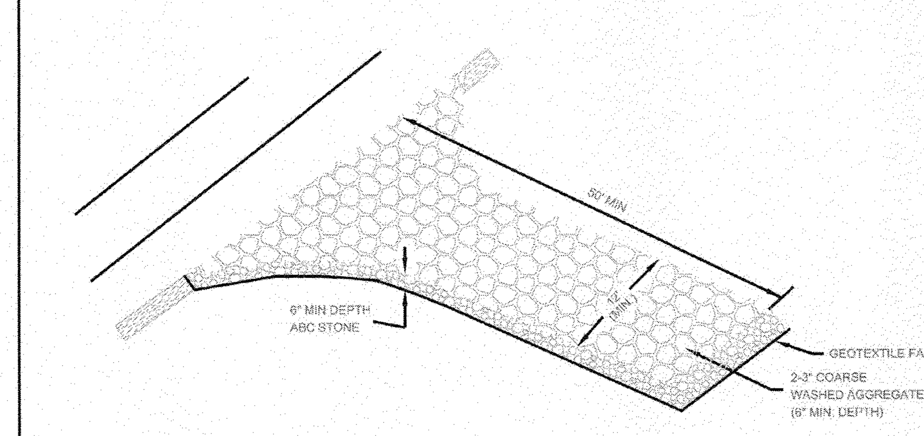
2. THE SURFACE SHALL BE MADE SMOOTH AND TRUE TO GRADE. THE AREAS SHALL BE PREPARED BY MEANS OF DISKING AND CROSS-DISKING, HARROWING, OR OTHER APPROVED METHOD OF PREPARATION SHALL BE CONTINUED UNTIL A FRIABLE AND THOROUGHLY PULVERIZED FOUR-INCH DEEP SEEDBED IS OBTAINED. CARE SHALL BE EXERCISED IN PREPARATION OF SEEDBEDS ON SLOPES TO KEEP LOOSE SOIL IN PLACE RATHER THAN PERMIT IT TO ACCUMULATE AT THE FOOT OF THE SLOPE. SEEDBED SHALL BE APPROVED PRIOR TO PLANTING THE SEED. PRIOR TO THE LAST TILLAGE OPERATION, LIME AND FERTILIZER SHALL BE BROADCAST WITH AN APPROVED SPREADER OVER THE SEEDBED IN ACCORDANCE WITH THE SCHEDULE.
3. AFTER THE SEEDBEDS HAVE BEEN PREPARED AND APPROVED, THE MIXTURE OF GRASS SEED, AS SPECIFIED, SHALL BE SOWED BY MEANS OF AN APPROVED SEEDER AT THE APPROPRIATE RATE, THE SEED WORKED INTO THE SOIL TO A DEPTH APPROXIMATELY 1/2 INCH AND THEN COMPACTED BY MEANS OF A CULTIPACKER ROLLER OR OTHER APPROVED EQUIPMENT.
4. GRAIN STRAW SHALL BE APPLIED OVER SEEDED AREAS AS A MULCH WITHIN 24 HOURS OF THE INITIAL SEEDING OPERATION. NO BARE GROUND SHALL BE VISIBLE WHEN RIDING BY A MULCHED AREA IF PROPER APPLICATIONS ARE ACHIEVED. THICK CLUMPS OF STRAW ARE NOT PERMISSIBLE AS A UNIFORM COVERAGE IS EXPECTED.
5. MULCHED AREA SHALL BE TACKED WITH ASPHALT (APPLICATION RATE OF 0.10 GALLON PER SQUARE YARD / 10 GALLONS PER 1000 SQ. FT / 436 GALLONS PER ACRE), ROVING, OR NETTING. ON STEEP SLOPES, NETTING IS PREFERRED.
6. DITCH TREATMENT SHALL BE USED IN AREAS WHERE STEEP GRADES COULD CAUSE DITCH EROSION. USE OF EXCELSIOR MATTING IS ACCEPTABLE. DITCH TREATMENT SHALL BE INSTALLED BEFORE MULCHING OPERATION.
7. VEGETATION SHALL BE ESTABLISHED ON ALL DISTURBED AREA WITHIN 7 OR 14 DAYS OF COMPLETION OF ANY PHASE OF GRADING ACTIVITIES OR WHERE CONSTRUCTION WILL TEMPORARILY CEASE FOR MORE THAN 7-14 CALENDAR DAYS. SEE STABILIZATION TIMEFRAME TABLE BELOW.
8. SOIL AMENDMENT SHALL INCLUDE A COMPOST OR TOPSOIL BLEND. APPROXIMATELY 3 INCHES OF AMENDMENT SHALL BE ADDED TO THE SITE. COMPOSE SHALL BE DISKED/TILLED INTO THE TOP 6 INCHES OF EXISTING SOIL.

MATERIALS:
1. THE LIMESTONE SHALL BE DOLOMITIC AGRICULTURAL GROUND LIMESTONE CONTAINING NOT LESS THAN 10% MAGNESIUM OXIDE. MIX INTO SOIL A MINIMUM OF 4 INCHES DEEP.
2. FERTILIZER SHALL BE COMMERCIAL PRODUCE OF 10-10-10 ANALYSIS. ALL FERTILIZER SHALL BE DELIVERED IN BAGS BEARING THE MANUFACTURER'SNAME, THE CHEMICAL ANALYSIS OF THE PRODUCT AND THE WEIGHT. IF NOT USED IMMEDIATELY AFTER DELIVERY, THE FERTILIZER SHALL BE STORED IN A MANNER WHICH WILL NOT ALLOW IT TO HARDEN OR DESTROY EFFECTIVENESS. MIX INTO SOIL A MINIMUM OF 4 INCHES DEEP.
3. GRASS SEED SHALL BE AN APPROVED MIXTURE BASED ON REGIONAL AND SEASONAL CONSIDERATIONS. PURITY OF SEED SHALL BE A MINIMUM OF 90% AND THE GERMINATION SHALL BE A MINIMUM OF 85%. THE SEED LABEL SHALL BE A "CERTIFIED SEED" LABEL.
4. MULCH SHALL CONSIST OF DRY, SMALL GRAIN STRAW, DRY HAY OR OTHER SUITABLE AND APPROVED MATERIAL.

DUKE ENERGY. PROGRESS
SEDIMENT AND EROSION CONTROL DETAILS
TRANSMISSION ENGINEERING
COASTAL AREAS SEEDING SCHEDULE

NO.	DATE	REVISION	BY	CK.	APP.
2	03-05-2017	FORMAT REVISIONS	LOE	BGT	BGT
1	09-08-2016	REVISIONS	LOE	BGT	BGT
0	05-06-2013	INITIAL RELEASE	SFP	BGT	SFP

LOCATION STANDARD DRAWING; SCALE 1" = 1'-0"; SCALE RATIO 1:1; DRAWN SFP; CHK. BGT; APP. SFP; DATE 05-06-13; DWG. NO. CT-65378 SH 1 OF 1



DETAIL NOTES:

CONSTRUCTION ENTRANCE DETAIL IS SHOWN FOR REFERENCE ONLY. CONSTRUCTION ENTRANCES SHALL BE USED WHERE HEAVY MATS ARE DEEMED INSUFFICIENT BY DUKE ENERGY PROGRESS AND ITS REPRESENTATIVES.

WASHING - IF CONDITIONS AT THE SITE ARE SUCH THAT MOST OF THE MUD AND SEDIMENT WILL NOT BE 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:
1. CLEAR THE ENTRANCE AND EXIT AREA OF ALL VEGETATION, ROOTS, AND OTHER OBJECTIONABLE MATERIAL PROPERLY TO GRADE IT.
2. ALWAYS USE GEOTEXTILE FABRIC TO IMPROVE STABILITY OF THE FOUNDATION IN LOCATIONS SUBJECT TO SEEPAGE OR HIGH WATER TABLE UNLESS OTHERWISE DIRECTED BY THE DESIGNATION REPRESENTATIVE OF DUKE ENERGY PROGRESS.
3. PLACE THE GRAVEL TO THE SPECIFIC GRADE AND DIMENSIONS SHOWN ON THE PLANS, AND SMOOTH IT.
4. PROVIDE DRAINAGE TO CARRY WATER TO A SEDIMENT TRAP OR OTHER SUITABLE OUTLET.

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 EVERY RAINFALL, INSPECT ANY STRUCTURE USED TO TRAP SEDIMENT AND CLEAN IT OUT AS NECESSARY. REMOVE ALL OBJECTIONABLE MATERIALS SPILLED, WASHED, OR TRACKED ONTO PUBLIC ROADWAYS.

TYPICAL 50' CONSTRUCTION ENTRANCE (TEMPORARY)
NTS

NCDENR-LQS NOTES:

NCDENR-LQS CONSTRUCTION ENTRANCE REQUIRES:
- 2"-3" WASHED STONE
- 50' MIN. LENGTH
- 6" MIN. DEPTH

DUKE ENERGY PROGRESS REQUIRES, WHERE NECESSARY, AN ADDITIONAL 50' OF ABC STONE TO ALLOW CONSTRUCTION EQUIPMENT TO GAIN TRACTION BEFORE ENTERING PUBLIC ROADS (SEE 100' CONSTRUCTION ENTRANCE).

SCDHEC NOTES:

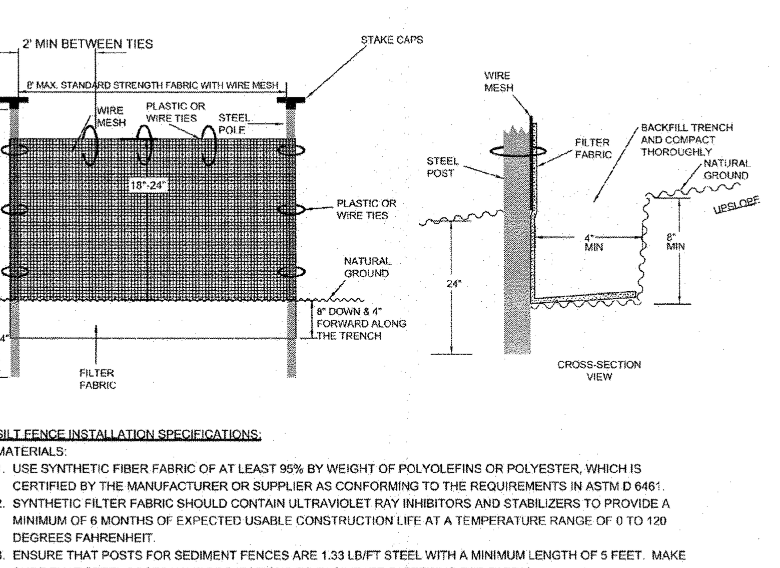
SEE 100' CONSTRUCTION ENTRANCE DETAIL FOR SC NOTES.

**SURGE STONE AND CRUSHED CONCRETE ARE NOT ACCEPTABLE FOR 2"-3" WASHED STONE

DUKE ENERGY. PROGRESS
SEDIMENT AND EROSION CONTROL DETAILS
TRANSMISSION ENGINEERING
50' CONSTRUCTION ENTRANCE

NO.	DATE	REVISION	BY	CK.	APP.
1	12-21-2015	REVISIONS	LOE	BGT	BGT
0	05-06-2013	INITIAL RELEASE	SFP	BGT	SFP

LOCATION STANDARD DRAWING; SCALE 1" = 1'-0"; SCALE RATIO 1:1; DRAWN SFP; CHK. BGT; APP. SFP; DATE 05-06-13; DWG. NO. CT-65381 SH 1 of 1



SILT FENCE INSTALLATION SPECIFICATIONS:

MATERIALS:
1. USE SYNTHETIC FIBER FABRIC OF AT LEAST 95% BY WEIGHT OF POLYOLEFINS OR POLYESTER, WHICH IS CERTIFIED BY THE MANUFACTURER OR SUPPLIER AS CONFORMING TO THE REQUIREMENTS IN ASTM D 6461.
2. SYNTHETIC FILTER FABRIC SHOULD CONTAIN ULTRAVIOLET RAY INHIBITORS AND STABILIZERS TO PROVIDE A MINIMUM OF 6 MONTHS OF EXPECTED USABLE CONSTRUCTION LIFE AT A TEMPERATURE RANGE OF 0 TO 120 DEGREES FAHRENHEIT.
3. ENSURE THAT POSTS FOR SEDIMENT FENCES ARE 1.33 LB/FT STEEL WITH A MINIMUM LENGTH OF 5 FEET. MAKE SURE THAT STEEL POSTS HAVE PROJECTIONS TO FACILITATE FASTENING THE FABRIC.
4. FOR REINFORCEMENT OF STANDARD STRENGTH FILTER FABRIC, USE WIRE MESH WITH A MINIMUM 14 GUAGE AND A MAXIMUM MESH SPACING OF 6 INCHES.
5. WIRE OR PLASTIC ZIP TIES SHOULD HAVE A MINIMUM 50 POUND TENSILE STRENGTH.

CONSTRUCTION:
1. DRIVE STEEL POST 24" INTO THE GROUND AND EXCAVATE A 8"x4" TRENCH UPHILL ALONG THE LINE OF THE POSTS. **(MAX. 8' BETWEEN POSTS)**
2. SUPPORT FILTER FABRIC WITH WIRE MESH FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS. EXTEND THE WIRE MESH SUPPORT TO THE BOTTOM OF THE 8" TRENCH.
3. ATTACH THE FILTER FABRIC TO THE WIRE MESH ON THE UPSLOPE SIDE OF THE FENCE POST AND EXTEND THE BOTTOM OF THE FABRIC 8" INTO THE TRENCH AND 4" ACROSS THE BOTTOM OF THE TRENCH.
4. BACKFILL THE TRENCH AND COMPACT THE SOIL FIRMLY TO ANCHOR THE BOTTOM OF THE SILT FENCE SO THAT RUNOFF IS FORCED TO GO THROUGH THE FENCE AND CANNOT GO UNDER IT.
5. ENSURE THE HEIGHT OF THE SEDIMENT FENCE DOES NOT EXCEED 36" ABOVE THE GROUND SURFACE. (HIGHER FENCES MAY IMPOUND VOLUMES OF WATER SUFFICIENT TO CAUSE FAILURE OF THE STRUCTURE).
6. CONSTRUCT THE FILTER FABRIC FROM A CONTINUOUS ROLL, CUT TO LENTH OF THE BARRIER TO AVOID JOINTS. WHEN JOINTS ARE NECESARY, SECURELY FASTEN THE FILTER FABRIC ONLY AT A SUPPORT POST WITH A MINIMUM OF 4 FEET OF OVERLAP TO THE NEXT POST.
7. DO NOT ATTACH FILTER FABRIC TO TREES.
8. DO NOT INSTALL SILT FENCE ACROSS STREAMS, DITCHES, WATERWAYS, OR OTHER AREAS OF CONCENTRATED FLOW.

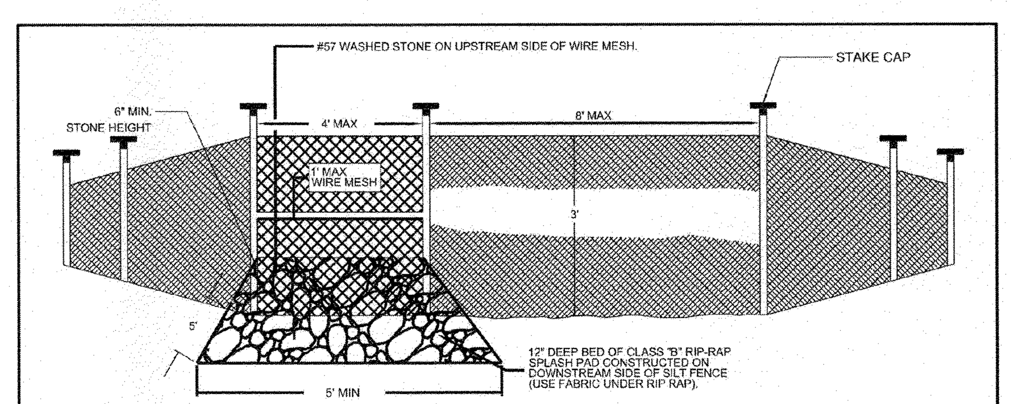
MAINTENANCE:
1. INSPECT SILT FENCE EVERY SEVEN DAYS AND WITHIN 24 HOURS AFTER EVERY RAINFALL EVENT 1/2 INCH OR GREATER.
2. SHOULD THE FABRIC OF A SEDIMENT FENCE COLLAPSE, TEAR, DECOMPOSE OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY.
3. REMOVE ACCUMULATED SEDIMENT AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE FENCE. TAKE CARE TO AVOID UNDERMINING THE FENCE DURING CLEANOUT. REMOVE ALL FENCING MATERIALS AND UNSTABLE SEDIMENT DEPOSITS AND BRING THE AREA TO GRADE AND STABILIZE IT AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

SILT FENCE DETAIL (TEMPORARY)
NTS

DUKE ENERGY. PROGRESS
SEDIMENT AND EROSION CONTROL DETAILS
TRANSMISSION ENGINEERING
SILT FENCE DETAIL

NO.	DATE	REVISION	BY	CK.	APP.
2	2-22-2016	REVISIONS	LOE	BGT	BGT
1	12-21-2015	REVISIONS	LOE	BGT	BGT
0	05-06-2013	INITIAL RELEASE	SFP	BGT	SFP

LOCATION STANDARD DRAWING; SCALE 1" = 1'-0"; SCALE RATIO 1:1; DRAWN SFP; CHK. BGT; APP. SFP; DATE 05-06-13; DWG. NO. CT-65380 SH 1of1



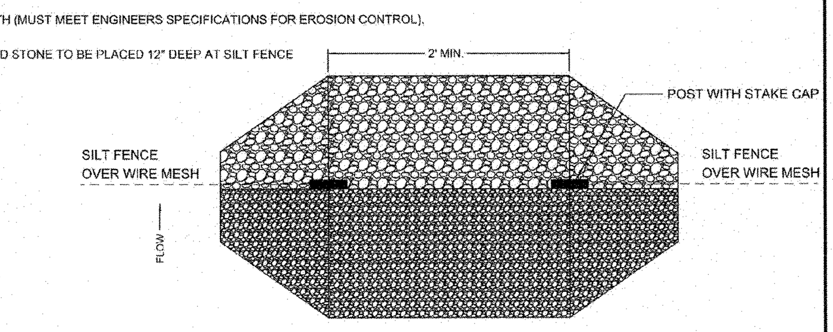
NOTES:

STRUCTURAL STONE SHALL BE CLASS "B" STONE FOR EROSION CONTROL PURPOSES.

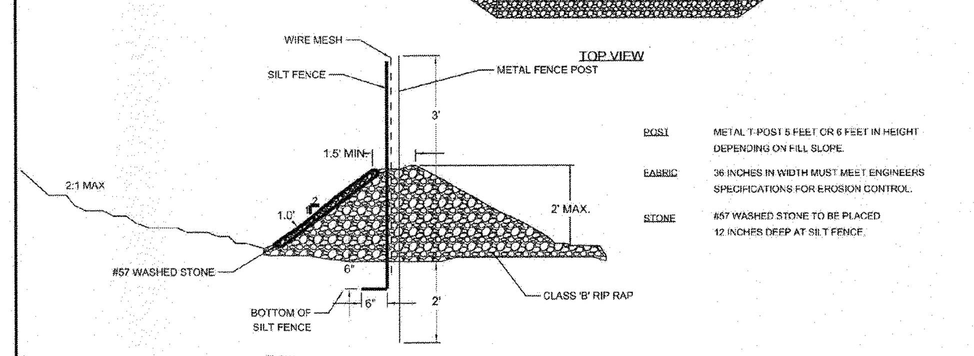
POST: METAL T-POSTS 5' OR 6' IN HEIGHT DEPENDING ON THE FILL SLOPE.

FABRIC: 36" IN WIDTH (MUST MEET ENGINEERS SPECIFICATIONS FOR EROSION CONTROL).

STONE: #57 WASHED STONE TO BE PLACED 12" DEEP AT SILT FENCE



TOP VIEW



CROSS SECTION

POST	METAL T-POST 5 FEET OR 6 FEET IN HEIGHT DEPENDING ON FILL SLOPE.
FABRIC	36 INCHES IN WIDTH MUST MEET ENGINEERS SPECIFICATIONS FOR EROSION CONTROL.
STONE	#57 WASHED STONE TO BE PLACED 12 INCHES DEEP AT SILT FENCE.

SILT FENCE OUTLET DETAIL (TEMPORARY)
NTS

MAINTENANCE:
1. INSPECT SILT FENCE OUTLET EVERY SEVEN DAYS AND WITHIN 24 HOURS AFTER EVERY RAINFALL EVENT 1/2 INCH OR GREATER.
2. REMOVE ACCUMULATED SEDIMENT AND REPLACE STONE AS NECESSARY.

DUKE ENERGY. PROGRESS
SEDIMENT AND EROSION CONTROL DETAILS
TRANSMISSION ENGINEERING
SILT FENCE OUTLET DETAIL

NO.	DATE	REVISION	BY	CK.	APP.
2	2-22-2016	REVISIONS	LOE	BGT	BGT
1	12-21-2015	REVISIONS	LOE	BGT	BGT
0	05-06-2013	INITIAL RELEASE	SFP	BGT	SFP

LOCATION STANDARD DRAWING; SCALE 1" = 1'-0"; SCALE RATIO 1:1; DRAWN SFP; CHK. BGT; APP. SFP; DATE 05-06-13; DWG. NO. CT-65393 SH 1 OF 1

Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 033840 CURTIS M. BLAZIER 9-15-17

McADAMS

THE JOHN R. McADAMS COMPANY, INC.
2905 Meridian Parkway
Durham, North Carolina 27713
License No.: C-0293
(800) 733-5646 ▪ McAdamsCo.com

FINAL DRAWING - NOT RELEASED FOR CONSTRUCTION

NO.	DATE	REVISION	BY	CK.	APP.
	-	-	-	-	-
	-	-	-	-	-
1	2017-09-15	REVISED PER CITY OF WILMINGTON COMMENTS	-	-	-

DUKE ENERGY. PROGRESS

WILMINGTON SUNSET PARK 115 KV SUBSTATION
317 BORDEAUX AVENUE, WILMINGTON NC 27601
SEDIMENT & EROSION CONTROL DETAILS

LOCATION: WILMINGTON, NC
SCALE: NTS SCALE RATIO: 1:1 PRJ. NO. DKE-17010
DRAWN: JB CHK. --- APP. _
DATE: 05-15-17 DWG. NO. 70818, SHEET 11 OF 18

X:\Projects\DKE\DKE-17010\Land\Construction Drawings\Current Drawings\DKE17010-EC4.dwg, 9/15/2017 2:56:51 PM, Bell, Josh

![ROLLMAX Rolled Erosion Control]

Specification Sheet – EroNet™ C125® Erosion Control Blanket

DESCRIPTION

The long-term double net erosion control blanket shall be a machine-produced mat of 100% coconut fiber with a functional longevity of up to 36 months. (NOTE: functional longevity may vary depending upon climatic conditions, soil, geographical location, and elevation). The blanket shall be of consistent thickness with the coconut evenly distributed over the entire area of the mat. The blanket shall be covered on the top and bottom sides with a heavyweight photodegradable polypropylene netting having ultraviolet additives to delay breakdown and an approximate 0.63 x 0.63 in (1.59 x 1.59 cm) mesh. The blanket shall be sewn together on 1.50 inch (3.81 cm) centers with degradable thread. The blanket shall be manufactured with a colored thread stitched along both outer edges (approximately 2-5 inches [5-12.5 cm] from the edge) as an overlap guide for adjacent mats.

The C125 shall meet Type 4 specification requirements established by the Erosion Control Technology Council (ECTC) and Federal Highway Administration's (FHWA) FP-03 Section 713.17

Material Content		
Matrix	100% Coconut Fiber	0.5 lbs/sq yd (0.27 kg/sm)
Netting	Heavyweight photodegradable with UV additives	3 lbs/1000 sq ft (1.47 g/sm)
Thread	Black polypropylene	

Standard Roll Sizes		
Width	6.67 (2.03 m)	8 ft (2.44 m)
Length	108 ft (32.92 m)	112 ft (35.14 m)
Weight ± 10%	44 lbs (19.95 kg)	56.25 (25.5 kg)
Area	80 sq yd (66.9 sm)	100 sq yd (83.61 sm)

Index Property	Test Method	Typical
Thickness	ASTM D6525	0.22 in. (5.59 mm)
Resiliency	ECTC Guidelines	82%
Water Absorbency	ASTM D1117	167%
Mass/Unit Area	ASTM 6475	7.73 oz/sy (262.8 g/sm)
Swell	ECTC Guidelines	13%
Smolder Resistance	ECTC Guidelines	Yes
Stiffness	ASTM D1388	0.75 oz-in
Light Penetration	ASTM D6567	16.6%
Tensile Strength - MD	ASTM D6818	472.8 lbs/ft (7.01 kN/m)
Elongation - MD	ASTM D6818	25.6%
Tensile Strength - TD	ASTM D6818	225.6 lbs/ft (3.35 kN/m)
Elongation - TD	ASTM D6818	33.9%
Biomass Improvement	ASTM 7322	257%

Design Permissible Shear Stress	
Unvegetated Shear Stress	2.25 psf (108 Pa)
Unvegetated Velocity	10.0 fps (3.05 m/s)

Slope Design Data: C Factors			
	Slope Gradients (S)		
Slope Length (L)	≤ 3:1	3:1 – 2:1	≥ 2:1
≤ 20 ft (6 m)	0.001	0.029	0.082
20-50 ft	0.036	0.060	0.096
≥ 50 ft (15.2 m)	0.070	0.090	0.110

Roughness Coefficients – Unveg.	
Flow Depth	Manning's n
≤ 0.50 ft (0.15 m)	0.022
0.50 – 2.0 ft	0.022-0.014
≥ 2.0 ft (0.60 m)	0.014

NORTH AMERICAN GREEN

North American Green
5401 St. Wendel-Cynthiana Road
Poseyville, Indiana 47633

nagreen.com
800-772-2040

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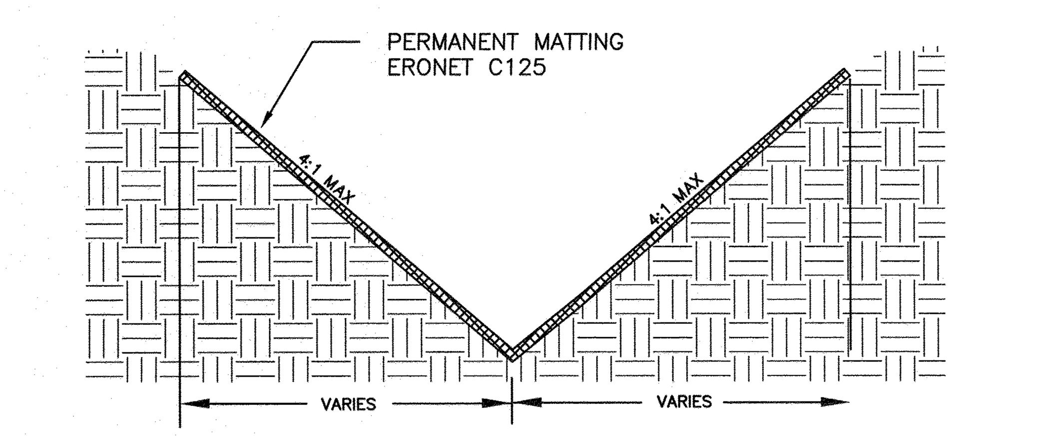

NOTES:
1. SEE TYPICAL MATTING INSTALLATION DETAIL.
2. SEE DETAILED GRADING PLAN FOR PERMANENT DRAINAGE DITCH SIDE AND LONGITUDINAL SLOPES.
3. PERMANENT SEEDING TO BE IN ACCORDANCE WITH SEEDING SCHEDULE AS SHOWN ON SHEET 10.

TYPICAL DRAINAGE DITCH DETAIL

DEMLR Monitoring Form Rev. 08012013 Page 1 of 2

INSPECTION AND MONITORING RECORDS FOR ACTIVITIES UNDER STORMWATER GENERAL PERMIT NCG010000 AND SELF-INSPECTION RECORDS FOR LAND DISTURBING ACTIVITIES PER G.S. 113A-54.1

Project Name		Land Quality or Local Program Project #	
Financially Responsible Party, (FRP) / Permittee		County	
INSPECTOR	Name	Employer	
Inspector Type (Mark) X	Address		
FRP/Permittee			
Agent/Designee	Phone Number	Email Address	

PART 1A: Rainfall Data

Day / Date	Rain Amt (inches) Daily Rainfall Required, except for Holidays or Weekends. If no rain, indicate with a "zero"
M	
T	
W	
Th	
F	
Sat (Optional)	
Sun (Optional)	

PART 1B: Current Phase of Project

Phase of Grading check the applicable box(es)	X
Installation of perimeter erosion and sediment control measures	
Clearing and grubbing of existing ground cover	
Completion of any phase of grading of slopes or fills	
Installation of storm drainage facilities	
Completion of all land-disturbing activity, construction or development	
Permanent ground cover sufficient to restrain erosion has been established	

PART 1C: Signature of Inspector

By this signature, I certify in accordance with the NCG010000 permit & G.S. 113A-54.1 that this report is accurate and complete to the best of my knowledge.

Financially Responsible Party / Permitee or Agent / Designee	Date

GROUND STABILIZATION TIMEFRAMES		
Site Area Description	Stabilization	Timeframe Exceptions
Perimeter dikes, swales and slopes	7 Days	None
High Quality Water (HQW) Zones	7 Days	None
Slopes Steeper than 3:1	7 Days	If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed
Slopes 3:1 or flatter	14 Days	7 days for slopes greater than 50' in length
All other areas with slopes flatter than 4:1	14 Days	None, except for perimeters and HQW Zones

*For an editable copy of this form as a Word doc and other information, see http://portal.ncdenr.org/web/lr/erosion

DEMLR Monitoring Form Rev. 08012013 Page 2 of 2

PART 2A: EROSION AND SEDIMENTATION CONTROL MEASURES: Measures must be inspected at least ONCE PER 7 CALENDAR DAYS AND WITHIN 24 HOURS OF A RAINFALL EVENT GREATER THAN 0.5 INCH PER 24 HOUR PERIOD.

Erosion and Sedimentation Control Measures Inspected						Inspection Date	Describe Actions Needed Corrective actions should be performed as soon as possible and before the next storm event	Date Corrected
Measure ID or Location and Description	Operating Properly? (Y/N)	Any Repair or Maintenance Needed? (Y/N)	New Measures Installed * Proposed Dimensions (ft.)	Actual Dimensions (ft.)	Significant Deviation from Plan? (Y/N)			

*New erosion and sedimentation control measures installed since the last inspection should be documented here or by initialing and dating each measure or practice shown on a copy of the approved erosion and sedimentation control plan. List Dimensions of Measures such as Sediment Basins and Riprap Aprons

PART 2B: STORMWATER DISCHARGE OUTFALLS (SDOs): SDOs must be inspected at least ONCE PER 7 CALENDAR DAYS AND WITHIN 24 HOURS OF A RAINFALL EVENT GREATER THAN 0.5 INCH PER 24 HOUR PERIOD.

Stormwater Discharge Outfall ID or Location	Any Visible Sedimentation in Streams, Wetlands or Outside Site Limits? (Y/N)	Any Increase in Stream Turbidity from Discharge? (Y/N)	Any Visible Erosion below SDO? (Y/N)	Any visible oil sheen, floating or suspended solids or discoloration? (Y/N)	Inspection Date	Report Visible Sedimentation to streams or wetlands to Land Quality within 24 Hours http://portal.ncdenr.org/web/lr/division-contacts Describe Actions Needed Corrective actions should be performed as soon as possible and before the next storm event	Date Corrected

(Stormwater Discharge Outfalls Inspected)

PART 2C: GROUND STABILIZATION Must be recorded after each Phase of Grading

Areas Where Land Disturbance Has Been Completed or Temporarily Stopped	Time Limit for Ground Cover 7 days or 14 days	Is Ground Cover Sufficient to Restrain Erosion? (Y/N)	Inspection Date	Describe Actions Needed	Date Corrected

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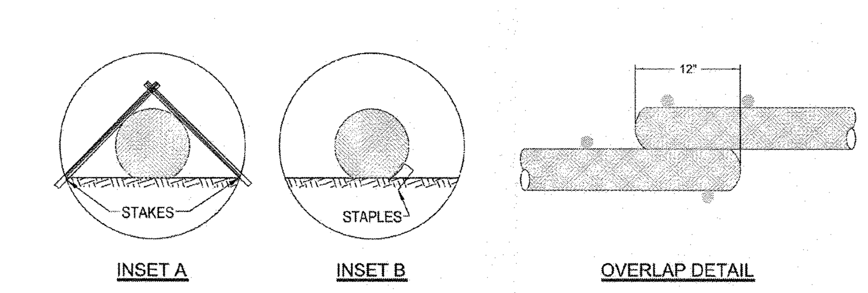
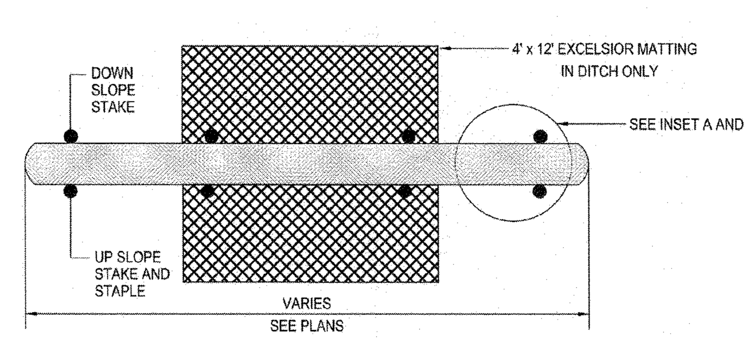




WATTLE DETAIL (TEMPORARY)
NTS

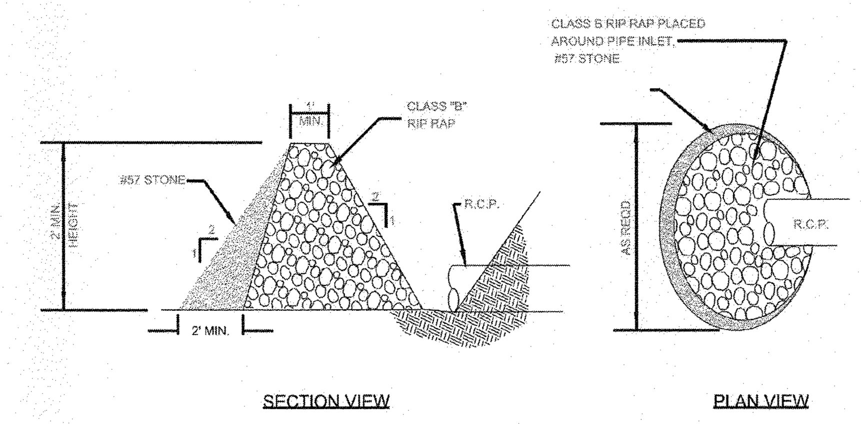
NOTES:
1. USE MINIMUM 12" DIAMETER EXCELSIOR WATTLE (LARGER WATTLES MAY BE REQUIRED TO KEEP SEDIMENT ON SITE).
2. USE 2' WOODEN STAKES WITH A 2" NOMINAL CROSS SECTION.
3. INSTALL A MINIMUM OF 2 UP SLOPE STAKES AND 4 DOWN SLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO EXISTING GRADE.
4. PROVIDE STAPLES OF 0.125" DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 6" IN LENGTH.
5. INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON THE UP SLOPE SIDE OF THE WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

MAINTENANCE
WATTLES SHOULD BE CHECKED AND CLEARED OF ACCUMULATED DEBRIS AND SEDIMENT. REPLACE AS REQUIRED.

DUKE ENERGY. PROGRESS
SEDIMENT AND EROSION CONTROL DETAILS
TRANSMISSION ENGINEERING
WATTLE DETAIL

NO.	DATE	REVISION	BY	CK.	APP.
1	12-21-2015	REVISIONS	LOE	BGT	BGT
0	05-06-2013	INITIAL RELEASE	SFP	BGT	SFP

LOCATION STANDARD DRAWING; SCALE 1" = 1'-0"; SCALE RATIO 1:1; DRAWN SFP; CHK. BGT; APP. SFP; DATE 05-06-13; DWG. NO. CT-65376 SH 1 OF 1



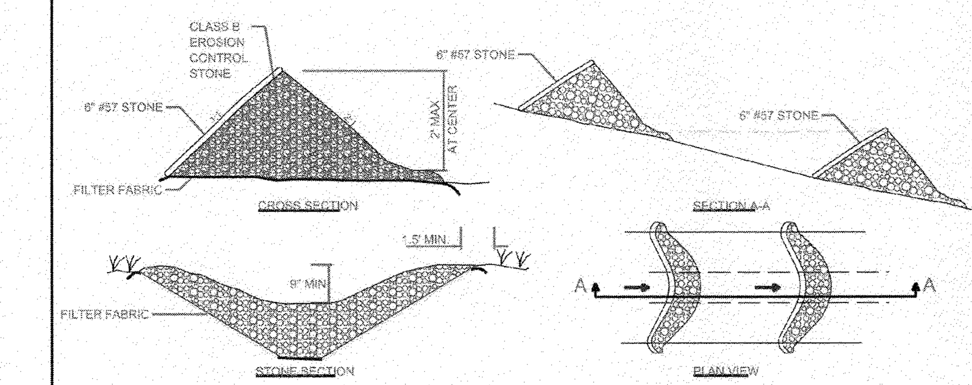
MAINTENANCE:
1. INSPECT SILT FENCE OUTLET EVERY SEVEN DAYS AND WITHIN 24 HOURS AFTER EVERY RAINFALL EVENT 1/2 INCH OR GREATER.
2. REMOVE ACCUMULATED SEDIMENT AND REPLACE STONE AS NECESSARY.

PIPE INLET PROTECTION DETAIL (TEMPORARY)
NTS

DUKE ENERGY. PROGRESS
SEDIMENT AND EROSION CONTROL DETAILS
TRANSMISSION ENGINEERING
PIPE INLET PROTECTION DETAIL

NO.	DATE	REVISION	BY	CK.	APP.
1	12-21-2015	REVISIONS	LOE	BGT	BGT
0	05-06-2013	INITIAL RELEASE	SFP	BGT	SFP

LOCATION STANDARD DRAWING; SCALE 1" = 1'-0"; SCALE RATIO 1:1; DRAWN SFP; CHK. BGT; APP. SFP; DATE 05-06-13; DWG. NO. CT-65391 SH 1 OF 1



CONSTRUCTION SPECIFICATIONS
1. PLACE STONE TO THE LINES AND DIMENSIONS SHOWN IN THE PLAN ON A FILTER FABRIC FOUNDATION.
2. KEEP THE CENTER STONE SECTION AT LEAST 9 INCHES BELOW NATURAL GROUND LEVEL WHERE THE DAM ABUTS THE CHANNEL BANKS.
3. EXTEND STONE AT LEAST 1.5 FEET BEYOND THE DITCH BANKS TO KEEP OVERFLOW WATER FROM UNDERCUTTING THE DAM AS IT RE-ENTERS THE CHANNEL.
4. SET SPACING BETWEEN DAMS TO ASSURE THAT THE ELEVATION AT THE TOP OF THE LOWER DAM IS THE SAME ELEVATION AS THE TOE ELEVATION OF THE UPPER DAM.
5. PROTECT THE CHANNEL DOWNSTREAM FROM THE LOWEST CHECK DAM, CONSIDER THAT WATER WILL FLOW OVER AND AROUND THE DAM.
6. MAKE SURE THAT THE CHANNEL REACH ABOVE THE MOST UPSTREAM DAM IS STABLE.
7. ENSURE THAT THE CHANNEL APPURTENANCES, SUCH AS CULVERT ENTRANCES BELOW CHECK DAMS, ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACED STONES.
8. BURY THE FILTER FABRIC MIN. 12" ON BOTH SIDES OF THE UPSTREAM SIDE.

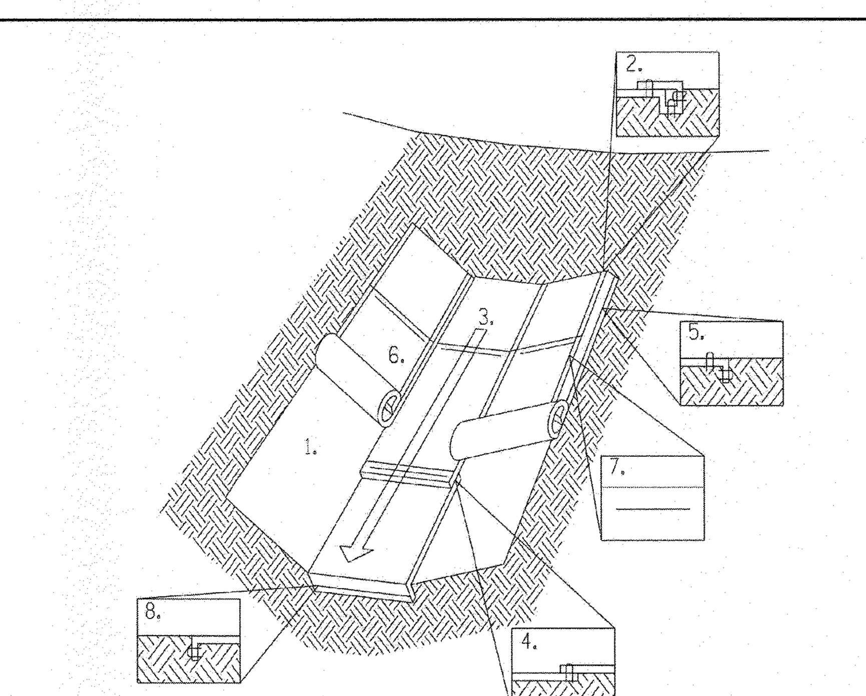
MAINTENANCE
1. INSPECT THE DAMS AND CHANNELS FOR DAMAGE AFTER EACH SIGNIFICANT (1/2 INCH OR GREATER) RAINFALL.
2. ANTICIPATE SUBMERGENCE AND DEPOSITION ABOVE THE CHECK DAM AND EROSION FROM HIGH FLOWS AROUND THE EDGES OF THE DAM. CORRECT ALL DAMAGE. IF SIGNIFICANT EROSION OCCURS BETWEEN DAMS, INSTALL A PROTECTIVE RIP RAP LINER IN THAT PORTION OF THE CHANNEL.
3. REMOVE SEDIMENT ACCUMULATED BEHIND THE DAMS AS NEEDED TO PREVENT DAMAGE TO CHANNEL VEGETATION, ALLOW THE CHANNEL TO DRAIN THROUGH THE STONE CHECK DAM, AND PREVENT LARGE FLOWS FROM CARRYING SEDIMENT OVER THE DAM. ADD STONES TO DAM AS NEEDED TO MAINTAIN DESIGN HEIGHT AND CROSS SECTION.

TYPICAL CHECK DAM DETAIL (TEMPORARY)
NTS

DUKE ENERGY. PROGRESS
SEDIMENT AND EROSION CONTROL DETAILS
TRANSMISSION ENGINEERING
TYPICAL ROCK CHECK DAM

NO.	DATE	REVISION	BY	CK.	APP.
1	12-21-2015	REVISIONS	LOE	BGT	BGT
0	05-06-2013	INITIAL RELEASE	SFP	BGT	SFP

LOCATION STANDARD DRAWING; SCALE 1" = 1'-0"; SCALE RATIO 1:1; DRAWN SFP; CHK. BGT; APP. SFP; DATE 05-06-13; DWG. NO. CT-65392 SH 1 OF 1



CONSTRUCTION SPECIFICATIONS:
1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING SOIL AMENDMENT & SEED.
2. BEGIN AT THE TOP OF THE CHANNEL BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
3. ROLL CENTER BLANKET IN DIRECTION OF WATER FLOW ON BOTTOM OF CHANNEL.
4. PLACE BLANKETS END OVER END (SHINGLE STYLE) WITH AN 18" OVERLAP. USE A DOUBLE ROW OF STAGGERED STAPLES 4" APART TO SECURE BLANKETS.
5. FULL LENGTH EDGE OF BLANKETS AT TOP OF SIDE SLOPES MUST BE ANCHORED IN A 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
6. BLANKETS IN SIDE SLOPES MUST BE OVERLAPPED 4" OVER THE CENTER BLANKET AND STAPLED (2" FOR C350 MATTING).
7. IN HIGH FLOW CHANNEL APPLICATIONS, A STAPLE CHECK SLOT IS RECOMMENDED AT 30 TO 40 FOOT INTERVALS. USE A ROW OF STAPLES 4" APART OVER ENTIRE WIDTH OF THE CHANNEL. PLACE A SECOND ROW 4" BELOW THE FIRST ROW IN A STAGGERED PATTERN.
8. THE TERMINAL END OF THE BLANKETS MUST BE ANCHORED IN A 6" DEEP X 6" WIDE TRENCH BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.

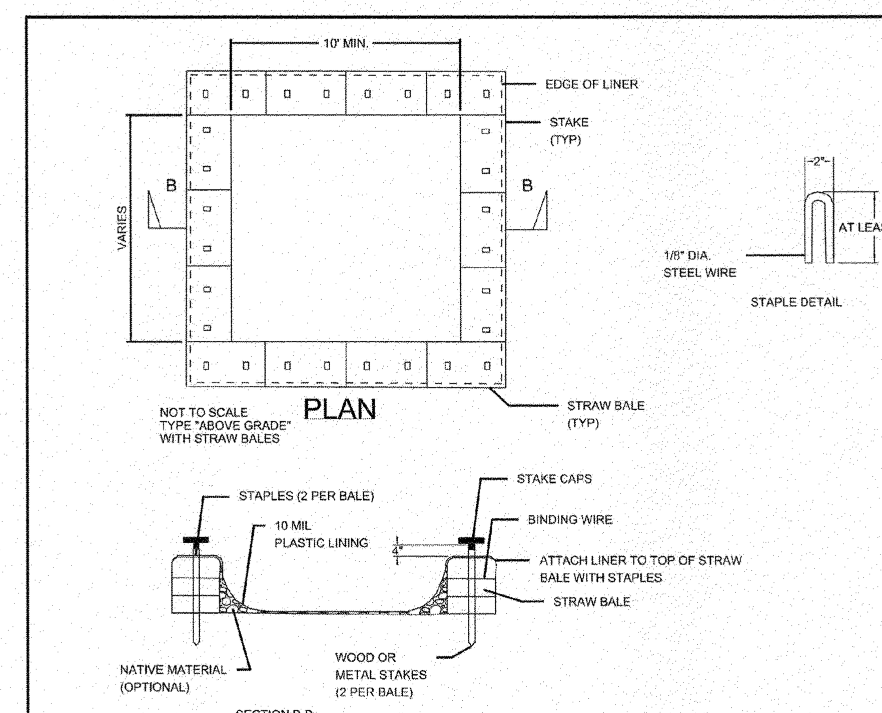
*FULL WIDTH MATTING IN SWELLS AND DITCHES WILL NOT REQUIRE OVERLAPPING

TYPICAL INSTALLATION OF NETTING AND MATTING
NTS

DUKE ENERGY. PROGRESS
SEDIMENT AND EROSION CONTROL DETAILS
TRANSMISSION ENGINEERING
INSTALLATION OF NETTING AND MATTING DETAIL

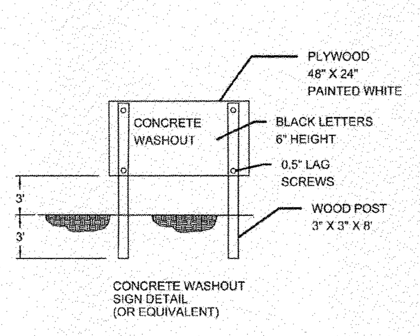
NO.	DATE	REVISION	BY	CK.	APP.
1	12-21-2015	REVISIONS	LOE	BGT	BGT
0	05-06-2013	INITIAL RELEASE	SFP	BGT	SFP

LOCATION STANDARD DRAWING; SCALE 1" = 1'-0"; SCALE RATIO 1:1; DRAWN SFP; CHK. BGT; APP. SFP; DATE 05-06-13; DWG. NO. CT-65389 SH 1 OF 1



NOTES:
1. ACTUAL LAYOUT DETERMINED IN THE FIELD
2. THE CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30 FT. OF THE TEMPORARY CONCRETE WASHOUT FACILITY

INSPECTION/MAINTENANCE/REMOVAL:
1. TEMPORARY CONCRETE WASHOUT FACILITIES ARE TO BE INSPECTED BY THE RESIDENT ENGINEER DURING HIS/HER WEEKLY EROSION AND SEDIMENT CONTROL INSPECTION, AFTER A STORM EVENT OF ½"OR GREATER AND AT THE END OF ANY DAY WHEN CONCRETE HAS BEEN POURED ON THE CONSTRUCTION SITE. THE INSPECTOR IS TO ENSURE THAT THERE ARE NO LEAKS, NO SPILLS AND THAT THE FACILITIES CAPACITY HAS NOT YET BEEN COMPROMISED.
2. ANY OVERFLOWING OF THE WASHOUT FACILITIES ONTO THE GROUND MUST BE CLEANED UP AND REMOVED WITHIN 24 HOURS OF DISCOVERY.
3. IF A RAIN OR SNOW EVENT IS FORECASTED, A NON-COLLAPSING, NON-WATER COLLECTING COVER SHALL BE PLACED OVER THE WASHOUT FACILITY AND SECURED TO PREVENT ACCUMULATION AND OVERFLOW OF PRECIPITATION.
4. CONTENTS OF EACH CONCRETE WASHOUT FACILITY ARE NOT TO EXCEED 75% OF ITS DESIGNED CAPACITY. IF THE CONTENTS REACH 75% CAPACITY, DISCONTINUE POURING CONCRETE INTO THE FACILITY UNTIL IT HAS BEEN CLEANED OUT.
5. ALLOW SLURRY TO EVAPORATE OR REMOVE FROM THE SITE IN A SAFE MANNER (IE. VACUUM TRUCK). ALL HARDENED MATERIAL CAN THEN BE REMOVED AND DISPOSED OF PROPERLY.
6. IF A LINED BASIN IS USED, IMMEDIATELY REPLACE THE LINER IF IT BECOMES DAMAGED.
7. REMOVE TEMPORARY CONCRETE WASHOUT FACILITIES WHEN THEY ARE NO LONGER NEEDED AND RESTORE THE DISTURBED AREAS TO THEIR ORIGINAL CONDITION.



CONCRETE WASHOUT SIGN DETAIL (OR EQUIVALENT)

NOT TO SCALE

DUKE ENERGY. PROGRESS
SEDIMENT AND EROSION CONTROL DETAILS
TRANSMISSION ENGINEERING
WASHOUT PIT

NO.	DATE	REVISION	BY	CK.	APP.
3	12-01-2016	REVISIONS - ADDED INSPECTION/MAINTENANCE/REMOVAL NOTES	JSS	PWS	PWS
2	2-22-2016	REVISIONS	LOE	BGT	BGT
1	12-21-2015	REVISIONS	LOE	BGT	BGT
0	05-06-2013	INITIAL RELEASE	SFP	BGT	SFP

LOCATION STANDARD DRAWING; SCALE 1" = 1'-0"; SCALE RATIO 1:1; DRAWN SFP; CHK. BGT; APP. SFP; DATE 05-06-13; DWG. NO. CT-65387 SH 1 OF 1

Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

NORTH CAROLINA PROFESSIONAL SEAL 033840 ENGINEER CURTIS M. BLAZIER 9-15-17

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Durham, North Carolina 27713
License No.: C-0293
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FINAL DRAWING – NOT RELEASED FOR CONSTRUCTION

NO.	DATE	REVISION	BY	CK.	APP.
	–	–	–	–	–
	–	–	–	–	–
1	2017-09-15	REVISED PER CITY OF WILMINGTON COMMENTS	–	–	–

DUKE ENERGY. PROGRESS

WILMINGTON SUNSET PARK 115 KV SUBSTATION
317 BORDEAUX AVENUE, WILMINGTON NC 27601
SEDIMENT & EROSION CONTROL DETAILS

LOCATION:	WILMINGTON, NC				
SCALE:	NTS	SCALE RATIO:	1:1	PRJ. NO.	DKE-17010
DRAWN:	JB	CHK.	---	APP.	_
DATE:	05-15-17	DWG. NO.	70818,	SHEET	12 OF 18

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LANDSCAPE CALCULATION:

STREETYARD*:

PRIMARY STREETYARD – BORDEAUX AVENUE 296 LF (296 LF X 18 LF = 5,328 SF)
UNDERSTORY TREE REQUIRED: 27 (3/600 SF)
UNDERSTORY TREE PROVIDED: 27

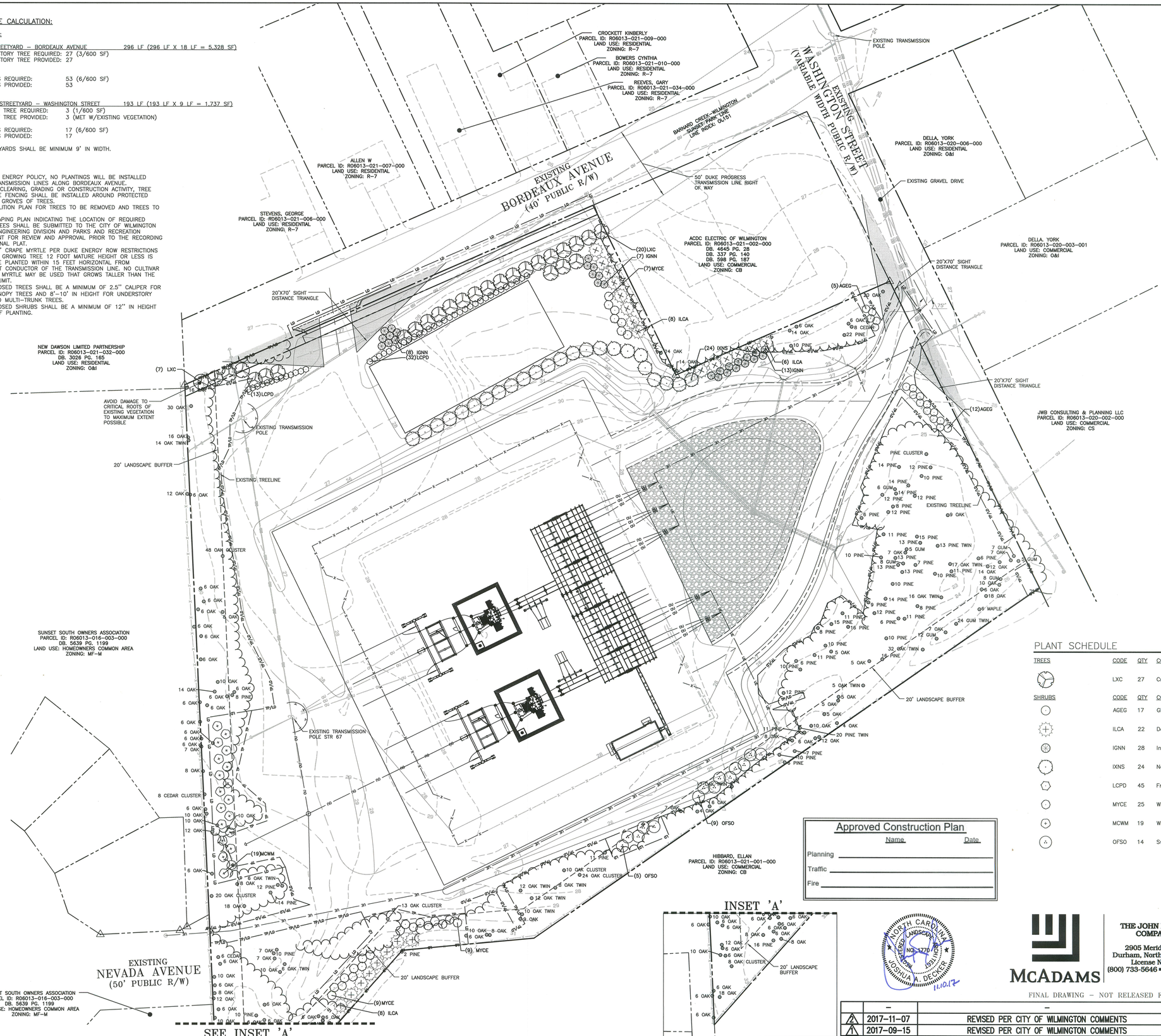
SHRUBS REQUIRED: 53 (6/600 SF)
SHRUBS PROVIDED: 53

SECONDARY STREETYARD – WASHINGTON STREET 193 LF (193 LF X 9 LF = 1,737 SF)
CANOPY TREE REQUIRED: 3 (1/600 SF)
CANOPY TREE PROVIDED: 3 (MET W/EXISTING VEGETATION)

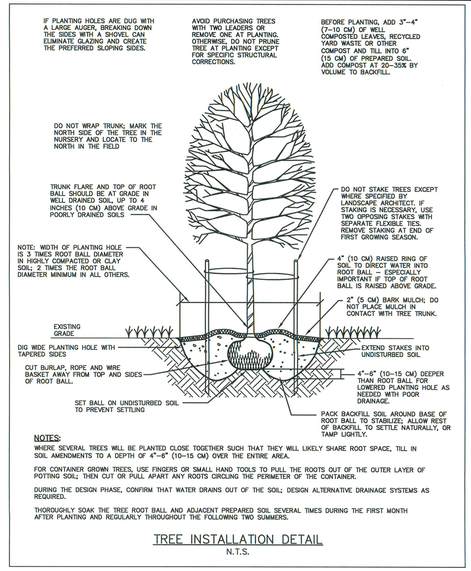
SHRUBS REQUIRED: 17 (6/600 SF)
SHRUBS PROVIDED: 17

*ALL STREETYARDS SHALL BE MINIMUM 9' IN WIDTH.

NOTES:
1. PER DUKE ENERGY POLICY, NO PLANTINGS WILL BE INSTALLED UNDER TRANSMISSION LINES ALONG BORDEAUX AVENUE.
2. PRIOR TO CLEARING, GRADING OR CONSTRUCTION ACTIVITY, TREE PROTECTIVE FENCING SHALL BE INSTALLED AROUND PROTECTED TREES OR GROVES OF TREES.
3. SEE DEMOLITION PLAN FOR TREES TO BE REMOVED AND TREES TO BE SAVED.
4. A LANDSCAPING PLAN INDICATING THE LOCATION OF REQUIRED STREET TREES SHALL BE SUBMITTED TO THE CITY OF WILMINGTON TRAFFIC ENGINEERING DIVISION AND PARKS AND RECREATION DEPARTMENT FOR REVIEW AND APPROVAL PRIOR TO THE RECORDING ON THE FINAL PLAT.
5. 'CHEYENNE' CRAPE MYRTLE PER DUKE ENERGY ROW RESTRICTIONS AS A LOW GROWING TREE 12 FOOT MATURE HEIGHT OR LESS IS NOT TO BE PLANTED WITHIN 15 FEET HORIZONTAL FROM OUTERMOST CONDUCTOR OF THE TRANSMISSION LINE. NO CULTIVAR OF CRAPE MYRTLE MAY BE USED THAT GROWS TALLER THAN THE 12 FOOT LIMIT.
6. ALL PROPOSED TREES SHALL BE A MINIMUM OF 2.5" CALIPER FOR SHADE CANOPY TREES AND 8'–10' IN HEIGHT FOR UNDERSTORY TREES AND MULTI–TRUNK TREES.
7. ALL PROPOSED SHRUBS SHALL BE A MINIMUM OF 12" IN HEIGHT AT TIME OF PLANTING.



TREE INSTALLATION DETAIL
N.T.S.



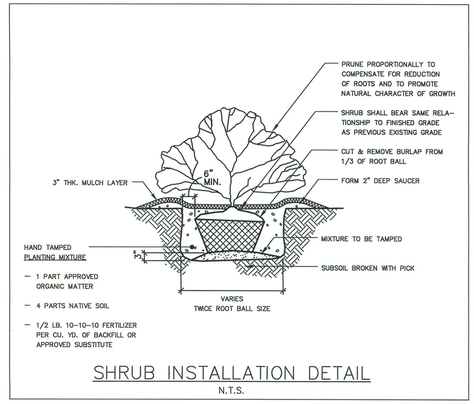
NOTES:
WHERE SEVERAL TREES WILL BE PLANTED CLOSE TOGETHER SUCH THAT THEY WILL LIKELY SHARE ROOT SPACE, TILL IN SOIL AMENDMENTS TO A DEPTH OF 4"–6" (10–15 CM) OVER THE ENTIRE AREA.

FOR CONTAINER GROWN TREES, USE FINGERS OR SMALL HAND TOOLS TO PULL THE ROOTS OUT OF THE OUTER LAYER OF POTTING SOIL; THEN CUT OR PULL APART ANY ROOTS CIRCLING THE PERIMETER OF THE CONTAINER.

DURING THE DESIGN PHASE, CONFIRM THAT WATER DRAINS OUT OF THE SOIL; DESIGN ALTERNATIVE DRAINAGE SYSTEMS AS REQUIRED.

THOROUGHLY SOAK THE TREE ROOT BALL AND ADJACENT PREPARED SOIL SEVERAL TIMES DURING THE FIRST MONTH AFTER PLANTING AND REGULARLY THROUGHOUT THE FOLLOWING TWO SUMMERS.

SHRUB INSTALLATION DETAIL
N.T.S.



PLANT SCHEDULE

TREES	CODE	QTY	COMMON NAME	BOTANICAL NAME	CAL	HGT
	LXC	27	Crape Myrtle	Lagerstroemia x 'Cheyenne'	–	8'
SHRUBS	**CODE**	**QTY**	**COMMON NAME**	**BOTANICAL NAME**	**HGT**	**OC**
	AGEG	17	Glossy Abelia	Abelia x grandiflora	24"	60"
	ILCA	22	Dahoon Holly	Ilex cassine	6'	72"
	IGNN	28	Inkberry	Ilex glabra	24"	60"
	IXNS	24	Nellie Stevens Holly	Ilex x 'Nellie R Stevens'	6'	72"
	LCPD	45	Fringe Flower	Loropetalum chinense 'Purple Diamond'	24"	48"
	MYCE	25	Wax Myrtle	Myrica cerifera	30"	72"
	MCWM	19	Wax Myrtle	Myrica cerifera	48"	72"
	OFSO	14	Sweet Olive	Osmanthus fragrans	30"	8'

GRAPHIC SCALE
30 0 15 30 60
1 inch = 30 ft.

Approved Construction Plan
Name Date
Planning
Traffic
Fire

NORTH CAROLINA PROFESSIONAL LANDSCAPE ARCHITECT NO. 1770 JOSHUA A. DECKER 11.10.17

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FINAL DRAWING – NOT RELEASED FOR CONSTRUCTION

DUKE ENERGY. PROGRESS

WILMINGTON SUNSET PARK 115 KV SUBSTATION
317 BORDEAUX AVENUE, WILMINGTON NC 27601
LANDSCAPE PLAN

NO.	DATE	REVISION	BY	CK.	APP.
–	–	–	–	–	–
2	2017–11–07	REVISED PER CITY OF WILMINGTON COMMENTS	JB	CB	–
1	2017–09–15	REVISED PER CITY OF WILMINGTON COMMENTS	JB	CB	–

LOCATION: WILMINGTON, NC
SCALE: 1"=30' SCALE RATIO: 1:1 PRJ. NO. DKE–17010
DRAWN: CMV CHK. ---- APP. –
DATE: 05–15–17 DWG. NO. 70818, SHEET 13 OF 18

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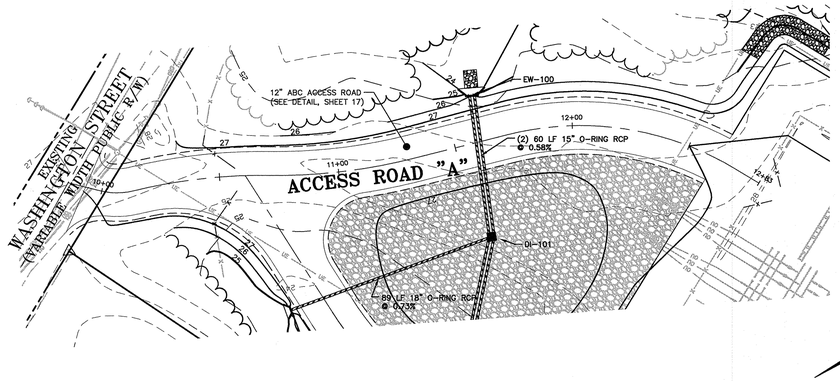
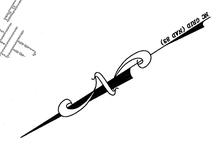
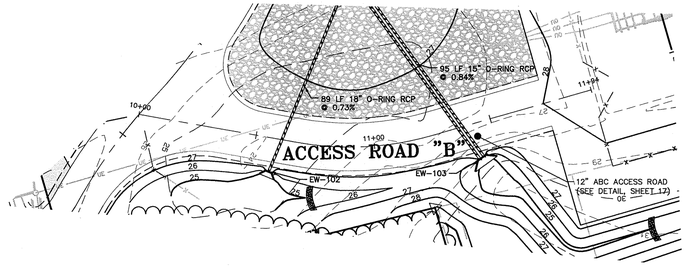




GRAPHIC SCALE

30 0 15 30 60

1 inch = 30 ft.

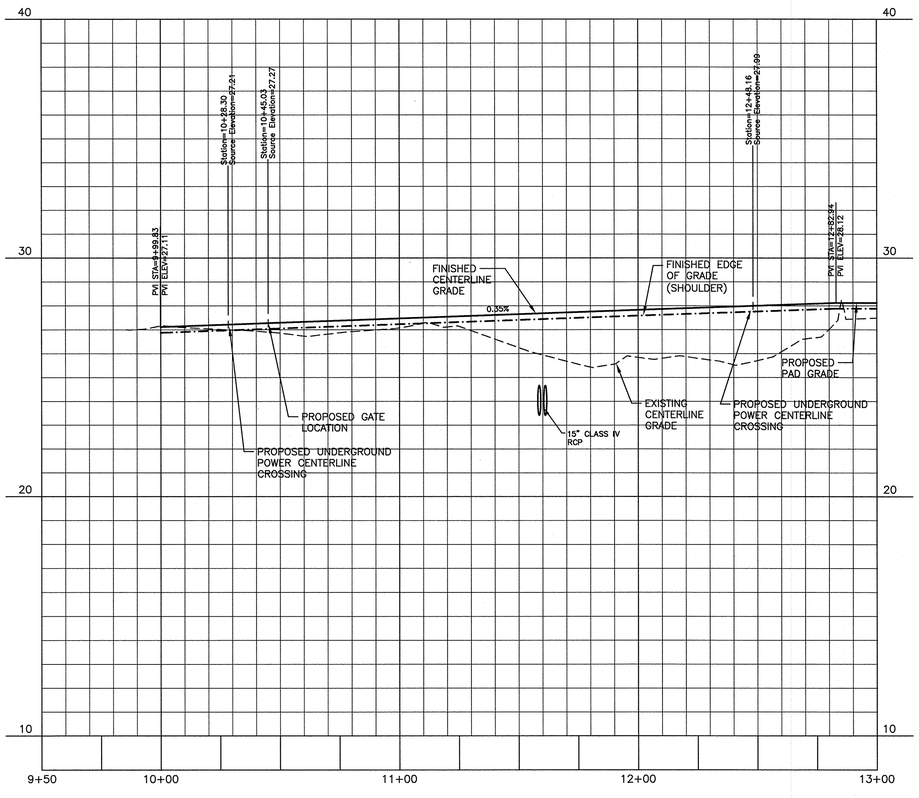


GRAPHIC SCALE

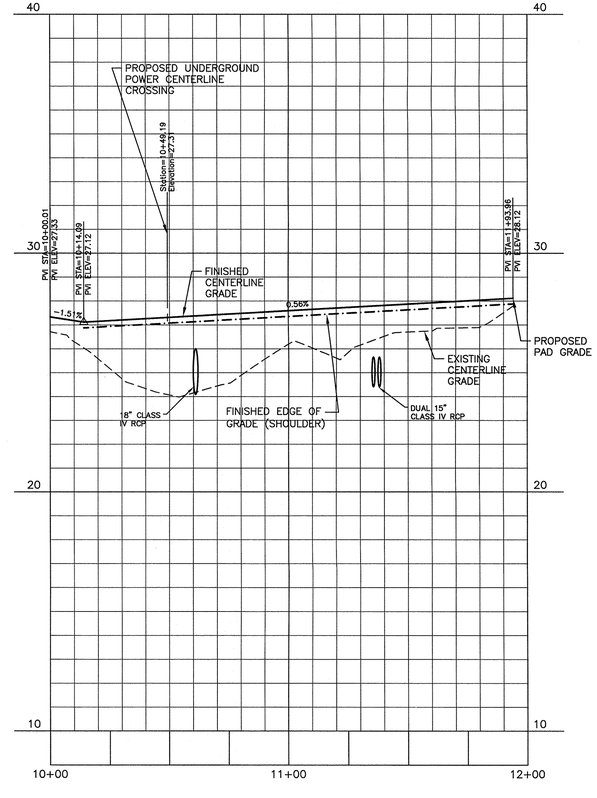
30 0 15 30 60

1 inch = 30 ft.

ACCESS ROAD "A"



ACCESS ROAD "B"



Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

NORTH CAROLINA PROFESSIONAL SEAL 033840 ENGINEER CURTIS M. BLAZIER 11-7-17

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FINAL DRAWING – NOT RELEASED FOR CONSTRUCTION

NO.	DATE	REVISION	BY	CK.	APP.
–	–	–	–	–	–
2	2017-11-07	REVISED PER CITY OF WILMINGTON COMMENTS	JB	CB	–
1	2017-09-15	REVISED PER CITY OF WILMINGTON COMMENTS	JB	CB	–

DUKE ENERGY. PROGRESS

WILMINGTON SUNSET PARK 115 KV SUBSTATION
317 BORDEAUX AVENUE, WILMINGTON NC 27601
ACCESS ROAD PLAN & PROFILES

LOCATION: WILMINGTON, NC
SCALE: 1"=30'/1"=3' SCALE RATIO: 1:1 PRJ. NO. DKE-17010
DRAWN: JB CHK. --- APP. _
DATE: 05-15-17 DWG. NO. 70818, SHEET 14 OF 18

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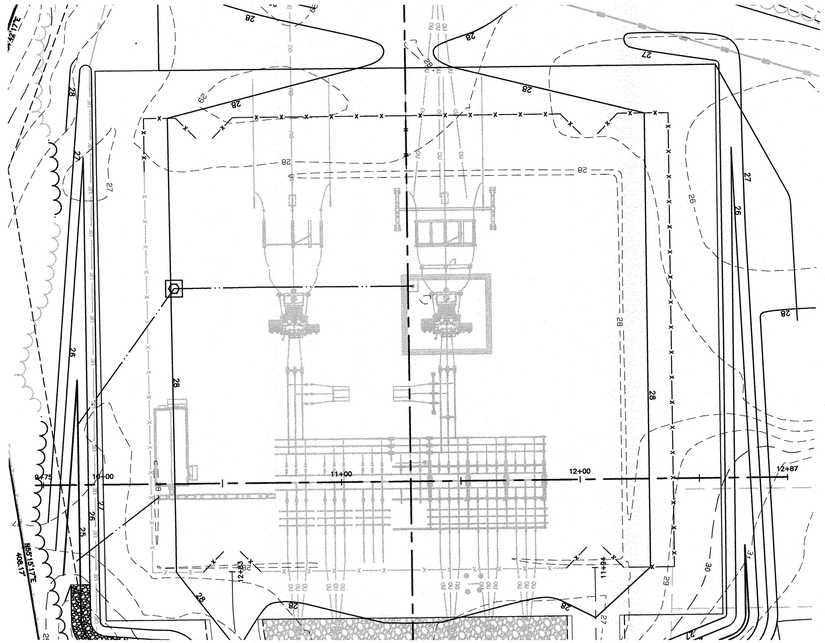

GRAPHIC SCALE

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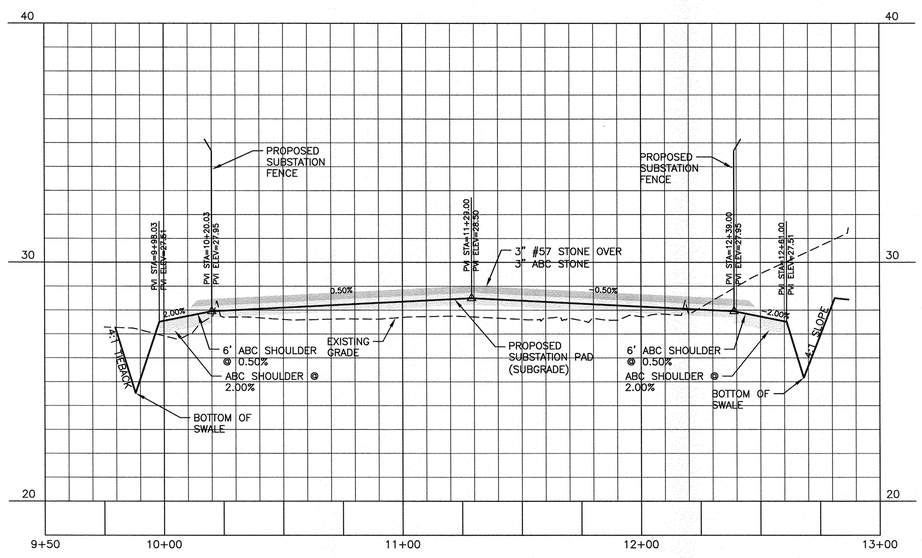
1 inch = 30 ft.

NORTH - SOUTH BASELINE



Approved Construction Plan

Name Date

Planning _____

Traffic _____

Fire _____

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NORTH CAROLINA PROFESSIONAL SEAL 033840 ENGINEER CHRIS M. BLAZIER 9-15-17

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FINAL DRAWING – NOT RELEASED FOR CONSTRUCTION

DUKE ENERGY. PROGRESS

WILMINGTON SUNSET PARK 115 KV SUBSTATION
317 BORDEAUX AVENUE, WILMINGTON NC 27601
NORTH – SOUTH BASELINE PROFILE

NO.	DATE	REVISION	BY	CK.	APP.
	–	–	–	–	–
	–	–	–	–	–
1	2017-09-15	REVISED PER CITY OF WILMINGTON COMMENTS	–	–	–

LOCATION: WILMINGTON, NC
SCALE: 1"=30'/1"=3' SCALE RATIO: 1:1 PRJ. NO. DKE-17010
DRAWN: JB CHK. --- APP. _
DATE: 05-15-17 DWG. NO. 70818, SHEET 15 OF 18

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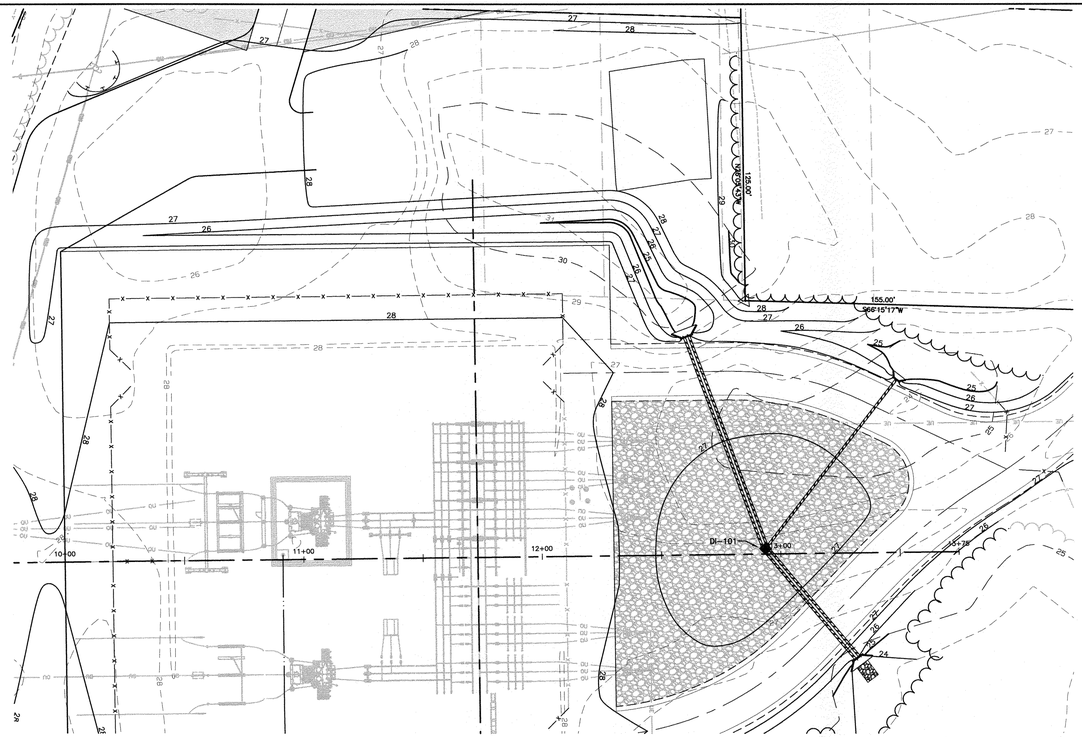
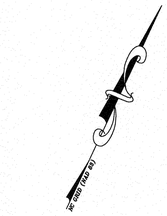


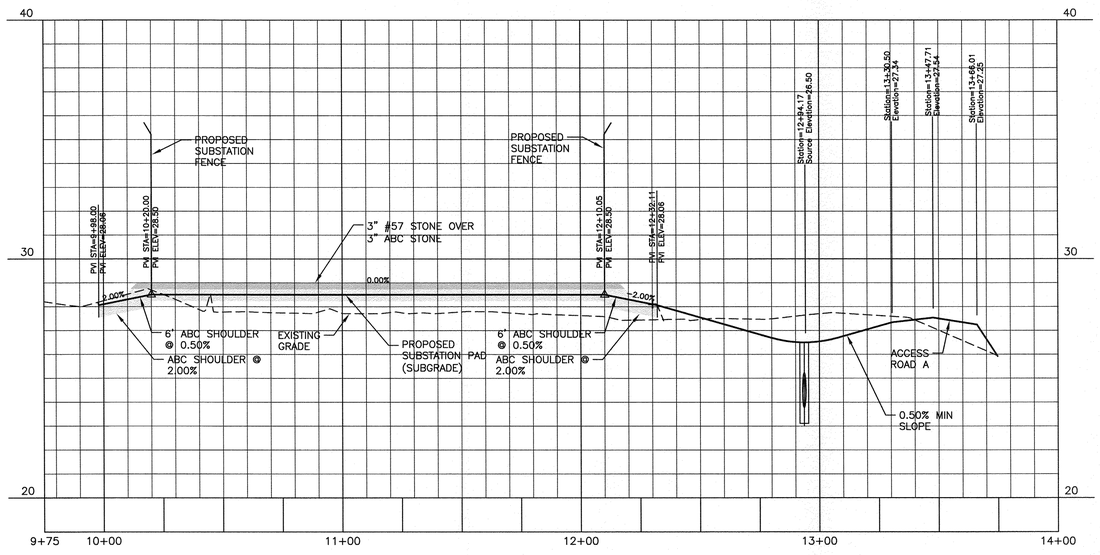


GRAPHIC SCALE

30 0 15 30 60

1 inch = 30 ft.

EAST - WEST BASELINE



Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

NORTH CAROLINA PROFESSIONAL SEAL 033840 ENGINEER CURTIS M. BRAZIER

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DUKE ENERGY. PROGRESS

WILMINGTON SUNSET PARK 115 KV SUBSTATION
317 BORDEAUX AVENUE, WILMINGTON NC 27601
EAST – WEST BASELINE PROFILE

NO.	DATE	REVISION	BY	CK.	APP.
	–	–	–	–	–
	–	–	–	–	–
1	2017-09-15	REVISED PER CITY OF WILMINGTON COMMENTS	–	–	–

LOCATION: WILMINGTON, NC
SCALE: 1"=30'/1"=3' SCALE RATIO: 1:1 PRJ. NO. DKE-17010
DRAWN: JB CHK. --- APP. –
DATE: 05-15-17 DWG. NO. 70818, SHEET 16 OF 18

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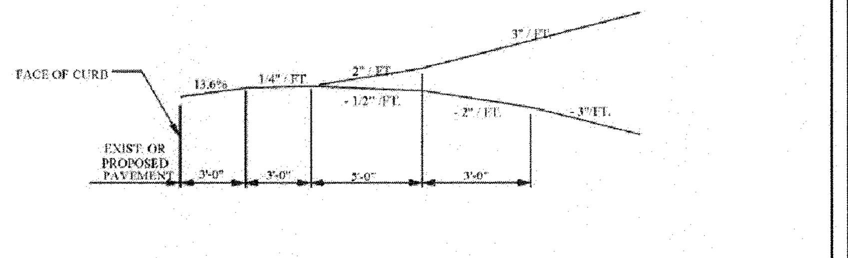
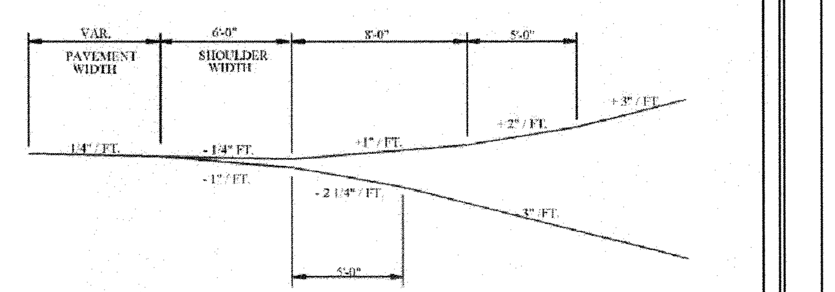


A. CURB & GUTTER SECTION



B. SHOULDER SECTION

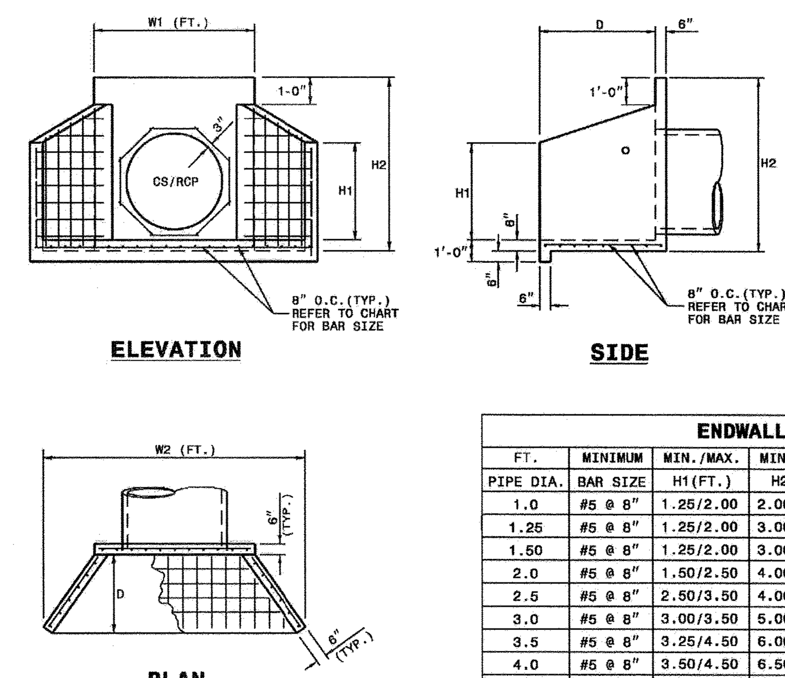
FIGURE 6

DRIVEWAY TURNOUT GRADES

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

1-12

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



NOTES:

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

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

ENDWALL DIMENSIONS

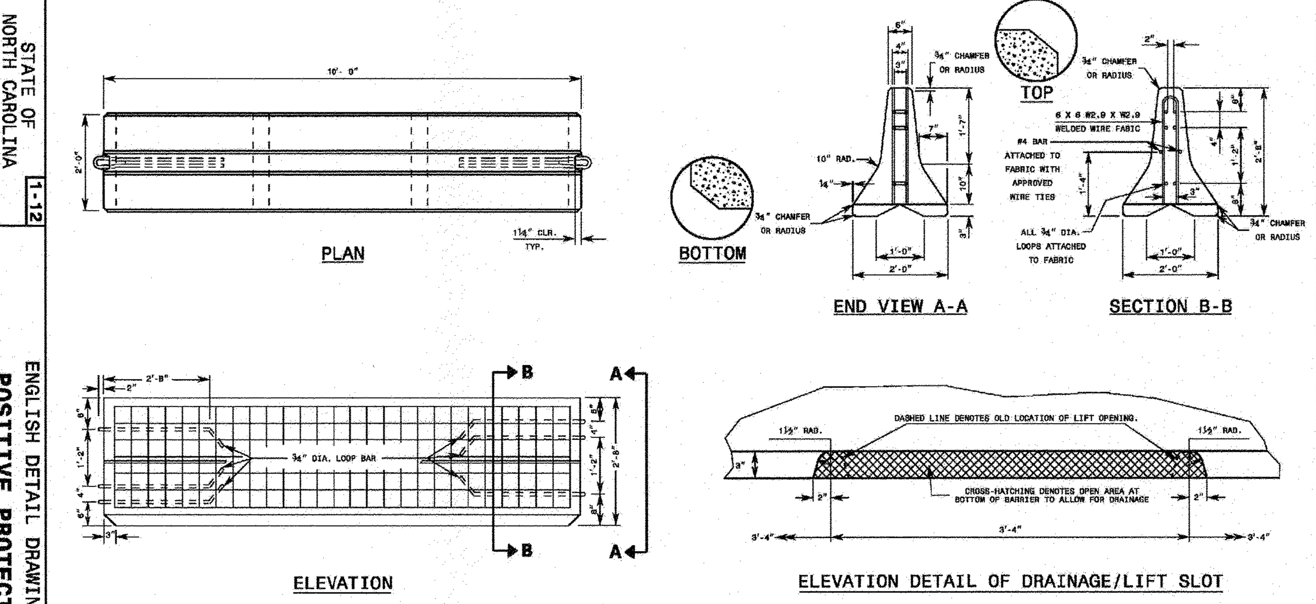
FT.	MINIMUM	MIN./MAX.	MIN./MAX.	MIN./MAX.	MIN./MAX.	MIN./MAX.
PIPE DIA.	BAR SIZE	H1(FT.)	H2(FT.)	D (FT.)	W1	W2
1.0	#5 @ 8"	1.25/2.00	2.00/3.75	1.25/1.75	3.00/3.75	5.50/6.00
1.25	#5 @ 8"	1.25/2.00	3.00/3.75	1.25/2.00	3.50/3.75	6.50/6.75
1.50	#5 @ 8"	1.25/2.00	3.00/4.25	1.50/2.50	3.50/3.75	6.50/6.75
2.0	#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	14.75/16.75

SHEET 1 OF 1
838.80

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

1-12

ENGLISH DETAIL DRAWING FOR
POSITIVE PROTECTION
PORTABLE CONCRETE BARRIER



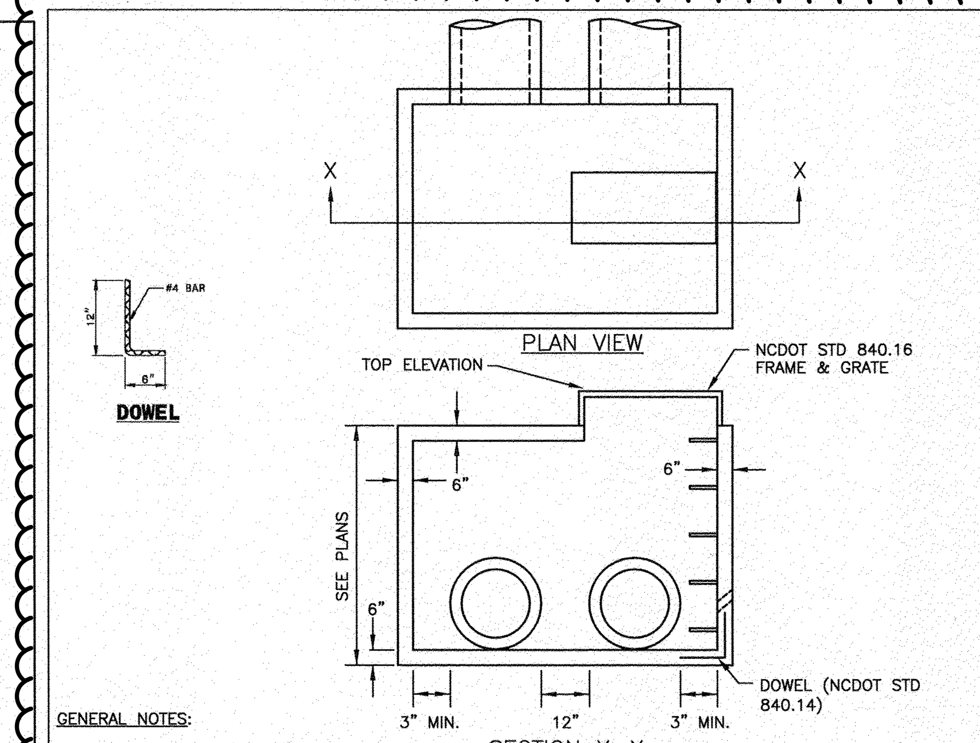
GENERAL NOTES

1- THE DRAINAGE/LIFT SLOT SHOWN IS A MODIFICATION OF THE LIFT OPENINGS, ALL OTHER DESIGN CRITERIA SUCH AS REINFORCEMENT BARS ETC. ARE THE SAME AS SHOWN ON THE STANDARD DRAWING.

2- BARRIER WITH DRAINAGE/LIFT SLOT IS INTENDED TO BE USED IN AREAS WHERE ROADWAY SURFACE WATER RUNOFF CAUSES EXCESS PUDDLING ADJACENT TO THE TEMPORARY BARRIER. INSTALL THE BARRIER AS SHOWN IN THE PLANS, OR AS DIRECTED BY THE ENGINEER.

3- DRAINAGE/SLOT CAN BE USED WITH ANCHORED "PORTABLE CONCRETE BARRIER".

SHEET 1 OF 5
1170.01



SECTION X–X

GENERAL NOTES:

USE CLASS "B" CONCRETE THROUGHOUT.

PROVIDE ALL DROP INLETS OVER 3'–6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH NCDOT STD. DRAWING 840.66.

OPTIONAL CONSTRUCTION – MONOLITHIC POUR, 2" KEYWAY, OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY ENGINEER.

USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.

IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM OF SLAB BOX, ADD TO SLAB AS SHOWN ON NCDOT STD. NO. 840.00.

SEE NCDOT STD DRAWING 840.25 FOR ATTACHMENT OF FRAMES AND GRATES NOT SHOWN.

INSTALL 2" WEEP HOLES AS DIRECTED BY ENGINEER.

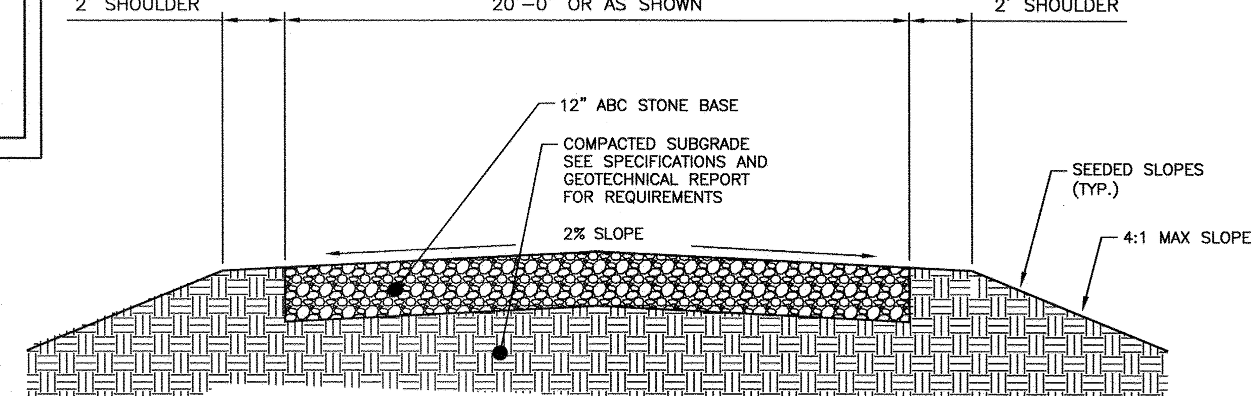
INSTALL STONE DRAINS, OF A MINIMUM OF 1 CUBIC FOOT OF NO. 78M STONE IN A PORUS FABRIC BAG OR WRAP, AT EACH WEEP HOLE OR AS DIRECTED BY THE ENGINEER.

CHAMFER ALL EXPOSED CORNERS 1".

DUAL PIPE CONCRETE DROP INLET
N.T.S.

2

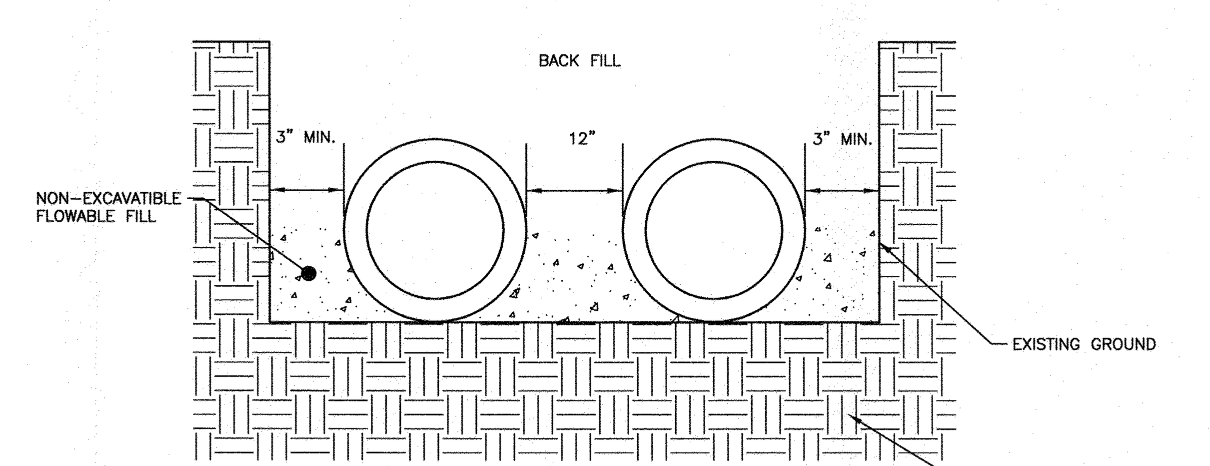
2



TYPICAL SUBSTATION ACCESS ROAD SECTION
NTS

GENERAL NOTES:

1. EXCAVATE TRENCH AND PLACE DUAL PIPES INTO DITCH WITH THE CORRECT SPACING AS SHOWN BELOW.
2. AFTER PLACING PIPES USE NON–EXCAVATABLE FLOWABLE FILL TO ENCASE THE PIPES IN THE DITCH.
3. FILL THE DITCH TO THE SPRING LINE OF THE PIPE WITH FLOWABLE FILL.
4. AFTER THE FLOWABLE FILL STARTS TO SETUP, FILL IN THE REST OF THE DITCH WITH FILL DIRT.
5. CONTRACTOR TO REFERENCE PROJECT SPECIFICATIONS.



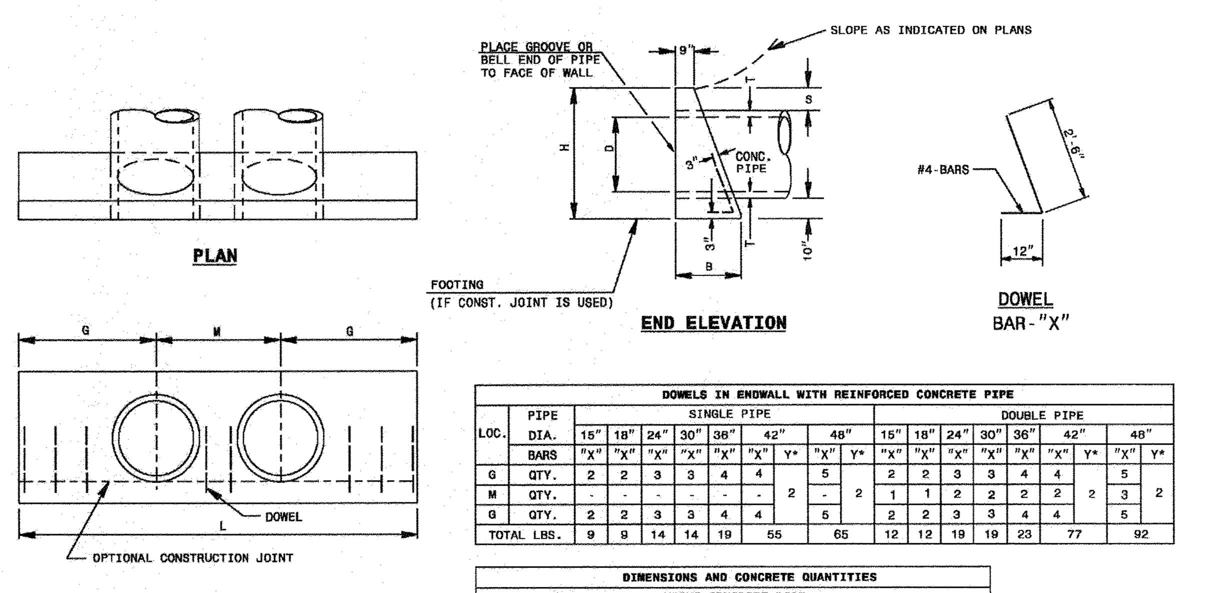
SECTION X–X

DUAL PIPE TRENCHING DETAIL
N.T.S.

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

1-12

ENGLISH STANDARD DRAWING FOR
CONCRETE ENDWALL FOR SINGLE AND DOUBLE PIPE CULVERTS
15" THRU 48" PIPE - 90° SKEW



DOWELS IN ENDWALL WITH REINFORCED CONCRETE PIPE

LOC.	PIPE DIA.	SINGLE PIPE 15"	18"	24"	30"	36"	42"		48"		DOUBLE PIPE 15"	18"	24"	30"	36"	42"		48"	
	BARS	"X"	"X"	"X"	"X"	"X"	"X"	Y*	"X"	Y*	"X"	"X"	"X"	"X"	"X"	"X"	Y*	"X"	Y*
G	QTY.	2	2	3	3	4	4		5		2	2	3	3	4	4		5	
M	QTY.	-	-	-	-	-	-	2	-	2	1	1	2	2	2	2	2	3	2
G	QTY.	2	2	3	3	4	4		5		2	2	3	3	4	4		5	
TOTAL LBS.		9	9	14	14	19	55		65		12	12	19	19	23	77		92	

DIMENSIONS AND CONCRETE QUANTITIES
USING CONCRETE PIPE

D	COMMON DIMENSIONS H	B	G	T	S	SINGLE PIPE L	YD³	DOUBLE PIPE M	L	YD³
15"	3'-3"	1'-8"	2'-9"	2¼"	9½"	5'-6"	0.7	2'-2"	7'-8"	1.0
18"	3'-7"	1'-10"	3'-2"	2½"	10"	6'-4"	1.0	2'-7"	8'-11"	1.3
24"	4'-2"	2'-1"	4'-0"	3"	10"	8'-0"	1.5	3'-5"	11'-5"	2.0
30"	5'-0"	2'-6"	4'-7"	4¼"	11½"	9'-2"	2.3	4'-3"	13'-5"	3.1
36"	5'-8"	2'-8"	5'-6"	4¾"	11½"	11'-0"	3.4	5'-0"	16'-0"	4.5
42"	6'-2"	3'-1"	6'-4"	5¼"	11½"	12'-8"	4.5	5'-10"	18'-6"	6.0
48"	6'-9"	3'-5"	7'-2"	5¾"	11½"	14'-4"	6.0	6'-8"	21'-0"	8.0

*SEE SHEET 3

SHEET 1 OF 3
838.01

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

1-12

ENGLISH STANDARD DRAWING FOR
CONCRETE ENDWALL FOR SINGLE AND DOUBLE PIPE CULVERTS
15" THRU 48" PIPE - 90° SKEW

GENERAL NOTES:

CHAMFER ALL CORNERS 1" OR HAVE A RADIUS OF 1".

PLACE 2 #6 "Y" BARS IN THE TOP OF ALL ENDWALL FOR PIPE CULVERTS 42" AND OVER WITH A MINIMUM OF 3" COVER AND A LENGTH OF 6" LESS THAN ENDWALL LENGTH.

CONSTRUCT BOTTOM SLAB WITH FORMS.

DO NOT INTERPRET WALL THICKNESS (T) SHOWN FOR THE THICKNESS ACCEPTABLE, BUT IS USED IN COMPUTING ENDWALL QUANTITIES.

WHEN THE CONTRACTOR ELECTS TO USE A CONSTRUCTION JOINT AT THE BOTTOM OF THE PIPE, PLACE BAR "X" DOWELS IN THE BASE AS SHOWN ON PLANS. SPACE BARS APPROXIMATELY ON 12" CENTERS UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

WHEN THE CONTRACTOR ELECTS TO USE A CONSTRUCTION JOINT AT THE BOTTOM OF THE PIPE AND POUR THE BASE SEPARATELY LEAVE THE POUR ROUGH.

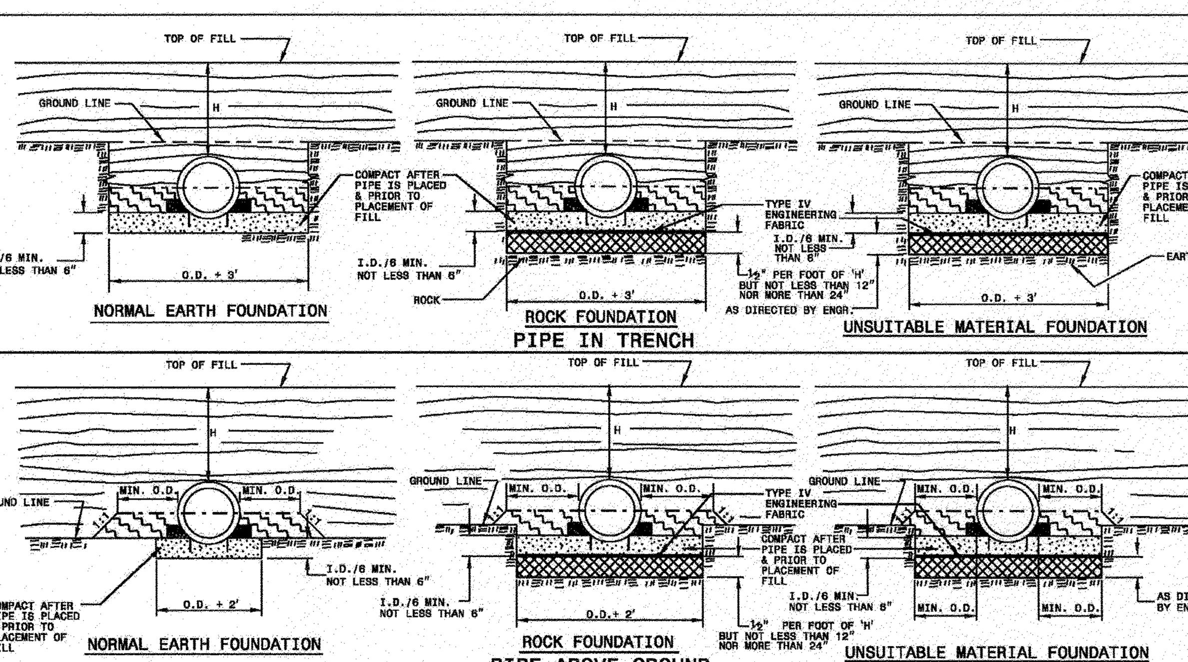
USE CLASS "B" CONCRETE.

SHEET 3 OF 3
838.01

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

1-12

ENGLISH STANDARD DRAWING FOR
METHOD OF PIPE INSTALLATION
RIGID PIPE



GENERAL NOTES:

I.D. = THE MAXIMUM HORIZONTAL INSIDE DIAMETER DIMENSION.

O.D. = THE MAXIMUM HORIZONTAL OUTSIDE DIAMETER DIMENSION.

H = THE FILL HEIGHT MEASURED VERTICALLY AT ANY POINT ALONG THE PIPE FROM THE TOP OF THE PIPE TO THE TOP OF THE EMBANKMENT AT THAT POINT.

TAKE CARE TO FULLY COMPACT HAUNCH ZONE OF PIPE BACKFILL.

LOOSELY PLACED SELECT MATERIAL CLASS III OR CLASS II, TYPE 1 FOR PIPE BEDDING. LEAVE SECTION DIRECTLY BENEATH PIPE UNCOMPACTED AS PIPE SEATING AND BACKFILL WILL ACCOMPLISH COMPACTION.

DO NOT OPERATE HEAVY EQUIPMENT OVER ANY PIPE CULVERT UNTIL THE PIPE CULVERT HAS BEEN PROPERLY BACKFILLED AND COVERED WITH AT LEAST 3 FEET OF APPROVED MATERIAL.

SPRINGLINE OF PIPE

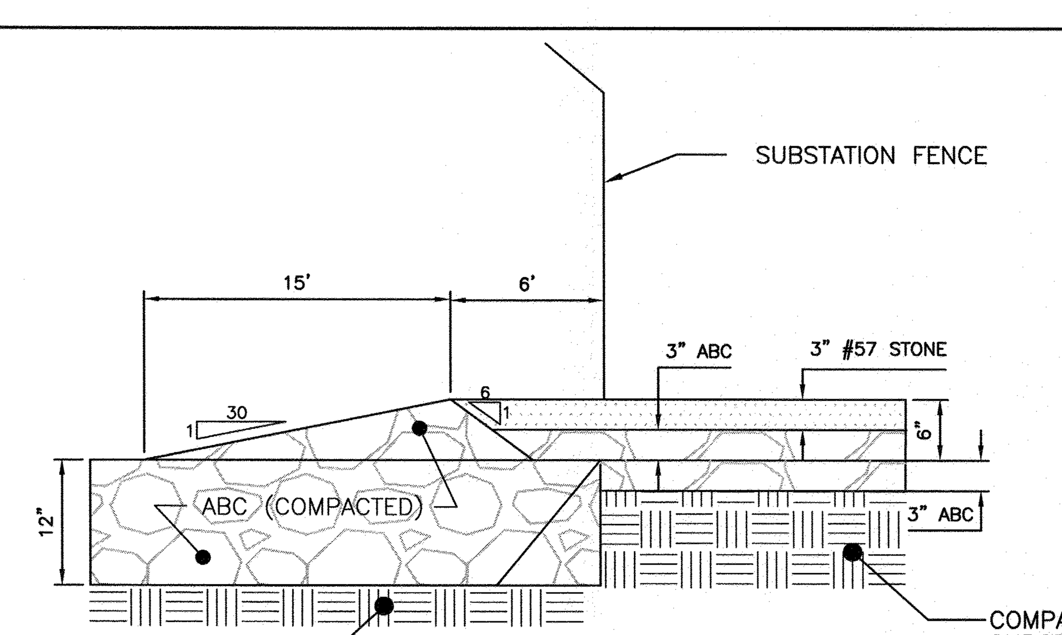
SELECT BACKFILL MATERIAL CLASS III OR CLASS II, BELOW SPRINGLINE.

APPROVED SUITABLE LOCAL MATERIAL ABOVE SPRINGLINE.

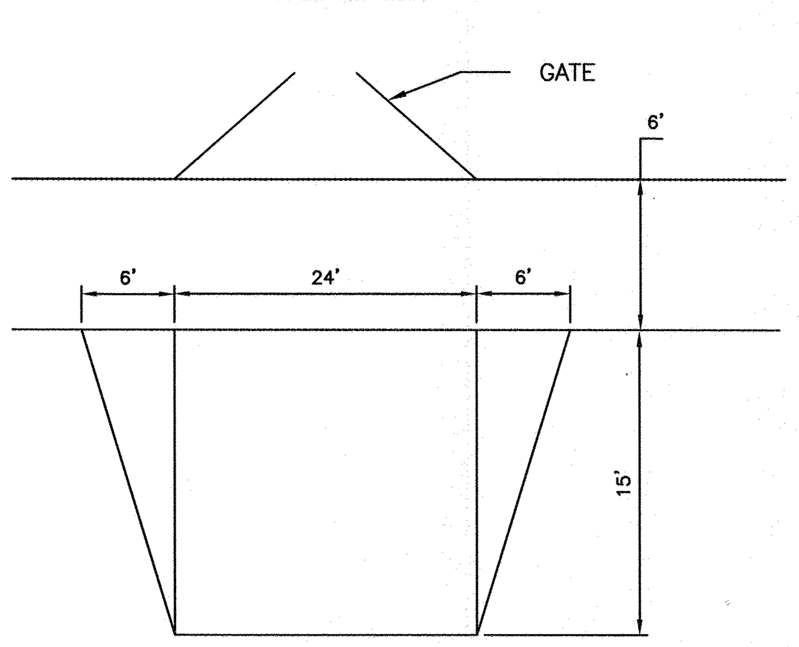
UNDISTURBED EARTH MATERIAL

SELECT MATERIAL CLASS V OR VI FOR FOUNDATION CONDITIONING. ENCAPSULATE WITH ENGINEERING FABRIC AS DIRECTED BY THE ENGINEER.

SHEET 2 OF 3
300.01

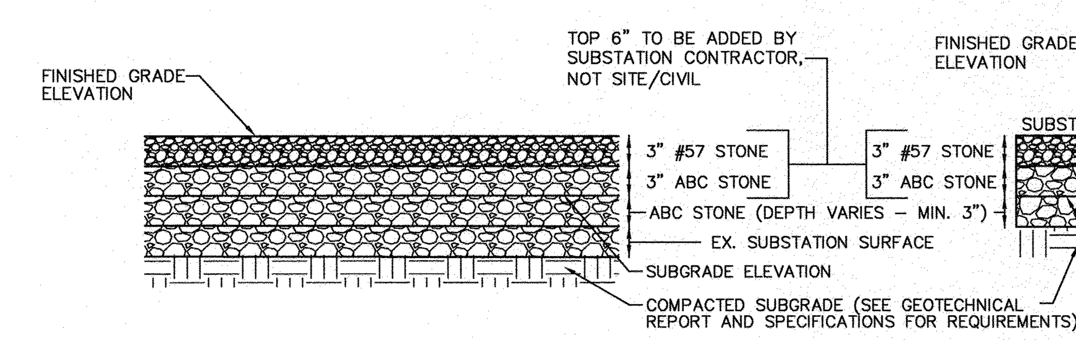


PROFILE VIEW

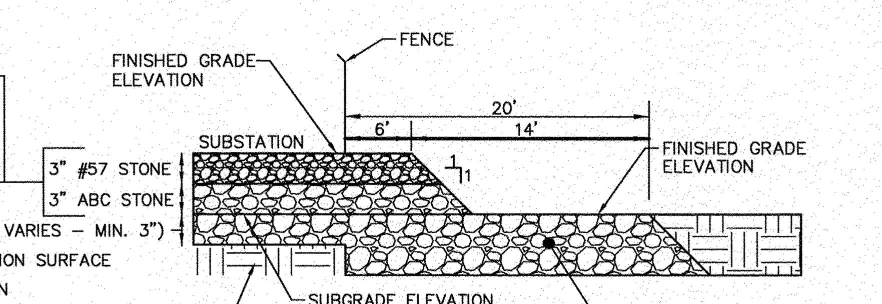


PLAN VIEW

SUBSTATION GATE ENTRANCE DETAIL

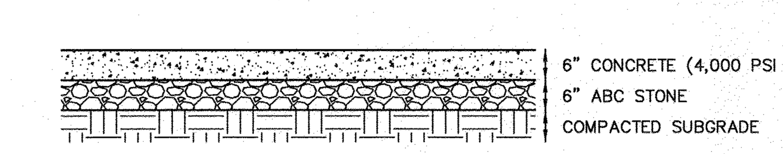


ABC STONE GRAVEL – SUBSTATION PAD
N.T.S.



SUBSTATION SHOULDER TYPICAL SECTION
N.T.S.

NOTE: THE SECTIONS ABOVE ARE BASED ON DUKE ENERGY REQUIREMENTS. CONTRACTOR SHALL REFERENCE DUKE ENERGY SPECIFICATIONS AND GEOTECHNICAL REPORT FOR ADDITIONAL RECOMMENDATIONS.



CONCRETE DRIVEWAY APRON
N.T.S.

NOTE: THE SECTION ABOVE IS TO BE CONFIRMED WITH THE GEOTECHNICAL ENGINEER AND REPORT.

Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 033840 CURTIS M. BLAZIER 11-7-17

MCADAMS

THE JOHN R. McADAMS COMPANY, INC.
2905 Meridian Parkway
Durham, North Carolina 27713
License No.: C-0293
(800) 733-5646 ▪ McAdamsCo.com

FINAL DRAWING – NOT RELEASED FOR CONSTRUCTION

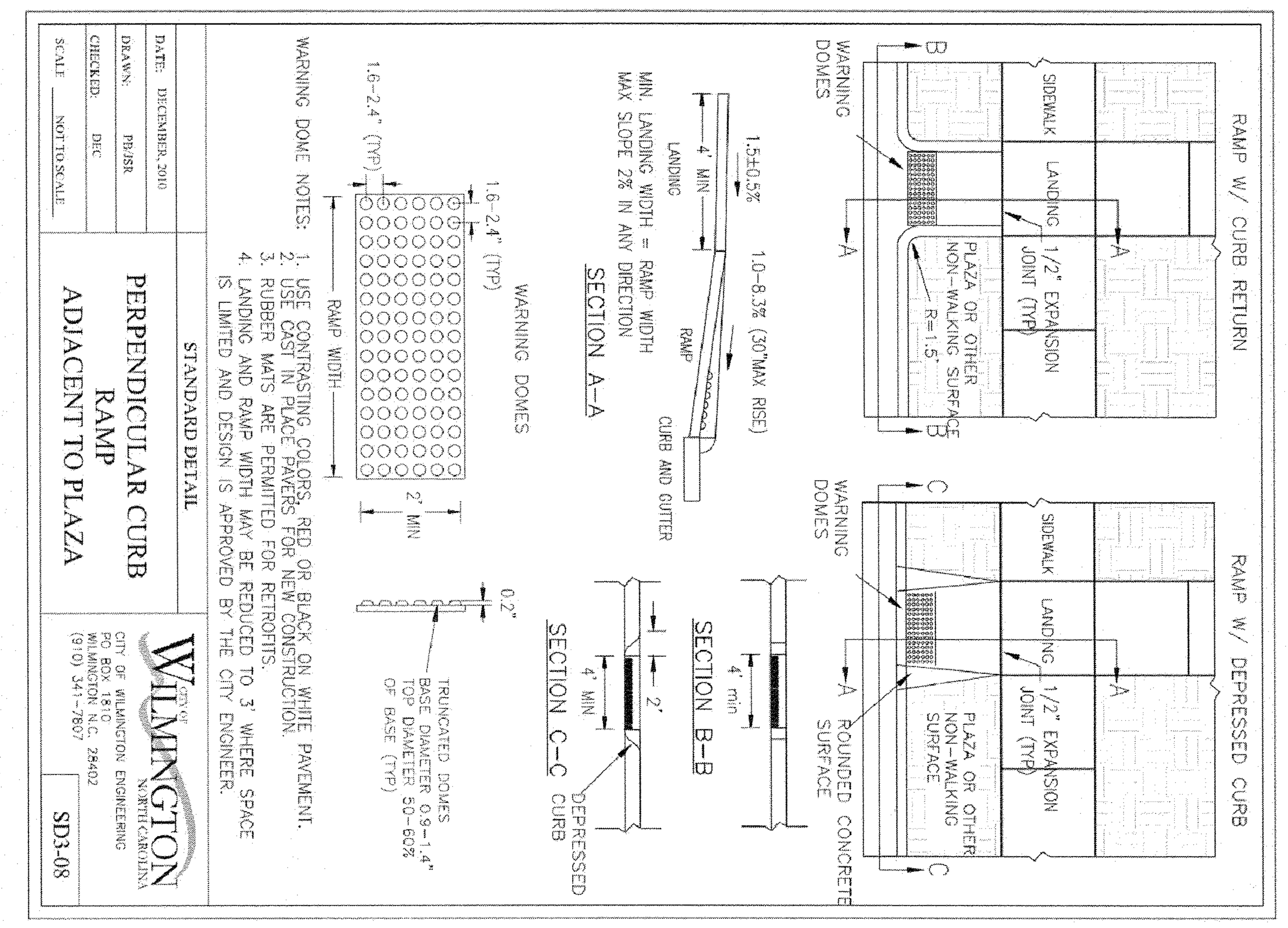
NO.	DATE	REVISION	BY	CK.	APP.
	–	–	–	–	–
2	2017–11–07	REVISED PER CITY OF WILMINGTON COMMENTS	JB	CB	–
1	2017–09–15	REVISED PER CITY OF WILMINGTON COMMENTS	JB	CB	–

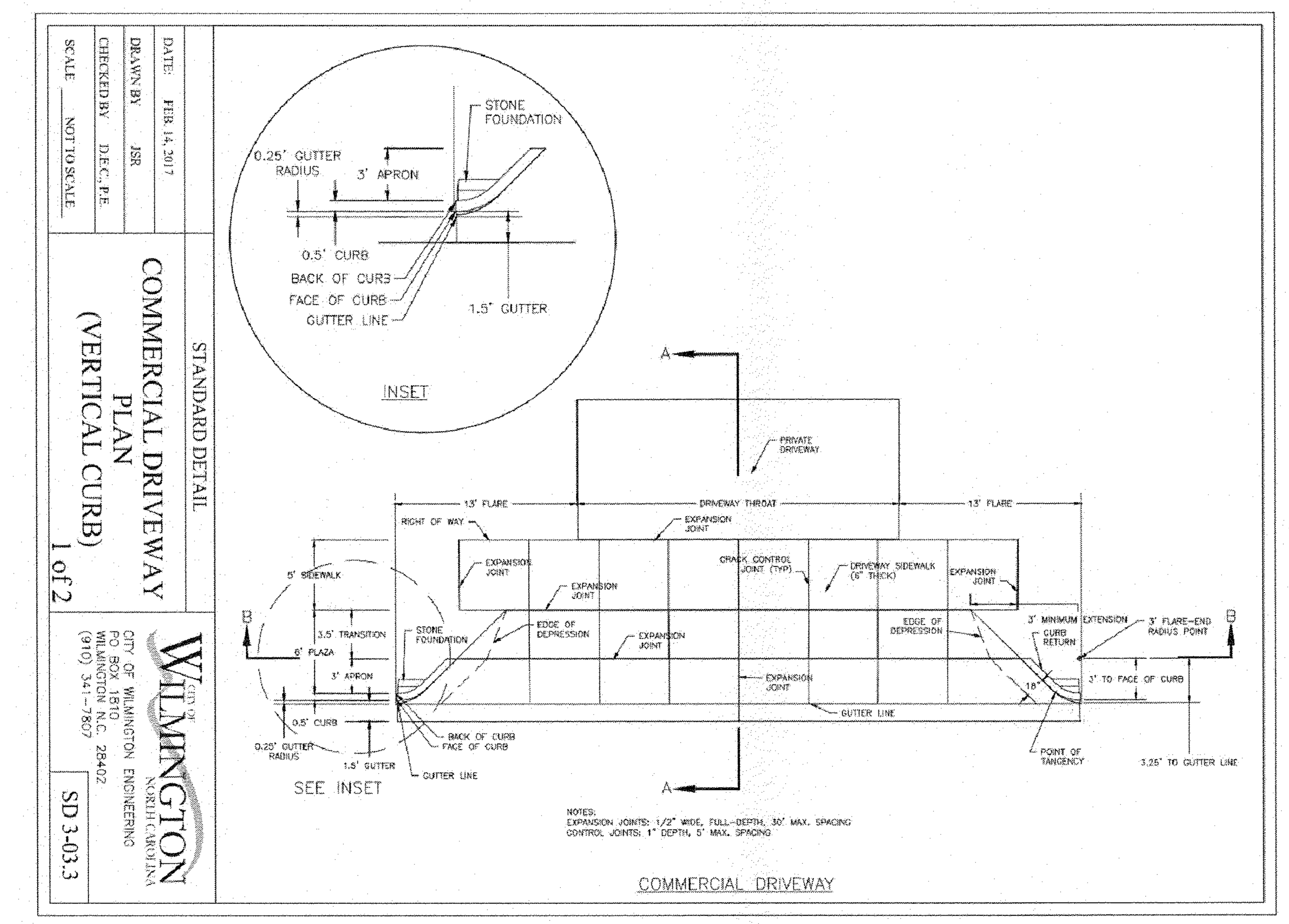
DUKE ENERGY. PROGRESS

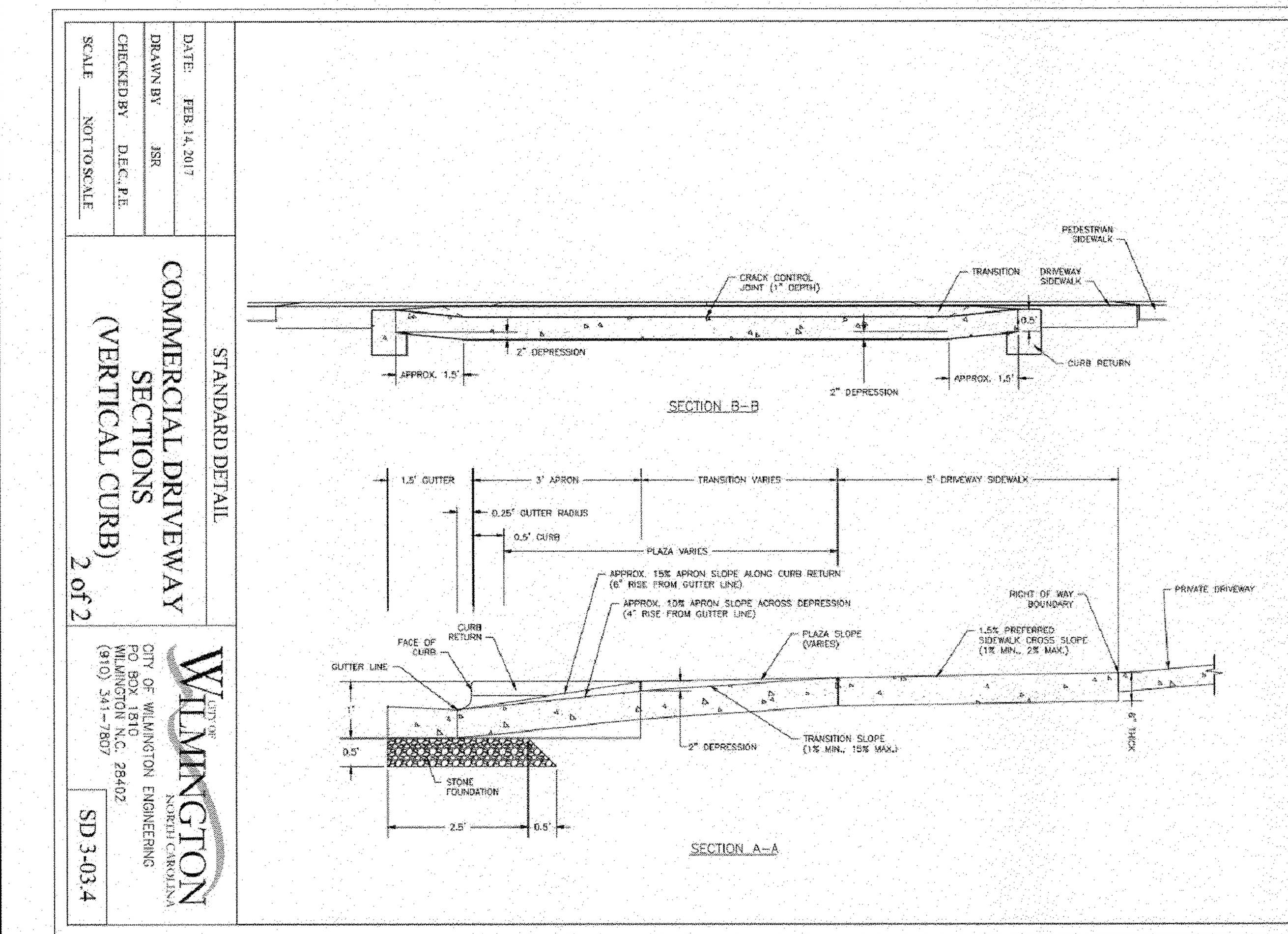
WILMINGTON SUNSET PARK 115 KV SUBSTATION
317 BORDEAUX AVENUE, WILMINGTON NC 27601
PROJECT DETAILS

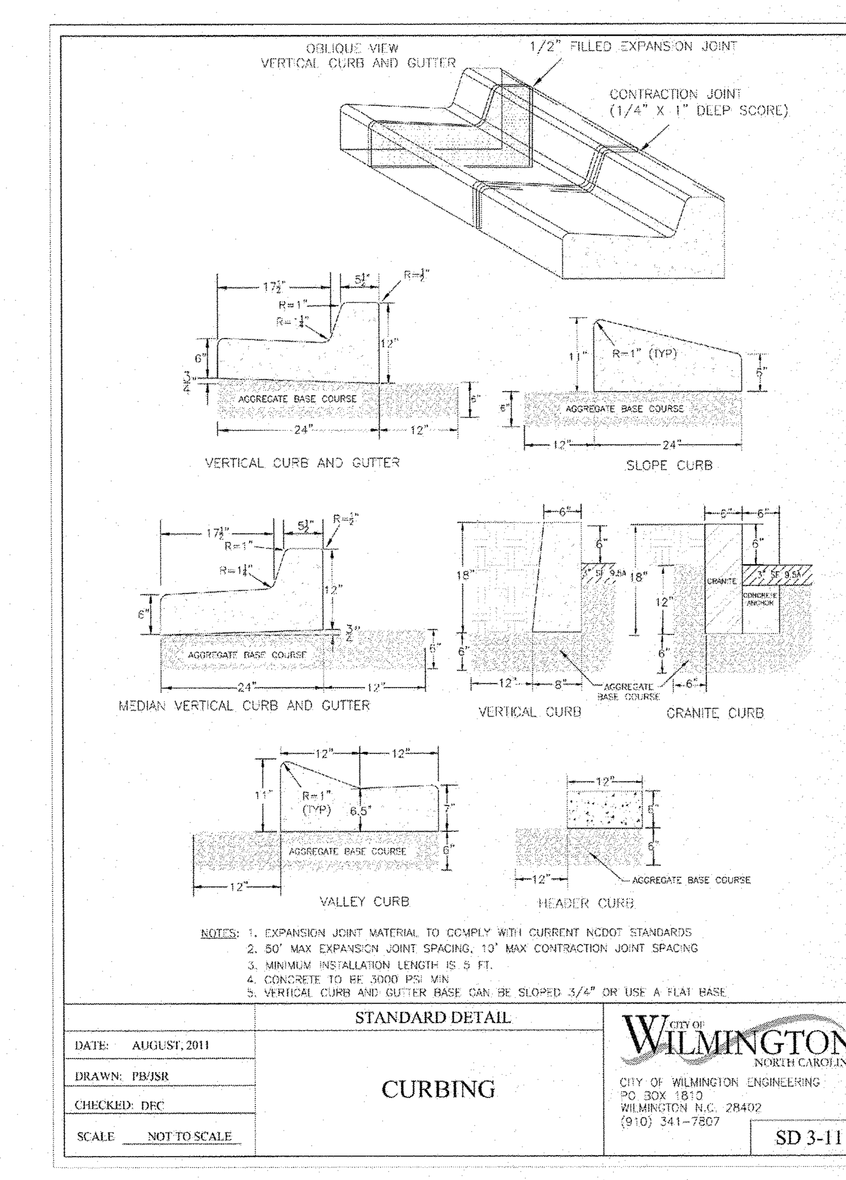
LOCATION: WILMINGTON, NC
SCALE: NTS SCALE RATIO: 1:1 PRJ. NO. DKE–17010
DRAWN: JB CHK. ––– APP. _
DATE: 05–15–17 DWG. NO. 70818, SHEET 17 OF 18

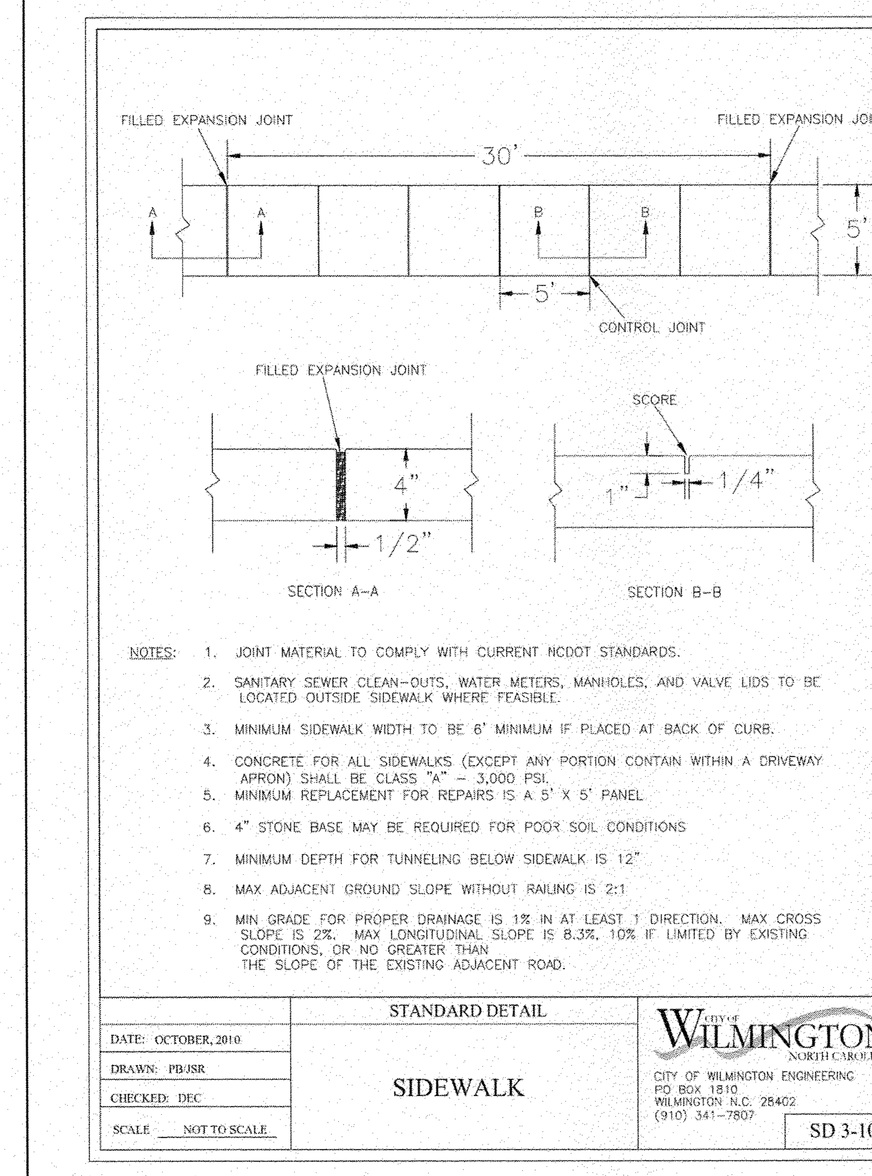
X:\Projects\DKE\DKE–17010\Land\Construction Drawings\Current Drawings\DKE17010–D1.dwg, 11/7/2017 3:12:41 PM, Blazier, Curt











TREE CONSERVATION DATA

QUANTITY	DBH INCHES	SPECIES	LDO TREE TYPE	VALUE PER TABLE IV
1	10	LIVE OAK	REGULATED	3.33
1	10	LIVE OAK	REGULATED	3.33
1	10	LIVE OAK	REGULATED	3.33
1	10	LIVE OAK	REGULATED	3.33
1	10	LIVE OAK	REGULATED	3.33
1	10	LIVE OAK	REGULATED	3.33
1	10	LONGLEAF PINE	N/A	0
1	10	LONGLEAF PINE	N/A	0
1	10	LONGLEAF PINE	N/A	0
1	10	LONGLEAF PINE	N/A	0
1	10	TWIN LONGLEAF PINE	N/A	0
1	10	TWIN LONGLEAF PINE	N/A	0
1	11	LONGLEAF PINE	N/A	0
1	11	LONGLEAF PINE	N/A	0
1	12	LIVE OAK	REGULATED	4
1	12	LIVE OAK	REGULATED	4
1	12	LIVE OAK	REGULATED	4
1	12	LIVE OAK	REGULATED	4
1	12	LIVE OAK	REGULATED	4
1	12	LONGLEAF PINE	REGULATED	4
1	12	LONGLEAF PINE	REGULATED	4
1	12	LONGLEAF PINE	REGULATED	4
1	14	LIVE OAK	REGULATED	4.67
1	14	LIVE OAK	REGULATED	4.67
1	14	LIVE OAK	REGULATED	4.67
1	14	LIVE OAK	REGULATED	4.67
1	14	LONGLEAF PINE	REGULATED	4.67
1	15	LONGLEAF PINE	REGULATED	5
1	16	LONGLEAF PINE	REGULATED	5.33
1	16	LONGLEAF PINE	REGULATED	5.33
1	16	LONGLEAF PINE	REGULATED	5.33
1	16	CLUSTER LONGLEAF PINE	REGULATED	5.33
1	18	LIVE OAK	REGULATED	6
1	18	LIVE OAK	REGULATED	6
1	18	LIVE OAK	REGULATED	6
1	18	LIVE OAK	REGULATED	6
1	18	LIVE OAK	REGULATED	6
1	18	LIVE OAK	REGULATED	6
1	18	LIVE OAK	REGULATED	6
1	18	LIVE OAK	REGULATED	6
1	18	LIVE OAK	REGULATED	6
1	18	TWIN LONGLEAF PINE	REGULATED	6
1	18	TWIN LONGLEAF PINE	REGULATED	6
1	20	LIVE OAK	REGULATED	6.67
1	20	LIVE OAK	REGULATED	6.67
1	20	TWIN LIVE OAK	REGULATED	6.67
1	24	LONGLEAF PINE	SIGNIFICANT	16
1	30	LIVE OAK	SIGNIFICANT	20
1	30	LIVE OAK	SIGNIFICANT	20
1	4	LIVE OAK	N/A	0
1	4	MAGNOLIA	REGULATED	1.33
1	4	TWIN LIVE OAK	N/A	0
1	5	MAGNOLIA	REGULATED	1.66
1	6	LIVE OAK	N/A	0
1	6	LIVE OAK	N/A	0
1	6	LIVE OAK	N/A	0
1	6	LIVE OAK	N/A	0
1	6	LIVE OAK	N/A	0
1	6	LIVE OAK	N/A	0
1	6	LIVE OAK	N/A	0
1	6	LIVE OAK	N/A	0
1	6	LIVE OAK	N/A	0
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1	6	LIVE OAK	N/A	0
1	6	LIVE OAK	N/A	0
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1	6	LIVE OAK	N/A	0
1	6	LIVE OAK	N/A	0
1	6	LIVE OAK	N/A	0
1	6	LIVE OAK	N/A	0
1	6	CLUSTER LIVE OAK	N/A	0
1	6	TWIN LONGLEAF PINE	N/A	0
1	7	EASTERN RED CEDAR	N/A	0
1	8	LIVE OAK	REGULATED	2.67
1	8	LIVE OAK	REGULATED	2.67
1	8	LIVE OAK	REGULATED	2.67
1	8	LIVE OAK	REGULATED	2.67
1	8	LONGLEAF PINE	N/A	0
1	8	LONGLEAF PINE	N/A	0
1	9	LIVE OAK	REGULATED	3
1	9	LONGLEAF PINE	N/A	0
1	9	LONGLEAF PINE	N/A	0
1	9	LONGLEAF PINE	N/A	0
86	969		REQUIRED REPLACEMENT TREES	240.35

QUANTITY	DBH INCHES	SPECIES	LDO TREE TYPE	CREDITS PER TABLE I
1	10	LIVE OAK	REGULATED	2
1	10	LIVE OAK	REGULATED	2
1	10	LIVE OAK	REGULATED	2
1	10	LIVE OAK	REGULATED	2
1	10	LIVE OAK	REGULATED	2
1	10	LIVE OAK	REGULATED	2
1	10	LIVE OAK	REGULATED	2
1	10	LIVE OAK	REGULATED	2
1	10	LIVE OAK	REGULATED	2
1	10	LIVE OAK	REGULATED	2
1	10	LIVE OAK	REGULATED	2
1	10	LIVE OAK	REGULATED	2
1	10	LIVE OAK CLUSTER	REGULATED	2
1	10	LIVE OAK TWIN	REGULATED	2
1	10	LONGLEAF PINE	N/A	2
1	10	LONGLEAF PINE	N/A	2
1	10	LONGLEAF PINE	N/A	2
1	10	LONGLEAF PINE	N/A	2
1	10	LONGLEAF PINE	N/A	2
1	10	LONGLEAF PINE	N/A	2
1	10	LONGLEAF PINE	N/A	2
1	10	LONGLEAF PINE	N/A	2
1	10	LONGLEAF PINE	N/A	2
1	10	LONGLEAF PINE	N/A	2
1	10	LONGLEAF PINE	N/A	2
1	11	LONGLEAF PINE	N/A	2
1	11	LONGLEAF PINE	N/A	2
1	11	LONGLEAF PINE	N/A	2
1	11	LONGLEAF PINE	N/A	2
1	11	LONGLEAF PINE	N/A	2
1	11	LONGLEAF PINE	N/A	2
1	11	LONGLEAF PINE	N/A	2
1	12	SWEET GUM	N/A	2
1	12	LIVE OAK	REGULATED	3
1	12	LIVE OAK	REGULATED	3
1	12	LIVE OAK	REGULATED	3
1	12	LIVE OAK	REGULATED	3
1	12	LIVE OAK	REGULATED	3
1	12	LIVE OAK	REGULATED	3
1	12	LIVE OAK TWIN	REGULATED	3
1	12	LIVE OAK TWIN	REGULATED	3
1	12	LONGLEAF PINE	REGULATED	3
1	12	LONGLEAF PINE	REGULATED	3
1	12	LONGLEAF PINE	REGULATED	3
1	12	LONGLEAF PINE	REGULATED	3
1	12	LONGLEAF PINE	REGULATED	3
1	12	LONGLEAF PINE	REGULATED	3
1	12	LONGLEAF PINE	REGULATED	3
1	13	LIVE OAK CLUSTER	REGULATED	3
1	13	LIVE OAK TWIN	REGULATED	3
1	13	LONGLEAF PINE	REGULATED	3
1	13	LONGLEAF PINE	REGULATED	3
1	13	LONGLEAF PINE	REGULATED	3
1	13	LONGLEAF PINE	REGULATED	3
1	13	LONGLEAF PINE TWIN	REGULATED	3
1	14	LIVE OAK	REGULATED	3
1	14	LIVE OAK	REGULATED	3
1	14	LIVE OAK	REGULATED	3
1	14	LIVE OAK	REGULATED	3
1	14	LIVE OAK	REGULATED	3
1	14	LIVE OAK TWIN	REGULATED	3
1	14	LONGLEAF PINE	REGULATED	3
1	14	LONGLEAF PINE	REGULATED	3
1	14	LONGLEAF PINE	REGULATED	3
1	14	LONGLEAF PINE	REGULATED	3
1	14	LONGLEAF PINE	REGULATED	3
1	15	LONGLEAF PINE	REGULATED	3
1	15	LONGLEAF PINE	REGULATED	3
1	16	LIVE OAK	REGULATED	3
1	16	LIVE OAK	REGULATED	3
1	16	LIVE OAK TWIN	REGULATED	3
1	16	LONGLEAF PINE	REGULATED	3
1	16	LONGLEAF PINE	REGULATED	3
1	16	LONGLEAF PINE	REGULATED	3
1	17	LIVE OAK TWIN	REGULATED	3
1	18	LIVE OAK	REGULATED	4
1	18	LIVE OAK	REGULATED	4
1	18	LIVE OAK	REGULATED	4
1	2	LONGLEAF PINE	REGULATED	1
1	20	LIVE OAK	REGULATED	4
1	20	LIVE OAK CLUSTER	REGULATED	4
1	20	LONGLEAF PINE TWIN	REGULATED	4
1	22	LONGLEAF PINE	REGULATED	4
1	24	SWEET GUM TWIN	N/A	4
1	24	LIVE OAK CLUSTER	SIGNIFICANT	4
1	30	LIVE OAK	SIGNIFICANT	5
1	32	LIVE OAK TWIN	SIGNIFICANT	5.33
1	4	LIVE OAK	N/A	1
1	4	LIVE OAK	N/A	1
1	48	LIVE OAK CLUSTER	SIGNIFICANT	8
1	5	SWEET GUM	N/A	1
1	5	SWEET GUM	N/A	1
1	5	LIVE OAK	N/A	1
1	5	LIVE OAK	N/A	1
1	5	LIVE OAK	N/A	1
1	5	LIVE OAK	N/A	1
1	5	LIVE OAK	N/A	1
1	5	LIVE OAK TWIN	N/A	1
1	6	CEDAR	N/A	2

QUANTITY	DBH INCHES	SPECIES	LDO TREE TYPE	CREDITS PER TABLE I
1	6	CEDAR	N/A	2
1	6	SWEET GUM	N/A	2
1	6	MAPLE	N/A	2
1	6	LIVE OAK	N/A	2
1	6	LIVE OAK	N/A	2
1	6	LIVE OAK	N/A	2
1	6	LIVE OAK	N/A	2
1	6	LIVE OAK	N/A	2
1	6	LIVE OAK	N/A	2
1	6	LIVE OAK	N/A	2
1	6	LIVE OAK	N/A	2
1	6	LIVE OAK	N/A	2
1	6	LIVE OAK	N/A	2
1	6	LIVE OAK	N/A	2
1	6	LIVE OAK	N/A	2
1	6	LIVE OAK	N/A	2
1	6	LIVE OAK	N/A	2
1	6	LIVE OAK	N/A	2
1	6	LIVE OAK	N/A	2
1	6	LIVE OAK	N/A	2
1	6	LIVE OAK	N/A	2
1	6	LIVE OAK	N/A	2
1	6	LIVE OAK	N/A	2
1	6	LIVE OAK	N/A	2
1	6	LIVE OAK	N/A	2
1	6	LIVE OAK	N/A	2
1	6	LIVE OAK	N/A	2
1	6	LIVE OAK	N/A	2
1	6	LIVE OAK	N/A	2
1	6	LIVE OAK	N/A	2
1	6	LIVE OAK	N/A	2
1	6	LIVE OAK	N/A	2
1	6	LIVE OAK	N/A	2
1	6	LIVE OAK	N/A	2
1	6	LIVE OAK	N/A	2
1	6	LIVE OAK	N/A	2
1	6	LIVE OAK	N/A	2
1	6	LIVE OAK	N/A	2
1	6	LIVE OAK	N/A	2
1	6	LIVE OAK	N/A	2
1	6	LIVE OAK	N/A	2
1	6	LIVE OAK	N/A	2
1	6	LIVE OAK	N/A	2
1	6	LIVE OAK	N/A	2
1	6	LIVE OAK	N/A	2
1	6	LIVE OAK	N/A	2
1	6	LIVE OAK	N/A	2
1	6	LIVE OAK	N/A	2
1	6	LIVE OAK	N/A	2
1	6	LIVE OAK	N/A	2
1	6	LIVE OAK	N/A	2
1	6	LIVE OAK	N/A	2
1	6	LIVE OAK	N/A	2
1	6	LIVE OAK TWIN	N/A	2
1	6	LIVE OAK TWIN	N/A	2
1	6	LONGLEAF PINE	N/A	2
1	6	LONGLEAF PINE	N/A	2
1	6	LONGLEAF PINE	N/A	2
1	6	LONGLEAF PINE	N/A	2
1	6	LONGLEAF PINE	N/A	2
1	7	SWEET GUM	N/A	2
1	7	LIVE OAK	N/A	2
1	7	LIVE OAK	N/A	2
1	7	LIVE OAK	N/A	2
1	7	LIVE OAK	N/A	2
1	7	LIVE OAK	N/A	2
1	7	LIVE OAK	N/A	2
1	7	LIVE OAK	N/A	2
1	7	LIVE OAK	N/A	2
1	7	LONGLEAF PINE	N/A	2
1	7	LONGLEAF PINE	N/A	2
1	8	CEDAR	N/A	2
1	8	CEDAR CLUSTER	N/A	2
1	8	SWEET GUM	N/A	2
1	8	SWEET GUM	N/A	2
1	8	LIVE OAK	REGULATED	2
1	8	LIVE OAK	REGULATED	2
1	8	LIVE OAK	REGULATED	2
1	8	LIVE OAK	REGULATED	2
1	8	LIVE OAK	REGULATED	2
1	8	LIVE OAK	REGULATED	2
1	8	LIVE OAK	REGULATED	2
1	8	LIVE OAK	REGULATED	2
1	8	LIVE OAK CLUSTER	REGULATED	2
1	8	LIVE OAK TWIN	REGULATED	2
1	8	LONGLEAF PINE	N/A	2
1	8	LONGLEAF PINE	N/A	2
1	8	LONGLEAF PINE	N/A	2
1	8	LONGLEAF PINE	N/A	2
1	9	LIVE OAK	REGULATED	2
1	9	LIVE OAK	REGULATED	2
1	9	LONGLEAF PINE	N/A	2
191	1865		TOTAL TREE CREDIT	443.33

Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

NORTH CAROLINA PROFESSIONAL SEAL 033840 ENGINEER CURTIS M. BLAZIER 9-15-17

McADAMS

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FINAL DRAWING – NOT RELEASED FOR CONSTRUCTION

NO.	DATE	REVISION	BY	CK.	APP.
	–	–	–	–	–
	–	–	–	–	–
1	2017-09-15	REVISED PER CITY OF WILMINGTON COMMENTS	–	–	–

DUKE ENERGY. PROGRESS

WILMINGTON SUNSET PARK 115 KV SUBSTATION
317 BORDEAUX AVENUE, WILMINGTON NC 27601
PROJECT DETAILS AND TREE CONSERVATION DATA

LOCATION: WILMINGTON, NC
SCALE: NTS SCALE RATIO: 1:1 PRJ. NO. DKE-17010
DRAWN: JB CHK. --- APP. _
DATE: 05-15-17 DWG. NO. 70818, SHEET 18 OF 18

X:\Projects\DKE\DKE-17010\Land\Construction Drawings\Current Drawings\DKE17010-D1.dwg, 9/15/2017 2:55:24 PM, Bell, Josh