

WILMINGTON SUNSET PARK 115kV SUBSTATION

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

DATE: DECEMBER 13, 2017

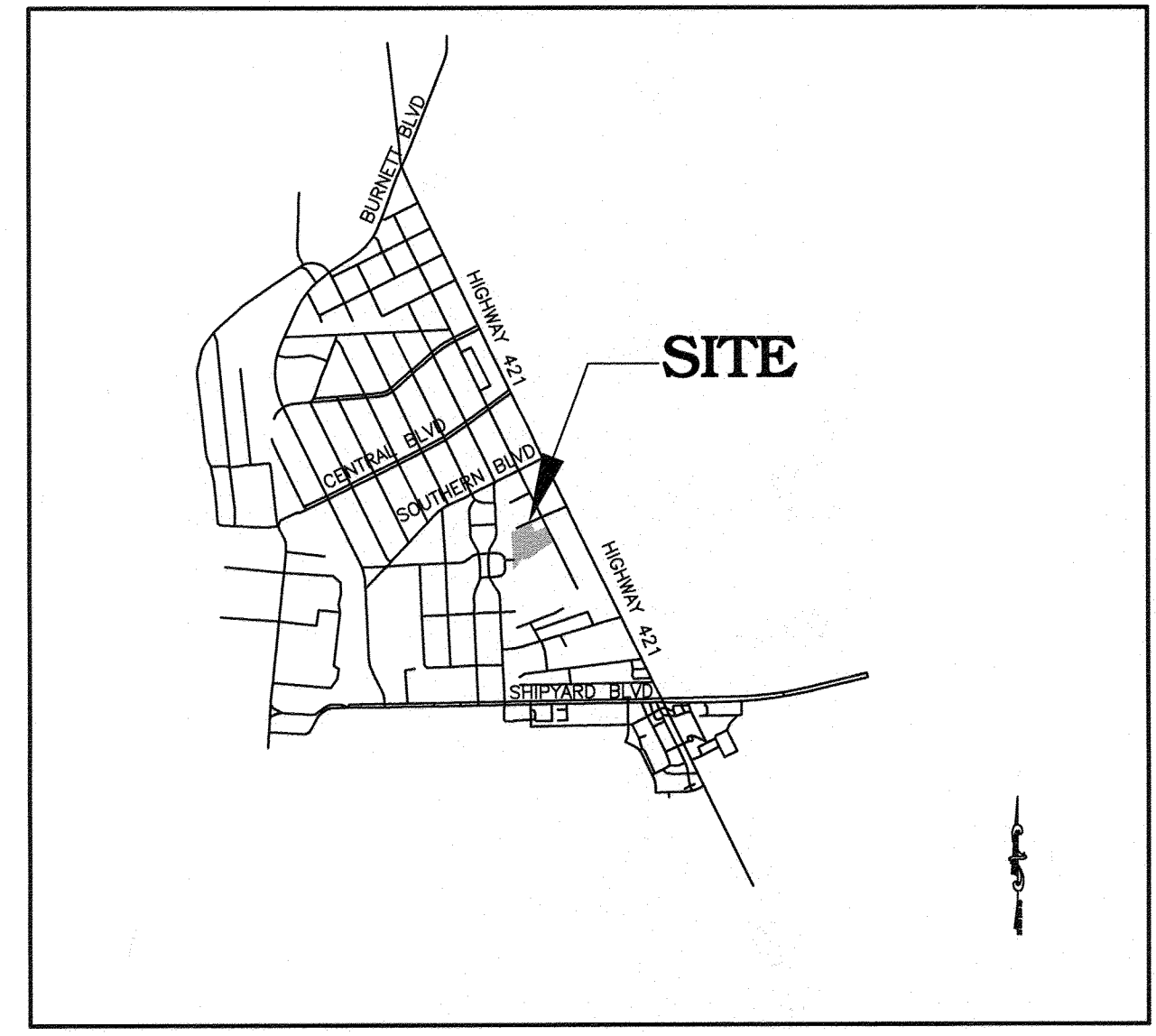
LATITUDE: 34.1983
LONGITUDE: -77.9392
DUKE PROJECT NUMBER: 140606H03

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

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: 46,138 SF/0.06 AC (23.4% PARCEL AREA) NET IMPERVIOUS AREA INCREASE: 42,459 SF/0.97 AC (21.4% 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 # 3720312800J 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 FRONT: 20' SIDE: 20' REAR: 20' PROPOSED FRONT: 20' SIDE: 20' REAR: 20'

SHEET INDEX

- 1 COVER SHEET
- 2 EXISTING CONDITIONS
- 3 TREE SURVEY
- 4 PROJECT NOTES
- 5 DEMOLITION PLAN
- 6 SITE PLAN
- 7 GRADING AND STORM DRAINAGE PLAN
- 8 SEDIMENT & EROSION CONTROL - STAGE 1
- 9 SEDIMENT & EROSION CONTROL - STAGE 2
- 10 SEDIMENT & EROSION CONTROL - STAGE 3
- 11 SEDIMENT & EROSION CONTROL DETAILS
- 12 SEDIMENT & EROSION CONTROL DETAILS
- 13 LANDSCAPE PLAN
- 14 ACCESS ROAD A & B PROFILES
- 15 NORTH - SOUTH BASELINE PROFILE
- 16 EAST - WEST BASELINE PROFILE
- 17 PROJECT DETAILS
- 18 PROJECT DETAILS AND TREE CONSERVATION DATA

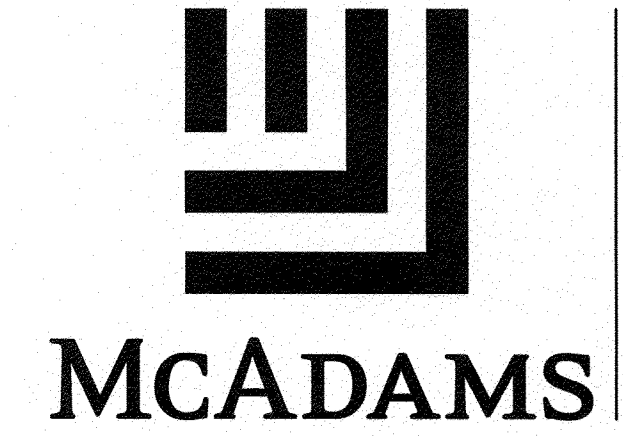
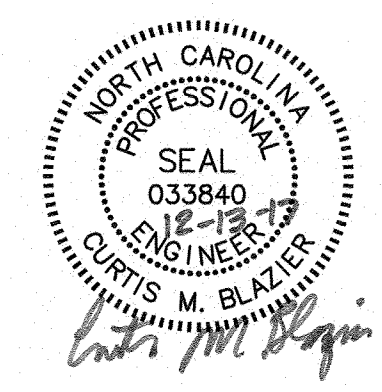


VICINITY MAP
NTS



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.



CITY OF WILMINGTON
NORTH CAROLINA
Public Services Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date: 12/18/17 Permit # 2017053
Signed: *[Signature]*

Approved Construction Plan		
Name	Date	
Planning: <i>Nicole D. Smith</i>	12/15/17	
Traffic: <i>[Signature]</i>	12-15-17	
Fire: <i>James Merritt</i>	12-18-17	

SHEET 1 OF 18
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@mcadamsc.com

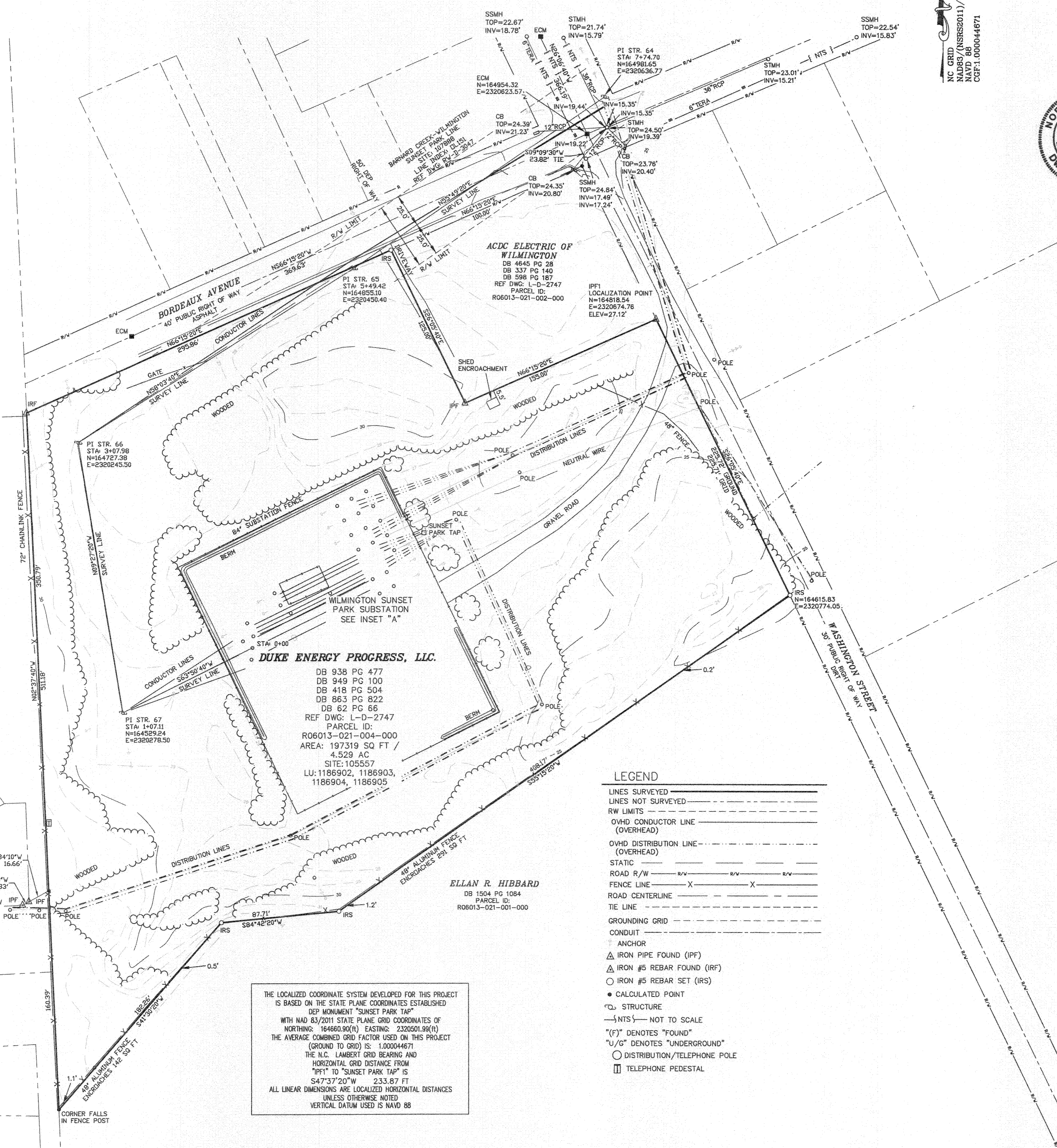


ESP Associates, P.A.
211 Racine Drive, Suite 101
Wilmington, NC 28403
910-313-6644
www.espaceassociates.com
Telefax-910-313-6823
License: C-0587

NEW DAWSON LIMITED PARTNERSHIP
DB 3026 PG 165
PARCEL ID: R06013-021-032-000

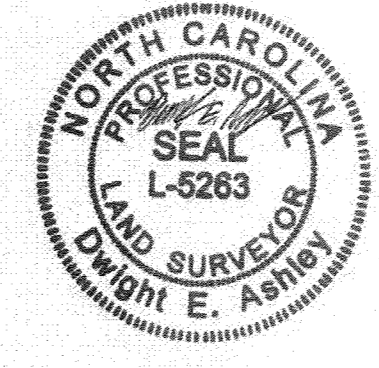
SUNSET SOUTH OWNERS ASSOCIATION
DB 5839 PG 1199
MB 45 PG 359
PARCEL ID: R06013-016-003-000

SUNSET SOUTH SUBDIVISION
MB 45 PG 359



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(1) EASTING: 2320501.99(1) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 1.00004671 THE N.C. LAMBERT GRID BEARING AND HORIZONTAL GRID DISTANCE FROM "T1" 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

- LEGEND**
- LINES SURVEYED
 - - - LINES NOT SURVEYED
 - - - RW LIMITS
 - O/VHD CONDUCTOR LINE (OVERHEAD)
 - O/VHD 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

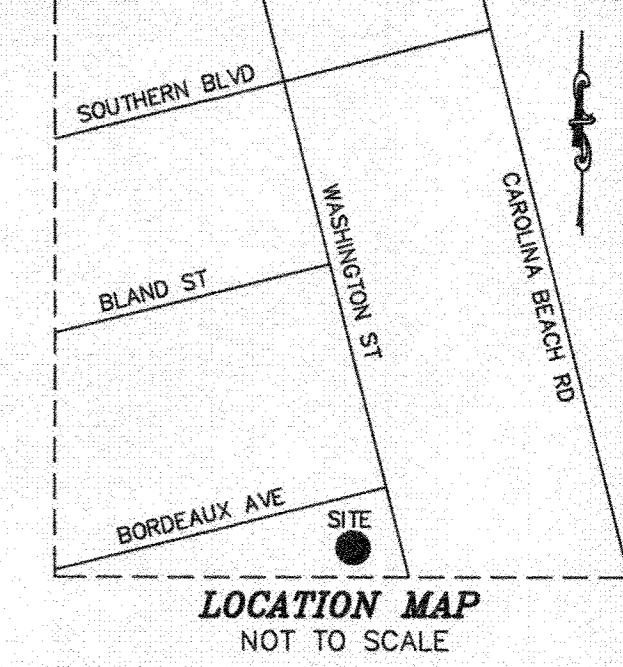


I, DWIGHT E. ASHLEY, CERTIFY THAT THIS PLAN WAS DRAWN UNDER MY SUPERVISION FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION (DEED DESCRIPTION, RECORDED IN BOOK 938, PAGE 477 AS SHOWN); THAT THE BOUNDARIES NOT SURVEYED ARE INDICATED AS BROKEN LINES; THAT THE RATIO OF PRECISION OR POSITIONAL ACCURACY AS CALCULATED IS 1:10000+; AND THAT THIS PLAN MEETS THE REQUIREMENTS OF THE STANDARDS OF PRACTICE FOR LAND SURVEYING IN NORTH CAROLINA (21 NCAC 58.1000); THAT THIS PLAN 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.

Dwight E. Ashley DATE 6/23/2017
PROFESSIONAL LAND SURVEYOR L-5263

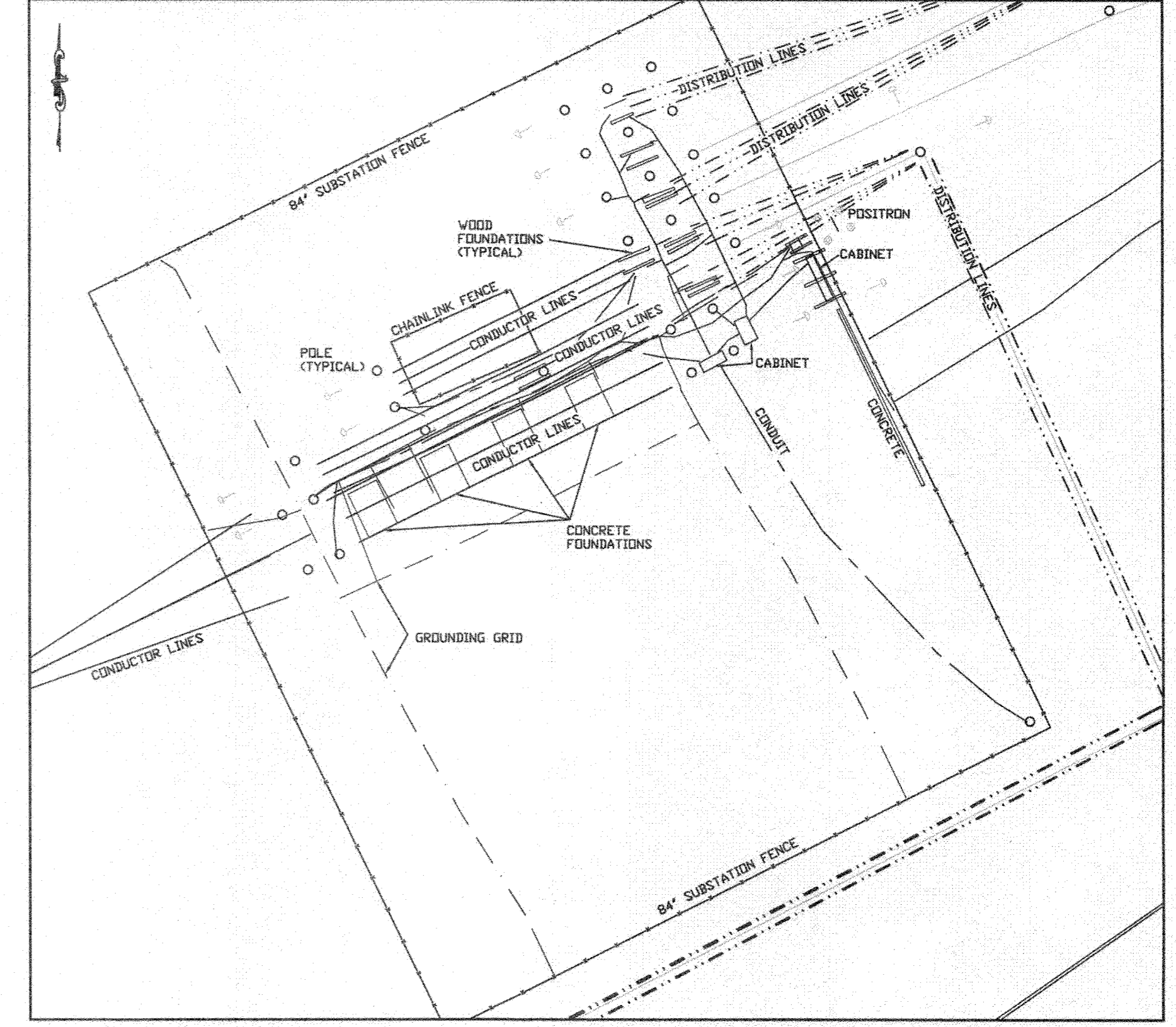


- NOTES:**
1. SURVEYED AND MAPPED FOR DUKE ENERGY PROGRESS, LLC.
 2. SURVEYED AND MAPPED BY ESP ASSOCIATES, PA.
 3. ALL AREAS COMPUTED BY COORDINATE COMPUTATION METHOD.
 4. THIS SURVEY WAS EXECUTED WITHOUT THE BENEFIT OF A FULL TITLE REPORT AND IS SUBJECT TO ANY EASEMENTS, RIGHT OF WAY OR ENCUMBRANCES A FULL TITLE 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

APPROVED CONST. PLAN
Name: *Nicole Smith* Date: 12/15/17
Public Utilities
Title: *WSPUB 12-15-17*
File: *James Newitt 12-18-17*

APPROVED
CITY OF WILMINGTON
ENGINEERING DEPARTMENT
12/18/17 *[Signature]* 2017053

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

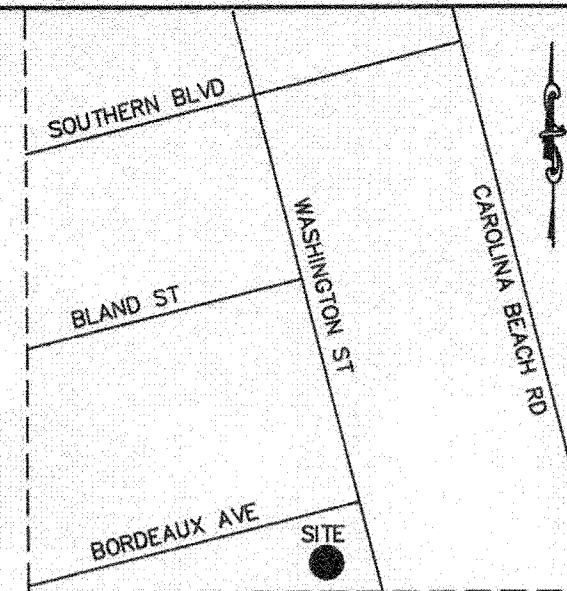
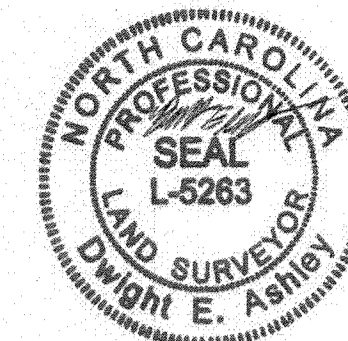
BOOK: 20170623 20 CREW: JRB
DATE: 6/23/17 DRAWN BY: DEA
SCALE: 1" = 40' SCALE IN FEET R.O.P. = 1:10000+

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.
211 Racine Drive, Suite 101
Wilmington, NC 28403
910-313-9649
www.espassociates.com
Telefax-910-313-8823
License: C-0587



LOCATION MAP
NOT TO SCALE

NC GRID
NAD83/(NRSR2011)
NAD 88
CGE1.000044671



DUKE ENERGY PROGRESS, LLC.

DB 938 PG 477
DB 949 PG 100
DB 418 PG 504
DB 863 PG 822
DB 62 PG 66
REF DWG: L-D-2747
PARCEL ID:
R06013-021-004-000
SITE: 105557
LU: 1186902, 1186903,
1186904, 1186905

LEGEND

- LINES SURVEYED
- ROAD R/W
- FENCE LINE
- WOODS LINE
- LIVE OAK TREE
- * LONG LEAF PINE TREE
- ⊙ SWEET GUM TREE
- ⊙ EASTERN RED CEDAR TREE
- ⊙ OTHER TREE

Approved Const. Plan
Name: Nicole D Smith
Planning: 12/15/17
Public Utilities: J. Smith
Traffic: J. Smith
Fire: J. Smith

STORMWATER MANAGEMENT PLAN
APPROVED
CITY OF WILMINGTON
ENGINEERING DEPARTMENT
DATE: 12/18/17
[Signature]

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: 20170823 DATE: 6/23/17 SCALE: 1" = 40'
DRAWN BY: DEB
CREW: JRB
R.O.P. = 1:10000+
MAP: 105557-456497

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

CITY OF WILMINGTON STANDARD NOTES

- PRIOR TO ANY CLEARING, GRADING OR CONSTRUCTION ACTIVITY, TREE PROTECTION FENCING SHALL BE INSTALLED AROUND PROTECTED TREES OR GROVES OF TREES. NO CONSTRUCTION WORKERS, TOOLS, MATERIALS, OR VEHICLES ARE PERMITTED WITHIN THE TREE PROTECTION FENCING.
- ANY TREES AND/OR AREAS DESIGNATED TO BE PROTECTED MUST BE PROPERLY BARRICADED WITH FENCING AND PROTECTED THROUGHOUT CONSTRUCTION TO INSURE THAT NO CLEARING, GRADING OR STAGING OF MATERIALS WILL OCCUR IN THOSE AREAS.
- NO EQUIPMENT IS ALLOWED ON SITE UNTIL ALL TREE PROTECTION FENCING AND SILT FENCING IS INSTALLED AND APPROVED. PROTECTIVE FENCING IS TO BE MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT, AND CONTRACTORS SHALL RECEIVE ADEQUATE INSTRUCTION ON TREE PROTECTION METHODS.
- ALL PAVEMENT MARKINGS IN PUBLIC RIGHTS-OF-WAY AND FOR DRIVEWAYS ARE TO BE THERMOPLASTIC AND MEET CITY AND/OR NCDOT STANDARDS.
- ONCE STREETS ARE OPEN TO TRAFFIC, CONTACT TRAFFIC ENGINEERING REGARDING THE INSTALLATION OF TRAFFIC AND STREET NAME SIGNS. PROPOSED STREET NAMES MUST BE APPROVED PRIOR TO INSTALLATION OF STREET NAME SIGNS.
- TRAFFIC CONTROL DEVICES (INCLUDING SIGNS AND PAVEMENT MARKINGS) IN AREAS OPEN TO PUBLIC TRAFFIC ARE TO MEET MUTCD (MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES) STANDARDS.
- CONTACT TRAFFIC ENGINEERING AT 910-341-7888 TO ENSURE THAT ALL TRAFFIC SIGNAL FACILITIES AND EQUIPMENT ARE SHOWN ON THE PLAN.
- CALL TRAFFIC ENGINEERING AT 910-341-7888 FORTY-EIGHT (48) HOURS PRIOR TO ANY EXCAVATION IN THE RIGHT-OF-WAY.
- TRAFFIC ENGINEERING MUST APPROVE OF PAVEMENT MARKING PRIOR TO ACTUAL STRIPING.
- ALL PARKING STALL MARKINGS AND LANE ARROWS WITHIN THE PARKING AREAS SHALL BE WHITE.
- ALL TRAFFIC CONTROL SIGNS AND MARKINGS OFF THE RIGHT-OF-WAY ARE TO BE MAINTAINED BY THE PROPERTY OWNER.
- STOP SIGNS AND STREET SIGNS TO REMAIN IN PLACE DURING CONSTRUCTION.
- TACTILE WARNING MATS WILL BE INSTALLED ON ALL WHEELCHAIR RAMPS.
- A UTILITY CUT PERMIT IS REQUIRED FOR EACH OPEN CUT OF A CITY STREET.
- ANY BROKEN OR MISSING SIDEWALK PANELS, DRIVEWAY PANELS, AND CURBING WILL BE REPLACED.
- CONTACT TRAFFIC ENGINEERING AT 910-341-7888 TO DISCUSS STREET LIGHTING OPTIONS.
- WATER AND SEWER SERVICE SHALL MEET CAPE FEAR PUBLIC UTILITY AUTHORITY (CFPUA) DETAILS AND SPECIFICATIONS.
- PROJECT SHALL COMPLY WITH CFPUA CROSS CONNECTION CONTROL REQUIREMENTS. WATER METER(S) CANNOT BE RELEASED UNTIL ALL REQUIREMENTS ARE MET AND THE STATE HAS GIVEN THEIR FINAL APPROVAL. CALL 910-343-3910 FOR INFORMATION.
- IF THE CONTRACTOR DESIRES CFPUA WATER FOR CONSTRUCTION, HE SHALL APPLY IN ADVANCE FOR THIS SERVICE AND MUST PROVIDE A REDUCED PRESSURE ZONE (RPZ) BACKFLOW PREVENTION DEVICE ON THE DEVELOPER'S SIDE OF THE WATER METER BOX.
- ANY IRRIGATION SYSTEM SUPPLIED BY CFPUA WATER SHALL COMPLY WITH THE CFPUA CROSS CONNECTION CONTROL REGULATIONS. CALL 919-343-3910 FOR INFORMATION.
- ANY IRRIGATION SYSTEM SHALL BE EQUIPPED WITH A RAIN AND FREEZER SENSOR.
- ANY BACKFLOW PREVENTION DEVICES REQUIRED BY THE CFPUA WILL NEED TO BE ON THE LIST OF APPROVED DEVICES BY USFCFCCOHR OR ASSE.
- CONTRACTOR TO FIELD VERIFY EXISTING WATER AND SEWER SERVICE LOCATIONS, SIZES AND MATERIALS PRIOR TO CONSTRUCTION. ENGINEER TO BE NOTIFIED OF ANY CONFLICTS.
- CONTRACTOR SHALL MAINTAIN ALL-WEATHER ACCESS FOR EMERGENCY VEHICLES AT ALL TIMES DURING CONSTRUCTION.
- UNDERGROUND FIRE LINE(S) MUST BE PERMITTED AND INSPECTED BY THE WILMINGTON FIRE DEPARTMENT FROM THE PUBLIC RIGHT-OF-WAY TO THE BUILDING. CONTACT THE WILMINGTON FIRE DEPARTMENT DIVISION OF FIRE AND LIFE SAFETY AT 910-341-0866.
- NO OBSTRUCTIONS ARE PERMITTED IN THE SPACE BETWEEN THIRTY (30) INCHES AND TEN (10) FEET ABOVE THE GROUND WITHIN THE TRIANGULAR SIGHT DISTANCE.
- CONTACT THE NORTH CAROLINA ONE CALL CENTER AT 1-800-632-4949 PRIOR TO DOING ANY DIGGING, CLEARING, OR GRADING.
- 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 GROUND COVER SUFFICIENT TO PERMANENTLY RESTRAIN EROSION SHALL BE RE-ESTABLISHED WITHIN 21 CALENDAR DAYS AFTER COMPLETION OF ANY PHASE OF GRADING. PERMANENT GROUND COVER 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 11 FOR SEASONAL RATES, APPLICATION PROCEDURES, AND MAINTENANCE NOTES.

EROSION CONTROL NOTES

- EROSION AND SEDIMENT CONTROL DEVICES MUST BE INSTALLED AND INSPECTED PRIOR TO ANY GRADING ON SITE. THE CONTRACTOR SHALL CALL FOR AN INSPECTION ONCE INITIAL MEASURES ARE IN PLACE.
- 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.
- THE PERMANENT STORM DRAINAGE SWALES ARE TO BE MATTED IMMEDIATELY UPON CONSTRUCTION.
- A COPY OF THE APPROVED EROSION CONTROL PLAN MUST BE ON FILE AT THE JOB SITE AT ALL TIMES.
- INSTALL A RAIN GAUGE (6" CAPACITY OR GREATER) ONSITE.
- CONSTRUCTION, MAINTENANCE, AND REMOVAL OF ALL EROSION CONTROL DEVICES ARE THE RESPONSIBILITY OF THE GRADING CONTRACTOR UNLESS OTHERWISE NOTED.
- ANY GRADING BEYOND THE DENUDED LIMITS SHOWN ON THE PLAN IS A VIOLATION OF THE EROSION CONTROL PERMIT AND IS SUBJECT TO A FINE.
- 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.
- ADDITIONAL MEASURES TO CONTROL EROSION AND SEDIMENT MAY BE REQUIRED BY CITY OF WILMINGTON AND/OR A REPRESENTATIVE OF THE NCDOT DEMLR DEPARTMENT.
- 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.
- 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 NCDOT DEMLR INSPECTOR AND THE ENGINEER OR THE OWNER'S REPRESENTATIVE.
- CONTRACTOR WILL FIELD LOCATE SILT FENCE OUTLETS AT LOW POINTS IN SILT FENCE AS REQUIRED TO PROVIDE RELIEF FROM CONCENTRATED FLOWS.
- 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.
- REQUIRED TREE PROTECTION FENCING SHALL BE INSTALLED PRIOR TO BEGINNING LAND DISTURBANCE.
- 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.
- 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.
- ALL CONSTRUCTION DEBRIS SHALL BE TESTED AND DISPOSED OF OFF-SITE IN A STATE PERMITTED LINED LANDFILL.
- 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

- 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.
- 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 THE PRESSURE ON THE FENCE. FENCING MATERIALS AND SEDIMENT DEPOSITS SHALL BE REMOVED, AND THE AREA BROUGHT TO GRADE FOLLOWING STABILIZATION OF UPGRADED 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 (HOW) 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 HOW 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

- 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.
- PROPERTY LIES WITHIN FEMA ZONE X (OUTSIDE 500 YEAR FLOOD PLAN) AS PER FEMA FIRM COMMUNITY PANEL NO. 3720312600I, REVISED DATE 04-03-06.
- PROJECT SITE IS LOCATED IN THE CAPE FEAR RIVER BASIN.
- ALL MATERIALS, CONSTRUCTION, WORKMANSHIP SHALL MEET CITY OF WILMINGTON, DUKE ENERGY PROGRESS, LLC (DEP), AND NCDOT (WHERE APPLICABLE) SPECIFICATIONS, STANDARDS AND DESIGN.
- CONTRACTOR SHALL COMPLY WITH ALL PERTINENT PROVISIONS OF THE "MANUAL OF ACCIDENT PREVENTION IN CONSTRUCTION" ISSUED BY AOC OF AMERICA, INC., AND THE SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION ISSUED BY THE U.S. DEPARTMENT OF LABOR.
- NOT ALL EXISTING UTILITIES ARE SHOWN. LOCATIONS SHOWN ARE APPROXIMATE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ACCURATELY LOCATE BOTH HORIZONTAL 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.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OF ANY PAVEMENT OR EXISTING UTILITIES THAT MAY BE DAMAGED DUE TO CONSTRUCTION ACTIVITY. EXERCISE CAUTION.
- 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.
- 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.
- 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.
- FOUNDATIONS, FENCES AND LIGHTING BY OTHERS.
- 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.
- ALL SITE WORK SHALL CONFORM TO DUKE ENERGY STANDARDS AND SPECIFICATIONS.
- DISTRIBUTION LINES ARE NOT SHOWN FOR CLARITY AT THIS TIME.
- ALL CONSTRUCTION DEBRIS SHALL BE TESTED AND DISPOSED OF OFF-SITE IN A STATE PERMITTED LINED LANDFILL OR AS DIRECTED BY DEP REPRESENTATIVE.
- DRIVEWAYS OF EXISTING LOTS ACROSS BORDEAUX AVENUE TO REMAIN OPEN DURING CONSTRUCTION.
- ALL PROPOSED VEGETATION WITHIN SIGHT DISTANCE TRIANGLES SHALL NOT INTERFERE WITH CLEAR VISUAL SIGHT LINES FROM 30 INCHES TO 10 FEET.
- EXTERIOR LIGHTING MUST BE INSTALLED SO AS NOT TO SHINE ONTO ADJACENT PROPERTIES OF RESIDENTIAL USE/ZONING.
- 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.
- NO TIE-INS TO PUBLIC UTILITIES NECESSARY FOR THIS PROJECT.
- ALL PROPOSED VEGETATION WITHIN SIGHT TRIANGLES SHALL NOT INTERFERE WITH CLEAR VISUAL SIGHT LINES FROM 30"-10".

GRADING NOTES

- CONTRACTOR SHALL CALL "NC811" 811 OR (800-832-4949) AT LEAST 3 FULL BUSINESS DAYS PRIOR TO MOBILIZATION TO HAVE EXISTING UTILITIES LOCATED. REPORT ANY DISCREPANCIES TO THE ENGINEER.
- CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN WORKING UNDER, AROUND, AND/OR ADJACENT TO EXISTING POWER LINES.
- STORM DRAINAGE PIPE SHALL BE CLASS IV RCP MIN. UNLESS OTHERWISE NOTED.
- PROPOSED DRIVEWAY SHALL BE 12 INCHES OF COMPACTED ABC STONE.
- 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).
- PROPOSED CONTOURS AND SPOT ELEVATIONS ARE FINISHED GRADE ELEVATIONS (TOP OF STONE, TOP OF GRASS, ETC) UNLESS OTHERWISE NOTED.
- 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.
- 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.
- CONTRACTOR TO REFER TO GEOTECHNICAL REPORT FOR GUIDANCE IN SITEWORK COMPLETED BY SAME, INC. DATED 4/10/17.
- 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.

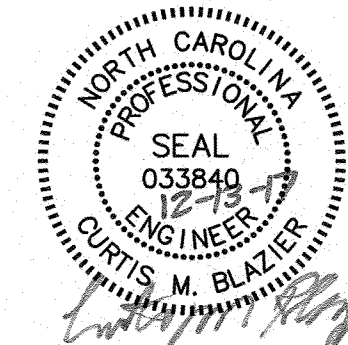
STORM READY RESPONSIBILITIES

- 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.
- ENSURE SEDIMENT BASINS OR CONTAINMENTS HAVE ENOUGH FREEBOARD TO ACCOMMODATE HEAVY RAINS WITHOUT OVERFLOWING.
- 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.
- 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.
- 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.

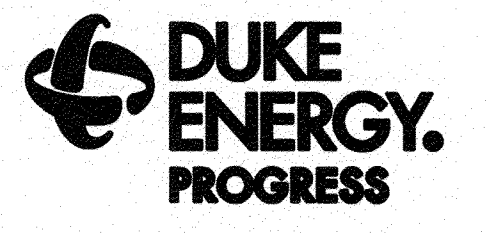
CITY OF WILMINGTON
NORTH CAROLINA
Public Services Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date: 12/18/17 Permit # 2017053
Signed: *[Signature]*

Approved Construction Plan

Name	Date
Planning <i>[Signature]</i>	12/15/17
Traffic <i>[Signature]</i>	12/15/17
Fire <i>[Signature]</i>	12/15/17



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

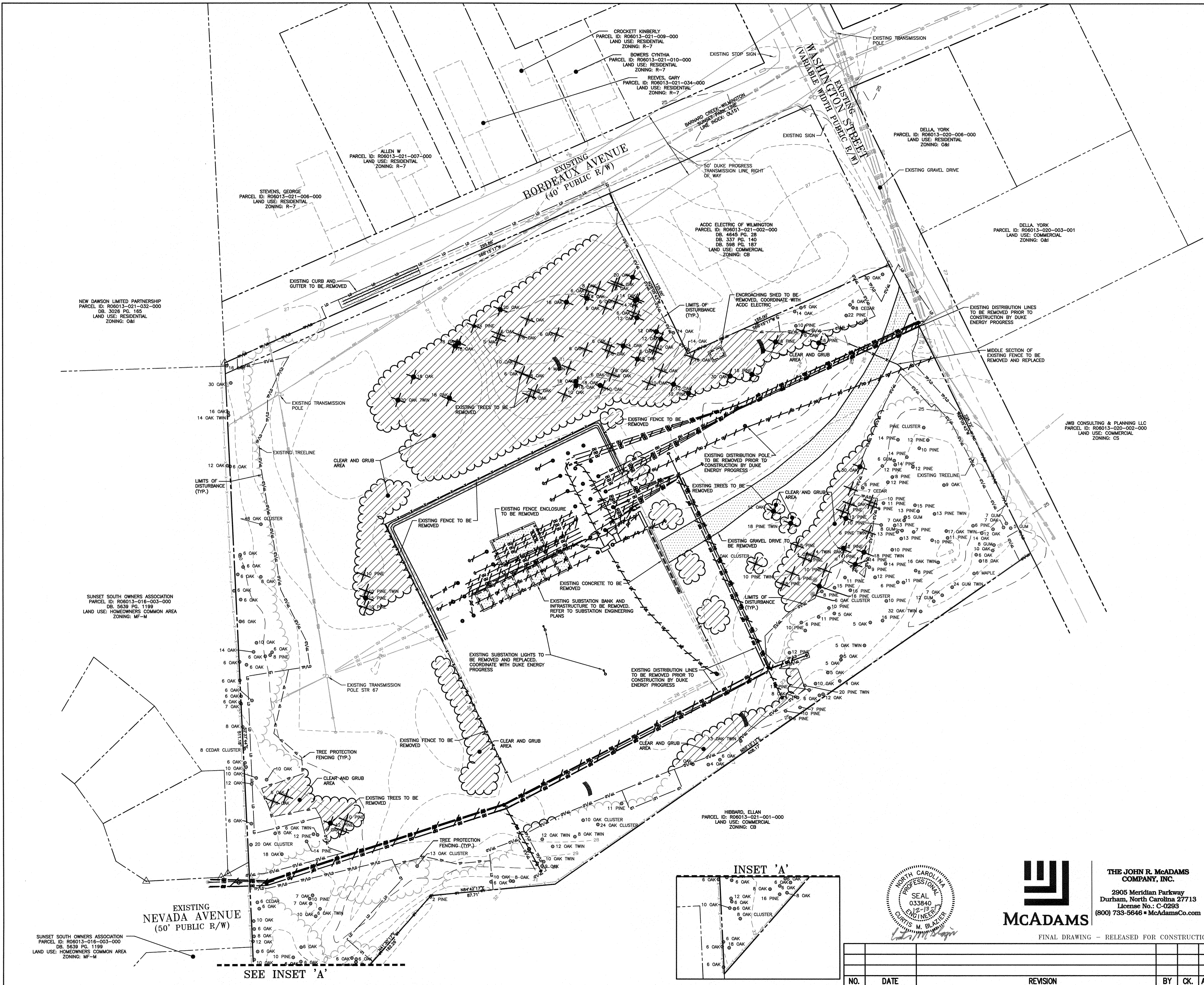


WILMINGTON SUNSET PARK 115 KV SUBSTATION
317 BORDEAUX AVENUE, WILMINGTON NC 27601
PROJECT NOTES





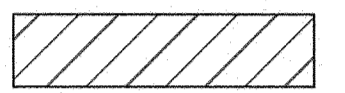
NO.	DATE	REVISION	BY	CK.	APP.

LOCATION: WILMINGTON, NC
SCALE: NTS SCALE RATIO: 1:1 P.L. NO. DKE-17010
DRAWN: JB CHK. --- APP. ---
DATE: 12-13-17 DWG. NO. 70818, SHEET 4 OF 18

X:\Projects\DK17-010\Drawings\Current\Drawings\DK17-010-DM.dwg, 12/13/2017 5:53:32 PM, Blazler, Curt



DEMOLITION LEGEND

-  TREE TO BE REMOVED
-  TREE 12" AND OVER TO BE REMOVED
-  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:

- 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 FRIBLE 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 FRIBLE 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.
- 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.

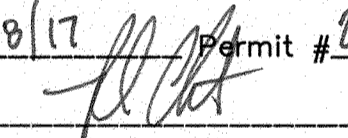
NOTES:

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

CITY OF WILMINGTON
NORTH CAROLINA

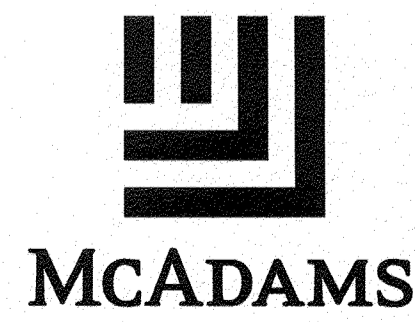
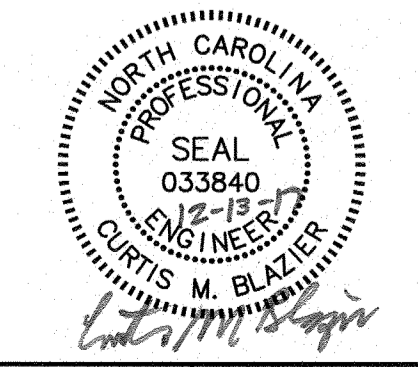
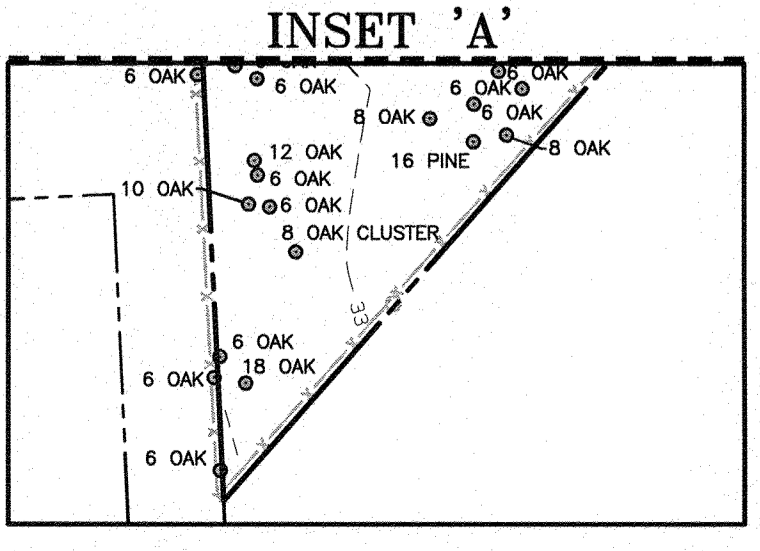
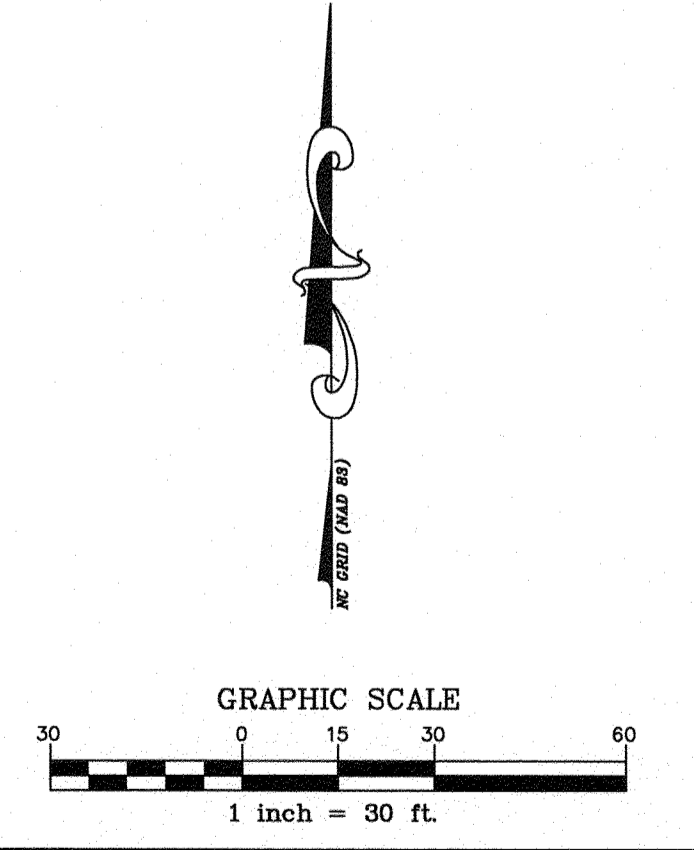
Public Services Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN

Date: 12/10/17 Permit # 2017052

Signed: 

Approved Construction Plan

Name	Date
Planning: <u>Nicole Smith</u>	<u>12/15/17</u>
Traffic: <u>James Marshall</u>	<u>12/15/17</u>
Fire: <u>James Marshall</u>	<u>12/15/17</u>



THE JOHN R. McADAMS COMPANY, INC.

2905 Meridian Parkway
Durham, North Carolina 27713
License No.: C-0293
(800) 733-5646 • McAdamsCo.com

FINAL DRAWING - RELEASED FOR CONSTRUCTION

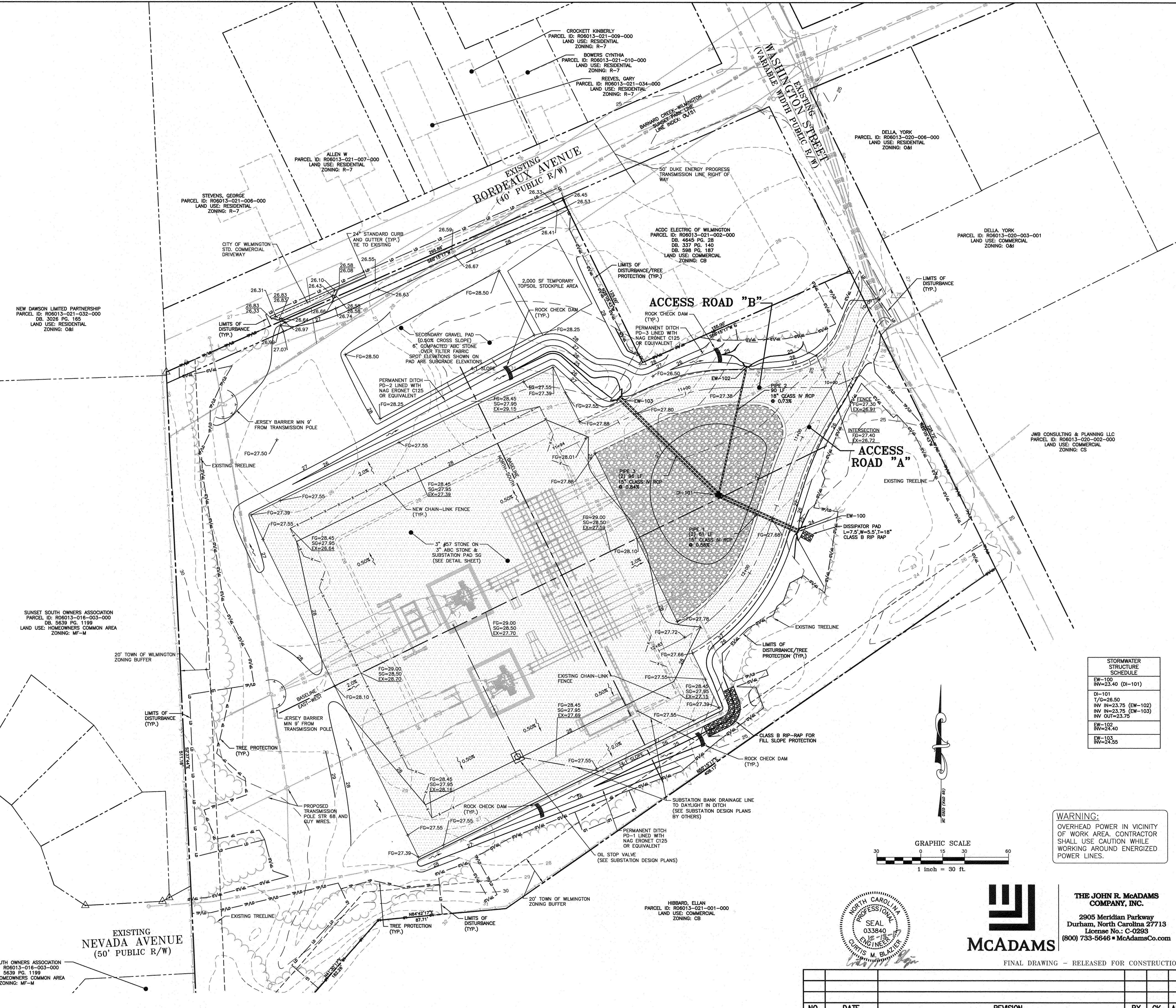
DUKE ENERGY
PROGRESS

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: 12-13-17 DWG. NO. 70818, SHEET 5 OF 18

NO.	DATE	REVISION	BY	CK.	APP.

X:\Projects\DKE-17010\Leno\Construction Drawings\Current Drawings\DWG17010-01.dwg, 12/13/2017 8:28:38 PM, Blister, Curt



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
- FINISHED GRADE ELEVATION
- SUB GRADE ELEVATION
- EXISTING GRADE ELEVATION
-
- CURB SPOT ELEVATION
- TOP OF CURB ELEVATION
- BOTTOM OF CURB ELEVATION
-
- STORM DRAINAGE
- LIMITS OF DISTURBANCE
-
- PROPOSED TREELINE
- MAJOR CONTOUR
- MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- 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.

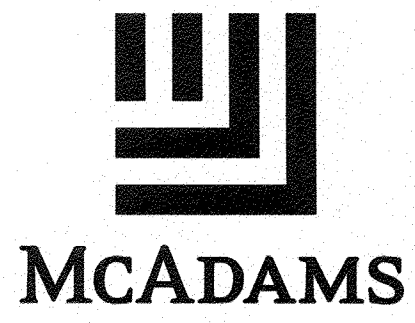
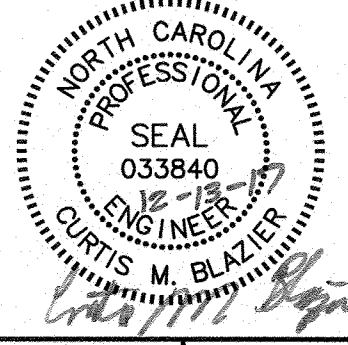
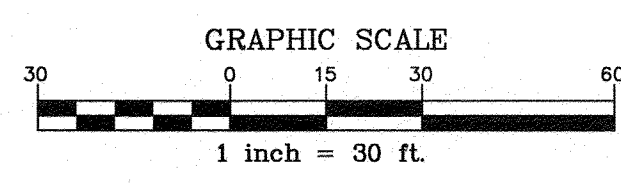
DITCH #	SECTION			TEMPORARY LINER
	SIDES	LONGITUDINAL (F/T)	DEPTH (FT)	
PD-1	4:1	0.011	1.25 MIN	C125
PD-2	4:1	0.008	1.50 MIN	C125
PD-3	4:1	0.029	1.00 MIN	C125

STORMWATER STRUCTURE SCHEDULE	
EW-100	IN=23.40 (DI-101)
DI-101	1/2"=28.50
IN-102	IN=23.75 (EW-102)
IN-103	IN=23.75 (EW-103)
IN-104	IN=23.75
EW-102	IN=24.40
EW-103	IN=24.55

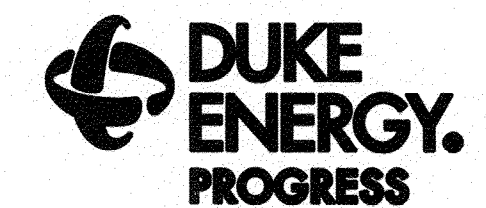
CITY OF WILMINGTON
 NORTH CAROLINA
 Public Services Engineering Division
 APPROVED STORMWATER MANAGEMENT PLAN
 Date: 12/18/17 Permit # 2017053
 Signed: *[Signature]*

Approved Construction Plan
 Name: *[Signature]* Date: 12/15/17
 Planning: *[Signature]* 12/15/17
 Traffic: *[Signature]* 12/15/17
 Fire: *[Signature]* 12/18/17

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



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









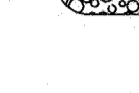

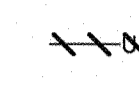
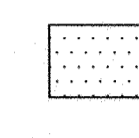
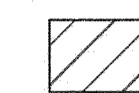
WILMINGTON SUNSET PARK 115 KV SUBSTATION
 317 BORDEAUX AVENUE, WILMINGTON NC 27601
 GRADING AND STORM DRAINAGE PLAN

FINAL DRAWING - RELEASED FOR CONSTRUCTION

NO.	DATE	REVISION	BY	CK.	APP.

LOCATION: WILMINGTON, NC
 SCALE: 1"=30' SCALE RATIO: 1:1 PRJ. NO. DKE-17010
 DRAWN: JB CHK: --- APP: ---
 DATE: 12-13-17 DWG. NO. 70818, SHEET 7 OF 18

EROSION CONTROL LEGEND

-  SILT FENCE OUTLET
-  SILT FENCE
-  TREE PROTECTION FENCE
-  LIMITS OF DISTURBANCE
-  WOODED AREA
-  CONSTRUCTION ENTRANCE/EXIT
-  TREE OR OTHER VEGETATION TO BE REMOVED
-  TREE 12" AND OVER TO BE REMOVED
-  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.

DISTURBED AREA = 3.57 AC.

CONSTRUCTION SEQUENCE -- STAGE 1

1. CALL THE DESIGNATED NCEQ 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 NCEQ 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 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.

CITY OF WILMINGTON
NORTH CAROLINA
Public Services Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date: 12/10/17 Permit # 2017053
Signed: *[Signature]*

Approved Construction Plan

Name	Date
Michelle Smith	12/15/17
Traffic	W. Smith 12/15/17
Fire	James Menott 12/18/17

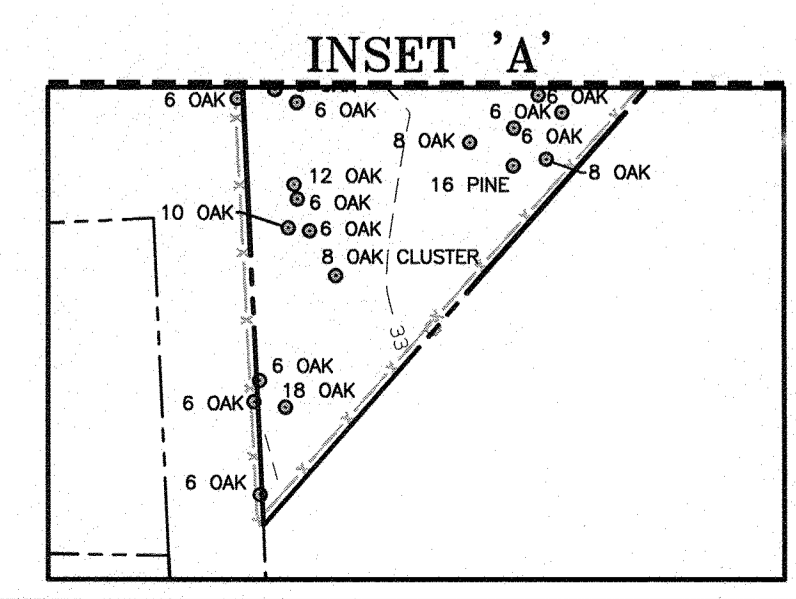
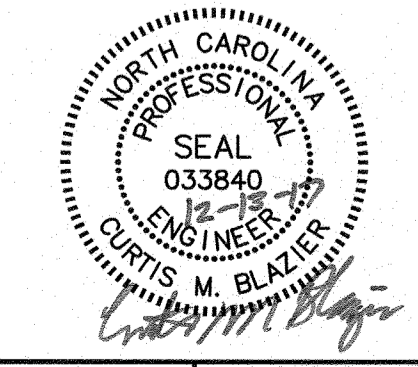
DUKE ENERGY
PROGRESS

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

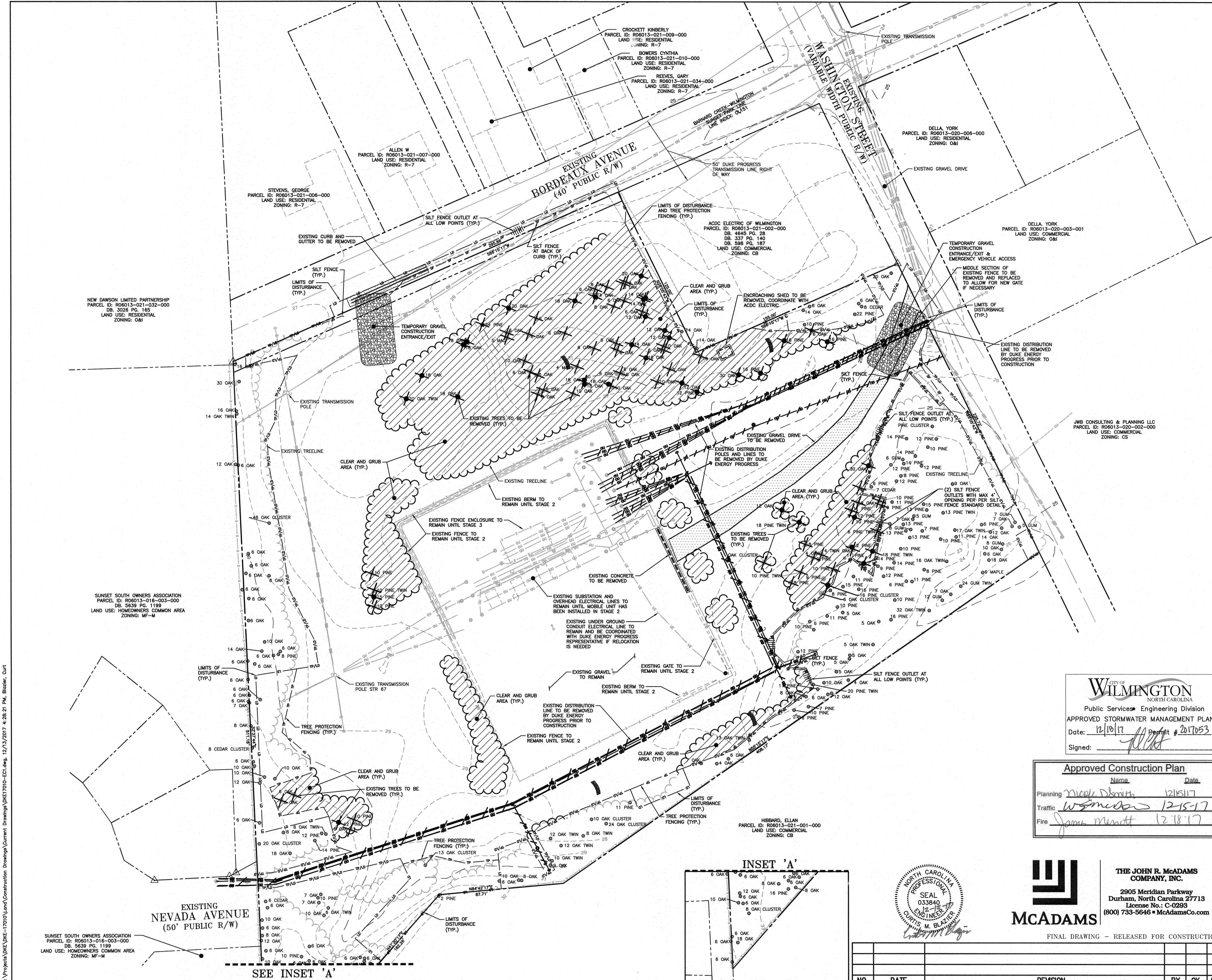
LOCATION: WILMINGTON, NC
SCALE: 1"=30' SCALE RATIO: 1:1 PRJ. NO. DKE-17010
DRAWN: JB CHK. --- APP. ---
DATE: 12-13-17 DWG. NO. 70818, SHEET 8 OF 18

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 - RELEASED FOR CONSTRUCTION

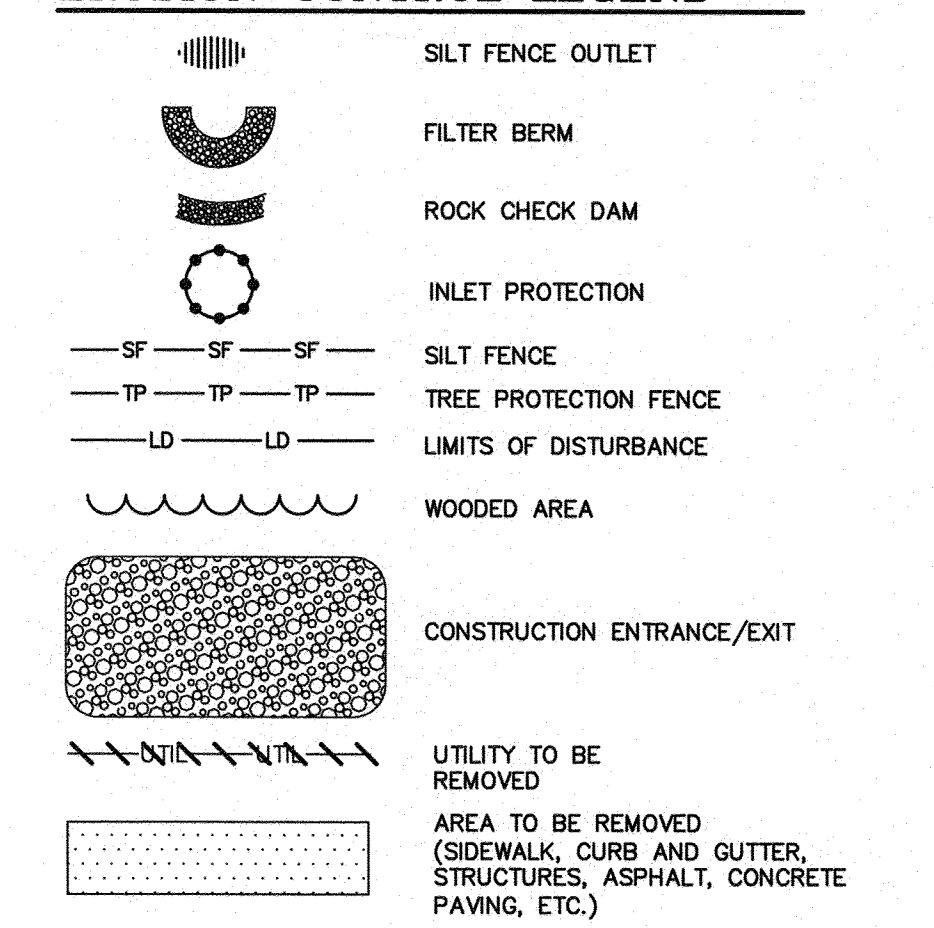


NO.	DATE	REVISION	BY	CK.	APP.



X:\Projects\DKE-17010\Drawings\Construction Drawings\Current Drawings\DWG17010-EC1.dwg, 12/13/2017, 4:28:21 PM, Blakley, Curt

EROSION CONTROL LEGEND



DISTURBED AREA = 3.57 AC.

CONSTRUCTION SEQUENCE - STAGE 2

- PENDING STAGE 1 IS COMPLETE AND ALL APPROVAL AND INSPECTIONS HAVE TAKEN PLACE. PROCEED WITH STAGE 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- CONTRACTOR IS TO INSTALL ROCK CHECK DAMS IN PERMANENT DITCHES AS SHOWN ON THE PLAN.
- 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).
- CONTRACTOR IS TO CONTINUE TO MONITOR, MAINTAIN, AND INSPECT ALL EROSION CONTROL DEVICES TO ENSURE NO VIOLATIONS WILL OCCUR.
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN 14 DAYS OF INACTIVITY.
- PRIOR TO COMMENCING STAGE 3, CALL THE DESIGNATED NCEQ EROSION CONTROL INSPECTOR AT (910) 796-7215 FOR AN INSPECTION. IF APPROVED, COMMENCE WITH STAGE 3.

EROSION CONTROL MAINTENANCE PLAN

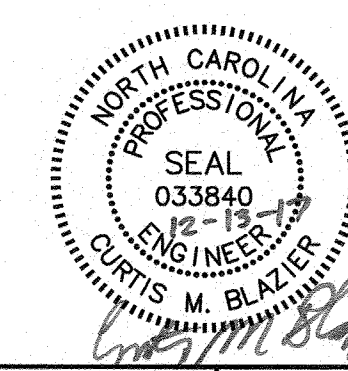
- ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CHECKED BY THE SITE CONTRACTOR FOR STABILITY AND OPERATION FOLLOWING EVERY RUNOFF-PRODUCING RAINFALL BUT IN NO CASE LESS THAN ONCE EVERY WEEK. ANY NEEDED REPAIRS SHALL BE MADE IMMEDIATELY TO MAINTAIN ALL MEASURES AS DESIGNED.
- SEDIMENT FENCES SHALL 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.

CITY OF WILMINGTON
 NORTH CAROLINA
 Public Services Engineering Division
 APPROVED STORMWATER MANAGEMENT PLAN
 Date: 12/18/17 Permit # 2017053
 Signed: *[Signature]*

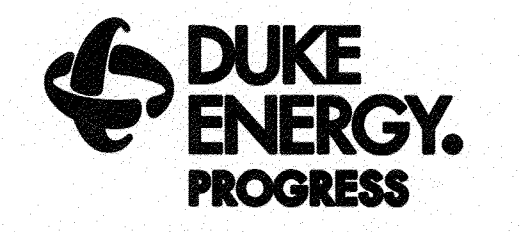
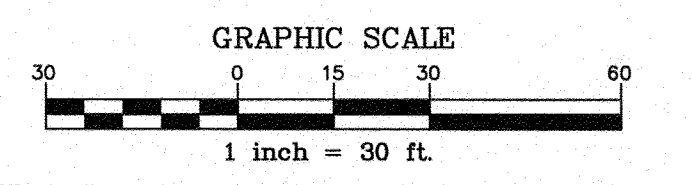
Approved Construction Plan

Name	Date
Planning <i>Neer D Smith</i>	12/15/17
Traffic <i>Wignard</i>	12-15-17
Fire <i>James Merritt</i>	12-15-17

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



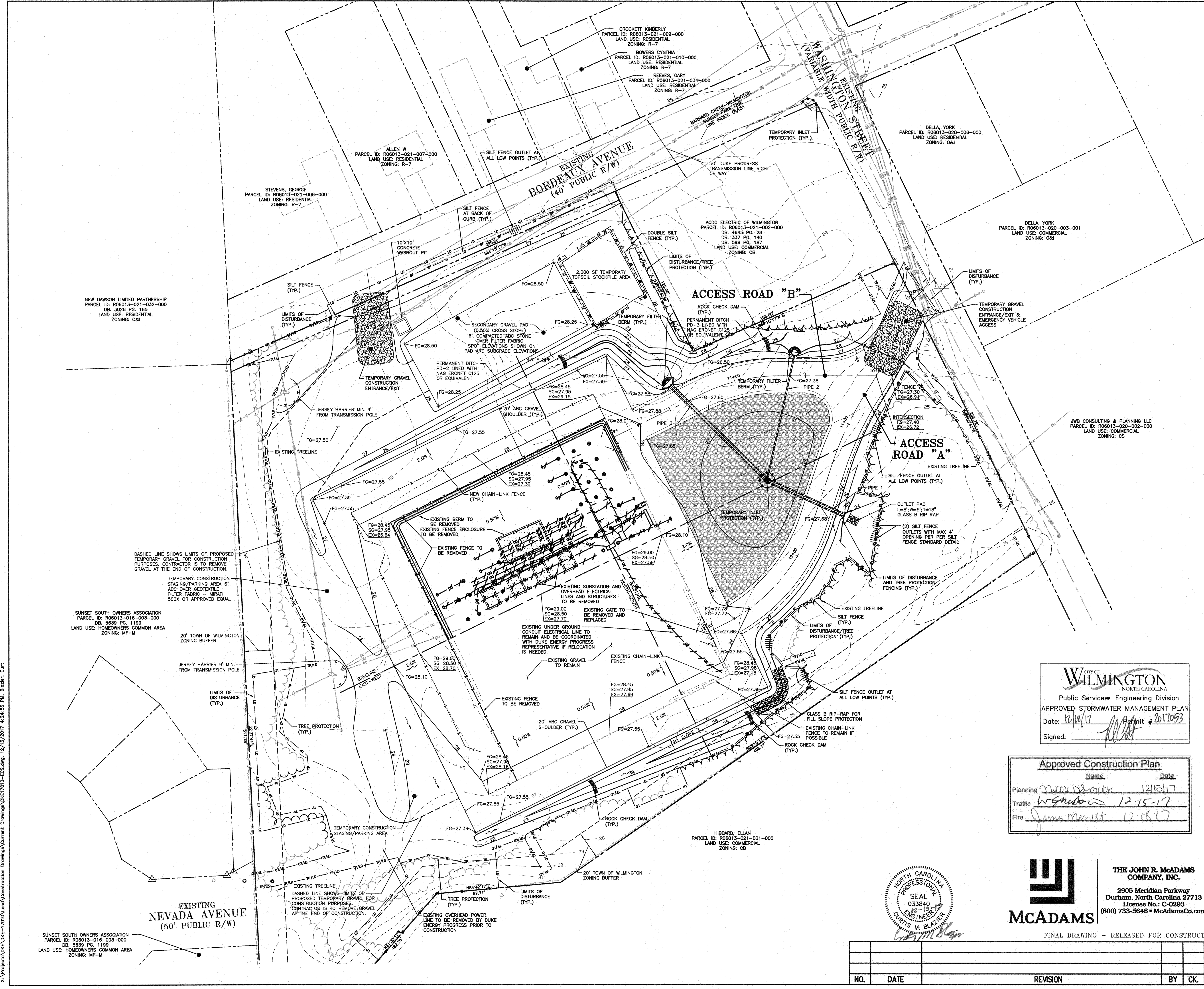
FINAL DRAWING - RELEASED FOR CONSTRUCTION



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

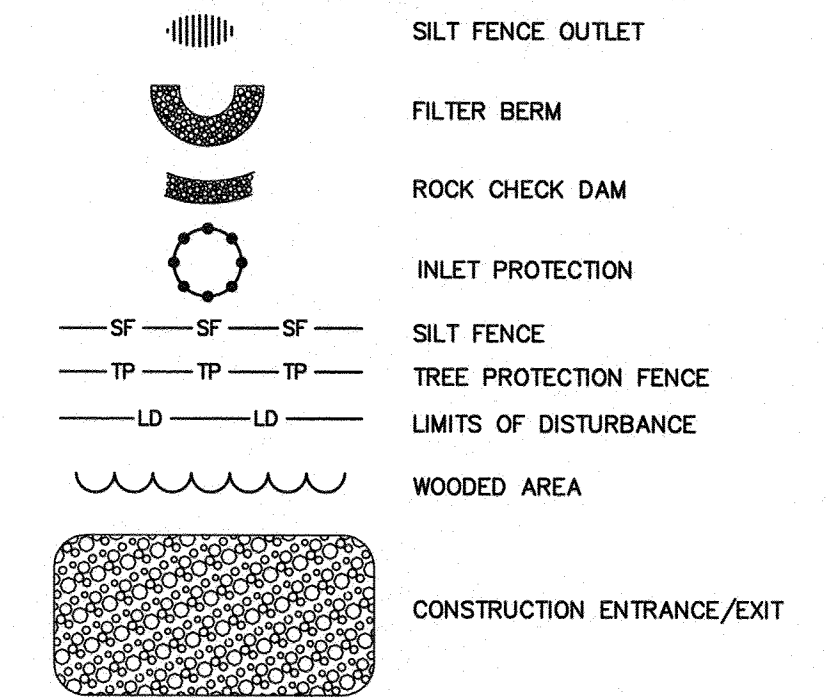
LOCATION: WILMINGTON, NC	SCALE RATIO: 1:1	PRJ. NO. DKE-17010
SCALE: 1"=30'	CHK: ---	APP: ---
DRAWN: JB	DWG. NO. 70818, SHEET 9 OF 18	
DATE: 12-13-17		

NO.	DATE	REVISION	BY	CK.	APP.



X:\Projects\DKE\17010\Land\Construction Drawings\Current Drawings\DKET7010-EC2.dwg, 12/13/2017 4:24:56 PM, Blazer, Curt

EROSION CONTROL LEGEND



DISTURBED AREA = 3.57 AC.

CONSTRUCTION SEQUENCE - STAGE 3

- PENDING STAGE 2 IS COMPLETE AND ALL APPROVAL AND INSPECTIONS HAVE TAKEN PLACE PROCEED WITH STAGE 3.
- 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.
- 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.
- 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.
- 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.
- REMOVE WASHOUT PIT.
- CONTRACTOR TO REMOVE TEMPORARY JERSEY BARRIERS.
- CONTRACTOR IS TO CONTINUE TO MONITOR, MAINTAIN, AND INSPECT ALL EROSION CONTROL DEVICES TO ENSURE NO VIOLATIONS WILL OCCUR.
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN 14 DAYS OF INACTIVITY.
- WHEN CONSTRUCTION IS COMPLETE AND ALL AREAS ARE STABILIZED COMPLETELY, CALL THE DESIGNATED NCEQ EROSION CONTROL INSPECTOR AT (910) 796-7215 FOR AN INSPECTION.
- IF SITE IS APPROVED BY THE NCEQ 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.
- REMOVE SILT FENCING, INLET PROTECTION, ETC.
- UPON COMPLETION OF STAGE 3, CALL THE DESIGNATED NCEQ EROSION CONTROL INSPECTOR AT (910) 796-7215 FOR FINAL INSPECTION.

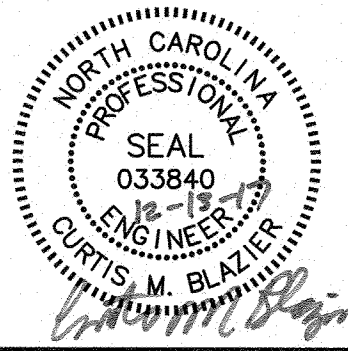
EROSION CONTROL MAINTENANCE PLAN

- 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.
- 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 UPGRADENT DISTURBED AREAS.

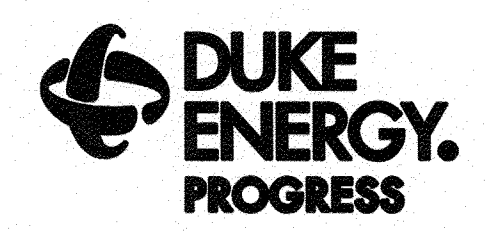
CITY OF WILMINGTON
NORTH CAROLINA
Public Services Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date: 12/15/17 Permit # 2017053
Signed: [Signature]

Approved Construction Plan

Name	Date
Planning: Nicole D. Smith	12/15/17
Traffic: WSM Wood	12-15-17
Fire: James Merritt	12-18-17



McADAMS
THE JOHN R. McADAMS COMPANY, INC.
2905 Meridian Parkway
Durham, North Carolina 27713
License No.: C-02983
(800) 733-5646 • McAdamsCo.com

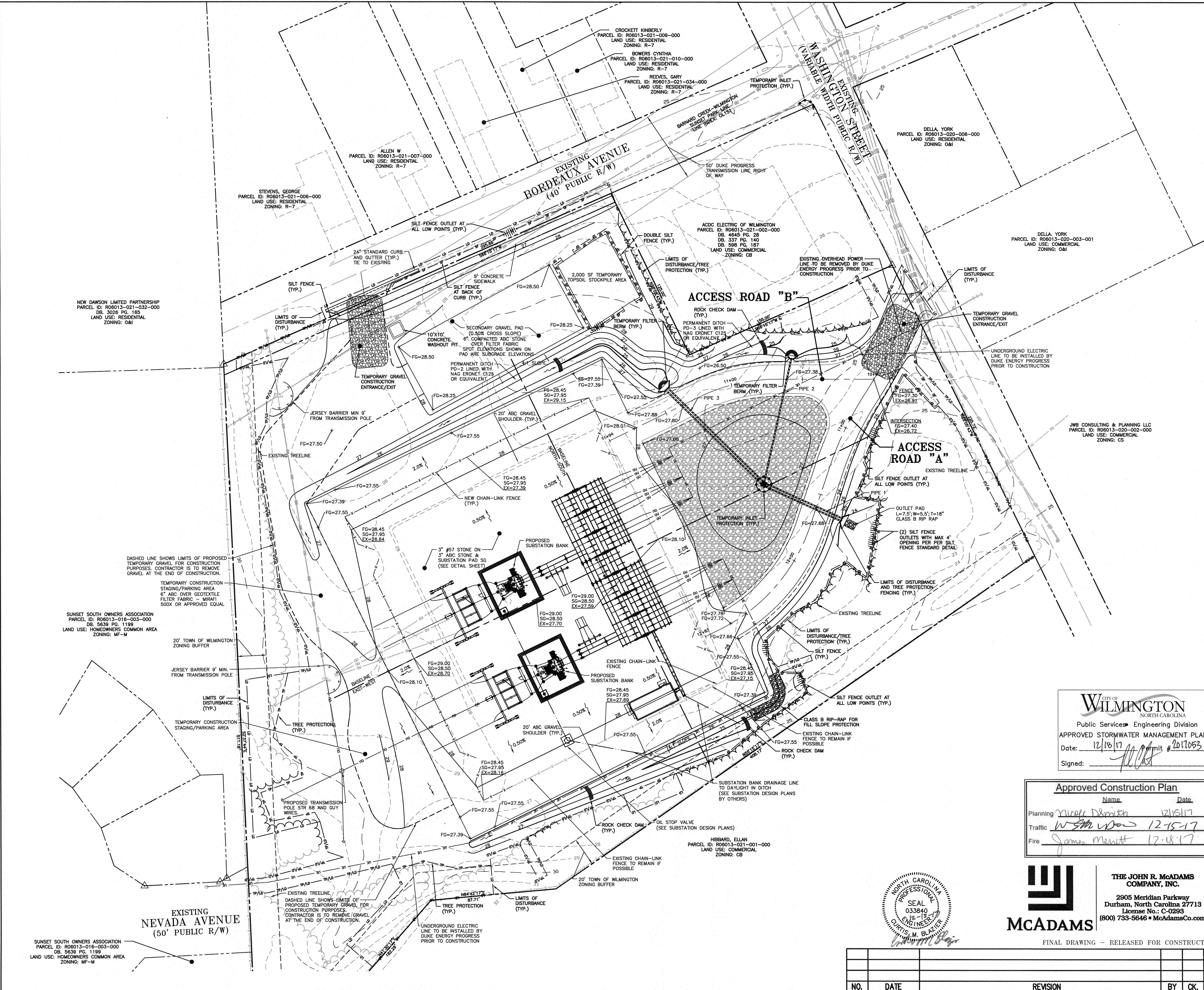


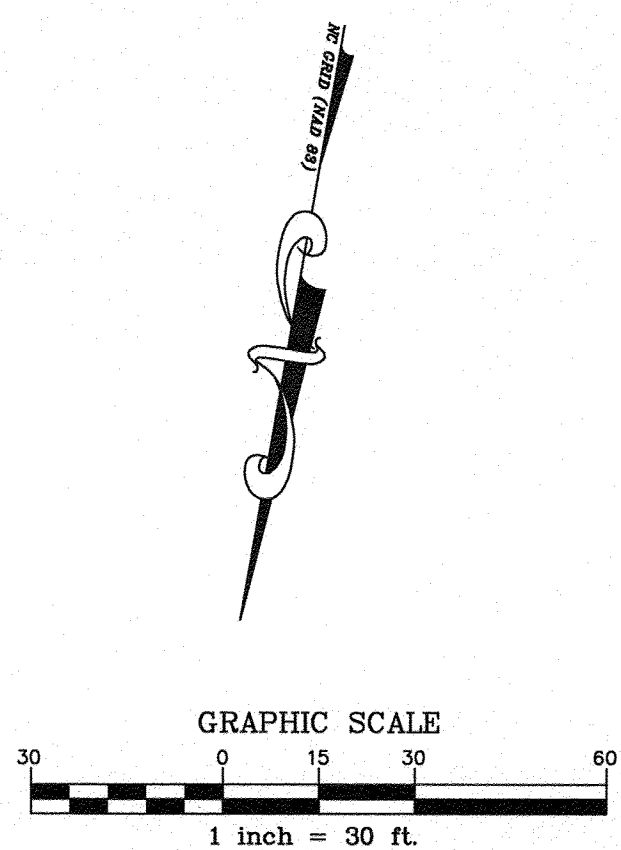
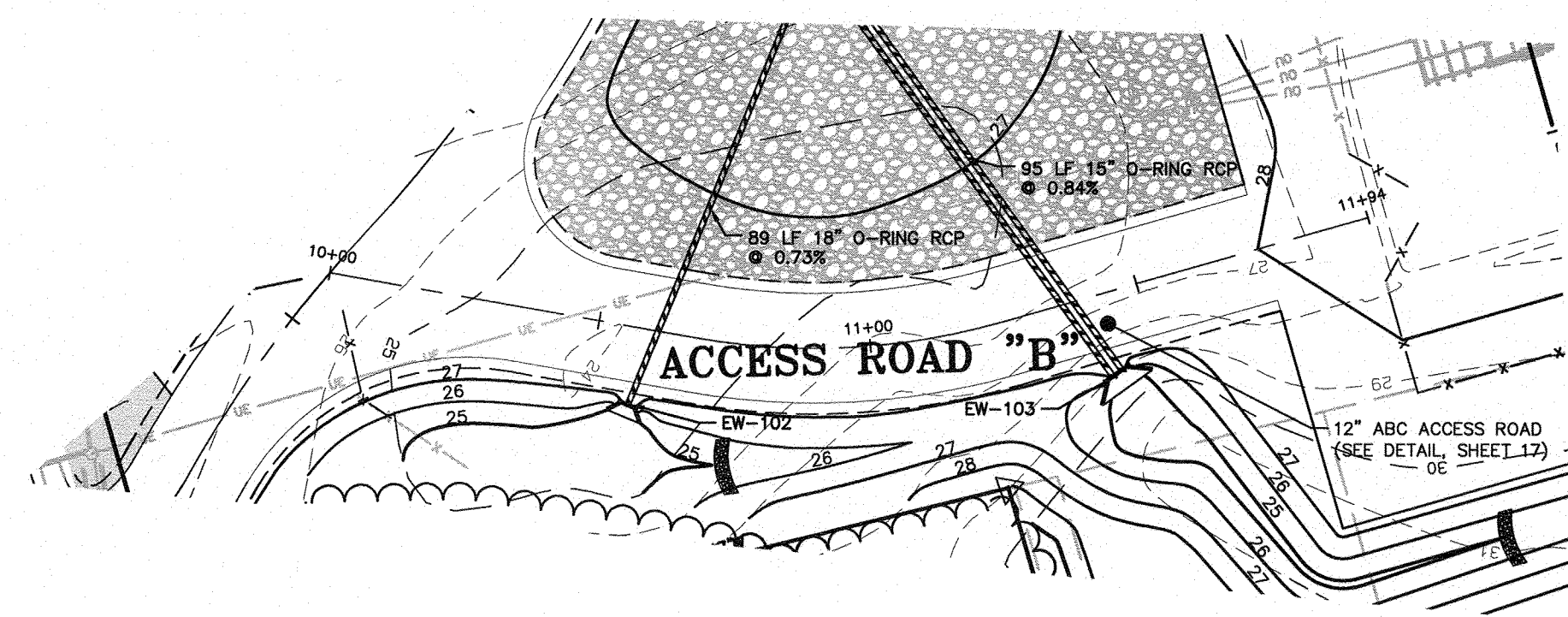
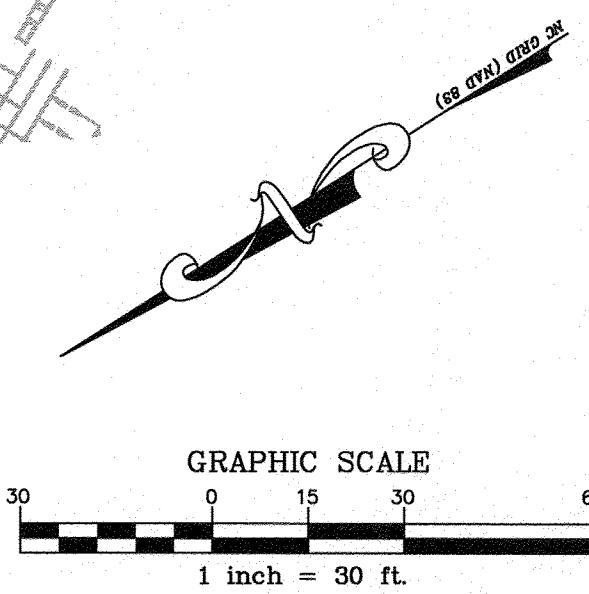
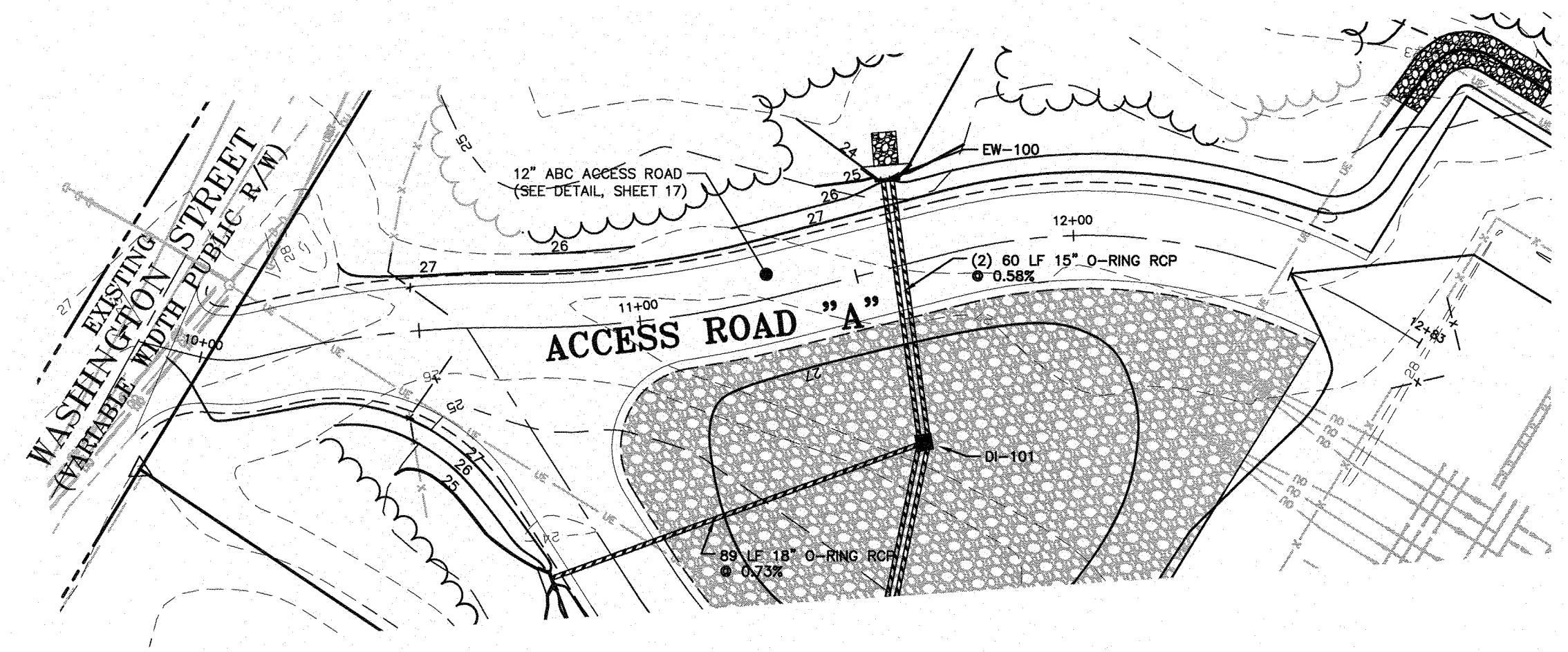
WILMINGTON SUNSET PARK 115 KV SUBSTATION
317 BORDEAUX AVENUE, WILMINGTON NC 27601
SEDIMENT & EROSION CONTROL PLAN - STAGE 3

LOCATION: WILMINGTON, NC
SCALE: 1"=30' SCALE RATIO: 1:1 PRJ. NO. DKE-17010
DRAWN: JB CHK: --- APP: ---
DATE: 12-13-17 DWG. NO. 70818, SHEET 10 OF 18

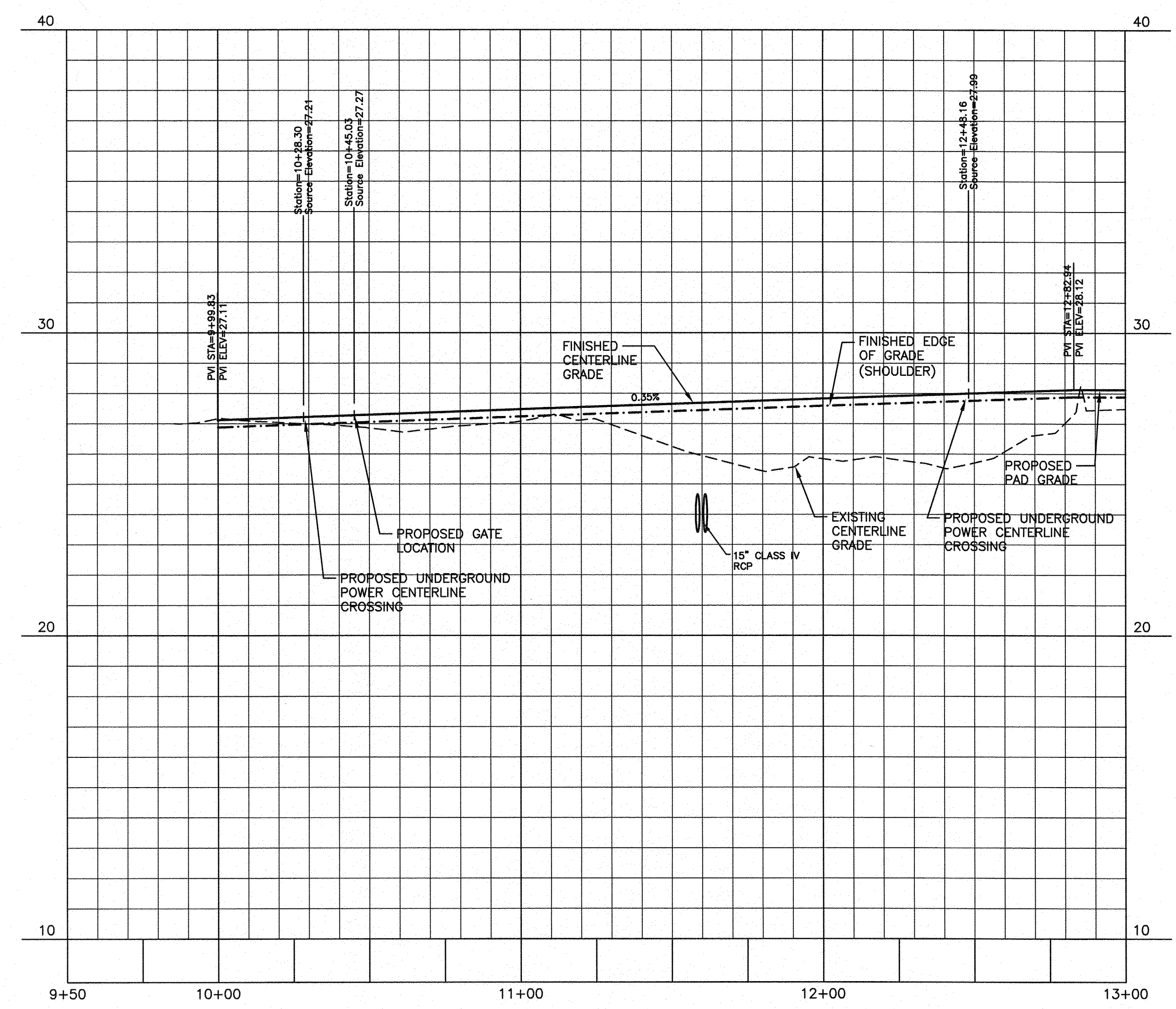
NO.	DATE	REVISION	BY	CK.	APP.

X:\Projects\DKE-17010\Drawings\Construction Drawings\Current Drawings\WKT7010-EC3.dwg, 12/13/2017 4:21:22 PM, Blazer, Curt

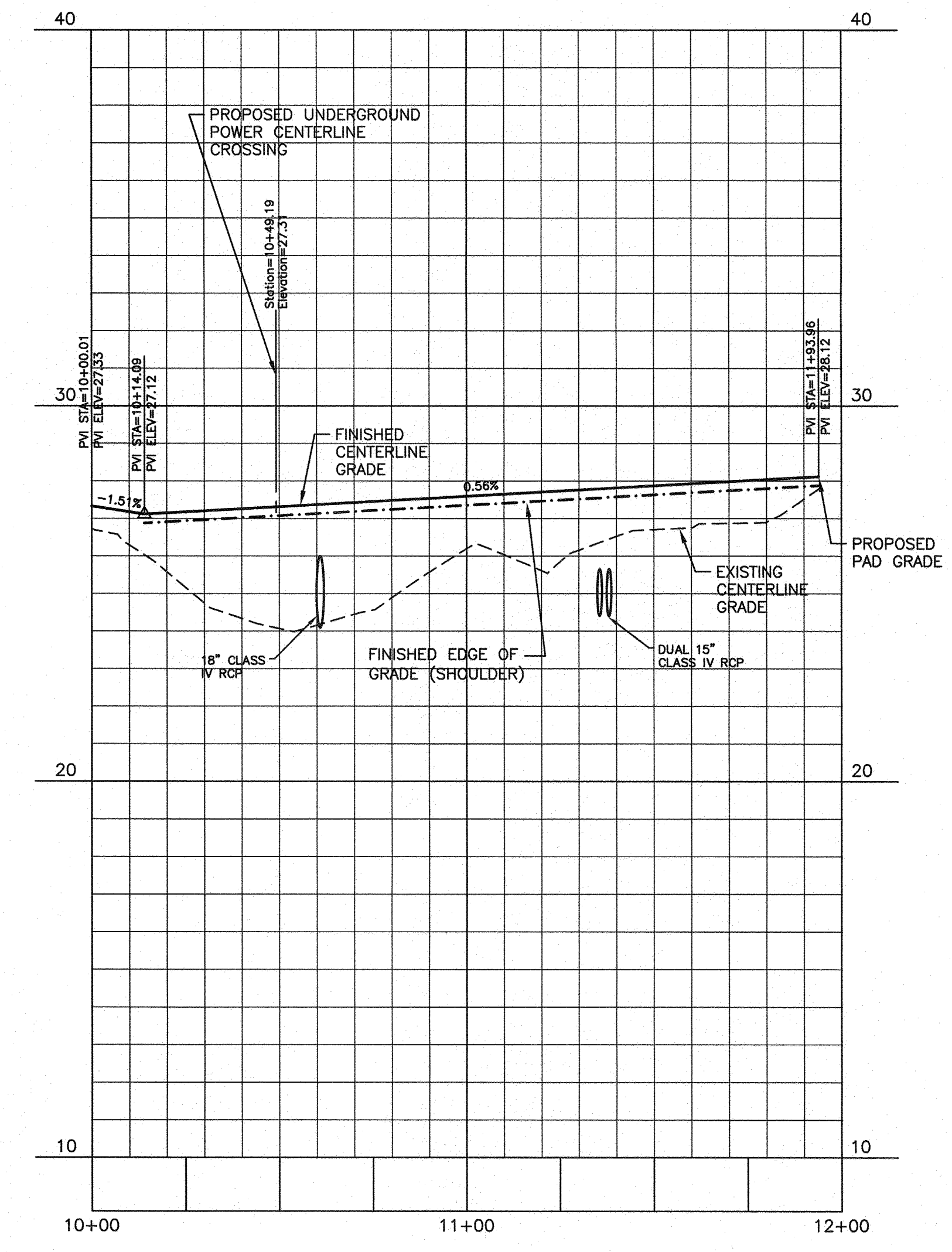





ACCESS ROAD "A"

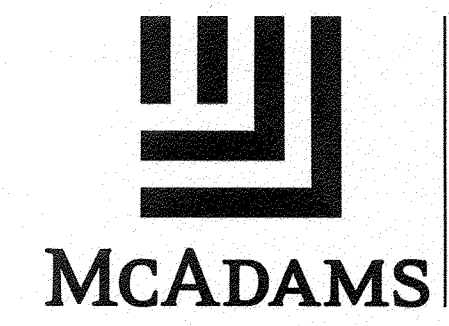
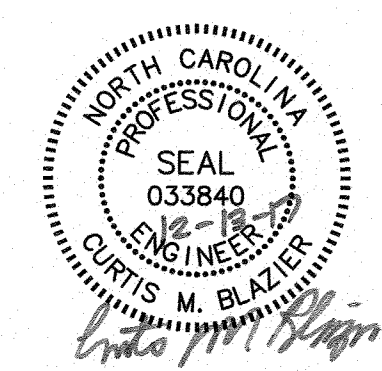


ACCESS ROAD "B"

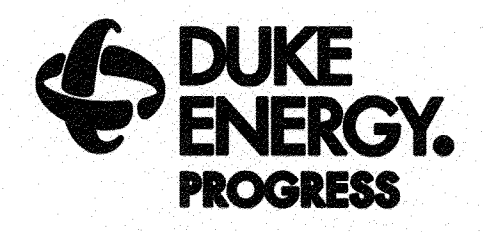



 NORTH CAROLINA
 Public Services Engineering Division
 APPROVED STORMWATER MANAGEMENT PLAN
 Date: 12/18/17 Permit # 2017053
 Signed: *[Signature]*

Approved Construction Plan	
Name	Date
Planning <i>Nicole Dymith</i>	12/15/17
Traffic <i>[Signature]</i>	12-15-17
Fire <i>James Smith</i>	12-18-17



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

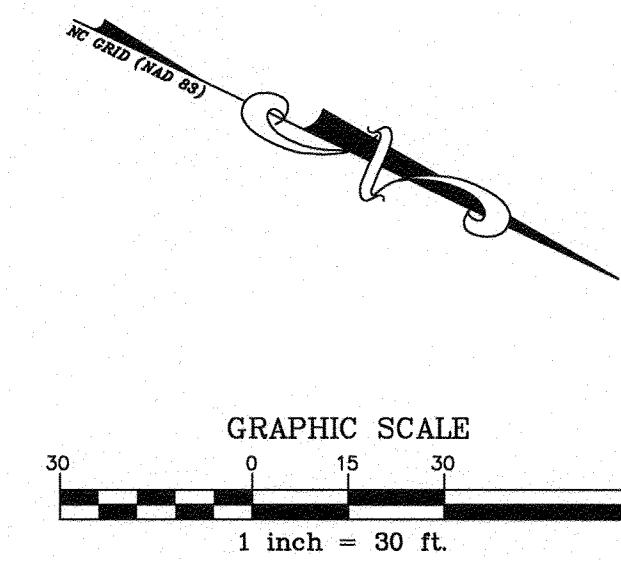
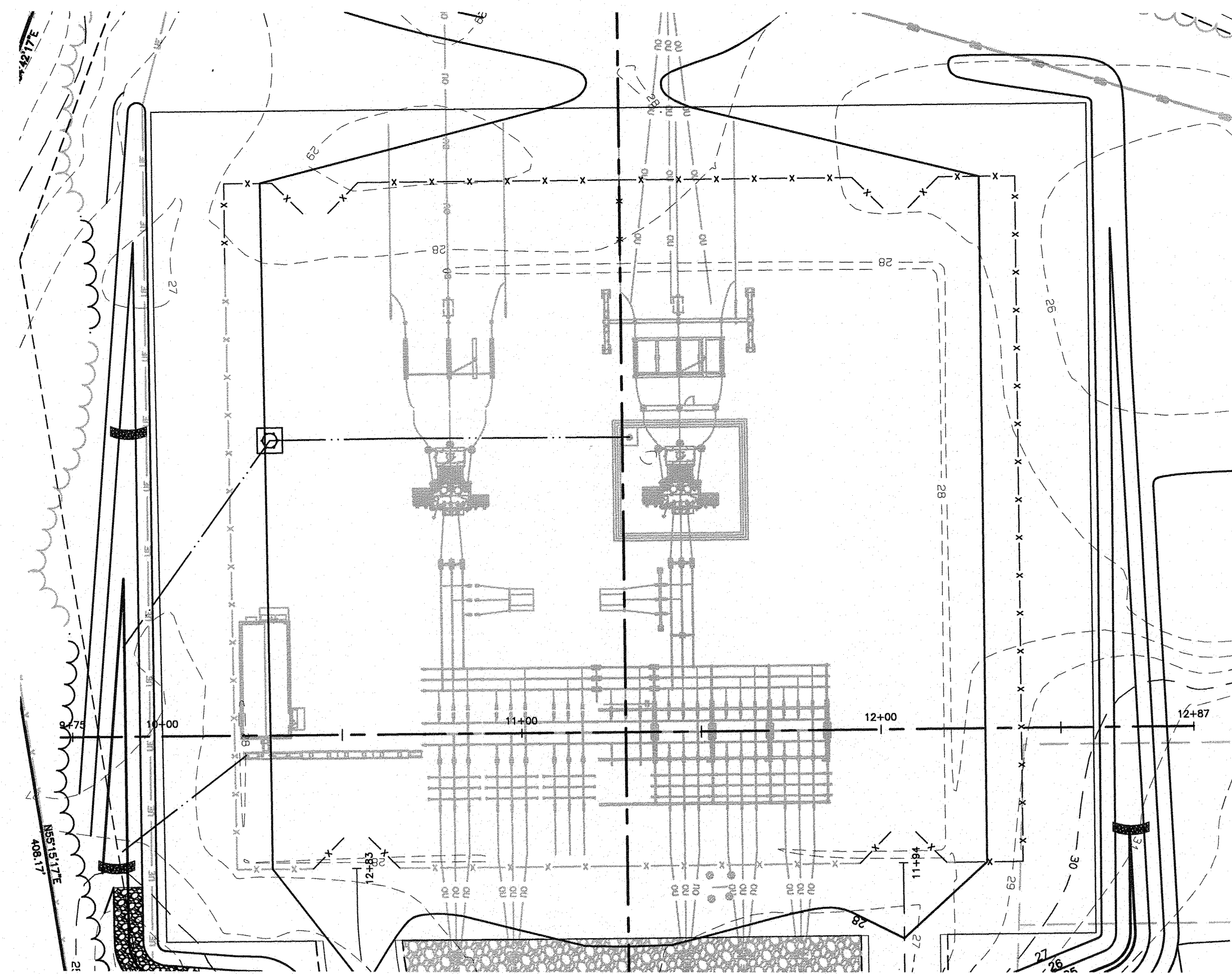


WILMINGTON SUNSET PARK 115 KV SUBSTATION
 317 BORDEAUX AVENUE, WILMINGTON NC 27601
 ACCESS ROAD PLAN & PROFILES

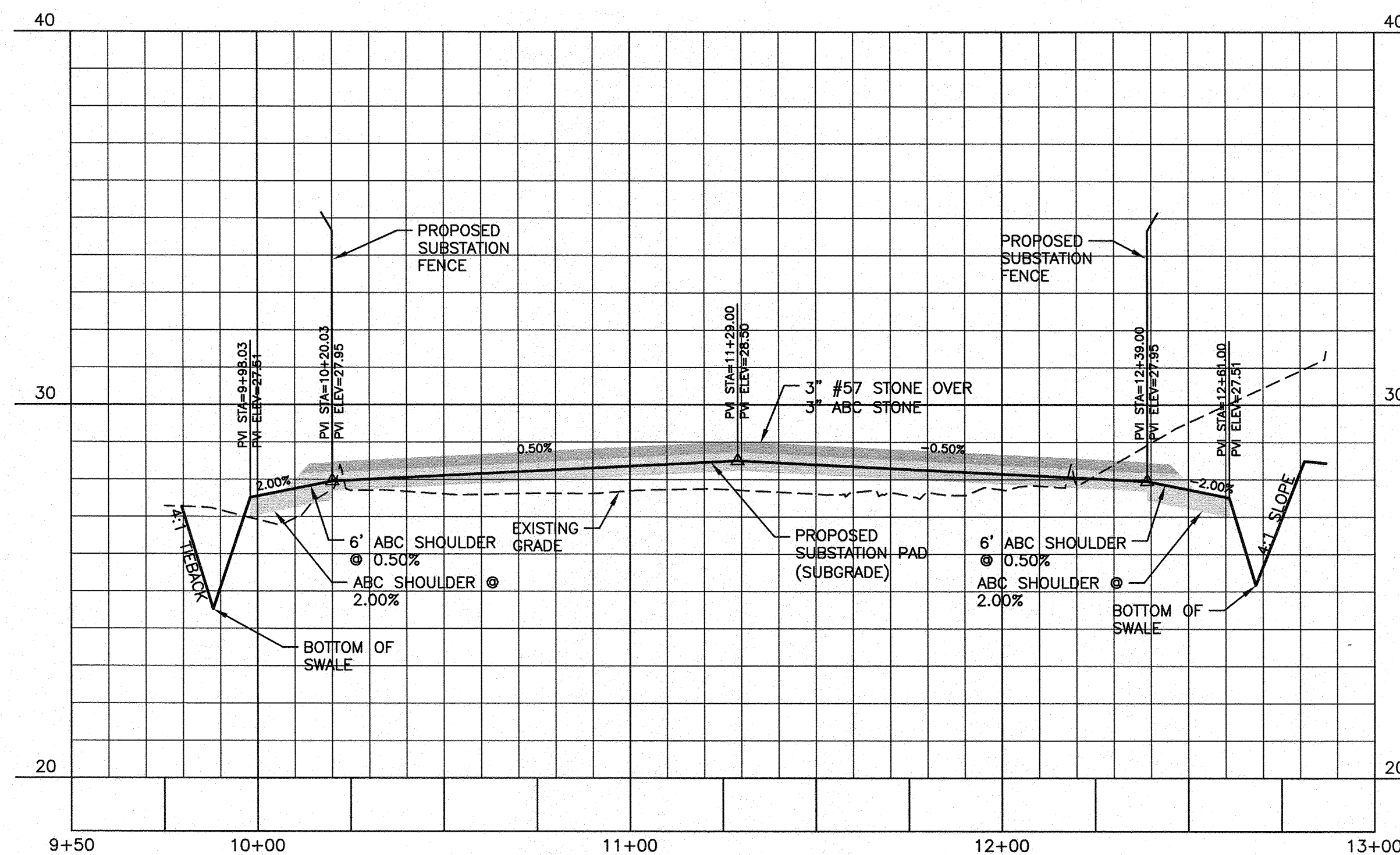
NO.	DATE	REVISION	BY	CK.	APP.

LOCATION: WILMINGTON, NC
 SCALE: 1"=30'/1"=3' SCALE RATIO: 1:1 PRJ. NO. DKE-17010
 DRAWN: JB CHK. --- APP. ---
 DATE: 12-13-17 DWG. NO. 70818, SHEET 14 OF 18

X:\Projects\DKE-17010\Leno\Construction Drawings\DKE17010-01.dwg, 12/13/2017 4:02:12 PM, Blasler, Curt



NORTH - SOUTH BASELINE



CITY OF WILMINGTON

 NORTH CAROLINA

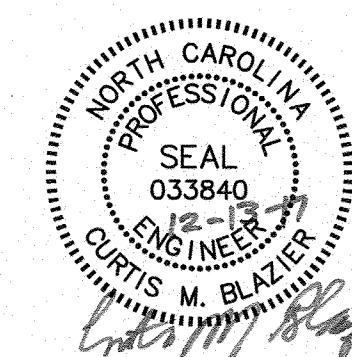
 Public Services Engineering Division

 APPROVED STORMWATER MANAGEMENT PLAN

 Date: 12/18/17 Permit # 2017053

 Signed: *[Signature]*

Approved Construction Plan	
Name	Date
Planning <i>Nicole Smith</i>	12/15/17
Traffic <i>[Signature]</i>	12-15-17
Fire <i>James Merritt</i>	12-15-17



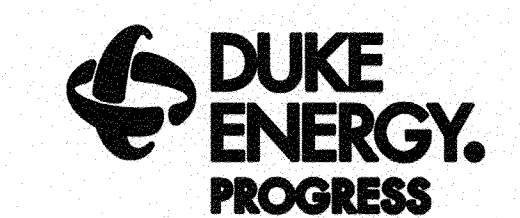
THE JOHN R. McADAMS COMPANY, INC.

 2905 Meridian Parkway

 Durham, North Carolina 27713

 License No.: C-0293

 (800) 733-5646 • McAdamsCo.com



WILMINGTON SUNSET PARK 115 KV SUBSTATION

 317 BORDEAUX AVENUE, WILMINGTON NC 27601

 NORTH - SOUTH BASELINE PROFILE

FINAL DRAWING - RELEASED FOR CONSTRUCTION

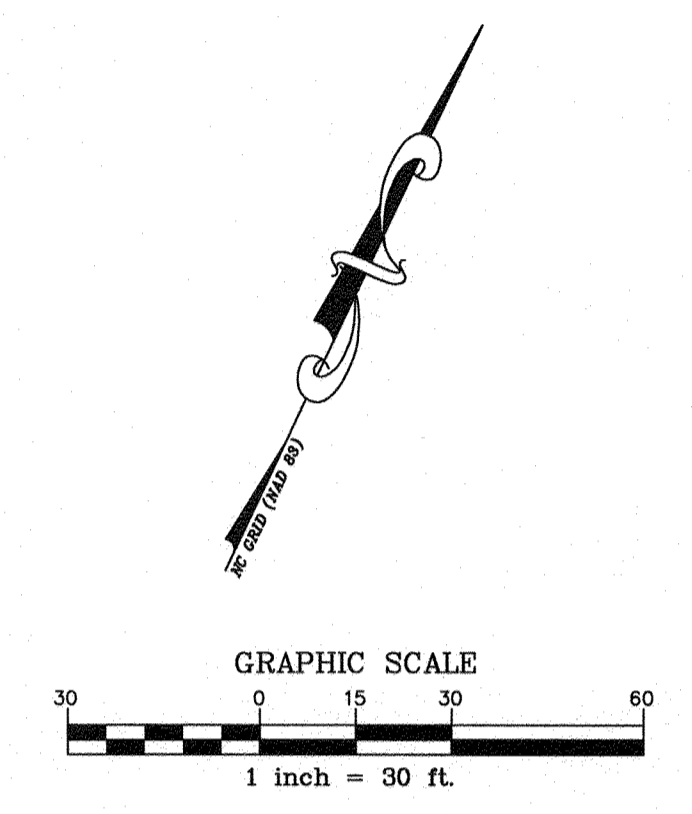
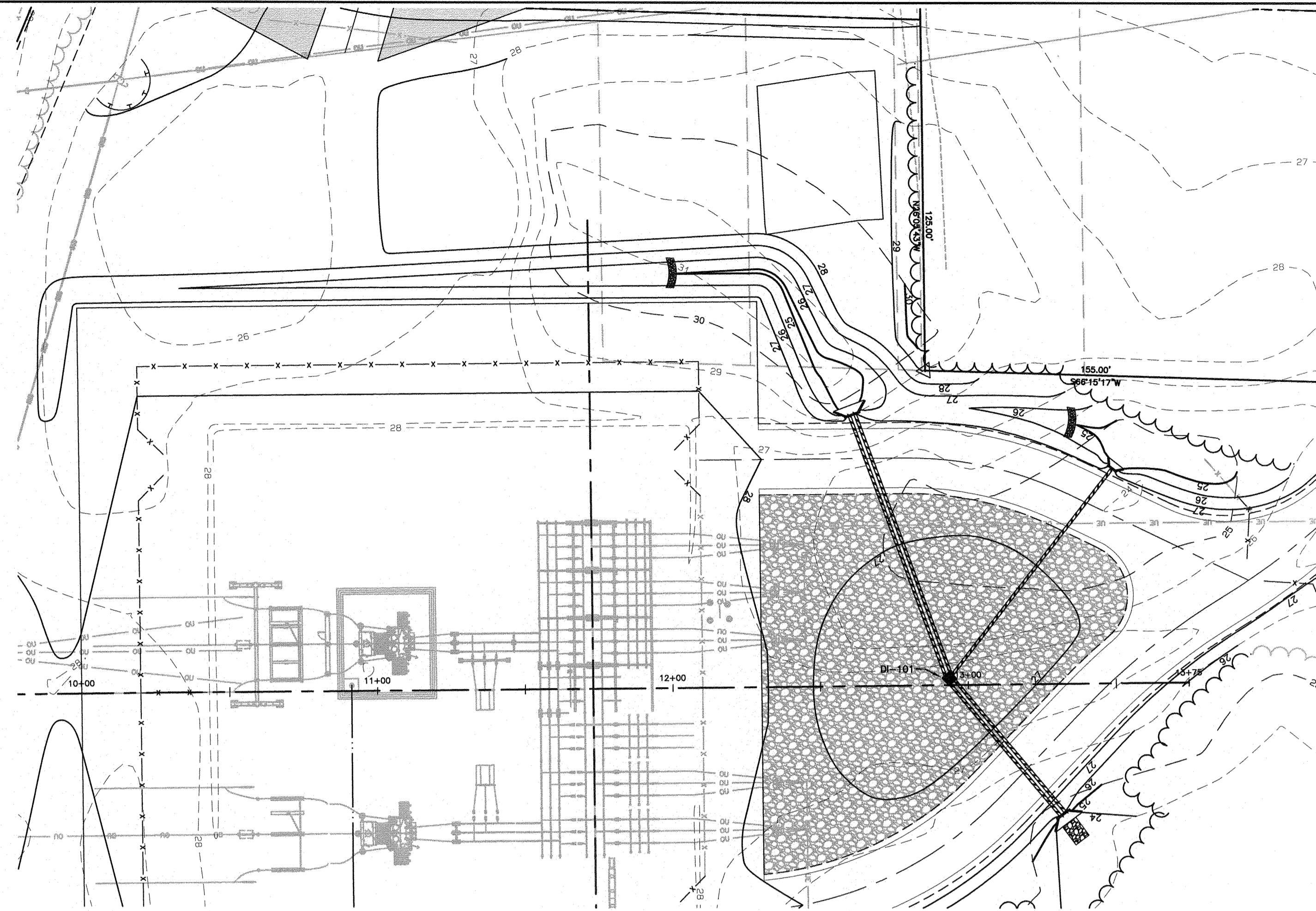
NO.	DATE	REVISION	BY	CK.	APP.

LOCATION: WILMINGTON, NC

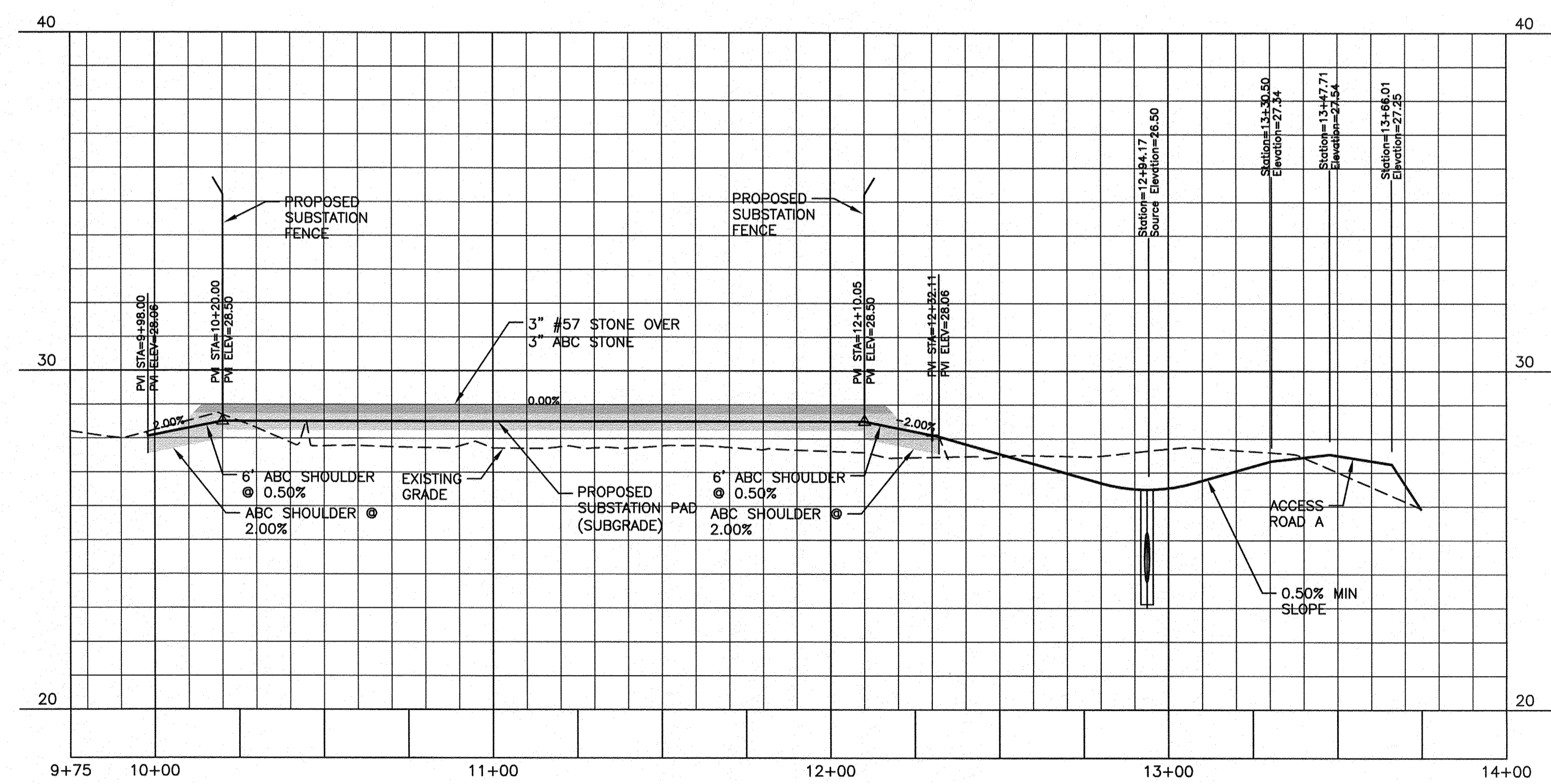
 SCALE: 1"=30'/1"=3' SCALE RATIO: 1:1 PRJ. NO. DKE-17010

 DRAWN: JB CHK. --- APP. ---

 DATE: 12-13-17 DWG. NO. 70818, SHEET 15 OF 18

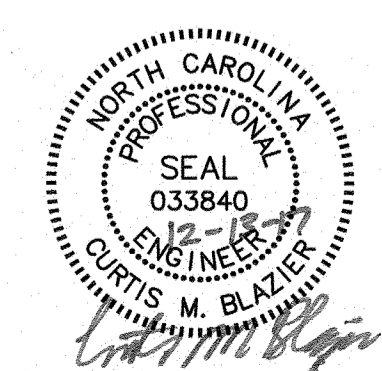


EAST - WEST BASELINE

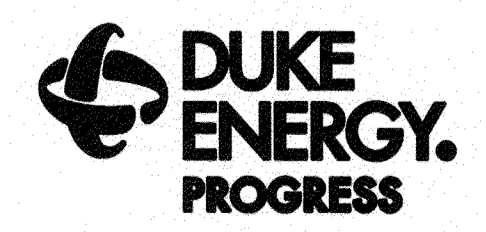


CITY OF WILMINGTON
 NORTH CAROLINA
 Public Services Engineering Division
 APPROVED STORMWATER MANAGEMENT PLAN
 Date: 12/18/17 Permit # 2017053
 Signed: *[Signature]*

Approved Construction Plan		
Name	Date	
Planning <i>Nicole D...</i>	12/15/17	
Traffic <i>W. St...</i>	12-15-17	
Fire <i>James M...</i>	12-18-17	



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

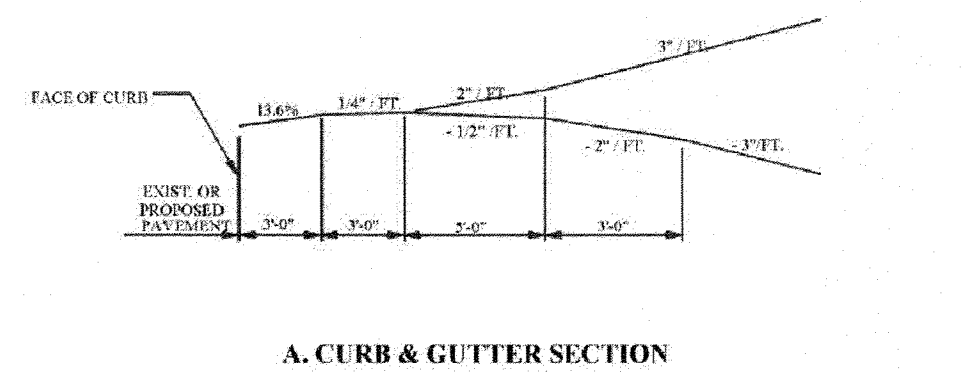


WILMINGTON SUNSET PARK 115 KV SUBSTATION
 317 BORDEAUX AVENUE, WILMINGTON NC 27601
 EAST - WEST BASELINE PROFILE

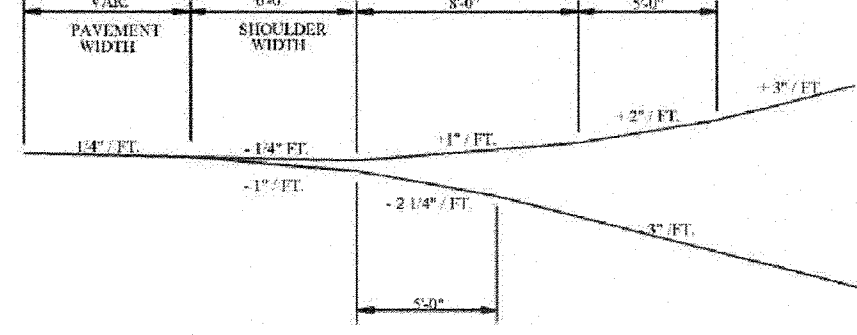
LOCATION: WILMINGTON, NC
 SCALE: 1"=30'/1"=3' SCALE RATIO: 1:1 PRJ. NO. DKE-17010
 DRAWN: JB CHK. --- APP. ---
 DATE: 12-13-17 DWG. NO. 70818, SHEET 16 OF 18

NO.	DATE	REVISION	BY	CK.	APP.

X:\Projects\DKE-17010\Land\Construction Drawings\Current Drawings\DKE17010-PI.dwg, 12/13/2017 3:56:09 PM, Blazier, Curt

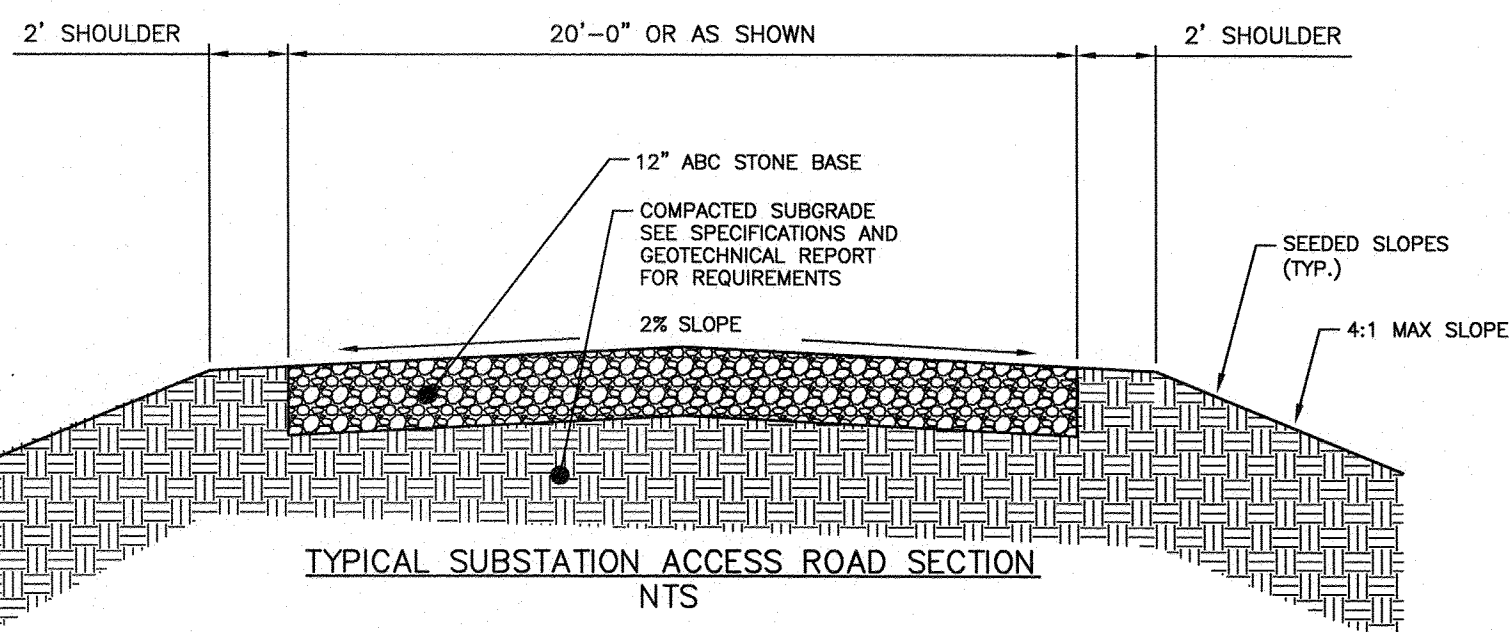


A. CURB & GUTTER SECTION

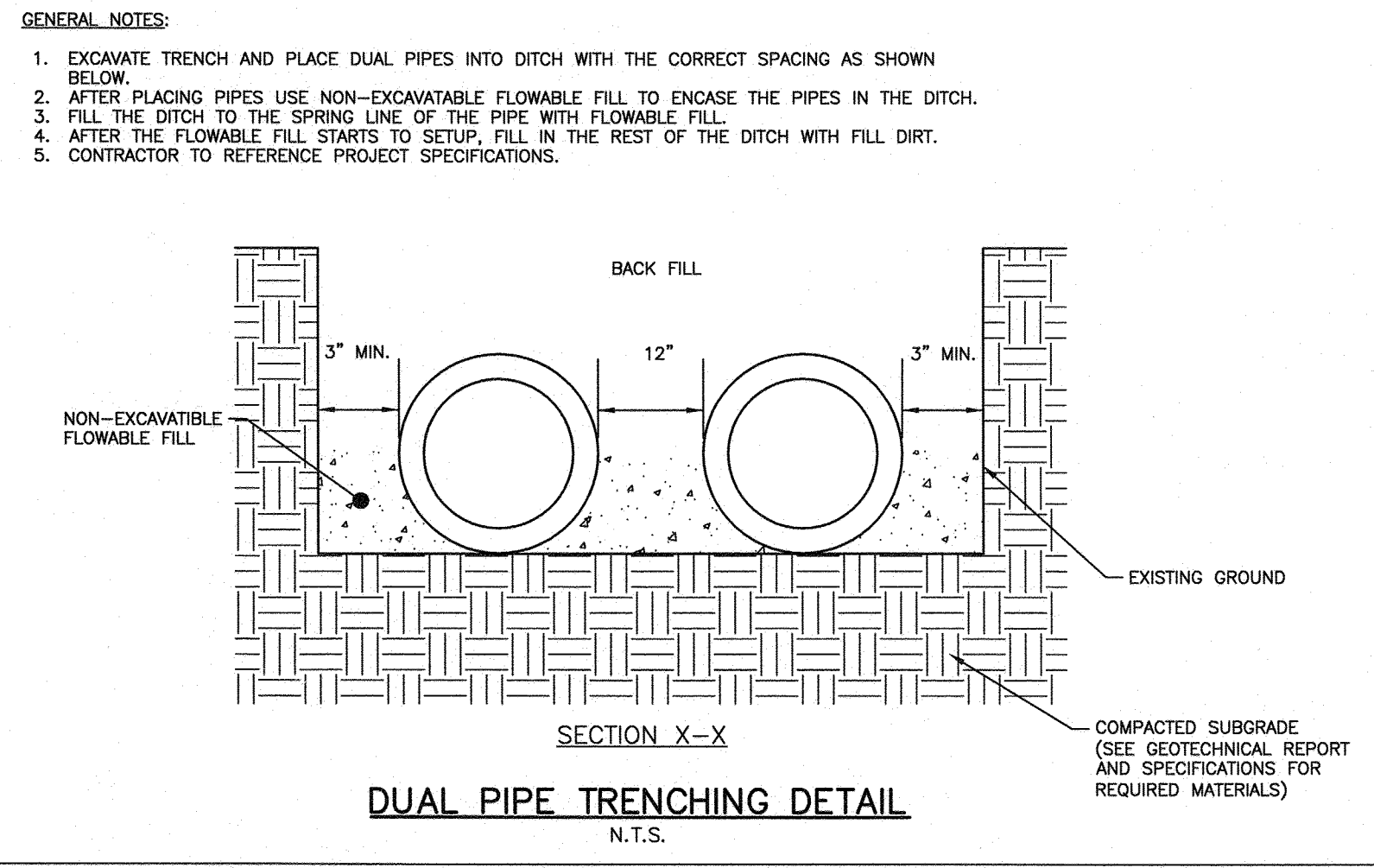


B. SHOULDER SECTION

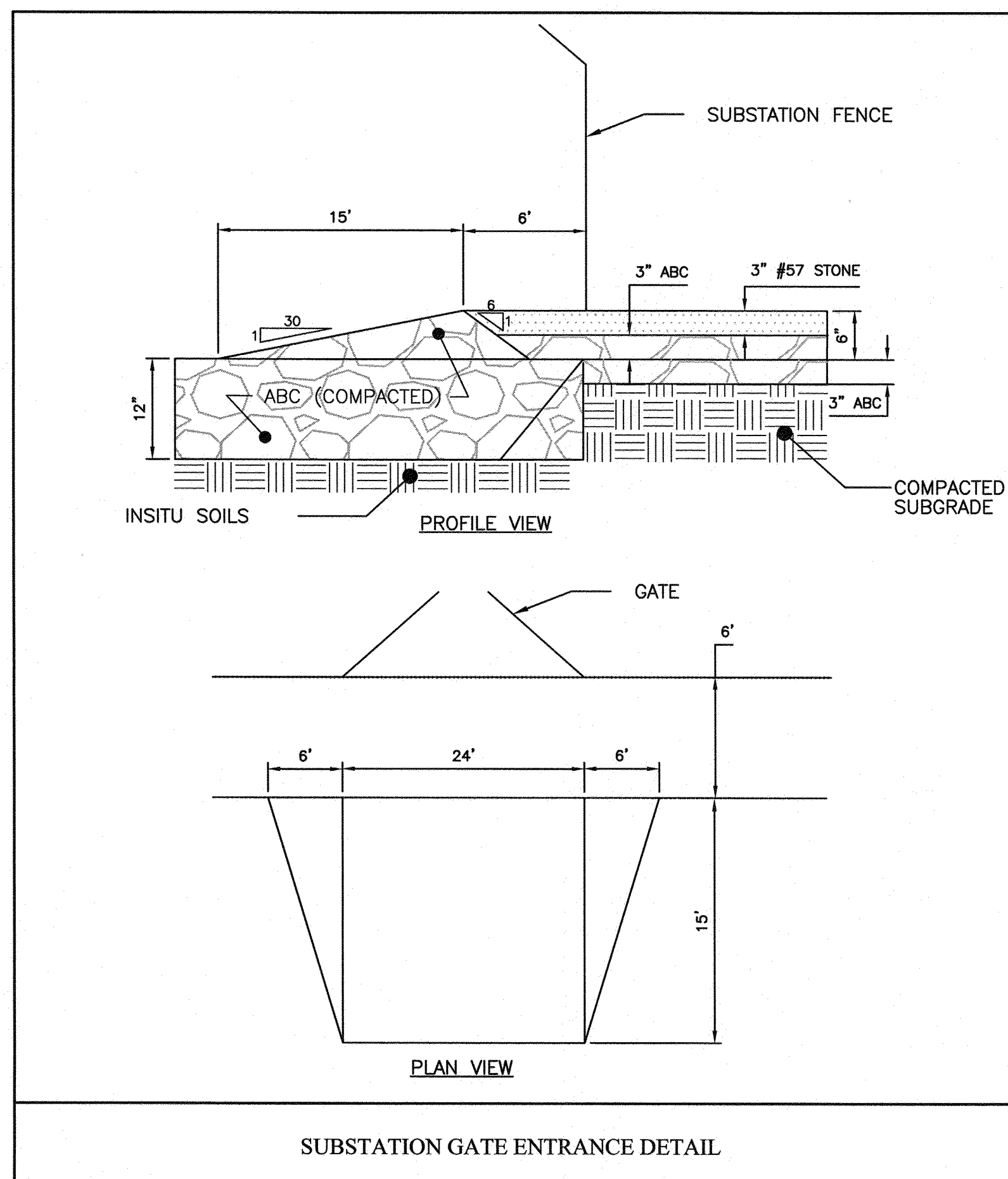
FIGURE 6
DRIVEWAY TURNOUT GRADES



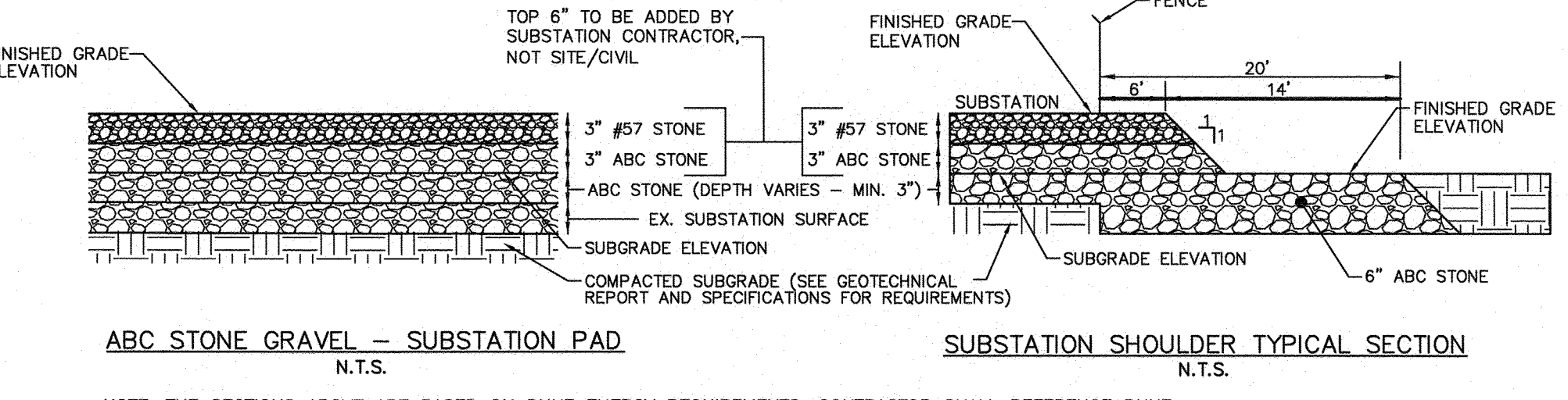
TYPICAL SUBSTATION ACCESS ROAD SECTION
N.T.S.



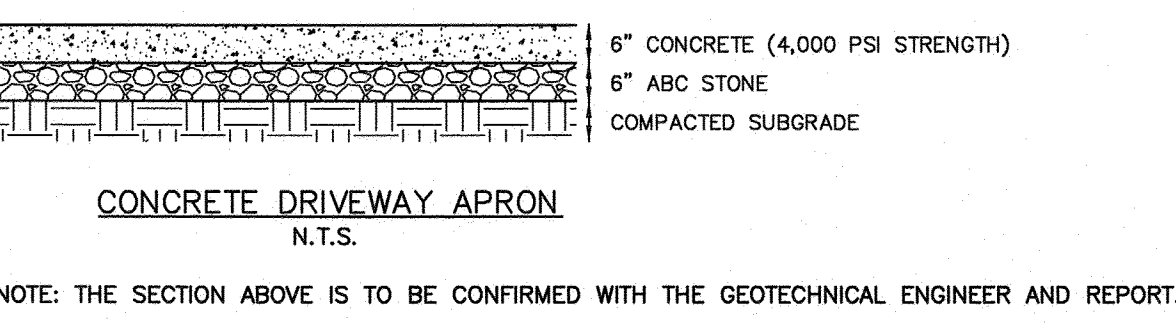
DUAL PIPE TRENCHING DETAIL
N.T.S.



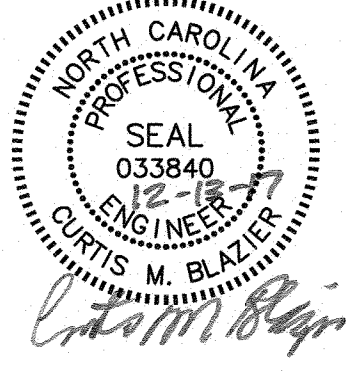
SUBSTATION GATE ENTRANCE DETAIL



ABC STONE GRAVEL - SUBSTATION PAD
N.T.S. SUBSTATION SHOULDER TYPICAL SECTION
N.T.S.



CONCRETE DRIVEWAY APRON
N.T.S.



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

FINAL DRAWING - RELEASED FOR CONSTRUCTION

City of WILMINGTON, NORTH CAROLINA
Public Services Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date: 12/18/17 Permit # 2017053
Signed: [Signature]

Approved Construction Plan
Name Date
Planning: [Signature] 12/15/17
Traffic: [Signature] 12/15/17
Fire: [Signature] 12/18/17

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

LOCATION: WILMINGTON, NC
SCALE: NTS SCALE RATIO: 1:1 P.R.J. NO. DKE-17010
DRAWN: JB CHK: --- APP: ---
DATE: 12-13-17 DWG. NO. 70818, SHEET 17 OF 18

ENGLISH STANDARD DRAWING FOR PRECAST CONCRETE ENDWALL FOR SINGLE 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.

DIMENSIONS AND CONCRETE QUANTITIES	
USING CONCRETE PIPE	
COMMON DIMENSIONS	STINGLE PIPE
D	H
18"	3'-3"
24"	4'-2"
30"	5'-0"
36"	5'-8"
42"	6'-6"
48"	7'-4"
54"	8'-2"
60"	9'-0"
66"	9'-8"
72"	10'-6"
78"	11'-4"
84"	12'-2"
90"	13'-0"
96"	13'-8"
102"	14'-6"
108"	15'-4"
114"	16'-2"
120"	17'-0"
126"	17'-8"
132"	18'-6"
138"	19'-4"
144"	20'-2"
150"	21'-0"
156"	21'-8"
162"	22'-6"
168"	23'-4"
174"	24'-2"
180"	25'-0"
186"	25'-8"
192"	26'-6"
198"	27'-4"
204"	28'-2"
210"	29'-0"
216"	29'-8"
222"	30'-6"
228"	31'-4"
234"	32'-2"
240"	33'-0"
246"	33'-8"
252"	34'-6"
258"	35'-4"
264"	36'-2"
270"	37'-0"
276"	37'-8"
282"	38'-6"
288"	39'-4"
294"	40'-2"
300"	41'-0"
306"	41'-8"
312"	42'-6"
318"	43'-4"
324"	44'-2"
330"	45'-0"
336"	45'-8"
342"	46'-6"
348"	47'-4"
354"	48'-2"
360"	49'-0"
366"	49'-8"
372"	50'-6"
378"	51'-4"
384"	52'-2"
390"	53'-0"
396"	53'-8"
402"	54'-6"
408"	55'-4"
414"	56'-2"
420"	57'-0"
426"	57'-8"
432"	58'-6"
438"	59'-4"
444"	60'-2"
450"	61'-0"
456"	61'-8"
462"	62'-6"
468"	63'-4"
474"	64'-2"
480"	65'-0"
486"	65'-8"
492"	66'-6"
498"	67'-4"
504"	68'-2"
510"	69'-0"
516"	69'-8"
522"	70'-6"
528"	71'-4"
534"	72'-2"
540"	73'-0"
546"	73'-8"
552"	74'-6"
558"	75'-4"
564"	76'-2"
570"	77'-0"
576"	77'-8"
582"	78'-6"
588"	79'-4"
594"	80'-2"
600"	81'-0"
606"	81'-8"
612"	82'-6"
618"	83'-4"
624"	84'-2"
630"	85'-0"
636"	85'-8"
642"	86'-6"
648"	87'-4"
654"	88'-2"
660"	89'-0"
666"	89'-8"
672"	90'-6"
678"	91'-4"
684"	92'-2"
690"	93'-0"
696"	93'-8"
702"	94'-6"
708"	95'-4"
714"	96'-2"
720"	97'-0"
726"	97'-8"
732"	98'-6"
738"	99'-4"
744"	100'-2"
750"	101'-0"
756"	101'-8"
762"	102'-6"
768"	103'-4"
774"	104'-2"
780"	105'-0"
786"	105'-8"
792"	106'-6"
798"	107'-4"
804"	108'-2"
810"	109'-0"
816"	109'-8"
822"	110'-6"
828"	111'-4"
834"	112'-2"
840"	113'-0"
846"	113'-8"
852"	114'-6"
858"	115'-4"
864"	116'-2"
870"	117'-0"
876"	117'-8"
882"	118'-6"
888"	119'-4"
894"	120'-2"
900"	121'-0"
906"	121'-8"
912"	122'-6"
918"	123'-4"
924"	124'-2"
930"	125'-0"
936"	125'-8"
942"	126'-6"
948"	127'-4"
954"	128'-2"
960"	129'-0"
966"	129'-8"
972"	130'-6"
978"	131'-4"
984"	132'-2"
990"	133'-0"
996"	133'-8"
1002"	134'-6"
1008"	135'-4"
1014"	136'-2"
1020"	137'-0"
1026"	137'-8"
1032"	138'-6"
1038"	139'-4"
1044"	140'-2"
1050"	141'-0"
1056"	141'-8"
1062"	142'-6"
1068"	143'-4"
1074"	144'-2"
1080"	145'-0"
1086"	145'-8"
1092"	146'-6"
1098"	147'-4"
1104"	148'-2"
1110"	149'-0"
1116"	149'-8"
1122"	150'-6"
1128"	151'-4"
1134"	152'-2"
1140"	153'-0"
1146"	153'-8"
1152"	154'-6"
1158"	155'-4"
1164"	156'-2"
1170"	157'-0"
1176"	157'-8"
1182"	158'-6"
1188"	159'-4"
1194"	160'-2"
1200"	161'-0"
1206"	161'-8"
1212"	162'-6"
1218"	163'-4"
1224"	164'-2"
1230"	165'-0"
1236"	165'-8"
1242"	166'-6"
1248"	167'-4"
1254"	168'-2"
1260"	169'-0"
1266"	169'-8"
1272"	170'-6"
1278"	171'-4"
1284"	172'-2"
1290"	173'-0"
1296"	173'-8"
1302"	174'-6"
1308"	175'-4"
1314"	176'-2"
1320"	177'-0"
1326"	177'-8"
1332"	178'-6"
1338"	179'-4"
1344"	180'-2"
1350"	181'-0"
1356"	181'-8"
1362"	182'-6"
1368"	183'-4"
1374"	184'-2"
1380"	185'-0"
1386"	185'-8"
1392"	186'-6"
1398"	187'-4"
1404"	188'-2"
1410"	189'-0"
1416"	189'-8"
1422"	190'-6"
1428"	191'-4"
1434"	192'-2"
1440"	193'-0"
1446"	193'-8"
1452"	194'-6"
1458"	195'-4"
1464"	196'-2"
1470"	197'-0"
1476"	197'-8"
1482"	198'-6"
1488"	199'-4"
1494"	200'-2"
1500"	201'-0"
1506"	201'-8"
1512"	202'-6"
1518"	203'-4"
1524"	204'-2"
1530"	205'-0"
1536"	205'-8"
1542"	206'-6"
1548"	207'-4"
1554"	208'-2"
1560"	209'-0"
1566"	209'-8"
1572"	210'-6"
1578"	211'-4"
1584"	212'-2"
1590"	213'-0"
1596"	213'-8"
1602"	214'-6"
1608"	215'-4"
1614"	216'-2"
1620"	217'-0"
1626"	217'-8"
1632"	218'-6"
1638"	219'-4"
1644"	220'-2"
1650"	221'-0"
1656"	221'-8"
1662"	222'-6"
1668"	223'-4"
1674"	224'-2"
1680"	225'-0"
1686"	225'-8"
1692"	226'-6"
1698"	227'-4"
1704"	228'-2"
1710"	229'-0"
1716"	229'-8"
1722"	230'-6"
1728"	231'-4"
1734"	232'-2"
1740"	233'-0"
1746"	233'-8"
1752"	234'-6"
1758"	235'-4"
1764"	236'-2"
1770"	237'-0"
1776"	237'-8"
1782"	238'-6"
1788"	239'-4"
1794"	240'-2"
1800"	241'-0"
1806"	241'-8"
1812"	242'-6"
1818"	243'-4"
1824"	244'-2"
1830"	245'-0"
1836"	245'-8"
1842"	246'-6"
1848"	247'-4"
1854"	248'-2"
1860"	249'-0"
1866"	249'-8"
1872"	250'-6"
1878"	251'-4"
1884"	252'-2"
1890"	253'-0"
1896"	253'-8"
1902"	254'-6"
1908"	255'-4"
1914"	256'-2"
1920"	257'-0"
1926"	257'-8"
1932"	258'-6"
1938"	259'-4"
1944"	260'-2"
1950"	261'-0"
1956"	261'-8"
1962"	262'-6"
1968"	263'-4"
1974"	264'-2"
1980"	265'-0"
1986"	265'-8"
1992"	266'-6"
1998"	267'-4"
2004"	268'-2"
2010"	269'-0"
2016"	269'-8"
2022"	270'-6"
2028"	271'-4"
2034"	272'-2"
2040"	273'-0"
2046"	273'-8"
2052"	274'-6"
2058"	275'-4"
2064"	276'-2"
2070"	277'-0"
2076"	277'-8"
2082"	278'-6"
2088"	279'-4"
2094"	280'-2"
2100"	281'-0"
2106"	281'-8"
2112"	282'-6"
2118"	283'-4"
2124"	284'-2"
2130"	285'-0"
2136"	285'-8"
2142"	286'-6"
2148"	287'-4"
2154"	288'-2"
2160"	289'-0"
2166"	289'-8"
2172"	290'-6"
2178"	291'-4"
2184"	292'-2"
2190"	293'-0"
2196"	293'-8"
2202"	294'-6"
2208"	295'-4"
2214"	296'-2"
2220"	297'-0"
2226"	297'-8"
2232"	298'-6"
2238"	299'-4"
2244"	300'-2"
2250"	301'-0"
2256"	301'-8"
2262"	302'-6"
2268"	303'-4"
2274"	304'-2"
2280"	305'-0"
2286"	305'-8"
2292"	306'-6"
2298"	307'-4"
2304"	308'-2"
2310"	309'-0"
2316"	309'-8"
2322"	310'-6"

