

WILMINGTON SUNSET PARK 115kV SUBSTATION

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

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

DATE: MAY 15, 2017
LATITUDE: 34.1983
LONGITUDE: -77.9392
DUKE PROJECT NUMBER: 140606H03

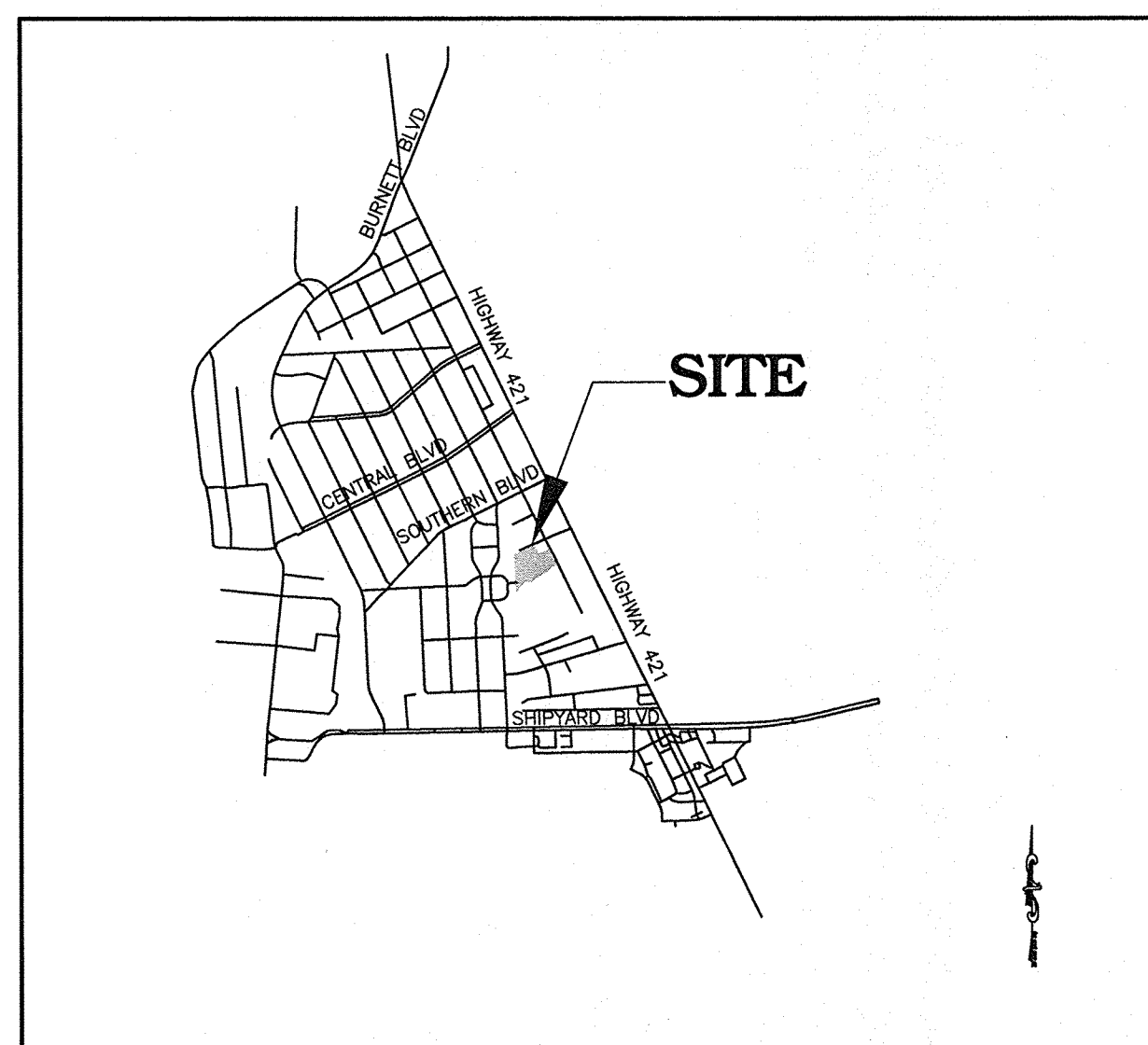
SITE DATA TABLE	
PROJECT NAME:	WILMINGTON SUNSET PARK 115kV SUBSTATION
PHYSICAL ADDRESS:	317 BORDEAUX AVENUE WILMINGTON, NC 28401
OWNER/DEVELOPER:	DUKE ENERGY PROGRESS 410 S. WILMINGTON ST. RALEIGH, NC 27601 (919) 546-6123
PARCEL ID NUMBER:	PIN NUMBER: 06013-021-004-000
TOTAL PARCEL & IMPERVIOUS AREA:	4.53 AC (3.50 AC DISTURBED) EXISTING SITE IMPERVIOUS AREA: 37,399 SF/0.86 AC (19.0% PARCEL AREA) PROPOSED SITE IMPERVIOUS AREA: 77,580 SF/1.78 AC (39.3% PARCEL AREA) NET IMPERVIOUS AREA INCREASE: 40,181 SF/0.92 AC (20.3% PARCEL AREA)
WETLANDS:	N/A
ZONING:	UNZONED
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 RAGONE DRIVE, SUITE 101 WILMINGTON, NORTH CAROLINA 28403 (910) 313-6648
ENGINEER:	MCADAMS 2905 MERIDIAN PKWY DURHAM, NC 27713 (919) 361-5000

OWNER:

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

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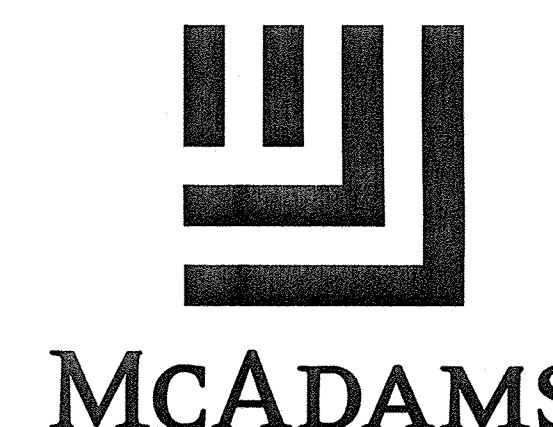
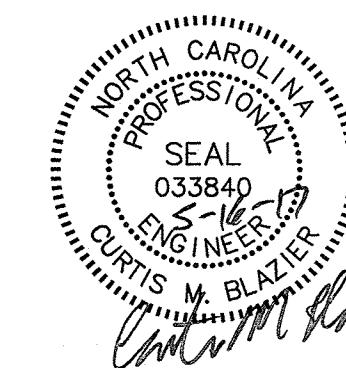


VICINITY MAP
NTS



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.



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@mcadamsco.com

X:\Projects\DKE-17010\LandConstruction Drawings\Current Drawings\DKE17010-CST.dwg, 5/16/2017 8:32:20 AM, Blalock, Curt

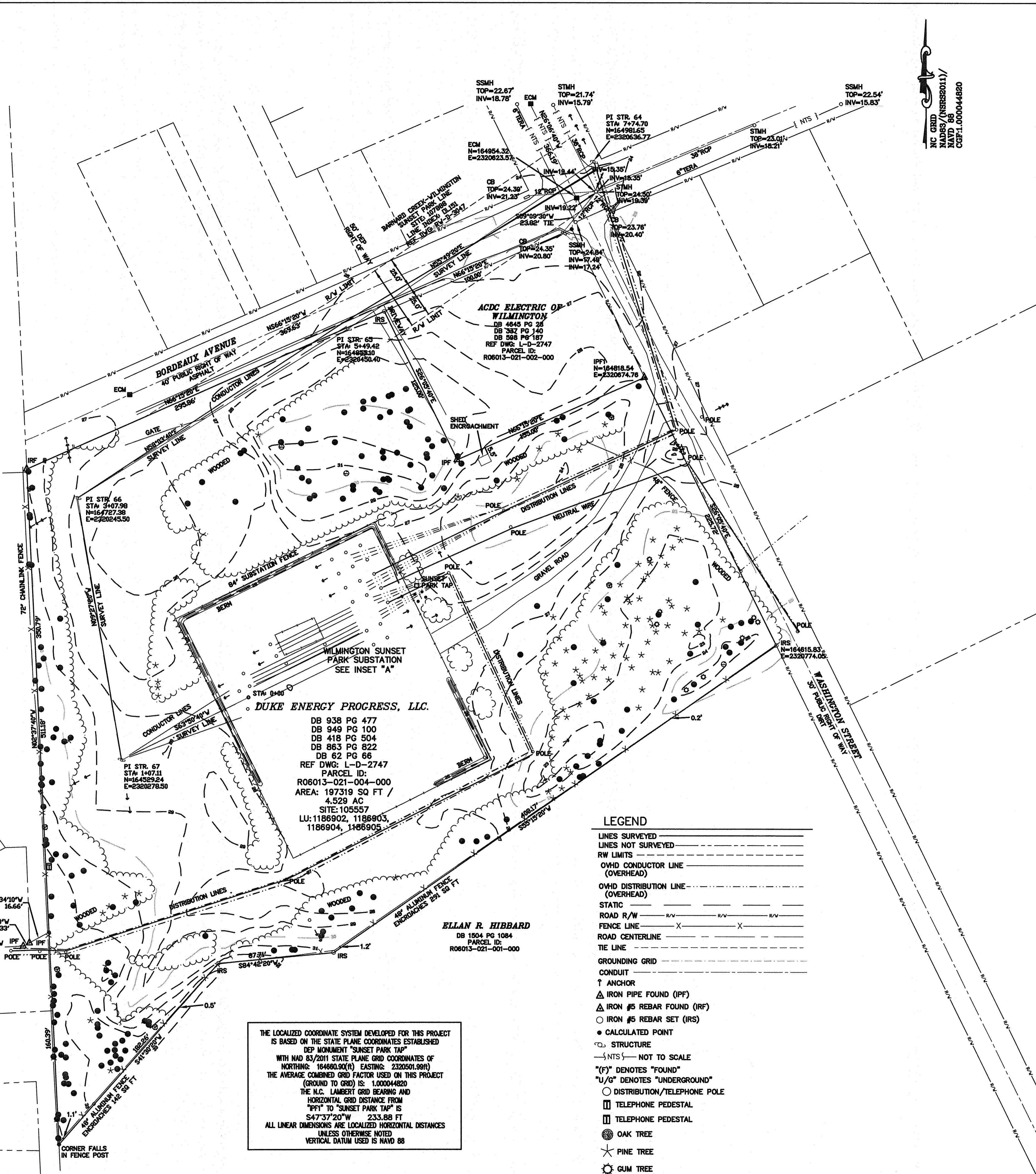


ESP Associates, P.A.
 211 Reata Drive, Suite 101
 Wilmington, NC 28408
 910-318-6648
 www.espassociates.com
 Telephone: 910-318-0828
 License: C-0587

NEW DAWSON LIMITED PARTNERSHIP
 DB 3028 PG 165
 PARCEL ID:
 R06013-021-032-000

SUNSET SOUTH OWNERS ASSOCIATION
 DB 5639 PG 1199
 NB 45 PG 359
 PARCEL ID:
 R06013-016-003-000

SUNSET SOUTH SUBDIVISION
 NB 45 PG 359



THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY DEPARTMENT "SUNSET PARK TAP" WITH NAD 83/2011 STATE PLANE GRID COORDINATES OF NORTHING: 164680.90(N) EASTING: 232050.98(E) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 1.00004820 THE N.C. LAMBERT GRID BEARING AND HORIZONTAL GRID DISTANCE FROM "TAP" TO "SUNSET PARK TAP" IS S47°37'20"W 233.88 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/H D CONDUCTOR LINE (OVERHEAD)
 - O/H D 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
 - TELEPHONE PEDESTAL
 - OAK TREE
 - ★ PINE TREE
 - ⊙ GUM TREE
 - ⊙ CEDAR TREE
 - ⊙ OTHER TREE

ELLAN R. HIBBARD
 DB 1504 PG 1084
 PARCEL ID:
 R06013-021-001-000

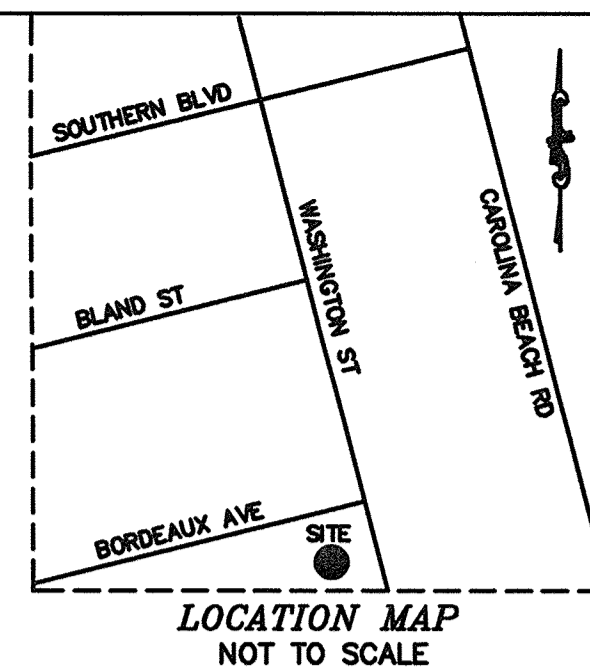
NC GRID
 NAD83 (NARS2011)
 NAVD 88
 CGP:1.00004820

I, BENJAMIN F. FARROW II, CERTIFY THAT THIS PLAN WAS DRAWN UNDER MY SUPERVISION FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION (DEED DESCRIPTION, RECORDED IN BOOK 008, PAGE 477 AS SHOWN); THAT THE BOUNDARIES NOT SURVEYED AND 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 06.1000); THAT THIS PLAN WAS PREPARED IN ACCORDANCE WITH G.S. 47-30 AS AMENDED.

WITNESS MY ORIGINAL SIGNATURE, REGISTRATION NUMBER AND SEAL THIS 17TH DAY OF FEBRUARY, A.D., 2017.

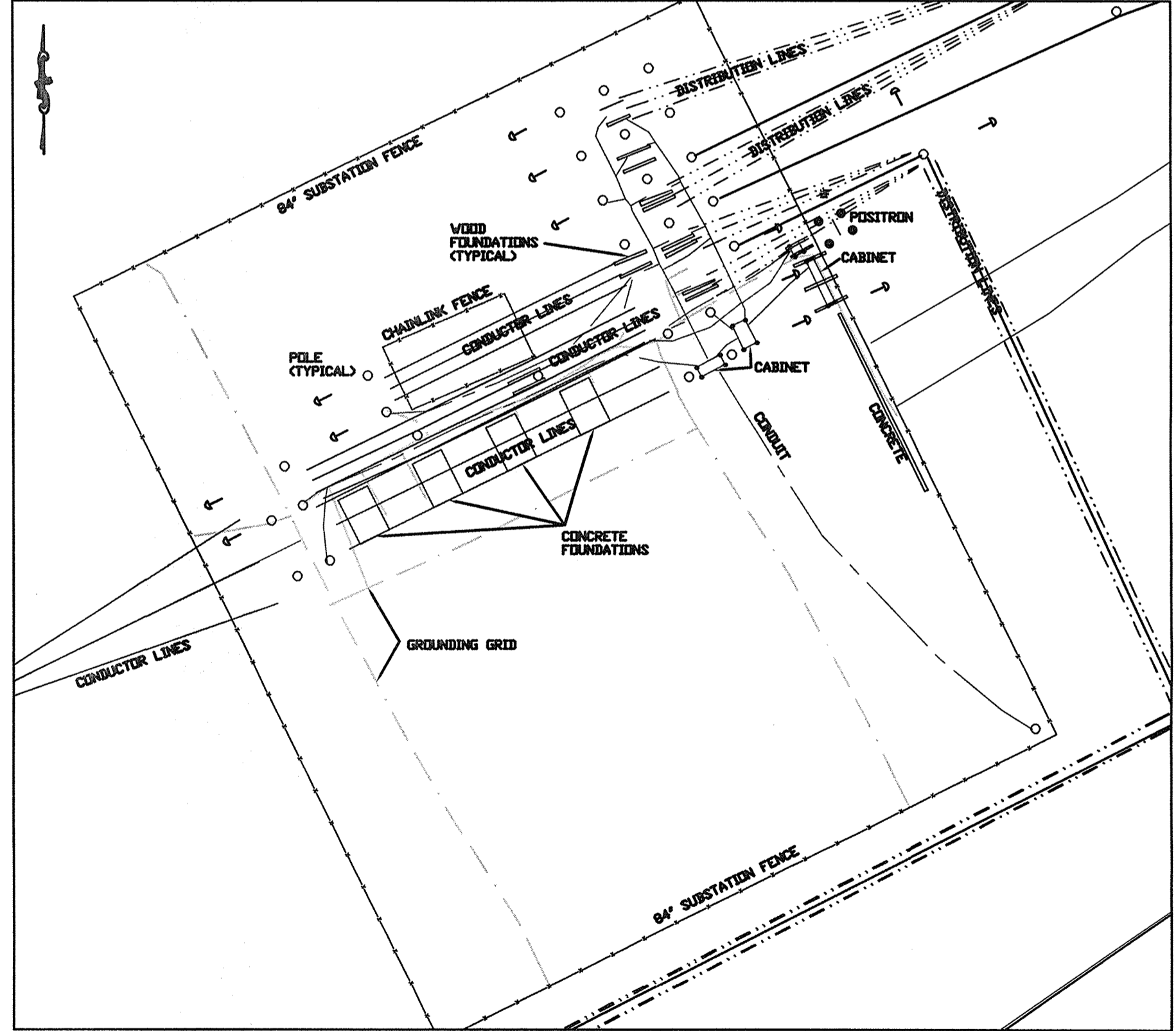
THIS SURVEY IS OF AN EXISTING PARCEL OR PARCELS OF LAND AND DOES NOT CREATE A NEW STREET OR CHANGE AN EXISTING STREET.

PROFESSIONAL LAND SURVEYOR L-_____ DATE _____



- 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'

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: 20170217 20 0 20 40 80 CREW: JRB
 DATE: 2/17/17 DRAWN BY: DEA
 SCALE: 1" = 40' SCALE IN FEET R.O.P. = 1:10000+

LAND UNITS: 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)282-2361

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 WILL BE REPLACED.
- CONTACT KAREN DIXON 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 USCFCOCHR OR ASSE.
- CONTRACTOR TO FIELD VERIFY EXISTING WATER AND SEWER SERVICE LOCATIONS, SIZES AND MATERIALS PRIOR TO CONSTRUCTION. ENGINEER TO BE NOTIFIED OF ANY CONFLICTS.
- CONTRACTOR SHALL MAINTAIN ALL-WEATHER ACCESS FOR EMERGENCY VEHICLES AT ALL TIMES DURING CONSTRUCTION.
- UNDERGROUND FIRE LINE(S) MUST BE PERMITTED AND INSPECTED BY THE WILMINGTON FIRE DEPARTMENT FROM THE PUBLIC RIGHT-OF-WAY TO THE BUILDING. CONTACT THE WILMINGTON FIRE DEPARTMENT DIVISION OF FIRE AND LIFE SAFETY AT 910-341-0696.
- NO OBSTRUCTIONS ARE PERMITTED IN THE SPACE BETWEEN THIRTY (30) INCHES AND TEN (10) FEET ABOVE THE GROUND WITHIN THE TRIANGULAR SIGHT DISTANCE.
- CONTACT THE NORTH CAROLINA ONE CALL CENTER AT 1-800-632-4949 PRIOR TO DOING ANY DIGGING, CLEARING, OR GRADING

GROUND STABILIZATION		
SITE AREA DESCRIPTION	STABILIZATION TIME FRAME	STABILIZATION TIME FRAME EXCEPTIONS
PERMETER 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.	

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 SEED 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 10 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 A 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) ON SITE.
- 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 SPECIALLY REQUIRED AS PART OF THE CONSTRUCTION SEQUENCE ON THE PLAN. ALL GRADED SLOPES STEEPER THAN 3:1 MUST BE SEED & MULCHED & TACKIFIER PLACED WITHIN 7 DAYS OF COMPLETION OF GRADING. ALL REMAINING DISTURBED AREAS ARE TO BE SEED & 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 NCDCEQ 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, COORDINATE CHANGES TO THE PLAN WITH THE ON-SITE NCDCEQ 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.

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 PRESSURE ON THE FENCE. FENCING MATERIALS AND SEDIMENT DEPOSITS SHALL BE REMOVED, AND THE AREA BROUGHT TO GRADE FOLLOWING STABILIZATION OF UPGRADIENT DISTURBED AREAS.

SITE NOTES

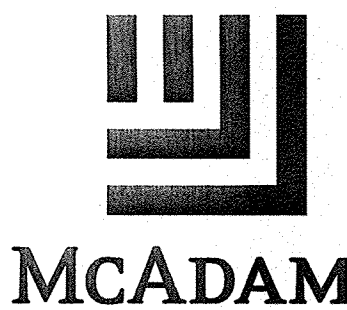
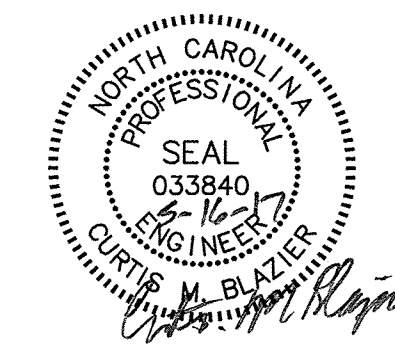
- LOCATION AND TOPOGRAPHICAL INFORMATION WAS TAKEN FROM AN ACTUAL FIELD SURVEY PERFORMED BY ESP ASSOCIATES P.A., DATED 01/12/2017. REFERENCE DATUM IS NAD 83 (2011) HORIZONTAL AND NAVD 88 FOR VERTICAL.
- PROPERTY LIES WITHIN FEMA ZONE X (OUTSIDE 500 YEAR FLOOD PLAIN) AS PER FEMA FIRM COMMUNITY PANEL NO. 3720312600J, 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 AGC 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 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.
- 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.

GRADING NOTES

- 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.
- 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 S&ME, 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 LEAKS. 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 MAINT IS NOT LOWERED AS WELL AS PORTABLE TOILETS THAT COULD TIP OVER IF NOT TIED DOWN OR SECURED.



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NO.	DATE	REVISION	BY	CK.	APP.

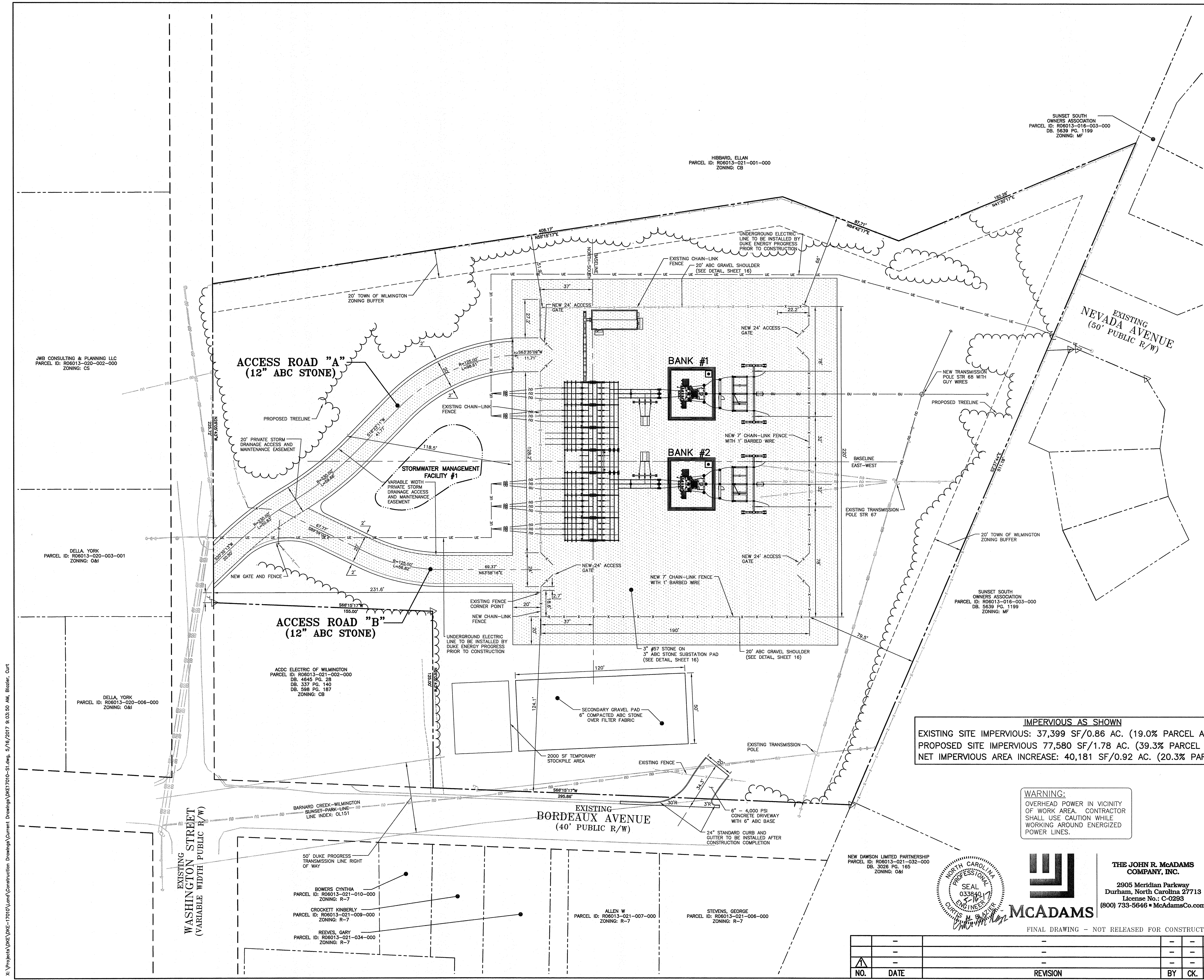
DUKE ENERGY PROGRESS

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

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

SITE LEGEND

---	PROPERTY LINE
---	RIGHT-OF-WAY LINE
---	LOT LINE
---	EASEMENT LINE
---	CENTERLINE



IMPERVIOUS AS SHOWN

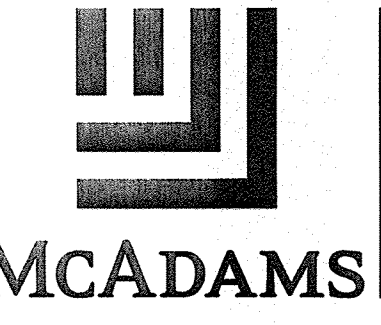
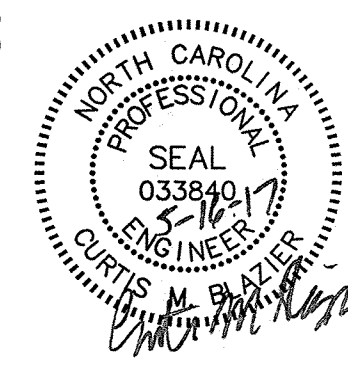
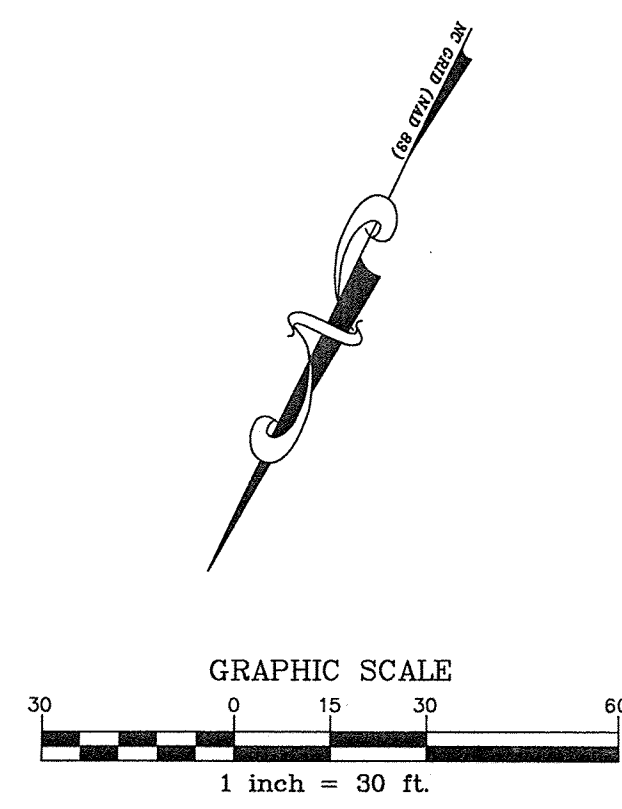
EXISTING SITE IMPERVIOUS: 37,399 SF/0.86 AC. (19.0% PARCEL AREA)

PROPOSED SITE IMPERVIOUS 77,580 SF/1.78 AC. (39.3% PARCEL AREA)

NET IMPERVIOUS AREA INCREASE: 40,181 SF/0.92 AC. (20.3% PARCEL AREA)

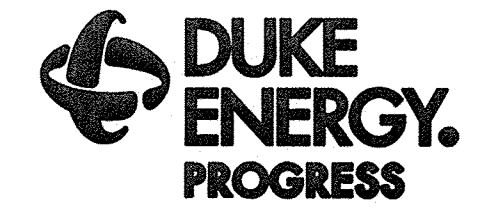
WARNING:

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



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

NO.	DATE	REVISION	BY	CK.	APP.

X:\Projects\DKE\17010\17010\Construction Drawings\Current Drawings\DKE17010-SI.dwg, 5/16/2017 9:03:50 AM, Blazier, Curt

X:\Projects\WME\DK-17010\Construction Drawings\DK17010-01.dwg, 5/16/2017 7:44:34 AM, Turner, Chandler

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

SUNSET SOUTH OWNERS ASSOCIATION
PARCEL ID: R06013-016-003-000
DB: 5639 PG. 1199
ZONING: MF

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

DELLA YORK
PARCEL ID: R06013-020-003-001
ZONING: O&I

DELLA YORK
PARCEL ID: R06013-020-006-000
ZONING: O&I

ADD ELECTRIC OF WILMINGTON
PARCEL ID: R06013-021-002-000
DB: 4645 PG. 28
DB: 337 PG. 140
DB: 598 PG. 197
ZONING: CB

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

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

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

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

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

GRADING LEGEND

- FLARED END SECTION
- ENDWALL SECTION
- CATCH BASIN
- DROP INLET
- JUNCTION BOX
- DRAINAGE FLOW ARROW
- + FG=250.00 FINISHED GRADE SPOT ELEVATIONS
- 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
- LIMITS OF DISTURBANCE
- PROPOSED TREELINE
- 250 MAJOR CONTOUR
- 252 MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EASEMENT LINE

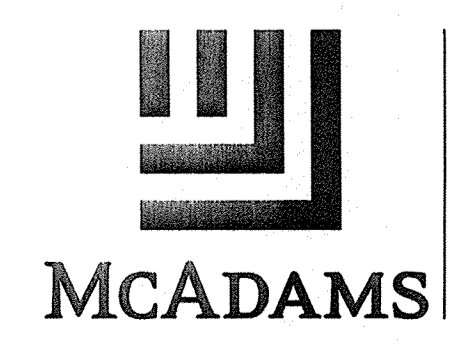
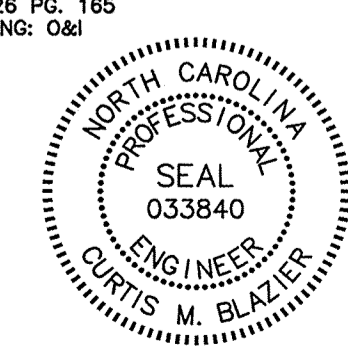
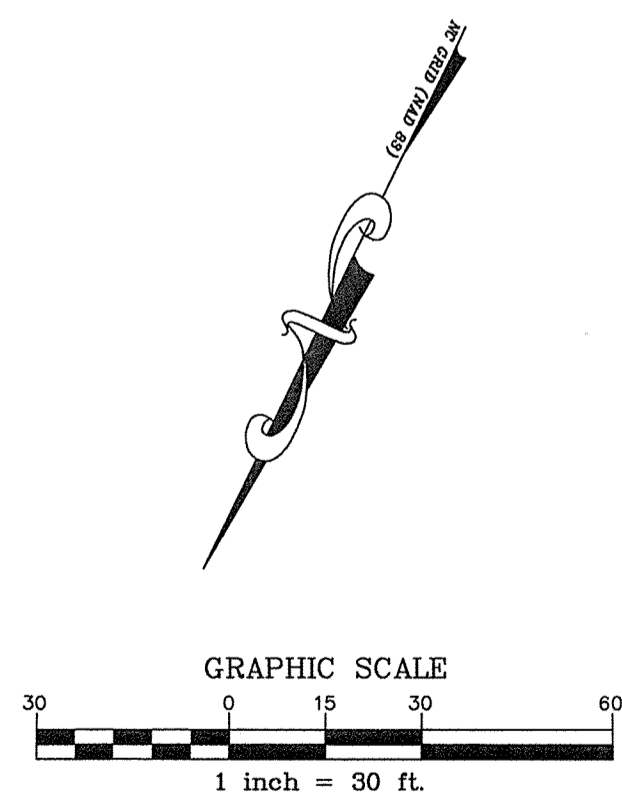
EARTHWORK VOLUMES:
CUT: 2,229 CU. YD.
FILL: 2,280 CU. YD.
NET (UNADJUSTED): 51 CU. YD. (FILL/IMPORT)
NET (ADJUSTED): 1,271 CU. YD. (CUT/EXPORT)
*** EARTHWORK VOLUMES ARE ESTIMATED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL VOLUMES AND QUANTITIES.

DITCH #	SECTION			TEMPORARY LINER
	SIDES	LONGITUDINAL (FT/FT)	DEPTH (FT)	
PD-1	4:1	0.013	1.0 MIN	C125
PD-2	4:1	0.006	1.0 MIN	C125
PD-3	4:1	0.029	1.0 MIN	C125

STORMWATER STRUCTURE SCHEDULE

EW-100	INV=24.00
HW-101	INV=24.50
EW-102	INV=23.50
HW-103	INV=24.00
EW-104	INV=23.50
HW-105	INV=24.25

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



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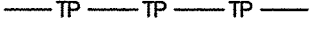
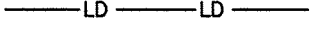

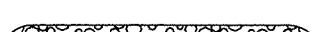



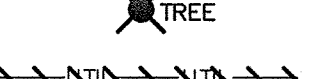
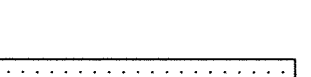
WILMINGTON SUNSET PARK 115 KV SUBSTATION
317 BORDEAUX AVENUE, WILMINGTON NC 27601
GRADING AND STORM DRAINAGE PLAN

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 6 OF 18

NO.	DATE	REVISION	BY	CK.	APP.

FINAL DRAWING - NOT RELEASED FOR CONSTRUCTION

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.

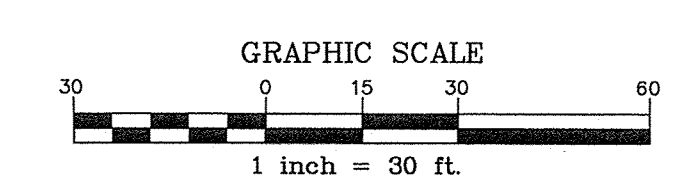
DISTURBED AREA = 3.50 AC.

CONSTRUCTION SEQUENCE - STAGE 1

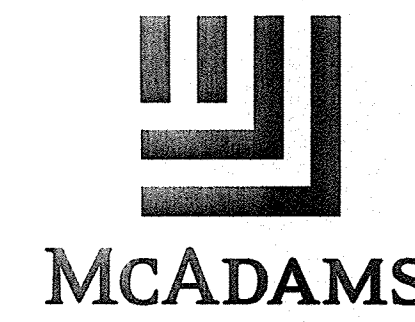
1. CALL THE DESIGNATED NCEQ EROSION CONTROL INSPECTOR AT (910) 796-7215 TO SCHEDULE AND HOLD A PRE-CONSTRUCTION MEETING.
2. DO NOT PROCEED WITH LAND DISTURBANCE ACTIVITIES WITHOUT AN APPROVED SEDIMENT AND EROSION CONTROL PLAN.
3. ONLY DISTURB AREAS NECESSARY TO INSTALL PERIMETER MEASURES. MAINTAIN DEVICES 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 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 UPGRADEMENT DISTURBED AREAS.



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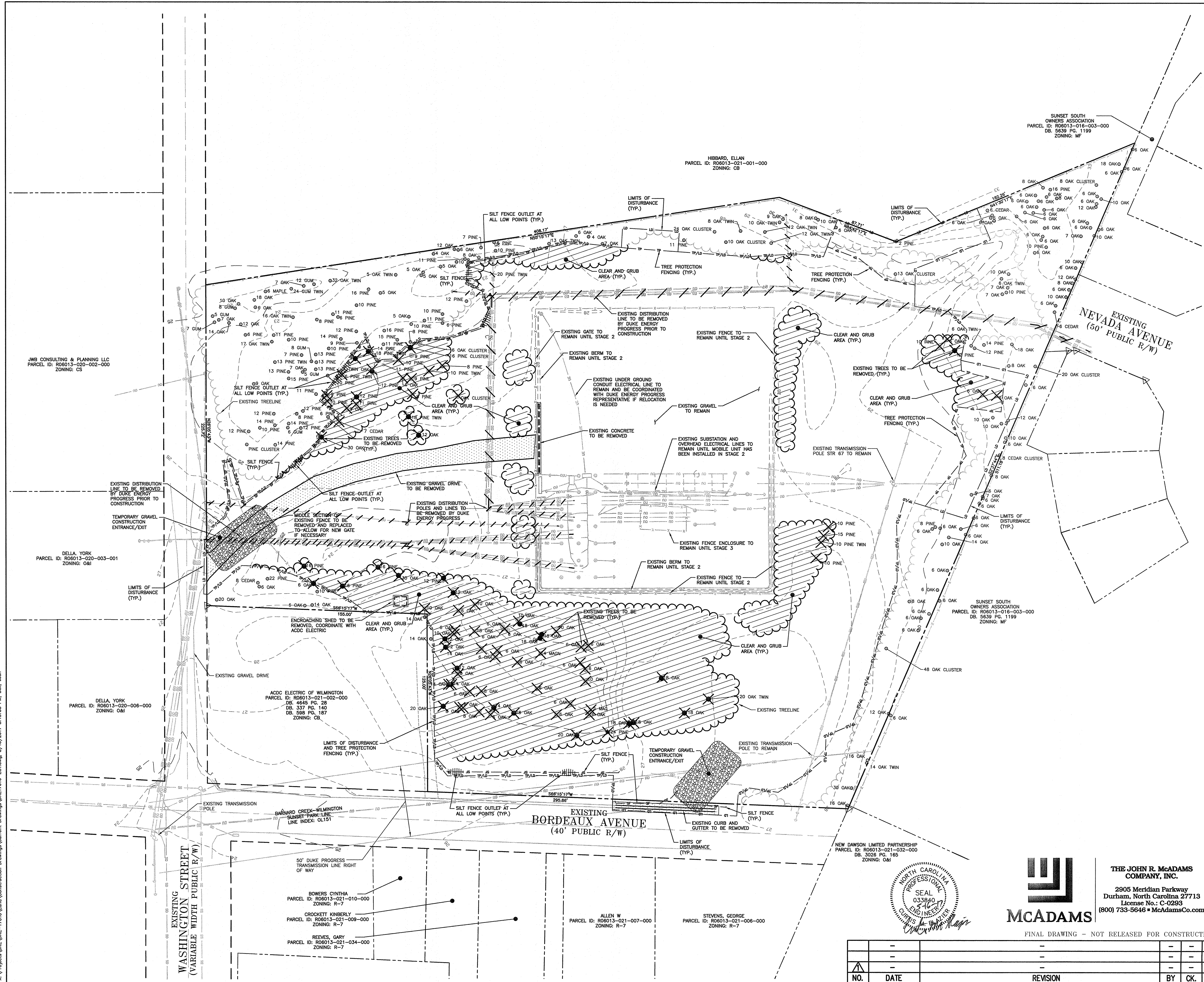


FINAL DRAWING - NOT RELEASED FOR CONSTRUCTION

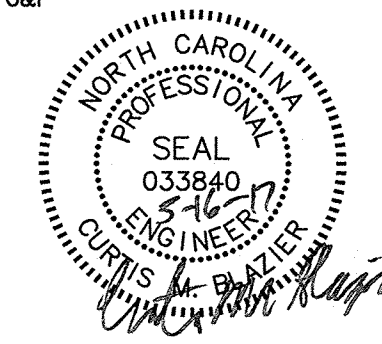
WILMINGTON SUNSET PARK 115 KV SUBSTATION
 317 BORDEAUX AVENUE, WILMINGTON NC 27601
 SEDIMENT & EROSION CONTROL PLAN - STAGE 1

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 7 OF 18

NO.	DATE	REVISION	BY	CK.	APP.



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EROSION CONTROL LEGEND

- SILT FENCE OUTLET
- CHECK DAM
- SILT FENCE
- TREE PROTECTION FENCE
- 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 = 3.50 AC.

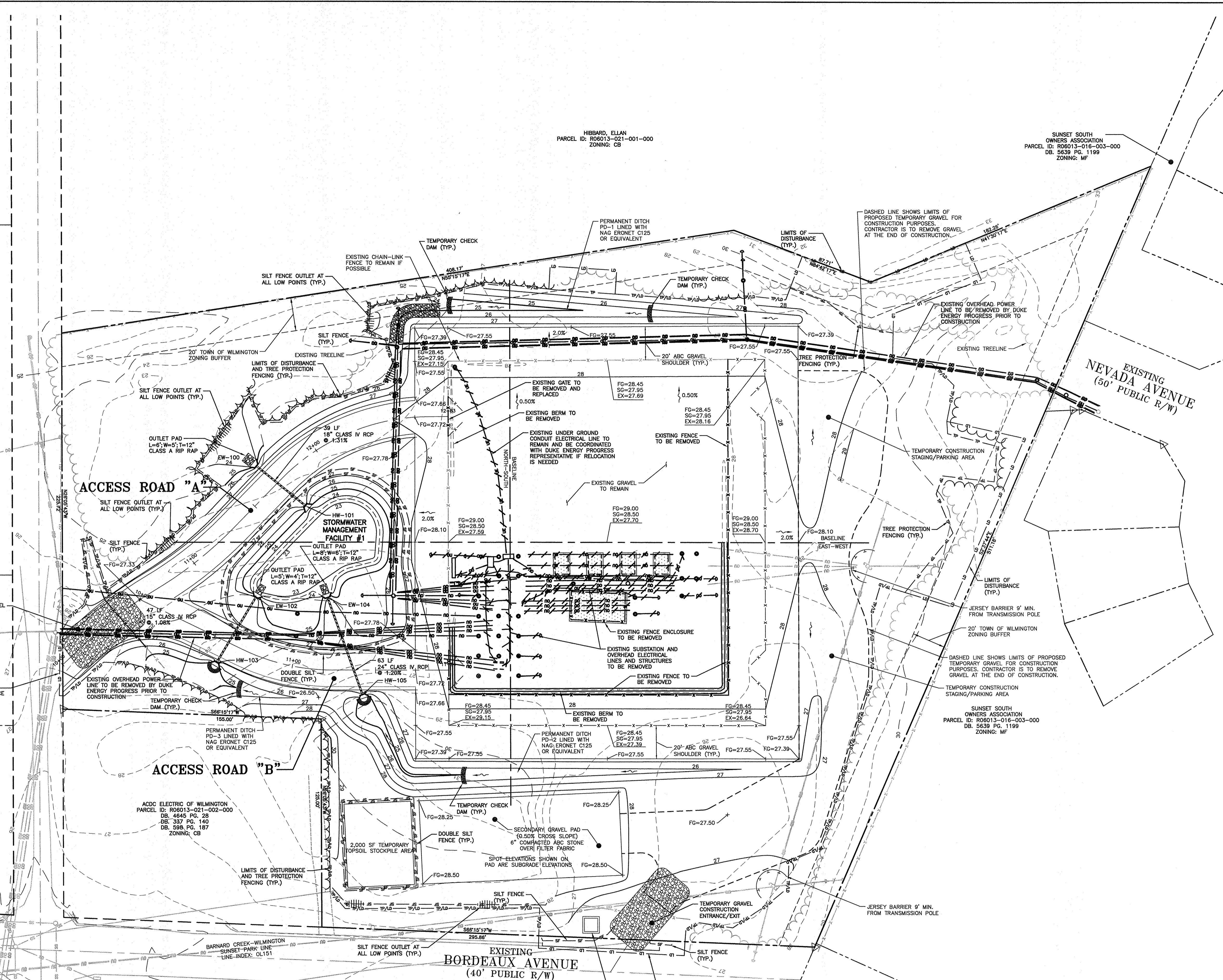
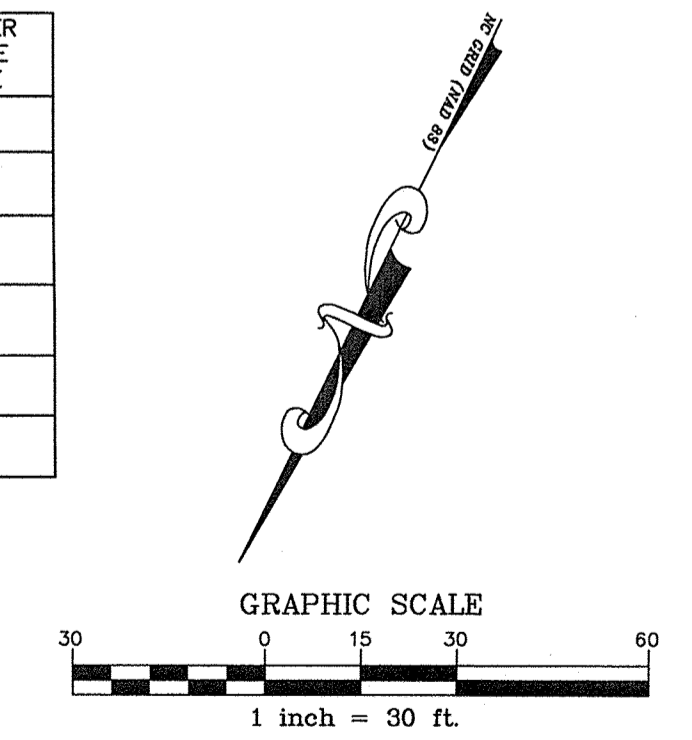
CONSTRUCTION SEQUENCE - STAGE 2

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 ASSOCIATING 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 REGARDING THE INSTALLATION OF THE MOBILE SUBSTATION UNIT.
4. ONCE THE MOBILE SUBSTATION UNIT IS ONLINE AND A DUKE ENERGY 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", SWMF #1, AND THE PROPOSED SUBSTATION PAD. DURING GRADING AND CONSTRUCTION OF ACCESS ROAD "A", ACCESS ROAD "B", AND SWMF #1 INSTALL THE STORM DRAINAGE CULVERTS FROM EW-100 TO HW-105 (SEE SW SHEETS FOR MORE DETAIL). DURING THE CONSTRUCTION OF THE SWMF #1 THE CONTRACTOR IS TO CONTINUOUSLY WRAP THE UPPER EDGE OF SWMF #1 WITH TWO LAYERS OF SILT FENCE THROUGHOUT THE CONSTRUCTION PROCESS.
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 TEMPORARY 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 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 NCEQ 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.

STORMWATER STRUCTURE SCHEDULE	
EW-100	INV=24.00
HW-101	INV=24.50
EW-102	INV=23.50
HW-103	INV=24.00
EW-104	INV=23.50
HW-105	INV=24.25



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

SUNSET SOUTH OWNERS ASSOCIATION
PARCEL ID: R06013-016-003-000
DB: 5639 PG. 1199
ZONING: MF

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

DELLA YORK
PARCEL ID: R06013-020-003-001
ZONING: O&I

DELLA YORK
PARCEL ID: R06013-020-006-000
ZONING: O&I

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

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

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

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

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

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

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

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FINAL DRAWING - NOT RELEASED FOR CONSTRUCTION

NO.	DATE	REVISION	BY	CK.	APP.

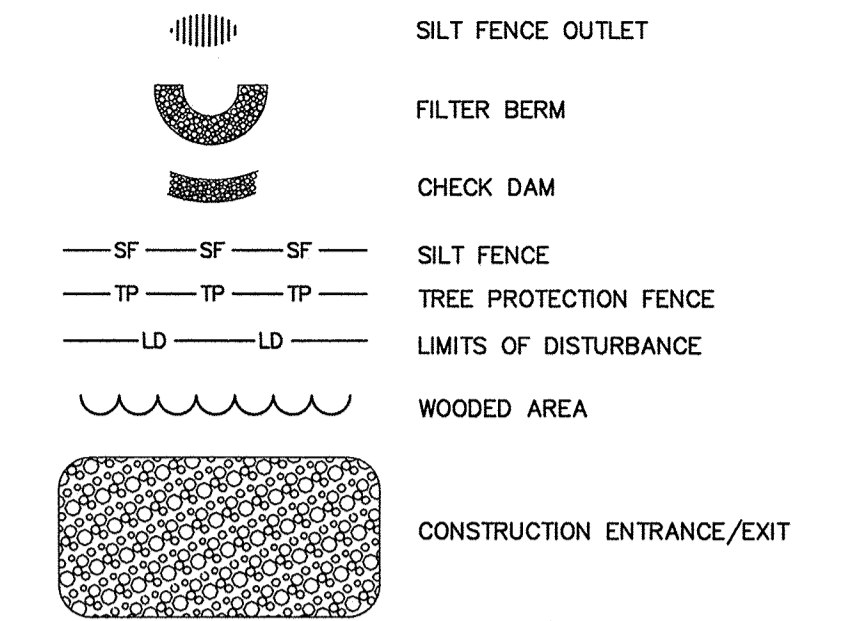
DUKE ENERGY
PROGRESS

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

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



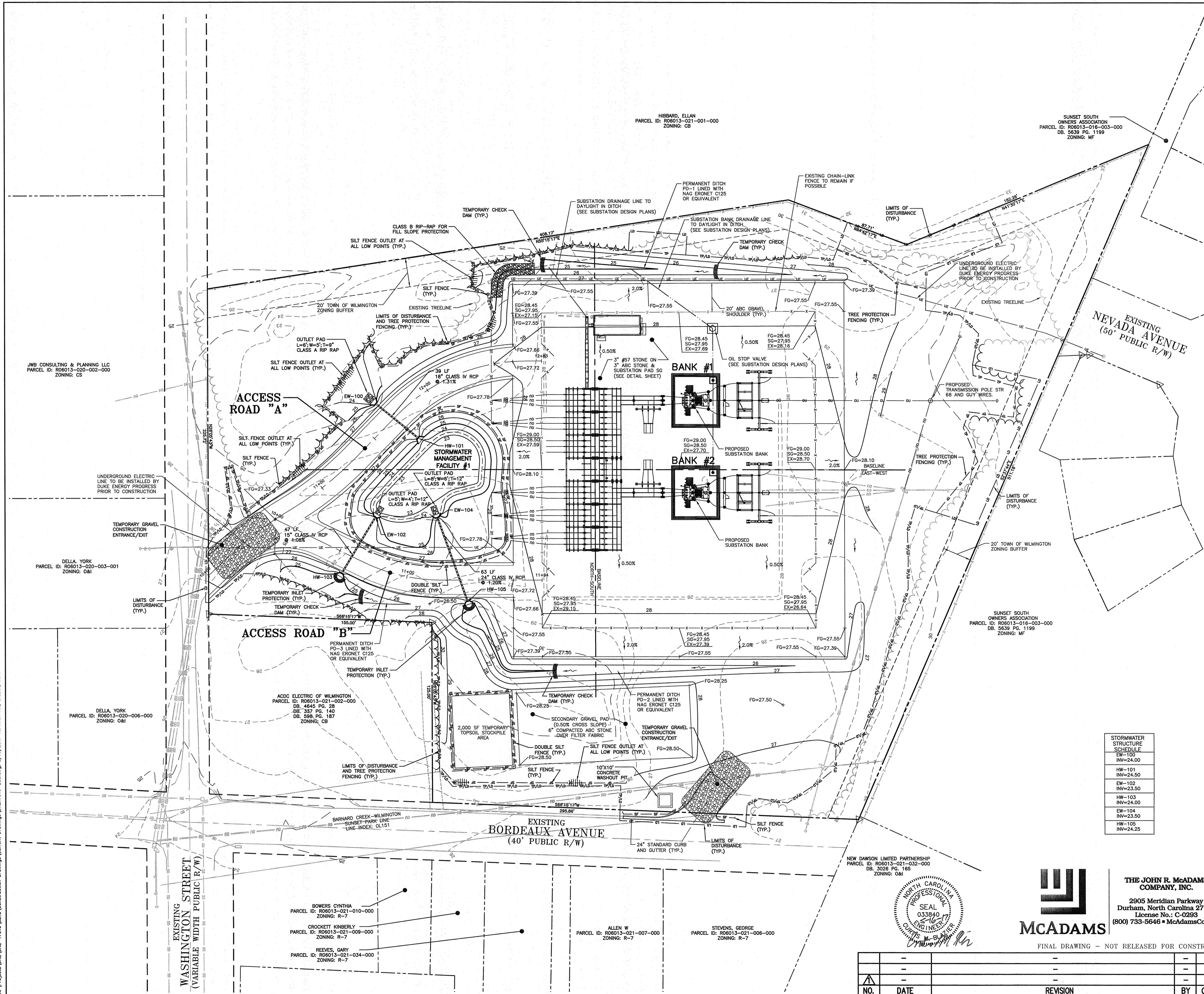
DISTURBED AREA = 3.50 AC.

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 WASHOUT PIT 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.
- 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, CHECK DAMS, ETC.
- UPON COMPLETION OF STAGE 3, CALL THE DESIGNATED NCEQ EROSION CONTROL INSPECTOR AT (910) 796-7215 FOR FINAL INSPECTION.

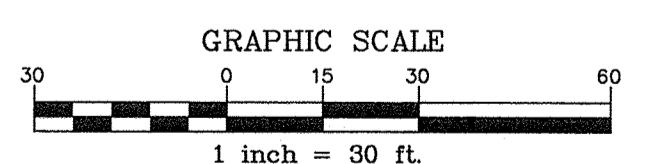
EROSION CONTROL MAINTENANCE PLAN

- 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 UPGRADIENT DISTURBED AREAS.

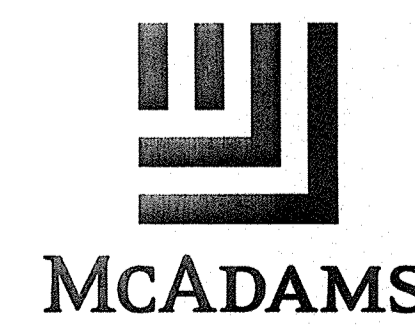


STORMWATER STRUCTURE SCHEDULE

EW-100	INV=24.00
HW-101	INV=24.50
EW-102	INV=23.50
HW-103	INV=24.00
EW-104	INV=24.00
HW-105	INV=24.25



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FINAL DRAWING - NOT RELEASED FOR CONSTRUCTION

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:	05-15-17
DWG. NO.:	70818, SHEET 9 OF 18

NO.	DATE	REVISION	BY	CK.	APP.

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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 heavy-weight 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 a 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

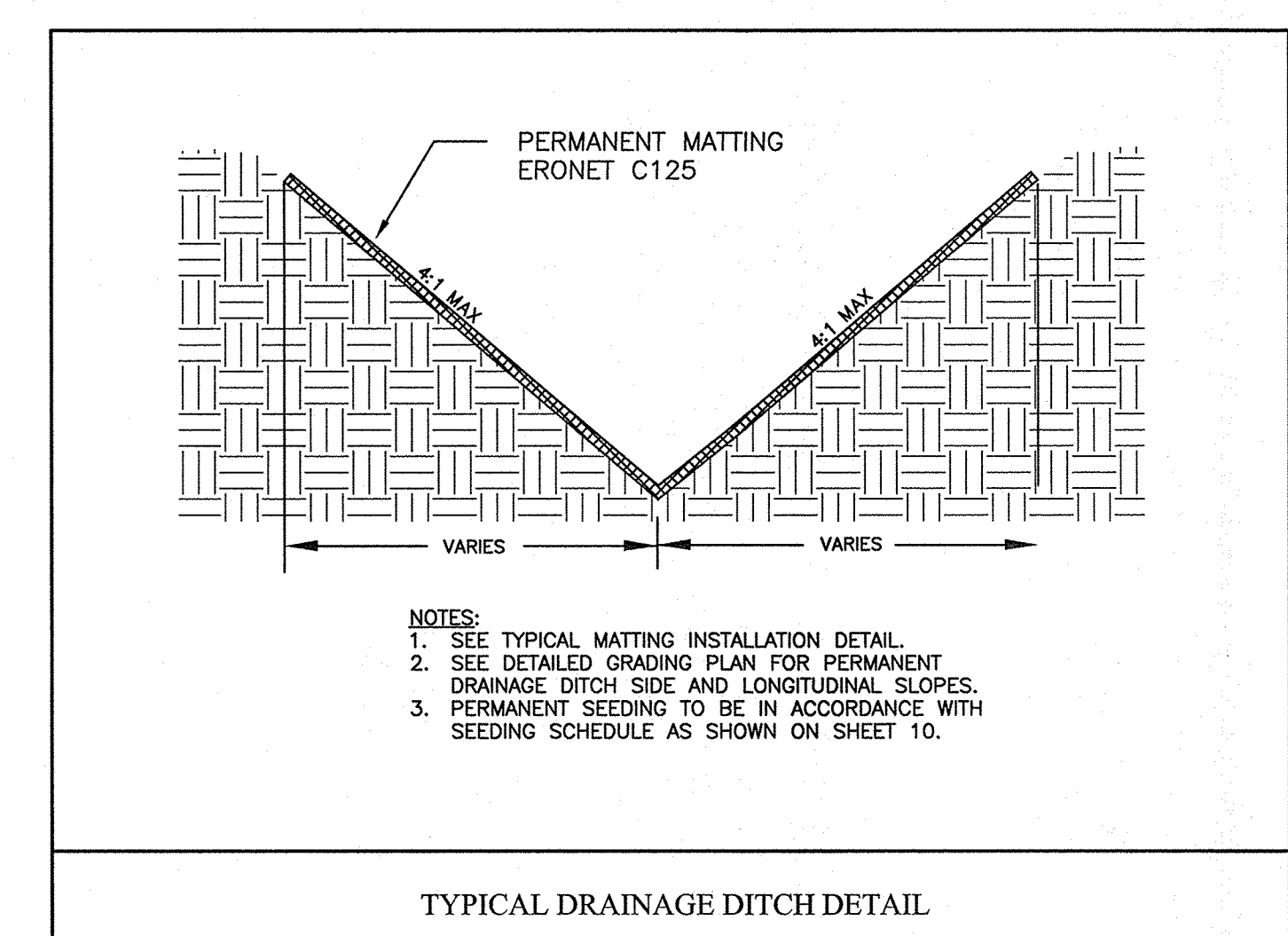
Index Property	Test Method	Typical
Thickness	ASTM D6525	0.23 in. (5.93 mm)
Resiliency	ECTC Guidelines	82%
Water Absorbency	ASTM D1117	167%
Mass/Unit Area	ASTM 6475	7.73 oz/sy (222.9 g/sm)
Swirl	ECTC Guidelines	13%
Smolder Resistance	ECTC Guidelines	Yes
Stiffness	ASTM D1888	0.75 oz-in
Light Penetration	ASTM D5667	16.6%
Tensile Strength - MD	ASTM D6818	472.8 lbs/ft (7.21 kN/m)
Elongation - MD	ASTM D6818	25.6%
Tensile Strength - TD	ASTM D6818	225.6 lbs/ft (3.15 kN/m)
Elongation - TD	ASTM D6818	39.9%
Biomass Improvement	ASTM 7322	29.7%

Material Content	Design Permissible Shear Stress
Matrix: 100% Coconut Fiber	Unvegetated Shear Stress: 2.25 psf (108 Pa)
Netting: Heavyweight photodegradable with UV additives	Unvegetated Velocity: 10.0 fps (3.05 m/s)

Standard Roll Sizes	Slope Gradients (S)
Width: 6.67 (2.03 m)	Slope Length (L) ≤ 3ft: 3:1 - 2:1
Length: 108 ft (32.92 m)	≤ 20 ft (6 m): 0.001 - 0.029
Weight ± 10%: 44 lbs (19.95 kg)	20-50 ft: 0.036 - 0.090
Area: 80 sq yd (66.9 sm)	≥ 50 ft (15.2 m): 0.070 - 0.090

Roughness Coefficients - Unveg.
Flow Depth: Manning's n
≤ 0.50 ft (0.15 m): 0.22
0.50 - 2.0 ft: 0.22-0.04
≥ 2.0 ft (6.60 m): 0.04

North American Green
5401 S. Vandalia Court, Raleigh, NC 27606
800-777-2040



NO.	DATE	REVISION	BY	CHK.	APP.
1	12-21-2015	REVISIONS	LIB	BEI	BEI
2	05-06-2015	INITIAL RELEASE	SFP	BEI	SFP

DCMLR Monitoring Form Rev. 08/12/13 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	Phone Number
Agent/Designee	EMR 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)
Installation of perimeter erosion and sediment control measures	<input type="checkbox"/>
Clearing and grubbing of existing ground cover	<input type="checkbox"/>
Completion of any phase of grading of slopes or fills	<input type="checkbox"/>
Installation of storm drainage facilities	<input type="checkbox"/>
Completion of all land-disturbing activity, construction or development	<input type="checkbox"/>
Permanent ground cover sufficient to restrain erosion has been established	<input checked="" type="checkbox"/>

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 / Permittee or Agent / Designee: _____ Date: _____

GROUND STABILIZATION TIMEFRAMES

Site Area Description	Stabilization	Timeframe Exceptions
Perimeter ditches, 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 2:1 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 detritus and HQW Zones

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.

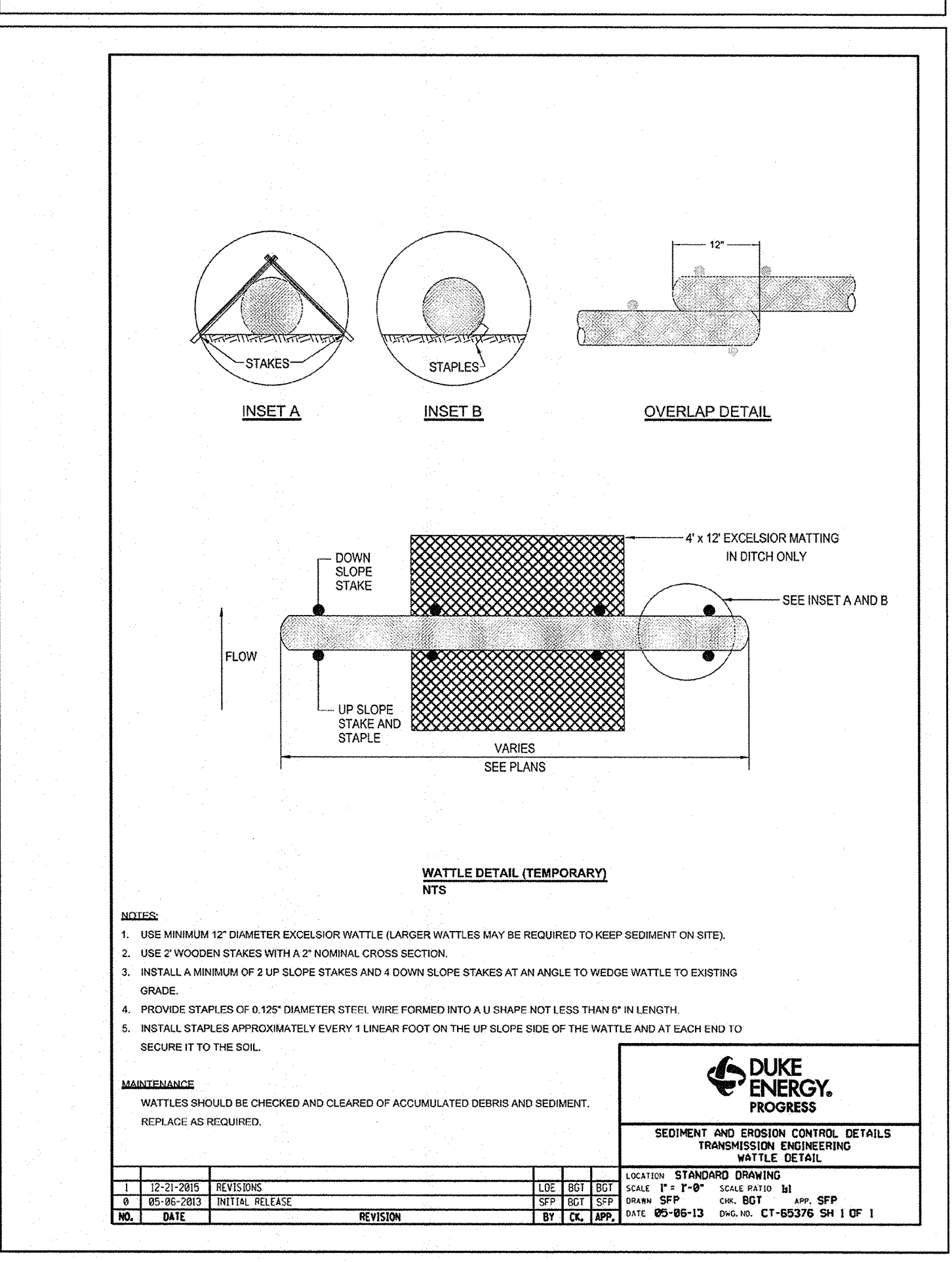
Measure ID or Location and Description	Opening Property? (Y/N)	Any Repair or Maintenance Needed? (Y/N)	New Measure Installed? (Y/N)	Actual Dimensions (ft)	Significant Deviation from Plans? (Y/N)	Inspection Date	Describe Actions Needed	Date Corrected

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.

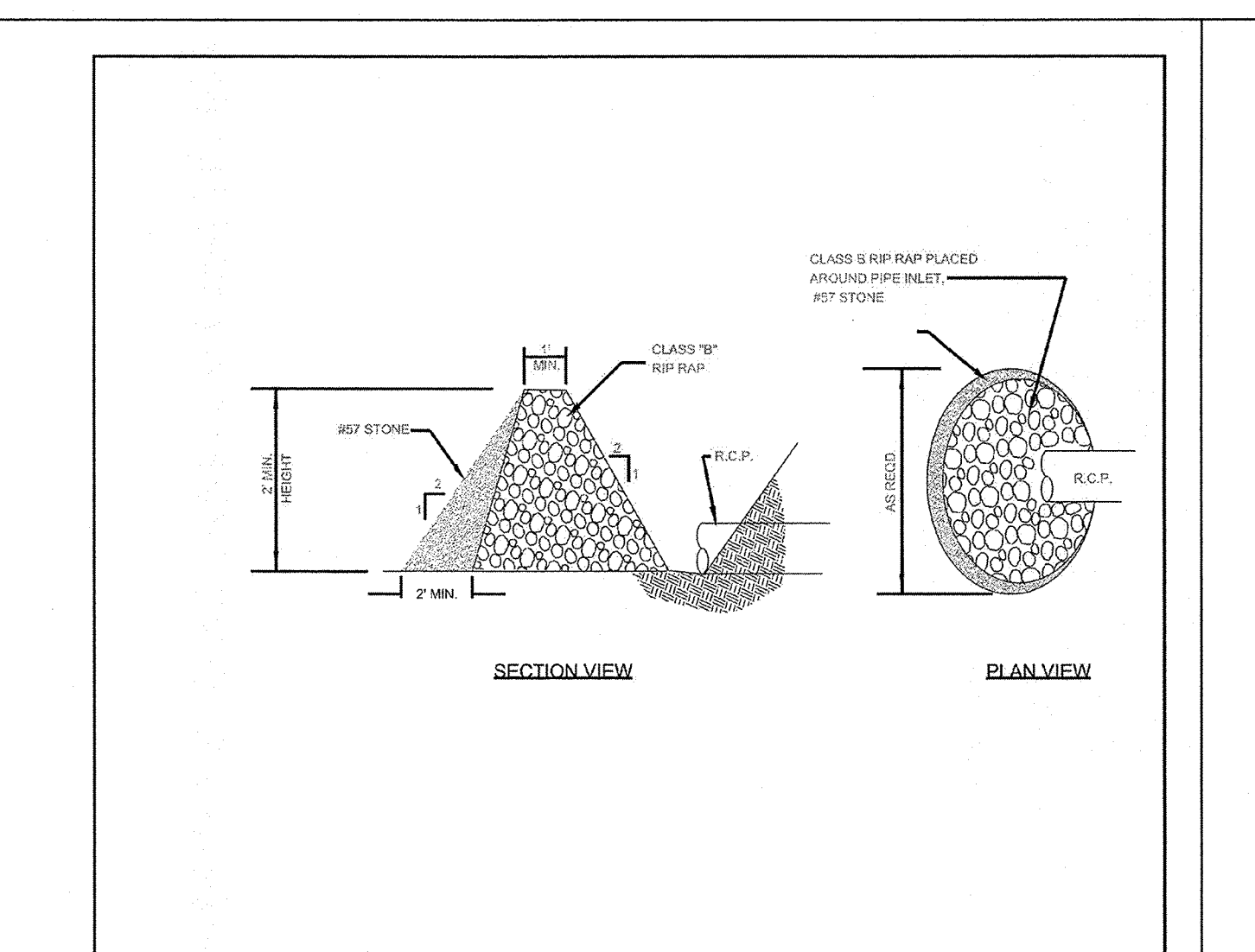
Stormwater Discharge Outfall ID or Location	Any Visible Sedimentation in Stream, Flooding or Turbidity from Discharge? (Y/N)	Any Increase in Stream Turbidity or Flooding below SDO? (Y/N)	Any Visible Erosion or Inundation on Downstream? (Y/N)	Inspection Date	Report Visible Sedimentation to streams or wetlands to Land Quality within 24 Hours	Describe Actions Needed	Date Corrected

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

Area Where Land Disturbance Has Been Completed or Temporarily Stopped	Ground Cover 7 Days or 14 Days	Inspection Date	Describe Actions Needed	Date Corrected



NO.	DATE	REVISION	BY	CHK.	APP.
1	12-21-2015	REVISIONS	LIB	BEI	BEI
2	05-06-2015	INITIAL RELEASE	SFP	BEI	SFP

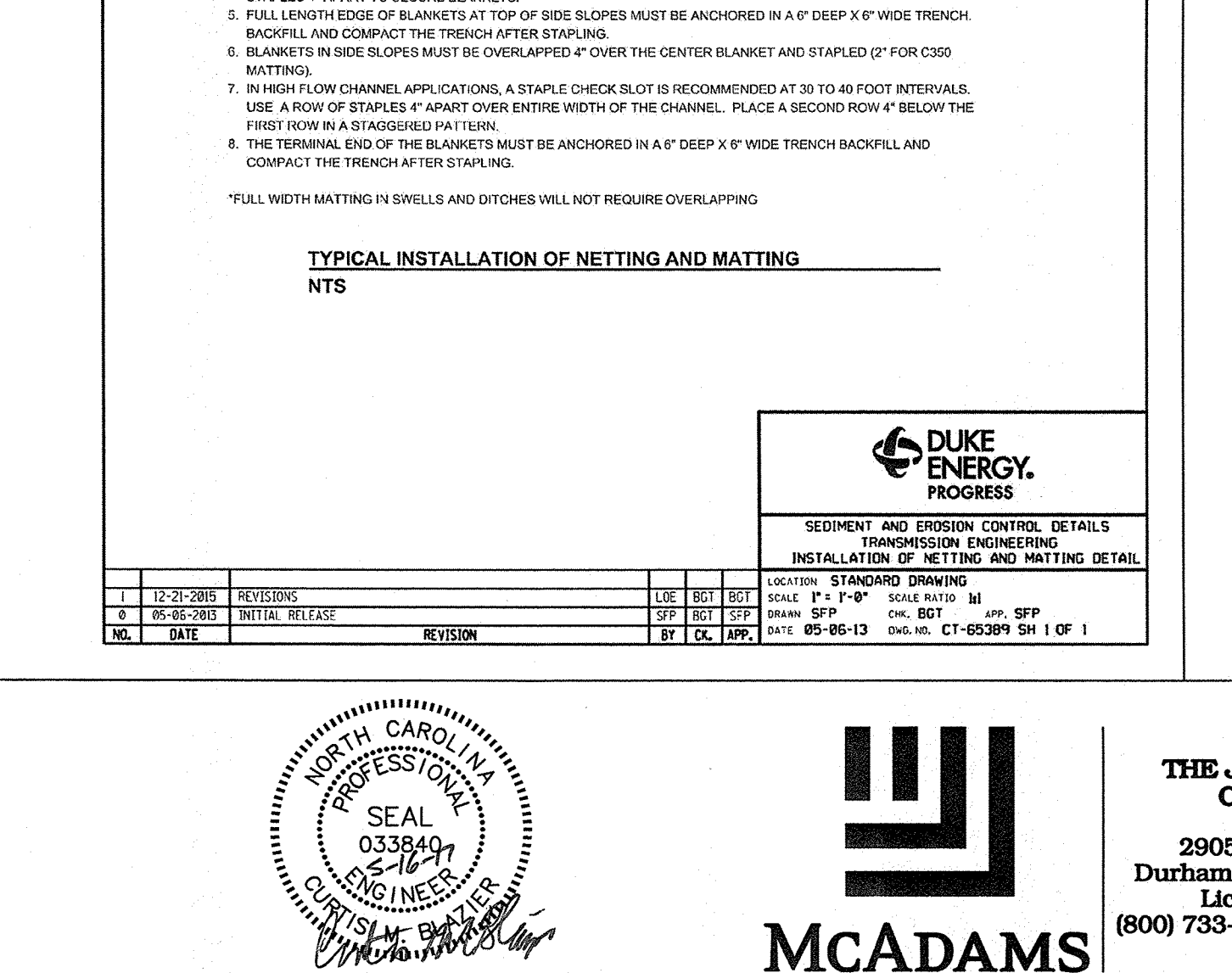
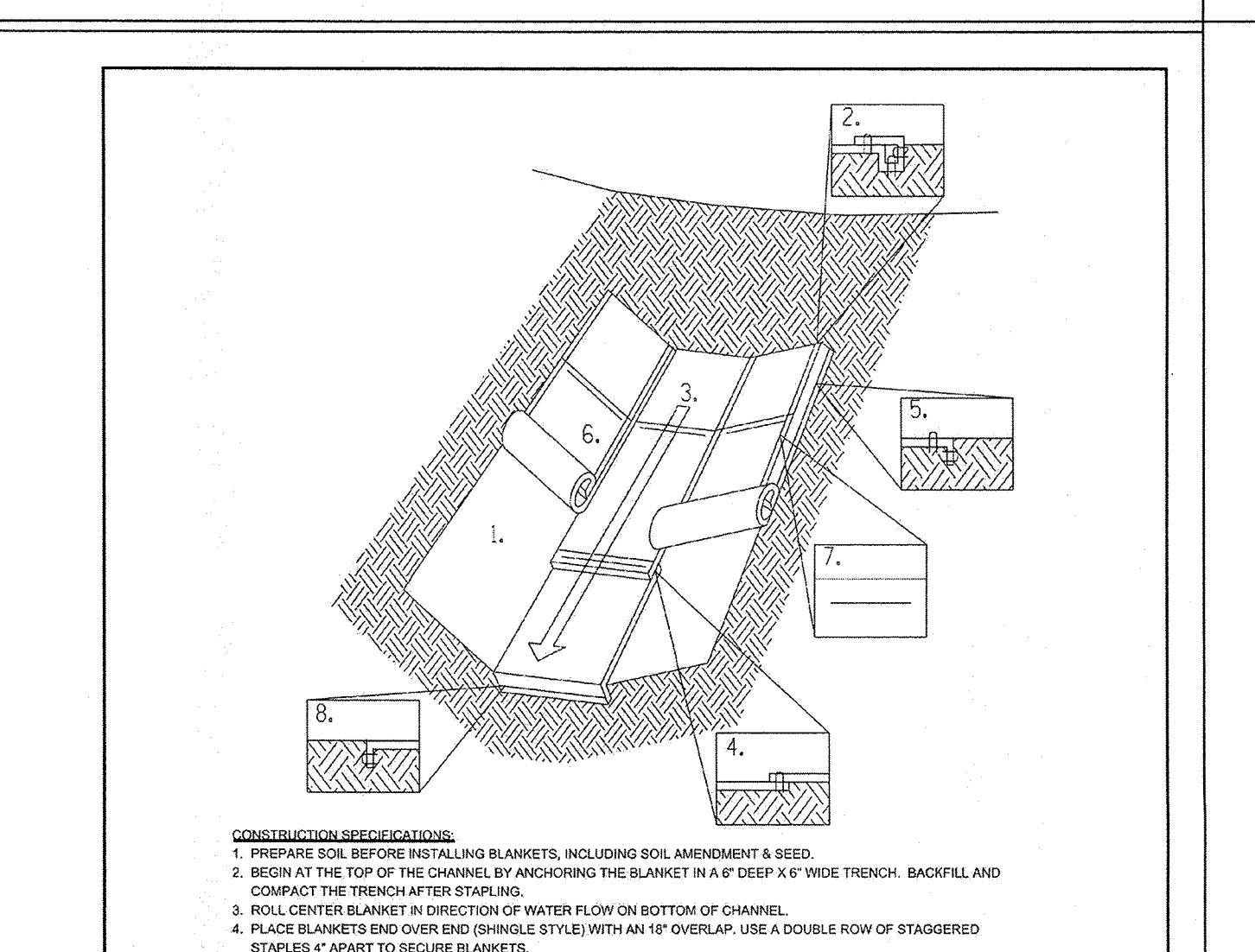


MAINTENANCE:

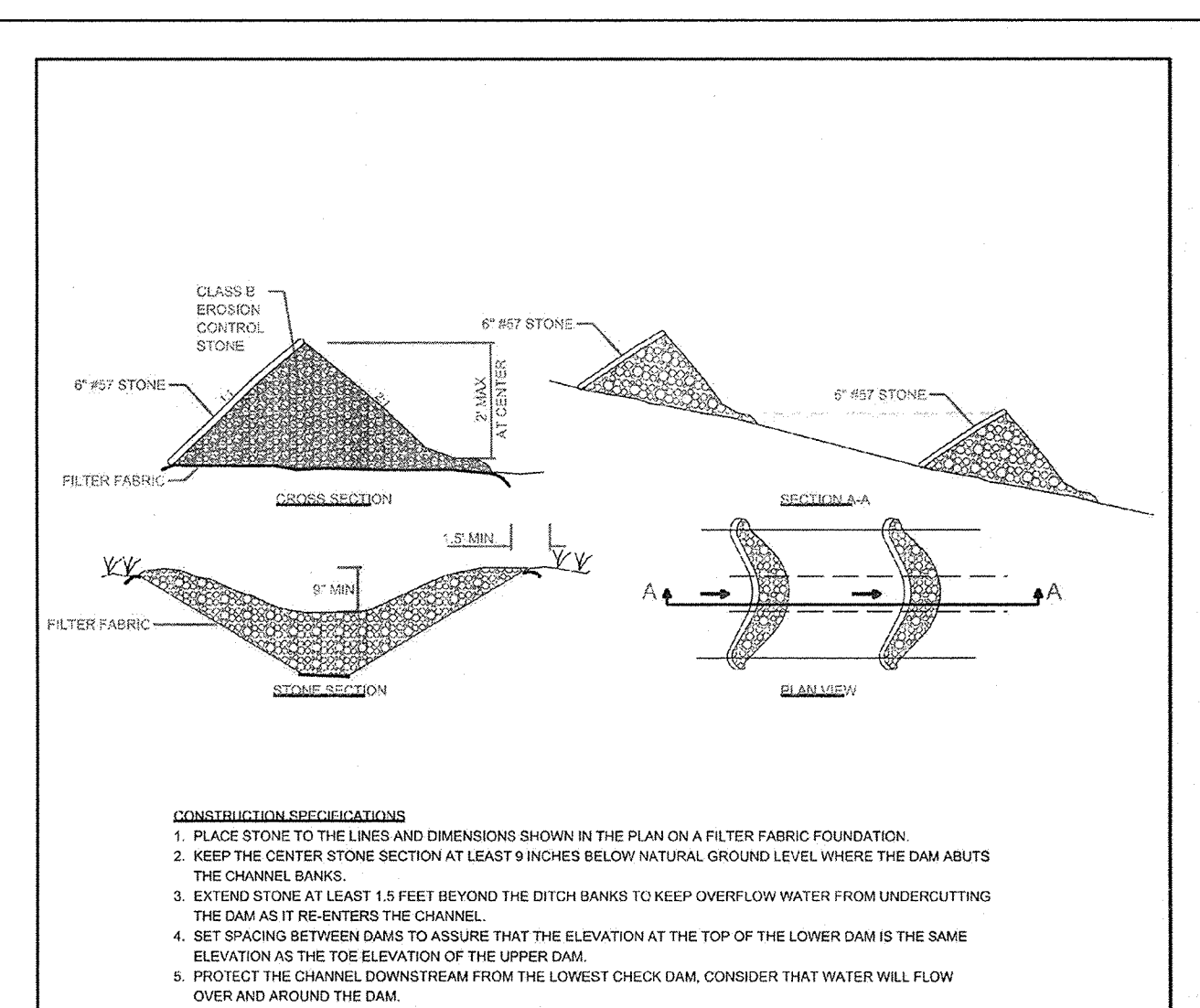
- INSPECT ONCE PER SEVEN DAYS AND WITHIN 24 HOURS AFTER EVERY RAINFALL EVENT 1/2 INCH OR GREATER.
- REMOVE ACCUMULATED SEDIMENT AND REPLACE STONE AS NECESSARY.

SEDIMENT AND EROSION CONTROL, DETAILS
TRANSMISSION ENGINEERING
PIPE INLET PROTECTION DETAIL

NO.	DATE	REVISION	BY	CHK.	APP.
1	12-21-2015	REVISIONS	LIB	BEI	BEI
2	05-06-2015	INITIAL RELEASE	SFP	BEI	SFP



NO.	DATE	REVISION	BY	CHK.	APP.
1	12-21-2015	REVISIONS	LIB	BEI	BEI
2	05-06-2015	INITIAL RELEASE	SFP	BEI	SFP

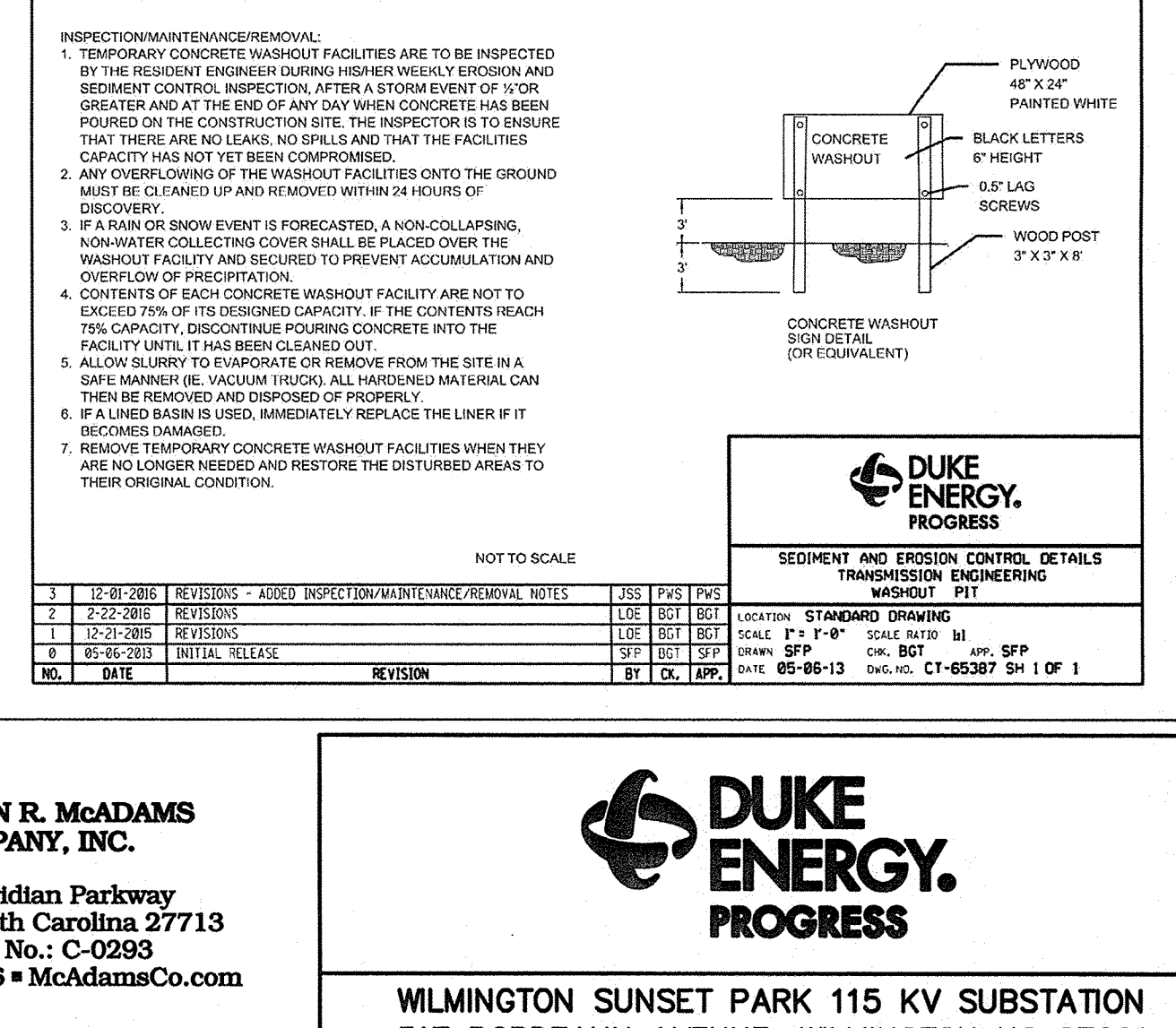
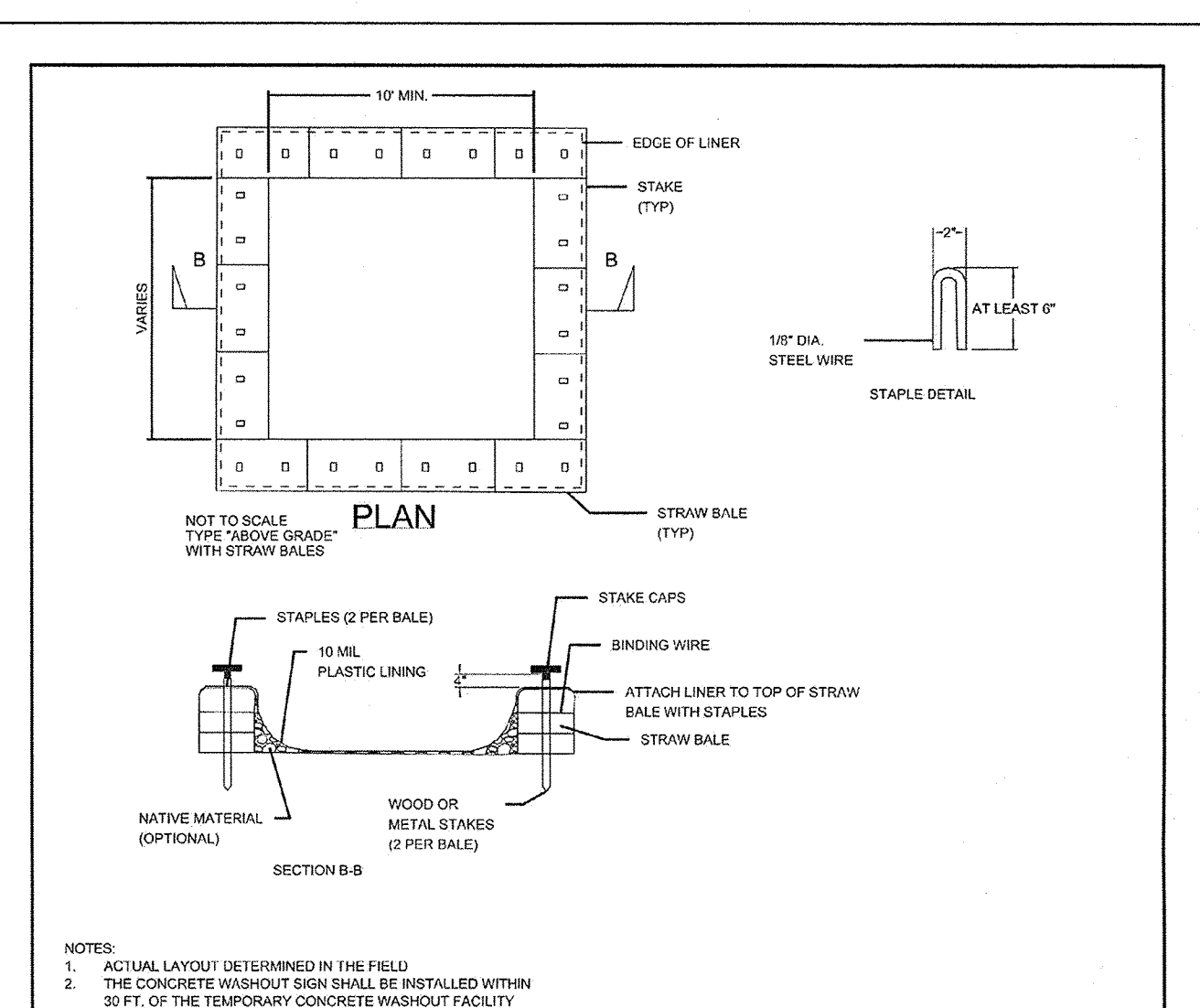


MAINTENANCE:

- INSPECT THE DAMS AND CHANNELS FOR DAMAGE AFTER EACH SIGNIFICANT (1/2 INCH OR GREATER) RAINFALL.
- ANTICIPATE SUBMERGENCE AND PROTECTION 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 LAYER THAT PORTIONS OF THE CHANNEL.
- 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.

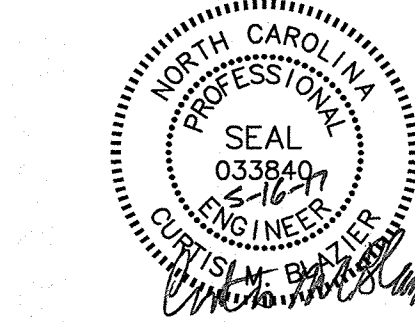
SEDIMENT AND EROSION CONTROL, DETAILS
TRANSMISSION ENGINEERING
TYPICAL CHECK DAM

NO.	DATE	REVISION	BY	CHK.	APP.
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2	05-06-2015	INITIAL RELEASE	SFP	BEI	SFP

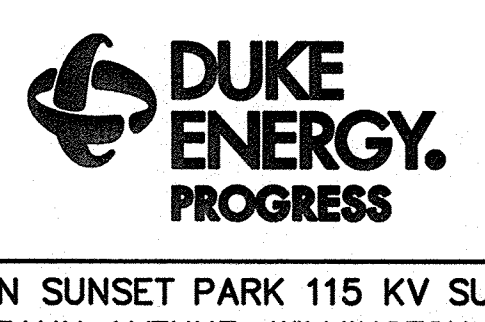


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2	05-06-2015	INITIAL RELEASE	SFP	BEI	SFP

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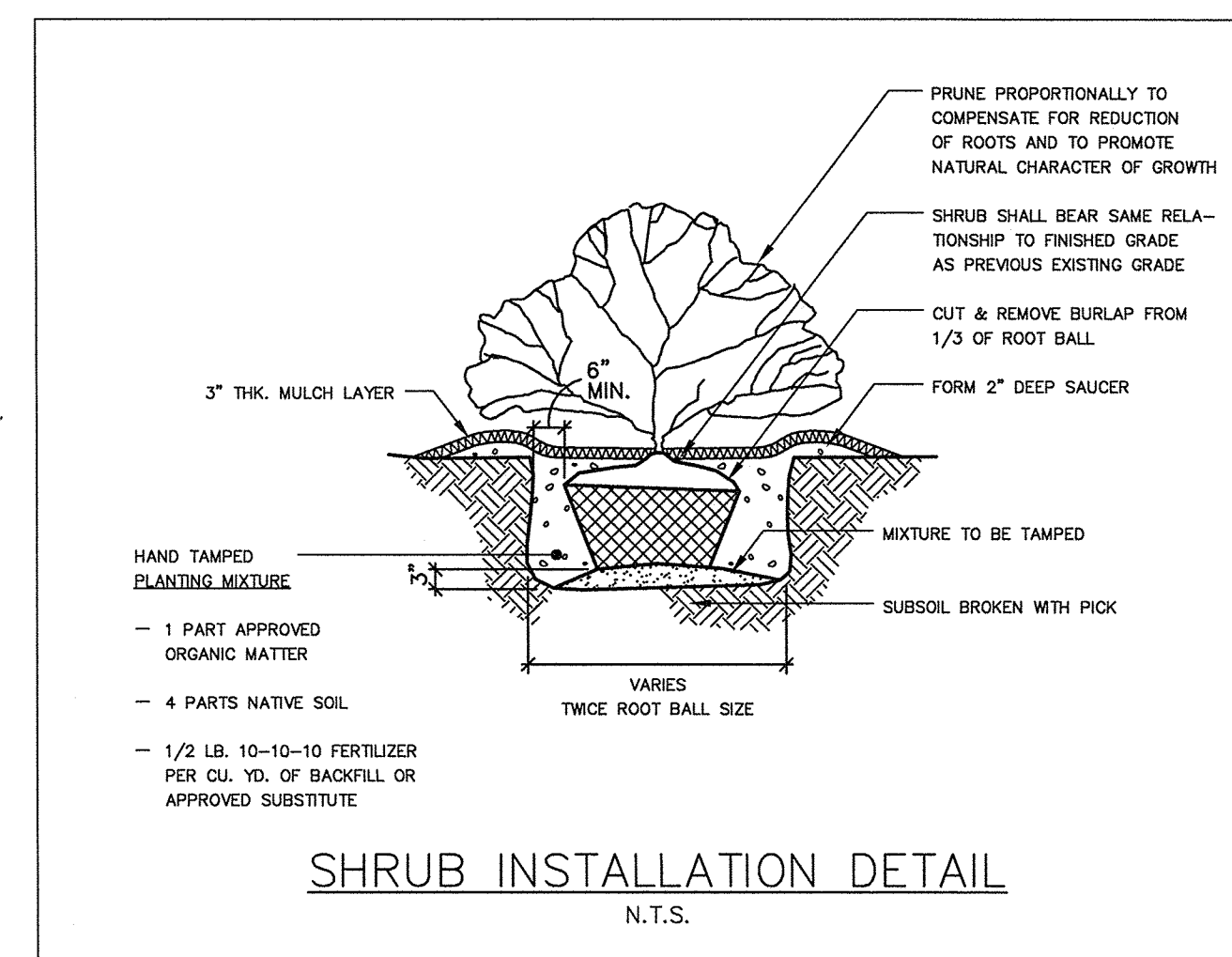
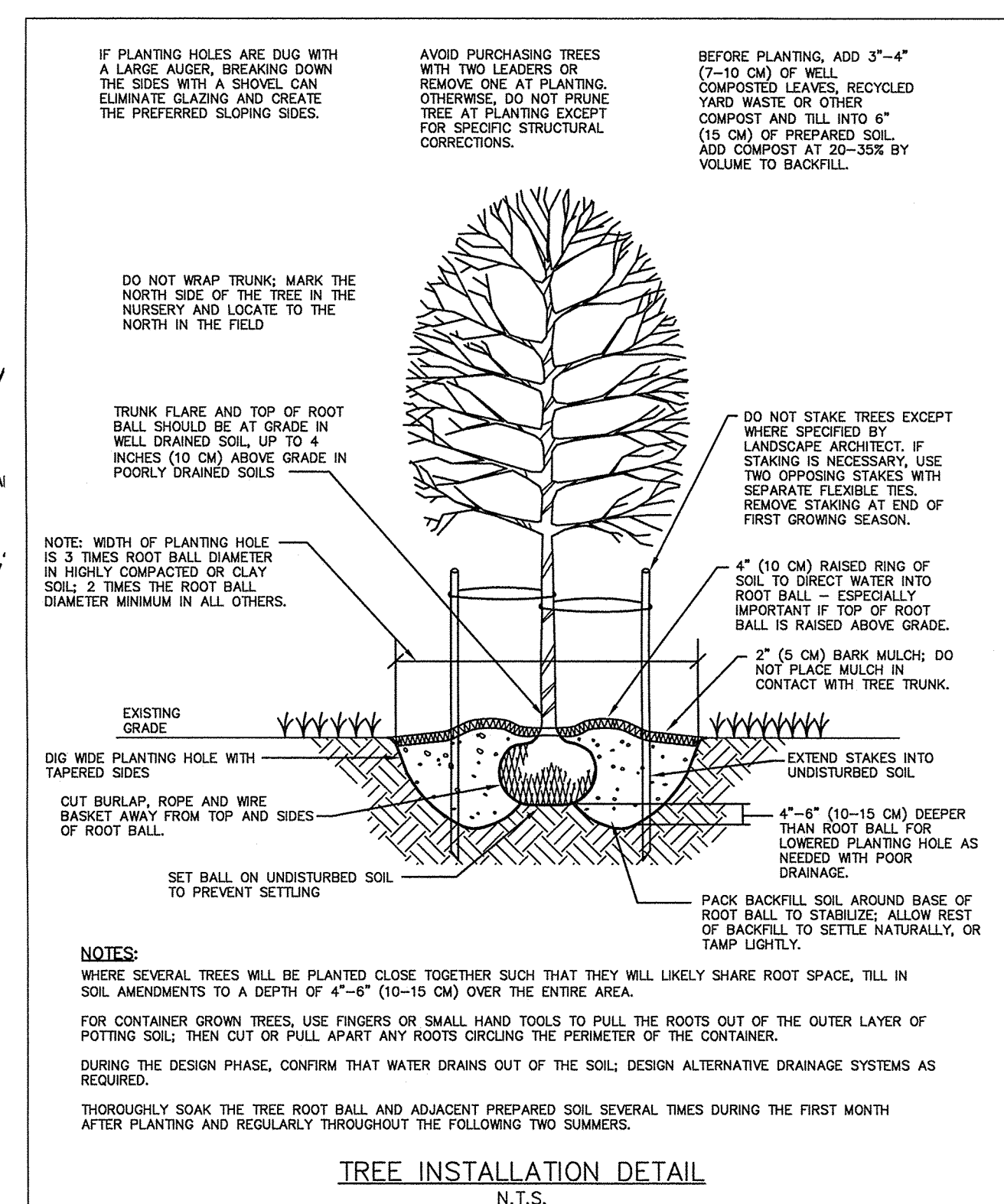
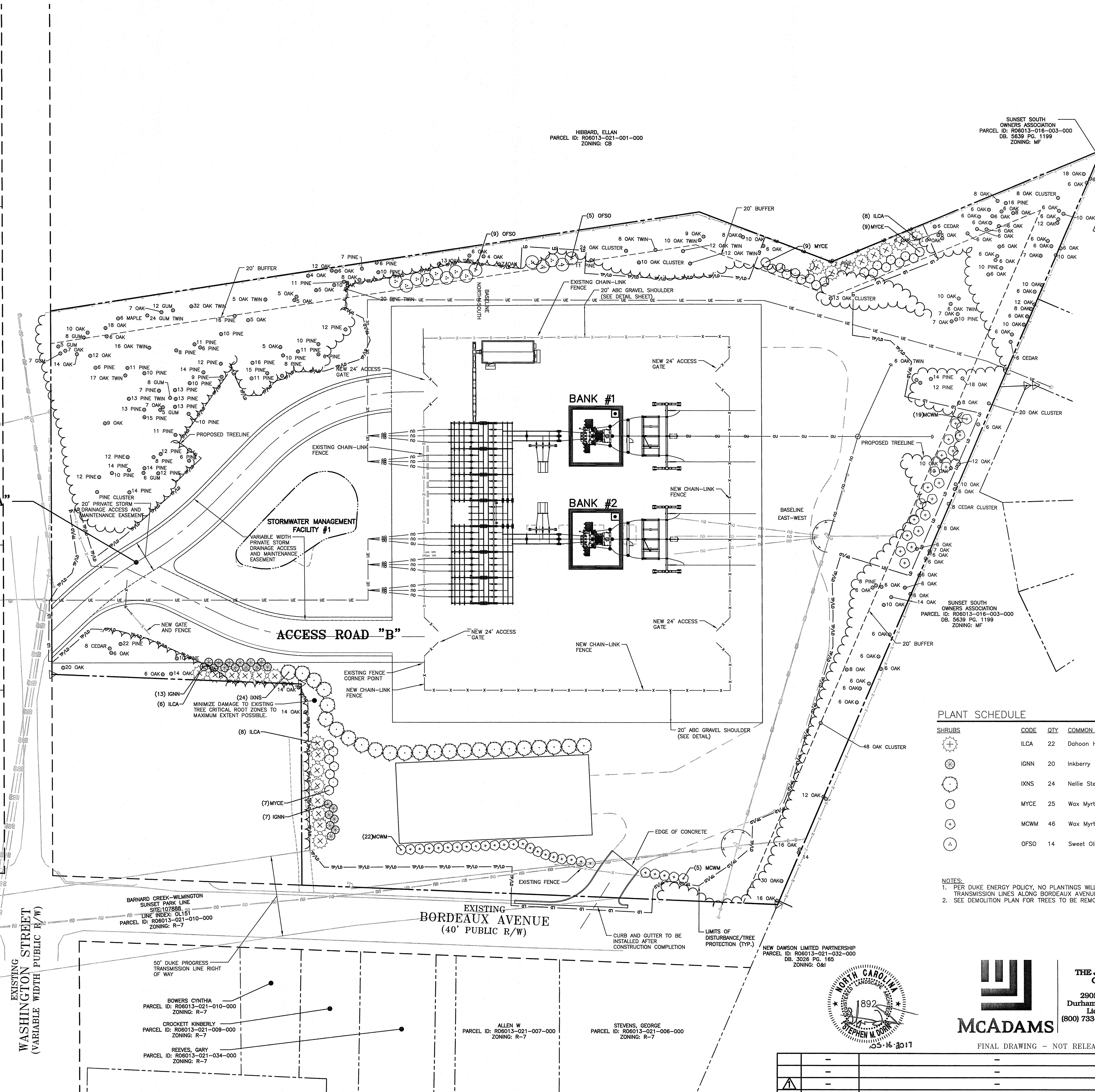


WILMINGTON SUNSET PARK 115 KV SUBSTATION
317 BORDEAUX AVENUE, WILMINGTON NC 27601
SEDIMENT & EROSION CONTROL DETAILS

NO.	DATE	REVISION	BY	CHK.	APP.
1	12-21-2015	REVISIONS	LIB	BEI	BEI
2	05-06-2015	INITIAL RELEASE	SFP	BEI	SFP

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

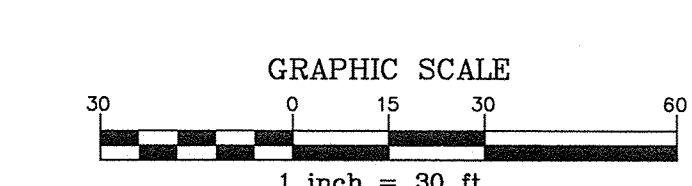
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PLANT SCHEDULE

SHRUBS	CODE	QTY	COMMON NAME	BOTANICAL NAME	HGT
	ILCA	22	Dahoon Holly	Ilex cassine	6'
	IGNN	20	Inkberry	Ilex glabra	24"
	IXNS	24	Nellie Stevens Holly	Ilex x 'Nellie R Stevens'	6'
	MYCE	25	Wax Myrtle	Myrica cerifera	30"
	MCWM	46	Wax Myrtle	Myrica cerifera	48"
	OFSO	14	Sweet Olive	Osmanthus fragrans	30"

NOTES:
 1. PER DUKE ENERGY POLICY, NO PLANTINGS WILL BE INSTALLED UNDER TRANSMISSION LINES ALONG BORDEAUX AVENUE.
 2. SEE DEMOLITION PLAN FOR TREES TO BE REMOVED AND TREES TO BE SAVED.



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DUKE ENERGY PROGRESS

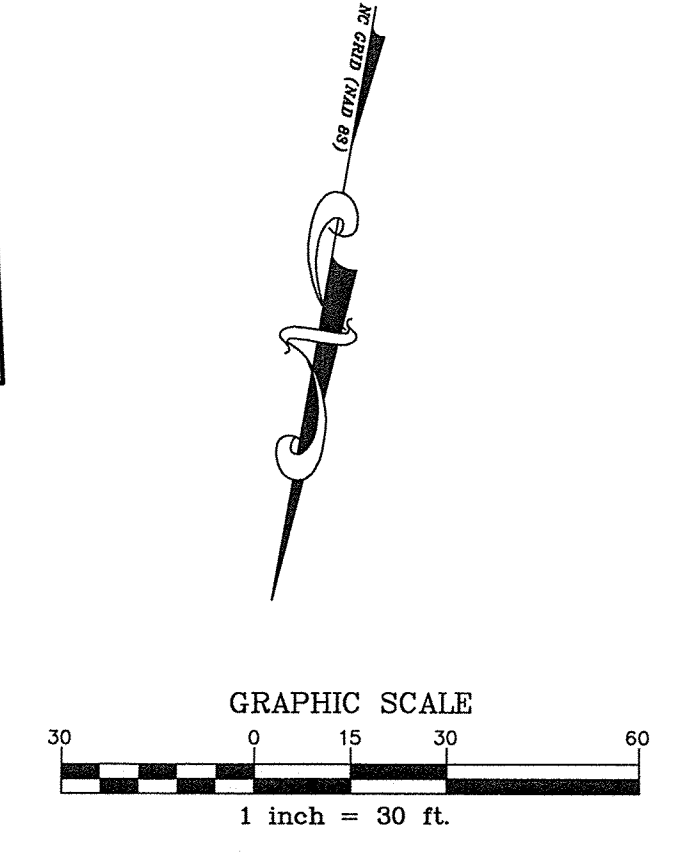
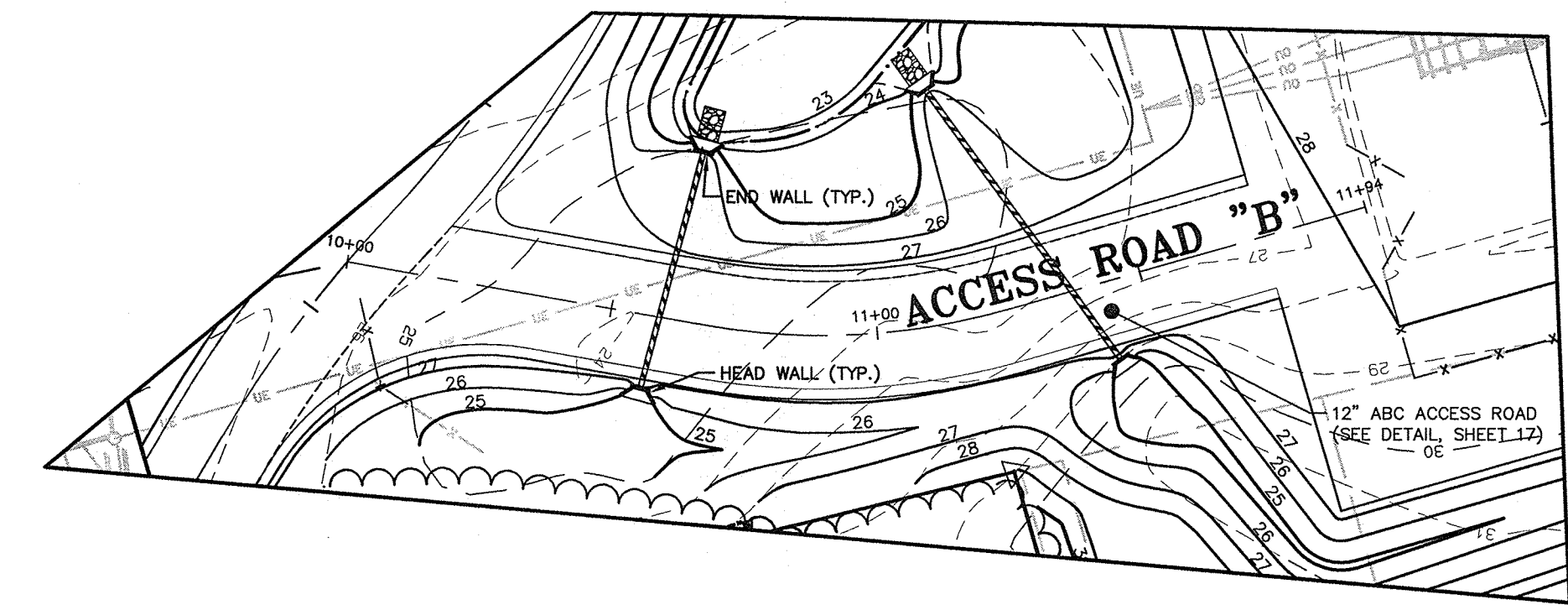
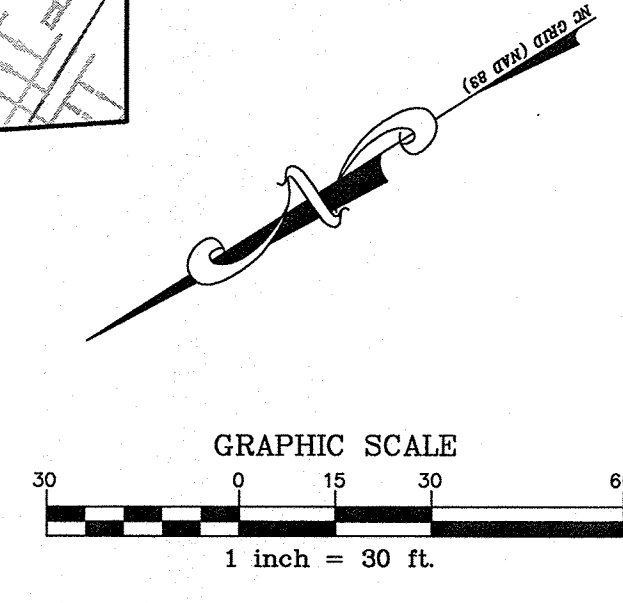
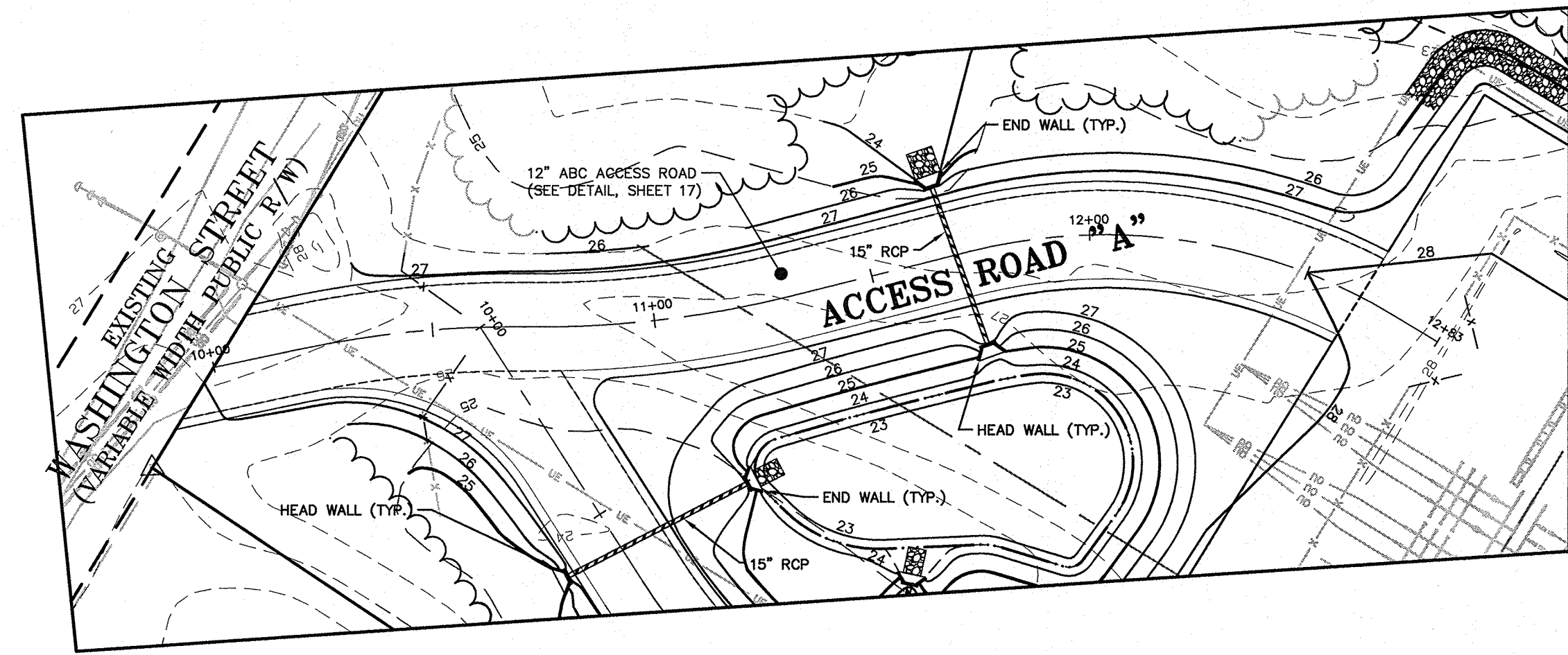
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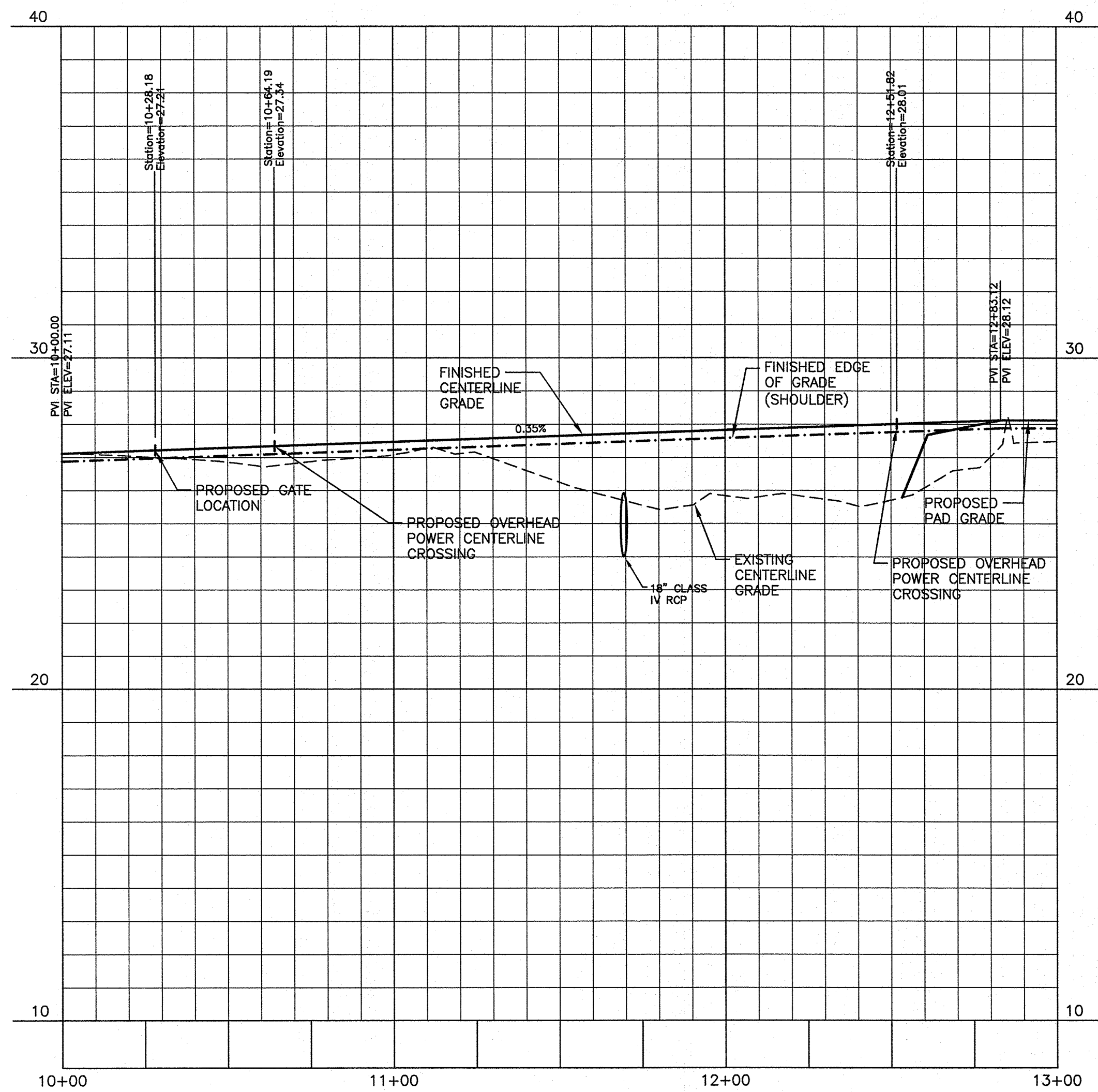
WILMINGTON SUNSET PARK 115 KV SUBSTATION
 317 BORDEAUX AVENUE, WILMINGTON NC 27601
 LANDSCAPE PLAN

LOCATION: WILMINGTON, NC
 SCALE: 1"=30'
 DRAWN: CMV
 DATE: 05-15-17

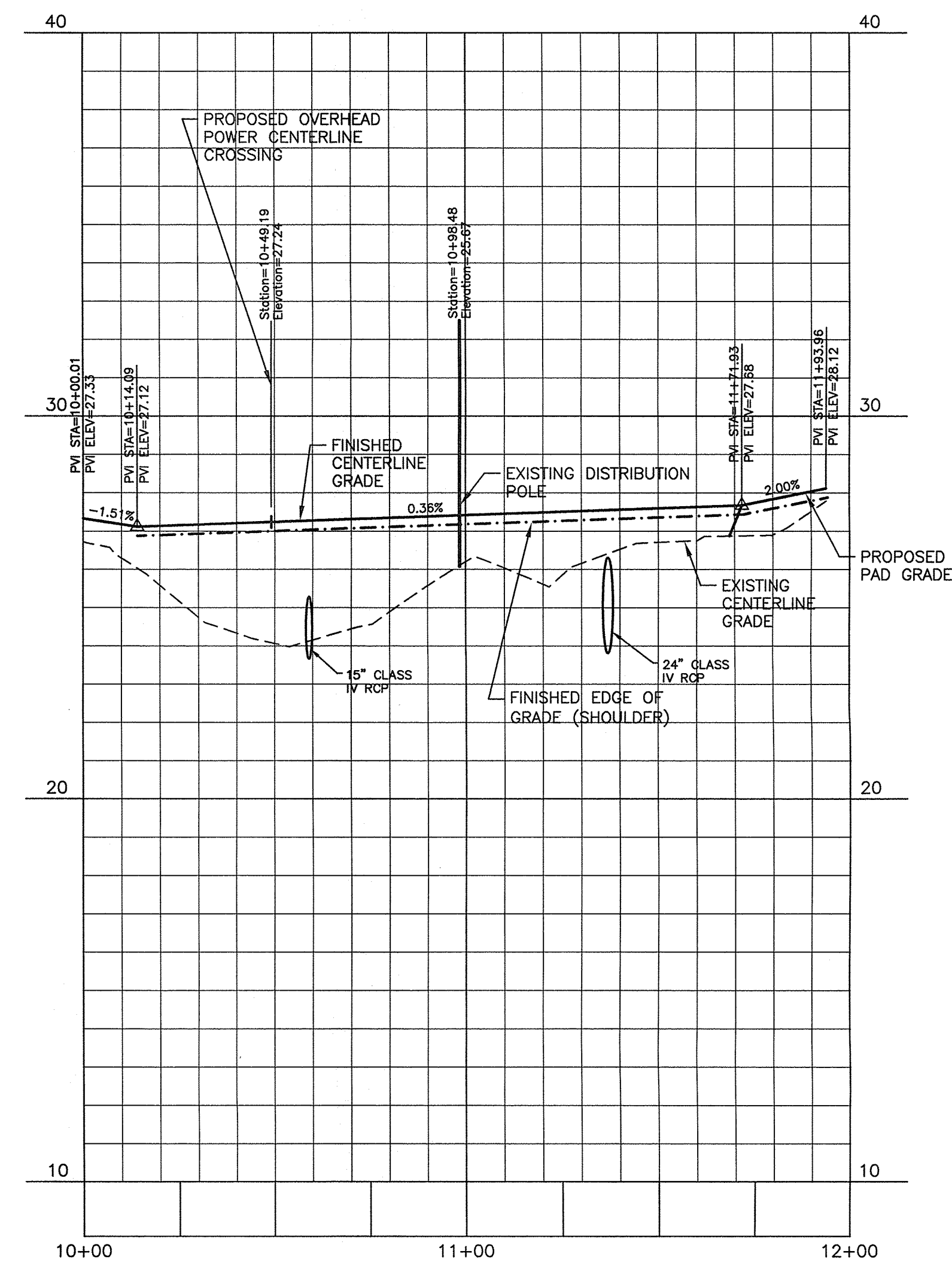
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 PRJ. NO. DKE-17010
 APP. _____
 DWG. NO. 70818, SHEET 12 OF 18



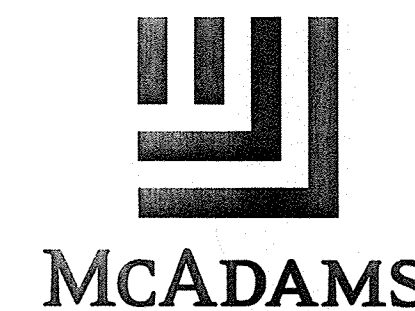
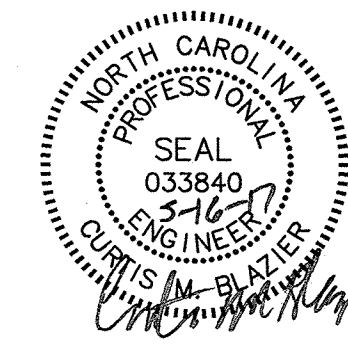
ACCESS ROAD "A"



ACCESS ROAD "B"



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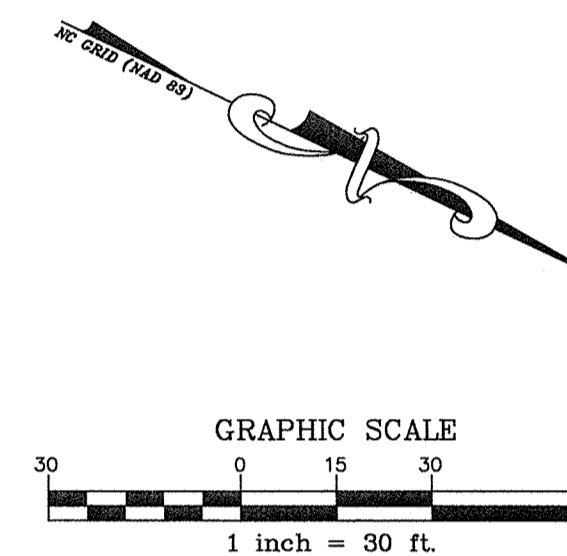
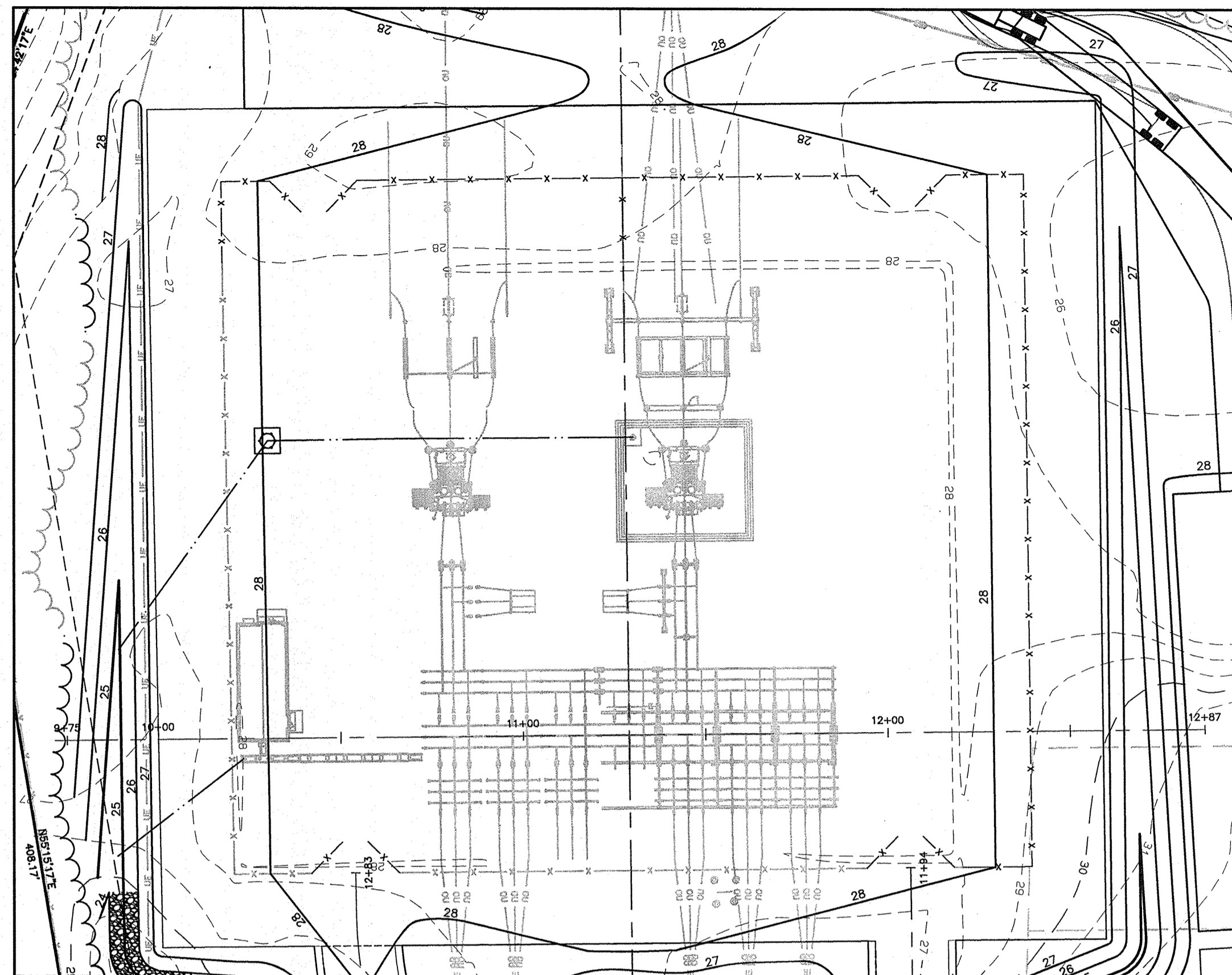
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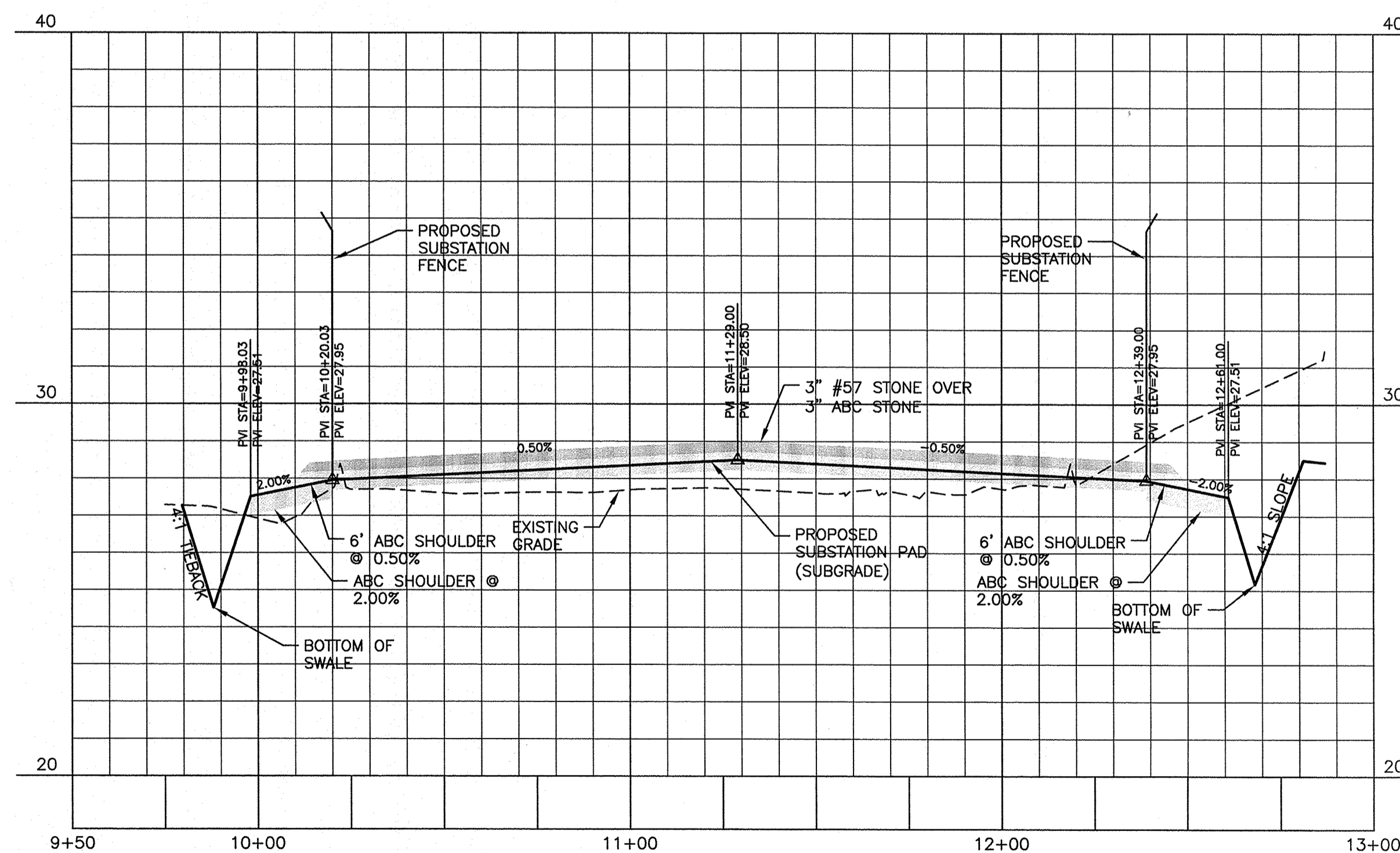
WILMINGTON SUNSET PARK 115 KV SUBSTATION
 317 BORDEAUX AVENUE, WILMINGTON NC 27601
 ACCESS ROAD PLAN & PROFILES

FINAL DRAWING - NOT RELEASED FOR CONSTRUCTION

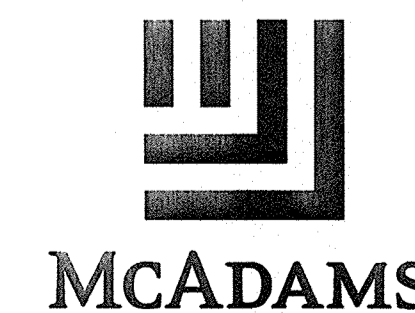
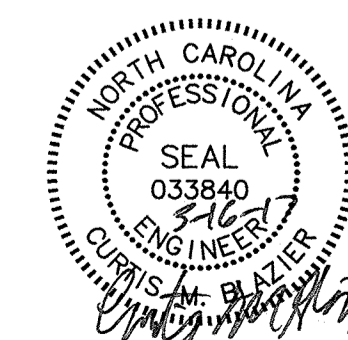
NO.	DATE	REVISION	BY	CK.	APP.	LOCATION: WILMINGTON, NC
1						SCALE: 1"=30' / 1"=3'
						SCALE RATIO: 1:1
						PRJ. NO. DKE-17010
						DRAWN: JJB
						CHK: ---
						APP: ---
						DATE: 05-15-17
						DWG. NO. 70818, SHEET 13 OF 18



NORTH - SOUTH BASELINE



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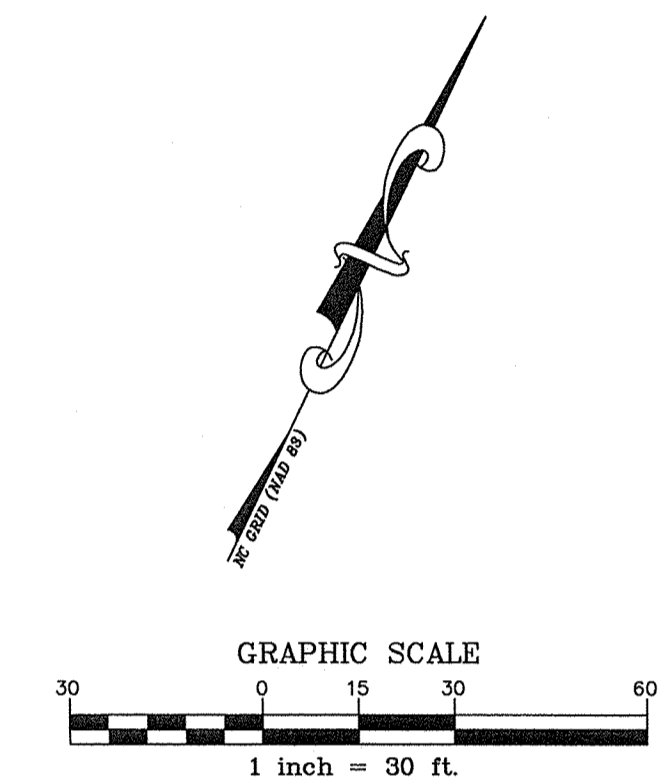
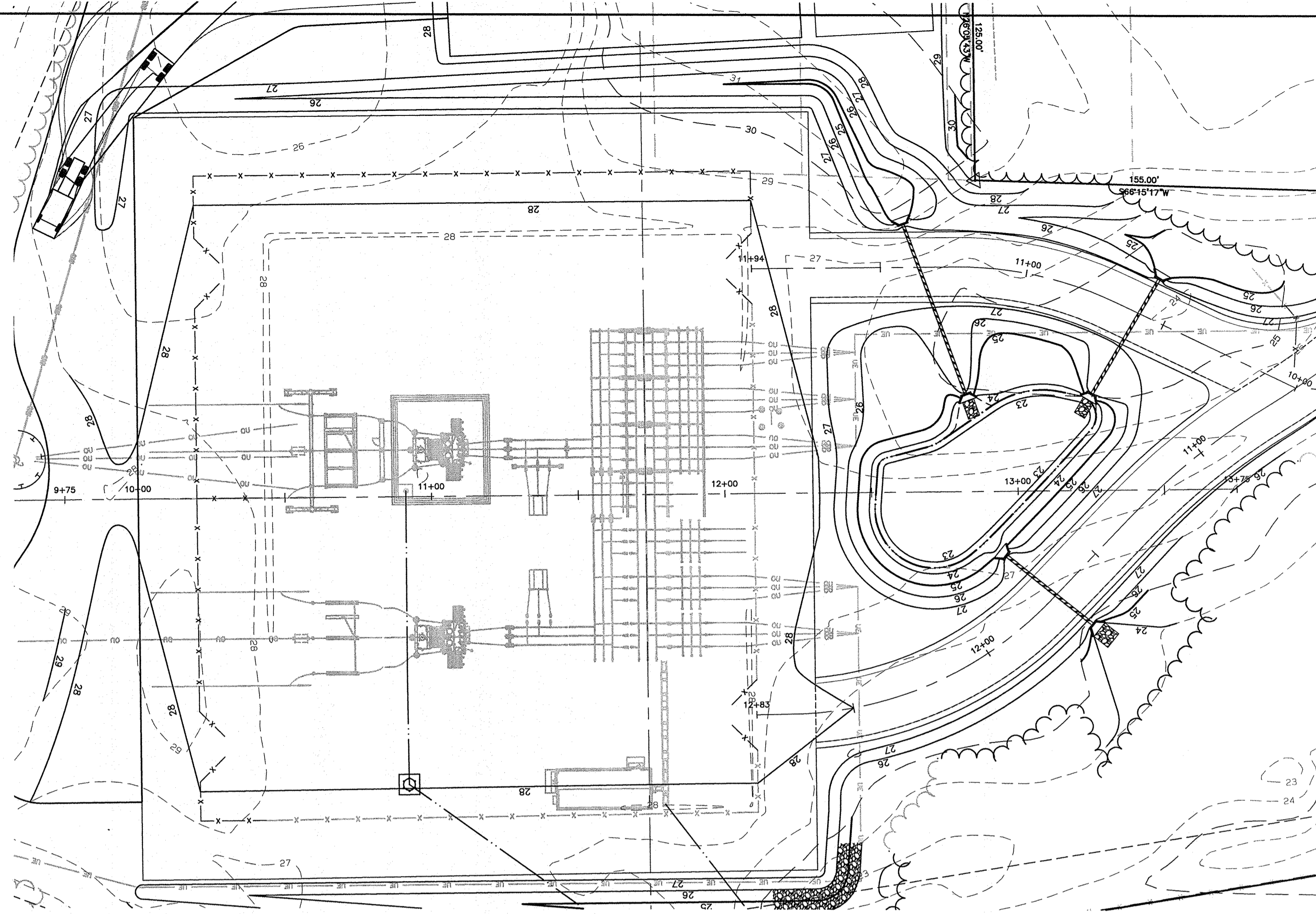
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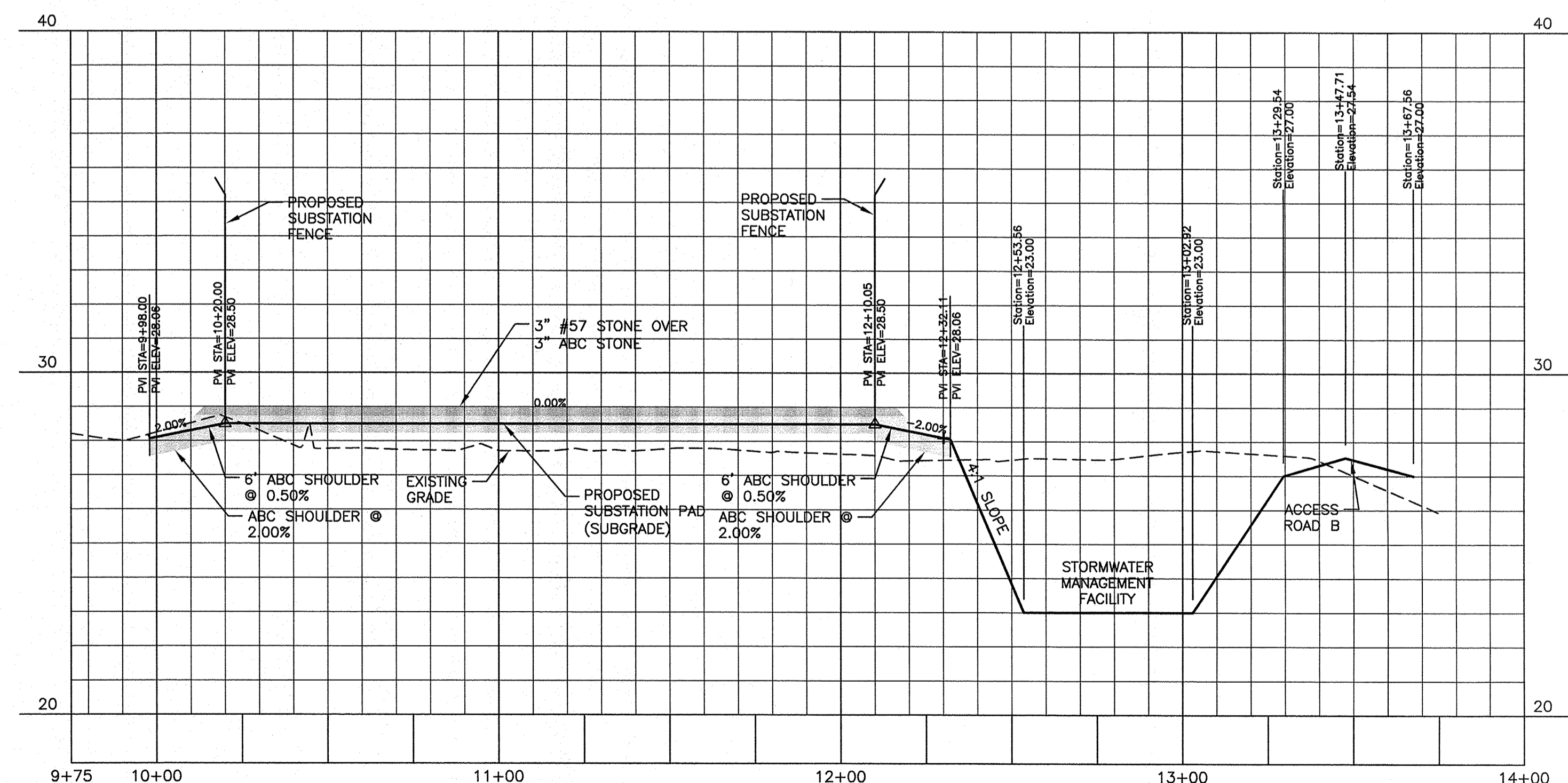
WILMINGTON SUNSET PARK 115 KV SUBSTATION
 317 BORDEAUX AVENUE, WILMINGTON NC 27601
 NORTH - SOUTH BASELINE PROFILE

NO.	DATE	REVISION	BY	CHK.	APP.

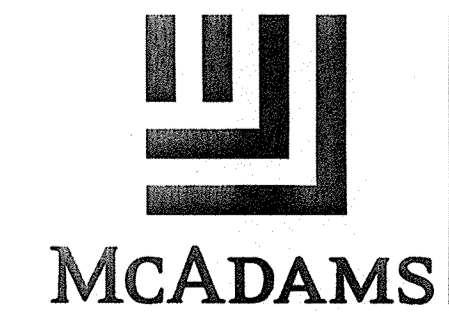
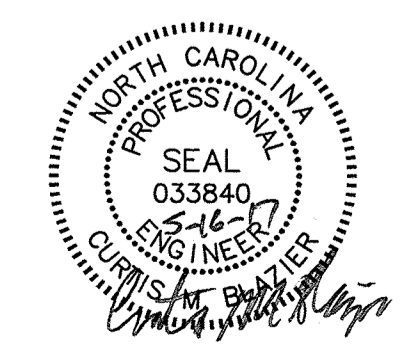
LOCATION: WILMINGTON, NC
 SCALE: 1"=30'/1"=3' SCALE RATIO: 1:1 PRJ. NO. DKE-17010
 DRAWN: JB CHK. --- APP. ---
 DATE: 05-15-17 DWG. NO. 70818, SHEET 14 OF 18



EAST - WEST BASELINE



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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: 05-15-17 DWG. NO. 70818, SHEET 15 OF 18

FINAL DRAWING - NOT RELEASED FOR CONSTRUCTION

NO.	DATE	REVISION	BY	CK.	APP.

INFILTRATION BASIN CONSTRUCTION SPECIFICATIONS

GENERAL NOTES

- CONSTRUCTION OF THE INFILTRATION BASIN SHALL BE DELAYED UNTIL AS CLOSE TO THE END OF PROJECT CONSTRUCTION AS POSSIBLE. IDEALLY, CONSTRUCTION OF THE INFILTRATION BASIN SHOULD TAKE PLACE AFTER THE SITE HAS BEEN STABILIZED. HOWEVER, A ROUGH EXCAVATION OF THE INFILTRATION BASIN MAY OCCUR TO ALLOW FOR USE OF THE EXCAVATED MATERIAL AS FILL IN OTHER AREAS OF THE SITE. THE PARTIALLY EXCAVATED BASINS SHALL NOT SERVE AS AN EROSION CONTROL DEVICE (I.E. SEDIMENT TRAP OR SEDIMENT BASIN) DURING PROJECT CONSTRUCTION.
- THE INFILTRATION BASIN SHALL NOT BE USED AS A TEMPORARY EROSION CONTROL DEVICE (I.E. SEDIMENT TRAP OR SEDIMENT BASIN) DURING CONSTRUCTION.
- DURING AND AFTER BASIN EXCAVATION, ALL EXCAVATED MATERIALS SHALL BE REMOVED FROM THE SITE OR LOCATED SUCH THAT RUNOFF FROM THESE MATERIALS (OR ANY OTHER DISTURBED AREA) DOES NOT ENTER THE INFILTRATION BASIN AREAS.
- ONCE CONSTRUCTED, THE INFILTRATION BASIN SHALL NOT RECEIVE STORMWATER RUNOFF UNTIL THE ENTIRE CONTRIBUTORY DRAINAGE AREA TO THE BASIN HAS BEEN COMPLETELY STABILIZED AND SITE CONSTRUCTION IS COMPLETE.
- IN ORDER TO AVOID COMPACTION OF THE EXISTING SOIL, ABSOLUTELY NO EQUIPMENT SHOULD BE DRIVEN OVER THE PROPOSED LOCATION OF THE INFILTRATION BASIN BEFORE AND AFTER CONSTRUCTION. NO CONSTRUCTION MATERIAL IS TO BE PLACED OR STOCKPILED IN THE INFILTRATION BASIN AREA.
- THE CONTRACTOR SHALL REFER TO THE PERMANENT PLANTING SCHEDULE ON SHEET 19. THE PERMANENT VEGETATION FOR THE PROPOSED INFILTRATION BASIN SIDESLOPES AND FLOOR SHALL BE PER THE SEEDING SCHEDULES PROVIDED.
- PLEASE NOTE THAT NO TREES/SHRUBS OF ANY TYPE MAY BE PLANTED ON THE PROPOSED DAM EMBANKMENT (FILL AREAS).
- THE OBSERVATION WELLS / CLEAN-OUTS ARE TO CONSIST OF 6-INCH DIAMETER SCHEDULE 40 PVC PIPE (OR ENGINEER APPROVED EQUAL) WITH A CAP SET 3-INCHES ABOVE GROUND LEVEL. THE PIPE SHALL HAVE A FACTORY ATTACHED CAST IRON OR HIGH IMPACT PLASTIC COLLAR WITH RIBS TO PREVENT ROTATION WHEN REMOVING SCREW TOP LID. THE SCREW TOP LID SHALL BE CAST IRON OR HIGH IMPACT PLASTIC THAT WILL WITHSTAND ULTRAVIOLET RAYS. THE SCREW TOP LID SHALL BE A CLEANOUT WITH A LOCKING MECHANISM OR SPECIAL BOLT TO DISCOURAGE VANDALISM.
- THE CONTRACTOR SHALL FURNISH, INSTALL, OPERATE, AND MAINTAIN ANY PUMPING EQUIPMENT, ETC. NEEDED FOR REMOVAL OF WATER FROM VARIOUS PARTS OF THE INFILTRATION BASIN SITE. IT IS ANTICIPATED THAT PUMPING WILL BE NECESSARY IN THE EXCAVATION AREAS (I.E. KEY TRENCH). DURING PLACEMENT OF FILL WITHIN THE EXCAVATION AREAS THE CONTRACTOR SHALL KEEP THE WATER LEVEL BELOW THE BOTTOM OF THE EXCAVATION. THE MANNER IN WHICH THE WATER IS REMOVED SHALL BE SUCH THAT THE EXCAVATION BOTTOM AND SIDESLOPES ARE STABLE AND SEDIMENT IS NOT DISCHARGED FROM THE SITE.
- ALL CONSTRUCTION OF THE INFILTRATION BASIN FACILITY SHALL BE PER THE DETAILS AND SPECIFICATIONS SHOWN IN THESE DRAWINGS, SOILS, COMPACTION, KEY TRENCH, AND OTHER MISCELLANEOUS DETAILS AND SPECIFICATIONS MAY BE MODIFIED PER THE RECOMMENDATIONS OF THE ON-SITE GEOTECHNICAL ENGINEER. HOWEVER, THE DESIGN ENGINEER SHALL BE NOTIFIED OF ANY DEVIATION FROM THESE DESIGN DRAWINGS, INCLUDING SHOP DRAWINGS FOR ANY PROPOSED MODIFICATION.
- EXISTING SOIL INFILTRATION RATES AND SEASONAL HIGH GROUNDWATER INFORMATION SHOWN ON THESE PLANS / SPECIFICATIONS IS FROM A REPORT BY SAME, INC. DATED MARCH 09, 2017.

CONSTRUCTION SEQUENCE

- PRIOR TO CONSTRUCTION, THE OWNER SHALL OBTAIN A LAND DISTURBANCE PERMIT (EROSION CONTROL / GRADING) ALONG WITH ANY PERMITS NECESSARY FROM THE CITY OF WILMINGTON OR OTHER APPLICABLE AGENCIES.
 - INSTALL ALL SEDIMENT AND EROSION CONTROL MEASURES PER THE APPROVED SEDIMENT & EROSION CONTROL PLAN. THE CONTRACTOR SHALL MAINTAIN ALL APPROVED SEDIMENT AND EROSION CONTROL MEASURES THROUGHOUT THE ENTIRE PROJECT, AS REQUIRED. THE CONTRACTOR SHALL RECEIVE APPROVAL FROM THE EROSION CONTROL INSPECTOR, AS REQUIRED BY GOVERNING AGENCIES, PRIOR TO ANY CLEARING.
 - CLEAR AND GRUB THE AREA WITHIN THE LIMITS OF THE PROPOSED INFILTRATION BASIN. ALL TREES AND THEIR ENTIRE ROOT SYSTEMS MUST BE REMOVED FROM THE INFILTRATION BASIN FOOTPRINT AREA AND BACKFILLED WITH SUITABLE SOIL MATERIAL PER DIRECTION OF THE ON-SITE GEOTECHNICAL ENGINEER. PLEASE NOTE THE BACKFILL MATERIAL FOR THE FLOOR OF THE INFILTRATION BASIN SHALL MEET THE REQUIREMENTS OF THE SECTION TITLED "INFILTRATION BASIN FLOOR FILL SOIL SPECIFICATIONS." FILL MATERIAL FOR THE DAM EMBANKMENT SHALL MEET THE REQUIREMENTS OF THE SECTION TITLED "BERM SOIL AND COMPACTION SPECIFICATIONS."
- THE BACKFILLED AREAS WITHIN THE DAM EMBANKMENT AREA SHALL BE COMPACTED TO THE SAME STANDARDS AS THE DAM EMBANKMENT. THE REMAINING AREA OF THE EMBANKMENT SHALL BE STRIPPED TO A SUITABLE DEPTH AS DIRECTED BY THE ON-SITE GEOTECHNICAL ENGINEER. ANY RESIDUAL SOILS TO BE LEFT IN PLACE MUST BE WELL SCARIFIED TO PROMOTE BONDING OF THE NEW EMBANKMENT FILL. NO EMBANKMENT MATERIAL SHALL BE PLACED FOR THE DAM, EMBANKMENT SUBGRADE, OR KEY TRENCH UNTIL APPROVAL OF THE DAM SUBGRADE / KEY TRENCH IS OBTAINED FROM THE ON-SITE GEOTECHNICAL ENGINEER.
- ANY REMOVED TOPSOIL SHALL BE STOCKPILED FOR USE IN PLANTING (SEEDING) ON THE DAM EMBANKMENT ONCE FINAL GRADES (AS SHOWN ON THE GRADING PLAN) HAVE BEEN ESTABLISHED WITH COMPACTED FILL. PRIOR TO TOPSOIL INSTALLATION, THE CONTRACTOR SHALL SCARIFY THE TOP 2"-3" OF THE BERM SECTION TO PROMOTE BONDING OF THE TOPSOIL WITH THE COMPACTED FILL. THE TOPSOIL DEPTH SHALL RANGE FROM 3"-4" ON THE DAM EMBANKMENT.
 - BEGIN CONSTRUCTION OF THE DAM EMBANKMENT AND ROUGH GRADING OF THE INFILTRATION BASIN. CONSTRUCTION AND COMPACTION OF THE DAM EMBANKMENT SHALL BE PER THE SECTION TITLED "BERM SOIL AND COMPACTION SPECIFICATIONS". IF AREAS OF THE INFILTRATION BASIN FLOOR ARE LOCATED IN CUT/EXCAVATION, THE INITIAL EXCAVATION SHOULD BE CARRIED TO WITHIN 1-FOOT OF THE FINAL GRADE OF THE BASIN FLOOR. IF AREAS OF THE INFILTRATION BASIN FLOOR ARE LOCATED IN FILL, THE BASIN FLOOR MAY BE CONSTRUCTED TO THE FINAL GRADE ELEVATION USING THE APPROPRIATE FILL MATERIAL FOR THE BASIN FLOOR (SEE SECTION TITLED "INFILTRATION BASIN FLOOR FILL SOIL SPECIFICATIONS"). LIGHT TRACKED EQUIPMENT SHOULD BE USED DURING THE EXCAVATION/ROUGH GRADING TO PREVENT COMPACTION OF THE EXISTING SOILS IN THE FLOOR AREA. FINAL EXCAVATION/GRADING TO THE FINISHED GRADE ELEVATION SHOULD BE DELAYED UNTIL ALL DISTURBED AREAS FROM THE CONTRIBUTORY DRAINAGE AREA HAVE BEEN STABILIZED.
 - ONCE THE CONTRIBUTORY DRAINAGE AREA HAS BEEN STABILIZED AND SITE CONSTRUCTION IS COMPLETE, THE FINAL PHASE OF THE EXCAVATION OF THE BASIN FLOOR CAN BEGIN BY REMOVING ALL ACCUMULATED SEDIMENT AND GRADING THE ENTIRE BASIN FLOOR TO THE DESIGN ELEVATION SHOWN ON THE GRADING PLAN. LIGHT TRACKED CONSTRUCTION EQUIPMENT IS RECOMMENDED FOR THIS OPERATION TO PREVENT COMPACTION OF THE BASIN FLOOR. ANY SMEARING OF THE SOIL AT THE INTERFACE WITH THE BASIN FLOOR MUST BE AVOIDED AND/OR REPAIRED BY RAKING OR ROTOTILLING.
 - INSTALL THE PROPOSED OBSERVATION WELLS PER THE DETAIL SHOWN ON SHEET 19.
 - AFTER FINAL GRADING, THE BASIN FLOOR SHOULD BE TILLED TO A DEPTH OF AT LEAST 6-INCHES TO PROVIDE A WELL-AERATED, HIGHLY POROUS SURFACE TEXTURE. SIX-INCHES OF COMPOST MAY BE TILLED INTO THE BASIN FLOOR AT THIS TIME IF THE SOILS ARE EVEN THE SLIGHTEST BIT COMPACTED TO FACILITATE INFILTRATION AND ROOT GROWTH.
 - UPON COMPLETION OF BASIN CONSTRUCTION, THE BASIN BOTTOM AND SLOPES SHOULD BE STABILIZED WITH A DENSE STAND OF THE APPROPRIATE VEGETATION PER THE SEEDING SCHEDULE PROVIDED ON SHEET 19-1C. DENSE VEGETATION ON THE BASIN SIDE SLOPES AND FLOOR IS RECOMMENDED. THE PERMANENT VEGETATION FOR THE PROPOSED INFILTRATION BASIN SIDESLOPES AND FLOOR SHALL BE PER THE SEEDING SCHEDULE PROVIDED.
 - ONCE CONSTRUCTION OF THE INFILTRATION BASIN IS COMPLETE AND THE ENTIRE CONTRIBUTORY DRAINAGE AREA HAS BEEN COMPLETELY STABILIZED, THE BASIN MAY BE BROUGHT "ONLINE".

INFILTRATION BASIN FLOOR FILL SOIL SPECIFICATIONS

- FILL SOIL USED TO CONSTRUCT THE FLOOR AND UNDERLYING SOILS OF THE INFILTRATION BASIN SHALL HAVE A MINIMUM HYDRAULIC CONDUCTIVITY OF 25.5 INCHES PER HOUR. SOILS CONTAINING CALCIUM CARBONATE SHOULD NOT BE USED AS FILL SOILS FOR CONSTRUCTION OF THE BASIN FLOOR. THE FLOOR OF THE INFILTRATION BASIN IS DEFINED AS ELEVATION 23.00 AND BELOW. SOILS USED FROM ELEVATION 23.00 AND ABOVE (I.E. THE FILL SECTIONS OF THE BERMS) SHOULD BE PER THE SOIL SPECIFICATIONS LISTED IN THE SECTION TITLED "BERM SOILS AND COMPACTION SPECIFICATIONS".
- PRIOR TO CONSTRUCTION, THE ON-SITE GEOTECHNICAL ENGINEER OR LICENSED SOIL SCIENTIST SHALL VERIFY THE SUITABILITY OF THE PROPOSED BORROW AREA / FILL FOR USE IN CONSTRUCTION OF THE INFILTRATION BASIN FLOOR.
- HYDRAULIC CONDUCTIVITY TESTS SHALL BE PERFORMED BY THE ON-SITE GEOTECHNICAL ENGINEER OR LICENSED SOIL SCIENTIST DURING CONSTRUCTION TO VERIFY PROPER FILL SOIL IS BEING UTILIZED FOR THE INFILTRATION BASIN FLOOR. ALL FILL MATERIALS TO BE USED FOR CONSTRUCTION OF THE INFILTRATION BASIN FLOOR SHALL BE CERTIFIED BY THE ON-SITE GEOTECHNICAL ENGINEER OR LICENSED SOIL SCIENTIST AS MEETING THE MINIMUM HYDRAULIC CONDUCTIVITY OF 25.50 INCHES PER HOUR. UPON REQUEST, THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH REPORTS TO VERIFY THAT THE INFILTRATION BASIN FLOOR SOILS MEET THE SPECIFIED HYDRAULIC CONDUCTIVITY REQUIREMENTS. THESE REPORTS WILL BE NEEDED DURING THE AS-BUILT CERTIFICATION PROCESS FOR THIS STORMWATER FACILITY. THEREFORE, IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE HYDRAULIC CONDUCTIVITY TESTS ARE PROPERLY PERFORMED DURING CONSTRUCTION.

OUTLET STRUCTURE MATERIAL SPECIFICATIONS

- THE 18" RCP OUTLET BARREL SHALL BE CLASS III RCP, MODIFIED BELL AND SPIGOT, MEETING THE REQUIREMENTS OF ASTM C76-LATEST. THE PIPE JOINTS SHALL BE TYPE R-4.
- GEOTEXTILE FABRIC FOR THE 18" OUTLET BARREL JOINTS SHALL BE NON-WOVEN FABRIC DEEMED APPROPRIATE BY THE ON-SITE GEOTECHNICAL ENGINEER FOR USE IN THESE SPECIFIC SITE SOIL CONDITIONS.

BERM SOIL AND COMPACTION SPECIFICATIONS

- ALL FILL MATERIALS TO BE USED FOR THE DAM EMBANKMENT SHALL BE TAKEN FROM BORROW AREAS APPROVED BY THE ON-SITE GEOTECHNICAL ENGINEER. THE FILL MATERIAL SHALL BE FREE FROM ROOTS, STUMPS, WOOD, STONES GREATER THAN 6", AND FROZEN OR OTHER OBJECTIONABLE MATERIAL.
- PRIOR TO USE AS FILL MATERIAL FOR THE DAM EMBANKMENT, THE CONTRACTOR SHALL PERFORM STANDARD PROCTORS ON THE PROPOSED BORROW MATERIAL TO ENSURE THAT OPTIMUM MOISTURE CONTENT AND COMPACTION CAN BE ACHIEVED / CONTROLLED DURING CONSTRUCTION.
- FILL PLACEMENT FOR THE EMBANKMENT SHALL NOT EXCEED A MAXIMUM 8" LIFT (UNCOMPACTED). EACH LIFT SHALL BE CONTINUOUS FOR THE ENTIRE LENGTH OF EMBANKMENT. BEFORE PLACEMENT OF FILL FOR THE BERM SECTION, UNSUITABLE MATERIAL SHALL BE REMOVED AND THE SURFACE PROPERLY PREPARED FOR FILL PLACEMENT. FILL MATERIAL ADJACENT TO ALL SPILLWAY AND DRAINAGE STRUCTURES SHALL BE PLACED IN 4-INCH (UNCOMPACTED) LIFTS AND HAND-COMPACTED TO THE SAME COMPACTION AND MOISTURE REQUIREMENTS AS THE ENTIRE EMBANKMENT.
- ALL FILL SOILS USED IN THE EMBANKMENT / KEY TRENCH CONSTRUCTION SHALL BE COMPACTED TO AT LEAST 95% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM-698). THE FILL SOILS SHALL BE COMPACTED AT A MOISTURE CONTENT WITHIN -1 TO +3 PERCENT OF ITS OPTIMUM MOISTURE CONTENT. COMPACTION TESTS SHALL BE PERFORMED BY THE ON-SITE GEOTECHNICAL ENGINEER DURING CONSTRUCTION TO VERIFY THAT THE PROPER COMPACTION LEVEL HAS BEEN REACHED. THE FILL SHOULD BE COMPACTED USING A SHEEPSFOOT TYPE COMPACTOR. IN ORDER TO PREVENT DAMAGE TO THE PIPE, NO COMPACTION EQUIPMENT SHALL CROSS ANY PIPE UNTIL MINIMUM COVER IS ESTABLISHED ALONG THE PIPE.
- A KEY TRENCH SHALL BE PROVIDED BENEATH ALL FILL AREAS OF THE BERM. THE TRENCH SHALL EXTEND A MINIMUM OF 2 FT BELOW THE OUTLET PIPE, 5-FT BELOW EXISTING GRADE, AND SHALL HAVE A MINIMUM BOTTOM WIDTH OF 5 FEET. THE KEY TRENCH SIDESLOPES SHALL BE A MINIMUM OF 1:1 (H:V). THE KEY TRENCH SHALL BE COMPACTED TO THE SAME SPECIFICATION LISTED IN ITEM 4 ABOVE.
- THE ON-SITE GEOTECHNICAL ENGINEER SHALL INSPECT THE KEY TRENCH EXCAVATION PRIOR TO PLACEMENT OF ANY BACKFILL WITHIN THE KEY TRENCH. IF THE CONTRACTOR CONSTRUCTS AND COVERS UP THE KEY TRENCH PRIOR TO INSPECTION, THEN THE KEY TRENCH SHALL BE UNCOVERED AND TESTED AT THE CONTRACTOR'S EXPENSE.
- UPON REQUEST, THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH REPORTS TO VERIFY THAT THE DAM EMBANKMENT / KEY TRENCH MEETS THE SPECIFIED COMPACTION REQUIREMENTS. COMPACTION REPORTS WILL BE NEEDED DURING THE AS-BUILT CERTIFICATION PROCESS FOR THIS STORMWATER FACILITY. THEREFORE, IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE COMPACTION TESTS ARE PROPERLY PERFORMED DURING CONSTRUCTION.

PIPE SUBGRADE SUPPORT AND BEDDING SPECIFICATIONS

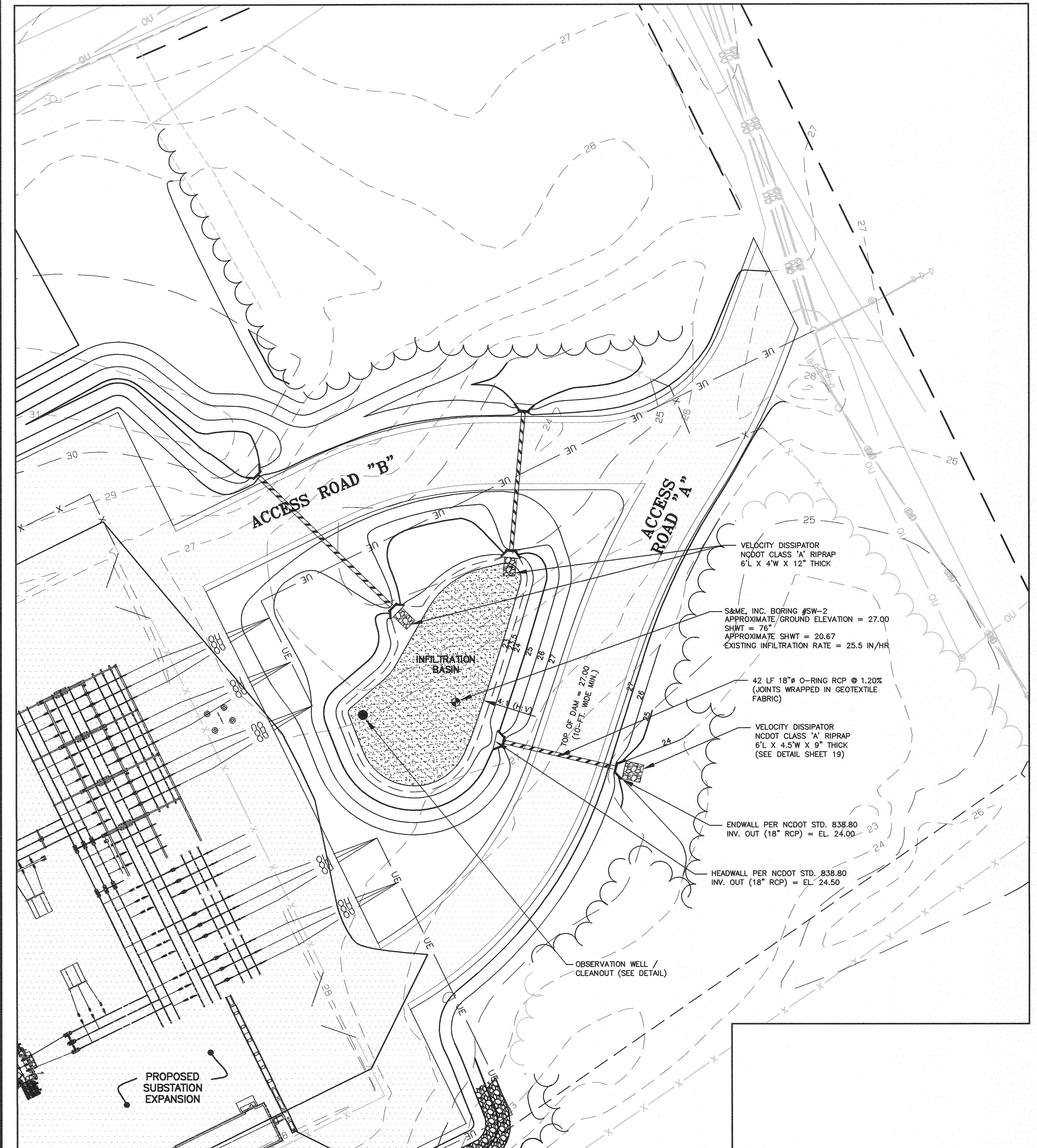
- FILL IN THE AREA OF THE 18" RCP OUTLET PIPE AND ADJACENT AREAS SHALL BE BROUGHT UP TO A POINT OF 2' TO 3' OR MORE ABOVE THE TOP ELEVATION OF THE PIPE IN ADVANCE OF PIPE CONSTRUCTION SO THAT THE PIPE CAN BE INSTALLED IN A TRENCH CONDITION. ONCE THE FILL IS BROUGHT UP TO ABOVE THE TOP OF PIPE, THE PIPE TRENCH SHOULD THEN BE EXCAVATED FOR INSTALLATION OF THE PIPE.
- IF SEEPAGE OR FLOW OCCURS IN OR ALONG THE PIPE ALIGNMENT, GROUNDWATER CONTROL WILL BE NECESSARY. THIS COULD INVOLVE PUMPING (OR STREAM DIVERSION, ETC.) DEPENDING ON THE TOPOGRAPHY. SINCE IT IS NECESSARY TO WORK IN A "DRY" CONDITION, THIS SITUATION MAY REQUIRE USE OF LEAN CONCRETE BACKFILL, FLOWABLE FILL, ETC. TO ESTABLISH SUBGRADE CONDITIONS SUITABLE FOR SOIL TYPE BACKFILL PLACEMENT.
- FILL MATERIAL ADJACENT TO THE 18" RCP OUTLET PIPE SHALL MEET THE SPECIFICATIONS LISTED IN ITEMS 1 THROUGH 3 IN THE SECTION TITLED "BERM SOIL & COMPACTION SPECIFICATIONS." THE CONTRACTOR SHALL PAY SPECIAL ATTENTION TO THE COMPACTION EFFORTS ALONG THE PIPE TO ENSURE THAT ALL SPACES UNDER AND ADJACENT TO THE PIPE ARE FILLED WITH PROPERLY COMPACTED MATERIAL. TO PREVENT DAMAGE, HAND OPERATED COMPACTION EQUIPMENT SHALL BE USED IN THE VICINITY OF ANY PIPE UNTIL MINIMUM COVER HAS BEEN ESTABLISHED.

TESTING OF THE EMBANKMENT

- THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH REPORTS TO VERIFY THAT THE DAM EMBANKMENT MEETS THE SPECIFIED COMPACTION REQUIREMENTS. COMPACTION REPORTS WILL BE NEEDED DURING THE AS-BUILT CERTIFICATION PROCESS FOR THESE STORMWATER FACILITIES. THEREFORE, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE COMPACTION TESTING AND TO ENSURE COMPACTION TESTS ARE PROPERLY PERFORMED DURING CONSTRUCTION.
- TESTING OF THE NEW FILL MATERIALS SHALL BE PERFORMED TO VERIFY THAT THE RECOMMENDED LEVEL OF COMPACTION IS ACHIEVED DURING CONSTRUCTION. THEREFORE, ONE DENSITY TEST SHALL BE PERFORMED FOR EVERY 2,500 SQUARE FEET OF AREA FOR EVERY LIFT OF FILL OR AS DIRECTED BY THE ON-SITE GEOTECHNICAL ENGINEER.

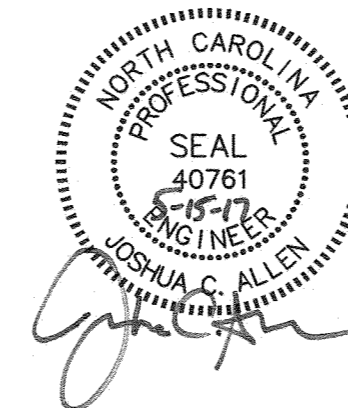
STATEMENT OF RESPONSIBILITY

- ALL REQUIRED MAINTENANCE AND INSPECTIONS OF THIS FACILITY SHALL BE THE RESPONSIBILITY OF FUTURE PROPERTY OWNER'S ASSOCIATION PER THE EXECUTED OPERATION AND MAINTENANCE AGREEMENT FOR THIS FACILITY.

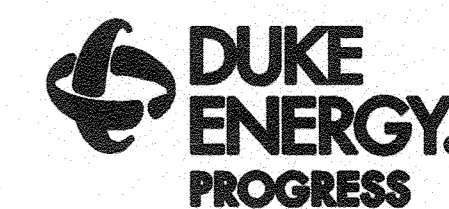


STORMWATER MANAGEMENT FACILITY PLAN VIEW

1" = 20'



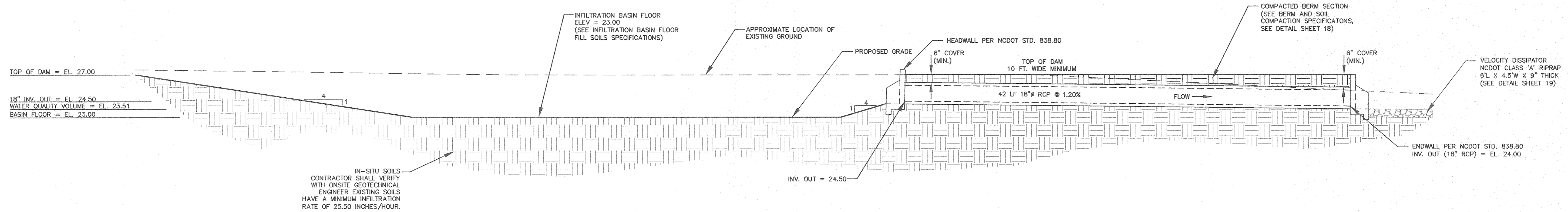
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WILMINGTON SUNSET PARK 115 KV SUBSTATION
 317 BORDEAUX AVENUE, WILMINGTON NC 27601
 STORMWATER MANAGEMENT FACILITY PLAN

LOCATION: WILMINGTON, NC
 SCALE: 1" = 20' SCALE RATIO: 1:1 PRJ. NO. DKE-17010
 DRAWN: JCA CHK. JCA APP. —
 DATE: 05-15-17 DWG. NO. 70818, SHEET 17 OF 18

NO.	DATE	REVISION	BY	CK.	APP.



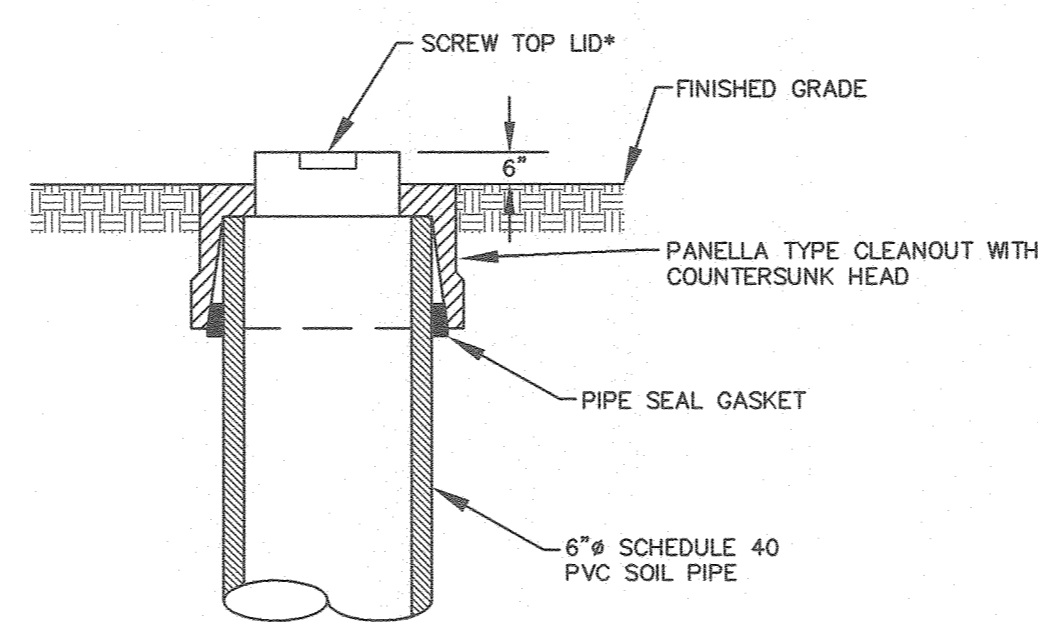
INFILTRATION BASIN CROSS SECTION
N.T.S.

NOTES:

- SEASONAL HIGH GROUNDWATER TABLE INFORMATION PROVIDED BY S&ME, INC. IN A REPORT DATED MARCH 09, 2017. PLEASE REFER TO SHEET 18 FOR APPROXIMATE LOCATIONS OF SPECIFIC BORINGS AND GROUNDWATER ELEVATIONS.

NOTES:

- A FILTER BLANKET IS TO BE INSTALLED BETWEEN THE RIPRAP AND SOIL FOUNDATION. THE FILTER BLANKET WILL CONSIST OF A MINIMUM 4" THICK LAYER OF STONE (NCDOT #57) UNDERLAIN WITH MIRAFI FILTER WEAVE 700 OR ENGINEER APPROVED EQUIVALENT

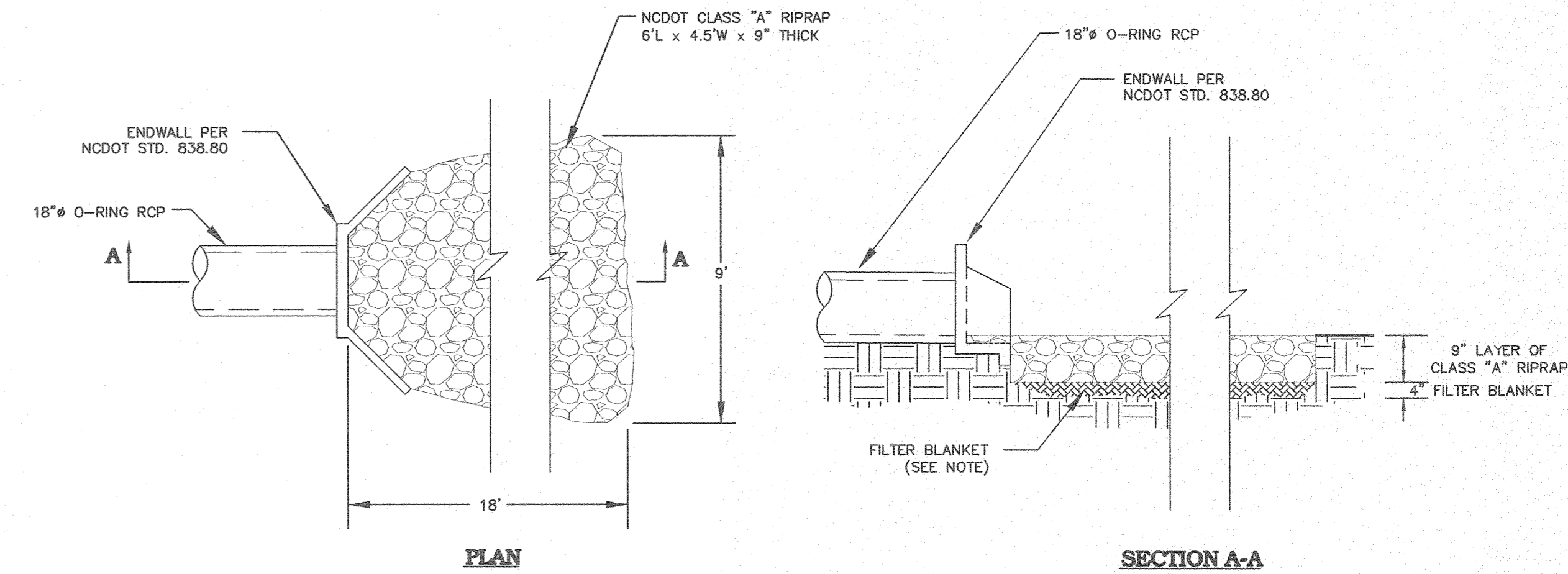


*ABOVE DETAIL PROVIDED AS SCHEMATIC SCREW TOP P.V.C. WELL CAP ONLY

OBSERVATION WELL / CLEANOUT DETAIL
N.T.S.

EACH OBSERVATION WELL SHALL INCLUDE THE FOLLOWING:

- FOR AN UNDERGROUND OBSERVATION WELL, PROVIDE A TUBE MADE OF NON-CORROSIVE MATERIAL, SCHEDULE 40 OR EQUAL, AT LEAST THREE FEET LONG WITH AN INSIDE DIAMETER OF AT LEAST 6 INCHES.
- THE TUBE SHALL HAVE A FACTORY ATTACHED CAST IRON OR HIGH IMPACT PLASTIC COLLAR WITH RIBS TO PREVENT ROTATION WHEN REMOVING SCREW TOP LID. THE SCREW TOP LID SHALL BE CAST IRON OR HIGH IMPACT PLASTIC THAT WILL WITHSTAND ULTRAVIOLET RAYS.



OUTLET BARREL VELOCITY DISSIPATOR
N.T.S.

TEMPORARY SEEDING SCHEDULE

SEEDING DATE	SEEDING MIXTURE	RATE (LBS/ACRE)
JAN 1 - MAY 1	RYE (GRAIN)	120
MAY 1 - AUG 15	GERMAN MILLET	40
AUG 15 - DEC 30	RYE (GRAIN)	120

SOIL AMENDMENTS
FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 LB/AC GROUND AGRICULTURE LIMESTONE AND 750 LB/AC 10-10-10 FERTILIZER (FROM AUG 15 - DEC 30, INCREASE 10-10-10 FERTILIZER TO 1000 LB/AC).

MULCH
APPLY 4000 LB/AC STRAW BY TACKING WITH ASPHALT, NETTING OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

MAINTENANCE
JAN 1 - AUG 15: REFERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RESEED, REFERTILIZE, AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE.

AUG 15 - DEC 30: REPAIR AND REFERTILIZE DAMAGED AREAS IMMEDIATELY. TOP DRESS WITH 50 LB/AC OF NITROGEN IN MARCH. IF IT IS NECESSARY TO EXTEND TEMPORARY COVER BEYOND JUNE 15, OVERSEED WITH 50 LB/AC KOBE LESPEDEZA IN LATE FEBRUARY OR EARLY MARCH.

NOTE: USE THE TEMPORARY SEEDING SCHEDULE ONLY WHEN DATE IS NOT CORRECT TO USE THE PERMANENT SEEDING SCHEDULE. IF THE DAM IS SEEDING DURING A TIME OF THE YEAR THAT REQUIRES USE OF THE TEMPORARY SEEDING SCHEDULE, THEN WHEN APPROPRIATE, THE SITE CONTRACTOR SHALL REMOVE THE TEMPORARY VEGETATION AND RESEED THE DAM USING THE PERMANENT SEEDING SCHEDULE.

SEEDBED PREPARATION

- CHISEL COMPACTED AREAS AND SPREAD TOPSOIL 3 INCHES DEEP OVER ADVERSE SOIL CONDITIONS, IF AVAILABLE.
- RIP THE ENTIRE AREA TO 6 INCHES DEPTH.
- REMOVE ALL LOOSE ROCK, ROOTS, AND OTHER OBSTRUCTIONS LEAVING SURFACE REASONABLY SMOOTH AND UNIFORM.
- APPLY AGRICULTURAL LIME, FERTILIZER, AND SUPERPHOSPHATE UNIFORMLY AND MIX WITH SOIL (SEE PERMANENT SEEDING SCHEDULE).
- CONTINUE TILLAGE UNTIL A WELL-PULVERIZED, FIRM REASONABLY UNIFORM SEEDBED IS PREPARED 4 TO 6 INCHES DEEP.
- SEED ON A FRESHLY PREPARED SEEDBED AND COVER.
- MULCH IMMEDIATELY AFTER SEEDING AND ANCHOR MULCH.
- INSPECT ALL SEEDING AREAS AND MAKE NECESSARY REPAIRS OR RESEEDINGS WITHIN THE PLANTING SEASON, IF POSSIBLE. IF STAND SHOULD BE OVER 60% DAMAGED, REESTABLISH FOLLOWING ORIGINAL LIME, FERTILIZER AND SEEDING RATES. SEED LIGHTLY WITH SEEDING EQUIPMENT OR CULTIPACK AFTER SEEDING.
- CONSULT CONSERVATION INSPECTOR ON MAINTENANCE TREATMENT AND FERTILIZATION AFTER PERMANENT COVER IS ESTABLISHED.

PERMANENT SEEDING SCHEDULE

SEEDING MIXTURE	RATE (LBS/ACRE)
PENSACOLA BERMUDAGRASS	50
COMMON BERMUDAGRASS	10
GERMAN MILLET	10

SEEDING NOTES
USE COMMON BERMUDAGRASS ONLY ON ISOLATED SITES WHERE IT CANNOT BECOME A PEST. BERMUDAGRASS MAY BE REPLACED WITH 5 LB/ACRE CENTIPEDAGRASS.

SEEDING DATES
APRIL 1 - JULY 15

SOIL AMENDMENTS
APPLY LIME AND FERTILIZER ACCORDING TO SOIL TESTS, OR APPLY 3000 LB/ACRE GROUND AGRICULTURE LIMESTONE AND 500 LB/ACRE 10-10-10 FERTILIZER.

MULCH
APPLY 4000 LB/AC GRAIN STRAW OR EQUIVALENT COVER OF ANOTHER SUITABLE MULCH. ANCHOR BY TACKING WITH ASPHALT, ROVING, OR NETTING OR BY CRIMPING WITH A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

MAINTENANCE
REFERTILIZE THE FOLLOWING APRIL WITH 50 LB/ACRE NITROGEN. REPEAT AS GROWTH REQUIRES. MAY BE MOWED ONLY ONCE A YEAR.

McADAMS
 FINAL DRAWING - NOT RELEASED FOR CONSTRUCTION

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DUKE ENERGY. PROGRESS

WILMINGTON SUNSET PARK 115 KV SUBSTATION
 317 BORDEAUX AVENUE, WILMINGTON NC 27601
 STORMWATER MANAGEMENT FACILITY DETAILS

NO.	DATE	REVISION	BY	CK.	APP.
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-

LOCATION: WILMINGTON, NC
 SCALE: 1" = 20' SCALE RATIO: 1:1 PRJ. NO. DKE-17010
 DRAWN: JCA CHK: JCA APP: -
 DATE: 05-15-17 DWG. NO. 70818, SHEET 18 OF 18

X:\Projects\DKE-17010\Storm\Drawings\DWG17010-SW.dwg, 5/15/2017 3:32:34 PM, Allen, Joshua