Cape Fear Community College

Electric Lineworker Overhead and Underground Training Facility

New Hanover County, NC

OWNER:
Cape Fear Community College
411 Front St.
Wilmington, NC 28401

ENGINEER:

Coastal Land Design, PLLC
Civil Engineering / Landscape Architecture Land Planning / Construction Management
NCBELS Firm License No: P-0369
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VICINITY MAP
NOT TO SCALE

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Certificate of Approval - New Hanover County Planning & Land Use

03/18/2021
Date

Administrator

REVIEW AGENCY	APPROVAL DATE	PERMIT NUMBER

ISSUED FOR AGENCY REVIEW ONLY

NOT RELEASED FOR CONSTRUCTION

BEFORE YOU DIG, CALL
North Carolina 811
www.nc811.org

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Cape Fear Community College

ELECTRICAL LINEWORKER OVERHEAD AND UNDERGROUND TRAINING FACILITY

REV	DATE	DESCRIPTION	INIT
C	16 MAR 2021	TRC REVIEW #2	NAA
B	19 FEB 2021	ADDED EROSION CONTROL DETAIL, SHEET AND ADDED STORMWATER BASIN PLAN	JRC
A	16 DEC 2020	INITIAL TRC REVIEW	NAA

DEVELOPER
CAPE FEAR COMMUNITY COLLEGE
411 NORTH FRONT STREET
WILMINGTON, NC 28401

NORTH CAROLINA PROFESSIONAL SEAL ENGINEER JASON R. CARMICHAEL
PRELIMINARY NOT RELEASED
3/16/2021

APPROVED:	JRC	PROJECT:	146-06
CHECKED:	JBP	SCALE:	NTS
DESIGNED:	NAA	RELEASE:	DESIGN

SHEET
COVER

CONSTRUCTION SEQUENCE:

PRE-CONSTRUCTION

1. APPLY FOR A CERTIFICATE OF COVERAGE (COC) UNDER NCG01 BY COMPLETING ELECTRONIC NOTICE OF INTENT (e-NOI) FORM FOUND ON THE NCDEQ-DEMLR WEBSITE.
2. OBTAIN NECESSARY PERMITS PRIOR TO ANY CONSTRUCTION ACTIVITIES REGULATED BY THAT PERMIT.
3. FIELD VERIFY SITE FOR EXISTING UTILITY ABOVE AND BELOW GROUND AND EXISTING CONDITIONS PRIOR TO COMMENCING THE INSTALLATION OF THE SEDIMENT CONTROL PRACTICES.
4. COORDINATE THE TIMING OF ANY IMPACTS TO EXISTING UTILITIES WITHIN THE SITE AND ADJOINING PROPERTIES WITH THE APPROPRIATE REGULATORY AUTHORITIES PRIOR TO COMMENCING WORK.
5. THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT SEDIMENT -LADEN RUNOFF IS TREATED PRIOR TO BEING DISCHARGED FROM THE SITE AND MAY BE REQUIRED TO PROVIDE ADDITIONAL MEASURES OF SEDIMENT CONTROL BASED UPON THE PERFORMANCE OF EROSION CONTROL MEASURES PROVIDE ONSITE.
6. THE CONTRACTOR MAY ALTER THE TIMING OF THE CONSTRUCTION ACTIVITIES PROVIDED IN THIS CONSTRUCTION SEQUENCE ONLY IF ADEQUATE EROSION AND SEDIMENTATION CONTROL PRACTICES ARE PROVIDED AT ALL TIMES. SHOULD ANY SUBSTANTIAL DEVIATION NEED TO OCCUR THAT WILL SIGNIFICANTLY ALTER THE DESIGN CONDITIONS OF A SEDIMENT CONTROL MEASURE PROVIDED IN THIS PLAN, THE CONTRACTOR MUST CONTACT THE ENGINEER OF RECORD PRIOR TO COMMENCING WITH THE MODIFICATION.
7. SET UP A PRE-CONSTRUCTION MEETING WITH NCDEQ-DEMLR STAFF PRIOR TO CONSTRUCTION.

CONSTRUCTION

1. INSTALL THE GRAVEL CONSTRUCTION ENTRANCE OFF EDUCATION LOOP ROAD AT THE PROPOSED SITE ENTRANCE LOCATION.
2. LOCATE AND MARK THE LIMIT OF DISTURBANCE. IN GENERAL, THE LIMIT OF DISTURBANCE WILL BE DEFINED BY THE PROJECT AREA BOUNDARY AND EASEMENT LINES.
3. EXCAVATE AND GRADE THE SKIMMER SEDIMENT BASIN AS SHOWN ON THE PLANS. EXCAVATION SPOILS SHALL BE KEPT WITHIN THE LIMIT OF DISTURBANCE AND PROTECTED AGAINST RUNOFF. PROVIDE THE FAIRCLOTH® SKIMMER ASSEMBLY AND COIR MESH BAFFLES AND OTHER RELATED ITEMS TO THE SKIMMER SEDIMENT BASIN.
4. EXCAVATE THE GRASS-LINED CHANNEL AND IMMEDIATE STABILIZE WITH JUTE NETTING. EXCAVATION SPOILS SHALL BE KEPT WITHIN THE LIMIT OF DISTURBANCE AND PROTECTED AGAINST RUNOFF.
5. INSTALL SEDIMENT FENCING AS INDICATED ON THE PLANS. NOTE THAT SEDIMENT FENCE IS NOT TO BE INSTALLED ACROSS ANY POINT OF PROPOSED OR EXISTING CONCENTRATED FLOW (DITCH, PIPE, SPILLWAY OUTLETS).
6. ERECT THE ELOUTF STRUCTURE AND GRADE THE SITE PER THE PLANS. ENSURE ADEQUATE DRAINAGE AWAY FROM THE STRUCTURE AND THAT THE DRAINAGE PATTERNS MATCH THE PLANS.
7. INSTALL THE GRAVITY SEWER SERVICE AND WATER SERVICE TO THE NEW STRUCTURE.
8. INSTALL THE GRAVEL PARKING LOT AND CONCRETE PARKING AREAS AS SHOWN ON THE PLANS.
9. FINE GRADE THE REMAINDER OF THE SITE AND PROVIDE FINISH GRADE ELEVATIONS THAT ENSURE PROPER DRAINAGE.
10. POUR THE CONCRETE DRIVEWAY APRON AS SHOWN ON THE PLANS AS ONE OF THE LAST CONSTRUCTION ITEMS TO PREVENT DAMAGE TO THE APRON BY CONSTRUCTION EQUIPMENT.
11. AFTER THE ATTRIBUTING DRAINAGE AREA FOR THE SKIMMER SEDIMENT BASIN IS STABILIZED, THE SKIMMER SEDIMENT BASIN CAN BE REMOVED, AND THE GROUND RE-GRADED TO MATCH THE REMAINDER OF THE GRASS-LINED CHANNEL. IMMEDIATE STABILIZE THE NEWLY CONSTRUCTED CHANNEL WITH JUTE NETTING.
12. AT THE END OF CONSTRUCTION, COMPLETE THE ELECTRONIC NOTICE OF TERMINATION (e-NOT) FORM AS FOUND ON THE NCDEQ-DEMLR TO END COVERAGE UNDER NCG01.

THROUGHOUT-CONDITIONS

1. SELF-MONITORING AND APPROPRIATE RECORD KEEPING, AND DOCUMENTATION IS REQUIRED EVERY SEVEN DAYS AND WITHIN 24-HOURS OF EVERY HALF-INCH RAINFALL EVENT. THESE REPORTS, A RAIN GAUGE, AND COPIES OF THE APPROVED PLAN AND PERMIT SHALL REMAIN ON SITE FOR THE DURATION OF CONSTRUCTION.
2. DENUDED AREAS MUST BE STABILIZED WITHIN 21 CALENDAR DAYS OF CEASE OF ANY PHASE OF ACTIVITY. THIS INCLUDES SLOPES, SWALES, CHANNELS, AND STOCKPILES.
3. INSPECT AND MAINTAIN ALL EROSION CONTROL DEVICES EVERY SEVEN DAYS AND AFTER EACH RAINFALL EVENT. NEEDED REPAIRS SHALL BE MADE IMMEDIATELY.
4. TOP DRESS TEMPORARY SEEDING WITH 50 POUNDS PER ACRE NITROGEN IN MARCH. IF COVER IS NEEDED THROUGH THE FOLLOWING SUMMER, OVERESEED WITH 50 POUNDS PER ACRE OF KOBE LESPEDEZA. MOWING OF GRASSED AREAS SHALL BE ACCOMPLISHED ACCORDING TO THE SEASON. MAXIMUM UNMOWN HEIGHT OF A GRASS AT ANY TIME SHALL BE SIX INCHES.
5. PERMANENT GRASS SHALL BE INSTALLED FOR AREAS AT FINAL GRADE AND IN SEASON. FERTILIZE, WATER AND RESEED TO ESTABLISH A VIGOROUS STAND OF GRASS.
6. AFTER COMPLETION OF CONSTRUCTION WITHIN ANY PHASE, AND THE PHASE IS PROPERLY STABILIZED REMOVE ALL ACCUMULATED SEDIMENT FROM THE SEDIMENTATION CONTROL DEVICES AND SPREAD IT EVENLY ACROSS THE SITE. THE SPREADINGS SHALL BE SEEDED AND STABILIZED BASED UPON THE GROUND STABILIZATION REQUIREMENTS, AND THE TEMPORARY AND PERMANENT SEEDING SCHEDULES.

GENERAL NOTES:

1. THE PROPERTY BOUNDARY, TOPOGRAPHIC, AND UTILITY SURVEY SHOWN ON THESE PLANS WERE PROVIDED BY ESP ASSOCIATES, P.A. LOCATED AT 211 RACINE DRIVE, WILMINGTON, NORTH CAROLINA 28402.
2. THE TOTAL DISTURBANCE FOR THIS PROJECT IS APPROXIMATELY 2.4 ACRES.
3. THIS PROJECT AREA DOES NOT CONTAIN AND SURFACE WATERS, WETLANDS, PROTECTED VEGETATED SETBACKS, OR PROTECTED RIPARIAN BUFFERS.
4. THE SITE IS NOT LOCATED IN A REGULATED FLOOD ZONE PER FEMA MAP NUMBER 3723230000K (PANEL 3230) DATED AUGUST 28, 2018.
5. THE SITE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITIES ABOVE AND BELOW GROUND BEFORE COMMENCING CONSTRUCTION.
6. THE SITE CONTRACTOR IS RESPONSIBLE FOR DISPOSAL OF ALL WASTE MATERIALS GENERATED THROUGH DEMOLITION AND GRUBBING ACTIVITIES SHOWN ON THESE PLANS.
7. THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT SEDIMENT-LADEN RUNOFF IS TREATED PRIOR TO BEING DISCHARGED FROM THE SITE AND MAY BE REQUIRED TO PROVIDE ADDITIONAL MEASURES OF SEDIMENT CONTROL BASED UPON THE PERFORMANCE OF EROSION CONTROL MEASURES PROVIDED ON SITE.
8. DENUDED AREAS MUST BE STABILIZED BASED UPON THE GROUND STABILIZATION REQUIREMENTS PROVIDED ON THE APPROVED EROSION CONTROL DRAWINGS. THIS INCLUDES SLOPES, SWALES, CHANNELS, AND STOCKPILES.
9. MATERIAL AND SOIL STAGING/STOCKPILING AREAS SHALL BE LOCATED WITHIN THE LIMIT OF DISTURBANCE, SURROUNDED BY SILT FENCE, AND STABILIZED AS REQUIRED BY THE STABILIZATION REQUIREMENTS AND SEEDING SCHEDULES.
10. ALL TREES THAT ARE TO BE PROTECTED WITHIN DISTURBED AREAS SHALL BE WRAPPED IN TREE-PROTECTION FENCING PER THE NEW HANOVER COUNTY DEVELOPMENT ORDINANCES.
11. ALL STORM DRAIN SYSTEM COMPONENTS ARE DESIGNED TO PROVIDE POSITIVE DRAINAGE.
12. ALL DRAINAGE FROM IMPERVIOUS SURFACES SHALL BE DIRECTED TO THE STORMWATER CONVEYANCE SYSTEMS (DITCHES).
13. RUNOFF FROM PROJECT DRAINS TO POND #1 UNDER NCDEQ PERMIT #SW8 990923 AND DRAINS TO THE PRINCE GEORGE CREEK (ID:18-74-53) CLASSIFIED AS "C;Sw".
14. ANY SCM IMPACTED BY SEDIMENTATION AND EROSION CONTROL DURING THE CONSTRUCTION PHASE SHALL BE CLEANED OUT AND CONVERTED TO ITS APPROPRIATE DESIGN STATE.

LANDSCAPE NOTES

1. ALL LANDSCAPE MATERIAL MUST BE INSTALLED PRIOR TO FINAL BUILDING INSPECTION.
2. TREES AND SHRUBS SHALL MEET THE QUALITY AND SIZE STANDARDS AS DESCRIBED IN THE MOST RECENT EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK (ANSI Z60.1).
3. ALL PLANTS MUST BE HEALTHY, VIGOROUS MATERIAL, FREE OF PESTS AND DISEASE.
4. ALL PLANTS TO BE CONTAINER GROWN OR BALLED AND BURLAPPED AS SPECIFIED IN THE PROVIDED PLANT LIST.
5. ALL TREES MUST HAVE A STRAIGHT TRUNK, BE FULL-HEADED, AND MEET ALL REQUIREMENTS SPECIFIED.
6. ALL PLANTS ARE SUBJECT TO THE APPROVAL OF THE LANDSCAPE ARCHITECT BEFORE, DURING, AND FOLLOWING INSTALLATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION AND/OR RELOCATION OF EXISTING UTILITIES IN COORDINATION WITH THE APPROPRIATE UTILITY AGENCY OR COMPANY.
7. THE CONTRACTOR SHALL COMPLETELY WARRANTY ALL PLANTED MATERIAL FOR A PERIOD OF (1) YEAR BEGINNING ON THE DATE OF SUBSTANTIAL COMPLETION. THE CONTRACTOR SHALL PROMPTLY MAKE ALL REPLACEMENTS BEFORE OR AT THE END OF THE WARRANTY PERIOD.
8. ANY PLANT MATERIAL WHICH DIES, TURNS BROWN, OR DEFOLIATES PRIOR TO SUBSTANTIAL COMPLETION OF THE WORK, SHALL BE PROMPTLY REMOVED FROM THE SITE AND REPLACED WITH MATERIAL OF THE SAME SPECIES, QUANTITY, AND SIZE MEETING ALL PLANT SCHEDULE SPECIFICATIONS.
9. CONTRACTOR SHALL NOT SUBSTITUTE FOR ANY OF THE PLANT MATERIAL THAT IS SPECIFIED WITHOUT PRIOR APPROVAL OF THE LANDSCAPE ARCHITECT.
10. VERIFICATION OF TOTAL QUANTITIES AS SHOWN IN THE PLANT LIST SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
11. MULCH UNDER ALL PROPOSED TREES AND SHRUBS WITH SHREDDED HARDWOOD AT A 3"-4" DEPTH OR APPROVED EQUAL.
12. PLANT SIZES INDICATED SPECIFY MINIMUM ALLOWABLE SIZES AT PLANTING. WHERE CONTAINER AND HT. SIZES ARE INDICATED FOR A SINGLE SPECIES, BOTH SIZE REQUIREMENTS MUST BE MET.
13. THERE SHALL BE AT LEAST A 3 FT. SEPARATION BETWEEN LANDSCAPED AREAS AND PARKING AREAS TO ALLOW VEHICLE OVERHANG WHEN PARKING BLOCKS ARE NOT USED.
14. ALL PLANTINGS USED TO SCREEN THE DRIVES AND PARKING AREAS FROM ADJOINING ROADWAYS WILL NEED TO BE A MINIMUM OF 36" HIGH AT TIME OF PLANTING.
15. ALL OTHER AREAS NOT BEING MULCHED TO BE SEEDED PER SEEDING SCHEDULE INCLUDED AS PART OF THE S&E PLANS.
16. THE OWNERS OF THE PROPERTY AND THEIR AGENTS, HEIRS, OR ASSIGNS SHALL BE RESPONSIBLE FOR THE INSTALLATION, PRESERVATION AND MAINTENANCE OF ALL PLANTING AND PHYSICAL FEATURES SHOWN ON THIS PLAN. THE OWNERS SHALL BE RESPONSIBLE FOR ANNUAL MAINTENANCE OF THE VEGETATION TO INCLUDE BUT NOT BE LIMITED TO:

A. **FERTILIZATION**
TREES SHRUBS AND GRASSED AREAS
BROADCAST A SLOW RELEASE FERTILIZER OVER THE MULCHED BEDS AT THE RECOMMENDED RATES AS SHOWN ON THE BAGS, ONCE MID-FEBRUARY AND ONCE MID-SEPTEMBER. THOROUGH WATERING IS REQUIRED UPON COMPLETION.

B. **PRUNING WITHIN LIMITS**
PRUNING WHEN NECESSARY, WILL BE DONE TO MAINTAIN THEIR NORMAL GROWTH PATTERN AND TO REMOVE DEAD OR DISEASED PLANT MATERIAL. THERE SHALL BE NO TOPPING OF TREES.

C. **PEST CONTROL (OPTIONAL)**
WEED CONTROL TO BE PROVIDED EARLY FEBRUARY, APRIL, JUNE, AUGUST AND OCTOBER IN THE SHRUB/TREE BEDS AND IN THE LAWN AREAS. INSECT DAMAGE SHALL BE TREATED WHEN NECESSARY TO PREVENT DAMAGE TO VEGETATION.

D. **MULCHING**
ALL AREAS AROUND THE BUILDING FOUNDATION AND SHRUB/TREE BEDS SHALL BE RE-MULCHED SO THAT THEY CONTAIN A MIN. DEPTH OF TWO INCHES AND A MAXIMUM DEPTH OF THREE INCHES. MULCH USED SHALL EQUAL WHICH WAS SUPPLIED DURING THE INSTALLATION OF THE PLANTS.

E. **MOWING**
MOWING SHALL BE DONE AS NECESSARY TO KEEP GRASS AT THE APPROPRIATE HEIGHT TO INSURE A HEALTHY GROWTH PATTERN.

F. **PROTECTION OF ROOT ZONES**
TREE/SHRUB ROOT ZONES SHOULD BE PROTECTED FROM FUTURE CONSTRUCTION AND EQUIPMENT AS MUCH AS POSSIBLE TO AVOID DAMAGE OR COMPACTION TO THE ROOT AREAS.

G. **WATERING SCHEDULE FOR IRRIGATION SYSTEM**
MAINTENANCE SHALL INCLUDE A THOROUGH INITIAL WATERING WITH WEEKLY WATERINGS THEREAFTER FOR THE FIRST 30 DAYS. WATERINGS THEREAFTER BE ON AN AS NEEDED SCHEDULE PER LOCAL CONDITIONS.

H. **STAKE AT WIRE REMOVAL**
AT THE END OF THE FIRST YEAR ALL PLANT STAKING AND GUYING SYSTEMS SHALL BE REMOVED.

I. **PROTECTED TREE REGULATION**
PRIOR TO ANY CLEARING, GRADING OR CONSTRUCTION ACTIVITY, TREE PROTECTION FENCING WILL BE INSTALLED AROUND PROTECTED TREES OR GROVES OF TREES AND NO CONSTRUCTION WORKERS, TOOLS, MATERIALS OR VEHICLES ARE PERMITTED WITHIN THE TREE PROTECTION FENCING.

SOIL PREPARATION NOTES

1. SOIL PREPARATION FOR GRASSED & LANDSCAPED AREAS IS CRUCIAL TO ESTABLISH AND SUPPORT A HEALTHY AND LASTING LANDSCAPE. EXISTING TOPSOIL SHOULD BE REMOVED AND STORED ON-SITE AWAY FROM CONSTRUCTION ACTIVITIES. THIS STOCKPILED SOIL CAN BE USED IN PROPOSED LANDSCAPED AREAS AT A LATER DATE.
2. SOIL SAMPLES SHALL BE COLLECTED FROM AREAS TO BE SEEDED OR SODDED AS WELL AS ALL SOILS RESERVED FOR LANDSCAPE BEDS. ALL SOIL TESTING WILL BE DONE AT THE CONTRACTOR'S EXPENSE. SOIL TESTS SHALL BE CONDUCTED BY A STATE LABORATORY OR RECOGNIZED COMMERCIAL LABORATORY. SAMPLES SHALL BE COLLECTED WITH A 6" DEEP CORE AND PREPARED IN ACCORDANCE WITH RECOMMENDATIONS OF THE SOIL TESTING LABORATORY.
3. EACH SOIL TEST SHALL DETERMINE SOIL TEXTURE (MECHANICAL ANALYSIS), pH, NITROGEN, PHOSPHORUS, POTASSIUM, MAGNESIUM, CALCIUM, SOLUBLE SALTS AND % ORGANIC MATTER. SOIL TEST RESULTS SHALL INCLUDE LABORATORY RECOMMENDATIONS FOR SOIL AMENDMENTS TO CORRECT DEFICIENCIES AND ACCOMPLISH PLANTING OBJECTIVES.
4. LANDSCAPE AREAS AND AREAS INTENDED TO BE SEEDED OR SODDED, THAT MAY HAVE BECOME COMPACTED BY RELATED CONSTRUCTION ACTIVITIES, SHALL BE EVALUATED FOR COMPACTION RATES. CONTRACTOR TO DE-COMPACT SOILS IN PLANTING AREAS BY ROTO-TILLING, DISCING, OR RIPPING TO A MIN. DEPTH OF 6-8". SOILS WITHIN SMALLER AREAS SUCH AS PARKING LOT ISLANDS MAY REQUIRE EXCAVATION OF THE COMPACTED SOILS TO A DEPTH OF 18" AND THEN RE-INSTALLED LOOSELY WITH RECOMMENDED AMENDMENTS. ANY DEBRIS LARGER THAN 2" TO BE REMOVED.
5. WHEN PERFORMING SOIL DE-COMPACTION, MULTIPLE PASSES AT DIFFERENT DIRECTIONS WILL BE REQUIRED IN ORDER TO ADEQUATELY DE-COMPACT THE SOILS. WHEN USING DISC OR RIPPING EQUIPMENT, THE FINAL PASSES SHALL BE DONE USING A ROT-TILLER TO BREAK APART ANY LARGER SOIL AGGREGATES.
6. FOLLOWING DE-COMPACTION PROCEDURES, SOIL AMENDMENTS SHALL BE ADDED AND THOROUGHLY MIXED. CONTRACTOR SHALL FOLLOW RECOMMENDATIONS OF THE NORTH CAROLINA DEQ. TEMPORARY AND PERMANENT SEEDING SPECS, TO PROVIDE OPTIMUM GROWING CONDITIONS FOR SEED & SOD.

GRASS TYPE	AMOUNT/ 1000 SF.	TIME OF SEEDING	INITIAL	FERTILIZATION/1000 SF. MAINTENANCE		
RYE GRAIN	1-2 LBS.	NOV. THRU JAN.	25 LBS. 10-10-10	NA	NA	NA
BROWNTOP MILLET	1-2 LBS.	JUNE THRU AUG.	25 LBS. 10-10-10	NA	NA	NA

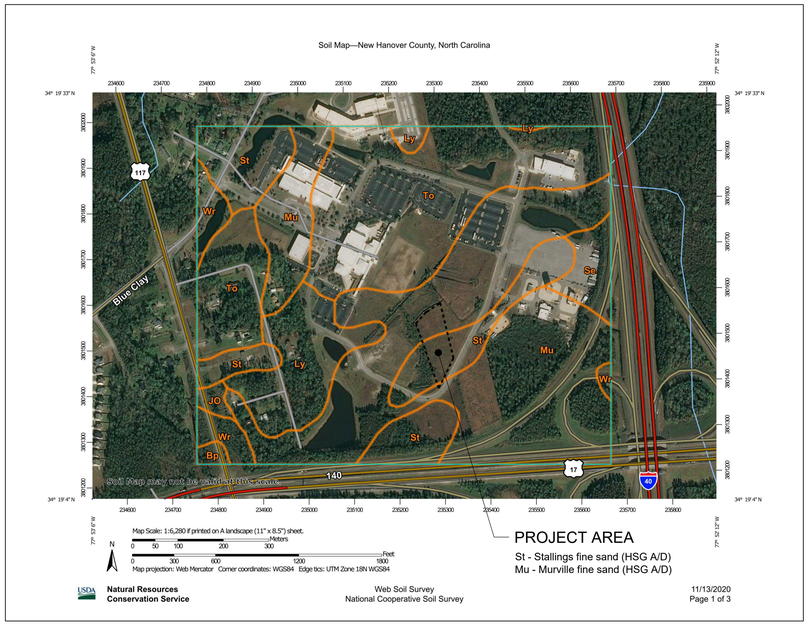
TEMPORARY SEEDING SCHEDULE

GRASS TYPE	AMOUNT/ 1000 SF.	TIME OF SEEDING	INITIAL	FERTILIZATION/1000 SF. MAINTENANCE		
BERMUDA, COMMON	1-2 LBS.	APR. THRU JUNE	25 LBS. 10-10-10	MARCH - APRIL 12 LBS. 10-10-10	EACH 4-8 WEEKS 1-2 LBS. N.	AUG. - SEPT. 12 LBS. 10-10-10
FESCUE, TALL (KENTUCKY 31)	5-7 LBS.	SEPT. THRU OCT. FEB. THRU OCT.	25 LBS. 10-10-10	FEB. - MARCH 12 LBS. 10-10-10	MAY & DEC. 1/2 TO 1 LB. N.	SEPT. - OCT. 12 LBS. 10-10-10
SERICEA LESPEDEZA (SLOPES)	1-2 LBS.	MARCH THRU APR.	25 LBS. 10-10-10	FEB. - MARCH	1/2 TO 1 LB. N.	NA

PERMANENT SEEDING SCHEDULE

GROUND STABILIZATION NOTES

2
C1.0



NRCS SOILS MAP

NTS

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C1.0

UTILITY SEPARATION NOTES:

1) THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS ARE BASED ON RECORDS FROM THE UTILITY COMPANY AND, WHERE POSSIBLE MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY LOCATION OF ALL EXISTING UTILITIES. ANY CONFLICTS SHALL BE BROUGHT TO THE OWNER'S AND ENGINEER'S ATTENTION IMMEDIATELY.

15A NCAC 18C .0904: PIPE LAYING
(AMENDED EFFECTIVE JULY 1, 2019)

(A) TRENCHING, PIPE LAYING, AND BACKFILLING SHALL BE ACCOMPLISHED IN A MANNER TO PREVENT DAMAGE TO AND MISALIGNMENT OF THE PIPE. WATER MAINS SHALL BE BURIED TO A DEPTH BELOW THE FROST LINE OR TO A DEPTH SUFFICIENT TO PROVIDE A MINIMUM OF 30 INCHES COVER, WHICHEVER IS GREATER. IN CASES WHERE IT IS IMPRACTICABLE TO PROVIDE 30 INCHES OF COVER TAKING INTO CONSIDERATION FEASIBILITY AND COST, A DEVIATION MAY BE APPROVED ON A CASE-BY-CASE BASIS, IF SUPPORTED BY DATA FROM THE DESIGN ENGINEER INCLUDING CONSIDERATION OF PIPE MATERIAL, COVER MATERIAL, LAND COVER, LAND USE, LAND SLOPE, THE DEPTH OF THE FROST LINE, AND THE LOCATION OF OTHER UTILITIES.

(B) TO ALLOW FOR CONSTRUCTION AND REPAIR, A MINIMUM DISTANCE OF 12 INCHES SHALL BE MAINTAINED BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF OTHER UTILITIES

15A NCAC 18C .0906: RELATION OF WATER MAINS TO NON-POTABLE WATER LINES
(AMENDED EFFECTIVE JULY 1, 2019)

(A) FOR THE PURPOSES OF THIS RULE, SEWER SHALL MEAN ANY EXISTING OR PROPOSED GRAVITY OR FORCE MAIN USED TO CONVEY SANITARY OR INDUSTRIAL PROCESS WASTE.

(B) LATERAL SEPARATION OF SEWERS AND WATER MAINS. WATER MAINS SHALL BE LAID AT LEAST 10 FEET LATERALLY FROM EXISTING OR PROPOSED SEWERS, UNLESS LOCAL CONDITIONS OR BARRIERS PREVENT A 10-FOOT LATERAL SEPARATION, IN WHICH CASE:
(1) THE WATER MAIN SHALL BE LAID IN A SEPARATE TRENCH, WITH THE ELEVATION OF THE BOTTOM OF THE WATER MAIN AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER; OR
(2) THE WATER MAIN SHALL BE LAID IN THE SAME TRENCH AS THE SEWER, WITH THE WATER MAIN LOCATED AT ONE SIDE ON A BENCH OF UNDISTURBED EARTH AND WITH THE ELEVATION OF THE BOTTOM OF THE WATER MAIN AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER.

(C) CROSSINGS. A WATER MAIN THAT CROSSES A SEWER SHALL BE LAID A MINIMUM VERTICAL DISTANCE OF 18 INCHES FROM THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF THE SEWER, EITHER ABOVE OR BELOW THE SEWER, WITH PREFERENCE TO THE WATER MAIN LOCATED ABOVE THE SEWER. ONE FULL LENGTH OF WATER PIPE SHALL BE LOCATED SO THAT BOTH JOINTS WILL BE AS FAR FROM THE SEWER AS POSSIBLE.

(D) WATER MAINS AND STORM SEWER PIPES. PIPES CARRYING STORM DRAINAGE SHALL BE SEPARATED FROM WATER LINES IN ACCORDANCE WITH RULE .0904 OF THIS SECTION.

(E) WATER MAINS AND RECLAIMED WATER DISTRIBUTION LINES. WATER LINES SHALL BE LOCATED AT LEAST10 FEET HORIZONTALLY FROM OR AT LEAST 18 INCHES ABOVE WATER PIPES CARRYING TREATED AND DISINFECTED WASTEWATER IN RECLAIMED WATER DISTRIBUTION LINES. CROSSINGS SHALL BE MADE IN ACCORDANCE WITH PARAGRAPH (C) OF THIS RULE.

UTILITY MATERIAL SPECIFICATIONS

1. WATER AND SEWER UTILITIES MATERIALS AND INSTALLATION SHALL BE PER THE CURRENT CAPE FEAR PUBLIC UTILITY AUTHORITY DESIGN MANUAL AND STANDARD SPECIFICATIONS PROVIDED ONLINE ON THEIR WEB PAGE.
WWW.CFPUA.ORG/765/TECHNICAL-SPECIFICATIONS-FOR-CONSTRUCTION

ISSUED FOR AGENCY REVIEW ONLY

NOT RELEASED FOR CONSTRUCTION

BEFORE YOU DIG, CALL
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www.nc811.org

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NORTH CAROLINA PROFESSIONAL SEAL ENGINEER JASON R. CARMICHAEL
PRELIMINARY NOT RELEASED
3/16/2021

Cape Fear Community College Electric Lineworker Overhead & Underground Training Facility

4500 Blue Clay Road
Castle Hayne, NC 28429

Project No: 20-21668-01A

Construction Documents
January 22, 2021

Revisions:

General Notes

C1.0

GROUND STABILIZATION AND MATERIALS HANDLING PRACTICES FOR COMPLIANCE WITH THE NCG01 CONSTRUCTION GENERAL PERMIT

Implementing the details and specifications on this plan sheet will result in the construction activity being considered compliant with the Ground Stabilization and Materials Handling sections of the NCG01 Construction General Permit (Sections E and F, respectively). The permittee shall comply with the Erosion and Sediment Control plan approved by the delegated authority having jurisdiction. All details and specifications shown on this sheet may not apply depending on site conditions and the delegated authority having jurisdiction.

SECTION E: GROUND STABILIZATION

Required Ground Stabilization Timeframes

Site Area Description	Stabilize within this many calendar days after ceasing land disturbance	Timeframe variations
(a) Perimeter dikes, swales, ditches, and perimeter slopes	7	None
(b) High Quality Water (HQW) Zones	7	None
(c) Slopes steeper than 3:1	7	If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed
(d) Slopes 3:1 to 4:1	14	-7 days for slopes greater than 50' in length and with slopes steeper than 4:1 -7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed
(e) Areas with slopes flatter than 4:1	14	-7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed unless there is zero slope

Note: After the permanent cessation of construction activities, any areas with temporary ground stabilization shall be converted to permanent ground stabilization as soon as practicable but in no case longer than 90 calendar days after the last land disturbing activity. Temporary ground stabilization shall be maintained in a manner to render the surface stable against accelerated erosion until permanent ground stabilization is achieved.

GROUND STABILIZATION SPECIFICATION

Stabilize the ground sufficiently so that rain will not dislodge the soil. Use one of the techniques in the table below:

Temporary Stabilization	Permanent Stabilization
• Temporary grass seed covered with straw or other mulches and tackifiers • Hydroseeding • Rolled erosion control products with or without temporary grass seed • Appropriately applied straw or other mulch • Plastic sheeting	• Permanent grass seed covered with straw or other mulches and tackifiers • Geotextile fabrics such as permanent soil reinforcement matting • Hydroseeding • Shrubs or other permanent plantings covered with mulch • Uniform and evenly distributed ground cover sufficient to restrain erosion • Structural methods such as concrete, asphalt or retaining walls • Rolled erosion control products with grass seed

POLYACRYLAMIDES (PAMS) AND FLOCCULANTS

1. Select flocculants that are appropriate for the soils being exposed during construction, selecting from the *NC DWR List of Approved PAMS/Flocculants*.
2. Apply flocculants at or before the inlets to Erosion and Sediment Control Measures.
3. Apply flocculants at the concentrations specified in the *NC DWR List of Approved PAMS/Flocculants* and in accordance with the manufacturer's instructions.
4. Provide ponding area for containment of treated Stormwater before discharging offsite.
5. Store flocculants in leak-proof containers that are kept under storm-resistant cover or surrounded by secondary containment structures.

EQUIPMENT AND VEHICLE MAINTENANCE

1. Maintain vehicles and equipment to prevent discharge of fluids.
2. Provide drip pans under any stored equipment.
3. Identify leaks and repair as soon as feasible, or remove leaking equipment from the project.
4. Collect all spent fluids, store in separate containers and properly dispose as hazardous waste (recycle when possible).
5. Remove leaking vehicles and construction equipment from service until the problem has been corrected.
6. Bring used fuels, lubricants, coolants, hydraulic fluids and other petroleum products to a recycling or disposal center that handles these materials.

LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE

1. Never bury or burn waste. Place litter and debris in approved waste containers.
2. Provide a sufficient number and size of waste containers (e.g dumpster, trash receptacle) on site to contain construction and domestic wastes.
3. Locate waste containers at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
4. Locate waste containers on areas that do not receive substantial amounts of runoff from upland areas and does not drain directly to a storm drain, stream or wetland.
5. Cover waste containers at the end of each workday and before storm events or provide secondary containment. Repair or replace damaged waste containers.
6. Anchor all lightweight items in waste containers during times of high winds.
7. Empty waste containers as needed to prevent overflow. Clean up immediately if containers overflow.
8. Dispose waste off-site at an approved disposal facility.
9. On business days, clean up and dispose of waste in designated waste containers.

PAINT AND OTHER LIQUID WASTE

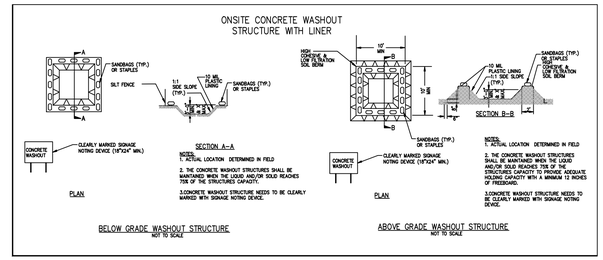
1. Do not dump paint and other liquid waste into storm drains, streams or wetlands.
2. Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
3. Contain liquid wastes in a controlled area.
4. Containment must be labeled, sized and placed appropriately for the needs of site.
5. Prevent the discharge of soaps, solvents, detergents and other liquid wastes from construction sites.

PORTABLE TOILETS

1. Install portable toilets on level ground, at least 50 feet away from storm drains, streams or wetlands unless there is no alternative reasonably available. If 50 foot offset is not attainable, provide relocation of portable toilet behind silt fence or place on a gravel pad and surround with sand bags.
2. Provide staking or anchoring of portable toilets during periods of high winds or in high foot traffic areas.
3. Monitor portable toilets for leaking and properly dispose of any leaked material. Utilize a licensed sanitary waste hauler to remove leaking portable toilets and replace with properly operating unit.

EARTHEN STOCKPILE MANAGEMENT

1. Show stockpile locations on plans. Locate earthen-material stockpile areas at least 50 feet away from storm drain inlets, sediment basins, perimeter sediment controls and surface waters unless it can be shown no other alternatives are reasonably available.
2. Protect stockpile with silt fence installed along toe of slope with a minimum offset of five feet from the toe of stockpile.
3. Provide stable stone access point when feasible.
4. Stabilize stockpile within the timeframes provided on this sheet and in accordance with the approved plan and any additional requirements. Soil stabilization is defined as vegetative, physical or chemical coverage techniques that will restrain accelerated erosion on disturbed soils for temporary or permanent control needs.



CONCRETE WASHOUTS

1. Do not discharge concrete or cement slurry from the site.
2. Dispose of, or recycle settled, hardened concrete residue in accordance with local and state solid waste regulations and at an approved facility.
3. Manage washout from mortar mixers in accordance with the above item and in addition place the mixer and associated materials on impervious barrier and within lot perimeter silt fence.
4. Install temporary concrete washouts per local requirements, where applicable. If an alternate method or product is to be used, contact your approval authority for review and approval. If local standard details are not available, use one of the two types of temporary concrete washouts provided on this detail.
5. Do not use concrete washouts for dewatering or storing defective curb or sidewalk sections. Stormwater accumulated within the washout may not be pumped into or discharged to the storm drain system or receiving surface waters. Liquid waste must be pumped out and removed from project.
6. Locate washouts at least 50 feet from storm drain inlets and surface waters unless it can be shown that no other alternatives are reasonably available. At a minimum, install protection of storm drain inlet(s) closest to the washout which could receive spills or overflow.
7. Locate washouts in an easily accessible area, on level ground and install a stone entrance pad in front of the washout. Additional controls may be required by the approving authority.
8. Install at least one sign directing concrete trucks to the washout within the project limits. Post signage on the washout itself to identify this location.
9. Remove leavings from the washout when at approximately 75% capacity to limit overflow events. Replace the tarp, sand bags or other temporary structural components when no longer functional. When utilizing alternative or proprietary products, follow manufacturer's instructions.
10. At the completion of the concrete work, remove remaining leavings and dispose of in an approved disposal facility. Fill pit, if applicable, and stabilize any disturbance caused by removal of washout.

HERBICIDES, PESTICIDES AND RODENTICIDES

1. Store and apply herbicides, pesticides and rodenticides in accordance with label restrictions.
2. Store herbicides, pesticides and rodenticides in their original containers with the label, which lists directions for use, ingredients and first aid steps in case of accidental poisoning.
3. Do not store herbicides, pesticides and rodenticides in areas where flooding is possible or where they may spill or leak into wells, stormwater drains, ground water or surface water. If a spill occurs, clean area immediately.
4. Do not stockpile these materials onsite.

HAZARDOUS AND TOXIC WASTE

1. Create designated hazardous waste collection areas on-site.
2. Place hazardous waste containers under cover or in secondary containment.
3. Do not store hazardous chemicals, drums or bagged materials directly on the ground.

NCG01 GROUND STABILIZATION AND MATERIALS HANDLING

EFFECTIVE: 04/01/19

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PRELIMINARY NOT RELEASED
3/16/2021

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C1.1

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION A: SELF-INSPECTION

Self-inspections are required during normal business hours in accordance with the table below. When adverse weather or site conditions would cause the safety of the inspection personnel to be in jeopardy, the inspection may be delayed until the next business day on which it is safe to perform the inspection. In addition, when a storm event of equal to or greater than 1.0 inch occurs outside of normal business hours, the self-inspection shall be performed upon the commencement of the next business day. Any time when

Inspect	Frequency (during normal business hours)	Inspection records must include:
(1) Rain gauge maintained in good working order	Daily	Daily rainfall amounts. If no daily rain gauge observations are made during weekend or holiday periods, and no individual-day rainfall information is available, record the cumulative rain measurement for those un-attended days (and this will determine if a site inspection is needed). Days on which no rainfall occurred shall be recorded as "zero." The permittee may use another rain-monitoring device approved by the Division.
(2) E&SC Measures	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the measures inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Indication of whether the measures were operating properly, 5. Description of maintenance needs for the measure, 6. Description, evidence, and date of corrective actions taken.
(3) Stormwater discharge outfalls (SDOs)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the discharge outfalls inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Evidence of indicators of stormwater pollution such as oil sheen, floating or suspended solids or discoloration, 5. Indication of visible sediment leaving the site, 6. Description, evidence, and date of corrective actions taken.
(4) Perimeter of site	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If visible sedimentation is found outside site limits, then a record of the following shall be made: 1. Actions taken to clean up or stabilize the sediment that has left the site limits, 2. Description, evidence, and date of corrective actions taken, and 3. An explanation as to the actions taken to control future releases.
(5) Streams or wetlands onsite or offsite (where accessible)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If the stream or wetland has increased visible sedimentation or a stream has visible increased turbidity from the construction activity, then a record of the following shall be made: 1. Description, evidence and date of corrective actions taken, and 2. Records of the required reports to the appropriate Division Regional Office per Part III, Section C, Item (2)(a) of this permit of this permit.
(6) Ground stabilization measures	After each phase of grading	1. The phase of grading (installation of perimeter E&SC measures, clearing and grubbing, installation of storm drainage facilities, completion of all land-disturbing activity, construction or redevelopment, permanent ground cover). 2. Documentation that the required ground stabilization measures have been provided within the required timeframe or an assurance that they will be provided as soon as possible.

NOTE: The rain inspection resets the required 7 calendar day inspection requirement.

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION B: RECORDKEEPING

1. E&SC Plan Documentation

The approved E&SC plan as well as any approved deviation shall be kept on the site. The approved E&SC plan must be kept up-to-date throughout the coverage under this permit. The following items pertaining to

Item to Document	Documentation Requirements
(a) Each E&SC Measure has been installed and does not significantly deviate from the locations, dimensions and relative elevations shown on the approved E&SC Plan.	Initial and date each E&SC Measure on a copy of the approved E&SC Plan or complete, date and sign an inspection report that lists each E&SC Measure shown on the approved E&SC Plan. This documentation is required upon the initial installation of the E&SC Measures or if the E&SC Measures are modified after initial installation.
(b) A phase of grading has been completed.	Initial and date a copy of the approved E&SC Plan or complete, date and sign an inspection report to indicate completion of the construction phase.
(c) Ground cover is located and installed in accordance with the approved E&SC Plan.	Initial and date a copy of the approved E&SC Plan or complete, date and sign an inspection report to indicate compliance with approved ground cover specifications.
(d) The maintenance and repair requirements for all E&SC Measures have been performed.	Complete, date and sign an inspection report.
(e) Corrective actions have been taken to E&SC Measures.	Initial and date a copy of the approved E&SC Plan or complete, date and sign an inspection report to indicate the completion of the corrective action.

2. Additional Documentation

In addition to the E&SC Plan documents above, the following items shall be kept on the site and available for agency inspectors at all times during normal business hours, unless the Division provides a site-specific exemption based on unique site conditions that make this requirement not practical:

(a) This general permit as well as the certificate of coverage, after it is received.

(b) Records of inspections made during the previous 30 days. The permittee shall record the required observations on the Inspection Record Form provided by the Division or a similar inspection form that includes all the required elements. Use of electronically-available records in lieu of the required paper copies will be allowed if shown to provide equal access and utility as the hard-copy records.

(c) All data used to complete the Notice of Intent and older inspection records shall be maintained for a period of three years after project completion and made available upon request. [40 CFR 122.41]

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION C: REPORTING

1. Occurrences that must be reported

Permittees shall report the following occurrences:

(a) Visible sediment deposition in a stream or wetland.

(b) Oil spills if:
- They are 25 gallons or more,
- They are less than 25 gallons but cannot be cleaned up within 24 hours,
- They cause sheen on surface waters (regardless of volume), or
- They are within 100 feet of surface waters (regardless of volume).

(a) Releases of hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act (Ref: 40 CFR 110.3 and 40 CFR 117.3) or Section 102 of CERCLA (Ref: 40 CFR 302.4) or G.S. 143-215.85.

(b) Anticipated bypasses and unanticipated bypasses.

(c) Noncompliance with the conditions of this permit that may endanger health or the environment.

Occurrence	Reporting Timeframes (After Discovery) and Other Requirements
(a) Visible sediment deposition in a stream or wetland	• ***Within 24 hours***, an oral or electronic notification. • ***Within 7 calendar days***, a report that contains a description of the sediment and actions taken to address the cause of the deposition. Division staff may waive the requirement for a written report on a case-by-case basis. • If the stream is named on the NC 303(d) list as impaired for sediment-related causes, the permittee may be required to perform additional monitoring, inspections or apply more stringent practices if staff determine that additional requirements are needed to assure compliance with the federal or state impaired-waters conditions.
(b) Oil spills and release of hazardous substances per Item 1(b)-(c) above	• ***Within 24 hours***, an oral or electronic notification. The notification shall include information about the date, time, nature, volume and location of the spill or release.
(c) Anticipated bypasses [40 CFR 122.41(m)(3)]	• ***A report at least ten days before the date of the bypass, if possible***. The report shall include an evaluation of the anticipated quality and effect of the bypass.
(d) Unanticipated bypasses [40 CFR 122.41(m)(3)]	• ***Within 24 hours***, an oral or electronic notification. • ***Within 7 calendar days,*** a report that includes an evaluation of the quality and effect of the bypass.
(e) Noncompliance with the conditions of this permit that may endanger health or the environment[40 CFR 122.41(l)(7)]	• ***Within 24 hours***, an oral or electronic notification. • ***Within 7 calendar days***, a report that contains a description of the noncompliance, and its causes; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time noncompliance is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. [40 CFR 122.41(l)(6). • Division staff may waive the requirement for a written report on a case-by-case basis.

NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING

EFFECTIVE: 04/01/19

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NC LICENSE# C-1073

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL JASON R. CARMICHAEL

PRELIMINARY NOT RELEASED

3/16/2021

Cape Fear Community College Electric Lineworker Overhead & Underground Training Facility

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Project No: 20-21668-01A

Construction Documents
January 22, 2021

Revisions:

General Notes

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C1.2

I Richard A. Pickham certify that this topographic drawing was drawn from an actual survey made under my supervision and that it is accurate to the requirements of the Standards of Practice of Land Surveying in North Carolina, and meets or exceeds the requirements for a class "A" survey as specified therein.

Witness my hand and seal this 15th day of May, 2020

Richard A. Pickham L-4646

PROFESSIONAL LAND SURVEYING SERVICES BY:

ESP ASSOCIATES, INC.

GEOMATICS • MOBILE • HYDROGRAPHIC • SUBSURFACE

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Wilmington, North Carolina 28403
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NORTH CAMPUS
CAPE FEAR COMMUNITY COLLEGE
TOPOGRAPHIC SURVEY FOR
LINEMAN FACILITY PROJECT
CAPE FEAR TOWNSHIP
NEW HANOVER COUNTY, NORTH CAROLINA

BOOK:
DATE: 05/15/20
SCALE: 1"= 40'
20 0 20 40 60
SCALE IN FEET
CREW: JB
DRAWN BY: JB
R.O.P.= 1:10,000+

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910 762-0892 s2a3.com

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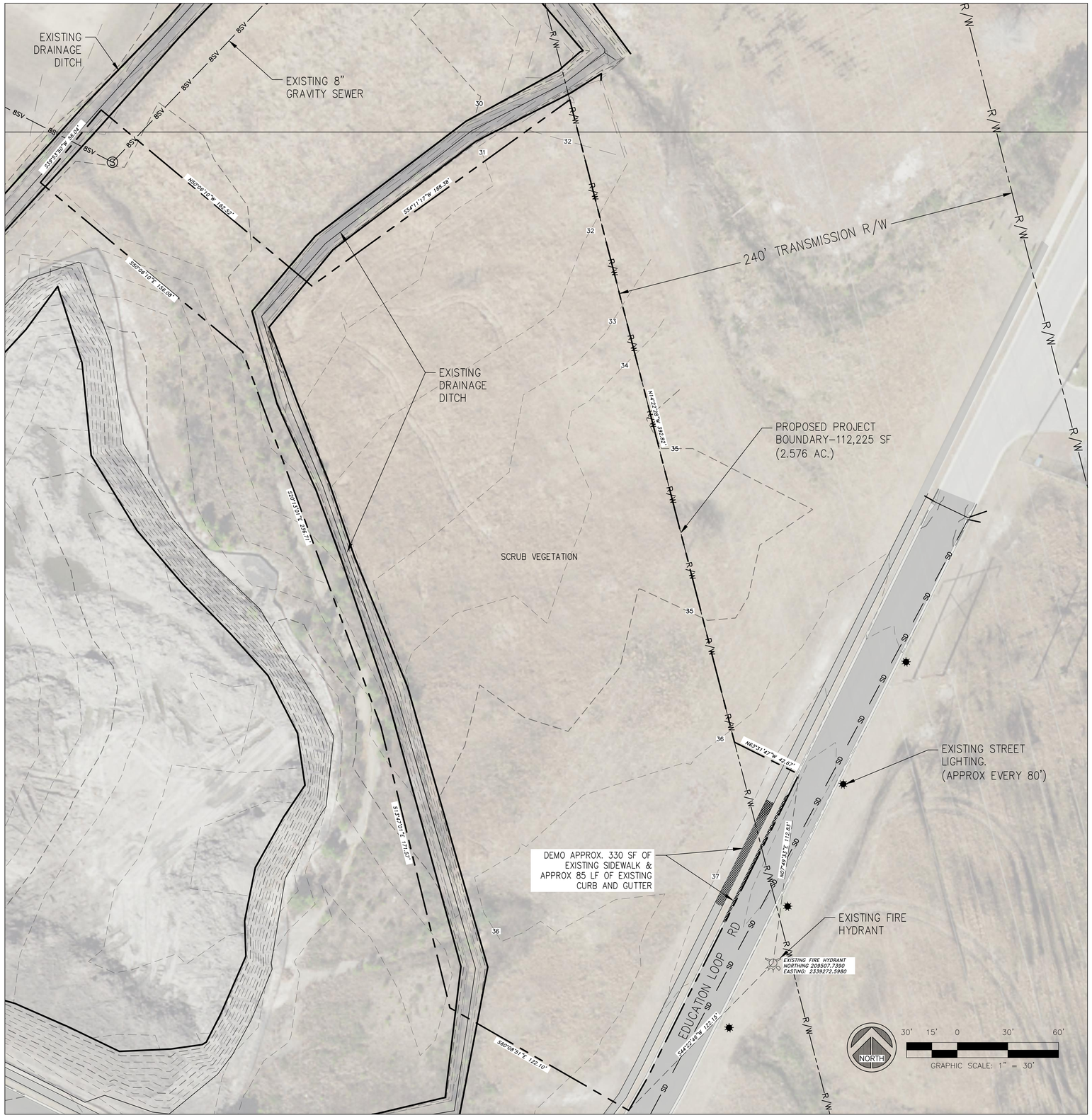
Site Survey

V1.0



CFCC CAMPUS MAP–N.T.S.

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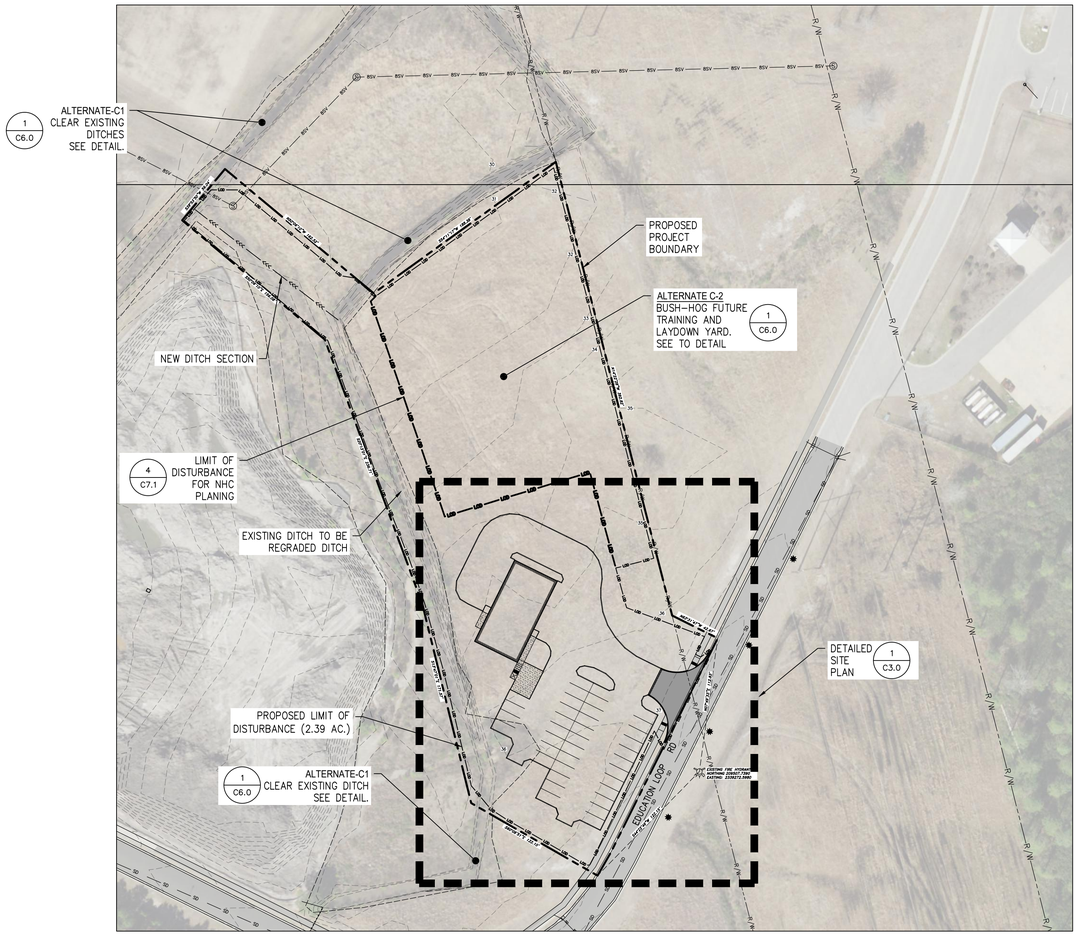
Revisions:

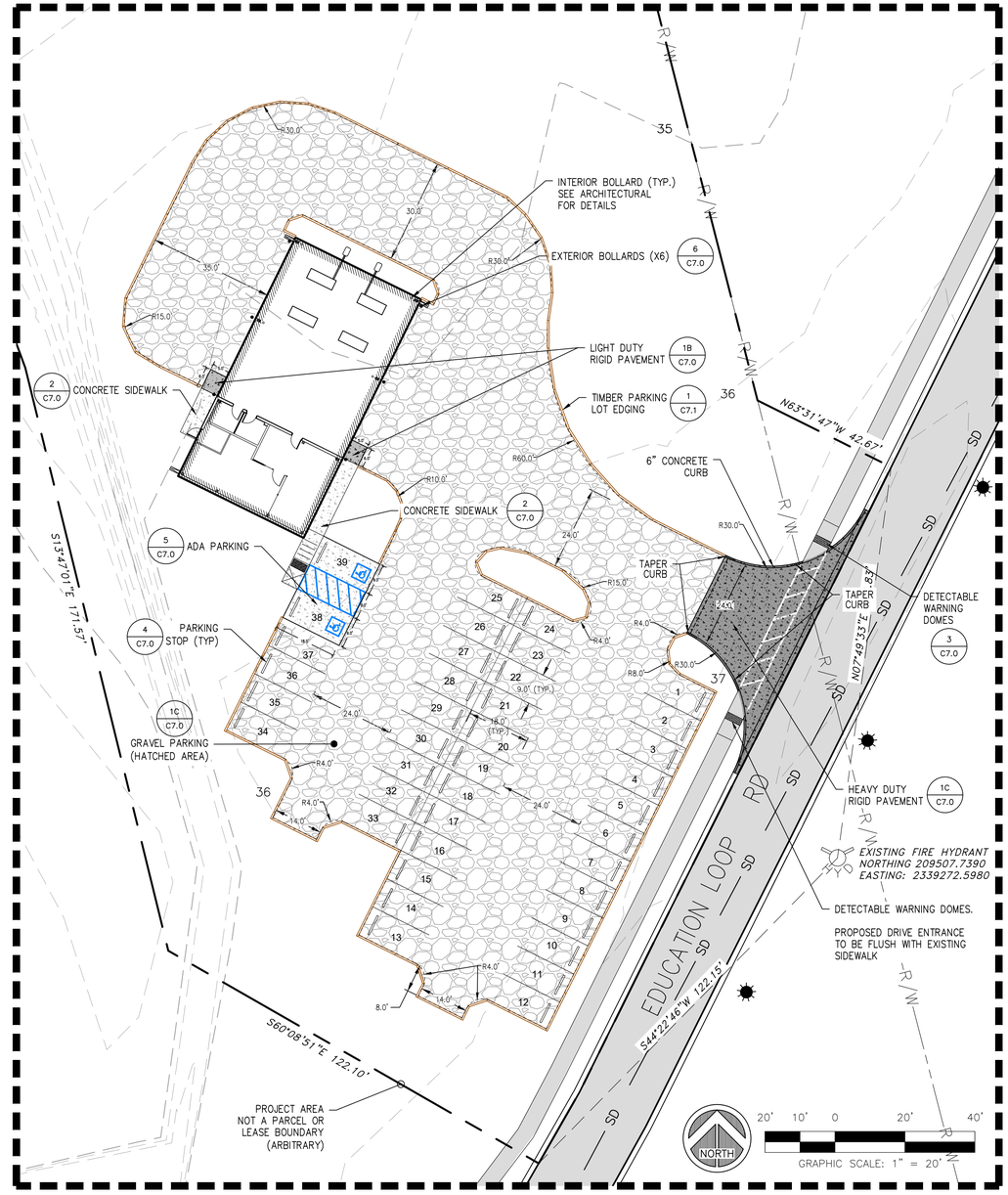
Existing Conditions & Demo Plan

C2.0



SITE CONTEXT MAP

SCALE: 1" = 60'



SITE PLAN

1 C3.0

FIRE AND LIFE SAFETY NOTES

CONTRACTOR SHALL SUBMIT A RADIO SIGNAL STRENGTH STUDY THAT DEMONSTRATES THAT THE EXISTING EMERGENCY RESPONDER RADIO SIGNAL LEVELS MEET THE REQUIREMENTS OF SECTION 510 OF THE NC FIRE CODE.

STORMWATER NOTE:

CAPE FEAR COMMUNITY COLLEGE IS UNDER AN EXISTING NCDEQ PERMIT (SW8 990923). THE PROPOSED SITE IS WITHIN THE OVERALL DRAINAGE BASIN FOR POND #1 AND UTILITIES A PORTION OF THE PERMITTED FUTURE ALLOCATION FOR THAT POND. THE PERMITTED FUTURE IMPERVIOUS ALLOCATION OF FOR POND #1 IS 1,103,083 SF. THE PROPOSED SITE USES 69,855 SF OF THAT FUTURE IMPERVIOUS AREA.

SITE DATA

PARCEL ID:	R02600-004-005-000
DEED BOOK/PAGE:	BK005403 PG002053
ADDRESS:	3210 EDUCATION LOOP RD.
CURRENT OWNER:	CAPE FEAR COMMUNITY COLLEGE 411 N. FRONT ST. WILMINGTON, NC 28401
MUNICIPALITY:	NHC
ZONING:	O&I
CURRENT USE:	UNUSED
PROPOSED USE:	821-SCHOOL LINEMAN TRAINING
PROJECT AREA:	2.576 ACRES
WETLANDS:	NONE
SOILS:	Stallings fine Murville fine (SEE MAP SHEET G-01)
FLOOD DATA:	ZONE X-PANEL # 3720323000K eff. 8/28/2018

DEVELOPMENT DATA

O&I SETBACKS:

	ALLOWED	PROP.
FRONT SETBACK:	25'	x
SIDE SETBACK:	NOT REQ'D	SEE BELOW
REAR SETBACK:	NOT REQ'D	SEE BELOW

3.1.3 C. NO INTERIOR SIDE OR REAR SETBACKS ARE REQ'D FOR NON-RESIDENTIAL STRUCTURES FROM LOT LINES SHARED WITH ABUTTING NON-RESIDENTIAL USES WHERE THE STRUCTURE AND THE ABUTTING USE ARE LOCATED WITHIN THE B-1, B-2, O&I, AC, I-1, and I-2 DISTRICTS.

MIN. LOT AREA	15,000 SF MIN.	
MIN. LOT WIDTH	90 LF	
MAX COVERAGE	50%	9.2%
MAX HEIGHT	52'	20'

REQUIRED PARKING:
VOCATIONAL / TRADE SCHOOL 3 SPACES/1,000 SF GFA
3,050 SF BLDG = 9 SPACES

PROPOSED PARKING: 39 SPACES (INCL 2 HC)

PROP. WATER & SEWER NEEDS:
SEE PLUMBING PLANS

PROJECT AREA IMPERVIOUS

IMPERVIOUS AREA	EXISTING	DEMO	NEW	AFTER DEV.
ON-SITE BUILDINGS	NONE	N/A	3,050 SF	3,050 SF
ON-SITE STREETS (C&G)	340 SF	170 SF	NONE	170 SF
ON-SITE PARKING (GRAVEL)	NONE	N/A	21,340 SF	21,340 SF
ON-SITE PARKING (PAVED)	NONE	N/A	470 SF	470 SF
ON-SITE SIDEWALK	1,085 SF	230 SF	330 SF	1,185 SF
ON-SITE D/W APRON	NONE	N/A	1,245 SF	1,245 SF
OTHER ON-SITE (TRAINING YARD)	NONE	N/A	43,820 SF	43,820 SF
FUTURE ON-SITE	NONE	N/A	NONE	NONE
OFF-SITE	NONE	N/A	NONE	NONE
TOTAL	1,425 SF	400 SF	70,255 SF	71,280 SF
PROJECT AREA DENSITY	1.27%	N/A	N/A	63.52%

Certificate of Approval - New Hanover County Planning & Land Use

03/18/2021

Date

Administrator

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WWW.CHEATHAMPA.COM
NC LICENSE# C-1073

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL JASON R. CARMICHAEL

PRELIMINARY NOT RELEASED

3/16/2021

Cape Fear Community College Electric Lineworker Overhead & Underground Training Facility

4500 Blue Clay Road
Castle Hayne, NC 28429

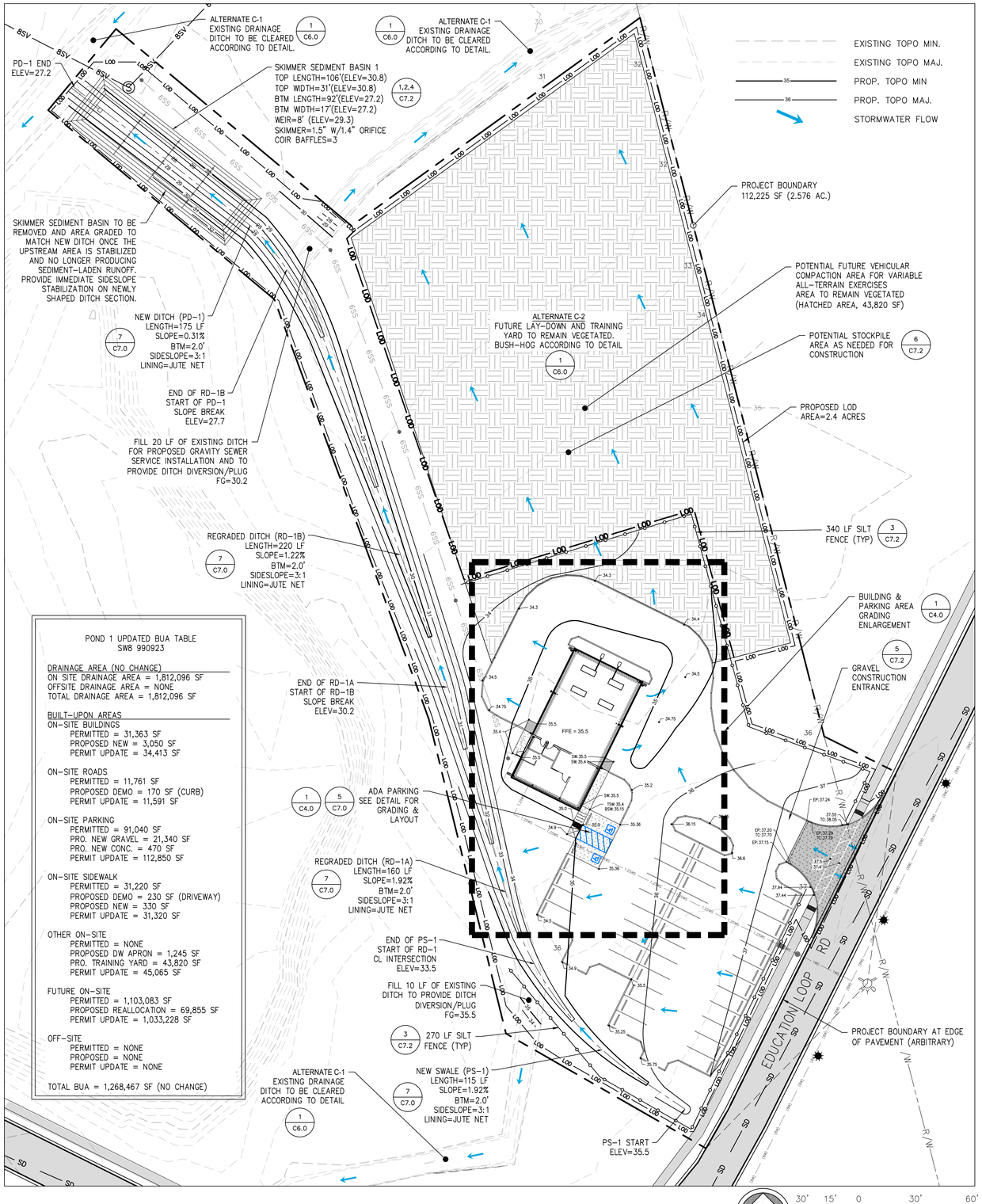
Project No: 20-21668-01A

Construction Documents
January 22, 2021

Revisions:

Site Plan

C3.0



POND 1 UPDATED BUA TABLE
SWB 990923

DRAINAGE AREA (NO CHANGE)
ON SITE DRAINAGE AREA = 1,812,096 SF
OFFSITE DRAINAGE AREA = NONE
TOTAL DRAINAGE AREA = 1,812,096 SF

BUILT-UPON AREAS
ON-SITE BUILDINGS
PERMITTED = 31,363 SF
PROPOSED NEW = 3,050 SF
PERMIT UPDATE = 34,413 SF

ON-SITE ROADS
PERMITTED = 11,761 SF
PROPOSED DEMO = 170 SF (CURB)
PERMIT UPDATE = 11,591 SF

ON-SITE PARKING
PERMITTED = 91,040 SF
PRO. NEW GRAVEL = 21,340 SF
PRO. NEW CONC. = 470 SF
PERMIT UPDATE = 112,850 SF

ON-SITE SIDEWALK
PERMITTED = 31,220 SF
PROPOSED DEMO = 230 SF (DRIVEWAY)
PROPOSED NEW = 330 SF
PERMIT UPDATE = 31,320 SF

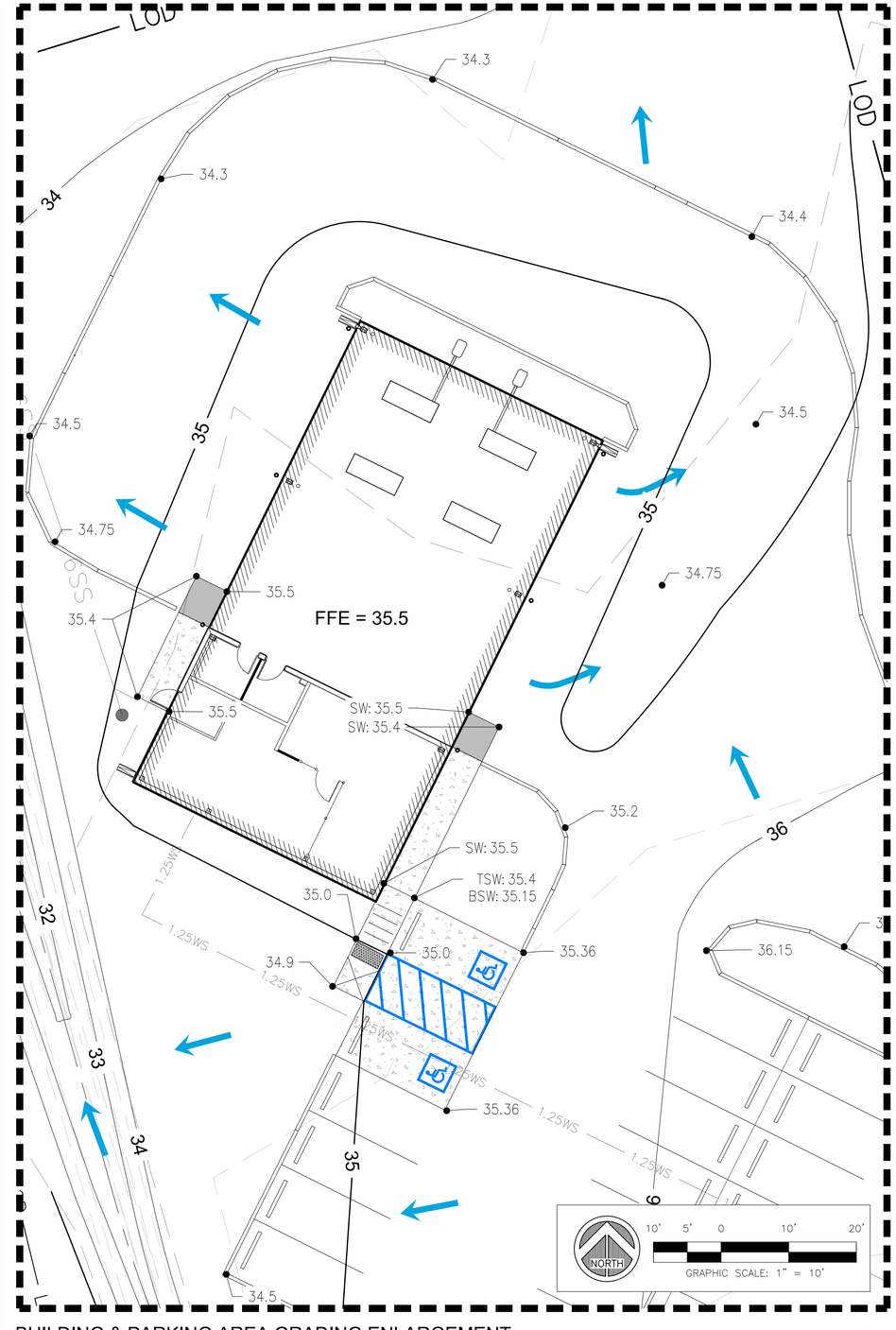
OTHER ON-SITE
PERMITTED = NONE
PROPOSED DW APRON = 1,245 SF
PRO. TRAINING YARD = 43,820 SF
PERMIT UPDATE = 45,065 SF

FUTURE ON-SITE
PERMITTED = 1,103,083 SF
PROPOSED REALLOCATION = 69,855 SF
PERMIT UPDATE = 1,033,228 SF

OFF-SITE
PERMITTED = NONE
PROPOSED = NONE
PERMIT UPDATE = NONE

TOTAL BUA = 1,268,467 SF (NO CHANGE)

GRADING PLAN



BUILDING & PARKING AREA GRADING ENLARGEMENT
1 C4.0

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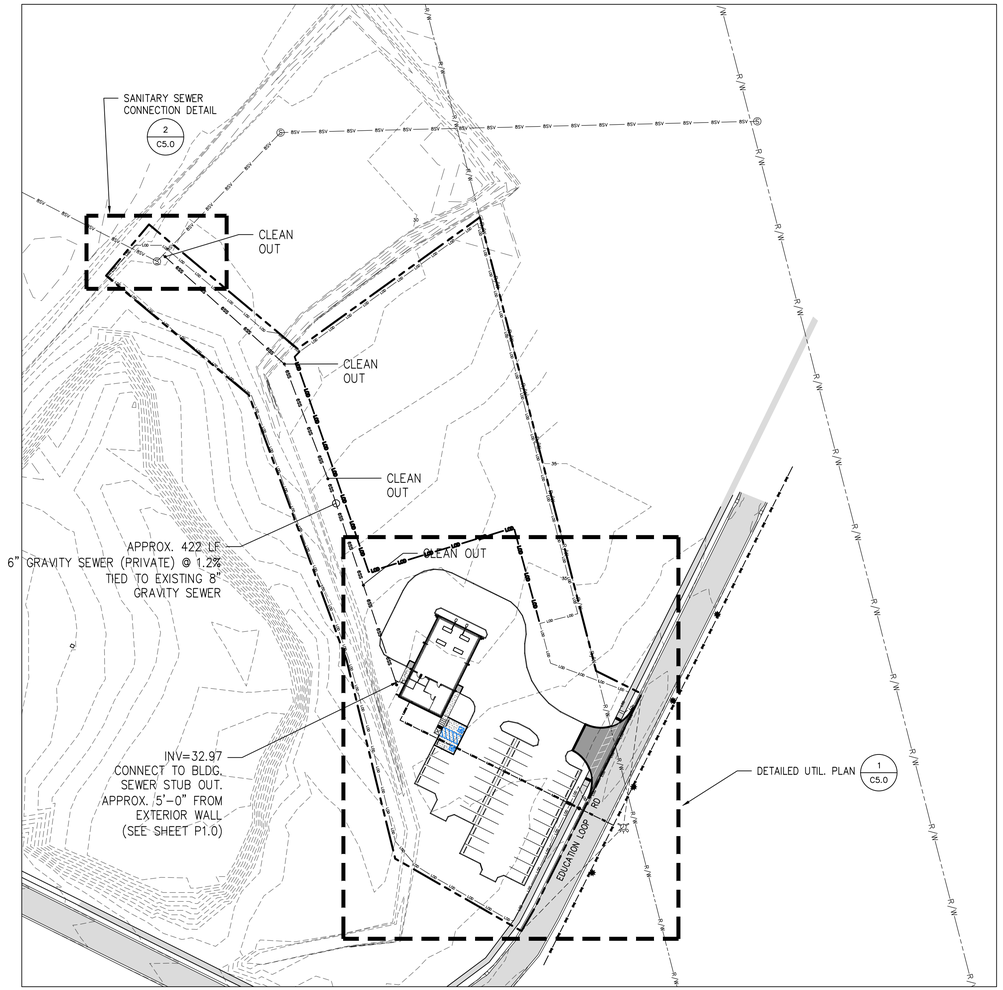
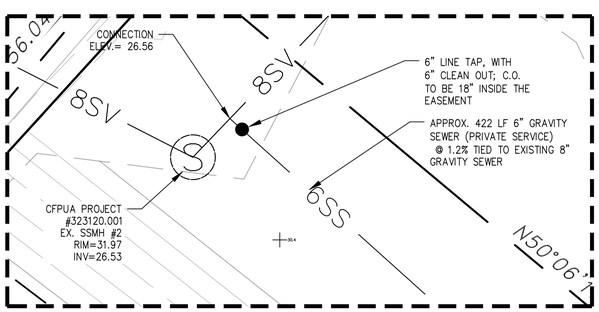
C4.0



SITE CONTEXT MAP

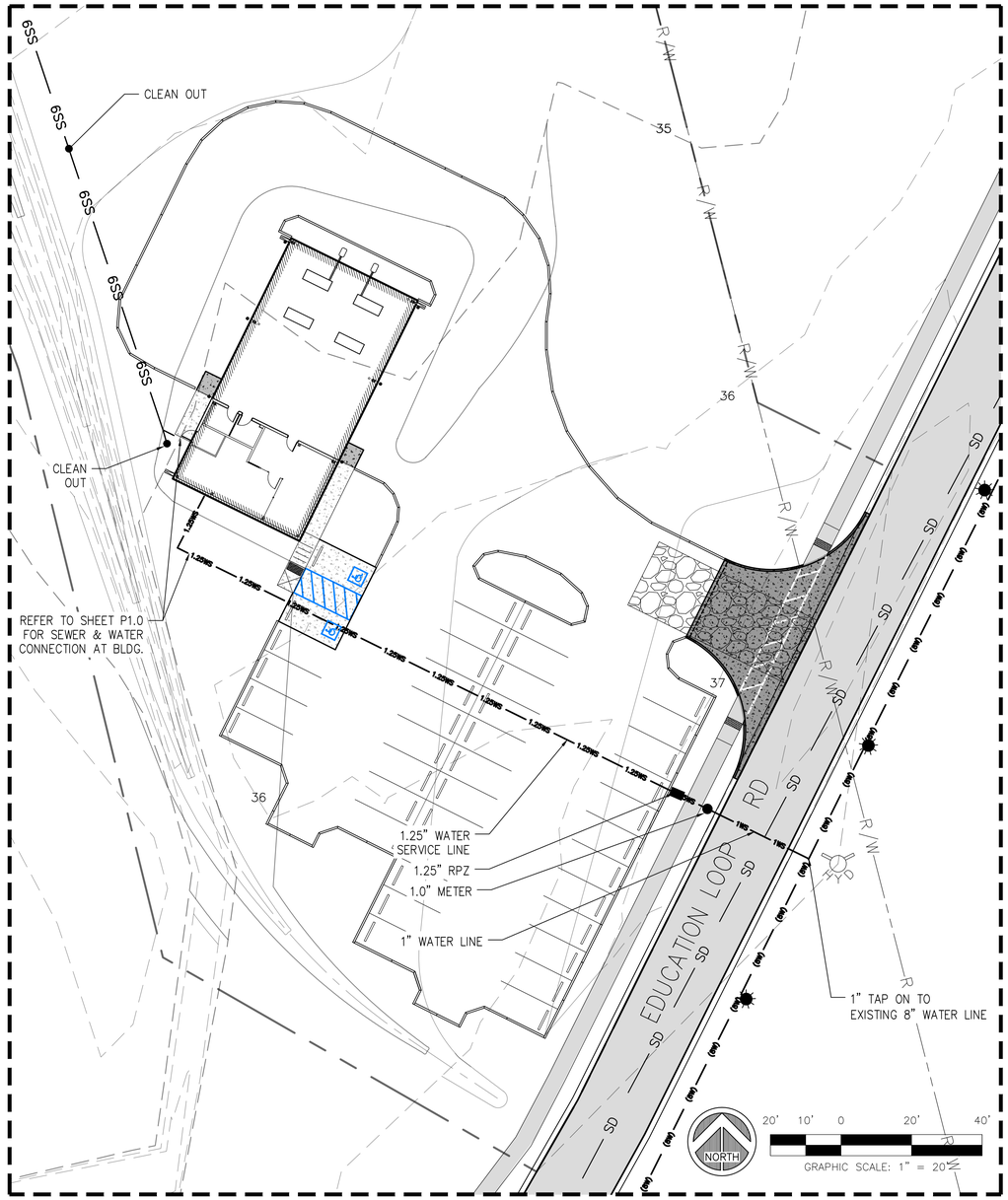
SCALE: 1" = 60'



SANITARY SEWER CONNECTION DETAIL

SCALE: 1" = 10'

2
C5.0



UTILITY PLAN

1
C5.0

UTILITY NOTES:

1. ALL UNDERGROUND LINES OUTSIDE THE BUILDING FOOTPRINT, EXCEPT LAWN IRRIGATION LINES, SHALL BE REQUIRED TO HAVE A WARNING TAPE INSTALLED IN THE BACKFILL BETWEEN 6–24" BELOW FINISHED GRADE DIRECTLY OVER PIPING.
2. METALLIC LINES SHALL BE IDENTIFIED WITH DURABLE PRINTED PLASTIC WARNING TAPES, MIN. 3" WIDE WITH LETTERING TO IDENTIFY BURIED LINE BELOW.
3. NON–METALLIC PIPES, OTHER THAN GAS LINES, SHALL BE IDENTIFIED BY DETECTABLE WARNING TAPE, MIN. 2" WIDE, WITH LETTERING TO IDENTIFY BURIED LINE BELOW.
4. FOR PLASTIC SEWER PIPING , AN INSULATED COPPER TRACER WIRE OR OTHER APPROVED CONDUCTOR SHALL BE INSTALLED ADJACENT TO AND OVER THE FULL LENGTH OF THE PIPING. ACCESS SHALL BE PROVIDED TO THE TRACER WIRE OR THE TRACER WIRE SHALL TERMINATE AT THE CLEANOUT BETWEEN THE BUILDING DRAIN AND BUILDING SEWER. THE TRACER WIRE SHALL BE NO LESS THAN 14 AWG AND THE INSULATION TYPE SHALL BE LISTED FOR DIRECT BURIAL.

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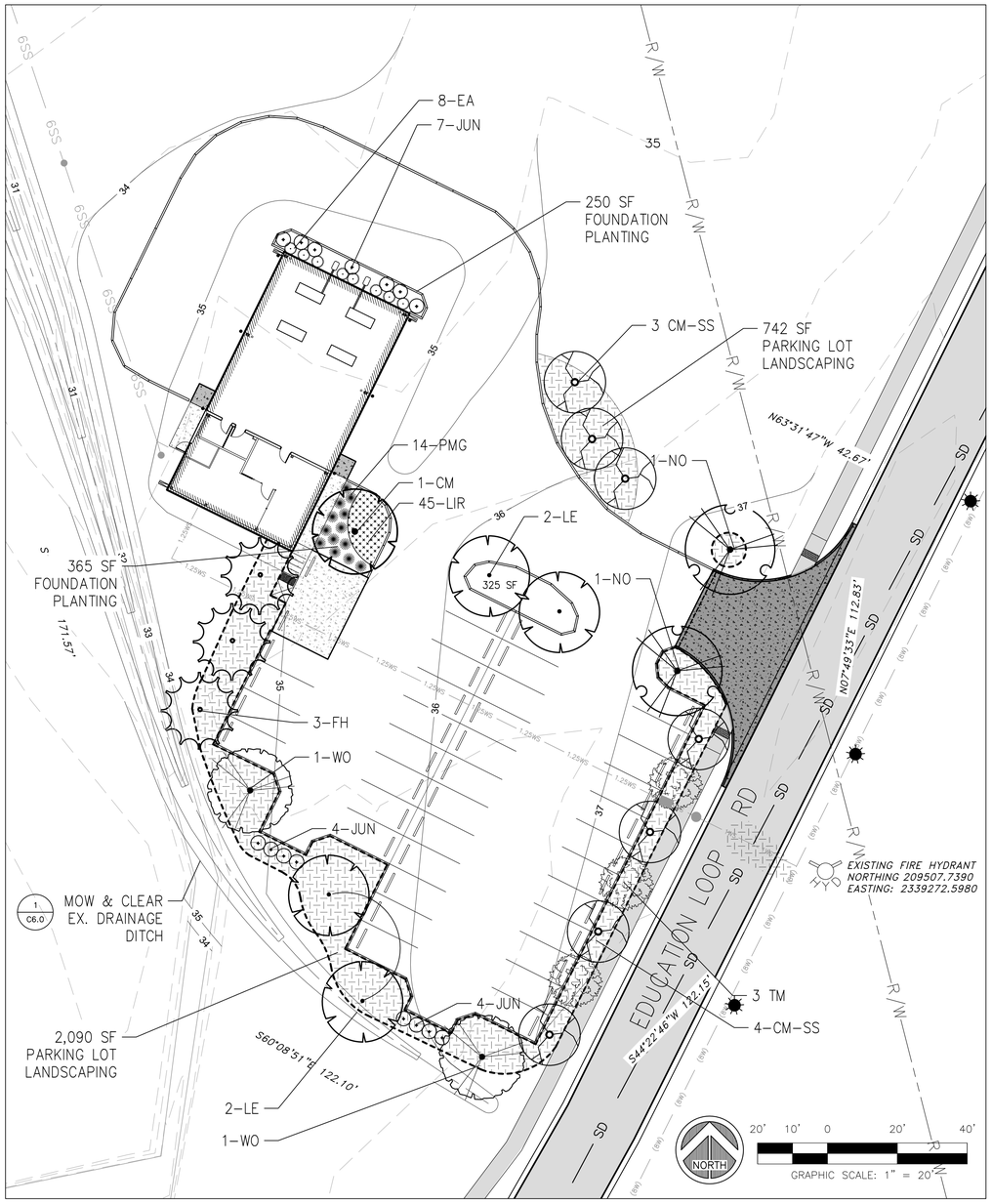
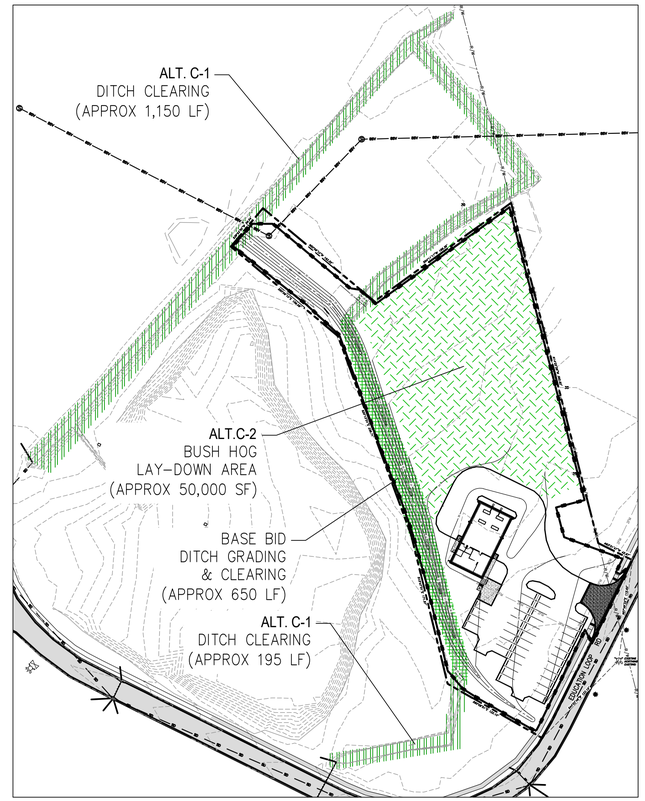


LANDSCAPE PLAN



DRAINAGE DITCH CLEARING & ALTERNATE C-2 BUSH HOG AREAS (1 / C6.0)
SCALE: 1" = 100'

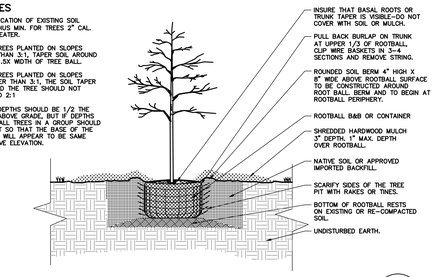
NOTES

SCARFICATION OF EXISTING SOIL 3' RADIUS MIN. FOR TREES 2" CAL. OR GREATER.

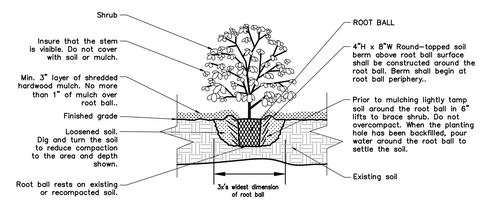
FOR TREES PLANTED ON SLOPES LESS THAN 3:1, TAPER SOIL AROUND TREE 1.5X WIDTH OF TREE BALL.

FOR TREES PLANTED ON SLOPES GREATER THAN 3:1, THE SOIL TAPER AROUND THE TREE SHOULD NOT EXCEED 2:1

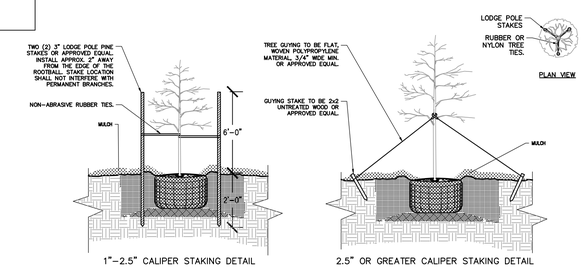
BALL DEPTHS SHOULD BE 1/2 THE BALL ABOVE GRADE, BUT 8" DEPTHS VARY ALL TREES IN A GROUP SHOULD BE SET SO THAT THE BASE OF THE TRUNK WILL APPEAR TO BE SAME RELETIVE ELEVATION.



TREE PLANTING DETAIL (2 / C6.0)
NTS



SHRUBS PLANTING DETAIL (3 / C6.0)
NTS



STAKING DETAILS - LARGE AND SMALL (4 / C6.0)
NTS

LANDSCAPE SCHEDULE

CODE	QUAN.	COMMON NAME	BOTANICAL NAME	CAL.	HT.	ROOT	REMARKS
			LARGE SHADE TREES				
LE	4	Lacebark Elm	Ulmus parvifolia	2.5"		B&B	
FH	3	Fosters Holly	Ilex x attenuata 'Fosteri'	2.5"		B&B	
WO	2	Hightower Willow Oak	Quercus phellos 'QPSTA' P.P.#13,677	2.5"		B&B	
NO	2	Nuttall Oak	Quercus nuttallii	2.5"		B&B	
TM	3	Trident Maple	Acer buergerianum	2"		B&B	
CM-SS	7	Crape Myrtle (Single Stem)	Lagerstroemia indica x fauriei 'Natchez'	2"		B&B	SINGLE STEM
			SMALL SHADE TREES				
CM	1	Natchez Crape Myrtle	Lagerstroemia indica x fauriei 'Natchez'		8-10'		
			SHRUBS				
JUN	15	Grey Owl Juniper	Juniperus virginiana 'Grey Owl'			3 Gal.	
PMG	18	Pink Muhly Grass	Muhlenbergia capillaris			3 Gal.	
EA	8	Emerald Arborvitae	Thuja occidentalis 'Smaragd'			10 Gal.	
LIR	45	Super Blue Liriope	Liriope muscari 'Super Blue'			1 Gal.	

MULCH BEDS (~4,000 SF)

LANDSCAPE CALCULATIONS

LANDSCAPED AREA	CODE CITED	REQUIRED QUAN.	PROV.QUAN
PARKING LOT LANDSCAPING	P.LOT INTERIOR LANDSCAPING SHALL BE EQUAL TO 8% OF TOTAL AREA USED FOR PARKING.	21,052 sf x 0.08 = 1,684 SF INTERIOR LANDSCAPE REQ'D	3,157 SF INTERIOR LANDSCAPING
	1 PLANTED OR EX. TREE SHALL BE REQ'D FOR EVERY 144 SF OF TOTAL INTERIOR LANDSCAPED AREA, MIN. 1/ISLAND. 75% OF TREES REQ'D SHALL BE CANOPY, MIN 3" CAL.	1,684/144 = 12 TREES	10- - CANOPY TREES 2 - UNDERSTORY TREE
STREETYARD	P.LOT IS INTERIOR TO THE CAMPUS PARCEL, NO R/W AND NO STREETYARD REQUIRED	N/A	N/A
FOUNDATION PLANTINGS	FOUNDATION PLANTING AREA SHALL BE A MIN. OF 12% OF THE AREA OF THE BLDG. FACE ADJ. TO THE PARKING AREA & INTERNAL DRIVE. PORTIONS OF BLDGS. WITH DRIVE-UP SERVICES ARE EXEMPT FROM THESE REQ.	520 sf x 0.12 = 63 SF OF REQUIRED FOUNDATION LANDSCAPING	500 SF FOUNDATION LANDSCAPING PROVIDED
TREE PLANTING	5.4.3.C MIN. 15 TREES 2" CAL. MUST BE RETAINED OR PLANTED ON THE PARCEL FOR EACH ACRE OF DISTURBED AREA.	LOD=1.45 ACRES 1.45 x 15 = 22 22 TREES (2" DBH MIN)	22 TREES (2" DBH MIN)

SEE SHEET C1.0 FOR GENERAL LANDSCAPE & SOIL PREPARATION NOTES.

Certificate of Approval - New Hanover County Planning & Land Use

03/18/2021
Date

Administrator

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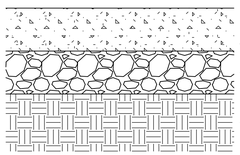
C6.0

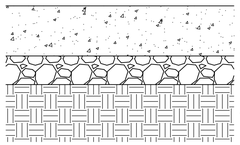


HEAVY-DUTY RIGID PAVEMENT
(DRIVEWAY APRON)
SECTION A

7" PORTLAND CEMENT CONCRETE (4,000 PSI 28-DAY COMPRESSIVE STRENGTH)

6" ABC STONE BASE: COMPACT TO AT LEAST 98% OF NUCLEAR TARGET DENSITY, OR EQUAL TO OR GREATER THAN 100% OF DENSITY OBTAINED BY COMPACTION OF SAMPLE IN ACCORDANCE WITH AASHTO T 180.

SUBGRADE: COMPACT TO A DEPTH OF AT LEAST 8" BELOW THE FINISHED SURFACE OF THE SUBGRADE TO A DENSITY EQUAL TO AT LEAST 100% OF THAT OBTAINED BY COMPACTING A SAMPLE OF THE MATERIAL IN ACCORDANCE WITH AASHTO T 99.

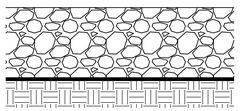


LIGHT-DUTY RIGID PAVEMENT
(PARKING PAD)
SECTION B

5" REINFORCED,PORTLAND CEMENT CONCRETE (4,000 PSI 28-DAY COMPRESSIVE STRENGTH)

4" ABC STONE BASE: COMPACT TO AT LEAST 98% OF NUCLEAR TARGET DENSITY, OR EQUAL TO OR GREATER THAN 100% OF DENSITY OBTAINED BY COMPACTION OF SAMPLE IN ACCORDANCE WITH AASHTO T 180.

SUBGRADE: COMPACT TO A DEPTH OF AT LEAST 8" BELOW THE FINISHED SURFACE OF THE SUBGRADE TO A DENSITY EQUAL TO AT LEAST 100% OF THAT OBTAINED BY COMPACTING A SAMPLE OF THE MATERIAL IN ACCORDANCE WITH AASHTO T 99.



GRAVEL PARKING LOT
SECTION C

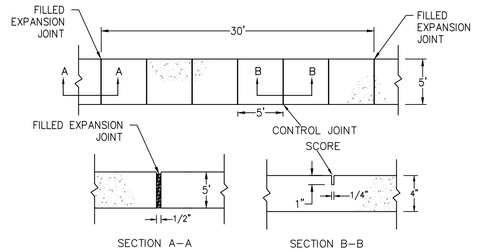
12" ABC STONE BASE: COMPACT TO AT LEAST 98% OF NUCLEAR TARGET DENSITY, OR EQUAL TO OR GREATER THAN 100% OF DENSITY OBTAINED BY COMPACTION OF SAMPLE IN ACCORDANCE WITH AASHTO T 180.

GEOTEXTILE FABRIC

SUBGRADE: COMPACT TO A DEPTH OF AT LEAST 4" BELOW THE FINISHED SURFACE OF THE SUBGRADE TO A DENSITY EQUAL TO AT LEAST 100% OF THAT OBTAINED BY COMPACTING A SAMPLE OF THE MATERIAL IN ACCORDANCE WITH AASHTO T 99.

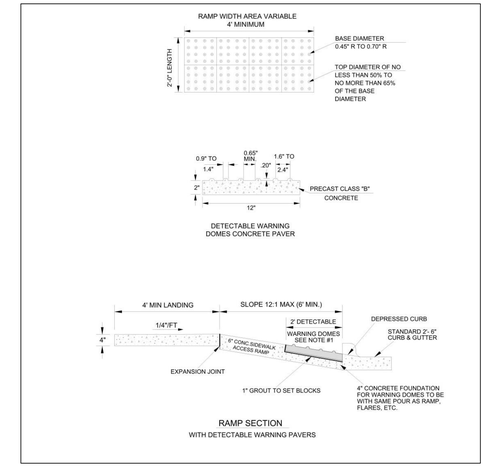
OR AS DIRECTED BY THE GEOTECHNICAL ENGINEER BASED UPON SITE SPECIFIC TESTING AND CONDITIONS. ADDITIONAL DEPTH, COMPACTION, OR STABILIZATION METHODS MAY BE REQUIRED BASED UPON THE RESULTS OF SITE SPECIFIC GEOTECHNICAL TESTING TO ENSURE PROPER COMPACTION.

PAVEMENT SECTION DETAILS
NOT TO SCALE
1 / C7.0

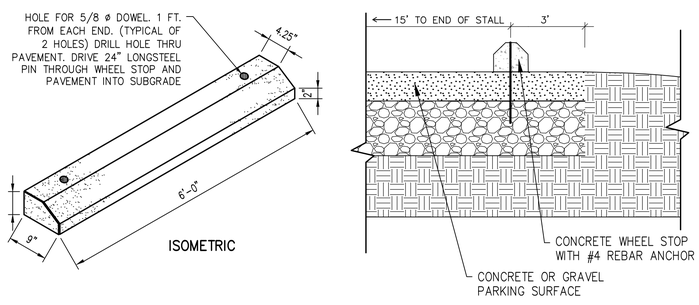


NOTES:
1. JOINT MATERIALS TO COMPLY WITH CURRENT NCDOT STANDARDS.
2. SANITARY SEWER CLEANOUTS, WATER METERS, MANHOLES, AND VALVE LIDS TO BE LOCATED OUTSIDE THE SIDEWALK WHERE FEASIBLE.
3. MINIMUM SIDEWALK WIDTH TO BE 6' IF PLACED AT BACK OF CURB.
4. CONCRETE FOR ALL SIDEWALKS (EXCEPT ANY PORTION CONTAINED WITHIN A DRIVEWAY) SHALL BE CLASS "A" – 3,000 PSI.
5. MINIMUM REPLACEMENT FOR REPAIRS IS A 5'x5' PANEL.
6. 4-INCH STONE BASE MAY BE REQUIRED FOR POOR SOIL CONDITIONS AS DIRECTED BY GEOTECHNICAL RECOMMENDATIONS.
7. MINIMUM SEPARATION FOR TUNNELING BELOW SIDEWALK IS 12-INCHES.
8 MAXIMUM ADJACENT GROUND SLOPE WITHOUT RAILING IS 2:1.
9. MINIMUM GRADE FOR PROPER DRAINAGE IS 1% IN AT LEAST 1 DIRECTION. MAXIMUM CROSS-SLOPE IS 2%. MAXIMUM LONGITUDINAL SLOPE IS 8.3%, 10% IF LIMITED BY EXISTING CONDITIONS, OR NO GREATER THAN THAT OF THE EXISTING ADJACENT ROAD.

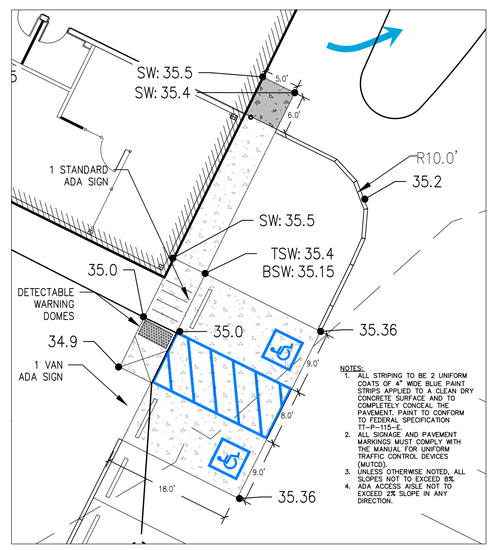
TYPICAL SIDEWALK DETAIL
NOT TO SCALE
2 / C7.0



DETECTABLE WARNING DOME DETAIL
NOT TO SCALE
3 / C7.0

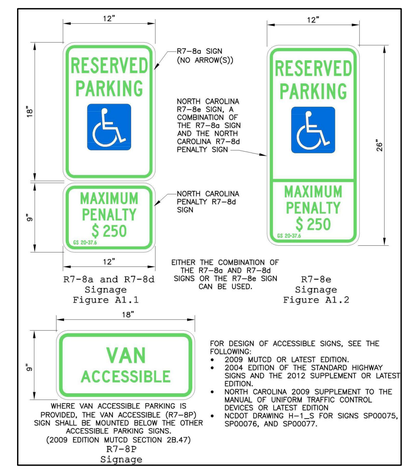


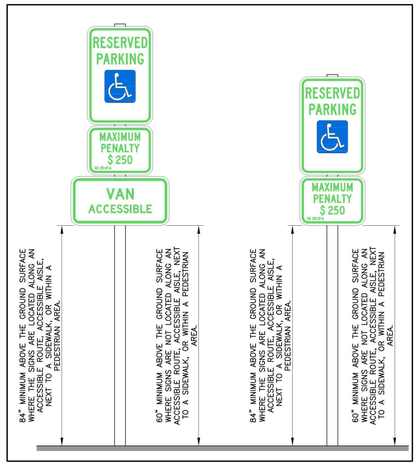
CONCRETE WHEEL STOP
NOT TO SCALE
4 / C7.0

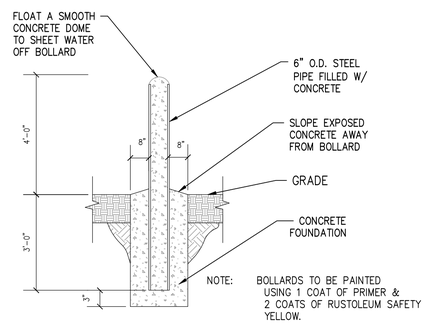


NOTES:
1. ALL STRIPING TO BE 2 UNIFORM COATS OF 4" WIDE BLUE PAINT STRIPS APPLIED TO A CLEAN DRY CONCRETE SURFACE AND TO COMPLETELY CONCEAL THE PAVEMENT. PAINT TO CONFORM TO FEDERAL SPECIFICATION TT-P-115-E.
2. ALL SIGNAGE AND PAVEMENT MARKINGS MUST COMPLY WITH THE MANUAL FOR UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
3. UNLESS OTHERWISE NOTED, ALL SLOPES NOT TO EXCEED 8%.
4. ADA ACCESS AISLE NOT TO EXCEED 2% SLOPE IN ANY DIRECTION.

ADA PARKING DETAIL & SIGNAGE
1"=10'-0"
5 / C7.0

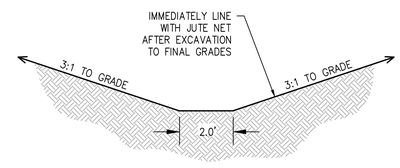






NOTE: BOLLARDS TO BE PAINTED USING 1 COAT OF PRIMER & 2 COATS OF RUSTOLEUM SAFETY YELLOW.

TYPICAL BOLLARD DETAIL
NOT TO SCALE
6 / C7.0



DRAINAGE DITCH MAINTENANCE:
(1) DURING THE ESTABLISHMENT PERIOD, CHECK GRASS-LINED CHANNELS AFTER EVERY RAINFALL.
(2) AFTER GRASS IS ESTABLISHED, PERIODICALLY CHECK THE CHANNEL; CHECK IT AFTER EVERY HEAVY RAINFALL EVENT.
(3) IMMEDIATELY MAKE REPAIRS. IT IS PARTICULARLY IMPORTANT TO CHECK THE CHANNEL OUTLET FOR BANK STABILITY AND EVIDENCE OF SCOUR HOLES.
(4) REMOVE ALL SIGNIFICANT SEDIMENT ACCUMULATIONS TO MAINTAIN THE DESIGN CARRYING CAPACITY.
(5) KEEP THE GRASS IN A HEALTHY, VIGOROUS CONDITION AT ALL TIMES SINCE IT IS THE PRIMARY EROSION PROTECTION FOR THE CHANNEL.

DRAINAGE SWALE CROSS SECTION
NOT TO SCALE
7 / C7.0

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NC LICENSE# C-1073

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL JASON R. CARMICHAEL
PRELIMINARY NOT RELEASED
3/16/2021

Cape Fear Community College Electric Lineworker Overhead & Underground Training Facility

4500 Blue Clay Road
Castle Hayne, NC 28429

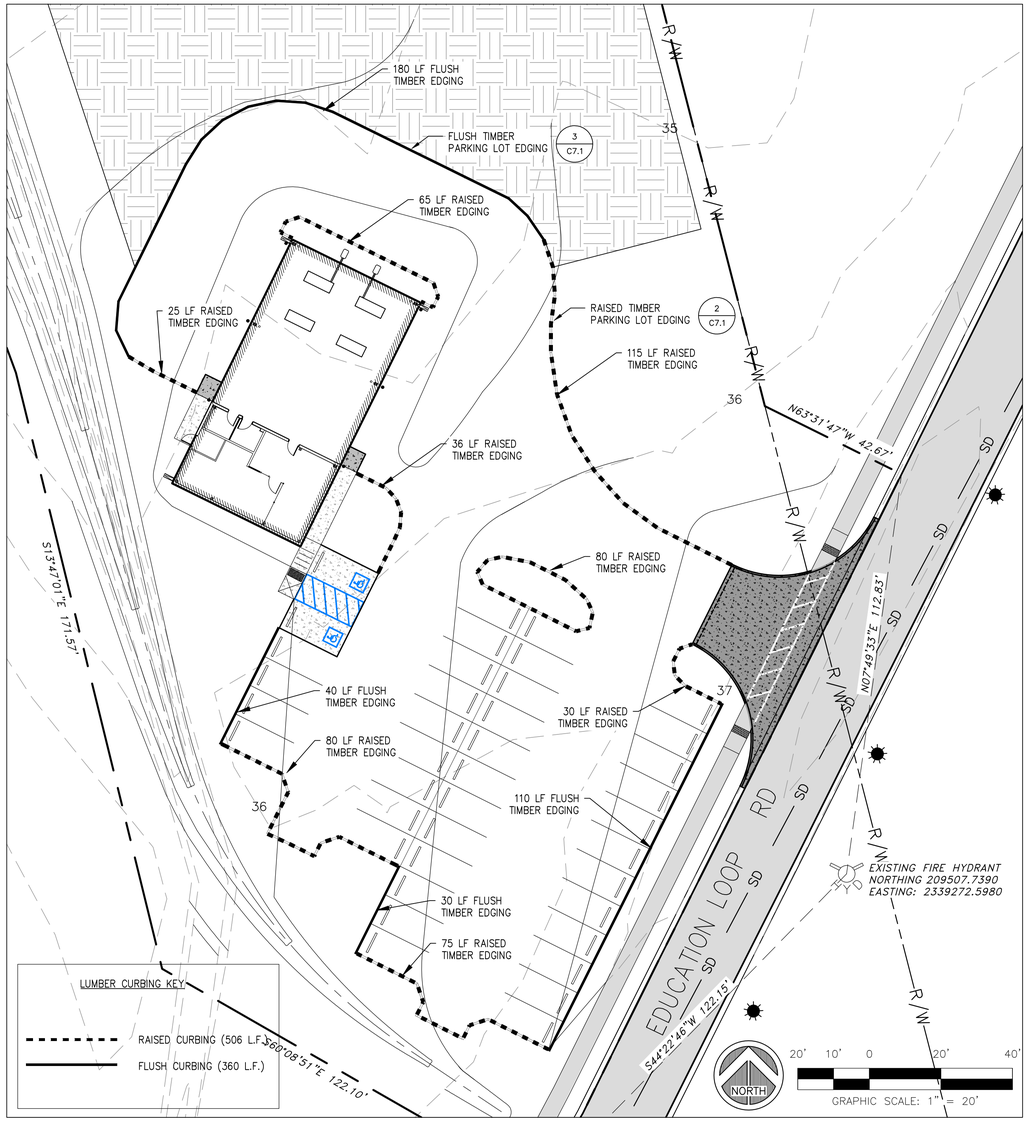
Project No: 20-21668-01A

Construction Documents
January 22, 2021

Revisions:

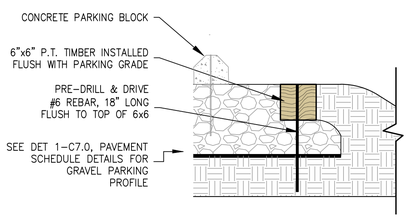
Site Details

C7.0



PARKING LOT EDGING PLAN

1 C7.1



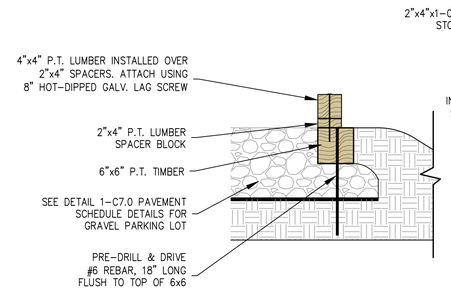
NOTES:

1. ALL PRESSURE TREATED (P.T.) WOOD MATERIALS TO BE GROUND-CONTACT, CATEGORY UC4A.
2. LAG SCREWS SHALL BE A MIN. ASTM A307 GRADE A, HOT-DIPPED GALVANIZED STEEL.
3. REFERENCE KEYED DIAGRAM FOR LOCATION OF FLUSH & RAISED EDGING.

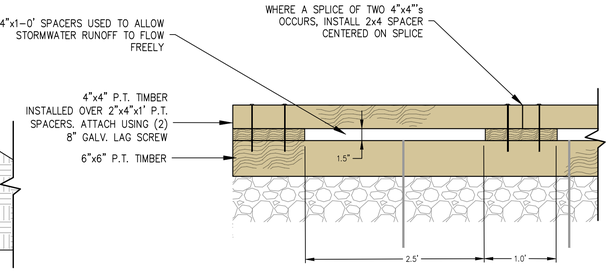
GRAVEL PARKING LOT FLUSH EDGING SECTION

NOT TO SCALE

3 C7.1



SECTION -NTS

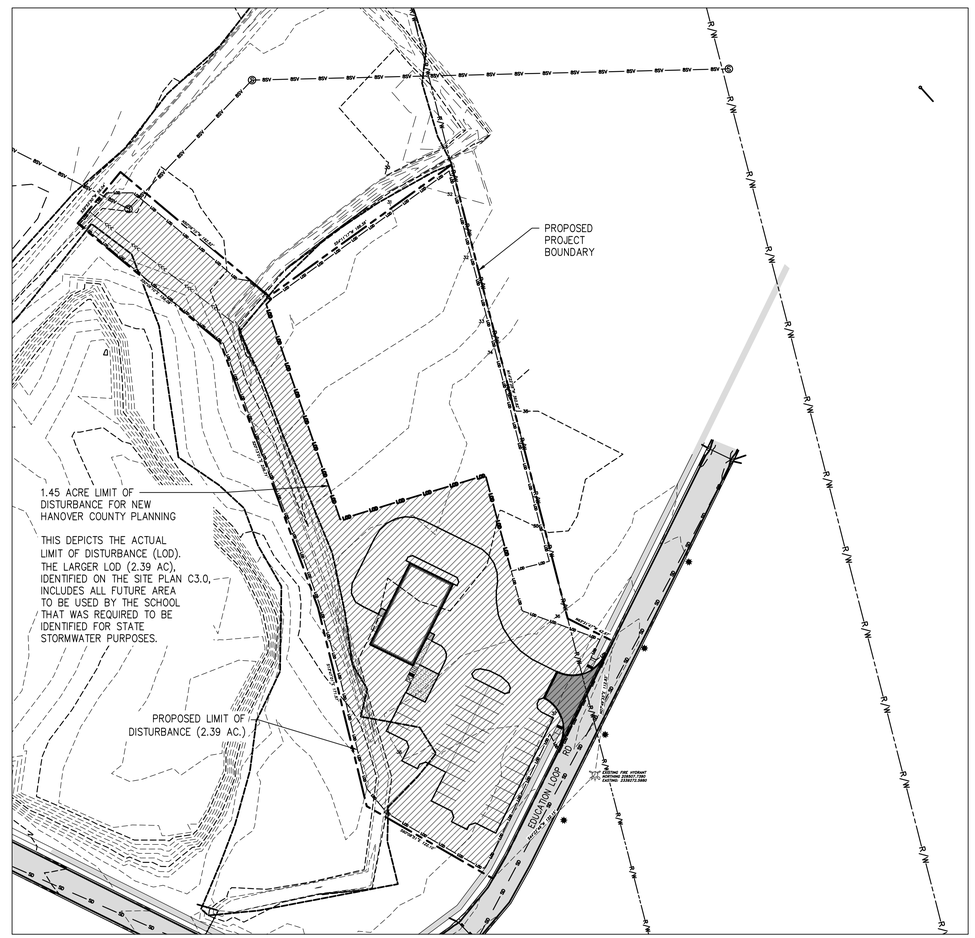


PROFILE -NTS

GRAVEL PARKING LOT RAISED EDGING SECTION & PROFILE

NOT TO SCALE

2 C7.1



LIMITS OF DISTURBANCE-NEW HANOVER COUNTY PLANNING

SCALE: 1" = 60'

4 C7.1

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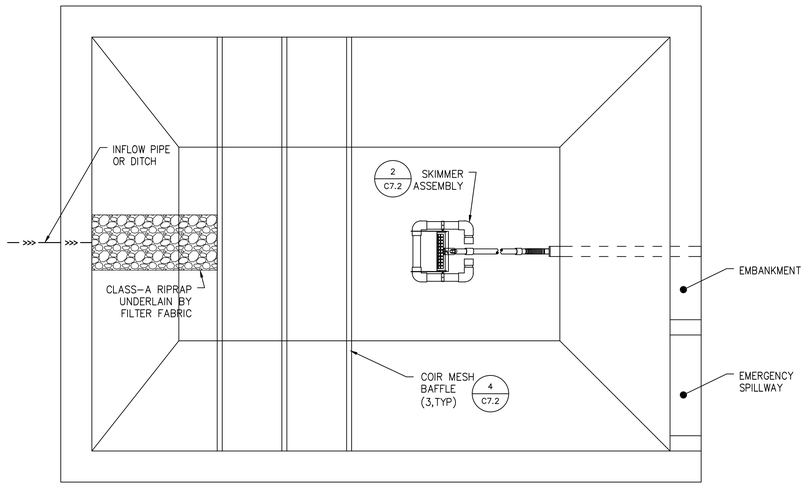
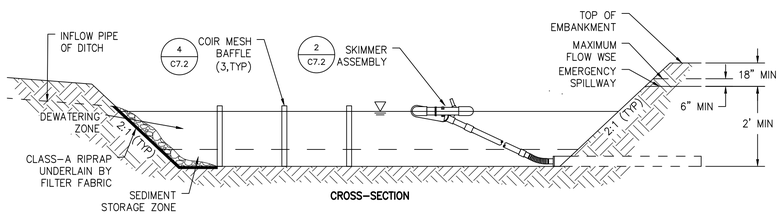


PLAN VIEW



CROSS-SECTION

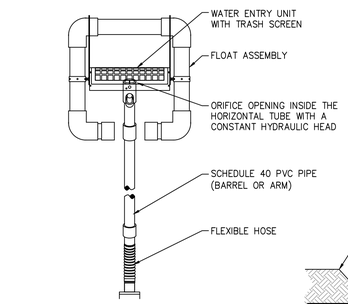
SKIMMER SEDIMENT BASIN CONSTRUCTION SPECIFICATIONS:

1. CLEAR, GRUB, AND STRIP THE AREA UNDER THE EMBANKMENT OF ALL VEGETATION AND ROOT MAT. REMOVE ALL SURFACE SOIL CONTAINING HIGH AMOUNTS OF ORGANIC MATTER AND STOCKPILE OR DISPOSE OF IT PROPERLY. HAUL ALL OBJECTIONABLE MATERIAL TO THE DESIGNATED DISPOSAL AREA. PLACE TEMPORARY SEDIMENT CONTROL MEASURES BELOW BASIN AS NEEDED.
2. ENSURE THAT FILL MATERIAL FOR THE EMBANKMENT IS FREE OF ROOTS, WOODY VEGETATION, ORGANIC MATTER, AND OTHER OBJECTIONABLE MATERIAL. PLACE THE FILL IN LIFTS NOT TO EXCEED 9 INCHES, AND MACHINE COMPACT IT. OVERFILL THE EMBANKMENT 6 INCHES TO ALLOW FOR SETTLEMENT.
3. SHAPE THE BASIN TO THE SPECIFIED DIMENSIONS. PREVENT THE SKIMMING DEVICE FROM SETTING INTO THE MUD BY EXCAVATING A SHALLOW PIT UNDER THE SKIMMER, OR PROVIDING A LOW SUPPORT UNDER THE SKIMMER OF STONE OR TIMBER.
4. PLACE THE BARREL (TYPICALLY A 4–INCH SCHEDULE 40 PVC) ON A FIRM, SMOOTH FOUNDATION OF IMPERVIOUS SOIL. DO NO USE PERVIOUS MATERIAL SUCH AS SAND, GRAVEL, OR CRUSHED STONE AS BACKFILL AROUND THE PIPE. PLACE THE FILL MATERIAL AROUND THE PIPE SPILLWAY IN 4–INCH LAYERS AND COMPACT IT UNDER AND AROUND THE PIPE TO AT LEAST THE SAME DENSITY AS THE ADJACENT EMBANKMENT. CARE MUST BE TAKEN NOT TO RAISE THE PIPE FROM THE FIRM CONTACT WITH ITS FOUNDATION WITH COMPACTING UNDER THE PIPE HAUNCHES. PLACE A MINIMUM DEPTH OF 2 FEET OF COMPACT BACKFILL OVER THE PIPE SPILLWAY BEFORE CROSSING IT WITH CONSTRUCTION EQUIPMENT. IN NO CASE SHOULD THE PIPE CONDUIT BE INSTALLED BY CUTTING A TRENCH THROUGH THE DAM AFTER THE EMBANKMENT IS COMPLETE.
5. ASSEMBLE THE SKIMMER FOLLOWING THE MANUFACTURER'S INSTRUCTIONS, OR AS DESIGNED.
6. LAY THE ASSEMBLED SKIMMER ON THE BOTTOM OF THE BASIN WITH THE FLEXIBLE JOINT AT THE END OF THE BARREL PIPE. ATTACH THE FLEXIBLE JOINT TO THE BARREL PIPE AND POSITION THE SKIMMER OVER THE EXCAVATED PIT OR SUPPORT. BE SURE TO ATTACH A ROPE TO THE SKIMMER AND ANCHOR IT TO THE SIDE OF THE BASIN. THIS WILL BE USED TO PULL THE SKIMMER TO THE SIDE FOR MAINTENANCE.
7. EARTHEN SPILLWAYS – INSTALL THE SPILLWAY IN UNDISTURBED SOIL TO THE GREATEST EXTENT POSSIBLE. THE ACHIEVEMENT OF PLANNED ELEVATIONS, GRADE, DESIGN WIDTH, AND END ENTRANCE AND EXIT SLOPE ARE CRITICAL TO THE SUCCESS OF THE SPILLWAY. THE SPILLWAY SHOULD BE LINED WITH LAMINATED PLASTIC OR IMPERMEABLE GEOTEXTILE FABRIC. THE FABRIC MUST BE WIDE AND LONG ENOUGH TO COVER THE BOTTOM AND SIDES AND EXTENDED TO THE TOP OF DAM FOR ANCHORING IN A TRENCH. THE EDGES MAY BE SECURED WITH 8–INCH STABLES OR PINS. THE FABRIC MUST BE LONG ENOUGH TO EXTEND DOWN THE SLOPE AND EXIT ONTO STABLE GROUND. THE WIDTH OF THE FABRIC MUST BE ONE PIECE, NOT JOINED OR SPLICED; OTHERWISE WATER CAN GET UNDER THE FABRIC. IF THE LENGTH OF THE FABRIC IS INSUFFICIENT FOR THE ENTIRE LENGTH OF THE SPILLWAY, MULTIPLE SECTIONS, SPANNING THE COMPLETE WIDTH, MAY BE USED. THE UPPER SECTION(S) SHOULD OVERLAP THE LOWER SECTION(S) SO THAT WATER CANNOT FLOW UNDER THE FABRIC. SECURE THE UPPER EDGE AND SIDES OF THE FABRIC IN A TRENCH WITH STAPLES OR PINS.
8. INLETS – DISCHARGE WATER INTO THE BASIN IN A MANNER TO PREVENT EROSION. USE TEMPORARY SLOPE DRAINS OR DIVERSIONS WITH OUTLET PROTECTION TO DIVERT SEDIMENT–LADEN WATER TO THE UPPER END OF THE POOL AREA TO IMPROVE BASIN TRAP EFFICIENCY.
9. EROSION CONTROL – CONSTRUCT THE STRUCTURE SO THAT THE DISTURBED AREA IS MINIMIZED. DIVERT SURFACE WATER AWAY FROM BASE AREAS. COMPLETE THE EMBANKMENT BEFORE THE AREA IS CLEARED. STABILIZE THE EMERGENCY SPILLWAY EMBANKMENT AND ALL OTHER DISTURBED AREAS ABOVE THE CREST OF THE PRINCIPAL SPILLWAY IMMEDIATELY AFTER CONSTRUCTION.
10. INSTALL POROUS BAFFLES AS SPECIFIED IN NCDEQ EROSION CONTROL STANDARD PRACTICE 6.65, POROUS BAFFLES.
11. AFTER THE SEDIMENT–PRODUCING AREAS HAVE BEEN PERMANENTLY STABILIZED, REMOVE THE STRUCTURE AND ALL THE UNSTABLE SEDIMENT. SMOOTH THE AREA TO BLEND WITH THE ADJOINING AREAS AND STABILIZE PROPERLY.

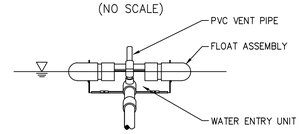
SKIMMER SEDIMENT BASIN MAINTENANCE PLAN:

1. INSPECT SKIMMER BASINS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (ONE–HALF INCH OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY. REMOVE SEDIMENT AND RESTORE THE BASIN TO ITS ORIGINAL DIMENSIONS WHEN SEDIMENT ACCUMULATES TO ONE–HALF THE HEIGHT OF THE FIRST BAFFLES. PULL THE SKIMMER TO ONE SIDE SO THAT THE SEDIMENT UNDERNEATH THE SKIMMER CAN BE EXCAVATED. EXCAVATE THE SEDIMENT FROM THE ENTIRE BASIN, NOT JUST AROUND THE SKIMMER OR THE FIRST CELL. MAKE SURE VEGETATION GROWING IN THE BOTTOM OF THE BASIN DOES NOT HOLD DOWN THE SKIMMER.
2. REPAIR THE BAFFLES IF THEY ARE DAMAGED. RE–ANCHOR THE BAFFLES IF THE WATER IS FLOWING UNDERNEATH OR AROUND THEM.
3. IF THE SKIMMER IS CLOGGED WITH TRASH AND THERE IS WATER IN THE BASIN, USUALLY JERKING ON THE ROPE WILL MAKE THE SKIMMER BOB UP AND DOWN AND DISLODGE THE DEBRIS AND RESTORE FLOW. IF THIS DOES NOT WORK, PULL THE SKIMMER OVER TO THE SIDE OF THE BASIN AND REMOVE THE DEBRIS. ALSO, CHECK THE ORIFICE INSIDE THE SKIMMER TO SEE IF IT IS CLOGGED; IF SO REMOVE THE DEBRIS.
4. IF THE SKIMMER ARM OR BARREL PIPE IS CLOGGED, THE ORIFICE CAN BE REMOVED AND THE OBSTRUCTION CLEARED WITH A PLUMBER'S SNAKE OR BY FLUSHING WITH WATER. BE SURE AND REPLACE THE ORIFICE BEFORE REPOSITIONING THE SKIMMER.
5. CHECK THE FABRIC–LINED SPILLWAY FOR DAMAGE AND MAKE ANY REQUIRED REPAIRS WITH FABRIC THAT SPANS THE FULL WIDTH OF THE SPILLWAY. CHECK THE EMBANKMENT, SPILLWAYS, AND OUTLET FOR EROSION DAMAGE, AND INSPECT THE EMBANKMENT FOR PIPING AND SETTLEMENT. MAKE ALL NECESSARY REPAIRS IMMEDIATELY. REMOVE ALL TRASH AND OTHER DEBRIS FROM THE SKIMMER AND POOL AREAS.
6. FREEZING WEATHER CAN RESULT IN ICE FORMING IN THE BASIN. SOME SPECIAL PRECAUTIONS SHOULD BE TAKEN IN THE WINTER TO PREVENT THE SKIMMER FROM PLUGGING WITH ICE.

SKIMMER SEDIMENT BASIN DETAIL (1 / C7.2)
NOT TO SCALE



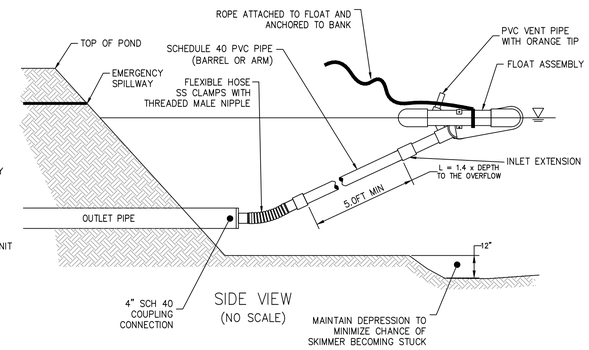
PLAN VIEW
(NO SCALE)



END VIEW
(NO SCALE)

GENERAL NOTES:

1. PROPER DESIGN MUST BE COMPLETED TO MINIMIZE PIPING AROUND DISCHARGE PIPE.
2. PROPER ORIFICE OPENING MUST BE SELECTED TO ENSURE POND DRAINS IN CORRECT AMOUNT OF TIME. MODIFICATIONS MAY BE REQUIRED IF FIELD CONDITIONS WARRANT A CHANGE.
3. EMBANKMENT MUST BE COMPACTED TO DESIGN SPECIFICATIONS
4. EMERGENCY SPILLWAY MUST BE CORRECTLY SIZED AND EROSION PROTECTION INSTALLED.
5. EROSION PROTECTION MUST BE INSTALLED ALONG THE EMBANKMENT AND AT THE DISCHARGE END OF THE PIPE.
6. INSPECT SYSTEM REGULARLY TO ENSURE IT IS FUNCTIONING IN A CORRECT MANNER.



SIDE VIEW
(NO SCALE)

SKIMMER DESIGNS IN THIS PROJECT:

SKIMMER SEDIMENT BASIN 1 (SSB–1).....1.5–INCH SKIMMER ASSEMBLY WITH 1.4–INCH DRILLED ORIFICE

SKIMMER BASIN WITH ORIFICE DETAIL (2 / C7.2)
NOT TO SCALE

BAFFLE CONSTRUCTION SPECIFICATIONS:

(1) GRADE THE BASIN SO THAT THE BOTTOM IS LEVEL FRONT TO BACK AND SIDE TO SIDE

(2) INSTALL POSTS OR SAW HORSES ACROSS THE WIDTH OF THE SEDIMENT TRAP OR BASIN

(3) STEEL POSTS SHOULD BE DRIVEN TO A DEPTH OF TWENTY–FOUR (24) INCHES, SPACED A MAXIMUM OF FOUR (4) FEET APART, AND INSTALLED UP THE SIDES OF THE BASIN S WELL. THE TOP OF THE FABRIC SHOULD BE SIX (6) INCHES HIGHER THAN THE INVERT OF THE SPILLWAY. TOPS OF BAFFLES SHOULD BE TWO (2) INCHES LOWER THAN THE TOP OF BERMS.

(4) INSTALL AT LEAST THREE ROWS OF BAFFLES BETWEEN THE INLET AND OUTLET DISCHARGE POINT. BASINS LESS THAN TWENTY (20) FEET IN LENGTH MAY USE TWO (2) BAFFLES.

(5) WHEN USING POSTS, ADD A SUPPORT WIRE OR ROPE ACROSS THE TOP OF THE MEASURE TO PREVENT SAGGING.

(6) WRAP POROUS MATERIAL, SUCH AS JUTE BACKED BY COIR MATERIAL, OVER A SAWHORSE OR THE TOP WIRE. HAMMER REBAR INTO THE SAWHORSE LEGS FOR ANCHORING. THE FABRIC SHOULD HAVE FIVE (5) TO TEN (10) PERCENT OPENINGS IN THE WEAVE. ATTACH FABRIC TO A ROPE AND A SUPPORT STRUCTURE WITH ZIP TIES, WIRE, OR STAPLES.

(7) THE BOTTOM AND SIDES OF THE FABRIC SHOULD BE ANCHORED IN A TRENCH OR PINNED WITH EIGHT (8) INCH EROSION CONTROL MATTING STAPLES.

(8) DO NOT SPLICE THE FABRIC. USE A CONTINUOUS PIECE ACROSS THE BASIN.

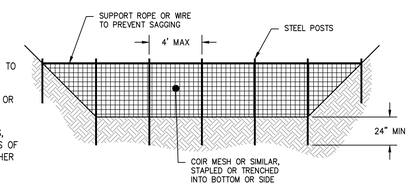
BAFFLE MAINTENANCE:

(1) INSPECT BAFFLES AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY.

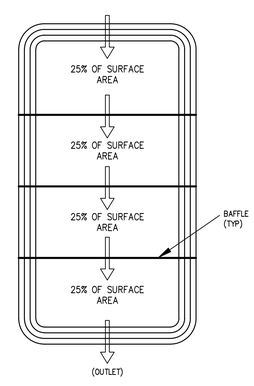
(2) BE SURE TO MAINTAIN ACCESS TO THE BAFFLES. SHOULD THE FABRIC OF THE BAFFLE COLLAPSE, TEAR, DECOMPOSE, OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY.

(3) REMOVE SEDIMENT DEPOSITS WHEN IT REACHES HALF FULL TO PROVED ADEQUATE STORAGE FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE BAFFLES. TAKE CARE TO AVOID DAMAGING THE BAFFLES DURING CLEANOUT. SEDIMENT DEPTH SHOULD NEVER EXCEED HALF THE DESIGNED STORAGE DEPTH.

(4) AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED, REMOVE ALL BAFFLE MATERIALS, AND UNSTABLE SEDIMENT DEPOSITS, BRING THE AREA TO GRADE, AND STABILIZE IT.

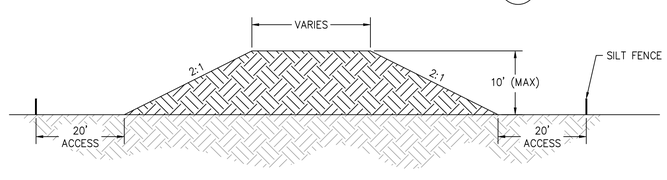


BAFFLE CROSS–SECTION

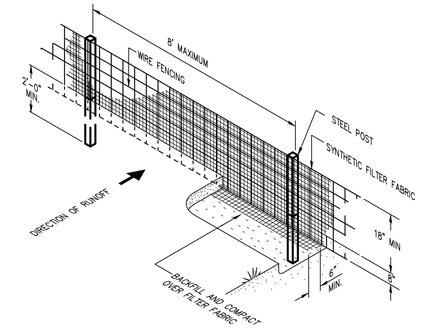


BAFFLE PLAN–VIEW

BAFFLE DETAIL (4 / C7.2)
NOT TO SCALE



TEMPORARY STOCKPILE DETAIL (6 / C7.2)
NOT TO SCALE



SEDIMENT FENCE CONSTRUCTION SPECIFICATIONS:

(1) SILT FENCE IS TO BE TRENCHED IN WITH TRENCHING MACHINE IN ORDER TO HAVE THE MINIMUM AREA OF DISTURBANCE (NON–EVASIVE) UPON INSTALLATION.

(2) HEIGHT OF SEDIMENT FENCE IS NOT TO EXCEED 18" ABOVE THE GROUND SURFACE.

(3) FILTER FABRIC TO BE CONSTRUCTED FROM CONTINUOUS ROLL CUT TO LENGTH TO AVOID JOINTS. IF JOINTS ARE NECESSARY, FILTER CLOTH IS TO BE SECURELY FASTENED TO SUPPORT POST WITH OVERLAP TO THE NEXT POST.

(4) FILTER FABRIC TO BE SUPPORTED BY WIRE MESH FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING HEAVY DUTY STAPLES AT LEAST 1" LONG OR TIE WIRES. EXTEND WIRE MESH SUPPORT TO THE BOTTOM OF THE TRENCH.

(5) A MAXIMUM OF 8' STAKE SPACING IS ALLOWED WHEN WIRE MESH SUPPORT FENCE IS USED. SUPPORT POST SHOULD BE DRIVEN SECURELY INTO THE GROUND A DISTANCE OF AT LEAST 18".

(6) EXTRA STRENGTH FILTER FABRIC WITH 6' POST SPACES DOES NOT REQUIRE WIRE MESH SUPPORT FENCE. STAPLE OR WIRE THE FILTER FABRIC DIRECTLY TO POSTS.

(7) EXCAVATE A TRENCH APPROXIMATELY 4" WIDE AND 8" DEEP ALONG THE PROPOSED LINE OF POSTS AND UPSLOPE FROM THE BARRIER.

(8) BACKFILL TRENCH WITH COMPACT SOIL OR GRAVEL PLACED OVER THE FILTER FABRIC.

(9) DO NOT ATTACH FILTER FABRIC TO EXISTING TREES.

SEDIMENT FENCE MAINTENANCE:

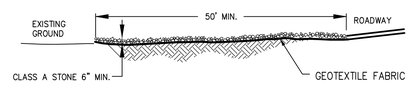
(1) INSPECT SEDIMENT FENCES AT LEAST ONCE A WEEK AND AFTER EACH SIGNIFICANT RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY

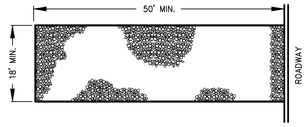
(2) SHOULD THE FABRIC OF A SEDIMENT FENCE COLLAPSE, TEAR, DECOMPOSE OR BECOME INEFFECTIVE, REPLACED IT PROMPTLY. REPLACE BURLAP EVERY 60 DAYS.

(3) REMOVE SEDIMENT DEPOSITS AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE FENCE. TAKE CARE TO AVOID UNDERMINING THE FENCE DURING CLEANOUT.

(4) REMOVE ALL FENCING MATERIALS AND UNSTABLE SEDIMENT DEPOSITS AND BRING THE AREA TO GRADE AND STABILIZE IT AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

SILT FENCE DETAIL (3 / C7.2)
NOT TO SCALE





CONSTRUCTION ENTRANCE CONSTRUCTION SPECIFICATIONS:

(1) CLEAR THE ENTRANCE AND EXIST AREA OF ALL VEGETATION, ROOTS, AND OTHER OBJECTIONABLE MATERIAL
(2) PLACE THE GRAVEL TO THE SPECIFIC GRADE AND DIMENSIONS SHOWN ON THE PLANS, AND SMOOTH IT.
(3) PROVIDE DRAINAGE TO CARRY WATER TO A SEDIMENT TRAP OR OTHER SUITABLE OUTLET.
(4) TRAFFIC WILL ENTER OR LEAVE THE CONSTRUCTION SITE ONTO A PUBLIC STREET. FILTER FABRIC OR COMPACTED CRUSHER RUN STONE MAY BE USED AS A BASE FOR THE CONSTRUCTION ENTRANCE.
(5) THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC STREETS OR EXISTING PAVEMENT. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS WARRANT AND REPAIR OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ANY SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC STREETS MUST BE REMOVED IMMEDIATELY.
(6) WHEN APPROPRIATE, WHEELS MUST BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTERING A PUBLIC STREET. WHEN WASHING IS REQUIRED, IT SHALL BE DONE IN AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED SEDIMENT BASIN SOIL STABILIZATION FABRIC SHALL BE USED.
(7) NCDOT MAY REQUIRE A STANDARD COMMERCIAL DRIVEWAY TO ACCESS THE CONSTRUCTION SITE IF THE DRIVEWAY IS ON A THOROUGHFARE.

CONSTRUCTION ENTRANCE MAINTENANCE:

(1) MAINTAIN THE GRAVEL PAD IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING THE CONSTRUCTION SITE. REDRESS THE TOP WITH 2" STONE AS NEEDED.
(2) AFTER EACH RAINFALL, INSPECT ANY STRUCTURE USED TO TRAP SEDIMENT AND CLEAN IT OUT AS NECESSARY.
(3) IMMEDIATELY REMOVE AL OBJECTIONABLE MATERIALS SPILLED, WASHED, OR TRACKED ONTO PUBLIC ROADWAYS.

CONSTRUCTION ENTRANCE DETAIL (5 / C7.2)
NOT TO SCALE

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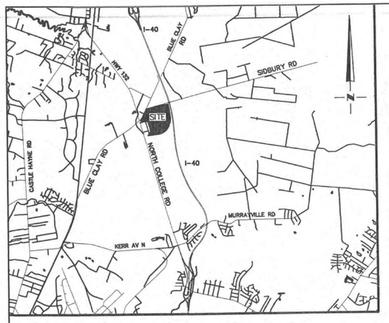
C7.2



VICINITY MAP
NOT TO SCALE

POND 1 UPDATED BUA TABLE
SW8 990923

DRAINAGE AREA (NO CHANGE)
ON SITE DRAINAGE AREA = 1,812,096 SF
OFFSITE DRAINAGE AREA = NONE
TOTAL DRAINAGE AREA = 1,812,096 SF

BUILT-UPON AREAS
ON-SITE BUILDINGS
PERMITTED = 31,363 SF
PROPOSED NEW = 3,050 SF
PERMIT UPDATE = 34,413 SF

ON-SITE ROADS
PERMITTED = 11,761 SF
PROPOSED DEMO = 170 SF (CURB)
PERMIT UPDATE = 11,591 SF

ON-SITE PARKING
PERMITTED = 91,040 SF
PRO. NEW GRAVEL = 21,340 SF
PRO. NEW CONC. = 470 SF
PERMIT UPDATE = 112,850 SF

ON-SITE SIDEWALK
PERMITTED = 31,220 SF
PROPOSED DEMO = 230 SF (DRIVEWAY)
PROPOSED NEW = 330 SF
PERMIT UPDATE = 31,320 SF

OTHER ON-SITE
PERMITTED = NONE
PROPOSED DW APRON = 1,245 SF
PRO. TRAINING YARD = 43,820 SF
PERMIT UPDATE = 45,065 SF

FUTURE ON-SITE
PERMITTED = 1,103,083 SF
PROPOSED REALLOCATION = 69,855 SF
PERMIT UPDATE = 1,033,228 SF

OFF-SITE
PERMITTED = NONE
PROPOSED = NONE
PERMIT UPDATE = NONE

TOTAL BUA = 1,268,467 SF (NO CHANGE)

ISSUED FOR AGENCY REVIEW ONLY

NOT RELEASED FOR CONSTRUCTION

BEFORE YOU DIG, CALL
North Carolina 811
www.nc811.org

THIS PLAN SHEET INCLUDES AN IMAGE OF THE PERMITTED DRAINAGE BASINS FOR NCDEQ STATE STORM WATER PERMIT SW8 990923 FOR REFERENCE ONLY. COASTAL LAND DESIGN, PLLC ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THE DRAINAGE BASIN ILLUSTRATION PROVIDED ON THIS SHEET.

SYM.	DATE	DESCRIPTION	BY
1		REVISIONS	

DRAINAGE BASIN

CFCC TRUCK FACILITY
WILMINGTON, NORTH CAROLINA

OWNER/DEVELOPER:
NAME
ADDRESS
CITY & STATE
PHONE

PROJECT # 04008

DES. JPN
CHKD. JPN
DRWN. BLR
DATE 06-17-04

SHEET
DA-1

SAWYER SHERWOOD & ASSOCIATE ARCHITECTURE
124 Market St, Wilmington, NC 28401
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OFFICE@CHEATHAMPA.COM
WWW.CHEATHAMPA.COM
NC LICENSE# C-1073

NORTH CAROLINA PROFESSIONAL SEAL ENGINEER JASON R. CARMICHAEL

PRELIMINARY
NOT RELEASED
3/16/2021

Cape Fear Community College Electric Lineworker Overhead & Underground Training Facility

4500 Blue Clay Road
Castle Hayne, NC 28429

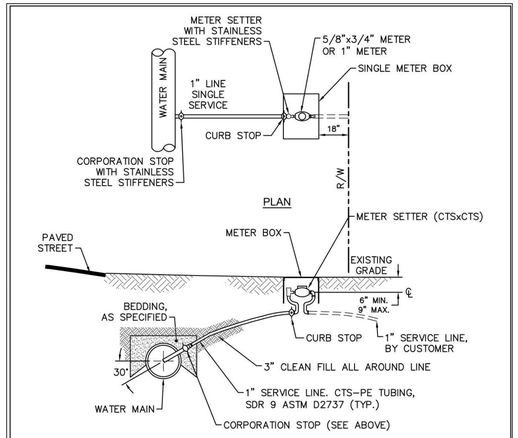
Project No: 20-21668-01A

Construction Documents
January 22, 2021

Revisions:

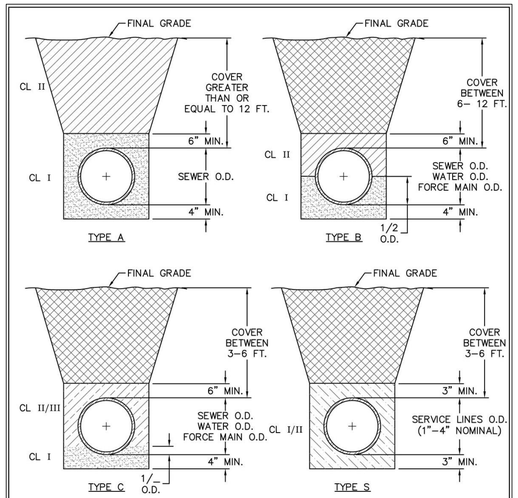
Supplemental Drainage Area Detail

C7.3



NOTES:
1. NO JOINT SHALL BE INSTALLED BETWEEN THE MAIN SERVICE TAP AND THE METER STOP. ALL SERVICES SHALL BE INSTALLED PERPENDICULAR TO MAIN.
2. SERVICE SADDLES ON PVC MAINS SHALL BE WIDE BAND BRASS BODY.
3. METER BOXES SUBJECT TO TRAFFIC LOADS SHALL CONFORM TO ASTM A48, CLASS 30B AND AASHTO H20 LOAD RATING STANDARDS.
4. WATER SERVICE LINE SHALL TERMINATE 18" WITHIN RIGHT-OF-WAY LINE.
5. WATER METER BOXES ARE TO BE A MINIMUM OF 5 FEET FROM THE PROPERTY CORNER.
6. SERVICE PIPING AND METER SETTER TO BE CENTERED IN THE METER BOX.

DETAIL: SINGLE WATER SERVICE CONNECTION - TYPICAL SHORT-SIDE CONNECTION		CAPE FEAR PUBLIC UTILITY AUTHORITY 235 GOVERNMENT CENTER DRIVE WILMINGTON, NC 28403 OFFICE: (910)332-6560 Stewardship. Sustainability. Service.	DETAIL NO: W-1
SCALE: NOT TO SCALE	CFPUA DETAIL DATE: 01/01/2021		SHEET NO: -



COMPACTION NOTES:

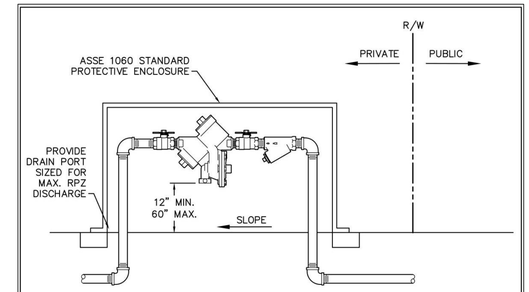
1. ALL ZONES: 95% STD EFFORT PER ASTM D698, EXCEPT AS STATED IN COMPACTION NOTE 2.
2. 12" SUBGRADE UNDER PAVEMENT: 98% STD EFFORT PER ASTM D698.
3. BEDDING REQUIREMENTS FOR SEWER FORCE MAINS AND WATER MAINS WITHIN TYPE A THROUGH TYPE S CONDITIONS, SHALL BE FOLLOWED IF IT HAS BEEN DETERMINED THAT UNSUITABLE SOILS EXIST WITHIN THE EXCAVATED TRENCH. OTHERWISE BEDDING FOR SEWER FORCE MAINS AND WATER MAINS MAY BE CLASS I OR CLASS II.

DETAIL: PIPE EMBEDMENT TYPES		CAPE FEAR PUBLIC UTILITY AUTHORITY 235 GOVERNMENT CENTER DRIVE WILMINGTON, NC 28403 OFFICE: (910)332-6560 Stewardship. Sustainability. Service.	DETAIL NO: WS-4
SCALE: NOT TO SCALE	CFPUA DETAIL DATE: 01/01/2021		SHEET NO: -

CAPE FEAR PUBLIC UTILITY AUTHORITY STANDARD NOTES:

1. ALL PROPOSED ADDITIONS TO THE CAPE FEAR PUBLIC UTILITY AUTHORITY (CFPUA) WATER DISTRIBUTION AND SANITARY SEWER COLLECTION SYSTEMS, AS SHOWN AND SPECIFIED HEREIN, SHALL BE DESIGNED AND CONSTRUCTED TO CONFORM TO STATE RULES AND THE CFPUA'S MINIMUM TECHNICAL STANDARDS. THE CFPUA MINIMUM TECHNICAL STANDARDS ARE CONTAINED IN THE CURRENT DESIGN GUIDANCE MANUAL, MATERIAL SPECIFICATION MANUAL, TECHNICAL SPECIFICATIONS FOR CONSTRUCTION, AND STANDARD DRAWING DETAILS.
2. SEWER GUARDS REQUIRED AT ALL MANHOLES. STAINLESS STEEL SEWER GUARDS REQUIRED AT MANHOLES LOCATED IN TRAFFIC AREAS.
3. WATER AND SEWER SERVICES SHALL BE PERPENDICULAR TO MAIN AND TERMINATE 18" INSIDE RIGHT-OF-WAY LINE. SEWER SERVICES IN CUL-DE-SACS ARE REQUIRED TO BE PERPENDICULAR, OR MUST ORIGINATE IN END OF LINE MANHOLE AND TERMINATE 18" INSIDE RIGHT-OF-WAY LINE.
4. ALL SEWER SERVICES CONNECTING INTO DUCTILE IRON MAINS SHALL ALSO BE CONSTRUCTED OF DIP.
5. MINIMUM 10' UTILITIES EASEMENT PROVIDED ALONG THE FRONTAGE OF ALL LOTS AND AS SHOWN FOR NEW DEVELOPMENTS.
6. NO FLEXIBLE COUPLINGS SHALL BE USED.
7. ALL STAINLESS STEEL FASTENERS SHALL BE TYPE 316.
8. CLEANOUTS SHALL BE LOCATED A MINIMUM OF 6 FEET FROM ALL PROPERTY CORNERS.
9. WATER METER BOXES ARE TO BE A MINIMUM OF 5 FEET FROM THE PROPERTY CORNER.
10. UNUSED SERVICES SHALL BE ABANDONED. ABANDONED WATER SERVICES SHALL BE DISCONNECTED FROM MAIN.
11. A MINIMUM OF 10' OF MAIN LINE, 5' UPSTREAM AND 5' DOWNSTREAM SHALL BE REPLACED FOR NEW SEWER SERVICE CONNECTIONS TO EXISTING CLAY GRAVITY SEWER MAINS.
12. A MINIMUM OF 20' OF MAIN LINE, 10' UPSTREAM AND 10' DOWNSTREAM SHALL BE REPLACED FOR NEW CUT IN MANHOLES ON EXISTING CLAY GRAVITY SEWER MAINS
13. PROVIDE A MINIMUM DISTANCE OF SIX (6) INCHES BETWEEN EDGE OF MANHOLE CORE HOLES AND MANHOLE BARREL JOINTS. PROVIDE A MINIMUM DISTANCE OF SIX (6) INCHES BETWEEN EDGES OF CORE HOLES. CORING THE MANHOLE CONE IS NOT PERMITTED
14. WATER MAIN AND FORCE MAIN PIPE INSTALLED BY OPEN CUT SHALL BE BURIED AT A MINIMUM OF THREE (3) FEET AND A MAXIMUM OF FIVE (5) FEET BELOW FINISHED GRADE. DEPTHS GREATER THAN FIVE (5) FEET MUST BE APPROVED BY CFPUA.
15. ALL MANHOLE MAIN LINE AND SERVICE PIPING TO BE INSTALLED AT A MINIMUM OF CROWN TO CROWN OF THE LARGEST DIAMETER PIPE.

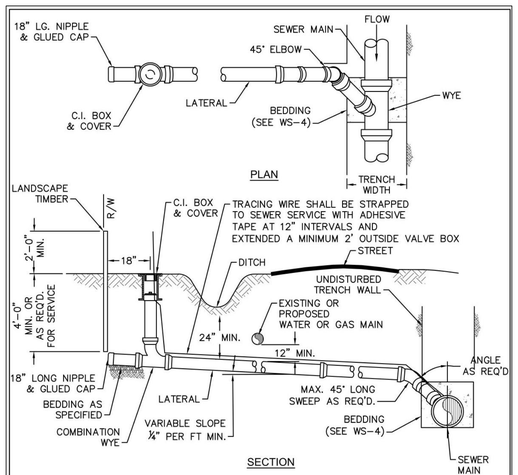
DETAIL: STANDARD NOTES (REQUIRED ON ALL PLAN AND PROFILE SHEETS)		CAPE FEAR PUBLIC UTILITY AUTHORITY 235 GOVERNMENT CENTER DRIVE WILMINGTON, NC 28403 OFFICE: (910)332-6560 Stewardship. Sustainability. Service.	DETAIL NO: WS-14
SCALE: NOT TO SCALE	CFPUA DETAIL DATE: 01/01/2021		SHEET NO: -



NOTES:
1. MUST BE MIN. 36" AWAY FROM ANY ELECTRICAL PANEL.
2. VALVE REQUIRED DOWNSTREAM OF BACKFLOW ASSEMBLY.
3. VERTICAL INSTALLATION SHALL BE DESIGNED AND SUBMITTED TO CFPUA EMD FOR APPROVAL.
4. LOCATE AS NEAR TO RIGHT-OF-WAY AS POSSIBLE.
5. MUST COMPLETE CFPUA'S BACKFLOW INSTALLATION FORM. CONTACT COMMUNITY COMPLIANCE AT 910-332-6558 OR COMMUNITY.COMPLIANCE@CFPUA.ORG.
6. ONLY IN-LINE TESTABLE ASSEMBLIES APPROVED BY THE USC FOUNDATION FOR CROSS CONNECTION CONTROL OR ASSE SHALL BE ACCEPTED.

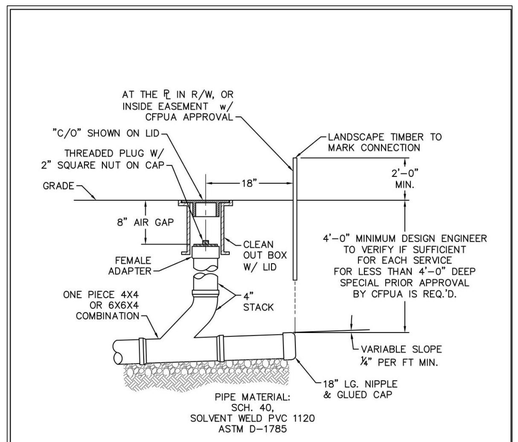
OUTDOOR HORIZONTAL INSTALLATION

DETAIL: REDUCED PRESSURE PRINCIPLE ASSEMBLY		CAPE FEAR PUBLIC UTILITY AUTHORITY 235 GOVERNMENT CENTER DRIVE WILMINGTON, NC 28403 OFFICE: (910)332-6560 Stewardship. Sustainability. Service.	DETAIL NO: EM-1
SCALE: NOT TO SCALE	CFPUA DETAIL DATE: 01/01/2021		SHEET NO: -



NOTES:
1. SEWER SERVICES SHALL BE PERPENDICULAR TO MAIN. SEWER SERVICES IN CUL-DE-SACS ARE REQUIRED TO BE PERPENDICULAR, OR MUST ORIGINATE IN END OF LINE MANHOLE AND TERMINATE AT RIGHT-OF-WAY LINE.
2. ALL SERVICES CONNECTING INTO DUCTILE IRON MAINS SHALL BE CONSTRUCTED OF DIP, WITH PROTECTIVE LINING.
3. CLEANOUTS SHALL BE LOCATED A MINIMUM OF 12 FEET FROM ALL PROPERTY CORNERS.
4. MINIMUM 1'-6" NIPPLE SPACING BETWEEN FITTINGS.
5. FOR PRIVATE 8" SERVICES, MANHOLES ARE REQUIRED FOR CONNECTION TO MAIN.

DETAIL: SEWER SERVICE CONNECTION - LONG-SIDE		CAPE FEAR PUBLIC UTILITY AUTHORITY 235 GOVERNMENT CENTER DRIVE WILMINGTON, NC 28403 OFFICE: (910)332-6560 Stewardship. Sustainability. Service.	DETAIL NO: S-10
SCALE: NOT TO SCALE	CFPUA DETAIL DATE: 01/01/2021		SHEET NO: -



NOTES:
1. FOR PRIVATE 8" SERVICES, MANHOLES ARE REQUIRED FOR CONNECTION TO SYSTEM AND AT THE PROPERTY LINE, WITH REQUIRED EASEMENT.
2. CLEANOUTS SHALL BE LOCATED A MINIMUM OF 12 FEET FROM ALL PROPERTY CORNERS.

DETAIL: SEWER SERVICE CONNECTION - TYPICAL CLEAN-OUT		CAPE FEAR PUBLIC UTILITY AUTHORITY 235 GOVERNMENT CENTER DRIVE WILMINGTON, NC 28403 OFFICE: (910)332-6560 Stewardship. Sustainability. Service.	DETAIL NO: S-13
SCALE: NOT TO SCALE	CFPUA DETAIL DATE: 01/01/2021		SHEET NO: -

ADDITIONAL RPZ NOTE:

1. RPZ TO BE CLASS 1 INSULATED

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WWW.CHEATHAMPA.COM
NC LICENSE# C-1073

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL JASON R. CARMITCHEL
PRELIMINARY NOT RELEASED
3/16/2021

Cape Fear Community College Electric Lineworker Overhead & Underground Training Facility

4500 Blue Clay Road
Castle Hayne, NC 28429

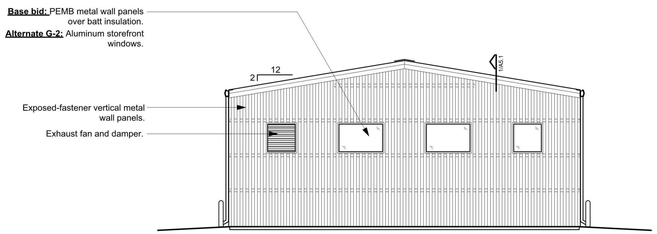
Project No: 20-21668-01A

Construction Documents
January 22, 2021

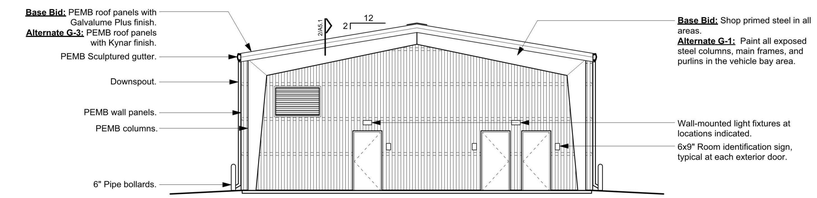
Revisions:

Utility Details

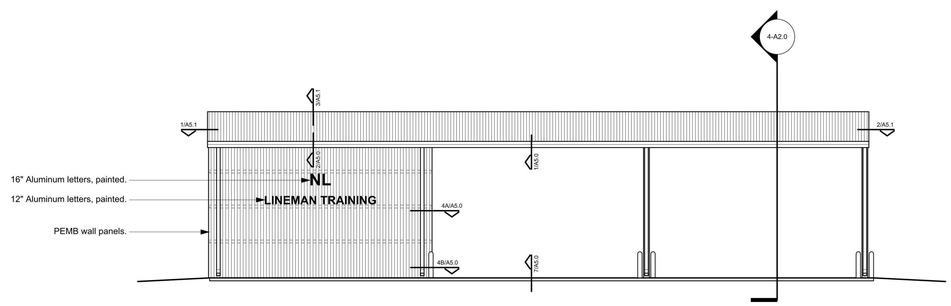
C8.0



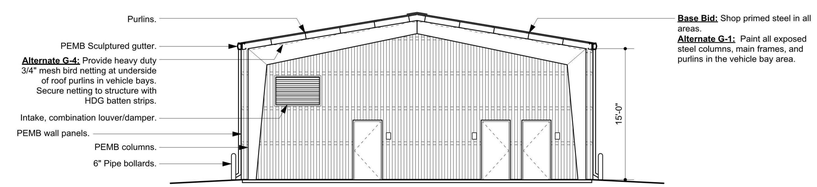
1 A2.0 South Elevation
Scale: 1/8" = 1'-0"



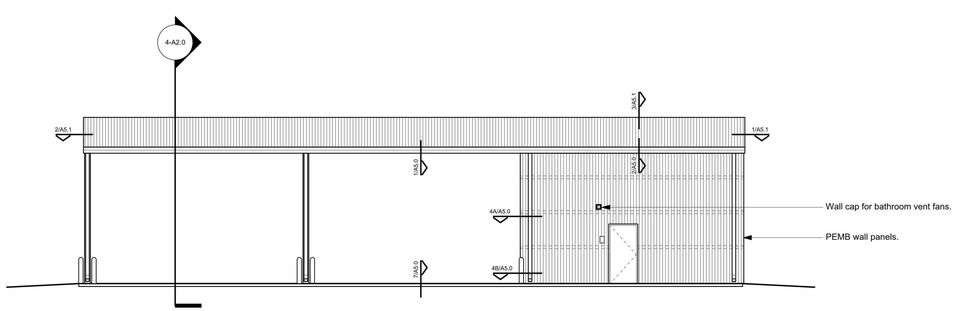
2 A2.0 North Elevation
Scale: 1/8" = 1'-0"



3 A2.0 East Elevation
Scale: 1/8" = 1'-0"



4 A2.0 Building Section
Scale: 1/8" = 1'-0"



3 A2.0 West Elevation
Scale: 1/8" = 1'-0"

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Project No: 20-21668-01

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Revisions:

Architectural Elevations

C9.0