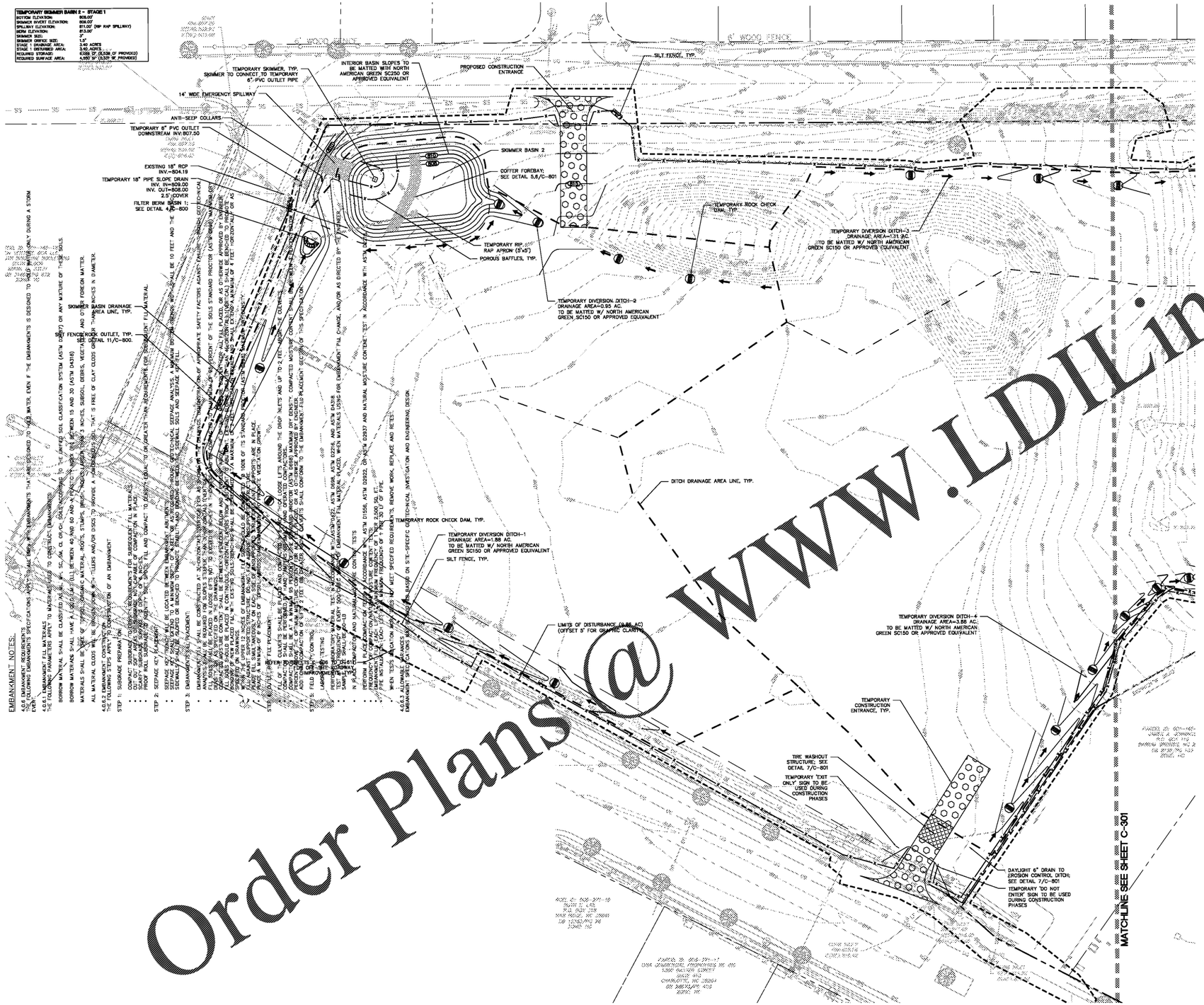

EMBANKMENT NOTES:

4.06 EMBANKMENT REQUIREMENTS
THE FOLLOWING EMBANKMENT'S SPECIFICATIONS APPLY TO ANY EMBANKMENT THAT IS 5 FEET OR GREATER IN HEIGHT AT ANY POINT ALONG THE EMBANKMENT'S CENTERLINE, AS MEASURED FROM THE NATURAL GROUND ELEVATION TO THE TOP OF THE EMBANKMENT, OR ANY EMBANKMENT THAT IMPOUNDS WATER, EVEN IF THE EMBANKMENT'S IS DESIGNED TO ONLY IMPOUND WATER ONLY DURING A STORM EVENT.

4.06.1 EMBANKMENT FILL MATERIALS
THE FOLLOWING PARAMETERS APPLY TO MATERIALS USED TO CONSTRUCT EMBANKMENTS:

BORROW MATERIAL SHALL BE CLASSIFIED AS SM, SC, GM, GC OR CH SOILS ACCORDING TO THE UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D2487) OR ANY MIXTURE OF THESE SOILS

BORROW MATERIALS SHALL HAVE A PLASTICITY INDEX (PI) OF BETWEEN 15 AND 30 (ASTM D4318)

MATERIALS SHALL BE FREE OF ORGANIC MATERIAL, ROOTS, STUMPS, BRUSH, TRASH, FROZEN MATERIALS, LARGE ROCKS OR CLODS OVER 6 INCHES IN DIAMETER, AND OTHER FOREIGN MATERIAL THAT IS FREE OF CLAY CLODS OVER 3 INCHES IN DIAMETER.

ALL MATERIAL CLODS WILL BE BROKEN DOWN WITH TILLERS AND/OR DISCS TO ENSURE A HOMOGENEOUS SOIL

4.06.2 EMBANKMENT CONSTRUCTION
THE FOLLOWING STEPS APPLY TO THE CONSTRUCTION OF AN EMBANKMENT

STEP 1: SUBGRADE PREPARATION

- DRAINAGE FILL SHALL BE CONSTRUCTED AT A MINIMUM OF 95% OF MAXIMUM DRY DENSITY (ASTM D698) MATERIAL WITH MOISTURE CONTENT WITHIN 2% OF THE OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D698.
- CUT OUT ANY SOFT, SPONGY, OR UNSUITABLE AREAS AND BACKFILL WITH SUITABLE MATERIAL AS DIRECTED BY THE ENGINEER.
- PROOF ROLL SUBGRADE WITH AT LEAST 4 PASSES OF A RUBBER-TIRED VEHICLE WEIGHING AT LEAST 10 TONS.

STEP 2: SEEPAGE KEY PLACEMENT

- SEEPAGE KEY TRENCH WILL BE LOCATED BETWEEN EMBANKMENT FILL AND UNDISTURBED GROUND AS SHOWN ON THE PLANS.
- SEEPAGE KEY SHALL EXTEND TO A MINIMUM DEPTH OF 4 FEET OR AS DIRECTED BY THE ENGINEER.
- SEEPAGE KEY SHALL BE A MINIMUM OF 4 FEET WIDE OR AS DIRECTED BY THE ENGINEER.

STEP 3: EMBANKMENT FILL PLACEMENT

- DRAINAGE FILL SHALL BE CONSTRUCTED AT A MINIMUM OF 95% OF MAXIMUM DRY DENSITY (ASTM D698) MATERIAL WITH MOISTURE CONTENT WITHIN 2% OF THE OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D698.
- CUT OUT ANY SOFT, SPONGY, OR UNSUITABLE AREAS AND BACKFILL WITH SUITABLE MATERIAL AS DIRECTED BY THE ENGINEER.
- PROOF ROLL SUBGRADE WITH AT LEAST 4 PASSES OF A RUBBER-TIRED VEHICLE WEIGHING AT LEAST 10 TONS.
- SEEPAGE KEY SHALL BE PLACED IN LOOSE LIFTS NOT TO EXCEED 8 INCHES IN THICKNESS AND COMPACTED TO A MINIMUM OF 95% OF MAXIMUM DRY DENSITY (ASTM D698) AT A MOISTURE CONTENT WITHIN 2% OF THE OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D698.
- COMPACTION AND MOISTURE CONTENT TESTS SHALL BE PERFORMED BY A QUALIFIED GEOTECHNICAL ENGINEER OR TECHNICIAN AT A MINIMUM FREQUENCY OF 1 TEST PER 2,500 SQ. FT. OF EACH LIFT PLACED.
- FILL SHALL BE PLACED IN LOOSE LIFTS NOT TO EXCEED 8 INCHES IN THICKNESS AND COMPACTED TO A MINIMUM OF 95% OF MAXIMUM DRY DENSITY (ASTM D698) AT A MOISTURE CONTENT WITHIN 2% OF THE OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D698.
- COMPACTION AND MOISTURE CONTENT TESTS SHALL BE PERFORMED BY A QUALIFIED GEOTECHNICAL ENGINEER OR TECHNICIAN AT A MINIMUM FREQUENCY OF 1 TEST PER 2,500 SQ. FT. OF EACH LIFT PLACED.
- WHEN PLACING FILL ADJACENT TO CONCRETE STRUCTURES, ENSURE THAT THE CONCRETE HAS ATTAINED AT LEAST 75% OF ITS DESIGN STRENGTH BEFORE PLACING FILL.
- FILL SHALL BE PLACED IN LOOSE LIFTS NOT TO EXCEED 8 INCHES IN THICKNESS AND COMPACTED TO A MINIMUM OF 95% OF MAXIMUM DRY DENSITY (ASTM D698) AT A MOISTURE CONTENT WITHIN 2% OF THE OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D698.
- COMPACTION AND MOISTURE CONTENT TESTS SHALL BE PERFORMED BY A QUALIFIED GEOTECHNICAL ENGINEER OR TECHNICIAN AT A MINIMUM FREQUENCY OF 1 TEST PER 2,500 SQ. FT. OF EACH LIFT PLACED.
- WHEN PLACING FILL ADJACENT TO CONCRETE STRUCTURES, ENSURE THAT THE CONCRETE HAS ATTAINED AT LEAST 75% OF ITS DESIGN STRENGTH BEFORE PLACING FILL.
- PIPE INSTALLATION SHALL CONFORM TO THE EMBANKMENT FIELD PLACEMENT SECTION OF THIS SPECIFICATION.
- ALL PIPE SUPPORTS SHALL BE PLACED SO THAT 100% OF ITS STANDARD LENGTH IS IN CONTACT WITH THE SOIL BEFORE ANY LOADS ARE PLACED ON THE PIPE.
- ANY VOIDS BELOW PIPE SUPPORTS ARE TO BE FILLED AND COMPACTED BEFORE THE PIPE SUPPORTS ARE IN PLACE.
- ALL PIPE SUPPORTS SHALL CONFORM TO THE EMBANKMENT FIELD PLACEMENT SECTION OF THIS SPECIFICATION.
- ANY VOIDS BELOW PIPE SUPPORTS ARE TO BE FILLED AND COMPACTED BEFORE THE PIPE SUPPORTS ARE IN PLACE.
- ALL PIPE SUPPORTS SHALL CONFORM TO THE EMBANKMENT FIELD PLACEMENT SECTION OF THIS SPECIFICATION.

STEP 4: FIELD QUALITY CONTROL TESTING

- PERFORM COMPACTION AND MOISTURE CONTENT TESTS IN ACCORDANCE WITH ASTM D2922, ASTM D698, ASTM D2216, AND ASTM D4318 ON EMBANKMENT FILL CHANGE, AND/OR AS DIRECTED BY THE ENGINEER.
- PERFORM A PLACE COMPACTION TEST IN ACCORDANCE WITH ASTM D1556, ASTM D2922, OR ASTM D2937 AND NATURAL MOISTURE CONTENT TEST IN ACCORDANCE WITH ASTM D2922 AND ASTM D4318 FOR EMBANKMENT FILL MATERIAL PLACED, WHEN MATERIALS USING FOR EMBANKMENT FILL CHANGE, AND/OR AS DIRECTED BY THE ENGINEER.
- ADD ADDITIONAL COMPACTION OF 6 INCH LIFTS AROUND THE DROP INLETS AND UP TO 2 FEET ABOVE THE CULVERTS.

4.06.3 ALLOWABLE ADVANCES
EMBANKMENT SPECIFICATIONS MAY BE ADVANCED BASED ON SITE-SPECIFIC GEOTECHNICAL INVESTIGATION AND ENGINEERING DESIGN.

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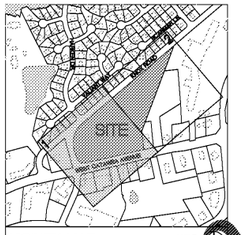

VICINITY MAP NTS

SURVEY DISCLAIMER

ALTA/NSPS LAND TITLE SURVEY ISSUE #01 EXISTING, MAP DATED NOVEMBER 01, 2017, PROVIDED BY ATLAS SURVEYING, INC. PINEVILLE, NORTH CAROLINA PHONE: 980-949-8475, WEBSITE: WWW.ATLASSURVEYING.COM

LEGEND

SYMBOL		DETAIL
	SEDIMENT BASIN	5,6/C-800
SKIM	OUTLET STRUCTURE WITH SKIMMER	6/C-800
	HIGH HAZARD SILT FENCE	10/C-800
	SILT FENCE	9/C-800
	TREE PROTECTION FENCING	2/C-803
	PROPOSED STORM DRAINAGE	-/-
	STABILIZED CONSTRUCTION ENTRANCE	3/C-800
RIP RAP	GRAVEL RIP RAP APRON	3/C-802
	LIMITS OF DISTURBANCE	-/-
	DIVERSION SWALE	8,12/C-800
	ROCK DITCH CHECK	2/C-800
	DRAINAGE AREA	-/-
	FILTER BERM BASIN	4/C-800
	EROSION CONTROL MATTING	3/C-801
	SILT FENCE ROCK OUTLET	11/C-800
	STONE INLET PROTECTION	1/C-800
	CATCH BASIN INLET PROTECTION	1/C-801

SEE SHEET C-301 AND C-808 FOR EROSION CONTROL NOTES

1. CONTRACTOR IS FULLY RESPONSIBLE FOR CONTACTING APPROPRIATE PARTIES AND ASSURING THAT EXISTING UTILITIES ARE LOCATED PRIOR TO CONSTRUCTION.
2. CONTRACTOR IS RESPONSIBLE FOR PLACING BARRICADES USING FLAG MEN, ETC. AS NECESSARY TO INSURE SAFETY TO THE PUBLIC.
3. ALL PAVEMENT CUTS, CONCRETE OR ASPHALT, ARE TO BE REPLACED ACCORDING TO STANDARDS OF THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION AND CHARLOTTE-MECKLENBURG UTILITIES SPECIFICATIONS.
4. SHORING SHALL BE IN ACCORDANCE WITH OSHA TRENCHING STANDARDS, 29 CFR, PART 1926, SUBPART P, OR AS AMENDED.

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300 South Tryon Street, Suite 1600
Charlotte, North Carolina 28202

p+704 376 1555 f+704 376 7851
url+ www.colejeneststone.com

CHARTER CORNELIUS, LP

75 Holly Hill Lane, Suite 305
Greenwich
Connecticut 06830

ONE NORMAN

20101 West Catawba Avenue
Cornelius
North Carolina 28031

EROSION CONTROL PLAN STAGE 1

Project No.
4493

Issued
03/26/19

Revised

COLEJENEST & STONE, P.A. CORPORATE SEAL C-138 NORTH CAROLINA

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT No. 2053 DAVID D. BACHMANN

06/19/19

SCALE: 1"=30'
0 15' 30' 60'

C-300

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