

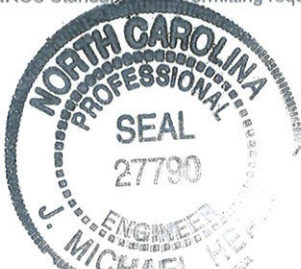
Pender County, North Carolina  
Department of Planning & Inspections  
USDA Emergency Watershed Protection Program  
EWP Event No. 5038 Hurricane Florence  
CONTRACT No. 10-091-4002  
DSR No. 494/ NC Wildlife Res. Commision  
7471 Shaw Hwy, Rocky Point, NC  
  
Slope Repair Plan

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**AFFIX NC LICENSED/PROFESSIONAL ENGINEERING SEAL**

"To the best of my professional knowledge, judgement and belief, these plans meet applicable NRCS Standards and Permitting requirements."



*J. Michael H. 3/14/22*



**PROJECT DESCRIPTION**  
**SLOPE BANK REPAIR AND STABILIZATION**

**SPONSOR:** PENDER COUNTY: PLANNING & INSPECTION DEPARTMENT

ADDRESS: 805 South Walker Street  
Burgaw, NC 28425  
CONTACT: Mr. Daniel Adams, CFM-Ast Dir  
PHONE: 910-259-0231  
EMAIL: dadams@pendercountync.gov

**PLANS & SPECIFICATIONS**

THESE PLANS & SPECIFICATIONS SHALL BE THE FINAL DOCUMENT USED BY THE CONTRACTOR(S) TO PERFORM THE PROJECTS AS SPECIFIED. PROVISIONS CONTAINED IN THE REQUEST FOR PROPOSAL SHALL ALSO BE INCORPORATED WITH THESE PLANS.

**THE COUNTY OF PENDER APPROVALS**

PENDER COUNTY SIGNATURES ON THIS PLAN SIGNIFY ONLY CONCURRENCE WITH THE GENERAL PURPOSE AND GENERAL LOCATIONS OF THE PROJECTS. ALL TECHNICAL DETAILS REMAIN THE RESPONSIBILITY OF THE ENGINEER PREPARING THE PLANS.


PENDER COUNTY INSPECTION & PLANNING DEPARTMENT				DATE
PENDER COUNTY MANAGER				DATE
USDA CONTRACT REPRESENTATIVE				DATE
REV NO	REVISION DESCRIPTION	SHEET(S)	INITIAL	DATE
1	FINAL PLANS & SPECIFICATIONS	1-10	RAS	2/28/2022



**REPAIR PLANS & SPECIFICATIONS**

County of Pender, North Carolina  
Department of Planning & Inspections  
Emergency Watershed Protection Program  
EWP Event No. 5038 Hurricane Florence  
DSR No. 494  
Slope Bank Repair and Stabilization

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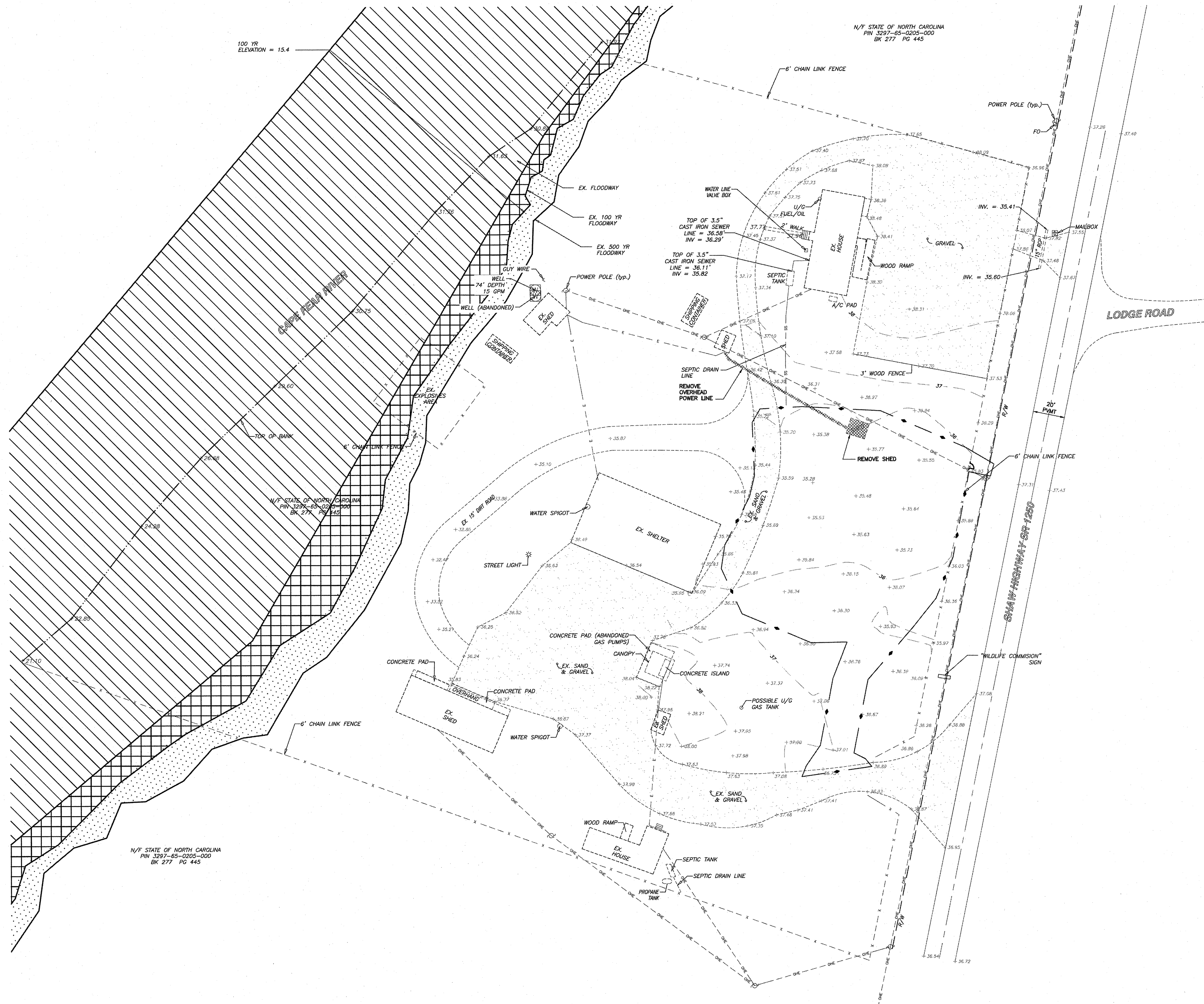
North Carolina Offices

- ☐ Charlotte, NC  
704 343 8973
- ☐ Raleigh, NC  
919 277 0494
- ☒ Wilmington, NC  
910 397 2929

**TITLE SHEET**



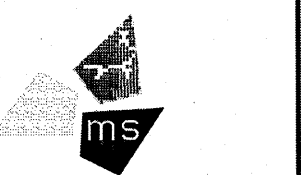
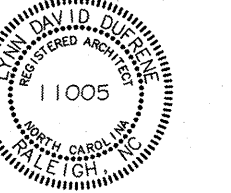
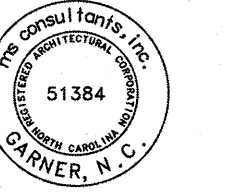




REVISION/DATE/DESCRIPTION  
XXXXXX XXXXXX

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engineers, architects, planners  
155 US 70 WEST  
Garner, North Carolina 27529  
phone 919.772.5565  
fax 919.779.2308

ENGINEER:  
**BNK**  
BASS, NIXON & KENNEDY, INC.  
CONSULTING ENGINEERS  
6310 CHAPEL HILL ROAD, SUITE 250  
RALEIGH, NORTH CAROLINA 27607  
TELEPHONE: (919) 851-4422  
or (800) 354-1879  
FAX: (919) 851-8968  
CERTIFICATION NUMBERS:  
NOBELS (C-0110)

PROJECT  
North Carolina Wildlife  
Resources Commission  
New Maintenance and  
Storage Building  
Holly Shelter Depot  
7471 Shaw Highway  
Rocky Point, NC 28457  
SCO# - ?

DATE: \_\_\_\_\_  
PROGRESS  
SHEET TITLE

EXISTING CONDITIONS  
AND DEMOLITION  
PLAN

KEY PLAN  
PER SCO COMMENTS 12-4-14

DRAWN BY: JP  
CHECKED BY: KRB  
PROJECT NO: 03-13319  
DRAWING

C1.0

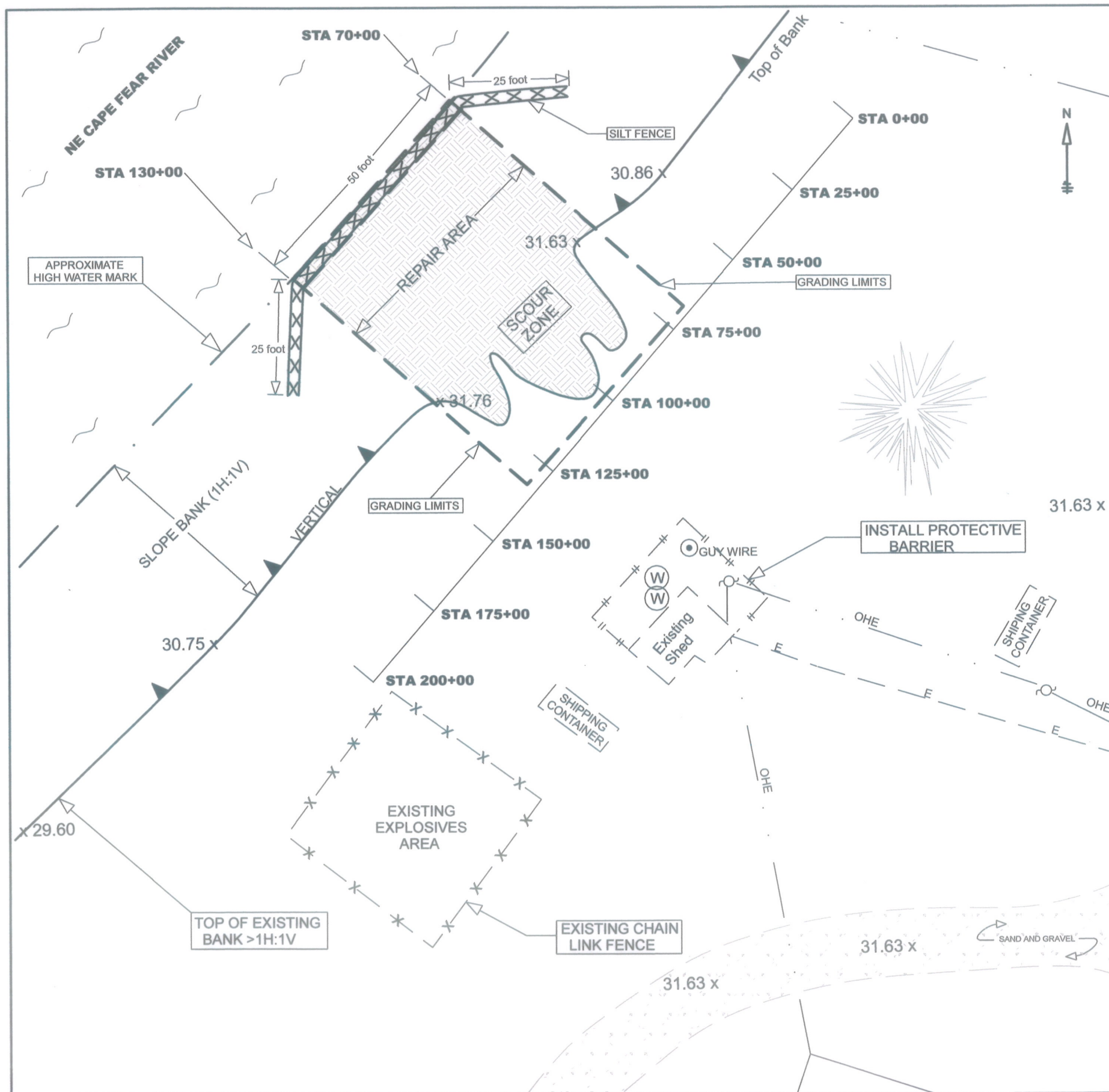
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Drawn By: ST      Checked By: RS

**NORTH CAROLINA WILDLIFE RESOURCES COMMISSION  
HOLLY SHELTER WILDLIFE DEPOT, MAINTENANCE AND  
STORAGE FACILITY  
7471 SHAW HIGHWAY, ROCKY POINT, NORTH CAROLINA**

**SITE SURVEY BY  
BASS, NIXON and  
KENNEDY INC. (2015)**

**SHEET  
2**



**FOR CONSTRUCTION PURPOSES**

**NOTES:**

- 1) Area of bank repair from STA 70+00 to STA 130+00.
- 2) Exact location to be field verified by Sponsor prior to commencing construction.
- 3) No grading or clearing shall occur from STA 130+00 to STA 200+00 or from STA 0+00 to STA 70+00.
- 4) Limits of excavation not to exceed area from STA 70+00 to STA 130+00 without written authorization from Sponsor.
- 5) No earthfill or debris shall be placed below the High-Water-Mark of NE Cape Fear River.
- 6) Install erosion control measures such as silt fence prior to grading; install at toe of bank and remain in place at all times during construction.
- 7) Adjacent slope banks not to be disturbed.
- 8) Contractor shall call 811 prior to performing any grading.
- 9) Contractor shall avoid disturbing or damaging all underground utilities; utilizing visible masking or barricade to show presence of all utilities in the work area.
- 10) No grading, fill, or disturbance below the High-Water-Mark.
- 11) Contractor shall provide protection barricade ground: Existing shed, water well and Guy Wire (as shown).

**LEGEND**

30.75 x	Spot Elevation		
OHE	OverHead Electric		
	Sand and Gravel Road		
	Repair Area	— E —	Electric Line
	Power Pole	(W)	Power Pole
	Steep Slope	⊙	Guy Wire
—    —	Protectice Barricade	—	Grading Limits

**SCALE IN FEET**



SOURCE: ORIGINAL SURVEY AND PLAN PRODUCED AS DRAWING C1.0 by BY BASS, NIXON & KENNEDY, INC. AND SEALED ON 4/10/15 BY KIRBY W. BELL, Jr/PE. ALSO GOOGLE EARTH PRO (12/2021) WAS USED AS THE BASE MAP FOR THIS DRAWING.

**SITE PLAN WITH  
STATION LOCATIONS  
AND GRADING LIMITS**

**NORTH CAROLINA WILDLIFE RESOURCES COMMISSION  
HOLLY SHELTER WILDLIFE DEPOT MAINTENANCE AND  
STORAGE FACILITY  
7471 SHAW HIGHWAY, ROCKY POINT, NORTH CAROLINA**

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**SHEET  
3**



AREA OF PROPOSED BANK REPAIR  
STA 130+00 through STA 70+00

N/F STATE OF NORTH CAROLINA  
PIN 3297-65-0205-000  
BK 277 PG 445

## EXISTING CONDITIONS WITH TOPOGRAPHY AND DRAINAGE

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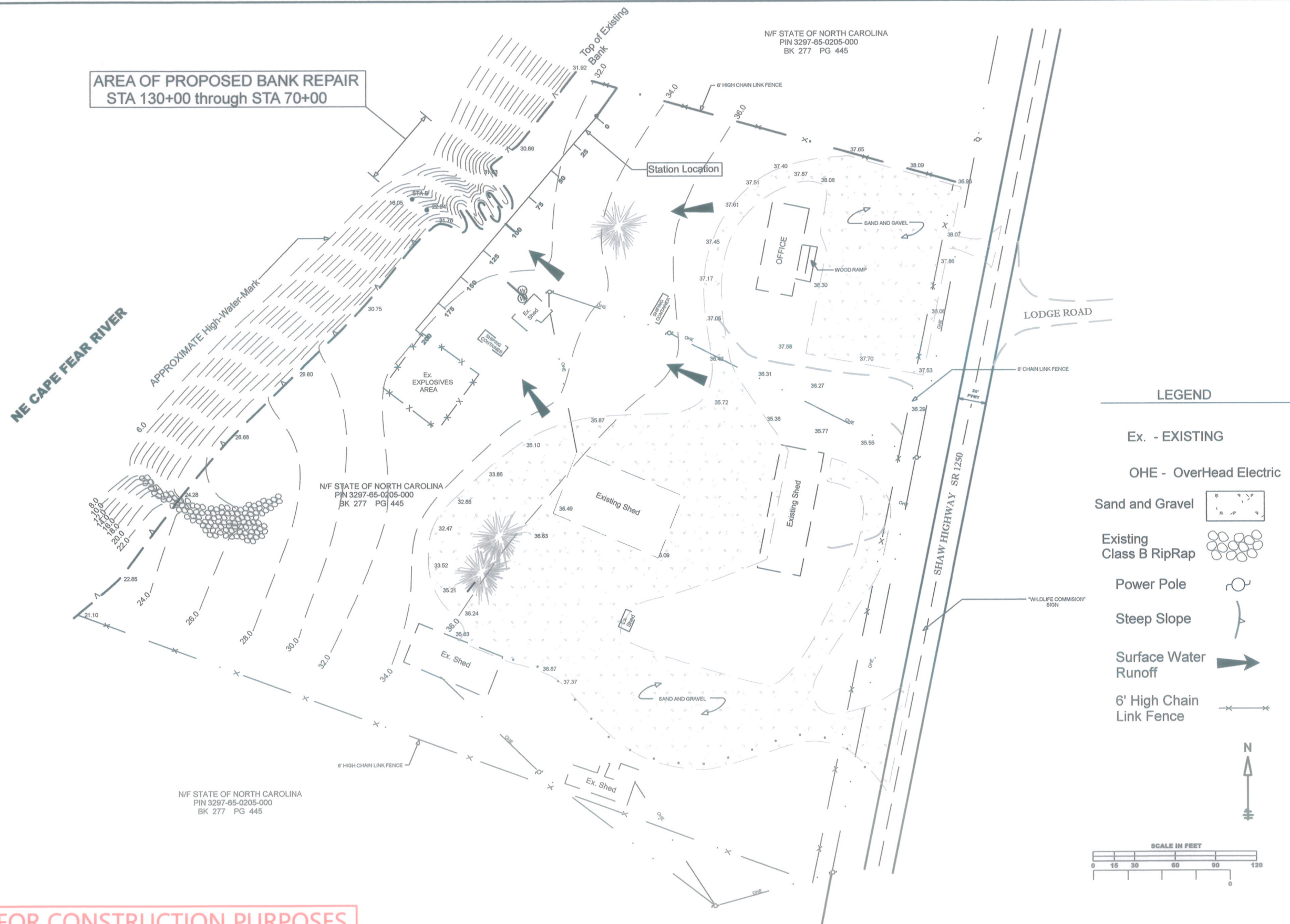
☐ Charlotte, NC  
704 343 8973

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919 277 0494

☒ Wilmington, NC  
910 397 2929

# SHEET

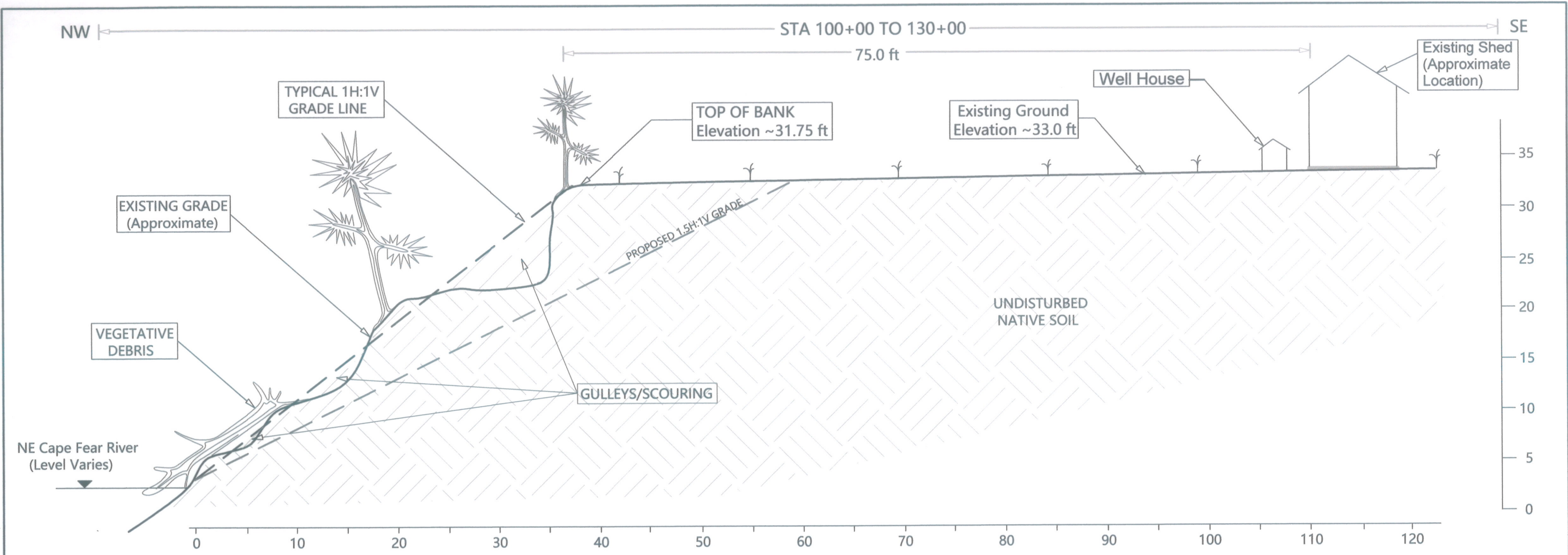
# 4



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FOR CONSTRUCTION PURPOSES





NOTES

- 1) VEGETATIVE DEBRIS SHALL BE REMOVED ONLY BETWEEN STA 130+00 TO STA 70+00 FROM TOP OF SLOPE TO TOE OF SLOPE.
- 2) FILL SECTIONS INDICATED BY THE PLANS SHALL BE PROVIDED WITH APPROVED FILL SOURCES (SP, SM, SC or SW) NOT TO EXCEED SHOWN QUANTITIES.
- 3) THE CONSTRUCTION LIMITS SHALL BE MARKED BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF GRADING AND APPROVED BY THE SPONSOR OR CFR.
- 4) GRADE OR CUT SLOPES SHALL BE PREPARED FOR VEGETATIVE STABILIZATION IN ACCORDANCE WITH THE SEEDING SPECIFICATIONS.
- 5) TEMPORARY EROSION SEDIMENTATION CONTROL MEASURES MUST BE UTILIZED TO PREVENT SEDIMENT OR LOOSE FILL FROM ENTERING THE ADJACENT WATERCOURSE AND SLOPE UNDER REPAIR.
- 6) THE CONTRACTOR SHALL PROVIDE GRADE STAKING/STAKE-OUT PRIOR TO GRADING.
- 7) CONTRACTOR SHALL CONTACT NORTH CAROLINA 811 PRIOR TO GRADING AND MARK ALL UTILITIES.

LEGEND

- |  |                           |
|--|---------------------------|
|  | GRASS                     |
|  | EXISTING GRADE            |
|  | TYPICAL GRADE LINE        |
|  | NATIVE SOIL (UNDISTURBED) |
|  | GULLEY/SCOURING           |

FOR CONSTRUCTION PURPOSES





TOP OF BANK  
Elevation ~31.75 ft

APPROXIMATE 1H:1V  
EXISTING GRADE LINE

APPROXIMATE  
HIGH-WATER-MARK

NE Cape Fear River  
(Level Varies)

APPROXIMATE LOCATION OF PROPOSED  
2H:1V FINAL GRADE (If Implemented)

APPROXIMATE LOCATION OF PROPOSED  
1.5H:1V FINAL GRADE (As Designed)

EXISTING GRADE

STA 100+00

STA 100+00 TO STA 130+00

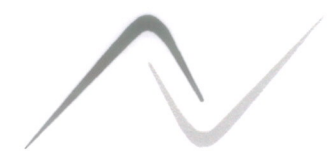
LEGEND

GRASS

- NOTES:
- 1) GRADE SLOPES TO 1.5 FT H:1 FT V FINAL GRADE AS SHOWN.
  - 2) FILL AREAS WHERE NEEDED USING ON-SITE SOIL OR APPROVED FILL.
  - 3) GRADE OR CUT SLOPES SHALL BE PREPARED FOR VEGETATIVE STABILIZATION IN ACCORDANCE WITH PLANS & SPECIFICATIONS AND THE SEEDING SPECIFICATIONS.
  - 4) TEMPORARY EROSION SEDIMENTATION CONTROL MEASURES MUST BE UTILIZED AT ALL TIMES TO PREVENT SEDIMENT OR LOOSE FILL FROM ENTERING THE WATERCOURSE UNDER REPAIR.
  - 5) CONTRACTOR SHALL APPLY APPROVED JUTE EROSION CONTROL BLANKET.
  - 6) THE PROPOSED 2H:1V FINAL GRADE IS SHOWN FOR ILLUSTRATIVE PURPOSES ONLY; NOT TO BE IMPLEMENTED IN THE REPAIR WORK SLOPE.

FOR CONSTRUCTION PURPOSES

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7471 SHAW HIGHWAY, ROCKY POINT, NC

CROSS SECTION SHOWING  
EXISTING AND PROPOSED  
SLOPE GRADIENT  
ALTERNATIVES

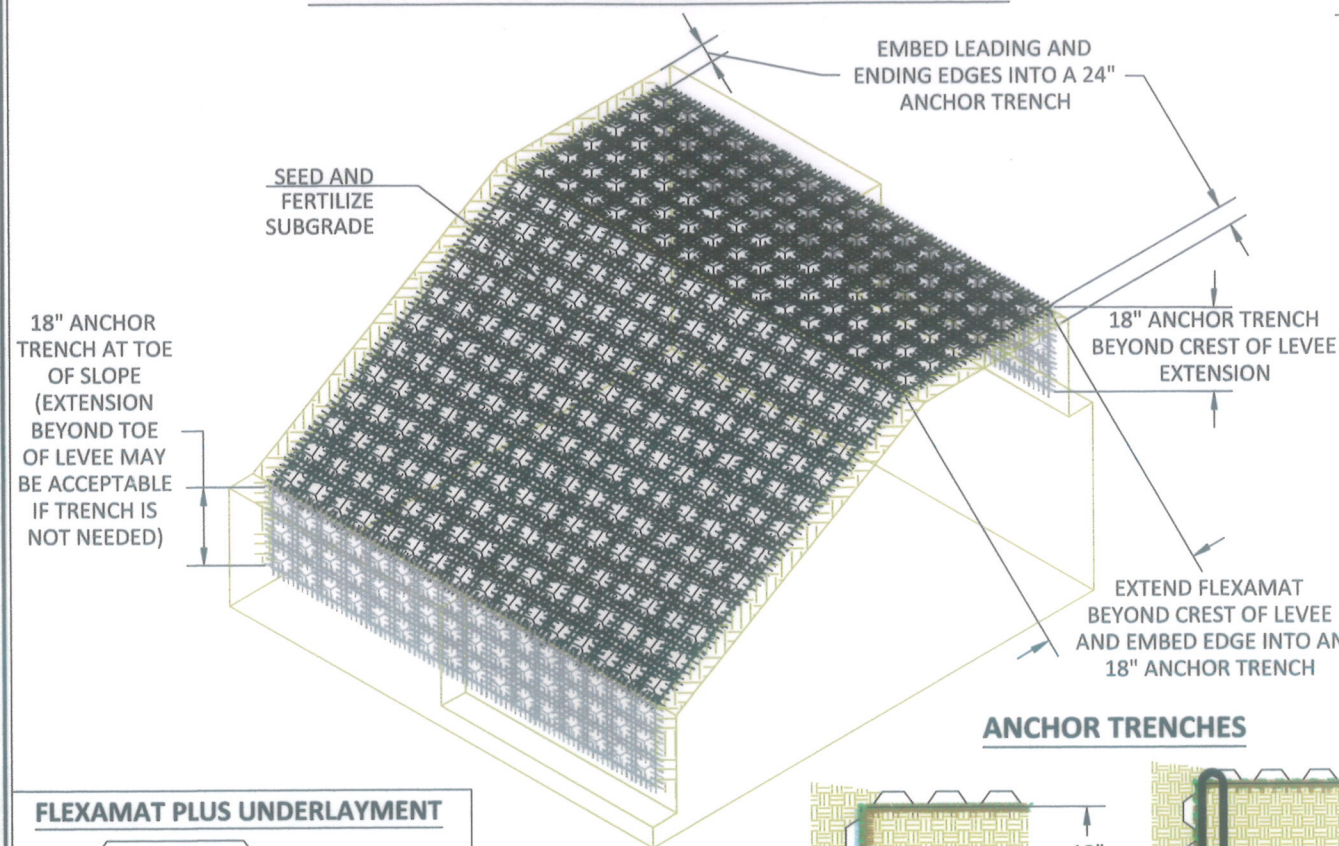
SHEET  
6

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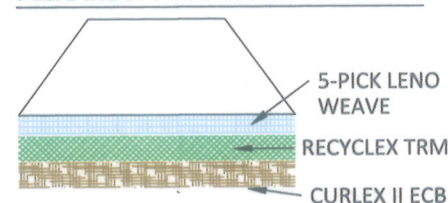
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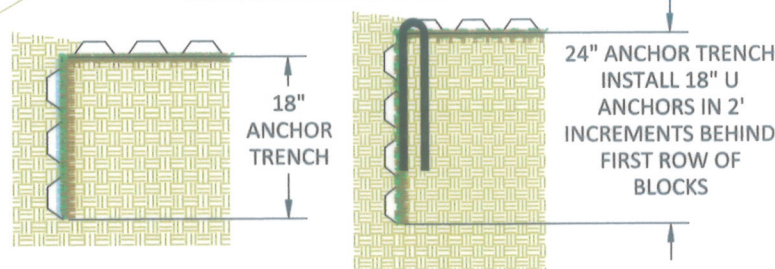
# ISOMETRIC VIEW OF SLOPE AND ANCHOR TRENCHES



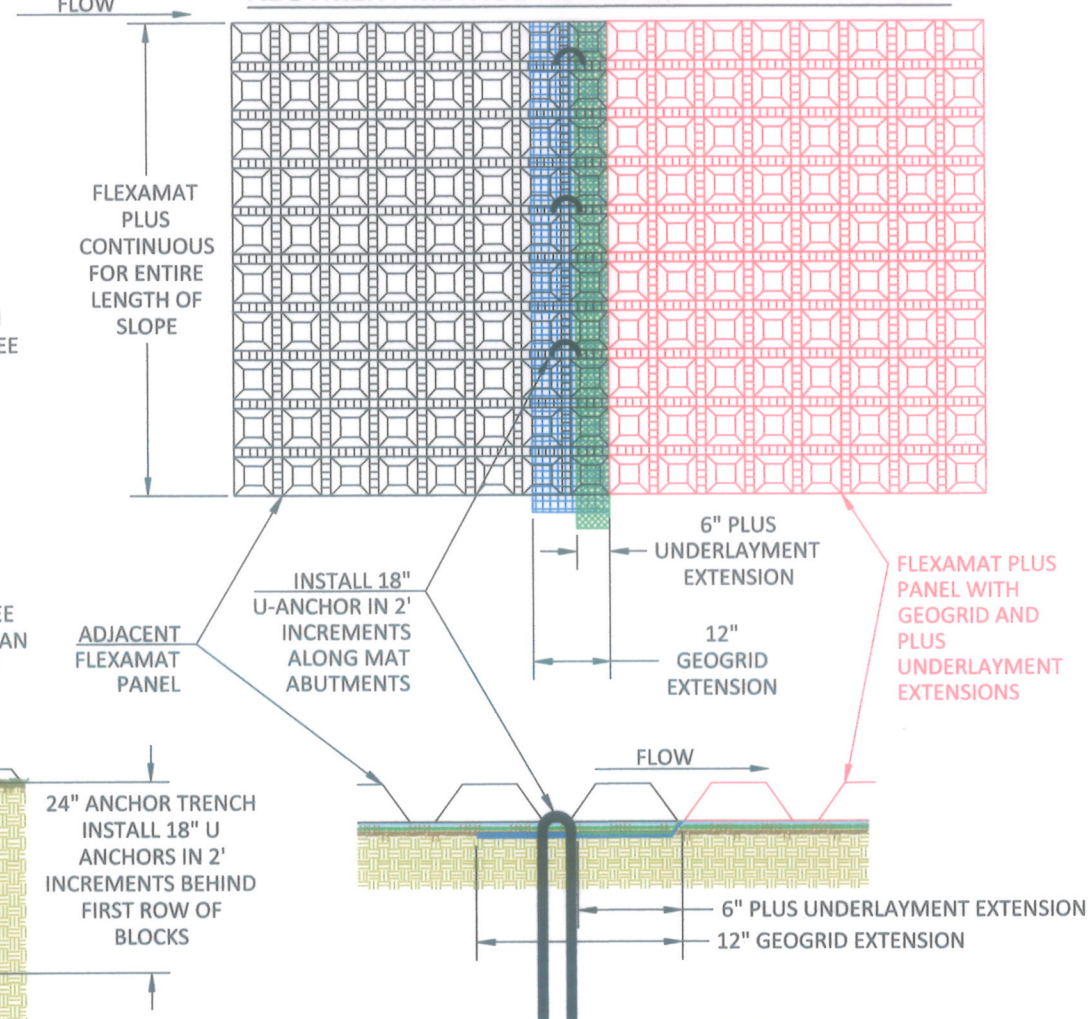
## FLEXAMAT PLUS UNDERLAYMENT



## ANCHOR TRENCHES

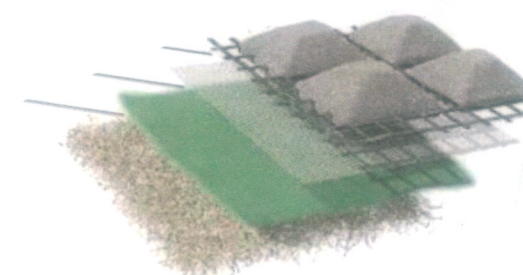


# ABUTMENT METHOD FOR SEAMS WITH EXTENSIONS



Bank Restoration **Flexamat**  
PERMANENT SITE SOLUTIONS

## Flexamat Plus



# FLEXAMAT PLUS - SLOPE ARMORING DETAIL

## CONSTRUCTION NOTES:

1. AN ENGINEER OR MANUFACTURERS REPRESENTATIVE SHALL BE ONSITE FOR THE START OF THE INSTALLATION
2. ALL SUBGRADE SURFACES PREPARED FOR THE PLACEMENT OF MATS SHALL BE SMOOTH AND FREE OF ALL ROCKS, STICKS, ROOTS, OTHER PROTRUSIONS, OR DEBRIS OF ANY KIND.
3. PRIOR TO FLEXAMAT PLUS INSTALLATION, SEED AND FERTILIZE PREPARED SUBGRADE WITH SITE SPECIFIC SEED MIX IN ACCORDANCE WITH THE PROJECT PLANS AND SPECIFICATIONS.
4. FLEXAMAT PLUS INSTALLATION WILL START AT THE DOWN CHANNEL END OF THE INSTALLATION AREA AND MOVE TOWARDS THE UP CHANNEL END OF THE INSTALLATION.
5. INSTALL FLEXAMAT PLUS ROLLS THAT ARE 15.5' WIDE AND INCLUDE A 12" GEOGRID EXTENSION AND A 6" PLUS UNDERLAYMENT EXTENSION FOR ABUTTING MATS. THE TOP EDGE OF MAT SHALL BE RECESSED 18" INTO THE SLOPE.
  - 5.1. INSTALL SUBSEQUENT MATS OVER THE 12" GEOGRID AND 6" PLUS UNDERLAYMENT EXTENSIONS OF THE DOWNSTREAM ADJACENTLY INSTALLED MAT. MATS SHALL BE CONTINUOUS FOR ENTIRE LENGTH OF SLOPE.
6. SECURE MAT ABUTMENT SEAMS IN 2' INCREMENTS USING 18" U-ANCHORS.
7. AT THE BEGINNING AND END OF THE LEVEE PROTECTION, EMBED THE MAT 24" PAST THE ANTICIPATED SCOUR POINT. FILL AND COMPACT TERMINATION TRENCH WITH COHESIVE SOIL.
8. EXTEND FLEXAMAT 5' PAST TOE OF SLOPE OR TRENCH MAT 18" AT THE TOE OF SLOPE.



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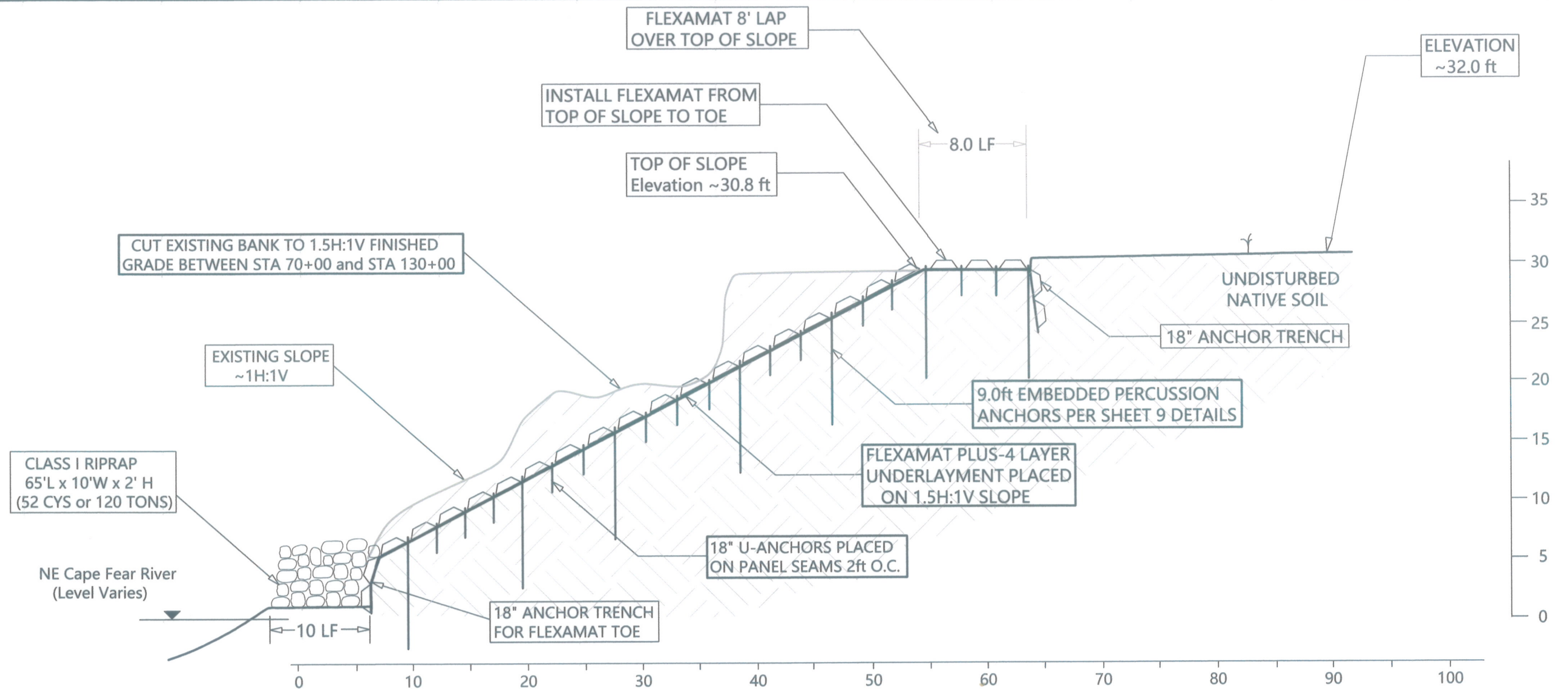
**FLEXAMAT PLUS -  
SLOPE ARMORING  
INSTALLATION DETAIL**

**SHEET  
7**

Drawn By: ST

Checked By: RS





- NOTES:
- 1) CUT EXISTING 1H:1V BANK TO FINISHED GRADE 1.5H:1V.
  - 2) COMPACT NATIVE SOIL SUBBASE TO MINIMUM 91% MDD.
  - 3) INSTALL FLEXAMAT PLUS 4-LAYER UNDERLAYMENT PER GUIDELINES IN APPENDIX I.
  - 4) INSTALL FLEXAMAT PLUS PER "FLEXAMAT INSTALLATION GUIDELINES".
  - 5) NO RIPRAP, FILL, OR FLEXAMAT PLACED BELOW NORMAL HIGH WATER MARK.
  - 6) GRADE SLOPE TO 1.5H:1V FINAL GRADE.
  - 7) FILL AREAS WHERE NEEDED USING ON-SITE SOIL OR APPROVED FILL.
  - 8) GRADE OR CUT SLOPES SHALL BE PREPARED FOR VEGETATIVE STABILIZATION PRIOR TO PLACING FLEXAMAT AND 4-LAYER UNDERLAYMENT.
  - 9) TEMPORARY EROSION CONTROL MEASURES MUST BE UTILIZED TO PREVENT SEDIMENT OR LOOSE FILL FROM ENTERING THE ADJACENT WATERCOURSE UNDER REPAIR.
  - 10) INSTALL 9.0ft PERCUSSION ANCHORS ON 8.0ft CENTERS; PLACE 18" U-ANCHORS ON ALL PANEL SEAMS SPACED EVERY 2.0ft (SEE SHEET 9).

WIDTH OF TOE = 65 LF  
 WIDTH OF APRON = 10 LF  
 DEPTH OF APRON ~2.0 LF

WEST

SLOPE X-SECTION AT STA 100+00

EAST

FOR CONSTRUCTION PURPOSES

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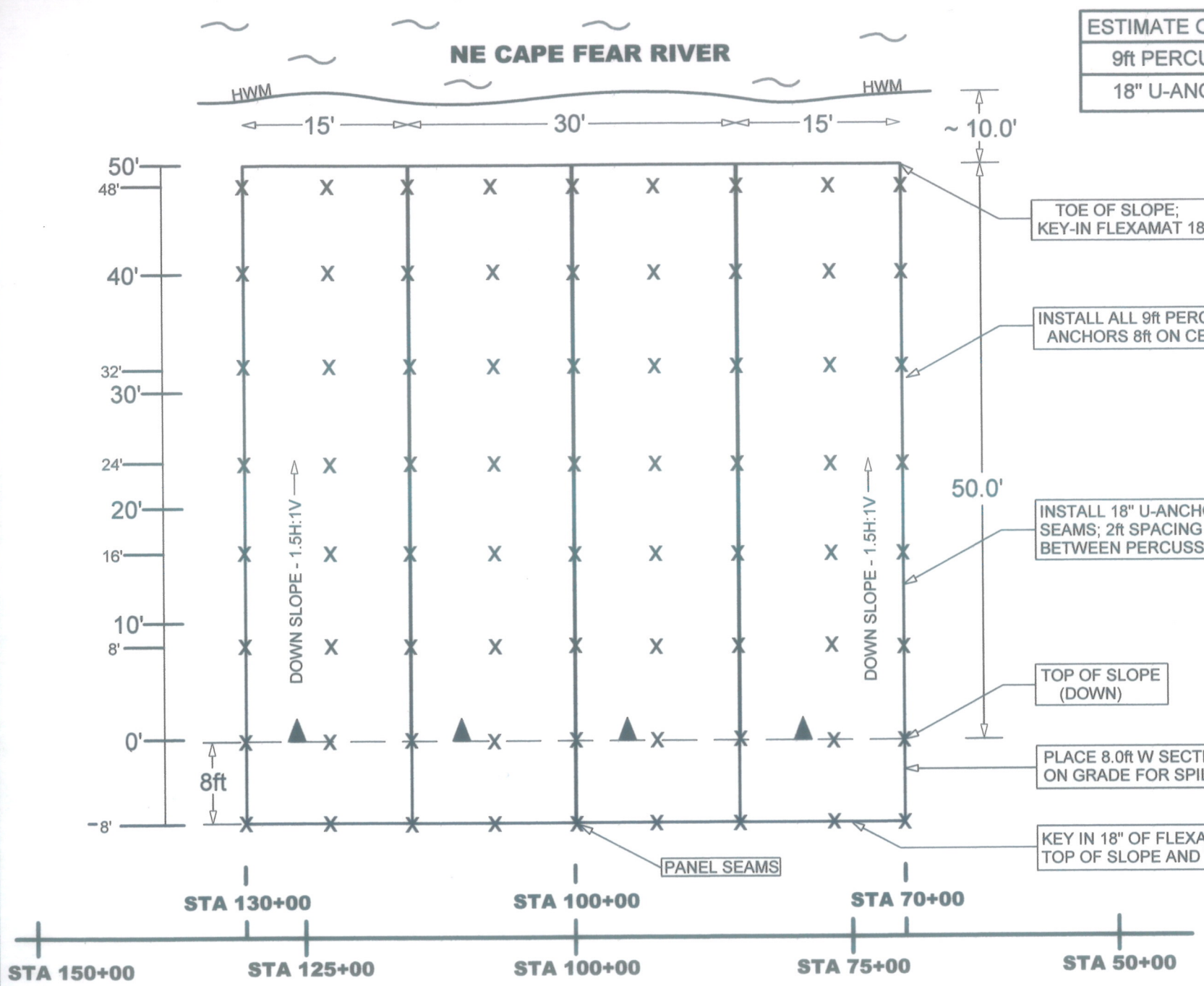
SLOPE REPAIR PLAN  
 USING FLEXAMAT PLUS

SHEET  
 8

Drawn By: ST

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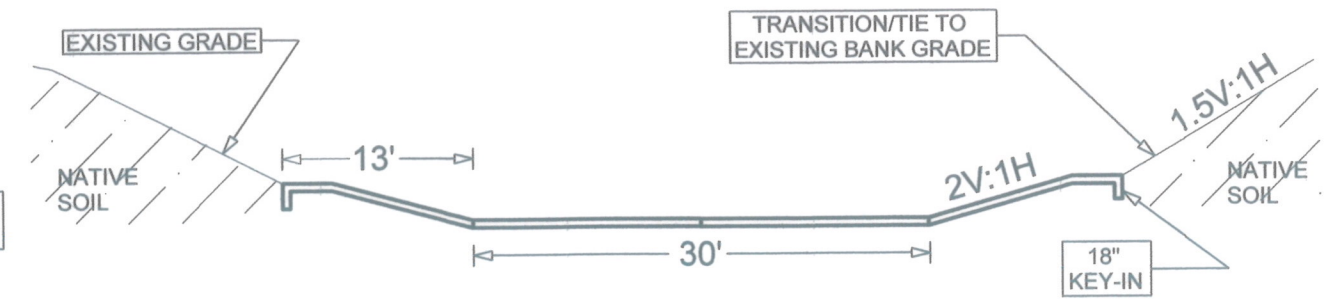




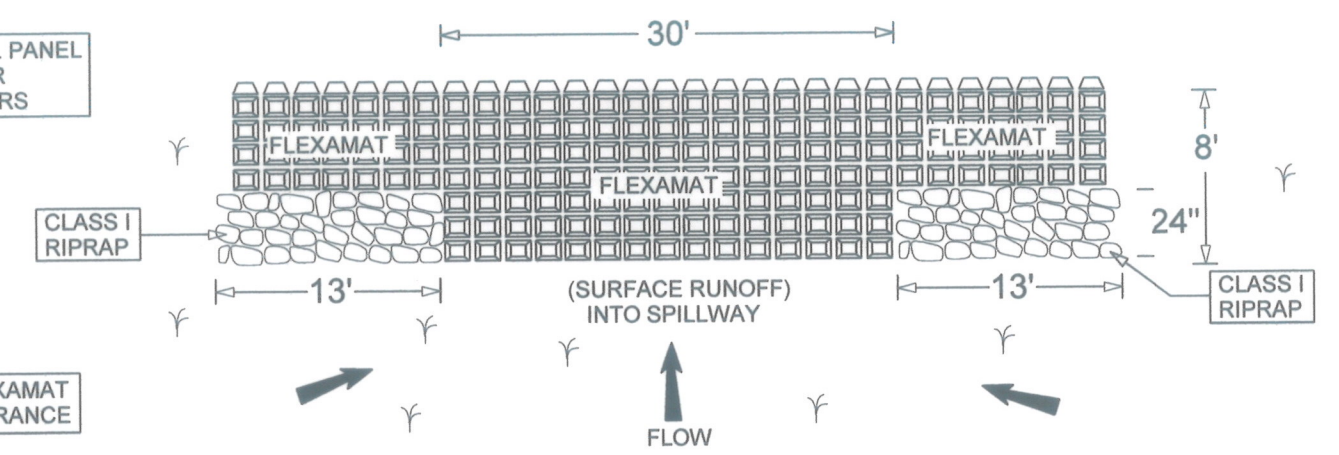
ESTIMATE OF ANCHOR QUANTITIES	
9ft PERCUSSION ANCHOR	72
18" U-ANCHOR (seam)	189

**FOR CONSTRUCTION PURPOSES**

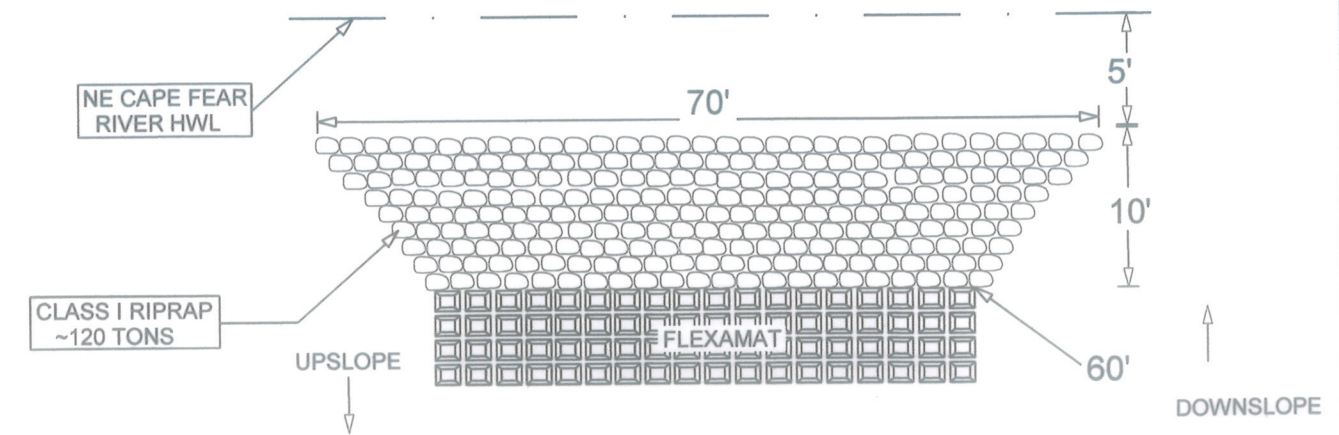
**CROSS SECTION OF SPILLWAY**



**SPILLWAY ENTRANCE DETAIL**



**SPILLWAY OUTFALL DETAIL**



- NOTE:
- 1) INSTALL 4-LAYER FLEXAMAT UNDERLAYMENT PER "FLEXAMAT INSTALLATION GUIDELINES" IN APPENDIX I.
  - 2) INSTALL FLEXAMAT PLUS PER "FLEXAMAT INSTALLATION GUIDELINES" IN APPENDIX I.
  - 3) INSTALL 18" U-BOLT ANCHORS PER "FLEXAMAT INSTALLATION GUIDELINES" IN APPENDIX I AND SHEET 8.
  - 4) INSTALL 9ft IMBEDDED PERCUSSION ANCHORS SPACED ON 8ft CENTERS PER "FLEXAMAT INSTALLATION GUIDELINES".
  - 5) DENSIFY UNDERLYING SOIL SUB-BASE TO 91% MDD BEFORE APPLYING FLEXAMAT UNDERLAYMENT.
  - 6) CONTRACTOR SHALL NOT MODIFY FLEXAMAT INSTALLATION PANEL LAYOUT, OR ANCHOR SPACINGS WITHOUT WRITTEN AUTHORIZATION FROM PROJECT ENGINEER.
  - 7) SPILLWAY ENTRANCE = 8.0 LF WIDE (AS SHOWN); KEY-IN 1.5ft FLEXAMAT INTO ANCHOR TRENCH.

X 9ft PERCUSSION ANCHOR SPACING = 8ft O.C.

▲ DIRECTION OF SLOPE (DOWN)

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**HOLLY SHELTER WILDLIFE DEPOT, MAINTENANCE AND STORAGE FACILITY**

**7471 SHAW HIGHWAY, ROCKY POINT, NC**

**PROPOSED FLEXAMAT PANEL LAYOUT WITH ANCHOR PLAN**

**SHEET 9**



GENERAL NOTES

1. THE CONTRACTOR SHALL SECURE ALL NECESSARY PERMITS FOR THIS PROJECT FROM THE LOCAL AND STATE AGENCIES.
2. THE LOCATION OF EXISTING SEWER, WATER OR TELEPHONE LINES, CONDUITS OR OTHER STRUCTURES ACROSS, UNDERNEATH OR OTHERWISE ALONG THE LINE OF PROPOSED WORK ARE NOT NECESARILY SHOWN ON THE PLANS, AND IF SHOWN ARE ONLY APPROXIMATE. CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF ALL UNDERGROUND UTILITIES SHOWN ON THE PLANS IN AREAS OF CONSTRUCTION PRIOR TO STARTING WORK. CONTACT ENGINEER IMMEDIATELY IF LOCATION OR ELEVATION IS DIFFERENT FROM THAT SHOWN ON THE PLANS, IF THERE APPEARS TO BE A CONFLICT, OR UPON DISCOVERY OF ANY UTILITY NOT SHOWN ON THE PLANS FOR ASSISTANCE IN LOCATING EXISTING UTILITIES CALL "NC ONE CALL", DIAL 811.
3. WHERE PAVEMENT IS ENCOUNTERED, THE CONTRACTOR SHALL NOT DISTURB REMOVE AGGREGATE BASE MATERIAL TO SUB-GRADE OR PAVEMENT.
4. DAMAGE TO THE UTILITIES (INCLUDING UNDERGROUND) OR PROPERTY OF OTHERS BY CONTRACTOR DURING CONSTRUCTION SHALL BE REPAIRED TO PRE-CONSTRUCTION CONDITIONS BY CONTRACTOR AT NO COST TO OWNER.
5. EXISTING PAVEMENT AND OTHER SURFACES DISTURBED BY CONTRACTOR (WHICH ARE NOT TO BE REMOVED) SHALL BE REPAIRED TO LIKE-NEW CONDITION.
6. THE CONTRACTOR IS REQUIRED TO MAINTAIN ALL DITCHES, PIPES, AND OTHER DRAINAGE STRUCTURES FREE FROM OBSTRUCTION UNTIL WORK IS ACCEPTED BY THE OWNER. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGES CAUSED BY FAILURE TO MAINTAIN DRAINAGE STRUCTURES IN OPERABLE CONDITION.
7. THE CONTRACTOR SHALL HAVE A SET OF APPROVED PLANS AVAILABLE AT THE SITE AT ALL TIMES WHEN WORK IS BEING PERFORMED. A DESIGNATED RESPONSIBLE EMPLOYEE SHALL BE AVAILABLE FOR CONTACT BY INSPECTOR.
8. THE CONTRACTOR SHALL NOTIFY ALL APPLICABLE REGULATORY AGENCIES AND THE ENGINEER AT LEAST 24 HOURS PRIOR TO STARTING WORK ON THIS PROJECT.
9. UNLESS OTHERWISE NOTED, ALL CONCRETE PIPE SHALL NOT BE ALTERED OR DISTURBED.
10. ALL EXCAVATION FOR UNDERGROUND INSTALLATIONS MUST COMPLY WITH OSHA STANDARDS FOR THE CONSTRUCTION INDUSTRY (29 CFR PART 1926).
11. VERIFY THE PROPOSED LAYOUT WITH ITS RELATIONSHIP TO THE EXISTING SITE SURVEY, ALSO VERIFY ALL DIMENSIONS, SITE CONDITIONS, AND MATERIAL SPECIFICATIONS AND NOTIFY THE OWNER AND ENGINEER OF ANY ERRORS, OMISSIONS, OR DISCREPANCIES BEFORE COMMENCING OR PROCEEDING WITH WORK.
12. DEVIATIONS FROM, OR CHANGES TO THESE PLANS SHALL OCCUR ONLY WITH WRITTEN CONCURRENCE FROM THE SPONSOR OR THE USDA.
13. MAKE EXPLORATORY EXCAVATIONS AND LOCATE EXISTING UTILITIES SUFFICIENTLY AHEAD OF CONSTRUCTION TO PERMIT REVISIONS TO THE PLANS IF NECESSARY. THE EXISTENCE AND/OR LOCATION OF UTILITIES SHOWN ON THESE PLANS MAY BE ONLY APPROXIMATELY CORRECT. TAKE PRECAUTIONARY MEASURES TO PROTECT THE UTILITIES SHOWN HEREON AND ANY OTHER EXISTING UTILITIES NOT OF RECORD OR NOT SHOWN ON THESE PLANS. REPAIR AT YOUR OWN EXPENSE, ANY EXISTING UTILITIES DAMAGED DURING CONSTRUCTION. IF A UTILITY IS DAMAGED DURING CONSTRUCTION, STOP WORK AND NOTIFY THE ENGINEER AND TOWN.
14. PROPERLY SECURE THE CONSTRUCTION AREA AT ALL TIMES AGAINST UNAUTHORIZED ENTRY AND ADEQUATELY PROTECT EQUIPMENT, MATERIALS, AN COMPLETED WORK FROM THEFT AND VANDALISM. THE OWNER IS NOT RESPONSIBLE FOR THE LOSS OF ANY MATERIAL STORED AT THE SITE.
15. THE CONTRACTOR SHALL IMPLEMENT MUTCD TRAFFIC CONTROL MEASURES IN ACCORDANCE WITH THE APPROVED TRAFFIC CONTROL PLAN.

CONSTRUCTION SEQUENCE

1. CONDUCT MANDATORY PRE-CONSTRUCTION MEETING BETWEEN CONTRACTOR AND SPONSOR.
2. INSTALL SILT FENCE AND OTHER PERIMETER CONTROLS.
3. INSTALL EROSION AND SEDIMENT CONTROL FEATURES AS INDICATED.
4. MINIMIZE DISTURBED AREAS AT ANY GIVEN TIME TO THOSE AREAS THAT ARE TO BEING ACTIVELY EXCAVATED.
5. INSPECT AND ADJUST AS NECESSARY ALL EROSION CONTROL DEVICES IN ORDER TO MAINTAIN PROPER FUNCTION.
6. COMPLETE AND TEMPORARY SITE ACCESS REQUIREMENTS, INCLUDING CLEARING, ACCESS ROAD INSTALLATION, AND TEMPORARY STREAM CROSSING INSTALLATION.
7. REMOVE MISCELLANEOUS DEBRIS BOTH IDENTIFIED AND AS ENCOUNTERED THAT IS NOT EXPLICITLY IDENTIFIED IN THE DESCRIPTION OF EACH STABILIZATION PROJECT. DISPOSE DEBRIS AT AN APPROVED PERMITTED LANDFILL FACILITY.
8. PERFORM GRADING AND FILL AS INDICATED IN PLANS TO ACHIEVE PROPOSED ELEVATION AND GRADES.
9. PROVIDE VEGETATION/SEEDING BENEATH FLEXAMAT UNDERLAYMENT.
10. INSTALL FLEXAMAT PLUS 4-LAYER-UNDERLAYMENT.
11. INSTALL FLEXAMAT PLUS RTCBM WHERE INDICATED.
12. INSTALL RIPRAP WHERE INDICATED.
13. STABILIZE SITE DURING AND AT THE CONCLUSION OF CONSTRUCTION IN ACCORDANCE WITH THE NOTES AND DETAILS IN THESE PLANS AND AS INSPECTOR HAS INSTRUCTED.
14. ONCE ALL AREAS HAVE BEEN STABILIZED, AND ONLY WITH THE APPROVAL OF THE SPONSOR REMOVE ALL REMAINING EROSION CONTROL DEVICES.
15. REMOVE AND REPLACE ANY ITEMS DISTURBED AND/OR REMOVED DURING ACCESS OR CONSTRUCTION ACTIVITIES REMOVE TEMPORARY ACCESS FEATURES UNLESS INDICATED TO REMAIN.

GENERAL UTILITY NOTE

1. THE SPONSOR AND PROJECT ENGINEER DOES NOT WARRANT THAT THE UTILITIES ARE IN THE EXACT LOCATION AS INDICATED ALTHOUGH, THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM THE INFORMATION AVAILABLE.
2. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO CONSTRUCTION SO THAT CONTRACTOR IS FAMILIAR AND UNDERSTANDS EXISTING CONDITIONS AND UTILITIES.
3. FIELD CHANGES MAY BE NECESSARY DUE EXISTING UTILITY LOCATIONS OR SITE OR SITE CONDITIONS. THE ENGINEER SHALL BE CONTACTED BEFORE MAKING ANY CHANGES TO THESE PLANS.
4. CONTRACTOR SHALL CONTACT 811- NO CUTS AND VERIFY THE PRESENCE AND LOCATION OF ALL UTILITIES IN THE NCDOT RIGHT-OF-WAY, AND/OR IN THE PROPOSED WORK ZONE. COPY OF 811-NO CUTS WORK TICKET SHALL BE PROVIDED TO

EROSION CONTROL NOTES

1. THE CONTRACTOR SHALL INSTALL ALL EROSION AND SEDIMENT CONTROL DEVICES AS REQUIRED DURING CONSTRUCTION IN ACCORDANCE WITH THE CURRENT EDITION OF THE NORTH CAROLINA EROSION AND SEDIMENT CONTROL MANUAL.
2. ALL DISTURBED AREAS SHALL BE PERMANENTLY SEEDED AND MULCHED PER THE SEEDING SCHEDULE AFTER REACHING FINAL GRADE. AREAS WHICH HAVE BEEN DISTURBED AND HAVE NOT REACHED FINAL GRADE, BUT WHICH ARE TO REMAIN UNDISTURBED FOR LONGER THAN 14 DAYS ARE TO BE TEMPORARILY SEEDED AND MULCHED PER THE SCHEDULE AS UPSTREAM AREAS ARE STABILIZED WITH PERMANENT GROUND COVER, DOWNSTREAM TEMPORARY DEVICES ARE TO BE REMOVED.
3. IT IS THE CONTRACTORS RESPONSIBILITY TO PERIODICALLY INSPECT ALL SEDIMENT CONTROL DEVICES TO ENSURE THEY ARE IN GOOD WORKING ORDER. AT A MINIMUM, ALL DEVICES SHALL BE INSPECTED DAILY AND AFTER MAJOR RAINFALL EVENTS. REPAIRS SHALL BE MADE WITHIN 24 HOURS.
4. THE CONTRACTOR SHALL INSTALL ADDITIONAL EROSION AND SEDIMENT CONTROL DEVICES IF DURING THE COURSE OF CONSTRUCTION THE ENGINEER OR NCDEQ INSPECTOR DETERMINES THAT THEY ARE REQUIRED.
5. SILT SHALL BE REMOVED FROM SILT FENCES WHEN THE SILT REACHES APPROXIMATELY ONE-THIRD (1/3) THE HEIGHT OF THE BARRIER.
6. THE CONTRACTOR SHALL PERIODICALLY TOP DRESS THE CONSTRUCTION ENTRANCE WITH CLEAN STONE. IF THE CONSTRUCTION ENTRANCE FAILS TO REMOVE DIRT FROM THE TIRES OF VEHICLES ENTERING A PUBLIC RIGHT-OF-WAY ADDITIONAL MEASURES MAY BE REQUIRED.
7. ALL EROSION AND SILTATION MEASURES ARE TO BE PLACED PRIOR TO OR AS THE FIRST STEP IN GRADING.
8. ALL TEMPORARY EARTH BERMS, DIVERSIONS, AND SILT DAMS ARE TO BE MULCHED AND SEEDED FOR VEGETATIVE COVER IMMEDIATELY AFTER GRADING. STRAW OR HAY MULCH IS REQUIRED. ADDITIONALLY ALL DIVERSION SWALES WILL BE PROTECTED AGAINST HIGH VELOCITY WITH EROSION CONTROL MEASURES AS DENOTED ON THESE PLANS. THE SAME APPLIES TO STOCKPILES ON SITE AS WELL AS SOIL (INTENTIONALLY) TRANSPORTED FROM THE PROJECT SITE.
9. ANY DISTURBED AREA NOT PAVED, SODDED, OR BUILT UPON IS TO BE SEEDED PER THE TEMPORARY AND PERMANENT SEEDING SCHEDULE INCLUDED IN THESE DRAWINGS.
- 10) CONTRACTOR STAGING AREA(S) SHALL BE RETURNED TO BETTER THAN ORIGINAL CONDITIONS AT THE COMPLETION OF THE WORK.
11. ALL DISTURBED AREAS ARE TO DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND DISTURBING ACTIVITIES AND DURING SITE DEVELOPEMENT UNTIL FINAL STABILIZATION IS ACHIEVED.
12. A PRE-CONSTRUCTION MEETING IS REQUIRED PRIOR TO ISSUANCE OF A LAND DISTURBANCE PERMIT. THE CONTRACTOR SHALL SCHEDULE THE MEETING WITH THE NCDEQ INSPECTOR ASSIGNED TO THE PROJECT.
13. PERMANENT GROUND COVER SHOULD BE PROVIDED FOR ALL DISTURBED AREAS WITHIN 10 WORKING DAYS FOLLOWING THE COMPLETION OF CONSTRUCTION OR DEVELOPEMENT, OR DISTURBING ANY PROJECT AREA.
14. A SILT CURTAIN OR OTHER APPROVED EROSION CONTROL MEASURE SHALL BE INSTALLED PRIOR TO CONSTRUCTION IN MILL CREEK AT THE END OF THE 100 LF RIP RAP SECTION.

SEEDING SCHEDULE

PERMANENT SEEDING SCHEDULE FOR ALL AREAS EXCEPT RESIDENTIAL LAWN/YARDS, PARKS OR IMPROVED AREAS

DATES	SPECIES	RATE (LB/1,000 SFT)
SEP 1 to MAR 31	KENTUCKY 31 TALL FESCUE	1.7
	PENSACOLA BAHIA GRASS	1.1
FEB 1 to to AUG 31	KENTUCKY 31 TALL FESCUE	1.1
	PENSACOLA BAHIA GRASS	1.7

SOIL AMENDMENTS: FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 12 LB/1,000 10-20-20 FERTILIZER. MULCH: 70 LBS HAY OR SMALL GRAIN STRAW MULCH.  
NOTE: SHOULD LOCALITY, CLIMATE AND/OR GROUND CONDITIONS WARRANT, THE SPONSOR MAY ALTER THE PLANTING DATES TO AN EARLIER OR LATER PERIOD, SEED MIX AND QUALITY, OR MULCH REQUIREMENTS FROM THOSE SHOWN ABOVE. ANY CHANGE OF THE SEEDING-MULCHING SPECIFICATIONS COULD BE CHANGED UPON THE RECOMMENDATIONS OF THE USDA/NRCS CONTRACT PERSONNEL PROVIDING CONSTRUCTION OVERSIGHT OF THESE PROJECTS. THE CONTRACTOR SHALL INSTALL THE USDA/NRCS RECOMMENDED FINAL SEEDING SPECIFICATION IF THAT DEVIATES FROM THE SCHEDULE SHOWN ABOVE.

GENERAL NOTES

(Utility, Seeding and Construction)

Pender County, North Carolina  
Department of Planning & Inspections  
Emergency Watershed Protection Program  
EWP Event No. 5038 Hurricane Florence  
DSR No. 494  
Slope Bank Repair and Stabilization



- North Carolina Offices
- ☐ Charlotte, NC  
704 343 8973
  - ☐ Raleigh, NC  
919 277 0494
  - ☒ Wilmington, NC  
910 397 2929

SHEET  
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FOR CONSTRUCTION PURPOSES