ADDENDUM #2

A New Transylvania County EMS Base, Brevard, North Carolina

<u>Addendum #2</u> August 31, 2022

This addendum supersedes all other addenda and forms a part of the bid documents and modifies the original project manual and drawings dated August 10, 2022.

Item #1: Project Manual: Section 313116 - "Termite Control"

A. Add attached Section 313116 – Termite Control to Project Manual.

Item #2: Civil Drawings Sheets C0, C1, C2, C3, C4, C5, C6, C7, C8, C9, C10, C11, L1:

A. Replace original Civil Drawings listed above dated 8/9/2022 with attached revised signed and sealed Civil Drawings dated 8/29/2022.

SECTION 313116 - TERMITE CONTROL

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Soil treatment.

1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at **Project site**.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product. Include the EPA-Registered Label for termiticide products.

1.4 INFORMATIONAL SUBMITTALS

- A. Product certificates.
- B. Soil Treatment Application Report: Include the following:
 - 1. Date and time of application.
 - 2. Moisture content of soil before application.
 - 3. Termiticide brand name and manufacturer.
 - 4. Quantity of undiluted termiticide used.
 - 5. Dilutions, methods, volumes used, and rates of application.
 - 6. Areas of application.
 - 7. Water source for application.
- C. Sample Warranties: For special warranties.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: A specialist who is licensed according to regulations of authorities having jurisdiction to apply termite control treatment and products in jurisdiction where Project is located and who employs workers trained and approved by manufacturer to install manufacturer's products.

TERMITE CONTROL 313116 - 1

1.6 WARRANTY

- A. Soil Treatment Special Warranty: Manufacturer's standard form, signed by Applicator and Contractor, certifying that termite control work consisting of applied soil termiticide treatment will prevent infestation of subterranean termites, including Formosan termites (Coptotermes formosanus). If subterranean termite activity or damage is discovered during warranty period, re-treat soil and repair or replace damage caused by termite infestation.
 - 1. Warranty Period: **Five** years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 SOIL TREATMENT

- A. Termiticide: EPA-Registered termiticide acceptable to authorities having jurisdiction, in an aqueous solution formulated to prevent termite infestation.
 - 1. <u>Manufacturers:</u> Subject to compliance with requirements, provide products by one of the following:
 - a. <u>Bayer Environmental Science</u>.
 - b. Ensystex, Inc.
 - c. Master Builders Solutions.
 - d. Syngenta Crop Protection, LLC.
 - 2. Service Life of Treatment: Soil treatment termiticide that is effective for not less than **five** years against infestation of subterranean termites.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Remove extraneous sources of wood cellulose and other edible materials, such as wood debris, tree stumps and roots, stakes, formwork, and construction waste wood from soil within and around foundations.
- B. Soil Treatment Preparation: Remove foreign matter and impermeable soil materials that could decrease treatment effectiveness on areas to be treated.

3.2 APPLYING SOIL TREATMENT

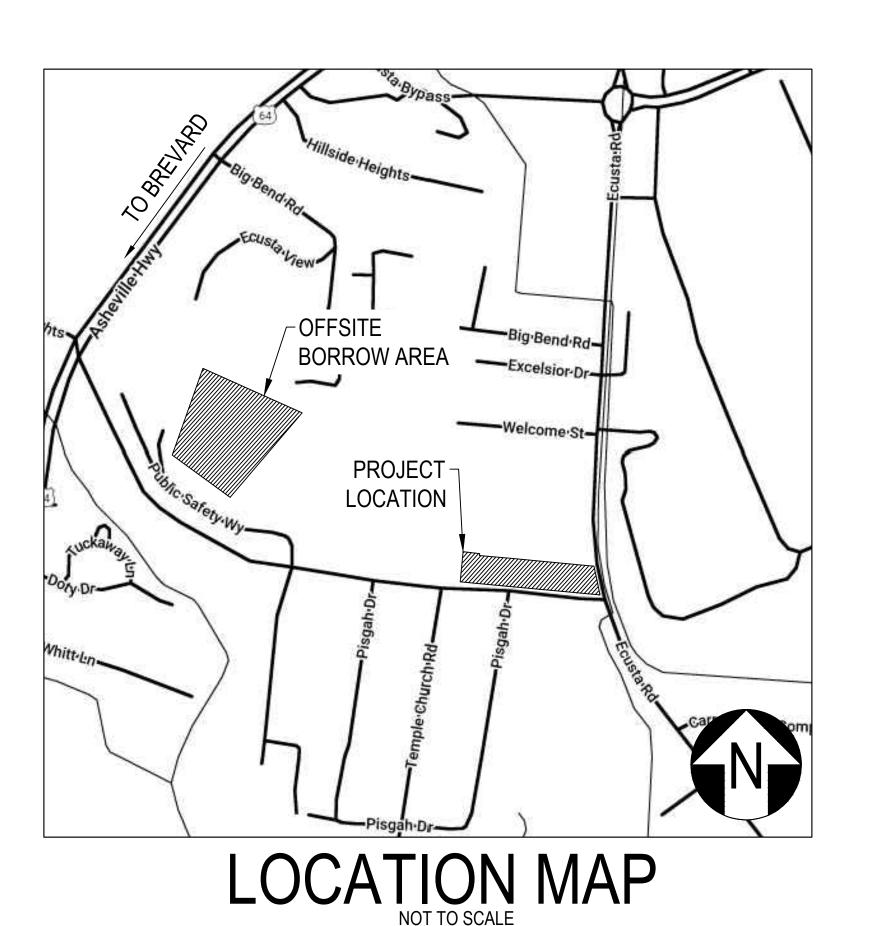
A. Application: Mix soil treatment termiticide solution to a uniform consistency. Distribute treatment uniformly. Apply treatment at the product's EPA-Registered Label volume and rate for maximum specified concentration of termiticide to the following so that a continuous horizontal and vertical termiticidal barrier or treated zone is established around and under building construction.

TERMITE CONTROL 313116 - 2

- 1. Slabs-on-Grade and Basement Slabs: Underground-supported slab construction, including footings, building slabs, and attached slabs as an overall treatment. Treat soil materials before concrete footings and slabs are placed.
- 2. Foundations: Soil adjacent to and along the entire inside perimeter of foundation walls; along both sides of interior partition walls; around plumbing pipes and electric conduit penetrating the slab; around interior column footers, piers, and chimney bases; and along the entire outside perimeter, from grade to bottom of footing.
- 3. Crawlspaces: Soil under and adjacent to foundations. Treat adjacent areas, including around entrance platform, porches, and equipment bases. Apply overall treatment only where attached concrete platform and porches are on fill or ground.
- 4. Masonry: Treat voids.
- 5. Penetrations: At expansion joints, control joints, and areas where slabs and below-grade walls will be penetrated.
- B. Post warning signs in areas of application.
- C. Reapply soil treatment solution to areas disturbed by subsequent excavation, grading, landscaping, or other construction activities following application.

END OF SECTION 313116

TERMITE CONTROL 313116 - 3



CONSTRUCTION PLANS

FOR THE

Transylvania County EMS Base

535 Morris Road, Brevard, NC 28712 TRANSYLVANIA COUNTY, NORTH CAROLINA AUGUST 9, 2022

PREPARED FOR: TRANSYLVANIA COUNTY 152 PUBLIC SAFETY WAY BREVARD, NC 28712 T: 828-884-3108 **CONTACT: DAVID MCNEILL**

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SHEET NO.	DESCRIPTION					
C-0	COVER SHEET					
C-1	EXISITING CONDITIONS & DEMOLITION PLAN					
C-2	SITE PLAN					
C-3	GRADING & STORMWATER PLAN & PROFILES					
C-4	UTILITY PLAN					
C-5	EROSION CONTROL PHASE 1					
C-6	EROSION CONTROL PHASE 2					
C-7	OFFSITE GRADING & EROSION PLAN					
C-8	DETAILS					
C-9	DETAILS					
C-10	DETAILS					
C-11	DETAILS					
L-1	LANDSCAPE PLAN					

REVISIONS

REVISION AND ISSUE NO.	SHEET NO.	DESCRIPTION	DATE		
A - ISSUE 1	ALL	ISSUED FOR BIDDING	8/9/2022		
A - ISSUE 2	ALL	ADDRESS OWNER COMMENTS 8/2			

EARTHWORK SPECIFICATIONS:

Clearing and grubbing shall consist of clearing the surface of the ground of the designated areas of all trees, logs, snags, brush, undergrowth, heavy growth of grass, weeds, fence structures, debris and rubbish of any nature natural obstructions such as objectionable soil material unsatisfactory for oundations. It shall also consist of grubbing of stumps, roots foundations and disposal of all such material. All holes remaining after the grubbing operation in embankment areas and in excavation areas less than two (2) feet in depth, shall have sides broken down and leveled if necessary to flatter out slopes, refilled with acceptable material that is properly compacted in layers by tampers, rollers or

Burning on site is not permitted without written approval of the local governing authorities having

2.Existing trees and area outside of grading limits line

Trees and vegetation to be saved shall be protected from damage by a fence barricade prior to, or during, clearing operations. Trees to be saved shall be designated by the owner. No trees are to be removed from the area outside the limits of grading or from specifically designated areas within the construction areas. If, in the opinion of the engineer, a contractor damages a tree not to be removed, the contractor will be fined a predetermined amount for each damaged tree. The contractor shall also be responsible for all costs associated in removing the damaged trees from the site.

All vegetation such as roots, brush, heavy growth of grass, topsoil, all decayed vegetable matter, rubbish, and other unsuitable material within the area upon which fill is to be placed shall be stripped or be otherwise removed before the fill operation is started. In no case shall unsuitable material rema in or under the fill area. Sloped ground surface steeper than one vertical to four horizontal, on which fill is to be placed, shall be placed, stepped or benched in such a manner that the fill to be placed shall be 95 percent of the maximum laboratory dry density according to standard proctor (AASHTO T99, ASTN D-698). Moisture content shall be within 3 percent of the optimum moisture content. Proof-roll the areas to be filled or on which structures are to be placed. A loaded dump truck or other rubber tired equipment shall be used proof-rolling. Overlapping passes of a vehicle should be made across the site in one direction and then perpendicular to the original direction of rolling.

Any yielding, pumping or soft areas should be cut out and replaced with fill compacted as described

The proposed fill should be limited to soils classified in accordance with ASTM D-2487 as GM, GC, SW, SM, SC, ML and CL. Soil classified as PT, OH, OL, CH and MH are not satisfactory as

Fills and embankments shall be constructed at the locations and to the lines and grades indicated on construction plans. The slope shall not exceed two feet horizontal to one foot vertical. The completed fill shall correspond to the shape of the typical sections indicated on the construction plans. Material removed from the excavation shall be used in forming the fill. Fill material shall be reasonably free from roots, other organic material, trash and stones having maximum dimensions greater than 6 inches (4 inches in trenches for utilities). No frozen material will be permitted in the fill. Stones having a maximum dimension of 4 inches will not be permitted in the upper six inches of fill or embankment or utility trench. The material shall be placed in successive horizontal layers not more than 8 inches thick unless otherwise noted, in loose depth for the width of the cross-section and shall be compacted to at least 95 percent of the maximum laboratory dry density according to standard proctor (ASTM D-698. AASHTO T-99). Moisture shall be within 3 percent of the optimum moisture content. The top 12 inches of the paying, parking and/or roadway sub-grade shall be compacted to 95 percent of the maximum dry density (standard proctor). Each lift shall be rolled with a vibratory roller, a sheepsfoot roller, or a loaded rubber tired dump truck, scraper or loader. If the soil is to dry, a water truck with spreader bar or spray hose shall be used to bring the soil to the proper moisture range. The water shall be thoroughly and properly mixed with the soil prior to compaction.

Storm drain pipes shall be placed on a firm bottom and hand tamped to shore up the pipe. A cushior of soil shall be tamped above the crown of the pipe in accordance with the pipe manufacturer's recommendations so that the heavier compaction equipment can then be used to bring the soil to a density as described above for fill areas.

F SOILS INVESTIGATION REPORT IS PROVIDED, THEN FOLLOW THE RECOMMENDATIONS OF THE REPORT IF THEY EXCEED THE RECOMMENDATIONS OF THESE SPECIFICATIONS.

Unless otherwise specified, areas designated for grading operations that contain a blanket of topsoil shall be stripped and placed in convenient stockpiles for later use as a topsoil blanket on the new graded areas specified herein, or as designated. Topsoil shall be stripped from all areas designated to receive fill. The stripping of material for topsoil shall be carefully determined and only the quantity required shall be stockpiled. Material stockpiled shall be stored in a satisfactory manner to afford proper drainage. When grading operations permit, instead of stockpiling, the topsoil shall be hauled and spread directly on the areas designated to receive topsoil.

If rock is encountered, clear away earth to expose material. Notify owner and receive written instructions prior to excavation. Remove rock to a depth of 6 inches below and 8 inches on each side of pipes in trenches. A measurement of the extent of rock to be removed shall be made. Rock excavation shall be paid for in accordance with agreement with the owner

CONSTRUCTION NOTES:

The drawings and specifications are intended to cover a complete project, ready to use, and all items necessary for a complete and workable job shall be furnished and installed. Any discrepancy shall be immediately reported to the owner or his representative.

All work shall comply with all applicable local, state, and federal codes. The contractor, at his expense shall obtain all necessary licenses and permits, unless already obtained by the owner.

The contractor shall coordinate location and installation of all underground utilities and appurtenances to minimize disturbing curbing, paving and all other utilities.

The existing utilities shown are for the contractor's convenience only. There may be other utilities not shown on these drawings. The utilities shown are based on the best available information and surface evidence where available. The engineer assumes no responsibility for the location of the utilities shown. It shall be the contractor's responsibility to verify the locations of all utilities within the limits of work. All damage made to existing utilities by the contractor shall be the sole responsibility

Deviations from these plans and specifications without prior consent of the engineer and the municipality may be cause for the work to be unacceptable.

All materials shall be new unless used or salvaged materials are authorized by the owner.

The contractor shall furnish and maintain all necessary barricades around the work and shall provide protection against water damage and soil erosion.

. All work shall be performed in a finished and workmanlike manner to the entire satisfaction of the owner, and in accordance with the best-recognized trade practices.

The contractor shall provide sheeting and shoring for all trench construction in accordance with

0. All pipe lengths shown are to the centerline of the structures unless specifically noted.

2. Bedding requirements specified herein are to be considered as minimum required for relatively dry stable earth conditions. Additional bedding shall be required for rock trenches to provide such additional bedding as required to properly construct work.

. Pipes (storm and sanitary sewer) shall be laid on smooth, continuous grades with no visible bends at

3. All storm drainage inlet structures shall have metal ring and cover for access.

14. All angles shown are 90 degrees unless shown otherwise.

5. All grades shown are finished grades. Contractor shall verify dimensions, grades, and existing elevations prior to construction. 16. Concrete curbs shall be constructed in accordance with the details shown on plans. Materials,

equipment, methods of construction and workmanship shall conform to state D.O.T. standard 7. All concrete shall have 3000-PSI compressive strength after 28 days, with a maximum slump of four

(4) inches, unless specified otherwise.

All exposed concrete shall have a fine hair broomed finish.

Parking and driveway base course and asphaltic concrete surface and prime materials, equipment, methods for construction and workmanship shall conform to state D.O.T. standard specifications.

20. Contractor to field verify all storm, sanitary, water and other utilities locations and inverts prior to installation of any utilities. Notify engineer prior to proceeding with any work if discrepancies found.

I. Contractor shall notify the proper local authorities 24 hours prior to any road being closed for construction, including but not limited to local newspaper, radio station, fire department, county sheriff's department, ambulance service, and county emergency agency. All traffic control shall conform to the requirements of NCDOT.

22. All fence damaged during construction shall be replaced with like materials in a workmanlike manner and in accordance with standard fence construction practices at the contractor's expense.

3. Contractor shall be responsible for any damage to existing roads during construction and shall repair road per requirements of NCDOT. No open cuts of existing roads shall be allowed except were indicated on the drawings or where specific permission is granted by NCDOT.

SOIL EROSION AND SEDIMENT CONTROL NOTES:

Provisions to prevent erosion of the soil from the site shall conform to the requirements of the "North Carolina Sedimentation Pollution Control Act of 1973" as shown herein and stipulated in the "Erosion and Sediment Control Planning and Design Manual". Installation shall be in a manner so as to minimize erosion of the disturbed areas and prevent sediment from leaving the site.

. The contractor shall incorporate all temporary and permanent erosion control measures into the project at the earliest practicable time during construction. The erosion control measures detailed hereon shall be continued until permanent drainage structures have been installed and until grass on planted shoulders and slopes is sufficiently established to be an effective erosion deterrent. The sediment removed from the control structures shall be evenly distributed outside construction limits Disposed sediment shall be permanently grassed.

Temporary and permanent vegetative cover shall be installed in accordance with the requirements of Chapter 6, Section 10 - Temporary Seeding, and Section 11 - Permanent Seeding of the "Planning and Design Manual" as described in note no. 1 above.

The contractor shall not restrict the use of silt fences or any other means of erosion control to the locations shown on these plans. Moreover, the contractor should constantly be aware of minimizing soil erosion and use erosion control means accordingly. The contractor shall promptly repair,

improve or add erosion control measures as required by the local reviewing agency. 5. Divert all runoff to the erosion control devices shown on the drawings.

Provide daily maintenance of erosion control devices to maintain their function at all times

Any disturbed area left exposed for a period greater than fourteen (14) days shall be stabilized with mulch or temporary seeding.

3. All silt fences must be installed immediately following clearing. No grading shall be performed until silt fence installation is complete.

9. Additional sediment control measures may be required based on actual field conditions as per local governing authorities.

0. All erosion control measures shall be checked and maintained daily.

1. Maximum cut and fill slopes shall be two (2) foot horizontal to one (1) foot vertical, unless otherwise

2. Erosion control measures will be maintained at all times. If full implementation of the approved plan does not provide for effective erosion control, additional erosion and sediment control measures shall be implemented to control or treat the sediment source.

3. The escape of sediment from the site shall be prevented by the installation of erosion and sediment control measures and practices prior to, or concurrent with, land-disturbing activities.

NORTH CAROLINA

CALL US FIRST!

N.C. ONE CALL CENTER

IT'S THE LAW!

PROJECT NOTES:

Transvlvania County 152 Public Safety Way Brevard, NC 2872 PHONE: 828-884-3108

CONTACT: David McNeill

High Country Engineering, PC (C-3347) 111 E. Chestnut Street

Asheville, North Carolina 2880 T·828-230-4511 Contact: Michael R. Goforth, PE

Property located in the City of Brevard, in Transylvania County, North Carolina. Property address is

535 Morris Road, Brevard, NC 28712. 2. PIN NUMBERS: 8597-30-6718, 8597-21-1481.

Zoning: Neighborhood Mixed Use (NMX) by City of Brevard for PIN 8597-30-6718, and General

Industrial (GI) for PIN 8597-21-1481.

Deed Book: 1017 and Page 810. Plat Book: 20 and Page 55, for PIN: 8597-30-6718, and Deed Book: 695 and Page 554. Plat Book: F15 and Page 361, for PIN: 8597-21-1481.

5. Proposed use is for an EMS Base.

6. Project Coordinates: 35.26156° N, 82.70726° W

The receiving water course for this project is an Unnamed Tributary to Davidson River. At the confluence, the Davidson River, Stream Index 6-34-(21), is a Class B water as classified by NCDEQ.

3. Total tract contains over ±2.30 acres/disturbed area= ±3.34 acres. Total new impervious area =

±0.77 acres (33.6%). Topographical information obtained from survey by Michael A. Pfoutz Sr., PLS #4458 and dated

10. Contour interval is 1 feet.

. This property is shown on F.I.R.M. panel number 3700859700J, dated October 2, 2009 and is located within a special flood hazard zone "X".

locations prior to any construction activity.

?. The location of underground utilities shown is approximate based on surface field evidence and information supplied by utility agencies. The survey makes no certification as to the completeness of the locations shown heron. Appropriate utility companies should be contacted for verification of

3. The contractor shall verify the invert elevations of all existing storm and sanitary sewer structures prior to commencement of storm and sanitary sewer construction.

14. Contractor shall notify the engineer and owner/developer of any information found in the field that is different from what is shown on these design plans.



HIGH COUNTRY ENGINEERING, P.C. 111 E. CHESTNUT STREET **ASHEVILLE, NORTH CAROLINA 28801** T: 828.230.4511

F: 828.348.5040

NC FIRM NO.: C-3347

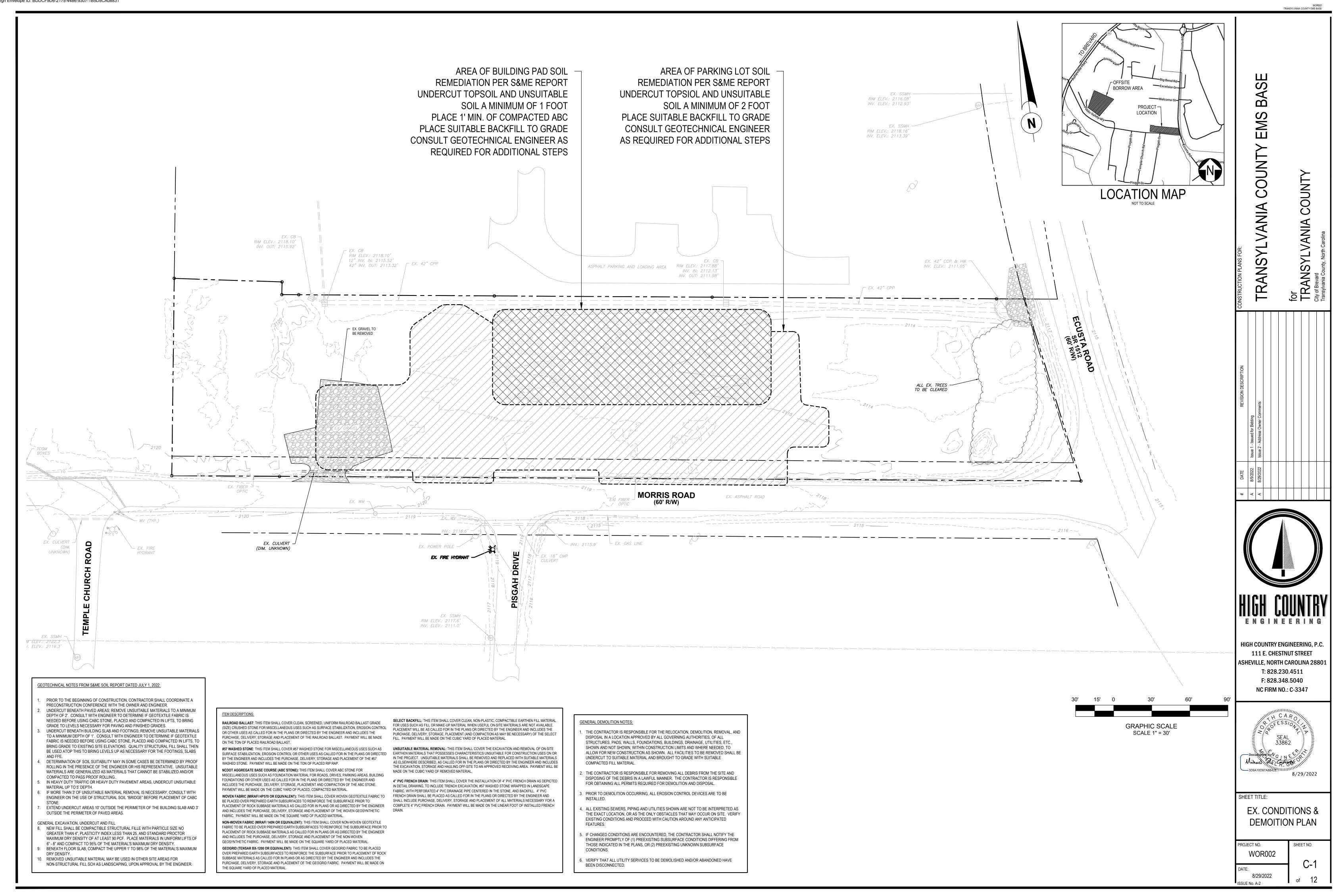


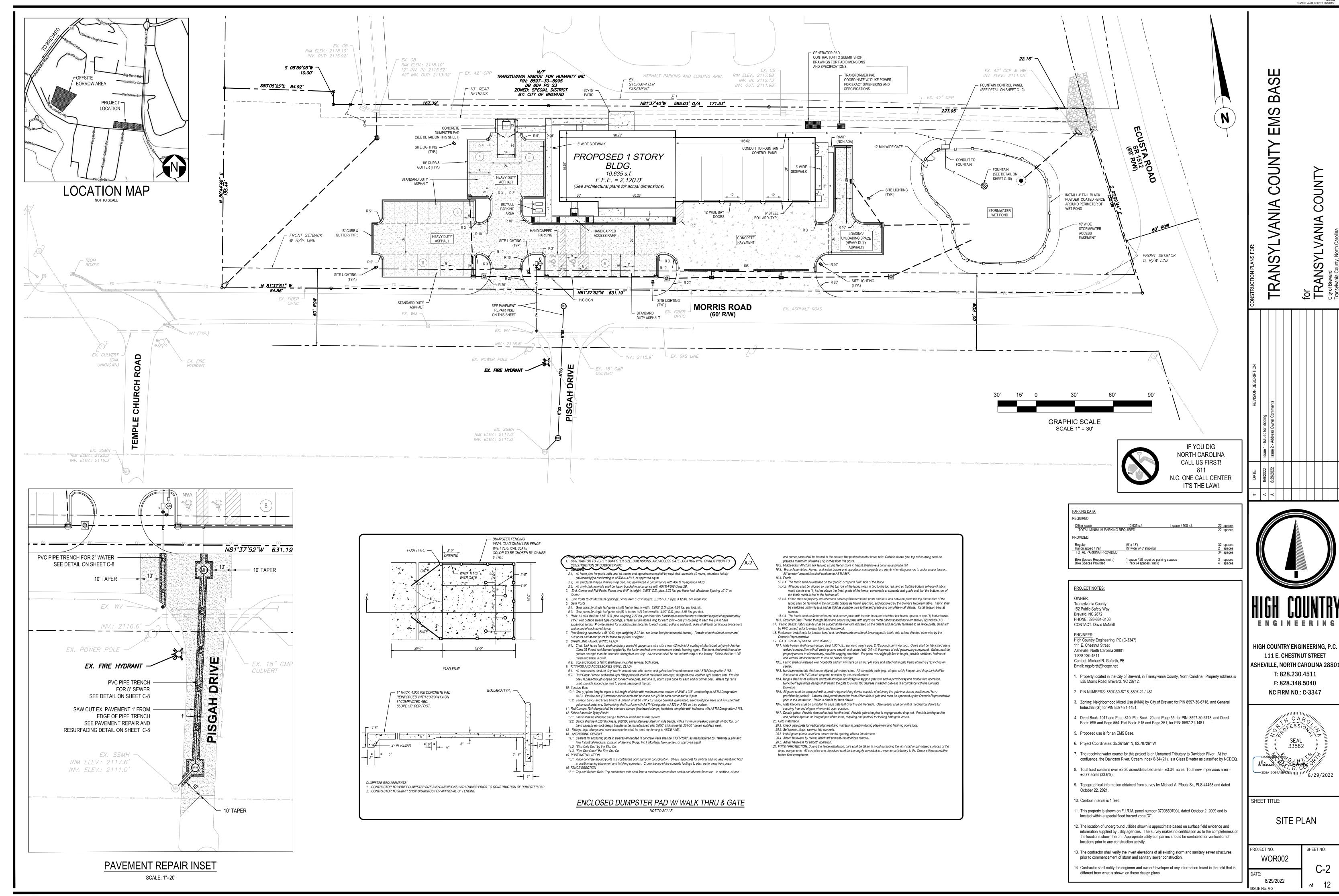
CONSTRUCTION PLANS TRANSYLVANIA COUNTY EMS BASE

535 Morris Road, Brevard, NC TRANSYLVANIA COUNTY, NORTH CAROLINA

AUGUST 9, 2022

SHEET NO.



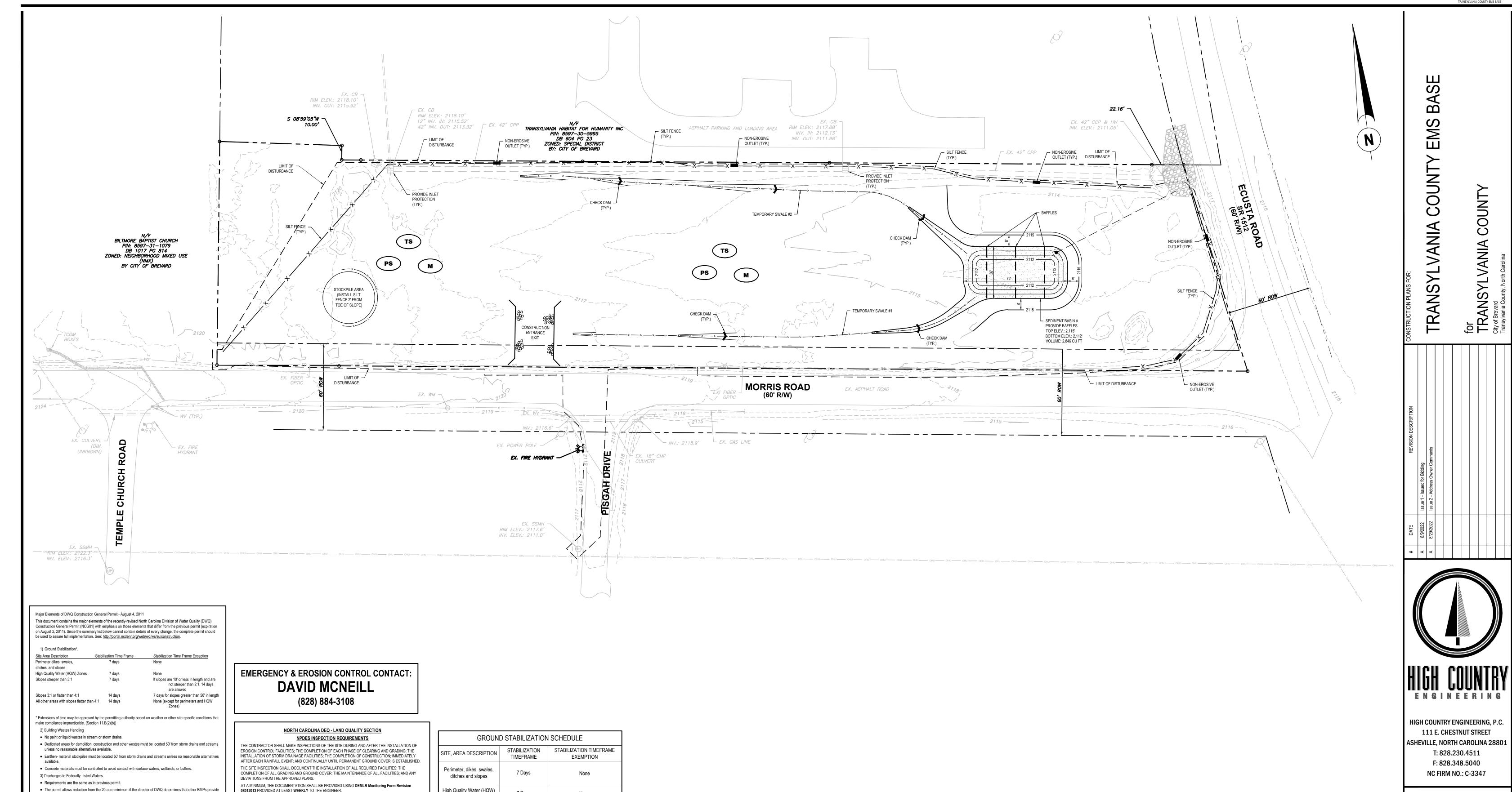


DocuSign Envelope ID: BDDCF9D6-2175-4486-9307-1B5D5CA08831 EX. 42" CCP & HW 42" INV. OUT: 2113.32' | EX. 42" CPP ASPHALT PARKING AND LOADING AREA RIM ELEV.: 2117.88' INV. ELEV.: 2111.05' (SEE DETAIL ON SHEET C-10) INV. IN: 2112.13' INV. OUT: 2111.98' FOUNTAIN (SEE DETAIL ON SHEET C-10) DISTURBANCE LIMIT OF -┌ EX. 42" CPP DISTURBANCE DISTURBANCE + 6' VEGETATED 6" PVC ROOF - $\mathbf{\Omega}$ PROPOSED 1 STORY **EMS** BLDG. 6" PVC ROOF LEADER 10,635 s.f. STRUCTURE C-2 F.F.E. = 2,120.0' (See architectural plans for actual dimensions) SWALE #3 COUNTY - 6" PVC ROOF LEADER MAX. 2% SLOPE FOR ADA ACCESS TO SIDEWALK GRADED RIDGE -(SEE DETAIL SHEET C-10) - 42.7 LF OF TRENCH DRAIN H.G.I. B-1 — (18.4) (SEE DETAIL SHEET C-10) DISTURBANCE STORMWATER WET POND SWALE #2 TOP ELEV .: 2,115' MAIN POOL PONDING ELEV.: 2,112' MAX. 2% CROSS SLOPE IF YOU DIG NORTH CAROLINA · WV (TYP.) CALL US FIRST! 811 N.C. ONE CALL CENTER IT'S THE LAW! **GRADING & STORMWATER PLAN** SCALE: 1"=30' 15' 0 **GRAPHIC SCALE** SCALE 1" = 30' H.G.I. A-6 STA. 3+36.6 STA. 3+85.0 STA. 1+54.0 STA. 2+08.0 TOP ELEV.: 2118.0' STA. 2+43.1 TOP ELEV.: 2117.5' TOP ELEV.: 2117.6' INV. IN: 2114.67 STA. 2+51.6 TOP ELEV.: 2118.4' STA. 3+93.6 STA. 0+68.5 TOP ELEV.: 2117.9' INV. IN: 2114.43 TOP ELEV.: 2117.6' INV. IN: 2114.72 STA. 4+55.8 TOP ELEV.: 2117.8' INV. IN: 2113.51 INV. IN: 2113.78 INV. IN: 2113.96 INV. OUT: 2114.43 INV. IN: 2114.00 TOP ELEV.: 2118.2' INV. IN: 2112.50 INV. OUT: 2113.01 INV. OUT: 2113.78 INV. OUT: 2114.00 INV. OUT: 2115.30 INV. OUT: 2114.72 INV. OUT: 2112.50 PROPOSED GRADE **⊢**Н.G.I. В-2 STA. 0+67.9 STA. 1+09.5 TOP ELEV.: 2118.1' TOP ELEV .: 2118.8' 62.1 LF OF 18" HDPE @ 0.93% ___8.5 LF OF 18" HDPE @ 0.51%___ - PROPOSED GRADE 35.1 LF OF 18" HDPE @ 0.50% 8.7 LF OF 18" HDPE @ 0.58% PIPE #7 48.3 LF OF 18" HDPE @ 0.50% _____68.5 LF OF 24" HDPE @ 0.73% 85.5 LF OF 24" HDPE @ 0.60% ___54.0 LF OF 18" HDPE @ 0.50%_ 85.0 LF OF 18" HDPE @ 0.51% L INV. OUT: 2,112.0' 67.9 LF OF 18" HDPE @ 3.09% └─ INV. OUT: 2,112.0' STORM 'A' PROFILE VIEW STORM 'B' PROFILE VIEW H. SCALE: 1"=30' H. SCALE: 1"=30' V. SCALE: 1"=5' V. SCALE: 1"=5' HIGH COUNTRY ENGINEERING, P.C EX. C.B. STA. 0+00.0 111 E. CHESTNUT STREET TOP ELEV.: 2118.1' **ASHEVILLE, NORTH CAROLINA 2880** T: 828.230.4511 D.I. D-1 STA. 0+19.7 TOP ELEV.: 2118.0' STRUCTURE TABLE FLARED END SECTION D-2 -F: 828.348.5040 O.C.S. C-2 STA. 0+56.9 PIPE TABLE _INV. OUT: 2,118.00_ STA. 0+00.0 INV. IN: 2114.00 PROPOSED GRADE ┌ EX. GRADE NC FIRM NO.: C-3347 TOP ELEV.: 2114.5' INV. IN: 2111.05 TOP ELEV.: 2115.0' STRUCTURE TOP. ELEV. | INV. ELEV. LENGTH SLOPE MATERIAL INV. UP INV. DN INV. OUT: 2113.50 TO STRUCTURE | STRUCTURE | DIAMETER (LF) D.I. A-1 2,117.8 | 2,112.50 G.I. A-2 2,117.9 2,113.01 D.I. A-1 POND 2,112.50 2,112.00 0.73% 2,118.0 2,113.78 G.I. A-3 D.I. A-1 0.60% HDPE 2,113.01 | 2,112.50 G.I. A-2 D.I. A-4 2,117.5 2,113.96 54.0 0.50% 2,113.78 2,113.51 G.I. A-3 G.I. A-2 HDPE SEAL 33862 H.G.I. A-5 2,118.4 2,114.00 35.1 2,113.96 2,113.78 D.I. A-4 0.50% G.I. A-3 HDPE H.G.I. A-6 2,118.4 2,114.43 H.G.I. A-5 D.I. A-4 0.51% HDPE 2,114.00 | 2,113.96 162.1 LF OF 24" HDPE @ 2.47% D.I. A-7 2,117.6 2,114.67 H.G.I. A-6 | H.G.I. A-5 85.0 | 0.51% | HDPE 2,114.43 2,114.00 ____56.9 LF OF 18" HDPE @ 0.79%-2,117.6 2,114.72 H.G.I. A-8 D.I. A-7 H.G.I. A-6 48.3 | 0.50% | HDPE 2,114.67 2,114.43 ___19.7 LF OF 30" HDPE @ 0.91% H.G.I. A-9 2,118.2 2,115.30 H.G.I. A-8 0.58% HDPE 2,114.72 2,114.67 D.I. A-7 2,118.1 2,114.10 62.1 H.G.I. B-1 H.G.I. A-9 H.G.I. A-8 0.93% HDPE 2,115.30 | 2,114.72 2,118.8 2,114.80 H.G.I. B-2 H.G.I. B-1 POND 67.9 | 3.09% | HDPE 2,114.10 2,112.00 SHEET TITLE: N/A 2,111.05 STORM 'C' PROFILE VIEW STORM 'D' PROFILE VIEW H.W. C-1 H.G.I. B-2 | H.G.I. B-1 41.6 | 1.68% | HDPE 2,114.80 2,114.10 **GRADING &** O.C.S. C-2 2,115.0 2,111.50 56.9 0.79% 2,111.50 2,111.05 O.C.S. C-2 H.W. C-1 HDPE STORMWATER PLAN H. SCALE: 1"=30' H. SCALE: 1"=30' 2,118.0 2,113.50 D.I. D-1 EX. C.B. 19.7 0.91% HDPE 2,113.50 2,113.32 D.I. D-1 V. SCALE: 1"=5' V. SCALE: 1"=5' & PROFILES F.E.S. D-2 2,118.00 D.I. D-2 D.I. D-1 162.1 | 2.47% | HDPE | 2,118.00 | 2,114.00 N/A 14 SHEET NO. WOR002 C-3 8/29/2022

DocuSign Envelope ID: BDDCF9D6-2175-4486-9307-1B5D5CA08831 **EMS** COUNTY 12" INV. IN: 2115.52' EX. 42" CCP & HW -42" INV. OUT: 2113.32' | EX. 42" CPP ASPHALT PARKING AND LOADING AREA RIM ELEV.: 2117.88' INV. ELEV.: 2111.05' INV. IN: 2112.13' DISTURBANCE PROPOSED 1 STORY 10,635 s.f. F.F.E. = 2,120.0' (See architectural plans for actual dimensions) CLEANOUT (TYP.) DOMESTIC SERVICE └ 6" PVC SEWER **MORRIS ROAD** WATERLINE STA. 1+17.5 TOP ELEV.: 2119.0' 2" TAPPING SADDLE & CORP STOP ----98.7 LF OF 8" PVC @ 0.79%-10.8 LF OF 8" PVC @ 1.85%— RIM ELEV .: 2117.6' INV. ELEV.: 2111.0' STA. 0+14.8 TOP ELEV.: 2118.1' INV IN: 2111.6' INV. OUT: 2111.4' HIGH COUNTRY ENGINEERING, P.C. TOP ELEV.: 2117.6' 111 E. CHESTNUT STREET INV IN: 2111.2' **ASHEVILLE, NORTH CAROLINA 28801** T: 828.230.4511 M.H. S-1 STA. 0+14.8 TOP ELEV.: 2118.1' M.H. S-2 STA. 1+17.5 TOP ELEV.: 2119.0' INV. OUT: 2112.4' F: 828.348.5040 NC FIRM NO.: C-3347 INV IN: 2111.6' EX. GRADE INV. OUT: 2111.4' IF YOU DIG EX. 18" CMP CULVERT — MIN. 18" SEPARATION NORTH CAROLINA CALL US FIRST! SEAL 33862 811 N.C. ONE CALL CENTER IT'S THE LAW! GENERAL SEWERLINE CONSTRUCTION NOTES: 10.8 LF OF 8" @ 1.85% 98.7 LF OF 8" DIP @ 0.79% . Sewer construction on this site is authorized by permits issued by the North Carolina Department of Environmental Quality (NCDEQ), and the OWNER. The work is subject to inspections at all times by representatives of NCDEQ, the OWNER, and the Engineer. The permits require certification of completion by the Engineer of the sewer SHEET TITLE: systems prior to issuance of final operation approval by NCDEQ.

2. Contractor shall verify the exact location and elevation for all utilities, drainage and other underground facilities, both existing and proposed, and shall notify the engineer of any discrepancies or conflicts prior to construction.

3. Install ferrous piping for both water and sewer within 10 ft. Of a crossing if: UTILITY PLAN The sewer line crosses over water, or GRAPHIC SCALE SCALE 1" = 30' 3.2. The vertical clearance between water and sewer is less than 18 inches. Maintain 10 feet horizontal separation between sewer mains and laterals, and water mains unless laid in separate trenches with the bottom of the water line at least 18 inches above the top of sewer, or use ferrous material for both water and 4. Maintain 12 inches vertical separation between storm drain and sanitary sewer, or install ferrous material on the SEWER 'S' PROFILE VIEW SHEET NO. sanitary sewer within 10 feet each side of crossing. PROJECT NO. 5. Coordinate exact locations of service lines with the detailed architectural, plumbing, and landscaping plans. 6. Contractor shall protect existing utilities during construction. Repairs shall be made in accordance with applicable standards of appropriate agencies at the contractors expense.
 7. Contractor shall notify appropriate utility agency prior to performing any work H. SCALE: 1"=30' V. SCALE: 1"=5' 8. Manhole steps are to align over invert out. Contractor shall install plug in upstream opening of pipe during construction whenever there is inactivity.
 All construction is to be performed by a North Carolina licensed utility contractor. 8/29/2022 ISSUE No. A-2



08012013 PROVIDED AT LEAST <u>WEEKLY</u> TO THE ENGINEER.

http://deq.nc.gov/about/divisions/energy-mineral-land-resources/erosion-sediment-control/forms. Under subheading, "Self-inspection and Self-Monitoring Combined Form".

equivalent protection. DEMLR Monitoring Form Revision 08012013 can be found at the following web address: Same weekly inspection requirements.

• Inspection reports must be available on-site during business hours unless a site-specific exemption is approved. Records must be kept for 3 years and available upon request.

 Electronically-available records may be substituted under certain conditions. 5) Implementation of New Permit Conditions

• Same rain gauge & inspection after 0.5" rain event. • Inspections are only required during "normal business hours".

4) Inspections

- Projects permitted under the previous permit can continue to follow conditions of approved application.
- Complete applications received prior to august 3, 2011 can follow conditions of approved application. • Applications received after August 2, 2011 must comply with new permit conditions.
- Designation on the plans where the 7 and the 14-day ground stabilization requirements of the NPDES permit
- Designation on the plans where basins that comply with the surface-withdrawal requirements of the NPDES
- 7) Building Wastes Handling
- No paint or liquid wastes in stream or storm drains.

Document prepared by the Division of Water Quality

6) Conditions in Erosion & Sedimentation Control Plans*

- Dedicated areas for demolition, construction and other wastes located 50' from the storm drains and streams unless no reasonable alternatives are available.
- Earthen-material stockpiles located 50' from storm drains unless no reasonable alternatives available. • Concrete materials must be controlled to avoid contact with surface waters, wetlands, or buffers.
- 8) Sediment Basins • Outlet structures must withdraw from basin surface unless drainage area is less than 1 acre.
- Use only DWQ-approved flocculants. *In order for the E&SC plan to satisfy the conditions of the Construction General Permit, it must identify areas were the ground stabilization requirements apply and the location of the basins where the surface-withdrawal requirements apply.

NORTH CAROLINA DEQ - LAND QUALITY SECTION

EROSION CONTROL PHASE 1 CONSTRUCTION SEQUENCE GENERAL: ALL EROSION CONTROL MEASURES ARE TO BE PERFORMED IN STRICT ACCORDANCE WITH REQUIREMENTS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY, LAND QUALITY SECTION. THE FOLLOWING CONSTRUCTION SEQUENCE SHALL BE COMPLIED WITH FOR ALL WORK.

1. Install all pertinent perimeter erosion control devices and mark surface water buffer prior to any ground

2. Install construction entrance at entrance to site.

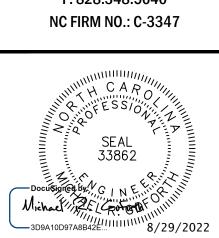
- 3. Install inlet protection on all stormwater grates that exist onsite.
- 4. Install all sedimentation traps and sediment basins in areas as designated on the plans. 5. Notify NCDEQ, Land Quality Section, a minimum of 48 hours prior to land disturbance.
- 6. Removal and store top soil 7. Perform earthwork, cut/fill & compaction as direction on the plans.
- 8. Establish seeding according to NPDES table on plans. Seed and mulch denuded areas within 14 days on disturbed flat areas and 7 days on all perimeter dikes, swales, ditches, perimeter slopes steeper than 3 feet horizontal to 1 foot vertical. Ground cover shall be required as soon as practicable but in any event within 14 or 7
- calendar days from the last land disturbing activity. All seeding shall be maintained, watered, etc., until permanent vegetative ground cover is established over all
- All slopes 2:1 or steeper shall be covered by erosion control matting. EROSION CONTROL IS FIELD PERFORMANCE BASED AND ADDITIONAL SILT FENCES, TEMPORARY SEDIMENT BASINS AND ALL OTHER MEASURES MAY NEED TO BE ADDED IN ADDITION TO THE APPROVED PLAN AS NECESSARY. MEASURES SHOWN CAN AND SHOULD BE ADJUSTED TO ASSURE MAXIMUM PROTECTION OF SITE.

GROUND STABILIZATION SCHEDULE							
TE, AREA DESCRIPTION	STABILIZATION TIMEFRAME	STABILIZATION TIMEFRAME EXEMPTION					
Perimeter, dikes, swales, ditches and slopes	7 Days	None					
igh Quality Water (HQW) Zones	7 Days	None					
Slopes steeper than 3:1	7 Days	If Slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed.					
Slopes 3:1 or flatter	14 Days	7 Days for Slopes greater than 50 feet in length					
Il other areas with slopes flatter than 4:1	14 Days	None (except for perimeters and HQW Zones)					

EROSION CONTROL LEGEND							
SYM. DEVICE NAME		SYM.	DEVICE NAME				
PS PERMANENT SEEDING		x	SILT FENCE				
TS	TEMPORARY SEEDING		NON-EROSIVE OUTLET				
MULCHING		<	CHECK DAM				
RECP ROLLED EROSION CONTROL PRODUCTS			CULVERT INLET PROTECTION				
SR SURFACE ROUGHENING			OUTLET PROTECTION				

Ι.								
	E							
			TE	MPORARY	/ DITCH	CALCULAT	TIONS	
	DITCH NUMBER	BOTTOM WIDTH (FT)	SIDE SLOPE (FT/FT)	DRAINAGE AREA (AC)	RUNOFF (CFS)	FLOW DEPTH (FT)	PRIMARY VEGETATION	TEMPORARY LINER MATERIAL
	SWALE #1	1	0.33	0.67	1.25	0.30	TALL FESCUE	NO LINER REQD.
	SWALE #2	1	0.33	0.50	0.93	0.25	TALL FESCUE	NO LINER REQD.

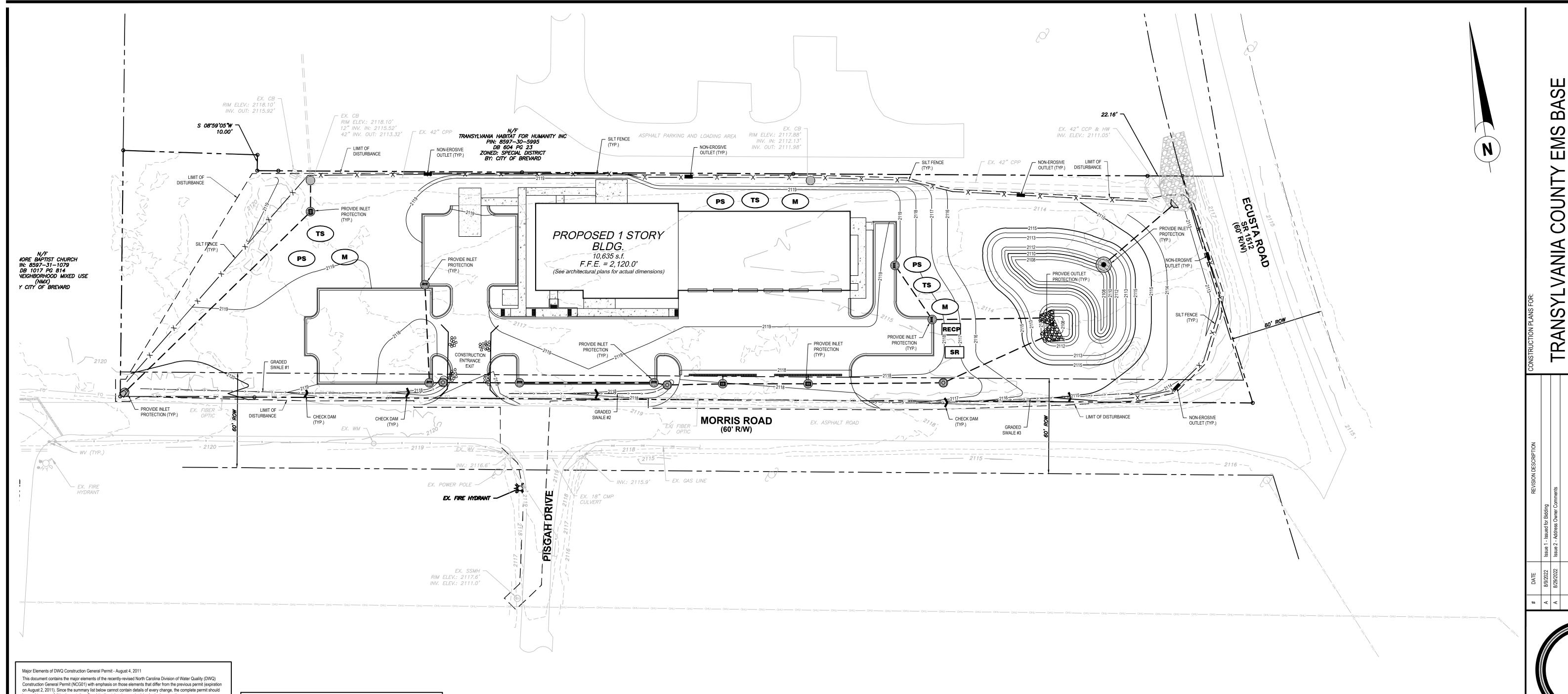




SHEET TITLE:

EROSION CONTROL PHASE 1

PROJECT NO.	SHEET NO.
WOR002	
DATE:	C-5
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be used to assure full implementation. See: http://portal.ncdenr.org/web/wq/ws/su/construction.

1) Ground Stabilization*.

Site Area Description Stabilization Time Frame Stabilization Time Frame Exception Perimeter dikes, swales, ditches, and slopes High Quality Water (HQW) Zones Slopes steeper than 3:1 If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed Slopes 3:1 or flatter than 4:1 14 days 7 days for slopes greater than 50' in length All other areas with slopes flatter than 4:1 14 days None (except for perimeters and HQW

* Extensions of time may be approved by the permitting authority based on weather or other site-specific conditions that make compliance impracticable. (Section 11.B(2)(b))

- 2) Building Wastes Handling
- No paint or liquid wastes in stream or storm drains.
- Dedicated areas for demolition, construction and other wastes must be located 50' from storm drains and streams unless no reasonable alternatives available. • Earthen- material stockpiles must be located 50' from storm drains and streams unless no reasonable alternatives
- Concrete materials must be controlled to avoid contact with surface waters, wetlands, or buffers.
- 3) Discharges to Federally- listed Waters
- Requirements are the same as in previous permit.
- The permit allows reduction from the 20-acre minimum if the director of DWQ determines that other BMPs provide equivalent protection.
- 4) Inspections Same weekly inspection requirements.
- Same rain gauge & inspection after 0.5" rain event. • Inspections are only required during "normal business hours".
- Inspection reports must be available on-site during business hours unless a site-specific exemption is approved. Records must be kept for 3 years and available upon request.
- Electronically-available records may be substituted under certain conditions. 5) Implementation of New Permit Conditions
- Projects permitted under the previous permit can continue to follow conditions of approved application. • Complete applications received prior to august 3, 2011 can follow conditions of approved application.

Applications received after August 2, 2011 must comply with new permit conditions.

- 6) Conditions in Erosion & Sedimentation Control Plans* • Designation on the plans where the 7 and the 14-day ground stabilization requirements of the NPDES permit
- Designation on the plans where basins that comply with the surface-withdrawal requirements of the NPDES
- 7) Building Wastes Handling
- No paint or liquid wastes in stream or storm drains.
- Dedicated areas for demolition, construction and other wastes located 50' from the storm drains and streams unless no reasonable alternatives are available.
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- 8) Sediment Basins • Outlet structures must withdraw from basin surface unless drainage area is less than 1 acre.

Document prepared by the Division of Water Quality

 Use only DWQ-approved flocculants. *In order for the E&SC plan to satisfy the conditions of the Construction General Permit, it must identify areas were the ground stabilization requirements apply and the location of the basins where the surface-withdrawal requirements apply.

EMERGENCY & EROSION CONTROL CONTACT: DAVID MCNEILL (828) 884-3108

NORTH CAROLINA DEQ - LAND QUALITY SECTION NPDES INSPECTION REQUIREMENTS

THE CONTRACTOR SHALL MAKE INSPECTIONS OF THE SITE DURING AND AFTER THE INSTALLATION OF EROSION CONTROL FACILITIES; THE COMPLETION OF EACH PHASE OF CLEARING AND GRADING; THE INSTALLATION OF STORM DRAINAGE FACILITIES; THE COMPLETION OF CONSTRUCTION; IMMEDIATELY AFTER EACH RAINFALL EVENT; AND CONTINUALLY UNTIL PERMANENT GROUND COVER IS ESTABLISHED. THE SITE INSPECTION SHALL DOCUMENT THE INSTALLATION OF ALL REQUIRED FACILITIES; THE COMPLETION OF ALL GRADING AND GROUND COVER; THE MAINTENANCE OF ALL FACILITIES; AND ANY DEVIATIONS FROM THE APPROVED PLANS.

AT A MINIMUM, THE DOCUMENTATION SHALL BE PROVIDED USING **DEMLR Monitoring Form Revision** 08012013 PROVIDED AT LEAST WEEKLY TO THE ENGINEER. DEMLR Monitoring Form Revision 08012013 can be found at the following web address:

http://deq.nc.gov/about/divisions/energy-mineral-land-resources/erosion-sediment-control/forms. Under subheading, "Self-inspection and Self-Monitoring Combined Form".

NORTH CAROLINA DEQ - LAND QUALITY SECTION

EROSION CONTROL PHASE 2 CONSTRUCTION SEQUENCE GENERAL: ALL EROSION CONTROL MEASURES ARE TO BE PERFORMED IN STRICT ACCORDANCE WITH REQUIREMENTS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY, LAND QUALITY

SECTION. THE FOLLOWING CONSTRUCTION SEQUENCE SHALL BE COMPLIED WITH FOR ALL WORK.

- 1. Establish seeding according to NPDES table on plans. Seed and mulch denuded areas within 14 days on disturbed flat areas and 7 days on all perimeter dikes, swales, ditches, perimeter slopes steeper than 3 feet horizontal to 1 foot vertical. Ground cover shall be required as soon as practicable but in any event within 14 or 7
- calendar days from the last land disturbing activity. All seeding shall be maintained, watered, etc., until permanent vegetative ground cover is established over all
- All slopes 2:1 or steeper shall be covered by erosion control matting. 2. Install underground utilities including stormwater conveyance system.
- 3. Install inlet protection and outlet protection on all stormwater conveyance pipes. 4. Construct roads & parking lots as shown on the plans.
- Construct building foundations.
- Begin building construction.
- 7. Convert temporary sediment trap into permanent stormwater pond. 8. Maintain all soil and erosion control measures for duration of the construction project and until permanent ground
- 9. Final Grading and install permanent grassing/landscaping.
- 10. Establish permanent seeding according to charts on plans.
- 11. Notify NCDEQ, Land Quality Section, once site has become stabilized.
- 12. Remove all temporary erosion control devices after permanent seeding is established. EROSION CONTROL IS FIELD PERFORMANCE BASED AND ADDITIONAL SILT FENCES, TEMPORARY SEDIMENT BASINS AND ALL OTHER MEASURES MAY NEED TO BE ADDED IN ADDITION TO THE APPROVED PLAN AS NECESSARY. MEASURES SHOWN CAN AND SHOULD BE ADJUSTED TO ASSURE MAXIMUM PROTECTION OF SITE

GROUND STABILIZATION SCHEDULE						
ITE, AREA DESCRIPTION	STABILIZATION TIMEFRAME	STABILIZATION TIMEFRAME EXEMPTION				
Perimeter, dikes, swales, ditches and slopes	7 Days	None				
High Quality Water (HQW) Zones	7 Days	None				
Slopes steeper than 3:1	7 Days	If Slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed.				
Slopes 3:1 or flatter	14 Days	7 Days for Slopes greater than 50 feet in length				
All other areas with slopes flatter than 4:1	14 Days	None (except for perimeters and HQW Zones)				

EROSION CONTROL LEGEND							
SYM. DEVICE NAME		SYM.	DEVICE NAME				
PS PERMANENT SEEDING		x	SILT FENCE				
TS TEMPORARY SEEDING			NON-EROSIVE OUTLET				
M MULCHING		<	CHECK DAM				
RECP ROLLED EROSION CONTROL PRODUCTS			CULVERT INLET PROTECTION				
SR SURFACE ROUGHENING			OUTLET PROTECTION				

	E				NORTH CALL (C. ONE (US FIF 811	OLI RS
				PE	RMANENT	DITCH	CA
	DITCH	BOTTOM	SIDE S	LOPE	DRAINAGE	RUNOFF	T

811 N.C. ONE CALL CENTER IT'S THE LAW!							
	PERMANENT DITCH CALCULATIONS						
DITCH NUMBER	BOTTOM WIDTH (FT)	SIDE SLOPE (FT/FT)	DRAINAGE AREA (AC)	RUNOFF (CFS)	FLOW DEPTH (FT)	PRIMARY VEGETATION	TEMPORARY LINER MATERIAL
SWALE #1	1	0.33	0.24	1.03	0.25	TALL FESCUE	NO LINER REQD.
SWALE #2	1	0.33	0.09	0.47	0.16	TALL FESCUE	NO LINER REQD.
SWALE #3	1	0.33	0.38	1.43	0.22	TALL FESCUE	NO LINER REQD.

15'

GRAPHIC SCALE SCALE 1" = 30'

NC FIRM NO.: C-3347

HIGH COUNTRY ENGINEERING, P.C.

111 E. CHESTNUT STREET

ASHEVILLE, NORTH CAROLINA 28801

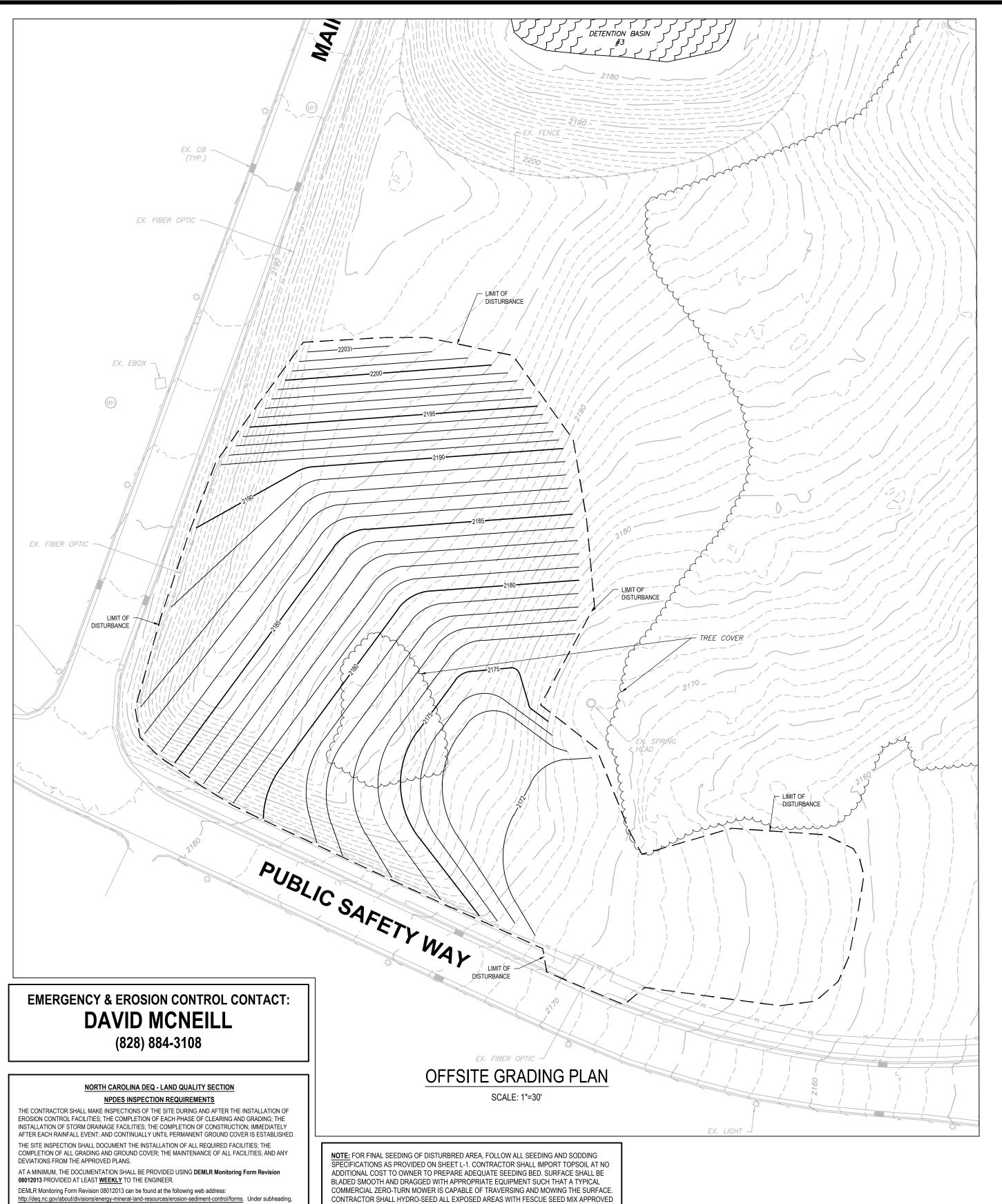
T: 828.230.4511

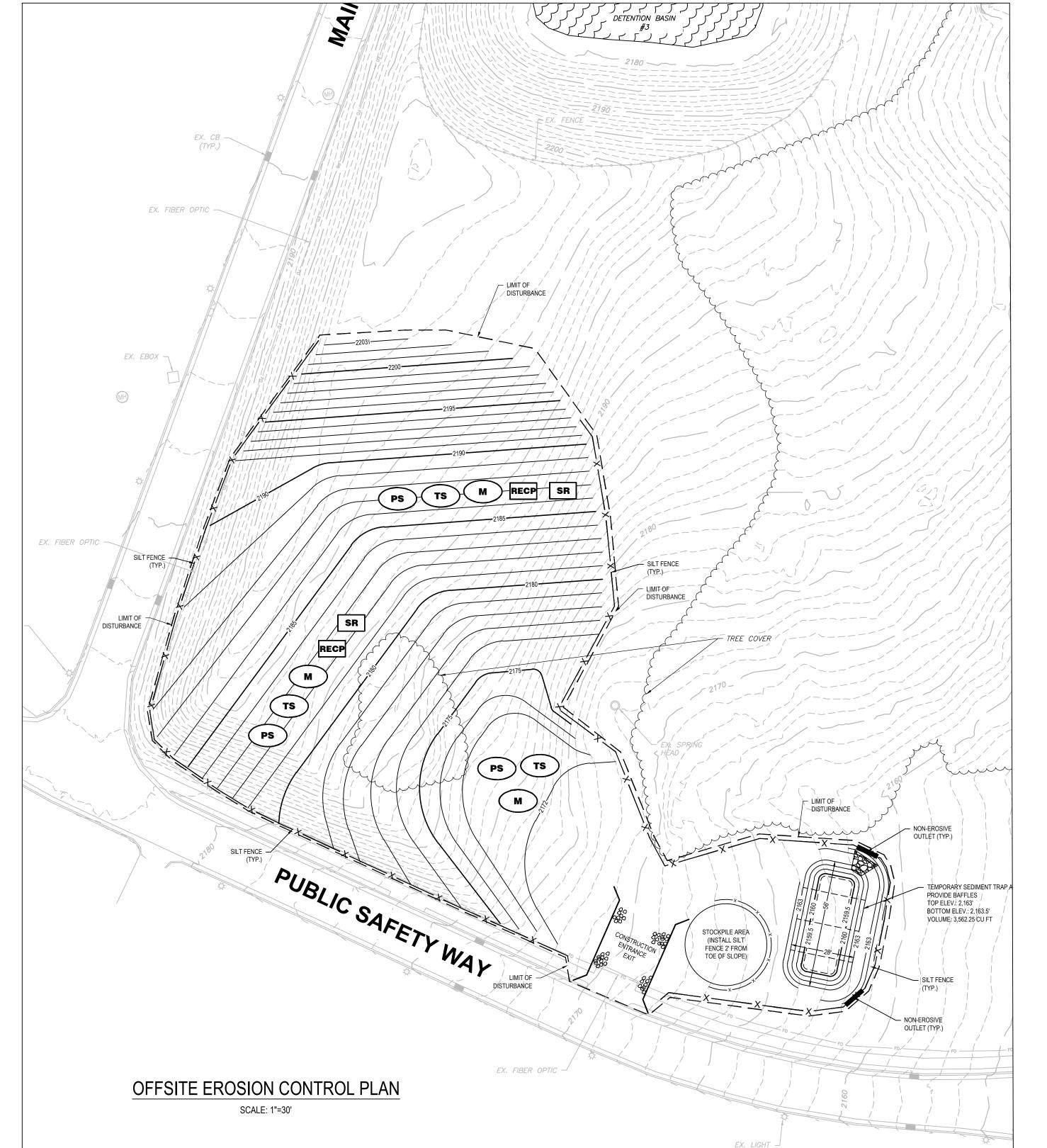
F: 828.348.5040

SHEET TITLE:

EROSION CONTROL PHASE 2

8/29/2022 ISSUE No. A-2





http://deq.nc.gov/about/divisions/energy-mineral-land-resources/erosion-sediment-control/forms. Under subheading, "Self-inspection and Self-Monitoring Combined Form".

Major Elements of DWQ Construction General Permit - August 4, 2011

the complete permit should be used to assure full implementation. See: http://portal.ncdenr.org/web/wq/ws/su/construction.

BY OWNER AND ENGINEER.

This document contains the major elements of the recently-revised North Carolina Division of Water Quality (DWQ) Construction General Permit (NCG01) with emphasis on those elements that differ from the previous permit (expiration on August 2, 2011). Since the summary list below cannot contain details of every change,

- Site Area Description Stabilization Time Frame Stabilization Time Frame Exception Perimeter dikes, swales, ditches, and slopes High Quality Water (HQW) Zones Slopes steeper than 3:1 If slopes are 10' or less in length and are
- Slopes 3:1 or flatter than 4:1 7 days for slopes greater than 50' in length All other areas with slopes flatter than 4:1 14 days None (except for perimeters and HQW
- * Extensions of time may be approved by the permitting authority based on weather or other site-specific conditions that make compliance impracticable. (Section
- 2) Building Wastes Handling No paint or liquid wastes in stream or storm drains.
- Dedicated areas for demolition, construction and other wastes must be located 50' from storm drains and streams unless no reasonable alternatives available. • Earthen- material stockpiles must be located 50' from storm drains and streams unless no reasonable alternatives available.
- Concrete materials must be controlled to avoid contact with surface waters, wetlands, or buffers.
- 3) Discharges to Federally-listed Waters
- Requirements are the same as in previous permit.
- The permit allows reduction from the 20-acre minimum if the director of DWQ determines that other BMPs provide equivalent protection.

• Same weekly inspection requirements.

- Same rain gauge & inspection after 0.5" rain event. Inspections are only required during "normal business hours".
 - Inspection reports must be available on-site during business hours unless a site-specific exemption is approved.
 - Records must be kept for 3 years and available upon request. Electronically-available records may be substituted under certain conditions.
 - 5) Implementation of New Permit Conditions
 - Projects permitted under the previous permit can continue to follow conditions of approved application. • Complete applications received prior to august 3, 2011 can follow conditions of approved application.

• Designation on the plans where the 7 and the 14-day ground stabilization requirements of the NPDES permit apply.

- Applications received after August 2, 2011 must comply with new permit conditions.
- Designation on the plans where basins that comply with the surface-withdrawal requirements of the NPDES permit are located. 7) Building Wastes Handling
- No paint or liquid wastes in stream or storm drains. Dedicated areas for demolition, construction and other wastes located 50' from the storm drains and streams unless no reasonable alternatives are available.
- Earthen-material stockpiles located 50' from storm drains unless no reasonable alternatives available. Concrete materials must be controlled to avoid contact with surface waters, wetlands, or buffers.
- 8) Sediment Basins
- Outlet structures must withdraw from basin surface unless drainage area is less than 1 acre.
- Use only DWQ-approved flocculants. *In order for the E&SC plan to satisfy the conditions of the Construction General Permit, it must identify areas were the ground stabilization requirements apply and the
- location of the basins where the surface-withdrawal requirements apply. Document prepared by the Division of Water Quality

NORTH CAROLINA DEQ - LAND QUALITY SECTION

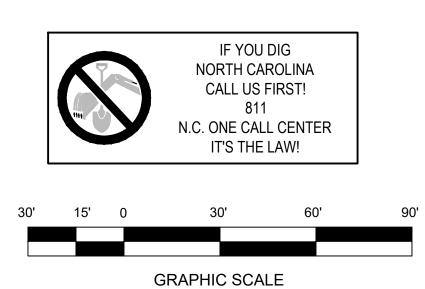
EROSION CONTROL OFFSITE CONSTRUCTION SEQUENCE GENERAL: ALL EROSION CONTROL MEASURES ARE TO BE PERFORMED IN STRICT ACCORDANCE WITH REQUIREMENTS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY, LAND QUALITY SECTION. THE FOLLOWING CONSTRUCTION SEQUENCE SHALL BE COMPLIED WITH FOR ALL WORK.

- 1. Install all pertinent perimeter erosion control devices and mark surface water buffer prior to any ground
- 2. Install construction entrance at entrance to site. 3. Install inlet protection on all stormwater grates that exists onsite.
- 4. Install all sedimentation traps and sediment basins in areas as designated on the plans.
- 5. Notify NCDEQ, Land Quality Section, a minimum of 48 hours prior to land disturbance. 6. Removal and store top soil
- 7. Perform earthwork, cut/fill & compaction as direction on the plans. 8. Establish seeding according to NPDES table on plans. Seed and mulch denuded areas within 14 days on disturbed flat areas and 7 days on all perimeter dikes, swales, ditches, perimeter slopes steeper than 3 feet horizontal to 1 foot vertical. Ground cover shall be required as soon as practicable but in any event within 14 or 7 calendar days from the last land disturbing activity.
- All seeding shall be maintained, watered, etc., until permanent vegetative ground cover is established over all All slopes 2:1 or steeper shall be covered by erosion control matting.

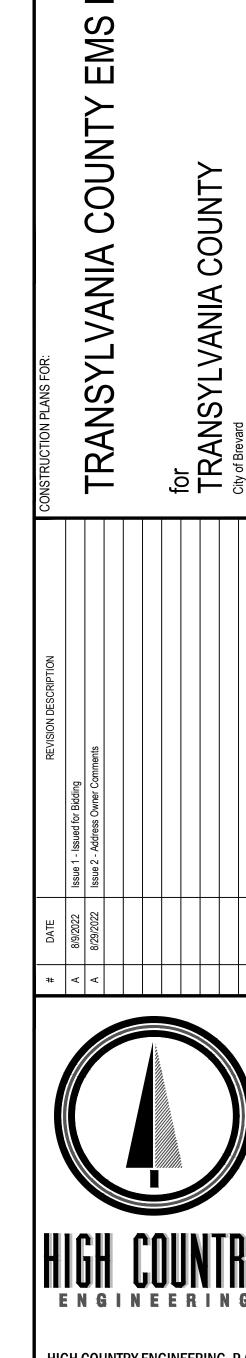
EROSION CONTROL IS FIELD PERFORMANCE BASED AND ADDITIONAL SILT FENCES. TEMPORARY SEDIMENT BASINS AND ALL OTHER MEASURES MAY NEED TO BE ADDED IN ADDITION TO THE APPROVED PLAN AS NECESSARY. MEASURES SHOWN CAN AND SHOULD BE ADJUSTED TO ASSURE MAXIMUM PROTECTION OF SITE.

GROUND STABILIZATION SCHEDULE							
SITE, AREA DESCRIPTION	E, AREA DESCRIPTION STABILIZATION TIMEFRAME						
Perimeter, dikes, swales, ditches and slopes	7 Days	None					
High Quality Water (HQW) Zones	7 Days	None					
Slopes steeper than 3:1	7 Days	If Slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed.					
Slopes 3:1 or flatter	14 Days	7 Days for Slopes greater than 50 feet in length					
All other areas with slopes flatter than 4:1	14 Days	None (except for perimeters and HQW Zones)					

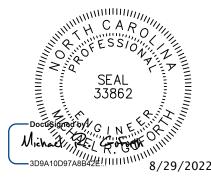
EROSION CONTROL LEGEND				
SYM.	DEVICE NAME SYM. DEVICE NAME		DEVICE NAME	
PS	PERMANENT SEEDING	x	SILT FENCE	
TS	TEMPORARY SEEDING		NON-EROSIVE OUTLET	
	MULCHING	\	CHECK DAM	
RECP	ROLLED EROSION CONTROL PRODUCTS		CULVERT INLET PROTECTION	
SR	SURFACE ROUGHENING		OUTLET PROTECTION	



SCALE 1" = 30'



HIGH COUNTRY ENGINEERING, P.C. 111 E. CHESTNUT STREET **ASHEVILLE, NORTH CAROLINA 28801** T: 828.230.4511 F: 828.348.5040 NC FIRM NO.: C-3347



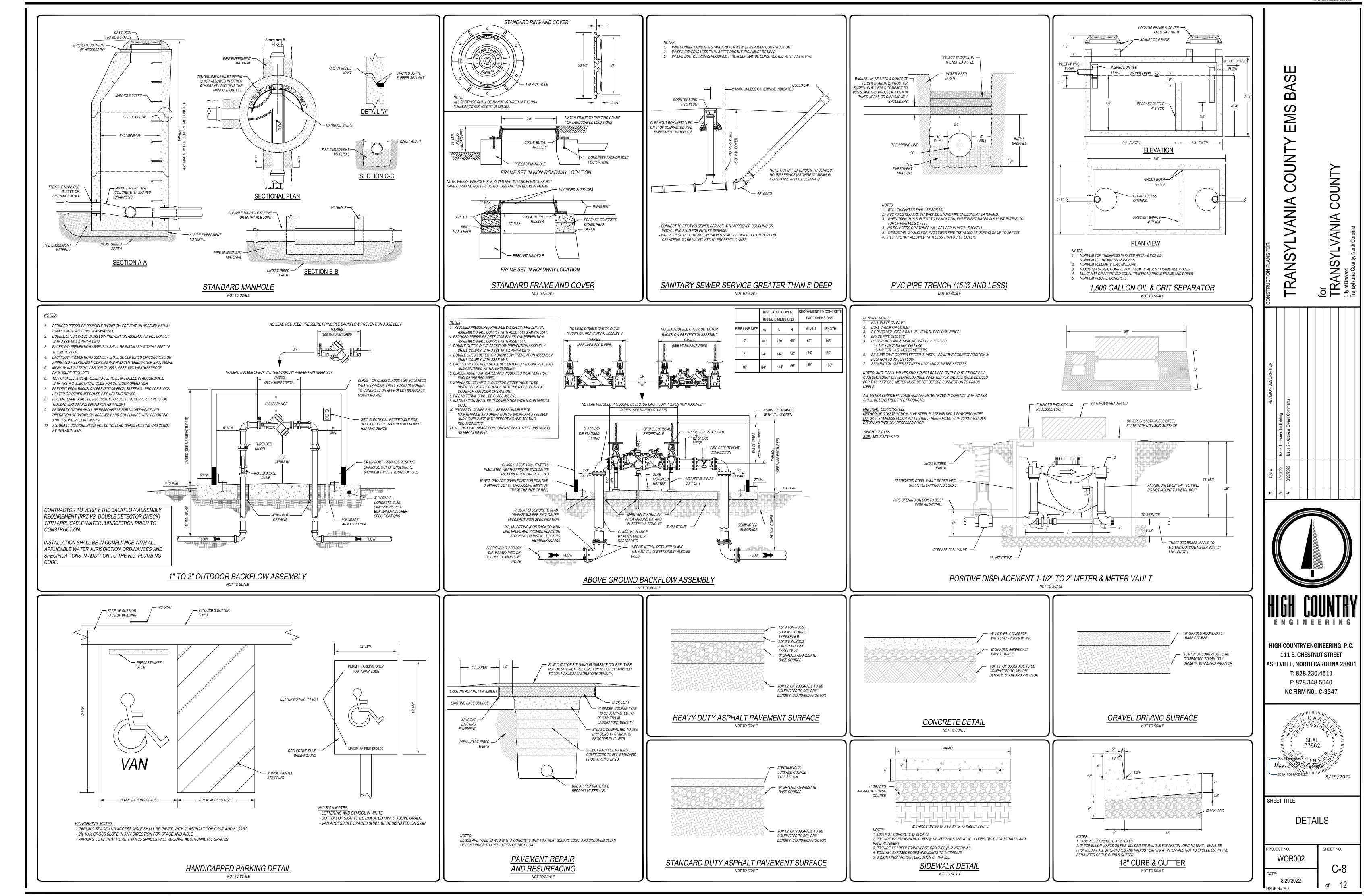
SHEET TITLE:

OFFSITE GRADING & EROSION PLAN

8/29/2022 ISSUE No. A-2

DocuSign Envelope ID: BDDCF9D6-2175-4486-9307-1B5D5CA08831

WORKST VANIA COINTY FMS BAS



MATS/BLANKETS SHOULD BE

INSTALLED VERTICALLY DOWN SLOPE

ISOMETRIC VIEW

ROLLED EROSION CONTROL PRODUCTS (RECP) ARE MANUFACTURED OR

FABRICATED INTO ROLLS DESIGNED TO REDUĆE SOIL EROSION AND ASSIST

EROSION CONTROL MATS AND BLANKETS ARE INTENDED TO PROTECT SOIL

AND HOLD SEED AND MULCH IN PLACE ON SLOPES AND IN CHANNELS SO

THAT VEGETATION CAN BECOME WELL ESTABLISHED.

IN THE GROWTH, ESTABLISHMENT AND PROTECTION OF VEGETATION.

NOO

SURFACE WITH HORIZONTAL ROOVES ACROSS THE SLOPE, OR RACKING WITH CONSTRUCTION QUIPMENT. <u>PURPOSE</u> TO AID THE ESTABLISHMENT OF VEGETAVTIVE COVER FROM SEED O REDUCE RUNOFF VELOCITY AND INCREASE INFILTRATION. INSTALL ACCORDING TO PPROVED PLAN INSTALL ALL OTHER BMPS FIRST ROUGHEN ALL SLOPES STEEPER ERIODICALLY CHECK THE SEEDED USE DOZER TRACKS TO CREATE SLOPES FOR RILLS AND WASHES. GROOVES PERDENCULAR TO ILL THESE AREAS SLIGHTLY ABOVE THE ORIGINAL GRADE, THEN RESEED AND MULCH AS SOON AS OSSIBLE. SURFACE ROUGHENING

TEMPORARY PROTECTIVE BLANKET OF STRAW OR OTHER PLANT RESIDUE, GRAVEL, OR SYNTHETIC MATERIAL TO THE SOIL SURFACE FOR A PERIOD OF SIX (6) MONTHS OR LESS WHEN SEEDING IS NOT PURPOSE
- REDUCE RUNOFF, EROSION, AND SEDIMENTATION, FOSTER THE MULCHING APPLICATION RATES GROWTH OF VEGETATION, CONSERVE MOISTURE, INSULATE THE SOIL MATERIAL | RATE PER ACRE | <u>INSTALLATION</u> - INSTALL ALL OTHER REQUIRED BMPS FIRST. STRAW OR HAY 1.5 TO 2.5 TONS 6" TO 10 - GRADE SITE, IF POSSIBLE, TO PERMIT THE USE OF EQUIPMENT FOR APPLYING AND ANCHORING MULCH 5 TO 6 TONS - IF POSSIBLE, LOOSEN COMPACTED SOIL TO A DEPTH OF THREE (3) FIBERS - APPLY STRAW OR HAY UNIFORMLY, BY HAND ANCHOR BY PRESSING 35 CUBIC YARDS BARK INTO SOIL OR USE NETTING. CORN STALKS 4 TO 6 TONS 5" TO 6" - MULCH ON SLOPES GREATER THAN 3% SHOULD BE ANCHORED WITH EMULSIFIED ASPHALT (GRADE AE-5 OR SS-1) OR OTHER SUITABLE SEE MANUFACTURER'S - WOOD WASTE ON SLOPES FLATTER THAN 3:1 DO NOT NEED RECOMMENDATIONS NETTING, ETC. *MAINTENANCE*

- RFDUCE SLOPE LENGTHS

COMPACT ALL FILLS

<u>INSTALLATION</u> - INSTALL ACCORDING TO APPROVED PLAN

SIDE SLOPES SHOULD BE 3:1 OR FLATTER

ADEQUATE OUTLET MUST BE PRESENT

CHANNELS). RIPRAP. OR PAVEMENT

- INSPECT AFTER HEAVY RAINS FOR EROSION AND DISLODGED MULCH. - ADD MULCH AS NEEDED TO MAINTAIN THE SUGGESTED DEPTH. - IF ORGANIC MULCH IS TO BE LEFT AND INCORPORATED INTO THE SOIL, APPLY 20 TO 30 POUNDS OF NITROGEN IN ADDITION TO THE FERTILIZER REQUIRED FOR VEGETATION. MULCHING NOT TO SCALE <u>DEFINITION</u> A RIDGE OF COMPACTED SOIL, CONSTRUCTED ABOVE, ACROSS, OR BELOW A SLOPE.

- INTERCEPT AND DIVERT STORM RUNOFF TO A STABLE OUTLET AT A NON-EROSIVE VELOCITY - REMOVE TREES, BRUSH, STUMPS, AND OTHER OBJECTIONABLE MATERIAL CHANNEL CROSS-SECTION SHOULD BE TRAPEZOIDAL OR PARABOLIC IN SHAPE EXCAVATE NARROW, DEEP CHANNELS ON STEEP SLOPES AND BROAD, SHALLOW CHANNELS ON GENTLE STABILIZE CHANNEL AND OUTLET WITH VEGETATION (MULCH REQUIRED FOR ALL SEEDED OR SPRIGGED DISPOSE OF AND/OR STABILIZE ALL UNNEEDED EXCAVATION MATERIAL NSPECT FREQUENTLY AND AFTER EACH RAINFALL AND MAKE NECESSARY REPAIRS.

 3:1 SIDE SLOPE REFER TO DESIGN TABLE FOR L DIMENSIONS

HIGH COUNTRY ENGINEERING, P.C 111 E. CHESTNUT STREET

ASHEVILLE, NORTH CAROLINA 2880: T: 828.230.4511 F: 828.348.5040 NC FIRM NO.: C-3347

33862

SHEET TITLE:

DETAILS

SHEET NO. 8/29/2022

 $\frac{\textit{DEFINITION}}{\textit{CONTROLLING RUNOFF AND EROSION ON DISTURBED AREAS BY ESTABLISHING PERENNIAL VEGETATIVE COVER WITH SEED.}$

TO REDUCE EROSION AND DECREASE SEDIMENT YIELD FROM DISTURBED AREAS. TO PERMANENTLY STABILIZE SUCH AREAS IN A

MANNER THAT IS ECONOMICAL. ADAPTS TO SITE CONDITIONS. AND ALLOWS SELECTION OF THE MOST APPROPRIATE PLANT

INSTALLATION
- APPLY ACCORDING TO APPROVED PLANS. - IF POSSIBLE, USE CONVENTIONAL PLANTING METHODS. CHECK THE TAG ON THE BAG OF SEED TO VERIFY TYPE AND GERMINATION OF THE SEED TO BE PLANTED AND THE DATE OF THE

- IRRIGATION SHOULD BE USED TO SUPPLEMENT RAINFALL. BUT NOT TO THE POINT TO CAUSE EROSION.

FERTILIZE BASED ON SOIL TESTS OR AS SHOWN IN TABLE. - APPLY AGRICULTURAL LIME AS PRESCRIBED BY SOIL TESTS OR AT A RATE OF 1 TON TO 2 TONS PER ACRE. - APPLY SEED BY HAND, CYCLONE SEEDER, DRILL OR HYDRO-SEEDER. SEED PLANTED WITH A DRILL SHOULD BE PLANTED 1/2" TO 1"

RESEED AREAS WHERE AN ADEQUATE STAND OF TEMPORARY VEGETATION FAILS TO EMERGE OR WHERE A POOR STAND EXISTS. - APPLY ONE TON OF AGRICULTURAL LIME AS INDICATED BY SOIL TEST OR EVERY 4 TO 6 YEARS. - MOW BERMUDA AND BAHIA AS DESIRED. MOW SERICEA LESPEDEZA ONLY AFTER FROST TO ENSURE SEEDS ARE MATURE. - MAINTAIN 6" OR MORE OF TOP GROWTH.

 $\frac{\textit{NOTES}}{\textit{-GRADING AND SHAPING REQUIRED WHERE FEASIBLE AND PRACTICAL}}.$ - CRITICAL AREA: DISTURBED LAND THAT IS EITHER HIGHLY ERODED OR HIGHLY ERODIBLE. TYPICALLY ADJACENT TO NATURAL AREAS, LESS FORMAL AND HAVING LOWER MAINTENANCE REQUIREMENTS THAN GRASSED LAWN AREAS. - SEEDING PREPARATION: NOT REQUIRED WHERE HYDRAULIC SEEDING AND FERTILIZING EQUIPMENT IS TO BE USED WITH

> 3:1 OR FLATTER / 4" - 6" DEPTH 3:1 TO 2:1 / 1" - 4" DEPTH 2:1 OR STEEPER / HAND TOOLED TRENCHES (6"-8" APART)

- FOR INDIVIDUAL PLANTS PREPARE SOIL BY EXCAVATING SOIL, OPENING FURROWS, OR DIBBLE PLANTING. - NO-TILL SEEDING. WITH APPROPRIATE EQUIPMENT. IS PERMISSIBLE INTO ANNUAL COVER CROPS IF THE PLANTING IS DONE AFTER THE COVER CROP HAS MATURED OR IF THE TEMPORARY COVER STAND IS SPARSE ENOUGH TO ALLOW ADEQUATE GROWTH OF - TAKE SOIL SAMPLES FROM SEVERAL AREAS FOR EFFICIENT CHEMICAL APPLICATION AND OPTIMUM PLANT HEALTH - MULCH IS REQUIRED ON ALL SLOPES STEEPER THAN 3 PERCENT, IN THE BOTTOM OF SPILLWAYS, ON ROADBANKS, AND WHEN

SEEDING IS DONE TOO LATE IN THE FALL OR WINTER FOR GERMINATION TO BE EXPECTED BEFORE SPRING. REFER TO MULCHING DETAIL FOR EXACT SPECIFICATIONS - SOIL RETENTION BLANKETS, EROSION CONTROL NETTING, OTHER MANUFACTURE MATERIALS OR BLOCK SOD MAY BE REQUIRED IN ADDITION TO MULCH ON UNSTABLE SOILS AND CONCENTRATED FLOW AREAS. ANCHOR STRAW OR HAY MULCH IMMEDIATELY AFTER APPLICATION WITH ONE OF THE FOLLOWING METHODS:

- SPRAY WITH EMULSIFIED ASPHALT - PRESS INTO THE SOIL WITH A ROLLER, PACKER DISK, ETC. - APPLY SYNTHETIC TACKIFIERS OR BINDERS - ADD RYE OR WHEAT SEED TO FALL AND WINTER PLANTINGS - INSTALL 1"X1" MESH NETTING

WOOD CELLULOSE AND WOOD FIBER MULCH IS SELF-ANCHORING.

THE AREA AROUND THE PAD MUST BE STABLE.

8/15-10/15 * WHEN MIXED WITH 3 OTHER VARIETIES. SEE NC DEQ TABLE 6.11.c FOR ALL SEEDING RATES. * USE MANUFACTURERS RECOMMENDED FERTILIZATION/LIMESTONE RATES

OPTIMAL PLANTING DATES SEEDING RATES* COMMON NAME MOUNTAINS PIEDMONT TOLERAN' SWITCHGRASS 12/1-4/15 SUN RECOMMENDED INDIAN GRASS 7.0 lbs 12/1-4/15 12/1-4/1 SUN DEERTONGUE 6.0 lbs 5/1-4/15 5/1-4/1 SUN & SHADE **BIG BLUESTEM** 12/1-4/15 12/1-4/1 7.0 lbs SUN 7.0 lbs 12/1-4/15 SUN BLUESTEM SUN & MOD 12/1-4/15 2.5 lbs 12/1-4/1 WOOREED SHADE RICE CUTGRASS 6.0 lbs 12/1-4/15 12/1-4/1 SUN SOFT RUSH 2.5 lbs SUN 9/1-11/1 8/15-10/15 2.5 lbs SUN SEDGE 8/15-10/15 9/1-11/1

NON-NATIVE SPECIES

MOUNTAINS

8/15-5/1

8/1-6/1

USE MANUFACTURERS RECOMMENDED FERTILIZATION/LIMESTONE RATES

NATIVE SPECIES

COMMON NAME

FESCUE

KY BLUE GRASS

HARD FESCUE

FOX SEDGE

SECTION A-A

WELL-DEFINED CHANNEL

OR FROM A SOIL TEST.

SEEDING RATES

lbs/acre

100 lbs

OPTIMAL PLANTING DATES

PIEDMONT

9/1-4/15

RECOMMENDE

RECOMMENDED

SUN/SHADE

SHADE

SHADE

PERMANENT SEEDING

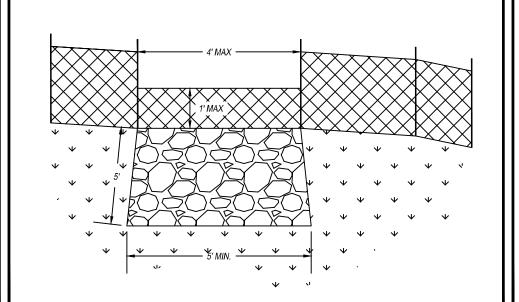
OUTLET WITHIN THE SILT FENCE PERIMETER WHERE OUTLET STORM FLOW MUST BE STABILIZED AGAINST EROSION.

O DETAIN AND PROVIDE A CONTROLLED RELEASE AREA FOR SEDIMENT LADEN WATER RUNOFF.

<u>NSTALLATION</u> - PLACE STABILIZED OUTLET EVERY 200' OF SILT FENCE. SET FABRIC HEIGHT AT 1 FOOT MAXIMUM BETWEEN SUPPORT POSTS SPACED NO MORE THAN 4 FEET APART. INSTALL A HORIZONTAL BRACE BETWEEN THE SUPPORT POSTS TO SERVE AS AN OVERFLOW WEIR AND TO SUPPORT TOP OF FABRIC PROVIDE A RIP RAP OUTLET APRON ACCORDING TO DETAIL. EXCAVATE FOUNDATION FOR THE SPLASH PAD A MINIMUM OF 5 FEET WIDE, 1 FOOT DEEP, AND 5 FEET LONG ON LEVEL GRADE. THE FINISHED SURFACE OF THE RIPRAP SHOULD BLEND WITH THE SURROUNDING AREA, ALLOWING NO OVERALL

IAINTENANCE
- INSPECT BARRIERS AT THE END OF EACH WORKING DAY, OR AFTER EACH RAIN, AND REPAIR OR CLEAN AS NECESSARY. REMOVE SEDIMENT FROM BARRIER WHEN TWO-THIRDS FULL. DISPOSE OF SEDIMENT SO THAT IT WILL NOT ENTER THE BARRIER AGAIN AND STABILIZE IT WITH VEGETATION. REPLACE FILTER FABRIC WHEN DETERIORATED.

DESIGN LIFE OF A SYNTHETIC SILT FENCE IS APPROXIMATELY 6 MONTHS. MAINTAIN UNTIL THE PROJECT IS VEGETATED OR OTHERWISE STABILIZED. REMOVE BARRIERS AND ACCUMULATED SEDIMENT AND STABILIZE THE EXPOSED AREA WHEN THE PROJECT IS STABILIZED



NON-EROSIVE OUTLET

<u>DEFINITION</u>
POROUS BARRIERS INSTALLED INSIDE A TEMPORARY SEDIMENT TRAP, SKIMMER BASIN, OR SEDIMENT BASIN TO

RIPRAPPED CHANNEL SECTION PLACED BELOW STORM DRAIN OUTLETS. REDUCE EROSION OF RECEIVING CHANNELS AND STABILIZE GRADES.

OR FROM A SOIL TEST.

INSTALLATION
-INSTALL ACCORDING TO APPROVED PLAN. -PLACE A FILTER BLANKET OR FILTER FABRIC BETWEEN RIPRAP AND SOIL FOUNDATION -INSTALL A GRADED GRAVEL LAYER OR SYNTHETIC FILTER CLOTH. -LINE WITH RIPRAP, GROUTED RIPRAP, OR CONCRETE. USE FIELD QUARRY STONE WITH MINIMUM DIAMETER OF 6 INCHES FOR RIPRAP MINIMUM APRON THICKNESS SHOULD BE 1.5 TIMES THE MAXIMUM STONE DIAMETER. -EXTEND APRON LENGTH TO AT LEAST SIX TIMES THE OUTLET PIPE

12/1-5/1

9/1-11/1

SUN

- FILTER APRON WIDTH FOR A WELL-DEFINED CHANNEL: SECTION A-A T -SIDE SLOPES OF THE CHANNEL NO STEEPER THAN 2:1. -APRON EXTENDS ACROSS THE CHANNEL BOTTOM. -APRON EXTENDS UP THE CHANNEL BANKS TO AN ELEVATION OF 6 PIPE OUTLET TO FLAT AREA-INCHES ABOVE THE MAXIMUM TAILWATER DEPTH OR TO THE TOP NO WELL-DEFINED CHANNEL OF THE BANK, WHICHEVER IS LESS.

APRON WIDTH FOR A FLAT ARFA: -UPSTREAM WIDTH THREE TIMES THE DIAMETER OF THE OUTLET PIPE. DOWNSTREAM WIDTH THREE TIMES THE DIAMETER OF THE OUTLET PIPE PLUS THE LENGTH OF THE APRON. CONSTRUCT APRON AT ZERO GRADE WITH NO OVERALL AT THE END. CONFORM TO BOTTOM GRADE OF RECEIVING CHANNEL. -LOCATE TO PREVENT BENDS IN HORIZONTAL ALIGNMENT.

-VEGETATE ALL DISTURBED AREAS IMMEDIATELY. <u>MAINTENANCE</u>
-INSPECT AFTER HEAVY RAINS FOR EROSION AND DISLODGED STONES MAKE ALL REPAIRS IMMEDIATELY.

- La IS THE LENGTH OF THE RIPRAP APRON. - T=1.5 TIMES THE MAXIMUM STONE DIAMETER BUT NOT LESS THAN 6". - A FILTER FABRIC SHOULD BE INSTALLED BETWEEN THE RIPRAP AND SOIL FOUNDATION.

OUTLET PROTECTION DIMENSIONS

* OUTLET PROTECTION DIMENSIONS WERE CALCULATED BY MAKING CONSERVATIVE ESTIMATES OF THE NCDENR EROSION & SEDIMENT CONTROL PLANNING & DESIGNING MANUAL, SECTION 8.06, PAGES 3 & 4. STORM DRAIN OUTLET PROTECTION

NOT TO SCALE

1ST CHAMBER 25%

- GALVANIZED HARDWARE WIRE EXTENDS TO TOP OF BOX - #57 WASHED STONE

PLANTING RAPID-GROWING, ANNUAL GRASSES OR SMALL GRAINS TO PROVIDE INITIAL, TEMPORARY COVER FOR

<u>OKPUSE</u> O TEMPORARILY STABILIZE DENUDED AREAS THAT WILL NOT BE BROUGHT TO FINAL GRADE FOR A PERIOD OF

GRADING AND SHAPING ARE NOT REQUIRED IF SLOPES CAN BE PLANTED WITH A HYDROSEEDER OR HAND

APPLY AGRICULTURAL LIME AT RATES RECOMMENDED BY SOILS REPORT OR A MINIMUM OF 1500 LBS/ACRE.

WHEN THE SOIL IS SEALED, IT SHOULD BE PITTED, TRENCHED OR SCARIFIED TO PROVIDE A PLACE FOR SEED TO

FERTILIZE LOW FERTILITY SOILS BY ADDING AND MIXING INTO SOIL PRIOR TO PLANTING AT THE RATE OF 500-700

T IS IMPERATIVE THAT YOU CHECK THE TAG ON THE BAG OF SEED TO VERIFY TYPE AND GERMINATION OF THE

APPLY SEED BY HAND, CYCLONE SEEDER, DRILL OR HYDRO-SEEDER. SEED PLANTED WITH A DRILL SHOULD BE

RESEED AREAS WHERE SEEDLING EMERGENCE IS POOR, OR WHERE EROSION OCCURS, AS SOON AS POSSIBLE. DO

TEMPORARY SEEDING SCHEDULE

TEMPORARY SEEDING

NOT TO SCALE

SEEDING MIXTURE

RYE (GRAIN)

ANNUAL LESPEDEZA

GERMAN MILLET

RYE (GRAIN)

- METAL POSTS

(LB./ACRE)

SEEDING DATES MAY BE ALTERED TO FIT TEMPERATURE VARIATIONS AND LOCAL CONDITIONS.

INSTALLATION
- INSTALL ALL EROSION CONTROL MEASURES PRIOR TO APPLYING TEMPORARY VEGETATION.

SEEDBED PREPARATION IS NOT REQUIRED IF SOIL IS LOOSE AND NOT SEALED.

POUNDS PER ACRE OF 10-10-10 FERTILIZER OR EQUIVALENT.

NOT MOW AND PROTECT FROM TRAFFIC AS MUCH AS POSSIBLE.

JSE 2 TONS OF HAY OR STRAW PER ACRE (IF NECESSARY,

DATE RANGE

FEB. 1 - MAY 15

MAY 15 - AUG. 15

AUG. 15 - DEC. 31

UNUSUAL SITE CONDITIONS MAY REQUIRE HEAVIER SEEDING RATES.

ROSION CONTROL ON DISTURBED AREAS.

MORE THAN 21 CALENDAR DAYS.

LODGE AND GERMINATE.

PLANTED 1/2" TO 1' DEEP

A TEMPORARY SEDIMENT BARRIER PLACED AROUND A STORM DRAIN DROP INLET.

TO PREVENT SEDIMENT FROM ENTERING THE STORM DRAINAGE SYSTEM.

<u>INSTALLATION</u> - INSTALL ACCORDING TO APPROVED PLAN - DO NOT INSTALL WHERE VEHICULAR TRAFFIC WILL BE AFFECTED. - INSTALL AT OR AROUND ALL STORM DRAIN DROP INLETS THAT RECEIVE RUNOFF FROM - CONSTRUCT ON NATURAL GROUND SURFACE, EXCAVATED SURFACE, OR ON MACHINE

- INSPECT, CLEAR, AND/OR REPAIR TRAP AT THE END OF EACH WORKING DAY. - DO NOT REMOVE INLET PROTECTION AND WASH SEDIMENT INTO THE STORM DRAIN. - REMOVE SEDIMENT FROM TRAP AND STABILIZE IT WITH VEGETATION. - REMOVE ALL MATERIALS AND ANY UNSTABLE SOIL ONCE THE CONTRIBUTING DRAINAGE AREA HAS BEEN ADEQUATELY STABILIZED. - APPROPRIATELY STABILIZE ALL BARE AREAS AROUND INLET.

INLET PROTECTION

<u>DEFINITION</u> A SMALL, TEMPORARY PONDING BASIN FORMED BY AN EMBANKMENT OR EXCAVATION TO CAPTURE SEDIMENT. <u>PUNPUSE</u> TO DETAIN SEDIMENT-LADEN RUNOFF AND TRAP THE SEDIMENT TO PROTECT RECEIVING STREAMS, LAKES, DRAINAGE SYSTEM. AND PROTECT ADJACENT PROPERTY.

INSTALLATION
- CLEAR, GRUB, AND STRIP THE AREA UNDER THE EMBANKMENT OF ALL VEGETATION AND ROOT MAT. REMOVE ALL SURFACE SOIL CONTAIN HIGH AMOUNTS OF ORGANIC MATTER, AND STOCKPILE OR DISPOSE OF IT PROPERLY. HAUL ALL OBJECTIONABLE MATERIAL TO THE DESIGNATED DISPOSAL AREA. - ENSURE FILL MATERIAL FOR THE EMBANKMENT IS FREE OF ROOTS, ORGANIC MATTER, OR OTHER OBJECTIONABLE MATERIAL. PLACE THE FILL IN LIFTS NOT TO EXCEED 9 INCHES, AND MACHINE COMPACT. OVERFILL THE EMBANKMENT 6 INCHES TO ALLOW FOR SETTLEMENT. - CONSTRUCT THE OUTLET SECTION IN THE EMBANKMENT. PROTECT THE CONNECTION BETWEEN THE RIPRAP

- ALL CUT AND FILL SLOPES SHOULD BE 2:1 OR FLATTER. - ENSURE THAT THE DRAINAGE SECTION OF THE EMBANKMENT HAS A MINIMUM BOTTOM WIDE OF 3' AND MAXIMUM SIDE SLOPES OF 1:1 THAT EXTEND TO THE BOTTOM OF THE SPILLWAY SECTION. - CONSTRUCT THE MINIMUM FINISHED STONE SPILLWAY BOTTOM WIDTH. KEEP THE THICKNESS OF THE SIDES OF THE SPILLWAY OUTLET STRUCTURE AT A MINIMUM OF 21 INCHES. THE WEIR MUST BE LEVEL AND CONSTRUCTED TO GRADE TO ASSURE DESIGN CAPACITY. - MATERIAL USED IN THE STONE SECTION SHOULD BE WELL-GRADED MIXTURE OF STONE WITH A d50 SIZE OF 9 INCHES AND A MAXIMUM STONE SIZE OF 14 INCHES. THE STONE SHOULD BE HARD, ANGULAR, AND HIGHLY

- DISCHARGE INLET WATER INTO THE BASIN IN A MANNER TO PREVENT EROSION. - ENSURE THAT THE STONE SPILLWAY OUTLET SECTION EXTENDS DOWNSTREAM PAST THE TOE OF THE EMBANKMENT UNTIL STABLE CONDITIONS ARE REACHED. KEEP THE EDGES OF THE STONE OUTLET SECTION FLUSH WITH THE SURROUNDING GROUND. - DIRECT EMERGENCY BYPASS TO NATURAL, STABLE AREAS. STABILIZE THE EMBANKMENT AND ALL DISTURBED AREAS ABOVE THE SEDIMENT POOL AND DOWNSTREAM FROM 2' TO 3.5'

- SHOW THE DISTANCE FROM THE TOP OF THE SPILLWAY TO THE SEDIMENT CLEANOUT LEVEL (1/2 THE DESIGN <u>MAINTENANCE</u> - INSPECT TEMPORARY SEDIMENT TRAPS AT LEAST WEEKLY AND AFTER EACH SIGNIFICAT RANKFALL EVENT AND REPAIR IMMEDIATELY

- REMOVE SEDIMENT, AND RESTORE THE TRAP TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO 1/2 THE DESIGN DEPTH OF THE TRAP. - CHECK THE STRUCTURE FOR DAMAGE FOR EROSION OR PIPING. - ANY RIPRAP DISPLACE FROM THE SPILL WAY MUST BE REPLACED IMMEDIATELY. - AFTER ALL SEDIMENT PRODUCING AREAS HAVE BEEN PERMANENTLY STABILIZED, REMOVE THE STRUC

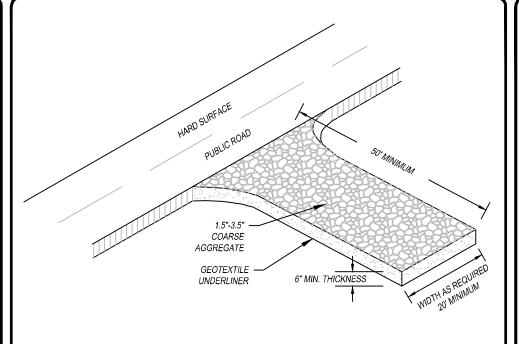
JRE AND						
		TEMP	PORARY SEDIMEN	NT TRAP DESIGN D	ATA	
TRAP ID	TOTAL AREA (AC.)	RUNOFF COEFF.	10-YEAR PEAK RUNOFF (CFS)	SURFACE AREA PROVIDED (S.F.)	VOLUME PROVIDED (FT^3)	APPROXIMATE DIMENSIONS DxWxL
Α	0.98	0.25	1.82	1,206	2,210	3.5' X 28' X 56'
* ALL RUNOFF CALCULATIONS WERE PERFORMED FOR THE 10 YEAR STORM USING THE RATIONAL METHOD WHERE I=7.44 IN/HR						
RARY	SEDI	MENT	TRAP			

12" #57 WASHE CLASS B RIPRAP CROSS-SECTION VIEW A SMALL TEMPORARY STONE DAM CONSTRUCTED ACROSS A DRAINAGE WAY.

PURPOSE REDUCE EROSION IN A DRAINAGE CHANNEL BY REDUCING THE VELOCITY OF FLOW. INSTALLATION
- INSTALL ACCORDING TO APPROVED PLAN.

- KEEP THE CENTER STONE SECTION AT LEAST 9" BELOW NATURAL GROUND LEVEL. - EXTEND STONE AT LEAST 1.5 FEET BEYOND THE DITCH BANK. - SET SPACING BETWEEN DAMS TO ASSURE THAT THE TOP OF THE LOWER DAM IS THE SAME AS THE TOE ELEVATION OF THE UPPER DAM. - PROTECT THE CHANNEL AFTER THE LOWEST CHECK DAM FROM HEAVY FLOW THAT COULD CAUSE - MAKE SURE THAT THE CHANNEL REACH ABOVE THE MOST UPSTREAM DAM IS STABLE.

<u>WAINTENANCE</u>
- INSPECT WEEKLY AND AFTER EACH SIGNIFICANT RAINFALL EVENT AND REPAIR IMMEDIATELY. - REMOVE SEDIMENT ACCUMULATED BEHIND THE DAMS AS NEEDED



A GRAVELED AREA OR PAD LOCATED AT POINTS WHERE VEHICLES ENTER AND LEAVE A CONSTRUCTION SITE. PURPOSE
TO PROVIDE A BUFFER AREA WHERE VEHICLES CAN DROP THEIR MUD AND SEDIMENT TO AVOID TRANSPORTING

<u>INSTALLATION</u> - INSTALL ACCORDING TO APPROVED PLAN - MINIMUM PAD THICKNESS OF 6 INCHES - MINIMUM PAD WIDTH OF 20 FEET - MINIMUM PAD LENGTH OF 50 FEET - EXCAVATE FOOTPRINT A MINIMUM OF 3 INCHES - ROUTE RUNOFF TO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN - INSTALL #200 ROAD STABILIZATION FABRIC AS A BASE UNDER STONE

INITIAL CHANNEL ANCHOR TRENCH

LONGITUDINAL ANCHOR TRENCH

<u>INSTALLATION</u> - INSTALL ACCORDING TO APPROVED PLAN

AND TRASH FROM THE SOIL SURFACE.

ACCOMPANYING DETAIL

GROUND SURFACE.

ARIABLE AS DIRECTED BY THE ENGINEER

FRONT VIEW

- WOVEN WIRE FABRIC IS

- SILT FENCE GEOTEXTILE

1"MIN. BACKFILL TRENCH AND

- STEEL POST

INSTALL ON SLOPES AND IN CHANNELS AS SHOWN IN THE

GRADE THE SURFACE OF INSTALLATION AREAS SO THAT THE GROUND IS

DRIVE STAPLES SO THAT THE TOP OF THE STAPLE IS FLUSH WITH THE

ROLLED EROSION CONTROL PRODUCTS

6" MAX. → →

TEMPORARY SEDIMENT FENCE

SMOOTH AND LOOSE. REMOVE ALL LARGE ROCKS, STUMPS, ROOTS

INTERMITTENT CHECK SLOT

TERMINAL SLOPE & CHANNEL ANCHOR

• INSPECT RECP AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/2

MONITOR AND REPAIR THE RECP AS NECESSARY UNTIL GROUND COVER

- STAKING OR STAPLING LAYOUT PER MANUFACTURE'S SPECIFICATIONS

FABRIC BURIED AT THE BOTTOM, STRETCHED, AND SUPPORTED BY

REDUCING THE VELOCITY OF SHEET FLOWS TO ALLOW SEDIMENT

- DO NOT PLACE IN WATERWAYS OR AREAS OF CONCENTRATED

- DRAINAGE AREA NOT TO EXCEED 1/2 ACRE PER 100 FEET OF

INSPECT BARRIERS AT THE END OF EACH WORKING DAY, OR

- REMOVE SEDIMENT FROM BARRIER WHEN TWO-THIRDS FULL.

- MAINTAIN UNTIL THE PROJECT IS VEGETATED OR OTHERWISE

- REMOVE BARRIERS AND ACCUMULATED SEDIMENT AND STABILIZE THE EXPOSED AREA WHEN THE PROJECT IS STABILIZED.

NOTES
- SILT FENCING SHALL MEET THE REQUIREMENT OF SECTION 6.62

ENVIRONMENT AND NATURAL RESOURCES EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL, LATEST

- THE FILTER FABRIC SHALL BE INSTALLED WITH A MINIMUM OF 5

- SILT FENCING SHALL BE INSTALLED PRIOR TO ANY GRADING OR

- POSTS SHALL BE A MINIMUM OF 5 FEET LONG, SPACED A

MAXIMUM OF SIX FEET APART.T

CONSTRUCTION.

INCHES OF THE BOTTOM BURIED.

SEDIMENT FENCE OF THE NORTH CAROLINA DEPARTMENT OF

AGAIN AND STABILIZE IT WITH VEGETATION.

ESIGN LIFE OF A SYNTHETIC SILT FENCE IS APPRI

- REPLACE FILTER FABRIC WHEN DETERIORATED.

AFTER EACH RAIN, AND REPAIR OR CLEAN AS NECESSARY.

DISPOSE OF SEDIMENT SO THAT IT WILL NOT ENTER THE BARRIER

- ONLY INSTALL IN AREAS WHERE SHEET FLOW CONDITIONS EXISTS

- VERIFY FABRIC BY INSPECTION OF FABRIC WITH A NAME PRINTED

TO RETAIN SEDIMENT FROM SMALL DISTURBED AREAS BY

INSTALL ACCORDING TO APPROVED PLAN

EVERY 100 FEET OF SILT FENCE

⊞RECP ⊞

INCH OR GREATER) RAIN FALL EVENT REPAIR IMMEDIATELY.

MAINTAIN GOOD CONTACT WITH THE GROUND SURFACE.

- CHECK SLOTS TO BE CONSTRUCTED PER MANUFACTURE'S

IS ESTABLISHED.

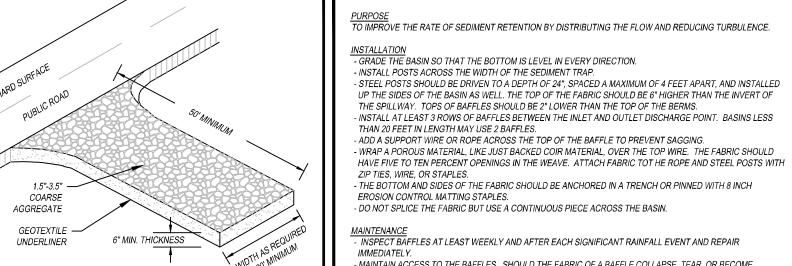
INSTALLED TO SECOND
WIFE FROM TOP

DEFINITION
A TEMPORARY SEDIMENT CONTROL MEASURE CONSISTING OF

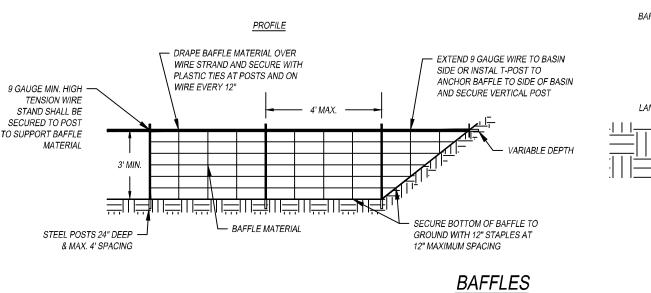
DEPOSITION.

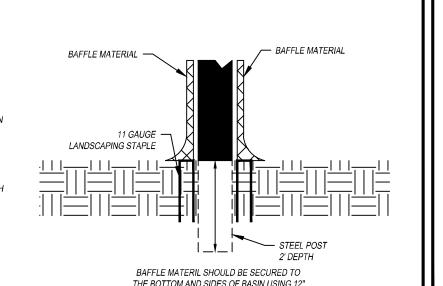
MAINTENANCE
- PERIODICALLY DRESS WITH 1.5" TO 3.5" STONE - MAINTAIN IN A CONDITION THAT WILL PREVENT TRACKING OF MUD ONTO PUBLIC ROADWAYS - IMMEDIATELY REMOVE MUD OR DEBRIS TRACKED OR SPILLED ONTO ROADWAYS

CONSTRUCTION EXIT



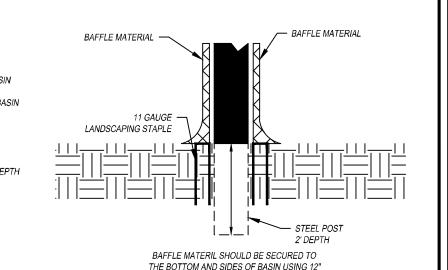
INSPECT BAFFLES AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT RAINFALL EVENT AND REPAIR - MAINTAIN ACCESS TO THE BAFFLES. SHOULD THE FABRIC OF A BAFFLE COLLAPSE, TEAR, OR BECOME INEFFECTIVE, REPLACE PROMPTLY





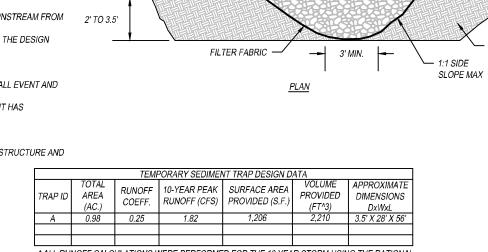
THE BOTTOM AND SIDES OF BASIN USING 12"

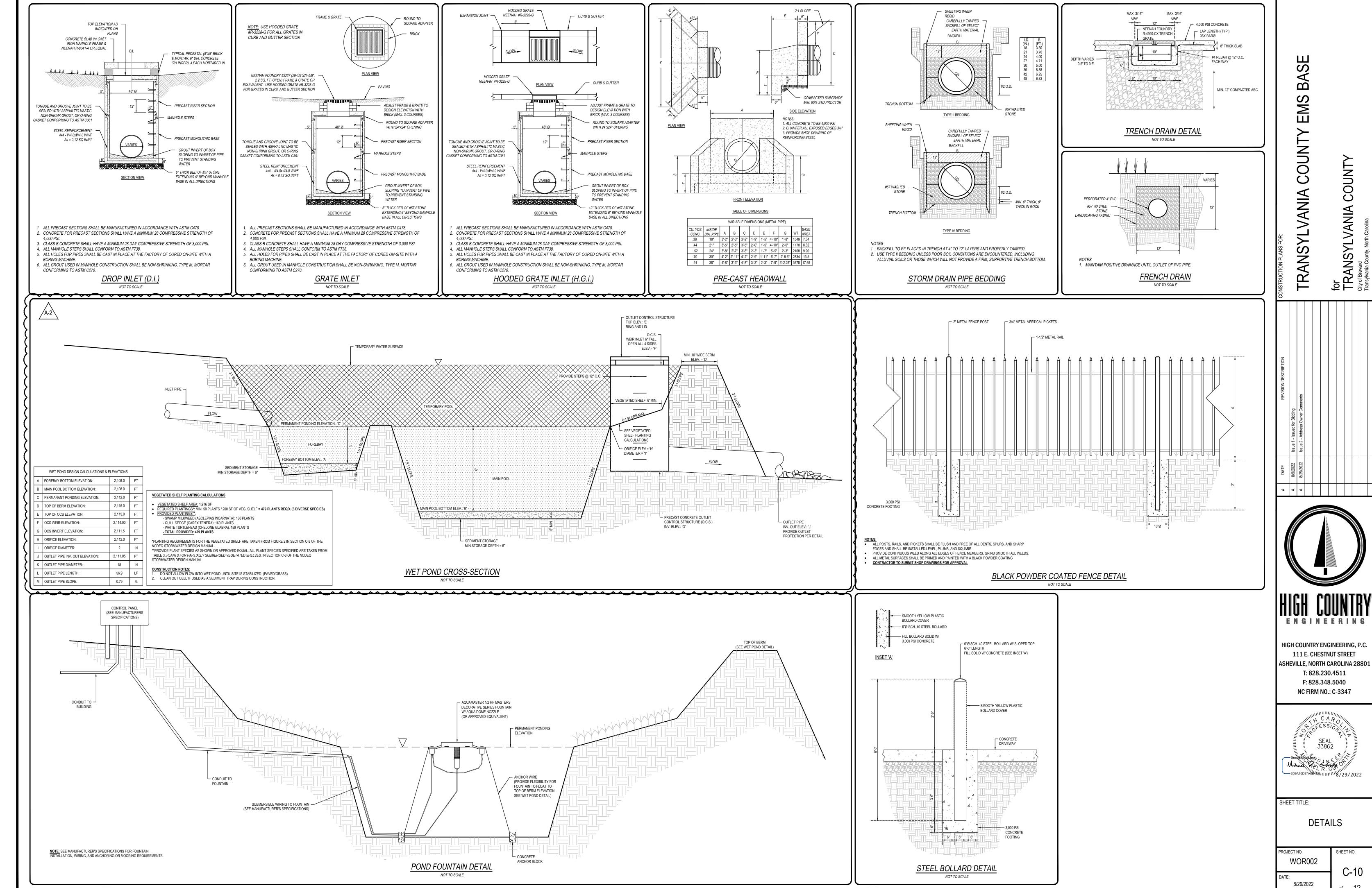
OUTLET ZONE 25% AND THE SOIL FROM PIPING BY USING FILTER FABRIC OR A KEYWAY CUTOFF TRENCH BETWEEN THE RIPRAP STRUCTURE AND SOIL. - CLEAR THE POND AREA BELOW THE ELEVATION OF THE CREST OF THE SPILLWAY TO FACILITATE SEDIMENT THE TRAP IMMEDIATELY AFTER CONSTRUCTION.



12" MIN #57 ---WASHED STONE 1.5' MIN. FILTER FABRIC CROSS-SECTION EMERGENCY BY-PASS -6" BELOW SETTLED TOP OF DAM OVERFILL 6" FOR -DESIGN -SETTLEMENT SETTLED TOP FILTER FABRIC -1:1 SIDE

GRASSED SWALE





SSUE No. A-2

THE NCG01 CONSTRUCTION GENERAL PERMI

SECTION E: GROUND STABILIZATION

Site Area Description

swales, ditches, and

perimeter slopes

(b) High Quality Water

(HQW) Zones

(c) Slopes steeper than

(d) Slopes 3:1 to 4:1

e) Areas with slopes

flatter than 4:1

GROUND STABILIZATION SPECIFICATION

Temporary Stabilization

Rolled erosion control products with or

Appropriately applied straw or other mulch

POLYACRYLAMIDES (PAMS) AND FLOCCULANTS

chniques in the table below

other mulches and tackifiers

without temporary grass seed

Hydroseeding

Plastic sheeting

(a) Perimeter dikes

GROUND STABILIZATION AND MATERIALS HANDLING PRACTICES FOR COMPLIANCE WITH

activity being considered compliant with the Ground Stabilization and Materials Handling

sections of the NCG01 Construction General Permit (Sections E and F. respectively). 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.

Required Ground Stabilization Timeframes

If slopes are 10' or less in length and are

-7 days for slopes greater than 50' in

ength and with slopes steeper than 4:1

not steeper than 2:1, 14 days are

-7 days for perimeter dikes, swales.

ditches, perimeter slopes and HQW

-10 days for Falls Lake Watershed

there is zero slope

other mulches and tackifiers

sufficient to restrain erosion

reinforcement matting

Hydroseeding

with mulch

retaining walls

Note: After the permanent cessation of construction activities, any areas with temporary

ctivity. Temporary ground stabilization shall be maintained in a manner to render the

abilize the ground sufficiently so that rain will not dislodge the soil. Use one of the

Temporary grass seed covered with straw or
 Permanent grass seed covered with straw or

Select flocculants that are appropriate for the soils being exposed during

PAMS/Flocculants and in accordance with the manufacturer's instructions.

or surrounded by secondary containment structures.

construction, selecting from the NC DWR List of Approved PAMS/Flocculants.

Apply flocculants at or before the inlets to Erosion and Sediment Control Measures

Apply flocculants at the concentrations specified in the NC DWR List of Approved

Provide ponding area for containment of treated Stormwater before discharging

Store flocculants in leak-proof containers that are kept under storm-resistant cover

surface stable against accelerated erosion until permanent ground stabilization is achieved.

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

-7 days for perimeter dikes, swales,

ditches, perimeter slopes and HQW Zones

-10 days for Falls Lake Watershed unless

Permanent Stabilization

Geotextile fabrics such as permanent soil

Shrubs or other permanent plantings covered

Uniform and evenly distributed ground cover

Structural methods such as concrete, asphalt or

Rolled erosion control products with grass seed

ermittee shall comply with the Erosion and Sediment Control plan approved by the

Stabilize within thi

days after ceasing

and disturbance

many calendar

plementing the details and specifications on this plan sheet will result in the construction

 \triangleleft $\mathbf{\Omega}$

EMS COUNTY

RANSYLVANIA



SHEET TITLE:

DETAILS

SELF-INSPECTION, RECORDKEEPING AND REPORTING

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

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 inspections

proved by the Division.

and within 24 3. Name of the person performing the inspection

event > 1.0 inch | 5. Description of maintenance needs for the measure.

At least once 1. Identification of the discharge outfalls inspected.

rain event > 1.0 | sheen, floating or suspended solids or discoloration,

inch in 24 hours 5. Indication of visible sediment leaving the site.

of the following shall be made:

(5) Streams At least once If the stream or wetland has increased visible sedimentation or a

or wetlands | per 7 calendar | stream has visible increased turbidity from the construction

onsite or days and within activity, then a record of the following shall be made:

(6) Ground After each phase 1. The phase of grading (installation of perimeter E&SC

hours of a rain 4. Indication of whether the measures were operating properly

24 hours of a 4. Evidence of indicators of stormwater pollution such as oil

days and within 1. Actions taken to clean up or stabilize the sediment that has left

124 hours of a 1. Description, evidence and date of corrective actions taken, and

rain event > 1.0 2. Records of the required reports to the appropriate Division

nch in 24 hours | Regional Office per Part III, Section C, Item (2)(a) of this permit.

or redevelopment, permanent ground cover).

rain event > 1.0 | 2. Description, evidence, and date of corrective actions taken,

7 calendar days 2. Date and time of the inspection,

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

"zero." The permittee may use another rain-monitoring device

6. Description, evidence, and date of corrective actions taken.

6. Description, evidence, and date of corrective actions taker

3. An explanation as to the actions taken to control future

measures, clearing and grubbing, installation of storm drainage

an assurance that they will be provided as soon as possible.

2. Documentation that the required ground stabilization

facilities, completion of all land-disturbing activity, construction

If visible sedimentation is found outside site limits, then a record

needed). Days on which no rainfall occurred shall be recorded as

Daily rainfall amounts.

which it is safe to perform the inspection. In addition, when a storm event of equal to or

SECTION A: SELF-INSPECTION

were delayed shall be noted in the Inspection Record.

24 hours of a the site limits.

inch in 24 hours and

stabilization of grading

SELF-INSPECTION, RECORDKEEPING AND REPORTING **SECTION B: RECORDKEEPING** Self-inspections are required during normal business hours in accordance with the table

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 the E&SC plan shall be kept on site and available for inspection at all times during normal business hours.

PART III

. Additional Documentation to be Kept on Site

site and available for inspectors at all times during normal business hours, unless the

Documentation to be Retained for Three Years All data used to complete the e-NOI and all inspection records shall be maintained for a period

DRAW DOWN OF SEDIMENT BASINS FOR MAINTENANCE OR CLOSE OUT

Sediment basins and traps that receive runoff from drainage areas of one acre or more shall use outlet structures that withdraw water from the surface when these devices need to be drawn down for maintenance or close out unless this is infeasible. The circumstances in which it is not feasible to withdraw water from the surface shall be rare (for example, times with extended cold weather).

(a) The E&SC plan authority has been provided with documentation of the non-surface withdrawal and the specific time periods or conditions in which it will occur. The non-surface withdrawal shall not commence until the E&SC plan authority has approved these items,

) The non-surface withdrawal has been reported as an anticipated bypass in accordance with Part III, Section C, Item (2)(c) and (d) of this permit,

properly sited, designed and maintained dewatering tanks, weir tanks, and filtration systems, I) Vegetated, upland areas of the sites or a properly designed stone pad is used to the extent feasible at the outlet of the dewatering treatment devices described in Item (c) above,

Non-surface withdrawals from sediment basins shall be allowed only when all of the following criteria have been met:

(c) Dewatering discharges are treated with controls to minimize discharges of pollutants from stormwater that is removed from the sediment basin. Examples of appropriate controls include

(e) Velocity dissipation devices such as check dams, sediment traps, and riprap are provided at the discharge points of all dewatering devices, and

SCINCRETE VASHBUT STRUCTURE NEEDS TO BE CLEARY MARKED VITH SIGNAGE NOTING DEVICE. CONCRETE WASHOUTS Do not discharge concrete or cement slurry from the site. (2) E&SC At least once per 1. Identification of the measures inspected, Dispose of, or recycle settled, hardened concrete residue in accordance with local and state solid waste regulations and at an approved facility 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. . Install temporary concrete washouts per local requirements, where applicable. If an Stormwater | per 7 calendar | 2. Date and time of the inspection, alternate method or product is to be used, contact your approval authority for discharge days and within 3. Name of the person performing the inspection, review and approval. If local standard details are not available, use one of the two types of temporary concrete washouts provided on this detail.

CONCRETE CLEARLY MARKED SIGNAGE
NOTING DEVICE (18'X84' MIN)

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 On business days, clean up and dispose of waste in designated waste containers. discharged to the storm drain system or receiving surface waters. Liquid waste must be pumped out and removed from project. Do not dump paint and other liquid waste into storm drains, streams or wetlands.

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

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. 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. 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. Provide staking or anchoring of portable toilets during periods of high winds or in high

2. THE CONCRETE VASHOUT STRUCTURES SHALL SE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES

3.CONCRETE VASHOUT STRUCTURE NEEDS TO BE CLEARY MARKED WITH STORAGE NOTING DEVICE.

.0. 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

Store and apply herbicides, pesticides and rodenticides in accordance with label **EARTHEN STOCKPILE MANAGEMEN** Show stockpile locations on plans. Locate earthen-material stockpile areas at least Store herbicides, pesticides and rodenticides in their original containers with the 50 feet away from storm drain inlets, sediment basins, perimeter sediment controls label, which lists directions for use, ingredients and first aid steps in case of and surface waters unless it can be shown no other alternatives are reasonably accidental poisoning.

Protect stockpile with silt fence installed along toe of slope with a minimum offset of five feet from the toe of stockpile

Provide stable stone access point when feasible. 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. NORTH CAROLINA Environmental Quality

HAZARDOUS AND TOXIC WASTE

Create designated hazardous waste collection areas on-site. Place hazardous waste containers under cover or in secondary containment

Do not store hazardous chemicals, drums or bagged materials directly on the ground.

Do not store herbicides, pesticides and rodenticides in areas where flooding is

or surface water. If a spill occurs, clean area immediately.

Do not stockpile these materials onsite.

possible or where they may spill or leak into wells, stormwater drains, ground water

NCG01 GROUND STABILIZATION AND MATERIALS HANDLING

TOP OF BASIN-

QUIPMENT AND VEHICLE MAINTENANCI

Maintain vehicles and equipment to prevent discharge of fluids.

to a recycling or disposal center that handles these materials.

receptacle) on site to contain construction and domestic wastes.

waters unless no other alternatives are reasonably available.

Dispose waste off-site at an approved disposal facility.

Contain liquid wastes in a controlled area.

on a gravel pad and surround with sand bags.

waters unless no other alternatives are reasonably available.

Identify leaks and repair as soon as feasible, or remove leaking equipment from the

Remove leaking vehicles and construction equipment from service until the problem

Bring used fuels, lubricants, coolants, hydraulic fluids and other petroleum products

Never bury or burn waste. Place litter and debris in approved waste containers.

Locate waste containers at least 50 feet away from storm drain inlets and surface

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.

Cover waste containers at the end of each workday and before storm events or

provide secondary containment. Repair or replace damaged waste containers.

Empty waste containers as needed to prevent overflow. Clean up immediately if

Locate paint washouts at least 50 feet away from storm drain inlets and surface

Containment must be labeled, sized and placed appropriately for the needs of site.

Prevent the discharge of soaps, solvents, detergents and other liquid wastes from

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

Monitor portable toilets for leaking and properly dispose of any leaked material.

offset is not attainable, provide relocation of portable toilet behind silt fence or place

Utilize a licensed sanitary waste hauler to remove leaking portable toilets and replace

Anchor all lightweight items in waste containers during times of high winds.

Provide a sufficient number and size of waste containers (e.g dumpster, trash

Collect all spent fluids, store in separate containers and properly dispose as

Provide drip pans under any stored equipment.

LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE

containers overflow.

PAINT AND OTHER LIQUID WASTE

construction sites.

foot traffic areas.

with properly operating unit.

hazardous waste (recycle when possible)

EFFECTIVE: 04/01/19

PVC END CAP ____ ─TOE OF BASIN DEWATERING DEVICE EMERGENCY-SPILLWA) SKIMMER END VIEW TOE OF BASIN-STRUCTURE PVC PIPE SCH 40-PVC VENT PIPE WATER SURFACE EMERGENCY → SPILLWAY (IF REQUIRED) PVC PIPE SCH 40-TOP OF BASIN— PLACE FLEXIBLE HOSE--SKIMMER SIZE: "C" ELEV.="O" ORIFICE Ø: "D" -REBAR TRASH RACK **BOTTOM SURFACE** -RISER Ø: "E" HEIGHT: "R" SKIMMER FRONT VIEW "P" LF OF "F" DIA. HDPE @ "R" -"N" ANTI-SEEP COLLAR

SPILLWAY SYSTEM CONSISTING OF A RISER AND BARREL PIPE. TO DETAIN SEDIMENT-LADEN RUNOFF AND TRAP THE SEDIMENT TO PROTECT RECEIVING STREAMS, LAKES, DRAINAGE SYSTEM, AND PROTECT ADJACENT PROPERTY.

AN EARTHEN EMBANKMENT TO CAPTURE RUNOFF WITH A PRIMARY

2-#5 BARS

CONC. ANTIFLOAT BLOCK

"I" DIMENSIONS

STONE PAD -

ISTALLATION CLEAR GRUB. AND STRIP THE AREA UNDER THE EMBANKMENT OF ALL VEGETATION AND ROOT MAT. REMOVE ALL SURFACE SOIL CONTAIN HIGH AMOUNTS OF ORGANIC MATTER, AND STOCKPILE OR DISPOSE OF IT PROPERLY. HAUL ALL OBJECTIONABLE MATERIAL TO THE DESIGNATED

EXCAVATE CUT-OFF TRENCH ALONG THE CENTERLINE OF THE EARTHEN FILL FMBANKMENT - ENSURE FILL MATERIAL FOR THE EMBANKMENT IS FREE OF ROOTS, ORGANIC MATTER, OR OTHER OBJECTIONABLE MATERIAL. PLACE THE FILL IN LIFTS NOT TO EXCEED 9 INCHES, AND MACHINE COMPACT. OVERFILL THE EMBANKMENT 6 INCHES TO ALLOW FOR SETTLEMENT. SECURE RISER TO THE OUTLET PIPE. PLACE THE BARREL AND RISER ON A FIRM SMOOTH FOUNDATION

PLACE THE SKIMMER BARREL ON FIRM, SMOOTH FOUNDATION OF

IMPERVIOUS SOIL. DO NOT USE PERVIOUS MATERIAL AS BACKFILL

AROUND THE PIPE PLACE THE MATERIAL IN 4-INCH LAYERS AROUND THE

SHALLOW PIT UNDER THE SKIMMER.

SHAPE THE BASIN TO THE SPECIFIED DIMENSIONS. PREVENT THE SKIMMING DEVICE FROM SETTLING INTO THE MUD BY EXCAVATING A

OVER THE SPILLWAY. - ASSEMBLE THE SKIMMER FOLLOWING THE MANUFACTURER'S LAY THE ASSEMBLED SKIMMER ON THE BOTTOM OF THE BASIN WITH THE FLEXIBLE JOINT IN AT THE INLET OF THE BARREL PIPE. ATTACH THE FLEXIBLE JOINT TO THE BARREL PIPE AND POSITION THE SKIMMER OVER THE EXCAVATED PIT. ATTACH A ROPE TO THE SKIMMER AND ANCHOR IT TO THE SIDE OF THE BASIN.

CUT-OFF TRENCH

1' DEEP. 2:1 SS

CROSS-SECTION

INSTALL THE SPILLWAY IN UNDISTURBED SOIL TO THE GREATEST EXTENT IMPERMEABLE GEOTEXTILE FABRIC. THE FABRIC MUST BE WIDE AND LONG ENOUGH TOT COVER THE BOTTOM AND SIDES AND EXTEND ONTO THE TOP OF THE DAM FOR ANCHORING. THE FABRIC MUST BE LONG ENOUGH TO EXTEND DOWN THE SLOPE AND EXIT ONTO STABLE GROUND. THE VIDTH OF THE FABRIC MUST BE ONE PIECE. SECURE THE UPPER EDGE AND SIDE OF THE FABRIC IN A TRENCH WITH STABLES OR PINS. LISE 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. - CONSTRUCT THE STRUCTURE SO THAT THE DISTURBED AREA IS MINIMIZED. DIVERT SURFACE WATER AWAY FROM BARE AREAS. COMPLETE THE EMBANKMENT BEFORE THE AREA IS CLEARED. STABILIZE THE EMERGENCY SPILLWAY EMBANKMENT AND ALL OTHER DISTURBED

ORIGINAL DIMENSIONS. EXCAVATE THE SEDIMENT FROM THE ENTIRE BASIN. NOT JUST AROUND THE SKIMMER OR THE FIRST CELL. - REPAIR THE BAFFLES IF THEY ARE DAMAGED. IF THE SKIMMER IS CLOGGED WITH TRASH AND THERE IS WATER IN THE POSSIBLE. THE SPILLWAY SHOULD BE LINED WITH LAMINATED PLASTIC OR BASIN, SWIFTLY TUG ON THE ROPE TO MAKE THE SKIMMER BOB UP AND DOWN TO DISLODGE DEBRIS AND RESTORE FLOW IF THIS DOESN'T WORL PULL THE SKIMMER TO THE SIDE OF THE BASIN AND REMOVE THE DEBRIS - IF THE SKIMMER ARM IS CLOGGED. THE ORIFICE CAN BE REMOVED AND THE OBSTRUCTION CLEARED BY FLUSHING WITH CLEAN WATER. CHECK THE FABRIC LINED SPILLWAY FOR DAMAGE AND MAKE ANY REQUIRED REPAIRS WIT FABRIC THAT SPANS THE FULL WIDE OF THE SPILLWAY CHECK THE EMBANKMENT SPILLWAYS A NO OUTLET FOR EROSION DAMAGE. REMOVE ALL TRASH AND OTHER DEBRIS FROM THE SKIMMER AND POOL AREAS. - SPECIAL PRECAUTIONS SHOULD BE TAKEN IN THE WINTER TO PREVENT THE SKIMMER FROM PLUGGING WITH ICE.

NSPECT SEDIMENT BASINS AT LEAST WEEKLY AND AFTER EACH

IMMEDIATELY. REMOVE SEDIMENT AND RESTORE THE BASIN TO ITS

SIGNIFICANT (ONE-HALF INCH OR GREATER) RAINFALL EVENT AND REPAIR

RIP-RAP OUTLET —

AREAS ABOVE THE CREST OF THE PRINCIPAL SPILLWAY IMMEDIATELY AFTER CONSTRUCTION. INSTALL POROUS BAFFLES AS SHOWN IN DETAIL. AFTER ALL 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

SPILLWAY PIPE. PLACE A MIN. DEPTH OF 2 FEET OF COMPACTED BACKFILL PROPERLY SEDIMENT BASIN SEDIMENT BASIN CALCULATIONS

	BASIN ID:	BASIN A	
	TOTAL AREA TO BASIN:	1.51	AC
	10-YEAR PEAK RUNOFF:	2.81	CFS
	SURFACE AREA REQD (BASED ON 25 YEAR STORM):	1,399	SF
	SURFACE AREA PROVIDED:	1,910	SF
	VOLUME REQD:	2,720.12	CF
	VOLUME PROVIDED:	2,846.00	CF
Α	ELEVATION OF MAX. REQUIRED VOLUME OF BASIN:	2,113.90	FT
В	ELEVATION OF CLEANOUT VOLUME OF THE BASIN:	2,113.10	FT
С	SKIMMER PIPE DIAMETER:	4	IN
D	SKIMMER ORIFICE DIAMETER:	0.75	IN
Ε	RISER PIPE DIAMETER:	30	IN
F	DIAMETER OF THE PRINCIPAL SPILLWAY PIPE:	18	IN
G	I.E. OF PRINCIPAL SPILLWAY @ THE DAM:	2,112	FT
Н	LENGTH OF REBAR IN CONCRETE ANTI-FLOAT:	36	IN
I	CONCRETE ANTI-FLOAT BLOCK DIMENSIONS:	42"W X 42" W X 13"T	IN
J	TOP OF EMBANKMENT WIDTH:	8	FT
K	EMBANKMENT SLOPE:	3	:1
L	EMERGENCY SPILLWAY CREST ELEVATION:	2,114.00	FT
М	EMERGENCY SPILLWAY CREST WIDTH:	N/A	FT
N	ANTI-SEEP COLLAR SIZE:	18 X 2	IN
0	TOP OF EMBANKMENT ELEVATION:	2,115.40	FT
Р	LENGTH OF PRINCIPAL SPILLWAY PIPE:	93.3	FT
Q	I.E. OF PRINCIPAL SPILLWAY @ THE TOE OF DAM:	2,111.1	FT
R	SLOPE OF SPILLWAY PIPE:	0.96	%
S	HEIGHT OF RISER STRUCTURE:	3.0	FT

	SEDIMENT BASIN CALCU	LATIONS	
	BASIN ID:	BASIN A	
	TOTAL AREA TO BASIN:	1.51	AC
	10-YEAR PEAK RUNOFF:	2.81	CFS
	SURFACE AREA REQD (BASED ON 25 YEAR STORM):	1,399	SF
	SURFACE AREA PROVIDED:	1,910	SF
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Α	ELEVATION OF MAX. REQUIRED VOLUME OF BASIN:	2,113.90	FT
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С	SKIMMER PIPE DIAMETER:	4	IN
D	SKIMMER ORIFICE DIAMETER:	0.75	IN
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1	CONCRETE ANTI-FLOAT BLOCK DIMENSIONS:	42"W X 42" W X 13"T	IN
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K	EMBANKMENT SLOPE:	3	:1
L	EMERGENCY SPILLWAY CREST ELEVATION:	2,114.00	FT
М	EMERGENCY SPILLWAY CREST WIDTH:	N/A	FT
N	ANTI-SEEP COLLAR SIZE:	18 X 2	IN
0	TOP OF EMBANKMENT ELEVATION:	2,115.40	FT
Р	LENGTH OF PRINCIPAL SPILLWAY PIPE:	93.3	FT
Q	I.E. OF PRINCIPAL SPILLWAY @ THE TOE OF DAM:	2,111.1	FT
R	SLOPE OF SPILLWAY PIPE:	0.96	%
S	HEIGHT OF RISER STRUCTURE:	3.0	FT

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.

In addition to the E&SC plan documents above, the following items shall be kept on 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 twelve months. 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.

measures have been provided within the required timeframe or NOTE: The rain inspection resets the required 7 calendar day inspection requirement.

NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING

of three years after project completion and made available upon request. [40 CFR 122.41]

PART II, SECTION G, ITEM (4)

Sediment removed from the dewatering treatment devices described in Item (c) above is disposed of in a manner that does not cause deposition of sediment into waters of the United States.

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). (c) 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.

(d) Anticipated bypasses and unanticipated bypasses.

(e) Noncompliance with the conditions of this permit that may endanger health or the

environment. 2. Reporting Timeframes and Other Requirements

After a permittee becomes aware of an occurrence that must be reported, he shall contact the appropriate Division regional office within the timeframes and in accordance with the other requirements listed below. Occurrences outside normal business hours may also be

reported to the Department's Environmental Emergency Center personnel at (800) Reporting Timeframes (After Discovery) and Other Requirements • Within 24 hours, an oral or electronic notification. (a) Visible sediment

deposition in a stream • 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 or wetland 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-rela causes, the permittee may be required to perform additional monitoring, nspections or apply more stringent practices if staff determine that additional

equirements are needed to assure compliance with the federal or state aired-waters conditions. (b) Oil spills and release • Within 24 hours, an oral or electronic notification. The notification shall include information about the date, time, nature, volume and location of the

of hazardous substances per Item spill or release. 11(b)-(c) above

(c) Anticipated bypasses • A report at least ten days before the date of the bypass, if possible. The [[40 CFR 122.41(m)(3)] report shall include an evaluation of the anticipated quality and effect of the Within 24 hours, an oral or electronic notification. • Within 7 calendar days, a report that includes an evaluation of the quality bypasses [40 CFR 122.41(m)(3)] and effect of the bypass

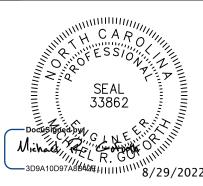
(e) Noncompliance with • Within 24 hours, an oral or electronic notification. the conditions of this • Within 7 calendar days, a report that contains a description of the ncompliance, and its causes; the period of noncompliance, including exact endanger health or the dates and times, and if the noncompliance has not been corrected, the /ironment[40 CFR ticipated time noncompliance is expected to continue; and steps taken or 122.41(I)(7)] [40 CFR 122.41(I)(6).

lanned to reduce, eliminate, and prevent reoccurrence of the noncomplianc • Division staff may waive the requirement for a written report on a

case-by-case basis

EFFECTIVE: 04/01/19

HIGH COUNTRY ENGINEERING, P.C. 111 E. CHESTNUT STREET ASHEVILLE, NORTH CAROLINA 2880: T: 828.230.4511 F: 828.348.5040 NC FIRM NO.: C-3347



SHEET NO.

8/29/2022

DocuSign Envelope ID: BDDCF9D6-2175-4486-9307-1B5D5CA08831

WOR002
TRANSYLVANIA COUNTY EMS BASE

