US Army Corps of Engineers
Memphis District

PublicNotice

FILE NUMBER: MVM-2022-193

NOTICE DATE: **August 3, 2022**

Attn: Postmaster, Please Post Until

EXPIRATION DATE: **September 2, 2022**

Public Notice
U.S. Army Corps of Engineers

AUTHORITY: Pursuant to 33 CFR 325, as published in the Federal Register dated November 13, 1986, this notice announces an application submitted for a Department of the Army permit under Section 404 of the Clean Water Act. The authority to grant permission for temporary or permanent alterations of any U.S. Army Corps of Engineers federally authorized civil works project is contained in Section 14 of the Rivers and Harbors Act of 1899 codified in 33 USC 408.

APPLICANT:
Shelby County Government
Attn: Darren Sanders
6463 Haley Road
Memphis, Tennessee 38134
Ph: (901) 222-7705

AGENT:
Tioga Environmental Consultants, Inc.
Attn: Ben S. Day
357 N. Main Street
Memphis, Tennessee 38103
Ph: (901) 791-2432

PURPOSE: The purpose of the project is to repair and stabilize excessive channel erosion that has created a large scour hole within Big Creek, south of Millington, Shelby County, Tennessee.

LOCATION: The project site is located south of Jack Huffman Blvd. and west of a railroad bridge within Big Creek south of Millington, Shelby County, Tennessee at Latitude 35.33274° and Longitude -89.90223° as shown on the Millington, Tennessee 1:24,000 USGS topographic quadrangle (Figure 1).

DESCRIPTION OF WORK: The applicant is requesting permit authorization to permanently fill approximately 1.29 acres of other waters of the United States to repair and stabilize the existing scour hole within Big Creek. The project reach totals approximately 830 l.f. in length. The scour hole is approximately 475 feet wide at top of bank and extends approximately 500 feet downstream with excessive bank erosion. The stream is heavily incised at the project location with silty clay banks having heights ranging from 30 to 45 feet above the water surface. On-going erosion of the banks has deposited a large volume of sediment into the stream as evidenced during site visits made by the applicant. Additionally, numerous trees have sloughed off the bank into the stream within the project reach. At the downstream end of the scour pool a large sand bar has formed on the left side of the stream, creating some additional sinuosity.

The applicant's proposal to repair and stabilize the scour hole is to install a new sheet pile grade control structure with grouted riprap being placed alongside the 50-foot-long scour hole immediately downstream of the railroad bridge. The banks will be re-established through selective grading and the placement of fill and stabilized with the placement of articulated concrete matting and grouted riprap armoring. Bank slopes will be constructed at 3:1 grade with benches every 10 vertical feet. Top of bank widths will be approximately 240 to 260 feet, narrowing at the downstream end to match existing stream conditions (width of approximately 160 feet) at Station 0+00. Details of the existing conditions are shown on Figure C3.01 (attached). Plan views and cross-sections of the applicant's repair design including erosion control measures to be taken are shown on Figures C3.01 - C3.10 (attached). A temporary construction access road will be developed on the north adjoining property and cross the

stream just below the rail line in order to provide equipment access to the left (south) bank (Figure C3.03, attached). Following construction, existing stream sinuosity would be reduced such that the final stream will be approximately 765 feet in length.

AVOIDANCE/MINIMIZATION: According to the applicant, due to the type of work proposed, avoidance of impacts to the stream is not feasible, but minimization efforts will be implemented to the extent possible. All work will be conducted "in-the-dry". Work in areas outside of the water will be conducted utilizing appropriate sediment and erosion controls, and any work required that would normally be within the water will utilize flow diversion techniques to maintain dry work conditions. A downstream turbidity curtain will be installed and remain in place during construction. Erosion control details demonstrating these techniques are attached as part of the project plans (Figure C3.04, attached). Mechanized equipment may be required to work in the channel and all possible efforts will be made to keep this equipment out of the water. Wherever possible, equipment will be transported along the outer edge of the channel, above the water level. Work will be completed in the dry, and equipment will be located within any containment / diversion structures to minimize potential exposure to any water in the channel. If equipment must be staged overnight in the channel, it will be similarly staged within a berm / containment structure, and equipment will be removed from the channel prior to any pending storm / high flow events. The applicant prepared an analysis of alternatives, and the Memphis District will review the applicant's alternatives evaluation for compliance with Section 404 (b)(1) Guidelines.

MITIGATION: The applicant is proposing to purchase stream credits from an approved mitigation bank. Based on the Tennessee Stream Quantification Debit Tool, functional loss for the action is -318.7 feet of stream. Once an agreement is finalized, evidence of the agreement for purchase will be supplied. The Memphis District will evaluate the proposed plans against the project impacts prior to making a formal decision on mitigation.

WATER QUALITY CERTIFICATION: The Clean Water Act (CWA) Section 401 Certification Rule (Certification Rule, 40 CFR 121), effective September 11, 2020, requires certification for any license or permit that authorizes an activity that may result in a discharge. The scope of a CWA Section 401 certification is limited to assuring that a discharge from a federally licensed or permitted activity will comply with water quality requirements. The applicant is responsible for requesting certification and providing required information to the certifying agency. In accordance with Certification Rule part 121.6, once the applicant submits a certification request the Corps of Engineers will determine the reasonable period of time for the certifying agency to act upon the certification and provide written notification.

ENDANGERED SPECIES: The Indiana bat and northern long-eared bat are listed as endangered or threatened by U.S. Fish and Wildlife Service (USFWS) in Shelby County. Based on review of the TN SLOPES agreement between USACE and USFWS, the effect determination for both bat species is "may affect, not likely to adversely affect". USACE will complete any further consultation with USFWS as required.

CULTURAL RESOURCES: In compliance with Section 106 of the National Historic Preservation Act of 1966 (NHPA), as amended, the Memphis District is soliciting comments from federal, state, and local agencies, federally-recognized Indian Tribes, the public, and other interested parties in order to identify and evaluate potential impacts of the proposed action on historic properties.

FLOODPLAIN: In accordance with 44 CFR Part 60 (Floodplain Management and Use), participating communities are required to review all proposed development to determine if a floodplain development permit is required. Floodplain administrators should review the proposed public notice and notify this office of any floodplain development permit requirements.

PUBLIC INTEREST REVIEW: The purpose of this public notice is to advise all interested parties of the activities for which a permit is sought and to solicit comments and information necessary to evaluate the probable impact on the public interest.

The decision whether to issue a permit will be based on an evaluation of the probable impact including cumulative impacts of the activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefits, which reasonably may be expected to accrue from the project, must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the project will be considered, including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership and in general, the needs and welfare of the people.

The Corps of Engineers is soliciting comments from the public; federal, state and local agencies and officials; federally recognized Tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

PUBLIC HEARING: Any person may request, in writing, within the comment period specified in this notice that a public hearing be held to consider this application. Requests for a public hearing shall state, with particularity, the reason for holding a public hearing. The District Engineer will determine if the issues raised are substantial and whether a hearing is needed for making a decision. If a public hearing is held, it will be for the purpose of obtaining additional information that we could not otherwise obtain through a public notice process; not to inform the public about the specific details of the project in greater detail than what is found in this notice. This is not a Corps of Engineers project. We are not a proponent nor are we an opponent of the project. We are merely the permitting authority of Section 404 and Section 10 permits required by our office.

COMMENTS OR REQUEST FOR ADDITIONAL INFORMATION: Send comments to the Corps of Engineers, Memphis District. Comments may be sent via mail or email to the following:

U.S. Army Corps of Engineers – Memphis District
ATTN: Mitch Elcan
167 North Main Street, Room B-202
Memphis, Tennessee 38103-1894
E-mail: james.m.elcan@usace.army.mil
phone: (901) 544-0737

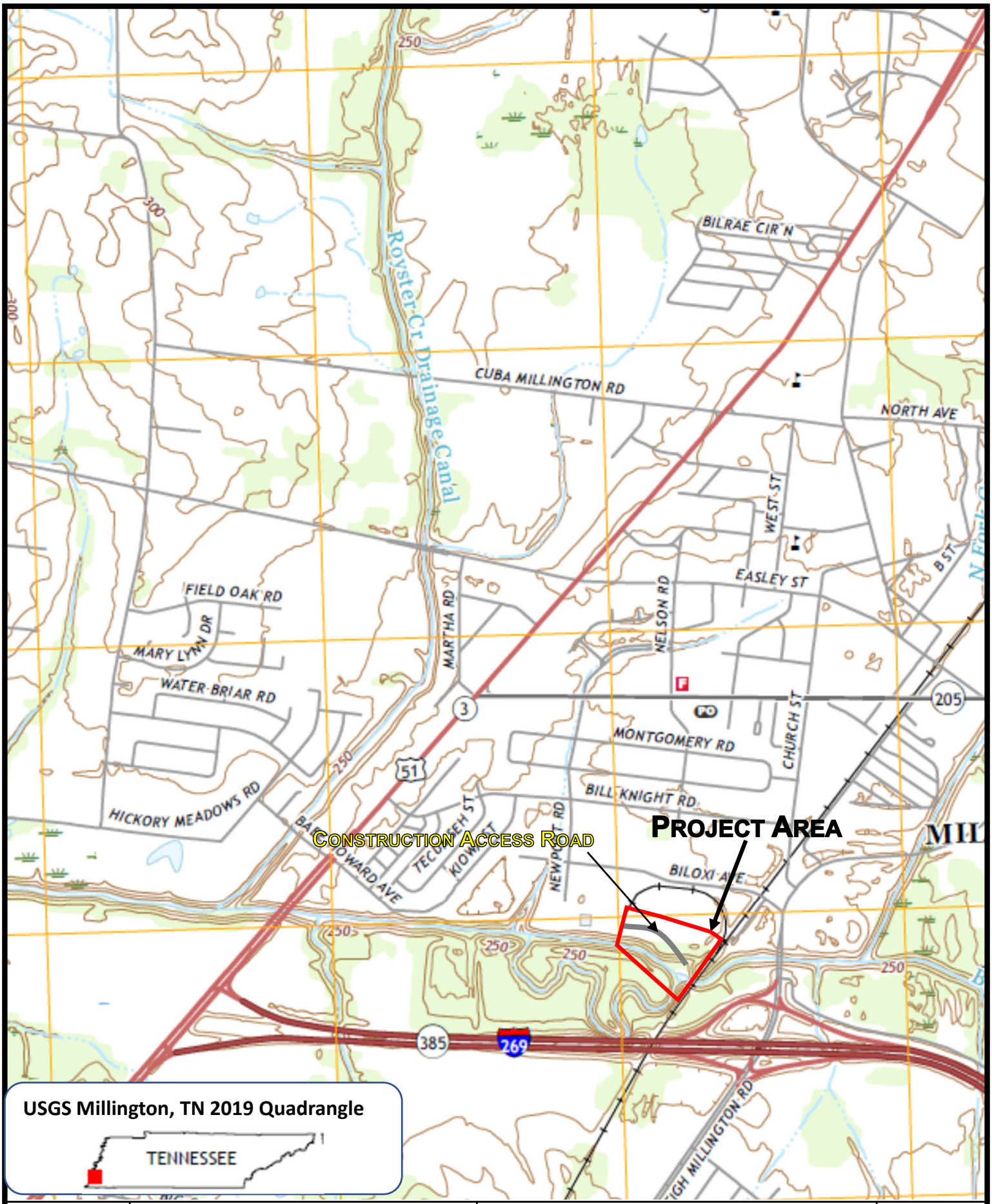
The Corps of Engineers may provide copies of all comments, (including name & address of those providing comments) to the applicant for consideration and response prior to a decision. Comments must be received by the expiration date listed on page one of this notice.

For Final Individual Permits actions in the Memphis District, go to the following link: https://permits.ops.usace.army.mil/orm-public. Using the Filter by District drop down box, select MVM-Memphis District, then select the year and month (information will populate in the table below). All pending individual permits can be located by selecting the **"Pending IP"** tab above. All of the environmental documents and statements of findings supporting issuance or denial of the permit decisions are available upon written request and where applicable, upon the payment of administrative fees. They are also available at the Memphis District, Regulatory Division office for examination.

Date: 2022.08.03
13:41:33 -05'00'

Gregg W. Williams
Chief
Regulatory Division

Attachments



USGS Millington, TN 2019 Quadrangle

N

1:24K

Tioga
ENVIRONMENTAL CONSULTANTS

PERMIT APPLICATION
BIG CREEK SCOUR REPAIR

DESCRIPTION: TOPOGRAPHIC MAP	PROJECT #: 541313.00
LOCATION: MILLINGTON, TN	DATE: JUNE 2022

1

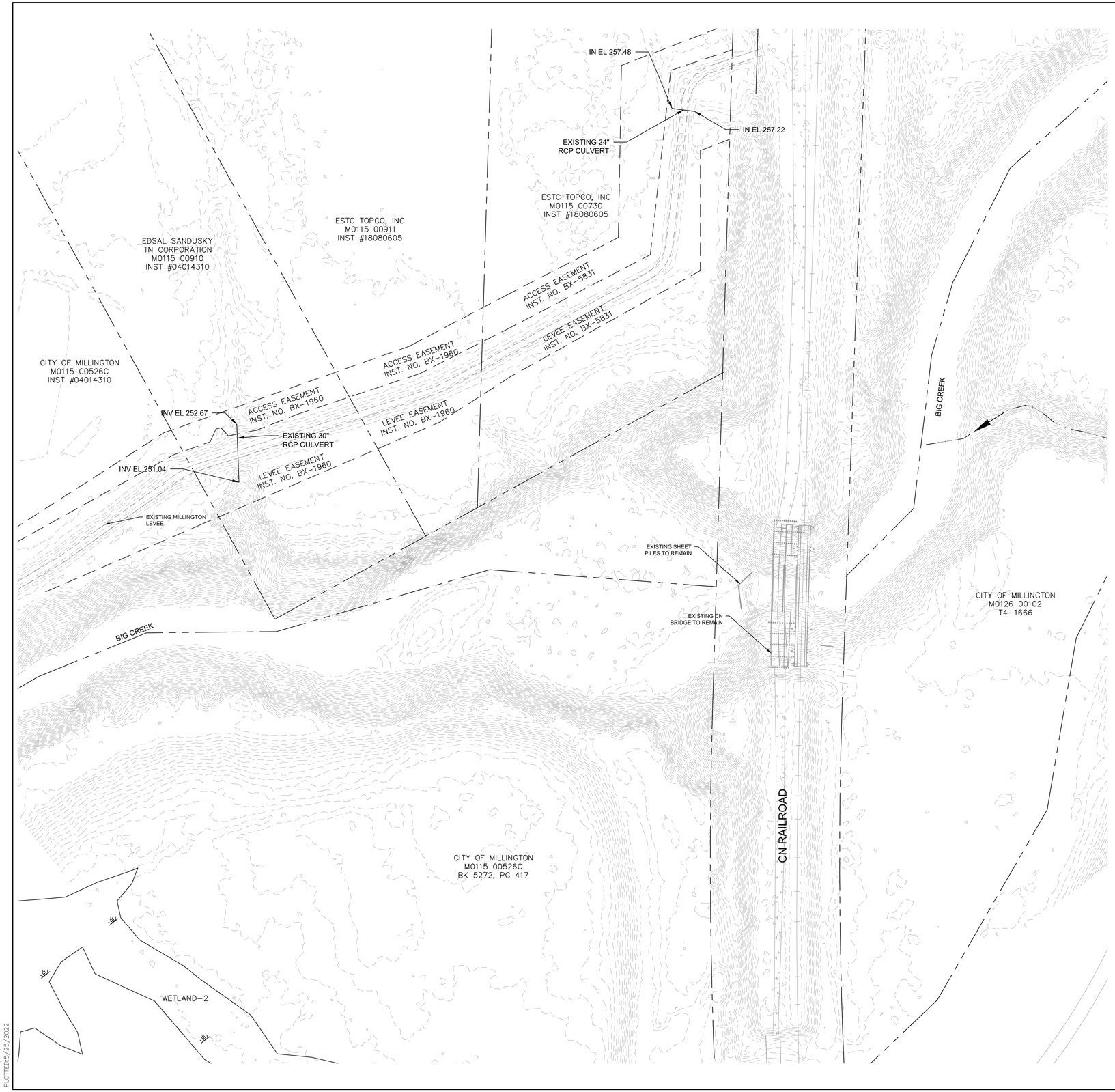
N
1:24K

Tioga
ENVIRONMENTAL CONSULTANTS

PERMIT APPLICATION
BIG CREEK SCOUR REPAIRS

DESCRIPTION: PROJECT AREA	PROJECT #: 541313.00
LOCATION: MILLINGTON, TN	DATE: JUNE 2022

2



LEGEND

235 EXISTING MAJOR CONTOUR

EXISTING MINOR CONTOUR

0 60 120 Feet

BARGE DESIGN SOLUTIONS
65 Germantown Court // Suite 100 // Memphis, Tennessee 38018
PHONE (901) 755-7165 // FAX (901) 755-7844

TREVOR A. CROPP REGISTERED ENGINEER AGRICULTURE NO. 114171 STATE OF TENNESSEE

Trevor A. Cropp

05/26/2022

CN GRADE CONTROL - SITE PLAN

Shelby County National Disaster Resilience 4-NDR

BIG CREEK WETLAND & RECREATION AREA

BIG CREEK SCOUR REPAIR

Shelby County, Tennessee

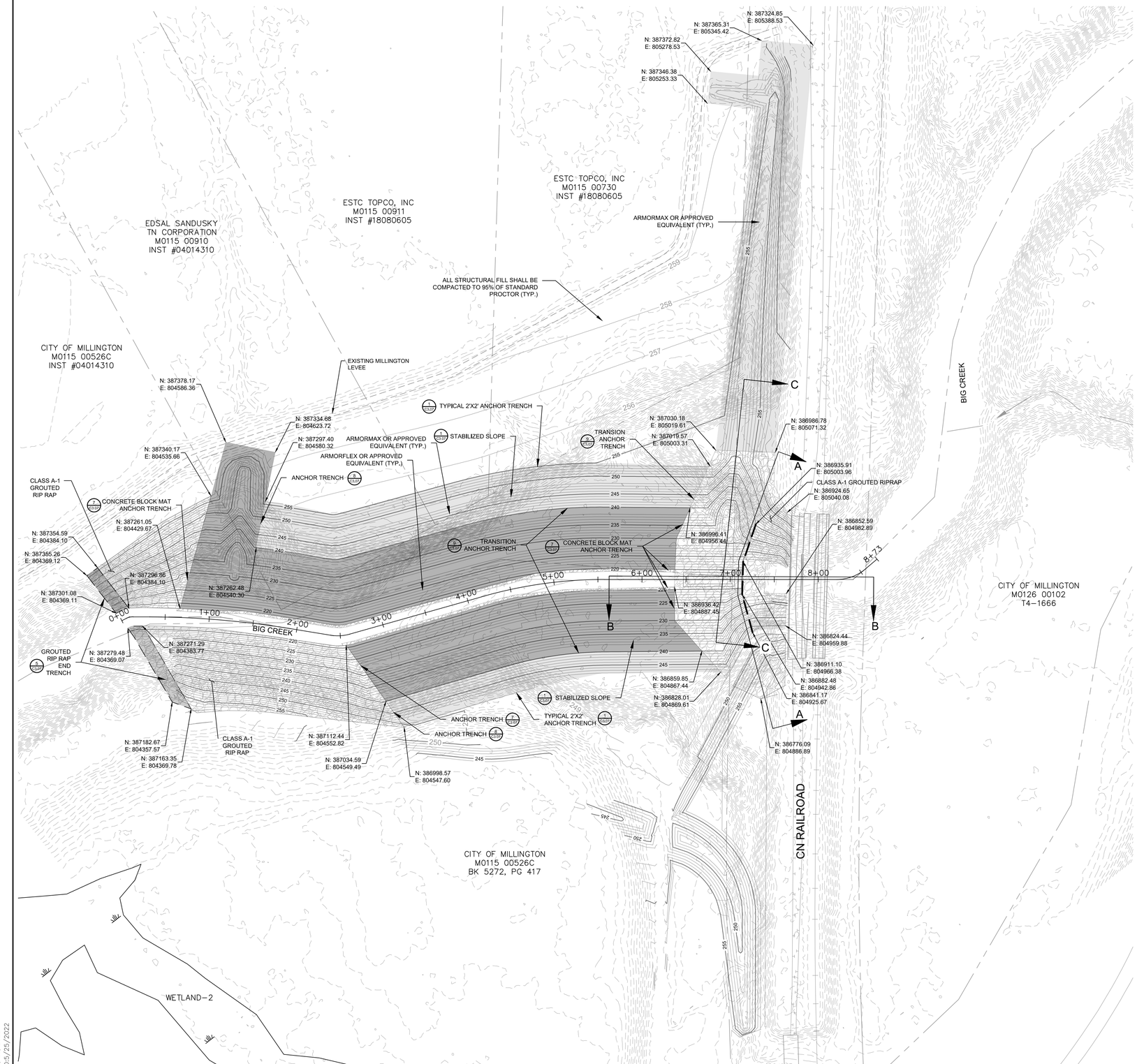
REV.	DR.	CHK.	DATE	DESCRIPTION

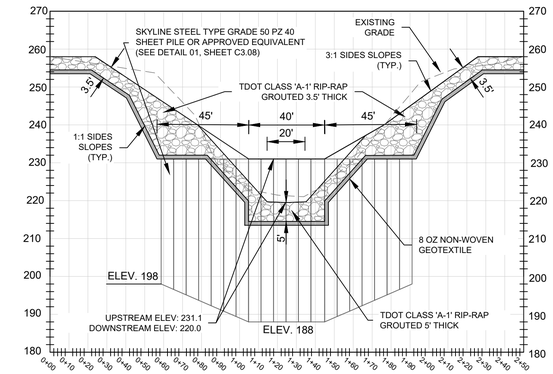
REVISION INFORMATION

C3.01

FILE NO. PROJ. NO. 3508507

USER:TACROPP
FILE:F:\35\35085\3508507\04_CAD\GENL\AREA_1_BRIDGE\A1B_3508507_C021_Existing Conditions.dwg
SAVED:5/25/2022
PLOTTED:5/25/2022





SECTION A (LOOKING UPSTREAM) (A / C3.01)
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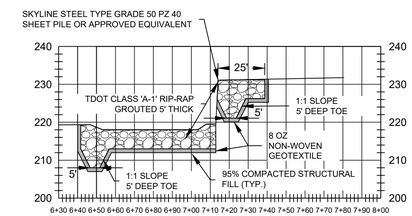

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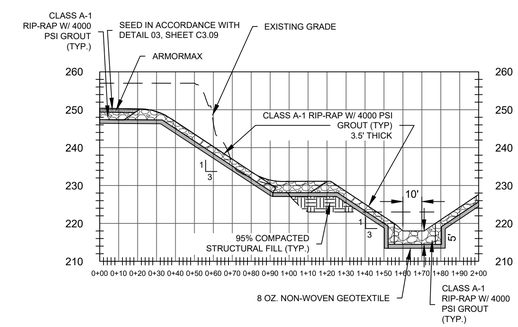

SECTION C (C / C3.01)
SCALE: 1"=40' H
1"=20' V

LEGEND

- EXISTING MAJOR CONTOUR (235)
- EXISTING MINOR CONTOUR
- PROPOSED MAJOR CONTOUR (225)
- PROPOSED MINOR CONTOUR
- PROPOSED SHEET PILE
- PROPOSED GROUTED RIPRAP
- PROPOSED ARMORFLEX OR APPROVED EQUIVALENT
- PROPOSED ARMORMAX OR APPROVED EQUIVALENT

0 60 120 Feet

BARGE DESIGN SOLUTIONS
65 Germantown Court // Suite 100 // Memphis, Tennessee 38018
PHONE (901) 755-7168 // FAX: (901) 755-7844

TREVOR A. CROPP REGISTERED ENGINEER AGRICULTURE NO. 114171 STATE OF TENNESSEE
05/26/2022

SITE PLAN

Shelby County National Disaster Resilience 4-NDR
BIG CREEK WETLAND & RECREATION AREA
BIG CREEK SCOUR REPAIR
Shelby County, Tennessee

REVISION INFORMATION			
REV	DR.	CHK	DATE	DESCRIPTION

C3.01

FILE NO. PROJ. NO. 3508507

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FILE:F:\35\35085\3508507\04_CAD\GENL\AREA_1_BRIDGE\A1B_3508507_C301_Site Plan.dwg
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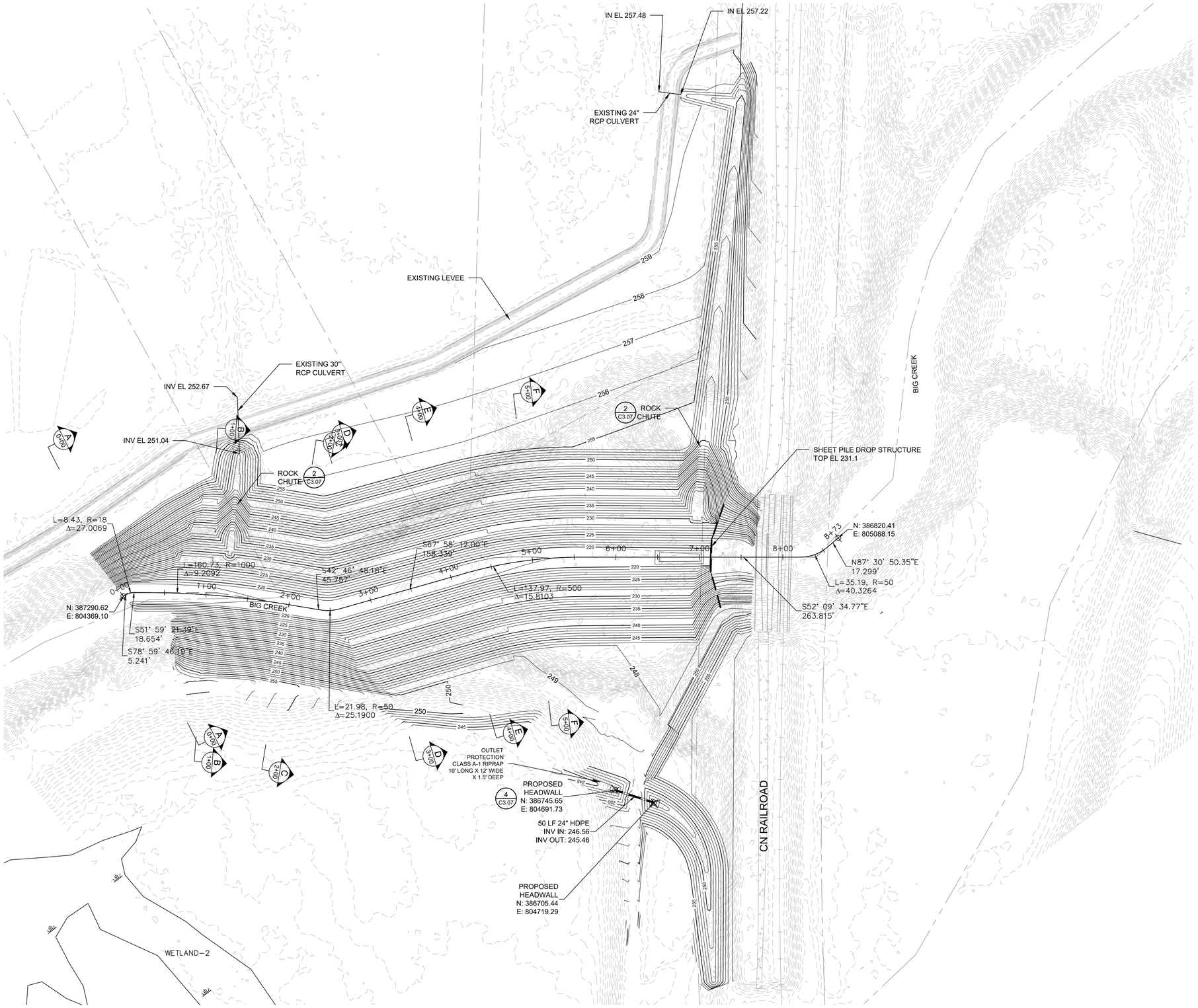


BARGE DESIGN SOLUTIONS
65 Germantown Court // Suite 100 // Memphis, Tennessee 38018
PHONE (901) 755-7165 // FAX (901) 755-7844

TREVOR A. CROPP REGISTERED ENGINEER AGRICULTURE NO. 114171 STATE OF TENNESSEE
05/26/2022

GRADING AND DRAINAGE PLAN

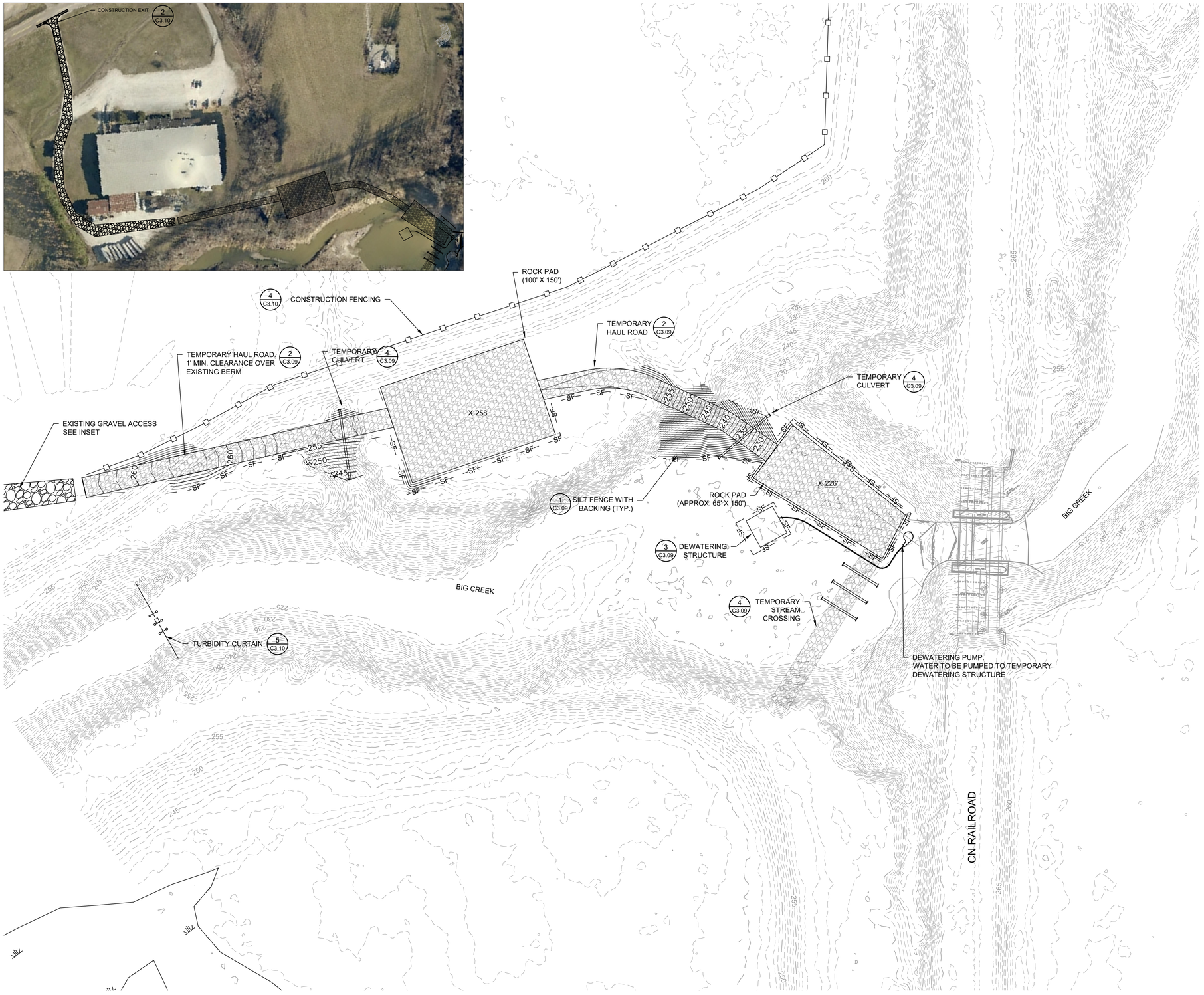
Shelby County National Disaster Resilience 4-NDR
BIG CREEK WETLAND & RECREATION AREA
BIG CREEK SCOUR REPAIR
Shelby County, Tennessee

REVISION INFORMATION			
REV.	DR.	CHK	DATE	DESCRIPTION

C3.02

FILE NO. PROJ. NO. 3508507

USER:TACROPP
FILE:F:\35\35085\3508507\04_CAD\GENL\AREA_1_BRIDGE\A1B_3508507_C302_Grading Plan.dwg
SAVED:5/25/2022
PLOTTED:5/25/2022



0 50 100 Feet

LEGEND

— — — 235 — — —	EXISTING MAJOR CONTOUR
— — — — — — — —	EXISTING MINOR CONTOUR
——— 225 ———	PROPOSED MAJOR CONTOUR
———	PROPOSED MINOR CONTOUR
— — — — —	PROPOSED SHEET PILE
— —SF— —SF— —SF—	PROPOSED SILT FENCE
	PROPOSED ROCK PAD
	PROPOSED TEMPORARY HAUL ROAD

NOTES:

1. LOCATION OF HAUL ROADS AND DEWATERING STRUCTURES TO VARY BASED ON ENCOUNTERED FIELD CONDITIONS.

EROSION CONTROL NOTES:

1. EROSION CONTROL DEVICES SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH TDEC'S EROSION AND SEDIMENT CONTROL HANDBOOK AND TDEC'S CONSTRUCTION ACTIVITY PERMIT REQUIREMENTS. THE DEVICES SHOWN ON THE DRAWINGS ARE THE MINIMUM REQUIRED. THE CONTRACTOR SHALL PROVIDE ADDITIONAL EROSION CONTROL DEVICES AS NEEDED.

2. EROSION AND SEDIMENT CONTROL MEASURES MUST BE INSTALLED PRIOR TO DISTURBANCE OF EXISTING GROUND COVER. THEY MUST REMAIN IN PLACE AND FUNCTIONAL THROUGHOUT THE CONSTRUCTION PERIOD.

3. APPLY TEMPORARY SEEDING WHENEVER GRADING OPERATIONS ARE TEMPORARILY HALTED FOR OVER 7 DAYS AND FINAL GRADING OF EXPOSED SURFACES IS TO BE COMPLETED WITHIN ONE YEAR. APPLY TEMPORARY SEEDING TO STEEP SLOPES (GREATER THAN OR EQUAL TO 3:1) WHENEVER GRADING OPERATIONS ARE TEMPORARILY HALTED FOR OVER 7 DAYS. TEMPORARY SEEDING TO SOIL STOCKPILES.

4. IF THE ACTION OF VEHICLES TRAVELING OVER THE GRAVEL CONSTRUCTION EXIT IS NOT SUFFICIENT TO REMOVE THE MAJORITY OF DIRT OR MUD, THEN THE TIRES MUST BE WASHED BEFORE THE VEHICLES ENTER A PUBLIC ROAD. IF WASHING IS USED, PROVISIONS MUST BE MADE TO INTERCEPT THE WASH WATER AND TRAP THE SEDIMENT BEFORE IT IS CARRIED OFF THE SITE.

5. ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.

6. THE CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF SITE CONSTRUCTION POLLUTION PREVENTION CONTROLS THROUGHOUT THE LIFE OF THE PROJECT.

7. UPON STABILIZATION OF THE SITE, SILT FENCES AND OTHER TEMPORARY SILT BARRIERS SHALL BE REMOVED OR OTHERWISE PREVENTED FROM BECOMING A POLLUTANT SOURCE FOR STORMWATER DISCHARGES.

8. GENERAL CONTRACTOR SHALL DENOTE ON PLAN THE TEMPORARY PARKING AND STORAGE AREA, THE EQUIPMENT MAINTENANCE AND CLEANING AREA, EMPLOYEE PARKING AREA, AND AREA FOR LOCATING PORTABLE FACILITIES, CONCRETE TRUCK WASHOUT AREA, OFFICE TRAILERS, AND TOILET FACILITIES.

9. CURRENT VERSIONS OF THIS STORMWATER POLLUTION PREVENTION PLAN, THE NOTICE OF INTENT, AND THE NOTICE OF COVERAGE SHALL BE KEPT ON THE SITE FOR THE DURATION OF THE PROJECT.

10. ALL UNDISTURBED AREAS INCLUDING WETLAND AND STREAM BUFFERS, SHALL BE FIELD MARKED AND KEPT FREE OF CONSTRUCTION EQUIPMENT.

PHASE 1 SEQUENCING NOTES:

1. INSTALL CONSTRUCTION EXIT AND HAUL ROAD AS SHOWN. THIS SHALL BE THE FIRST WORK PERFORMED ON SITE.

2. INSTALL ORANGE CONSTRUCTION FENCE AS SHOWN.

3. INSTALL TURBIDITY CURTAIN.

4. INSTALL DEWATERING STRUCTURE.

5. BUILD TEMPORARY CROSSINGS AND ROCK PADS.

6. ONCE THE ABOVE REFERENCED BMPS ARE INSTALLED, INSTALL DIVERSIONS BEFORE BEGINNING CONSTRUCTION.

7. ANY TRAPPED WATER WILL BE PUMPED THROUGH A DEWATERING STRUCTURE BEFORE LEAVING THE SITE.

BARGE DESIGN SOLUTIONS
65 Germantown Court // Suite 100 // Memphis, Tennessee 38018
PHONE (901) 755-7165 // FAX (901) 755-7844

TREVOR A. CROPP REGISTERED ENGINEER AGRICULTURE NO. 114171 STATE OF TENNESSEE
Trevor A. Cropp
05/26/2022

EROSION CONTROL PHASE I

Shelby County National Disaster Resilience 4-NDR
BIG CREEK WETLAND & RECREATION AREA
BIG CREEK SCOUR REPAIR
Shelby County, Tennessee

REV.	DR.	CHK.	DATE	DESCRIPTION

REVISION INFORMATION

C3.03

FILE NO. PROJ. NO. 3508507

USER:TACROPP
FILE:F:\35\3508507\04_CAD\GENL\AREA_1_BRIDGE\A1B_3508507_C303_Erosion ControlPhase1.dwg
SAVED:5/25/2022
PLOTTED:5/25/2022

LEGEND

— — — 235 — — —	EXISTING MAJOR CONTOUR
— — — — — —	EXISTING MINOR CONTOUR
——— 225 ———	PROPOSED MAJOR CONTOUR
———	PROPOSED MINOR CONTOUR
— — — —	PROPOSED SHEET PILE
— —SF— —SF— —SF—	PROPOSED SILT FENCE
▽	CHECK DAM

EROSION CONTROL NOTES:

1. APPLY PERMANENT SEEDING WHENEVER GRADING OPERATIONS ARE COMPLETED AND ALL CONSTRUCTION OPERATIONS WILL NOT IMPACT THE DISTURBED AREA. APPLY PERMANENT SEEDING TO ALL NON-CONSTRUCTION AREAS THAT SHOW SIGNS OF EXCESSIVE EROSION.
2. PERMANENT SEEDING SHALL BE PER DETAIL 3, C3.10. SEED AT A RATE OF 6-8 LBS./1000 S.F. USE A SLOW RELEASE STARTER FERTILIZER WITH 1 LBS./1000 S.F. NITROGEN. IF GRADING IS PERFORMED DURING THE WINTER MONTHS, SEED MIXTURE SHALL BE SUPPLEMENTED WITH A WINTER RYE OR OTHER APPROPRIATE MIXTURE TO ASSURE STABILIZATION DURING THE WINTER SEASON.
3. MULCH WITH STRAW AT A RATE OF 100 LBS/1000 S.F. OVER THE SEEDED AREAS.
4. UPON COMPLETE STABILIZATION OF THE SITE, SILT FENCES AND OTHER TEMPORARY SILT BARRIERS SHALL BE REMOVED OR OTHERWISE PREVENTED FROM BECOMING A POLLUTANT SOURCE FOR STORMWATER DISCHARGES.

PHASE II SEQUENCING NOTES:

1. CONTRACTOR TO MAINTAIN ALL BMPS INSTALLED ON PHASE 1.
2. INSTALL SILT FENCE WITH BACKING AS SHOWN.
3. INSTALL CHECK DAMS AS SHOWN.
4. ONCE SLOPES HAVE BEEN CONSTRUCTED, STABILIZE SLOPES USING DESIGNATED COVER SYSTEM. SEE SITE PLAN, SHEET 3.01.
5. SEED AND MULCH ALL OTHER DISTURBED AREAS.
6. ONCE THE SITE IS VEGETATED, THE BMPS CAN BE REMOVED.

BARGE DESIGN SOLUTIONS
65 Germantown Court // Suite 100 // Memphis, Tennessee 38018
PHONE (901) 755-7165 // FAX (901) 755-7844

TREVOR A. CROPP
REGISTERED ENGINEER
AGRICULTURE
NO. 114171
STATE OF TENNESSEE
Trevor A. Cropp
05/26/2022

EROSION CONTROL (PHASE II)

Shelby County National Disaster Resilience 4-NDR
BIG CREEK WETLAND & RECREATION AREA
BIG CREEK SCOUR REPAIR
Shelby County, Tennessee

REVISION INFORMATION			
REV.	DR	CHK	DATE	DESCRIPTION

C3.04

FILE NO. PROJ. NO.
3508507

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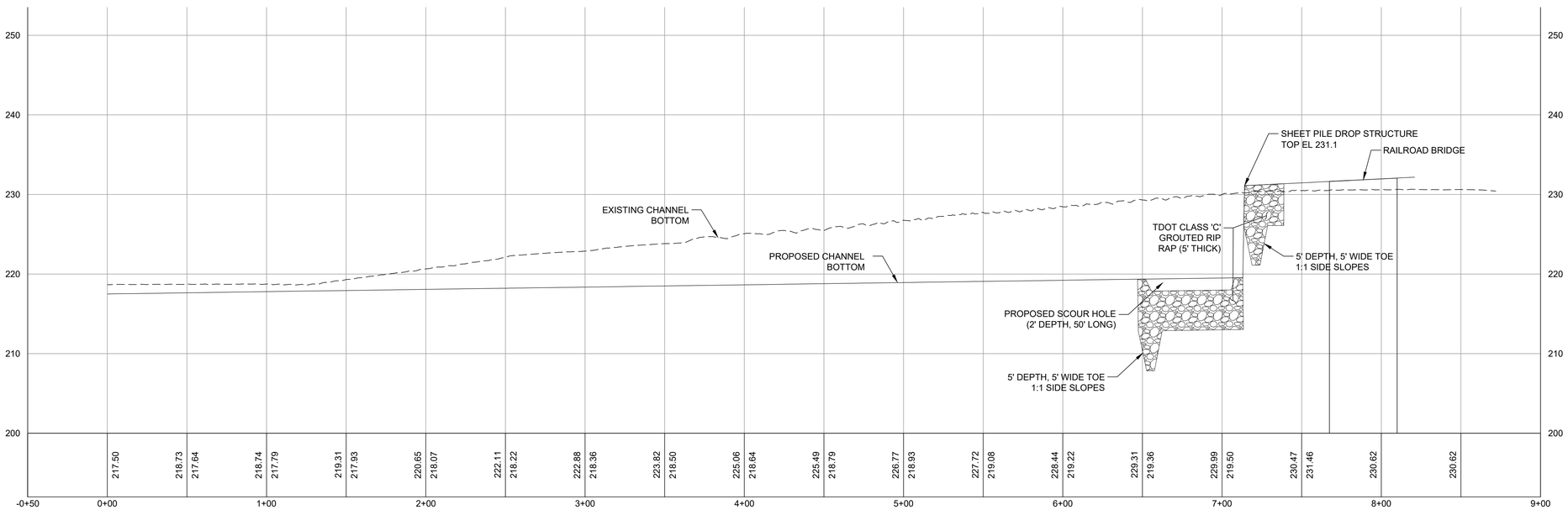
SAVED:5/25/2022
PLOTTED:5/25/2022

BIG CREEK PROFILE



SCALE: 1"=40' H
1"=8' V

BARGE DESIGN SOLUTIONS
65 Germantown Court // Suite 100 // Memphis, Tennessee 38018
PHONE (901) 755-7168 // FAX: (901) 755-7844

TREVOR A. CROPP
REGISTERED ENGINEER
AGRICULTURE
NO. 114171
STATE OF TENNESSEE
Trevor A. Cropp
05/26/2022

PROFILES

Shelby County National Disaster Resilience 4-NDR
BIG CREEK WETLAND & RECREATION AREA
BIG CREEK SCOUR REPAIR
Shelby County, Tennessee

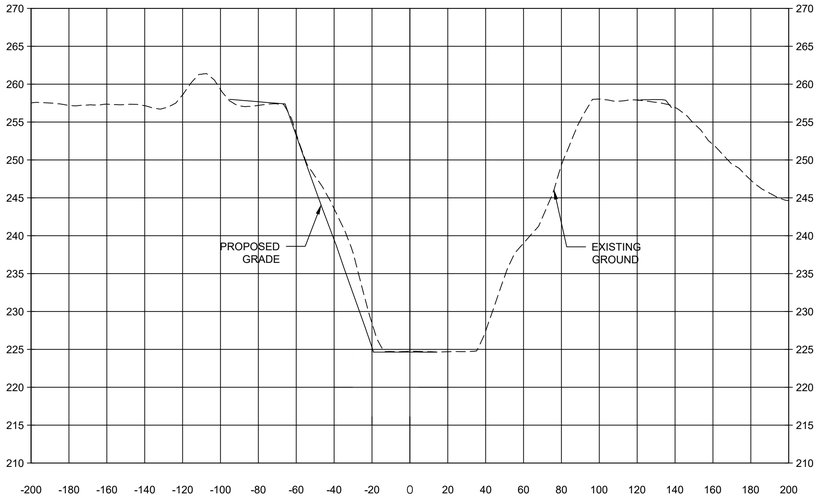
REVISION INFORMATION				
REV.	DR.	CHK	DATE	DESCRIPTION

C3.05

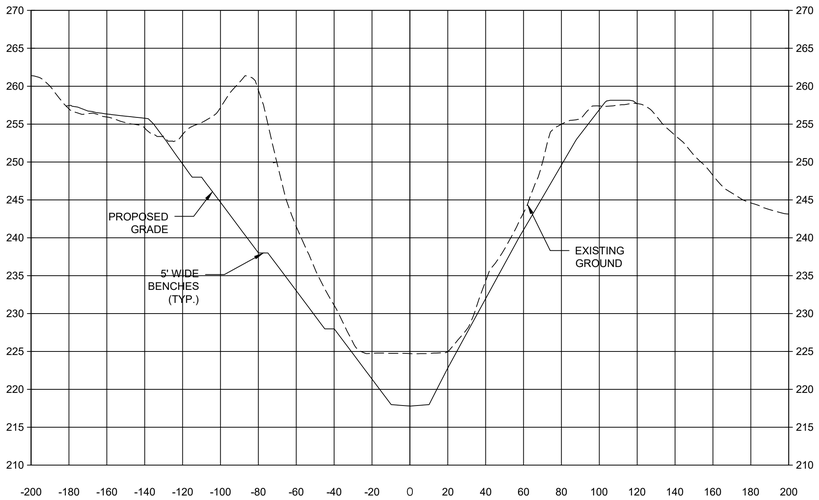
FILE NO. PROJ. NO.
3508507

USER:TACROPP
FILE:F:\35\35085\3508507\04_CAD\GENL\AREA_1_BRIDGE\A1B_3508507_C305_Profiles.dwg
SAVED:5/25/2022
PLOTTED:5/25/2022

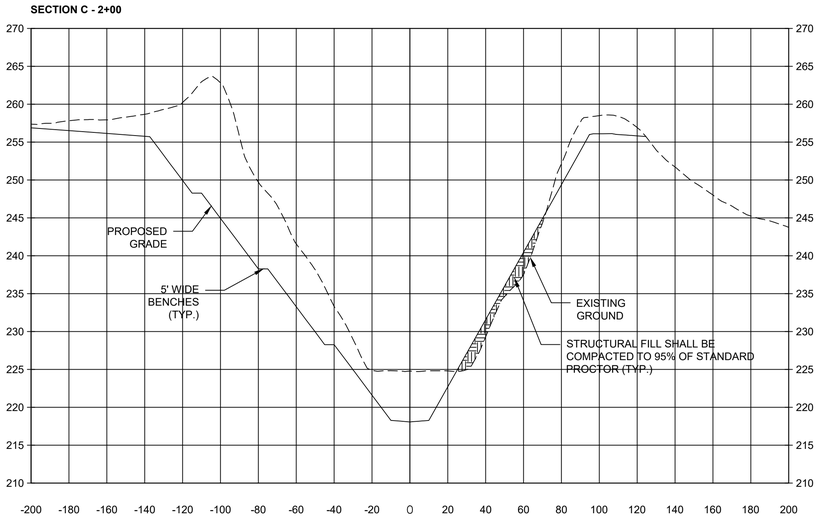
SECTION A - 0+00



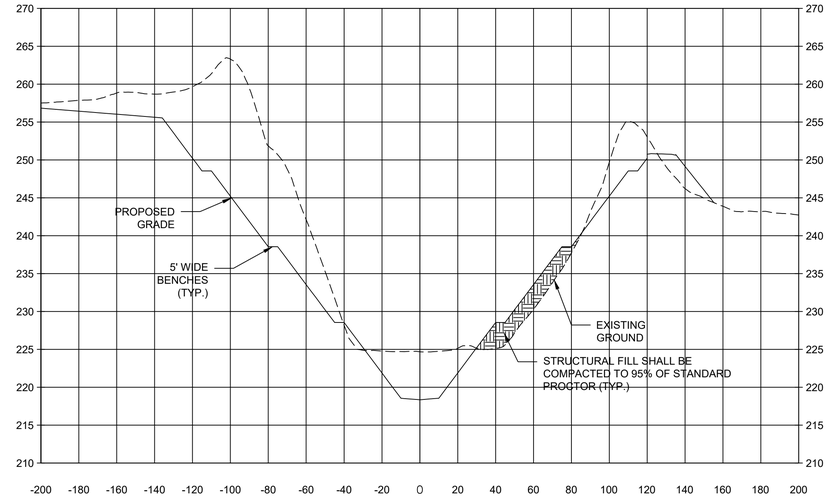
SECTION B - 1+00



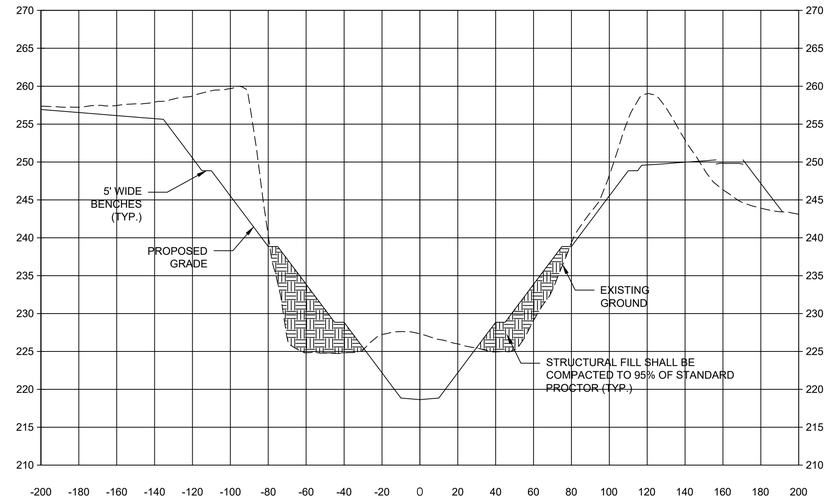
SECTION C - 2+00



SECTION D - 3+00



SECTION E - 4+00



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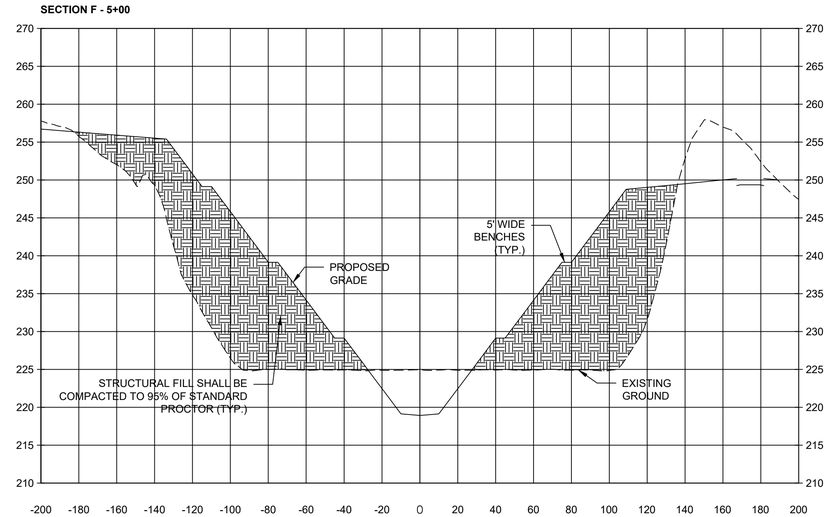

BARGE DESIGN SOLUTIONS
65 Germantown Court // Suite 100 // Memphis, Tennessee 38018
PHONE (901) 755-7168 // FAX (901) 755-7844

TREVOR A. CROPP
REGISTERED ENGINEER
AGRICULTURE
NO. 114171
STATE OF TENNESSEE
Trevor A. Cropp
05/26/2022

CROSS SECTIONS

Shelby County National Disaster Resilience 4-NDR
BIG CREEK WETLAND & RECREATION AREA
BIG CREEK SCOUR REPAIR
Shelby County, Tennessee

REVISION INFORMATION			
REV.	DR.	CHK	DATE	DESCRIPTION

C3.06

FILE NO. PROJ. NO.
3508507

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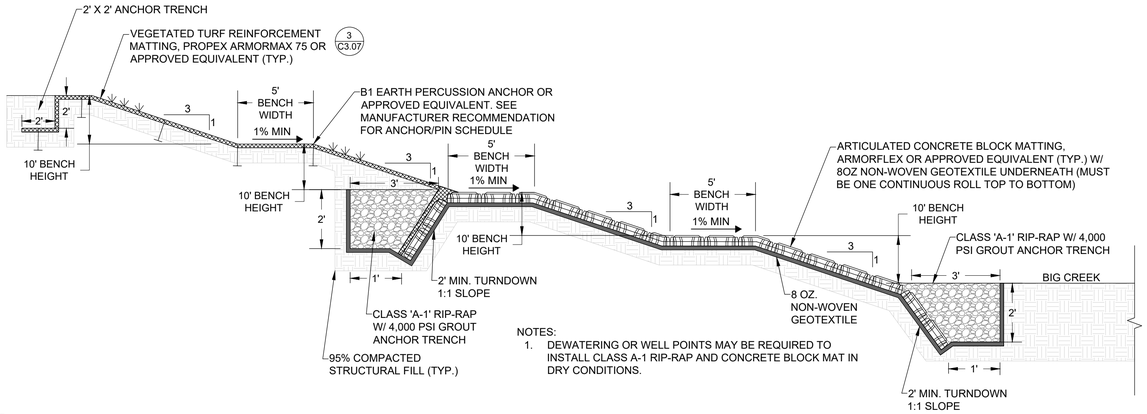
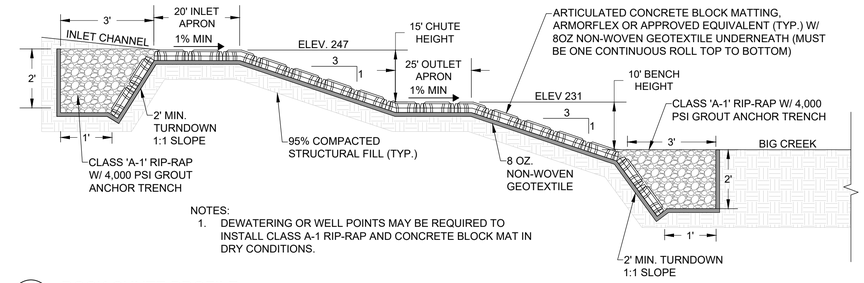
SAVED:5/25/2022
PLOTTED:5/25/2022



NOTES:
1. DEWATERING OR WELL POINTS MAY BE REQUIRED TO INSTALL CLASS A-1 RIP-RAP AND CONCRETE BLOCK MAT IN DRY CONDITIONS.

1 STABILIZED SLOPE
SCALE: N.T.S.



NOTES:
1. DEWATERING OR WELL POINTS MAY BE REQUIRED TO INSTALL CLASS A-1 RIP-RAP AND CONCRETE BLOCK MAT IN DRY CONDITIONS.

2 ROCK CHUTE PROFILE
SCALE: N.T.S.

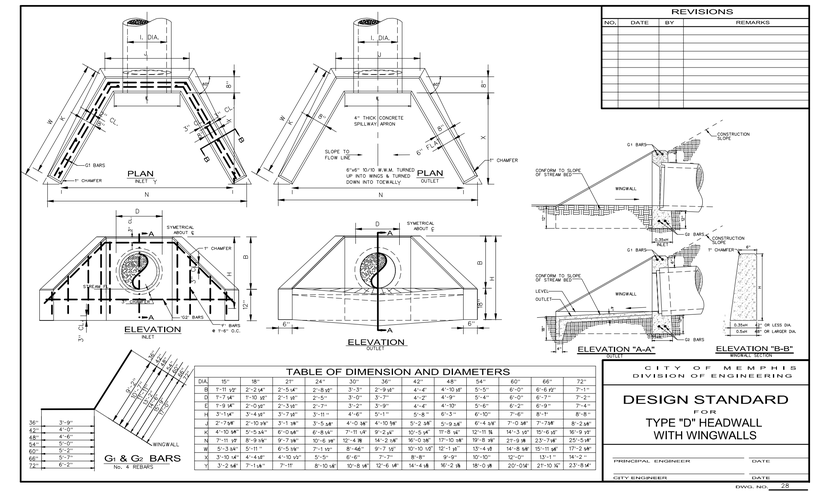


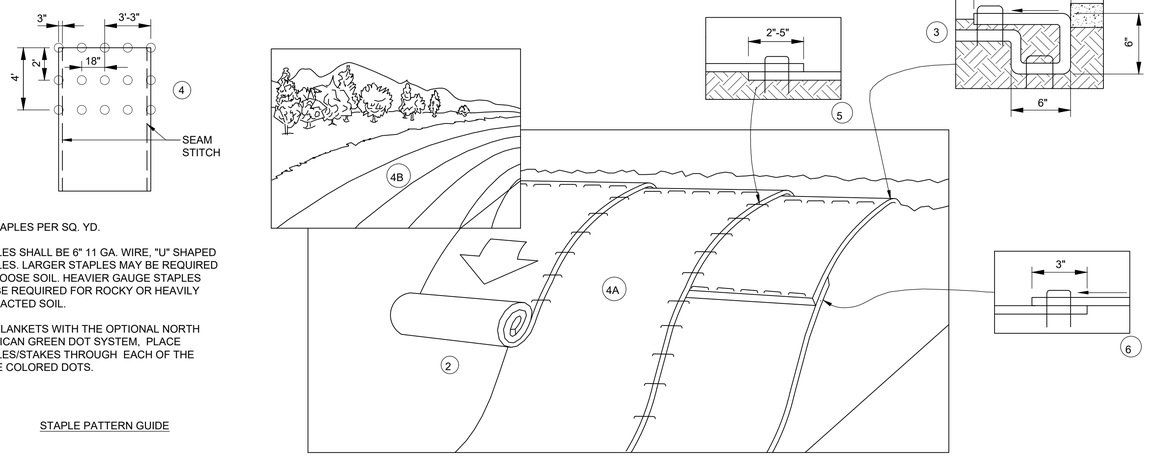
TABLE OF DIMENSION AND DIAMETERS

DIA.	15"	18"	21"	24"	30"	36"	42"	48"	54"	60"	66"	72"
B	7'-11 1/2"	2'-2.4"	2'-5.4"	2'-8.9"	3'-3"	2'-9.6"	4'-4"	4'-10.6"	5'-5"	6'-0"	6'-6.6"	7'-1"
D	1'-7.4"	1'-10.8"	2'-1.8"	2'-5"	2'-10"	3'-7"	4'-2"	4'-9"	5'-4"	6'-0"	6'-7"	7'-2"
E	1'-9.4"	2'-0.8"	2'-3.8"	2'-7"	3'-2"	3'-9"	4'-4"	4'-10"	5'-6"	6'-2"	6'-9"	7'-4"
H	3'-1.4"	3'-4.8"	3'-7.8"	3'-11"	4'-6"	5'-1"	5'-8"	6'-3"	6'-10"	7'-6"	8'-1"	
J	2'-7.4"	2'-10.8"	3'-1.8"	3'-5.8"	4'-0.8"	4'-10.8"	5'-2.8"	5'-9.8"	6'-4.8"	7'-0.8"	7'-7.8"	8'-2.8"
K	4'-10.8"	5'-5.8"	6'-0.8"	6'-8.8"	7'-11.8"	9'-2.8"	10'-5.8"	11'-8.8"	12'-11.8	14'-3.8"	15'-6.8"	16'-9.8"
N	7'-11.8"	8'-9.8"	9'-7.8"	10'-5.8"	12'-4.8"	14'-2.8"	16'-0.8"	17'-10.8"	19'-8.8"	21'-6.8	23'-7.8"	25'-5.8"
W	5'-3.8"	5'-11"	6'-5.8"	7'-1.8"	8'-4.8"	9'-7.8"	10'-10.8"	12'-1.8"	13'-4.8	14'-8.8	15'-11.8"	17'-2.8"
X	3'-10.8"	4'-4.8"	4'-10.8"	5'-5"	6'-6"	7'-7"	8'-8"	9'-9"	10'-10"	12'-0"	13'-1"	14'-2"
Y	3'-2.8"	7'-1.8"	7'-7"	8'-10.8"	10'-8.8"	12'-6.8"	14'-4.8	16'-2.8	18'-0.8	20'-0.8"	21'-10.8"	23'-8.8"

G1 & G2 BARS
No. 4 REBARS

36"	3'-9"
42"	4'-0"
48"	4'-6"
54"	5'-0"
60"	5'-2"
66"	5'-7"
72"	6'-2"

4 HEADWALL DETAIL
SCALE: N.T.S.

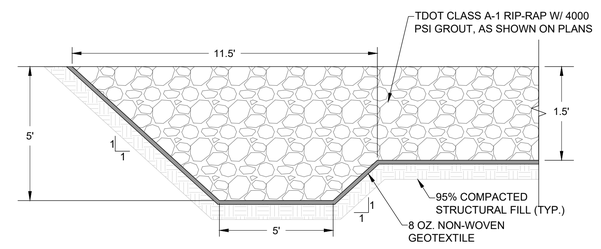


1. 3.4 STAPLES PER SQ. YD.
2. STAPLES SHALL BE 6" 11 GA. WIRE, "U" SHAPED STAPLES. LARGER STAPLES MAY BE REQUIRED FOR LOOSE SOIL. HEAVIER GAUGE STAPLES MAY BE REQUIRED FOR ROCKY OR HEAVILY COMPACTED SOIL.
3. FOR BLANKETS WITH THE OPTIONAL NORTH AMERICAN GREEN DOT SYSTEM, PLACE STAPLES/STAKES THROUGH EACH OF THE WHITE COLORED DOTS.

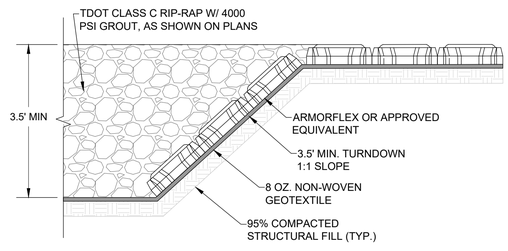
STAPLE PATTERN GUIDE

1. BLANKET SHALL BE PROPEX ARMORMAX 75 SS WITH TYPE B2 ANCHORS OR APPROVED SUBSTITUTION.
2. INSTALLED TO MANUFACTURER RECOMMENDATIONS.
3. PREPARE SOIL BEFORE INSTALLING BLANKETS. SEE SEEDING AND SODDING NOTES. CONTRACTOR SHALL WATER SEED TO ENSURE GERMINATION AND ATTAIN A STAND OF GRASS ACCEPTABLE TO THE OWNER AND ENGINEER.
4. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES OR STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE BLANKET.
5. ROLL THE BLANKETS (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM , STAPLES OR STAKES SHOULD BE PLACED THROUGH THE WHITE DOTS.
6. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2" TO 5" OVERLAP.
7. CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE BLANKET WIDTH.

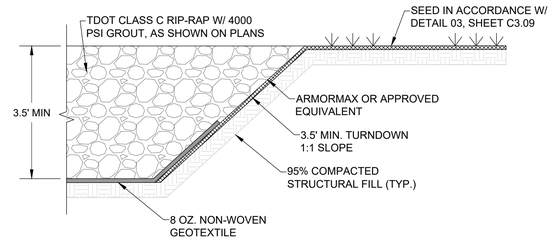
3 VEGETATED TURF REINFORCEMENT MATTING (TRM)
SCALE: N.T.S.



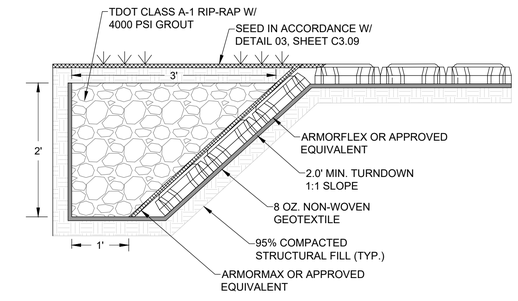
5 GROUTED RIP-RAP END ANCHOR TRENCH
SCALE: N.T.S.



7 CONCRETE BLOCK MAT ANCHOR TRENCH - UPSTREAM & DOWNSTREAM EDGES
SCALE: N.T.S.



8 TURF REINFORCEMENT MAT ANCHOR TRENCH - UPSTREAM & DOWNSTREAM EDGES
SCALE: N.T.S.



9 TURF REINFORCEMENT MAT & CONCRETE BLOCK MAT-TRANSITION ANCHOR TRENCH
SCALE: N.T.S.

6 NOT USED
SCALE: N.T.S.

BARGE DESIGN SOLUTIONS
65 Germantown Court // Suite 100 // Memphis, Tennessee 38018
PHONE (901) 755-7168 // FAX (901) 755-7844

TREVOR A. CROPP REGISTERED ENGINEER AGRICULTURE NO. 114171 STATE OF TENNESSEE
05/26/2022

SITE DETAILS

Shelby County National Disaster Resilience 4-NDR
BIG CREEK WETLAND & RECREATION AREA
BIG CREEK SCOUR REPAIR
Shelby County, Tennessee

REVISION INFORMATION

REV.	DR.	CHK.	DATE	DESCRIPTION

C3.07

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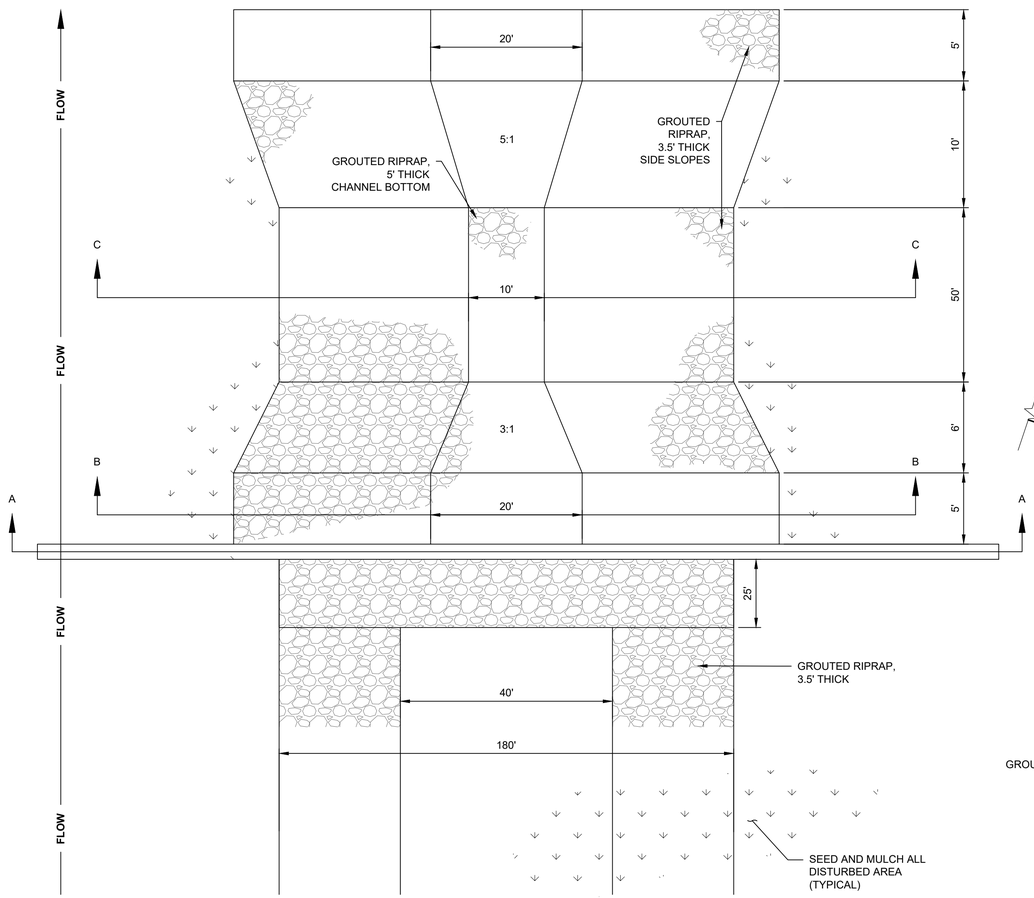
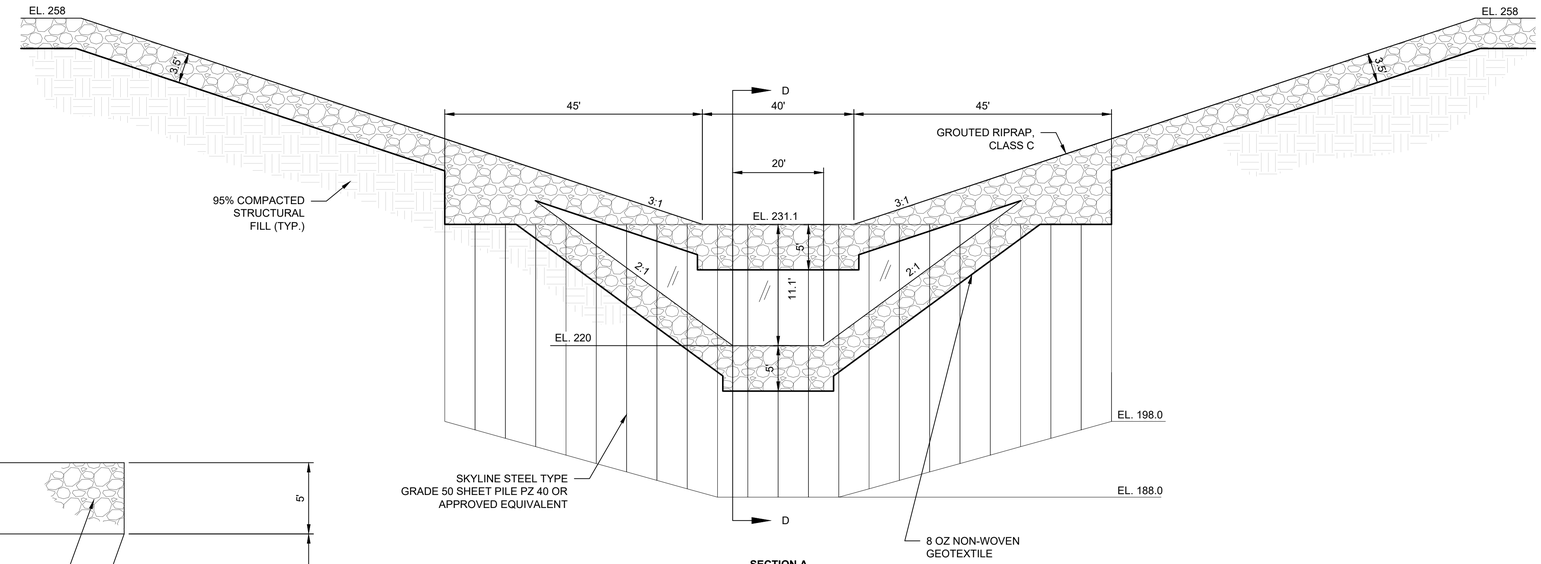
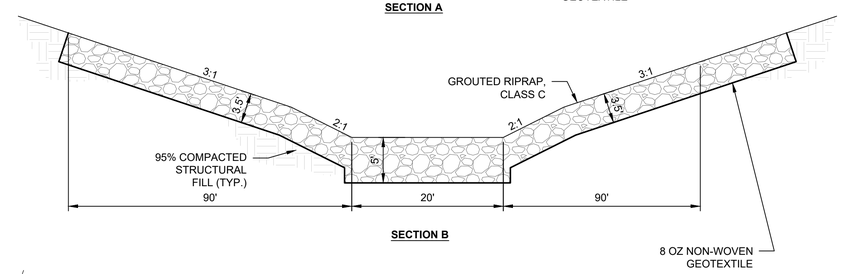


1 GRADE CONTROL STRUCTURE DETAIL

SCALE: N.T.S.



SECTION A



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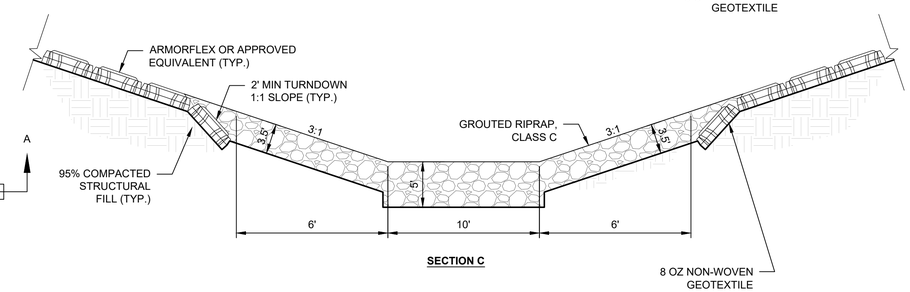

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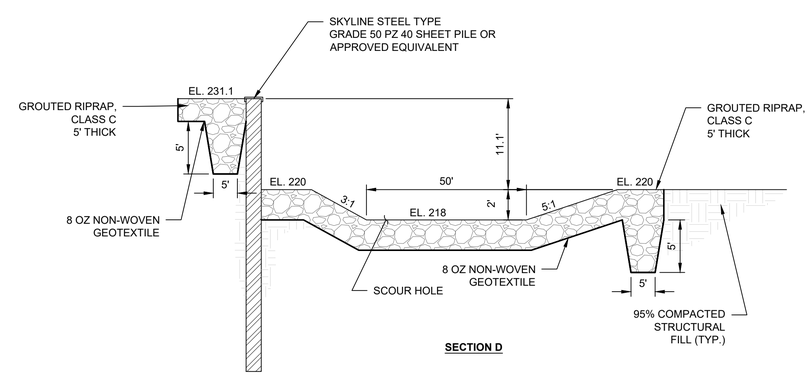

SECTION D

BARGE DESIGN SOLUTIONS
65 Germantown Court / Suite 100 // Memphis, Tennessee 38018
PHONE (901) 755-7168 // FAX (901) 755-7844

TREVOR A. CROPP REGISTERED ENGINEER AGRICULTURE NO. 114171 STATE OF TENNESSEE

Trevor A. Cropp

05/26/2022

SITE DETAILS

Shelby County National Disaster Resilience 4-NDR
BIG CREEK WETLAND & RECREATION AREA
BIG CREEK SCOUR REPAIR
Shelby County, Tennessee

REV.	DR.	CHK	DATE	DESCRIPTION

REVISION INFORMATION

C3.08

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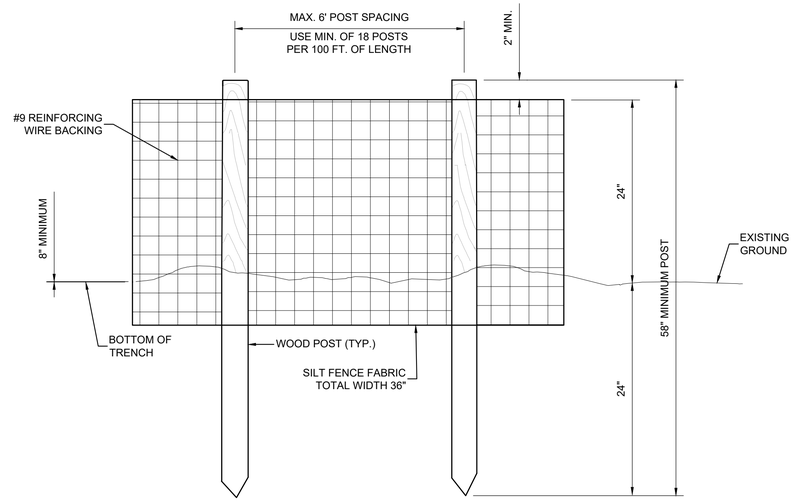
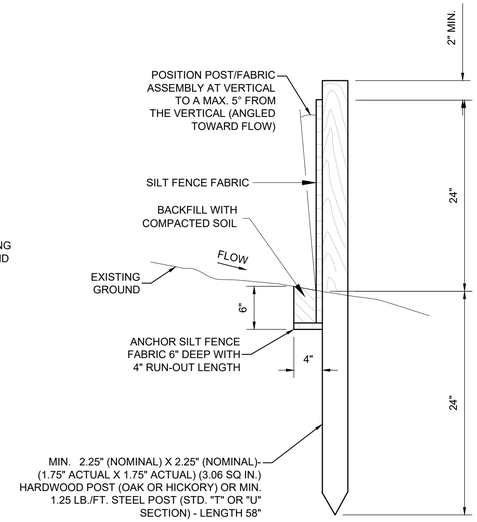
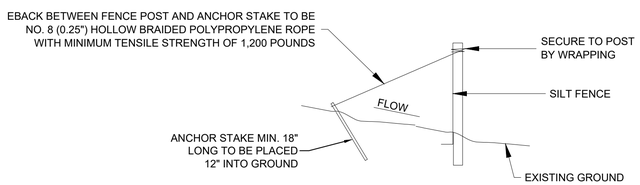


ELEVATION VIEW



SECTIONAL VIEW



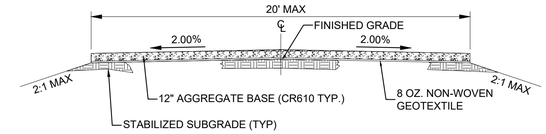
SILT FENCE TIEBACK
FOR STEEL POSTS OR WOOD POSTS

(WHEN REQUIRED BY THE ENGINEER OR NOTED IN THE PLANS.
COST TO BE INCLUDED IN THE ITEMS FOR SILT FENCE)

SILT FENCE NOTES

1. FILTER CLOTH SHALL MEET THE REQUIREMENTS OF THE STANDARD SPECIFICATION FOR GEOTEXTILES AASHTO DESIGNATION: M288, SEDIMENT CONTROL, SELF SUPPORTED.
2. THE FILTER MATERIAL SHALL BE STAPLED TO THE STAKES. HEAVY DUTY WIRE STAPLES WITH 1/2 INCH WIDTH SHALL BE USED AND EVENLY SPACED WITH AT LEAST FOUR PER POST FOR SILT FENCES AND THREE (3) PER POST FOR FILTER BARRIERS. FILTER MATERIAL SHALL NOT BE STAPLED TO EXISTING TREES.
3. MINIMUM (2" NOMINAL X 2" NOMINAL) - (1.5" ACTUAL X 1.5" ACTUAL) (2.25 SQ. IN.) HARDWOOD POST (OAK OR HICKORY) - LENGTH 48" OR MINIMUM 1.33 LB./FT. STEEL POST (STD. OR U SECTION.
4. WHEN STEEL POSTS ARE USED THEY SHALL HAVE A PROTECTION FOR FASTENING WIRE TO THEM. THE WIRE FASTENERS SHOULD BE EVENLY SPACED WITH AT LEAST FIVE PER POST.
5. BINDING WIRE OR TWINE SHALL REMAIN ON STRAW BALES.
6. PLACE STRAW BALES ON ALL DOWN STREAM SIDES OF ALL SILT FENCES.
7. STRAW BALES TO BE PLACED END TO END UP AGAINST THE SILT FENCE.
8. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN 12" DEEP.
9. INSTALL FENCE ALONG CONTOUR (NEVER UP AND DOWN SLOPE).
10. SILT FENCE SHALL BE MAINTAINED UNTIL CONTRIBUTING AREA IS STABILIZED WITH PAVEMENT OR VEGETATION. ALL FENCING SHALL BE REMOVED AFTER STABILIZATION AND DISPOSED OF IN AN APPROVED LANDFILL.

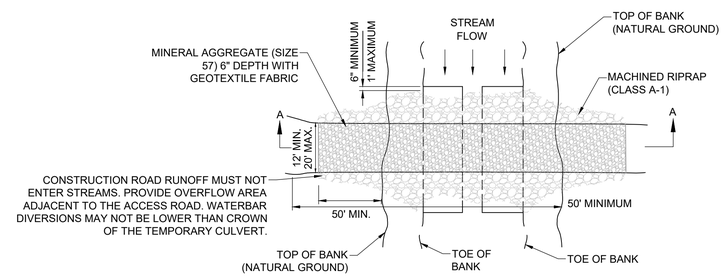
1 SILT FENCE
SCALE: N.T.S.



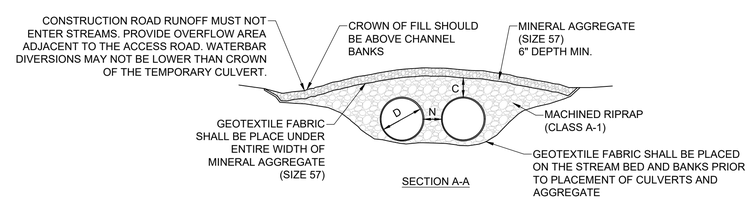
NOTES:

1. PLACE CR610 (TYP.) IN TWO COMPACTED LIFTS TO 100% STANDARD PROCTOR ASTM D698.
2. CEMENT TREAT SUBGRADE 6-8" WITH 3-6% BY DRY WEIGHT.
3. PLACE SEPARATION GEOTEXTILE FABRIC BETWEEN SUBGRADE AND AGGREGATE BASE.
4. FILL TO ACHIEVE SUBGRADE ELEVATION. SUBGRADE TO BE PLACED ON STABLE EXISTING GROUND AFTER IT HAS BEEN GRUBBED, STRIPPED, AND PROOFROLLED TO SHOW STABILITY.
5. IF UNSTABLE, UNDERCUT AS NEEDED AND APPROVE BY ENGINEER.
6. VEGETATE SIDE SLOPES AS NEEDED FOR EROSION PROTECTION.

2 TEMPORARY HAUL ROAD
SCALE: N.T.S.

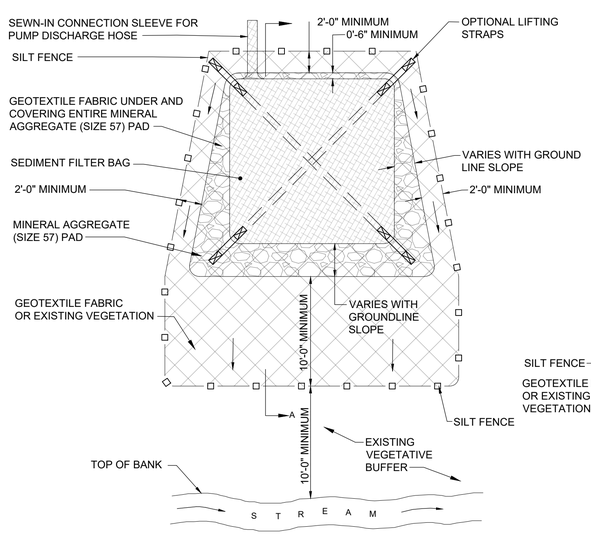


PLAN VIEW OF TEMPORARY CULVERT CROSSING

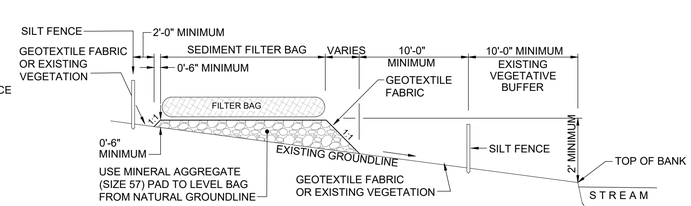


SECTION A-A

C = 1/2 DIAMETER OF PIPE OR 18" WHICHEVER IS GREATER
N = 1/2 DIAMETER OF PIPE OR 12" WHICHEVER IS GREATER
D = PIPE DIAMETER



PLAN VIEW



SECTION A - A

3 DEWATERING STRUCTURE
SCALE: N.T.S.

TEMPORARY STREAM CROSSING SELECTION

PIPE DIAMETER (INCHES)	AVERAGE CHANNEL SLOPE					
	0.5%	1.0%	1.5%	2.0%	2.5%	3.0%
18	8.5	9.1	9.8	10.4	11.0	11.3
24	17.4	18.8	20.0	21.4	21.5	21.7
30	30.1	32.3	33.9	34.1	33.5	33.0
36	46.8	50.4	49.5	47.8	46.6	45.8
42	67.7	69.0	65.5	62.8	61.0	59.6
48	92.6	88.1	76.8	78.6	75.8	73.7
54	127.2	107.0	91.9	94.9	91.1	88.1
60	146.5	121.1	118.4	111.1	106.1	101.9
72	194.9	142.2	153.6	141.3	133.3	127.9
RIPRAP	B	B	B	B	B/C	B/C

4 TEMPORARY CULVERT CROSSING
SCALE: N.T.S.

BARGE DESIGN SOLUTIONS
65 Germantown Court // Suite 100 // Memphis, Tennessee 38018
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SITE DETAILS

Shelby County National Disaster Resilience 4-NDR
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BIG CREEK SCOUR REPAIR
Shelby County, Tennessee

REVISION INFORMATION

REV.	DR.	CHK.	DATE	DESCRIPTION

C3.09

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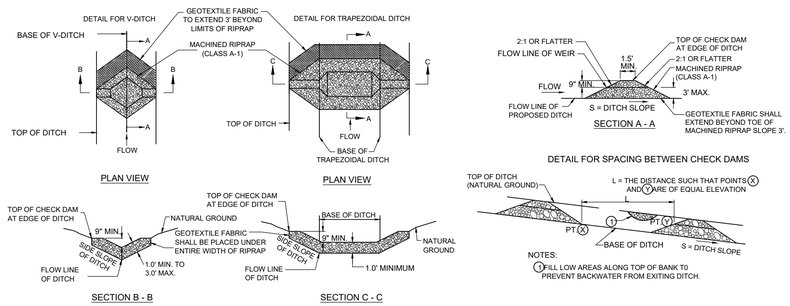


1 CHECK DAM

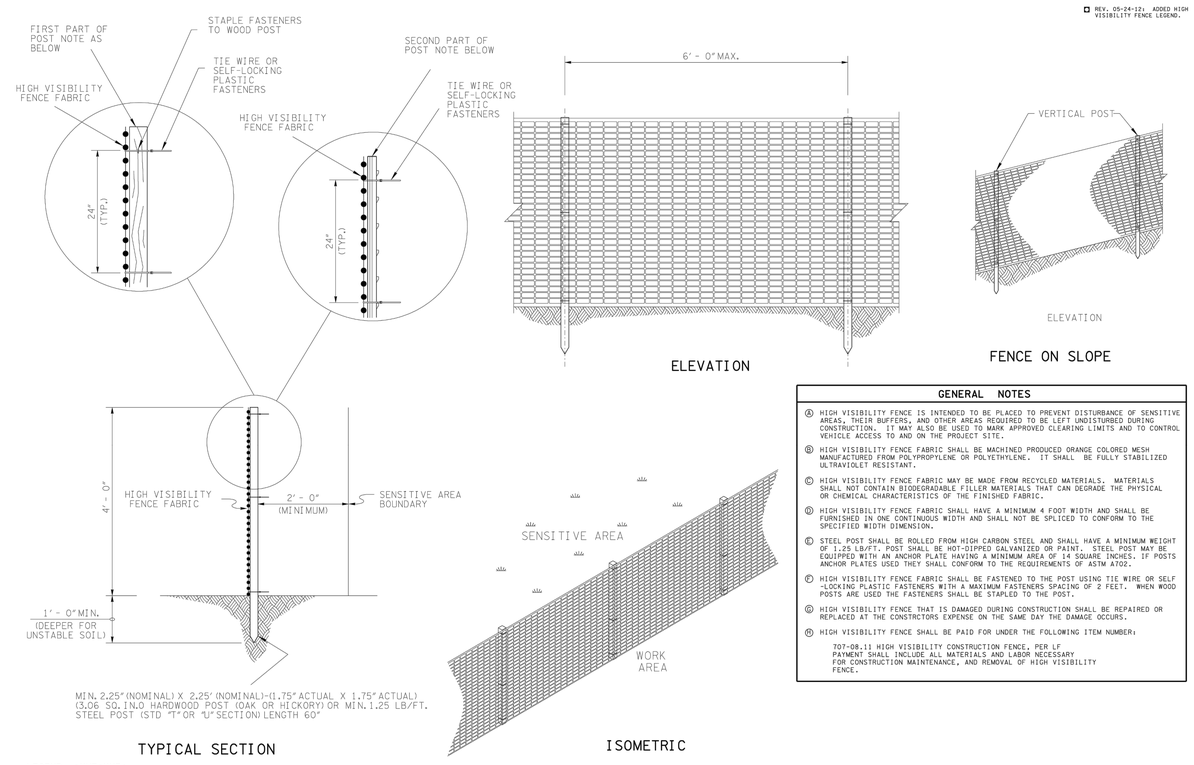
SCALE: N.T.S.

PERMANANT COVER SEEDING MIXTURES		
KIND	GROUP A % BY WEIGHT	GROUP B % BY WEIGHT
HULLED BERMUDA	50	20
KENTUCKY 31 FESCUE	40	60
ENGLISH RYE	10	20
TOTAL	**100**	**100**

TIME OF SOWING & SEEDING MIXTURE REQUIRED	
FEBRUARY 1 TO AUGUST	USE GROUP A ONLY
MONTH OF AUGUST ONLY	USE EITHER GROUP A OR GROUP B
SEPTEMBER 1 TO DECEMBER 1	USE GROUP B ONLY
DECEMBER 1 TO FEBRUARY 1	DO NOT SOW ANY SEED

3 COVER SEEDING MIXTURES

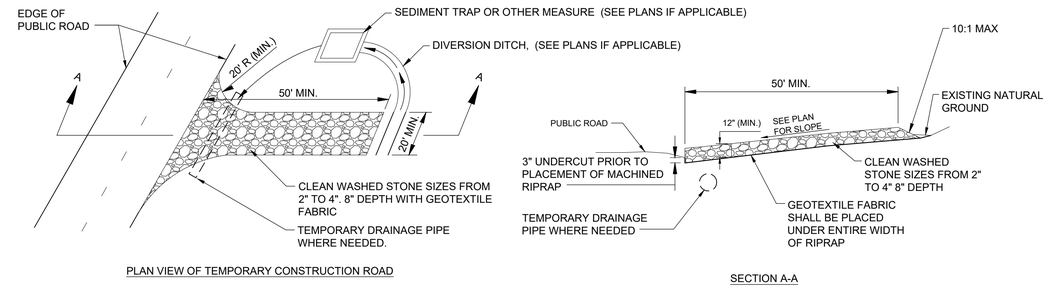
SCALE: N.T.S.



GENERAL NOTES
(A) HIGH VISIBILITY FENCE IS INTENDED TO BE PLACED TO PREVENT DISTURBANCE OF SENSITIVE AREAS, THEIR BUFFERS, AND OTHER AREAS REQUIRED TO BE LEFT UNDISTURBED DURING CONSTRUCTION. IT MAY ALSO BE USED TO MARK APPROVED CLEARING LIMITS AND TO CONTROL VEHICLE ACCESS TO AND ON THE PROJECT SITE.
(B) HIGH VISIBILITY FENCE FABRIC SHALL BE MACHINED PRODUCED ORANGE COLORED MESH MANUFACTURED FROM POLYPROPYLENE OR POLYETHYLENE. IT SHALL BE FULLY STABILIZED ULTRAVIOLET RESISTANT.
(C) HIGH VISIBILITY FENCE FABRIC MAY BE MADE FROM RECYCLED MATERIALS. MATERIALS SHALL NOT CONTAIN BIODEGRADABLE FILLER MATERIALS THAT CAN DEGRADE THE PHYSICAL OR CHEMICAL CHARACTERISTICS OF THE FINISHED FABRIC.
(D) HIGH VISIBILITY FENCE FABRIC SHALL HAVE A MINIMUM 4 FOOT WIDTH AND SHALL BE FURNISHED IN ONE CONTINUOUS WIDTH AND SHALL NOT BE SPLICED TO CONFORM TO THE SPECIFIED WIDTH DIMENSION.
(E) STEEL POST SHALL BE ROLLED FROM HIGH CARBON STEEL AND SHALL HAVE A MINIMUM WEIGHT OF 1.25 LB/FT. POST SHALL BE HOT-DIPPED GALVANIZED OR PAINT. STEEL POST MAY BE EQUIPPED WITH AN ANCHOR PLATE HAVING A MINIMUM AREA OF 14 SQUARE INCHES. IF POSTS ANCHOR PLATES USED THEY SHALL CONFORM TO THE REQUIREMENTS OF ASTM A702.
(F) HIGH VISIBILITY FENCE FABRIC SHALL BE FASTENED TO THE POST USING TIE WIRE OR SELF -LOCKING PLASTIC FASTENERS WITH A MAXIMUM FASTENERS SPACING OF 2 FEET. WHEN WOOD POSTS ARE USED THE FASTENERS SHALL BE STAPLED TO THE POST.
(G) HIGH VISIBILITY FENCE THAT IS DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED OR REPLACED AT THE CONSTRCTORS EXPENSE ON THE SAME DAY THE DAMAGE OCCURS.
(H) HIGH VISIBILITY FENCE SHALL BE PAID FOR UNDER THE FOLLOWING ITEM NUMBER: 707-08.11 HIGH VISIBILITY CONSTRUCTION FENCE, PER LF PAYMENT SHALL INCLUDE ALL MATERIALS AND LABOR NECESSARY FOR CONSTRUCTION MAINTENANCE, AND REMOVAL OF HIGH VISIBILITY FENCE.

4 CONSTRUCTION FENCE

SCALE: N.T.S.

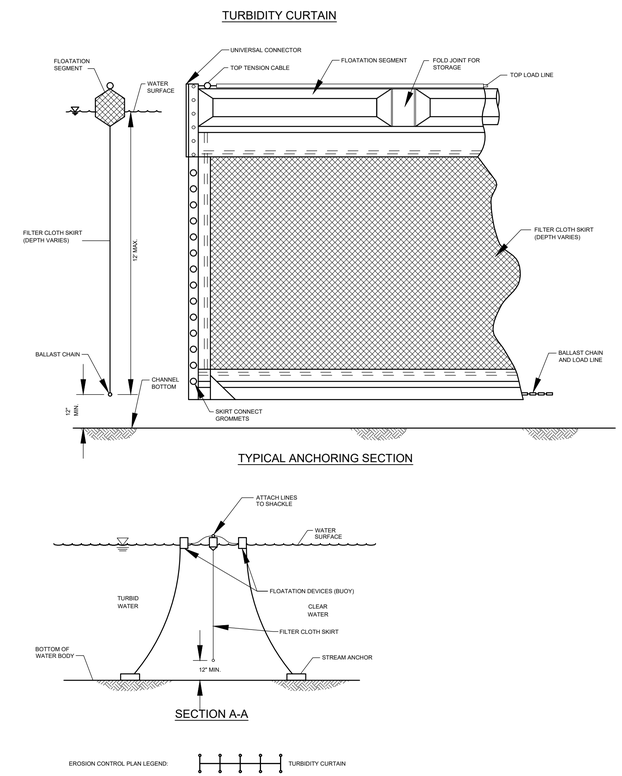


NOTES:

1. STONE FOR A STABILIZED CONSTRUCTION EXIT SHALL BE 2 TO 4 INCH STONE, RECLAIMED STONE, OR RECYCLED CONCRETE EQUIVALENT.
2. THE LENGTH OF THE STABILIZED ENTRANCE SHALL NOT BE LESS THAN 50 FEET.
3. THE THICKNESS OF THE STONE FOR THE STABILIZED ENTRANCE SHALL NOT BE LESS THAN 6 INCHES.
4. THE WIDTH OF THE ENTRANCE SHALL NOT BE LESS THAN THE FULL WIDTH OF THE ENTRANCE WHERE INGRESS OR EGRESS OCCURS OR 20 FEET, WHICH EVER IS GREATER.
5. GEOTEXTILE FILTER CLOTH SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING THE STONE. FABRIC SHALL BE 12 OZ./S.Y. NON-WOVEN.
6. ALL SURFACE WATER THAT IS FLOWING TO OR DIVERTED TOWARD THE CONSTRUCTION ENTRANCE SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A BERM WITH 5:1 SLOPES THAT CAN BE CROSSED BY VEHICLES MAY BE SUBSTITUTED FOR THE PIPE.
7. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOPDRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, WASHED, OR TRACKED ONTO PUBLIC RIGHT-OF-WAY MUST BE REMOVED PROMPTLY.
8. IF APPLICABLE, DIVERSION DITCH AND SEDIMENT TRAP SHALL BE LOCATED AS SHOWN IN PLANS. REPRESENTATION IN THE ABOVE DETAIL IS FOR GENERAL REFERENCE.

2 TEMPORARY CONSTRUCTION EXIT

SCALE: N.T.S.



NOTES:

TURBIDITY CURTAIN SHALL BE AER-FLO ENVIRONMENTAL TYPE 2.DOT OR APPROVED EQUIVALENT

5 TURBIDITY CURTAIN

SCALE: N.T.S.

BARGE DESIGN SOLUTIONS
65 Germantown Court // Suite 100 // Memphis, Tennessee 38018
PHONE (901) 755-7166 // FAX: (901) 755-7844

TREVOR A. CROPP REGISTERED ENGINEER AGRICULTURE NO. 114171 STATE OF TENNESSEE

Trevor A. Cropp

05/26/2022

SITE DETAILS

Shelby County National Disaster Resilience 4-NDR
BIG CREEK WETLAND & RECREATION AREA
BIG CREEK SCOUR REPAIR
Shelby County, Tennessee

REVISION INFORMATION			
REV.	DR.	CHK.	DATE	DESCRIPTION

C3.10

FILE NO. PROJ. NO. 3508507

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SAVED:5/25/2022
PLOTTED:5/25/2022