


THIS IS A TWO-SIDED DOCUMENT

 <b>Adirondack Park Agency</b> PO Box 99 · 1133 NYS Route 86 Ray Brook, NY 12977 Tel: (518) 891-4050 www.apa.ny.gov	<b>APA General Permit/Order 2024G-1</b>	Permit #: 2026-0081
	<b>Certificate for Certain Minor Regulated Activities in APA Jurisdictional Freshwater Wetlands</b>	

This certificate under General Permit 2024G-1 is granted to the New York State Department of Environmental Conservation, United States Fish and Wildlife Service, and Trout Unlimited, authorizing a minor regulated activity in a freshwater wetland pursuant to the Freshwater Wetlands Act (Environmental Conservation Law, Article 24) and the Adirondack Park Agency Act (Executive Law, Article 27, including Section 809(13)(e)), in an area classified Intensive Use by the Official Adirondack Park Land Use and Development Plan as described in the application received by the Agency on April 3, 2026 and as depicted on the attached reduced-scale Project Plans. The project site is in the Town of Arietta, Hamilton County.

The project shall not be undertaken or continued unless the project authorized herein, including site restoration, is completed within four years of the date of issuance of this certification.

This certificate does not convey any right to trespass upon the lands or interfere with the riparian rights of others in order to undertake the authorized project, nor does it authorize the impairment of any easement, right, title, or interest in real or personal property.

Nothing contained in this certificate shall be construed to satisfy any legal obligations of the permittee to comply with all applicable laws and regulations or to obtain any governmental approval or permit from any entity other than the Agency, whether federal, state, regional, or local.

Failure to comply with this general permit and approved attached Project Plans is a violation and may subject the project sponsor, successors and assigns to civil penalties and other legal proceedings, including modification, suspension or revocation of the permit.

**PROJECT SITE**

The project sites are existing crossings along Moose River Road (Limekiln Lake-Cedar River Road) in the Town of Arietta, Hamilton County, in an area classified Intensive Use on the Adirondack Park Land Use and Development Plan Map. The site is located within Tax Map Section 79.000, Block 1, Parcel 8 and within Tax Map Section 71.000, Block 1, Parcel 4.100.

The project site is located within the Moose River Plains Intensive Use Corridor and contains wetlands associated with unnamed tributaries to Silver Run. Additional wetlands not described herein or depicted on the Project Plans may be located on or adjacent to the project site.

**PROJECT DESCRIPTION AS PROPOSED**

The project as conditionally approved herein involves the removal of three corrugated metal pipe culverts.

The project is shown on the following maps, plans, and reports:

- A five-sheet document titled "South Branch of the Moose River Aquatic Reconnection Project," undated and unsigned, received by the Agency on April 3, 2026 (Project Narrative); and
- Twenty-eight sheets of plans titled "South Branch Moose River, Trout Unlimited Culvert Replacement Project, Limekiln Lake-Cedar River Rd., Hamilton County, NY," prepared by Depot Engineering Service, dated January 22, 2026, and last revised March 30, 2026 (Project Plans).

The Project Narrative and a reduced-scale copy of the Project Plans for the project are attached to this certificate for easy reference.

### CONDITIONS

1. This permit is binding on the permittee(s) and all contractors undertaking all or a portion of the project authorized herein. Copies of this certificate and Project Plans shall be furnished by the permittee to all contractors prior to undertaking the activities authorized herein.
2. This certificate authorizes minor regulated activities in a freshwater wetland as depicted and described in the Project Plans. Any change to the location, dimensions, materials, or other aspect of the activities authorized herein shall require prior written Agency authorization.
3. Prior to construction, including clearing and grubbing, temporary erosion and sediment control measures shall be installed and maintained as depicted and described in the Project Plans. All silt fence shall be properly installed with the bottom buried at a depth of at least 4 inches. Once the site has been stabilized, silt fence and any other temporary erosion and sediment controls shall be completely removed.
4. All site restoration activities depicted and described in the Project Plans shall be implemented within three days of project completion, and in accordance with the approved implementation schedule.
5. The permittee shall notify the Agency in writing within five business days after the work authorized by this certificate including any required restoration of temporary wetland impacts has been successfully completed. Written notification shall include color photographs which clearly show the completed work and site restoration and identify the date and location that the photographs were taken.
6. The authorized work shall be scheduled and conducted during drier periods (not during major storm events, spring runoff, and thawing conditions) to avoid and minimize erosion of soils and to prevent silting and muddying of wetlands or surface waterbodies.
7. No mechanized equipment shall be driven in wetlands unless expressly authorized herein. Every effort shall be made to work from upland areas and to minimize disturbances to areas adjacent to wetlands. Only tracked equipment shall be used in wetlands. Vehicular access in wetlands shall be under frozen conditions when possible. If work cannot be performed under frozen conditions, timber mats shall be

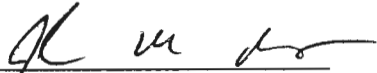
used for access in wetlands, to be removed within three days of project completion and areas beneath timber mats restored to pre-construction condition. No temporary access structures shall be located within a wetland for more than 30 days.

8. Wetland disturbance including grading and grubbing of stumps and roots shall be limited to the area depicted and described on the Project Plans.
9. No waste disposal, material or excavation stockpiling, or dewatering discharge shall occur in or within 100 feet of wetlands unless specifically authorized in the Project Plans. Clean water bypass shall be discharged back to freshwater wetlands in a manner that limits or prevents erosion, sedimentation, and particle suspension.
10. When brought from off-site, all equipment, including but not limited to trucks, excavators, tractors, etc., and hand excavation tools such as shovels, rakes, and picks, to be used on the project site shall be clean and free of soil, mud, or other similar material. If washed on the project site, equipment shall be washed in one location to prevent the distribution of propagules among different wash sites. All construction equipment and vehicles operating in areas that may contain existing invasive species shall be thoroughly cleaned prior to moving to other areas.
11. Any cutting of vegetation along the shorelines of navigable waterbodies shall be in conformance with the Shoreline Restrictions of Section 806 of the Adirondack Park Agency Act. A copy of the Shoreline Restrictions or the Citizen's Guide is available upon request.
12. All tree cutting and/or vegetation removal shall be limited to the area depicted and described on the Project Plans. All cut vegetation shall be immediately removed from the wetland and adjacent area upon completion of the activity.
13. Water control structures shall be of the type and size, and shall be placed in such a manner, so as to not impair surface water flow into or out of the wetland.
14. Water control structures shall be constructed of non-erodible materials, and located in such a manner so as to prevent its dispersion or movement by normal or high water flows.

Dated: April 14th, 2026

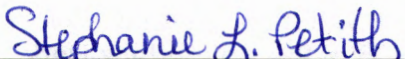
Ray Brook, New York

**ADIRONDACK PARK AGENCY**

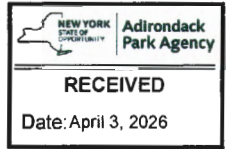
By:   
John M. Burth  
Deputy Director, Regulatory Programs

STATE OF NEW YORK  
COUNTY OF ESSEX

On the 14th day of April in the year 2026, before me, the undersigned, a Notary Public in and for said State personally appeared John M. Burth, personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that they executed the same in their capacity, and that by their signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

  
Notary Public

STEPHANIE PETITH  
Notary Public, State of New York  
Reg. No. 01PE6279890  
Qualified in Essex County  
Commission Expires April 15, 2029

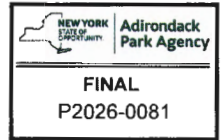


Part 4 Attachment.

South Branch of the Moose River Aquatic Reconnection Project

Phase 1 Moose River Plains Intensive Use Area

NAACC ID #'s 95242, 95244 & 105306



**Project narrative**

This proposal includes three sites within phase 1 of the South Branch of the Moose River Aquatic Reconnection Project (SBMR), a partnership between Trout Unlimited (TU), New York State Department of Environmental Conservation (NYSDEC) & United States Fish & Wildlife Service (USFWS). The project seeks to replace and/or remove all aquatic organism barriers within the watershed. Most of these aquatic organism barriers exist on NYS DEC managed Forest Preserve lands. Through this partnership Phase 1 of the project includes the replacement of 6 culverts and removal of a 7<sup>th</sup> culvert. This permit application proposes replacement of three culverts in unnamed tributaries to Silver Run, identified in SL2025-0008 as NAACC ID's 95242, 95244 & 105306.

**a.) The purpose and need for the proposed activity involving or affecting existing**

**wetlands:** NYS Department of Environmental Conservation proposes to remove 3 corrugated metal pipe culverts that are currently creating significant aquatic organism barriers fragmenting aquatic habitat. The culvert locations are within the Moose River Plains Camping Area and open to seasonal public vehicular traffic and recreation. All three culverts are crossings to unnamed tributaries to Silver Run. The proposed culvert replacements and habitat improvement to these sites would involve removing the existing dilapidated corrugated metal pipe (CMP) culverts and installing 2 prefabricated bridges on prefabricated concrete blocking and an embedded pipe arch. The project would also involve reinforcing grading and stabilization.

The site identified as NAACC#95242 is a 66 x 58 inch, 27-foot-long CMP that will be replaced with a 14 foot span and 18 foot wide single lane prefabricated steel girder and wooden deck bridge sitting on precast concrete redi-rock abutments. The project also requires the installation of 6 stream improvement structures through the newly constructed stream channel within the footprint of the existing culvert and extending 31 feet upstream and 19 feet downstream. This work will require 31 square feet of temporary wetland impacts and 10 square feet of permanent wetland impacts.

The site identified as NAACC#95244 is a 24 inch, 31-foot-long CMP that will be replaced with a 10 foot span and 18 foot wide single lane prefabricated steel girder and wooden deck bridge sitting on precast concrete redi-rock abutments. The project also requires the installation of 4 stream improvement structures through the newly constructed stream channel within the footprint of the existing culvert and extending 8 feet upstream and 13 feet downstream. This work will require 104 square feet of temporary wetland impacts and 48 square feet of permanent wetland impacts.

The site identified as NAACC#105306 is a 66 x 62 inch, 40-foot-long CMP that will be replaced with a 9-foot 7 inch x 6 foot 6 inch aluminum pipe structure, 40 foot long. The project requires the installation of 5 stream improvement structures through the newly constructed stream channel within the footprint of the new culvert and extending 17 feet upstream and 20 feet downstream. This work will require 20 square feet of temporary wetland impacts and 4 square feet of permanent wetland impacts.

The stream improvement structures serve as grade control features to prevent additional erosion and stream channel instability, restore natural stream channel function, and restore fish passage and aquatic connectivity through the previously impacted culvert sites.

**b.) why there is no practicable alternative to avoid working in the wetlands;** The culvert removals and installation(s) of new prefabricated bridges and pipe arch will remove 3 significant barriers to the stream ecosystem. Due to the proximity of the wetlands to the dilapidated culverts, any construction, alteration, and remediation to the sites will have potential impact to the wetlands on all 3 sites, both temporary and permanent; this impact will be caused from culvert removal, remediation, stream stabilization, and staging of equipment. While there is significant alteration planned for the sites, total permanent wetland impacts are expected to be limited to 62 square ft. The removal of the culverts will remove 3 significant barriers to aquatic organism movement in the tributaries and will allow for better connectivity of the aquatic ecosystem. Furthermore, the stream stabilization proposed for these projects will assist in improved ecosystem function, aid in nutrient cycling and create a more hospitable fisheries environment.

**c.) how impacts to the wetlands have been avoided and minimized to the greatest extent practicable;** The project proposal has minimized wetland impacts as much as possible by adjusting the layout of stream improvement structures. The replacement of the culverts with the new prefabricated bridges and pipe arch is planned to be installed within the footprint of the original culverts. While wetland impacts will occur with this project, the stream improvement structures planned will stabilize the tributaries, ensuring the health and stability of the surrounding wetlands.

**d.) the quantity in square feet of temporary excavation or fill and permanent excavation or fill;** The proposed projects involve 62 square feet of permanent wetland impacts. There is a projected 155 square feet temporary wetland impact at all three of the sites combined. The impact on the wetlands will be a result of excavation for the installation of the stream improvement structures upstream of the culvert. The project impacts are further categorized as follows:

Site 95242- 10 square feet permanent impacts and 31 square feet of temporary wetland impacts

Site 95244/104613- 48 square feet permanent impact and 104 square feet of temporary wetland impacts

Site 105306- 4 square feet permanent impacts and 20 square feet of temporary wetland impacts

**e.) all temporary and permanent erosion and sediment control practices to be used to protect the wetlands during and after construction;** All erosion and sediment control details for the project are included on sheet D4.1 of the project plans attached and include the use of compost filter socks and straw bale dikes. Stream flow water diversion for the project will include the installation of a rock dam and sandbag dike with water pumps and velocity dissipation to quickly route clean stream flows around the project site while in-stream excavation work is conducted. Isolated turbid water within the project footprint will be pumped to a filter bag in an adjacent upland area for treatment before discharging back to the wetland and stream down gradient. Please see the erosion and sediment control plan below which is included in project bid specifications.

Erosion & Sediment Control plan:

1. Define and minimize project footprint.
2. Avoid disturbance of areas where no work is proposed; Even if the project is going to work in those areas, only disturb the bare minimum. There is no need to scour the whole stream length to prep for grade controls if we're not going to be doing them for 2 weeks. We can work with the contracted operator and enforce through construction oversight.
3. Protect vegetation and re-establish vegetation as soon as site work is at grade.
4. Dewatering and providing a safe and stable velocity dissipation outlet.
5. Collecting turbid water and having a safe outlet for the discharge. This can also be shown on the drawings if it isn't already.

6. Working during low stream flows and low risk times of the year.
7. Expediting the work and stabilizing exposed areas as quickly as possible (ie, don't leave bare soils for more than a few days).
8. A spill kit will be required on site.
9. Have materials on site to deploy in the event of an emergency.
10. Avoid placing spoil piles where susceptible to erosion into the stream; stock piles will be lined with silt fence or filter socks.

**f) plans for the prevention and control of invasive species:** The Department has included a standard specification for all phases of the proposal to include the following:

Invasive Species Best Management Practices To prevent the unintentional introduction or spread of invasive species, as defined by the Prohibited and Regulated Invasive Species regulations (6 NYCRR Part 575), all construction equipment (e.g. vehicles, trailers, machinery, matting, tools, watercraft, etc.) and personal gear (e.g. clothing and footwear) shall be thoroughly cleaned of mud, seeds, vegetation, roots, rhizomes, egg masses, and other debris before entering and exiting any approved construction and disturbance areas. All invasive species plant parts and propagules that are removed from equipment must be destroyed or contained to prevent spreading to other locations. To the maximum extent practicable, staging areas will be established in an area free of invasive species.

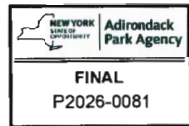
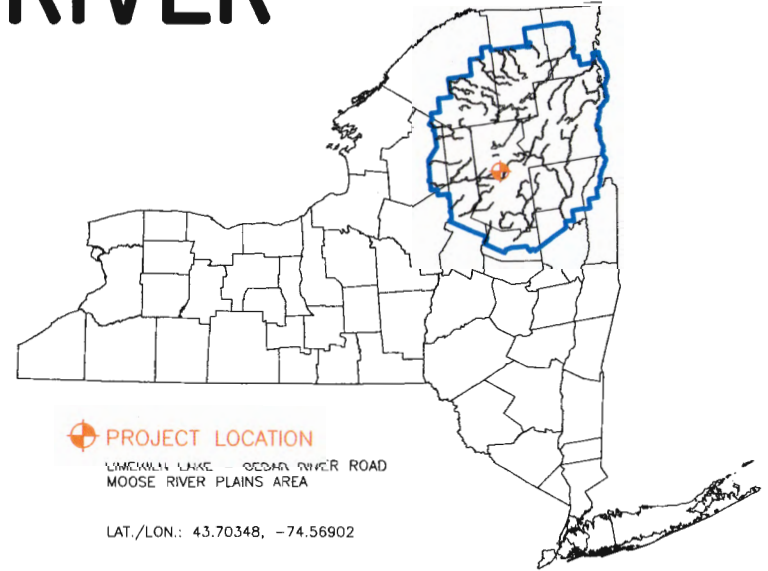
**g)final site stabilization and restoration methods (e.g., topsoiling and seeding, planting of trees and shrubs), including the implementation schedule and list of seed mixes and plant names/sizes;** All final site stabilization measures are specified on sheet D 4.0 of the project plans. These include seed and mulching all disturbed areas, there are no plans to import topsoil for the project and any native woody materials that are excavated during construction shrubs and small trees will be reused on site for stabilization purposes.

**h) all other proposed compensatory mitigation measures, including construction of replacement wetlands, if any, and construction activities including sequence of work and the proposed start date and estimated completion date:** The project does not propose to construct compensatory wetland mitigation elsewhere on the Forest Preserve. However, the removal of the existing road fill within the footprint of the proposed new

road/stream crossings does allow for the establishment of riparian wetlands along the newly constructed stream channel potentially connecting wetlands upstream and downstream within the riparian corridor. Estimated construction completion by October of 2026.

# SOUTH BRANCH MOOSE RIVER

## TROUT UNLIMITED CULVERT REPLACEMENT PROJECT LIMEKILN LAKE-CEDAR RIVER RD. HAMILTON COUNTY, NY



NAACC #95242

PERMIT PLANS  
JANUARY 22, 2026

LAST REVISED: MARCH 30, 2026

PREPARED FOR:



DESIGNED BY:



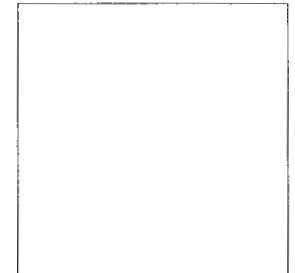
DRAFTED BY:



### PLAN SHEET INDEX:

G1.0	GENERAL NOTES & QUANTITIES
C1.0	EXISTING CONDITIONS PLAN & PROFILE
C2.0	PROPOSED LAYOUT PLAN & PROFILE
D1.0	STRUCTURE DETAILS
D2.0	STRUCTURE ABUTMENT DETAILS
D2.1	ROADWAY & WINGWALL DETAILS
D3.0	STREAM IMPROVEMENT STRUCTURE DETAILS
D4.0	EROSION & SEDIMENT CONTROL NOTES
D4.1	EROSION & SEDIMENT CONTROL DETAILS

ENGINEERS SEAL:



**GENERAL CONSTRUCTION NOTES:**

- ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE LATEST EDITION OF THE STATE OF NEW YORK AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION.
- ROAD WILL BE CLOSED TO TRAFFIC DURING CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ROAD CLOSURE SIGNS & BARRICADES THROUGHOUT CONSTRUCTION.
- BEFORE ORDERING MATERIALS, CONTRACTOR SHALL REVIEW ALL CONSTRUCTION DOCUMENTS, INCLUDING SHOP DRAWINGS, AND OTHER RELATED DOCUMENTS, TO VERIFY AND COORDINATE DIMENSIONS, LOCATIONS, PLACEMENT, AND APPLICABILITY OF BRIDGE COMPONENTS. THE CONTRACTOR SHALL MAKE FIELD CHECKS TO VERIFY THE ACCURACY OF DIMENSIONS, TOPOGRAPHY, AND OTHER EXISTING CONDITIONS. IF THERE IS ANY DISCREPANCY IN THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER AS SOON AS POSSIBLE.
- CONTRACTOR IS RESPONSIBLE FOR ADEQUATE BRACING OF STRUCTURAL MEMBERS, WALLS, AND NON-STRUCTURAL ITEMS DURING CONSTRUCTION. JOB-SITE SAFETY CONDITIONS, INCLUDING, BUT NOT LIMITED TO, LATERAL STABILITY AND WIND BRACING, SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
- STRUCTURE IS TO BE DESIGNED FOR HL-93 LIVE LOADING IN ACCORDANCE WITH AASHTO LRFD SPECIFICATIONS.
- THE CONTRACTOR SHALL REVIEW ALL SHOP DRAWINGS BEFORE SUBMISSION TO THE ENGINEER; THUS, PROVIDING ANY INFORMATION REQUIRED OF THE FABRICATOR SUCH AS FIELD DIMENSIONS, ELEVATIONS, ETC.
- ABUTMENT FOOTING BLOCKS SHALL BEAR ON UNDISTURBED SOIL HAVING A MINIMUM BEARING CAPACITY OF 2,500 PSF, OR ON CONTROLLED ENGINEERED FILL, OR ON SOUND LEVEL ROCK. NOTIFY THE ENGINEER IF UNSUITABLE MATERIAL IS ENCOUNTERED. SOIL UNIT WEIGHT ASSUMED FOR DESIGN = 120 PCF. REFER TO GEOTECHNICAL REPORT FOR FURTHER INFORMATION.
- ALL BACKFILL ADJACENT TO ABUTMENTS SHALL BE WELL COMPACTED FREE DRAINING STRUCTURAL FILL WITHOUT COBBLES AND/OR BOULDERS. STRUCTURAL BACKFILL SHALL BE IN ACCORDANCE WITH AASHTO M145 SOIL CLASSIFICATION A-1, A-2 OR A-3. STRUCTURAL BACKFILL SHALL BE COMPACTED IN 6-8" LIFTS TO 90% MAX DENSITY PER AASHTO T99.
- SCARIFY AND COMPACT NATIVE BASE MATERIAL UNDER ABUTMENT FOOTINGS TO 95% OF THE MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT, ASTM D1557.
- THE CONTRACTOR SHALL THOROUGHLY CLEAN THE PREMISES AT COMPLETION OF WORK AND AT TIMES AS DIRECTED BY THE OWNER. LEGALLY DISPOSE OF EXCESS MATERIAL OFF SITE. INSTALL SITE PROTECTION AND ISOLATION FENCES DURING CONSTRUCTION.
- SURFACE DRAINAGE SHALL BE DIRECTED AWAY FROM THE BRIDGE.
- BASIC CONSTRUCTION STANDARDS FOR STORAGE OF MATERIALS, SAFETY PROTECTION, PROTECTION OF NEIGHBORING PROPERTIES, AND RECLAMATION OF DISTURBED AREAS SHALL BE FOLLOWED. ALL LANDSCAPING MUST BE RETURNED TO THE ORIGINAL CONDITION.
- DETAILS SHOWN ON ANY DRAWINGS ARE TO BE CONSIDERED TYPICAL FOR ALL SIMILAR CONDITIONS, UNLESS OTHERWISE NOTED.
- PRIOR TO BEGINNING CONSTRUCTION THE FOLLOWING PEOPLE SHALL BE NOTIFIED:
  - PROJECT ENGINEER AND TROUT UNLIMITED
  - PROJECT OWNER

IF WORK IS DELAYED FOR A SIGNIFICANT PERIOD, THE SAME PEOPLE SHALL BE CONTACTED AGAIN PRIOR TO RESTART.
- INVESTIGATE ABOVE SURFACE SITE CONDITIONS PRIOR TO BEGINNING WORK. NOTED AND/OR OBSERVABLE SUBSURFACE IMPROVEMENTS SUCH AS UTILITIES, WATER LINES, AND CULVERTS SHALL BE AVOIDED AND REPAIRED AND/OR REPLACED AS NEEDED. REPAIR OF UNFORESEEN SUBSURFACE IMPROVEMENTS WILL BE NEGOTIATED. DISTURBED AND DAMAGED PROPERTY MUST BE REPLACED AND/OR REPAIRED TO THE SATISFACTION OF THE OWNER AND ENGINEER.
- ALL EXCAVATION AND BACKFILLING SHALL BE COMPLETED AS SOON AS POSSIBLE. OPEN TRENCHES SHALL BE PROPERLY BARRICADED AND WARNED PER OSHA REGULATIONS.

**BID ITEM SCHEDULE**

#	Item	Unit	Quantity	Estimate	Responsibility
1	Mobilization and demobilization	EACH	1		Contractor
2	Remove existing pipe	EACH	1		Contractor
3	Haul existing culvert offsite	EACH	1		Municipality
4	Install water control plan and pump around	EACH	1		Contractor
5	Install and Maintain E&S control practices	EACH	1		Contractor
6	Excavation (total material for culvert and	CY	200		TU
7	Procure structure	EACH	1		TU
8	Procure abutments	EACH	60		Contractor
9	Gravel (base of abutments and backfill for	CY	15		Contractor
10	Install abutments	EACH	60		Contractor
11	Install bridge deck and attach to abutments	EACH	1		Contractor
12	Procure rock	TONS	74		Contractor
13	Install rock grade controls	EACH	6*		Contractor
14	Install rock wing walls	EACH	4		Contractor
15	Restore site access, stream bank slope	ACRE	0.02		Contractor
16	Procure seed for site restoration	lb	1.9		Contractor
17	Procure straw mulch for site restoration (3	EACH	5		Contractor
18	Restore road	SF	1200		Municipality

**GENERAL CONSTRUCTION SEQUENCE:**

- CONTRACTOR SHALL ESTABLISH THE CONSTRUCTION MATERIAL AND EQUIPMENT STAGING AREA AS SHOWN ON THE PLANS AND APPROVED BY THE ENGINEER.
- INSTALL EROSION & SEDIMENT CONTROL DEVICES.
- REMOVE EXISTING VEGETATION ONLY AS NECESSARY FOR CONSTRUCTION. ONLY MARKED TREES SHALL BE REMOVED.
- EXCAVATE FOR AND CONSTRUCT CONCRETE ABUTMENTS. CONTRACTOR SHALL STAGE MATERIALS ACCORDINGLY TO AVOID IMPACT TO STREAM BED.
- EXCAVATE AND REMOVE EXISTING CULVERT STRUCTURE.
- BACKFILL ABUTMENTS AND CONSTRUCT STREAM BED BELOW PROPOSED STRUCTURE.
- COMPLETE GRADE CONTROL STRUCTURES AND STREAM WORK BELOW BRIDGE DECK FOOTPRINT.
- SET NEW BRIDGE STRUCTURE & COMPLETE ROAD DECK.
- CONSTRUCT ROADWAY RECONSTRUCTION
- COMPLETE REMAINING STREAM WORK INCLUDING GRADE CONTROL STRUCTURES.
- RESTORE AREAS DISTURBED AS A RESULT OF CONSTRUCTION.
- DEMobilize ANY REMAINING MATERIALS & EQUIPMENT
- REMOVE EROSION CONTROL DEVICES AFTER SITE HAS BEEN ESTABLISHED AND AS APPROVED BY THE ENGINEER.

**CALCULATED IMPACTS:**

TOTAL LENGTH OF STREAM IMPACT: 77± LF  
 TOTAL LENGTH OF ROADWAY IMPACT: 45± LF (INCLUDES STRUCTURE)  
 TEMPORARY DISTURBANCE IMPACT: 2,275± SF (AREA SHOWN ON PLANS)  
 AREA OF FILL BELOW OHW: 522± SF (SIS & FILL B/E ABUT)  
 VOLUME OF FILL BELOW OHW: 67 CY

**WETLAND AREA:**

TOTAL WETLAND AREA: 31 SF (APA MAPPED AREA ON SITE)  
 PERMANENT WETLAND IMPACTS: 10 SF (W/ BUFFER WITHIN LOD)  
 TEMPORARY WETLAND IMPACTS: 31 SF (WITHIN LOD)



**TROUT UNLIMITED**  
 CLIENT: 1700 N. Moore Street, Suite 2085, Arlington, VA 22209

PROJECT: CULVERT REPLACEMENT  
 NAACC #95242

SEAL

DRAWN	J. FLEMING, DES
DESIGNED	J. HUMPHREYS, TU
CHECKED	T. BROWN, TU
SCALE	AS SHOWN
DATE	01/22/2020
PROJECT	TU-87

NO.	DATE	REVISIONS
1	3/24	NYS DEC COMMENTS
2	3/30	REVISED WETLAND AREAS

SEAL

IT IS A VIOLATION OF THE LAW FOR ANY PERSON, UNLESS AUTHORIZED UNDER THE PROVISIONS OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, OR LAND SURVEYOR, TO ALTER OR ADD TO ANY SIGN, PLAN, SPECIFICATION, OR CONTRACT DOCUMENT, OR TO SIGN ANY SUCH DOCUMENT, WITHOUT BEING DULY REGISTERED AND LICENSED AS SUCH. ANY PERSON WHO VIOLATES THIS PROVISION SHALL BE SUBJECT TO PENALTIES AS PROVIDED BY LAW. THE SIGNATURE OF THE LICENSED PROFESSIONAL ENGINEER, ARCHITECT, OR LAND SURVEYOR SHALL BE REQUIRED ON ALL SUCH DOCUMENTS, AND A SPECIFIC DESCRIPTION OF THE ALTERATION DRAWING TITLE.

**GENERAL NOTES & QUANTITIES**

DRAWING NUMBER 610



**TROUT UNLIMITED**  
 CLIENT: 1700 N. Moore Street, Suite 2005, Arlington, VA, 22206  
 PROJECT: CULVERT REPLACEMENT  
 NAACC #95242

DRAWN: J.F. EMIG, DES.  
 DESIGNED: J. HUNNBERG, P.E.  
 CHECKED: J. HUNNBERG, P.E.  
 SCALE: AS SHOWN  
 DATE: 01/22/06  
 PROJECT: 11-10

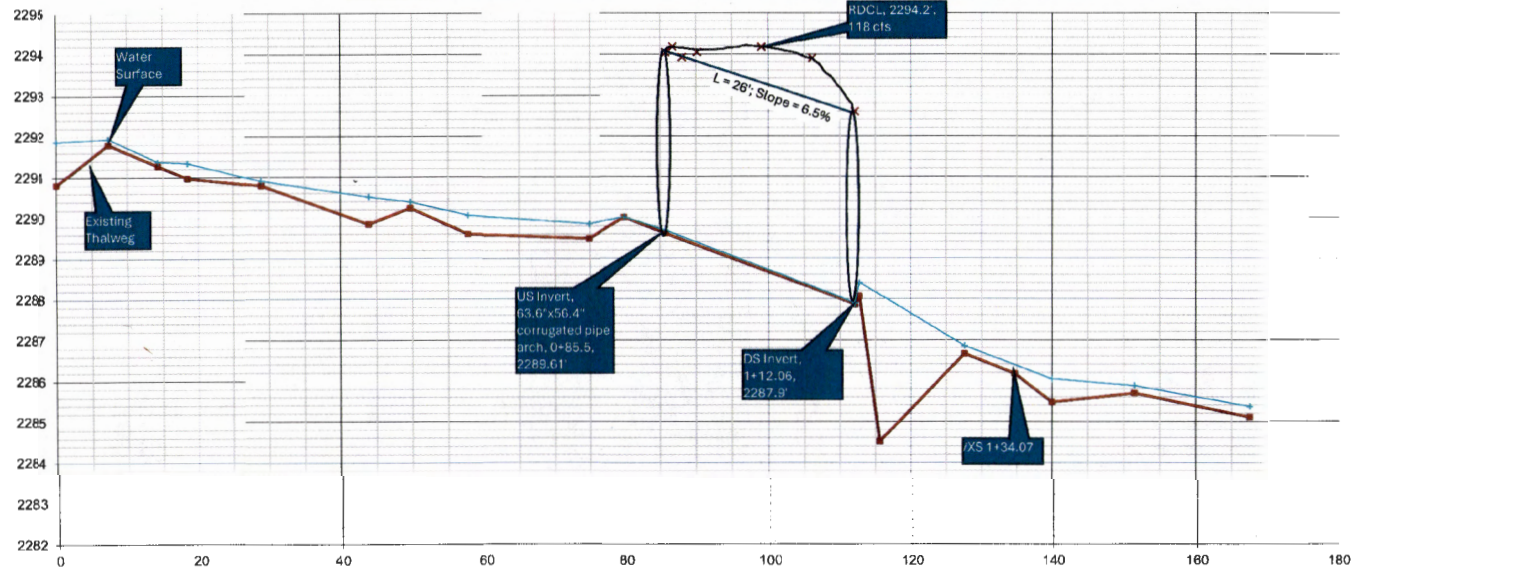
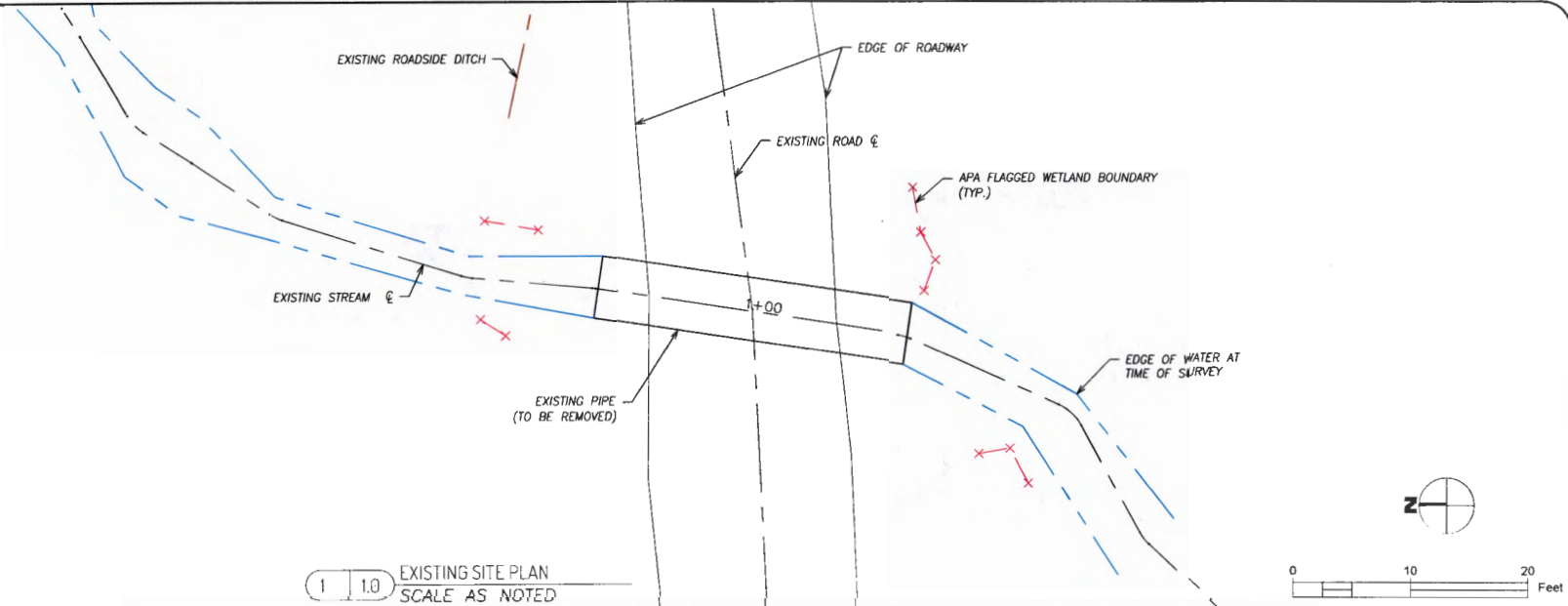
NO.	DATE	REVISIONS
1	3/24	NYS DEC COMMENTS

SEAL

IT IS A VIOLATION OF THE LAW FOR ANY PERSON UNLESS ACTING UNDER THE SUPERVISION OF A LICENSED PROFESSIONAL ENGINEER ARCHITECT OR LAND SURVEYOR TO ALTER OR COPY IN ANY MANNER ANY PLAN DRAWING OR STATEMENT OF A LICENSED PROFESSIONAL ENGINEER ARCHITECT OR LAND SURVEYOR. THIS STATEMENT AND INCLUDES THE SIGNATURE SHALL BE FOLLOWED BY THEIR SIGNATURE, TITLE, OF EACH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

EXISTING CONDITIONS  
 PLAN & PROFILE F

DRAWING NUMBER C10





CLIENT: **TROUT UNLIMITED**  
 1700 N. Moore Street, Suite 2005, Arlington, VA 22209

PROJECT: **CULVERT REPLACEMENT**  
 NAACC #95242

DESIGN: J. FLEMING, DEC  
 DRAWN: J. HUMPHREYS, TU  
 CHECKED: T. BRIDGMAN, TU  
 SCALE: AS SHOWN  
 DATE: 01/22/2020  
 PROJECT: TU-07

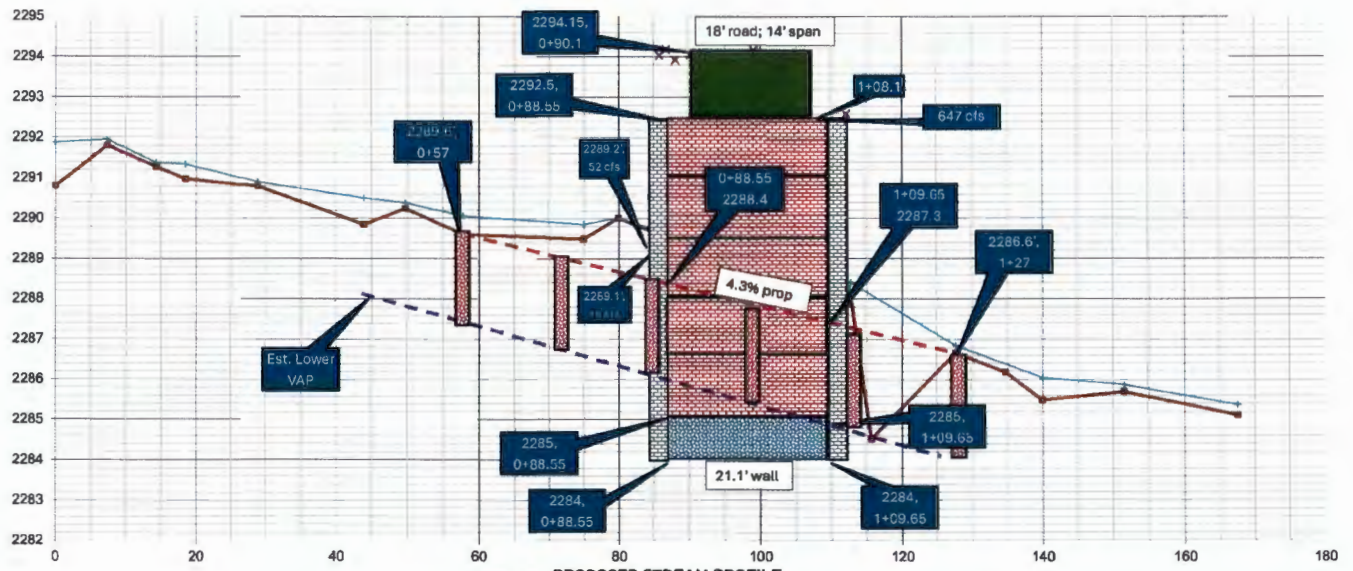
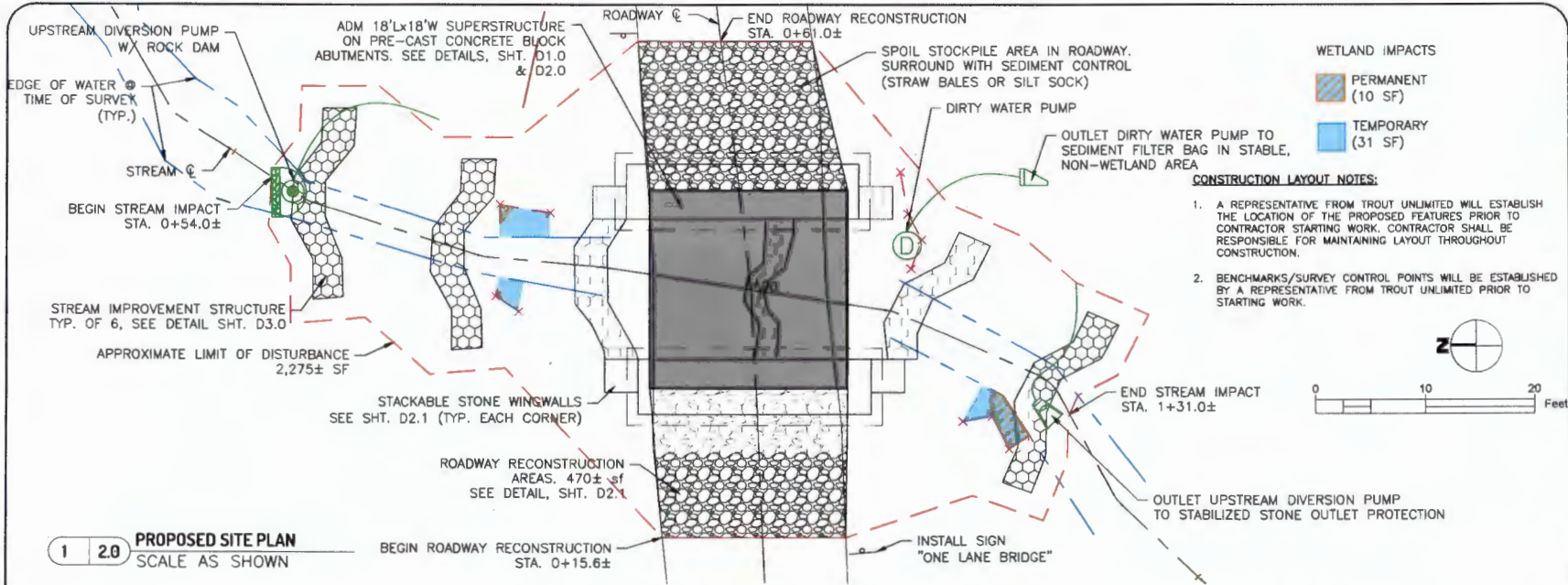
NO.	DATE	REVISIONS
1	3/24	NYS DEC COMMENTS
2	3/30	REVISED WETLAND AREAS

SEAL

IT IS A VIOLATION OF THE LAW FOR ANY PERSON UNLESS ACTING UNDER THE SUPERVISION OF A LICENSED PROFESSIONAL ENGINEER OR ARCHITECT TO PREPARE OR SIGN ANY DRAWING OR SPECIFICATION OF A STRUCTURE, MACHINE, OR EQUIPMENT, OR ANY OTHER WORK, WITHOUT BEING DULY QUALIFIED BY EDUCATION, TRAINING, AND EXPERIENCE. ANY PERSON WHO VIOLATES THIS SECTION SHALL BE CONSIDERED TO BE ENGAGED IN THE PRACTICE OF ENGINEERING OR ARCHITECTURE WITHOUT BEING DULY QUALIFIED BY EDUCATION, TRAINING, AND EXPERIENCE. THE STATE OF NEW YORK HAS A STATUTE OF CONSENT WHICH PROVIDES THAT ANY PERSON WHO VIOLATES THIS SECTION SHALL BE CONSIDERED TO BE ENGAGED IN THE PRACTICE OF ENGINEERING OR ARCHITECTURE WITHOUT BEING DULY QUALIFIED BY EDUCATION, TRAINING, AND EXPERIENCE.

**PROPOSED CONDITIONS**  
**PLAN & PROFILE**

DRAWING NUMBER **C2.0**





**TROUT UNLIMITED**  
 CLIENT: 1700 N. Micare Street, Suite 2005, Arlington, VA, 22209  
 PROJECT: CULVERT REPLACEMENT  
 NAACC # 95242

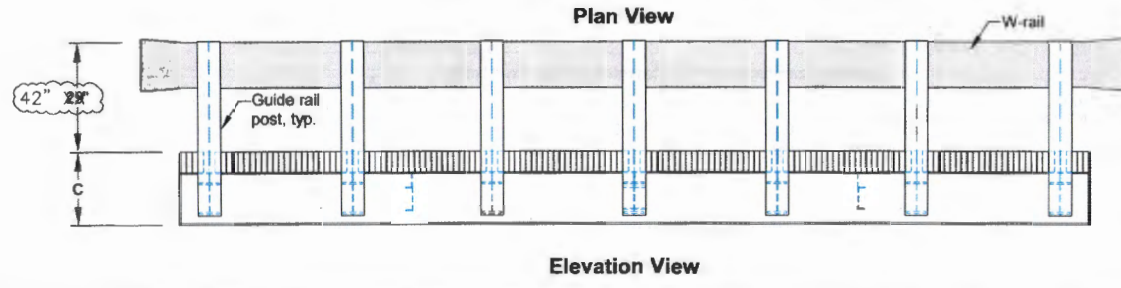
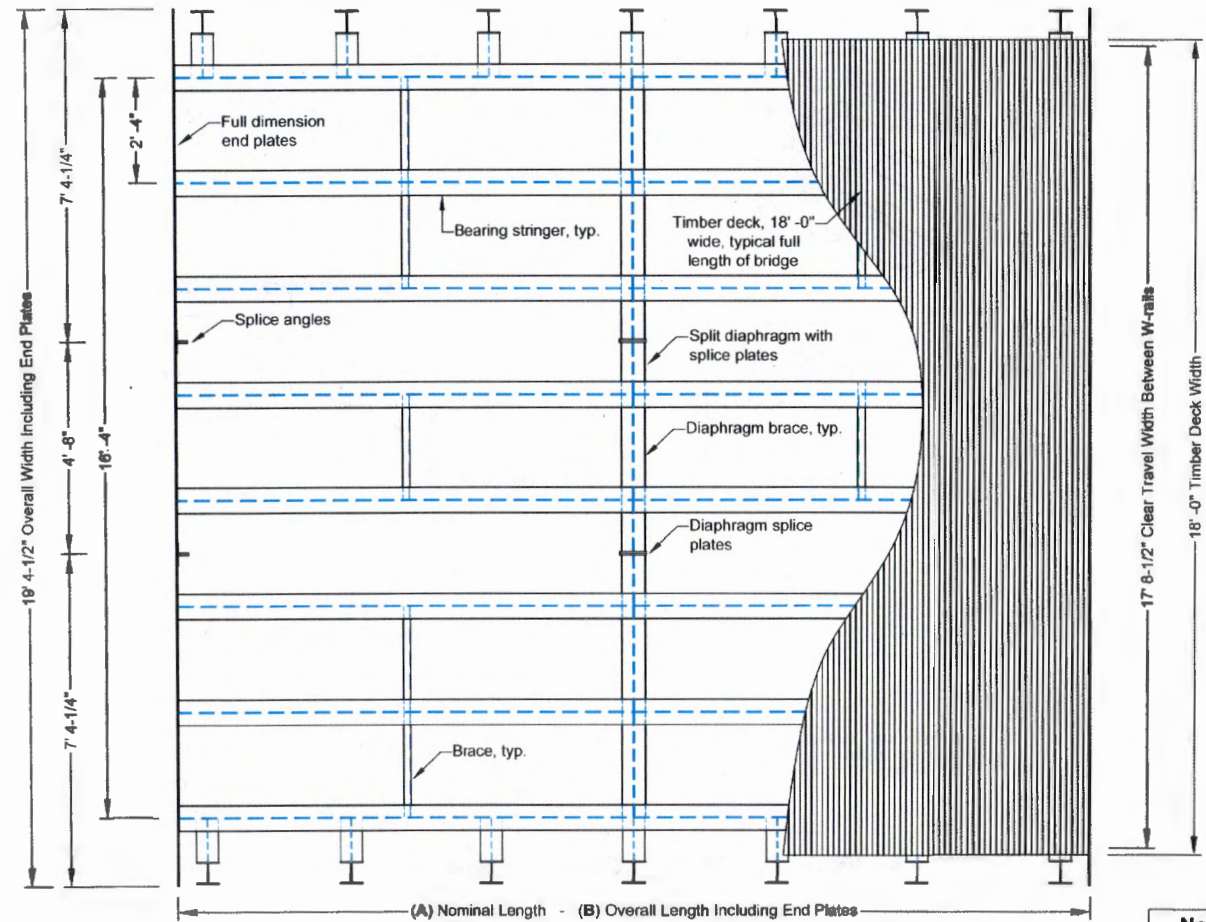
THE INTENT OF THE DETAILS ON THIS SHEET IS TO GIVE THE REVIEW/PERMITTING AGENCIES INFORMATION ON THE TYPE OF STRUCTURE PROPOSED FOR THE SITE/PROJECT. DETAILS SHOWN ON THIS PLAN SHEET ARE REPRESENTATIVE EXAMPLES PROVIDED BY THE MANUFACTURER. SITE SPECIFIC DRAWINGS WILL BE COMPLETED BY THE MANUFACTURER FOR REVIEW AND APPROVAL AFTER AWARD OF THE CONTRACT AND PRIOR TO FABRICATION.

ADM Welding & Fabrication, LLC  
 37 Broadhead Street  
 Warren, PA 16365  
 Phone: 814-723-7227

Email: admwelding@verizon.net  
 Website: www.admwelding.com

These drawings are only intended to apply to structures fabricated by ADM Welding & Fabrication, LLC

**18"W Modular Bridges**  
 HL93 vehicular loading with  
 no speed restriction (full  
 impact loading)



Nominal Length	Overall Length	Structure Depth
A	B	C
10' -0"	10' 0-3/4"	17.5"
12' -0"	12' 0-3/4"	17.5"
20' -0"	20' 0-3/4"	19.5"
30' -0"	30' 0-3/4"	23.5"

NO. DATE REVISIONS

1	3/24	NYS DEC COMMENTS

SEAL

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DRAWING TITLE  
**ADM SUPERSTRUCTURE  
 DETAIL 5**

DRAWING NUMBER: 019



**TROUT UNLIMITED**  
 CLIENT: 1700 N. Macre Street, Suite 2005, Arlington, VA 22206

**CULVERT REPLACEMENT**  
 NAACC # 95242

PROJECT: \_\_\_\_\_

DRAWN: J FLEMING, D.F.S.

DESIGNED: J HERRBERG, P. E.

CHECKED: J HERRBERG, III

SCALE: AS SHOWN

DATE: 08/22/2016

PROJECT: 10-12

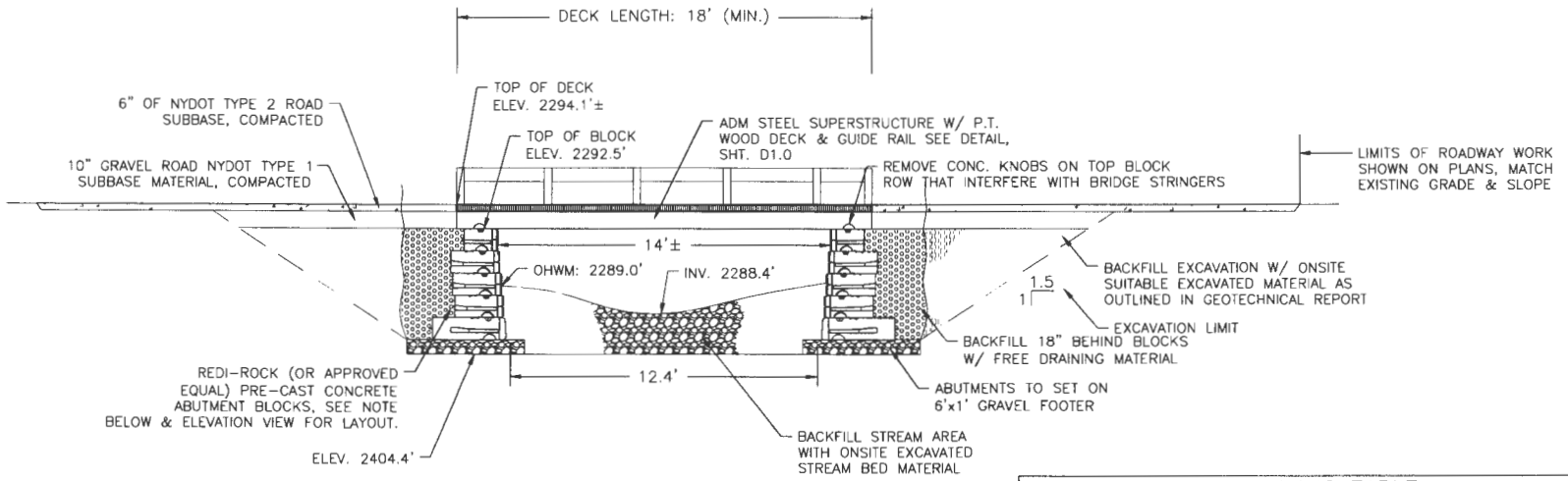
NO.	DATE	REVISIONS
1	3/24	NYS DEC COMMENTS

SEAL: \_\_\_\_\_

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STRUCTURE ABUTMENT  
 DETAILS

DRAWING NUMBER: D20

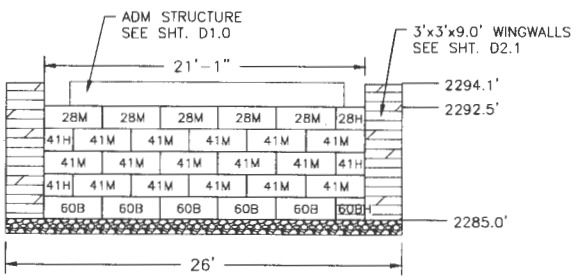


STORM EVENT	CALC. FLOW (CFS)	FLOW ELEV. @ STRUCT. (FT)	CALC. FREEBOARD (FT)
1%	52	2289.2	4.9
2%	45	2289.1	5.0

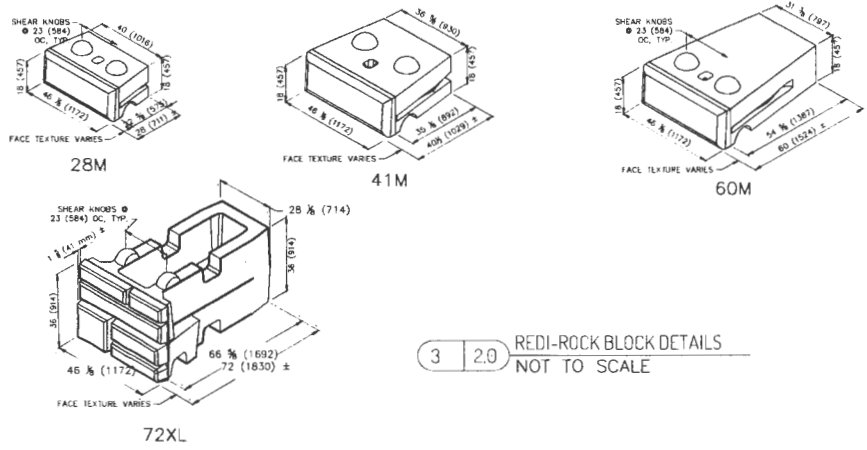
FREEBOARD CALCULATED TO EDGE OF ROAD ELEVATION.

**REDI-ROCK ABUTMENT NOTE:**  
 ABUTMENT BLOCKS SHOWN ARE FROM A SIMILAR PROJECT DESIGN. BLOCK MANUFACTURER WILL DESIGN A SITE SPECIFIC BLOCK CONFIGURATION.

1 20 STRUCTURE ELEVATION VIEW  
 NOT TO SCALE



2 20 ABUTMENT ELEVATION  
 NOT TO SCALE



3 20 REDI-ROCK BLOCK DETAILS  
 NOT TO SCALE



CLIENT: TROUT UNLIMITED  
1700 N. Moore Street, Suite 2005, Arlington, VA, 22209

PROJECT: CULVERT REPLACEMENT  
NAACC # 95242

DRAWN: J. FLEMING, DES.  
DESIGNED: J. HUMPHREYS, TU  
CHECKED: T. BROWN, TU  
SCALE: AS SHOWN  
DATE: 01/22/2026  
PROJECT: TU-97

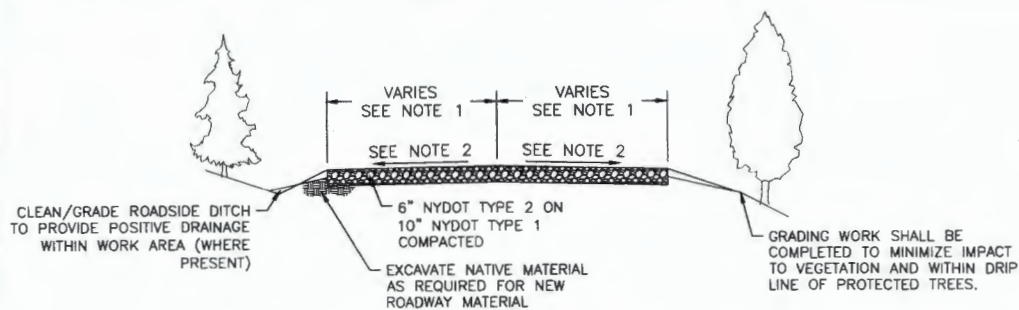
NO.	DATE	REVISIONS
1	3/24	NYS DEC COMMENTS

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ROADWAY & WINGWALL  
DETAILS

DRAWING NUMBER 021



**NOTES:**

1. MATCH EXISTING ROADWAY WIDTH AT LIMIT OF RECONSTRUCTION AS SHOWN ON THE PLANS. PROVIDE LINEAR TRANSITION TO MEET BRIDGE/STRUCTURE WIDTH (18' TYP.).
2. MATCH EXISTING CROSS SLOPE AT THE LIMIT OF RECONSTRUCTION. TRANSITION TO BRIDGE/STRUCTURE SLOPE. MAINTAIN 2% CROSS-SLOPE WHENEVER POSSIBLE TO PROMOTE DRAINAGE.

1 2.1 TYPICAL ROADWAY SECTION  
NOT TO SCALE



**WINGWALL CONSTRUCTION:**

1. WINGWALLS SHALL BE CONSTRUCTED OF STACKABLE ROCK THAT MATCHES NATIVE ROCK IN THE AREA.
2. ROCK SHALL BE A MINIMUM OF 12" IN HEIGHT AND 36" IN WIDTH. VARIABLE DEPTH AS REQUIRED TO CONSTRUCT A STABLE WALL.
3. TOTAL LENGTH OF WINGWALL(S) (AS MEASURED ALONG STREAM BANK) SHALL BE AS SHOWN ON PLANS OR AS DIRECTED BY REPRESENTATIVE FROM TROUT UNLIMITED.

2 2.1 WINGWALL CONSTRUCTION  
NOT TO SCALE

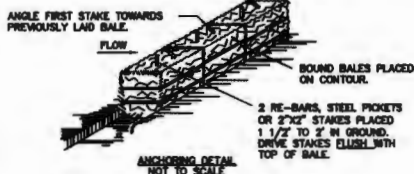






SYMBOL

**BIDDING DETAIL**  
NOT TO SCALE  
DRAINAGE AREA NO MORE THAN 1/4 ACRE PER 100 FEET OF STRAW BALE DIKE FOR SLOPES LESS THAN 25%.

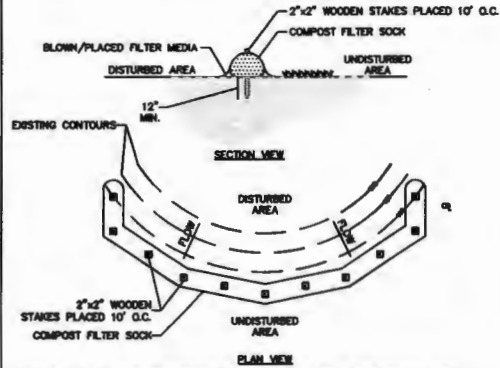


**CONSTRUCTION SPECIFICATIONS**

- BALES SHALL BE PLACED AT THE TOE OF A SLOPE OR ON THE CONTOUR AND IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES.
- EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF (4) INCHES, AND PLACED SO THE ENDS ARE HORIZONTAL.
- BALES SHALL BE SECURELY ANCHORED IN PLACE BY EITHER TWO STAKES OR RE-BARS DRIVEN THROUGH THE BALE. THE FIRST STAKE IN EACH BALE SHALL BE DRIVEN TOWARD THE PREVIOUSLY LAID BALE AT AN ANGLE TO FORCE THE BALES TOGETHER. STAKES SHALL BE DRIVEN FLUSH WITH THE BALE.
- INSPECTION SHALL BE FREQUENT AND REPAIR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
- BALES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPIDE STORM FLOW OR DRAINAGE.

ADAPTED FROM DETAILS PROVIDED BY: USDA - NRCS, NEW YORK STATE DEPARTMENT OF TRANSPORTATION, NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION, NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE.

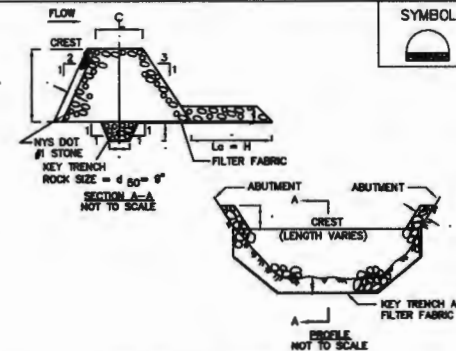
STRAW BALE DIKE



- SOCK FABRIC SHALL MEET STANDARDS OF TABLE 5.1. COMPOST SHALL MEET THE STANDARDS LISTED ON OF TABLE 5.2.
- COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH SIDES OF THE SOCK SHALL BE EXTENDED AT LEAST 6 FEET OF SLOPE AT 45 DEGREES TO THE HORN ORDER ALIGNMENT (GRADE & 45% MAXIMUM SLOPE LENGTH) ABOVE ANY SOCK SHALL NOT EXCEED THAT SPECIFIED ON FIGURE 5.1. SOCKS MAY BE INSTALLED INDEPENDENTLY COMPLETELY OF THE SOCK IF SO SPECIFIED BY THE MANUFACTURER.
- TRAPPS SHALL NOT BE PERMITTED TO CROSS FILTER SOCKS.
- ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES HALF THE ABOVEGROUND HEIGHT OF THE SOCK AND BEFORE THE SOCK IS DAMAGED EXCESSIVELY IN THE PLACE.
- SOCKS SHALL BE INSPECTED REGULARLY AND AFTER EACH RAINFALL EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.
- BIODEGRADABLE FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS. NONBIODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
- UPON RESTORATION OF THE AREA SUBJECT TO THE SOCKS, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED IN THE LATTER CASE. THE SOIL SHALL BE CUT OPEN AND THE SOIL SPREAD AS A SOIL SUPPLEMENT.

ADAPTED FROM DETAILS PROVIDED BY: FILTERCOX

COMPOST FILTER SOCK

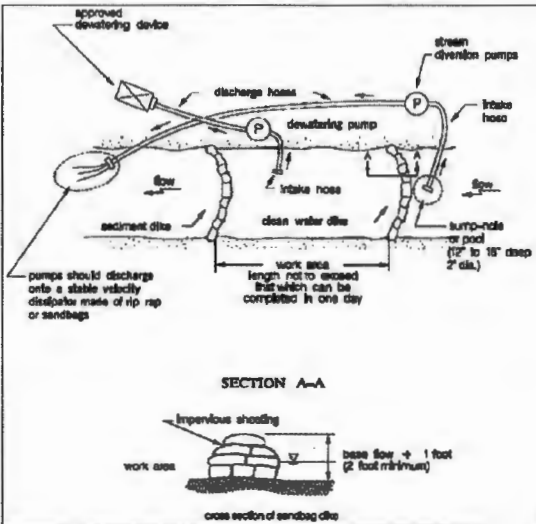


**CONSTRUCTION SPECIFICATIONS**

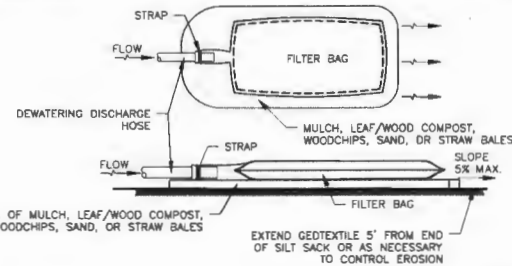
- THE AREA UNDER THE ROCK DAM SHALL BE CLEARED AND STRIPPED OF ROOTS AND OTHER SUBSTANTIAL MATERIAL. THE RESERVOIR SHALL BE CLEARED AS NEEDED TO FACILITATE SEDIMENT REMOVAL.
- DIMENSIONS SHOWN ARE MINIMUM. TRENCH SHALL BE EXCAVATED FROM ABUTMENT TO ABUTMENT ON THE DAM CENTERLINE. FILTER FABRIC SHALL BE PLACED FROM UPSTREAM EDGE OF KEY TRENCH TO DOWNSTREAM EDGE OF ABUTMENT. JOINTS WILL LAP A MINIMUM OF 1 FT. WITH UPSTREAM STRIP ON TOP.
- CONSTRUCT THE ROCK EMBANKMENT TO THE DIMENSIONS SHOWN ON THE DRAWING. ROCK ABUTMENTS SHALL BE MAINTAINED 2 FT. ABOVE THE CREST.
- THE ROCK DAM SHALL BE CONSTRUCTED PRIOR TO CLEARING THE BASIN AREA. STAKES, ALL DISTURBED AREAS, EXCEPT THE BASIN AREA, WITH TEMPORARY SEEDING.
- FENCES AND WARNING SIGNS SHOULD BE PLACED AS APPROPRIATE. MAXIMUM DRAINAGE AREA: 50 ACRES.

ADAPTED FROM DETAILS PROVIDED BY: USDA - NRCS, NEW YORK STATE DEPARTMENT OF TRANSPORTATION, NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION, NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE.

ROCK DAM



2 4.1 CLEAN WATER PUMP AROUND NOT TO SCALE



**NOTES**

- TIGHTLY SEAL SLEEVE AROUND THE PUMP DISCHARGE HOSE WITH A STRAP OR SIMILAR DEVICE.
- CONTROL PUMPING RATE TO PREVENT EXCESSIVE PRESSURE WITHIN THE FILTER BAG IN ACCORDANCE WITH THE MANUFACTURER RECOMMENDATIONS. AS THE BAG FILLS WITH SEDIMENT, REDUCE PUMPING RATE.
- REMOVE AND PROPERLY DISPOSE OF FILTER BAG UPON COMPLETION OF PUMPING OPERATIONS OR AFTER BAG HAS REACHED CAPACITY OR IS DAMAGED, WHICHEVER OCCURS FIRST. RE-USE CAPTURED SEDIMENTS AS FINE MATERIAL TO SUPPORT PLANT GROWTH OR DISPOSE OF OFF-SITE. RESTORE THE SURFACE AREA BENEATH THE BAG TO ORIGINAL CONDITION UPON REMOVAL OF THE DEVICE.
- REMOVE SILT SACKS FROM CHANNEL AREA WHEN FLOWS IN EXCESS OF 8,000 CFS ARE ANTICIPATED.
- USE NONWOVEN GEOTEXTILE WITH DOUBLE STITCHED SEAMS USING HIGH STRENGTH THREAD. SIZE SLEEVE TO ACCOMMODATE A MAXIMUM 4 INCH DIAMETER PUMP DISCHARGE HOSE. THE BAG MUST BE MANUFACTURED FROM A NONWOVEN GEOTEXTILE THAT MEETS OR EXCEEDS MINIMUM AVERAGE ROLL VALUES (MARV) IN THE SHOWN TABLE.

REQUIREMENTS FOR FILTER BAG		
GRAB TENSILE	250 LB	ASTM D-4832
PUNCTURE	150 LB	ASTM D-4833
FLOW RATE	70 GAL/MIN FT <sup>2</sup>	ASTM D-4491
PERMITTIVITY (SEC-1/)	1.2	ASTM D-4491
UV RESISTANCE	70%	ASTM D-4355
APPEARING SIZE (AOS)	NO. 40 TO 80	ASTM D-4751
SEAM STRENGTH	90%	ASTM D-4832

1 4.1 FILTER BAG PUMP OUTLET NOT TO SCALE



TROUT UNLIMITED  
1700 N. Moore Street, Suite 2005, Arlington, VA 22209

CULVERT REPLACEMENT  
NAACC # 95242

CLIENT:  
PROJECT:

DRAWN: J.FLEHIG,DES  
DESIGNED: J.HUMPHREYS,TU  
CHECKED: T.BROZYN,TU  
SCALE: AS SHOWN  
DATE: 02/22/2028  
PROJECT: TU-07

NO.	DATE	REVISIONS
1	3/24	NYS DEC COMMENTS

SEAL

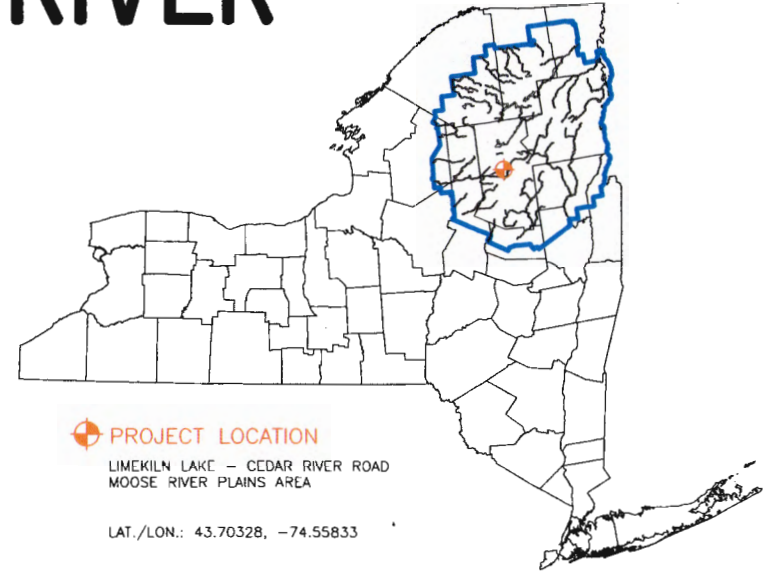
IT IS A VIOLATION OF THE LAW FOR ANY PERSON, WHETHER ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL REGISTERED ARCHITECT OR LAND SURVEYOR, TO SEAL OR SIGN AS HIS OR HER OWN AS A SEAL OR SIGN THE DESIGN OF A LICENSED PROFESSIONAL ARCHITECT OR LAND SURVEYOR, WITHOUT BEING REGISTERED AS SUCH AND BEING IN GOOD STANDING WITH THE BOARD OF ARCHITECTS AND SURVEYORS OF THE STATE OF NEW YORK. ANY PERSON WHO VIOLATES THIS SECTION OF THE LAW SHALL BE SUBJECT TO THE PENALTIES OF SUCH VIOLATION AND A SPECIFIC DESCRIPTION OF THE VIOLATION.

EROSION & SEDIMENT CONTROL DETAILS

DRAWING NUMBER D.41

# SOUTH BRANCH MOOSE RIVER

## TROUT UNLIMITED CULVERT REPLACEMENT PROJECT LIMEKILN LAKE-CEDAR RIVER RD. HAMILTON COUNTY, NY



NAACC #95244

PERMIT PLANS  
JANUARY 21, 2026

REVISED MARCH 23, 2026

PREPARED FOR:



DESIGNED BY:



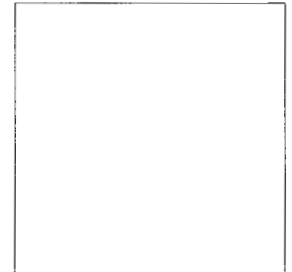
DRAFTED BY:



### PLAN SHEET INDEX:

- G1.0 GENERAL NOTES & QUANTITIES
- C1.0 EXISTING CONDITIONS PLAN & PROFILE
- C2.0 PROPOSED LAYOUT PLAN & PROFILE
- D1.0 STRUCTURE DETAILS
- D2.0 STRUCTURE ABUTMENT DETAILS
- D2.1 ROADWAY & WINGWALL DETAILS
- D3.0 STREAM IMPROVEMENT STRUCTURE DETAILS
- D4.0 EROSION & SEDIMENT CONTROL NOTES
- D4.1 EROSION & SEDIMENT CONTROL DETAILS

ENGINEERS SEAL:







CLIENT: TROUT UNLIMITED  
 1700 N. Moore Street, Suite 2005, Arlington, VA, 22209

PROJECT: CULVERT REPLACEMENT  
 NAACC #95244

DRAWN: J. FLEMING, DES.  
 DESIGNED: J. HUMPHREYS, TU  
 CHECKED: T. BROWN, TU  
 SCALE: AS SHOWN  
 DATE: 01/21/2006  
 PROJECT: TLE-06-2108

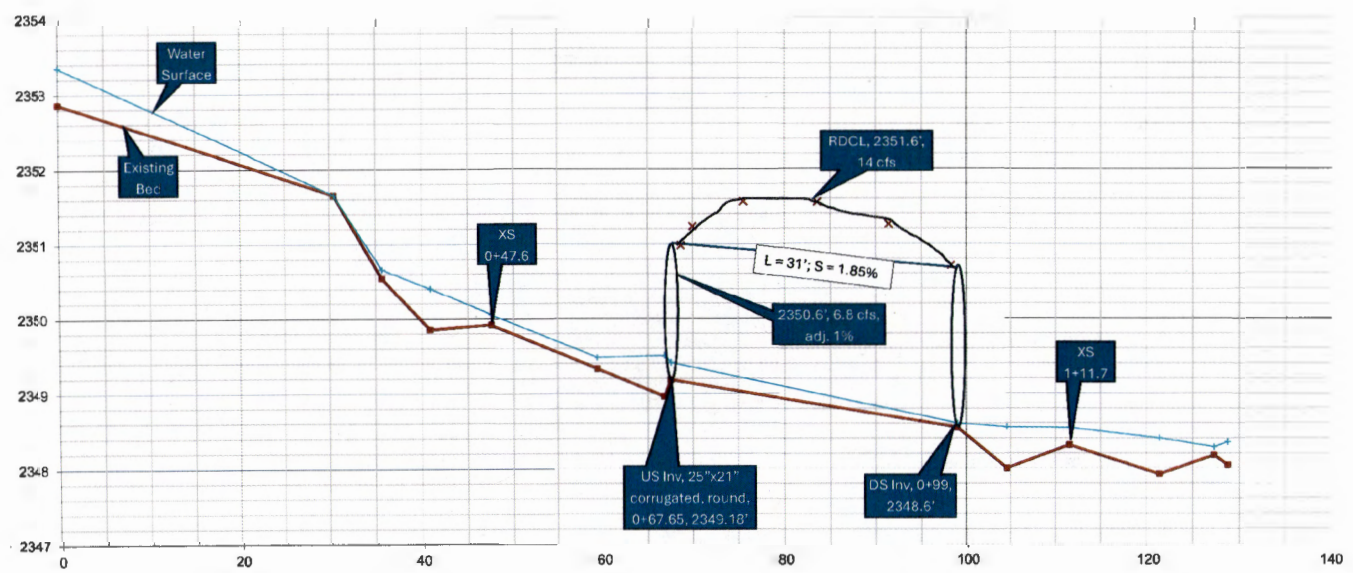
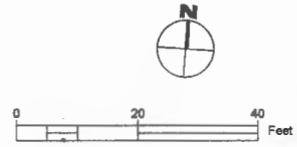
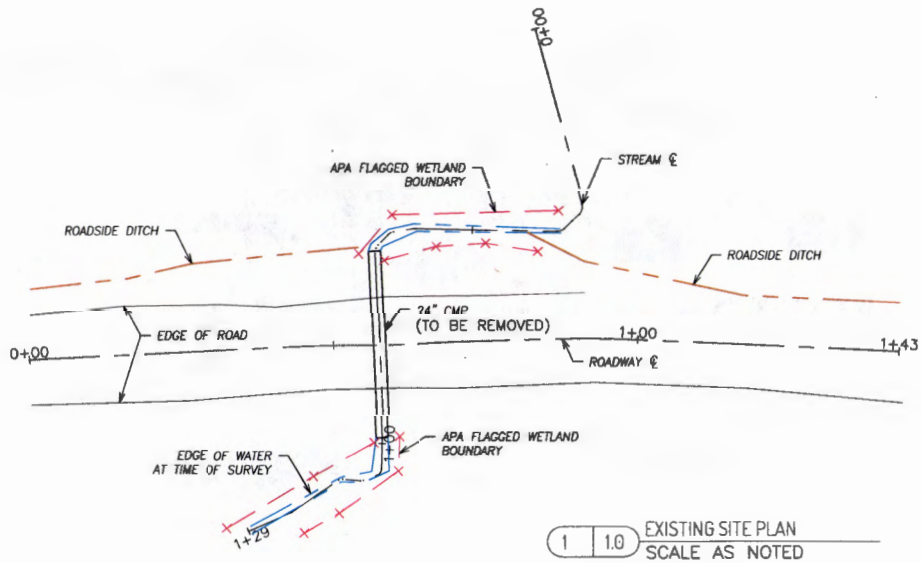
NO.	DATE	REVISIONS
1	3/23	NYS DEC COMMENTS

SEAL

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DRAWING TITLE: EXISTING CONDITIONS & PROFILE

DRAWING NUMBER: C1.0



2 1.0 EXISTING STREAM PROFILE  
 NOT TO SCALE



CLIENT: TROUT UNLIMITED  
 1700 N. Moore Street, Suite 2005, Arlington, VA 22209

PROJECT: CULVERT REPLACEMENT  
 NAACC #95244

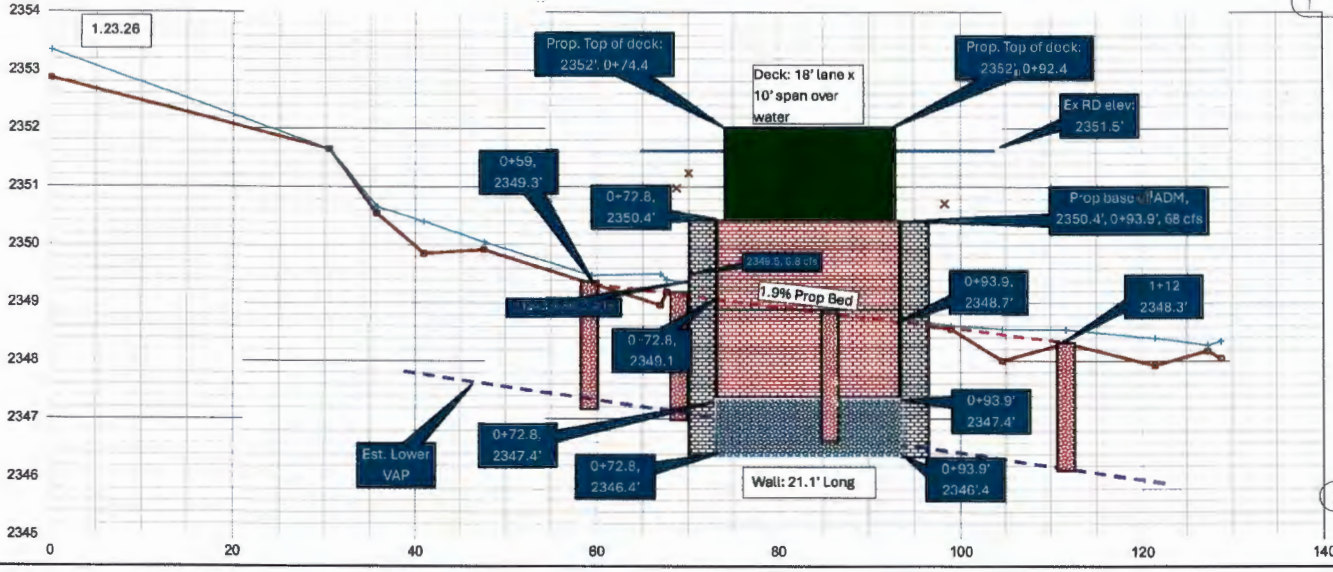
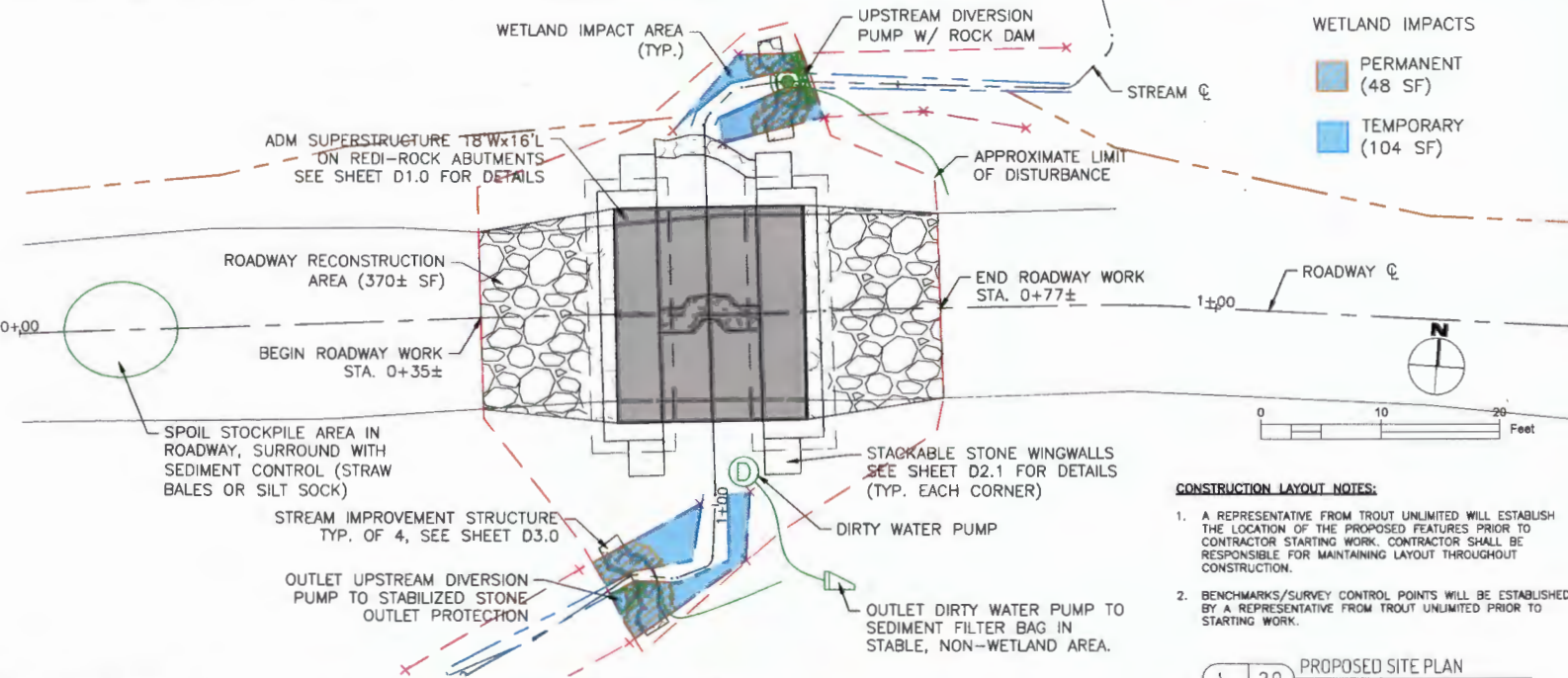
SEAL

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PROPOSED CONDITIONS & PROFILE

DRAWING NUMBER C-20





**TROUT UNLIMITED**  
 CLIENT: 1700 N. Moore Street, Suite 2005, Arlington, VA, 22209  
 PROJECT: CULVERT REPLACEMENT  
 NAACC #95244

CLIENT: 1700 N. Moore Street, Suite 2005, Arlington, VA, 22209  
 PROJECT: CULVERT REPLACEMENT  
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NO.	DATE	REVISIONS
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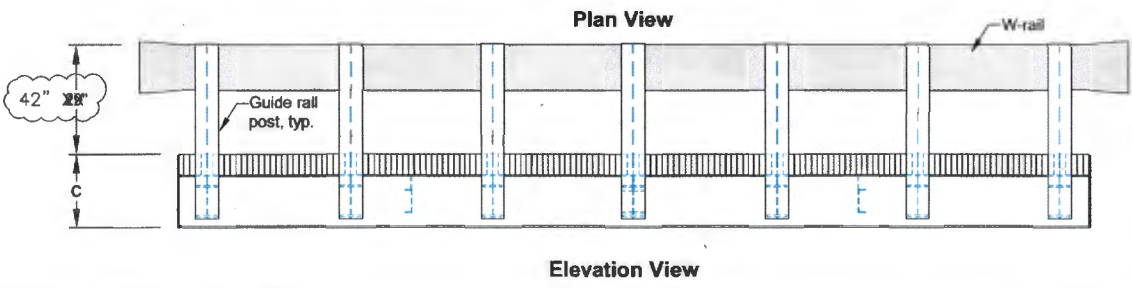
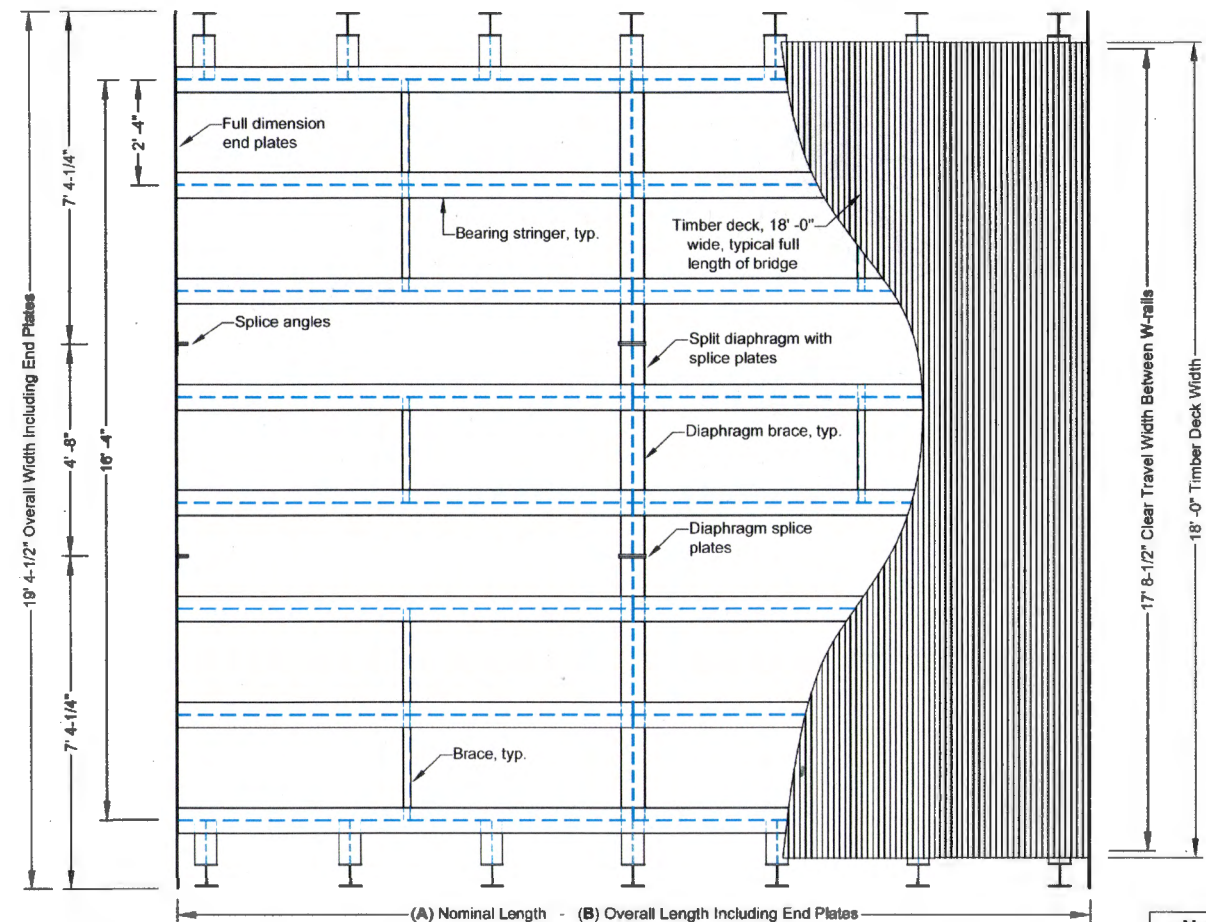
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ADM Welding & Fabrication, LLC  
 37 Broadhead Street  
 Warren, PA 16365  
 Phone: 814-723-7227  
 Email: admwelding@verizon.net  
 Website: www.admwelding.com

These drawings are only intended to apply to structures fabricated by ADM Welding & Fabrication, LLC

**18" W Modular Bridges**  
 HL93 vehicular loading with  
 no speed restriction (full  
 impact loading)



Nominal Length	Overall Length	Structure Depth
A	B	C
10'-0"	10' 0-3/4"	17.5"
12'-0"	12' 0-3/4"	17.5"
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ADM SUPERSTRUCTURE  
 DETAIL 5

DRAWING NUMBER 019



CLIENT: **TROUT UNLIMITED**  
 1700 V. Moore Street, Suite 2305, Arlington, VA 22209

PROJECT: **CULVERT REPLACEMENT**  
 NAACC #95244

NO. DATE REVISIONS

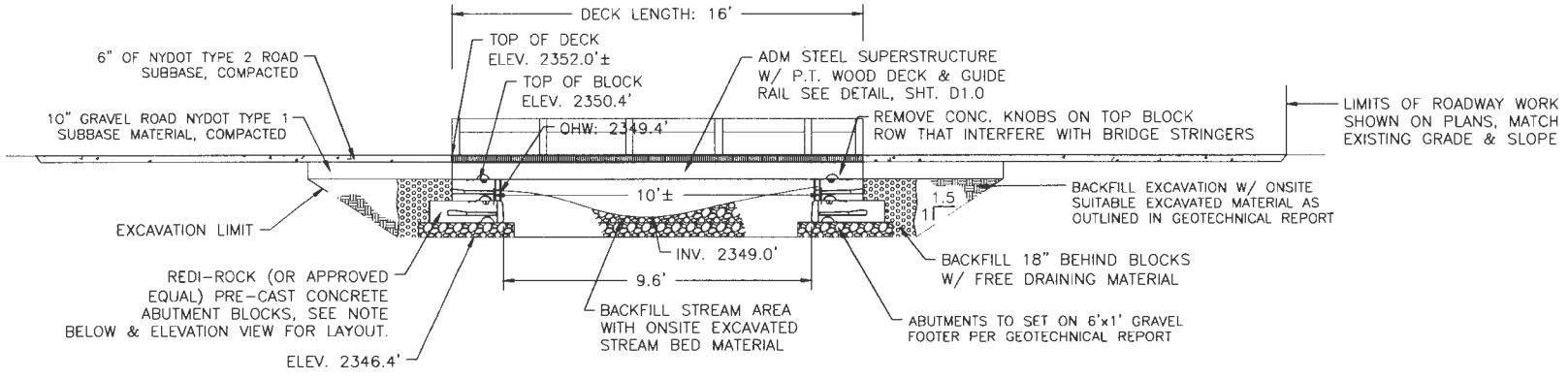
1	3/23	NYS DEC COMMENTS

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STRUCTURE ABUTMENT  
 DETAILS

DRAWING NUMBER: 020



REDI-ROCK ABUTMENT NOTE:

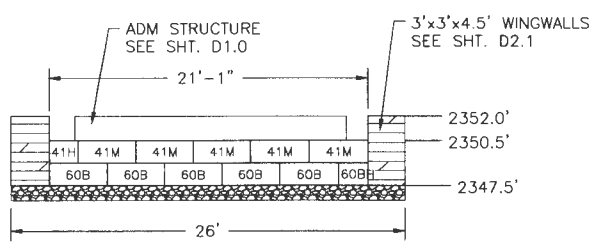
ABUTMENT BLOCKS SHOWN ARE FROM A SIMILAR PROJECT DESIGN. BLOCK MANUFACTURER WILL DESIGN A SITE SPECIFIC BLOCK CONFIGURATION.

HYDRAULIC TABLE

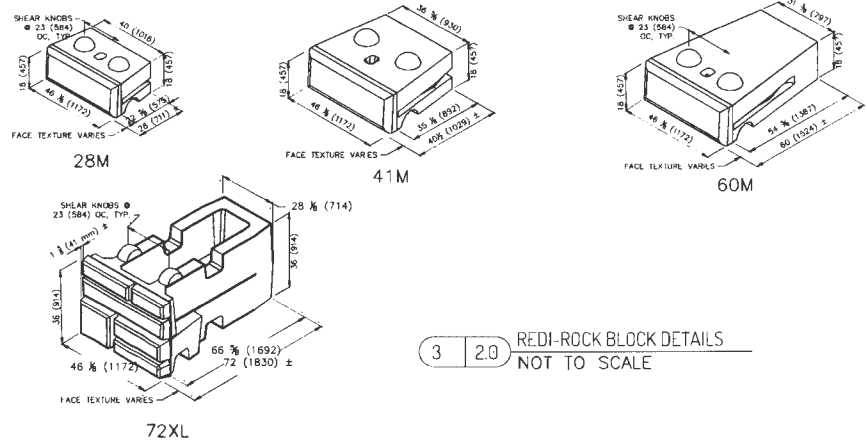
STORM EVENT	CALC. FLOW (CFS)	FLOW ELEV. @ STRUCT. (FT)	CALC. FREEBOARD (FT)
1%	6.8	2349.4	2.6
2%	6.0	2349.3	2.7

FREEBOARD CALCULATED TO EDGE OF ROAD ELEVATION.

1 20 STRUCTURE ELEVATION VIEW  
 NOT TO SCALE



2 20 ABUTMENT ELEVATION  
 NOT TO SCALE



3 20 REDI-ROCK BLOCK DETAILS  
 NOT TO SCALE



**TROUT UNLIMITED**  
 CLIENT: 1700 N. Moore Street, Suite 2005, Arlington, VA, 22209

PROJECT: CULVERT REPLACEMENT  
 NAACC #85244

DRAWN: J.FLEMMIG, DES.  
 DESIGNED: J. HAMPHREYS, TV  
 CHECKED: T. BROWN, TV  
 SCALE: AS SHOWN  
 DATE: 01/23/2016  
 PROJECT: TUL-06-2016

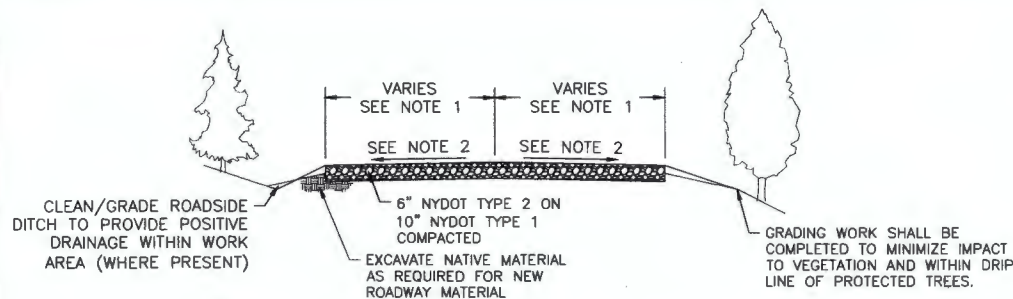
NO.	DATE	REVISIONS
1	3/23	NYS DEC COMMENTS

SEAL

I, AS A REPRESENTATIVE OF THE USER FOR ANY PURPOSE, HEREBY ACKNOWLEDGE THE QUALITY OF THE USER FOR ANY PURPOSE, UNLESS I HAVE SPECIFICALLY ADVISED THE USER OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, OR LAND SURVEYOR. TO ALLOW AN END USER OF ALL INFORMATION AND TO ALLOW THE USER TO MAKE ANY CHANGES TO THE USER'S OWN PROJECTS. THE USER'S OWN PROJECTS ARE NOT GUARANTEED BY TROUT UNLIMITED. THE USER'S OWN PROJECTS ARE NOT GUARANTEED BY TROUT UNLIMITED. THE USER'S OWN PROJECTS ARE NOT GUARANTEED BY TROUT UNLIMITED. THE USER'S OWN PROJECTS ARE NOT GUARANTEED BY TROUT UNLIMITED. THE USER'S OWN PROJECTS ARE NOT GUARANTEED BY TROUT UNLIMITED.

ROADWAY & WINGWALL  
 DETAILS

DRAWING NUMBER: D21



**NOTES:**

1. MATCH EXISTING ROADWAY WIDTH AT LIMIT OF RECONSTRUCTION AS SHOWN ON THE PLANS. PROVIDE LINEAR TRANSITION TO MEET BRIDGE/STRUCTURE WIDTH (18' TYP.).
2. MATCH EXISTING CROSS SLOPE AT THE LIMIT OF RECONSTRUCTION. TRANSITION TO BRIDGE/STRUCTURE SLOPE. MAINTAIN 2% CROSS-SLOPE WHENEVER POSSIBLE TO PROMOTE DRAINAGE.

1 | 2.1 TYPICAL ROADWAY SECTION  
 NOT TO SCALE



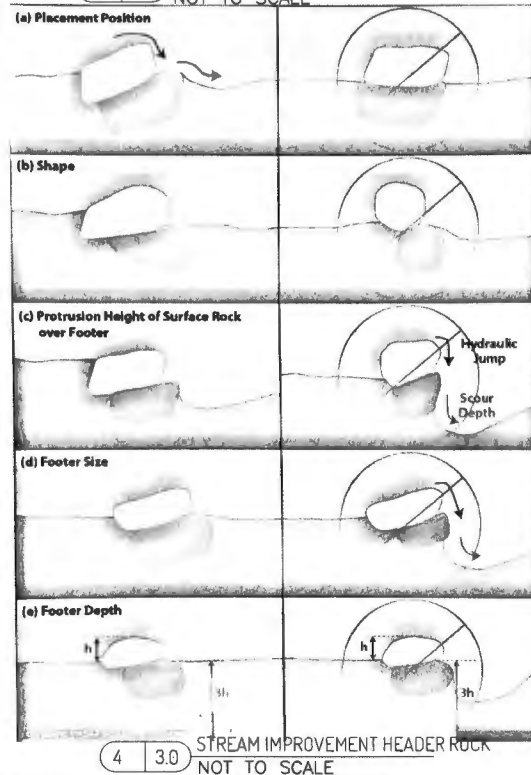
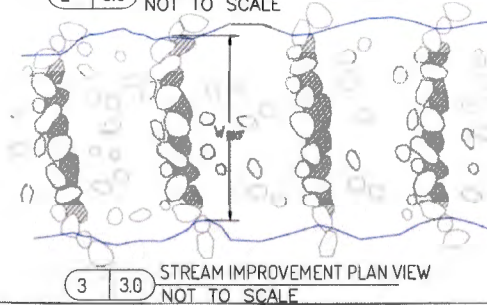
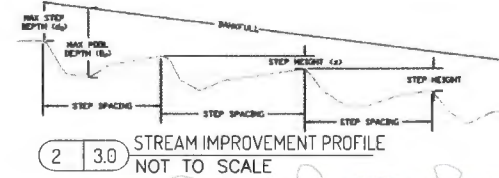
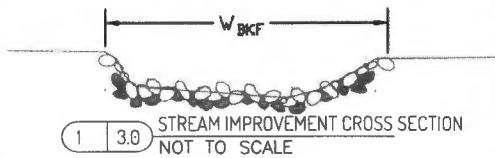
**WINGWALL CONSTRUCTION:**

1. WINGWALLS SHALL BE CONSTRUCTED OF STACKABLE ROCK THAT MATCHES NATIVE ROCK IN THE AREA.
2. ROCK SHALL BE A MINIMUM OF 12" IN HEIGHT AND 36" IN WIDTH. VARIABLE DEPTH AS REQUIRED TO CONSTRUCT A STABLE WALL.
3. TOTAL LENGTH OF WINGWALL(S) (AS MEASURED ALONG STREAM BANK) SHALL BE AS SHOWN ON PLANS OR AS DIRECTED BY REPRESENTATIVE FROM TROUT UNLIMITED.

2 | 2.1 WINGWALL CONSTRUCTION  
 NOT TO SCALE

STREAM IMPROVEMENT STRUCTURES (USFS STREAM SIMULATION)

1. STREAM IMPROVEMENT STRUCTURES ARE DESIGNED TO PROTECT THE STREAM AND CULVERT STRUCTURE. STREAM IMPROVEMENT STRUCTURE DESIGNS DIFFER DEPENDING ON SITE GOALS AND SLOPE. STEP POOL SEQUENCES ARE COMMON BEDFORMS IN HIGH-GRADIENT (2%-7%), COARSE BED ALLUVIAL CHANNELS. FOR LOWER GRADIENT SITES (LESS THAN 2%), CROSS VANES AND J HOOK STRUCTURES ARE MORE APPROPRIATE. FOR GRADIENTS HIGHER THAN 7%, A CASCADE MAY BE RECOMMENDED.
2. STREAM IMPROVEMENT STRUCTURES ARE IMPORTANT FOR ENERGY DISSIPATION AND CHANNEL STABILITY AND FORM. THE LARGEST PARTICLES IN THE BED CONGREGATE AND SUPPORT EACH OTHER, CREATING A BEDFORM THAT IS MORE RESISTANT TO MOVEMENT THAN THE INDIVIDUAL PIECES.
3. PROPOSED STREAM IMPROVEMENT STRUCTURES ARE INTENDED TO MIMIC NATURAL CONDITIONS. INSTALLED STREAM IMPROVEMENT STRUCTURES ARE CHANNEL SPANNING, TIE INTO BANKFULL ELEVATION AND ARE PLACED TO THE LOWER VERTICAL ADJUSTMENT PROFILE ELEVATION AND COMPOSED OF APPROPRIATELY SIZED ROCK.
4. STREAM IMPROVEMENT STRUCTURE ROCKS ARE SIZED TO BE IMMOBILE.
5. SPACING OF STREAM IMPROVEMENT STRUCTURES IS AS FOLLOWS: VERTICAL SPACING AND HORIZONTAL SPACING SHALL BE DETERMINED BY STREAM RESTORATION DESIGNER AND SPECIFIED IN EACH INDIVIDUAL DESIGN. TIE INTO EXISTING BANK BY 5-10 FT. VERTICAL SPACING SHALL NOT EXCEED 8" BETWEEN THALWEG OF ADJACENT STRUCTURES. HORIZONTAL SPACING IS BASED ON STREAM GRADIENT. BANK TIE IN IS NO LESS THAN 4 FEET. MATURE, HEALTHY TREE ROOTS, BEDROCK OR EXISTING LARGE BOULDERS INFLUENCE THE EXTENT OF TIE IN. IN NO CASE SHALL A BANK BE DE-STABILIZED OR UNDERMINED IN ORDER TO EXTEND TIE IN.
6. REMOVAL OF MATURE TREES IS NOT NECESSARY FOR TIE IN. ADJUST LOCATIONS TO PROTECT MATURE AND HEALTHY ROOT SYSTEMS.
7. IN PLAN FORM, THE STREAM IMPROVEMENT STRUCTURES SHOULD BE CRESCENT SHAPED IN THE UPSTREAM DIRECTION. DEPARTURE ANGLE FROM THE BANK IS ~ 20'.
8. POOLS SHOULD BE EXCAVATED BELOW EACH BOULDER STEP TO APPROXIMATELY 1.5X BANKFULL DEPTH - TAKE CARE AS TO AVOID UNDERMINING THE UPSTREAM AND DOWNSTREAM STREAM IMPROVEMENT STRUCTURES. POOLS SHOULD GENERALLY BE 1.1-1.5X BANKFULL WIDTH.
9. USE SPOIL FROM EXCAVATION TO BACKFILL THE STREAM IMPROVEMENT STRUCTURAL AND CREATE A FLOOD PRONE BENCH AREA.
10. MAINTAIN STREAM IMPROVEMENT STRUCTURE SPACING WITHIN THE RANGE OF VARIABILITY OBSERVED IN THE REFERENCE REACH.
11. BASE OF STREAM IMPROVEMENT STRUCTURE FOOTER ROCKS TO BE PLACED AT LEAST AS LOW AS THE DESIGNATED LOWER VAP (VERTICAL ADJUSTMENT PROFILE) TO ACCOMMODATE SCOUR.
12. MIMIC NATURAL IMBRICATION WITH THE PLACEMENT OF THE ROCKS SUCH THAT HEADER ROCKS ARE UPSTREAM OF AND ANGLED APPROXIMATELY 30-40' (DET.4) TO THE FOOTER ROCKS. FINISHED STREAM IMPROVEMENT STRUCTURES SHOULD BLEND INTO THE BED RATHER THAN EMERGING ABOVE THE BED WITH BARE ROCK FACES EXPOSED. USE NATURAL BOULDERS FOR TOP LAYER OF BOULDER STEP IF AVAILABLE.
13. CONSTRUCT THE STREAM IMPROVEMENT STRUCTURE SO THAT IT IS NOT FLAT ACROSS THE HEADER ROCK COURSE. A LOW FLOW CHANNEL SHALL BE CONSTRUCTED ALLOWING FOR VARIABLE PASSAGeways FOR FLOW MIMICKING NATURAL STEP CONDITIONS. OFFSET THE LOWEST POINTS OF EACH BOULDER STEP STRUCTURE TO CREATE MINOR SINUOSITY WITHIN THE LOW FLOW CHANNEL.
14. INTERLOCK ROCK TO ENSURE STABILITY WITHOUT CREATING A CHECK DAM.
15. REFER TO THE PROFILE FOR TOP OF STREAM IMPROVEMENT STRUCTURE ELEVATIONS ALONG THE STRUCTURE. THE TOP SURFACES OF STRUCTURE SHALL SLOPE UNIFORMLY BETWEEN THE SPOT ELEVATIONS SHOWN ON THE SITE PLAN. THE PROPOSED DESIGN OF THE STRUCTURES WILL MATCH THE GEOMORPHOLOGICAL FEATURES MEASURED AT THE REFERENCE REACH RELATED TO THIS SITE (E.G., POOL LENGTH, POOL DEPTH, ETC).
16. ALL HEADER ROCKS AND FOOTER ROCKS SHALL BE ANGULAR, FLAT OR CUBED IN SHAPE AND SHALL BE OF SUFFICIENT HARDNESS TO RESIST WEATHERING (POROUS OR SOFT ROCKS SHALL NOT BE USED). FOR HEADER ROCKS, THE OPPOSING SURFACES DEFINED BY THE A AND B AXES SHALL BE RELATIVELY FLAT AS NEEDED TO CREATE A UNIFORM SLOPE ON THE BOULDER STEP TOP SURFACE AND ALLOW SUFFICIENT CONTACT WITH FOOTER ROCKS. ROCKS WITH MORE ROUNDNESS MAY BE USED FOR FOOTER ROCKS, HOWEVER, AT LEAST ONE SURFACE DEFINED BY THE A AND B AXES SHALL BE RELATIVELY FLAT AS NEEDED TO ALLOW SUFFICIENT CONTACT WITH STEP ROCKS.
17. ROCKS WHICH FAILS TO MEET THE SIZE, SHAPE AND OR DURABILITY REQUIREMENTS WILL NOT BE ALLOWED. SIZING AND SHAPE TO BE DETERMINED BY STREAM RESTORATION DESIGNER AND SPECIFIED IN EACH INDIVIDUAL DESIGN.
18. FOR STEEPER BOULDER STEPS, THE DOWNSTREAM ENDS OF THE STEPS SHALL BE KEYED INTO THE STREAMBANK AT THE BANKFULL ELEVATION. ADDITIONAL FOOTER ROCKS SHALL BE PLACED SUCH THAT THE FRAGMENTS ABOUT THE DOWNSTREAM ENDS OF THE STEPS TO CREATE A CONTINUOUS MASS OF ROCK EXTENDING UP THE BANK. VOID SPACES SHALL BE CHINKED WITH SMALL BOULDERS, COBBLE OR ROCK FRAGMENTS AS NEEDED SUCH THAT NO VOIDS GREATER THAN FOUR INCHES IN SIZE ARE PRESENT.
19. FOOTER ROCKS SHALL BE FIRMLY KEYED INTO THE STREAMBED. HEADER ROCKS SHALL BEAR ON FOOTER ROCKS OFFSET FROM THE DOWNSTREAM VERTICAL FACE OF THE OVERLYING HEADER ROCK WITH A MINIMUM OVERLAP OF 6" AS SHOWN ON THE HEADER AND FOOTER ROCK OVERLAP DETAIL.
20. VOIDS BETWEEN FOOTER ROCKS AND BETWEEN FOOTER ROCKS AND HEADER ROCKS SHALL BE CHINKED WITH SMALL BOULDERS, COBBLE, OR ROCK FRAGMENTS SUCH THAT NO VOIDS GREATER THAN 4" IN SIZE WILL BE PRESENT.



**TROUT UNLIMITED**  
1700 N. Moore Street, Suite 2005, Arlington, VA 22209

**CULVERT REPLACEMENT**  
NAACC #95244

CLIENT: \_\_\_\_\_  
PROJECT: \_\_\_\_\_

DRAWN: J. FLEMING, DES  
DESIGNED: J. HUMPHREYS, TU  
CHECKED: T. BROWN, TU  
SCALE: AS SHOWN  
DATE: 02/24/2008  
PROJECT: TUL06-2908

NO.	DATE	REVISIONS
1	3/23	NYS DEC COMMENTS

SEAL

IT IS A VIOLATION OF THE LAW FOR ANY PERSON, UNLESS AUTHORIZED BY THE DESIGNER OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, OR LAND SURVEYOR TO ALTER OR SIGN ANY DRAWING OR SPECIFICATION OF ANY KIND. ANY PERSON WHO VIOLATES THIS LAW SHALL BE PENALIZED BY THE STATE OF VIRGINIA. ANY PERSON WHO VIOLATES THIS LAW SHALL BE PENALIZED BY THE STATE OF VIRGINIA. ANY PERSON WHO VIOLATES THIS LAW SHALL BE PENALIZED BY THE STATE OF VIRGINIA.

STREAM IMPROVEMENT  
STRUCTURE DETAILS

DRAWING NUMBER D30

GENERAL EROSION, SEDIMENT & POLLUTION CONTROL NOTES:

1. PERMITS: THE CONTRACTOR MUST KEEP ALL REQUIRED PERMITS ON THE JOB SITE AT ALL TIMES.
2. WATER MANAGEMENT PLAN: A CONTRACTOR'S PLAN SHOULD BE SUBMITTED AND APPROVED BY TU & NYSDEC PRIOR TO STARTING WORK.
3. WEATHER: THE CONTRACTOR WILL MONITOR THE WEATHER, RAINFALL AND STORM WARNINGS ISSUES BY THE NATIONAL WEATHER SERVICE THROUGHOUT THE PROJECT AND WILL REMOVE ALL EQUIPMENT AND MATERIALS THAT MAY BE AFFECTED BY FLOWS FROM THE STREAM.
4. MINIMIZE SEDIMENT PRODUCTION: THE CONTRACTOR MUST TAKE ALL NECESSARY STEPS TO MINIMIZE THE CREATION OF SEDIMENT AND ITS INTRODUCTION INTO THE STREAM.
5. PRE-CONSTRUCTION BARRIERS: TEMPORARY SEDIMENT CONTROL BARRIERS MUST BE INSTALLED BEFORE ANY GROUND-DISTURBING WORK BEGINS.
6. STREAM DIVERSION: STREAM FLOW MUST BE DIVERTED AROUND THE WORK AREA BEFORE ANY WORK THAT IMPACTS THE STREAM CHANNEL STARTS.
7. DEWATERING DISCHARGE: WATER PUMPED FROM FOOTING EXCAVATIONS MUST BE DISCHARGED ONTO A LEVEL, VEGETATED UPLAND AREA.
8. MINIMIZE EQUIPMENT STREAM CROSSINGS: THE CONTRACTOR MUST LIMIT THE NUMBER OF TIMES EQUIPMENT CROSSES FLOWING WATER.
9. MAINTAIN EROSION CONTROLS: THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL EROSION AND SEDIMENT CONTROL MEASURES IN GOOD WORKING ORDER UNTIL THEY ARE NO LONGER NEEDED.
10. POST-CONSTRUCTION REMOVAL AND STABILIZATION:
  - 10.1. UPON COMPLETION, THE CONTRACTOR MUST REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES.
  - 10.2. ALL DISTURBED AREAS MUST BE STABILIZED.
11. MANUFACTURER'S INSTRUCTIONS: EROSION AND SEDIMENT CONTROL MATERIALS MUST BE INSTALLED ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS.
12. SOFT SURFACE STABILIZATION: ALL DISTURBED SOFT SURFACE AREAS MUST BE STABILIZED USING SEED AND MULCH OR EROSION CONTROL BLANKETS UNTIL PERMANENT VEGETATION IS ESTABLISHED.
13. STEEP SLOPE STABILIZATION:
  - 13.1. DISTURBED SLOPES STEEPER THAN 3:1 THAT CANNOT BE SEEDED AND MULCHED BY OCTOBER 1ST, MUST BE SEEDED AND COVERED WITH EROSION AND SEDIMENT CONTROL FABRIC. THE FABRIC SHOULD BE NATURAL FIBERS THAT DO NOT INCLUDE PLASTIC.
  - 13.2. SEED SLOPES WITH SEED MIX AS OUTLINED IN THE SITE RESTORATION NOTES.
  - 13.3. THESE SLOPES MUST ALSO BE COVERED WITH EROSION CONTROL BLANKETS FOR OVERWINTER STABILIZATION.
14. PREVENT CHEMICAL SPILLS: THE CONTRACTOR MUST TAKE ALL NECESSARY PRECAUTIONS TO PREVENT SPILLS OF CHEMICAL POLLUTANTS, INCLUDING BUT NOT LIMITED TO FUEL, OIL, GREASE, AND HYDRAULIC FLUID. A SPILL KIT MUST BE KEPT ON-SITE AT ALL TIMES.
15. LEAK-FREE EQUIPMENT: ALL EQUIPMENT USED ON THE PROJECT MUST BE FREE OF LEAKS AND EXCESSIVE DEPOSITS OF MATERIALS SUCH AS FUEL, HYDRAULIC FLUID, OIL, AND OTHER LUBRICANTS.
16. INVASIVE SPECIES BEST MANAGEMENT PRACTICES: TO PREVENT THE UNINTENTIONAL INTRODUCTION OR SPREAD OF INVASIVE SPECIES, AS DEFINED BY THE PROHIBITED AND REGULATED INVASIVE SPECIES REGULATIONS (6 NYCRR PART 575), ALL CONSTRUCTION EQUIPMENT (E.G. VEHICLES, TRAILERS, MACHINERY, MATTING, TOOLS, WATERCRAFT, ETC.) AND PERSONAL GEAR (E.G. CLOTHING AND FOOTWEAR) SHALL BE THOROUGHLY CLEANED OF MUD, SEEDS, VEGETATION, ROOTS, RHIZOMES, EGG MASSES, AND OTHER DEBRIS BEFORE ENTERING AND EXITING ANY APPROVED CONSTRUCTION AND DISTURBANCE AREAS. ALL INVASIVE SPECIES PLANT PARTS AND PROPAGULES THAT ARE REMOVED FROM EQUIPMENT MUST BE DESTROYED OR CONTAINED TO PREVENT SPREADING TO OTHER LOCATIONS. TO THE MAXIMUM EXTENT PRACTICABLE, STAGING AREAS WILL BE ESTABLISHED IN AN AREA FREE OF INVASIVE SPECIES.

CONSTRUCTION SEQUENCING:

- SEDIMENT CONTROL MEASURES, WATER DIVERSION PRACTICES AND ASSOCIATED CHANNEL AND BANK CONSTRUCTION WILL BE COMPLETED IN THE FOLLOWING SEQUENCE:
1. EROSION CONTROL: TU APPROVAL REQUIRED FOR ALL SEDIMENT AND EROSION CONTROLS AND INCLUDES ALL PRACTICES TO PROTECT WATER QUALITY AS PER PERMIT REQUIREMENTS.
  2. SPILL PREVENTION: ON-SITE SPILL KITS AND NYS DEC PROTOCOL TRAINING ARE MANDATORY.
  3. MATERIAL STAGING: MAINTAIN STAGE MATERIALS IN APPROVED UPLAND AREA TO PREVENT RUNOFF, USING SILT SOCKS OR STRAW BALES AS NEEDED, AVOIDING STAGING IN HIGH-FLOW AREAS.
  4. TREE REMOVAL: PROTECT EXISTING VEGETATION AND MINIMIZE TREE REMOVAL OUTSIDE OF THE PROJECT PLANS AND PERMIT REQUIREMENTS, PRESERVE MATURE TREES (>12 IN) AND ONLY REMOVING TREES PER PLAN OR FOR SAFETY. USE REMOVED TREES FOR STREAM IMPROVEMENT.
  5. WORK LIMITS: STAY WITHIN DESIGNATED DISTURBANCE AREAS MARKED ON PLANS AND IN THE FIELD.
  6. WORK PROGRESSION: BEGIN DOWNSTREAM, STABILIZING ACCESS POINTS FIRST, AND PROCEED UPSTREAM UNLESS TU FIELD REPRESENTATIVE DECIDES DIFFERENTLY.
  7. DAILY COMPLETION: ONLY START WORK THAT CAN BE FINISHED AND STABILIZED BY DAY'S END.
  8. RAIN RESTRICTIONS: NO IN CHANNEL WORK DURING A DOWNPOUR OR FLOODING CONDITIONS. ENSURE THAT SITE IS STABILIZED AHEAD OF PREDICTED HEAVY RAINS.
  9. EQUIPMENT MOVEMENT: AVOID UNNECESSARY EQUIPMENT MOVEMENT WITHIN THE CHANNEL.
  10. RESTORATION COMPLIANCE: IMPLEMENT ALL RESTORATION MEASURES PER PLANS, WITH TU, NYS DEC AND LANDOWNER APPROVAL PRIOR TO DEMOBILIZATION.
  11. POST-CONSTRUCTION RESTORATION: REGRADE, MULCH, AND SEED ALL DISTURBED AREAS PER THE SITE RESTORATION NOTES BELOW.

SITE RESTORATION NOTES:

1. POST GRADING SEEDING/MULCHING: AFTER ROUGH GRADING IS COMPLETE, THE CONTRACTOR MUST SEED AND MULCH, OR INSTALL EROSION CONTROL BLANKETS ON ALL DISTURBED AREAS OUTSIDE THE STREAM CHANNEL THAT ARE NOT SHOWN ON THE PROJECT PLANS. ALL SEEDING & MULCHING SHALL BE COMPLETED WITHIN 1 DAY OF FINISH GRADING.
2. SEEDBED PREPARATION: ALL SURFACE TO BE SEEDED MUST BE SMOOTH AND FREE OF LARGE ROCKS.
3. SEED TYPE & APPLICATION: APPLY THE RECOMMENDED CONSERVATION SEED MIX, BELOW, AT A RATE OF 95 LBS/ACRE (2.2 LBS/1000 SFT):
  - CANADA WILD RYE (ELYMUS CANADENSIS)
  - LITTLE BLUESTEM (SCHIZACHYRIUM SCOPARIUM)
  - INDIAN GRASS (SORGHASTRUM NUTANS)
  - SWITCH GRASS (PANICUM VIRGATUM)
  - PERENNIAL RYEGRASS (LOLIUM PERENNEL)
  - ANNUAL RYEGRASS (LOLIUM MULTIFLORUM)
4. MULCHING: APPLY STRAW MULCH IMMEDIATELY AFTER SEEDING AT A RATE OF 2 TONS PER ACRES (2-3 BALES PER 1000 SF). ENSURE UNIFORM COVER OVER ALL SEEDED AREAS. MULCH MUST BE FREE OF MOLD, NOXIOUS SEEDS, MUSTY ODORS, CAKING, DECAY, AND EXCESSIVE DUST.
5. EROSION CONTROL BLANKETS: BLANKETS SHALL BE INSTALLED ON SLOPES. BLANKETS SHALL CONTAIN NO PLASTIC NETTING. EMBED THE UPSLOPE END OF THE BLANKETS BELOW GROUND AND ANCHOR BLANKETS WITH STAPLES ACCORDING TO THE MFG'S INSTRUCTIONS.



CLIENT: TROUT UNLIMITED  
 1700 N. McCree Street, Suite 2005, Arlington, VA 22209  
 PROJECT: CULVERT REPLACEMENT  
 NAACC #95244

DRAWN: J. FLEMING, CFS  
 DESIGNED: J. FLEMING, CFS  
 CHECKED: J. BRUNN, TU  
 SCALE: AS SHOWN  
 DATE: 01/13/23  
 PROJECT: 11-02

NO.	DATE	REVISIONS
1	3/23	NYS DEC COMMENTS

SEAL

IT IS A VIOLATION OF THE LAW FOR ANY PERSON UNLESS ACTING UNDER THE SUPERVISION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, OR LAND SURVEYOR TO ALTER AN SEAL OR SIGN IF ALTERED THE SEALING ENGINEER ARCHITECT OR LAND SURVEYOR'S OR SIGN SIGNATURE SHALL STAMP THE ORIGINAL AND INCLUDE THE REASON THEREFOR BY FOLLOWING BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

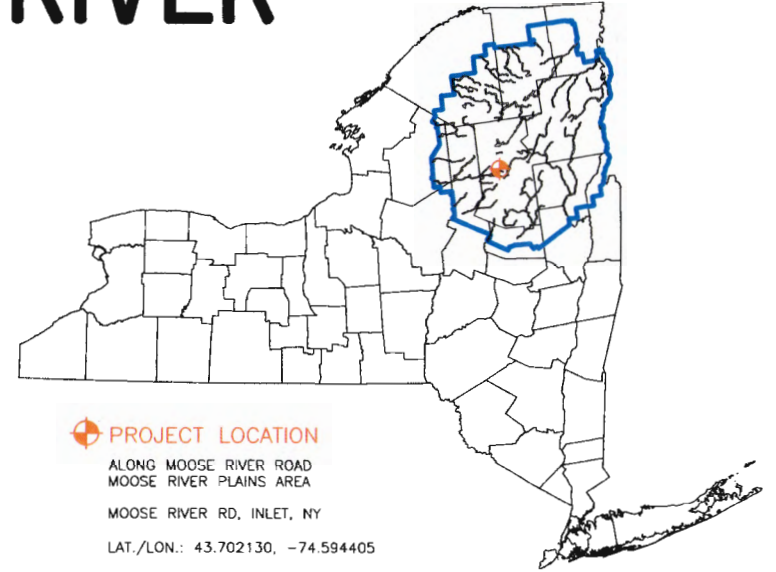
DRAWING TITLE  
 EROSION & SEDIMENT CONTROL NOTES

DRAWING NUMBER: D40



# SOUTH BRANCH MOOSE RIVER

## TROUT UNLIMITED CULVERT REPLACEMENT PROJECT TOWN OF ARIETTA HAMILTON COUNTY, NY



NAACC #105306

PROJECT PERMIT PLANS  
JANUARY 27, 2026

REVISED MARCH 24, 2026

PREPARED FOR:



DESIGNED BY:



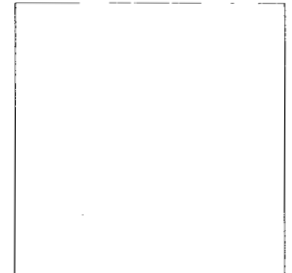
DRAFTED BY:



### PLAN SHEET INDEX:

- G1.0 GENERAL NOTES & QUANTITIES
- C1.0 EXISTING CONDITIONS PLAN & PROFILE
- C2.0 PROPOSED LAYOUT PLAN & PROFILE
- D1.0 PIPE & ROADWAY DETAILS
- D2.0 STREAM IMPROVEMENT STRUCTURE DETAILS
- D4.0 EROSION & SEDIMENT CONTROL NOTES
- D4.1 EROSION & SEDIMENT CONTROL DETAILS

ENGINEERS SEAL:





CLIENT: **TROUT UNLIMITED**  
 PROJECT: 1700 V. Moore Street, Suite 2305, Arlington, VA 22209  
**SOUTH BRANCH MOOSE RIVER  
 CULVERT REPLACEMENT  
 NAACC #105306**

DRAWN: [ ] FIRMING OPS  
 DESIGNED: [ ] FIRMING OPS  
 CHECKED: [ ] FIRMING OPS  
 SCALE: [ ] AS SHOWN  
 DATE: 02/22/2016  
 PROJECT: [ ] JOB

NO.	DATE	REVISIONS
1	3/24	NYS DEC COMMENTS

SEAL

IT IS A VIOLATION OF THE LAW FOR ANY PERSON UNLESS ACTING UNDER THE SUPERVISION OF A LICENSED PROFESSIONAL ENGINEER ARCHITECT OR LAND SURVEYOR TO ALTER OR ADD TO ANY PART OF ANY PLAN DRAWING OR SPECIFICATION OF A LICENSED PROFESSIONAL ARCHITECT OR ENGINEER OR LAND SURVEYOR WITHOUT THE WRITTEN CONSENT OF THE ARCHITECT OR ENGINEER OR LAND SURVEYOR WHOSE NAME IS ON THE ORIGINAL SET OF SUCH ALTERNATION AND A SPECIFIC DESCRIPTION OF THE ALTERNATION DRAWING TITLE.

GENERAL NOTES  
& QUANTITIES

DRAWING NUMBER 610

**GENERAL CONSTRUCTION NOTES:**

- ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE LATEST EDITION OF THE STATE OF NEW YORK AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION.
- ROAD WILL BE CLOSED TO TRAFFIC DURING CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ROAD CLOSURE SIGNS & BARRICADES THROUGHOUT CONSTRUCTION.
- BEFORE ORDERING MATERIALS, CONTRACTOR SHALL REVIEW ALL CONSTRUCTION DOCUMENTS, INCLUDING SHOP DRAWINGS, AND OTHER RELATED DOCUMENTS, TO VERIFY AND COORDINATE DIMENSIONS, LOCATIONS, PLACEMENT, AND APPLICABILITY OF BRIDGE COMPONENTS. THE CONTRACTOR SHALL MAKE FIELD CHECKS TO VERIFY THE ACCURACY OF DIMENSIONS, TOPOGRAPHY, AND OTHER EXISTING CONDITIONS. IF THERE IS ANY DISCREPANCY IN THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER AS SOON AS POSSIBLE.
- CONTRACTOR IS RESPONSIBLE FOR ADEQUATE BRACING OF STRUCTURAL MEMBERS, WALLS, AND NON-STRUCTURAL ITEMS DURING CONSTRUCTION. JOB-SITE SAFETY CONDITIONS, INCLUDING, BUT NOT LIMITED TO, LATERAL STABILITY AND WIND BRACING, SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
- STRUCTURE IS TO BE DESIGNED FOR HL-93 LIVE LOADING IN ACCORDANCE WITH AASHTO LRFD SPECIFICATIONS.
- THE CONTRACTOR SHALL REVIEW ALL SHOP DRAWINGS BEFORE SUBMISSION TO THE ENGINEER; THUS, PROVIDING ANY INFORMATION REQUIRED OF THE FABRICATOR SUCH AS FIELD DIMENSIONS, ELEVATIONS, ETC.
- ABUTMENT FOOTING BLOCKS SHALL BEAR ON UNDISTURBED SOIL HAVING A MINIMUM BEARING CAPACITY OF 2,500 PSF, OR ON CONTROLLED ENGINEERED FILL, OR ON SOUND LEVEL ROCK. NOTIFY THE ENGINEER IF UNSUITABLE MATERIAL IS ENCOUNTERED. SOIL UNIT WEIGHT ASSUMED FOR DESIGN = 120 PCF.
- ALL BACKFILL ADJACENT TO ABUTMENTS SHALL BE WELL COMPACTED FREE DRAINING STRUCTURAL FILL WITHOUT COBBLES AND/OR BOULDERS. STRUCTURAL BACKFILL SHALL BE IN ACCORDANCE WITH AASHTO M145 SOIL CLASSIFICATION A-1, A-2 OR A-3. STRUCTURAL BACKFILL SHALL BE COMPACTED IN 6"-8" LIFTS TO 90% MAX DENSITY PER AASHTO T99.
- SCARIFY AND COMPACT NATIVE BASE MATERIAL UNDER ABUTMENT FOOTINGS TO 95% OF THE MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT, ASTM D1557.
- THE CONTRACTOR SHALL THOROUGHLY CLEAN THE PREMISES AT COMPLETION OF WORK AND AT TIMES AS DIRECTED BY THE OWNER. LEGALLY DISPOSE OF EXCESS MATERIAL OFF SITE. INSTALL SITE PROTECTION AND ISOLATION FENCES DURING CONSTRUCTION.
- SURFACE DRAINAGE SHALL BE DIRECTED AWAY FROM THE BRIDGE.
- BASIC CONSTRUCTION STANDARDS FOR STORAGE OF MATERIALS, SAFETY PROTECTION, PROTECTION OF NEIGHBORING PROPERTIES, AND RECLAMATION OF DISTURBED AREAS SHALL BE FOLLOWED. ALL LANDSCAPING MUST BE RETURNED TO THE ORIGINAL CONDITION.
- DETAILS SHOWN ON ANY DRAWINGS ARE TO BE CONSIDERED TYPICAL FOR ALL SIMILAR CONDITIONS, UNLESS OTHERWISE NOTED.
- PRIOR TO BEGINNING CONSTRUCTION THE FOLLOWING PEOPLE SHALL BE NOTIFIED:  
 A. PROJECT ENGINEER AND TROUT UNLIMITED  
 B. PROJECT OWNER  
 IF WORK IS DELAYED FOR A SIGNIFICANT PERIOD, THE SAME PEOPLE SHALL BE CONTACTED AGAIN PRIOR TO RESTART.
- INVESTIGATE ABOVE SURFACE SITE CONDITIONS PRIOR TO BEGINNING WORK. NOTED AND/OR OBSERVABLE SUBSURFACE IMPROVEMENTS SUCH AS UTILITIES, WATER LINES, AND CULVERTS SHALL BE AVOIDED AND REPAIRED AND/OR REPLACED AS NEEDED. REPAIR OF UNFORESEEN SUBSURFACE IMPROVEMENTS WILL BE NEGOTIATED. DISTURBED AND DAMAGED PROPERTY MUST BE REPLACED AND/OR REPAIRED TO THE SATISFACTION OF THE OWNER AND ENGINEER.
- ALL EXCAVATION AND BACKFILLING SHALL BE COMPLETED AS SOON AS POSSIBLE. OPEN TRENCHES SHALL BE PROPERLY BARRICADED AND WARNED PER OSHA REGULATIONS.

**BID ITEM SCHEDULE**

#	Item	Unit	Quantity	Estimate	Responsibility
1	Mobilization and demobilization	EACH	1		Contractor
2	Remove existing pipe	EACH	1		Contractor
3	Haul existing culvert offsite	EACH	1		Municipality
4	Install water control plan and pump around	EACH	1		Contractor
5	Install and Maintain E&S control practices	EACH	1		Contractor
6	Excavation (total material for culvert and	CY	200		TU
7	Procure structure	EACH	1		TU
8	Procure abutments	EACH	0		Contractor
9	Gravel (pipe foundation material)	CY	26		Contractor
10	Install abutments	EACH	0		Contractor
11	Install culvert	EACH	1		Contractor
12	Procure rock	TONS	80		Contractor
13	Install rock grade controls	EACH	5		Contractor
14	Install rock wing walls	EACH	4		Contractor
15	Restore site access, stream bank slope	ACRE	0.02		Contractor
16	Procure seed for site restoration	lb	1.9		Contractor
17	Procure straw mulch for site restoration (3	EACH	10		Contractor
18	Restore road	SF	1440		Municipality

**GENERAL CONSTRUCTION SEQUENCE:**

- CONTRACTOR SHALL ESTABLISH THE CONSTRUCTION MATERIAL AND EQUIPMENT STAGING AREA AS SHOWN ON THE PLANS AND APPROVED BY THE ENGINEER.
- INSTALL EROSION & SEDIMENT CONTROL DEVICES. NYS DEC SHALL INSPECT DEVICES PRIOR TO STARTING WORK.
- REMOVE EXISTING VEGETATION ONLY AS NECESSARY FOR CONSTRUCTION. ONLY MARKED TREES SHALL BE REMOVED.
- EXCAVATE AND REMOVE EXISTING CULVERT STRUCTURE.
- INSTALL NEW PIPE CULVERT & CONSTRUCT STACKABLE STONE HEADWALLS.
- COMPLETE GRADE CONTROL STRUCTURES AND STREAM WORK.
- CONSTRUCT ROADWAY RECONSTRUCTION.
- RESTORE AREAS DISTURBED AS A RESULT OF CONSTRUCTION.
- DEMobilize ANY REMAINING MATERIALS & EQUIPMENT
- REMOVE EROSION CONTROL DEVICES AFTER SITE HAS BEEN ESTABLISHED AND AS APPROVED BY THE ENGINEER.

**CALCULATED IMPACTS:**

TOTAL LENGTH OF STREAM IMPACT:	83± LF	
TOTAL LENGTH OF ROADWAY IMPACT:	83± LF	(INCLUDES STRUCTURE)
TEMPORARY DISTURBANCE IMPACT:	2,800± SF	(AREA SHOWN ON PLANS)
AREA OF FILL BELOW OHW:	571± SF	(SIS & STRUCTURE)
VOLUME OF FILL BELOW OHW:	42± CY	

**WETLAND AREAS:**

TOTAL APA WETLAND AREA:	24 SF
PERMANENT WETLAND IMPACTS:	4 SF
TEMPORARY WETLAND IMPACTS:	20 SF



CLIENT: TROUT UNLIMITED  
 1700 N. Moore Street, Suite 2005, Arlington, VA, 22209

PROJECT: SOUTH BRANCH MOOSE RIVER  
 CULVERT REPLACEMENT  
 NAACC #105306

DESIGNED BY: J. FLEMING, DES  
 CHECKED BY: J. HUMPHREYS, TU  
 SCALE: AS SHOWN  
 DATE: 01/22/2008  
 PROJECT: TULOR

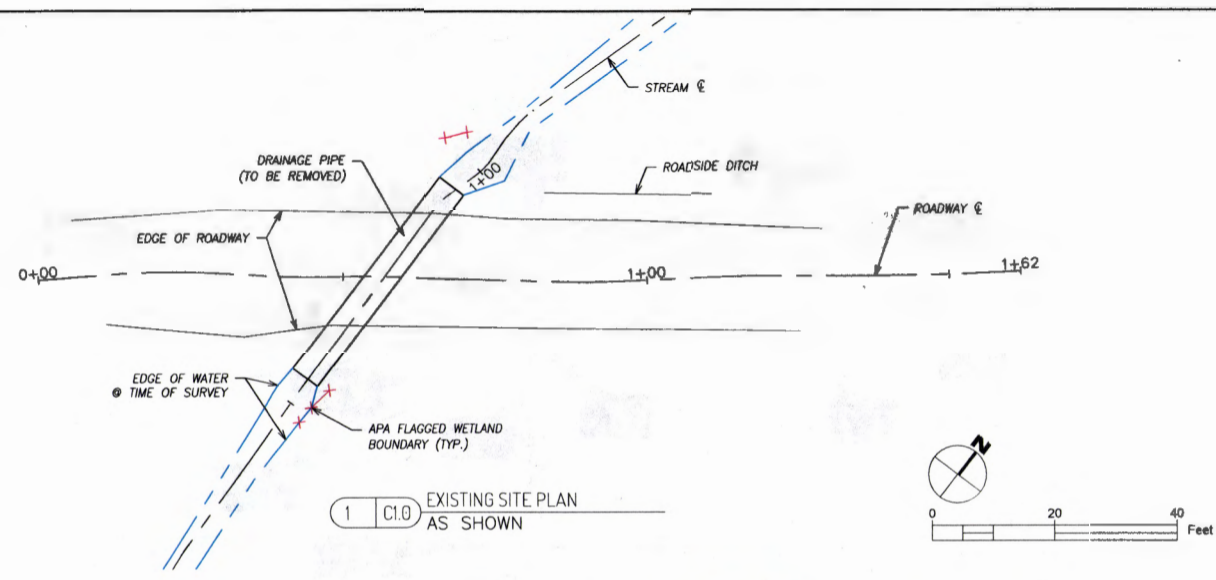
NO.	DATE	REVISIONS
1	3/24	MYS DEC COMMENTS

SEAL

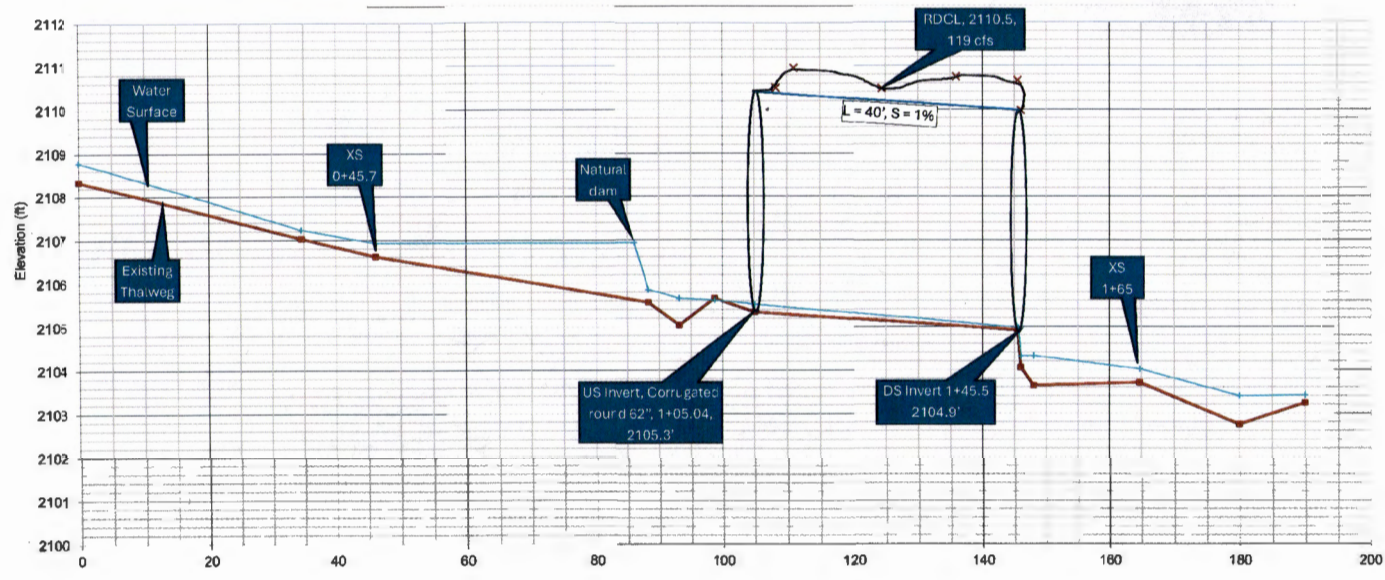
IT IS A VIOLATION OF THE LAW FOR ANY PERSON UNLESS ACTING UNDER THE SUPERVISION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, OR LAND SURVEYOR TO PLACE AN SEAL OR SIGN ON ANY DRAWING OR SPECIFICATION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, OR LAND SURVEYOR. ANY PERSON WHO VIOLATES THIS SECTION OF THE PENAL CODE SHALL BE SUBJECT TO A FINE OF UP TO \$10,000 AND IMPRISONMENT FOR UP TO 12 MONTHS OR BOTH. THE SEALS OF SUCH ALTERNATE SHALL BE SUBJECT TO THE DISCRETION OF THE BOARD OF PROFESSIONAL ENGINEERS AND ARCHITECTS.

EXISTING CONDITIONS

DRAWING NUMBER C1.0



1 C1.0 EXISTING SITE PLAN AS SHOWN



2 C1.0 EXISTING STREAM PROFILE NOT TO SCALE



CLIENT: **TROUT UNLIMITED**  
 1700 N. Moore Street, Suite 2005, Arlington, VA 22209

PROJECT: **SOUTH BRANCH MOOSE RIVER  
 CULVERT REPLACEMENT  
 NAACC #105306**

DRAWN: J FLEMING, DES.  
 DESIGNED: J HUNNIPRE, P.S., T.U.  
 CHECKED: T. BROWN, T.U.  
 SCALE: AS SHOWN  
 DATE: 01/22/2016  
 PROJECT: T.U. DR.

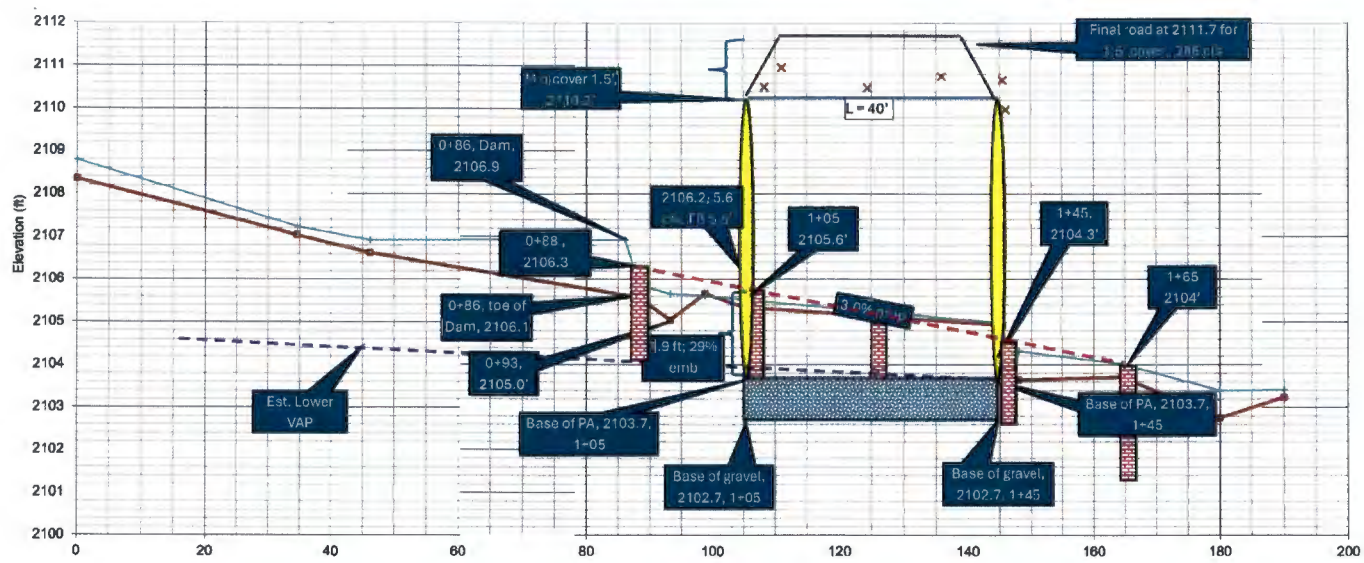
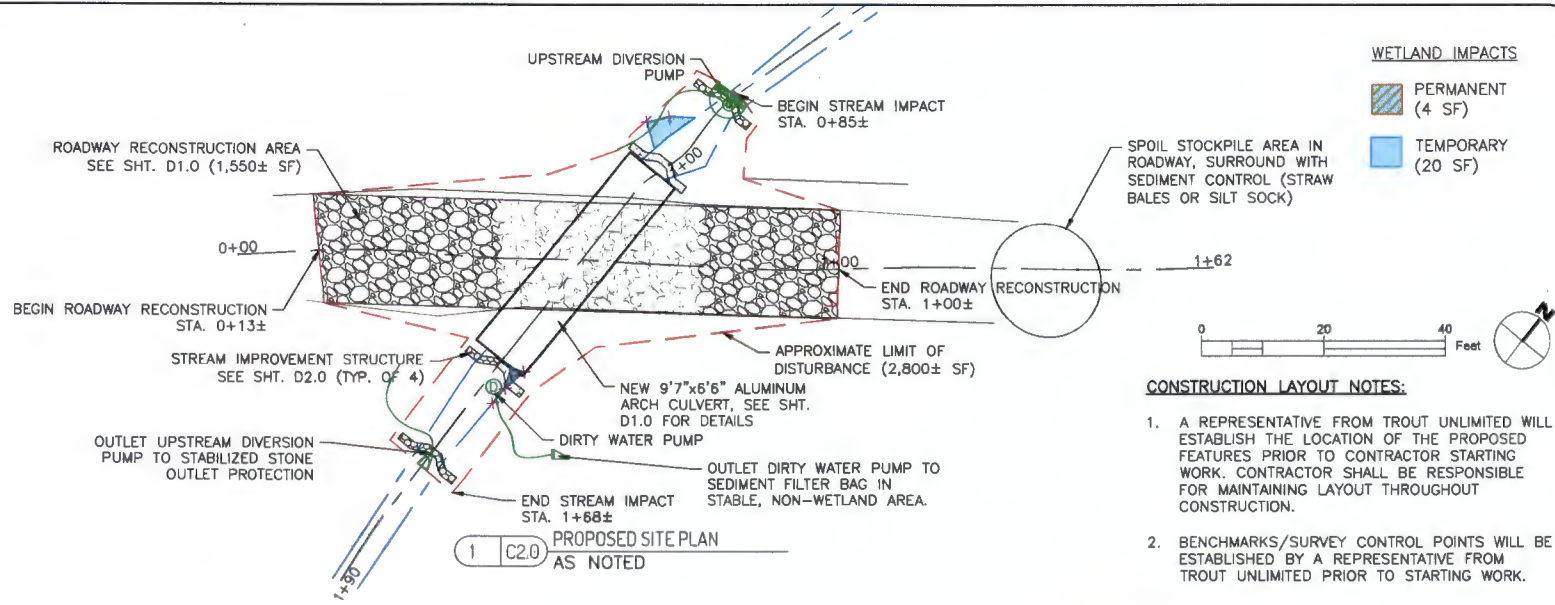
NO.	DATE	REVISIONS
1	3/24	HYS DEC COMMENTS

SEAL

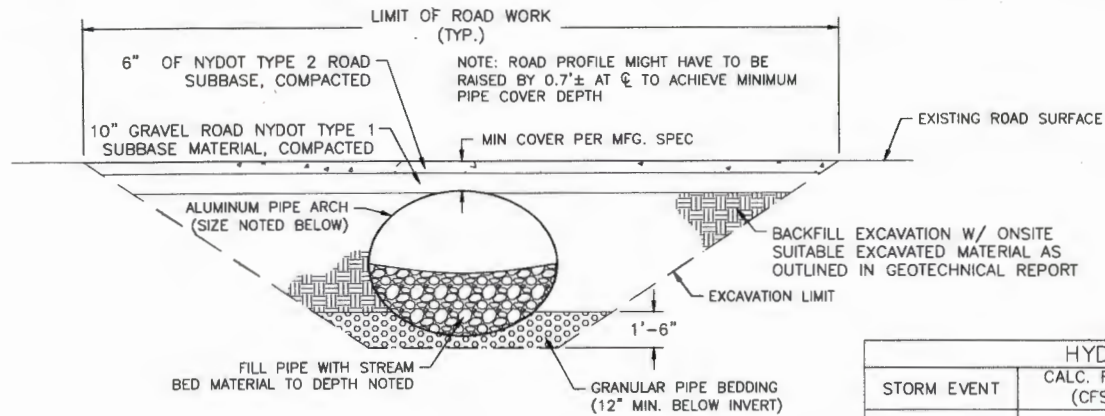
IT IS A VIOLATION OF THE LAW FOR ANY PERSON, UNLESS ACTING UNDER THE SUPERVISION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, OR LAND SURVEYOR, TO PREPARE OR SIGN ANY SET OF PLANS OR SPECIFICATIONS FOR THE CONSTRUCTION OF A STRUCTURE, OR ALTERED OR LAND IMPROVEMENT, WITHOUT BEING A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, OR LAND SURVEYOR. SHALL KEEP THE ORIGINAL AND ALL COPIES OF SUCH ALTERNATE, AND A BRIEF DESCRIPTION OF THE REASON FOR SUCH ALTERATION.

DRAWING TITLE  
**PROPOSED CONDITIONS  
 & NOTES**

DRAWING NUMBER **C20**



**2 C20 PROPOSED STREAM PROFILE AS NOTED**



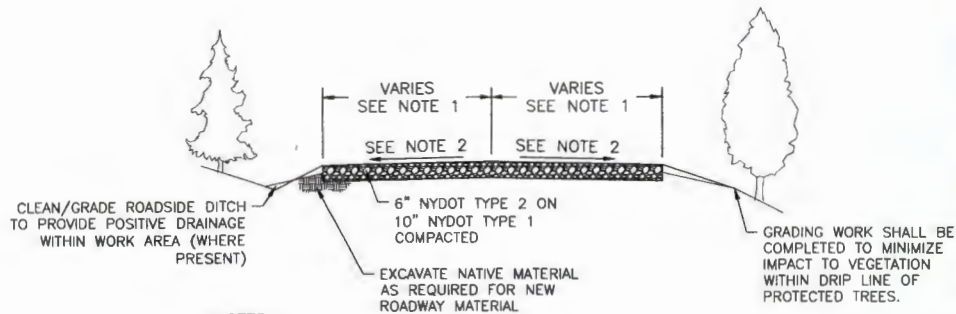
PIPE ARCH SHALL BE AN ALUMINUM STRUCTURAL PLATE PIPE-ARCH 9'-7"x6'-6" AS MANUFACTURED BY CONTECH CONSTRUCTION PRODUCTS, INC.

PIPE ARCH SHALL BE FILLED TO THE ELEVATIONS AS SHOW ON THE PROPOSED PROFILE (SHEET C2.0)

HYDRAULIC TABLE			
STORM EVENT	CALC. FLOW (CFS)	FLOW ELEV. @ STRUCT. (FT)	CALC. FREEBOARD (FT)
2%	5.6	2,106.2	5.5

FREEBOARD CALCULATED TO TOP OF ROAD.

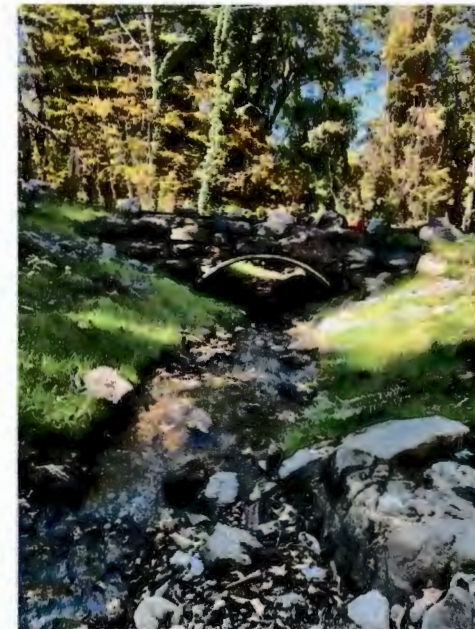
1 2.0 STRUCTURE ELEVATION VIEW NOT TO SCALE



**NOTES:**

1. MATCH EXISTING ROADWAY WIDTH AT LIMIT OF RECONSTRUCTION AS SHOWN ON THE PLANS. PROVIDE LINEAR TRANSITION TO MEET BRIDGE/STRUCTURE WIDTH (18' TYP.).
2. MATCH EXISTING CROSS SLOPE AT THE LIMIT OF RECONSTRUCTION. TRANSITION TO BRIDGE/STRUCTURE SLOPE. MAINTAIN 2% CROSS-SLOPE WHENEVER POSSIBLE TO PROMOTE DRAINAGE.

2 2.0 TYPICAL ROADWAY SECTION NOT TO SCALE



3 2.0 TYPICAL CULVERT ABUTMENT NOT TO SCALE



**TROUT UNLIMITED**  
 CLIENT: 1700 N. Moore Street, Suite 2005, Arlington, VA, 22209  
 PROJECT: SOUTH BRANCH MOOSE RIVER BASIN CULVERT REPLACEMENT NAACC #165306

DRAWN: J. FLEMIUS, DES.  
 DESIGNED: J. HUNTER, DES. TU  
 CHECKED: T. BROWN, TU  
 SCALE: AS SHOWN  
 DATE: 01/27/2008  
 PROJECT: TU, OR

NO.	DATE	REVISIONS
1	3/24	NYS DEC COMMENTS

SEAL

I, AS A MEMBER OF THE LAW FOR ANY PERSON, UNDER THE PENALTY OF PERJURY, CERTIFY UNDER THE OATH OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LAND SURVEYOR, OR AS A REGISTERED PROFESSIONAL GEODETIC ENGINEER, THAT I AM THE DESIGNER OF THE PROJECT AND I HAVE REVIEWED THE DRAWING AND I AM AWARE OF THE CONTENTS THEREOF. I HEREBY CERTIFY THAT I AM A MEMBER OF THE PROFESSIONAL SOCIETY OF ENGINEERS AND ARCHITECTS OF THE STATE OF NEW YORK. I HEREBY CERTIFY THAT I AM A MEMBER OF THE PROFESSIONAL SOCIETY OF ENGINEERS AND ARCHITECTS OF THE STATE OF NEW YORK. I HEREBY CERTIFY THAT I AM A MEMBER OF THE PROFESSIONAL SOCIETY OF ENGINEERS AND ARCHITECTS OF THE STATE OF NEW YORK.

DRAWING TITLE  
 PIPE STRUCTURE  
 DETAILS

DRAWING NUMBER 01.0



**GENERAL EROSION & SEDIMENT CONTROL NOTES:**

1. PERMITS: THE CONTRACTOR MUST KEEP ALL REQUIRED PERMITS ON THE JOB SITE AT ALL TIMES.
2. WATER MANAGEMENT PLAN: A CONTRACTOR'S PLAN SHOULD BE SUBMITTED AND APPROVED BY TU & NYSDEC PRIOR TO STARTING WORK.
3. WEATHER: THE CONTRACTOR WILL MONITOR THE WEATHER, RAINFALL AND STORM WARNINGS ISSUES BY THE NATIONAL WEATHER SERVICE THROUGHOUT THE PROJECT AND WILL REMOVE ALL EQUIPMENT AND MATERIALS THAT MAY BE AFFECTED BY FLOWS FROM THE STREAM.
4. MINIMIZE SEDIMENT PRODUCTION: THE CONTRACTOR MUST TAKE ALL NECESSARY STEPS TO MINIMIZE THE CREATION OF SEDIMENT AND ITS INTRODUCTION INTO THE STREAM.
5. PRE-CONSTRUCTION BARRIERS: TEMPORARY SEDIMENT CONTROL BARRIERS MUST BE INSTALLED BEFORE ANY GROUND-DISTURBING WORK BEGINS.
6. STREAM DIVERSION: STREAM FLOW MUST BE DIVERTED AROUND THE WORK AREA BEFORE ANY WORK THAT IMPACTS THE STREAM CHANNEL STARTS.
7. DEWATERING DISCHARGE: WATER PUMPED FROM FOOTING EXCAVATIONS MUST BE DISCHARGED ONTO A LEVEL, VEGETATED UPLAND AREA.
8. MINIMIZE EQUIPMENT STREAM CROSSINGS: THE CONTRACTOR MUST LIMIT THE NUMBER OF TIMES EQUIPMENT CROSSES FLOWING WATER.
9. MAINTAIN EROSION CONTROLS: THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL EROSION AND SEDIMENT CONTROL MEASURES IN GOOD WORKING ORDER UNTIL THEY ARE NO LONGER NEEDED.
10. POST-CONSTRUCTION REMOVAL AND STABILIZATION:
  - 10.1. UPON COMPLETION, THE CONTRACTOR MUST REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES.
  - 10.2. ALL DISTURBED AREAS MUST BE STABILIZED.
11. MANUFACTURER'S INSTRUCTIONS: EROSION AND SEDIMENT CONTROL MATERIALS MUST BE INSTALLED ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS.
12. SOFT SURFACE STABILIZATION: ALL DISTURBED SOFT SURFACE AREAS MUST BE STABILIZED USING SEED AND MULCH OR EROSION CONTROL BLANKETS UNTIL PERMANENT VEGETATION IS ESTABLISHED.
13. STEEP SLOPE STABILIZATION:
  - 13.1. DISTURBED SLOPES STEEPER THAN 3:1 THAT CANNOT BE SEEDED AND MULCHED BY OCTOBER 1ST, MUST BE SEEDED AND COVERED WITH EROSION AND SEDIMENT CONTROL FABRIC. THE FABRIC SHOULD BE NATURAL FIBERS THAT DO NOT INCLUDE PLASTIC.
  - 13.2. SEED SLOPES WITH SEED MIX AS OUTLINED IN THE SITE RESTORATION NOTES.
  - 13.3. THESE SLOPES MUST ALSO BE COVERED WITH EROSION CONTROL BLANKETS FOR OVERWINTER STABILIZATION.
14. PREVENT CHEMICAL SPILLS: THE CONTRACTOR MUST TAKE ALL NECESSARY PRECAUTIONS TO PREVENT SPILLS OF CHEMICAL POLLUTANTS, INCLUDING BUT NOT LIMITED TO FUEL, OIL, GREASE, AND HYDRAULIC FLUID. A SPILL KIT MUST BE KEPT ON-SITE AT ALL TIMES.
15. LEAK-FREE EQUIPMENT: ALL EQUIPMENT USED ON THE PROJECT MUST BE FREE OF LEAKS AND EXCESSIVE DEPOSITS OF MATERIALS SUCH AS FUEL, HYDRAULIC FLUID, OIL, AND OTHER LUBRICANTS.
16. INVASIVE SPECIES BEST MANAGEMENT PRACTICES: TO PREVENT THE UNINTENTIONAL INTRODUCTION OR SPREAD OF INVASIVE SPECIES, AS DEFINED BY THE PROHIBITED AND REGULATED INVASIVE SPECIES REGULATIONS (6 NYCRR PART 575), ALL CONSTRUCTION EQUIPMENT (E.G. VEHICLES, TRAILERS, MACHINERY, MATTING, TOOLS, WATERCRAFT, ETC.) AND PERSONAL GEAR (E.G. CLOTHING AND FOOTWEAR) SHALL BE THOROUGHLY CLEANED OF MUD, SEEDS, VEGETATION, ROOTS, RHIZOMES, EGG MASSES, AND OTHER DEBRIS BEFORE ENTERING AND EXITING ANY APPROVED CONSTRUCTION AND DISTURBANCE AREAS. ALL INVASIVE SPECIES PLANT PARTS AND PROPAGULES THAT ARE REMOVED FROM EQUIPMENT MUST BE DESTROYED OR CONTAINED TO PREVENT SPREADING TO OTHER LOCATIONS. TO THE MAXIMUM EXTENT PRACTICABLE, STAGING AREAS WILL BE ESTABLISHED IN AN AREA FREE OF INVASIVE SPECIES.

**CONSTRUCTION SEQUENCING:**

- SEDIMENT CONTROL MEASURES, WATER DIVERSION PRACTICES AND ASSOCIATED CHANNEL AND BANK CONSTRUCTION WILL BE COMPLETED IN THE FOLLOWING SEQUENCE:
1. EROSION CONTROL: TU APPROVAL REQUIRED FOR ALL SEDIMENT AND EROSION CONTROLS AND INCLUDES ALL PRACTICES TO PROTECT WATER QUALITY AS PER PERMIT REQUIREMENTS.
  2. SPILL PREVENTION: ON-SITE SPILL KITS AND NYS DEC PROTOCOL TRAINING ARE MANDATORY.
  3. MATERIAL STAGING: MAINTAIN STAGE MATERIALS IN APPROVED UPLAND AREA TO PREVENT RUNOFF, USING SILT SOCKS OR STRAW BALES AS NEEDED, AVOIDING STAGING IN HIGH-FLOW AREAS.
  4. TREE REMOVAL: PROTECT EXISTING VEGETATION AND MINIMIZE TREE REMOVAL OUTSIDE OF THE PROJECT PLANS AND PERMIT REQUIREMENTS, PRESERVE MATURE TREES (>12 IN) AND ONLY REMOVING TREES PER PLAN OR FOR SAFETY. USE REMOVED TREES FOR STREAM IMPROVEMENT.
  5. WORK LIMITS: STAY WITHIN DESIGNATED DISTURBANCE AREAS MARKED ON PLANS AND IN THE FIELD.
  6. WORK PROGRESSION: BEGIN DOWNSTREAM, STABILIZING ACCESS POINTS FIRST, AND PROCEED UPSTREAM UNLESS TU FIELD REPRESENTATIVE DECIDES DIFFERENTLY.
  7. DAILY COMPLETION: ONLY START WORK THAT CAN BE FINISHED AND STABILIZED BY DAY'S END.
  8. RAIN RESTRICTIONS: NO IN-CHANNEL WORK DURING A DOWNPOUR OR FLOODING CONDITIONS. ENSURE THAT SITE IS STABILIZED AHEAD OF PREDICTED HEAVY RAINS.
  9. EQUIPMENT MOVEMENT: AVOID UNNECESSARY EQUIPMENT MOVEMENT WITHIN THE CHANNEL.
  10. RESTORATION COMPLIANCE: IMPLEMENT ALL RESTORATION MEASURES PER PLANS, WITH TU, NYS DEC AND LANDOWNER APPROVAL PRIOR TO DEMOBILIZATION.
  11. POST-CONSTRUCTION RESTORATION: REGRADE, MULCH, AND SEED ALL DISTURBED AREAS PER THE SITE RESTORATION NOTES, BELOW.

**SITE RESTORATION NOTES:**

1. POST GRADING SEEDING/MULCHING: AFTER ROUGH GRADING IS COMPLETE, THE CONTRACTOR MUST SEED AND MULCH, OR INSTALL EROSION CONTROL BLANKETS ON ALL DISTURBED AREAS OUTSIDE THE STREAM CHANNEL THAT ARE NOT SHOWN ON THE PROJECT PLANS. ALL SEEDING & MULCHING SHALL BE COMPLETED WITHIN 1 DAY OF FINISH GRADING.
2. SEEDBED PREPARATION: ALL SURFACE TO BE SEEDED MUST BE SMOOTH AND FREE OF LARGE ROCKS.
3. SEED TYPE & APPLICATION: APPLY THE RECOMMENDED CONSERVATION SEED MIX, BELOW, AT A RATE OF 95 LBS/ACRE (2.2 LBS/1000 SFT):  
 CANADA WILD RYE (ELYMUS CANADENSIS)  
 LITTLE BLUESTEM (SCHIZACHYRIUM SCOPARIUM)  
 INDIANGRASS (SORGHASTRUM NUTANS)  
 SWITCH GRASS (PANICUM VIRGATUM)  
 PERENNIAL RYEGRASS (LOLIUM PERENNEL)  
 ANNUAL RYEGRASS (LOLIUM MULTIFLORUM)
4. MULCHING: APPLY STRAW MULCH IMMEDIATELY AFTER SEEDING AT A RATE OF 2 TONS PER ACRES (2-3 BALES PER 1000 SF). ENSURE UNIFORM COVER OVER ALL SEEDED AREAS. MULCH MUST BE FREE OF MOLD, NOXIOUS SEEDS, MUSTY ODORS, CAKING, DECAY, AND EXCESSIVE DUST.
5. EROSION CONTROL BLANKETS: BLANKETS SHALL BE INSTALLED ON SLOPES. BLANKETS SHALL CONTAIN NO PLASTIC NETTING. EMBED THE UPSLOPE END OF THE BLANKETS BELOW GROUND AND ANCHOR BLANKETS WITH STAPLES ACCORDING TO THE MFG'S INSTRUCTIONS.



**TROUT UNLIMITED**  
 1700 V. Moore Street, Suite 2005, Arlington, VA 22209  
**SOUTH BRANCH MOOSE RIVER  
 CULVERT REPLACEMENT  
 NAACC #105306**

CLIENT: \_\_\_\_\_  
 PROJECT: \_\_\_\_\_  
 DRAWN BY: J. FLEMING, D.F.S.  
 DESIGNED BY: J.H. BURRIS, P. E., T.H.  
 CHECKED BY: T. BRIDGEMAN, T.U.  
 SCALE: AS SHOWN  
 DATE: 07/20/06  
 PROJECT: 1109

NO.	DATE	REVISIONS
1	3/24	NYS DEC COMMENTS

SEAL

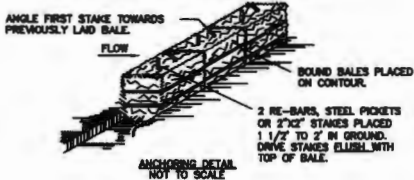
IT IS A VIOLATION OF THE LAW FOR ANY PERSON, UNLESS ACTING UNDER THE SUPERVISION OF A LICENSED PROFESSIONAL ENGINEER, TO PREPARE OR SIGN ANY DRAWING OR SPECIFICATION FOR CONSTRUCTION WITHOUT BEING A REGISTERED PROFESSIONAL ENGINEER. ANY PERSON WHO VIOLATES THIS PROVISION SHALL BE SUBJECT TO PENALTY AS PROVIDED IN THE PENALTY LAWS OF THE STATE OF VIRGINIA. ANY PERSON WHO VIOLATES THIS PROVISION SHALL BE SUBJECT TO PENALTY AS PROVIDED IN THE PENALTY LAWS OF THE STATE OF VIRGINIA. ANY PERSON WHO VIOLATES THIS PROVISION SHALL BE SUBJECT TO PENALTY AS PROVIDED IN THE PENALTY LAWS OF THE STATE OF VIRGINIA.

EROSION & SEDIMENT CONTROL NOTES  
 DRAWING NUMBER 040



BOUNDING DETAIL  
NOT TO SCALE

DRAINAGE AREA NO MORE THAN 1/4 ACRE PER 100 FEET OF STRAW BALE DIKE FOR SLOPES LESS THAN 25%.

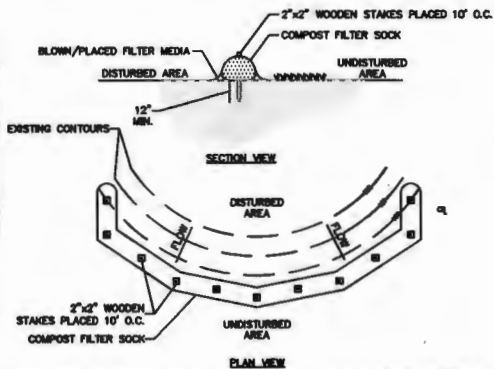


### CONSTRUCTION SPECIFICATIONS

- BALES SHALL BE PLACED AT THE TOE OF A SLOPE OR ON THE CONTOUR AND IN A ROW WITH ENDS TIGHTLY ADJUTING THE ADJACENT BALES.
- EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF (4) INCHES, AND PLACED SO THE BINDINGS ARE HORIZONTAL.
- BALES SHALL BE SECURELY ANCHORED IN PLACE BY EITHER TWO STAKES OR RE-BARS DRIVEN THROUGH THE BALE. THE FIRST STAKE IN EACH BALE SHALL BE DRIVEN TOWARD THE PREVIOUSLY LAID BALE AT AN ANGLE TO FORCE THE BALES TOGETHER. STAKES SHALL BE DRIVEN FLUSH WITH THE BALE.
- INSPECTION SHALL BE FREQUENT AND REPAIR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
- BALES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPIDE STORM FLOW OR DRAINAGE.

ADAPTED FROM DETAILS PROVIDED BY: USDA - NRCS,  
NEW YORK STATE DEPARTMENT OF TRANSPORTATION,  
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION,  
NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE.

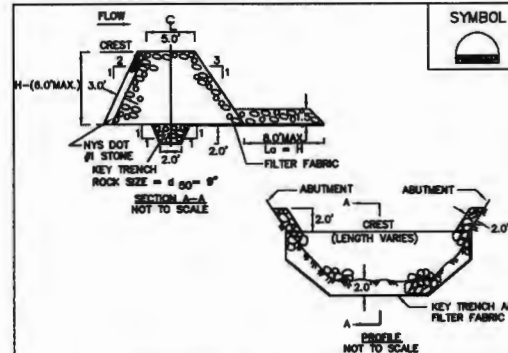
### STRAW BALE DIKE



- SOCK FABRIC SHALL MEET STANDARDS OF TABLE 5.1. COMPOST SHALL MEET THE STANDARDS LISTED ON OF TABLE 5.2.
- COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL, GRADE. BOTH SIDES OF THE SOCK SHALL BE COVERED AT LEAST 6 FEET OF ROCK AT 40 INCHES TO THE SOAK ROCK ABUTMENT (FIGURE 4.1). HORIZONTAL SLASH LENGTHS AROUND ANY SOCK OR NOT COVERED BY ROCK OR PUBLIC S.L. STAKES MAY BE INSTALLED IMMEDIATELY DOWNSTREAM OF THE SOCK IF SO SPECIFIED BY THE SUPERVISOR.
- STAKES SHALL NOT BE PERMITTED TO CROSS FILTER SOCK.
- ACCUMULATION DEVICES SHALL BE PROVIDED WHEN IT REACHES HALF THE ABUTMENT HEIGHT OF THE SOCK AND EXPOSED IN THE DRAINAGE CHANNELS ELIMINABLE IN THE PLAN.
- SOCKS SHALL BE INSPECTED VISUALLY AND AFTER EACH HEAVY EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 30 HOURS OF INSPECTION.
- NONDEGRADEABLE FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS. BIODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
- UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCKS, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED IN THE LATTER CASE, THE SOCK SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

ADAPTED FROM DETAILS PROVIDED BY: F.ILTRCOX

### COMPOST FILTER SOCK

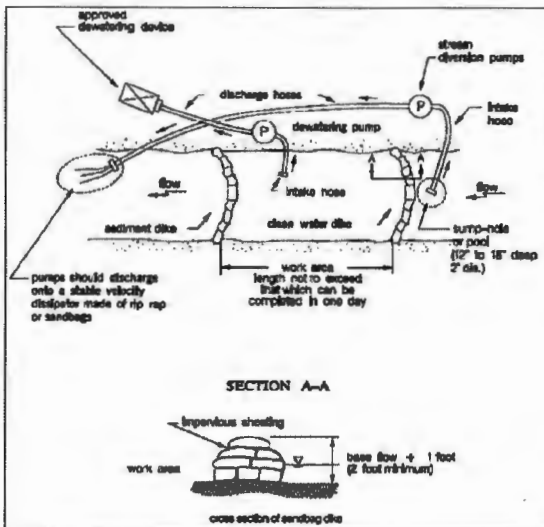


### CONSTRUCTION SPECIFICATIONS

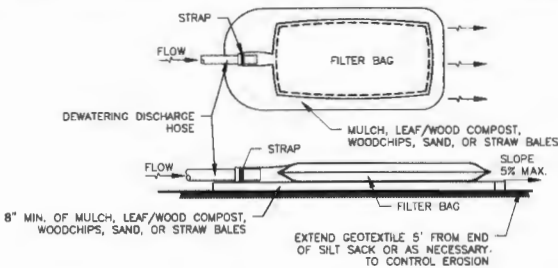
- THE AREA UNDER THE ROCK DAM SHALL BE CLEARED AND STRIPPED OF ROOTS AND OTHER OBSTRUCTIONS. MATERIALS TO BE REMOVED SHALL BE CLEARED AS NEEDED TO FACILITATE SEDIMENT REMOVAL.
- DIMENSIONS SHOWN ARE MINIMUM. TRENCH SHALL BE EXCAVATED FROM ABUTMENT TO ABUTMENT ON THE DAM CENTERLINE. FILTER FABRIC SHALL BE PLACED FROM UPSTREAM EDGE OF KEY TRENCH TO DOWNSTREAM EDGE OF APRON. JOINTS WILL LAP A MINIMUM OF 1 FT. WITH UPSTREAM STRIP ON TOP.
- CONSTRUCT THE ROCK EMBRANKMENT TO THE DIMENSIONS SHOWN ON THE DRAWING. ROCK ABUTMENTS SHALL BE MAINTAINED 2 FT. ABOVE THE CREST.
- THE ROCK DAM SHALL BE CONSTRUCTED PRIOR TO CLEARING THE BASIN AREA. STAKES ALL DISTURBED AREAS, EXCEPT THE BASIN AREA, WITH TEMPORARY SEEDING.
- FENCES AND WARNING SIGNS SHOULD BE PLACED AS APPROPRIATE.

ADAPTED FROM DETAILS PROVIDED BY: USDA - NRCS,  
NEW YORK STATE DEPARTMENT OF TRANSPORTATION,  
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION,  
NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE.

### ROCK DAM



### CLEAN WATER PUMP AROUND NOT TO SCALE



### NOTES

- TIGHTLY SEAL SLEEVE AROUND THE PUMP DISCHARGE HOSE WITH A STRAP OR SIMILAR DEVICE.
- CONTROL PUMPING RATE TO PREVENT EXCESSIVE PRESSURE WITHIN THE FILTER BAG IN ACCORDANCE WITH THE MANUFACTURER RECOMMENDATIONS. AS THE BAG FILLS WITH SEDIMENT, REDUCE PUMPING RATE.
- REMOVE AND PROPERLY DISPOSE OF FILTER BAG UPON COMPLETION OF PUMPING OPERATIONS OR AFTER BAG HAS REACHED CAPACITY OR IS DAMAGED, WHICHEVER OCCURS FIRST. RE-USE CAPTURED SEDIMENTS AS FINE MATERIAL TO SUPPORT PLANT GROWTH OR DISPOSE OF OFF-SITE. RESTORE THE SURFACE AREA BENEATH THE BAG TO ORIGINAL CONDITION UPON REMOVAL OF THE DEVICE.
- REMOVE SILT SACKS FROM CHANNEL AREA WHEN FLOWS IN EXCESS OF 8,000 CFS ARE ANTICIPATED.
- USE NONWOVEN GEOTEXTILE WITH DOUBLE STITCHED SEAMS USING HIGH STRENGTH THREAD. SIZE SLEEVE TO ACCOMMODATE A MAXIMUM 4 INCH DIAMETER PUMP DISCHARGE HOSE. THE BAG MUST BE MANUFACTURED FROM A NONWOVEN GEOTEXTILE THAT MEETS OR EXCEEDS MINIMUM AVERAGE ROLL VALUES (MARV) IN THE SHOWN TABLE.

REQUIREMENTS FOR FILTER BAG		
GRAB TENSILE	250 LB	ASTM D-4832
PUNCTURE	150 LB	ASTM D-4833
FLOW RATE	70 GAL/MIN FT <sup>2</sup>	ASTM D-4481
PERMITTIVITY (SEC-1/2)	1-2	ASTM D-4491
UV RESISTANCE	70% STRENGTH @ 500 HOURS	ASTM D-4395
APPARENT OPENING SIZE (AOS)	U.S. SIEVE NO. 40 TO 80	ASTM D-4751
SEAM STRENGTH	90%	ASTM D-4832

### FILTER BAG PUMP OUTLET NOT TO SCALE



**TROUT UNLIMITED**

CLIENT: TROUT UNLIMITED  
1700 N. Moore Street, Suite 2005, Arlington, VA, 22209

PROJECT: SOUTH BRANCH MOOSE RIVER  
CULVERT REPLACEMENT  
NAACC #105306

NO.	DATE	REVISIONS
1	3/24	NYS DEC COMMENTS

NO.	DATE	REVISIONS
1	3/24	NYS DEC COMMENTS

SEAL

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EROSION & SEDIMENT  
CONTROL DETAILS

DRAWING NUMBER D.41