



Connecticut Department of Energy and Environmental Protection License*

Section 401 Water Quality Certification

Licensee(s): Town of Kent

Licensee Address(s): 41 Kent Green Boulevard PO
Box 678
Kent, CT 06757

License Number(s): 202306288 -WQC

Municipality: Kent

Project Description: Replacement of Bridge No. 067016

Project Address/Location: Kent Hollow Road Bridge over West Aspetuck River

Waters: West Aspetuck River

**Authorizing CT Statute(s)
and/or Federal Law:** Section 401 CWA (33 USC 1341)

**Applicable Regulations of
CT State Agencies:** 22a-426-1 to 9

Agency Contact: Land & Water Resources Division,
Bureau of Water Protection & Land Reuse, 860-424-3019

License Expiration: Upon expiration of the U.S. Army Corps of Engineers Section 404 permit for the same activity.

Project Site Plan Set: *Town of Kent: Plan for the Replacement of Kent Hollow Road Bridge over West Aspetuck River (Bridge No. 067-016), 15 sheets, dated October 27, 2022, and prepared by Cardinal Engineering Associates*

*Connecticut's Uniform Administrative Procedure Act defines License to include, "the whole or part of any agency permit, certificate, approval, registration, charter or similar form of permission required by law . . ."

License Enclosures: Invasive Species Control Plan; Site Plan Set; LWRD Compliance Certification Form; LWRD Work Commencement Form; LWRD General Conditions

Authorized Activities:

The Licensee is hereby authorized to conduct the following work as described in application # 202306288 and as depicted on any site plan sheets / sets cited herein:

Temporarily and permanently impact 233 square feet (sf) and 72 sf of wetlands, respectively and temporarily and permanently impact 93 sf and 918 sf of watercourse, respectively due to the replacement of Kent Hollow Road Bridge over West Aspetuck River which includes:

1. Replacing the existing 14 ft open span three-sided frame with a 24' long, 15 ft x 6 ft concrete box culvert, embedded 1 ft into the streambed and backfilled with 1 ft of natural streambed material;
2. Installing four (4) new wingwalls and cut-off walls;
3. Installing 12" of intermediate rip rap (20 cy) in front of the wingwalls for scour protection, 12" of granular fill (30 cy) below the existing streambed elevation, top-dressed with 12" of natural streambed material (90 cy) as depicted per site plan sheet STR-03;
4. Installing a rock weir approximately 15-20 ft downstream of the new structure as depicted per site plan sheet PLA-01;
5. Temporarily installing sedimentation controls including a turbidity control curtain within the regulated watercourse and wetlands as depicted per site plan sheet WET-01; and
6. Temporarily installing twin 36" bypass pipes, a temporary 8' x 6' modified rip rap splash pad for the pipes' outlet, and cofferdams for water handling as depicted per site plan sheet WTH-01.

Failure to comply with the terms and conditions of this license shall subject the Licensee and / or the Licensee's contractor(s) to enforcement actions and penalties as provided by law.

This license is subject to the following Terms and Conditions:

1. **License Enclosure(s) and Conditions.** The Licensee shall comply with all applicable terms and conditions as may be stipulated within the License Enclosure(s) listed above.
2. **Road Barricade and Flood Warning.** The Licensee shall post flood warning signage at both crossing approaches. In the event of a significant storm forecast with the potential for road overtopping, the Licensee shall barricade the road and allow for alternative routes.
3. **Fisheries Notification.** The Licensee shall notify the DEEP Fisheries Division at least 10 days prior to the installation of the rock weir at the outlet.
4. **Natural Streambed Material in Box Culvert.** The Licensee shall embed the 15 ft x 6 ft box culvert 1 ft into the existing streambed and backfill with 1 ft of natural streambed material to improve water quality and facilitate fish passage.

5. **Invasive Species Control Plan.** The Licensee shall manage invasive vegetation species according to the Invasive Species Control Plan attached herein.

Issued under the authority of the Commissioner of Energy and Environmental Protection on:

Date

Emma Cimino
Deputy Commissioner
Environmental Quality Branch



LWRD General Conditions

- 1. Land Record Filing (for Structures Dredging & Fill, Tidal Wetlands, Certificate of Permission, and Long Island Sound General Permit Licenses only).** The Licensee shall file the Land Record Filing on the land records of the municipality in which the subject property is located not later than thirty (30) days after license issuance pursuant to Connecticut General Statutes (CGS) Section 22a-363g. A copy of the Notice with a stamp or other such proof of filing with the municipality shall be submitted to DEEP.LWRDRegulatory@ct.gov no later than sixty (60) days after license issuance. If a Land Record Filing form is not enclosed and the work site is not associated with an upland property, no filing is required.
- 2. Contractor Notification.** The Licensee shall give a copy of the license and its attachments to the contractor(s) who will be carrying out the authorized activities prior to the start of construction and shall receive a written receipt for such copy, signed and dated by such contractor(s). The Licensee's contractor(s) shall conduct all operations at the site in full compliance with the license and, to the extent provided by law, may be held liable for any violation of the terms and conditions of the license. At the work site, the contractor(s) shall, whenever work is being performed, have on site and make available for inspection a copy of the license and the authorized plans.
- 3. Work Commencement¹.** Not later than two (2) weeks prior to the commencement of any work authorized herein, the Licensee shall submit to DEEP.LWRDRegulatory@ct.gov, on the Work Commencement Form attached hereto, the name(s) and address(es) of all contractor(s) employed to conduct such work and the expected date for commencement and completion of such work, if any.
 - For water diversion activities authorized pursuant to 22a-377(c)-1 of the Regulations of Connecticut State Agencies, the Licensee shall also notify the Commissioner in writing two weeks prior to initiating the authorized diversion.
 - For emergency activities authorized pursuant Connecticut General Statutes Section 22a-6k, the Licensee shall notify the Commissioner, in writing, of activity commencement at least one (1) day prior to construction and of activity completion no later than five (5) days after conclusion.
- 4. For Coastal Licenses Only - License Notice.** The Licensee shall post the first page of the License in a conspicuous place at the work area while the work authorized therein is undertaken.
- 5. Unauthorized Activities.** Except as specifically authorized, no equipment or material, including but not limited to, fill, construction materials, excavated material or debris, shall be

¹ The Work Commencement condition and the need for a Work Commencement Form is not applicable to Flood Management Certification approvals.

deposited, placed or stored in any wetland or watercourse on or off-site. The Licensee may not conduct work within wetlands or watercourses other than as specifically authorized, unless otherwise authorized in writing by the Commissioner. Tidal wetlands means “wetland” as defined by section 22a-29 and “freshwater wetlands and watercourses” means “wetlands” and “watercourses” as defined by section 22a-38.

6. **Management of Materials.** Any materials removed from the site shall be managed in accordance with all federal, state, and local requirements, including Chapter 446K Water Pollution Control, Chapter 445 Hazardous Waste, and Chapter 446d Solid Waste of the Connecticut General Statutes.
7. **Unconfined Instream Work.** Unless otherwise noted in a condition of the license, the following conditions apply to projects in non-coastal waters:
 - Unconfined instream work is limited to the period June 1 through September 30.
 - Confinement of a work area by cofferdam techniques using sand bag placement, sheet pile installation (vibratory method only), portadam, or similar confinement devices is allowed any time of the year. The removal of such confinement devices is allowed any time of the year.
 - Once a work area has been confined, in-water work within the confined area is allowed any time of the year.
 - The confinement technique used shall completely isolate and protect the confined area from all flowing water. The use of silt boom/curtain or similar technique as a means for confinement is prohibited.
8. **For State Actions Only - Material or Equipment Storage in the Floodplain.** Unless approved by a Flood Management Exemption, the storage of any materials at the site which are buoyant, hazardous, flammable, explosive, soluble, expansive, radioactive, or which could in the event of a flood be injurious to human, animal or plant life, below the elevation of the five-hundred (500) year flood is prohibited. Any other material or equipment stored at the site below said elevation by the Licensee or the Licensee's contractor must be firmly anchored, restrained or enclosed to prevent flotation. The quantity of fuel stored below such elevation for equipment used at the site shall not exceed the quantity of fuel that is expected to be used by such equipment in one day. In accordance with the licensee's Flood Contingency Plan, the Licensee shall remove equipment and materials from the floodplain during periods when flood warnings have been issued or are anticipated by a responsible federal, state or local agency. It shall be the Licensee's responsibility to obtain such warnings when flooding is anticipated.
9. **Temporary Hydraulic Facilities for Water Handling.** If not reviewed and approved as a part of the license application, temporary hydraulic facilities shall be designed by a qualified professional and in accordance with the *Connecticut Guidelines for Soil Erosion and Sediment Control*, the *2004 Connecticut Stormwater Quality Manual*, or the *Department of Transportation's ConnDOT Drainage Manual*, as applicable. Temporary hydraulic facilities may include channels, culverts or bridges which are required for haul roads, channel relocations, culvert installations, bridge construction, temporary roads, or detours.

- 10. Excavated Materials.** Unless otherwise authorized, all excavated material shall be staged and managed in a manner which prevents additional impacts to wetlands and watercourses.
- 11. Best Management Practices.** The Licensee shall not cause or allow pollution of any wetlands or watercourses, including pollution resulting from sedimentation and erosion. In constructing or maintaining any authorized structure or facility or conducting any authorized activity, or in removing any such structure or facility, the Licensee shall employ best management practices to control storm water discharges, to prevent erosion and sedimentation, and to otherwise prevent pollution of wetlands and other waters of the State. For purposes of the license, “pollution” means “pollution” as that term is defined by CGS section 22a-423. Best Management Practices include, but are not limited, to practices identified in the *Connecticut Guidelines for Soil Erosion and Sediment Control* as revised, *2004 Connecticut Stormwater Quality Manual*, Department of Transportation’s *ConnDOT Drainage Manual* as revised, and the Department of Transportation Standard Specifications as revised.
- 12. In-Water Work Vessel Staging and Storage. (for Structures Dredging & Fill, Tidal Wetlands, Certificate of Permission, and Long Island Sound General Permit Licenses only).** For any barge, vessel, skiff or floating work platform (“work vessels”) utilized in the execution of the work authorized herein, the Licensee shall ensure that such work vessels:
- do not rest on, or come in contact with, the substrate at any time, unless specifically authorized in the license.
 - are not stored over intertidal flats, submerged aquatic vegetation or tidal wetland vegetation or in a location that interferes with navigation. In the event any work vessel is grounded, no dragging or prop dredging shall occur to free it.
- 13. Work Site Restoration.** Upon completion of any authorized work, the Licensee shall restore all areas impacted by construction, or used as a staging area or accessway in connection with such work, to their condition prior to the commencement of such work.
- 14. Inspection.** The Licensee shall allow any representative of the Commissioner to inspect the project location at reasonable times to ensure that work is being or has been conducted in accordance with the terms and conditions of this license.
- 15. Change of Use. (Applies only if a use is specified within the License “Project Description”)**
- a. The work specified in the license is authorized solely for the purpose set forth in the license. No change in purpose or use of the authorized work or facilities as set forth in the license may occur without the prior written approval of the Commissioner. The Licensee shall, prior to undertaking or allowing any change in use or purpose from that which is authorized by this license, request permission from the Commissioner for such change. Said request shall be in writing and shall describe the proposed change and the reason for the change.
 - b. A change in the form of ownership of any structure authorized herein from a rental/lease commercial marina to a wholly-owned common interest community or dockominium may constitute a change in purpose as specified in paragraph (a) above.
- 16. De Minimis Alteration.** The Licensee shall not deviate from the authorized activity without

prior written approval from the Commissioner. The Licensee may request a de minimis change to any authorized structure, facility, or activity. A de minimis alteration means a change in the authorized design, construction or operation that individually and cumulatively has minimal additional environmental impact and does not substantively alter the project as authorized.

- For diversion activities authorized pursuant to 22a-377(c)-2 of the Regulations of Connecticut State Agencies, a de minimis alteration means an alteration which does not significantly increase the quantity of water diverted or significantly change the capacity to divert water.

17. Extension Request. The Licensee may request an extension of the license expiration date. Such request shall be in writing and shall be submitted to DEEP.LWRDRegulatory@ct.gov at least thirty (30) days prior to the license expiration. Such request shall describe the work done to date, what work still needs to be completed, and the reason for such extension. The Commissioner may extend the expiration date of this license for a period of up to one year, in order for the Licensee to complete the authorized activities. It shall be at the Commissioner's sole discretion to grant or deny such request. No more than three (3) one-year extensions will be granted under this license.

18. Compliance Certification. Not later than 90 days after completion of the authorized work, the Licensee shall prepare and submit to DEEP.LWRDRegulatory@ct.gov, the attached Compliance Certification Form. Such Compliance Certification shall be completed, signed, and sealed by the Licensee and a Connecticut Licensed Design Professional. If non-compliance is indicated on the form, or the Commissioner has reason to believe the activities and/or structures were conducted in non-compliance with the license, the Commissioner may require the Licensee to submit as-built plans as a condition of this license.

19. Maintenance. The Licensee shall maintain all authorized structures or work in optimal condition or shall remove such structures or facility and restore the affected waters to their pre-work condition. Any such maintenance or removal activity shall be conducted in accordance with applicable law and any additional approvals required by law.

20. No Work After License Expiration. Work conducted after the license expiration date is a violation of the license and may subject the licensee to enforcement action, including penalties, as provided by law.

21. License Transfer. The license is not transferable without prior written authorization of the Commissioner. A request to transfer a license shall be submitted in writing and shall describe the proposed transfer and the reason for such transfer. The Licensee's obligations under the license shall not be affected by the passage of title to the license site to any other person or municipality until such time as a transfer is approved by the Commissioner.

22. Document Submission. Any document required to be submitted to the Commissioner under the license or any contact required to be made with the Commissioner shall, unless otherwise specified in writing by the Commissioner, be directed to:

DEEP.LWRDRegulatory@ct.gov or

Regulatory Section
Land & Water Resources Division
Department of Energy and Environmental Protection
79 Elm Street
Hartford, Connecticut 06106-5127
860-424-3019

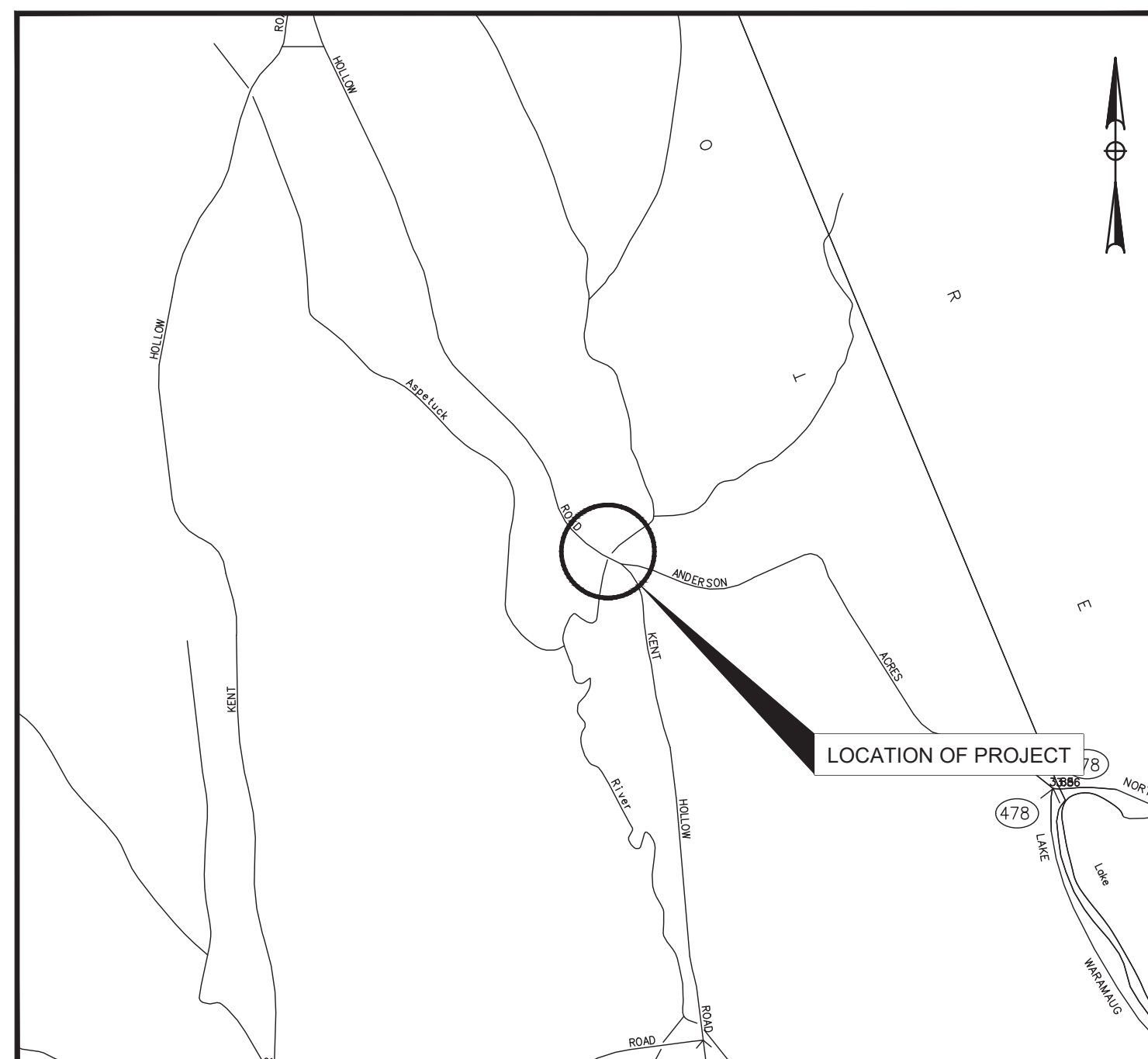
- 23. Date of Document Submission.** The date of submission to the Commissioner of any document required by the license shall be the date such document is received by the Commissioner. The date of any notice by the Commissioner under the license, including but not limited to notice of approval or disapproval of any document or other action, shall be the date such notice is personally delivered or the date three (3) days after it is mailed by the Commissioner, whichever is earlier. Except as otherwise specified in the license, the word “day” as used in the license means calendar day. Any document or action which is required by the license to be submitted or performed by a date which falls on a Saturday, Sunday or a Connecticut or federal holiday shall be submitted or performed on or before the next day which is not a Saturday, Sunday, or a Connecticut or federal holiday.
- 24. Certification of Documents.** Any document, including but not limited to any notice, which is required to be submitted to the Commissioner under the license shall be signed by the Licensee and by the individual or individuals responsible for actually preparing such document, each of whom shall certify in writing as follows: “I have personally examined and am familiar with the information submitted in this document and all attachments and certify that based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief, and I understand that any false statement made in this document or its attachments may be punishable as a criminal offense.”
- 25. Accuracy of Documentation.** In evaluating the application for the license, the Commissioner has relied on information and data provided by the Licensee and on the Licensee’s representations concerning site conditions, design specifications and the proposed work, including but not limited to representations concerning the commercial, public or private nature of the work or structures, the water-dependency of said work or structures, its availability for access by the general public, and the ownership of regulated structures or filled areas. If such information proves to be false, deceptive, incomplete or inaccurate, the license may be modified, suspended or revoked, and any unauthorized activities may be subject to enforcement action.
- 26. Limits of Liability.** In granting the license, the Commissioner has relied on all representations of the Licensee, including information and data provided in support of the Licensee’s application. Neither the Licensee’s representations nor the issuance of the license shall constitute an assurance by the Commissioner as to the structural integrity, the engineering feasibility or the efficacy of such design.
- 27. Reporting of Violations.** In the event that the Licensee becomes aware that they did not or may not comply, or did not or may not comply on time, with any provision of this license or of any document incorporated into the license, the Licensee shall immediately notify the

agency contact specified within the license and shall take all reasonable steps to ensure that any noncompliance or delay is avoided or, if unavoidable, is minimized to the greatest extent possible. In so notifying the agency contact, the Licensee shall provide, for the agency's review and written approval, a report including the following information:

- a. the provision(s) of the license that has been violated;
- b. the date and time the violation(s) was first observed and by whom;
- c. the cause of the violation(s), if known;
- d. if the violation(s) has ceased, the duration of the violation(s) and the exact date(s) and times(s) it was corrected;
- e. if the violation(s) has not ceased, the anticipated date when it will be corrected;
- f. steps taken and steps planned to prevent a reoccurrence of the violation(s) and the date(s) such steps were implemented or will be implemented; and
- g. the signatures of the Licensee and of the individual(s) responsible for actually preparing such report.

If the violation occurs outside of normal business hours, the Licensee shall contact the Department of Energy and Environmental Protection Emergency Dispatch at 860-424-3333. The Licensee shall comply with any dates which may be approved in writing by the Commissioner.

- 28. Revocation/Suspension/Modification.** The license may be revoked, suspended, or modified in accordance with applicable law.
- 29. Other Required Approvals.** License issuance does not relieve the Licensee of their obligations to obtain any other approvals required by applicable federal, state and local law.
- 30. Rights.** The license is subject to and does not derogate any present or future property rights or powers of the State of Connecticut, and conveys no property rights in real estate or material nor any exclusive privileges, and is further subject to any and all public and private rights and to any federal, state or local laws or regulations pertinent to the property or activity affected hereby.
- 31. Condition Conflicts.** In the case where a project specific special condition listed on the license differs from, or conflicts with, one of the general conditions listed herein, the project specific special condition language shall prevail. It is the licensee's responsibility to contact the agency contact person listed on the license for clarification if needed prior to conducting any further regulated activities.



PROJECT LOCATION PLAN
NOT TO SCALE

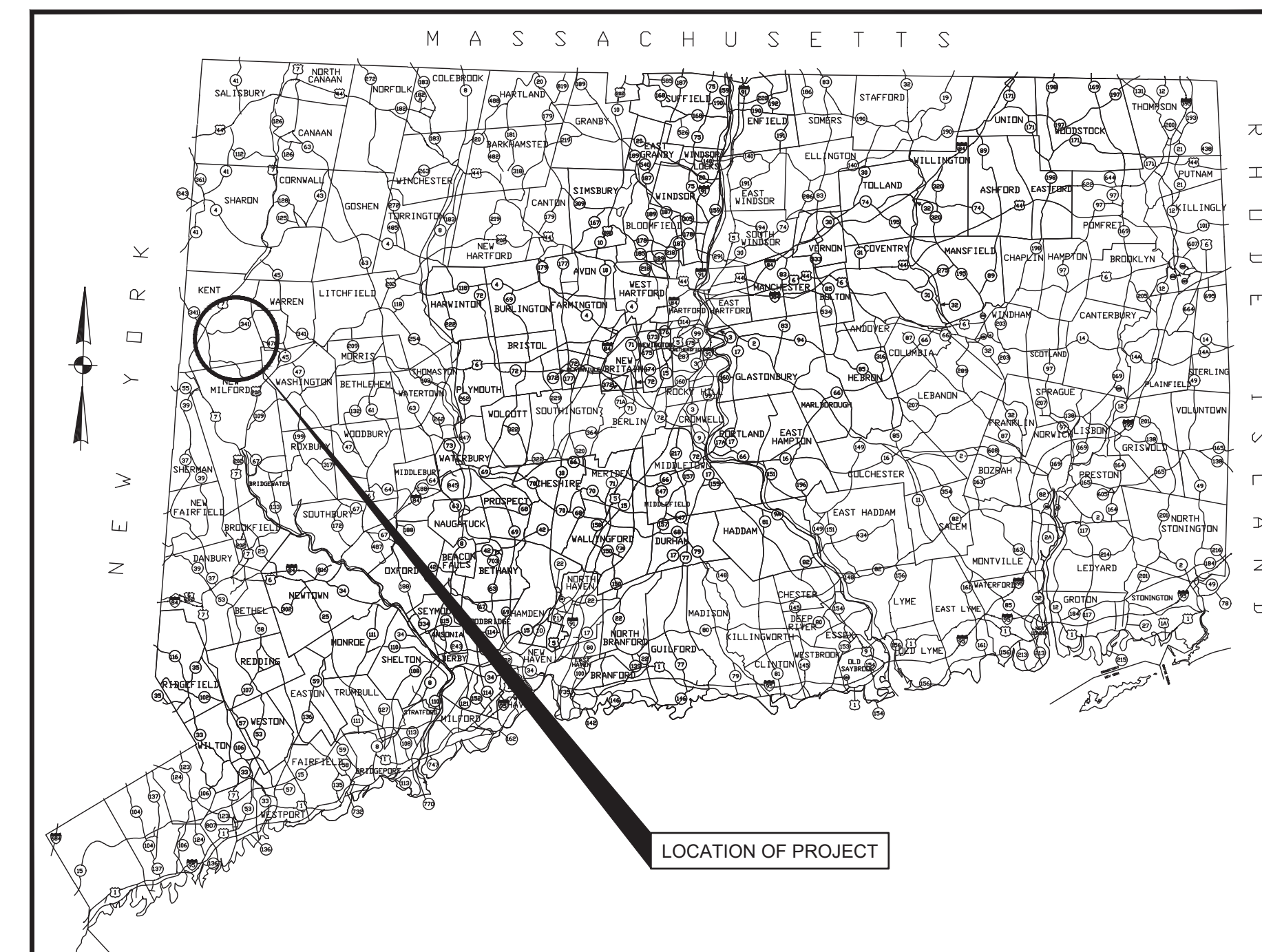
TOWN OF KENT PLAN FOR THE REPLACEMENT OF KENT HOLLOW ROAD BRIDGE OVER WEST ASPECTUCK RIVER (BRIDGE NO. 067-016) STATE PROJECT NO. #####-#####

FROM STATION 1+00 TO STATION 2+00
LENGTH = 100'
SCALES: AS NOTED
TO BE MAINTAINED BY THE TOWN OF KENT

FIRST SELECTMAN

Jean C. Speck
DIRECTOR OF PUBLIC WORKS
J. Rick Osborne III

October 27, 2022



PROJECT VICINITY MAP
NOT TO SCALE

DESIGN DATA
FUNCTIONAL CLASSIFICATION: RURAL LOCAL ROAD
DESIGN SPEED: 25 mph
ADT (EST.): 100

CONSTRUCTION SPECIFICATIONS: STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADS, BRIDGES, FACILITIES AND INCIDENTAL CONSTRUCTION FORM 818 (2020), SUPPLEMENTAL SPECIFICATIONS DATED 7/2021 AND SPECIAL PROVISIONS.

| LIST OF DRAWING REVISIONS | | | |
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| SHEET NO. | DESCRIPTION | DATE | BY |
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| LIST OF DRAWINGS | | | | | |
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| SHEET NO. | TITLE | DRAWING | SHEET NO. | STANDARD DRAWINGS | FHWA APPROVAL DATE |
| 1 | TITLE SHEET | TITLE | | | |
| 2 | GENERAL NOTES AND TYPICAL SECTION | GEN-01 | | | |
| 3 | EXISTING CONDITIONS PLAN | EXC-01 | | | |
| 4 | ROADWAY PLAN & PROFILE | PLA-01 | | | |
| 5 - 7 | CROSS SECTIONS | XSC-01 - XSC-03 | | | |
| 8 | CULVERT GENERAL PLAN | STR-01 | | | |
| 9 | CULVERT PROFILE | STR-02 | | | |
| 10 | CULVERT ELEVATION AND SECTIONS | STR-03 | | | |
| 11 | SEDIMENT & EROSION CONTROL NOTES | SED-01 | | | |
| 12 | SEDIMENT & EROSION CONTROL DETAILS | SED-02 | | | |
| 13 | WATER HANDLING PLAN | WTH-01 | | | |
| 14 | WETLANDS/WATERCOURSE IMPACT PLAN | WET-01 | | | |
| 15 | INUNDATION PLAN | IND-01 | | | |
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**PERMIT REVIEW PLANS
NOT FOR CONSTRUCTION**

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| TITLE |
| 1 |

CARDINAL
ENGINEERING ASSOCIATES

180 RESEARCH PKWY | MERIDEN, CT 06450 | 203-238-1969
457 BANTAM RD | LITCHFIELD, CT 06769 | 860-597-9106

GENERAL NOTES

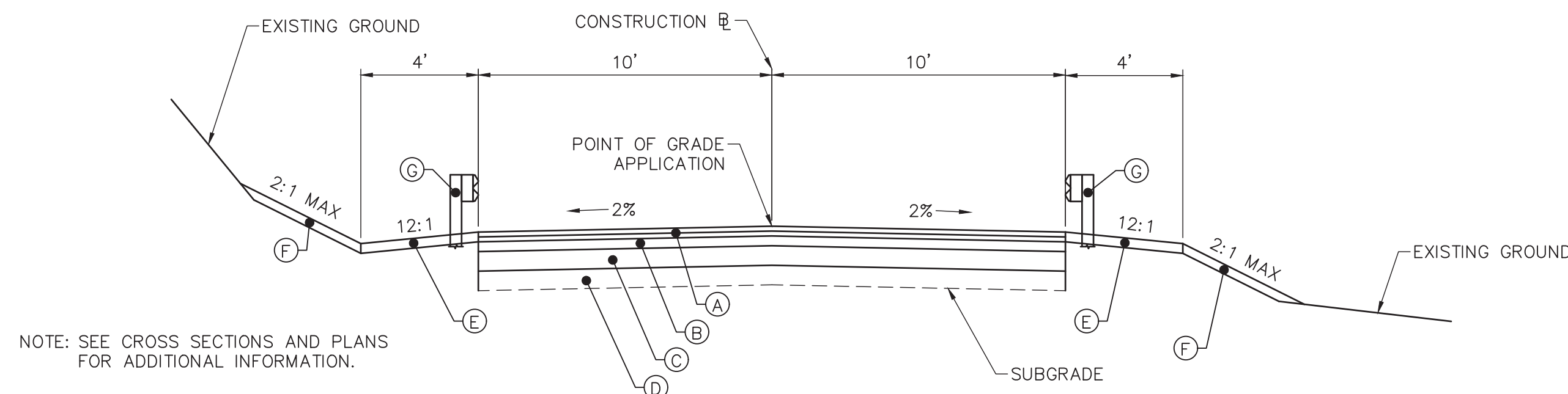
- ALL CONSTRUCTION METHODS AND MATERIALS SHALL CONFORM TO THE CONNECTICUT DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADS, BRIDGES, FACILITIES AND INCIDENTAL CONSTRUCTION, FORM 818 (2020), SUPPLEMENTAL SPECIFICATIONS DATED 7/2021 AND SPECIAL PROVISIONS.
- THE PROJECT SITE SHALL CONSIST OF THE AREA WITHIN THE MUNICIPALLY-OWNED RIGHT OF WAY BETWEEN THE DESIGNATED BEGINNING AND END STATIONS FOR THE PROJECT AS SHOWN ON THE PLANS. IT SHALL ALSO INCLUDE ANY EASEMENTS TO PERFORM WORK ON PRIVATELY-OWNED PROPERTY AS DEPICTED ON THE PLANS. THE CONTRACTOR SHALL LIMIT HIS CONSTRUCTION ACTIVITIES TO THE AREA WITHIN THE PROJECT SITE.
- EROSION AND SEDIMENT CONTROL MEASURES WILL BE CONSTRUCTED IN ACCORDANCE WITH THE TOWN REGULATIONS, THE CONNECTICUT DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADS, BRIDGES AND INCIDENTAL CONSTRUCTION, FORM 818, WITH LATEST REVISIONS, 2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL, DEP BULLETIN 34, UNLESS OTHERWISE SPECIFIED IN THE SPECIAL PROVISIONS.
- ALL DIMENSIONS ARE FEET UNLESS OTHERWISE NOTED.
- THE CONTRACTOR SHALL WALK THE PROJECT PRIOR TO CONSTRUCTION WITH A REPRESENTATIVE FROM THE TOWN AND THE ENGINEER. TREES TO BE REMOVED SHALL BE MARKED IN THE FIELD. NO TREES 3" IN DIAMETER OR GREATER SHALL BE CUT DOWN FROM APRIL 15 TO AUGUST 31. EXTREME CARE SHALL BE EXERCISED TO PROTECT ALL TREES NOT DESIGNATED FOR REMOVAL. NO TREES SHALL BE REMOVED UNTIL AUTHORIZATION IS GIVEN BY THE TOWN. COST IS INCLUDED IN THE ITEM "CLEARING AND GRUBBING".
- ANY PHYSICAL FEATURES DISTURBED BY THE CONTRACTOR SHALL BE REPLACED OR RECONSTRUCTED AS DIRECTED BY THE ENGINEER TO A CONDITION EQUAL TO OR BETTER THAN PRIOR TO CONSTRUCTION AT THE CONTRACTORS EXPENSE.
- ALL DIMENSIONS AND ELEVATIONS MUST BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO THE START OF MANUFACTURING AND CONSTRUCTION, AND NECESSARY ADJUSTMENTS MADE AS ORDERED BY THE ENGINEER.
- WORKING HOURS SHALL BE LIMITED TO THE HOURS BETWEEN 7:00 A.M. AND 5:00 P.M., MONDAY THRU FRIDAY. NO WORK WILL BE PERFORMED ON WEEKENDS, HOLIDAYS, OR SPECIAL DAYS AS DIRECTED BY THE ENGINEER. THE ONLY EXCEPTIONS TO THESE LIMITATIONS WILL BE AS DIRECTED BY THE ENGINEER TO CORRECT OR HANDLE EMERGENCY CONDITIONS, OR IF APPROVED BY THE ENGINEER IN WRITING.
- THE CONTRACTOR SHALL SUBMIT A DETAILED SCHEDULE FOR APPROVAL PRIOR TO COMMENCING CONSTRUCTION.
- THE CONTRACTOR SHALL PROVIDE ACCESS TO ALL PROPERTIES AT ALL TIMES DURING CONSTRUCTION. COORDINATE ACCESS WITH PAVING OPERATIONS SO THAT JOINTS ARE MINIMIZED (SEE MAINTENANCE AND PROTECTION OF TRAFFIC SPECIFICATIONS). NO TRANSVERSE JOINTS SHALL BE ALLOWED DURING THE PAVING OF THE WEARING COURSE.
- ALL DISTURBED AREAS THAT WILL NOT BE PAVED SHALL RECEIVE 4" OF TOPSOIL AND TURF ESTABLISHMENT UNLESS OTHERWISE NOTED.
- RCP SHALL BE CLASS IV UNLESS NOTED OTHERWISE.
- ALL SWALES AND DITCHES WILL HAVE TEMPORARY "U" SHAPED STONE DIKES PLACED PERPENDICULAR TO FLOW AT 30' SPACING DURING CONSTRUCTION TO PREVENT EROSION.
- ALL REQUIRED UTILITY RELOCATIONS SHALL BE PERFORMED BY THE RESPECTIVE UTILITY COMPANY UNLESS OTHERWISE SPECIFIED. THE CONTRACTOR SHALL CONTACT THE UTILITY COMPANIES PRIOR TO ANY WORK AND COORDINATE HIS WORK WITH THE UTILITY COMPANY WORK. THE CONTRACTOR SHALL COORDINATE WITH THE RESPECTIVE UTILITY COMPANY FOR THE UTILITY COMPANY TO HOLD ANY POLES THAT NEED TO BE SUPPORTED DURING THE CONTRACTOR'S TRENCHING OPERATIONS. THE COST TO COORDINATE THIS WORK WITH THE UTILITY COMPANIES SHALL BE INCIDENTAL TO THE PROJECT UNLESS A SPECIFIC PAY ITEM IS INCLUDED.
- IF THE CONTRACTOR WILL BE REQUIRED TO WORK IN PROXIMITY OF AND BENEATH OVERHEAD POWER LINES AS WELL AS TELEPHONE, CABLE TV AND TELECOMMUNICATION LINES. THE OVERHEAD LINES ARE NOT ANTICIPATED TO BE DE-ENERGIZED DURING THE PROSECUTION OF THIS WORK. THE CONTRACTOR SHALL SPECIFICALLY COMPLY WITH THE REQUIREMENTS DETAILED IN OSHA REGULATIONS (STANDARDS 29 CFR) CRANES AND DERRICKS - 1926.550 AS WELL AS OTHER APPLICABLE OSHA STANDARDS. THE CONTRACTOR SHALL MAINTAIN A SAFE DISTANCE FROM ALL UTILITY POLES DURING CONSTRUCTION ACTIVITIES.
- THE INFORMATION SHOWN ON THESE PLANS IS BASED ON LIMITED INVESTIGATIONS AND IS IN NO WAY WARRANTED TO INDICATE THE TRUE CONDITIONS OR ACTUAL QUANTITIES OF WORK REQUIRED. LOCATIONS OF EXISTING UTILITIES AND UNDERGROUND STRUCTURES HAVE BEEN COMPILED FROM THE BEST AVAILABLE INFORMATION. THIS INFORMATION WAS COMPILED UTILIZING UTILITY COMPANY & TOWN RECORD MAPS AND FIELD SURVEY AND THEREFORE, IS CONSIDERED TO BE APPROXIMATE. ALL UTILITIES AND UNDERGROUND STRUCTURES MAY NOT BE SHOWN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR DETERMINING THE ACTUAL LOCATION OF ALL UTILITIES AND TO NOTIFY UTILITY COMPANIES OF NECESSARY RELOCATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL WORK WITH THAT OF THE UTILITY COMPANIES. UTILITY LINES DAMAGED BY THE CONTRACTOR SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ENGINEER AND THE UTILITY COMPANY AND THE COST OF REPAIR WORK SHALL BE BORNE BY THE CONTRACTOR. THE CONTRACTOR SHALL CONTACT CALL BEFORE-U-DIG AT 1-800-922-4455 FOR MARKING OF EXISTING UTILITIES AT LEAST FORTY-EIGHT (48) HOURS IN ADVANCE OF EXCAVATION (MONDAY THROUGH FRIDAY, EXCLUDING HOLIDAYS).
- CONTRACTOR TO SUPPLY UTILITY COMPANIES WITH SUFFICIENT VERTICAL AND HORIZONTAL STAKEOUT OF PROPOSED STORM DRAINAGE, PROPOSED ROADWAY, AND OTHER PROPOSED IMPROVEMENTS TO PERFORM UTILITY RELOCATIONS. THE COST OF THIS WORK SHALL BE INCLUDED IN THE ITEM "CONSTRUCTION STAKING."
- ANTICIPATED UTILITY POLE RELOCATIONS, IF ANY, ARE SHOWN ON THE PLANS. ADDITIONAL POLE RELOCATIONS MAY BE REQUIRED. CONTRACTOR TO PROVIDE STAKEOUT OF PROPOSED IMPROVEMENTS PRIOR TO COMMENCEMENT OF WORK TO DETERMINE IF ADDITIONAL POLE RELOCATIONS ARE REQUIRED. POLE RELOCATIONS MAY NOT BE COMPLETED PRIOR TO THE INSTALLATION OF STORM DRAINAGE AND ROADWAY IMPROVEMENTS. THE COST OF THIS WORK SHALL BE INCIDENTAL TO THE PROJECT.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE WITH THE UTILITY COMPANIES TO RESET ALL UTILITY BOXES TO FINISHED GRADE. THERE WILL BE NO SEPARATE PAYMENT TO COORDINATE THIS WORK OR CLAIM FOR TIME EXTENSION.
- THE CONTRACTOR SHALL RESET ALL WATER AND GAS CURB STOPS BOXES AND WATER AND GAS GATE VALVE BOXES TO FINISHED GRADE. THERE SHALL BE NO SEPARATE MEASUREMENT OR PAYMENT FOR THIS WORK AS IT IS INCIDENTAL TO CONSTRUCTION.
- EXISTING PAVEMENT SHALL BE REMOVED IN FILL AREAS PRIOR TO PLACING FILL. EXISTING PAVEMENT OUTSIDE OF THE CUT AND FILL LIMITS THAT WILL NOT BE USED IN THE PROPOSED CONDITIONS SHALL BE REMOVED. PAYMENT SHALL BE MADE UNDER THE ITEM "EARTH EXCAVATION."
- ALL EXISTING DRAINAGE PIPES AND CULVERTS WITHIN THE PROJECT SLOPE LIMITS THAT ARE DESIGNATED TO BE REMOVED SHALL BE REMOVED AND BACKFILLED AS SPECIFIED IN SECTION 2.05 "TRENCH EXCAVATION" UNLESS OTHERWISE SPECIFIED ON THE PLANS OR AS DIRECTED BY THE ENGINEER. COORDINATE THIS WORK WITH THE RECONNECTION OF ANY EXISTING FOUNDATION AND OTHER DRAINS TO THE PROPOSED DRAINAGE SYSTEM.
- THE CONTRACTOR SHALL MAINTAIN ALL ROAD NAME SIGNS AS INDICATED ON THE PLANS AND SHALL MAINTAIN ALL TRAFFIC CONTROL SIGNS AS NEEDED DURING CONSTRUCTION AND AS DIRECTED BY THE ENGINEER. COST IS INCLUDED IN THE ITEM "MAINTENANCE AND PROTECTION OF TRAFFIC".
- PLANIMETRIC AND TOPOGRAPHIC FEATURES ARE BASED ON FIELD SURVEY PERFORMED BY CARDINAL ENGINEERING ASSOCIATES, IN MARCH 2019. SURVEY BASELINE CONFORMS TO CLASS A-2 HORIZONTAL ACCURACY. STREETLINE AND PROPERTY LINE INFORMATION (IF SHOWN) ARE APPROXIMATE AND BASED ON LIMITED FIELD SURVEY. ALL ELEVATIONS ARE BASED ON NAVD 88. HORIZONTAL COORDINATES ARE BASED ON CONNECTICUT STATE PLANE COORDINATE SYSTEM (NAD 83). VERTICAL ACCURACY IS CLASS T-2.
- ALL TYPE "C" CATCH BASIN TOP OF FRAME ELEVATIONS SHALL BE MEASURED IN THE CENTER OF THE GRATE AT THE GUTTER LINE AND REFLECT THE ELEVATION WITH THE STANDARD DEPRESSION AS SHOWN ON "DETAILS OF DEPRESSED GUTTER STRIP FOR TYPE 'C' CATCH BASIN" (SEE CTDOT STANDARD DETAIL SHEET NO. HW-507_01). ALL TYPE "C-L" CATCH BASIN TOP OF FRAME ELEVATIONS SHALL BE MEASURED IN THE CENTER OF THE GRATE.
- ALL UNCONFINED INSTREAM WORK SHALL BE PERFORMED BETWEEN JUNE 1 AND SEPTEMBER 30.

LIST OF ABBREVIATIONS

| | | | |
|------------|------------------------------------|--------------|--------------------------------------|
| AGGR | AGGREGATE | NOM | NOMINAL |
| AH | AHEAD | NO | NUMBER |
| A | ALGEBRAIC DIFFERENCE IN GRADES | PERF | PERFORATED |
| APPROX | APPROXIMATE | POB | POINT OF BEGINNING |
| ASPH | ASPHALT | PCC | POINT OF COMPOUND CURVATURE |
| BK | BACK | PC | POINT OF CURVATURE |
| B | BASELINE | POE | POINT OF ENDING |
| BM | BENCHMARK | PGA | POINT OF GRADE APPLICATION |
| BIT | BITUMINOUS | PI | POINT OF INTERSECTION |
| BCLC | BITUMINOUS CONCRETE LIP CURBING | PRC | POINT OF REVERSE CURVE |
| CGR | CABLE GUIDERAIL | PT | POINT OF TANGENCY |
| CI / CIP | CAST IRON PIPE | PVC | POINT OF VERTICAL CURVATURE |
| CB | CATCH BASIN | PVCC | POINT OF VERTICAL COMPOUND CURVATURE |
| C | CENTERLINE | PVI | POINT OF VERTICAL INTERSECTION |
| CC | CONCRETE CURBING | PVRC | POINT OF VERTICAL REVERSE CURVE |
| CL | CLASS | PVT | POINT OF VERTICAL TANGENCY |
| CONC | CONCRETE | POC | POINT ON CURVATURE |
| CP | CONTROL POINT | POT | POINT ON TANGENT |
| COR | CORNER | PVC | POLYVINYL CHLORIDE PIPE |
| CMP | CORRUGATED METAL PIPE | R | PROPERTY LINE |
| CPFE | CORRUGATED POLYETHYLENE FLARED END | R | RADIUS |
| CPP | CORRUGATED POLYETHYLENE PIPE | RR | RAILROAD |
| CY | CUBIC YARD | K | RATE OF VERTICAL CURVATURE |
| DIA | DIAMETER | REINF | REINFORCED |
| DBL | DOUBLE | RCCE | REINFORCED CONCRETE CULVERT END |
| DRIVE | DRIVEWAY | RCP | REINFORCED CONCRETE PIPE |
| DI / DIP | DUCTILE IRON PIPE | REQD | REQUIRED |
| EA | EACH | RT | RIGHT |
| EP | EDGE OF PAVEMENT | ROW | RIGHT OF WAY |
| EL / ELEV | ELEVATION | RSC | RIGID STEEL CONDUIT |
| EX / EXIST | EXISTING | RD | ROAD |
| FG | FINISHED GRADE | SAN | SANITARY |
| FP | FLAGPOLE | SS | SANITARY SEWER |
| FE | FLARED END | SED | SEDIMENTATION |
| FL | FLOW LINE | SCB | SEDIMENT CONTROL BALES |
| FT | FOOT | SCS | SEDIMENT CONTROL SYSTEM |
| FND | FOUND | SHLD | SHOULDER |
| FOUND | FOUNDATION | SF | SQUARE FOOT |
| G | GAS | SY | SQUARE YARD |
| GV | GAS VALVE | STD | STANDARD |
| GSC / GC | GRANITE STONE CURBING | STA | STATION |
| HP | HIGH POINT | SSD | STOPPING SIGHT DISTANCE |
| HORIZ | HORIZONTAL | ST | STREET |
| HRS | HOURS | § | STREET LINE |
| HYD | HYDRANT | TBD | TO BE DETERMINED |
| INV | INVERT | TOP OF FRAME | TOP OF FRAME |
| IE | INVERT ELEVATION | TF | TYPICAL |
| IP | IRON PIN | UD | UNDERDRAIN |
| LT | LEFT | VERT | VERTICAL |
| L | LENGTH | VC | VERTICAL CURVE |
| LVC | LENGTH OF VERTICAL CURVE | VF | VERTICAL FEET |
| LTP | LIGHT POLE | VCP | VITRIFIED CLAY PIPE |
| LF | LINEAR FEET | W | WATER |
| LP | LOW POINT | WV | WATER VALVE |
| LS | LUMP SUM | | |
| MB | MAILBOX | | |
| MH | MANHOLE | | |
| MAX | MAXIMUM | | |
| MBR | METAL BEAM RAIL | | |
| MCE | METAL CULVERT END | | |
| MIN | MINIMUM | | |
| MON | MONUMENT | | |
| NTS | NOT TO SCALE | | |

STANDARD CONVENTIONS

| EXISTING | | PROPOSED |
|----------|---|----------|
| | APPROXIMATE LIMIT OF CUT SLOPE | |
| | APPROXIMATE LIMIT OF FILL SLOPE | |
| | APPROXIMATE PROPERTY LINE | |
| | APPROXIMATE STREET LINE | |
| | BASELINE STATION | |
| | BITUMINOUS CONCRETE DRIVEWAY | |
| | BORING NUMBER B10 (SEE BORING LOG SHEET) | B10 |
| | CATCH BASIN | |
| | CONTROL POINT | |
| | CONCRETE DRIVEWAY/ CONCRETE DRIVEWAY RAMP | |
| | CULVERT END | |
| | DRAINAGE DITCH | |
| | DRAINAGE PIPE | |
| | EASEMENT LINE (PERMANENT) | |
| | EASEMENT LINE (TEMPORARY) | |
| | ELECTRIC LINE (OVERHEAD OR UNDERGROUND) | |
| | GAS LINE | |
| | GAS TEST PIT | TP G1 |
| | GAS VALVE or WATER VALVE | |
| | HIGH VOLTAGE OVERHEAD LINE | |
| | HOUSE/ STRUCTURE | |
| | HYDRANT | |
| | INLAND WETLAND LIMITS | |
| | MAILBOX | |
| | MANHOLE (STORM) | |
| | MANHOLE (SANITARY) | |
| | MONUMENT | |
| | NORTH ARROW | |
| | ORDINARY HIGH WATER | |
| | RIPRAP APRON | |
| | SANITARY SERVICE CONNECTION | |
| | SANITARY SEWER | |
| | SEDIMENTATION CONTROL SYSTEM | |
| | SIGN | |
| | SPOT ELEVATION | x 33.2 |
| | STONE WALL | |
| | TELEPHONE LINE (OVERHEAD OR UNDERGROUND) | |
| | TEST HOLE NUMBER 5 (SEE CONTRACT DOCUMENTS) | TH-5 |
| | TREE | |
| | TREE LINE | |
| | UNDERDRAIN | |
| | "U" SHAPED STONE DIKE | |
| | UTILITY POLE | |
| | WATER COURSE | |
| | WATER LINE | |
| | WATER TEST PIT | TP W1 |

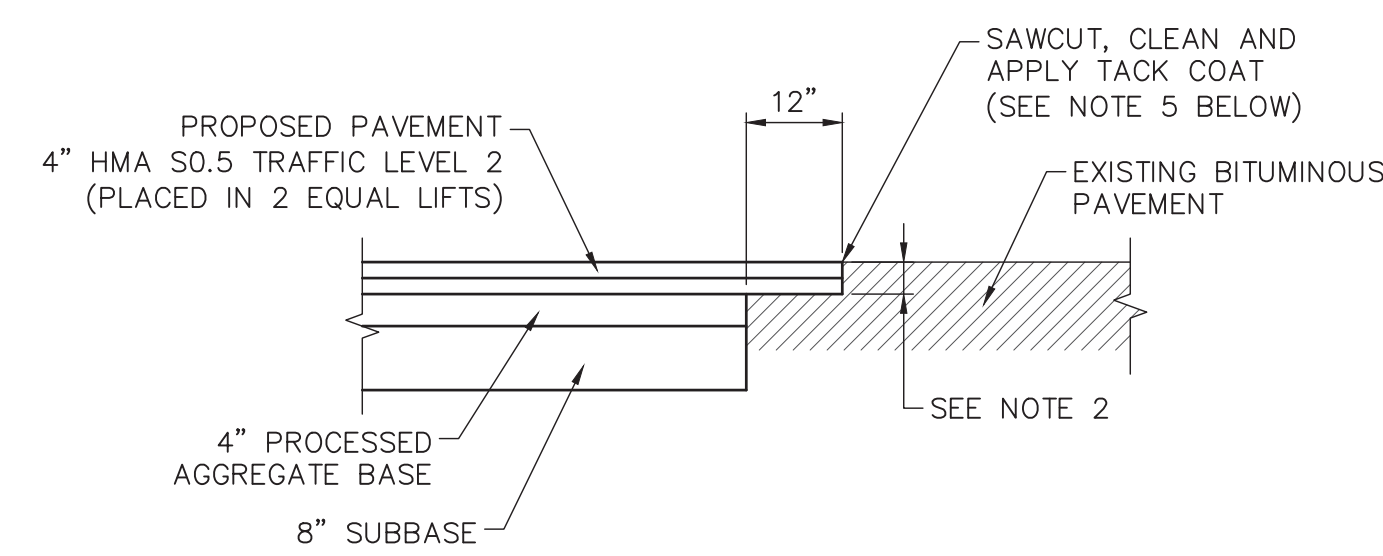


NOTE: SEE CROSS SECTIONS AND PLANS FOR ADDITIONAL INFORMATION.

LEGEND

- (A) 4" - HMA S0.5 TRAFFIC LEVEL 2 (PLACED IN 2 EQUAL LIFTS)
- (B) 4" - PROCESSED AGGREGATE BASE
- (C) 8" - SUBBASE ON EARTH, 18" ON ROCK
- (D) ADDITIONAL SUBBASE AS NEEDED
- (E) 4" - PROCESSED AGGREGATE
- (F) 4" - TOPSOIL AND TURF ESTABLISHMENT
- (G) METAL BEAM RAIL

ROADWAY TYPICAL SECTION NOT TO SCALE



NOTES:

- THIS DETAIL IS TO BE USED WHERE "SAWCUT & MATCH EXISTING PAVEMENT" IS CALLED FOR ON THE PLANS.
- OVERLAP BOTH BITUMINOUS CONCRETE COURSES OVER EXISTING SUBBASE.
- MINIMUM THICKNESS TO BE SAME AS PROPOSED BITUMINOUS OR MATCH THICKNESS OF EXISTING PAVEMENT, WHICHEVER IS GREATER.
- PAVEMENT MATCH TREATMENT WILL BE INCIDENTAL TO THE WORK.
- TO BE PAID FOR UNDER THE ITEM "CUT BITUMINOUS CONCRETE PAVEMENT".

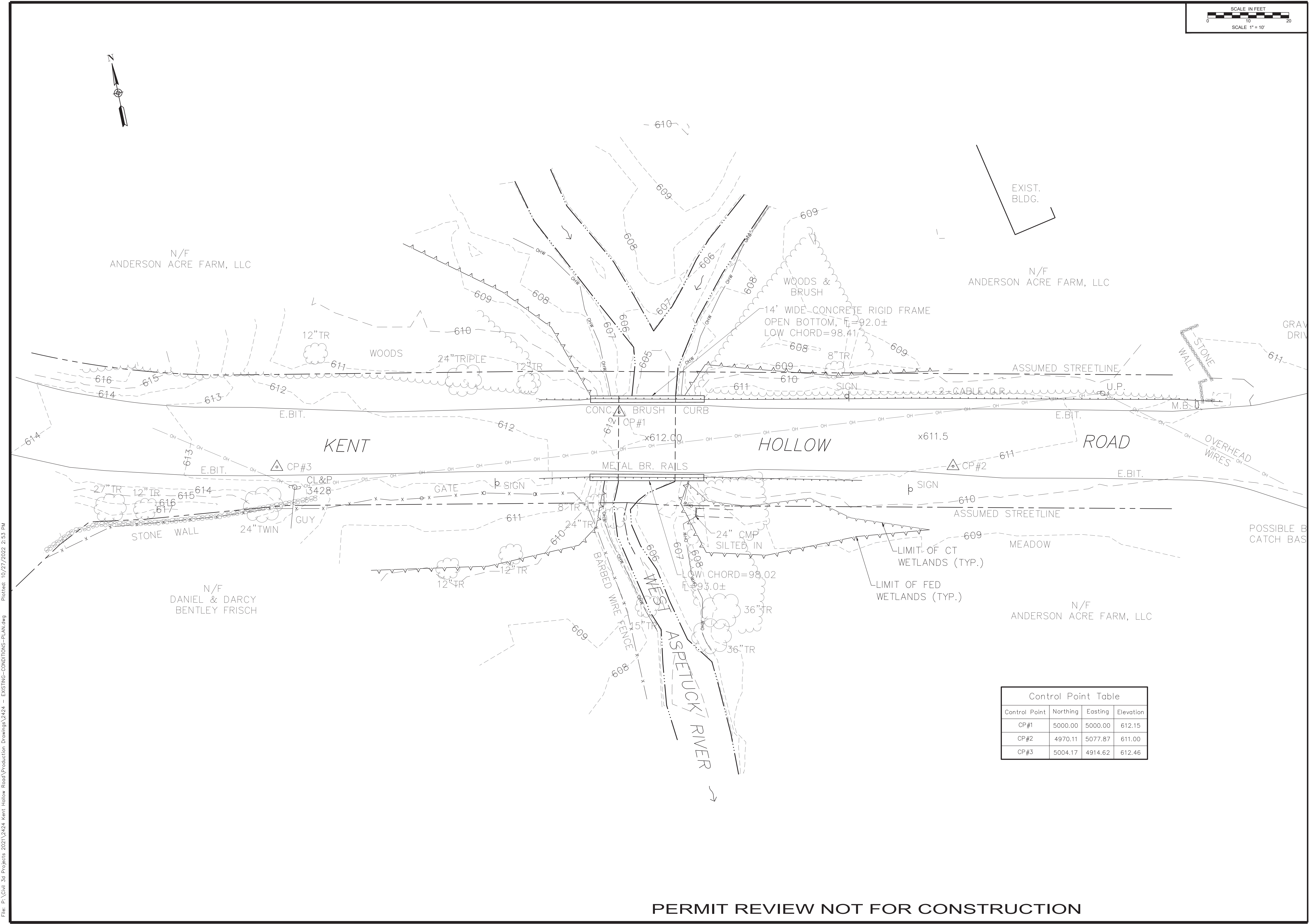
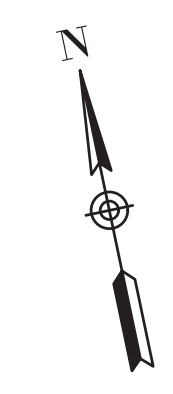
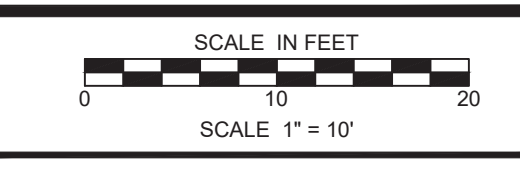
PAVEMENT TRANSITION DETAIL NOT TO SCALE

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DATE: October 2022
SCALE: AS NOTED
DESIGNED BY:
DRAWN BY:
CHECKED BY:
APPROVED BY: JAC

CARDINAL
ENGINEERING ASSOCIATES
480 BEECHER AVENUE, SUITE 100, WEST ASPECTUCK RIVER, CT 06460-0100
487 BARTON RD | LITCHFIELD, CT 06759-5972-9106

REPLACEMENT OF BRIDGE NO. 067-016
KENT HOLLOW ROAD OVER WEST ASPECTUCK RIVER
KENT, CONNECTICUT
GENERAL NOTES & TYPICAL SECTION

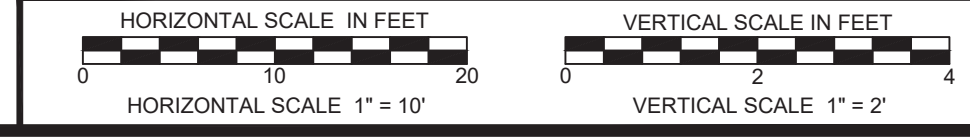
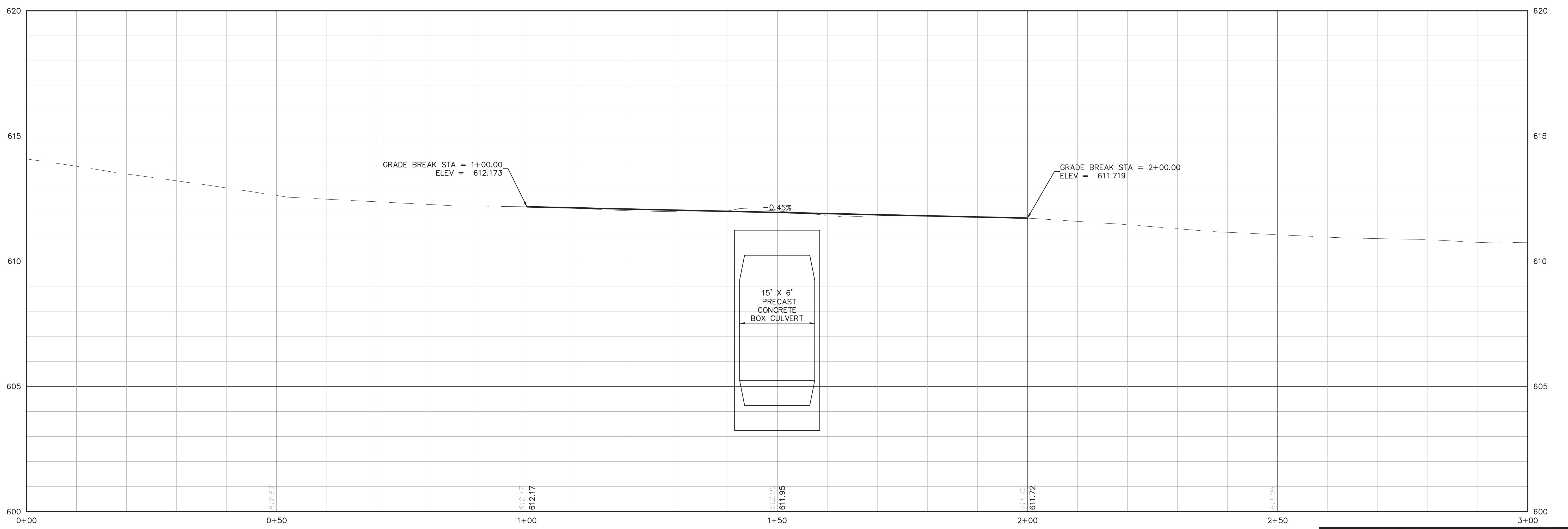
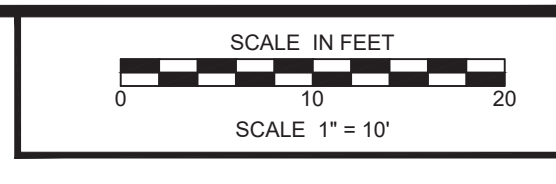
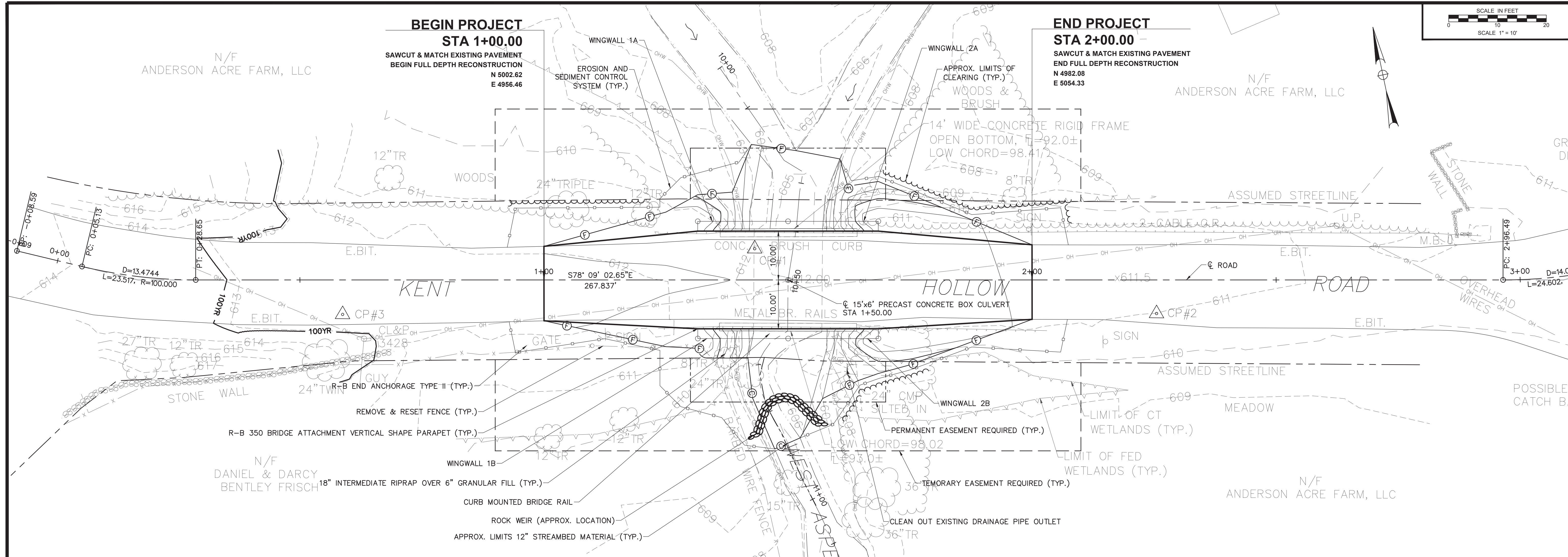


| Control Point Table | | | |
|---------------------|----------|---------|-----------|
| Control Point | Northing | Easting | Elevation |
| CP#1 | 5000.00 | 5000.00 | 612.15 |
| CP#2 | 4970.11 | 5077.87 | 611.00 |
| CP#3 | 5004.17 | 4914.62 | 612.46 |

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| | |
|---|---|
| <p>DATE: October 2022 SCALE: AS NOTED DESIGNED BY: DRAWN BY: CHECKED BY: APPROVED BY: JAC</p> | <p>NO. 1 REVISION LOWER PROFILE & SHORTEN ALIGNMENT, ADD ROCK WEIR DATE: 6/21/19 BY: GG</p> |
| <p>CARDINAL ENGINEERING ASSOCIATES 480 RESEARCH PARKWAY, MERIDEN, CT 06460 203-268-1869 457 BANTAM RD LIC#FIELD CT 06737 860-377-7106</p> | |
| <p>REPLACEMENT OF BRIDGE NO. 067-016 KENT HOLLOW ROAD OVER WEST ASPETUCK RIVER KENT, CONNECTICUT EXISTING CONDITIONS</p> | |
| <p>EXC-01</p> | |
| <p>3</p> | |

PERMIT REVIEW NOT FOR CONSTRUCTION

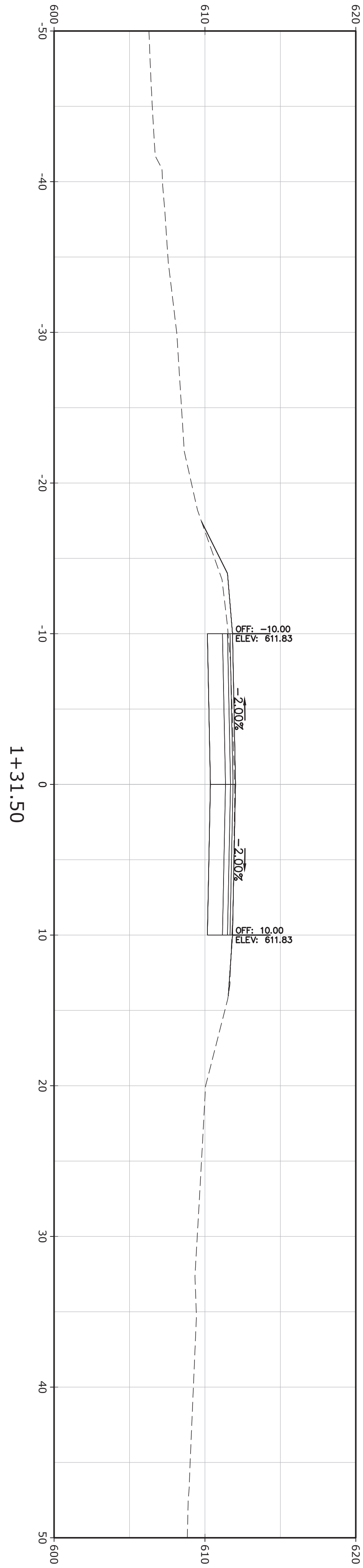
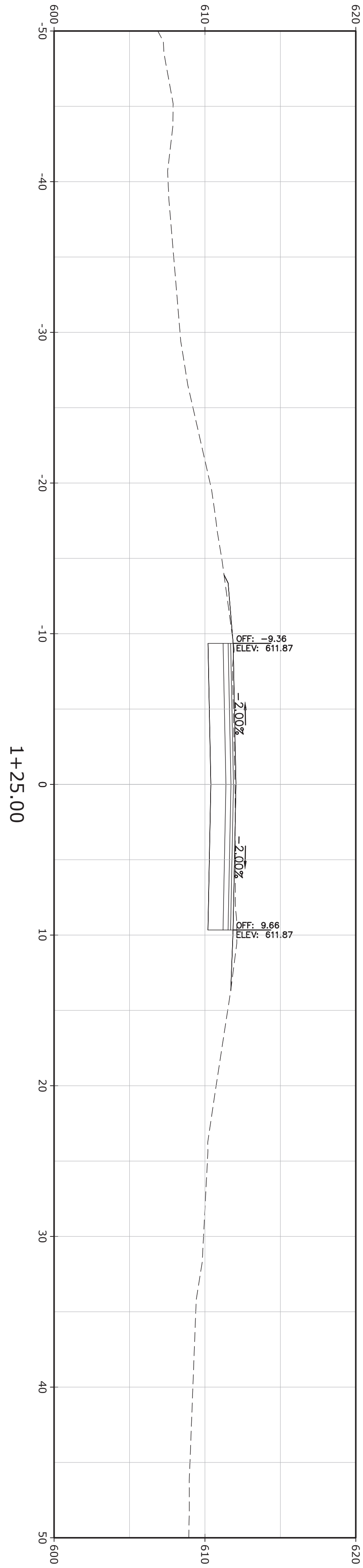
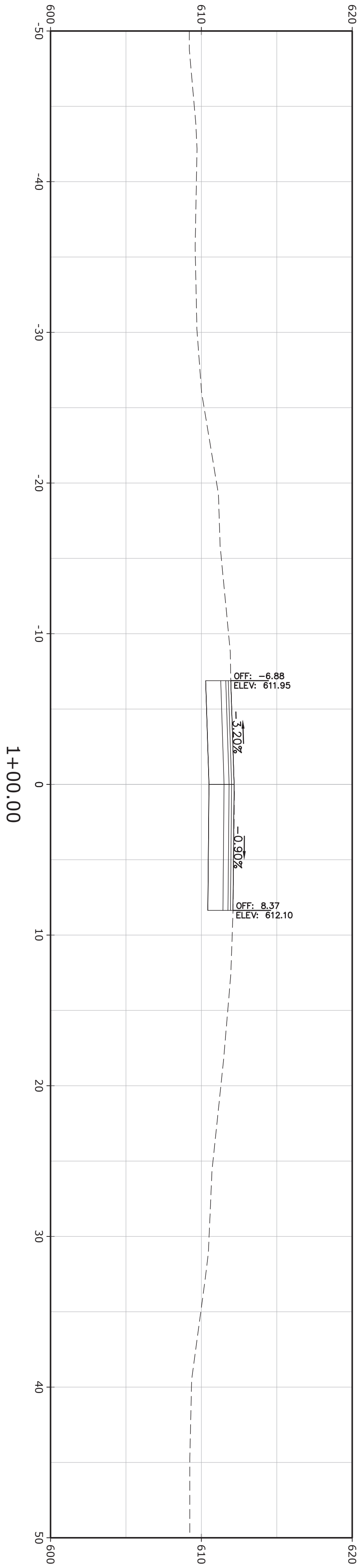


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| DATE: October 2023 | SCALE: AS NOTED |
| DESIGNED BY: | DRAWN BY: |
| CHECKED BY: | APPROVED BY: JAC |
| NO. | REVISION |
| DATE | BY |

CARDINAL
 ENGINEERING ASSOCIATES
 480 RESEARCH PARKWAY MERIDEN, CT 06460 203-238-4819
 487 BANTAM RD | LITCHFIELD, CT 06759 203-377-7106

REPLACEMENT OF BRIDGE NO. 067-016
 KENT HOLLOW ROAD OVER WEST ASPETUCK RIVER
 KENT, CONNECTICUT
 ROADWAY PLAN & PROFILE



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REPLACEMENT OF BRIDGE NO. 067-016
KENT HOLLOW ROAD OVER WEST ASPECTUCK RIVER
KENT, CONNECTICUT
CROSS SECTIONS

CARDINAL
ENGINEERING ASSOCIATES

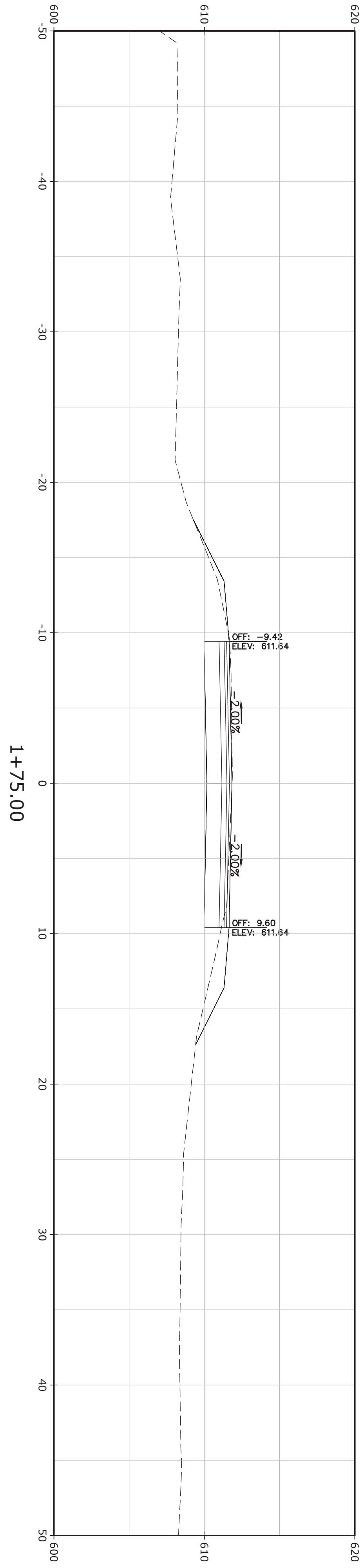
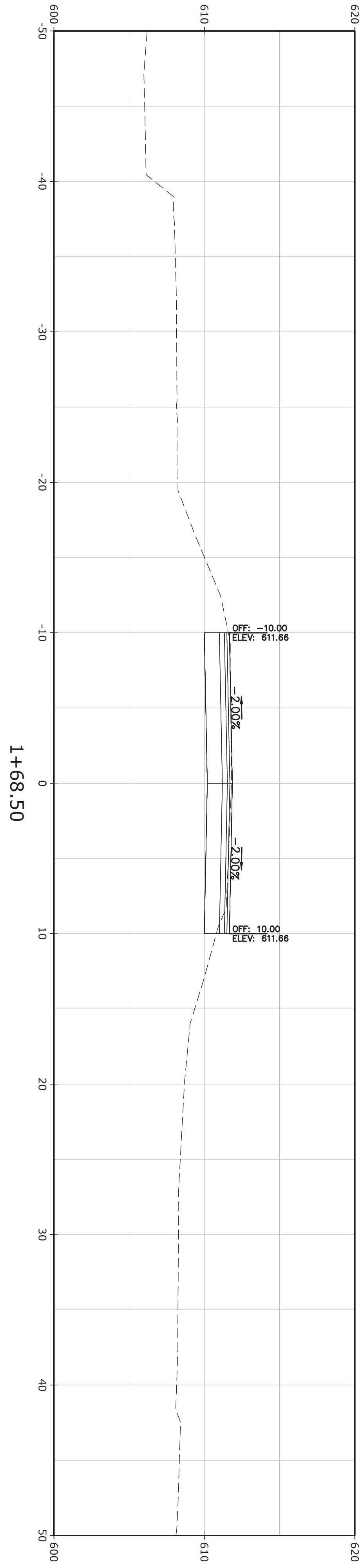
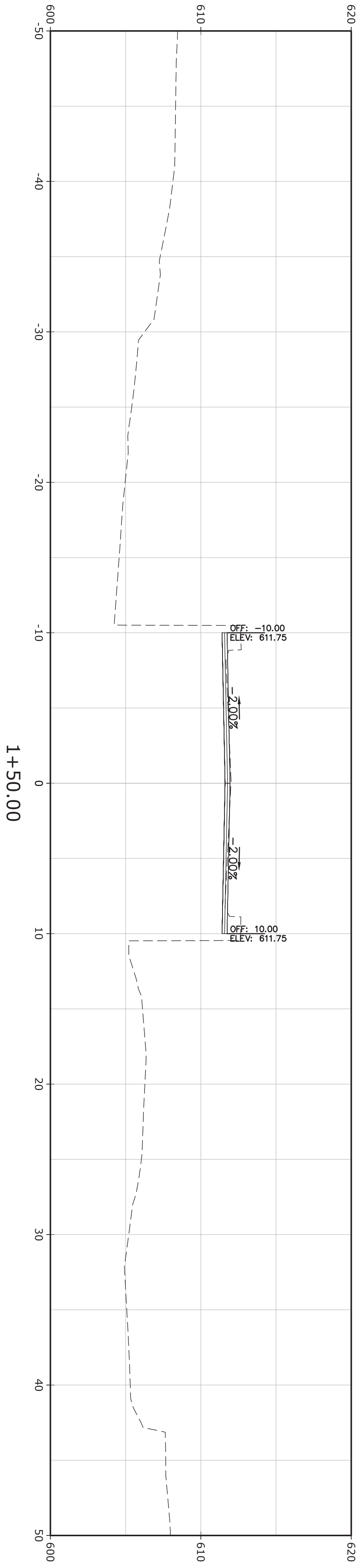
180 RESEARCH PKWY | MERIDEN, CT 06450 | 203-238-1969
457 BANTAM RD | LITCHFIELD, CT 06759 | 860-597-9106

DATE: October 2022
SCALE: AS NOTED
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DRAWN BY:
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APPROVED BY: JAC

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XSC-01

5



PERMIT REVIEW NOT FOR CONSTRUCTION



REPLACEMENT OF BRIDGE NO. 067-016
KENT HOLLOW ROAD OVER WEST ASPECTUCK RIVER
KENT, CONNECTICUT
CROSS SECTIONS

XSC-02

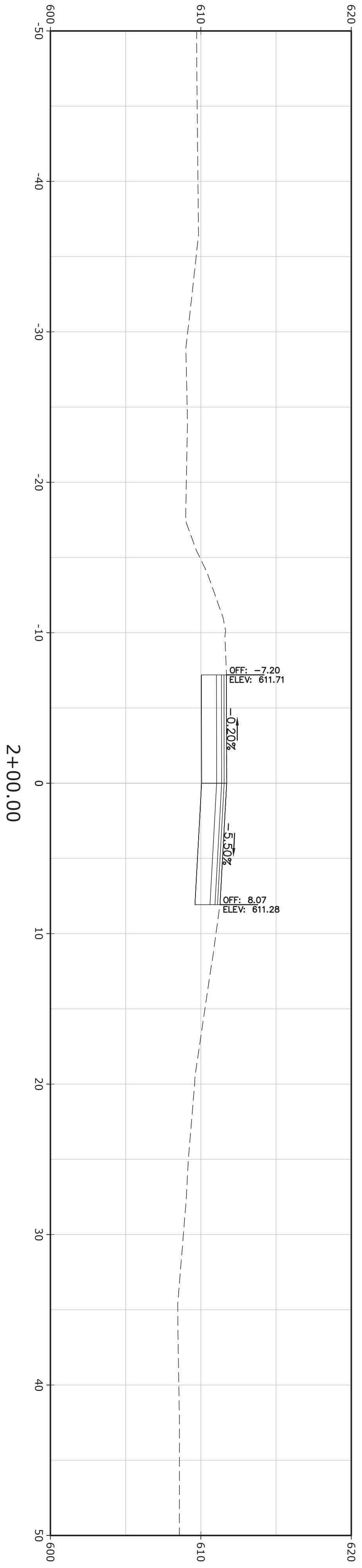
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CARDINAL
ENGINEERING ASSOCIATES

180 RESEARCH PKWY | MERIDEN, CT 06450 | 203-238-1969
457 BANTAM RD | LITCHFIELD, CT 06759 | 860-597-9106

DATE: October 2022
SCALE: AS NOTED
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SCALE NUMBER
SCALE 1" = 5'

REPLACEMENT OF BRIDGE NO. 067-016
KENT HOLLOW ROAD OVER WEST ASPECTUCK RIVER
KENT, CONNECTICUT
CROSS SECTIONS

XSC-03
7

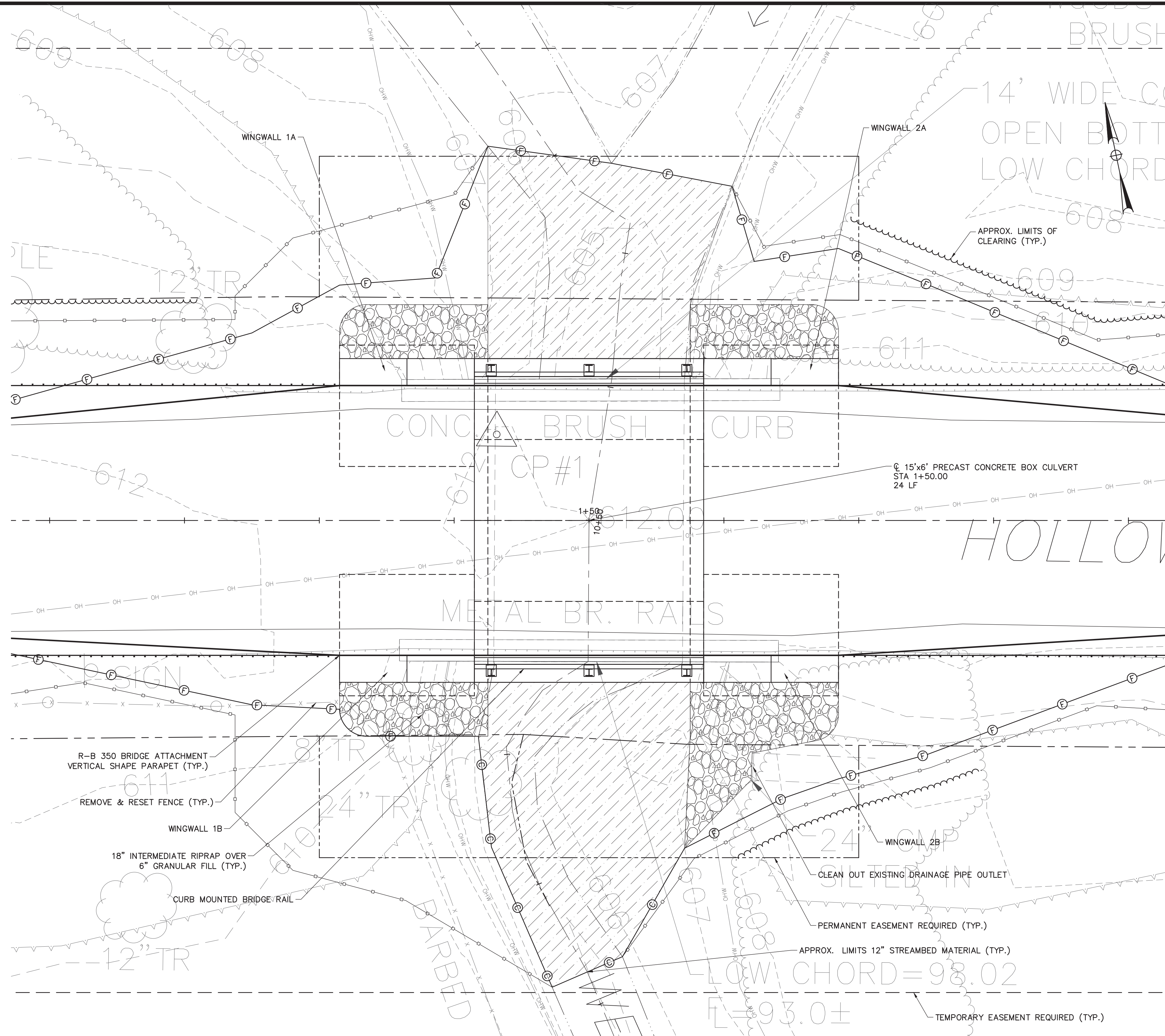
CARDINAL
ENGINEERING ASSOCIATES

180 RESEARCH PKWY | MERIDEN, CT 06450 | 203-238-1969
457 BANTAM RD | LITCHFIELD, CT 06759 | 860-597-9106

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APPROVED BY: JAC

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PLAN
SCALE: 1/4"=1'-0"

GENERAL NOTES:

SPECIFICATIONS: CONNECTICUT DEPARTMENT OF TRANSPORTATION FORM 818 (2020), SUPPLEMENTAL SPECIFICATIONS DATED 7/2020 AND SPECIAL PROVISIONS.
DESIGN SPECIFICATIONS: AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS EIGHTH EDITION, INCLUDING 2018 INTERIM REVISIONS AS SUPPLEMENTED BY THE CONNECTICUT DEPARTMENT OF TRANSPORTATION BRIDGE DESIGN MANUAL (2003 EDITION), UP TO AND INCLUDING 2019 REVISIONS.

MATERIAL STRENGTHS:

CONCRETE:
 CLASS PCC03340 $f'_c = 3,000$ PSI
 CLASS PCC04462 $f'_c = 4,000$ PSI
 CLASS PCC05562 $f'_c = 5,000$ PSI
 THE CONCRETE STRENGTH, f'_c , USED IN DESIGN OF THE CONCRETE COMPONENTS IS NOTED ABOVE. THE COMPRESSIVE STRENGTH OF THE CONCRETE IN THE CONSTRUCTED COMPONENTS SHALL CONFORM TO THE REQUIREMENTS OF 6.01 - CONCRETE FOR STRUCTURES, AND M.03 - PORTLAND CEMENT CONCRETE.

REINFORCEMENT (ASTM A615 GRADE 60): $F_y = 60$ KSI

LIVE LOAD: HL-93, LEGAL AND PERMIT VEHICLES

FUTURE PAVING ALLOWANCE: NONE

DIMENSIONS: WHEN DECIMAL DIMENSIONS ARE GIVEN TO LESS THAN THREE DECIMAL PLACES, THE OMITTED DIGITS SHALL BE ASSUMED TO BE ZEROS.

EXISTING DIMENSIONS: DIMENSIONS AND LOCATIONS OF THE EXISTING STRUCTURE SHOWN ON THESE PLANS ARE FOR GENERAL REFERENCE ONLY. THE CONTRACTOR SHALL TAKE ALL FIELD MEASUREMENTS NECESSARY TO ASSURE PROPER FIT OF THE FINISHED WORK AND SHALL ASSUME FULL RESPONSIBILITY FOR THEIR ACCURACY. WHEN SHOP DRAWINGS BASED ON FIELD MEASUREMENTS ARE SUBMITTED FOR APPROVAL, THE FIELD MEASUREMENTS SHALL ALSO BE SUBMITTED FOR REFERENCE BY THE REVIEWER.

UTILITIES:

THE FOLLOWING UTILITIES ARE LOCATED WITHIN THE PROJECT LIMITS AND SHALL BE PROTECTED DURING CONSTRUCTION:
 ELECTRIC DISTRIBUTION
 CABLE TV
 EVERSOURCE ENERGY
 FRONTIER COMMUNICATIONS OF CONNECTICUT
 CHARTER COMMUNICATIONS
 CONTRACTOR SHALL COORDINATE ALL WORK RELATED TO UTILITY RELOCATION WITH THE RESPECTIVE UTILITY COMPANIES.

MASH TEST LEVEL: THE 3-TUBE CURB MOUNTED BRIDGE RAIL MEETS THE TL-4 CRITERIA FOR MASH 2016.

JOINT SEAL: SEE SPECIAL PROVISIONS.

EXPOSED EDGES: EXPOSED EDGES OF CONCRETE SHALL BE BEVELED 1" X 1" UNLESS DIMENSIONED OTHERWISE.

CONCRETE COVER: ALL REINFORCEMENT SHALL HAVE TWO INCHES OF COVER UNLESS DIMENSIONED OTHERWISE.

REINFORCEMENT: ALL REINFORCEMENT SHALL BE GALVANIZED AFTER FABRICATION UNLESS NOTED OTHERWISE. ALL REINFORCEMENT SHALL CONFORM TO THE REQUIREMENTS OF ASTM A767, CLASS 1, INCLUDING SUPPLEMENTAL REQUIREMENTS. THE COST OF FURNISHING AND PLACING THIS REINFORCEMENT SHALL BE INCLUDED IN THE ITEM 'DEFORMED STEEL BARS - GALVANIZED.'

PREFORMED EXPANSION JOINT FILLER: THE COST OF FURNISHING AND INSTALLING PREFORMED EXPANSION JOINT FILLER IS PAID FOR AS '(THICKNESS AND TYPE) JOINT FILLER FOR BRIDGES.'

CONSTRUCTION JOINTS: CONSTRUCTION JOINTS, OTHER THAN THOSE SHOWN ON THE PLANS WILL NOT BE PERMITTED WITHOUT THE PRIOR APPROVAL OF THE ENGINEER.

PRECAST CONCRETE BOX CULVERT: SEE SPECIAL PROVISIONS.

| CONCRETE COMPONENTS | | |
|------------------------------|--|--------------------|
| ITEM NAME | COMPONENT | MIX CLASSIFICATION |
| FOOTING CONCRETE | CUTOFF AND RETURN WALLS, WINGWALL FOOTINGS | PCC03340 |
| ABUTMENT AND WALL CONCRETE | WINGWALL STEMS, ENDWALL STEMS | PCC03340 |
| BRIDGE DECK CONCRETE | BRUSH CURB | PCC04462 |
| PRECAST CONCRETE BOX CULVERT | PRECAST CONCRETE BOX CULVERT | PCC05562 |

| PRECAST CONCRETE BOX CULVERT | | | | |
|------------------------------|-----------------|-----------------|----------------|-----------------|
| UNIT | SHIPPING LENGTH | SHIPPING HEIGHT | SHIPPING WIDTH | SHIPPING WEIGHT |
| CELL TYPE "A" | 17 Ft | 8 Ft | 6.00 Ft | 22.5 TONS |
| CELL TYPE "B" | 17 Ft | 8 Ft | 6.00 Ft | 22.5 TONS |

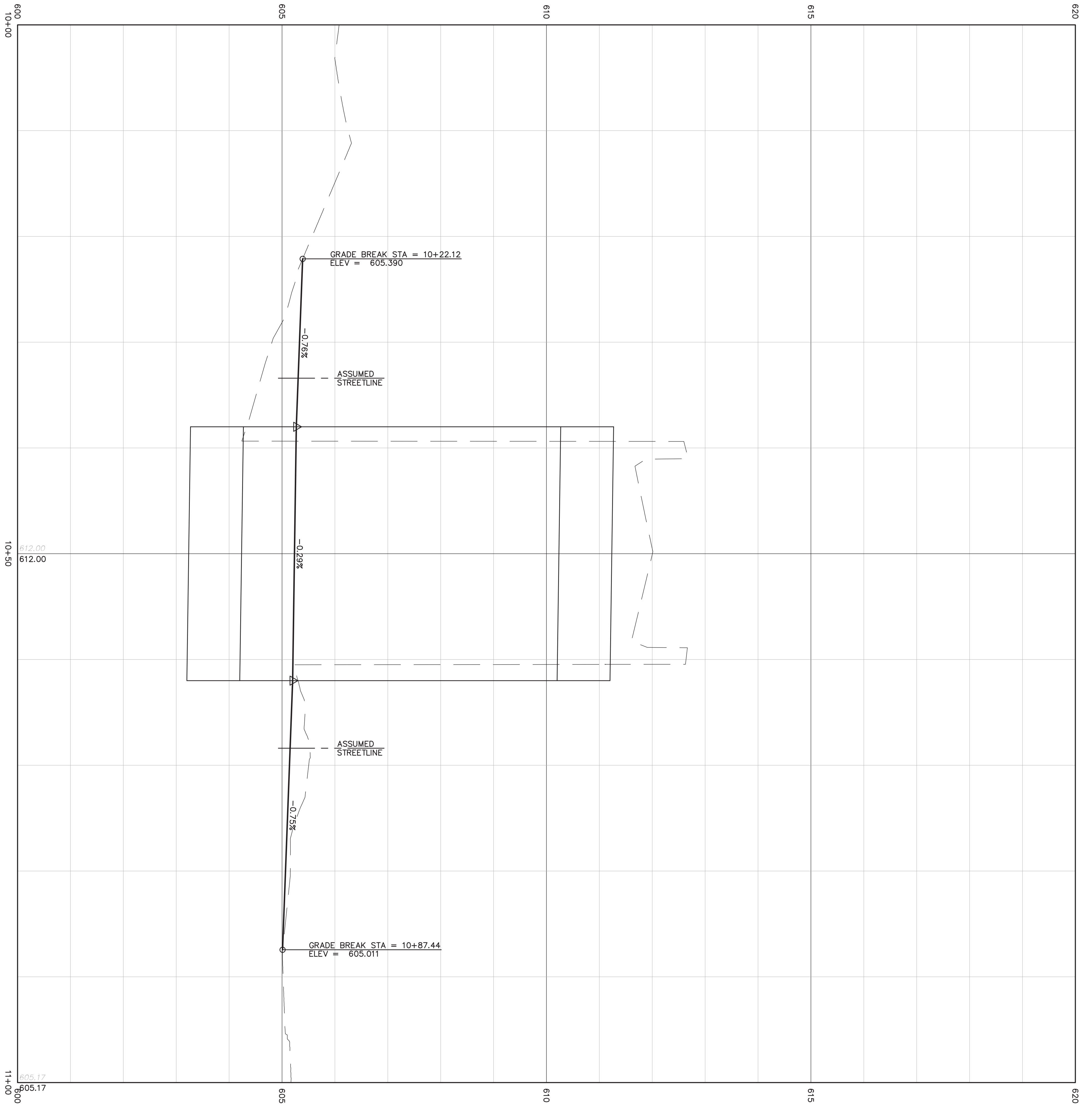
| HYDRAULIC DATA | |
|---|----------------|
| DRAINAGE AREA | 4.13 SQ. MILES |
| DESIGN FREQUENCY | 100 YEARS |
| DESIGN DISCHARGE | 965 C.F.S. |
| *AVERAGE DAILY FLOW ELEVATION | 607.75 |
| UPSTREAM DESIGN WATER SURFACE ELEVATION | 612.60 |
| DOWNSTREAM DESIGN WATER SURFACE ELEVATION | 608.85 |
| MAXIMUM SCOUR ELEVATION | NA |
| FREQUENCY | NA |
| DISCHARGE | NA |
| WORST CASE SCOUR SUB-STRUCTURE UNIT | NA |

*OBSERVED AUGUST 2022

PERMIT REVIEW NOT FOR CONSTRUCTION

| | |
|---|---|
| <p>CARDINAL ENGINEERING ASSOCIATES</p> <p>480 RESEARCHWAY/AMERDEN, CT 06460/938.4819 487 BARTON RD LITCHFIELD, CT 06759/860.597.9106</p> | <p>REPLACEMENT OF BRIDGE NO. 067-016 KENT HOLLOW ROAD OVER WEST ASPETUCK RIVER KENT, CONNECTICUT CULVERT GENERAL PLAN</p> |
| <p>DATE: October 2022 SCALE: AS NOTED DESIGNED BY: DRAWN BY: CHECKED BY: APPROVED BY: JAC</p> | <p>NO. _____ REVISION _____ DATE _____</p> |
| <p>STR-01</p> | <p>8</p> |

PERMIT REVIEW NOT FOR CONSTRUCTION



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|-------------|--|---|--------------------|----------|------|----|
| STR-02 9 | REPLACEMENT OF BRIDGE NO. 067-016 KENT HOLLOW ROAD OVER WEST ASPECTUCK RIVER KENT, CONNECTICUT ROADWAY PLAN & PROFILE | 180 RESEARCH PKWY MERIDEN, CT 06450 203-238-1969 457 BANTAM RD LITCHFIELD, CT 06759 860-597-9106 | DATE: October 2022 | | | |
| | | | SCALE: AS NOTED | | | |
| | | | DESIGNED BY: | | | |
| | | | DRAWN BY: | | | |
| | | | CHECKED BY: | | | |
| | | | APPROVED BY: JAC | | | |
| | | | NO. | REVISION | DATE | BY |

RESPONSIBILITY AND AUTHORITY

THE CITY/TOWN OR ITS AUTHORIZED REPRESENTATIVE HAS THE RESPONSIBILITY AND AUTHORITY FOR THE IMPLEMENTATION, MAINTENANCE, AND MONITORING OF THE EROSION CONTROL MEASURES.

GENERAL

1. EROSION AND SEDIMENT CONTROL MEASURES WILL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY/TOWN STANDARDS, THE CONNECTICUT DOT SPECIFICATIONS FOR ROADS, BRIDGES, FACILITIES AND INCIDENTAL CONSTRUCTION, FORM 818 (8/20) JULY 2020 SUPPLEMENT 2002 CONNECTICUT REGULATIONS FOR EROSION AND SEDIMENT CONTROL, DEF BULLETIN 34, AND THE PROJECT SPECIFICATIONS.
2. THESE GUIDELINES SHALL APPLY TO ALL WORK CONSISTING OF ANY AND ALL POLLUTION AND SOIL EROSION, AS MAY BE REQUIRED, DURING THE CONSTRUCTION OF THE PROJECT.
3. IN GENERAL, ALL CONSTRUCTION ACTIVITIES SHALL PROCEED IN SUCH A MANNER SO AS NOT TO POLLUTE ANY WETLANDS. WATERCOURSE CROSSINGS SHALL BE LIMITED TO THE NECESSARY MINIMUM. THE SURFACE AREA OF EARTH MATERIALS EXPOSED BY CONSTRUCTION METHODS AND IMMEDIATELY PROVIDE PERMANENT AND TEMPORARY POLLUTION CONTROL MEASURES TO PREVENT CONTAMINATION OF ADJACENT WETLANDS, WATERCOURSES, AND WATERBODIES, AND TO PREVENT, INsofar AS POSSIBLE, EROSION ON THE SITE.
4. ALL EROSION CONTROL MATINGS SHALL BE AS SPECIFIED ON THE PLANS OR TEMPORARY EROSION CONTROL MATINGS SHALL BE LISTED ON THE PLANS. ALL EROSION CONTROL MATINGS SHALL BE USED ON TRANSPORTATION PROJECTS (REPORT NUMBER 211-12-04-4) DATED APRIL 2004 OR LATEST REVISION. THIS REPORT IS POSTED ON THE CONNECTICUT DEPARTMENT OF TRANSPORTATION WEB SITE. INSTALLATION SHALL CONFORM TO CONN DOT FORM 817, SECTION 7.55, GEOTEXTILE
5. THE EROSION CONTROL PLAN PROPOSES EROSION CONTROL MEASURES TO HELP CONTROL ACCELERATED EROSION AND SEDIMENTATION AND THE DANGER FROM STORM WATER RUNOFF AT THE SITE. THE RUNOFF SHALL BE PREVENTED BY THE PERFORMED EROSION CONTROL MEASURES. EROSION CONTROL CONSTRUCTION ACTIVITY AND PRESERVING NATURAL VEGETATION WHENEVER POSSIBLE.
6. EXISTING VEGETATION SHALL BE PROTECTED AND ONLY THAT CLEARING AND GRUBBING ABSOLUTELY NECESSARY FOR THE PROPOSED CONSTRUCTION SHALL BE PERFORMED. ALL DISTURBED AREAS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION AND CONTROL UNLESS OTHERWISE INDICATED ON THE PLANS. THE CONTRACTOR SHALL TAKE SPECIAL CARE WITH HIS CONSTRUCTION METHODS AND SHALL COMPLY WITH THE FOLLOWING GUIDELINES.
 7. ALL AREAS SHALL BE PROTECTED FROM SEDIMENTATION DURING AND AFTER CONSTRUCTION, PARTICULARLY THE STORAGE OF EXCAVATED OR STOCKPILE MATERIAL. THE CONTRACTOR SHALL CAREFULLY STRIP ALL TOPSOIL, LOAM OR ORGANIC MATTER PRIOR TO TRENCHING OR OTHER OPERATIONS AND SHALL STORE THEM SEPARATELY FROM ALL OTHER MATERIALS DURING EXCAVATION. EACH STOCKPILE MUST BE IMMEDIATELY RINSED WITH SEDIMENT CONTROL MATERIAL (I.E. HAY BALES AND/OR GEOTEXTILE FENC)
 8. THE EXISTING NATURAL DRAINAGE PATTERNS AND VEGETATIVE COVER SHALL BE PRESERVED TO THE MAXIMUM POSSIBLE EXTENT.
 9. CONSTRUCTION EQUIPMENT SHALL BE A TYPE THAT DOES NOT DAMAGE ADJACENT AREAS AND MINIMIZES THE NEED FOR AND SIZE OF ACCESS ROADWAYS.
 10. CONSTRUCTION SHALL BE PERFORMED IN SUCH A MANNER SO AS TO KEEP LAND GRADING AND DISTURBANCES TO A MINIMUM.
 11. WATERCOURSE ELEVATIONS WITHIN THE CONSTRUCTION SITE SHALL BE RESTORED. CHANNELS SHALL BE CLEANED AND CLEARED OF SEDIMENT AND DEBRIS.
 12. EXCESS EXCAVATED MATERIAL AND OTHER DEBRIS SHALL NOT BE STORED OR DISPOSED OF WITHIN THE ADJACENT WATERCOURSES OR WETLAND AREAS.
 13. ANY CONSTRUCTION ROADS BUILT DURING CONSTRUCTION SHALL BE REMOVED AND ALL GRADE ELEVATIONS SHALL BE RESTORED TO ORIGINAL CONDITION.
 14. DEBRIS AND OTHER WASTE RESULTING FROM EQUIPMENT MAINTENANCE AND CONSTRUCTION SHALL NOT BE DISCARDED ON SITE.

LAND GRADING

GENERAL:

- THE RESHAPING OF THE GROUND SURFACE BY EXCAVATION AND FILLING OR A COMBINATION OF BOTH, TO OBTAIN PLANNED GRADES, SHALL PROCEED IN ACCORDANCE WITH THE FOLLOWING CRITERIA.
- A. THE CUT FACE OF EARTH EXCAVATION SHALL NOT BE STEEPER THAN TWO HORIZONTAL TO ONE VERTICAL (2:1).
 - B. THE PERMANENT EXPOSED FACES OF FILLS SHALL NOT BE STEEPER THAN TWO HORIZONTAL TO ONE VERTICAL (2:1).
 - C. THE CUT FACE OF ROCK EXCAVATION SHALL NOT BE STEEPER THAN ONE HORIZONTAL TO FOUR VERTICAL (1:4).
 - D. PROVISION SHOULD BE MADE TO CONDUIT SURFACE WATER SAFELY TO STORM DRAINS TO PREVENT SURFACE RUNOFF FROM DAMAGING CUT FACES AND FILL SLOPES.
 - E. EXCAVATIONS SHOULD NOT BE MADE SO CLOSE TO PROPERTY LINES AS TO ENDANGER ADJOINING PROPERTY WITHOUT PROTECTING SUCH PROPERTY FROM EROSION, SLIDING, SETTLING, OR CRACKING.
 - F. NO FILL SHOULD BE PLACED WHERE IT WILL SLIDE OR WASH UPON THE WATERCOURSES, OR WATERBODIES.
 - G. PRIOR TO ANY REGRADING, A STABILIZED CONSTRUCTION ENTRANCE SHALL BE PLACED AT THE ENTRANCE TO THE WORK AREA IN ORDER TO REDUCE MUD AND OTHER SEDIMENTS FROM LEAVING THE SITE.

TOPSOILING

GENERAL:

1. TOPSOIL SHALL BE SPREAD OVER ALL EXPOSED AREAS IN ORDER TO PROVIDE ESTABLISHMENT, GROWTH, AND MAINTENANCE OF VEGETATION.
2. UPON ATTAINING FINAL SUBGRADES, SCARIFY SURFACE TO PROVIDE A GOOD BOND WITH TOPSOIL.
3. REMOVE ALL LARGE STONES, TREE LIMBS, ROOTS AND CONSTRUCTION DEBRIS.
4. APPLY LIME ACCORDING TO SOIL TEST OR AT THE RATE OF 2 TON PER ACRE MATERIAL:

 1. TOPSOIL SHOULD HAVE PHYSICAL, CHEMICAL, AND BIOLOGICAL CHARACTERISTICS FAVORABLE TO THE GROWTH OF PLANTS.
 2. TOPSOIL SHOULD HAVE A SANDY OR LOAMY TEXTURE.
 3. TOPSOIL SHOULD BE RELATIVELY FREE OF SUBSOIL MATERIAL AND MUST BE FREE OF STONES (OVER 1" IN DIAMETER), LUMPS OF SOIL, ROOTS, TREE LIMBS, TRASH, OR CONSTRUCTION DEBRIS. IT SHOULD BE FREE OF ROOTS OR RHIZOMES SUCH AS THISTLE, NUTGRASS, AND QUACKGRASS.
 4. AN ORGANIC MATTER CONTENT OF SIX PERCENT (6%) IS REQUIRED. AVOID LIGHT COLORED SUBSOIL MATERIAL.
 5. SOLUBLE SALT CONTENT OF OVER 800 PARTS PER MILLION (PPM) IS LESS AND THE RECOMMENDED MARSH SOILS BECAUSE OF HIGH SALT CONTENT AND SULFUR ACIDITY.
 6. THE pH SHOULD BE MORE THAN 6.0. IF LESS, ADD LIME TO INCREASE pH TO AN ACCEPTABLE LEVEL.

1. AVOID SPREADING WHEN TOPSOIL IS WET OR FROZEN.
2. SPREAD TOPSOIL UNIFORMLY TO A DEPTH OF AT LEAST FOUR INCHES, OR TO THE DEPTH SHOWN ON THE PLANS.

APPLICATION:

TEMPORARY VEGETATIVE COVER

GENERAL:

1. TEMPORARY VEGETATIVE COVER SHALL BE ESTABLISHED ON ALL UNPROTECTED AREAS THAT PRODUCE SEDIMENT, AREAS WHERE FINAL GRADING HAS BEEN COMPLETED, AND AREAS WHERE THE ESTIMATED PERIOD OF BARE SOIL EXPOSURE IS LESS THAN 12 MONTHS. TEMPORARY VEGETATIVE COVER SHALL BE APPLIED IF AREAS WILL NOT BE PERMANENTLY SEEDED BY OCTOBER 15.
1. INSTALL REQUIRED SURFACE WATER CONTROL MEASURES.
2. REMOVE LOOSE ROCK, STONE, AND CONSTRUCTION DEBRIS FROM AREA.
3. APPLY LIME ACCORDING TO SOIL TEST OR AT A RATE OF 1 TON OF GROUND DOMESTIC LIMESTONE PER ACRE.
4. APPLY FERTILIZER ACCORDING TO SOIL TEST OR AT THE RATE OF 30 LB OF 10-10-10 PER ACRE (7.5 LB PER 1000 SF) AND SECOND APPLICATION OF 30 LB OF 10-10-10 (6.5 LB PER 1000 SF) WHEN GRASS IS 4" TO 6" HIGH. APPLY ONLY WHEN GRASS IS DRY.
5. UNLESS HYDROSEEDING, WORK IN LIME AND FERTILIZER TO A DEPTH OF 4" USING A DISK OR ANY SUITABLE EQUIPMENT.
6. TILLAGE SHOULD ACHIEVE A REASONABLY UNIFORM LOOSE SEEDBED. WORK ON CONTOUR IF SITE IS SLOPING.
- ESTABLISHMENT:
 1. SELECT APPROPRIATE SPECIES FOR THE SITUATION, NOTE RATES AND SEEDING DATES (SEE VEGETATIVE COVER SELECTION & MULCHING SPECIFICATION BELOW).
 2. APPLY SEED UNIFORMLY ACCORDING TO THE RATE INDICATED BY BROADCASTING, DRILLING, OR HYDRAULIC APPLICATION.
 3. UNLESS HYDROSEEDING, COVER PREGRASS SEEDS WITH NOT MORE THAN 2" OF SOIL USING SUITABLE EQUIPMENT.
 4. MULCH IMMEDIATELY AFTER SEEDING IF REQUIRED. (SEE VEGETATIVE COVER SELECTION & MULCHING SPECIFICATION BELOW.) APPLY STRAW OR HAY MULCH AND ANCHOR TO SLOPES GREATER THAN 3% OR WHERE CONCENTRATED FLOW WILL OCCUR.

PERMANENT VEGETATIVE COVER

GENERAL:

1. PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED AS VARIOUS SECTIONS OF THE PROJECT ARE COMPLETED IN ORDER TO STABILIZE THE SOIL, REDUCE DOWNSTREAM DAMAGE FROM SEDIMENT AND RUNOFF, AND TO ENHANCE THE AESTHETIC NATURE OF THE SITE. IT WILL BE APPLIED TO ALL CONSTRUCTION AREAS SUBJECT TO EROSION WHERE FINAL GRADING HAS BEEN COMPLETED AND A PERMANENT COVER IS NEEDED.
1. INSTALL REQUIRED SURFACE WATER CONTROL MEASURES.
2. REMOVE LOOSE ROCK, STONE, AND CONSTRUCTION DEBRIS FROM AREA.
3. PERFORM ALL PLANTING OPERATIONS PARALLEL TO THE CONTOURS OF THE SLOPE.
4. APPLY TOPSOIL AS INDICATED ELSEWHERE HEREIN.
5. APPLY FERTILIZER ACCORDING TO SOIL TEST OR SPREAD SEEDING: WORK DEEPLY IN SOIL, BEFORE SEEDING, 30 LB OF 10-10-10 FERTILIZER PER ACRE (7.5 LB PER 1000 SF), THEN SIX (6) TO EIGHT (8) WEEKS LATER, APPLY ON THE SURFACE AN ADDITIONAL 30 LB OF 10-10-10 FERTILIZER PER ACRE. AFTER SEPTEMBER 1, TEMPORARY VEGETATIVE COVER SHALL BE APPLIED, FALL SEEDING: WORK DEEPLY IN SOIL, BEFORE SEEDING, 240 LB OF 10-10-10 FERTILIZER PER ACRE (6.5 LB PER 1000 SF)

VEGETATIVE COVER SELECTION & MULCHING

TEMPORARY VEGETATIVE COVER:

- PERMANIAL RYEGRASS 3 LB/1000 SF (OLIUM PERENNIS)
- PERMANENT VEGETATIVE COVER:
- CREEPING RED FESCUE 2 LB/1000 SF (FESTUCA RUBRA)
- REDTOP 1 LB/1000 SF (AGROSTIS ALBA)
- TALL FESCUE 2 LB/1000 SF (FESTUCA ARUNDINACEA)
- TEMPORARY MULCHING:
- STRAW OR HAY: 60-90 LB/1000 SF (TEMPORARY VEGETATIVE AREAS)
- WOOD FIBER IN HYDROMULCH SLURRY 25-50 LB/1000 SF
- ESTABLISHMENT:
1. SMOOTH AND FIRM SEEDED WITH CULTIPACKER OR OTHER SIMILAR EQUIPMENT PRIOR TO SEEDING (EXCEPT WHEN HYDROSEEDING).
 2. SELECT ADAPTED SEED MIXTURE FOR THE SPECIFIC SITUATION. NOTE RATES AND THE SEEDING DATES (SEE VEGETATIVE COVER SELECTION & MULCHING SPEC).
 3. APPLY SEED UNIFORMLY, ACCORDING TO RATE INDICATED, BY BROADCASTING, DRILLING, OR HYDRAULIC APPLICATION.
 4. COVER GRASS AND LEGUME SEED WITH NOT MORE THAN 1/4" OF SOIL WITH SUITABLE EQUIPMENT (EXCEPT WHEN HYDROSEEDING).
 5. MULCH IMMEDIATELY AFTER SEEDING, IF REQUIRED, ACCORDING TO TEMPORARY MULCHING SPECIFICATIONS. (SEE VEGETATIVE COVER SELECTION & MULCHING SPECIFICATION.)
 6. USE PROPER INOCULANT ON ALL LEGUME SEEDINGS. USE FOUR (4) TIMES NORMAL RATES WHEN HYDROSEEDING.
 7. USE SOIL WHERE THERE IS A HEAVY CONCENTRATION OF WATER AND IN CRITICAL AREAS WHERE IT IS IMPORTANT TO GET A QUICK VEGETATIVE COVER TO PREVENT EROSION.

TEMPORARY EROSION / SEDIMENTATION CONTROL DEVICES

THE FOLLOWING EROSION/SEDIMENTATION CONTROL DEVICES ARE PLANNED FOR THE SITE DURING THE CONSTRUCTION PERIOD. THESE DEVICES SHALL BE INSTALLED AS INDICATED ON THE PLANS OR AS DESCRIBED HEREWITHIN.

1. SYNTHETIC FILTER BARRIERS AND HAY BALES WILL BE INSTALLED ALONG ALL EXPOSED AREAS TO PREVENT EROSION. HAY BALES WILL BE INSTALLED UNTIL THE SITE IS REVEGETATED. INSTALLATION DETAILS ARE PROVIDED IN THE PLAN SET ON THE EROSION CONTROL DETAIL SHEETS.
2. STRAW OR HAY MULCH IS INTENDED TO PROVIDE COVER FOR DENuded OR SEEDED AREAS UNTIL REVEGETATION IS ESTABLISHED. MULCH PLACED ON SLOPES OF LESS THAN 3 PERCENT SHALL BE ANCHORED BY APPLYING WATER MULCH PLACED IN AREAS OF CONCENTRATED FLOW OR ON SLOPES STEEPER THAN 3 PERCENT SHALL BE COVERED WITH FABRIC NETTING OR EROSION AND ANCHORED WITH STAPLES. ANCHORING WITH STAPLES SHALL BE LIMITED TO AREAS WITH SLOPES OF 1:1 AND WHERE SHOWN ON THE PLANS, WHICH ARE TO BE REVEGETATED. SHALL RECEIVE CURLEX BLANKETS BY AMERICAN EXCELISOR.
3. CONSTRUCTION ENTRANCES WILL BE INSTALLED AT ALL ACCESS POINTS OF THE SITE TO PREVENT THE TRACKING OF SOIL ONTO CITY STREETS AND STATE ROADS.
4. IF REQUIRED, TEMPORARY SEDIMENTATION BASINS AND/OR SEDIMENT TRAPS SHALL BE CONSTRUCTED AT THE LOCATIONS SPECIFIED BY THE ENGINEER DURING CONSTRUCTION TO ALLOW SETTLEMENT OF FINE GRAIN PARTICLES FROM DEWATERING OPERATIONS, AND SURFACE RUNOFF. THE REQUIRED VOLUME OF STORAGE IS 134 CUBIC YARDS FOR EVERY ACRE OF DISTURBED SITE ENTERING THE BASIN. A SEDIMENTATION BASIN WILL BE REQUIRED WHEN TWO ACRES ARE DISTURBED THAT DISCHARGE TO ANY POINT.
5. TEMPORARY STORAGE AND STOCKPILE AREAS SHALL BE SURROUNDED BY A SYNTHETIC FILTER BARRIER. TEMPORARY DRAINAGE SWALES SHALL BE CONSTRUCTED AT THE LOCATIONS SPECIFIED BY THE ENGINEER TO DIVERST RUNOFF INTO THE SEDIMENTATION BASINS.
6. SEDIMENT TRAPS WILL BE INSTALLED AROUND ALL CATCH BASINS. THE SEDIMENT TRAPS SHALL BE LEFT IN PLACE UNTIL THE TRIBUTARY AREA IS PAVED OR REVEGETATED.
7. WHERE CONSTRUCTION ACTIVITIES HAVE PERMANENTLY CEASED OR HAVE TEMPORARILY BEEN SUSPENDED FOR MORE THAN SEVEN DAYS, OR WHEN FINAL GRADES ARE REACHED IN ANY PORTION OF THE SITE, STABILIZATION MATERIAL SHALL BE APPLIED TO ALL EXPOSED AREAS. STABILIZATION MATERIAL REMAINING DISTURBED BUT INACTIVE FOR AT LEAST THIRTY DAYS SHALL RECEIVE TEMPORARY SEEDING IN ACCORDANCE WITH THE GUIDELINES. AREAS THAT WILL REMAIN DISTURBED BEYOND THE PLANTING SEASON, SHALL RECEIVE LONG-TERM, NON-VEGETATIVE STABILIZATION SUFFICIENT TO PROTECT THE SITE THROUGH THE WINTER. IN ALL CASES, STABILIZATION MEASURES SHALL BE IMPLEMENTED AS SOON AS POSSIBLE IN ACCORDANCE WITH THE GUIDELINES.
8. IF WORK IS CONDUCTED BETWEEN SEPTEMBER, 15TH AND APRIL, 15TH OF ANY CALENDAR YEAR, ALL DENDED AREAS WILL BE COVERED WITH HAY MULCH, APPLIED AT TWICE THE NORMAL APPLICATION RATE AND ANCHORED WITH FABRIC NETTING. THE PERIOD BETWEEN FINAL GRADING AND MULCHING SHALL BE REDUCED TO A 15 DAY MAXIMUM.
9. ALL STREETS SHALL BE SWEEP OR WASHED TO CONTROL MUD AND DUST AS NECESSARY AS DETERMINED BY THE TOWN AND/OR THE ENGINEER.
10. DURING GRUBBING OPERATIONS, CHECK DAMS WILL BE INSTALLED AT ANY EFFLUENT CONCENTRATED FLOW DISCHARGE POINTS.
11. EFFLUENT FROM DEWATERED WORK AREAS SHALL NOT BE DISCHARGED TO THE WATERCOURSE BUT BE PROCESSED THROUGH TREATMENT STRUCTURES. SUCH STRUCTURES ARE NOT TO BE LOCATED WITHIN THE WATERCOURSE CHANNEL, OR ADJACENT WETLANDS.

PERMANENT EROSION CONTROL MEASURES

THE FOLLOWING PERMANENT EROSION CONTROL MEASURES HAVE BEEN DESIGNED AS PART OF THE EROSION/SEDIMENTATION CONTROL PLAN:

1. ALL AREAS DISTURBED DURING CONSTRUCTION, BUT NOT SUBJECT TO OTHER RESTORATION (PAVING, RIP RAP, ETC.) WILL BE LOAMED, LIMED, FERTILIZED, MULCHED AND SEEDED. FABRIC NETTING ANCHORED WITH STAPLES SHALL BE PLACED OVER THE MULCH IN AREAS WHERE THE FINISH GRADE SLOPES IS GREATER THAN 3%. ALL AREAS SHALL RECEIVE PROTECTION WITHIN 30 DAYS. NATIVE TOPSOIL SHALL BE STOCKPILED AND REUSED FOR FINAL RESTORATION WHEN IT IS OF SUFFICIENT QUALITY.
2. CATCH BASINS WILL BE PROVIDED WITH SEDIMENT SUMPS.

GENERAL PHASING OF EROSION AND SEDIMENTATION CONTROL MEASURES:

THE CONSTRUCTION OF THE TEMPORARY SEDIMENTATION BASINS, IF REQUIRED MUST BE TAKEN BEFORE OTHER WORK BEGINS AT THE SITE. EXTREME CAUTION MUST BE EXERCISED TO LIMIT THE EXTENT OF DISTURBED AREAS. WORK SHALL BE CONDUCTED IN THE FOLLOWING ORDER FOR ADDITIONAL INFORMATION SEE SCHEDULE OF CONSTRUCTION).

- A. INSTALL CRUSHED STONE CONSTRUCTION ENTRANCES.
- B. AND STORAGE AREAS AND IN OTHER AREAS AS INDICATED ON THE PLANS OR DIRECTED BY THE ENGINEER. INSTALL HAY BALE SEDIMENT TRAPS AT ALL EXISTING CATCH BASINS AND DRAINS.
- C. CONSTRUCT TEMPORARY SEDIMENTATION BASINS AND, IF REQUIRED, SWALES AND OTHER AREAS OF CONCENTRATED FLOW.
- D. DISPOSE OF ANY UNUSABLE FILL MATERIAL OFF SITE. DISPOSAL OF MATERIALS SHALL BE CONDUCTED IN A MANNER CONSISTENT WITH THIS PLAN WHICH WILL AVOID EROSION AND SEDIMENTATION OFF SITE. PLACE FILL MATERIAL WHICH IS SUITABLE FOR REUSE WITH DESIGNATED STOCKPILE AREAS.
- E. DURING GRUBBING OPERATIONS, INSTALL CHECK DAMS AT ANY EVIDENT CONCENTRATED FLOW DISCHARGE POINTS.
- F. INSTALL PROPOSED STORM SEWER SYSTEM AND CATCH BASINS. PROTECT CATCH BASINS FROM SILTATION WITH APPROPRIATE CONTROLS AS SHOWN ON THE DETAIL SHEETS.
- G. STABILIZE DISTURBED AREAS WITH TEMPORARY VEGETATION AND EROSION CONTROL MATS.
- H. RECONSTRUCT ROADWAYS.
- I. RESTORE DISTURBED AREAS, COMPLETE SEEDING AND LANDSCAPING AND REMOVE EROSION CONTROL DEVICES.

ADDITIONAL REQUIREMENTS

- IN ADDITION TO THE MEASURES LISTED ABOVE, THE FOLLOWING WORK WILL BE PERFORMED AS REQUIRED.
1. REMOVE ACCUMULATED SEDIMENT AHEAD OF ANY SILT BARRIERS (AS NECESSARY) AND DISPOSE OFF SITE.
 2. DUST AND WIND EROSION SHALL BE CONTROLLED THROUGHOUT THE LIFE OF THE PROJECT. DUST CONTROL SHALL INCLUDE, BUT IS NOT LIMITED TO, SPRINKLING OF WATER ON EXPOSED SOILS AND HAIL ROADS.
 3. IF EXCAVATION IS INTERRUPTED BY HEAVY RAINS, ADDITIONAL MULCHING OR GRAVEL WORK MATS MAY BE REQUIRED ON AREAS OF EXPOSED SOILS. SOILS WHICH HAVE BECOME UNSUITABLE FOR USE DUE TO EXPOSURE TO HEAVY RAINS SHALL BE REMOVED FROM THE WORK AREA AND DRIED OR DISPOSED OFF SITE IN A MANNER CONSISTENT WITH THIS PLAN.
 4. CLEAN OUT ALL CULVERTS, CATCH BASINS AND STORM SEWERS IN STREETS ADJACENT TO THE PROJECT AREA AFTER COMPLETION OF THE PROJECT.
 5. CONSTRUCTION EQUIPMENT IS NOT TO ENTER ANY WATERCOURSE OR WETLAND.
 6. EQUIPMENT IS NOT TO BE WASHED IN OR NEAR WETLANDS OR WATERCOURSES.
 7. EQUIPMENT MAINTENANCE SHALL NOT BE CARRIED OUT WITHIN THE PROJECT SITE UNLESS APPROVED IN WRITING BY THE ENGINEER.
 8. TRASH RECEPTACLES SHALL BE REQUIRED ON THE JOB SITE.
 9. DUMPING OF OIL, CHEMICALS OR OTHER DELETERIOUS MATERIALS ON THE GROUND IS FORBIDDEN. THE CONTRACTOR SHALL PROVIDE A MEANS OF CATCHING, RETAINING AND PROPERLY DISPOSING OF DRAINED OIL, REMOVED OIL FILTERS OR OTHER DELETERIOUS MATERIAL. ALL SPILLS OF SUCH MATERIAL SHALL BE REPORTED IMMEDIATELY BY THE CONTRACTOR TO DEP. THE CONTRACTOR SHALL STORE OIL ABSORBENT MATERIALS ON SITE FOR THE CLEANUP OF SPILLS.
- SEDIMENTATION AND EROSION CONTROL MAINTENANCE PROCEDURES**
- DURING CONSTRUCTION:**
- ALL SEDIMENTATION AND EROSION CONTROL DEVICES SHALL BE INSPECTED DURING CONSTRUCTION BY THE CONTRACTOR ONLY, DAILY BASIS AND FOLLOWING ALL STORMS. THE CONTRACTOR SHALL MAINTAIN AND MAKE REPAIRS AND REMOVE SEDIMENT AS REQUIRED. THIS WORK SHALL BE PERFORMED WITHIN 24 HOURS FOLLOWING ALL STORM EVENTS. THERE SHALL BE NO SEPARATE PAYMENT FOR THIS WORK.
- THE CONTRACTOR SHALL CLEAN SEDIMENT AND DEBRIS FROM ALL DRAINAGE STRUCTURES AND PIPES AT THE COMPLETION OF CONSTRUCTION AND AS REQUIRED TO KEEP THE SYSTEM FUNCTIONING PROPERLY DURING CONSTRUCTION.
- FOLLOWING COMPLETION OF CONSTRUCTION, THE CONTRACTOR SHALL REPAIR ALL ERODED AREAS AND ENSURE A GOOD STAND OF TURF IS ESTABLISHED THROUGHOUT. THE CONTRACTOR SHALL REPAIR ALL ERODED OR DISPLACED RIPRAP AND CLEAN SEDIMENT COVERED STONES.
- SILT FENCES SHALL BE INSPECTED, REPAIRED AND CLEANED AS REQUIRED AND AS DIRECTED BY THE ENGINEER.
- THE CONTRACTOR SHALL REPAIR AND ADD STONE TO THE CONSTRUCTION ENTRANCES AS THEY BECOME SATURATED WITH MUD TO INSURE THAT THEY WORK AS PLANNED DURING THE CONSTRUCTION.

POST CONSTRUCTION:

1. THE MAINTENANCE SCHEDULE FOR THE CATCH BASIN, SEDIMENT SUMPS, S&S FLOWLAYS, THESE DEVICES SHALL BE INSPECTED IN APRIL OF EACH YEAR AT A MINIMUM. ACCUMULATED SEDIMENT SHALL BE REMOVED FROM THE CATCH BASINS WHEN THE DEPTH OF THE SEDIMENT IS WITHIN ONE FOOT OF THE OUTLET PIPE INVERT. THE SEDIMENT WILL BE REMOVED FROM THE SITE BY THE TOWN OR THE CATCH BASIN CLEANING CONTRACTOR AND DISPOSED OF IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.
2. STREETS ARE TO BE CLEANED WITH STREET SWEEPERS ANNUALLY AT A MINIMUM.
3. THE SITE SHALL BE INSPECTED EVERY 6 MONTHS AND AFTER MAJOR STORMS FOR EVIDENCE OF EROSION. ALL ERODED SURFACES ARE TO BE REPAIRED AND PERMANENTLY STABILIZED.

INSPECTION:

QUALIFIED PERSONNEL (PROVIDED BY THE CONTRACTOR) SHALL INSPECT DISTURBED AREAS OF THE CONSTRUCTION ACTIVITY THAT HAVE NOT BEEN REVEGETATED OR OTHERWISE RESTORED. THESE AREAS SHALL BE INSPECTED AT LEAST EVERY SEVEN (7) CONSECUTIVE DAYS AND WITHIN 24 HOURS OF THE END OF A STORM THAT IS 0.1 INCHES OR GREATER. WHERE SITES HAVE BEEN TEMPORARILY OR FINALLY STABILIZED, SUCH INSPECTION SHALL BE CONDUCTED AT LEAST ONCE EVERY MONTH FOR 3 MONTHS. FULL TIME CONSTRUCTION INSPECTION WILL BE PROVIDED BY THE ENGINEER.

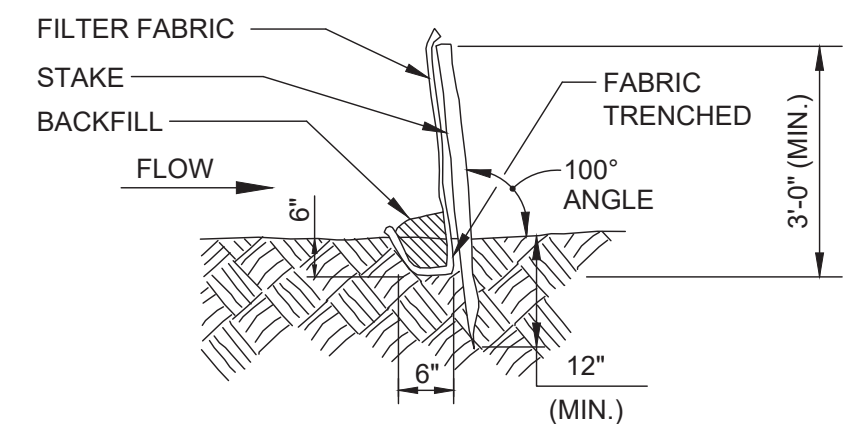
1. DISTURBED AREAS AND AREAS USED FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION SHALL BE INSPECTED FOR EVIDENCE OF OR THE POTENTIAL FOR EROSION. THESE AREAS SHALL BE INSPECTED AT LEAST EVERY SEVEN (7) CONSECUTIVE DAYS AND WITHIN 24 HOURS OF THE END OF A STORM THAT IS 0.1 INCHES OR GREATER. WHERE SITES HAVE BEEN TEMPORARILY OR FINALLY STABILIZED, SUCH INSPECTION SHALL BE CONDUCTED AT LEAST ONCE EVERY MONTH FOR 3 MONTHS. FULL TIME CONSTRUCTION INSPECTION WILL BE PROVIDED BY THE ENGINEER.

2. BASED ON THE RESULTS OF THE INSPECTION, THE DESCRIPTION OF POTENTIAL EROSION AND THE AREAS WHERE EROSION IS MOST LIKELY TO OCCUR SHALL BE REVISED AS APPROPRIATE AS SOON AS PRACTICABLE AFTER SUCH INSPECTION. SUCH MODIFICATIONS SHALL PROVIDE FOR TIMELY IMPLEMENTATION OF ANY CHANGES TO THE PLAN WITHIN 3 CALENDAR DAYS FOLLOWING THE INSPECTION. THE PLAN SHALL BE REVISED AND THE SITE CONTROL LINES UPDATED IN ACCORDANCE WITH SOUND ENGINEERING PRACTICES AND GUIDELINES. A REPORT SUMMARIZING THE SCOPE OF THE INSPECTION, THE DATES OF THE INSPECTION, MAJOR OBSERVATIONS RELATING TO THE EROSION AND SEDIMENT CONTROL MEASURES, AND THE ACTIONS TAKEN SHALL BE MADE AND RETAINED AS PART OF THE PLAN FOR AT LEAST 3 YEARS AFTER THE DATE OF INSPECTION. THE REPORT SHALL BE SIGNED BY THE PERMITTED OR HIS AUTHORIZED REPRESENTATIVE.

PERMIT REVIEW NOT FOR CONSTRUCTION

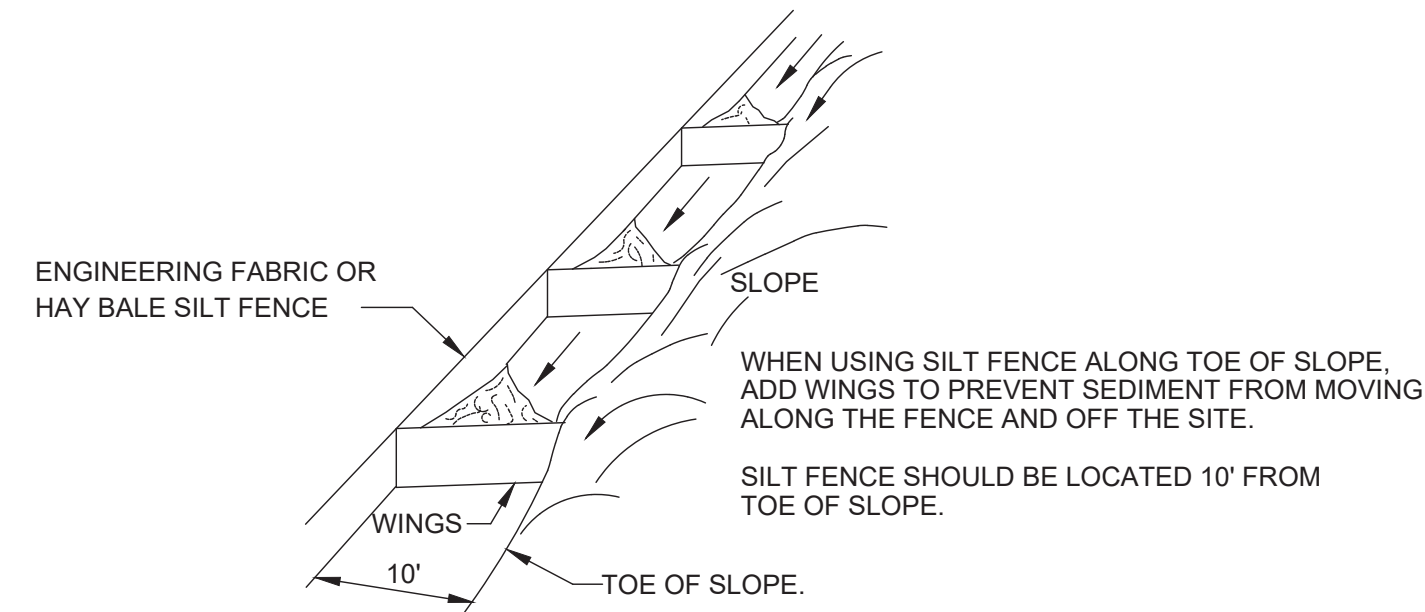
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|--------------|--|---|--|--|--|--|--|--|
| SED-01 11 | REPLACEMENT OF BRIDGE NO. 067-016 KENT HOLLOW ROAD OVER WEST ASPECTUCK RIVER KENT, CONNECTICUT SEDIMENT & EROSION CONTROL NOTES | DATE: October 2022 | | | | | | |
| | | SCALE: AS NOTED DESIGNED BY: DRAWN BY: CHECKED BY: APPROVED BY: JAC | | | | | | |
| | | NO. | | | | | | |
| | | REVISION | | | | | | |
| | | DATE | | | | | | |
| | | BY | | | | | | |

CARDINAL
 ENGINEERING ASSOCIATES
 180 RESEARCH PKWY/IRMIDEN, CT 064501203-238-1969
 457 BANTAM RD | LITCHFIELD, CT 067591860-597-9106



SILT FENCE INSTALLATION

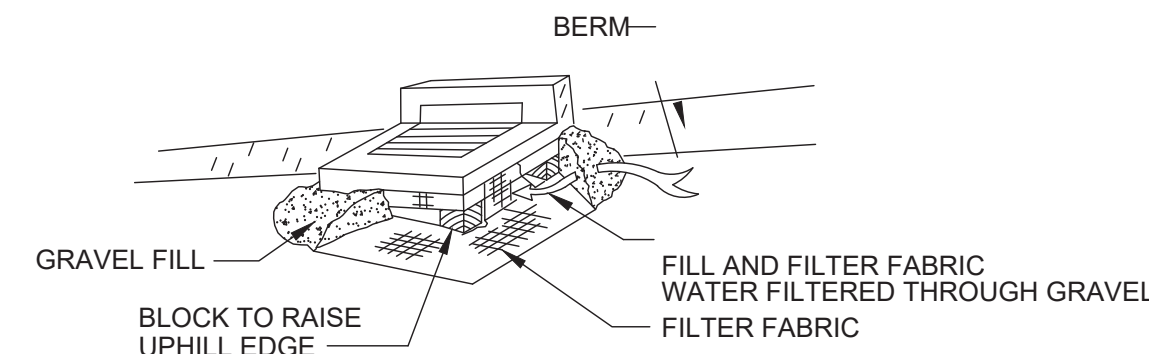
- A) MINIMUM LENGTH OF SILT FENCE IS 15 L.F.
- B) MAXIMUM POST SPACING IS 10 L.F.
- C) JOINTS ONLY AT SUPPORT POST WITH MINIMUM 6" OVERLAP, SECURELY SEALED.
- D) SEDIMENTATION DEPOSITS SHALL BE REMOVED WHEN THEY REACH 1/2 THE HEIGHT OF THE SILT FENCE.
- E) SILT FENCE SHALL NOT BE USED IN A WATER COURSE.
- F) UPON ESTABLISHMENT OF GROUND COVER ON DISTURBED AREAS, AND WHEN DIRECTED BY THE ENGINEER, FENCE WILL BE REMOVED AND ANY SEDIMENTATION WILL BE THINLY SPREAD UPON EXISTING GROUND COVER.



SEDIMENTATION CONTROL SYSTEM

TOE OF SLOPE

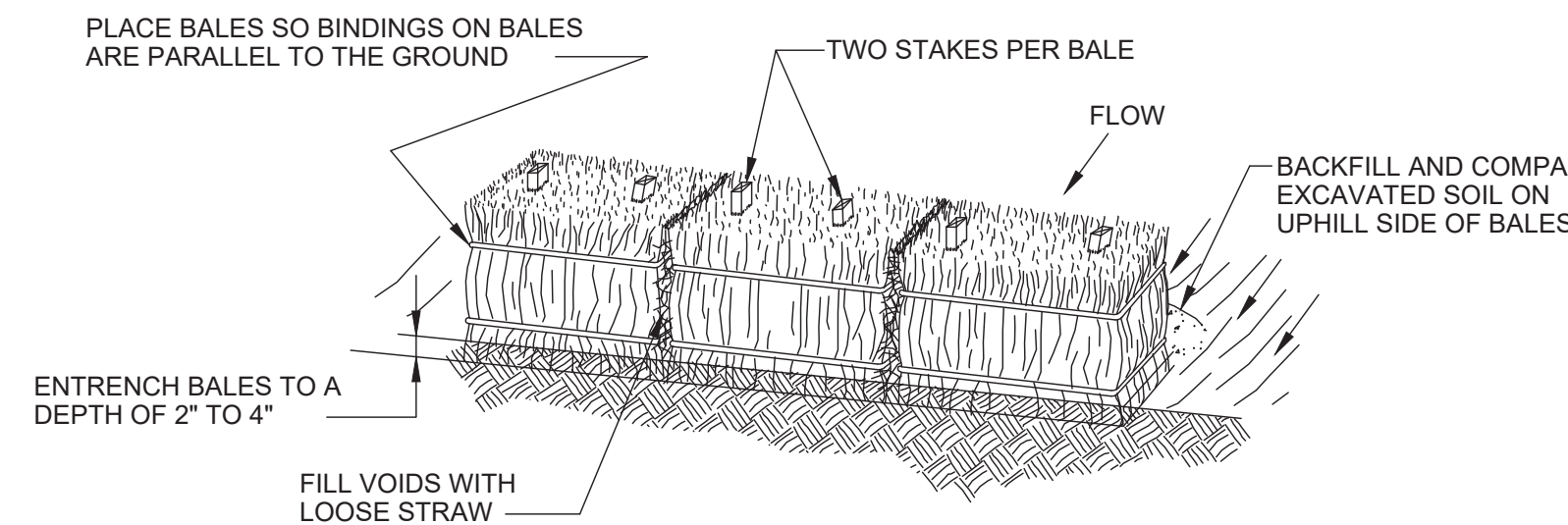
(WHERE DIRECTED BY ENGINEER)



WHERE DIRECTED BY ENGINEER, CONTRACTOR SHALL CONSTRUCT A STONE DIKE IN LIEU OF THE FILTER FABRIC CHECK DAM.

SEDIMENTATION CONTROL SYSTEM FOR CATCH BASINS

NOTE: RAISE AND PROTECT CATCH BASIN TOPS WITH CRUSHED STONE AS SOON AS POSSIBLE TO PERMIT DRAINAGE TO ENTER STORM SYSTEMS, WHEN ROADWAY IS BROUGHT UP TO SUBBASE BEFORE PAVING.



INSTALLATION

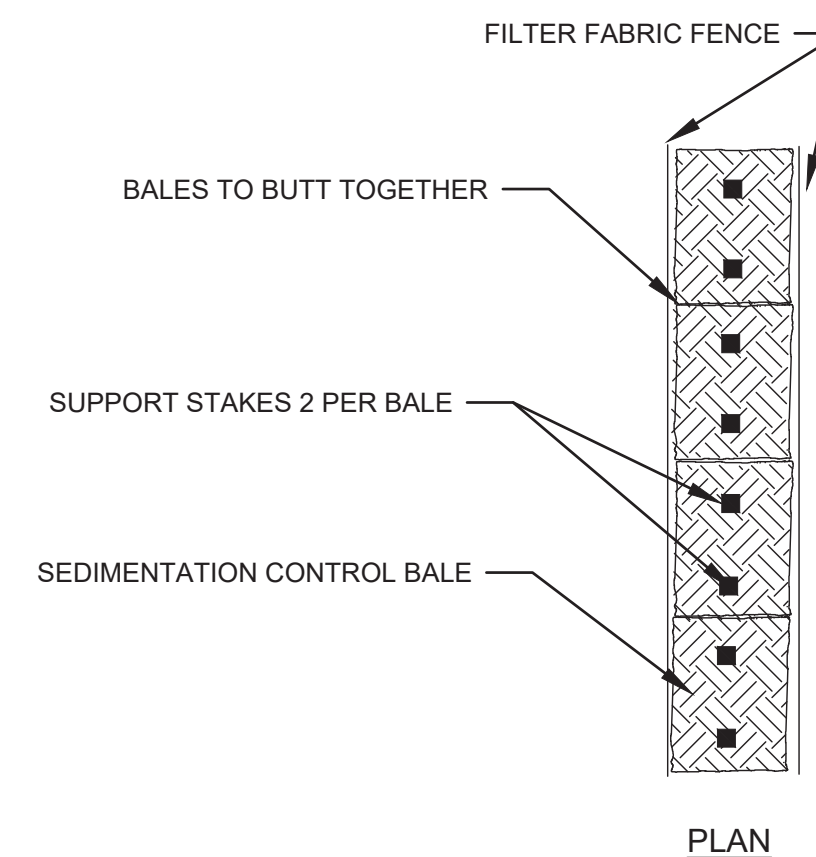
- A) IDEALLY, BALES SHOULD BE ENTRENCHED 2 TO 4 INCHES AND TIGHTLY BUTTED TOGETHER. BALES CAN BE SUCCESSFULLY PLACED WITHOUT A TRENCH IF GOOD GROUND CONTACT IS MADE. REMOVE HEAVY BRUSH AND FILL IN ALL VOIDS WITH LOOSE STRAW.
- B) BALES SHALL BE ONLY USED AS A TEMPORARY BARRIER AND FOR NO LONGER THAN 60 DAYS. THEY SHALL NOT BE USED ON A JOB ADJACENT TO A RESIDENTIAL NEIGHBORHOOD, RESIDENCES OR ADJACENT TO OR IN A WATERCOURSE.
- C) WHEN SEDIMENTATION DEPOSITS REACH WITHIN 3" OF THE TOP OF THE BALES, REMOVE SEDIMENTATION OR ADD ADDITIONAL BALES ON SEDIMENTATION DIRECTLY BEHIND THE FIRST ROW OF BALES AS DIRECTED BY THE ENGINEER.
- D) UPON ESTABLISHMENT OF GROUND COVER ON DISTURBED AREAS AND WHEN DIRECTED BY THE THE ENGINEER, HAY BALES WILL BE REMOVED AND USED AS MULCH. ANY SEDIMENTATION WILL BE THINLY SPREAD UPON ESTABLISHED GROUND COVER.



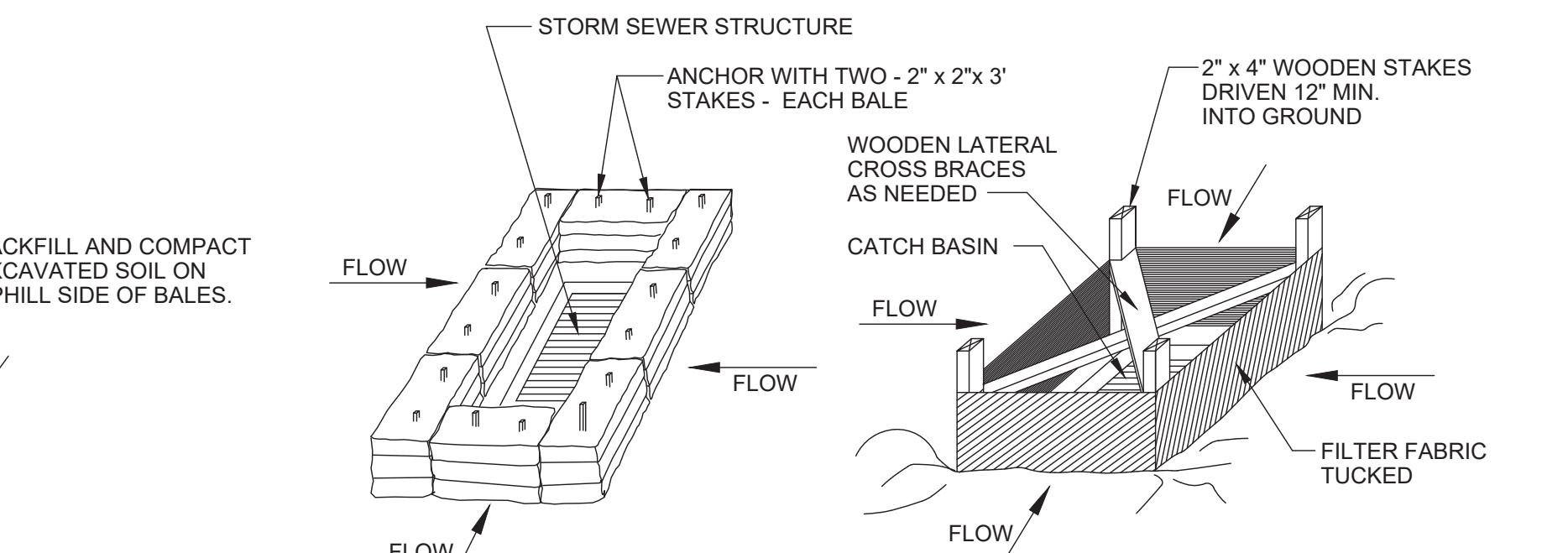
BALE PLACEMENT

BALES PLACED AWAY FROM TOE OF SLOPE HAVE A LARGER CONFINEMENT AREA. ADDITIONAL BALES SHOULD BE ADDED BEHIND ORIGINAL BALES BEFORE SEDIMENT TOPS THE FIRST BALE.

DIKES HAY/STRAW BALES



PLAN



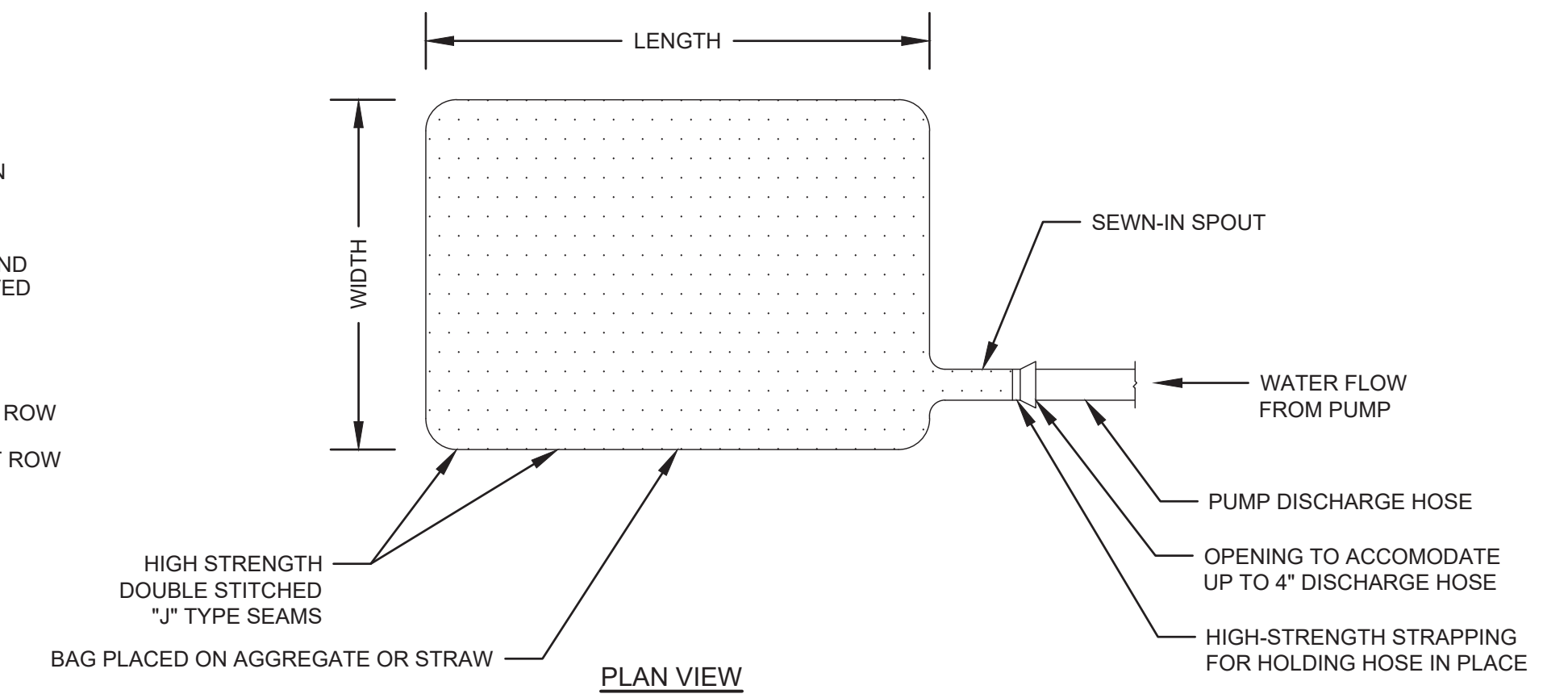
HAY BALE INSTALLATION

AT CATCH BASIN

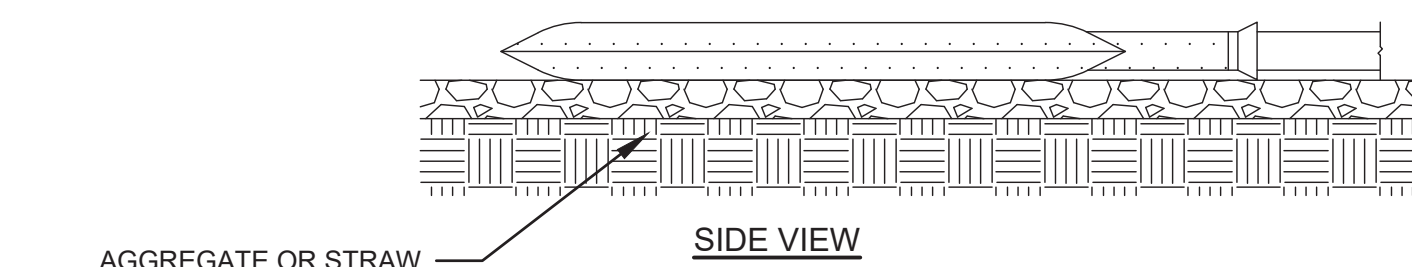
SILT FENCE INSTALLATION

AT CATCH BASIN

CATCH BASIN IN A DEPRESSION



PLAN VIEW

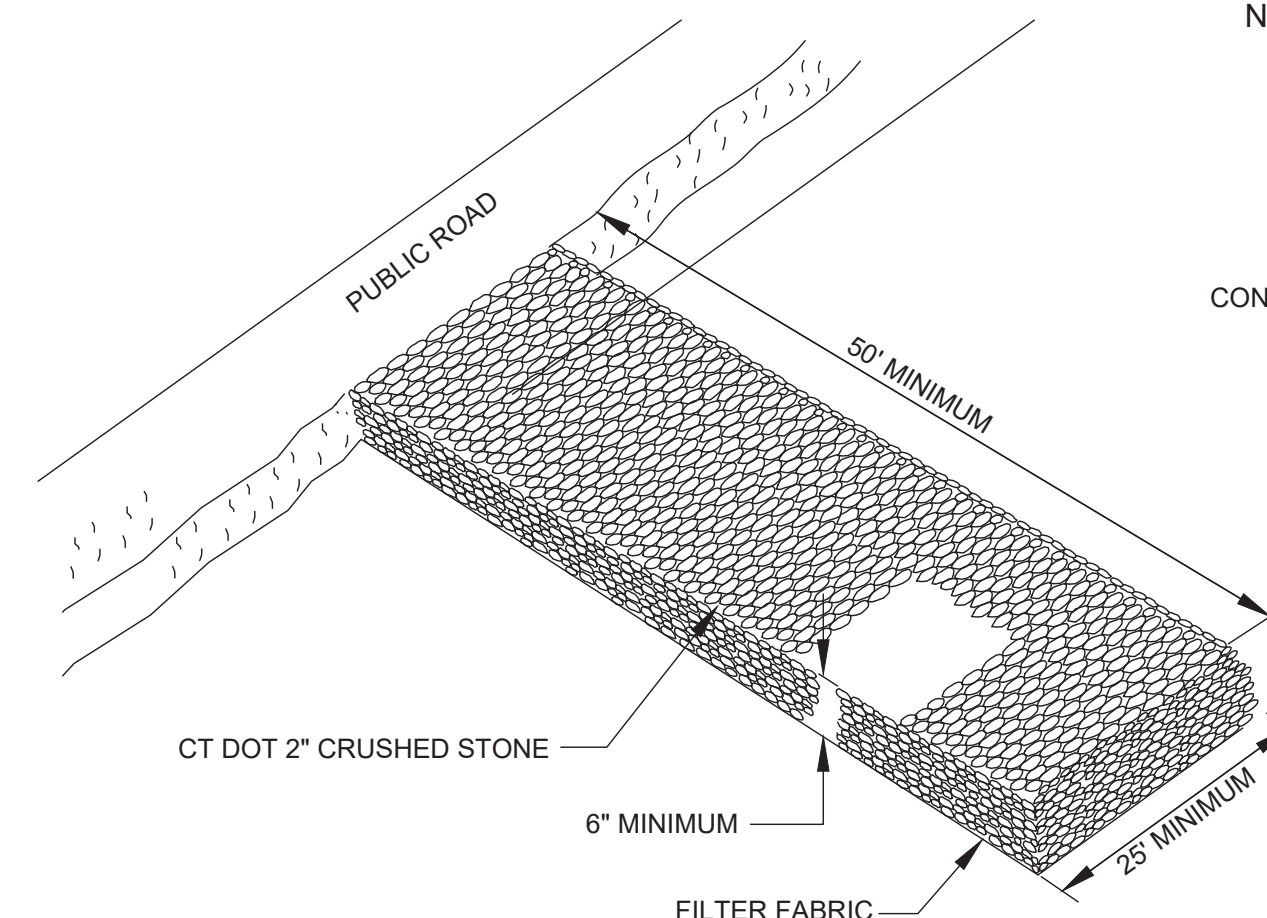


SYNTHETIC FILTER BAG

SECTION

SEDIMENTATION CONTROL SYSTEM DOUBLE SILT FENCE WITH HAYBALES

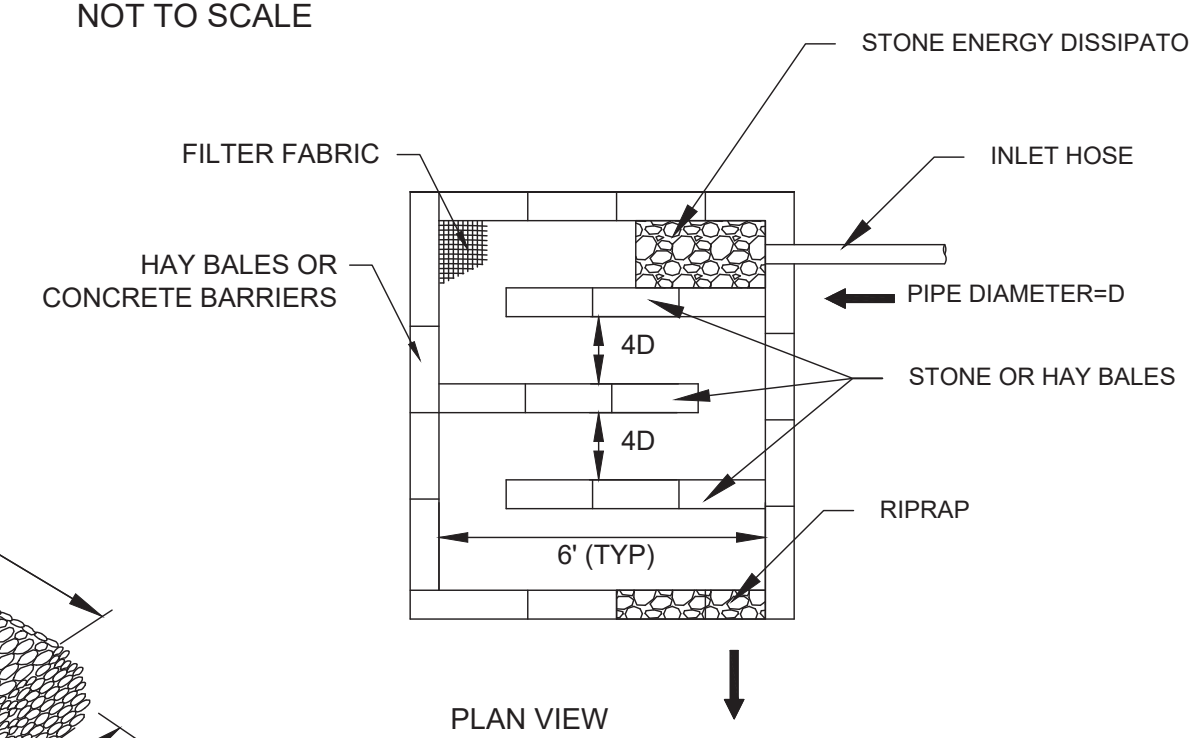
NOT TO SCALE



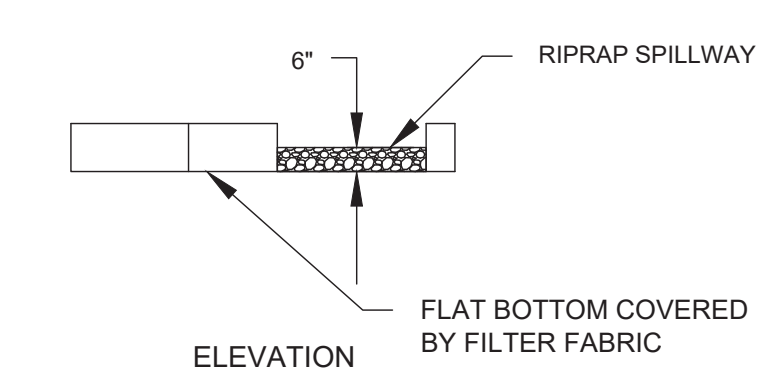
NOTES:

- 1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
- 2. ANTI-TRACKING PADS SHALL BE INSTALLED AS DIRECTED BY THE ENGINEER.

ANTI-TRACKING PAD



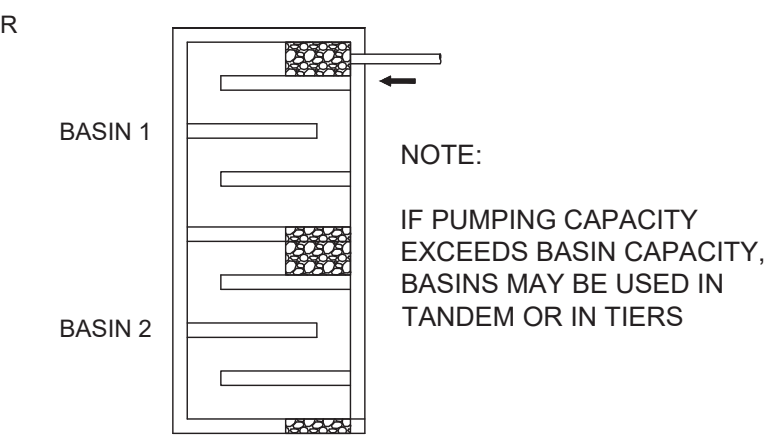
PLAN VIEW



ELEVATION

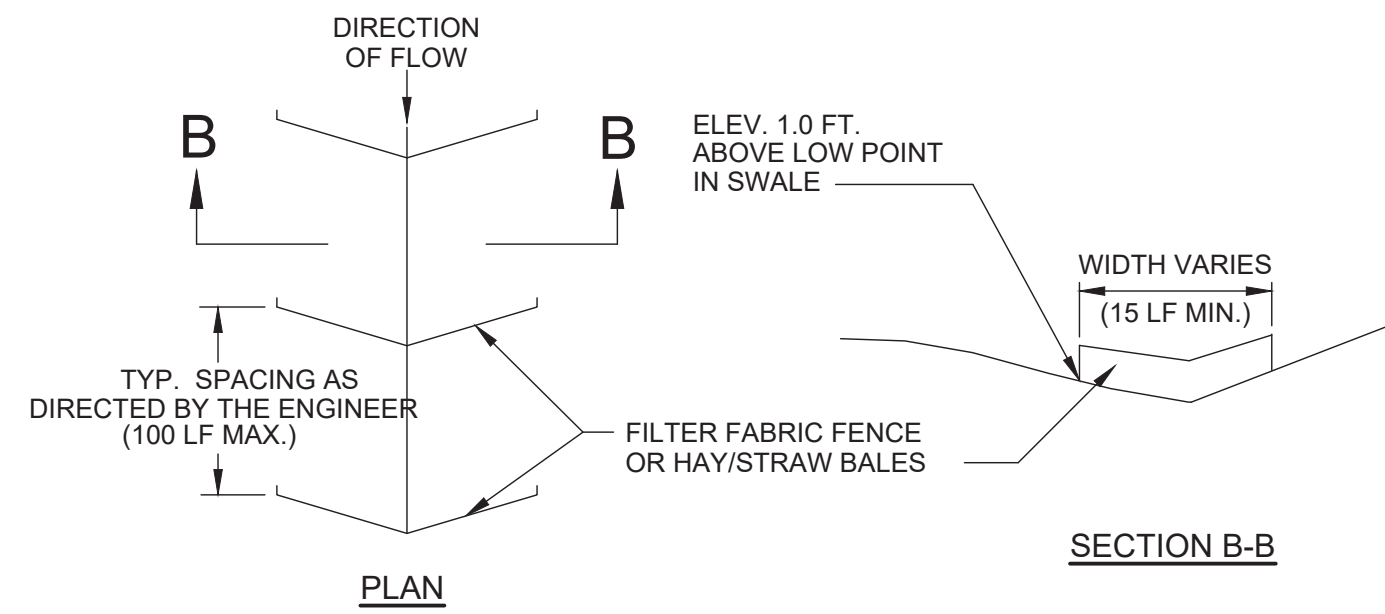
DEWATERING BASIN

NOT TO SCALE



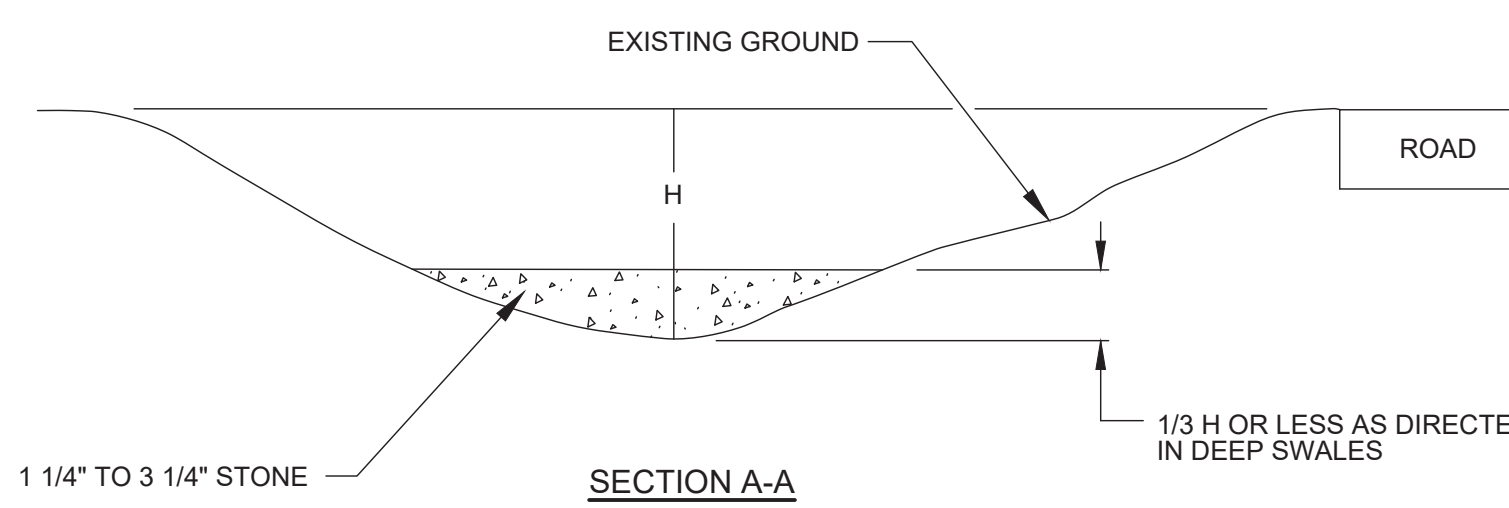
NOTES:

- 1. VOLUME OF BASIN IS EQUAL TO THE MAXIMUM VOLUME OF WATER CAPABLE OF BEING PUMPED OVER ONE HOUR. THIS VOLUME CAN BE DETERMINED BY THE CONTRACTOR USING THE PUMP MANUFACTURER'S SPECIFICATIONS.
- 2. CONTRACTOR TO SHOW APPROXIMATE LOCATION AND SIZE OF HIS PROPOSED DEWATERING BASIN(S) ON HIS EROSION AND SEDIMENTATION CONTROL PLANS. SEE SECTION 1.10, ENVIRONMENTAL COMPLIANCE.
- 3. DEWATERING BASIN(S) NOT TO BE LOCATED IN ANY WETLAND AREA.
- 4. THERE WILL BE NO SEPARATE PAYMENT FOR THE DEWATERING BASINS, BUT IT WILL BE INCLUDED IN THE COST OF THE RESPECTIVE ITEMS "COFFERDAM AND DEWATERING" AND SEDIMENT AND EROSION CONTROL.

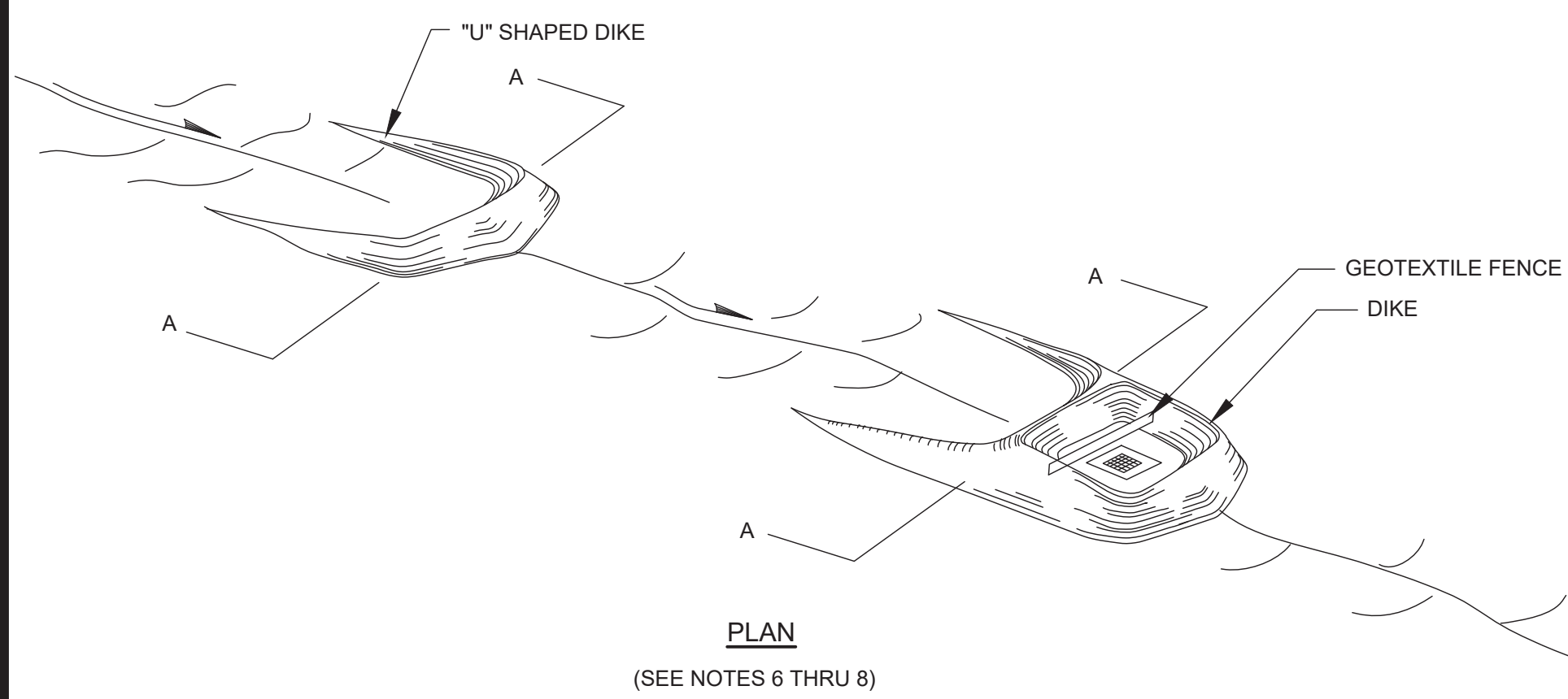


CHECK DAM

FILTER FABRIC OR HAY/STRAW BALES



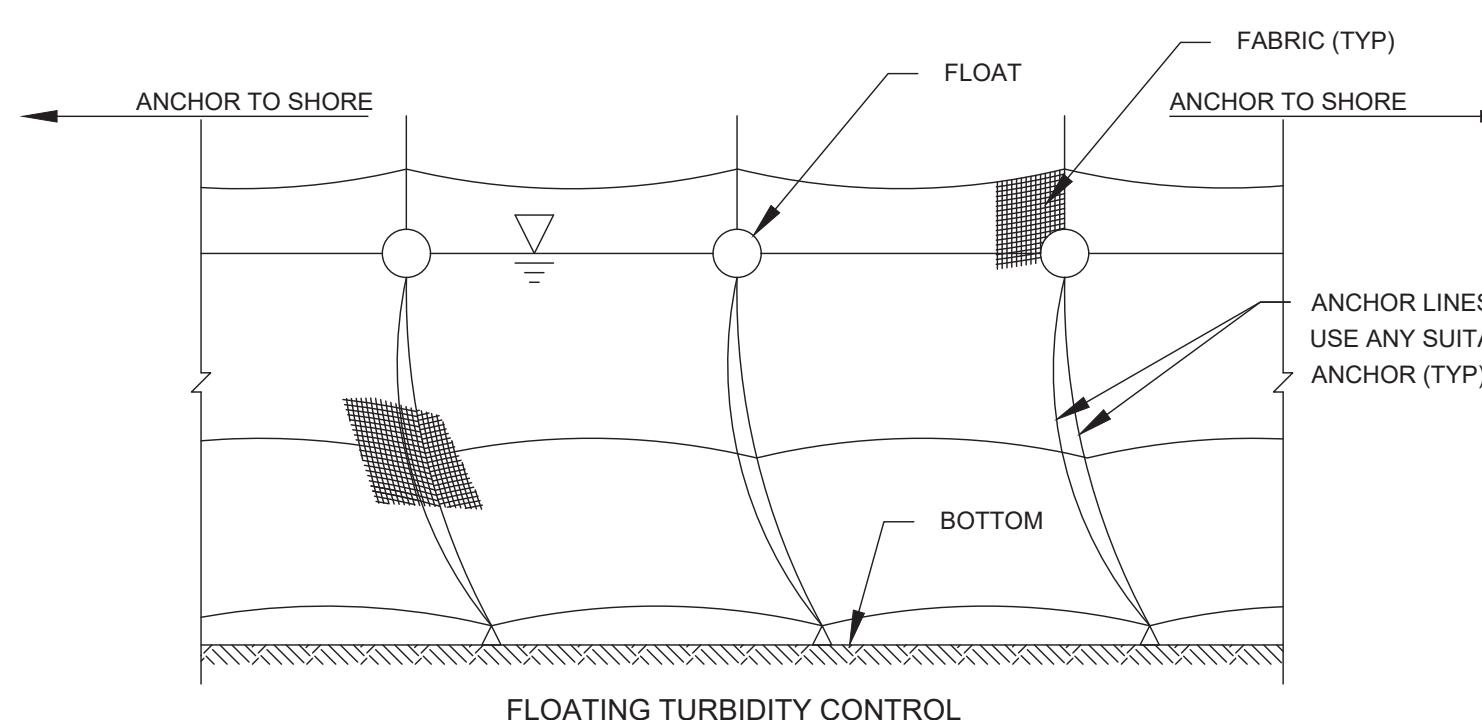
SECTION A-A



PLAN

(SEE NOTES 6 THRU 8)

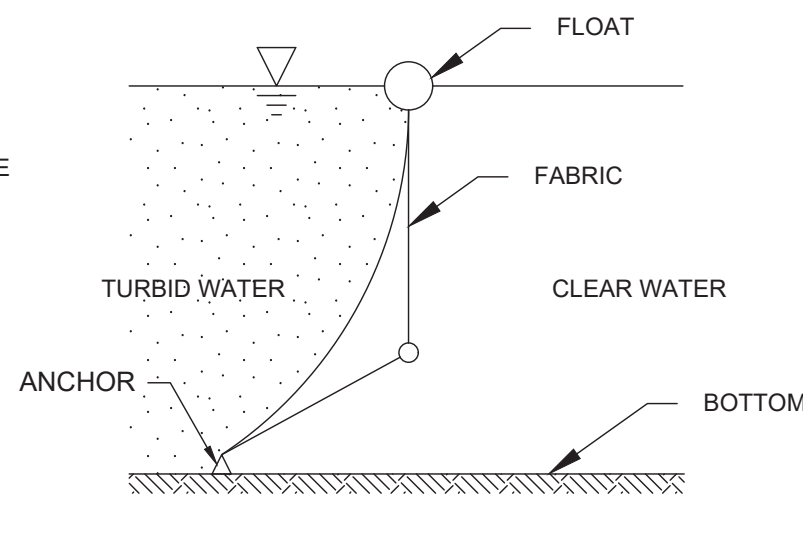
"U" SHAPED STONE DIKE



FLOATING TURBIDITY CONTROL

TURBIDITY CONTROL CURTAIN

NOT TO SCALE



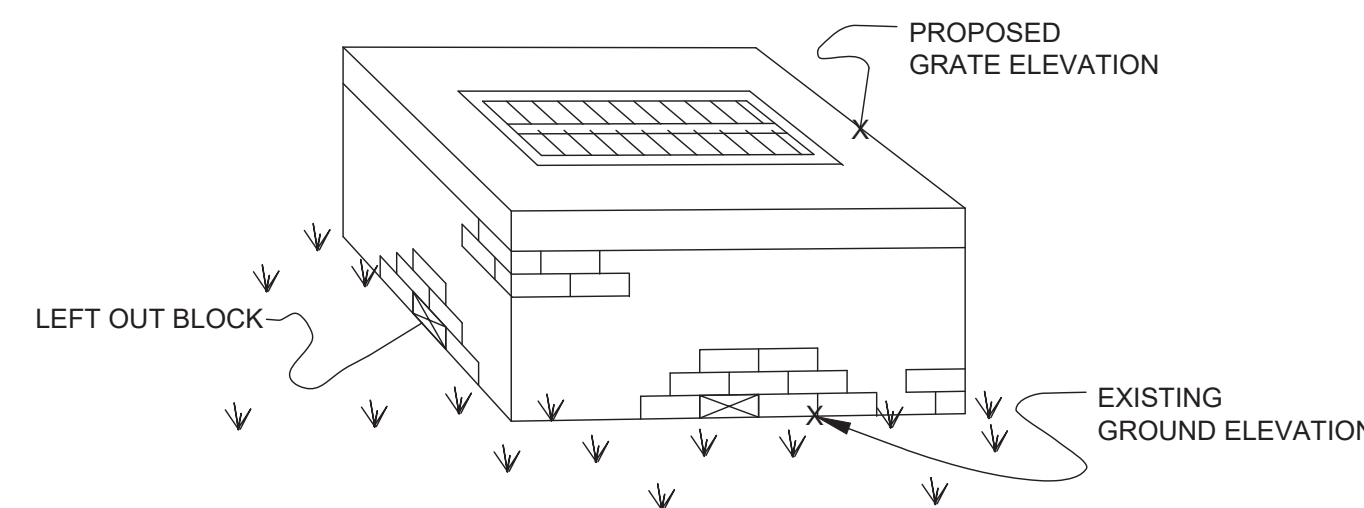
FLOATING SECTION

NOTE:

SEE PLANS AND SPECIAL PROVISIONS FOR LOCATION OF AND ADDITIONAL INFORMATION REGARDING TURBIDITY CONTROL CURTAIN.

SHORT TERM ALTERNATE

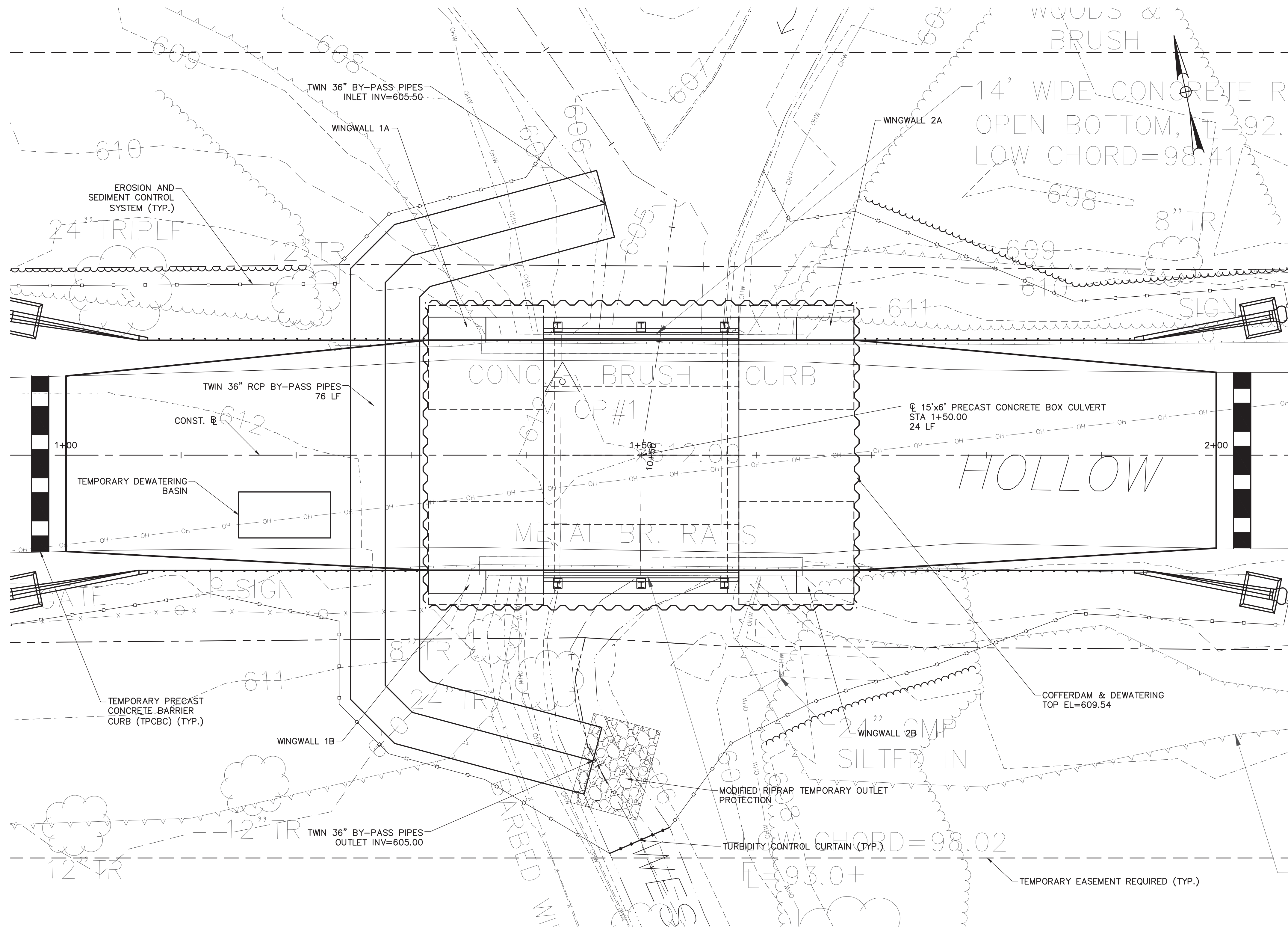
(SEE NOTES 2 THRU 5)



NOTES:

- 1. ALL DIMENSIONS ARE IN INCHES (") EXCEPT AS NOTED.
- 2. CONSTRUCT CATCH BASINS LEAVING ONE (1) BLOCK OUT PER SIDE AT EXISTING GROUND ELEVATION TO ALLOW WATER TO ENTER.
- 3. IF GROUND WITHIN A CATCH BASIN'S WATERSHED BECOMES DISTURBED AND THE CATCH BASIN WILL NOT BE BACKFILLED TO TOP OF GRATE ELEVATION FOR AT LEAST EIGHT (8) HOURS, INSTALL SEDIMENTATION CONTROL SYSTEM FOR CATCH BASIN.
- 4. INSTALL LEFT OUT BLOCKS NOT SOONER THAN TWO (2) HOURS PRIOR TO BACKFILLING AROUND CATCH BASIN.
- 5. IMMEDIATELY AFTER PLACING FILL, INSTALL SEDIMENTATION CONTROL SYSTEMS.
- 6. THE ENDS OF THE DIKE SHALL BE THE SAME ELEVATION AS THE SPILLWAY OR GREATER.
- 7. MAXIMUM HEIGHT OF DIKE SHOULD NOT EXCEED 1/3 HEIGHT OF THE CHANNEL.
- 8. STONE DIKES SHALL BE PLACED AT 50' INTERVALS IN ALL TEMPORARY DITCHES AND CHANNELS.

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PLAN
SCALE: 1"=5'

LEGEND

- TEMPORARY PRECAST CONCRETE BARRIER CURB (TPCBC)
- COFFERDAM
- EROSION AND SEDIMENT CONTROL SYSTEM
- TURBIDITY CONTROL CURTAIN
- TEMPORARY EASEMENT

SUGGESTED CONSTRUCTION SEQUENCE NOTES

1. INSTALL EROSION & SEDIMENT CONTROL SYSTEM.
2. INSTALL TWIN 36" BY-PASS PIPES.
3. CONSTRUCT COFFERDAM AND DIVERT FLOW TO BY-PASS PIPES.
4. REMOVE THE EXISTING CULVERT AND HEADWALL.
5. INSTALL PRECAST WINGWALL FOOTINGS, RETURN WALLS AND CUTOFF WALLS.
6. INSTALL PRECAST CONCRETE BOX CULVERT.
7. INSTALL PRECAST WINGWALLS.
8. BACKFILL BOX CULVERT AND WINGWALLS, GRADE CHANNEL, REMOVE BY-PASS PIPES, COFFERDAMS AND DIRECT FLOW INTO NEW CULVERT.
9. INSTALL PAVEMENT & GUIDERAIL, PLACE BARRICADES, SAND BARREL ARRAY AND TRAFFIC DRUMS AS NECESSARY TO PROTECT THE REMAINING WORK AREAS ON THE BRIDGE AND REDIRECT TRAFFIC.
10. OPEN ROADWAY, CONSTRUCT REMAINING BRIDGE ELEMENTS (ALTERNATING ONE-WAY TRAFFIC IF REQUIRED).
11. CONSTRUCT THE REMAINING ROADWAY AND CULVERT IMPROVEMENTS UTILIZING ALTERNATING ONE-WAY TRAFFIC AS REQUIRED.

TEMPORARY HYDRAULIC DATA

| | |
|--|----------|
| AVERAGE DAILY FLOW | 7.51 CFS |
| AVERAGE SPRING FLOW | 14.7 CFS |
| 2-YEAR FREQUENCY DISCHARGE | 125 CFS |
| TEMPORARY DESIGN DISCHARGE | 125 CFS |
| TEMPORARY DESIGN FREQUENCY | 2 YEAR |
| TEMPORARY WATER SURFACE ELEVATION UPSTREAM | 609.04 |
| TEMPORARY WATER SURFACE ELEVATION DOWNSTREAM | 606.39 |

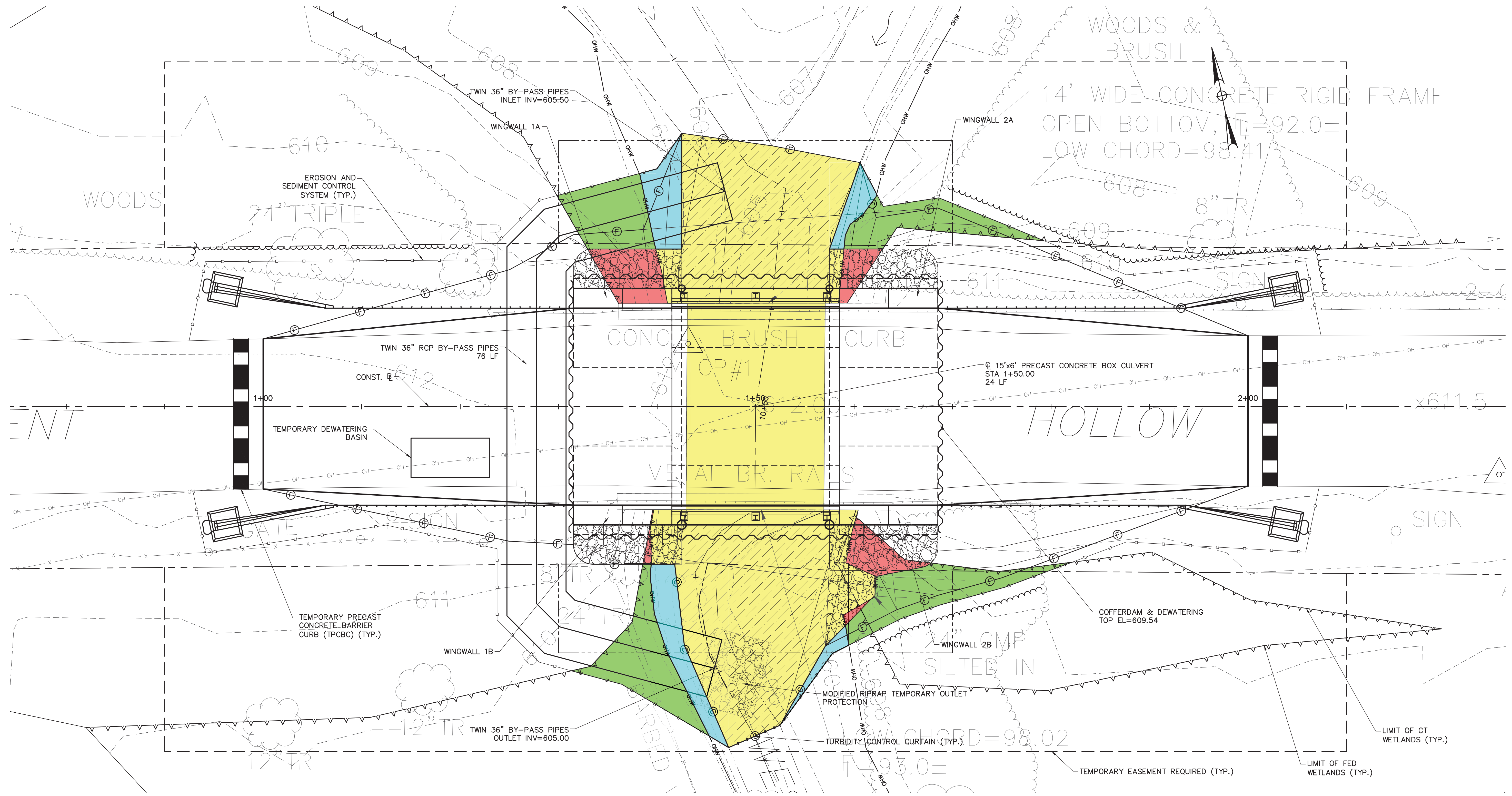
CONSTRUCTION SEQUENCE GENERAL NOTES

1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH BEST MANAGEMENT PRACTICES.
2. SEQUENCE OF CONSTRUCTION NOTES SHALL BE USED IN CONJUNCTION WITH THE HIGHWAY CONSTRUCTION, MAINTENANCE AND PROTECTION OF TRAFFIC PLANS.
3. THE SUGGESTED STEPS ILLUSTRATE A SEQUENCE OF CONSTRUCTION THAT CONFORMS TO STAGING REQUIREMENTS. THE SEQUENCE MAY BE ALTERED, SUBJECT TO THE APPROVAL OF THE ENGINEER SO LONG AS THE OPERATION OF VEHICULAR TRAFFIC IS MAINTAINED.
4. NEITHER THE WORK NOR STEPS LISTED IN THE CONSTRUCTION SEQUENCE ARE INTENDED TO COVER ALL DETAILS OF THE WORK. THE CONTRACTOR SHALL PREPARE A DETAILED CONSTRUCTION SEQUENCE AND SCHEDULE FOR REVIEW AND APPROVAL BY THE ENGINEER.
5. THE TEMPORARY COFFERDAM SHALL CONSIST OF SHEETS OR ANY OTHER APPROVED SYSTEM THAT THE CONTRACTOR ELECTS TO USE WHICH WILL SAFELY CONVEY WATER FLOWS THROUGH THE CONSTRUCTION AREA, BE ABLE TO SUPPORT CONSTRUCTION ACTIVITY AND EXCAVATION AND SHALL CONFORM TO PERMITS.
6. THE CONTRACTOR IS HEREIN NOTIFIED THAT THE OVERHEAD ELECTRICAL FACILITIES WILL REMAIN LIVE THROUGHOUT THE DURATION OF CONSTRUCTION.

PERMIT REVIEW NOT FOR CONSTRUCTION

| | |
|---|---|
| <p>CARDINAL ENGINEERING ASSOCIATES</p> <p>180 RESEARCH PARKWAY, MERIDEN, CT 06460-2000-1109 487 BANTAM RD LITCHFIELD, CT 06759-3779-1106</p> | <p>DATE: October 2022 SCALE: AS NOTED DESIGNED BY: DRAWN BY: CHECKED BY: APPROVED BY: JAC</p> |
| <p>REPLACEMENT OF BRIDGE NO. 067-016 KENT HOLLOW ROAD OVER WEST ASPETUCK RIVER KENT, CONNECTICUT WATER HANDLING PLAN</p> | <p>NO. 1 DATE: 6/21/19 BY: GG REVISION: LOWER PROFILE & SHORTEN ALIGNMENT, ADD ROCK WEIR</p> |
| <p>WTH-01</p> | <p>13</p> |

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PLAN
SCALE: 1"=5'

LEGEND

| | |
|--|------------------------------|
| | ORDINARY HIGH WATER |
| | WETLANDS (STATE/FEDERAL) |
| | SEDIMENTATION CONTROL SYSTEM |
| | 100 YEAR FLOODPLAIN (FEMA) |
| | WATER - TEMP |
| | WATER - PERM |
| | WETLAND - TEMP |
| | WETLAND - PERM |

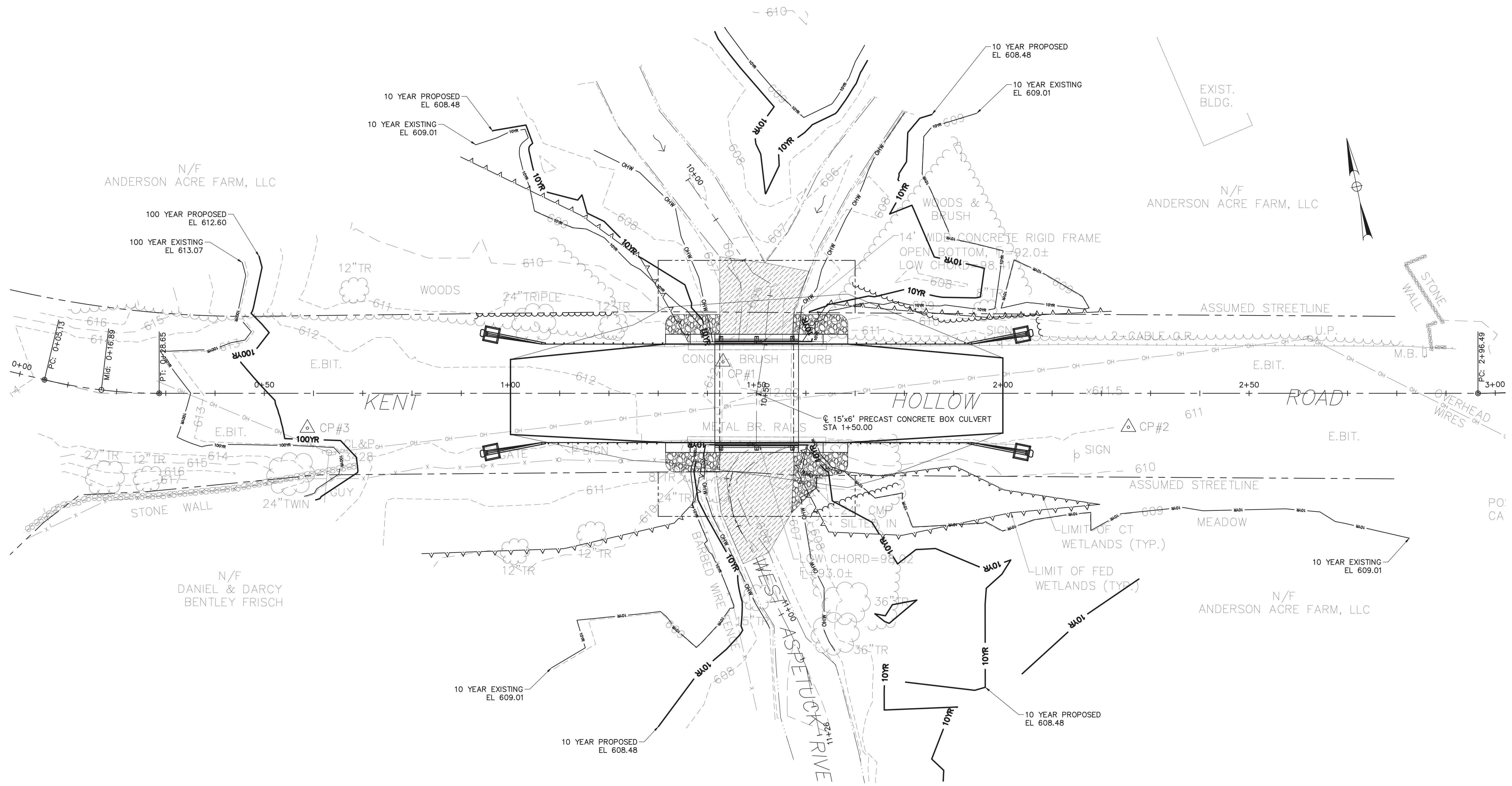
NOTE: ENTIRE PROJECT IS WITHIN FEMA 100 YEAR FLOODPLAIN.

| WETLAND IMPACT TABLE | | | |
|----------------------|-----------------|------------------|---------|
| | WETLAND IMPACTS | WATERWAY IMPACTS | TOTAL |
| TEMPORARY IMPACTS | 233 SF | 93 SF | 326 SF |
| PERMANENT IMPACTS | 72 SF | 918 SF | 990 SF |
| TOTAL IMPACTS | 305 SF | 1011 SF | 1316 SF |

PERMIT REVIEW NOT FOR CONSTRUCTION

| | |
|---|---|
| <p>CARDINAL ENGINEERING ASSOCIATES</p> <p>480 RESEARCHWAY/NEWBURY, CT 06460/938-989-4816 487 BARTLAND RD LITCHFIELD, CT 06759/860-597-9106</p> | <p>DATE: October 2022 SCALE: AS NOTED DESIGNED BY: DRAWN BY: CHECKED BY: APPROVED BY: JAC</p> |
| <p>REPLACEMENT OF BRIDGE NO. 067-016 KENT HOLLOW ROAD OVER WEST ASPETUCK RIVER KENT, CONNECTICUT WETLANDS/WATERCOURSE IMPACT PLAN</p> | |
| <p>WET-01</p> | |
| <p>14</p> | |

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PLAN
SCALE: 1"=10'

LEGEND

| | | |
|-----------|-----------|--------------------------------|
| — 10YR — | — 10YR — | 10 YEAR FLOODPLAIN (EXISTING) |
| — 10YR — | — 10YR — | 10 YEAR FLOODPLAIN (PROPOSED) |
| — 100YR — | — 100YR — | 100 YEAR FLOODPLAIN (EXISTING) |
| — 100YR — | — 100YR — | 100 YEAR FLOODPLAIN (PROPOSED) |

| FLOODPLAIN IMPACT TABLE | | | |
|-------------------------|--------------------|--------------------|-----------------|
| | EXISTING AREA (SF) | PROPOSED AREA (SF) | AREA CHANGE (%) |
| 10 YEAR | 8673 | 5919 | -31.75% |
| 100 YEAR | 31130 | 30676 | -1.46% |

PERMIT REVIEW NOT FOR CONSTRUCTION

| | |
|---|---|
| <p>CARDINAL ENGINEERING ASSOCIATES</p> <p>480 RESEARCH PARKWAY, MERIDEN, CT 06460-9008-1819 487 BANTAM ROAD LITCHFIELD, CT 06751-8605-597-9106</p> | <p>DATE: October 2022 SCALE: AS NOTED DESIGNED BY: DRAWN BY: CHECKED BY: APPROVED BY: JAC</p> |
| <p>REPLACEMENT OF BRIDGE NO. 067-016 KENT HOLLOW ROAD OVER WEST ASPETUCK RIVER KENT, CONNECTICUT INUNDATION PLAN</p> | |
| <p>IND-01</p> | |
| <p>15</p> | |

**Replacement of Bridge No. 067016
Kent Hollow Road over West Aspetuck River
Town of Kent**

Invasive Species Control Plan (rev 10-23-2023)

Before being disturbed, the work area must be inspected for invasive species and, if necessary, quickly treated. The Contractor shall hire a qualified environmental professional, natural resource planner, engineer or similar professional, to identify the invasive species for immediate removal from the site. Once invasive vegetation has been identified, an Invasive Vegetation Removal Plan (IVRP) to outline the materials, labor and equipment the Contractor plans to use for the complete eradication and treatment of the invasive vegetation shall be developed and submitted to the Engineer for approval.

All vegetation designated for removal shall be eradicated in its entirety in accordance with the IVRP submitted by the Contractor and approved by the Engineer. Certain situations may require the full and complete mechanical excavation of invasive vegetation including its entire root system.

The use of herbicides will not be permitted between the dates of October 1 and May 31. All herbicides shall be registered for the species being treated and shall be formulated as applicable for target-species foliar treatment, cut surface, or injection applications. Where work in or immediately adjacent to wetlands is necessary, the product label for any chemical/adjuvant formulation applied must indicate that the formulation is approved for aquatic environments.

Seeds and roots, especially, must be destroyed or carefully collected and discarded with trash to prevent reestablishment. The equipment used to clear the work area must be cleaned and washed immediately after the work is finished.

The transferred topsoil, fill and other materials must be screened for roots and rhizomes. Roadside slope and shoulder material removed during road work must not be reused, since it can be loaded with invasive plant seeds.

The disturbed areas will be replanted and reseeded with a native seed mix per DOT Specification 0945005A indicated in the Notice to Contractor. The seed mix shall be New England Wetland Seed Mix.



LWRD Work Commencement Form

To: DEEP.LWRDRegulatory@ct.gov or
Regulatory Section
Department of Energy and Environmental Protection
Land & Water Resources Division
79 Elm Street
Hartford, CT 06106-5127

Licensee Name: Town of Kent
Municipality in which the project is occurring: Kent
DEEP License No(s): 202306288-WQC

CONTRACTOR(s):

1 Name: _____
Address: _____
Telephone: _____
E-mail: _____

2 Name: _____
Address: _____
Telephone: _____
E-mail: _____

3 Name: _____
Address: _____
Telephone: _____
E-mail: _____

Date Contractor(s) received a copy
of the license and approved plans: _____

EXPECTED DATE OF COMMENCEMENT OF WORK: _____

EXPECTED DATE OF COMPLETION OF WORK: _____

LICENSEE: _____
(Signature) (Date)



Compliance Certification Form

The following certification must be signed by the licensee working in consultation with a Connecticut-licensed design professional and must be submitted to the address indicated at the end of this form within ninety (90) days of completion of the authorized work.

| | |
|--|------------------|
| 1. Licensee Name: <u>Town of Kent</u> | |
| DEEP License Number(s): <u>202306288-WQC</u> | |
| Municipality in which project is occurring: <u>Kent</u> | |
| 2. Check one: | |
| (a) <input type="checkbox"/> "I certify that the final site conditions and / or structures are in general conformance with the approved site plans". Identify and describe any deviations and attach to this form. | |
| (b) <input type="checkbox"/> "The final site conditions and / or structures are not in general conformance with the approved site plans. The enclosed "as-built" plans note the modifications". | |
| 3. "I understand that any false statement in this certification is punishable as a criminal offence under section 53a-157b of the General Statutes and under any other applicable law." | |
| _____ Signature of Licensee | _____ Date |
| _____ Name of Licensee (print or type) | |
| _____ Signature of CT-Licensed Design Professional | _____ Date |
| _____ Name of CT-Licensed Design Professional (print or type) | |
| _____ Professional License Number (if applicable) | Affix Stamp Here |
| <ul style="list-style-type: none"> As-built plans shall include: elevations or tidal datums, as applicable, and structures, including any proposed elevation views and cross sections included in the approved license plans. Such as-built plans shall be the original ones and be signed and sealed by an engineer, surveyor or architect, as applicable, who is licensed in the State of Connecticut. The Licensee will be notified by staff of the Land and Water Resources Division (LWRD) if further compliance review is necessary. Lack of response by LWRD staff does not imply compliance. | |
| <p>Submit this completed form to :</p> <p>DEEP.LWRDRegulatory@ct.gov or</p> <p>Regulatory Section Department of Energy and Environmental Protection Land & Water Resources Division 79 Elm Street Hartford, CT 06106-5127</p> | |