

CONTRACT DOCUMENTS
FOR
REPLACEMENT OF HUNT ROAD
BRIDGE NO. 030004
COLUMBIA, CONNECTICUT

PREPARED FOR
Town of Columbia
323 Route 87
Columbia, Connecticut 06237

June 2023

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TAB A

Invitation to Bid

**INVITATION TO BID
REPLACEMENT OF HUNT ROAD
BRIDGE NO. 030004**

The Town of Columbia Connecticut is soliciting sealed bids for The Replacement of Hunt Road Bridge No. 030004.

This project generally consists of the complete replacement of the existing concrete box culvert and wingwalls with a new precast concrete box culvert and precast wingwalls. The work also includes the installation of pre-cast concrete headwalls, roadway reconstruction, placement of metal beam rail, associated regrading and turf restoration and other miscellaneous site work. The work described above includes furnishing, installing and incorporating all materials and equipment into the project as well as performing or providing all labor, supervision, equipment and services unless otherwise noted within the bid documents for the lump sum base bid.

A pre-bid meeting will be held at the site on Thursday, June 29, 2023 at 10:00 a.m.

Sealed bids will be received by the Office of the Town Administrator at the Columbia Town Hall, 323 Route 87, Columbia, CT 06237, until 2:00 PM prevailing time on **Thursday, July 20, 2023** when they will be opened publicly and read aloud. No Bidder may withdraw his bid for a period of sixty (60) days after the date of bid opening.

The Contract Documents, including specifications and drawings, may be obtained on the Town's website, www.columbiact.org under the "Notifications" tab, no log in information is necessary. A satisfactory Bid Bond or Certified Check, in an amount equal to five (5%) of the base Bid, shall be submitted with each bid. The Bid Bond shall be made payable to the Town of Columbia and shall be properly executed by the Bidder and acceptable sureties. All bonds must be from sureties registered in the State of Connecticut.

This contract is subject to state contract compliance requirements, including non-discrimination statutes and set-aside requirements. See CHRO Requirements in Contract Documents.

The Town of Columbia reserves the right to accept or reject any or all bids or options, to waive any technicality in any bid or part thereof, and to accept any bid deemed to be in the best interest of the Town of Columbia.

TAB B

Instructions to Bidders

INSTRUCTIONS TO BIDDERS

1. PROJECT DESCRIPTION:

The Town of Columbia Connecticut is soliciting sealed bids for The Replacement of Hunt Road Bridge No. 030004. This project consists of all necessary work to complete improvements as described on the Contract Plans and Specifications for the lump sum base bid.

The work generally consists of the complete replacement of the existing concrete box culvert and wingwalls with a new precast concrete box culvert and precast wingwalls. The work also includes the installation of pre-cast concrete headwalls, roadway reconstruction, placement of metal beam rail, associated regrading and turf restoration and other miscellaneous site work as shown on the plans or directed by the Owner.

2. GENERAL:

Sealed bids will be received by the Office of the Town Administrator at the Columbia Town Hall, 323 Route 87, Columbia, CT 06237, until 2:00 PM prevailing time on **Thursday July 20, 2023** when they will be opened publicly and read aloud.

3. CONTRACT DOCUMENTS:

These Contract Documents include a complete set of Bidding Forms to be used by the bidder. Division II Construction Details and Division III Materials Section in the State of Connecticut Department of Transportation (CTDOT) Standard Specifications for Roads, Bridges, Facilities and Incidental Construction, Form 818, dated 2020 (including all supplements) which are incorporated herein and are referred to herein after at "Form 818," which is part of the contract, may be purchased from CTDOT –DOT Print Shop, (860) 594-3086 or electronically at <http://www.ct.gov/dot/cwp/view.asp?a=3609&q=430362>

4. BIDS:

Bids shall be enclosed in a sealed envelope clearly marked "**SEALED BID – TOWN OF COLUMBIA – REPLACEMENT OF HUNT ROAD BRIDGE NO. 030004**" along with the name of bidder organization, date and time of bid opening in order to guard against premature opening of the bid.

All bids must be submitted on forms supplied by the Owner and shall be subject to all requirements of the Contract Documents, including "Instruction to Bidders". All bids must be regular in every respect; no interlineations, ditto marks, excisions or special conditions shall be made or included in the bid form by the bidder organization.

The Owner may consider as irregular any bid on which there are any omissions, alterations of form, additions not called for, conditional or alternate bids, or irregularities of any kind and, at its option, may reject same. The blank spaces in the bid must be filled in correctly where indicated for each and every item for which a quantity is given typed or printed in ink. If any price is omitted, the bid may be rejected. The Bidder shall sign his bid correctly. If the bid is made by an individual, his name and post office address must be shown. If made by a firm,

partnership, or by a corporation, the bid must be signed by an official of the firm, partnership, or corporation authorized to sign contracts, and also must show the post office address of the firm, partnership or corporation.

A Non-Collusion Affidavit shall be completed and returned with the submitted bid. More than one bid from an individual, a firm or partnership, a corporation or association under the same or different names will not be considered. Reasonable ground for believing that any Bidder is interested in more than one bid for the work contemplated will cause the rejection of all bids in which such Bidder is interested. Bids in which the prices are obviously unbalanced may be rejected.

Failure to return the following completed forms and information with the bid proposal(s) will disqualify the Contractor's bid:

1. Bidder Contract Compliance Monitoring Report, in accordance with part 14 of this section and Tab I.
2. Non-Collusion Affidavit
3. Bid Security
4. Bidders Qualification Statement, in accordance with part 7 of this section.

5. ADDENDA & INTERPRETATIONS:

Any request from a prospective Bidder for interpretation of meaning of Contract Drawings, Specifications or other Contract Documents shall be made in writing to the Elizabeth Lunt, Director of Public Works for the Town of Columbia. To be given consideration, such requests must be received at least seven (7) days prior to date fixed for opening of proposals. Such requests may be sent via e-mail to elunt@columbiact.org. Interpretations will be made in the form of written Addenda to Contract Documents, which Addenda shall become a part of the Contract. Not later than three (3) days prior to date fixed for opening of proposals, Addenda will be posted to the town's website www.columbiact.org where the project documents are located. It is the responsibility of the bidder to verify that all addenda have been received and incorporated into the submitted bid. Failure of any Bidder to receive any such addenda shall not relieve Bidder from any obligations under his proposal as submitted. Only questions answered by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

6. SITE CONDITIONS:

All information on the Drawings or in the contract Documents relating to subsurface conditions, utilities, and other structures is from best sources available at present to the Owner. All such information and drawings of existing construction are furnished only for the information and convenience of Bidders.

At the date fixed for opening of Bids, it will be presumed that each Bidder has made an examination of location and site of work to be done under Contract; has satisfied himself as to actual conditions, requirements and quantities of work; has considered federal, state and

local laws and regulations that may affect cost, progress, performance or furnishing the Work; and has read and become thoroughly familiar with Contract Documents including Contract Drawings, Specifications, Addenda, and documents referenced therein.

The Owner and the Engineer assume no responsibility whatsoever with respect to ascertaining for the Contractor any facts concerning physical characteristics at the site of the project.

A pre-bid meeting will be held at the site on Tuesday, June 27, 2023 at 10:00 a.m.

7. BIDDER'S QUALIFICATIONS:

Each bid must include the Bidder's Qualification Statement form as well as contain evidence of Bidder's qualification to do business in the State of Connecticut or covenant to obtain such qualification prior to award of the contract. All bidders shall provide information with their bids demonstrating their qualifications to perform the work. At a minimum, each bidder must provide the following information:

- Evidence of Bidder's qualification to business in the State of Connecticut as well as copies of all required professional licenses.
- A list of present commitments or obligations that may delay the work.
- A list of the major tasks to be completed on the job as well as who will be performing each task (i.e. your company or a subcontractor). If a subcontractor will be utilized, please identify their name.
- A list of relevant project experience demonstrating ability to complete job within the time required and within the established budget. A minimum of four or five references and project owner's primary contact from construction projects completed in the last four years (note: projects shall be competitively bid). Preference is for projects of similar size and scope to this, with minimum contract value of \$250,000. Please also provide the original contract value (at time of contract signing) and final contract value (upon project completion), including all change orders.

The Owner shall make such investigation as deemed necessary to determine the ability of the Bidder to discharge his Contract. After bid opening, Bidder shall be prepared to furnish the Owner with all written evidence as may be required for this purpose (e.g., financial data, previous experience, present commitments) within five (5) days after Owner requests such evidence.

Bids received from Bidders who have previously failed to complete contracts within the time required, or who have previously performed similar work in an unsatisfactory manner, may be rejected. A bid may be rejected if the Bidder cannot show that he has the necessary capital and experience, and owns, controls, or can procure the necessary plant to commence and complete the work at the rate or time specified, and that he is not already obligated for the performance of other work which would delay the commencement, prosecution, or completion of the work.

8. MODIFICATION:

Any Bidder may modify his Bid at any time prior to the scheduled closing time for receipt of Bids, by submitting an appropriate document duly executed in a manner that Bid must be executed and delivered to the place where Bids are to be submitted. After opening of Bids, no Bidder may withdraw his proposal for a period of sixty (60) days. Owner may, in its sole discretion, release any Bid prior to that date.

9. REJECTION OF BIDS:

The Owner also reserves the right to reject any or all Bids, for any reason it deems advisable, and to award Contract or Contracts to any of the Bidders, regardless of amount of Bid.

10. TIME OF COMPLETION & LIQUIDATED DAMAGES:

The Bidder must agree to fully complete all work within the number of consecutive calendar days of the issuance of the Notice to Proceed set forth in the Agreement. The Bidder must agree also to pay as liquidated damages the sum set forth in the Agreement for each consecutive calendar day thereafter.

11. AWARD OF CONTRACTS:

If the Contract(s) is (are) awarded, Owner will give successful Bidder(s) a Notice of Award within forty five (45) days after the day of Bid opening. The successful Bidder(s) shall then execute and deliver to the Owner, within ten (10) days after notification of the award, three (3) executed Agreements, Final Certificate of Insurance, Performance Bond, Payment Bond on forms provided by the Owner. If a successful Bidder fails to comply with the requirements of these documents within ten (10) days of receiving said Notice, that Bidder shall forfeit Bid Security and, at the option of the Owner, the Award may become null and void. The Owner may then proceed to Award the Contract(s) to another of the Bidders.

Nonresident contractors shall comply with the State of Connecticut Department of Revenue Services (DRS) Special Notice SN 2012(2) 2011 Legislative Changes to the Procedures Governing Nonresident Contractors.

12. BID SECURITY:

Each Bid must be accompanied by a surety bond in the amount of 5% of the total of the Bid with the forms supplied by the Owner. Bid security of the successful Bidder will be retained until such Bidder has executed the Agreement, furnished the required contract security and met the other conditions of the Notice of Award, whereupon the Bid security will be returned. The Bid security of other Bidders whom Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of the seventh day after the Effective Date of the Agreement or the sixty-first day after Bid opening, whereupon the Bid security furnished by such Bidders will be returned. Bid security with Bids which are not competitive will be returned within seven (7) days of Bid opening.

13. SCHEDULE OF VALUES:

The apparent successful Bidder must submit, prior to the execution of an Agreement, a preliminary schedule of values for all of the Work. The preliminary schedule of values must be submitted after Bidding by the apparent low Bidder, and the schedule of values must be deemed acceptable by the Engineer, before the Agreement is executed.

14. SECURITY FOR FAITHFUL PERFORMANCE:

In addition to the Agreement, a successful Bidder shall also provide, within the time stipulated, a Construction Performance Bond by a company satisfactory to the Owner in an amount equal to One Hundred Percent (100%) of Estimated Total Contract Price recorded in the Proposal section of the Contract as executed, and a Construction Payment Bond in like amount will be required from the successful Bidder for faithful performance of the Contract.

15. COMMISSION ON HUMAN RIGHTS AND OPPORTUNITIES (CHRO) CONTRACT COMPLIANCE (See Tab H):

The contractor who is selected to perform this State project must comply with CONN. GEN. STAT. §§ 4a-60, 4a-60a, 4a-60g, and 46a-68b through 46a-68f, inclusive, as amended by June 2015 Special Session Public Act 15-5.

State law requires a minimum of twenty-five (25%) percent of the state-funded portion of the contract be set aside for award to subcontractors holding current certification from the Connecticut Department of Administrative Services (“DAS”) under the provisions of CONN. GEN. STAT. § 4a-60g. (25% of the total state-funded value with DAS-certified Small Businesses and 6.25% of the total state-funded value with DAS-certified Minority-, Women-, and/or Disabled-owned Businesses.) The contractor must demonstrate good faith effort to meet the 25% set-aside goals.

All bidders must complete, sign, and return the “CHRO Bidder Contract Compliance Monitoring Report” form to the grantee at the time of bid opening. Bids not including this form should be considered incomplete and rejected. This form is attached, and can also be found at: [Contract Compliance Forms and Reports](#)

TAB C

Forms

Bid Proposal

Bidder Contract Compliance Monitoring Report

Non-Collusion Affidavit of Bidder

Bid Bond

Qualifications Statement

Agreement

Performance Bond

Payment Bond

BID PROPOSAL

BID PROPOSAL

PROJECT IDENTIFICATION:

Replacement of Hunt Road Bridge

THIS BID IS SUBMITTED TO:

Town of Columbia Town Hall
First Selectman's Office
323 Route 87
Columbia, Connecticut 06237
Attention: Mr. Steven M. Everett, First Selectman

The Undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an agreement with Owner in the form included in the Contract Documents to perform and furnish all Work as specified or indicated in the Contract Documents for the Bid Price and within the Bid Times indicated in this Bid and in accordance with the other terms and conditions of the Contract Documents.

Bidder accepts all terms and conditions of the Invitation to Bid and Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for sixty (60) days after the day of Bid opening. Bidder will sign and deliver the required number of counterparts of the Agreement with the Bonds and other documents required by the Bidding Requirements within ten (10) days after the date of Owner's Notice of Award.

In submitting this Bid, Bidder represents, as more fully set forth in the Agreement, that:

1. Bidder has examined and carefully studied the Bidding Documents and the following Addenda receipt all of which is hereby acknowledged (List Addenda by Addendum Number and Date):

2. Bidder has visited the site and become familiar with and is satisfied as to the general, local and site conditions that may affect cost, progress, performance and furnishing of the Work.
3. Bidder has examined and carefully studied the Contract Documents including the Commission on Human Rights and Opportunities (CHRO) Contract Compliance requirements.
4. Bidder is familiar with and is satisfied as to all federal, state and local Laws and regulations that may affect cost, progress, performance and furnishing of the Work.
5. Bidder has carefully studied all reports and explorations and tests of subsurface conditions at or contiguous to the site and all drawings of physical conditions in or

relating to existing surface or subsurface structures at or contiguous to the site (except Underground Facilities) which have been identified in the Supplementary Conditions. Bidder acknowledges that Owner and Engineer do not assume responsibility for the accuracy or completeness of information and data shown or indicated in the Bidding Documents with respect to Underground Utilities at or contiguous to the site. Bidder has obtained and carefully studied (or assumes responsibility for having done so) all such additional or supplementary examinations, investigations, explorations, tests, studies and data concerning conditions (surface, subsurface, Underground Facilities) at or contiguous to the site or otherwise which may affect cost, progress, performance or furnishing of the Work or which relate to any aspect of the means, methods, techniques, sequences and procedures of construction to be employed by Bidder and safety precautions and programs related thereto. Bidder does not consider that any additional examinations, investigations, explorations, tests, studies or data are necessary for the determination of the Bid for performance and furnishing of the Work in accordance with the times, price and other terms and conditions of the Contract Documents.

6. Bidder is aware of the general nature of Work to be performed by Owner and others at the site that relates to Work for which this Bid is submitted as indicated in the Contract Documents.
7. Bidder has correlated the information known to Bidder, information and observations obtained from visits to the site, reports and drawings identified in the Contract Documents and all additional examinations, investigations, explorations, tests, studies and data with the Contract Documents.
8. Bidder has given Engineer written notice of all conflicts, errors, ambiguities or discrepancies that Bidder has discovered in the Contract Documents and the written resolution thereof by Engineer is acceptable to Bidder, and the Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work for which this Bid is submitted.
9. This Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; Bidder has not solicited or induced any person, firm or corporation to refrain from bidding; and Bidder has not sought by collusion to obtain for itself any advantage over any other Bidder or over Owner.
10. Bidder is to write his lump sum price Bid in words and in figures in the blank spaces provided under BASE BID – SITE WORK- LUMP SUM.

The Bidder is advised that the description below is only a summary. The unit price or lump sum bid shall include all of the items as specified in detail in the contract

documents. Bidder will complete the Work in accordance with the Contract Documents for the following price(s):

A. BASE BID– SITE WORK - LUMP SUM

Bidder will provide all materials, tools and labor to complete the replacement of the existing concrete box culvert and wingwalls with a new precast concrete box culvert and precast wingwalls. Also included is the installation of pre-cast concrete headwalls, roadway reconstruction, placement of metal beam rail, associated regrading and turf restoration and other miscellaneous site work. The work described above includes furnishing, installing and incorporating all materials and equipment into the project as well as performing or providing all labor, supervision, equipment and services as depicted on the Contract Plans. This work will be completed for the following BASE BID LUMP SUM price:

_____ Dollars (*in words*)

\$ _____
(*in numbers*)

The undersigned affirms that the above lump sum prices represents the entire cost per plans, specifications, addenda, including all labor, materials, tools, equipment, overhead, profit and that no claim will be made on account of any increase in wage scales, material prices, delivery delays, taxes, insurance, cost indexes or any other rates affecting the construction industry or this project.

11. The Bidder is listed as a Prequalified Construction Firm with the State of Connecticut Department of Transportation? (***Please circle one***)

YES / NO

12. Bidder agrees that the Work will be substantially completed and completed and ready for final payment in accordance with Article 14 of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.

13. Bidder accepts the provisions of the Agreement as to liquidated damages in the event of failure to complete the Work within the times specified in the Agreement.

14. The following documents are attached to and made a part of this Bid:

Required Bid Security in the form of _____

15. Communications concerning this Bid shall be addressed to the address of Bidder below.

16. Terms used in this Bid which are defined in the General Conditions or Instructions to Bidders will have the same meanings indicated in the General Conditions or Instructions to Bidders.

SUBMITTED on: _____, 2023 *(Seal – if Bid by Corporation)*

By: _____ Title: _____

Bidder: _____

Address: _____

SEAL – if Bid is by a Corporation

The undersigned affirms that the above lump sum price represents the entire cost per plans, specifications, addenda, including all labor, materials, tools, equipment, overhead, profit and that no claim will be made on account of any increase in wage scales, material prices, delivery delays, taxes, insurance, cost indexes or any other rates affecting the construction industry or this project.

BIDDER CONTRACT COMPLIANCE MONITORING REPORT

COMMISSION ON HUMAN RIGHTS AND OPPORTUNITIES
CONTRACT COMPLIANCE REGULATIONS
NOTIFICATION TO BIDDERS

(Revised 09/3/15)

The contract to be awarded is subject to contract compliance requirements mandated by [Sections 4a-60](#) and [4a-60a](#) of the Connecticut General Statutes; and, when the awarding agency is the State, [Sections 46a-71\(d\)](#) and [46a-81i\(d\)](#) of the Connecticut General Statutes. There are Contract Compliance Regulations codified at [Section 46a-68j-21 through 43](#) of the Regulations of Connecticut State Agencies, which establish a procedure for awarding all contracts covered by [Sections 4a-60](#) and [46a-71\(d\)](#) of the Connecticut General Statutes.

According to [Section 46a-68j-30\(9\)](#) of the Contract Compliance Regulations, every agency awarding a contract subject to the contract compliance requirements has an obligation to “aggressively solicit the participation of legitimate minority business enterprises as bidders, contractors, subcontractors and suppliers of materials.” “Minority business enterprise” is defined in [Section 4a-60](#) of the Connecticut General Statutes as a business wherein fifty-one percent or more of the capital stock, or assets belong to a person or persons: “(1) Who are active in daily affairs of the enterprise; (2) who have the power to direct the management and policies of the enterprise; and (3) who are members of a minority, as such term is defined in subsection (a) of [Section 32-9n](#).” “Minority” groups are defined in [Section 32-9n](#) of the Connecticut General Statutes as “(1) Black Americans . . . (2) Hispanic Americans . . . (3) persons who have origins in the Iberian Peninsula . . . (4) Women . . . (5) Asian Pacific Americans and Pacific Islanders; (6) American Indians . . .” An individual with a disability is also a minority business enterprise as provided by [Section 4a-60g](#) of the Connecticut General Statutes. The above definitions apply to the contract compliance requirements by virtue of [Section 46a-68j-21\(11\)](#) of the Contract Compliance Regulations.

The awarding agency will consider the following factors when reviewing the bidder’s qualifications under the contract compliance requirements:

- (a) the bidder’s success in implementing an affirmative action plan;
- (b) the bidder’s success in developing an apprenticeship program complying with [Sections 46a-68-1 to 46a-68-17](#) of the Administrative Regulations of Connecticut State Agencies, inclusive;
- (c) the bidder’s promise to develop and implement a successful affirmative action plan;
- (d) the bidder’s submission of employment statistics contained in the “Employment Information Form”, indicating that the composition of its workforce is at or near parity when compared to the racial and sexual composition of the workforce in the relevant labor market area; and
- (e) the bidder’s promise to set aside a portion of the contract for legitimate minority business enterprises. [See Section 46a-68j-30\(10\)\(E\)](#) of the Contract Compliance Regulations.

INSTRUCTIONS AND OTHER INFORMATION

The following [BIDDER CONTRACT COMPLIANCE MONITORING REPORT](#) must be completed in full, signed, and submitted with the bid for this contract. The contract awarding agency and the Commission on Human Rights and Opportunities will use the information contained thereon to determine the bidders compliance to [Sections 4a-60](#) and [4a-60a](#) CONN. GEN. STAT., and [Sections 46a-68j-23](#) of the Regulations of Connecticut State Agencies regarding equal employment opportunity, and the bidder’s good faith efforts to include minority business enterprises as subcontractors and suppliers for the work of the contract.

1) **Definition of Small Contractor**

[Section 4a-60g](#) CONN. GEN. STAT. defines a small contractor as a company that has been doing business under the same management and control and has maintained its principal place of business in Connecticut for a one year period immediately prior to its application for certification under this section, had gross revenues not exceeding fifteen million dollars in the most recently completed fiscal year, and at least fifty-one percent of the ownership of which is held by a person or persons who are active in the daily affairs of the company, and have the power to direct the management and policies of the company, except that a nonprofit corporation shall be construed to be a small contractor if such nonprofit corporation meets the requirements of subparagraphs (A) and (B) of subdivision [4a-60g](#) CONN. GEN. STAT.

2) Description of Job Categories (as used in Part IV Bidder Employment Information) (Page 2)

MANAGEMENT: Managers plan, organize, direct, and control the major functions of an organization through subordinates who are at the managerial or supervisory level. They make policy decisions and set objectives for the company or departments. They are not usually directly involved in production or providing services. Examples include top executives, public relations managers, managers of operations specialties (such as financial, human resources, or purchasing managers), and construction and engineering managers.

BUSINESS AND FINANCIAL OPERATIONS: These occupations include managers and professionals who work with the financial aspects of the business. These occupations include accountants and auditors, purchasing agents, management analysts, labor relations specialists, and budget, credit, and financial analysts.

MARKETING AND SALES: Occupations related to the act or process of buying and selling products and/or services such as sales engineer, retail sales workers and sales representatives including wholesale.

LEGAL OCCUPATIONS: In-House Counsel who is charged with providing legal advice and services in regards to legal issues that may arise during the course of standard business practices. This category also includes assistive legal occupations such as paralegals, legal assistants.

COMPUTER SPECIALISTS: Professionals responsible for the computer operations within a company are grouped in this category. Examples of job titles in this category include computer programmers, software engineers, database administrators, computer scientists, systems analysts, and computer support specialists

ARCHITECTURE AND ENGINEERING: Occupations related to architecture, surveying, engineering, and drafting are included in this category. Some of the job titles in this category include electrical and electronic engineers, surveyors, architects, drafters, mechanical engineers, materials engineers, mapping technicians, and civil engineers.

OFFICE AND ADMINISTRATIVE SUPPORT: All clerical-type work is included in this category. These jobs involve the preparing, transcribing, and preserving of written communications and records; collecting accounts; gathering and distributing information; operating office machines and electronic data processing equipment; and distributing mail. Job titles listed in this category include telephone operators, bill and account collectors, customer service representatives, dispatchers, secretaries and administrative assistants, computer operators and clerks (such as payroll, shipping, stock, mail and file).

BUILDING AND GROUNDS CLEANING AND MAINTENANCE: This category includes occupations involving landscaping, housekeeping, and janitorial services. Job titles found in this category include supervisors of landscaping or housekeeping, janitors, maids, grounds maintenance workers, and pest control workers.

CONSTRUCTION AND EXTRACTION: This category includes construction trades and related occupations. Job titles found in this category include boilermakers, masons (all types), carpenters, construction laborers, electricians, plumbers (and related trades), roofers, sheet metal workers, elevator installers, hazardous materials removal workers, paperhangers, and painters. Paving, surfacing, and tamping equipment operators; drywall and ceiling tile installers; and carpet, floor and tile installers and finishers are also included in this category. First line supervisors, foremen, and helpers in these trades are also grouped in this category.

INSTALLATION, MAINTENANCE AND REPAIR: Occupations involving the installation, maintenance, and repair of equipment are included in this group. Examples of job titles found here are heating, ac, and refrigeration mechanics and installers; telecommunication line installers and repairers; heavy vehicle and mobile equipment service technicians and mechanics; small engine mechanics; security and fire alarm systems installers; electric/electronic repair, industrial, utility and transportation equipment; millwrights; riggers; and manufactured building and mobile home installers. First line supervisors, foremen, and helpers for these jobs are also included in the category.

MATERIAL MOVING WORKERS: The job titles included in this group are Crane and tower operators; dredge, excavating, and lading machine operators; hoist and winch operators; industrial truck and tractor operators; cleaners of vehicles and equipment; laborers and freight, stock, and material movers, hand; machine feeders and offbearers; packers and packagers, hand; pumping station operators; refuse and recyclable material collectors; and miscellaneous material moving workers.

PRODUCTION WORKERS: The job titles included in this category are chemical production machine setters, operators and tenders; crushing/grinding workers; cutting workers; inspectors, testers sorters, samplers, weighers; precious stone/metal workers; painting workers; cementing/gluing machine operators and tenders; etchers/engravers; molders, shapers and casters except for metal and plastic; and production workers.

3) Definition of Racial and Ethnic Terms (as used in Part IV Bidder Employment Information) (Page 3)

<p><u>White</u> (not of Hispanic Origin)-All persons having origins in any of the original peoples of Europe, North Africa, or the Middle East.</p> <p><u>Black</u> (not of Hispanic Origin)-All persons having origins in any of the Black racial groups of Africa.</p> <p><u>Hispanic</u>- All persons of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race.</p>	<p><u>Asian or Pacific Islander</u>- All persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands. This area includes China, India, Japan, Korea, the Philippine Islands, and Samoa.</p> <p><u>American Indian or Alaskan Native</u>- All persons having origins in any of the original peoples of North America, and who maintain cultural identification through tribal affiliation or community recognition.</p>
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BIDDER CONTRACT COMPLIANCE MONITORING REPORT

PART 1 – Bidder Information

<p>Company Name: Street Address: City & State: Chief Executive:</p>	<p>Bidder Federal Employer Identification Number: Or Social Security Number:</p>
<p>Major Business Activity: (brief description)</p>	<p>Bidder Identification (response optional/definitions on page 1)</p> <p>-Bidder is a small contractor? Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>-Bidder is a minority business enterprise? Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>(If yes, check ownership category)</p> <p>Black <input type="checkbox"/> Hispanic <input type="checkbox"/> Asian American <input type="checkbox"/></p> <p>American Indian/Alaskan Native <input type="checkbox"/> Iberian Peninsula <input type="checkbox"/></p> <p>Individual(s) with a Physical Disability <input type="checkbox"/> Female <input type="checkbox"/></p> <p>-Bidder is certified as above by State of CT? Yes <input type="checkbox"/> No <input type="checkbox"/></p>
<p>Bidder Parent Company: (If any)</p>	
<p>Other Locations in CT: (If any)</p>	

PART II - Bidder Nondiscrimination Policies and Procedures

<p>1. Does your company have a written Affirmative Action/Equal Employment Opportunity statement posted on company bulletin boards? Yes <input type="checkbox"/> No <input type="checkbox"/></p>	<p>7. Do all of your company contracts and purchase orders contain non-discrimination statements as required by Sections 4a-60 & 4a-60a Conn. Gen. Stat.? Yes <input type="checkbox"/> No <input type="checkbox"/></p>
<p>2. Does your company have the state-mandated sexual harassment prevention in the workplace policy posted on company bulletin boards? Yes <input type="checkbox"/> No <input type="checkbox"/></p>	<p>8. Do you, upon request, provide reasonable accommodation to employees, or applicants for employment, who have physical or mental disability? Yes <input type="checkbox"/> No <input type="checkbox"/></p>
<p>3. Do you notify all recruitment sources in writing of your company's Affirmative Action/Equal Employment Opportunity employment policy? Yes <input type="checkbox"/> No <input type="checkbox"/></p>	<p>9. Does your company have a mandatory retirement age for all employees? Yes <input type="checkbox"/> No <input type="checkbox"/></p>
<p>4. Do your company advertisements contain a written statement that you are an Affirmative Action/Equal Opportunity Employer? Yes <input type="checkbox"/> No <input type="checkbox"/></p>	<p>10. If your company has 50 or more employees, have you provided at least two (2) hours of sexual harassment training to all of your supervisors? Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/></p>
<p>5. Do you notify the Ct. State Employment Service of all employment openings with your company? Yes <input type="checkbox"/> No <input type="checkbox"/></p>	<p>11. If your company has apprenticeship programs, do they meet the Affirmative Action/Equal Employment Opportunity requirements of the apprenticeship standards of the Ct. Dept. of Labor? Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/></p>
<p>6. Does your company have a collective bargaining agreement with workers? Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>6a. If yes, do the collective bargaining agreements contain non-discrimination clauses covering all workers? Yes <input type="checkbox"/> No <input type="checkbox"/></p>	<p>12. Does your company have a written affirmative action Plan? Yes <input type="checkbox"/> No <input type="checkbox"/> If no, please explain.</p>
<p>6b. Have you notified each union in writing of your commitments under the nondiscrimination requirements of contracts with the state of CT? Yes <input type="checkbox"/> No <input type="checkbox"/></p>	<p>13. Is there a person in your company who is responsible for equal employment opportunity? Yes <input type="checkbox"/> No <input type="checkbox"/> If yes, give name and phone number:</p>

1. Will the work of this contract include subcontractors or suppliers? Yes No

1a. If yes, please list all subcontractors and suppliers and report if they are a small contractor and/or a minority business enterprise. (defined on page 1 / use additional sheet if necessary)

1b. Will the work of this contract require additional subcontractors or suppliers other than those identified in 1a. above? Yes No

PART IV - Bidder Employment Information

Date:

JOB CATEGORY*	OVERALL TOTALS	WHITE (not of Hispanic origin)		BLACK (not of Hispanic origin)		HISPANIC		ASIAN or PACIFIC ISLANDER		AMERICAN INDIAN or ALASKAN NATIVE	
		Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Management											
Business & Financial Ops											
Marketing & Sales											
Legal Occupations											
Computer Specialists											
Architecture/Engineering											
Office & Admin Support											
Bldg/ Grounds Cleaning/Maintenance											
Construction & Extraction											
Installation , Maintenance & Repair											
Material Moving Workers											
Production Occupations											
TOTALS ABOVE											
Total One Year Ago											
FORMAL ON THE JOB TRAINEES (ENTER FIGURES FOR THE SAME CATEGORIES AS ARE SHOWN ABOVE)											
Apprentices											
Trainees											

*NOTE: JOB CATEGORIES CAN BE CHANGED OR ADDED TO (EX. SALES CAN BE ADDED OR REPLACE A CATEGORY NOT USED IN YOUR COMPANY)

1. Which of the following recruitment sources are used by you? (Check yes or no, and report percent used)				2. Check (X) any of the below listed requirements that you use as a hiring qualification (X)	3. Describe below any other practices or actions that you take which show that you hire, train, and promote employees without discrimination
SOURCE	YES	NO	% of applicants provided by source		
State Employment Service	<input type="checkbox"/>	<input type="checkbox"/>		Work Experience	
Private Employment Agencies	<input type="checkbox"/>	<input type="checkbox"/>		Ability to Speak or Write English	
Schools and Colleges	<input type="checkbox"/>	<input type="checkbox"/>		Written Tests	
Newspaper Advertisement	<input type="checkbox"/>	<input type="checkbox"/>		High School Diploma	
Walk Ins	<input type="checkbox"/>	<input type="checkbox"/>		College Degree	
Present Employees	<input type="checkbox"/>	<input type="checkbox"/>		Union Membership	
Labor Organizations	<input type="checkbox"/>	<input type="checkbox"/>		Personal Recommendation	
Minority/Community Organizations	<input type="checkbox"/>	<input type="checkbox"/>		Height or Weight	
Others (please identify)	<input type="checkbox"/>	<input type="checkbox"/>		Car Ownership	
	<input type="checkbox"/>	<input type="checkbox"/>		Arrest Record	
	<input type="checkbox"/>	<input type="checkbox"/>		Wage Garnishments	

Certification (Read this form and check your statements on it CAREFULLY before signing). I certify that the statements made by me on this BIDDER CONTRACT COMPLIANCE MONITORING REPORT are complete and true to the best of my knowledge and belief, and are made in good faith. I understand that if I knowingly make any misstatements of facts, I am subject to be declared in non-compliance with Section 4a-60, 4a-60a, and related sections of the CONN. GEN. STAT.

(Signature)	(Title)	(Date Signed)	(Telephone)
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NON-COLLUSION AFFIDAVIT OF BIDDER

BID BOND

BID BOND

Any singular reference to Bidder, Surety, Owner, or other party shall be considered plural where applicable.

BIDDER (Name and Address):

SURETY (Name and Address of Principal Place of Business):

OWNER (Name and Address):

BID

Bid Due Date:

Project (Brief Description Including Location):

BOND

Bond Number:

Date (Not later than Bid due date):

Penal sum

_____)
(Words)

_____)
(Figures)

Surety and Bidder, intending to be legally bound hereby, subject to the terms printed on the reverse side hereof, do each cause this Bid Bond to be duly executed on its behalf by its authorized officer, agent, or representative.

BIDDER

SURETY

(Seal
)

(Seal)

Bidder's Name and Corporate Seal

Surety's Name and Corporate Seal

By: _____
Signature and Title

By: _____
Signature and Title
(Attach Power of Attorney)

Attest: _____
Signature and Title

Attest: _____
Signature and Title

Note: Above addresses are to be used for giving required notice.

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to pay to Owner upon default of Bidder the penal sum set forth on the face of this Bond. Payment of the penal sum is the extent of Surety's liability.
2. Default of Bidder shall occur upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.
3. This obligation shall be null and void if:
 - 3.1. Owner accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents, or
 - 3.2. All Bids are rejected by Owner, or
 - 3.3. Owner fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by Paragraph 5 hereof).
4. Payment under this Bond will be due and payable upon default by Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.
5. Surety waives notice of any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by Owner and Bidder, provided that the total time for issuing Notice of Award including extensions shall not in the aggregate exceed 120 days from Bid due date without Surety's written consent.
6. No suit or action shall be commenced under this Bond prior to 30 calendar days after the notice of default required in Paragraph 4 above is received by Bidder and Surety and in no case later than one year after Bid due date.
7. Any suit or action under this Bond shall be commenced only in a court of competent jurisdiction located in the state in which the Project is located.
8. Notices required hereunder shall be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier, or by United States Registered or Certified Mail, return receipt requested, postage pre-paid, and shall be deemed to be effective upon receipt by the party concerned.
9. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent, or representative who executed this Bond on behalf of Surety to execute, seal, and deliver such Bond and bind the Surety thereby.
10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond shall be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute shall govern and the remainder of this Bond that is not in conflict therewith shall continue in full force and effect.
11. The term "Bid" as used herein includes a Bid, offer, or proposal as applicable.

QUALIFICATIONS STATEMENT

BIDDER'S QUALIFICATION STATEMENT

All bidders are required to complete this form properly and submit it with their proposal. Failure of a bidder to answer any question or provide required information in sufficient detail or providing incorrect or false information may result in bid rejection. *(Use back of sheet if necessary for add'l space)*

1. State the exact organization name, address, telephone: _____

2. State the type of organization (Corporation, Partnership, Sole Proprietorship, Other):

3. State the number of years this organization has been in business under present name: _____

4. State the number of years this organization has been in business as a General Contractor: _____

5. If organization has not always been a General Contractor, list the trade(s) customarily performed prior to becoming a General Contractor:

6. If organization has not always been under present name, list all other names by which the organization has been known and associated length of time:

7. List all licenses (description and number) held by the organization:

8. Has the organization ever failed to complete a contract, or has any officer or partner of the organization ever been an officer or partner of another organization that failed to complete a contract (Yes/No)? If yes, indicate the circumstances leading to the project failure and the name of the company which provided the bonding for the failed contract(s):

9. List all legal or administrative proceedings currently pending or concluded within the last five years which relate to procurement or performance of any public or private construction contract:

10. List all Occupational Safety and Health Act (OSHA) violations cited within the last five years:

11. List all present commitments or obligations that may delay the work:

12. List all major tasks to be completed on the job as well as who will be performing each task (i.e. your company or a subcontractor), if a subcontractor will be utilized, please identify by name:

13. List five projects and associated references contact information for similar projects performed demonstrating ability to complete job within the time required and within the established budget. Preference is for projects of similar size and scope to this project. Provide project name, address, original contract amount, final contract amount, date completed, owner & reference contact:

14. List previous relevant construction experience within the past 2 years:

Dated at _____

this _____ day of _____, 2023.

Name of Organization:

Signature: _____

(Print Name): _____

Title: _____

Notary Statement:

Mr./Mrs./Ms. _____ being duly sworn

deposes and says that he/she is the _____ (Position/Title)
of

_____ (Organization Name),

and that all of the answers and statements contained therein are true and accurate.

Subscribed and sworn before me this _____ day of _____,
2023.

Notary Public: _____

My Commission expires: _____, _____

AGREEMENT

AGREEMENT

BETWEEN OWNER AND CONTRACTOR
ON THE BASIS OF A STIPULATED PRICE

THIS AGREEMENT is dated as of the _____ day of _____ in the year _____ by
and between the Town of Columbia (hereinafter called OWNER) and
_____ (hereinafter called CONTRACTOR).

OWNER and CONTRACTOR, in consideration of the mutual covenants hereinafter set forth,
agree as follows:

Article 1. WORK

CONTRACTOR shall complete all Work as specified or indicated in the Contract Documents.
The Work is generally described as follows:

Replacement of Hunt Road Bridge No. 030004 as described by the specifications and
shown on the drawings contained therein.

Article 2. ENGINEER

The Project has been designed by:

Barton & Loguidice, LLC
41 Sequin Drive
Glastonbury, Connecticut 06033
Phone: (860) 633-8770

who is hereinafter called ENGINEER and who is to act as OWNER's representative from time
to time, assume some duties and responsibilities and have the rights and authority assigned
to ENGINEER in the Contract Documents in connection with completion of the Work in
accordance with the Contract Documents. OWNER will perform most of the duties
associated with processing applications for payments in lieu of ENGINEER.

Article 3. CONTRACT TIMES

- 3.1 The Work will be substantially completed within one hundred forty-two (142)
consecutive calendar days of issuance of Notice to Proceed as provided in
paragraph 2.03 of the General Conditions and as modified by the Supplementary
Conditions.
- 3.2 *Liquidated Damages.* OWNER and CONTRACTOR recognize that time is of the
essence of this Agreement and that OWNER may suffer financial loss if the Work is
not completed within the times specified in paragraph 3.1 above, plus any

extensions thereof allowed in accordance with Article 12 of the General Conditions. They also recognize the delays, expense and difficulties involved in proving the actual loss suffered by OWNER if the Work is not completed on time. Accordingly, instead of requiring any such proof, OWNER and CONTRACTOR agree that as liquidated damages for delay (but not as a penalty) CONTRACTOR shall pay OWNER seven hundred fifty dollars (\$750.00) for each calendar day that expires after the time specified in paragraph 3.1 for Substantial Completion until the Work is substantially complete. After Substantial Completion, if CONTRACTOR shall neglect, refuse or fail to complete the remaining Work within the time specified in paragraph 3.1 for completion and readiness for final payment or any proper extension thereof granted by OWNER, CONTRACTOR shall pay OWNER three hundred fifty dollars (\$350.00) for each calendar day that expires after the time specified in paragraph 3.1 for completion and readiness for final payment.

Article 4. CONTRACT PRICE

OWNER shall pay CONTRACTOR for completion of the Work in accordance with the Contract Documents an amount in current funds equal to the sum of the amounts determined pursuant to paragraphs 4.1 and 4.2 below:

- 4.1 For all work in accordance with the Contractor’s Bid Proposal and
 - A. BASE BID LUMP SUM:

(in numbers)

(in words)

Article 5. PAYMENT PROCEDURES

CONTRACTOR shall submit Applications for Payment in accordance with Article 14 of the General Conditions. Applications for Payment will be processed by OWNER or ENGINEER as provided in the General Conditions and Supplementary Conditions.

- 5.1 *Progress Payments; Retainage.* OWNER shall make progress payments on account of the Contract Price on the basis of CONTRACTOR's Applications for Payment as recommended by the ENGINEER, each month during construction as provided in paragraphs 5.1.1 and 5.1.2. below. All such payments will be measured by the schedule of values established in paragraph 2.07 of the General Conditions (and in the case of Unit Price Work based on the number of units completed), or, in the event there is no schedule of values, as provided in the General Requirements.

- 5.1.1 Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below, but, in each case, less the aggregate of

payments previously made and less such amounts as ENGINEER shall determine, or OWNER may withhold, in accordance with paragraph 14.02 of the General Conditions.

90% of Work completed (with the balance being retainage).

90% (with the balance being retainage) of materials and equipment not incorporated in the Work (but delivered, suitably stored and accompanied by documentation satisfactory to OWNER as provided in paragraph 14.02 of the General Conditions).

5.1.2 Upon Substantial Completion, in an amount sufficient to increase total payments to CONTRACTOR to 98% of the Contract Price (with the balance being retainage), less such amounts as ENGINEER shall determine, or OWNER may withhold, in accordance with paragraph 14.02 of the General Conditions.

5.2 *Final Payment.* At the end of the One Year Correction Period, the CONTRACTOR shall submit to ENGINEER an Application for Payment of the retainage in accordance with paragraph 14.07 of the General Conditions.

Article 6. INTEREST

All moneys not paid when due as provided in Article 14 of the General Conditions shall bear interest at the maximum rate allowed by law at the place of the project.

Article 7. CONTRACTOR'S REPRESENTATIONS

In order to induce OWNER to enter into this Agreement, CONTRACTOR makes the following representations:

7.1 CONTRACTOR has examined and carefully studied the Contract Documents (including the Addenda listed in paragraph 8) and the other related data identified in the Proposal Documents including "technical data".

7.2 CONTRACTOR has visited the site and become familiar with and is satisfied as to the general, local and site conditions that may affect cost, progress, performance or furnishing of the Work.

7.3 CONTRACTOR is familiar with and is satisfied as to all federal, state and local Laws and Regulations that may affect cost, progress, performance and furnishing of the Work.

7.4 CONTRACTOR has carefully studied all reports of explorations and tests of subsurface conditions at or contiguous to the site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the site (except Underground Facilities) which have been identified in the Supplementary Conditions as provided in paragraph 4.0.2 of the General Conditions. CONTRACTOR accepts the determination set forth in paragraph 4.0.2

of the Supplementary Conditions of the extent of the “technical data” contained in such reports and drawings upon which CONTRACTOR is entitled to rely as provided in paragraph 4.0.2 of the General Conditions. CONTRACTOR acknowledges that such reports and drawings are not Contract Documents and may not be complete for CONTRACTOR's purposes. CONTRACTOR acknowledges that OWNER and ENGINEER do not assume responsibility for the accuracy or completeness of information and data shown or indicated in the Contract Documents with respect to Underground Facilities at or contiguous to the site. CONTRACTOR has obtained and carefully studied (or assumes responsibility for having done so) all such additional supplementary examinations, investigations, explorations, tests, studies and data concerning conditions (surface, subsurface and Underground Facilities) at or contiguous to the site or otherwise which may affect cost, progress, performance or furnishing of the Work or which relate to any aspect of the means, methods, techniques, sequences and procedures of construction to be employed by CONTRACTOR and safety precautions and programs incident thereto. CONTRACTOR does not consider that any additional examinations, investigations, explorations, tests, studies or data are necessary for the performance and furnishing of the Work at the Contract Price, within the Contract Times and in accordance with the other terms and conditions of the Contract Documents.

- 7.5 CONTRACTOR is aware of the general nature of work to be performed by OWNER and others at the site that relates to the Work as indicated in the Contract Documents.
- 7.6 CONTRACTOR has correlated the information known to CONTRACTOR, information and observations obtained from visits to the site, reports and drawings identified in the Contract Documents and all additional examinations, investigations, explorations, tests, studies and data with the Contract Documents.
- 7.7 CONTRACTOR has given ENGINEER written notice of all conflicts, errors, ambiguities or discrepancies that CONTRACTOR has discovered in the Contract Documents and the written solution thereof by ENGINEER is acceptable to CONTRACTOR, and the Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

Article 8. CONTRACT DOCUMENTS

The Contract Documents which comprise the entire agreement between OWNER and CONTRACTOR concerning the Work consist of the following:

- 8.1 This Agreement (pages A-1 to A-6, inclusive).
- 8.2 Exhibits to this Agreement (Exhibits A, B, C, D, E,).
 - 8.2a Exhibit A – Contractor’s Certificate of Insurance
 - 8.2b Exhibit B – Contractor’s Performance Bond & Payment Bond.
 - 8.2c Exhibit C – Contractor’s Bid

- 8.2d Exhibit D – Bid Addenda (if any....)
- 8.2e Exhibit E – Original Contract Bid Documents.
- 8.3 The following which may be delivered or issued after the Effective Date of the Agreement and are not attached hereto: All Written Amendments and other documents amending, modifying or supplementing the Contract Documents pursuant to paragraph 3.0.4 of the General Conditions.

The documents listed in paragraphs 8.2 et seq. above are attached to this Agreement (except as expressly noted otherwise above).

There are no Contract Documents other than those listed in this Article 8. The Contract Documents may only be amended, modified, or supplemented as provided in paragraph 3.0.4 of the General Conditions.

Article 9. MISCELLANEOUS

- 9.1 Terms used in this Agreement which are defined in Article 1 of the General Conditions will have the meanings indicated in the General Conditions.
- 9.2 No assignment by a party hereto of any rights under or interests in the Contract Documents will be binding on another party hereto without the written consent of the party sought to be bound; and, specifically but without limitation, moneys that may become due and moneys that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.
- 9.3 OWNER and CONTRACTOR each binds itself, its partners, successors, assigns and legal representatives to the other party hereto, its partners, successors, assigns and legal representatives in respect to all covenants, agreements and obligations contained in the Contract Documents.
- 9.4 Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon OWNER and CONTRACTOR, who agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

IN WITNESS WHEREOF, OWNER and CONTRACTOR have signed this Agreement, in triplicate. One counterpart each has been delivered to OWNER, CONTRACTOR and ENGINEER. All portions of the Contract Documents have been signed, initialed or identified by OWNER and CONTRACTOR or identified by OWNER and CONTRACTOR or identified by ENGINEER on their behalf.

This Agreement will be effective on _____, 2023, (which is the Effective Date of the Agreement).

OWNER:

CONTRACTOR:

Town of Columbia _____

By: _____

By: _____

[CORPORATE SEAL]

[CORPORATE SEAL]

Attest _____

Attest _____

Address for giving notices:

Address for giving notices:

(If OWNER is a public body, attach evidence of authority to sign and resolution or other documents authorizing execution of Agreement.)

License No. _____

Agent for service of process: _____

(If CONTRACTOR is a corporation, attach evidence of authority to sign.)

PERFORMANCE BOND

PERFORMANCE BOND

Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.

CONTRACTOR (Name and Address):

SURETY (Name and Address of Principal Place of Business):

OWNER (Name and Address):

CONTRACT

Date:

Amount:

Description (Name and Location):

BOND

Bond Number:

Date (Not earlier than Contract Date):

Amount:

Modifications to this Bond Form:

Surety and Contractor, intending to be legally bound hereby, subject to the terms printed on the reverse side hereof, do each cause this Performance Bond to be duly executed on its behalf by its authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL

Company:

Signature: _____ (Seal)

Name and Title:

SURETY

(Seal)

Surety's Name and Corporate Seal

By: _____

Signature and Title

(Attach Power of Attorney)

(Space is provided below for signatures of additional parties, if required.)

Attest: _____

Signature and Title

CONTRACTOR AS PRINCIPAL

Company:

Signature: _____ (Seal)

Name and Title:

SURETY

(Seal)

Surety's Name and Corporate Seal

By: _____

Signature and Title

(Attach Power of Attorney)

Attest: _____

Signature and Title:

EJCDC No. C-610 (2002 Edition)

Originally prepared through the joint efforts of the Surety Association of America, Engineers Joint Contract Documents Committee, the Associated General Contractors of America, and the American Institute of Architects.

1. Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to Owner for the performance of the Contract, which is incorporated herein by reference.

2. If Contractor performs the Contract, Surety and Contractor have no obligation under this Bond, except to participate in conferences as provided in Paragraph 3.1.

3. If there is no Owner Default, Surety's obligation under this Bond shall arise after:

3.1. Owner has notified Contractor and Surety, at the addresses described in Paragraph 10 below, that Owner is considering declaring a Contractor Default and has requested and attempted to arrange a conference with Contractor and Surety to be held not later than 15 days after receipt of such notice to discuss methods of performing the Contract. If Owner, Contractor and Surety agree, Contractor shall be allowed a reasonable time to perform the Contract, but such an agreement shall not waive Owner's right, if any, subsequently to declare a Contractor Default; and

3.2. Owner has declared a Contractor Default and formally terminated Contractor's right to complete the Contract. Such Contractor Default shall not be declared earlier than 20 days after Contractor and Surety have received notice as provided in Paragraph 3.1; and

3.3. Owner has agreed to pay the Balance of the Contract Price to:

1. Surety in accordance with the terms of the Contract;
2. Another contractor selected pursuant to Paragraph 4.3 to perform the Contract.

4. When Owner has satisfied the conditions of Paragraph 3, Surety shall promptly and at Surety's expense take one of the following actions:

4.1. Arrange for Contractor, with consent of Owner, to perform and complete the Contract; or

4.2. Undertake to perform and complete the Contract itself, through its agents or through independent contractors; or

4.3. Obtain bids or negotiated proposals from qualified contractors acceptable to Owner for a contract for performance and completion of the Contract, arrange for a contract to be prepared for execution by Owner and Contractor selected with Owner's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Contract, and pay to Owner the amount of damages as described in Paragraph 6 in excess of the Balance of the Contract Price incurred by Owner resulting from Contractor Default; or

4.4. Waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances:

1. After investigation, determine the amount for which it may be liable to Owner and, as soon as practicable after the amount is determined, tender payment therefor to Owner; or
2. Deny liability in whole or in part and notify Owner citing reasons therefor.

5. If Surety does not proceed as provided in Paragraph 4 with reasonable promptness, Surety shall be deemed to be in default on this Bond 15 days after receipt of an additional written notice from Owner to Surety demanding that Surety perform its obligations under this Bond, and Owner shall be entitled to enforce any remedy available to Owner. If Surety proceeds as provided in Paragraph 4.4, and Owner refuses the payment tendered or Surety has denied liability, in whole or in part, without further notice Owner shall be entitled to enforce any remedy available to Owner.

6. After Owner has terminated Contractor's right to complete the Contract, and if Surety elects to act under Paragraph 4.1, 4.2, or 4.3 above, then the responsibilities of Surety to Owner shall not be greater than those of Contractor under the Contract, and the responsibilities of Owner to Surety shall not be greater than those of Owner under the Contract. To a limit of the amount of this Bond, but subject to commitment by Owner of the Balance of the Contract Price to mitigation of costs and damages on the Contract, Surety is obligated without duplication for:

6.1. The responsibilities of Contractor for correction of defective Work and completion of the Contract;

6.2. Additional legal, design professional, and delay costs resulting from Contractor's Default, and resulting from the actions or failure to act of Surety under Paragraph 4; and

6.3. Liquidated damages, or if no liquidated damages are specified in the Contract, actual damages caused by delayed performance or non-performance of Contractor.

7. Surety shall not be liable to Owner or others for obligations of Contractor that are unrelated to the Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than Owner or its heirs, executors, administrators, or successors.

8. Surety hereby waives notice of any change, including changes of time, to Contract or to related subcontracts, purchase orders, and other obligations.

9. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the Work or part of the Work is located and shall be instituted within two years after Contractor Default or within two years after Contractor ceased working or within two years after Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

10. Notice to Surety, Owner, or Contractor shall be mailed or delivered to the address shown on the signature page.

11. When this Bond has been furnished to comply with a statutory requirement in the location where the Contract was to be performed, any provision in this Bond conflicting with said statutory requirement shall be deemed deleted herefrom and provisions conforming to such statutory requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

12. Definitions.

12.1 Balance of the Contract Price: The total amount payable by Owner to Contractor under the Contract after all proper adjustments have been made, including allowance to Contractor of any amounts received or to be received by Owner in settlement of insurance or other Claims for damages to which Contractor is entitled, reduced by all valid and proper payments made to or on behalf of Contractor under the Contract.

12.2 Contract: The agreement between Owner and Contractor identified on the signature page, including all Contract Documents and changes thereto.

12.3 Contractor Default: Failure of Contractor, which has neither been remedied nor waived, to perform or otherwise to comply with the terms of the Contract.

12.4 Owner Default: Failure of Owner, which has neither been remedied nor waived, to pay Contractor as required by the Contract or to perform and complete or comply with the other terms thereof.

FOR INFORMATION ONLY – Name, Address and Telephone
Surety Agency or Broker
Owner's Representative (engineer or other party)

PAYMENT BOND

PAYMENT BOND

Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.

CONTRACTOR (Name and Address):

SURETY (Name and Address of Principal Place of Business):

OWNER (Name and Address):

CONTRACT

Date:

Amount:

Description (Name and Location):

BOND

Bond Number:

Date (Not earlier than Contract Date):

Amount:

Modifications to this Bond Form:

Surety and Contractor, intending to be legally bound hereby, subject to the terms printed on the reverse side hereof, do each cause this Payment Bond to be duly executed on its behalf by its authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL

Company:

Signature: _____ (Seal)

Name and Title:

SURETY

(Seal)

Surety's Name and Corporate Seal

By: _____

Signature and Title

(Attach Power of Attorney)

(Space is provided below for signatures of additional parties, if required.)

Attest: _____

Signature and Title

CONTRACTOR AS PRINCIPAL

Company:

Signature: _____ (Seal)

Name and Title:

SURETY

(Seal)

Surety's Name and Corporate Seal

By: _____

Signature and Title

(Attach Power of Attorney)

Attest: _____

Signature and Title:

EJCDC No. C-615 (2002 Edition)

Originally prepared through the joint efforts of the Surety Association of America, Engineers Joint Contract Documents Committee, the Associated General Contractors of America, the American Institute of Architects, the American Subcontractors Association, and the Associated Specialty Contractors.

1. Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to Owner to pay for labor, materials, and equipment furnished by Claimants for use in the performance of the Contract, which is incorporated herein by reference.
2. With respect to Owner, this obligation shall be null and void if Contractor:
 - 2.1. Promptly makes payment, directly or indirectly, for all sums due Claimants, and
 - 2.2. Defends, indemnifies, and holds harmless Owner from all claims, demands, liens, or suits alleging non-payment by Contractor by any person or entity who furnished labor, materials, or equipment for use in the performance of the Contract, provided Owner has promptly notified Contractor and Surety (at the addresses described in Paragraph 12) of any claims, demands, liens, or suits and tendered defense of such claims, demands, liens, or suits to Contractor and Surety, and provided there is no Owner Default.
3. With respect to Claimants, this obligation shall be null and void if Contractor promptly makes payment, directly or indirectly, for all sums due.
4. Surety shall have no obligation to Claimants under this Bond until:
 - 4.1. Claimants who are employed by or have a direct contract with Contractor have given notice to Surety (at the addresses described in Paragraph 12) and sent a copy, or notice thereof, to Owner, stating that a claim is being made under this Bond and, with substantial accuracy, the amount of the claim.
 - 4.2. Claimants who do not have a direct contract with Contractor:
 1. Have furnished written notice to Contractor and sent a copy, or notice thereof, to Owner, within 90 days after having last performed labor or last furnished materials or equipment included in the claim stating, with substantial accuracy, the amount of the claim and the name of the party to whom the materials or equipment were furnished or supplied, or for whom the labor was done or performed; and
 2. Have either received a rejection in whole or in part from Contractor, or not received within 30 days of furnishing the above notice any communication from Contractor by which Contractor had indicated the claim will be paid directly or indirectly; and
 3. Not having been paid within the above 30 days, have sent a written notice to Surety and sent a copy, or notice thereof, to Owner, stating that a claim is being made under this Bond and enclosing a copy of the previous written notice furnished to Contractor.
5. If a notice by a Claimant required by Paragraph 4 is provided by Owner to Contractor or to Surety, that is sufficient compliance.
6. When a Claimant has satisfied the conditions of Paragraph 4, the Surety shall promptly and at Surety's expense take the following actions:
 - 6.1. Send an answer to that Claimant, with a copy to Owner, within 45 days after receipt of the claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed.
 - 6.2. Pay or arrange for payment of any undisputed amounts.
7. Surety's total obligation shall not exceed the amount of this Bond, and the amount of this Bond shall be credited for any payments made in good faith by Surety.
8. Amounts owed by Owner to Contractor under the Contract shall be used for the performance of the Contract and to satisfy claims, if any, under any performance bond. By Contractor furnishing and Owner accepting this Bond, they agree that all funds earned by Contractor in the performance of the Contract are dedicated to satisfy obligations of Contractor and Surety under this Bond, subject to Owner's priority to use the funds for the completion of the Work.
9. Surety shall not be liable to Owner, Claimants, or others for obligations of Contractor that are unrelated to the Contract. Owner shall not be liable for payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligations to make payments to, give notices on behalf of, or otherwise have obligations to Claimants under this Bond.
10. Surety hereby waives notice of any change, including changes of time, to the Contract or to related Subcontracts, purchase orders and other obligations.
11. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the location in which the Work or part of the Work is located or after the expiration of one year from the date (1) on which the Claimant gave the notice required by Paragraph 4.1 or Paragraph 4.2.3, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.
12. Notice to Surety, Owner, or Contractor shall be mailed or delivered to the addresses shown on the signature page. Actual receipt of notice by Surety, Owner, or Contractor, however accomplished, shall be sufficient compliance as of the date received at the address shown on the signature page.
13. When this Bond has been furnished to comply with a statutory requirement in the location where the Contract was to be performed, any provision in this Bond conflicting with said statutory requirement shall be deemed deleted herefrom and provisions conforming to such statutory requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory Bond and not as a common law bond.
14. Upon request of any person or entity appearing to be a potential beneficiary of this Bond, Contractor shall promptly furnish a copy of this Bond or shall permit a copy to be made.

15. DEFINITIONS

- 15.1. Claimant: An individual or entity having a direct contract with Contractor, or with a first-tier subcontractor of Contractor, to furnish labor, materials, or equipment for use in the performance of the Contract. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Contract, architectural and engineering services required for performance of the Work of Contractor and Contractor's Subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials, or equipment were furnished.
- 15.2. Contract: The agreement between Owner and Contractor identified on the signature page, including all Contract Documents and changes thereto.
- 15.3. Owner Default: Failure of Owner, which has neither been remedied nor waived, to pay Contractor as required by the Contract or to perform and complete or comply with the other terms thereof.

**FOR INFORMATION ONLY – Name, Address and Telephone
Surety Agency or Broker:
Owner's Representative (engineer or other party):**

TAB D

General Conditions

This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the Controlling Law.

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by

ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

and

Issued and Published Jointly By



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a practice division of the
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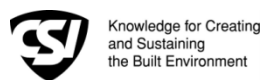
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The Associated General Contractors of America



Construction Specifications Institute

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These General Conditions have been prepared for use with the Suggested Forms of Agreement Between Owner and Contractor Nos. C-520 or C-525 (2002 Editions). Their provisions are interrelated and a change in one may necessitate a change in the other. Comments concerning their usage are contained in the EJCDC Construction Documents, General and Instructions (No. C-001) (2002 Edition). For guidance in the preparation of Supplementary Conditions, see Guide to the Preparation of Supplementary Conditions (No. C-800) (2002 Edition).

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GENERAL CONDITIONS

ARTICLE 1 - DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

A. Wherever used in the Bidding Requirements or Contract Documents and printed with initial capital letters, the terms listed below will have the meanings indicated which are applicable to both the singular and plural thereof. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.

1. *Addenda*--Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.

2. *Agreement*--The written instrument which is evidence of the agreement between Owner and Contractor covering the Work.

3. *Application for Payment*--The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.

4. *Asbestos*--Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.

5. *Bid*--The offer or proposal of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

6. *Bidder*--The individual or entity who submits a Bid directly to Owner.

7. *Bidding Documents*--The Bidding Requirements and the proposed Contract Documents (including all Addenda).

8. *Bidding Requirements*--The Advertisement or Invitation to Bid, Instructions to Bidders, bid security of acceptable form, if any, and the Bid Form with any supplements.

9. *Change Order*--A document recommended by Engineer which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, issued on or after the Effective Date of the Agreement.

10. *Claim*--A demand or assertion by Owner or Contractor seeking an adjustment of Contract Price or Contract Times, or both, or other relief with respect to the terms of the Contract. A demand for money or services by a third party is not a Claim.

11. *Contract*--The entire and integrated written agreement between the Owner and Contractor concerning the Work. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.

12. *Contract Documents*-- Those items so designated in the Agreement. Only printed or hard copies of the items listed in the Agreement are Contract Documents. Approved Shop Drawings, other Contractor's submittals, and the reports and drawings of subsurface and physical conditions are not Contract Documents.

13. *Contract Price*--The moneys payable by Owner to Contractor for completion of the Work in accordance with the Contract Documents as stated in the Agreement (subject to the provisions of Paragraph 11.03 in the case of Unit Price Work).

14. *Contract Times*--The number of days or the dates stated in the Agreement to: (i) achieve Milestones, if any, (ii) achieve Substantial Completion; and (iii) complete the Work so that it is ready for final payment as evidenced by Engineer's written recommendation of final payment.

15. *Contractor*--The individual or entity with whom Owner has entered into the Agreement.

16. *Cost of the Work*--See Paragraph 11.01.A for definition.

17. *Drawings*--That part of the Contract Documents prepared or approved by Engineer which graphically shows the scope, extent, and character of the Work to be performed by Contractor. Shop Drawings and other Contractor submittals are not Drawings as so defined.

18. *Effective Date of the Agreement*--The date indicated in the Agreement on which it becomes effective, but if no such date is indicated, it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.

19. *Engineer*--The individual or entity named as such in the Agreement.

20. *Field Order*--A written order issued by Engineer which requires minor changes in the Work but which does not involve a change in the Contract Price or the Contract Times.

21. *General Requirements*--Sections of Division 1 of the Specifications. The General Requirements pertain to all sections of the Specifications.

22. *Hazardous Environmental Condition*--The presence at the Site of Asbestos, PCBs, Petroleum, Hazardous Waste, or Radioactive Material in such quantities or circumstances that may present a substantial danger to persons or property exposed thereto in connection with the Work.

23. *Hazardous Waste*--The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.

24. *Laws and Regulations; Laws or Regulations*--Any and all applicable laws, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

25. *Liens*--Charges, security interests, or encumbrances upon Project funds, real property, or personal property.

26. *Milestone*--A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.

27. *Notice of Award*--The written notice by Owner to the Successful Bidder stating that upon timely compliance by the Successful Bidder with the conditions precedent listed therein, Owner will sign and deliver the Agreement.

28. *Notice to Proceed*--A written notice given by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work under the Contract Documents.

29. *Owner*--The individual or entity with whom Contractor has entered into the Agreement and for whom the Work is to be performed.

30. *PCBs*--Polychlorinated biphenyls.

31. *Petroleum*--Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Waste and crude oils.

32. *Progress Schedule*--A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor's plan to accomplish the Work within the Contract Times.

33. *Project*--The total construction of which the Work to be performed under the Contract Documents may be the whole, or a part.

34. *Project Manual*--The bound documentary information prepared for bidding and constructing the Work. A listing of the contents of the Project Manual, which may be bound in one or more volumes, is contained in the table(s) of contents.

35. *Radioactive Material*--Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.

36. *Related Entity* -- An officer, director, partner, employee, agent, consultant, or subcontractor.

37. *Resident Project Representative*--The authorized representative of Engineer who may be assigned to the Site or any part thereof.

38. *Samples*--Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.

39. *Schedule of Submittals*--A schedule, prepared and maintained by Contractor, of required submittals and the time requirements to support scheduled performance of related construction activities.

40. *Schedule of Values*--A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

41. *Shop Drawings*--All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work.

42. *Site*--Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements for access thereto, and such other lands furnished by Owner which are designated for the use of Contractor.

43. *Specifications*--That part of the Contract Documents consisting of written requirements for materials, equipment, systems, standards and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable thereto.

44. *Subcontractor*--An individual or entity having a direct contract with Contractor or with any other

Subcontractor for the performance of a part of the Work at the Site.

45. *Substantial Completion*--The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion thereof.

46. *Successful Bidder*--The Bidder submitting a responsive Bid to whom Owner makes an award.

47. *Supplementary Conditions*--That part of the Contract Documents which amends or supplements these General Conditions.

48. *Supplier*--A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or any Subcontractor.

49. *Underground Facilities*--All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.

50. *Unit Price Work*--Work to be paid for on the basis of unit prices.

51. *Work*--The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction, and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.

52. *Work Change Directive*--A written statement to Contractor issued on or after the Effective Date of the Agreement and signed by Owner and recommended by Engineer ordering an addition, deletion, or revision in the Work, or responding to differing or unforeseen subsurface or physical conditions under which the Work is to be performed or to emergencies. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the change ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times.

1.02 Terminology

A. The following words or terms are not defined but, when used in the Bidding Requirements or Contract Documents, have the following meaning.

B. Intent of Certain Terms or Adjectives

1. The Contract Documents include the terms "as allowed," "as approved," "as ordered", "as directed" or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives "reasonable," "suitable," "acceptable," "proper," "satisfactory," or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action or determination will be solely to evaluate, in general, the Work for compliance with the requirements of and information in the Contract Documents and conformance with the design concept of the completed Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of Paragraph 9.09 or any other provision of the Contract Documents.

C. Day

1. The word "day" means a calendar day of 24 hours measured from midnight to the next midnight.

D. Defective

1. The word "defective," when modifying the word "Work," refers to Work that is unsatisfactory, faulty, or deficient in that it:

a. does not conform to the Contract Documents, or

b. does not meet the requirements of any applicable inspection, reference standard, test, or

approval referred to in the Contract Documents, or

c. has been damaged prior to Engineer's - recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 14.04 or 14.05).

E. Furnish, Install, Perform, Provide

1. The word "furnish," when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.

2. The word "install," when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.

3. The words "perform" or "provide," when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.

4. When "furnish," "install," "perform," or "provide" is not used in connection with services, materials, or equipment in a context clearly requiring an obligation of Contractor, "provide" is implied.

F. Unless stated otherwise in the Contract Documents, words or phrases which have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2 - PRELIMINARY MATTERS

2.01 *Delivery of Bonds and Evidence of Insurance*

A. When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.

B. *Evidence of Insurance:* Before any Work at the Site is started, Contractor and Owner shall each deliver to the other, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance which either of them or any additional insured may reasonably request) which Contractor and Owner respectively are required to purchase and maintain in accordance with Article 5.

2.02 *Copies of Documents*

A. Owner shall furnish to Contractor up to ten printed or hard copies of the Drawings and Project Manual. Additional copies will be furnished upon request at the cost of reproduction.

2.03 *Commencement of Contract Times; Notice to Proceed*

A. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Agreement or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Agreement. In no event will the Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Agreement, whichever date is earlier.

2.04 *Starting the Work*

A. Contractor shall start to perform the Work on the date when the Contract Times commence to run. No Work shall be done at the Site prior to the date on which the Contract Times commence to run.

2.05 *Before Starting Construction*

A. *Preliminary Schedules:* Within 10 days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), Contractor shall submit to Engineer for timely review:

1. a preliminary Progress Schedule; indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract Documents;

2. a preliminary Schedule of Submittals; and

3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.06 *Preconstruction Conference*

A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.05.A, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, and maintaining required records.

2.07 *Initial Acceptance of Schedules*

A. At least 10 days before submission of the first Application for Payment a conference attended by Contractor, Engineer, and others as appropriate will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.05.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.

1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work nor interfere with or relieve Contractor from Contractor's full responsibility therefor.

2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.

3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to component parts of the Work.

ARTICLE 3 - CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

3.01 *Intent*

A. The Contract Documents are complementary; what is required by one is as binding as if required by all.

B. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. Any labor, documentation, services, materials, or equipment that may reasonably be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the intended result will be provided whether or not specifically called for at no additional cost to Owner.

C. Clarifications and interpretations of the Contract Documents shall be issued by Engineer as provided in Article 9.

3.02 *Reference Standards*

A. Standards, Specifications, Codes, Laws, and Regulations

1. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard, specification, manual, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.

2. No provision of any such standard, specification, manual or code, or any instruction of a Supplier shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees from those set forth in the Contract Documents. No such provision or instruction shall be effective to assign to Owner, or Engineer, or any of, their Related Entities, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

3.03 *Reporting and Resolving Discrepancies*

A. Reporting Discrepancies

1. *Contractor's Review of Contract Documents Before Starting Work:* Before undertaking each part of the Work, Contractor shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy which Contractor may discover and shall obtain a written interpretation or clarification from Engineer before proceeding with any Work affected thereby.

2. *Contractor's Review of Contract Documents During Performance of Work:* If, during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents or between the Contract Documents and any provision of any Law or Regulation applicable to the performance of the Work or of any standard, specification, manual or code, or of any instruction of any Supplier, Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 6.16.A) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in Paragraph 3.04.

3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor knew or reasonably should have known thereof.

B. Resolving Discrepancies

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:

- a. the provisions of any standard, specification, manual, code, or instruction (whether or not specifically incorporated by reference in the Contract Documents); or
- b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 *Amending and Supplementing Contract Documents*

A. The Contract Documents may be amended to provide for additions, deletions, and revisions in the Work or to modify the terms and conditions thereof by either a Change Order or a Work Change Directive.

B. The requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, by one or more of the following ways:

1. A Field Order;
2. Engineer's approval of a Shop Drawing or Sample; (Subject to the provisions of Paragraph 6.17.D.3); or
3. Engineer's written interpretation or clarification.

3.05 *Reuse of Documents*

A. Contractor and any Subcontractor or Supplier or other individual or entity performing or furnishing all of the Work under a direct or indirect contract with Contractor, shall not:

1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or Engineer's consultants, including electronic media editions; or
2. reuse any of such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer.

B. The prohibition of this Paragraph 3.05 will survive final payment, or termination of the Contract.

Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

3.06 *Electronic Data*

A. Copies of data furnished by Owner or Engineer to Contractor or Contractor to Owner or Engineer that may be relied upon are limited to the printed copies (also known as hard copies). Files in electronic media format of text, data, graphics, or other types are furnished only for the convenience of the receiving party. Any conclusion or information obtained or derived from such electronic files will be at the user's sole risk. If there is a discrepancy between the electronic files and the hard copies, the hard copies govern.

B. Because data stored in electronic media format can deteriorate or be modified inadvertently or otherwise without authorization of the data's creator, the party receiving electronic files agrees that it will perform acceptance tests or procedures within 60 days, after which the receiving party shall be deemed to have accepted the data thus transferred. Any errors detected within the 60-day acceptance period will be corrected by the transferring party..

C. When transferring documents in electronic media format, the transferring party makes no representations as to long term compatibility, usability, or readability of documents resulting from the use of software application packages, operating systems, or computer hardware differing from those used by the data's creator.

ARTICLE 4 - AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS; REFERENCE POINTS

4.01 *Availability of Lands*

A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work. Owner will obtain in a timely manner and pay for easements for permanent structures or permanent changes in existing facilities. If Contractor and Owner are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of any delay in Owner's furnishing the Site or a part thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.

B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which the Work is to be performed and Owner's interest therein as

necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.

C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

4.02 *Subsurface and Physical Conditions*

A. *Reports and Drawings:* The Supplementary Conditions identify:

1. those reports of explorations and tests of subsurface conditions at or contiguous to the Site that Engineer has used in preparing the Contract Documents; and

2. those drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) that Engineer has used in preparing the Contract Documents.

B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the general accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their Related Entities with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or

2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or

3. any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions, or information.

4.03 *Differing Subsurface or Physical Conditions*

A. *Notice:* If Contractor believes that any subsurface or physical condition at or contiguous to the Site that is uncovered or revealed either:

1. is of such a nature as to establish that any "technical data" on which Contractor is entitled to rely as provided in Paragraph 4.02 is materially inaccurate; or

2. is of such a nature as to require a change in the Contract Documents; or

3. differs materially from that shown or indicated in the Contract Documents; or

4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so.

B. *Engineer's Review:* After receipt of written notice as required by Paragraph 4.03.A, Engineer will promptly review the pertinent condition, determine the necessity of Owner's obtaining additional exploration or tests with respect thereto, and advise Owner in writing (with a copy to Contractor) of Engineer's findings and conclusions.

C. Possible Price and Times Adjustments

1. The Contract Price or the Contract Times, or both, will be equitably adjusted to the extent that the existence of such differing subsurface or physical condition causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

a. such condition must meet any one or more of the categories described in Paragraph 4.03.A; and

b. with respect to Work that is paid for on a Unit Price Basis, any adjustment in Contract Price will be subject to the provisions of Paragraphs 9.07 and 11.03.

2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times if:

a. Contractor knew of the existence of such conditions at the time Contractor made a final commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract; or

b. the existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous

areas required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such final commitment; or

c. Contractor failed to give the written notice as required by Paragraph 4.03.A.

3. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, a Claim may be made therefor as provided in Paragraph 10.05. However, Owner and Engineer, and any of their Related Entities shall not be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

4.04 *Underground Facilities*

A. Shown or Indicated: The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:

1. Owner and Engineer shall not be responsible for the accuracy or completeness of any such information or data; and

2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:

a. reviewing and checking all such information and data,

b. locating all Underground Facilities shown or indicated in the Contract Documents,

c. coordination of the Work with the owners of such Underground Facilities, including Owner, during construction, and

d. the safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work.

B. Not Shown or Indicated

1. If an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated, or not shown or indicated with reasonable accuracy in the Contract Documents, Contractor shall, promptly after becoming aware thereof and before further

disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer. Engineer will promptly review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the consequences of the existence or location of the Underground Facility. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.

2. If Engineer concludes that a change in the Contract Documents is required, a Work Change Directive or a Change Order will be issued to reflect and document such consequences. An equitable adjustment shall be made in the Contract Price or Contract Times, or both, to the extent that they are attributable to the existence or location of any Underground Facility that was not shown or indicated or not shown or indicated with reasonable accuracy in the Contract Documents and that Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment in Contract Price or Contract Times, Owner or Contractor may make a Claim therefor as provided in Paragraph 10.05.

4.05 *Reference Points*

A. Owner shall provide engineering surveys to establish reference points for construction which in Engineer's judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

4.06 *Hazardous Environmental Condition at Site*

A. Reports and Drawings: Reference is made to the Supplementary Conditions for the identification of those reports and drawings relating to a Hazardous Environmental Condition identified at the Site, if any, that have been utilized by the Engineer in the preparation of the Contract Documents.

B. Limited Reliance by Contractor on Technical Data Authorized: Contractor may rely upon the general accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified

in the Supplementary Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their Related Entities with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto; or

2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or

3. any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions or information.

C. Contractor shall not be responsible for any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work. Contractor shall be responsible for a Hazardous Environmental Condition created with any materials brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible.

D. If Contractor encounters a Hazardous Environmental Condition or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, Contractor shall immediately: (i) secure or otherwise isolate such condition; (ii) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 6.16.A); and (iii) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any.

E. Contractor shall not be required to resume Work in connection with such condition or in any affected area until after Owner has obtained any required permits related thereto and delivered to Contractor written notice: (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work; or (ii) specifying any special conditions under which such Work may be resumed safely. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, either party may make a Claim therefor as provided in Paragraph 10.05.

F. If after receipt of such written notice Contractor does not agree to resume such Work based on

a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of an adjustment in Contract Price or Contract Times as a result of deleting such portion of the Work, then either party may make a Claim therefor as provided in Paragraph 10.05. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 7.

G. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition: (i) was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be included within the scope of the Work, and (ii) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06. G shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

H. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.H shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

I. The provisions of Paragraphs 4.02, 4.03, and 4.04 do not apply to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 5 - BONDS AND INSURANCE

5.01 *Performance, Payment, and Other Bonds*

A. Contractor shall furnish performance and payment bonds, each in an amount at least equal to the

Contract Price as security for the faithful performance and payment of all of Contractor's obligations under the Contract Documents. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 13.07, whichever is later, except as provided otherwise by Laws or Regulations or by the Contract Documents. Contractor shall also furnish such other bonds as are required by the Contract Documents.

B. All bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. All bonds signed by an agent must be accompanied by a certified copy of the agent's authority to act.

C. If the surety on any bond furnished by Contractor is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of Paragraph 5.01.B, Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the requirements of Paragraphs 5.01.B and 5.02.

5.02 *Licensed Sureties and Insurers*

A. All bonds and insurance required by the Contract Documents to be purchased and maintained by Owner or Contractor shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds or insurance policies for the limits and coverages so required. Such surety and insurance companies shall also meet such additional requirements and qualifications as may be provided in the Supplementary Conditions.

5.03 *Certificates of Insurance*

A. Contractor shall deliver to Owner, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Owner or any other additional insured) which Contractor is required to purchase and maintain.

B. Owner shall deliver to Contractor, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Contractor or any other additional insured) which Owner is required to purchase and maintain.

5.04 *Contractor's Liability Insurance*

A. Contractor shall purchase and maintain such liability and other insurance as is appropriate for the Work being performed and as will provide protection from claims set forth below which may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable:

1. claims under workers' compensation, disability benefits, and other similar employee benefit acts;

2. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees;

3. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees;

4. claims for damages insured by reasonably available personal injury liability coverage which are sustained:

a. by any person as a result of an offense directly or indirectly related to the employment of such person by Contractor, or

b. by any other person for any other reason;

5. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom; and

6. claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.

B. The policies of insurance required by this Paragraph 5.04 shall:

1. with respect to insurance required by Paragraphs 5.04.A.3 through 5.04.A.6 inclusive, include as additional insured (subject to any customary exclusion regarding professional liability) Owner and Engineer, and any other individuals or entities identified in the Supplementary Conditions, all of whom shall be listed as additional insureds, and include coverage for the respective officers, directors, partners, employees, agents, consultants and subcontractors of each and any of all such additional insureds, and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby;

2. include at least the specific coverages and be written for not less than the limits of liability provided in the Supplementary Conditions or required by Laws or Regulations, whichever is greater;

3. include completed operations insurance;

4. include contractual liability insurance covering Contractor's indemnity obligations under Paragraphs 6.11 and 6.20;

5. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other additional insured identified in the Supplementary Conditions to whom a certificate of insurance has been issued (and the certificates of insurance furnished by the Contractor pursuant to Paragraph 5.03 will so provide);

6. remain in effect at least until final payment and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work in accordance with Paragraph 13.07; and

7. with respect to completed operations insurance, and any insurance coverage written on a claims-made basis, remain in effect for at least two years after final payment.

a. Contractor shall furnish Owner and each other additional insured identified in the Supplementary Conditions, to whom a certificate of insurance has been issued, evidence satisfactory to Owner and any such additional insured of continuation of such insurance at final payment and one year thereafter.

5.05 *Owner's Liability Insurance*

A. In addition to the insurance required to be provided by Contractor under Paragraph 5.04, Owner, at Owner's option, may purchase and maintain at Owner's expense Owner's own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.

5.06 *Property Insurance*

A. Unless otherwise provided in the Supplementary Conditions, Owner shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:

1. include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions,

and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured;

2. be written on a Builder's Risk "all-risk" or open peril or special causes of loss policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, false work, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage, (other than caused by flood) and such other perils or causes of loss as may be specifically required by the Supplementary Conditions;

3. include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects);

4. cover materials and equipment stored at the Site or at another location that was agreed to in writing by Owner prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by Engineer;

5. allow for partial utilization of the Work by Owner;

6. include testing and startup; and

7. be maintained in effect until final payment is made unless otherwise agreed to in writing by Owner, Contractor, and Engineer with 30 days written notice to each other additional insured to whom a certificate of insurance has been issued.

B. Owner shall purchase and maintain such boiler and machinery insurance or additional property insurance as may be required by the Supplementary Conditions or Laws and Regulations which will include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured.

C. All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with Paragraph 5.06 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other additional insured to whom a certificate of insurance has been issued and will contain waiver provisions in accordance with Paragraph 5.07.

D. Owner shall not be responsible for purchasing and maintaining any property insurance specified in this Paragraph 5.06 to protect the interests of Contractor, Subcontractors, or others in the Work to the extent of any deductible amounts that are identified in the Supplementary Conditions. The risk of loss within such identified deductible amount will be borne by Contractor, Subcontractors, or others suffering any such loss, and if any of them wishes property insurance coverage within the limits of such amounts, each may purchase and maintain it at the purchaser's own expense.

E. If Contractor requests in writing that other special insurance be included in the property insurance policies provided under Paragraph 5.06, Owner shall, if possible, include such insurance, and the cost thereof will be charged to Contractor by appropriate Change Order. Prior to commencement of the Work at the Site, Owner shall in writing advise Contractor whether or not such other insurance has been procured by Owner.

5.07 *Waiver of Rights*

A. Owner and Contractor intend that all policies purchased in accordance with Paragraph 5.06 will protect Owner, Contractor, Subcontractors, and Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them) in such policies and will provide primary coverage for all losses and damages caused by the perils or causes of loss covered thereby. All such policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any of the insureds or additional insureds thereunder. Owner and Contractor waive all rights against each other and their respective officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them for all losses and damages caused by, arising out of or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Subcontractors, and Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insured or additional insured (and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them) under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by Owner as trustee or otherwise payable under any policy so issued.

B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them for:

1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other perils whether or not insured by Owner; and

2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial utilization pursuant to Paragraph 14.05, after Substantial Completion pursuant to Paragraph 14.04, or after final payment pursuant to Paragraph 14.07.

C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 5.07.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them.

5.08 *Receipt and Application of Insurance Proceeds*

A. Any insured loss under the policies of insurance required by Paragraph 5.06 will be adjusted with Owner and made payable to Owner as fiduciary for the insureds, as their interests may appear, subject to the requirements of any applicable mortgage clause and of Paragraph 5.08.B. Owner shall deposit in a separate account any money so received and shall distribute it in accordance with such agreement as the parties in interest may reach. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the moneys so received applied on account thereof, and the Work and the cost thereof covered by an appropriate Change Order .

B. Owner as fiduciary shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within 15 days after the occurrence of loss to Owner's exercise of this power. If such objection be made, Owner as fiduciary shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If no such agreement among the parties in interest is reached, Owner as fiduciary shall adjust and settle the loss with the insurers and, if required in writing by any party in interest, Owner as fiduciary shall give bond for the proper performance of such duties.

5.09 *Acceptance of Bonds and Insurance; Option to Replace*

A. If either Owner or Contractor has any objection to the coverage afforded by or other provisions of the bonds or insurance required to be purchased and maintained by the other party in accordance with Article 5 on the basis of non-conformance with the Contract

Documents, the objecting party shall so notify the other party in writing within 10 days after receipt of the certificates (or other evidence requested) required by Paragraph 2.01.B. Owner and Contractor shall each provide to the other such additional information in respect of insurance provided as the other may reasonably request. If either party does not purchase or maintain all of the bonds and insurance required of such party by the Contract Documents, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage. Without prejudice to any other right or remedy, the other party may elect to obtain equivalent bonds or insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.

5.10 *Partial Utilization, Acknowledgment of Property Insurer*

A. If Owner finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 14.05, no such use or occupancy shall commence before the insurers providing the property insurance pursuant to Paragraph 5.06 have acknowledged notice thereof and in writing effected any changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies, but the property insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy.

ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES

6.01 *Supervision and Superintendence*

A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction. Contractor shall not be responsible for the negligence of Owner or Engineer in the design or specification of a specific means, method, technique, sequence, or procedure of construction which is shown or indicated in and expressly required by the Contract Documents.

B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to Owner and Engineer except under extraordinary circumstances. The superintendent will be Contractor's representative at the Site and shall have authority to act on behalf of Contractor. All communications given to or

received from the superintendent shall be binding on Contractor.

6.02 *Labor; Working Hours*

A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.

B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours. Contractor will not permit the performance of Work on a Saturday, Sunday, or any legal holiday without Owner's written consent (which will not be unreasonably withheld) given after prior written notice to Engineer.

6.03 *Services, Materials, and Equipment*

A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start-up, and completion of the Work.

B. All materials and equipment incorporated into the Work shall be as specified or, if not specified, shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.

C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

6.04 *Progress Schedule*

A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.07 as it may be adjusted from time to time as provided below.

1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.07) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times. Such adjustments will comply with any provisions of the General Requirements applicable thereto.

2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 12. Adjustments in Contract Times may only be made by a Change Order.

6.05 *Substitutes and "Or-Equals"*

A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or-equal" item or no substitution is permitted, other items of material or equipment or material or equipment of other Suppliers may be submitted to Engineer for review under the circumstances described below.

1. "*Or-Equal*" Items: If in Engineer's sole discretion an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by Engineer as an "or-equal" item, in which case review and approval of the proposed item may, in Engineer's sole discretion, be accomplished without compliance with some or all of the requirements for approval of proposed substitute items. For the purposes of this Paragraph 6.05.A.1, a proposed item of material or equipment will be considered functionally equal to an item so named if:

a. in the exercise of reasonable judgment Engineer determines that:

1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;

2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole,

3) it has a proven record of performance and availability of responsive service; and

b. Contractor certifies that, if approved and incorporated into the Work:

1) there will be no increase in cost to the Owner or increase in Contract Times, and

2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.

2. Substitute Items

a. If in Engineer's sole discretion an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item under Paragraph 6.05.A.1, it will be considered a proposed substitute item.

b. Contractor shall submit sufficient information as provided below to allow Engineer to determine that the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefor. Requests for review of proposed substitute items of material or equipment will not be accepted by Engineer from anyone other than Contractor.

c. The requirements for review by Engineer will be as set forth in Paragraph 6.05.A.2.d, as supplemented in the General Requirements and as Engineer may decide is appropriate under the circumstances.

d. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:

1) shall certify that the proposed substitute item will:

a) perform adequately the functions and achieve the results called for by the general design,

b) be similar in substance to that specified, and

c) be suited to the same use as that specified;

2) will state:

a) the extent, if any, to which the use of the proposed substitute item will prejudice Contractor's achievement of Substantial Completion on time;

b) whether or not use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item; and

c) whether or not incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty;

3) will identify:

a) all variations of the proposed substitute item from that specified, and

b) available engineering, sales, maintenance, repair, and replacement services;

4) and shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other contractors affected by any resulting change,

B. Substitute Construction Methods or Procedures: If a specific means, method, technique, sequence, or procedure of construction is expressly required by the Contract Documents, Contractor may furnish or utilize a substitute means, method, technique, sequence, or procedure of construction approved by Engineer. Contractor shall submit sufficient information to allow Engineer, in Engineer's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The requirements for review by Engineer will be similar to those provided in Paragraph 6.05.A.2.

C. Engineer's Evaluation: Engineer will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to Paragraphs 6.05.A and 6.05.B. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No "or equal" or substitute will be ordered, installed or utilized until Engineer's review is complete, which will be evidenced by either a Change Order for a substitute or an approved Shop Drawing for an "or equal." Engineer will advise Contractor in writing of any negative determination.

D. Special Guarantee: Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.

E. Engineer's Cost Reimbursement: Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor pursuant to Paragraphs 6.05.A.2 and 6.05.B. Whether or not Engineer approves a substitute item so proposed or submitted by Contractor, Contractor shall reimburse Owner for the charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the charges of Engineer for making changes in the Contract

Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.

F. Contractor's Expense: Contractor shall provide all data in support of any proposed substitute or "or-equal" at Contractor's expense.

6.06 Concerning Subcontractors, Suppliers, and Others

A. Contractor shall not employ any Subcontractor, Supplier, or other individual or entity (including those acceptable to Owner as indicated in Paragraph 6.06.B), whether initially or as a replacement, against whom Owner may have reasonable objection. Contractor shall not be required to employ any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against whom Contractor has reasonable objection.

B. If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, or other individuals or entities to be submitted to Owner in advance for acceptance by Owner by a specified date prior to the Effective Date of the Agreement, and if Contractor has submitted a list thereof in accordance with the Supplementary Conditions, Owner's acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the Bidding Documents or the Contract Documents) of any such Subcontractor, Supplier, or other individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity, and the Contract Price will be adjusted by the difference in the cost occasioned by such replacement, and an appropriate Change Order will be issued. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of any right of Owner or Engineer to reject defective Work.

C. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions. Nothing in the Contract Documents:

1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier or other individual or entity, nor

2. shall anything in the Contract Documents create any obligation on the part of Owner or Engineer to pay or to see to the payment of any moneys due any such Subcontractor, Supplier, or other individual

or entity except as may otherwise be required by Laws and Regulations.

D. Contractor shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work under a direct or indirect contract with Contractor.

E. Contractor shall require all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work to communicate with Engineer through Contractor.

F. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.

G. All Work performed for Contractor by a Subcontractor or Supplier will be pursuant to an appropriate agreement between Contractor and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer. Whenever any such agreement is with a Subcontractor or Supplier who is listed as an additional insured on the property insurance provided in Paragraph 5.06, the agreement between the Contractor and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against Owner, Contractor, and Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them) for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, Contractor will obtain the same.

6.07 *Patent Fees and Royalties*

A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if to the actual knowledge of Owner or Engineer its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by Owner in the Contract Documents.

B. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

6.08 *Permits*

A. Unless otherwise provided in the Supplementary Conditions, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Agreement. Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

6.09 *Laws and Regulations*

A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.

B. If Contractor performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work. However, it shall not be Contractor's primary responsibility to make certain that the Specifications and Drawings are in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.

C. Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids) having an effect on the cost or time of performance of the Work shall be the subject of an adjustment in Contract Price or Contract Times. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

6.10 *Taxes*

A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

6.11 *Use of Site and Other Areas*

A. Limitation on Use of Site and Other Areas

1. Contractor shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the Site and other areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and other areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof, or of any adjacent land or areas resulting from the performance of the Work.

2. Should any claim be made by any such owner or occupant because of the performance of the Work, Contractor shall promptly settle with such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law.

3. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused by or based upon Contractor's performance of the Work.

B. Removal of Debris During Performance of the Work: During the progress of the Work Contractor shall keep the Site and other areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.

C. Cleaning: Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

D. Loading Structures: Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

6.12 *Record Documents*

A. Contractor shall maintain in a safe place at the Site one record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, and written interpretations and clarifications in good order and annotated to show changes made during construction. These record documents together with all approved Samples and a counterpart of all approved Shop Drawings will be available to Engineer for reference. Upon completion of the Work, these record documents, Samples, and Shop Drawings will be delivered to Engineer for Owner.

6.13 *Safety and Protection*

A. Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

1. all persons on the Site or who may be affected by the Work;

2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and

3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.

B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify owners of adjacent property and of Underground Facilities and other utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property.

C. All damage, injury, or loss to any property referred to in Paragraph 6.13.A.2 or 6.13.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor (except damage or loss attributable to the fault of Draw-

ings or Specifications or to the acts or omissions of Owner or Engineer or , or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).

D. Contractor's duties and responsibilities for safety and for protection of the Work shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 14.07.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

6.14 *Safety Representative*

A. Contractor shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

6.15 *Hazard Communication Programs*

A. Contractor shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

6.16 *Emergencies*

A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent threatened damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If Engineer determines that a change in the Contract Documents is required because of the action taken by Contractor in response to such an emergency, a Work Change Directive or Change Order will be issued.

6.17 *Shop Drawings and Samples*

A. Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the acceptable Schedule of Submittals (as required by Paragraph 2.07). Each submittal will be identified as Engineer may require.

1. Shop Drawings

a. Submit number of copies specified in the General Requirements.

b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide and to enable Engineer to review the information for the limited purposes required by Paragraph 6.17.D.

2. *Samples:* Contractor shall also submit Samples to Engineer for review and approval in accordance with the acceptable schedule of Shop Drawings and Sample submittals.

a. Submit number of Samples specified in the Specifications.

b. Clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the submittal for the limited purposes required by Paragraph 6.17.D.

B. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals , any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.

C. Submittal Procedures

1. Before submitting each Shop Drawing or Sample, Contractor shall have determined and verified:

a. all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;

b. the suitability of all materials with respect to intended use, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work;

c. all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto; and

d. shall also have reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents.

2. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents

with respect to Contractor's review and approval of that submittal.

3. With each submittal, Contractor shall give Engineer specific written notice of any variations, that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be both a written communication separate from the Shop Drawing's or Sample Submittal; and, in addition, by a specific notation made on each Shop Drawing or Sample submitted to Engineer for review and approval of each such variation.

D. Engineer's Review

1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

3. Engineer's review and approval shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 6.17.C.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer's review and approval shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 6.17.C.1.

E. Resubmittal Procedures

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.

6.18 Continuing the Work

A. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or

disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by Paragraph 15.04 or as Owner and Contractor may otherwise agree in writing.

6.19 Contractor's General Warranty and Guarantee

A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its Related Entities shall be entitled to rely on representation of Contractor's warranty and guarantee.

B. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:

1. abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or

2. normal wear and tear under normal usage.

C. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:

1. observations by Engineer;

2. recommendation by Engineer or payment by Owner of any progress or final payment;

3. the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;

4. use or occupancy of the Work or any part thereof by Owner;

5. any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by Engineer;

6. any inspection, test, or approval by others; or

7. any correction of defective Work by Owner.

6.20 Indemnification

A. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or

arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable .

B. In any and all claims against Owner or Engineer or any of their respective consultants, agents, officers, directors, partners, or employees by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 6.20.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

C. The indemnification obligations of Contractor under Paragraph 6.20.A shall not extend to the liability of Engineer and Engineer's officers, directors, partners, employees, agents, consultants and subcontractors arising out of:

1. the preparation or approval of, or the failure to prepare or approve, maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or
2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

6.21 *Delegation of Professional Design Services*

A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable law.

B. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal

shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Engineer.

C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.

D. Pursuant to this Paragraph 6.21, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 6.17.D.1.

E. Contractor shall not be responsible for the adequacy of the performance or design criteria required by the Contract Documents.

ARTICLE 7 - OTHER WORK AT THE SITE

7.01 *Related Work at Site*

A. Owner may perform other work related to the Project at the Site with Owner's employees, or via other direct contracts therefor, or have other work performed by utility owners. If such other work is not noted in the Contract Documents, then:

1. written notice thereof will be given to Contractor prior to starting any such other work; and

2. if Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times that should be allowed as a result of such other work, a Claim may be made therefor as provided in Paragraph 10.05.

B. Contractor shall afford each other contractor who is a party to such a direct contract, each utility owner and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work, and shall properly coordinate the Work with theirs. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and

properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering their work and will only cut or alter their work with the written consent of Engineer and the others whose work will be affected. The duties and responsibilities of Contractor under this Paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of Contractor in said direct contracts between Owner and such utility owners and other contractors.

C. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 7, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

7.02 *Coordination*

A. If Owner intends to contract with others for the performance of other work on the Project at the Site, the following will be set forth in Supplementary Conditions:

1. the individual or entity who will have authority and responsibility for coordination of the activities among the various contractors will be identified;
2. the specific matters to be covered by such authority and responsibility will be itemized; and
3. the extent of such authority and responsibilities will be provided.

B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

7.03 *Legal Relationships*

A. Paragraphs 7.01.A and 7.02 are not applicable for utilities not under the control of Owner.

B. Each other direct contract of Owner under Paragraph 7.01.A shall provide that the other contractor is liable to Owner and Contractor for the reasonable direct delay and disruption costs incurred by Contractor as a result of the other contractor's actions or inactions.

C. Contractor shall be liable to Owner and any other contractor for the reasonable direct delay and disruption costs incurred by such other contractor as a result of Contractor's action or inactions.

ARTICLE 8 - OWNER'S RESPONSIBILITIES

8.01 *Communications to Contractor*

A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.

8.02 *Replacement of Engineer*

A. In case of termination of the employment of Engineer, Owner shall appoint an engineer to whom Contractor makes no reasonable objection, whose status under the Contract Documents shall be that of the former Engineer.

8.03 *Furnish Data*

A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

8.04 *Pay When Due*

A. Owner shall make payments to Contractor when they are due as provided in Paragraphs 14.02.C and 14.07.C.

8.05 *Lands and Easements; Reports and Tests*

A. Owner's duties in respect of providing lands and easements and providing engineering surveys to establish reference points are set forth in Paragraphs 4.01 and 4.05. Paragraph 4.02 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of subsurface conditions and drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site that have been utilized by Engineer in preparing the Contract Documents.

8.06 *Insurance*

A. Owner's responsibilities, if any, in respect to purchasing and maintaining liability and property insurance are set forth in Article 5.

8.07 *Change Orders*

A. Owner is obligated to execute Change Orders as indicated in Paragraph 10.03.

8.08 *Inspections, Tests, and Approvals*

A. Owner's responsibility in respect to certain inspections, tests, and approvals is set forth in Paragraph 13.03.B.

8.09 *Limitations on Owner's Responsibilities*

A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

8.10 *Undisclosed Hazardous Environmental Condition*

A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 4.06.

8.11 *Evidence of Financial Arrangements*

A. If and to the extent Owner has agreed to furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract Documents, Owner's responsibility in respect thereof will be as set forth in the Supplementary Conditions.

ARTICLE 9 - ENGINEER'S STATUS DURING CONSTRUCTION

9.01 *Owner's Representative*

A. Engineer will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract Documents and will not be changed without written consent of Owner and Engineer.

9.02 *Visits to Site*

A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep

Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.

B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 9.09. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

9.03 *Project Representative*

A. If Owner and Engineer agree, Engineer will furnish a Resident Project Representative to assist Engineer in providing more extensive observation of the Work. The authority and responsibilities of any such Resident Project Representative and assistants will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 9.09. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer's consultant, agent or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

9.04 *Authorized Variations in Work*

A. Engineer may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. These may be accomplished by a Field Order and will be binding on Owner and also on Contractor, who shall perform the Work involved promptly. If Owner or Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, and the parties are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

9.05 *Rejecting Defective Work*

A. Engineer will have authority to reject Work which Engineer believes to be defective, or that Engineer believes will not produce a completed Project that conforms to the Contract Documents or that will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Engineer will also have authority to require special inspection or testing of the Work as provided in Paragraph 13.04, whether or not the Work is fabricated, installed, or completed.

9.06 *Shop Drawings, Change Orders and Payments*

A. In connection with Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, see Paragraph 6.17.

B. In connection with Engineer's authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, see Paragraph 6.21.

C. In connection with Engineer's authority as to Change Orders, see Articles 10, 11, and 12.

D. In connection with Engineer's authority as to Applications for Payment, see Article 14.

9.07 *Determinations for Unit Price Work*

A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, subject to the provisions of Paragraph 10.05.

9.08 *Decisions on Requirements of Contract Documents and Acceptability of Work*

A. Engineer will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. All matters in question and other matters between Owner and Contractor arising prior to the date final payment is due relating to the acceptability of the Work, and the interpretation of the requirements of the Contract Documents pertaining to the performance of the Work, will be referred initially to Engineer in writing within 30 days of the event giving rise to the question

B. Engineer will, with reasonable promptness, render a written decision on the issue referred. If Owner or Contractor believe that any such decision entitles them to an adjustment in the Contract Price or Contract Times or both, a Claim may be made under Paragraph 10.05. The date of Engineer's decision shall be the date of the event giving rise to the issues referenced for the purposes of Paragraph 10.05.B.

C. Engineer's written decision on the issue referred will be final and binding on Owner and Contractor, subject to the provisions of Paragraph 10.05.

D. When functioning as interpreter and judge under this Paragraph 9.08, Engineer will not show

partiality to Owner or Contractor and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity.

9.09 *Limitations on Engineer's Authority and Responsibilities*

A. Neither Engineer's authority or responsibility under this Article 9 or under any other provision of the Contract Documents nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.

D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 14.07.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals that the results certified indicate compliance with the Contract Documents.

E. The limitations upon authority and responsibility set forth in this Paragraph 9.09 shall also apply to, the Resident Project Representative, if any, and assistants, if any.

ARTICLE 10 - CHANGES IN THE WORK; CLAIMS

10.01 *Authorized Changes in the Work*

A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work by a Change Order, or a Work Change Directive. Upon receipt of any such document, Contractor shall

promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).

B. If Owner and Contractor are unable to agree on entitlement to, or on the amount or extent, if any, of an adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a Work Change Directive, a Claim may be made therefor as provided in Paragraph 10.05.

10.02 *Unauthorized Changes in the Work*

A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents as amended, modified, or supplemented as provided in Paragraph 3.04, except in the case of an emergency as provided in Paragraph 6.16 or in the case of uncovering Work as provided in Paragraph 13.04.B.

10.03 *Execution of Change Orders*

A. Owner and Contractor shall execute appropriate Change Orders recommended by Engineer covering:

1. changes in the Work which are: (i) ordered by Owner pursuant to Paragraph 10.01.A, (ii) required because of acceptance of defective Work under Paragraph 13.08.A or Owner's correction of defective Work under Paragraph 13.09, or (iii) agreed to by the parties;

2. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive; and

3. changes in the Contract Price or Contract Times which embody the substance of any written decision rendered by Engineer pursuant to Paragraph 10.05; provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, Contractor shall carry on the Work and adhere to the Progress Schedule as provided in Paragraph 6.18.A.

10.04 *Notification to Surety*

A. If notice of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times) is required by the provisions of any bond to be given to a surety, the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

10.05 *Claims*

A. *Engineer's Decision Required:* All Claims, except those waived pursuant to Paragraph 14.09, shall be referred to the Engineer for decision. A decision by Engineer shall be required as a condition precedent to any exercise by Owner or Contractor of any rights or remedies either may otherwise have under the Contract Documents or by Laws and Regulations in respect of such Claims.

B. *Notice:* Written notice stating the general nature of each Claim, shall be delivered by the claimant to Engineer and the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto. The responsibility to substantiate a Claim shall rest with the party making the Claim. Notice of the amount or extent of the Claim, with supporting data shall be delivered to the Engineer and the other party to the Contract within 60 days after the start of such event (unless Engineer allows additional time for claimant to submit additional or more accurate data in support of such Claim). A Claim for an adjustment in Contract Price shall be prepared in accordance with the provisions of Paragraph 12.01.B. A Claim for an adjustment in Contract Time shall be prepared in accordance with the provisions of Paragraph 12.02.B. Each Claim shall be accompanied by claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant believes it is entitled as a result of said event. The opposing party shall submit any response to Engineer and the claimant within 30 days after receipt of the claimant's last submittal (unless Engineer allows additional time).

C. *Engineer's Action:* Engineer will review each Claim and, within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any, take one of the following actions in writing:

1. deny the Claim in whole or in part,

2. approve the Claim, or

3. notify the parties that the Engineer is unable to resolve the Claim if, in the Engineer's sole discretion, it would be inappropriate for the Engineer to do so. For purposes of further resolution of the Claim, such notice shall be deemed a denial.

D. In the event that Engineer does not take action on a Claim within said 30 days, the Claim shall be deemed denied.

E. Engineer's written action under Paragraph 10.05.C or denial pursuant to Paragraphs 10.05.C.3 or 10.05.D will be final and binding upon Owner and Contractor, unless Owner or Contractor invoke the dispute resolution procedure set forth in Article 16 within 30 days of such action or denial.

F. No Claim for an adjustment in Contract Price or Contract Times will be valid if not submitted in accordance with this Paragraph 10.05.

ARTICLE 11 - COST OF THE WORK;
ALLOWANCES; UNIT PRICE WORK

11.01 *Cost of the Work*

A. *Costs Included:* The term Cost of the Work means the sum of all costs, except those excluded in Paragraph 11.01.B, necessarily incurred and paid by Contractor in the proper performance of the Work. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, the costs to be reimbursed to Contractor will be only those additional or incremental costs required because of the change in the Work or because of the event giving rise to the Claim. Except as otherwise may be agreed to in writing by Owner, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall include only the following items, and shall not include any of the costs itemized in Paragraph 11.01.B.

1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time at the Site. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.

2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates and refunds and returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.

3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and

Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 11.01.

4. Costs of special consultants (including but not limited to Engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.

5. Supplemental costs including the following:

a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.

b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.

c. Rentals of all construction equipment and machinery, and the parts thereof whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.

d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, imposed by Laws and Regulations.

e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.

f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 5.06.D), provided such losses and damages have

resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee.

g. The cost of utilities, fuel, and sanitary facilities at the Site.

h. Minor expenses such as telegrams, long distance telephone calls, telephone service at the Site, expresses, and similar petty cash items in connection with the Work.

i. The costs of premiums for all bonds and insurance Contractor is required by the Contract Documents to purchase and maintain.

B. Costs Excluded: The term Cost of the Work shall not include any of the following items:

1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 11.01.A.1 or specifically covered by Paragraph 11.01.A.4, all of which are to be considered administrative costs covered by the Contractor's fee.

2. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.

3. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.

4. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.

5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraphs 11.01.A and 11.01.B.

C. Contractor's Fee: When all the Work is performed on the basis of cost-plus, Contractor's fee shall

be determined as set forth in the Agreement. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 12.01.C.

D. Documentation: Whenever the Cost of the Work for any purpose is to be determined pursuant to Paragraphs 11.01.A and 11.01.B, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

11.02 Allowances

A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.

B. Cash Allowances

1. Contractor agrees that:

a. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and

b. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.

C. Contingency Allowance

1. Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.

D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

11.03 Unit Price Work

A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.

B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by Contractor will be made by Engineer subject to the provisions of Paragraph 9.07.

C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.

D. Owner or Contractor may make a Claim for an adjustment in the Contract Price in accordance with Paragraph 10.05 if:

1. the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and

2. there is no corresponding adjustment with respect any other item of Work; and

3. Contractor believes that Contractor is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price and the parties are unable to agree as to the amount of any such increase or decrease.

ARTICLE 12 - CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIMES

12.01 *Change of Contract Price*

A. The Contract Price may only be changed by a Change Order. Any Claim for an adjustment in the Contract Price shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.

B. The value of any Work covered by a Change Order or of any Claim for an adjustment in the Contract Price will be determined as follows:

1. where the Work involved is covered by unit prices contained in the Contract Documents, by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 11.03); or

2. where the Work involved is not covered by unit prices contained in the Contract Documents, by a mutually agreed lump sum (which may include an

allowance for overhead and profit not necessarily in accordance with Paragraph 12.01.C.2); or

3. where the Work involved is not covered by unit prices contained in the Contract Documents and agreement to a lump sum is not reached under Paragraph 12.01.B.2, on the basis of the Cost of the Work (determined as provided in Paragraph 11.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 12.01.C).

C. *Contractor's Fee:* The Contractor's fee for overhead and profit shall be determined as follows:

1. a mutually acceptable fixed fee; or

2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:

a. for costs incurred under Paragraphs 11.01.A.1 and 11.01.A.2, the Contractor's fee shall be 15 percent;

b. for costs incurred under Paragraph 11.01.A.3, the Contractor's fee shall be five percent;

c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraph 12.01.C.2.a is that the Subcontractor who actually performs the Work, at whatever tier, will be paid a fee of 15 percent of the costs incurred by such Subcontractor under Paragraphs 11.01.A.1 and 11.01.A.2 and that any higher tier Subcontractor and Contractor will each be paid a fee of five percent of the amount paid to the next lower tier Subcontractor;

d. no fee shall be payable on the basis of costs itemized under Paragraphs 11.01.A.4, 11.01.A.5, and 11.01.B;

e. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in Contractor's fee by an amount equal to five percent of such net decrease; and

f. when both additions and credits are involved in any one change, the adjustment in Contractor's fee shall be computed on the basis of the net change in accordance with Paragraphs 12.01.C.2.a through 12.01.C.2.e, inclusive.

12.02 *Change of Contract Times*

A. The Contract Times may only be changed by a Change Order. Any Claim for an adjustment in the Contract Times shall be based on written notice submitted

by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.

B. Any adjustment of the Contract Times covered by a Change Order or any Claim for an adjustment in the Contract Times will be determined in accordance with the provisions of this Article 12.

12.03 *Delays*

A. Where Contractor is prevented from completing any part of the Work within the Contract Times due to delay beyond the control of Contractor, the Contract Times will be extended in an amount equal to the time lost due to such delay if a Claim is made therefor as provided in Paragraph 12.02.A. Delays beyond the control of Contractor shall include, but not be limited to, acts or neglect by Owner, acts or neglect of utility owners or other contractors performing other work as contemplated by Article 7, fires, floods, epidemics, abnormal weather conditions, or acts of God.

B. If Owner, Engineer, or other contractors or utility owners performing other work for Owner as contemplated by Article 7, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.

C. If Contractor is delayed in the performance or progress of the Work by fire, flood, epidemic, abnormal weather conditions, acts of God, acts or failures to act of utility owners not under the control of Owner, or other causes not the fault of and beyond control of Owner and Contractor, then Contractor shall be entitled to an equitable adjustment in Contract Times, if such adjustment is essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays described in this Paragraph 12.03.C.

D. Owner, Engineer and the Related Entities of each of them shall not be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of Engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

E. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delays within the control of Contractor. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of Contractor.

ARTICLE 13 - TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

13.01 *Notice of Defects*

A. Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor. All defective Work may be rejected, corrected, or accepted as provided in this Article 13.

13.02 *Access to Work*

A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and governmental agencies with jurisdictional interests will have access to the Site and the Work at reasonable times for their observation, inspecting, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's Site safety procedures and programs so that they may comply therewith as applicable.

13.03 *Tests and Inspections*

A. Contractor shall give Engineer timely notice of readiness of the Work for all required inspections, tests, or approvals and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.

B. Owner shall employ and pay for the services of an independent testing laboratory to perform all inspections, tests, or approvals required by the Contract Documents except:

1. for inspections, tests, or approvals covered by Paragraphs 13.03.C and 13.03.D below;

2. that costs incurred in connection with tests or inspections conducted pursuant to Paragraph 13.04.B shall be paid as provided in said Paragraph 13.04.C; and

3. as otherwise specifically provided in the Contract Documents.

C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.

D. Contractor shall be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests, or approvals required for Owner's and Engineer's acceptance of materials or equipment to

be incorporated in the Work; or acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work. Such inspections, tests, or approvals shall be performed by organizations acceptable to Owner and Engineer.

E. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, it must, if requested by Engineer, be uncovered for observation.

F. Uncovering Work as provided in Paragraph 13.03.E shall be at Contractor's expense unless Contractor has given Engineer timely notice of Contractor's intention to cover the same and Engineer has not acted with reasonable promptness in response to such notice.

13.04 *Uncovering Work*

A. If any Work is covered contrary to the written request of Engineer, it must, if requested by Engineer, be uncovered for Engineer's observation and replaced at Contractor's expense.

B. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, furnishing all necessary labor, material, and equipment.

C. If it is found that the uncovered Work is defective, Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05.

D. If, the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.

13.05 *Owner May Stop the Work*

A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, Owner may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work shall not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

13.06 *Correction or Removal of Defective Work*

A. Promptly after receipt of notice, Contractor shall correct all defective Work, whether or not fabricated, installed, or completed, or, if the Work has been rejected by Engineer, remove it from the Project and replace it with Work that is not defective. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or removal (including but not limited to all costs of repair or replacement of work of others).

B. When correcting defective Work under the terms of this Paragraph 13.06 or Paragraph 13.07, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.

13.07 *Correction Period*

A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents) or by any specific provision of the Contract Documents, any Work is found to be defective, or if the repair of any damages to the land or areas made available for Contractor's use by Owner or permitted by Laws and Regulations as contemplated in Paragraph 6.11.A is found to be defective, Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:

1. repair such defective land or areas; or
2. correct such defective Work; or
3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and
4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others or other land or areas resulting therefrom.

B. If Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by Contractor.

C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications .

D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this Paragraph 13.07, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

E. Contractor's obligations under this Paragraph 13.07 are in addition to any other obligation or warranty. The provisions of this Paragraph 13.07 shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitation or repose.

13.08 *Acceptance of Defective Work*

A. If, instead of requiring correction or removal and replacement of defective Work, Owner (and, prior to Engineer's recommendation of final payment, Engineer) prefers to accept it, Owner may do so. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness) and the diminished value of the Work to the extent not otherwise paid by Contractor pursuant to this sentence. If any such acceptance occurs prior to Engineer's recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work, and Owner shall be entitled to an appropriate decrease in the Contract Price, reflecting the diminished value of Work so accepted. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05. If the acceptance occurs after such recommendation, an appropriate amount will be paid by Contractor to Owner.

13.09 *Owner May Correct Defective Work*

A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work or to remove and replace rejected Work as required by Engineer in accordance with Paragraph 13.06.A, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, Owner may, after seven days written notice to Contractor, correct or remedy any such deficiency.

B. In exercising the rights and remedies under this Paragraph 13.09, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, take possession of Contractor's tools, appliances, construction equipment and machinery at the Site, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this Paragraph.

C. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 13.09 will be charged against Contractor, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount of the adjustment, Owner may make a Claim therefor as provided in Paragraph 10.05. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.

D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 13.09.

ARTICLE 14 - PAYMENTS TO CONTRACTOR AND COMPLETION

14.01 *Schedule of Values*

A. The Schedule of Values established as provided in Paragraph 2.07.A will serve as the basis for progress

payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed.

14.02 *Progress Payments*

A. Applications for Payments

1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens and evidence that the materials and equipment are covered by appropriate property insurance or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.

2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.

3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

B. *Review of Applications*

1. Engineer will, within 10 days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to Owner or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.

2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations on the Site of the executed Work as an experienced and qualified design professional and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:

a. the Work has progressed to the point indicated;

b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, to the results of any subsequent tests called for in the Contract Documents, to a final determination of quantities and classifications for Unit Price Work under Paragraph 9.07, and to any other qualifications stated in the recommendation); and

c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.

3. By recommending any such payment Engineer will not thereby be deemed to have represented that:

a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract Documents; or

b. that there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.

4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:

a. to supervise, direct, or control the Work, or

b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or

c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or

d. to make any examination to ascertain how or for what purposes Contractor has used the moneys paid on account of the Contract Price, or

e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.

5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 14.02.B.2. Engineer may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent

inspections or tests, revise or revoke any such payment recommendation previously made, to such extent as may be necessary in Engineer's opinion to protect Owner from loss because:

- a. the Work is defective, or completed Work has been damaged, requiring correction or replacement;
- b. the Contract Price has been reduced by Change Orders;
- c. Owner has been required to correct defective Work or complete Work in accordance with Paragraph 13.09; or
- d. Engineer has actual knowledge of the occurrence of any of the events enumerated in Paragraph 15.02.A.

C. Payment Becomes Due

1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended will (subject to the provisions of Paragraph 14.02.D) become due, and when due will be paid by Owner to Contractor.

D. Reduction in Payment

1. Owner may refuse to make payment of the full amount recommended by Engineer because:

- a. claims have been made against Owner on account of Contractor's performance or furnishing of the Work;
- b. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;
- c. there are other items entitling Owner to a set-off against the amount recommended; or
- d. Owner has actual knowledge of the occurrence of any of the events enumerated in Paragraphs 14.02.B.5.a through 14.02.B.5.c or Paragraph 15.02.A.

2. If Owner refuses to make payment of the full amount recommended by Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, when Contractor corrects to Owner's satisfaction the reasons for such action.

3. If it is subsequently determined that Owner's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 14.02.C.1.

14.03 Contractor's Warranty of Title

A. Contractor warrants and guarantees that title to all Work, materials, and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to Owner no later than the time of payment free and clear of all Liens.

14.04 Substantial Completion

A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete (except for items specifically listed by Contractor as incomplete) and request that Engineer issue a certificate of Substantial Completion.

B. Promptly after Contractor's notification, , Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.

C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the tentative certificate during which to make written objection to Engineer as to any provisions of the certificate or attached list. If, after considering such objections, Engineer concludes that the Work is not substantially complete, Engineer will within 14 days after submission of the tentative certificate to Owner notify Contractor in writing, stating the reasons therefor. If, after consideration of Owner's objections, Engineer considers the Work substantially complete, Engineer will within said 14 days execute and deliver to Owner and Contractor a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as Engineer believes justified after consideration of any objections from Owner.

D. At the time of delivery of the tentative certificate of Substantial Completion, Engineer will deliver to Owner and Contractor a written recommendation as to division of responsibilities pending final payment between Owner and Contractor with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees. Unless Owner and Contractor agree otherwise in writing and so inform Engineer in writing prior to Engineer's issuing the definitive certificate of Substantial

Completion, Engineer's aforesaid recommendation will be binding on Owner and Contractor until final payment.

E. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to complete or correct items on the tentative list.

14.05 *Partial Utilization*

A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions.

1. Owner at any time may request Contractor in writing to permit Owner to use or occupy any such part of the Work which Owner believes to be ready for its intended use and substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor will certify to Owner and Engineer that such part of the Work is substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.

2. Contractor at any time may notify Owner and Engineer in writing that Contractor considers any such part of the Work ready for its intended use and substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.

3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 14.04 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 5.10 regarding property insurance.

14.06 *Final Inspection*

A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals

that the Work is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

14.07 *Final Payment*

A. Application for Payment

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance certificates of inspection, marked-up record documents (as provided in Paragraph 6.12), and other documents, Contractor may make application for final payment following the procedure for progress payments.

2. The final Application for Payment shall be accompanied (except as previously delivered) by:

a. all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required by Paragraph 5.04.B.7;

b. consent of the surety, if any, to final payment;

c. a list of all Claims against Owner that Contractor believes are unsettled; and

d. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of or Liens filed in connection with the Work.

3. In lieu of the releases or waivers of Liens specified in Paragraph 14.07.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (i) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (ii) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner or Owner's property might in any way be responsible have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien.

B. *Engineer's Review of Application and Acceptance*

1. If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations

under the Contract Documents have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of payment and present the Application for Payment to Owner for payment. At the same time Engineer will also give written notice to Owner and Contractor that the Work is acceptable subject to the provisions of Paragraph 14.09. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

C. Payment Becomes Due

1. Thirty days after the presentation to Owner of the Application for Payment and accompanying documentation, the amount recommended by Engineer, less any sum Owner is entitled to set off against Engineer's recommendation, including but not limited to liquidated damages, will become due and , will be paid by Owner to Contractor.

14.08 *Final Completion Delayed*

A. If, through no fault of Contractor, final completion of the Work is significantly delayed, and if Engineer so confirms, Owner shall, upon receipt of Contractor's final Application for Payment (for Work fully completed and accepted) and recommendation of Engineer, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by Owner for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if bonds have been furnished as required in Paragraph 5.01, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by Contractor to Engineer with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

14.09 *Waiver of Claims*

A. The making and acceptance of final payment will constitute:

1. a waiver of all Claims by Owner against Contractor, except Claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 14.06, from failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from Contractor's continuing obligations under the Contract Documents; and

2. a waiver of all Claims by Contractor against Owner other than those previously made in accordance

with the requirements herein and expressly acknowledged by Owner in writing as still unsettled.

ARTICLE 15 - SUSPENSION OF WORK AND TERMINATION

15.01 *Owner May Suspend Work*

A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by notice in writing to Contractor and Engineer which will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be granted an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension if Contractor makes a Claim therefor as provided in Paragraph 10.05.

15.02 *Owner May Terminate for Cause*

A. The occurrence of any one or more of the following events will justify termination for cause:

1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule established under Paragraph 2.07 as adjusted from time to time pursuant to Paragraph 6.04);

2. Contractor's disregard of Laws or Regulations of any public body having jurisdiction;

3. Contractor's disregard of the authority of Engineer; or

4. Contractor's violation in any substantial way of any provisions of the Contract Documents.

B. If one or more of the events identified in Paragraph 15.02.A occur, Owner may, after giving Contractor (and surety) seven days written notice of its intent to terminate the services of Contractor:

1. exclude Contractor from the Site, and take possession of the Work and of all Contractor's tools, appliances, construction equipment, and machinery at the Site, and use the same to the full extent they could be used by Contractor (without liability to Contractor for trespass or conversion),

2. incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and

3. complete the Work as Owner may deem expedient.

C. If Owner proceeds as provided in Paragraph 15.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Owner arising out of or relating to completing the Work, such excess will be paid to Contractor. If such claims, costs, losses, and damages exceed such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this Paragraph Owner shall not be required to obtain the lowest price for the Work performed.

D. Notwithstanding Paragraphs 15.02.B and 15.02.C, Contractor's services will not be terminated if Contractor begins within seven days of receipt of notice of intent to terminate to correct its failure to perform and proceeds diligently to cure such failure within no more than 30 days of receipt of said notice.

E. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue. Any retention or payment of moneys due Contractor by Owner will not release Contractor from liability.

F. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 5.01.A, the termination procedures of that bond shall supersede the provisions of Paragraphs 15.02.B, and 15.02.C.

15.03 *Owner May Terminate For Convenience*

A. Upon seven days written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):

1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;

2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses;

3. all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred in settlement of terminated contracts with Subcontractors, Suppliers, and others; and

4. reasonable expenses directly attributable to termination.

B. Contractor shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.

15.04 *Contractor May Stop Work or Terminate*

A. If, through no act or fault of Contractor, (i) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (ii) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (iii) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the Contract and recover from Owner payment on the same terms as provided in Paragraph 15.03.

B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this Paragraph 15.04 are not intended to preclude Contractor from making a Claim under Paragraph 10.05 for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this Paragraph.

ARTICLE 16 - DISPUTE RESOLUTION

16.01 *Methods and Procedures*

A. Either Owner or Contractor may request mediation of any Claim submitted to Engineer for a decision under Paragraph 10.05 before such decision becomes final and binding. The mediation will be

governed by the Construction Industry Mediation Rules of the American Arbitration Association in effect as of the Effective Date of the Agreement. The request for mediation shall be submitted in writing to the American Arbitration Association and the other party to the Contract. Timely submission of the request shall stay the effect of Paragraph 10.05.E.

B. Owner and Contractor shall participate in the mediation process in good faith. The process shall be concluded within 60 days of filing of the request. The date of termination of the mediation shall be determined by application of the mediation rules referenced above.

C. If the Claim is not resolved by mediation, Engineer's action under Paragraph 10.05.C or a denial pursuant to Paragraphs 10.05.C.3 or 10.05.D shall become final and binding 30 days after termination of the mediation unless, within that time period, Owner or Contractor:

1. elects in writing to invoke any dispute resolution process provided for in the Supplementary Conditions, or

2. agrees with the other party to submit the Claim to another dispute resolution process, or

3. gives written notice to the other party of their intent to submit the Claim to a court of competent jurisdiction.

ARTICLE 17 - MISCELLANEOUS

17.01 *Giving Notice*

A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:

1. delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or

2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

17.02 *Computation of Times*

A. When any period of time is referred to in the Contract Documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

17.03 *Cumulative Remedies*

A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract Documents. The provisions of this Paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

17.04 *Survival of Obligations*

A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, will survive final payment, completion, and acceptance of the Work or termination or completion of the Contract or termination of the services of Contractor.

17.05 *Controlling Law*

A. This Contract is to be governed by the law of the state in which the Project is located.

17.06 *Headings*

A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

TAB E

Supplementary Conditions

SUPPLEMENTARY CONDITIONS

These Supplementary Conditions amend or supplement the General Conditions and other provisions of the Contract Documents as indicated below. All provisions which are not so amended or supplemented remain in full force and effect.

ARTICLE 1 REVISIONS:

1.01.29 Engineer

After the word “performed,” add the words “Owner may designate in writing one or more authorized representatives who shall have express authority to bind the Owner with respect to matters requiring Owner’s approval or authorization. The Engineer does not have such authority. The term “Owner” means the Owner, and the Owner’s Authorized Representative. The Owner’s Authorized Representative is not to be confused with the owner’s representative to which Article 9 refers.”

Add the following:

1.01.53 Project Manager

The person employed by the Town of Columbia on behalf of the owner. All major decisions and determinations required during the work will be made jointly by the owner, and the project manager; and if applicable, the architect/engineer, however, instructions to the contractor are to be from the Owner. If the contractor performs work beyond the scope of the project at the direction or request of any person other than the owner, it will be at his own risk and expense. If this work must be removed or revised, that also will be at the expense of the contractor.

ARTICLE 2 REVISIONS:

2.05 Before Starting Construction

To Paragraph 2.05.A, after the word “review,” add the words “and Owner’s approval:”

Delete Article 2.05.A.3 and replace with the following new Article 2.05.B.1.:

Documentation submitted by CONTRACTOR prior to execution of Agreement shall include a preliminary schedule of values for all of the Work that includes quantities and prices of items which, when added together, equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work. The approved schedule of values shall follow the format provided in the Bidding Documents.

2.07 Initial Acceptance of Schedules

To Paragraph 2.07.A, after the word “Engineer,” in line 4, add the words “and Owner”. And after the word “Engineer” in line 10, add the words “for its review and the Owner’s approval.”

To Paragraph 2.07.A.1, after the word “Engineer,” in line 2, add the words “and Owner”. And after the word “Engineer” in line 4, add the words “and Owner.” And after the word “therefore” in line 8, add “The schedule shall not exceed time limits current under the Contract Documents, shall be revised at appropriate intervals as required by the conditions of the Work and Project, shall be related to the entire Project to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the Work. A Contractor’s construction schedule and any and all updates shall be prepared and maintained by the Contractor using the Critical Path Method and shall contain a minimum of 25 activities. The Contractor shall submit its schedules to the Owner and Engineer at regular intervals, not to exceed one month. Each submittal shall include, at a minimum, plots of bar charts showing progress of the Work, Total Float and Critical Paths, in addition to a listing of the supporting data organized in tabular form. The Contractor’s construction schedule updates shall identify the Work completed to date based on completed activities as a percentage of the total Work.”

To Paragraph 2.07.A.2, after the word “Engineer,” in line 2, add the words “and Owner”.

To Paragraph 2.07.A.3, after the word “Engineer,” in line 2, add the words “and Owner”.

ARTICLE 3 REVISIONS:**3.07 Add the following:**

The Contract Documents are complementary; what is called for by one is as binding as if called for by all. In resolving conflicts, errors, and discrepancies, the documents shall be given precedence in the following order: Agreement, Specifications, Drawings. Within the specifications the order of precedence shall be as follows: Special Provisions, Instructions to Bidders, General Conditions, Technical Provisions. Figure dimensions on Drawings shall govern over scale/dimensions, and detailed Drawings shall govern over general Drawings. The Contractor assumes full responsibility for having familiarized itself with the nature and extent of the Contract Documents, work, locality, and local conditions that may in any manner affect the work to be done.

ARTICLE 4 REVISIONS:**4.01 Availability of Lands**

Add the following:

- D. If the Contractor, by direct negotiation and bargaining with any land owner, lessee or tenant, has secured for himself any right to use more space or greater privileges in the space provided for purposes incidental to the performance of the Contract, he shall, upon request of the Owner's Representative, furnish to the Owner's Representative proper evidence that such additional right have been properly secured and assurance that no damage to or claim upon the Owner will arrive there from. The Owner shall not be liable in any way for any expense incurred by the Contractor in securing any such right to use additional property.
- E. If access is provided by means of any road or driveway or through private lands, the Contractor shall permit the regular Owners or users thereof to use the same so far as it is consistent with the construction of the work. If any existing driveway or road is damaged by his use thereof, the Contractor shall at once restore it to as good condition as it would have been had he not used it. The Contractor and those under him using any private road or driveway must assume to use that road or driveway on an "as is" basis and use it at their own risk. Neither the Owner nor the land owner shall be liable for damage to persons or property of the Contractor's forces arising from any defect in such road or driveway, except as such defect may be the consequence of negligence of the Owner or the land owner after the award of the Contract.

4.05 Reference Points

To Paragraph 4.05.A, after the word "Work," in line 4, add the words "The Contractor shall be entitled to rely on the accuracy of the information furnished by the Owner unless the Contractor has actual knowledge to the contrary."

ARTICLE 5 REVISIONS:

5.01 Performance, Payment, and Other Bonds

To Paragraph 5.01.A, add "The Contractor shall deliver the executed, approved bonds to the Owner at the time of execution of this Contract. In the alternative, Contractor shall furnish Owner with an irrevocable, documentary standby letter of credit in the amount of the Contract sum. The letter of credit may be drawn upon by the Owner if a default under the Contract occurs and/or to pay any Liquidated Damages Amount. If the Owner draws on the letter of credit to pay any of the Liquidated Damages amounts, the Contractor shall remain liable for any remaining Liquidated Damages Amount after such draw(s). The letter of credit (a) shall be in a form and by a financial institution reasonably acceptable to the Owner, (b) shall be payable on sight draft, in partial draws, if applicable, to Owner without other conditions except for the beneficiaries certificate that it is entitled to draw thereon, (c) shall not expire prior to Final Completion of the Work, and (d) shall be for an initial term of one (1) year, which term shall be automatically renewable for subsequent one-year terms thereafter, or for an initial term of one (1) year with a provision that the Owner

receive thirty (30) days prior written notice of the termination date of the letter of credit, at which time the Owner may draw on the letter of credit, whether or not a default under the Contract exists, prior to such termination date; provided, however, that such letter of credit shall be returned no later than thirty (30) days following Final Completion of all of the work. The Contractor shall deliver such executed, approved letter of credit to Owner at the time of the execution of this Contract.”

5.03 Certificates of Insurance

To Paragraph 5.03.A, add “Contractor shall also deliver to Owner copies of each of the insurance policies required of Contractor under this Contract, including without limitation, declarations, and any other document evidencing types of coverage, limits of coverage, insureds, and additional insureds.”

5.04 Contractor’s Liability Insurance

Add the following:

- C. The insurance required by Paragraph 5.04 shall be written for not less than amounts set forth below or required by law, whichever coverage is greater. Coverages shall be maintained without interruption from date of commencement of the Work until date of final payment and termination of any coverage required to be maintained after final payment. Such coverages shall be maintained by insurance carriers acceptable to Owner and Owner’s lender in all respects.
 1. Workers’ Compensation and Employer’s Liability Insurance: Workers’ Compensation limits shall not be less than those statutorily required by the State of Connecticut and shall include Employers Liability limits of liability of \$1,000,000 bodily injury per accident/employee; \$1,000,000 bodily injury per disease/employee; \$1,000,000 policy by disease;
 2. Commercial General Liability Insurance: Limits of liability shall not be less than Two Million dollars (\$2,000,000) per occurrence combined Bodily Injury and Property Damage and Four Million dollars (\$4,000,000) in the aggregate. The limits may be provided through a combination of Primary and Umbrella/Excess Liability policies acceptable to the Owner;
 3. Commercial Automobile Liability Insurance: Limits of liability shall not be less than Two Million dollars (\$2,000,000) per occurrence combined Bodily Injury and Property Damage. The limit may be provided through a combination of Primary and Umbrella/Excess Liability policies acceptable to the Owner;
 4. The Contractor shall, within 30 days of being awarded the contract, provide the Owner with copies of the insurance policies required of it under this contract, each of which names the Town of Columbia and Barton & Loguidice, LLC as additional insureds, with the Town of Columbia as the Certificate Holders. The “Hold Harmless” endorsement of the insurance shall include the interest of the

Town of Columbia. The Contractor and Subcontractors and other interests shall be so named. The policy shall insure against all risks of physical damages except as modified by the Contract Documents and subject to the normal all risk exclusions.

5. The amount of insurance contained in aforementioned insurance coverage shall not be construed to be a limitation of the obligation or liability on the part of the Contractor or any of its subcontractors under the provisions of this Contract or at law.
 6. The aforementioned insurance coverage outlined in this section and any other coverage that Contractor may consider necessary are the Contractor's sole responsibility and any deficiency in coverage or policy limits of the Contractor will be the sole responsibility of the Contractor.
 7. In the event of failure of the Contractor to furnish and maintain the aforementioned insurance and to furnish satisfactory evidence thereof, such failure shall constitute a breach of this Contract and the Owner shall have the right, in addition to any other rights, to immediately cancel and terminate this Contract without any further costs to the Owner or, at the Owner's option, to take out and maintain the same on behalf of the Contractor who agrees to furnish all necessary information relative thereto and to pay the cost thereof to the Owner immediately upon presentation of a bill
- D. Insurance requirements shall also apply to all Subcontractors, and the Contractor shall not allow any Subcontractor to commence work until the Subcontractor's insurance has been obtained.

5.06 Property Insurance

Delete Paragraph 5.06.A.2, and replace with the following new Paragraph 5.06.A.2: "Property insurance shall be on an "all-risk" form and shall include, without limitation, insurance against earthquake, flood, windstorm, falsework, testing and startup, demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for Engineer's and Contractor's services and expenses required as a result of such insured loss."

To Paragraph 5.06.B, in line 10, delete the words "and shall be listed as an insured or additional insured."

5.07 Waiver of Rights

To Paragraph 5.07.A, in line 14, delete the words "Owner and", replace the word "waive," with "waives", and after the word "against", add "Owner." From line 15, delete the word "their" and replace with "its". Add "The Contractor shall require of the subcontractors, sub-subcontractors, agents and employees of any of them, by appropriate agreements, written where legally required for validity, similar waivers each in favor of the Owner. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective as to a person or

entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged.”

Add the following:

- D. Claims for Consequential Damages. Except as otherwise provided in the Contract Documents, the Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes:
1. damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and
 2. damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party’s termination in accordance with Article 15. Nothing contained in this section 5.07 shall be deemed to preclude an award of liquidated non-consequential damages, when applicable, in accordance with the requirements of the Contract Documents.”

ARTICLE 6 REVISIONS:

Add the following:

6.10 Supervision and Superintendence

To Paragraph 6.01.A, after the phrase “Contract Documents” in line 5, add “in a manner consistent with the degree of care and skill usually exercised by contractors experienced in projects of similar scope and in accordance with the standards of skill and care expected of contractors experienced in projects similar to the Project. Under no circumstances shall the quality and completeness of Work be less than recognized industry standards.”

To Paragraph 6.01.B, add “The Superintendent shall be satisfactory to the Owner and the Owner shall have the right to request Contractor to dismiss from the Project any Superintendent whose performance is not satisfactory to Owner. In the event Owner and Contractor fail to agree as to whether such dismissal is warranted, the Engineer shall make such determination and both parties shall agree to abide by the decision of the Engineer. The Contractor shall not replace the Superintendent without the consent of the Owner, which consent shall not be unreasonably withheld.”

6.02 Labors; Working Hours

To Paragraph 6.02.A, after the word "Site" in line 5, add "The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for or on behalf of the Contractor or any of its Subcontractors. If the Owner or Engineer has reasonable objection to an employee of the Contractor or any of its Subcontractors, the Contractor must submit an acceptable substitute person or entity to the Owner."

6.04 Progress Schedule

To Paragraph 6.04.A.1, after the words "Engineer for", add "review and Owner".

6.06 Concerning Subcontractors, Suppliers, and Others

To Paragraph 6.06.A, add "Unless otherwise stated in the Contract Documents or the bidding requirements, the Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner the names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each principal portion of the Work. The Owner will promptly reply to the Contractor in writing stating whether or not the Owner or the Engineer, after due investigation, has reasonable objection to any such proposed person or entity. Failure of the Owner or Engineer to reply promptly shall constitute notice of no reasonable objection."

To Paragraph 6.06.G, add "Any part of the work performed for the Contractor by a Subcontractor shall be pursuant to a written Subcontract between the Contractor and Subcontractor. Copies of all Subcontractor bids or proposals, and ultimately, subcontracts, shall, upon request of Owner, be submitted to Owner and Engineer."

Add the following:

"H. The Contractor shall obtain lien waivers from Subcontractors and material suppliers upon payment to such parties and shall supply copies of the same to Owner promptly upon receipt thereof. If Contractor fails to comply with the provisions of this Paragraph 6.06.H, and for so long as such failure continues, Owner may make all payments attributable to a Subcontractor or material supplier co-payable to the Contractor and such Subcontractor or material supplier."

6.08 Permits

To Paragraph 6.08.A, add "The Contractor will perform and complete the Work in accordance with all requirements of law and with the Contract Documents and no work shall be undertaken until the Contractor has been issued all required permits."

Contractor shall prosecute all work diligently to assure completion no later than the date specified therefore.”

6.09 Laws and Regulations

To Paragraph 6.09.A, after the word “Work” in line 3, add “Contractor shall review the Contract Documents and notify the Owner and the Engineer of any discrepancy between building codes and regulations of which the Contractor has actual knowledge without independent investigation. The Contractor shall not violate any zoning, set-back or other locational requirements of applicable laws, codes or ordinances, or of any recorded covenants of which the Contractor has actual knowledge. If the Contractor observes or is told by any building inspector that portions of the Contract Documents are at variance with applicable laws, statutes ordinances, building codes, rules or regulations, the Contractor shall promptly notify the Engineer and Owner in writing, and necessary changes shall be accomplished by appropriate modification.”

Add the following:

“D. The Contractor shall be responsible to procure Certificate(s) of Occupancy, if required, from the authorities having jurisdiction.”

“E. The Contractor shall maintain policies of employment as follows:

1. The Contractor and the Contractor’s subcontractors shall not discriminate against any employee or applicant for employment because of race, religion, color, sex, or national origin. The Contractor shall take affirmative action to insure that applicants are employed, and that employees are treated during employment without regard to their race, religion, color, sex, or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the policies of non-discrimination.
2. The Contractor and the Contractor’s Subcontractors shall, in all solicitations or advertisements for employees placed by them or on their behalf, state that all qualified applicants will receive consideration for employment without regard to race, religion, color, sex, or national origin.”

6.10 Taxes

To Paragraph 6.10.A, add “The Contractor shall not be paid or reimbursed for any state, consumer, use, service, ad valorem or other tax paid by the Contractor related to the performance of the Work. The Town of Columbia is exempt from payment of taxes. Therefore, the Contractor should obtain from the Owner’s Department of Finance tax exempt certificates for each of the Contractor’s vendors and suppliers in order to avoid the imposition of any of the aforesaid taxes. In any event, the Owner will not pay or reimburse the Contractor for any taxes that the Contractor may pay in the performance of the Work.”

6.11.A.1 Use of Site and Other Areas

A.1 “The exact limit of Work and equipment storage shall be verified and agreed to by Owner and Contractor in the field.”

6.12 Record Documents

To Paragraph 6.12.A, add “In the event that either party to this Agreement terminates the Agreement, the Contract Documents and Project files that were maintained in paper and electronic formats shall be the property of and reside with the Owner.”

6.19 Contractor’s General Warranty and Guaranty

To Paragraph 6.19.A, after the word “guarantee” in line 5, add “The Contractor warrants to the Owner and Engineer that materials and equipment furnished under the Contract will be of good quality and new unless otherwise required or permitted by the Contract Documents, that the Work will be free from defects not inherent in the quality required or permitted, and that the Work will conform to the requirements of the Contract Documents. Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective. If required by the Owner or Engineer, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment. The Contractor further warrants and represents that:

1. The Contractor is financially solvent, able to pay all debts as they mature and possessed of sufficient working capital to complete the work and perform all obligations under the Contract Documents;
2. the Contractor is able to furnish the tools, materials, supplies, equipment and labor required to complete the work and perform all obligations under the Contract Documents, and has sufficient experience and competence to do so;

3. the Contractor is authorized to do business in the state where the Project is located and is properly licensed by all necessary governmental, public and other authorities having jurisdiction over the Contractor and the Project;
4. the persons executing the Contract Documents are authorized to do so;
5. the Contractor has visited the site of the Project and become familiar with the Contract Documents and the conditions of the site, and knows of no reason why the work cannot be performed as set forth in the Contract Documents;
6. The Contractor shall warrant all Work for a period of one (1) year after Final Completion; and
7. The Contractor shall assign any extended warranties (in excess of the Contractor's one (1) year warranty) on equipment and materials furnished as part of the Work to the Owner."

6.20 Indemnification

To Paragraph 6.20.A, after the word "performance" in line 10, add "or non-performance".

6.22 Prevailing Wage Rate Requirements

- A. "Town of Columbia construction contracts are subject to Connecticut's prevailing wage law as codified in Connecticut General Statutes Section 31-53 and 31-53a. The Contractor shall be required to comply with all requirements of Connecticut's prevailing wage laws if the project value exceeds the monetary thresholds which are described in Connecticut General Statutes Section 31-53(g)."
- B. Upon the award of the Contract, the Contractor shall certify, under oath, to the Labor Commissioner the pay scale to be used by the Contractor and any of its Subcontractors for the work to be performed under the Contract. Additionally, the Contractor and any of its Subcontractors must file certified payrolls with the Owner containing information, including but not limited to, employee names; occupations; hours worked; rates paid; and the employers compliance with various provisions of law.
- C. The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Contract. The Contractor shall not permit employment of unfit persons or persons not skilled in tasks assigned to them in either its own organization, or in any of its subcontractor's respective organizations. All work required to be done by persons licensed under all applicable governmental requirements and codes

shall be performed by such licensed persons. Contractor agrees to maintain a harmonious job site and to use laborers, suppliers and subcontractors that will not cause any labor disruptions or disharmony in connection with the performance of the Work or any other work being performed at the Project. Contractor agrees to address any labor disputes or disruptions promptly.”

ARTICLE 7 REVISION:

7.01 Related Work at Site

To Paragraph 7.01.C, after the word “Engineer” in line 4, add “and Owner.”

ARTICLE 8 REVISION:

8.11 Evidence of Financial Arrangements

Delete Paragraph 8.11.A in its entirety.

ARTICLE 9 REVISION:

9.04 Authorized variations in Work

To Paragraph 9.04.A, after the word “Engineer,” in line 1, add the words “after having received approval from the Owner,”.

9.08 Decisions on Requirements of Contract Documents and Acceptability of Work

Delete Paragraph 9.08.A in its entirety.

9.09 Limitations on Engineer’s Authority and Responsibility

Add the following:

“F. Except as otherwise provided in the Contract Documents or when direct communications have been specially authorized, the Owner and Contractor shall endeavor to communicate with each other through the Owner’s designated representative about matters arising out of or relating to the Contract. Communications by and with the Engineer’s consultants shall be through the Engineer. Communications by and with Subcontractors and material suppliers shall be through the Contractor. Communications by and with separate contractors shall be through the Owner’s designated representative.”

ARTICLE 10 REVISIONS:

10.05 Claims

Delete Paragraph 10.05.E in its entirety.

ARTICLE 11 REVISIONS:

Add the following:

11.04 Equipment Rental Rates Not Otherwise Covered

With regard to rental rates applicable to work not covered by either Lump Sum pay items or Unit Adjustments, for any power-operated machinery, trucks or equipment, necessary to use, the Engineer will allow the Contractor the rental rate set forth in the most current edition of the "Rental Rate Blue Book," including all Rate Adjustment Tables and amendments, as published by Dataquest, Inc. of San Jose, California in effect at the time the work is performed for Contractor-owned equipment or at a lower rate, if submitted by the Contractor.

- A. Should the proper completion of the work require equipment of a type not covered by the above-mentioned schedule, the Engineer will allow Contractor a reasonable rental rate which shall be based on that prevailing in the area of the work and shall be agreed upon in writing before the work is begun. However, the Contractor shall show the sources for the rates he has proposed.
- B. For power-operated machinery, truck or equipment, which the Contractor must obtain by rental, he shall inform the Engineer of his need to rent the equipment prior to using it on the work. He shall be paid the actual rental for the equipment, provided that rate does not exceed the rental rate set forth in the "Rental Rate Blue Book", including all Rate Adjustment Tables and amendments as published by Dataquest, Inc. The Contractor shall provide a copy of the paid receipt for the rental expense incurred.
- C. The estimated operating cost per hour will apply only to the actual time the equipment is operating. Operators will be paid as stated hereinbefore for labor except for certain trucks listed in the "Rental Rate Blue Book" as published by Dataquest, Inc. which show the operators to be included.
- D. For rented equipment not owned by the Contractor or a subsidiary of the Contractor, the following rates shall apply:
 - 1. The daily rate per hour shall apply when the equipment is specifically assigned to the work by the Engineer for a period of 7 consecutive calendar days or less.
 - 2. The weekly rate per hour shall apply when the assigned time exceeds 7 consecutive calendar days but does not exceed 21 calendar days.
 - 3. The monthly rate per hour shall apply when the assigned time exceeds 21 consecutive calendar days.
- E. For Contractor-owned equipment or equipment rented or obtained from a subsidiary of the Contractor, the maximum hourly rate to be used shall be the monthly rate as set forth in the current edition of the "Rental Rate Blue Book",

including Rate Adjustment Tables and amendments as published by Dataquest, Inc., divided by 176 (176 working hours per month).

ARTICLE 12 REVISIONS:

12.03 Delays

To Paragraph 12.03.B, after the words “equitable adjustment in” in line 6, delete the words “Contract Price or the”, and after the words “Contract Times, delete the words “, or both”. Add “Such an adjustment to the Contract Time shall be the Contractor’s sole and exclusive remedy for the delays discussed in this paragraph 12.03.”

To Paragraph 12.03.C, after the words “Contract Times” in line 9, add the words “and only to the extent that the critical path to the Project Schedule is extended.”

ARTICLE 13 REVISIONS:

13.03 Delays

Delete section 13.03.B, and replace with the following new section 13.03.B:

“All materials and equipment used in the construction of the project shall be subject to adequate inspection and testing in accordance with accepted standards. The laboratory or inspection agency shall be retained by the contractor as part of his obligation. The owner reserves the right to approve/disapprove the firm(s) selected to perform any and all tests/inspections and to be given a copy of any reports thus generated.

Materials of construction, particularly those upon which the strength and durability of the structure may depend, shall be subject to inspection and testing to establish conformance with specifications and suitability for uses intended.

Any authorized agent of the Municipality shall be permitted to inspect the project in general or any of its phases. “

13.07 Correction Period

To Paragraph 13.07.A, after the words “the date of” in line 1, delete the words “Substantial Completion”, and replace with the words “Final Completion.”

ARTICLE 14 REVISIONS:

14.01 Schedule of Values

To Paragraph 14.01.A, after the words “acceptable to Engineer” in line 4, add the words “and Owner.”

14.02.C Payment Becomes Due

To Paragraph 14.02.C.1, add “In no event shall the Owner be obligated to pay the Contractor for more than the amount certified by the Engineer for each Application for Payment, plus any pending change orders that the Owner agreed to approve.”

14.07 Final Payment

Add Paragraph 14.07.D – Acceptance of Final Payment as Release

The acceptance by the contractor of final payment shall be and shall operate as a release to the owner of all claims and all liability to the contractor for all things done or furnished in connection with this work and for every act and neglect of the owner and others relating to or arising out of this work. No payment, final or otherwise, shall operate to release the contractor or his subcontractors or his surety from any obligation under this contract or the bonds affixed thereto.

Add the Following:

14.10 Withholding of Payments

The Owner may withhold payments necessary to pay laborers, mechanics, apprentices and trainees employed by the contractor or subcontractor on the work, the full amount of wages required by the contract. In the event of failure to pay any laborer, mechanic, apprentice or trainee employed or working on the site of the project or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project, all or part of the wages required by the contract, the Municipality may, after written notice to the contractor, sponsor, applicant or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

ARTICLE 15 REVISIONS:

Delete the word “persistent” from Article 15.0.2.A.1

15.03 Owner may Terminate for Convenience

To Paragraph 15.03.A.1, delete from line 3 the words “including fair and reasonable sums for overhead and profit on such Work.”

To Paragraph 15.03.A.2, delete from line 5 the words “plus fair and reasonable sums for overhead and profit on such expenses.”

To Paragraph 15.03.A.4, add “, but no overhead and profit on work not executed.”

Add the following:

- “C. In no event shall the Contractor or any Subcontractor employed on the Project be entitled to profit, overhead, or damages on work that was not performed as of the date of termination, regardless of the reasons for termination.”
- “D. Upon receipt of written notice from the Owner of such termination for the Owner’s convenience, the Contractor shall:
1. cease operations as directed by the Owner in the notice;
 2. take actions necessary, or that the Owner may direct, for the protection and preservation of the Work;
 3. except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders; and
 4. provide a detailed inventory to the Owner that indicates the value, nature, and description of all material, labor, and equipment supplied as of the date of termination.”

ARTICLE 16 REVISIONS:

Delete Paragraph 16.01.A, and replace with the following new Paragraph 16.01.A.:

“Owner, in its sole discretion, may request mediation of any Claim submitted to Engineer for a decision under Paragraph 10.05. The mediation will be governed by the Construction Industry Mediation Rules of the American Dispute Resolution Center, New Britain, Connecticut, currently in effect.”

Delete Paragraph 16.01.C, and replace with the following new Paragraph 16.01.C:

“Any Claim arising out of or related to the Contract, except Claims relating to aesthetic effect and except those waived in the Contract Documents, shall, at the sole discretion of the Owner, be subject to arbitration. If the Owner chooses to Arbitrate the Claims, the arbitration shall be in accordance with the Construction Industry Arbitration Rules of the American Dispute Resolution Center, New Britain, Connecticut, currently in effect. The demand for arbitration shall be filed in writing with the other party to the Contract and with the American Dispute Resolution Center, and a copy shall be filed with the Engineer.”

ARTICLE 17 REVISIONS:

Add the following:

17.07 Time for Completion and Liquidated Damages:

- A. It is hereby understood and mutually agreed, by and between Contractor and Owner, that the date of beginning and the time for completion as specified in the Agreement of the work to be done hereunder are essential conditions of this Contract; and it is further mutually understood and agreed that the Work embraced in this Agreement shall be commenced on a date to be specified in the Notice to Proceed.
- B. Contractor agrees that said Work shall be prosecuted regularly, diligently and uninterruptedly at such rate of progress as will insure full completion thereof within the time specified. It is expressly understood and agreed, by and between Contractor and Owner, that the time for the completion of the Work described herein is a reasonable time for the completion of the same, taking into consideration the average climatic range and conditions in this locality.
- C. If said Contractor shall neglect, fail or refuse to complete the Work within the time herein specified, or any proper extension thereof granted by Owner, then the Contractor does hereby agree to pay to Owner the amount specified in the Agreement, not as a penalty but as Liquidated Damages for such breach of Agreement, for each and every calendar day that Contractor shall be in default after the time stipulated in the Agreement for completing the Work.
- D. The said amount is fixed and agreed upon by and between Contractor and Owner because of the impracticality and extreme difficulty of fixing and ascertaining the actual damages Owner would in event sustain, and said amount shall be retained from time to time by the Owner from current periodical estimates.
- E. It is further agreed that time is of the essence of each and every portion of this contract and of the specification wherein a definite and certain length of time is fixed for the performance of any act whatsoever; and where under the contract an additional time is allowed for the completion of any of the work, the new time limit fixed by such extension shall be of the essence of this contract, provided that the contractor shall not be charged with liquidated damages or any excess cost when the owner determines that the contractor is without fault and the contractor's reasons for the time extension are acceptable to the owner, provided further that the contractor shall not be charged with liquidated damages or any excess cost when the delay of completion of the work is due:
 - 1. to any preference, priority or allocation order duly issued by the government;

2. to unforeseeable cause beyond the control and without the fault or negligence of the contractor, including but not restricted to, acts of the owner, acts of another contractor in the performance of a contract with the owner, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and severe weather; and/or
3. to any delays of subcontractors or suppliers occasioned by any of the causes specified in the preceding two paragraphs, provided further that the contractor shall, within ten (10) days from the beginning of such delay, unless the owner shall grant a further period of time prior to the date of final settlement of the contract, notify the owner, in writing, of the cause of delay, who shall ascertain the facts and extent of the delay and notify the contractor within a reasonable time of its decision in the matter.

17.08 REQUIRED PROVISIONS DEEMED INSERTED:

Each and every provision of law required to be inserted in this contract shall be deemed to be inserted herein and the contract shall be read and enforced as though it were included herein. If through mistake or otherwise any provision is not inserted, or is inserted incorrectly then upon the application of either party the contract shall be amended to make such insertion or correction.

17.09 EMPLOYMENT OF CERTAIN PERSONS PROHIBITED:

No person under the age of sixteen and no person who at the present time is serving sentence in a penal or correctional institute shall be employed on the work covered by this contract.

17.10 OTHER PROHIBITED INTERESTS:

No official of the owner who is authorized solely or jointly to negotiate, make, accept, or approve any architectural, engineering, inspection, construction or material supply contract or any subcontract in connection with the construction of the project, shall become directly or indirectly interested personally in this contract or in any part hereof. No officer, employee, architect, attorney, engineer or inspector of or for the owner who is authorized in a capacity to exercise any legislative, executive, supervisory or other similar functions in connection with the construction of the project, shall become directly or indirectly interested personally in this contract or any part thereof.

17.11 NO CONFLICT

No member or Delegate to Congress of the United States, and no Resident Commissioner, shall be admitted to any share or part of this contract or to any benefit to arise from the same.

17.12 SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION:

In order to protect the life and health of his employees under the contract, the contractor shall comply with all pertinent provision of the Contract Work Hours and Safety Act commonly known as the Construction Safety Act as pertains to health and safety standards; and shall maintain an accurate record of all cases of death, occupational disease, and injury requiring medical attention or causing loss of time from work, arising out of and in the course of employment on work under this contract.

The contractor alone shall be responsible for the safety, efficiency, and adequacy of his plant, appliances, and methods, and for any damage which may result from their failure or their improper construction, maintenance, or operation.

17.13 PROJECT MANAGER'S AUTHORITY:

The project manager shall give all orders and directions contemplated under this contract and specifications relative to the execution of the work. The project manager shall determine the amount, quality, acceptability and fitness of the several kinds of work and materials which are to be paid for under this contract and shall decide all questions which may arise in relation to the work. The project manager's estimates and decisions shall be final and conclusive, except as otherwise provided. In case any question shall arise between the parties hereto relative to the contract or specifications, the determination or decision of the project manager shall be a condition precedent to the right of the contractor to receive any money or payment for work under this contract affected in any manner or to any extent by such question.

The project manager shall decide the meaning and intent of any portion of the specifications and of any plan or drawing where the same may be found obscure or be in dispute. Any differences or conflicts in regard to their work which may arise between the contractor and any other contractors performing work for the owner shall be adjusted and determined by the project manager.

17.14 NOTICE AND SERVICE THEREOF:

Any notice from the owner to any contractor regarding any part of this contract shall be in writing and considered delivered and the service thereof completed when the

notice is posted by certified or registered mail to the contractor at his last given address, or delivered in person to the contractor or his authorized representative on the work site.

17.15 ADDITIONAL INSTRUCTIONS AND DETAIL DRAWINGS:

The contractor may be furnished additional instructions and detail drawings as necessary to carry out the work included in the contract.

The additional drawings and instructions thus supplied to the contractor will coordinate with the contract documents. The contractor shall carry out the work in accordance with the additional detail drawings and instructions. The contractor and the project manager will prepare jointly (a) a schedule, fixing the dates at which specific detail drawings will be required, such drawings, if any, to be furnished by the project manager in accordance with said schedule and (b) a schedule fixing the respective dates for the submission of shop drawings, the beginning of manufacturer's testing, installation of materials, supplies and equipment, and the completion of the various parts of the work; each such schedule is subject to change in accordance with actual work progress.

17.16 CONTRACTOR'S TITLE TO MATERIAL:

No materials or supplies for the work shall be purchased by the contractor or by any subcontractor subject to any chattel mortgage or under a conditional sale contract or other agreement by which an interest is retained by the seller. The contractor warrants that he has good title to all materials and supplies used in the work, free from all liens, claims or encumbrances.

17.17 PREVAILING WAGE RATES:

Prevailing wage rates will be applicable for bids per the requirements of C.G.S. 31-53g. It is the contractor's responsibility to obtain the annual prevailing wage rate increases directly from the State Department of Labor website. The owner will not allow additional costs for Labor rate increase during the course of the project.

17.18 SUBCONTRACTING:

The contractor may utilize the services of specialty subcontractors on those parts of the work which, under normal contracting practices, are performed by specialty subcontractors.

The contractor shall not award any work to any subcontractor without the approval of the owner. Approval will not be given until the contractor submits to the owner a

written statement including appropriate certifications concerning the proposed award to the subcontractor, which statement will contain such information as the owner may require.

The contractor shall be as fully responsible to the owner for the acts and omissions of his subcontractors, and of persons either directly or indirectly employed by them, as he is for the acts and omissions of persons employed directly by him.

The contractor shall cause appropriate provisions to be inserted in all subcontracts relative to the work to bind subcontractors to the contractor by the terms of the general conditions and other contract documents insofar as applicable to the work of subcontractors and to give the contractor the same power as regards terminating any subcontract that the owner may exercise over the contractor under any provision of the contract documents.

Nothing contained in this contract shall create any contractual relation between any subcontractor and the owner.

The contractor shall insert these same general and supplemental conditions in any subcontract he awards.

17.19 MUTUAL RESPONSIBILITY OF CONTRACTORS:

If through acts of neglect on the part of the contractor, any other contractor or subcontractor shall suffer loss or damage on work, the contractor agrees to settle with such other contractor or subcontractor by agreement or arbitration if the other contractor or subcontractor shall assert any claim against the owner on account of any damage alleged to have been sustained, the owner shall notify the contractor, who shall indemnify and save harmless the owner against any such claim.

17.20 WEATHER CONDITIONS:

In the event of temporary suspension of work, or during inclement weather, or whenever the project manager shall direct, the contractor will, and will cause his subcontractors to, carefully protect his and their work and materials against damage or injury from the weather. If, in the opinion of the project manager, any work or materials shall have been damaged or injured by reason of failure on the part of the contractor or any of his subcontractors to so protect his work, such materials shall be removed and replaced at the expense of the contractor.

17.21 PROTECTION OF WORK AND PROPERTY - EMERGENCY:

The contractor shall, at all times, protect the owner's property from injury or loss in connection with this contract. He shall, at all times, safely guard and protect his own

work, and that of adjacent property, from damage. The contractor shall replace or make good any such damage, loss or injury unless it was caused directly by errors contained in the contract or by the owner, or the owner's duly authorized representative.

In case of an emergency which threatens loss or injury of property and/or safety of life, the contractor will be allowed to act, without previous instructions from the project manager immediately thereafter. Any claim for compensation by the contractor due to such extra work shall be promptly submitted to the project manager for approval.

Where the contractor has not taken action but has notified the project manager of an emergency threatening injury to persons or damage to the work or any adjoining property, he shall act as instructed or authorized by the project manager.

The amount of reimbursement paid to the contractor on account of any emergency action shall be determined by the project manager and owner based on their review of submitted documentation of actual costs incurred by the contractor.

17.22 EXTRAS:

Without invalidating the contract, the project manager may order extra work of the kind bid upon or make changes by altering, adding to or deducting from the work. The contract sum will be adjusted accordingly, and the consent of the surety will be obtained as required. All of the work of the kind bid upon shall be paid for at the prices stipulated in the proposal, and no claims for any extra work or materials shall be allowed unless the work is ordered in writing by the project manager and the cost therefore is stated in the order.

17.23 ANTI-LOBBYING:

- A. No Federal appropriated funds have been paid or will be paid, by or on behalf of it, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement;
- B. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this

Federal contract, grant, loan, or cooperative agreement, it will complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions; and

- C. It will require that the language of paragraph (n) of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

17.24 QUANTITIES OF ESTIMATE:

Wherever the quantities of work to be done and materials to be furnished on a unit basis under this contract are shown in any of the documents including the proposal, they are given for use in comparing bids. The owner reserves the right to increase or decrease the units as may be deemed reasonably necessary or desirable to complete the work in this contract. Any such increase/decrease shall in no way invalidate this contract, nor shall any such increase/decrease give cause for claims or liability for damages.

17.25 ASSIGNMENTS:

The contractor shall not assign the whole or any part of this contract or any monies due or to become due hereunder without the express, written consent of the owner. In case the contractor assigns all or any part of any monies due or to become due under this contract, the instruments of assignment shall contain a clause substantially to the effect that it is agreed that the right of the assignee in and to any monies due or to become due to the contractor shall be subject to prior claims of all persons, firms and corporations for services rendered or materials supplied for the performance of the work called for in this contract.

17.26 GENERAL GUARANTY:

Neither the final payment nor partial or entire occupancy of the premises constitute an acceptance of any work not done in accordance with the contract documents; nor does either condition relieve the contractor of liability in respect to any express warranties or responsibility for faulty materials or workmanship. The contractor shall remedy any defects in the work and pay for any damage to other work resulting therefrom, which shall appear within a period of one year from the date of final acceptance of the work unless a longer period is specified. The owner will give notice of observed defects with reasonable promptness.

17.27 OSHA

Any contract awarded on or after July 1, 2009 requires any mechanic, laborer, or worker who performs work in a classification listed on the prevailing wage rate schedule on any public works project is required to complete a ten (10) hour federal OSHA safety and health course and provide proof of completion.

17.28 EQUAL EMPLOYMENT OPPORTUNITY:

- A. The Contractor agrees and warrants that in the performance of the contract such contractor will not discriminate or permit discrimination against any person or group of persons on the grounds of race, color, religious creed, age, marital status, national origin, ancestry, sex, mental retardation or physical disability, including, but not limited to, blindness, unless it is shown by such contractor that such disability prevents performance of the work involved, in any manner prohibited by the laws of the United States or of the State of Connecticut. The contractor further agrees to take affirmative action to insure that applicants with job related qualifications are employed and that employees are treated when employed with out regard to their race, color, religious creed, age, marital status, national origin, ancestry, sex, mental retardation, or physical disability, including, but not limited to, blindness, unless it is shown by such contractor that such disability prevents performance of the work involved;
- B. The contractor agrees, in all solicitations or advertisements for employees placed by or on behalf of the contractor, to state that it is an "affirmative action-equal opportunity employer" in accordance with regulations adopted by the commission;
- C. The contractor agrees to provide each labor union or representative of workers with such contractor has a collective bargaining agreement or other contract or understanding and each vendor with which such contractor has a contract or understanding, a notice to be provided by the commission advising the labor union or workers' representative of the contractor's commitments under this section, and to post copies of the notice in conspicuous places available to employees and applicants for employment;
- D. The contractor agrees to comply with each provision of Conn. Gen. Stat. §§ 4a-60, 46a-68e and 46a-68f and with each regulation or relevant order issued by said commission pursuant to Conn. Gen. Stat. §§ 46a-56, as amended by Section 5 of Public Act 89-253, 46a-68e;
- E. The contractor agrees to provide the Commission on Human Rights and Opportunities with such information requested by the Commission, and permit access to pertinent books, records and accounts, concerning the employment

practices and procedures of the contractor as relate to the provisions of this section and section 46a-56. If the contract is a public work contract, the contractor agrees and warrants that he will make good faith efforts to employ minority and women business enterprises as subcontractors and suppliers of materials on such public works project.

Pursuant to the provisions of Conn. Stat. Sect. 4a-60a.

- A. The contractor agrees and warrants that in the performance of the contract such contractor will not discriminate or permit discrimination against any person or group of persons on the grounds of sexual orientations, in any manner prohibited by the laws of the United States or of the State of Connecticut, and that employees are treated when employed without regard to their sexual orientation;
- B. The contractor agrees to provide each labor union or representative of workers with which such contractor has a collective bargaining agreement or other contract or understanding and each vendor with which such contractor has a contract or understanding, a notice to be provided by the Commission on Human Rights and Opportunities advising the labor union or workers' representative of the contractor's commitments under this section, and to post copies of the notice in conspicuous places available to employees and applicants for employment;
- C. The contractor agrees to comply with each provision of this section and sections 46a-68e and 46a-68f of the general statutes and with each regulation or relevant order issued by said Commission pursuant to section 46a-56, 46a-68e and 46a-68f of the general statutes;
- D. The contractor agrees to provide the Commission on Human Rights and Opportunities with such information requested by the commission, and permit access to pertinent books, records and accounts, concerning the employment practices and procedures of the contractor as relate to the provisions of this section and section 46a-56 of the general statutes.

Executive Order 11246.30 Federal Regulations 12319 (1965) Equal Opportunity Clause.

“During the performance of this contract, the contractor agrees as follows:

- A. The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. Such action

shall include, but not be limited to, the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertisement; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, and to make available to employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of this nondiscrimination clause.

- B. The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.
- C. The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided by the Contract Compliance Officer advising the said labor union or workers' representatives of the contractor's commitment under this section and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
- D. The contractor will comply with all provisions of (Federal) Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the (United States) Secretary of Labor.
- E. The contractor will furnish all information and reports required by (Federal) Executive Order 11246 of September 24, 1965, and by the rules and regulations, and orders of the (United States) Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by HUD, by the State Department of Housing and by the (United States) Secretary of Labor, for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
- F. In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any such rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further (United States) Government contracts or federally assisted construction contracts procedures authorized in (Federal) Executive Order 11246 of September 24, 1965, or order of the (United States) Secretary of Labor, or as otherwise provided by law.
- G. The contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (7)

in every subcontract or purchase order unless exempted by rules, regulations, or orders of the (United States) Secretary of Labor issued pursuant to Section 204 of (Federal) Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as HUD shall direct as a means of enforcing such provisions, including sanctions for noncompliance: provided, however, that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by HUD, the contractor may request the United States to enter into such litigation to protect the interest of the United States”

Exemptions from above Equal Employment Opportunity Clause (4)(CFR Chap. 60):

- A. Contracts and subcontracts of \$10,000 or less (other than Government bills of lading) are exempt. The amount of the contract, rather than the amount of the Federal financial assistance shall govern in determining the applicability of this exemption.
- B. Except in the case of subcontracts for the performance of construction work at the site of construction, the clause shall not be required to be inserted in subcontracts below the second tier.
- C. Contracts and subcontracts of \$100,000 or less for standard commercial supplies or raw materials are exempt.

The contractor shall not be nor enter into any subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.

The contractor shall carry out sanctions and penalties for violation of these specifications and the Equal Employment Clause, including suspension, termination and cancellation of existing subcontracts, as imposed or ordered by the Office of Federal Contract Compliance in accordance with Executive Order 11246. Any contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.

The contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in the sub-paragraphs above, so as to achieve maximum results from its employees to ensure equal employment opportunity. If the contractor fails to comply with the requirements of the

Executive Order, the implementing regulations or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.

The contractor shall designate a responsible official to monitor all employment-related activity in order to ensure that the company EEO policy is being carried out. The designated official must keep records and submit reports relating to the provisions hereof as required by the Municipality. Records shall include for each employee the name, address, telephone numbers, construction trade union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g. mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.

Nothing herein shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application or requirements for the hiring of local or other area residents (e.g. those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

Executive Order Number 3.

This contract is subject to the provisions of Executive Order No. 3 of Governor Thomas J. Meskill promulgated June 16, 1971, and, as such, this contract may be canceled, terminated, or suspended by the State Labor Commissioner for violation of or noncompliance with said Executive Order No. Three, or any State or Federal law concerning nondiscrimination, notwithstanding that the Labor Commissioner is not a party to this contract. The parties to this contract, as part of the consideration hereof, agree that said Executive Order No. Three is incorporated herein by reference and made a part hereof. The parties agree to abide by said Executive Order and agree that the State Labor Commissioner shall have continuing jurisdiction in respect to contract performance in regard to nondiscrimination, until the contract is completed or terminated prior to completion.

Executive Order Number 17.

This contract is subject to the provision of Executive Order No. 17 of Governor Thomas J. Meskill, promulgated February 15, 1973, and, as such, this contract may be canceled, terminated, or suspended by the State Labor Commissioner for violation of or noncompliance with said Executive Order No. Seventeen,

notwithstanding that the Labor Commissioner may not be a party to this contract. The parties to this contract, as part of the consideration hereof, agree that Executive Order No. Seventeen is incorporated herein by reference and made a part hereof. The parties agree to abide by said Executive Order and agree that the State Labor Commissioner shall have continuing jurisdiction in respect to listing all employment openings with the Connecticut State Employment Service.

Certification of Nonsegregated Facilities as required by 41CFR 60-1.8, must be submitted prior to the award of federally assisted construction contracts exceeding \$10,000 which are not exempt from the provisions of the Equal Employment Clause.

Contractors receiving federally assisted construction contract awards exceeding \$10,000 which are not exempt from the provisions of the Equal Employment Clause shall be required to provide for the forwarding of the following notice to prospective subcontractors for supplies and construction contracts where the subcontracts exceed \$10,000 and are not exempt from the provisions of the Equal Employment Clause:

- A. A certification of non-segregated facilities as required by the 32CFR 7439, May 19, 1967, must be submitted prior to the award of a subcontract exceeding \$10,000 which is not exempt from the provisions of the Equal Employment Opportunity Clause.
- B. Contractors receiving subcontract awards exceeding \$10,000 which are not exempt from the provisions of the Equal Employment Opportunity Clause shall be required to provide for the forwarding of this notice to prospective subcontractors for supplies and construction contracts where the subcontracts exceed \$10,000 and are not exempt from the provisions of the Equal Employment Opportunity Clause.

TAB F

Special Provisions

SPECIAL PROVISIONS

DESCRIPTION:

These Special Provisions amend or supplement the Division II Construction Details (Technical Provisions) and Division III Materials Section in the State of Connecticut Department of Transportation (CTDOT) Standard Specifications for Roads, Bridges, Facilities and Incidental Construction, Form 818, dated 2020 (and latest supplements) which are incorporated herein and are referred to herein after at "Form 818". Only the Form 818 Division II Construction Details and Division III Materials Section are incorporated herein.

Copies of Form 818 are available electronically at:

<http://www.ct.gov/dot/cwp/view.asp?a=3609&q=430362>.

GENERAL INFORMATION:

The Owner is the Town of Columbia. The Engineer is Barton & Loguidice, LLC (B&L). The project site is located on Hunt Road, Columbia, Connecticut. This project consists of replacement of an existing concrete culvert with a new precast concrete box culvert and wingwalls. Also included is roadway reconstruction, guide rail installation with associated turf reestablishment and traffic control described on the Contract Plans and Special Provisions.

Special Provision amendments or supplements that apply throughout Form 818 Division Details (Technical Provisions) are outlined below:

- Replace the word "State" and the word "Department, wherever they appear, with the word "Town" throughout Form 818. Unless otherwise determined by the town, all references to the State and the Department of Transportation, including its officers and employees and its sub-agencies such as the Office of Environmental Planning, shall be considered as references to the town.
- Method of Measurement: Work for these items will not be measured separately for payment unless additions, deletions or modifications to the Work are ordered by the Town of Columbia through a formally issued Change Order.
- Basis for Payment: Work items for this project will not be paid for separately unless additions, deletions or modifications to the Work are ordered by the Town of Columbia through a formally issued Change Order. Progress payments will be made against the Unit Prices provided for items contained in the Bid Form for the entire project, using an approved Schedule of Values.

CONTRACT SUPERVISION:

The Contractor shall have a supervisor onsite at all times when work is being performed throughout the entire course of this Contract. This person shall be the responsible individual in charge onsite whom the Engineer shall coordinate all onsite activities (ie. inspections, etc.). The Contractor shall identify this person at the pre-construction meeting and provide contact information (including emergency contact information ie. outside of onsite work hours).

SCHEDULE:

The contract time for this project is **142** consecutive calendar days, starting on the Notice to Proceed date, not including winter shutdown days, and allows time in April 2024 for final completion (road paving, guide railing and topsoil and seeding). The intended project schedule is as follows:

Proposals Due:	July 20, 2023
Notice of Award:	July 31, 2023
Contract Signing:	August 7, 2023
Notice to Proceed:	August 7, 2023
Anticipated Road Closure	October 2, 2023
End Bypass Pumping/Box Culvert Backfilled	November 30, 2023
Project Completion	April 26, 2024

LIQUIDATED DAMAGES:

The Contractor is hereby notified that liquidated damages in the amount of seven hundred fifty dollars (\$750.00) per consecutive calendar day apply to this project in order to help ensure a timely completion.

LICENSES:

The Contractor and its subcontractors performing the work shall hold a relevant license issued by the State of Connecticut. All work under this Contract shall be subject to the rules and ordinances of the State of Connecticut, and the Town of Columbia.

PERMITS:

The Contractor is responsible for obtaining all necessary permits, including all associated costs, required for this Contract work.

CALL-BEFORE-YOU-DIG (CBYD):

The Contractor is hereby notified that he shall contact Call-Before-You-Dig (CBYD) 1-800-922-4455 www.cbyd.com and obtain authorization prior to start of work as required by law.

CONSTRUCTION FIELD OFFICE:

If Contractor elects to provide a field office, then Contractor shall keep a complete current set of plans and specifications, with past revisions if applicable, and approved shop drawings within the construction field office at all times. There shall be no separate measure and payment for construction field office.

PORTABLE CHEMICAL TOILET FACILITY:

The Contractor is hereby notified that the Contractor shall provide adequate number of portable chemical toilets per OSHA for the Contractor's use to support this project. There shall be no separate measurement and payment for chemical portable toilet facilities.

CONSTRUCTION STAKING & LAYOUT:

The Contractor shall be responsible for all construction stakeout. Control shall be provided by Barton & Loguidice, LLC.

MATERIALS & INSTALLATIONS:

The Contractor shall furnish and install all materials necessary to complete this project unless specifically otherwise noted. The Contractor shall furnish all materials to meet or exceed those specified. The Contractor shall install all materials in accordance with both the material manufacturer's recommendations, accepted industry standard practices and the contract specifications.

INSPECTION:

The Contractor is hereby notified that the Town's agent, Barton & Loguidice, LLC, shall perform construction inspection to support this project.

TESTING:

The Contractor is hereby notified that the Town's agent, Barton & Loguidice, LLC shall perform all in place soils and bituminous concrete density tests as deemed necessary to ensure proper compaction.

FINAL CLEANING:

The Contractor shall be responsible for disposing of all construction and demolition waste materials that are generated by this project in accordance with all local, state, and federal regulations. The Contractor shall perform an overall final cleaning of the entire Contract work prior to and in preparation for the Owner's final inspection. Following the Owner's final inspection and acceptance of the entire Contract work, the Contractor shall remove all tools and equipment from Owner's property. There shall be no separate measurement and payment for final cleaning.

WARRANTY & GUARANTEE:

The Contractor shall warranty and guarantee all work under this Contract for a minimum period of one year from the date of final payment. The Contractor performing the work shall secure warranties and guaranties from its subcontractors for their parts of the work under this Contract.

CONSTRUCTION SEQUENCE:

The Contractor is hereby notified that they shall submit a construction schedule to the Owner for approval prior to the start of construction.

SUBMITTALS:

The Contractor shall submit one (1) copy of each material certification/product data sheet required to the Town or its agent for approval, prior to construction. Submittals shall be digital only. The Town or its agent will endeavor to respond with their approval and/or review comments within a (2) week period of their receipt of said submittals. The Contractor shall make submittals that are specifically described within the individual technical specifications.

LIST OF SPECIAL PROVISIONS

NOTICE TO CONTRACTOR – PROSECUTION AND PROGRESS

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NOTICE TO CONTRACTOR - PROSECUTION AND PROGRESS

Prosecution of Work:

The Contractor shall schedule performance of work adjacent to the waterway during times of low water (July/August) if required by local, state or federal regulatory agency permit approval(s).

Prior to construction, particularly as will affect traffic operations, the Contractor shall submit, for the review and approval of the Engineer, a detailed Progress Schedule. It shall show all fundamental work items and operations as a function of estimated time periods. This submittal shall also include a listing of shop drawings (if applicable) and other required submittals keyed to the Progress Schedule activities. It shall reflect realistic processing, delivery and construction periods.

The Progress Schedule shall provide ample space for plotting of actual related progress. It shall be updated by the Contractor on a biweekly basis throughout the full period of the project.

Limitation of Operations:

Hunt Road at the project site shall be closed to vehicular and pedestrian traffic for the active construction of the contract. The Contractor shall schedule his construction operations so as to cause minimal inconvenience to adjoining property owners. The Contractor shall meet with the owner(s) or his/her agent and discuss their access requirements. The Contractor shall provide temporary access to all properties whose access is disturbed by his construction operations.

In order to provide for traffic operations as outlined in the special provisions "Maintenance and Protection of Traffic," the Contractor shall progress his construction activities as outlined herein or as shown on the plans for Maintenance and Protection of Traffic. Any revisions shall require the written approval of the Town.

The Contractor's allowable work hours at the site are limited to the following:

- Monday through Friday between 7:00 a.m. and 6:00 p.m.;
- Saturday – only with prior Town approval for certain activities;
- Sunday – no work allowed.

The Contractor will be permitted to interfere with normal or staged traffic operations only at the discretion of the Engineer.

All temporary concrete barriers, other protective systems and traffic control devices as called for by the contract or ordered by the Engineer must be on hand and available in sufficient

quantity for immediate installation prior to any stage change. Temporary concrete barrier may be salvaged, but must meet all applicable specifications for its item. All temporary concrete barriers, other protective systems and traffic control devices shall be maintained in a "like new" condition, otherwise they must be replaced.

When the installation of all the intermediate courses of Superpave pavement is completed for the entire roadway, the Contractor shall install the final course of Superpave pavement. Final pavement markings shall be installed on the final course of Superpave pavement in accordance with Article 9.71.03 as contained in the Special Provision "Maintenance and Protection of Traffic".

NOTICE TO CONTRACTOR – ARCHAEOLOGICAL STUDY

A portion of the project site at the northeast corner of the bridge contains features of an historical/cultural resource. The Town's consultant, Raber Associates, will be completing a written report of their investigation of the area for submission to the State Historic Preservation Office. During construction at the northeast corner of the bridge, prior to removal of the portion of the existing retaining wall, the Contractor will need to allow access for the Town's consultant. The consultant will complete a survey of the wall prior to removal for documentation. The Contractor will schedule his project work accordingly to allow this survey work to be completed. The duration of the documentation survey work is anticipated to be no longer than 2 days. The Contractor shall coordinate their project work accordingly and shall not make any claims for delay of work due to this required survey work by others.

TECHNICAL SPECIFICATION EXCAVATION AND REUSE OF EXISTING CHANNEL BOTTOM MATERIAL

Description:

Work under this item shall consist of excavating existing channel bottom material in areas where the channel bottom is to be re-graded or disturbed to create a work area for the culvert and cofferdam installation. This item shall also include stockpiling and protecting the excavated material on the project site, subsequent placement of the stockpiled material in the channel, removal and proper disposal off-site of all unused material.

Materials:

The material for this item shall consist of the existing naturally formed cobbles, gravel, soils and clean natural sediment from within the channel. Rock excavated from ledge (bedrock) formations, or broken from larger boulders, will not be accepted. Broken concrete will not be accepted.

When a sufficient quantity of material is not available from the existing streambed channel within the permitted footprint of the Site, the Contractor shall furnish visually inspected and accepted supplemental streambed channel material from an off-site source.

The supplemental streambed channel material for this item shall be consistent with the existing naturally-formed cobbles and rocks, gravel, and clean natural sediments found within the existing channel. Rock excavated from ledge (bedrock) formations, broken from larger boulders, broken concrete or angular material will not be accepted. Rock larger than 12 inches in diameter will not be accepted. Silts and clays will not be accepted.

The visual inspection of the supplemental streambed channel material shall be performed by the Engineer at the off-Site source prior to delivery of material to the Site. The Contractor shall notify the Engineer at least 10 days in advance of the need for inspection of proposed off-Site material.

Construction Methods:

The Contractor shall prepare an area, approved by the Engineer, suitable in size and location for storing the excavated channel bottom material, so that it will not be contaminated, mixed with other excavated material or erode. Select a location where disruption to the channel and wetland areas caused by moving the excavated material to and from the stockpile is minimized. Locate the stockpile where it can remain undisturbed for the duration of the culvert construction. Identify the temporary stockpile area(s) prior to the start of excavation for approval by the Engineer.

Prepare a clean surface for the stockpile adequate to prevent mixing with the underlying soil or other material. Provide adequate measures to contain the stockpiled material and protect it from erosion by rain or other forces. Store material excavated from the existing channel bottom separately from other excavated materials until it may be reused or disposed of, as directed by the Engineer. Do not add any other excavated or imported material to the stockpile of channel bottom material.

After clearing and grubbing, the Engineer will identify the limits of exposed channel bottom material to be excavated under this item. Only areas within the limits of channel to be re-graded or disturbed to create a work area for the culvert and cofferdam placement will be identified for excavation. As much material as possible, will be identified for this excavation. The Engineer will identify the bottom limit of the excavation based on the qualities of the material encountered. Do not in any case excavate below the depth otherwise required for culvert or bridge and cofferdams, including any unsuitable material excavation. Perform the excavation separately, prior to beginning any other roadway, structure, channel, or unsuitable material excavation in the area.

The Contractor shall perform all containment, diversion, or other separation of the channel flow from the excavation of channel bottom material in accordance with the requirements of "Handling Water".

Complete all stages of the culvert and cofferdam installation, including installation of riprap to the satisfaction of the Engineer, before placing any existing channel bottom material.

Place the channel bottom material to the thickness and in the locations shown on the plans, and as directed by the Engineer. Use equipment and placement techniques that will prevent integration with the surrounding material and keep the channel bottom material relatively homogeneous. Place the channel material in a manner that replicates the original condition of the channel, with a well-defined low flow channel connecting to the existing channel.

Place or dispose of any surplus or unsuitable material in accordance with Section 2.02. Restore the stockpile area as directed by the Engineer.

All material not identified for excavation in accordance with this specification shall be excavated, as required for other contract work, in accordance with Section 2.02.

Method of Measurement & Payment:

There shall be no separate measurement and payment for Excavation and Reuse of Existing Channel Bottom Material, as it shall be included under the Lump Sum Contract Work.

TECHNICAL SPECIFICATION HANDLING WATER

Description: This work shall consist of the construction of such cofferdams, flow diversion dams, barriers, bypass pumps, temporary storm pipes or other such protective facilities and methods as are necessary for the conduction of water beyond the limits of construction; the dewatering of the site on which work is to be constructed; and the removal of all such temporary structures and facilities upon the completion of the permanent work or as required. The handling of water shall be in accordance with the requirements of Form 818, Section 1.10 Environmental Compliance and the Town of Columbia Inland Wetlands and Watercourses Permit. For the purposes of this specification, such work shall be understood to mean any temporary type of protective facility which the Contractor elects to build or use to satisfy, and which does satisfy, the condition that the work be built in the dry. The handling of flood flows, the protection of any or all of the finished construction during high water, and maintaining the operation of the existing structure until it is abandoned are included in the scope of the work under this item.

Construction Methods: The Contractor shall investigate and verify existing stream conditions, and evaluate the need for, and the type of protection and facilities required. The suggested method of controlling water during construction consists of temporary by-pass pump(s) with piping and temporary flow diversion dams as shown on the plans. The Contractor shall submit his plans and methods for handling water for review and approval in accordance with the requirements of Section 1.10 of the Standard Specifications Form 818, Environmental Compliance. The furnishing of such plans and methods shall not serve to relieve the Contractor of any part of his responsibilities for the safety or the successful completion of this work. Approximate flows for temporary conditions will be supplied.

The minimum height of any cofferdams, flow diversion dams and barriers shall be in accordance with the information shown on the plans and sizes of pumps shall be as designed by the Contractor to provide reasonable protection from flooding. All such temporary structures or facilities shall be safely designed, extended to sufficient depth and be of such dimensions and water-tightness to assure construction of the permanent work in the dry. They shall not interfere with proper performance of the work. Their construction shall be such as to permit excavation for the permanent work to the limits shown on the plans. Interior dimensions shall give sufficient clearance for construction. Movements or failures of the temporary protection facilities, or any portions thereof, which prevent proper completion of the permanent work, shall be corrected at the sole expense of the Contractor.

Any pumped water must be discharged into containment areas and in accordance with the requirements of Section 1.10 of the Standard Specifications Form 818, Environmental Compliance. Unless otherwise provided, or directed, all such temporary protective work shall be removed and disposed of in an approved manner when no longer required.

The Contractor will be responsible for the scheduling of work so as not to interfere with any sequence of operations developed for this project. Delays as a result of work required under this item will not constitute a claim for an extension of contract time.

Method of Measurement & Payment: There shall be no separate measurement and payment for Handling Water, as it shall be included under the Lump Sum Contract Work.

**TECHNICAL SPECIFICATION
REMOVAL OF EXISTING CULVERT (SITE NO. 1)**

Work under this item shall conform to the requirements of Section 5.03 of the Standard Specifications (Form 818) amended as follows:

Description: Replace the first sentence with the following:

This work shall consist of the removal and satisfactory disposal of the existing concrete box culvert as shown on the plans.

Construction Methods: Replace the entire Subarticle with the following:

All work shall proceed as directed by and to the satisfaction of the Engineer and in accordance with the details shown on the plans, or as approved by the Engineer.

The removal shall not result in damage to any permanent construction (new or existing) or to adjoining property or river area. If damage does occur, it shall be repaired by the Contractor to the satisfaction of the Engineer at no additional expense to the State.

Prior to initiating work, the Contractor shall submit for approval, plans and written documentation describing his methods of removal and for falsework and shielding required for the protection of traffic (if any), environmentally sensitive areas and adjoining property, in accordance with Article 1.05.02-2 Working Drawings. Protection of the watercourse from falling debris from removing the box culvert shall also be included in the Contractor's submittal. Approval of the Contractor's plans shall not be considered as relieving the Contractor of any of his responsibility.

Method of Measurement & Payment: There shall be no separate measurement and payment for Removal of Existing Culvert (Site No. 1), as it shall be included under the Lump Sum Contract Work.

TECHNICAL SPECIFICATION RETAINING WALL

Description: This item will consist of designing, furnishing and constructing a retaining wall and all incidentals necessary to complete the work in the location, at the grades, and to the dimensions and details shown on the contract drawings, and in accordance with these specifications. For the purposes of this specification, “retaining wall” refers to all retaining walls on the project, including those labeled as headwalls or wingwalls.

Retaining Wall Selection: The retaining wall type shall be selected from the list of retaining walls shown on the plans or from ConnDOT’s Qualified Product List, “Walls: Retaining Wall – Prefabricated Modular Walls.” Refer to the Department’s Qualified Product List (QPL) for the current approved proprietary retaining wall and for the suppliers’ contact information; no other proprietary retaining walls will be allowed.

On-Site Representative: A qualified and experienced representative from the retaining wall supplier shall be at the Site at the initiation of wall construction to assist the Contractor and the Engineer at no additional cost to the Town. The wall supplier’s on-Site representative shall have, in the past three years, successfully installed at least three retaining walls of the height, length and complexity similar to the retaining wall(s) shown on the plans and meeting the tolerances specified herein. If there is more than one wall or more than one wall type on the plans, then this criterion will apply to the construction of the initial wall only, or the initial wall of each wall type only. After the initial wall construction, the representative shall also be available on an as needed basis, as requested by the Engineer.

Pre-Installation Meeting: A Pre-Installation meeting shall be scheduled prior to commencement of construction activity. Attendees shall include the Engineer, the Contractor (including wall construction crew chiefs), the wall Subcontractor, wall manufacturer and wall designer, or their respective representatives. No wall construction activity shall be performed until the Contractor’s final submittal has been approved by the Engineer and the Pre-Installation meeting has been held.

Design: The Contractor shall submit working drawings and design computations for temporary earth retaining systems in accordance with Article 7.16.03.

1. **Design Computations:** The Contractor is fully responsible for the design, detailing and additional specifications required. The actual designer of the retaining wall shall be a qualified Professional Engineer licensed in the State of Connecticut. The designer must have designed at least three proprietary walls within the last three years.
2. **Designer's Liability Insurance:** The Designer of the proprietary retaining wall shall secure and maintain at no direct cost to the Town, a Professional Liability Insurance Policy for errors and omissions in accordance with ConnDOT’s Form 818, Articles 1.03.07 and 1.05.02.

The Designer shall supply the certificate of this insurance to the Engineer prior to the start of construction of the wall. The designer’s insurance company shall be licensed in the State of Connecticut.

3. **Preliminary Submissions for Proprietary Retaining Walls:** Prior to the start of fabrication or construction, the Contractor shall submit to the Engineer a design package, which shall include, but not be limited to the following:
 - a) Detailed Plans:
 1. Full plan view of the wall drawn to scale. The plan view must reflect the horizontal alignment and offset from the horizontal control line to the face of the wall.

Beginning and ending stations, all utilities, signs, lights, etc. that affect the construction along with all property lines and easement lines adjacent to the retaining wall shall be shown.

2. Full elevation view of the wall drawn to scale. Elevation views shall indicate the elevation at the top and bottom of walls, horizontal and vertical break points, and the location of finished grade.
 3. Typical cross sections drawn to scale including all appurtenances. Detailed cross sections shall be provided at significant reinforcement transitions such as wall ends.
 4. Details of all wall components and their connections such as the length, size and type of reinforcement and where any changes occur; modular component and facing details including reinforcing steel and reinforcement connections; joint material including geotextile filter location and horizontal joint compression material, etc.
 5. Drainage details for embankment backfill including attachment to outlets shown on plans.
 6. Details of any roadway drainage pipe projecting through the wall, or any attachments to the wall. Details of the treatment of drainage swales or ditches shown on the plans.
 7. Design parameters used along with references from latest edition of American Association of State Highway and Transportation Officials (AASHTO) LRFD Bridge Design Specifications, including the latest interims, as specified in the plans.
 8. Material designations for all materials to be used.
 9. Detailed construction methods including a Quality Control plan. Construction Quality Control plans shall include monitoring and testing frequencies (e.g., for setting batter and maintaining horizontal and vertical control), construction restraints, and specific requirements for construction around obstructions.
 10. Details of parapet attachments where required, along with any lighting and/or signing requirements.
 11. Details of architectural treatment where required.
 12. Details of TERS where required.
 13. Details of retaining wall treatment where the wall abuts other structures.
 14. Treatment at underground utilities where required.
- b) Design Computations:
1. Computations shall clearly refer to the applicable AASHTO LRFD Bridge Design Specifications provisions as stated on the plans.
 2. Documentation of computer programs including all design parameters.
 3. The design shall meet the criteria listed below.
- c) Construction Specifications:
1. Construction methods shall be specific to the proprietary retaining wall chosen. These specifications shall include construction limitations including vertical clearance, right-of-way limits, etc.
 2. Submittal requirements for materials such as certification, quality, and acceptance/rejection criteria.
 3. Details on connection of modular units and connection of reinforcements including assurance of uniform stress transfer.
 4. Any other requirements.
4. Final Submissions for Proprietary Retaining Walls: Once a proprietary retaining wall design has been reviewed and accepted by the Department, the Contractor shall submit working drawings in accordance with Article 1.05.02.

The working drawing submission shall be made no later than 14 days after acceptance by the Engineer. No work shall be performed on the retaining wall until the Engineer has accepted the working drawings.

Acceptance of the working drawings shall not relieve the Contractor of responsibility for the successful completion of the work.

The Contractor's designer of the proprietary retaining wall shall review any shop drawings prepared for the fabrication of the wall. One set of full size approved shop drawings shall be submitted per Article 1.05.02-2. Working Drawings.

5. General Design Requirements:

- a) All designs for proprietary walls and TERS (if required) shall meet the requirements of the latest edition of the AASHTO LRFD Bridge Design Specifications including the latest Interims published except as noted otherwise herein.
- b) The wall design shall follow the dimensions of the wall envelope shown on the plans.
For all proprietary walls, the top of the leveling pad or reinforced concrete toe footing shall be located at or below the bottom of the footing elevation shown on the plans. If no footing elevation is shown, the minimum wall embedment shall be 4 feet as measured to the top of the leveling pad or toe footing.
If steps at the bottom of the wall are required, they shall be kept at or below the footing elevation shown on the plans. Steps in addition to those shown on the plans will be permitted at no additional cost to the Department.
- c) The wall shall be designed to be within all property lines and easement lines shown on the plans. If additional work areas are necessary for the construction of the proprietary retaining wall, the Contractor shall be responsible for obtaining the rights from the affected property owners. Copies of these rights shall be forwarded to the Department.
- d) The top of the wall shall be at the top of the wall elevations shown on the plans. Where coping or barrier is utilized, the wall face panel shall extend up into the coping or barrier a minimum of 2 inches. The top of the face panels may be level or sloped to meet the top of the wall line noted.
- e) Cast-in-place concrete will not be an acceptable replacement for areas noted by the wall envelope, except for minor grouting of pipe penetrations and leveling required for coping or traffic barrier.
- f) The wall shall be designed for a minimum live load surcharge as specified in AASHTO LRFD Bridge Design Specifications Article 3.11.6. If there are specific live load surcharges acting on the wall, they shall also be accounted for. The minimum equivalent fluid pressure used to design the wall shall meet the requirements of AASHTO LRFD Article 3.11.5.
- g) If stated on the plans, the retaining wall shall be designed for seismic forces according to the AASHTO LRFD Bridge Design Specifications.
- h) If the wall is detailed with a concrete parapet, the top two courses of prefabricated modular walls units shall be designed to support a transverse railing load of 10 kips. The 10 kip load may be distributed over the length of the parapet section between joints, but not exceeding 20 feet. Computations that verify the stability of the top two courses of the modular units shall be submitted to the Engineer.
- i) The detailing and reinforcement in the parapet section above the gutterline or finished grade, including any light standard attachments, shall be as shown on the plans.
- j) The wall shall be designed to accommodate all roadway drainage and drainage structures as shown on the plans.
- k) At a minimum, an underdrain system shall be provided for leading subsurface and surface water away from the backfill and outside limits of the wall.
- l) Hydrostatic Forces: Unless specified otherwise, when a design high water surface is shown on the plans at the face of the wall, the design stresses calculated from that elevation to the bottom of wall

must include a 3-foot minimum differential head of saturated backfill. In addition, the buoyant weight of saturated soil shall be used in the calculation of pullout resistance.

- m) The Maximum Design Foundation Pressures for both Strength and Service Limit States shall be as shown on the plans. The foundation pressure stated assumes a uniform pressure distribution. If additional soils information is required by the Contractor's designer, it must be obtained by the Contractor at no additional cost to the Department.
- n) Backfill: The friction angle of the Pervious Structure Backfill used in the reinforced fill zone for the internal stability design of the wall shall be assumed to be 34 degrees unless shown otherwise on the plans. The friction angle of the in-situ soils shall be assumed to be a maximum of 30 degrees unless otherwise shown on the plans.
- o) Parapet and Moment Slab Design:
 - 1) General requirements for parapet and moment slab design:

Where an unyielding barrier (e.g. concrete barrier, parapet) on top of the retaining wall is warranted, the parapet and moment slab shall be designed in accordance with the latest AASHTO LRFD Bridge Design Specifications, including the latest interim specifications and errata, amended as follows:

The parapet shall be designed and constructed of precast or cast-in-place concrete. The moment slab shall be designed and constructed of cast-in-place reinforced concrete.

Above the finished grade, the parapet dimensions, concrete and reinforcement shall meet the Department's retaining wall parapet details. Below the finished grade, the parapet shall be designed to resist the forces specified in the following table:

MASH Test Level	Parapet Height (in.)	Design Transverse Impact Force F_t (kips)	Height of Design Impact Force (in.)
TL-3	≥ 29	71	19
TL-4	36	68	25
	> 36	80	30
TL-5	42	160	35
	> 42	262	43

The structural design of the moment slab and its connection to the parapet shall resist, at a minimum, a transverse load equal to 100% of F_t . The length of the structural connection between parapet and moment slab assumed to resist transverse force F_t shall be the distance between parapet joints but not greater than 30 feet in any case.

The minimum thickness of the moment slab shall be 1foot.

The design of the moment slab for overturning and sliding shall be based on a lateral force of 10 kips static load. The length of the moment slab assumed to resist sliding and overturning may exceed parapet joint spacing providing the slab is monolithic beneath the joints, but shall be no greater than 30 feet in any case. The moments shall be summed about the front face of the wall facing. All resistance factors shall be taken as 1.0. The internal angle of friction for the soil shall be assumed to be 34 degrees unless otherwise shown on the plans.

Minimum concrete cover for reinforcing steel shall be 2 inches for top bars and 3 inches for bottom bars.

- 2) Precast Concrete Parapet Alternative:
 - o Precast parapet sections shall be no less than 10 feet in length.

- Parapets shall include details for shear transfer between adjacent units by either concrete shear keys or steel dowels as follows:
 - Shear keys, when used, shall be monolithically cast in each parapet section or joint location. Shear keys shall be located vertically within the top 32 inches of the parapet and shall be a minimum of 24 inches in length with a tapered width between 3 and 4 inches, and a minimum interlock depth of 2 inches.
 - Steel dowels, when used, shall be, at a minimum, 14 inches long and have a 1-inch diameter at each parapet interface. The steel dowels shall be smooth and, at a minimum, number 3 bars. Steel dowels shall be located in each parapet joint and spaced approximately 1 foot apart vertically. Steel dowels shall be positioned to project equally into each adjoining parapet section and shall be detailed to avoid impeding shrinkage and thermal movements. Bond breakers may be used with steel dowels for that purpose. Alternatively, pockets may be cast to receive steel dowels in adjacent parapet units. Pocket widths shall not exceed steel dowel diameters by more than 1/2 inch.
- Moment slabs for precast concrete parapets shall be structurally continuous throughout the overall retaining wall length. Construction joints are permitted in moment slabs.

3) Cast-in-Place Parapet Alternative:

The minimum distance between parapet joints shall be 20 feet. Expansion and contraction joints shall be placed in accordance with Section 11.6 of the AASHTO LRFD Bridge Design specifications. Expansion and contraction joints shall be located a minimum of 10 feet from the nearest edge of a catch basin. Expansion and contraction joints shall be located a minimum of 6 feet from the centerline of light standard anchorages and junction boxes. Preformed expansion joint filler, 1/2 inch thick, shall be installed at the expansion joints in the parapet.

Parapets shall include details for shear transfer between sections by way of concrete shear keys or steel dowels as follows:

- Shear keys, when used, shall be monolithically cast in each parapet section or joint location. Shear keys shall be located vertically within the top 32 inches of the parapet and shall be a minimum of 24 inches in length with a tapered width between 3 and 4 inches, and a minimum interlock depth of 2 inches.
- Steel dowels, when used, shall be a minimum of 14 inches long and have a 1-inch diameter at each parapet interface. The steel dowels shall be smooth and, at a minimum, number 3 bars. Steel dowels shall be located in each parapet joint and spaced approximately 1 foot apart vertically. Steel dowels shall be positioned to project equally into each adjoining parapet sections and shall be detailed to avoid impeding shrinkage and thermal movements. A bond breaker shall be used with steel dowels for that purpose.

Moment slabs for cast-in-place parapets shall extend to the outside face of the retaining wall as shown on the plans. Moment slabs for cast-in-place parapets shall be structurally continuous throughout the overall wall length, except for the purpose of crack control at parapet contraction and expansion joint locations, longitudinal reinforcing within 2 feet of the retaining wall face shall be discontinuous. All remaining longitudinal reinforcement in moment slabs at parapet expansion and contraction joints shall be continuous. A vertical 1 inch deep chamfer on the exposed face of the moment slab shall be provided in locations directly under parapet expansion and contraction joints. Construction joints are permitted in cast-in place moment slabs.

6. Design Requirements for Mechanically Stabilized Earth Walls: The design shall consider the internal stability of the wall mass as outlined below. The global stability of the structure, including slope stability, bearing

capacity at strength and service limit states, and total and differential settlement, is the responsibility of the Department.

- a. Soil Reinforcement: The soil reinforcement shall be the same length from the bottom to the top of each wall section. The reinforcement length defining the width of the entire reinforced soil mass may vary with wall height along the length of wall. The minimum length of the soil reinforcement shall be 70% of the wall height, H, or 8 feet, whichever is greater.

The soil reinforcement shall be of sufficient length to provide for the required factored resistances for sliding, overturning and pullout loads (as designated in AASHTO LRFD Bridge Design Specifications) and shall be the minimum lengths required for external stability as recommended by the Department. Calculations of stresses, pullout factored loads and resistances shall be in accordance with the most recent AASHTO LRFD Bridge Design Specifications.

- b. Calculations for factored loads and resisting forces shall be based on assumed conditions at the end of the design life. The design life shall be 75 years unless otherwise indicated on the plans. The design of soil reinforcements shall account for section loss as outlined in the AASHTO LRFD Bridge Design Specifications. All soil reinforcement shall be hot-dip galvanized in accordance with ASTM A123.
7. Design Requirements for Prefabricated Modular Walls: The general design of the retaining wall shall be according to the AASHTO LRFD Bridge Design Specifications. The Contractor shall be responsible for internal stability aspects of wall design. The design shall consider the stability at each level of modules. The global stability of the structure, including slope stability, bearing capacity at strength and service limit states, and total and differential settlement, is the responsibility of the Department.
 - a. Infill: The maximum assumed unit weight of infill material used for overturning stability analysis shall be 100 pounds per cubic foot. If Doublewal modules are to be filled with crushed stone, the maximum assumed unit weight of the infill shall be 80 pounds per cubic foot.
 - b. Resistance Factors: The resistance factors used in the design computations shall be as specified in the AASHTO LRFD Bridge Design Specifications amended as follows: The unfactored resistance for pullout of the concrete stem for T-Walls shall be 1.5 times or greater than the unfactored loads. Shear keys shall not be included in these computations. Only resisting forces developed beyond the theoretical failure plane may be used in these computations.

Materials:

1. Cast-in Place Concrete Walls: The materials furnished and used in the work shall be those prescribed in the Standard Specifications for Roads, Bridges, Facilities and Incidental Construction, including supplemental specifications and applicable special provisions as specified in the Contract.
2. Prefabricated Modular and Mechanically Stabilized Earth Walls: Materials shall meet the following requirements, and those not listed below shall be as prescribed within the Standard Specifications for Roads, Bridges, Facilities and Incidental Construction, including supplemental specifications and applicable special provisions.
 - a. Concrete: The concrete shall meet the requirements of Section M.03 and as follows:
Concrete for all precast components shall be air-entrained, Portland cement, fine and coarse aggregates, admixtures and water. An air-entraining Portland cement or an approved air-entraining admixture shall be used. The entrained-air content shall be from 4% to 7%. The concrete shall attain a minimum 28-day strength (f'_c) of 4,500 pounds per square inch. The mix design shall be furnished to the Engineer.

Concrete for footings or unreinforced leveling pads shall meet the requirements of Class PCC03340

Concrete. Class PCC04460 Concrete shall be used for cast-in-place concrete copings.

Concrete Finish: Unless otherwise indicated on the plans or elsewhere in the specifications, the concrete surface for the exposed face shall have a steel form finish. All non-exposed surfaces shall have an unformed finish which shall be free of open pockets of aggregate and surface distortions in excess of 1/4 inch.

Special Surface Treatment: If a special surface finish is proposed, before proceeding with production, a model face panel shall be provided by the fabricator for the Engineer's approval, to establish a guide and standard for the type of finish on the exposed face. This panel shall be stored at the fabricator's plant to be used for comparison purposes during production. Formed surfaces other than the exposed face shall not require a special finish.

Acceptance Criteria for Precast Components: Acceptance of precast components shall be based on the concrete strength, the soil reinforcement connection devices and the panel or module dimensions meeting the manufacturer's allowable tolerances. Any chipping, cracks, honeycomb or other defects shall be within acceptable standards for precast concrete or repaired as determined by the Engineer. It is recognized that certain cracks and surface defects are not detrimental to the structural integrity of the precast components if properly repaired. The Engineer shall determine the need for, and proper method of, such repair and all repairs shall be approved by the Engineer prior to acceptance for use in wall construction.

Marking: The date of manufacture, production lot number, and piece-mark shall be clearly marked on the non-exposed side of each element.

- b. Reinforcing Steel: Reinforcing steel shall meet the requirements of ASTM A615, Grade 60.
- c. Attachment Devices for Prefabricated Modular Walls: All structural connectors shall be hot-dip galvanized according to the requirements of ASTM A123 (AASHTO M111). The minimum thickness of the galvanizing shall be based on the service life requirements in the AASHTO LRFD Bridge Design Specifications.
- d. Soil Reinforcing and Attachment Devices for MSE Walls:
 - 1) Soil Reinforcement: Steel strip reinforcement bands shall be hot rolled to the required shape and dimensions. The steel shall meet the requirements of ASTM A572 Grade 65 unless otherwise specified.

Welded wire fabric reinforcement shall be shop fabricated from cold-drawn wire of the sizes and spacing shown on the plans. All wire and welded wire fabric shall meet the requirements of ASTM A1064 or AASHTO M 336M/M 336. Welded wire fabric shall be galvanized in accordance with the requirements of AASHTO M 111 or ASTM A123.

All soil reinforcement and structural connectors shall be hot-dip galvanized in accordance with ASTM A123 (AASHTO M111). The minimum thickness of the galvanizing shall be based on the service life requirements as previously stated.

- 2) Connection Hardware: Connection hardware shall be in accordance with the details on the plans, and shall meet the requirements in the special provisions or plans. All fasteners shall be galvanized in accordance with ASTM A153 or AASHTO M 232 and shall meet the requirements of AASHTO M 164. The minimum thickness of the galvanizing shall be based on the service life requirements as previously stated.
- e. Joint Materials: All horizontal and vertical joints between panels shall be covered by a Geotextile (Separation-High Survivability) meeting the requirements of Subarticle M.08.01-19. The minimum width and lap shall be 12 inches. Details of installation including connection of the geotextile to coping shall be provided.
- f. Backfill: Backfill shall be Pervious Structure Backfill meeting the requirements of Articles M.02.05 and M.02.06. In addition, the backfill for Mechanically Stabilized Earth Walls shall meet all of the following electrochemical requirements:

PROPERTY	REQUIREMENT	TEST METHODS
Resistivity at 100% saturation	Minimum 3000 ohm-cm	ASTM G57-06 (2012) AASHTO T288
pH	Acceptable Range 5.0 – 10.0	ASTM G51-95 (2012) AASHTO T289
Chlorides	Maximum 100 ppm	ASTM D512 or D4327 AASHTO T291
Sulfates	Maximum 200 ppm	ASTM D516 or D4327 AASHTO T290
Organic Content	Maximum 1%	ASTM D2974 or AASHTO T267

- g. Smooth Steel dowels: Steel dowels used in parapet joints shall meet the requirements of ASTM A36 and shall be galvanized in accordance with ASTM A153.

Construction Methods:

1. Cast-in-Place Concrete Walls: All construction methods for cast-in-place retaining walls shall be in accordance with the detailed requirements prescribed for the construction of the appropriate component items as specified in the Standard Specifications for Roads, Bridges, Facilities and Incidental Construction.
2. Prefabricated Modular Walls: All construction methods for prefabricated modular retaining walls shall be in accordance with the detailed requirements prescribed for the construction of the appropriate component items as specified in the Standard Specifications for Roads, Bridges, Facilities and Incidental Construction, with the following additional requirements:
 - a. Inspection and Rejection: The quality of materials, process of manufacture, and finished units shall be subject to inspection by the Engineer prior to shipment.

Modular units which have imperfect molding, honeycomb, open texture concrete, or broken corners shall be repaired to the satisfaction of the Engineer or shall be rejected. Insufficient compressive strength shall also be cause for rejection.

Modular units with special surface treatments shall be rejected if there are variations in the exposed face that deviate from the approved model as to color or texture in accordance with precast concrete industry standards.

- b. Installation: The modular units shall be installed in accordance with manufacturer's recommendations. Special care shall be taken in setting the bottom course of units to true line and grade.

The vertical joint opening on the front face of the wall shall not exceed 3/4 inch. Vertical tolerances and horizontal alignment of the wall shall not exceed 3/4 inch in 8 feet from the vertical. The plumbness of the wall from top to bottom shall not exceed 1/2 inch per 8 feet, or 1 inch total, whichever is less, measured from the face line shown on the plans. A strip of geotextile shall be installed at all vertical joints.

Assembly of the various components shall not place any undue strain or stress on any of the members that constitute the completed structure.

- c. Backfilling:
 - 1) Doublewal:

- Infill for modular units shall be placed one course at a time, in lifts not exceeding two feet in thickness. The dry density of each lift of Pervious Structure Backfill, after compaction, shall meet the requirements of Article 2.16.03.
 - Placement of the Pervious Structure Backfill behind the wall shall follow erection of successive courses of modular units. The difference in backfill elevation between the interior and exterior of the wall shall not exceed 6 feet.
 - The units may be backfilled with crushed stone if the design of the retaining wall was based on a density of 80 pounds per cubic foot.
 - All Pervious Structure Backfill placed outside of the modular units shall be placed in accordance with the requirements of Article 2.16.03.
 - At the end of each work shift, the Contractor shall slope the last level of backfill away from the wall facing to direct runoff away from the wall face. The Contractor shall control and divert runoff at the ends of the wall to prevent erosion. In addition, the Contractor shall prevent surface runoff from entering the wall construction site.
- 2) T-Wall:
- Backfill placement in the interior of the wall unit and behind the wall shall follow erection of each course of prefabricated wall modules. Backfill shall be placed in such a manner as to avoid any damage or disturbance to the wall materials or misalignment of the modules. Any wall materials which become damaged or disturbed during backfill placement shall be removed and replaced at the Contractor's expense or corrected, as directed by the Engineer. Any backfill material placed within the wall envelope which does not meet the specified material requirements shall be corrected or removed and replaced at the Contractor's expense.
 - Each lift (10 inches thick maximum) shall be placed and compacted with a mechanical or vibratory compactor to meet the density requirements in Article 2.16.03. The Contractor may reduce the lift thickness to obtain the specified density.
 - Compaction within 3 feet of the module face shall be achieved by at least three passes of a lightweight mechanical tamper, roller or vibratory system. The specified lift thickness shall be adjusted as warranted by the type of compaction equipment actually used. Care shall be exercised in the compaction process to avoid misalignment or damage to the module. Heavy compaction equipment shall not be used to compact backfill within 3 feet of the wall face. Sheepfoot rollers and puddling for compaction will not be allowed. The Contractor shall take soil density tests, in accordance with Article 2.16.03, to ensure compliance with specified compaction requirements and if a compaction test fails, no additional backfill shall be placed over the area until the lift is recompacted and a passing test is achieved.
 - The moisture content of the backfill material prior to and during compaction shall be uniform throughout each layer. Backfill material shall have a placement moisture content less than or equal to the optimum moisture content. Backfill material with a placement moisture content in excess of the optimum moisture content shall be removed and reworked until the moisture content is uniform and acceptable throughout the entire lift. The optimum moisture content shall be determined in accordance with Article 2.16.03.
 - At the end of each day's operation, the Contractor shall slope the last level of backfill away from the retaining wall facing to direct runoff away from the retaining wall face. The Contractor shall control and divert runoff at the ends of the wall to prevent erosion or washout of the wall section does not occur. In addition, the Contractor shall prevent surface runoff from entering the wall construction site.
3. Mechanically Stabilized Earth Walls: All construction methods for items not listed below shall be in accordance with the detailed requirements prescribed for the construction of the appropriate items as specified in the Standard Specifications for Roads, Bridges, and Incidental Construction.

- a. Foundation Preparation: The foundation for the structure shall be graded level for a width equal to or exceeding the length of the soil reinforcements, or as shown on the plans. Prior to wall construction the foundation, if not rock, shall be compacted. Any foundation soils found to be unsuitable shall be removed and replaced with Granular Fill or as shown on the plans.

At each panel foundation level, an un-reinforced concrete leveling pad shall be constructed as shown on the plans. Granular Fill leveling pads are not allowed. The concrete leveling pad shall be cast to the design elevations as shown on the plans and shall meet the pertinent requirements of Section 6.01.

- b. Wall Erection: Panels shall be placed in successive horizontal lifts in the sequence shown on the plans as backfill material is placed behind the panels, and the panels shall be maintained in a vertical position. The vertical joint opening on the front face of the wall panels shall not exceed 3/4 inch. Vertical tolerances and horizontal alignment of the wall face shall not exceed 3/4 inch in 8 feet from the vertical. The plumbness of the wall from top to bottom shall not exceed 1/2 inch per 8 feet, or 1 inch total, whichever is less, measured from the face line shown on the plans.

The allowable offset in any panel joint shall be 3/4 inch. The final horizontal and vertical joint gaps between adjacent facing panel units shall be within 1/8 inch and 1/4 inch, respectively, of the design final joint opening per the approved working drawings.

- c. Placement of Reinforcements: Soil reinforcements shall be placed normal to the face of the wall, unless otherwise shown on the plans. All reinforcement bands shall be structurally connected to the wall face per the manufacturer's detail.

The reinforcement shall bear uniformly on compacted soil from the wall connection to the free end of the reinforcing elements. The reinforcement placement elevation shall be at, or at most 2 inches above, the connection elevation. Bending of reinforcement in the horizontal plane that results in a permanent deformation in their alignment is not allowed. Gradual bending in the vertical direction that does not result in permanent deformations is allowable.

Connection of reinforcements to piles or bending of reinforcements around piles is not allowed. A structural connection (yoke) from the retaining wall panel to the reinforcement shall be used to avoid cutting or excessive skewing of reinforcements due to pile or utility conflicts.

Where overlapping of reinforcement may occur, such as at corners, reinforcing connections to panels shall be adjusted to maintain at least 3 inches of vertical separation between overlapping reinforcement.

- d. Backfill Placement: Backfill placement shall follow erection of each course of panels. Backfill shall be placed to avoid any damage, disturbance to the wall materials or misalignment of the facing panels, or damage to soil reinforcement. The Contractor shall place backfill to the level of connection and shall ensure that no voids exist directly underneath the reinforcing elements.

Any wall materials which become damaged or disturbed during backfill placement shall be either removed and replaced at the Contractor's expense or corrected, as directed by the Engineer. The Contractor may submit alternative corrective procedures to the Engineer for consideration. Proposed alternative corrective procedures shall have the concurrence of the MSE wall supplier and designer, in writing, prior to submission to the Engineer for consideration. All corrective procedure development and actions shall be at the Contractor's expense.

Any backfill material placed within the reinforced soil mass which does not meet the specified requirements shall be corrected or removed and replaced at the Contractor's expense.

The fill shall be spread by moving the machinery parallel to or away from the wall facing so that the steel reinforcement remains normal to the face of the wall. Construction equipment shall not operate directly on the steel reinforcement. A minimum fill thickness of 3 inches over steel reinforcement shall be required prior to operation of vehicles. Sudden braking and sharp turning shall be avoided.

Backfill shall be installed in accordance with Article 2.16.03, except as follows:

If 30% or more of the backfill material is greater than 3/4 inch in size, the acceptance criterion for control of compaction shall be either a minimum of 70% of the dry density of the material as determined by a test method performed by the Contractor, or by following a specification provided by the wall supplier. The wall supplier's specification shall be based on a test compaction section, which defines the type of equipment, lift thickness, number of passes of the specified equipment, and placement moisture content.

Backfill shall be compacted using a static-weighted or vibratory roller. Sheepfoot or grid type rollers shall not be used for compacting material within the limits of the soil reinforcement. The Contractor shall take soil density tests, in accordance with Article 2.16.03, to ensure compliance with specified compaction requirements.

The maximum lift thickness after compaction shall not exceed 10 inches, regardless of the vertical spacing between layers of soil reinforcements. The Contractor shall decrease this lift thickness, if necessary, to obtain the specified density. Prior to placement of the soil reinforcements, the backfill elevation at the face shall be level with the connection after compaction. From a point approximately 3 feet behind the back face of the panels to the free end of the soil reinforcements, the backfill shall be 2 inches above the attachment device elevation unless otherwise shown on the plans.

Compaction within 3 feet of the back face of the panels shall be achieved by at least three passes of a lightweight mechanical tamper, roller or vibratory system. The minimum number of passes and rolling pattern shall be determined, prior to construction of the wall, by constructing a test pad section. The minimum dimensions of the test pad shall be 5 feet wide, 15 feet long, and 3 feet final depth. The specified lift thickness shall be adjusted as warranted by the type of compaction equipment actually used. Care shall be exercised in the compaction process to avoid misalignment of the panels or damage to the attachment devices. Heavy compaction equipment shall not be used to compact backfill within 3 feet of the wall face.

The moisture content of the backfill material prior to and during compaction shall be uniform throughout each layer. Backfill material shall have a placement moisture content less than or equal to the optimum moisture content. Backfill material with a placement moisture content in excess of the optimum moisture content shall be removed and reworked until the moisture content is uniform and acceptable throughout the entire lift. The optimum moisture content shall be determined in accordance with Article 2.16.03 (with oversize correction, as outlined in Note 7).

At the end of each day's operation, the Contractor shall slope the last level of backfill away from the wall facing to direct runoff away from the wall face. The Contractor shall control and divert runoff at the ends of the wall to prevent erosion. In addition, the Contractor shall prevent surface runoff from entering the wall construction site.

Method of Measurement: There will be no separate measurement and payment for the Retaining Wall item, as it shall be included under the Lump Sum Contract Work.

Basis of Payment: There will be no separate measurement and payment for the "Retaining Wall" item, as it shall be included under the Lump Sum Contract Work. All work shown on the plans for the retaining wall include the following:

1. Design and construction of the proprietary retaining wall.
2. Excavation required for the construction of the retaining wall.
3. Design and construction of temporary earth retaining systems to retain the existing facilities during construction.
4. The furnishing, placing and compacting of Pervious Structure Backfill within the payment lines.
5. The furnishing and placing of backfill drainage systems for the wall.
6. The furnishing and placing of rigid metal conduit, junction boxes, light standard anchorages, and other electrical appurtenances located within the wall proper.
7. Services of the On-Site Representative.
8. Any other work and materials shown on the plans for the retaining wall.

This work shall also include all materials, equipment, tools and labor incidental thereto.

TECHNICAL SPECIFICATION PREFORMED JOINT SEAL

Description: Work under this item consists of furnishing and installing a preformed joint seal as shown on the plans. Work also includes a pre-installation survey to measure the pavement depth at all locations where the joint meets the curb.

Materials: One of the following Preformed Joint Seals specified on the plans shall be supplied:

V-Shaped Silicone Seals:

1. Silicoflex:
RJ Watson, Inc.
11035 Walden Ave
Alden, New York 14004
Tel: (716) 901-7020
Website: <http://www.rjwatson.com>

2. V-Seal:
D.S. Brown Company
300 East Cherry Street
North Baltimore, Ohio 45872
Tel: (419) 257-3561
Website: <http://www.dsbrown.com>

Foam-Supported Silicone Seals:

3. Bridge Expansion Joint System (B.E.J.S.):
EMSEAL Joint Systems Ltd.
25 Bridle Lane,
Westborough, MA 01581
Tel: (508) 836-0280
Website: <http://www.emseal.com>

4. Wabo FS Bridge Seal
Watson Bowman Acme Corp.
95 Pineview Drive
Amherst, NY 14228
Tel: (716) 691-9239
Website: <https://wbacorp.com/products/bridge-highway/joint-seals/wabofsbridge/>

When foam-supported silicone joint seals are the only type allowed on the plans (such as at bridge joints that extend through sidewalks), the CTDOT will consider products from other foam-supported silicone joint manufacturers, if the products have been installed by another State Department of Transportation, are functioning successfully in a similar climate to Connecticut's for at least one year, and are deemed by the CTDOT to be suitable for use in the specific application for which the Contractor is requesting. To be considered, the Contractor shall submit documentation indicating the product name, manufacturer, the contact information for a Department of Transportation official who can confirm the successful installation and continued success of the product, the date of installation and the nature of the installation, including thermal movement range and skew of the installed joint.

A Materials Certificate for all components of the selected preformed joint seal shall be submitted by the Contractor in accordance with the requirements of Article 1.06.07

Construction Methods: All work at each joint location shall be accomplished in accordance with "Maintenance and Protection of Traffic" and "Prosecution and Progress."

Submittals:

Prior to ordering preformed joint seals, and prior to forming block-outs for the preformed joint seals in the headers, the Contractor shall submit the following to the Engineer:

- The Manufacturer and product information of the selected joint system;
- Material safety data sheets (MSDS) and technical product information;
- Name and credentials of a qualified technical representative supplied by the manufacturer and acceptable to the Engineer. This person shall be available to provide assistance at the beginning of the work and be available to provide training and guidance throughout the project.
- A detailed, step-by-step installation procedure, including surface preparation, splicing of the preformed joint seal, and a list of the specific equipment to be used for the installation.

Installation: The technical representative of the accepted joint system shall be notified of the scheduled installation a minimum of 2 weeks in advance and be present to provide direction and assistance for the first joint installation and succeeding joint installations until the Contractor becomes proficient in the work and to the satisfaction of the Engineer.

The minimum ambient temperature for installing any of the qualified, preformed joint seals is 40°F and rising. When the manufacturer's requirement for minimum installation temperature is greater than 40°F, the manufacturer's requirement will govern.

All concrete surfaces to which sealing glands will be bonded shall be prepared in accordance with International Concrete Repair Institute (ICRI) concrete surface profile standards. The minimum acceptable surface profile is CSP2 (grinding), but CSP3 (light abrasive blast) is preferred. Any discontinuities or sharp projections into the plane of the joint shall be ground smooth prior to blasting. Whenever abrasive blast cleaning is performed, the Contractor shall take adequate measures to ensure that the abrasive blast cleaning will not cause damage to adjacent traffic or other facilities. Traffic will not be allowed to pass over the joint after blasting has occurred.

Following blasting, the joint surfaces shall be wiped down or blown clean as recommended by the manufacturer.

The joint surfaces shall be completely dry before installing any of the components of the selected joint seal. The selected joint seal shall not be installed immediately after precipitation or if precipitation is forecast. Joint preparation and installation of the selected preformed joint seal must be done during the same day.

The selected joint sealing system shall be installed continuously with no field splices in the preformed seal in the roadway section, unless field splices are allowed by the manufacturer of the selected preformed joint seal. In no case shall field splices of the preformed joint seal be allowed in a wheel path or within the roadway shoulder. When splices cannot be avoided due to traffic constraints, the splice shall be at a painted lane line.

After the joint seal has been installed, water shall not be able to penetrate the joint. Any joint seal that does not effectively seal against water shall be removed and replaced at the Contractor's expense.

Method of Measurement & Payment: There shall be no separate measurement and payment for Preformed Joint Seal, as it shall be included under the Lump Sum Contract Work.

TECHNICAL SPECIFICATION

8'-6"X4'-6" PRECAST CONCRETE BOX CULVERT

Description: Work under this item consists of furnishing and installing a precast concrete box culvert(s) as shown on the plans and as ordered by the Engineer. This item also includes all hardware, inserts, dowels for connections, reinforcing steel and joint materials as shown on the plans.

Materials:

- The concrete mix design shall meet the requirements of M.03.02, Class PCC05562, and shall be submitted to the Engineer.
- All reinforcing steel, including dowel bar mechanical connectors, shall be galvanized and shall meet the requirements of M.06.01.
- All threaded concrete inserts, lifting fixtures, and miscellaneous hardware cast into precast concrete components shall be galvanized in accordance with ASTM A153 or ASTM B695 Grade 50. All portions of the lifting and seating devices shall be recessed from the finished concrete surface.
- Non-shrink grout shall meet the requirements of M.03.05 and be suitable for submerged applications.
- Gaskets shall meet the requirements of ASTM D1056, C1677 or C990.
- Geotextiles shall be the "Separation (High Survivability)" type and shall be selected from the Department's Qualified Product List.

Construction Methods:

1. Submittals: All submittals shall include a title sheet with the following:

- Project number, town and crossing.
 - Bridge number, when shown on the plans.
 - Design code, as applicable.
 - Contact information for fabricator – contact information shall include name and address of the fabricator and the name of contact person with phone number and email address.
- (a) Shop Drawings - Precast Concrete Components:** Prior to fabrication, the Contractor shall submit an individually packaged set of shop drawings for the precast concrete components for each precast box culvert location to the Engineer for review, in accordance with the plans and 1.05.02. Each shop drawing package shall include details necessary for fabrication of each unique component, handling and installation of the precast concrete components, supporting documents for all materials incorporated into the precast concrete components and for other materials provided by the fabricator.
- (b) Working Drawings - Lifting and Seating Devices :** Prior to fabrication, the Contractor shall submit working drawings and supporting computations for the embedded lifting and seating devices required for the handling and installation of the precast concrete

components at each box culvert location to the Engineer for review in accordance with 1.05.02. Prior to applying load to the embedded devices, the concrete shall attain the minimum concrete compressive strength associated with the safe working load of the device.

(c) Working Drawings - Installation of Precast Concrete Components: Prior to installation of the precast concrete components, the Contractor shall submit working drawings and supporting computations for the lifting and placement of the precast concrete components, to the Engineer for review in accordance with 1.05.02. Cranes shall be operated in accordance with the Connecticut Department of Public Safety regulations. The Contractor shall be responsible for verifying the weight of each lift. The working drawing submittal shall include, but not be limited to the following:

- Plan of the work area showing all structures, roads, railroad tracks, Federal and State regulated areas as depicted on the plans, overhead and subsurface utilities, property lines, or any other information relative to erection. No picks shall be allowed over vehicular, pedestrian, railway or vessel traffic.
- A detailed narrative describing the lifting and installation sequence.
- Manufacturer's data sheet for the crane(s) including the load/capacity chart. The capacity of the crane shall be adequate for the total lift/pick load including rigging, spreaders and other materials. In the area of railroads and navigable waterways, the capacity shall be as required by the regulatory authorities.
- Manufacturer's data sheets and product data sheets for all rigging (slings, spreader bars, blocks, etc.), lifting devices, and other connecting equipment and hardware listing the number, type, size, arrangement and capacity of each.
- Location of each crane for each pick.
- Crane support measures, including any support beneath the outriggers such as bearing pads, crane mats, planking or special decking, or other means to transfer the crane's total weight (including the lifted load) into the earth or structure beneath it.
- Delivery location of each component.
- Boom length and the lift and setting radius for each pick (or maximum lift radius).
- Pick point location(s) on each component.
- Lifting weight of each component including rigging (clamps, spreader beams, etc.)

(d) Product Data – Field Installed Materials: Prior to installation of the precast concrete components, the Contractor shall submit product data for field installed materials, such as non-shrink grout, geotextile, etc., not addressed in other submissions to the Engineer for review in accordance with 1.05.02.

2. Fabrication and Manufacture: The fabrication and manufacture of the precast concrete components shall meet the requirements of M.08.02-4 as supplemented by the following:

(a) Reinforcing Steel: Reinforcing steel shall be fabricated and installed in accordance with Articles 6.02.03-2 through 6.02.03-5. The welding of reinforcement is not permitted.

- (b) Test Cylinders:** During the casting of the components, the Contractor shall cast a minimum of four 4 inch × 6 inch test cylinders in accordance with AASHTO T23 during each production run. Cylinders shall be cured under the requirements of ASTM C31 and shall be used to confirm that the concrete meets the requirements of M.03.02.
- (c) Placing Concrete:** Concrete shall not be deposited in the forms until the Contractor has inspected the reinforcing steel, including all other embedded components, and has documented such inspection.

Concrete shall not be deposited into the forms when the ambient temperature is below 40°F or above 100°F, unless adequate heating or cooling procedures have been previously approved by the Engineer. The concrete temperature shall be 60°F to 90°F at the time of placement.

Truck-mixed or transit-mixed concrete will not be allowed.

Production during the winter season, from November 15 to March 15 inclusive, will be permitted only on beds located in a completely enclosed structure of suitable size and dimension that provides a controlled atmosphere for the protection of the casting operation and the product.

Outside concreting operations will not be permitted during rainfall unless the operation is completely under cover.

The concrete shall be vibrated internally, or externally, or both, as needed to provide adequate flow and consolidation of the concrete. The vibration shall be provided in such a manner as to avoid displacement of reinforcing steel, forms, or other components. There shall be no interruption in the placement of concrete. Concrete shall be placed and vibrated sufficiently to produce a surface free from imperfections such as honeycombing, segregation, cracking, or checking.

Any deficiencies noted in the components may be cause for rejection.

- (d) Finishing:** All fins, runs, or mortar shall be removed from the concrete surfaces which will remain exposed. Form marks on exposed surfaces shall be smoothed by grinding. All exposed, outside concrete surfaces shall be given a grout clean-down finish in accordance with 6.01.03-10.
- (e) Handling and Storage:** Any precast concrete components damaged during storage, transportation or handling shall be repaired or replaced by the Contractor, at its own expense, as directed by the Engineer.
- (f) Repairs:** The Contractor shall submit to the Engineer, for review, any proposed methods or materials to be used in the repair of precast concrete components or defective surfaces. Precast concrete components with defective area greater than 10% as determined by the Engineer will be rejected.

- 3. Fabrication Tolerances:** Tolerances of forming precast concrete box sections shall be as follows:
- (a) Internal Dimensions:** The internal dimensions shall be within 1% of the design dimensions or within 1 1/2 inches, whichever is less.
 - (b) Roof, Floor and Wall Thickness:** The roof, floor and wall thickness shall be within 1/4 inch of the thicknesses shown in the design.
 - (c) Laying Length of Opposite Surfaces:** Variations in laying lengths of two opposite surfaces of the box section shall be less than 1/8 inch/foot of internal span up to 3/4 inch maximum.
 - (d) Length of Section:** The length of a section shall not vary from the designed length by more than 1/2 inch in any box section.
- 4. Pre-assembly of Box Sections:** Box sections shall conform to all dimensions within tolerances specified herein. Adjacent sections shall be assembled without a gasket at the manufacturing plant to ensure that all tolerances are met prior to shipping. All sections that will be joined with mechanical connectors shall be pre-assembled, complete with fasteners, to confirm alignment. The Department shall be given at least 2 working days' notice to inspect and evaluate the sections prior to shipping.
- 5. Installation:** The installation of the precast concrete box sections and components shall be in accordance with the plans and the following:
- (a)** The installation of the precast concrete box sections shall proceed as required by the sequence of construction, stage construction plans, and the special provisions entitled "Prosecution and Progress" and "Maintenance and Protection of Traffic."
 - (b)** Prior to installing the inlet and outlet end box culvert sections, a bed of non-shrink grout shall be placed on the cut-off walls. The end box culvert sections shall be connected to the cut-off wall using galvanized dowels installed in cast or drilled holes and bonded with non-shrink grout.
 - (c)** All box culvert lap joints shall be sealed with rubber gaskets and must provide a silt-tight fit. A positive means, through the use of seating devices, shall be used for pulling each section against the adjacent section to assure a silt-tight joint. The gasket shall be uniformly compressed to a minimum of 1/2 of its uncompressed width. The joint opening between adjacent seated sections on all interior surfaces of the culvert shall be uniform and match the width shown on the plans. The interior surfaces on either side of the lap joints of the adjacent seated sections shall form a smooth and continuous plane, free from irregularities.

- (d) After its installation, any box section, as determined by the Engineer, not acceptable in vertical or horizontal alignment for any reason, including but not limited to settlement, displacement, excess camber or misfit, shall be removed by the Contractor and correctly installed, as directed by the Engineer and at the Contractor's expense.
- (e) The lap joints on the exterior of the roof and the interior of the floor and the lap joints on the interior and exterior of the walls (full height on each side) shall be filled with non-shrink grout after seating the sections. The exposed portions of the lap joints within the haunches or fillets on the interior of the culvert sections shall also be filled with non-shrink grout. The non-shrink grout shall be finished smooth and flush with the adjacent concrete surface.

All portions of the lifting and seating devices that extend to or beyond the finished concrete surface shall be removed. All fixtures or holes cast into the sections for lifting or seating shall be completely filled with non-shrink grout and finished smooth and flush with the adjacent concrete surface.

The surface preparation, mixing, placing, curing, and finishing of the non-shrink grout shall follow the written instructions provided by the manufacturer of the grout. The Contractor shall furnish the Engineer with copies of the instructions.

Prior to the passage of flowing water over the with non-shrink grout, the non-shrink grout shall attain a minimum compressive strength of 3,000 psi.

- (f) Geotextile shall be placed on the exterior surface of the roof and walls of the culvert over the lap joints between the culvert sections. The geotextile shall extend 12 inches to each side of the joint and shall be attached to the culvert with silicone caulk.

6. Erection Tolerances: The Contractor shall be responsible for ensuring the overall length of the box culvert meets the layout requirements on the plans within all acceptable tolerances as specified in the contract.

Method of Measurement & Payment: There shall be no separate measurement and payment for 8'-6"x 4'-6" Precast Concrete Box Culvert, as it shall be included under the Lump Sum Contract Work.

TECHNICAL SPECIFICATION MEMBRANE WATERPROOFING (COLD LIQUID ELASTOMERIC)

Description: Work under this item consists of furnishing and installing a seamless elastomeric waterproofing membrane system applied to a concrete or steel surface as shown on the plans, in accordance with this specification and as directed by the Engineer. Work shall also include conditioning of the surface to be coated and all quality-control testing noted herein.

The completed membrane system shall be comprised of a primer coat, two layers of the membrane coating (minimum total thickness of 80 mil and maximum total thickness not to exceed 120 mil), an additional 40 mil membrane layer with aggregate broadcast into the material while still wet, reinforcing material at deck panel joints and two applications of asphalt emulsion (tack coat) at a rate of 0.05-0.07 gal/s.y. each, allowing the first application to break prior to applying the second.

Materials: The Contractor shall select a waterproofing membrane system from the Department's current Qualified Product List (QPL) for Spray-Applied Membrane Waterproofing System. All materials incorporated in the works shall meet the Manufacturer's specification for the chosen system. The Engineer will reject any system that is not on the QPL.

Reinforcing material shall be as recommended by the manufacturer.

Materials Certificate: The Contractor shall submit to the Engineer a Materials Certificate for the primer, membrane and aggregate in accordance with the requirements of Article 1.06.07.

Construction Methods: At least 30 days prior to installation of the membrane system, the Contractor shall submit to the Engineer a Site-specific Installation Plan that includes the manufacturer's recommended procedure for preparing the deck surface, pre-treatment or preparing at cracks and gaps, treatment at curbs, vertical surfaces or discontinuities, applying the primer and membrane, placing of aggregated coat and all Quality Control (QC Plan) testing operations to be performed during the membrane system's installation. Procedures shall also include recommended repairs of system non-compliant issues identified during application. The system shall be applied to the prepared area(s) as defined or shown in the plans, strictly in accordance with the Installation Plan.

A technical representative, in the direct employ of the manufacturer, shall be present on-Site immediately prior to and during application of the membrane. The representative shall inspect and approve the surface prior to priming, and provide guidance on the handling, mixing and addition of components and observe application of the primer and membrane. The technical representative shall perform all required QC testing and remain on the Project site until the membrane has fully cured.

All QC testing, including verbal direction or observations at the time of installation, shall be recorded and submitted to the Engineer for inclusion in the Project records. The QC testing data shall be received by the Department's project personnel prior to any paving over the finished membrane, or within 24 hours following completion of any staged portion of the work.

1. **Applicator Approval:** The Contractor's membrane Applicator shall be fully trained and licensed by the membrane manufacturer and shall have successfully completed at least three spray membrane projects in the past five years. The Contractor shall furnish references from those projects, including names of contact persons and the names, addresses and phone numbers of persons who supervised the projects. This information shall be submitted to the Engineer prior to the submittal of the Installation Plan. The Engineer shall have sole authority to determine the adequacy and compliance of the submitted information. Inadequate proof of ability to perform the work will be grounds to reject proposed applicators.

2. **Job Conditions:**

(a) **Environmental Requirements:** Air and substrate temperatures shall be between 32°F and 104°F and the substrate shall be above the dew point. Outside of this range, the Manufacturer shall be consulted.

The Applicator shall be provided with adequate disposal facilities for nonhazardous waste generated during installation of the membrane system. The applicator shall follow safety instructions regarding respirators and safety equipment.

(b) **Safety Requirements:** All open flames and spark producing equipment shall be removed from the work area prior to commencement of application.

"No Smoking" signs shall be visibly posted at the Site during application of the membrane waterproofing.

Personnel not involved in membrane application shall be kept out of the work area.

3. **Delivery, Storage and Handling:**

(a) **Packaging and Shipping:** All components of the membrane system shall be delivered to the Site in the Manufacturer's packaging, clearly identified with the product type and batch number.

(b) **Storage and Protection:** The Applicator shall be provided with a storage area for all components. The area shall be cool, dry and out of direct sunlight and shall be in

accordance with the Manufacturer's recommendations and relevant health and safety regulations.

Copies of Material Safety Data Sheets (MSDS) for all components shall be kept on Site for review by the Engineer or other personnel.

- (c) Shelf Life - Membrane Components: Packaging of all membrane components shall include a shelf life date sealed by the Manufacturer. No membrane components whose shelf life has expired shall be used.

4. Surface Preparation:

- (a) Protection: The Applicator shall be responsible for the protection of equipment and adjacent areas from over spray or other contamination. Parapets and bridge joints shall be masked prior to application of the materials.
- (b) Surface Preparation: Sharp peaks and discontinuities shall be ground smooth. Any peak greater than $\frac{1}{4}$ inch above the surface profile of the prepared substrate shall be ground to the surrounding elevation. Any valley or minor surface deterioration of $\frac{1}{2}$ inch or greater shall also be repaired. The extent and location of surface patches require the approval of the Engineer before the membrane system is applied.

Surfaces shall be free of oil, grease, curing compounds, loose particles, moss, algae, growth, laitance, friable matter, dirt, bituminous products, and previous waterproofing materials. If required, degreasing shall be done by detergent washing in accordance with ASTM D4258.

The surface shall be abrasively cleaned, in accordance with ASTM D4259, to provide a sound substrate free from laitance.

Voids, honeycombed areas, and blow holes on vertical surfaces shall be repaired as indicated in the Installation Plan.

All steel components to receive membrane waterproofing shall be blast cleaned in accordance with SSPC SP6 and shall be coated with the membrane waterproofing system within the same work shift.

- 5. Inspection and Testing: Prior to priming of the surface, the Engineer, Applicator and Manufacturer's technical representative shall inspect and approve the prepared substrate.

- (a) Random tests for deck moisture content shall be conducted on the substrate by the Contractor at the Site using a "Sovereign Portable Electronic Moisture Master Meter," a "Tramex CMEXpertII Concrete Moisture Meter" or approved equal. The minimum frequency shall be one test per 1000 s.f. but not less than three tests per shift for each contiguous section worked on during that shift. Additional tests may be required if atmospheric conditions change and retesting of the substrate moisture content is warranted.

The membrane system shall not be installed on substrate with a moisture content greater than 6%, or at a moisture content above the amount recommended by the system's Manufacturer, whichever is less.

- (b) Random tests for adequate tensile bond strength shall be conducted by the Contractor on the substrate using an adhesion tester in accordance with the requirements of ASTM D4541. The minimum frequency shall be one test per 5,000 s.f. but not less than three adhesion tests per shift for each contiguous section worked on during that shift. The locations of the pull tests shall be at least a distance from each other equal to or greater than 1/3 of the width or length (whichever is greater) of the area being worked in that section. The location of the pull tests shall be located in accordance with ASTM D3665 or a statistically-based procedure of stratified random sampling approved by the Engineer.

Adequate surface preparation will be indicated by tensile bond strengths of primer to the substrate greater than or equal to 150 psi or failure in a concrete surface and greater than or equal to 300 psi for steel surfaces.

If the tensile bond strength is lower than the minimum specified, the Engineer may request additional substrate preparation. Any primer not adequately applied shall be removed and new primer applied at the Contractor's expense, as directed by Engineer.

- (c) Grouted joints, materials that the membrane cannot bond to, and cracks or discontinuities that cannot be bridged over by the membrane material shall be covered by a reinforcing material recommended by the membrane system's Manufacturer prior to application of membrane layers as approved or directed by the Engineer.

6. Application:

- (a) The System shall be applied in the following distinct steps as follows:
 - 1) Substrate preparation
 - 2) Priming

- 3) Reinforcing material application over grouted joints, cracks, etc.
 - 4) Membrane application (minimum 2 layers)
 - 5) Membrane with aggregate
- (b) Immediately prior to the application of any components of the System, the surface shall be adequately dry (see Section 5(a) of this specification) and any remaining dust or loose particles shall be removed using clean, dry, oil-free compressed air or industrial vacuum.
- (c) Where the area to be treated is bound by a vertical surface (e.g. curb or wall), the membrane system shall be continued up the vertical, if shown on the plans or directed by the Engineer.
- (d) The handling, mixing and addition of components shall be performed in a safe manner to achieve the desired results, in accordance with the Manufacturer's recommendations or as approved or directed by the Engineer.
- (e) A neat finish with well defined boundaries and straight edges shall be provided by the Applicator.
- (f) Primer: The primer shall consist of one coat with an overall coverage rate of 125 to 175 s.f./gal unless otherwise recommended in the Manufacturer's written instructions.

All components shall be measured and mixed in accordance with the Manufacturer's recommendations.

The primer shall be spray applied using a single component spray system approved for use by the Manufacturer. If required by Site conditions and allowed by the manufacturer brush, squeegee or roller application will be allowed.

The primer shall be allowed to cure tack-free for a minimum of 30 minutes or as required by the Manufacturer's instructions, whichever time is greater, prior to application of the first lift of waterproofing membrane.

Porous concrete (brick) may require a second coat of primer should the first coat be absorbed.

- (g) Membrane and Reinforcing Material: Application of the membrane on the primed surface shall not commence until the primer is cured as described in Section 6(f) of this specification and the adhesion pull tests are completed in accordance with Section 5(b) of this specification.

The waterproofing membrane shall consist of two coats for a total dry film thickness of a minimum 80 mils but not to exceed 120 mils. Adjacent coats shall be of a contrasting color to aid in Quality Assurance and inspection. Any reinforcing material shall be applied immediately before the first coat of membrane in accordance with the Manufacturer's recommendations.

The membrane shall be comprised of Components A and B and a hardener powder which is to be added to Component B in accordance with the Manufacturer's recommendations.

The substrate shall be coated in a methodical manner.

Thickness checks: For each layer, checks for wet film thickness using a gauge pin or standard comb-type thickness gauge shall be carried out once every 100 s.f. Where rapid set time of the membrane does not allow for wet film thickness checks, ultrasonic testing (steel surfaces only), calibrated point-penetrating (destructive) testing, in-situ sampling (cutout of small sections for measuring thicknesses), or other methods approved by the Engineer shall be employed for determination of dry film thickness. The measured thickness of each and every individual test of the membrane shall be greater than or equal to the required thickness.

Bond Strength: Random tests for adequate tensile bond strength shall be conducted on the membrane in accordance with the requirements of ASTM D4541. The minimum test frequency shall be one test per 5,000 s.f. but no less than three adhesion tests per bridge. Adequate adhesion will be indicated by tensile bond strengths of the membrane to the substrate of greater than or equal to 150 psi or failure in a concrete surface, and greater than or equal to 300 psi for steel surfaces.

Repair the membrane system following destructive testing and correct any deficiencies in the membrane system or substrate noted during QC testing in accordance with the Manufacturer's recommendations to the satisfaction of the Engineer at no additional cost to the State.

- (h) Repairs: If an area is left untreated or the membrane becomes damaged, a patch repair shall be carried out to restore the integrity of the system. The damaged areas shall be cut back to sound materials and wiped with solvent (e.g. acetone) up to a width of at least four inches on the periphery, removing any contaminants unless otherwise recommended by the Manufacturer. The substrate shall be primed as necessary, followed by the membrane layers. A continuous layer shall be obtained over the substrate with a four-inch overlap onto existing membrane.

Where the membrane is to be joined to existing cured material, the new application shall overlap the existing by at least four inches. Cleaning and surface preparation on areas to be lapped shall be as recommended in the Manufacturer's written instructions.

(i) Aggregated Finish:

- 1) Apply an additional 40 mil thick layer of the membrane material immediately followed by an aggregate coating, before the membrane cures, at a rate to fully cover the coated area to a point where no membrane material is visible. The membrane and aggregate shall be fully integrated after the aggregate has been applied and the membrane cured.
 - 2) Localized areas not fully coated shall be touched-up with additional membrane and aggregate as needed.
 - 3) Using motorized mechanical sweepers or a vacuum sweeper apparatus, remove all loose and excess aggregate from the surface to the satisfaction of the Engineer and dispose of properly after application prior to allowing traffic onto finished surface or application of tack coat. Any areas not fully coated after sweeping shall be touched up with additional membrane and aggregate as needed.
7. Final Review: The Engineer and the Applicator shall jointly review the area(s) over which the completed system has been installed. Any irregularities or other criteria that do not meet the requirements of the Engineer shall be addressed at this time.

Method of Measurement & Payment: There shall be no separate measurement and payment for Membrane Waterproofing (Cold Liquid Elastomeric), as it shall be included under the Lump Sum Contract Work.

TECHNICAL SPECIFICATION PENETRATING SEALER PROTECTIVE COMPOUND

Description: Work under this item shall consist of cleaning concrete surfaces of dirt, dust, and debris, and furnishing and applying a clear, penetrating sealer to concrete surfaces where shown on the plans, to provide a barrier against the intrusion of moisture and chlorides. This work also includes furnishing, installing, and removing platforms, scaffolding, ladders, and other means of access as well as shields, as required, to protect adjacent areas and traffic from overspray.

Materials: The penetrating sealer shall conform to Article M.03.09. A Materials Certificate shall be submitted for the penetrating sealer in accordance with Article 1.06.07. A product not listed on the Qualified Products List (QPL) may be considered for approval. A Certified Test Report shall be submitted in accordance with Article 1.06.07 indicating that the product being considered conforms to the Test Requirements listed on the QPL.

Construction Methods:

Submittals: The Contractor shall submit to the Engineer Safety Data Sheets (SDS), Technical Data Sheets and product literature for the approved sealer. The literature shall include written instructions how to apply the sealer to vertical and horizontal surfaces, and where required, overhead surfaces. Application rate and number of applications of sealer shall be addressed.

The Contractor shall submit to the Engineer, in accordance with Article 1.05.02, written procedures for cleaning the concrete surfaces prior to sealer application. The submittal shall include proposed equipment and materials and shall address how adjacent traffic and other areas shall be protected from dust, debris and overspray during the cleaning and application processes. Where the sealer is to be applied to parapets before pavement is placed, the submittal shall address protection of the deck and curb to which membrane waterproofing will be applied. Should the membrane already be present, the submittal shall address shielding of the membrane. It shall also indicate how vegetation and regulated areas shall be protected from overspray. The submittal shall address the conditions under which work may proceed, including wind speed, temperature and precipitation. It shall also include procedures to be followed to protect the work should unfavorable weather conditions occur before the product has been absorbed.

The Contractor shall inspect the surfaces to be sealed to identify surface cleaning needs before submitting the procedures. The Contractor shall identify concrete surfaces that:

- Need repair
- Require special attention or cleaning procedures
- Have been previously treated with coatings or curing compounds that would hinder penetration of the sealer into the concrete
- Will be new or newly repaired

Written procedures shall include observations listed above. Application of penetrating sealer to new concrete shall be addressed in the application procedures. Forms for surfaces of new concrete to receive penetrating sealer shall not be treated using form release oil, which can inhibit or prevent penetration of the sealer into the concrete.

Surface Preparation: Concrete surfaces to which penetrating sealer will be applied shall be clean and free of grease, oil, and other surface contaminants, including biological growth. Dry surfaces may be cleaned by sweeping with brushes or brooms, and blowing clean with oil-free, compressed air. The Contractor shall take care not to damage the concrete surface finish during cleaning operations. Care shall be taken so that cleaning methods do not damage joint sealant or other components of the structure that are to remain.

Application: Application of the sealer may begin only after the Engineer evaluates the concrete surfaces and determines that conditions for installation comply with the accepted written application procedures.

The sealer shall be applied in accordance with the accepted application procedures at the rate specified by the manufacturer. The Contractor shall monitor and record the number of square feet of concrete surface sealed and the number of gallons of sealer applied over that surface area to verify that the required application rate is being met. A minimum of three applications of sealer shall be assumed to be needed. After the first application of the sealer, curing time shall be recorded and submitted to the Engineer. Additional applications of sealer shall be applied as specified in the application instructions, provided adequate time between applications and appropriate curing of the sealer have occurred. For each application, the Contractor shall record the area and number of gallons of sealer applied as well as the curing time for that application. The Contractor may be directed to apply sealer in up to three separate applications if concrete surfaces readily absorb the previous application.

If the Contractor is directed to apply more than three applications of sealer, the additional applications will be compensated as extra work. Should salts, oil or other visually undesirable materials be evacuated from the concrete by the penetrating sealer and remain on the surface after sufficient rain events have occurred, the Engineer may order surface cleaning of the concrete as extra work.

The Engineer shall be provided access to inspect the concrete surface during application and after the sealer has had adequate time to cure.

Method of Measurement & Payment: There shall be no separate measurement and payment for Penetrating Sealer Protective Compound, as it shall be included under the Lump Sum Contract Work.

TECHNICAL SPECIFICATION
MAINTENANCE AND PROTECTION OF TRAFFIC

Description: During construction of the bridge, Hunt Road shall be closed to traffic. The Contractor shall set up and maintain the scheme for maintenance of traffic, including detours, as shown on the plans, unless an alternate scheme acceptable to the Engineer is offered by the Contractor at no additional cost.

Construction Methods:

The Contractor shall furnish and erect signs legally closing the roadway to traffic, as shown on the plans or directed by the Engineer, prior to barricading the roadway for closure.

The Contractor shall furnish a sufficient number of signs, barricades, temporary precast concrete barrier curbs, barricade warning lights, drums, traffic cones and delineators to forewarn traffic of the construction, as shown on the plans contained within or as directed by the Engineer.

The Contractor shall also provide such safety measures, pavement markings, warning devices and signs as deemed necessary to safeguard and guide the traveling public through detours ordered by the Engineer, included in the approved scheme for maintenance of traffic, or as shown on the plans. The Contractor shall erect, maintain, move, adjust, clean, relocate and store these signs, barricades, drums, traffic cones and delineators when, where and as directed by the Engineer. The Contractor shall also provide uniformed flaggers for any traffic patterns used that the Engineer or the Town deems it necessary.

The use of unauthorized or unapproved signs, barricades, drums, traffic cones or delineators will not be permitted.

All signs in any one signing pattern shall be mounted the same height above the roadway. The Contractor shall keep all signs in proper position, clean and legible at all times. Care shall be taken so that weeds, shrubbery, construction materials or equipment, and soil, are not allowed to obscure any sign, light, or barricade. Signs that do not apply to existing conditions shall be removed or adjusted so that the legend is not visible to approaching traffic.

The Contractor shall maintain access to and egress from all commercial and residential driveways throughout the project limits. If a temporary closure of a residential driveway is necessary, the Contractor shall coordinate with the owner to determine the time period of the closure.

Should the Contractor fail to perform any of the work required under this section, the Town may perform or arrange for others to perform such work. In such cases, the Town will deduct from money due or to become due for the Contractor and all expenses connected therewith which are found to be greater than the cost to the Town had the Contractor performed the specified work.

The following information is for traffic control during construction operations when the roadway is open to traffic.

TRAFFIC CONTROL DURING CONSTRUCTION OPERATIONS

The following guidelines shall assist field personnel in determining when and what type of traffic control patterns to use for various situations. These guidelines shall provide for the safe and efficient movement of traffic through work zones and enhance the safety of work forces in the work area.

TRAFFIC CONTROL PATTERNS

Traffic control patterns shall be used when a work operation requires that all or part of any vehicle or work area protrudes onto any part of a travel lane or shoulder. For each situation, the installation of traffic control devices shall be based on the following:

- Speed and volume of traffic
- Duration of operation
- Exposure to hazards

Traffic control patterns shall be uniform, neat and orderly so as to command respect from the motorist.

In the case of a horizontal or vertical sight restriction in advance of the work area, the traffic control pattern shall be extended to provide adequate sight distance for approaching traffic.

If a lane reduction taper is required to shift traffic, the entire length of the taper should be installed on a tangent section of roadway so that the entire taper area can be seen by the motorist.

Any existing signs that are in conflict with the traffic control patterns shall be removed, covered, or turned so that they are not readable by oncoming traffic.

When installing a traffic control pattern, a Buffer Area should be provided and this area shall be free of equipment, workers, materials and parked vehicles.

Traffic control patterns will not be required when vehicles are on an emergency patrol type activity or when a short duration stop is made and the equipment can be contained within the shoulder. Flashing lights and appropriate trafficperson shall be used when required.

Although each situation must be dealt with individually, conformity with the typical traffic control plans contained herein is required. In a situation not adequately covered by the typical traffic control plans, the Contractor must contact the Engineer for assistance prior to setting up a traffic control pattern.

PLACEMENT OF SIGNS

Signs must be placed in such a position to allow motorists the opportunity to reduce their speed prior to the work area. Signs shall be installed on the same side of the roadway as the work area. On multi-lane divided highways, advance warning signs shall be installed on both sides of the highway. On directional roadways (on-ramps, off-ramps, one-way roads), where the sight distance to signs is restricted, these signs should be installed on both sides of the roadway.

ALLOWABLE ADJUSTMENT OF SIGNS AND DEVICES SHOWN ON THE TRAFFIC CONTROL PLANS

The traffic control plans contained herein show the location and spacing of signs and devices under ideal conditions. Signs and devices should be installed as shown on these plans whenever possible.

The proper application of the traffic control plans and installation of traffic control devices depends on actual field conditions.

Adjustments to the traffic control plans shall be made only at the direction of the Engineer to improve the visibility of the signs and devices and to better control traffic operations. Adjustments to the traffic control plans shall be based on safety of work forces and motorists, abutting property requirements, driveways, side roads, and the vertical and horizontal curvature of the roadway.

The Engineer may require that the traffic control pattern be located significantly in advance of the work area to provide better sight line to the signing and safer traffic operations through the work zone.

Table I indicates the minimum taper length required for a lane closure based on the posted speed limit of the roadway. These taper lengths shall only be used when the recommended taper lengths shown on the traffic control plans cannot be achieved.

TABLE I – MINIMUM TAPER LENGTHS

POSTED SPEED LIMIT MILES PER HOUR	MINIMUM TAPER LENGTH IN FEET FOR A SINGLE LANE CLOSURE
30 OR LESS	180
35	250
40	320
45	540
50	600
55	660
65	780

INSTALLING AND REMOVING TRAFFIC CONTROL PATTERNS

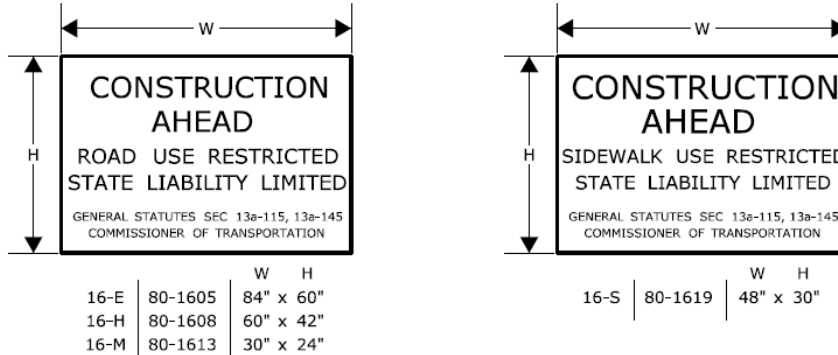
- Lane Closures shall be installed beginning with the advanced warning signs and proceeding forward toward the work area.
- Lane Closures shall be removed in the reverse order, beginning at the work area, or end of the traffic control pattern, and proceeding back toward the advanced warning signs.
- Stopping traffic may be allowed:
 - As per the contract for such activities as blasting, steel erection, etc.
 - During paving, milling operations, etc. where, in the middle of the operation, it is necessary to flip the pattern to complete the operation on the other half of the roadway and traffic should not travel across the longitudinal joint or difference in roadway elevation.
 - To move slow moving equipment across live traffic lanes into the work area.
- Under certain situations when the safety of the traveling public and/or that of the workers may be compromised due to conditions such as traffic volume, speed, roadside obstructions, or sight line deficiencies, as determined by the Engineer and/or State Police, traffic may be briefly impeded while installing and/or removing the advanced warning signs and the first ten traffic cones/drums only. Appropriate measures shall be taken to safely slow traffic. If required, traffic slowing techniques may be used and shall include the use of Truck Mounted Impact Attenuators (TMAs) as appropriate, for a minimum of one mile in advance of the pattern starting point. Once the advanced warning signs and the first ten traffic cones/drums are installed/removed, the TMAs and sign crew shall continue to install/remove the pattern as described in Section 4c and traffic shall be allowed to resume their normal travel.

- The Contractor must adhere to using the proper signs, placing the signs correctly, and ensuring the proper spacing of signs.
- Additional devices are required on entrance ramps, exit ramps, and intersecting roads to warn and/or move traffic into the proper travel path prior to merging/exiting with/from the main line traffic. This shall be completed before installing the mainline pattern past the ramp or intersecting roadway.
- Prior to installing a pattern, any conflicting existing signs shall be covered with an opaque material. Once the pattern is removed, the existing signs shall be uncovered.
- On limited access roadways, workers are prohibited from crossing the travel lanes to install and remove signs or other devices on the opposite side of the roadway. Any signs or devices on the opposite side of the roadway shall be installed and removed separately.

USE OF TRAFFIC DRUMS AND TRAFFIC CONES

- Traffic drums shall be used for taper channelization on limited-access roadways, ramps, and turning roadways and to delineate raised catch basins and other hazards.
- Traffic drums shall be used in place of traffic cones in traffic control patterns that are in effect for more than a 36-hour duration.
- Traffic Cones less than 42 inches in height shall not be used on limited-access roadways or on non-limited access roadways with a posted speed limit of 45 mph and above.
- Typical spacing of traffic drums and/or cones shown on the Traffic Control Plans in the Contract are maximum spacings and may be reduced to meet actual field conditions as required.

SERIES 16 SIGNS



THE 16-S SIGN SHALL BE USED ON ALL PROJECTS THAT REQUIRE SIDEWALK RECONSTRUCTION OR RESTRICT PEDESTRIAN TRAVEL ON AN EXISTING SIDEWALK.

SERIES 16 SIGNS SHALL BE INSTALLED IN ADVANCE OF THE TRAFFIC CONTROL PATTERNS TO ALLOW MOTORISTS THE OPPORTUNITY TO AVOID A WORK ZONE. SERIES 16 SIGNS SHALL BE INSTALLED ON ANY MAJOR INTERSECTING ROADWAYS THAT APPROACH THE WORK ZONE. ON LIMITED-ACCESS HIGHWAYS, THESE SIGNS SHALL BE LOCATED IN ADVANCE OF THE NEAREST UPSTREAM EXIT RAMP AND ON ANY ENTRANCE RAMPS PRIOR TO OR WITHIN THE WORK ZONE LIMITS.

THE LOCATION OF SERIES 16 SIGNS CAN BE FOUND ELSEWHERE IN THE PLANS OR INSTALLED AS DIRECTED BY THE ENGINEER.

SIGNS 16-E AND 16-H SHALL BE POST-MOUNTED.

SIGN 16-E SHALL BE USED ON ALL EXPRESSWAYS.

SIGN 16-H SHALL BE USED ON ALL RAMPS, OTHER STATE ROADWAYS, AND MAJOR TOWN/CITY ROADWAYS.

SIGN 16-M SHALL BE USED ON OTHER TOWN ROADWAYS.

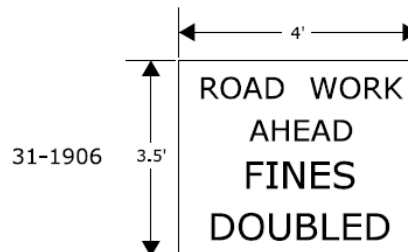
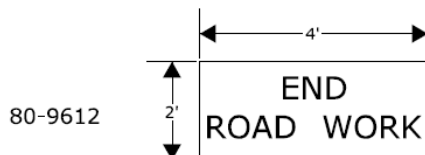
REGULATORY SIGN "ROAD WORK AHEAD, FINES DOUBLED"

THE REGULATORY SIGN "ROAD WORK AHEAD FINES DOUBLED" SHALL BE INSTALLED FOR ALL WORK ZONES THAT OCCUR ON ANY STATE HIGHWAY IN CONNECTICUT WHERE THERE ARE WORKERS ON THE HIGHWAY OR WHEN THERE IS OTHER THAN EXISTING TRAFFIC OPERATIONS.

THE "ROAD WORK AHEAD FINES DOUBLED" REGULATORY SIGN SHALL BE PLACED AFTER THE SERIES 16 SIGN AND IN ADVANCE OF THE "ROAD WORK AHEAD" SIGN.

"END ROAD WORK" SIGN

THE LAST SIGN IN THE PATTERN MUST BE THE "END ROAD WORK" SIGN.



SCALE: NONE

CONSTRUCTION TRAFFIC CONTROL PLAN
REQUIRED SIGNS

NOTES FOR TRAFFIC CONTROL PLANS

1. IF A TRAFFIC STOPPAGE OCCURS IN ADVANCE OF SIGN (A), THEN AN ADDITIONAL SIGN (A) SHALL BE INSTALLED IN ADVANCE OF THE STOPPAGE.
2. SIGNS (AA), (A), AND (D) SHOULD BE OMITTED WHEN THESE SIGNS HAVE ALREADY BEEN INSTALLED TO DESIGNATE A LARGER WORK ZONE THAN THE WORK ZONE THAT IS ENCOMPASSED ON THIS PLAN.
3. SEE TABLE 1 FOR ADJUSTMENT OF TAPERS IF NECESSARY.
4. IF THIS PLAN REMAINS IN CONTINUOUS OPERATION FOR MORE THAN 36 HOURS, THEN TRAFFIC DRUMS SHALL BE USED IN PLACE OF TRAFFIC CONES.
5. ANY LEGAL SPEED LIMIT SIGNS WITHIN THE LIMITS OF A ROADWAY / LANE CLOSURE AREA SHALL BE COVERED WITH AN OPAQUE MATERIAL WHILE THE CLOSURE IS IN EFFECT, AND UNCOVERED WHEN THE ROADWAY / LANE CLOSURE IS RE-OPENED TO ALL LANES OF TRAFFIC.
6. IF THIS PLAN REMAINS IN CONTINUOUS OPERATION FOR MORE THAN 36 HOURS, THEN ANY EXISTING CONFLICTING PAVEMENT MARKINGS SHALL BE ERADICATED OR COVERED, AND TEMPORARY PAVEMENT MARKINGS THAT DELINEATE THE PROPER TRAVELPATHS SHALL BE INSTALLED.
7. DISTANCES BETWEEN SIGNS IN THE ADVANCE WARNING AREA MAY BE REDUCED TO 100' ON LOW-SPEED URBAN ROADS (SPEED LIMIT < 40 MPH).
8. IF THIS PLAN IS TO REMAIN IN OPERATION DURING THE HOURS OF DARKNESS, INSTALL BARRICADE WARNING LIGHTS - HIGH INTENSITY ON ALL POST-MOUNTED DIAMOND SIGNS IN THE ADVANCE WARNING AREA.
9. A CHANGEABLE MESSAGE SIGN SHALL BE INSTALLED ONE HALF TO ONE MILE IN ADVANCE OF THE LANE CLOSURE TAPER.
10. SIGN (P) SHALL BE MOUNTED A MINIMUM OF 7 FEET FROM THE PAVEMENT SURFACE TO THE BOTTOM OF THE SIGN.

TABLE 1 - MINIMUM TAPER LENGTHS

POSTED SPEED LIMIT (MILES PER HOUR)	MINIMUM TAPER LENGTH FOR A SINGLE LANE CLOSURE
30 OR LESS	180' (55m)
35	250' (75m)
40	320' (100m)
45	540' (165m)
50	600' (180m)
55	660' (200m)
65	780' (240m)

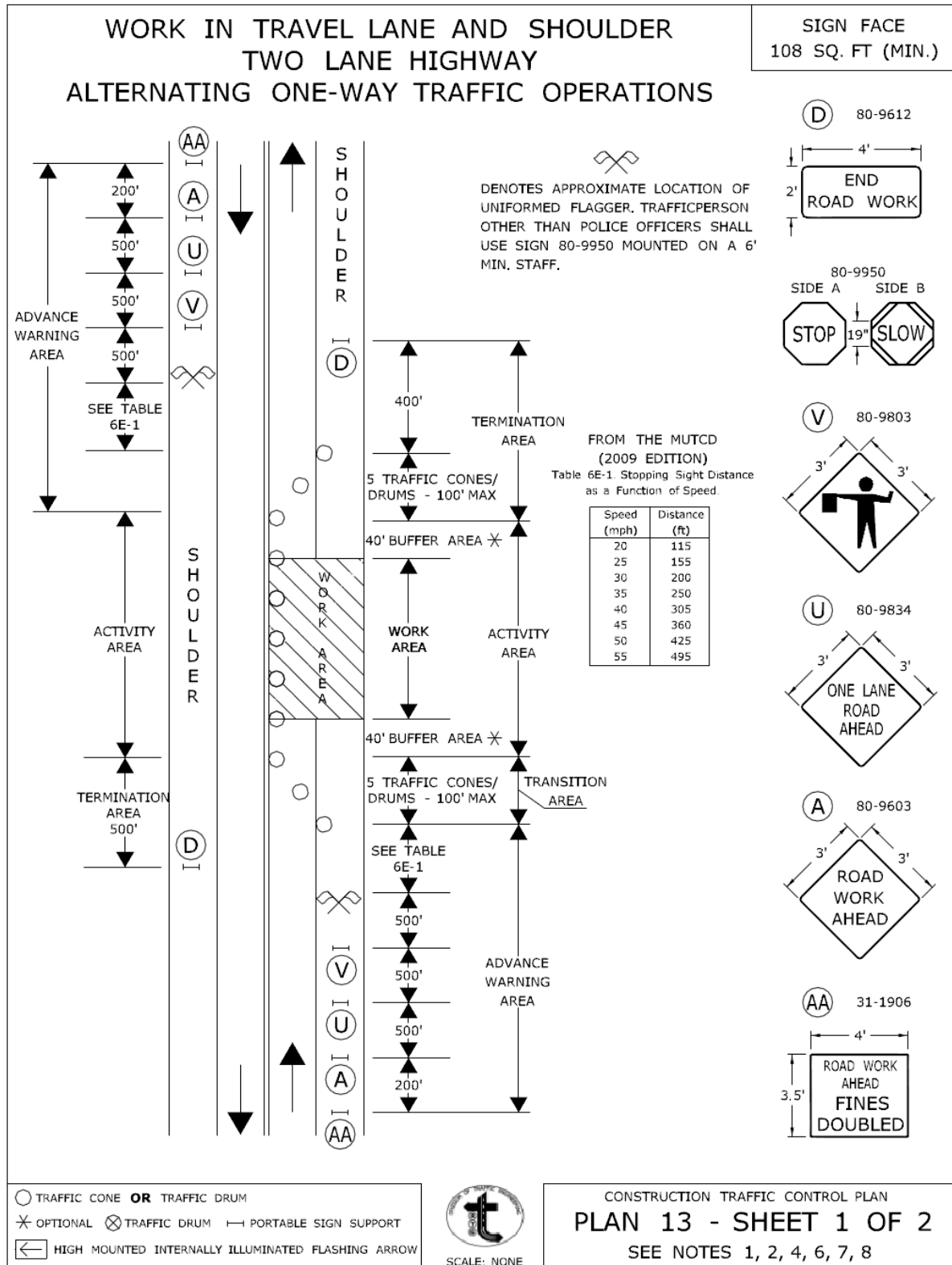
METRIC CONVERSION CHART (1" = 25mm)

ENGLISH	METRIC	ENGLISH	METRIC	ENGLISH	METRIC
12"	300mm	42"	1050mm	72"	1800mm
18"	450mm	48"	1200mm	78"	1950mm
24"	600mm	54"	1350mm	84"	2100mm
30"	750mm	60"	1500mm	90"	2250mm
36"	900mm	66"	1650mm	96"	2400mm



SCALE: NONE

CONSTRUCTION TRAFFIC CONTROL PLAN
NOTES



○ TRAFFIC CONE OR TRAFFIC DRUM
 ✖ OPTIONAL ✕ TRAFFIC DRUM ⇨ PORTABLE SIGN SUPPORT
 HIGH MOUNTED INTERNALLY ILLUMINATED FLASHING ARROW



CONSTRUCTION TRAFFIC CONTROL PLAN
PLAN 13 - SHEET 1 OF 2
 SEE NOTES 1, 2, 4, 6, 7, 8

WORK IN TRAVEL LANE AND SHOULDER TWO LANE HIGHWAY ALTERNATING ONE-WAY TRAFFIC OPERATIONS

SIGN FACE
108 SQ. FT (MIN.)

HAND SIGNAL METHODS TO BE USED BY UNIFORMED FLAGGERS

THE FOLLOWING METHODS FROM SECTION 6E.07, FLAGGER PROCEDURES, IN THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES," SHALL BE USED BY UNIFORMED FLAGGERS WHEN DIRECTING TRAFFIC THROUGH A WORK AREA. THE STOP/SLOW SIGN PADDLE (SIGN NO. 80-9950) SHOWN ON THE TRAFFIC STANDARD SHEET TR-1220 01 ENTITLED, "SIGNS FOR CONSTRUCTION AND PERMIT OPERATIONS" SHALL BE USED.

A. TO STOP TRAFFIC

TO STOP ROAD USERS, THE FLAGGER SHALL FACE ROAD USERS AND AIM THE STOP PADDLE FACE TOWARD ROAD USERS IN A STATIONARY POSITION WITH THE ARM EXTENDED HORIZONTALLY AWAY FROM THE BODY. THE FREE ARM SHALL BE HELD WITH THE PALM OF THE HAND ABOVE SHOULDER LEVEL TOWARD APPROACHING TRAFFIC.



B. TO DIRECT TRAFFIC TO PROCEED

TO DIRECT STOPPED ROAD USERS TO PROCEED, THE FLAGGER SHALL FACE ROAD USERS WITH THE SLOW PADDLE FACE AIMED TOWARD ROAD USERS IN A STATIONARY POSITION WITH THE ARM EXTENDED HORIZONTALLY AWAY FROM THE BODY. THE FLAGGER SHALL MOTION WITH THE FREE HAND FOR ROAD USERS TO PROCEED.



C. TO ALERT OR SLOW TRAFFIC

TO ALERT OR SLOW TRAFFIC, THE FLAGGER SHALL FACE ROAD USERS WITH THE SLOW PADDLE FACE AIMED TOWARD ROAD USERS IN A STATIONARY POSITION WITH THE ARM EXTENDED HORIZONTALLY AWAY FROM THE BODY. TO FURTHER ALERT OR SLOW TRAFFIC, THE FLAGGER HOLDING THE SLOW PADDLE FACE TOWARD ROAD USERS MAY MOTION UP AND DOWN WITH THE FREE HAND, PALM DOWN.

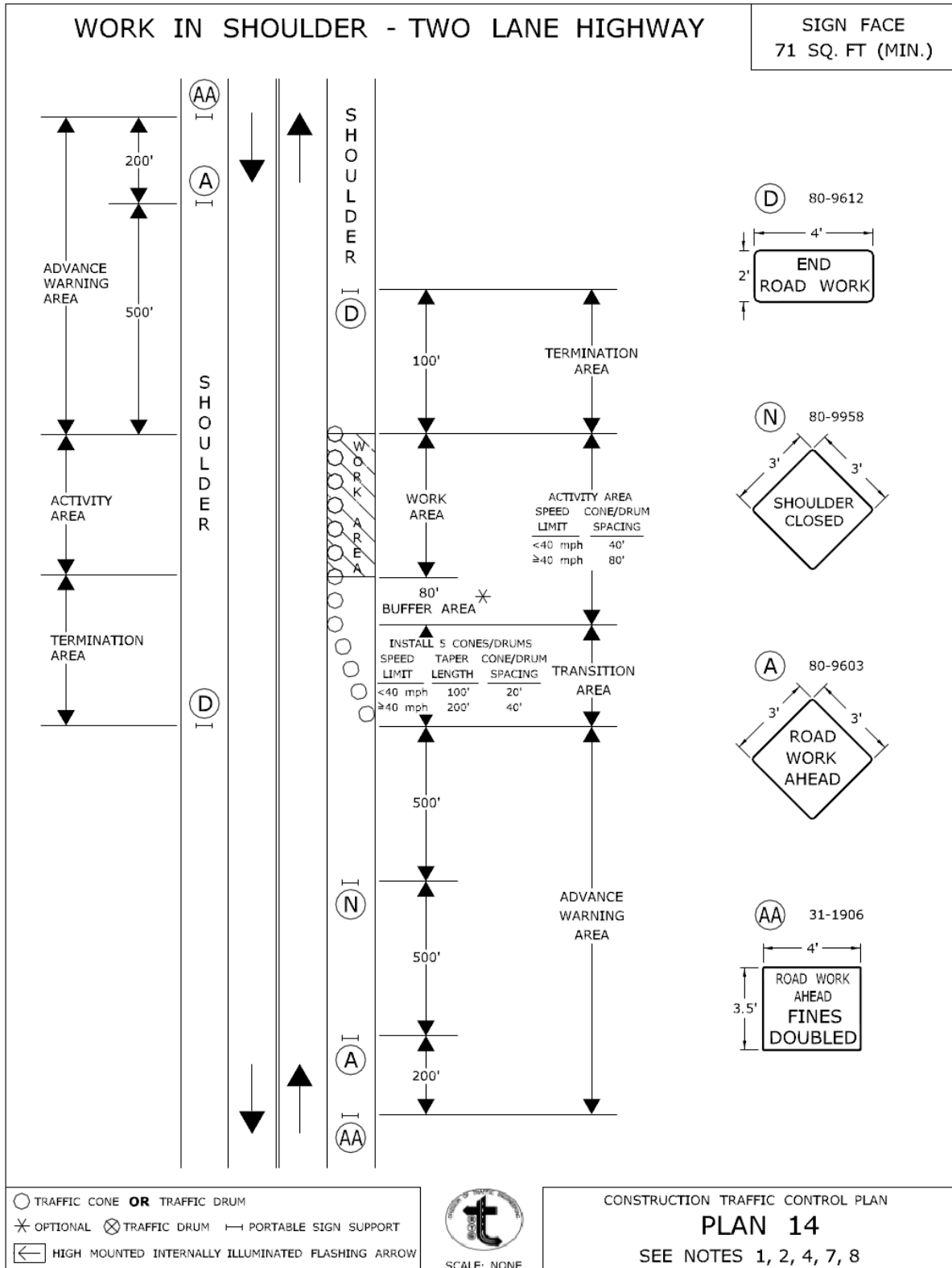


- TRAFFIC CONE **OR** TRAFFIC DRUM
- * OPTIONAL ⊗ TRAFFIC DRUM → PORTABLE SIGN SUPPORT
- ◀ HIGH MOUNTED INTERNALLY ILLUMINATED FLASHING ARROW



SCALE: NONE

CONSTRUCTION TRAFFIC CONTROL PLAN
PLAN 13 - SHEET 2 OF 2
SEE NOTES 1, 2, 4, 6, 7, 8



**TECHNICAL SPECIFICATION
REMOVAL OF EXISTING MASONRY**

Work under this item shall conform to the requirements of Section 9.74 of Form 818, amended as follows:

Revise the following:

9.74.03 - Construction Methods:

1. Submittals: Add the following after the last sentence of the first paragraph:

- Plan to protect the portion of existing channel walls adjacent to the dam spillway, which will remain in place, as shown on the Contract Plans

Add the following sentence to the end of **9.74.04 – Method of Measurement:**

There shall be no separate measurement for removal of existing masonry, as it shall be included under the Lump Sum Contract Work.

Add the following sentence to **9.74.05 – Basis of Payment:**

There shall be no separate payment the Removal of Existing Masonry, as it shall be included under the Lump Sum Contract Work.

TAB G

Prevailing Wage Rate Information

Minimum Rates and Classifications for Heavy/Highway Construction

ID#: 23-49425

Connecticut Department of Labor Wage and Workplace Standards

By virtue of the authority vested in the Labor Commissioner under provisions of Section 31-53 of the General Statutes of Connecticut, as amended, the following are declared to be the prevailing rates and welfare payments and will apply only where the contract is advertised for bid within 20 days of the date on which the rates are established. Any contractor or subcontractor not obligated by agreement to pay to the welfare and pension fund shall pay this amount to each employee as part of his/her hourly wages.

Project Number:

Project Town: Columbia

State#:

FAP#:

Project: Replacement of Hunt Road Bridge No. 30004

CLASSIFICATION	Hourly Rate	Benefits
1) Boilermaker	44.46	28.51
1a) Bricklayer, Cement Masons, Cement Finishers, Plasterers, Stone Masons	39.92	34.47
2) Carpenters, Piledrivermen	37.61	27.61
2a) Diver Tenders	37.61	27.61
3) Divers	46.07	27.61
03a) Millwrights	38.02	28.41
4) Painters: (Bridge Construction) Brush, Roller, Blasting (Sand, Water, etc.), Spray	56.25	25.05
4a) Painters: Brush and Roller	37.62	24.70
4b) Painters: Spray Only	40.62	24.70

As of: June 19, 2023

4c) Painters: Steel Only	39.62	24.70
4d) Painters: Blast and Spray	40.62	24.70
4e) Painters: Tanks, Tower and Swing	39.62	24.70
4f) Elevated Tanks (60 feet and above)	46.62	24.70
5) Electrician (Trade License required: E-1,2 L-5,6 C-5,6 T-1,2 L-1,2 V-1,2,7,8,9)	43.75	32.47+3% of gross wage
6) Ironworkers: Ornamental, Reinforcing, Structural, and Precast Concrete Erection	42.37	40.02 + a
7) Plumbers (Trade License required: (P-1,2,6,7,8,9 J-1,2,3,4 SP-1,2) and Pipefitters (Including HVAC Work) (Trade License required: S-1,2,3,4,5,6,7,8 B-1,2,3,4 D-1,2,3,4 G-1, G-2, G-8, G-9)	48.28	35.50
----LABORERS----		
8) Group 1: General Laborers and concrete specialist	33.5	25.59
8) Group 1a: Acetylene Burners (Hours worked with a torch)	34.5	25.59
9) Group 2: Chain saw operators, fence and guard rail erectors, pneumatic tool operators, powdermen	33.75	25.59
10) Group 3: Pipelayers	34.0	25.59
11) Group 4: Jackhammer/Pavement breaker (handheld); mason tenders (cement/concrete), catch basin builders, asphalt rakers, air track operators, block paver, curb setter and forklift operators	34.0	25.59

As of: June 19, 2023

12) Group 5: Toxic waste removal (non-mechanical systems)	35.5	25.59
13) Group 6: Blasters	35.25	25.59
Group 7: Asbestos/lead removal, non-mechanical systems (does not include leaded joint pipe)	36.5	25.59
Group 8: Traffic control signalmen	20.1	25.59
Group 9: Hydraulic Drills	34.25	25.59
Group 10: Toxic Waste Removers A or B With PPE	36.5	25.59
----LABORERS (TUNNEL CONSTRUCTION, FREE AIR). Shield Drive and Liner Plate Tunnels in Free Air.----		
13a) Miners, Motormen, Mucking Machine Operators, Nozzle Men, Grout Men, Shaft & Tunnel Steel & Rodmen, Shield & Erector, Arm Operator, Cable Tenders	35.73	25.59 + a
13b) Brakemen, Trackmen, Miners' Helpers and all other men	34.76	25.59 + a
----CLEANING, CONCRETE AND CAULKING TUNNEL----		
14) Concrete Workers, Form Movers, and Strippers	34.76	25.59 + a
15) Form Erectors	35.09	25.59 + a
----ROCK SHAFT LINING, CONCRETE, LINING OF SAME AND TUNNEL IN FREE AIR:----		

As of: June 19, 2023

16) Brakemen, Trackmen, Tunnel Laborers, Shaft Laborers, Miners Helpers	34.76	25.59 + a
17) Laborers Topside, Cage Tenders, Bellman	34.65	25.59 + a
18) Miners	35.73	25.59 + a
----TUNNELS, CAISSON AND CYLINDER WORK IN COMPRESSED AIR: ----		
18a) Blaster	42.22	25.59 + a
19) Brakemen, Trackmen, Groutman, Laborers, Outside Lock Tender, Gauge Tenders	42.02	25.59 + a
20) Change House Attendants, Powder Watchmen, Top on Iron Bolts	40.04	25.59 + a
21) Mucking Machine Operator, Grout Boss, Track Boss	42.81	25.59 + a
----TRUCK DRIVERS----(*see note below)		
Two Axle Trucks, Helpers	32.16	30.51 + a
Three Axle Trucks; Two Axle Ready Mix	32.27	30.51 + a
Three Axle Ready Mix	32.33	30.51 + a
Four Axle Trucks	32.39	30.51 + a
Four Axle Ready-Mix	32.44	30.51 + a

As of: June 19, 2023

Heavy Duty Trailer (40 tons and over)	34.66	30.51 + a
Specialized earth moving equipment other than conventional type on-the road trucks and semi-trailer (including Euclids)	32.44	30.51 + a
Heavy Duty Trailer (up to 40 tons)	33.39	30.51 + a
Snorkle Truck	32.54	30.51 + a
----POWER EQUIPMENT OPERATORS----		
Group 1: Crane Handling or Erecting Structural Steel or Stone, Hoisting Engineer (2 drums or over). (Trade License Required)	52.78	27.80 + a
Group 1a: Front End Loader (7 cubic yards or over); Work Boat 26 ft. and over.	48.37	27.80 + a
Group 2: Cranes (100 ton rate capacity and over); Bauer Drill/Caisson. (Trade License Required)	52.41	27.80 + a
Group 2a: Cranes (under 100 ton rated capacity).	51.51	27.80 + a
Group 2b: Excavator over 2 cubic yards; Pile Driver (\$3.00 premium when operator controls hammer).	48.0	27.80 + a
Group 3: Excavator; Gradall; Master Mechanic; Hoisting Engineer (all types of equipment where a drum and cable are used to hoist or drag material regardless of motive power of operation), Rubber Tire Excavator (Drott-1085 or similar); Grader Operator; Bulldozer Fine Grade (slopes, shaping, laser or GPS, etc.). (Trade License Required)	47.1	27.80 + a
Group 4: Trenching Machines; Lighter Derrick; CMI Machine or Similar; Koehring Loader (Skooper).	46.64	27.80 + a
Group 5: Specialty Railroad Equipment; Asphalt Paver; Asphalt Spreader; Asphalt Reclaiming Machine; Line Grinder; Concrete Pumps;	45.92	27.80 + a

As of: June 19, 2023

Drills with Self Contained Power Units; Boring Machine; Post Hole Digger; Auger; Pounder; Well Digger; Milling Machine (over 24" mandrel)

Group 5 continued: Side Boom; Combination Hoe and Loader; Directional Driller. 45.92 27.80 + a

Group 6: Front End Loader (3 up to 7 cubic yards); Bulldozer (rough grade dozer). 45.55 27.80 + a

Group 7: Asphalt Roller; Concrete Saws and Cutters (ride on types); Vermeer Concrete Cutter; Stump Grinder; Scraper; Snooper; Skidder; Milling Machine (24" and under Mandrel) 45.14 27.80 + a

Group 8: Mechanic, Grease Truck Operator, Hydroblaster, Barrier Mover, Power Stone Spreader; Welder; Work Boat under 26 ft.; Transfer Machine. 44.67 27.80 + a

Group 9: Front End Loader (under 3 cubic yards), Skid Steer Loader regardless of attachments (Bobcat or Similar); Fork Lift, Power Chipper; Landscape Equipment (including hydroseeder), Vacuum Excavation Truck and Hydrovac Excavation Truck (27 HG pressure or greater). 44.14 27.80 + a

Group 10: Vibratory Hammer, Ice Machine, Diesel and Air Hammer, etc. 41.69 27.80 + a

Group 11: Conveyor, Earth Roller; Power Pavement Breaker (whiphammer), Robot Demolition Equipment. 41.69 27.80 + a

Group 12: Wellpoint Operator. 41.61 27.80 + a

Group 13: Compressor Battery Operator. 40.92 27.80 + a

Group 14: Elevator Operator; Tow Motor Operator (Solid Tire No Rough Terrain). 39.54 27.80 + a

As of: June 19, 2023

Group 15: Generator Operator; Compressor Operator; Pump Operator; Welding Machine Operator; Heater Operator.	39.06	27.80 + a
Group 16: Maintenance Engineer.	38.28	27.80 + a
Group 17: Portable Asphalt Plant Operator; Portable Crusher Plant Operator; Portable Concrete Plant Operator., Portable Grout Plant Operator, Portable Water Filtration Plant Operator.	43.46	27.80 + a
Group 18: Power Safety Boat; Vacuum Truck; Zim Mixer; Sweeper; (minimum for any job requiring CDL license).	40.54	27.80 + a

****NOTE: SEE BELOW**

----LINE CONSTRUCTION----(Railroad Construction and Maintenance)----

20) Lineman, Cable Splicer, Technician	48.19	6.5% + 22.00
21) Heavy Equipment Operator	42.26	6.5% + 19.88
22) Equipment Operator, Tractor Trailer Driver, Material Men	40.96	6.5% + 19.21
23) Driver Groundmen	26.5	6.5% + 9.00
23a) Truck Driver	40.96	6.5% + 17.76

----LINE CONSTRUCTION----

24) Driver Groundmen	30.92	6.5% + 9.70
25) Groundmen	22.67	6.5% + 6.20

As of: June 19, 2023

26) Heavy Equipment Operators	37.1	6.5% + 10.70
27) Linemen, Cable Splicers, Dynamite Men	41.22	6.5% + 12.20
28) Material Men, Tractor Trailer Drivers, Equipment Operators	35.04	6.5% + 10.45

Welders: Rate for craft to which welding is incidental.

**Note: Hazardous waste removal work receives additional \$1.25 per hour for truck drivers.*

***Note: Hazardous waste premium \$3.00 per hour over classified rate*

Crane with 150 ft. boom (including jib) - \$1.50 extra

Crane with 200 ft. boom (including jib) - \$2.50 extra

Crane with 250 ft. boom (including jib) - \$5.00 extra

Crane with 300 ft. boom (including jib) - \$7.00 extra

Crane with 400 ft. boom (including jib) - \$10.00 extra

All classifications that indicate a percentage of the fringe benefits must be calculated at the percentage rate times the "base hourly rate".

Apprentices duly registered under the Commissioner of Labor's regulations on "Work Training Standards for Apprenticeship and Training Programs" Section 31-51-d-1 to 12, are allowed to be paid the appropriate percentage of the prevailing journeymen hourly base and the full fringe benefit rate, providing the work site ratio shall not be less than one full-time journeyman instructing and supervising the work of each apprentice in a specific trade.

~~Connecticut General Statute Section 31-55a: Annual Adjustments to wage rates by contractors doing state work
~~

The Prevailing wage rates applicable to this project are subject to annual adjustments each July 1st for the duration of the project.

Each contractor shall pay the annual adjusted prevailing wage rate that is in effect each July 1st, as posted by the Department of Labor.

It is the contractor's responsibility to obtain the annual adjusted prevailing wage rate increases directly from the Department of Labor's website.

The annual adjustments will be posted on the Department of Labor's Web page:

www.ct.gov/dol. For those without internet access, please contact the division listed below.

The Department of Labor will continue to issue the initial prevailing wage rate schedule to the Contracting Agency for the project.

All subsequent annual adjustments will be posted on our Web Site for contractor access.

Contracting Agencies are under no obligation pursuant to State labor law to pay any increase due to the annual adjustment provision.

Effective October 1, 2005 - Public Act 05-50: any person performing the work of any mechanic, laborer, or worker shall be paid prevailing wage

All Person who perform work ON SITE must be paid prevailing wage for the appropriate mechanic, laborer, or worker classification.

All certified payrolls must list the hours worked and wages paid to All Persons who perform work ON SITE regardless of their ownership i.e.: (Owners, Corporate Officers, LLC Members, Independent Contractors, et. al)

Reporting and payment of wages is required regardless of any contractual relationship alleged to exist between the contractor and such person.

~~Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clause (29 CFR 5.5 (a) (1) (ii)).

Please direct any questions which you may have pertaining to classification of work and payment of prevailing wages to the Wage and Workplace Standards Division, telephone (860)263-6790.

**Connecticut Department of Labor
Wage and Workplace Standards Division
FOOTNOTES**

⇒ Please Note: If the “Benefits” listed on the schedule for the following occupations includes a letter(s) (+ a or + a+b for instance), refer to the information below.

Benefits to be paid at the appropriate prevailing wage rate for the listed occupation.

If the “Benefits” section for the occupation lists only a dollar amount, disregard the information below.

Bricklayers, Cement Masons, Cement Finishers, Concrete Finishers, Stone Masons
(Building Construction) and
(Residential- Hartford, Middlesex, New Haven, New London and Tolland Counties)

- a. Paid Holiday: Employees shall receive 4 hours for Christmas Eve holiday provided the employee works the regularly scheduled day before and after the holiday. Employers may schedule work on Christmas Eve and employees shall receive pay for actual hours worked in addition to holiday pay.

Elevator Constructors: Mechanics

- a. Paid Holidays: New Year’s Day, Memorial Day, Independence Day, Labor Day, Veterans’ Day, Thanksgiving Day, Christmas Day, plus the Friday after Thanksgiving.
- b. Vacation: Employer contributes 8% of basic hourly rate for 5 years or more of service or 6% of basic hourly rate for 6 months to 5 years of service as vacation pay credit.

Glaziers

- a. Paid Holidays: Labor Day and Christmas Day.

Power Equipment Operators
(Heavy and Highway Construction & Building Construction)

- a. Paid Holidays: New Year’s Day, Good Friday, Memorial day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day, provided the employee works 3 days during the week in which the holiday falls, if scheduled, and if scheduled, the working day before and the working day after the holiday. Holidays falling on Saturday may be observed on Saturday, or if the employer so elects, on the preceding Friday.

Ironworkers

- a. Paid Holiday: Labor Day provided employee has been on the payroll for the 5 consecutive work days prior to Labor Day.

Laborers (Tunnel Construction)

- a. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day. No employee shall be eligible for holiday pay when he fails, without cause, to work the regular work day preceding the holiday or the regular work day following the holiday.

Roofers

- a. Paid Holidays: July 4th, Labor Day, and Christmas Day provided the employee is employed 15 days prior to the holiday.

Sprinkler Fitters

- a. Paid Holidays: Memorial Day, July 4th, Labor Day, Thanksgiving Day and Christmas Day, provided the employee has been in the employment of a contractor 20 working days prior to any such paid holiday.

Truck Drivers

(Heavy and Highway Construction & Building Construction)

- a. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas day, and Good Friday, provided the employee has at least 31 calendar days of service and works the last scheduled day before and the first scheduled day after the holiday, unless excused.

November 29, 2006

Notice
To All Mason Contractors and Interested Parties
Regarding Construction Pursuant to Section 31-53 of the
Connecticut General Statutes (Prevailing Wage)

The Connecticut Labor Department Wage and Workplace Standards Division is empowered to enforce the prevailing wage rates on projects covered by the above referenced statute.

Over the past few years the Division has withheld enforcement of the rate in effect for workers who operate a forklift on a prevailing wage rate project due to a potential jurisdictional dispute.

The rate listed in the schedules and in our Occupational Bulletin (see enclosed) has been as follows:

Forklift Operator:

- **Laborers (Group 4) Mason Tenders** - operates forklift solely to assist a mason to a maximum height of nine feet only.
- **Power Equipment Operator (Group 9)** - operates forklift to assist any trade and to assist a mason to a height over nine feet.

The U.S. Labor Department conducted a survey of rates in Connecticut but it has not been published and the rate in effect remains as outlined in the above Occupational Bulletin.

Since this is a classification matter and not one of jurisdiction, effective January 1, 2007 the Connecticut Labor Department will enforce the rate on each schedule in accordance with our statutory authority.

Your cooperation in filing appropriate and accurate certified payrolls is appreciated.



Opportunity * Guidance * Support



THIS IS A PUBLIC WORKS PROJECT

Covered by the

PREVAILING WAGE LAW

CT General Statutes Section 31-53

**If you have QUESTIONS regarding your wages
CALL (860) 263-6790**

Section 31-55 of the CT State Statutes requires every contractor or subcontractor performing work for the state to post in a prominent place the prevailing wages as determined by the Labor Commissioner.

Sec. 31-53b. Construction safety and health course. New miner training program. Proof of completion required for mechanics, laborers and workers on public works projects. Enforcement. Regulations. Exceptions. (a) Each contract for a public works project entered into on or after July 1, 2009, by the state or any of its agents, or by any political subdivision of the state or any of its agents, described in subsection (g) of section 31-53, shall contain a provision requiring that each contractor furnish proof with the weekly certified payroll form for the first week each employee begins work on such project that any person performing the work of a mechanic, laborer or worker pursuant to the classifications of labor under section 31-53 on such public works project, pursuant to such contract, has completed a course of at least ten hours in duration in construction safety and health approved by the federal Occupational Safety and Health Administration or, has completed a new miner training program approved by the Federal Mine Safety and Health Administration in accordance with 30 CFR 48 or, in the case of telecommunications employees, has completed at least ten hours of training in accordance with 29 CFR 1910.268.

(b) Any person required to complete a course or program under subsection (a) of this section who has not completed the course or program shall be subject to removal from the worksite if the person does not provide documentation of having completed such course or program by the fifteenth day after the date the person is found to be in noncompliance. The Labor Commissioner or said commissioner's designee shall enforce this section.

(c) Not later than January 1, 2009, the Labor Commissioner shall adopt regulations, in accordance with the provisions of chapter 54, to implement the provisions of subsections (a) and (b) of this section. Such regulations shall require that the ten-hour construction safety and health courses required under subsection (a) of this section be conducted in accordance with federal Occupational Safety and Health Administration Training Institute standards, or in accordance with Federal Mine Safety and Health Administration Standards or in accordance with 29 CFR 1910.268, as appropriate. The Labor Commissioner shall accept as sufficient proof of compliance with the provisions of subsection (a) or (b) of this section a student course completion card issued by the federal Occupational Safety and Health Administration Training Institute, or such other proof of compliance said commissioner deems appropriate, dated no earlier than five years before the commencement date of such public works project.

(d) This section shall not apply to employees of public service companies, as defined in section 16-1, or drivers of commercial motor vehicles driving the vehicle on the public works project and delivering or picking up cargo from public works projects provided they perform no labor relating to the project other than the loading and unloading of their cargo.

(P.A. 06-175, S. 1; P.A. 08-83, S. 1.)

History: P.A. 08-83 amended Subsec. (a) by making provisions applicable to public works project contracts entered into on or after July 1, 2009, replacing provision re total cost of work with reference to Sec. 31-53(g), requiring proof in certified payroll form that new mechanic, laborer or worker has completed a 10-hour or more construction safety course and adding provision re new miner training program, amended Subsec. (b) by substituting "person" for "employee" and adding "or program", amended Subsec. (c) by adding "or in accordance with Federal Mine Safety and Health Administration Standards" and setting new deadline of January 1, 2009, deleted former Subsec. (d) re "public building", added new Subsec. (d) re exemptions for public service company employees and delivery drivers who perform no labor other than delivery and made conforming and technical changes, effective January 1, 2009.

Information Bulletin ***Occupational Classifications***

The Connecticut Department of Labor has the responsibility to properly determine "job classification" on prevailing wage projects covered under C.G.S. Section 31-53(d).

Note: This information is intended to provide a sample of some occupational classifications for guidance purposes only. It is not an all-inclusive list of each occupation's duties. This list is being provided only to highlight some areas where a contractor may be unclear regarding the proper classification. If unsure, the employer should seek guidelines for CTDOL.

Below are additional clarifications of specific job duties performed for certain classifications:

- **ASBESTOS WORKERS**

Applies all insulating materials, protective coverings, coatings and finishes to all types of mechanical systems.

- **ASBESTOS INSULATOR**

Handle, install apply, fabricate, distribute, prepare, alter, repair, dismantle, heat and frost insulation, including penetration and fire stopping work on all penetration fire stop systems.

- **BOILERMAKERS**

Erects hydro plants, incomplete vessels, steel stacks, storage tanks for water, fuel, etc. Builds incomplete boilers, repairs heat exchanges and steam generators.

- **BRICKLAYERS, CEMENT MASONS, CEMENT FINISHERS, MARBLE MASONS, PLASTERERS, STONE MASONS, PLASTERERS. STONE MASONS, TERRAZZO WORKERS, TILE SETTERS**

Lays building materials such as brick, structural tile and concrete cinder, glass, gypsum, terra cotta block. Cuts, tools and sets marble, sets stone, finishes concrete, applies decorative steel, aluminum and plastic tile, applies cements, sand, pigment and marble chips to floors, stairways, etc.

- **CARPENTERS, MILLWRIGHTS. PILEDRIVERMEN. LATHERS. RESILEINT FLOOR LAYERS, DOCK BUILDERS, DIKERS, DIVER TENDERS**

Constructs, erects, installs and repairs structures and fixtures of wood, plywood and wallboard. Installs, assembles, dismantles, moves industrial machinery. Drives piling into ground to provide foundations for structures such as buildings and bridges, retaining walls for earth embankments, such as cofferdams. Fastens wooden, metal or rockboard lath to walls, ceilings and partitions of buildings, acoustical tile layer, concrete form builder. Applies firestopping materials on fire resistive joint systems only. Installation of curtain/window walls only where attached to wood or metal studs. Installation of insulated material of all types whether blown, nailed or attached in other ways to walls, ceilings and floors of buildings. Assembly and installation of modular furniture/furniture systems. Free-standing furniture is not covered. This includes free standing: student chairs, study top desks, book box desks, computer furniture, dictionary stand, atlas stand, wood shelving, two-position information access station, file cabinets, storage cabinets, tables, etc.

- **LABORER, CLEANING**

- The clean up of any construction debris and the general (heavy/light) cleaning, including sweeping, wash down, mopping, wiping of the construction facility and its furniture, washing, polishing, and dusting.

- **DELIVERY PERSONNEL**

- If delivery of supplies/building materials is to one common point and stockpiled there, prevailing wages are not required. If the delivery personnel are involved in the distribution of the material to multiple locations within the construction site then they would have to be paid prevailing wages for the type of work performed: laborer, equipment operator, electrician, ironworker, plumber, etc.

- An example of this would be where delivery of drywall is made to a building and the delivery personnel distribute the drywall from one "stockpile" location to further sub-locations on each floor. Distribution of material around a construction site is the job of a laborer or tradesman, and not a delivery personnel.

- **ELECTRICIANS**

Install, erect, maintenance, alteration or repair of any wire, cable, conduit, etc., which generates, transforms, transmits or uses electrical energy for light, heat, power or other purposes, including the Installation or maintenance of telecommunication, LAN wiring or computer equipment, and low voltage wiring. ****License required per Connecticut General Statutes: E-1,2 L-5,6 C-5,6 T-1,2 L-1,2 V-1,2,7,8,9.***

- **ELEVATOR CONSTRUCTORS**

Install, erect, maintenance and repair of all types of elevators, escalators, dumb waiters and moving walks. **License required by Connecticut General Statutes: R-1,2,5,6.*

- **FORK LIFT OPERATOR**

Laborers Group 4) Mason Tenders - operates forklift solely to assist a mason to a maximum height of nine (9) feet only.

Power Equipment Operator Group 9 - operates forklift to assist any trade, and to assist a mason to a height over nine (9) feet.

- **GLAZIERS**

Glazing wood and metal sash, doors, partitions, and 2 story aluminum storefronts. Installs glass windows, skylights, store fronts and display cases or surfaces such as building fronts, interior walls, ceilings and table tops and metal store fronts. Installation of aluminum window walls and curtain walls is the "joint" work of glaziers and ironworkers, which require equal composite workforce.

- **IRONWORKERS**

Erection, installation and placement of structural steel, precast concrete, miscellaneous iron, ornamental iron, metal curtain wall, rigging and reinforcing steel. Handling, sorting, and installation of reinforcing steel (rebar). Metal bridge rail (traffic), metal bridge handrail, and decorative security fence installation. Installation of aluminum window walls and curtain walls is the "joint" work of glaziers and ironworkers which require equal composite workforce.

- **INSULATOR**

- Installing fire stopping systems/materials for "Penetration Firestop Systems": transit to cables, electrical conduits, insulated pipes, sprinkler pipe penetrations, ductwork behind radiation, electrical cable trays, fire rated pipe penetrations, natural polypropylene, HVAC ducts, plumbing bare metal, telephone and communication wires, and boiler room ceilings.

- **LABORERS**

Acetylene burners, asphalt rakers, chain saw operators, concrete and power buggy operator, concrete saw operator, fence and guard rail erector (except metal bridge rail (traffic), decorative security fence (non-metal).

installation.), hand operated concrete vibrator operator, mason tenders, pipelayers (installation of storm drainage or sewage lines on the street only), pneumatic drill operator, pneumatic gas and electric drill operator, powermen and wagon drill operator, air track operator, block paver, curb setters, blasters, concrete spreaders.

- **PAINTERS**

Maintenance, preparation, cleaning, blasting (water and sand, etc.), painting or application of any protective coatings of every description on all bridges and appurtenances of highways, roadways, and railroads. Painting, decorating, hardwood finishing, paper hanging, sign writing, scenic art work and drywall hhg for any and all types of building and residential work.

- **LEAD PAINT REMOVAL**

- Painter's Rate

1. Removal of lead paint from bridges.
2. Removal of lead paint as preparation of any surface to be repainted.
3. Where removal is on a Demolition project prior to reconstruction.

- Laborer's Rate

1. Removal of lead paint from any surface NOT to be repainted.
2. Where removal is on a *TOTAL* Demolition project only.

- **PLUMBERS AND PIPEFITTERS**

Installation, repair, replacement, alteration or maintenance of all plumbing, heating, cooling and piping. ****License required per Connecticut General Statutes: P-1,2,6,7,8,9 J-1,2,3,4 SP-1,2 S-1,2,3,4,5,6,7,8 B-1,2,3,4 D-1,2,3,4.***

- **POWER EQUIPMENT OPERATORS**

Operates several types of power construction equipment such as compressors, pumps, hoists, derricks, cranes, shovels, tractors, scrapers or motor graders, etc. Repairs and maintains equipment. ****License required, crane operators only, per Connecticut General Statutes.***

- **ROOFERS**

Covers roofs with composition shingles or sheets, wood shingles, slate or asphalt and gravel to waterproof roofs, including preparation of surface. (demolition or removal of any type of roofing and or clean-up of any and all areas where a roof is to be relaid.)

- **SHEETMETAL WORKERS**

Fabricate, assembles, installs and repairs sheetmetal products and equipment in such areas as ventilation, air-conditioning, warm air heating, restaurant equipment, architectural sheet metal work, sheetmetal roofing, and aluminum gutters. Fabrication, handling, assembling, erecting, altering, repairing, etc. of coated metal material panels and composite metal material panels when used on building exteriors and interiors as soffits, fascia, louvers, partitions, canopies, cornice, column covers, awnings, beam covers, cladding, sun shades, lighting troughs, spires, ornamental roofing, metal ceilings, mansards, copings, ornamental and ventilation hoods, vertical and horizontal siding panels, trim, etc. The sheet metal classification also applies to the vast variety of coated metal material panels and composite metal material panels that have evolved over the years as an alternative to conventional ferrous and non-ferrous metals like steel, iron, tin, copper, brass, bronze, aluminum, etc. Fabrication, handling, assembling, erecting, altering, repairing, etc. of architectural metal roof, standing seam roof, composite metal roof, metal and composite bathroom/toilet partitions, aluminum gutters, metal and composite lockers and shelving, kitchen equipment, and walk-in coolers. To include testing and air –balancing ancillary to installation and construction.

- **SPRINKLER FITTERS**

Installation, alteration, maintenance and repair of fire protection sprinkler systems.

****License required per Connecticut General Statutes: F-1,2,3,4.***

- **TILE MARBLE AND TERRAZZO FINISHERS**

Assists and tends the tile setter, marble mason and terrazzo worker in the performance of their duties.

- **TRUCK DRIVERS**

~How to pay truck drivers delivering asphalt is under REVISION~

Truck Drivers are required to be paid prevailing wage for time spent "working" directly on the site. These drivers remain covered by the prevailing wage for any time spent transporting between the actual construction location and facilities (such as fabrication, plants, mobile factories, batch plant, borrow pits, job headquarters, tool yards, etc.) dedicated exclusively, or nearly so, to performance of the contract or project, which are so located in proximity to the actual construction location that it is reasonable to include them. ****License required, drivers only, per Connecticut General Statutes.***

For example:

- Material men and deliverymen are not covered under prevailing wage as long as they are not directly involved in the construction process. If, they unload the material, they would then be covered by prevailing wage for the classification they are performing work in: laborer, equipment operator, etc.
- Hauling material off site is not covered provided they are not dumping it at a location outlined above.
- Driving a truck on site and moving equipment or materials on site would be considered covered work, as this is part of the construction process.

➤ *Any questions regarding the proper classification should be directed to:*
Public Contract Compliance Unit
Wage and Workplace Standards Division
Connecticut Department of Labor
200 Folly Brook Blvd, Wethersfield, CT 06109
(860) 263-6790.

Informational Bulletin

THE 10-HOUR OSHA CONSTRUCTION SAFETY AND HEALTH COURSE

(applicable to public building contracts entered into *on or after July 1, 2007*, where the total cost of all work to be performed is at least \$100,000)

- (1) This requirement was created by Public Act No. 06-175, which is codified in Section 31-53b of the Connecticut General Statutes (pertaining to the prevailing wage statutes);
- (2) The course is required for public building construction contracts (projects funded in whole or in part by the state or any political subdivision of the state) entered into on or after July 1, 2007;
- (3) It is required of private employees (not state or municipal employees) and apprentices who perform manual labor for a general contractor or subcontractor on a public building project where the total cost of all work to be performed is at least \$100,000;
- (4) The ten-hour construction course pertains to the ten-hour Outreach Course conducted in accordance with federal OSHA Training Institute standards, and, for telecommunications workers, a ten-hour training course conducted in accordance with federal OSHA standard, 29 CFR 1910.268;
- (5) The internet website for the federal OSHA Training Institute is http://www.osha.gov/fso/ote/training/edcenters/fact_sheet.html;
- (6) The statutory language leaves it to the contractor and its employees to determine who pays for the cost of the ten-hour Outreach Course;
- (7) Within 30 days of receiving a contract award, a general contractor must furnish proof to the Labor Commissioner that all employees and apprentices performing manual labor on the project will have completed such a course;
- (8) Proof of completion may be demonstrated through either: (a) the presentation of a *bona fide* student course completion card issued by the federal OSHA Training Institute; *or* (2) the presentation of documentation provided to an employee by a trainer certified by the Institute pending the actual issuance of the completion card;
- (9) Any card with an issuance date more than 5 years prior to the commencement date of the construction project shall not constitute proof of compliance;

- (10) Each employer shall affix a copy of the construction safety course completion card to the certified payroll submitted to the contracting agency in accordance with Conn. Gen. Stat. § 31-53(f) on which such employee's name first appears;
- (11) Any employee found to be in non-compliance shall be subject to removal from the worksite if such employee does not provide satisfactory proof of course completion to the Labor Commissioner by the fifteenth day after the date the employee is determined to be in noncompliance;
- (12) Any such employee who is determined to be in noncompliance may continue to work on a public building construction project for a maximum of fourteen consecutive calendar days while bringing his or her status into compliance;
- (13) The Labor Commissioner may make complaint to the prosecuting authorities regarding any employer or agent of the employer, or officer or agent of the corporation who files a false certified payroll with respect to the status of an employee who is performing manual labor on a public building construction project;
- (14) The statute provides the minimum standards required for the completion of a safety course by manual laborers on public construction contracts; any contractor can exceed these minimum requirements; and
- (15) Regulations clarifying the statute are currently in the regulatory process, and shall be posted on the CTDOL website as soon as they are adopted in final form.
- (16) Any questions regarding this statute may be directed to the Wage and Workplace Standards Division of the Connecticut Labor Department via the internet website of <http://www.ctdol.state.ct.us/wgwkstnd/wgemenu.htm>; or by telephone at (860)263-6790.

THE ABOVE INFORMATION IS PROVIDED EXCLUSIVELY AS AN EDUCATIONAL RESOURCE, AND IS NOT INTENDED AS A SUBSTITUTE FOR LEGAL INTERPRETATIONS WHICH MAY ULTIMATELY ARISE CONCERNING THE CONSTRUCTION OF THE STATUTE OR THE REGULATIONS.

STATUTE 31-55a

- SPECIAL NOTICE -

To: All State and Political Subdivisions, Their Agents, and Contractors

Connecticut General Statute 31-55a - Annual adjustments to wage rates by contractors doing state work.

Each contractor that is awarded a contract on or after October 1, 2002, for (1) the construction of a state highway or bridge that falls under the provisions of section 31-54 of the general statutes, or (2) the construction, remodeling, refinishing, refurbishing, rehabilitation, alteration or repair of any public works project that falls under the provisions of section 31-53 of the general statutes shall contact the Labor Commissioner on or before July first of each year, for the duration of such contract, to ascertain the prevailing rate of wages on an hourly basis and the amount of payment or contributions paid or payable on behalf of each mechanic, laborer or worker employed upon the work contracted to be done, and shall make any necessary adjustments to such prevailing rate of wages and such payment or contributions paid or payable on behalf of each such employee, effective each July first.

- The prevailing wage rates applicable to any contract or subcontract awarded on or after October 1, 2002 are subject to annual adjustments each July 1st for the duration of any project which was originally advertised for bids on or after October 1, 2002.
- Each contractor affected by the above requirement shall pay the annual adjusted prevailing wage rate that is in effect each July 1st, as posted by the Department of Labor.
- It is the **contractor's** responsibility to obtain the annual adjusted prevailing wage rate increases directly from the Department of Labor's Web Site. The annual adjustments will be posted on the Department of Labor Web page: www.ctdol.state.ct.us. For those without internet access, please contact the division listed below.
- The Department of Labor will continue to issue the initial prevailing wage rate schedule to the Contracting Agency for the project. All subsequent annual adjustments will be posted on our Web Site for contractor access.

Any questions should be directed to the Contract Compliance Unit, Wage and Workplace Standards Division, Connecticut Department of Labor, 200 Folly Brook Blvd., Wethersfield, CT 06109 at (860)263-6790.

NOTICE

TO ALL CONTRACTING AGENCIES

Please be advised that Connecticut General Statutes Section 31-53, requires the contracting agency to certify to the Department of Labor, the total dollar amount of work to be done in connection with such public works project, regardless of whether such project consists of one or more contracts.

Please find the attached “Contracting Agency Certification Form” to be completed and returned to the Department of Labor, Wage and Workplace Standards Division, Public Contract Compliance Unit.

Inquiries can be directed to 860.263.6790.



CONNECTICUT DEPARTMENT OF LABOR
WAGE AND WORKPLACE STANDARDS DIVISION

Contracting Agency Certification Form

I, _____, acting in my official capacity as _____,
Authorized Representative Title

for _____, located at _____,
Contracting Agency Address

do hereby certify that the total dollar amount of work to be done in connection with

_____, located at _____,
Project name and number Address

shall be \$_____, which includes all work, regardless of whether such project
contains of one or more contracts.

Contractor Information

Name: _____

Address: _____

Authorized Representative: _____

Approximate Starting Date: _____

Approximate Completion Date: _____

Signature

Date

Return to:

Connecticut Department of Labor
Wage & Workplace Standards Division
200 Folly Brook Blvd.
Wethersfield, CT 06109

Rate Schedule Issued (Date): _____

CONNECTICUT DEPARTMENT OF LABOR
WAGE AND WORKPLACE STANDARDS DIVISION

CONTRACTORS WAGE CERTIFICATION FORM
Construction Manager at Risk/General Contractor/Prime Contractor

I, _____ of _____
Officer, Owner, Authorized Rep. Company Name

do hereby certify that the _____
Company Name

Street

City

and all of its subcontractors will pay all workers on the

Project Name and Number

Street and City

the wages as listed in the schedule of prevailing rates required for such project (a copy of which is attached hereto).

Signed

Subscribed and sworn to before me this _____ day of _____, _____.

Notary Public

Return to:
Connecticut Department of Labor
Wage & Workplace Standards Division
200 Folly Brook Blvd.
Wethersfield, CT 06109

Rate Schedule Issued (Date): _____

[New] In accordance with Section 31-53b(a) of the C.G.S. each contractor shall provide a copy of the OSHA 10 Hour Construction Safety and Health Card for each employee, to be attached to the first certified payroll on the project.

In accordance with Connecticut General Statutes, 31-53 Certified Payrolls with a statement of compliance shall be submitted monthly to the contracting agency.											PAYROLL CERTIFICATION FOR PUBLIC WORKS PROJECTS											Connecticut Department of Labor Wage and Workplace Standards Division 200 Folly Brook Blvd. Wethersfield, CT 06109													
WEEKLY PAYROLL											CONTRACTOR NAME AND ADDRESS:											SUBCONTRACTOR NAME & ADDRESS					WORKER'S COMPENSATION INSURANCE CARRIER								
PAYROLL NUMBER		Week-Ending Date		PROJECT NAME & ADDRESS											POLICY #											EFFECTIVE DATE:					EXPIRATION DATE:				
PERSON/WORKER, ADDRESS and SECTION	APPR RATE %	MALE/FEMALE AND RACE*	WORK CLASSIFICATION	DAY AND DATE							Total ST Hours	BASE HOURLY RATE	TYPE OF FRINGE BENEFITS Per Hour 1 through 6 (see back)	GROSS PAY FOR ALL WORK PERFORMED THIS WEEK	TOTAL DEDUCTIONS				GROSS PAY FOR THIS PREVAILING RATE JOB	CHECK # AND NET PAY															
				S	M	T	W	TH	F	S					Total O/T Hours	TOTAL FRINGE BENEFIT PLAN CASH	FICA	FEDERAL WITH-HOLDING			STATE WITH-HOLDING	LIST OTHER													
			Trade License Type & Number - OSHA 10 Certification Number	HOURS WORKED EACH DAY																															
												\$	1. \$																						
											Base Rate	2. \$																							
											\$	3. \$																							
											Cash Fringe	4. \$																							
											\$	5. \$																							
											Cash Fringe	6. \$																							
											\$	1. \$																							
											Base Rate	2. \$																							
											\$	3. \$																							
											Cash Fringe	4. \$																							
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											Cash Fringe	6. \$																							
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											Base Rate	2. \$																							
											\$	3. \$																							
											Cash Fringe	4. \$																							
											\$	5. \$																							
											Cash Fringe	6. \$																							

12/9/2013 *IF REQUIRED
WWS-CPI

*SEE REVERSE SIDE

PAGE NUMBER ____ OF

***FRINGE BENEFITS EXPLANATION (P):**

Bona fide benefits paid to approved plans, funds or programs, except those required by Federal or State Law (unemployment tax, worker’s compensation, income taxes, etc.).

Please specify the type of benefits provided:

- 1) Medical or hospital care _____ 4) Disability _____
- 2) Pension or retirement _____ 5) Vacation, holiday _____
- 3) Life Insurance _____ 6) Other (please specify) _____

CERTIFIED STATEMENT OF COMPLIANCE

For the week ending date of _____,

I, _____ of _____, (hereafter known as Employer) in my capacity as _____ (title) do hereby certify and state:

Section A:

1. All persons employed on said project have been paid the full weekly wages earned by them during the week in accordance with Connecticut General Statutes, section 31-53, as amended. Further, I hereby certify and state the following:

- a) The records submitted are true and accurate;
- b) The rate of wages paid to each mechanic, laborer or workman and the amount of payment or contributions paid or payable on behalf of each such person to any employee welfare fund, as defined in Connecticut General Statutes, section 31-53 (h), are not less than the prevailing rate of wages and the amount of payment or contributions paid or payable on behalf of each such person to any employee welfare fund, as determined by the Labor Commissioner pursuant to subsection Connecticut General Statutes, section 31-53 (d), and said wages and benefits are not less than those which may also be required by contract;
- c) The Employer has complied with all of the provisions in Connecticut General Statutes, section 31-53 (and Section 31-54 if applicable for state highway construction);
- d) Each such person is covered by a worker’s compensation insurance policy for the duration of his employment which proof of coverage has been provided to the contracting agency;
- e) The Employer does not receive kickbacks, which means any money, fee, commission, credit, gift, gratuity, thing of value, or compensation of any kind which is provided directly or indirectly, to any prime contractor, prime contractor employee, subcontractor, or subcontractor employee for the purpose of improperly obtaining or rewarding favorable treatment in connection with a prime contract or in connection with a prime contractor in connection with a subcontractor relating to a prime contractor; and
- f) The Employer is aware that filing a certified payroll which he knows to be false is a class D felony for which the employer may be fined up to five thousand dollars, imprisoned for up to five years or both.

2. OSHA~The employer shall affix a copy of the construction safety course, program or training completion document to the certified payroll required to be submitted to the contracting agency for this project on which such persons name first appears.

 (Signature) (Title) Submitted on (Date)

[New] In accordance with Section 31-53b(a) of the C.G.S. each contractor shall provide a copy of the OSHA 10 Hour Construction Safety and Health Card for each employee, to be attached to the first certified payroll on the project.

PAYROLL CERTIFICATION FOR PUBLIC WORKS PROJECTS										Connecticut Department of Labor Wage and Workplace Standards Division 200 Folly Brook Blvd. Wethersfield, CT 06109											
In accordance with Connecticut General Statutes, 31-53 Certified Payrolls with a statement of compliance shall be submitted monthly to the contracting agency.										WEEKLY PAYROLL											
CONTRACTOR NAME AND ADDRESS: Landon Corporation, 15 Connecticut Avenue, Northford, CT 06472										SUBCONTRACTOR NAME & ADDRESS XYZ Corporation 2 Main Street Yantic, CT 06389					WORKER'S COMPENSATION INSURANCE CARRIER Travelers Insurance Company POLICY # #BAC8888928 EFFECTIVE DATE: 1/1/09 EXPIRATION DATE: 12/31/09						
PAYROLL NUMBER	Week-Ending Date	PROJECT NAME & ADDRESS								Total ST Hours	BASE HOURLY RATE	TYPE OF FRINGE BENEFITS	GROSS PAY FOR ALL WORK PERFORMED THIS WEEK	TOTAL DEDUCTIONS			GROSS PAY FOR THIS PREVAILING RATE JOB	CHECK # AND NET PAY			
		DAY AND DATE												TOTAL FRINGE BENEFIT PLAN CASH	FICA	FEDERAL WITH-HOLDING			STATE WITH-HOLDING	LIST OTHER	
PERSON/WORKER, ADDRESS and SECTION	APPR RATE %	MALE/FEMALE AND RACE*	WORK CLASSIFICATION	S	M	T	W	TH	F	S	Total O/T Hours	Per Hour 1 through 6 (see back)									
Robert Craft 81 Maple Street Willimantic, CT 06226		M/C	Electrical Lineman E-1 1234567 Owner OSHA 123456	20	21	22	23	24	25	26	40	S-TIME	1. \$ 5.80	\$1,582.80				P-xxxx	\$1,582.80	#123	
				HOURS WORKED EACH DAY								O-TIME	2. \$								
													3. \$ 2.01								
													4. \$								
													5. \$								
													6. \$								
Ronald Jones 212 Elm Street Norwich, CT 06360	65%	M/B	Electrical Apprentice OSHA 234567	20	21	22	23	24	25	26	40	S-TIME	1. \$	\$1,464.80	xx.xx	xxx.xx	xx.xx	G-xxx	\$1,464.80	#124	
												O-TIME	2. \$								
													3. \$								
													4. \$								
													5. \$								
													6. \$								
Franklin T. Smith 234 Washington Rd. New London, CT 06320 SECTION B		M/H	Project Manager	20	21	22	23	24	25	26	8	S-TIME	1. \$	\$1,500.00	xx.xx	xx.xx	xx.xx	M-xx.x		xxx.xx	
												O-TIME	2. \$								
													3. \$								
													4. \$								
													5. \$								
													6. \$								
				20	21	22	23	24	25	26		S-TIME	1. \$								
												O-TIME	2. \$								
													3. \$								
													4. \$								
													5. \$								
													6. \$								

7/13/2009 *IF REQUIRED
WWS-CP1

*SEE REVERSE SIDE

PAGE NUMBER 1 OF 2

OSHA 10 ~ATTACH CARD TO 1ST CERTIFIED PAYROLL

***FRINGE BENEFITS EXPLANATION (P):**

Bona fide benefits paid to approved plans, funds or programs, except those required by Federal or State Law (unemployment tax, worker's compensation, income taxes, etc.).

Please specify the type of benefits provided:

- 1) Medical or hospital care Blue Cross 4) Disability _____
- 2) Pension or retirement _____ 5) Vacation, holiday _____
- 3) Life Insurance Utopia 6) Other (please specify) _____

CERTIFIED STATEMENT OF COMPLIANCE

For the week ending date of 9/26/09,

I, Robert Craft of XYZ Corporation, (hereafter known as

Employer) in my capacity as Owner (title) do hereby certify and state:

Section A:

1. All persons employed on said project have been paid the full weekly wages earned by them during the week in accordance with Connecticut General Statutes, section 31-53, as amended. Further, I hereby certify and state the following:

- a) The records submitted are true and accurate;
- b) The rate of wages paid to each mechanic, laborer or workman and the amount of payment or contributions paid or payable on behalf of each such employee to any employee welfare fund, as defined in Connecticut General Statutes, section 31-53 (h), are not less than the prevailing rate of wages and the amount of payment or contributions paid or payable on behalf of each such employee to any employee welfare fund, as determined by the Labor Commissioner pursuant to subsection Connecticut General Statutes, section 31-53 (d), and said wages and benefits are not less than those which may also be required by contract;
- c) The Employer has complied with all of the provisions in Connecticut General Statutes, section 31-53 (and Section 31-54 if applicable for state highway construction);
- d) Each such employee of the Employer is covered by a worker's compensation insurance policy for the duration of his employment which proof of coverage has been provided to the contracting agency;
- e) The Employer does not receive kickbacks, which means any money, fee, commission, credit, gift, gratuity, thing of value, or compensation of any kind which is provided directly or indirectly, to any prime contractor, prime contractor employee, subcontractor, or subcontractor employee for the purpose of improperly obtaining or rewarding favorable treatment in connection with a prime contract or in connection with a prime contractor in connection with a subcontractor relating to a prime contractor; and
- f) The Employer is aware that filing a certified payroll which he knows to be false is a class D felony for which the employer may be fined up to five thousand dollars, imprisoned for up to five years or both.

2. OSHA-The employer shall affix a copy of the construction safety course, program or training completion document to the certified payroll required to be submitted to the contracting agency for this project on which such employee's name first appears.

Robert Craft owner 10/2/09
 (Signature) (Title) Submitted on (Date)

Section B: Applies to CONNDOT Projects ONLY

That pursuant to CONNDOT contract requirements for reporting purposes only, all employees listed under Section B who performed work on this project are not covered under the prevailing wage requirements defined in Connecticut General Statutes Section 31-53.

Robert Craft owner 10/2/09
 (Signature) (Title) Submitted on (Date)

Note: CTDOL will assume all hours worked were performed under Section A unless clearly delineated as Section B WWS-CP1 as such. Should an employee perform work under both Section A and Section B, the hours worked and wages paid must be segregated for reporting purposes.

*****THIS IS A PUBLIC DOCUMENT***
 DO NOT INCLUDE SOCIAL SECURITY NUMBERS**

TAB H

Commission on Human Rights and Opportunities (CHRO) Contract Compliance

The contractor who is selected to perform this State project must comply with CONN. GEN. STAT. §§ 4a-60, 4a-60a, 4a-60g, and 46a-68b through 46a-68f, inclusive, as amended by June 2015 Special Session Public Act 15-5.

State law requires a minimum of twenty-five (25%) percent of the state-funded portion of the contract be set aside for award to subcontractors holding current certification from the Connecticut Department of Administrative Services (“DAS”) under the provisions of CONN. GEN. STAT. § 4a-60g. (25% of the total state-funded value with DAS-certified Small Businesses and 6.25% of the total state-funded value with DAS-certified Minority-, Women-, and/or Disabled-owned Businesses.) The contractor must demonstrate good faith effort to meet the 25% set-aside goals.

Non-Discrimination and Affirmative Action Provisions for Municipal Public Works/Quasi-Public Agency Project Contracts

- (A) (1) The contractor agrees and warrants that in the performance of the contract such contractor will not discriminate or permit discrimination against any person or group of persons on the grounds of race, color, religious creed, age, marital status, national origin, ancestry, sex, gender identity or expression, status as a veteran, intellectual disability, mental disability or physical disability, including, but not limited to, blindness, unless it is shown by such contractor that such disability prevents performance of the work involved, in any manner prohibited by the laws of the United States or of the state of Connecticut; and the contractor further agrees to take affirmative action to ensure that applicants with job-related qualifications are employed and that employees are treated when employed without regard to their race, color, religious creed, age, marital status, national origin, ancestry, sex, gender identity or expression, status as a veteran, intellectual disability, mental disability or physical disability, including, but not limited to, blindness, unless it is shown by such contractor that such disability prevents performance of the work involved; (2) The contractor agrees, in all solicitations or advertisements for employees placed by or on behalf of the contractor, to state that it is an “affirmative action-equal opportunity employer” in accordance with regulations adopted by the Commission on Human Rights and Opportunities; (3) The contractor agrees to provide each labor union or representative of workers with which such contractor has a collective bargaining agreement or other contract or understanding and each vendor with which such contractor has a contract or understanding, a notice to be provided by the Commission on Human Rights and Opportunities advising the labor union or workers' representative of the contractor's commitments under this section, and to post copies of the notice in conspicuous places available to employees and applicants for employment; (4) The contractor agrees to comply with each provision of this section and sections 46a-68e and 46a-68f and with each regulation or relevant order issued by said commission pursuant to sections 46a-56, 46a-68e, 46a-68f and 46a-86; and (5) The contractor agrees to provide the Commission on Human Rights and Opportunities with such information requested by the commission, and permit access to pertinent books, records and accounts, concerning the employment practices and procedures of the contractor as relate to the provisions of this section and section 46a-56.
- (B) If the contract is a public works contract, municipal public works contract or contract for a quasi-public agency project, the contractor agrees and warrants that he or she will make good faith efforts to employ minority business enterprises as subcontractors and suppliers of materials on such public works or quasi-public agency project.
- (C) For the purposes of this section, “contract” includes any extension or modification of the contract, “contractor” includes any successors or assigns of the contractor, “marital status” means being single, married as recognized by the state of Connecticut, widowed, separated or divorced, and “mental disability” means one or more mental disorders, as defined in the most recent edition of the American Psychiatric Association's “Diagnostic and Statistical Manual of Mental Disorders”, or a record of or regarding a person as having one or more such disorders. For the purposes of this section, “contract” does not include a contract where each contractor is (1) a political subdivision of the state, including, but not limited to, a municipality, unless the contract is a municipal public works contract or quasi-public agency project contract, (2) any other state, as defined in section 1-267, (3) the federal government, (4) a foreign government, or (5) an agency of a subdivision, state or government described in subdivision (1), (2), (3) or (4) of this subsection.
- (D) For the purposes of this section, “minority business enterprise” means any small contractor or supplier of materials fifty-one per cent or more of the capital stock, if any, or assets of which is owned by a person or persons: (1) Who are active in the daily affairs of the enterprise, (2) who have the power to direct the management and policies of the enterprise, and (3) who are members of a

minority, as such term is defined in subsection (a) of section 32-9n of the Connecticut General Statutes; and “good faith” means that degree of diligence which a reasonable person would exercise in the performance of legal duties and obligations. “Good faith efforts” shall include, but not be limited to, those reasonable initial efforts necessary to comply with statutory or regulatory requirements and additional or substituted efforts when it is determined that such initial efforts will not be sufficient to comply with such requirements.

- (E) The contractor shall develop and maintain adequate documentation, in a manner prescribed by the Commission on Human Rights and Opportunities, of its good faith efforts.
- (F) The contractor shall include the provisions of subsections (a) and (b) of this section in every subcontract or purchase order entered into in order to fulfill any obligation of a contract with the state, and in every subcontract entered into in order to fulfill any obligation of a municipal public works contract or contract for a quasi-public agency project, and such provisions shall be binding on a subcontractor, vendor or manufacturer, unless exempted by regulations or orders of the Commission on Human Rights and Opportunities. The contractor shall take such action with respect to any such subcontract or purchase order as the commission may direct as a means of enforcing such provisions, including sanctions for noncompliance in accordance with section 46a-56; provided, if such contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the commission regarding a state contract, the contractor may request the state of Connecticut to enter into any such litigation or negotiation prior thereto to protect the interests of the state and the state may so enter.

COMMISSION ON HUMAN RIGHTS AND OPPORTUNITIES
CONTRACT COMPLIANCE REGULATIONS
NOTIFICATION TO BIDDERS

(Revised 09/3/15)

The contract to be awarded is subject to contract compliance requirements mandated by [Sections 4a-60](#) and [4a-60a](#) of the Connecticut General Statutes; and, when the awarding agency is the State, [Sections 46a-71\(d\)](#) and [46a-81i\(d\)](#) of the Connecticut General Statutes. There are Contract Compliance Regulations codified at [Section 46a-68j-21 through 43](#) of the Regulations of Connecticut State Agencies, which establish a procedure for awarding all contracts covered by [Sections 4a-60](#) and [46a-71\(d\)](#) of the Connecticut General Statutes.

According to [Section 46a-68j-30\(9\)](#) of the Contract Compliance Regulations, every agency awarding a contract subject to the contract compliance requirements has an obligation to “aggressively solicit the participation of legitimate minority business enterprises as bidders, contractors, subcontractors and suppliers of materials.” “Minority business enterprise” is defined in [Section 4a-60](#) of the Connecticut General Statutes as a business wherein fifty-one percent or more of the capital stock, or assets belong to a person or persons: “(1) Who are active in daily affairs of the enterprise; (2) who have the power to direct the management and policies of the enterprise; and (3) who are members of a minority, as such term is defined in subsection (a) of [Section 32-9n.](#)” “Minority” groups are defined in [Section 32-9n](#) of the Connecticut General Statutes as “(1) Black Americans . . . (2) Hispanic Americans . . . (3) persons who have origins in the Iberian Peninsula . . . (4) Women . . . (5) Asian Pacific Americans and Pacific Islanders; (6) American Indians . . .” An individual with a disability is also a minority business enterprise as provided by [Section 4a-60g](#) of the Connecticut General Statutes. The above definitions apply to the contract compliance requirements by virtue of [Section 46a-68j-21\(11\)](#) of the Contract Compliance Regulations.

The awarding agency will consider the following factors when reviewing the bidder’s qualifications under the contract compliance requirements:

- (a) the bidder’s success in implementing an affirmative action plan;
- (b) the bidder’s success in developing an apprenticeship program complying with [Sections 46a-68-1 to 46a-68-17](#) of the Administrative Regulations of Connecticut State Agencies, inclusive;
- (c) the bidder’s promise to develop and implement a successful affirmative action plan;
- (d) the bidder’s submission of employment statistics contained in the “Employment Information Form”, indicating that the composition of its workforce is at or near parity when compared to the racial and sexual composition of the workforce in the relevant labor market area; and
- (e) the bidder’s promise to set aside a portion of the contract for legitimate minority business enterprises. [See Section 46a-68j-30\(10\)\(E\)](#) of the Contract Compliance Regulations.

INSTRUCTIONS AND OTHER INFORMATION

The following [BIDDER CONTRACT COMPLIANCE MONITORING REPORT](#) must be completed in full, signed, and submitted with the bid for this contract. The contract awarding agency and the Commission on Human Rights and Opportunities will use the information contained thereon to determine the bidders compliance to [Sections 4a-60](#) and [4a-60a](#) CONN. GEN. STAT., and [Sections 46a-68j-23](#) of the Regulations of Connecticut State Agencies regarding equal employment opportunity, and the bidder’s good faith efforts to include minority business enterprises as subcontractors and suppliers for the work of the contract.

1) **Definition of Small Contractor**

[Section 4a-60g](#) CONN. GEN. STAT. defines a small contractor as a company that has been doing business under the same management and control and has maintained its principal place of business in Connecticut for a one year period immediately prior to its application for certification under this section, had gross revenues not exceeding fifteen million dollars in the most recently completed fiscal year, and at least fifty-one percent of the ownership of which is held by a person or persons who are active in the daily affairs of the company, and have the power to direct the management and policies of the company, except that a nonprofit corporation shall be construed to be a small contractor if such nonprofit corporation meets the requirements of subparagraphs (A) and (B) of subdivision [4a-60g](#) CONN. GEN. STAT.

2) Description of Job Categories (as used in Part IV Bidder Employment Information) (Page 2)

MANAGEMENT: Managers plan, organize, direct, and control the major functions of an organization through subordinates who are at the managerial or supervisory level. They make policy decisions and set objectives for the company or departments. They are not usually directly involved in production or providing services. Examples include top executives, public relations managers, managers of operations specialties (such as financial, human resources, or purchasing managers), and construction and engineering managers.

BUSINESS AND FINANCIAL OPERATIONS: These occupations include managers and professionals who work with the financial aspects of the business. These occupations include accountants and auditors, purchasing agents, management analysts, labor relations specialists, and budget, credit, and financial analysts.

MARKETING AND SALES: Occupations related to the act or process of buying and selling products and/or services such as sales engineer, retail sales workers and sales representatives including wholesale.

LEGAL OCCUPATIONS: In-House Counsel who is charged with providing legal advice and services in regards to legal issues that may arise during the course of standard business practices. This category also includes assistive legal occupations such as paralegals, legal assistants.

COMPUTER SPECIALISTS: Professionals responsible for the computer operations within a company are grouped in this category. Examples of job titles in this category include computer programmers, software engineers, database administrators, computer scientists, systems analysts, and computer support specialists

ARCHITECTURE AND ENGINEERING: Occupations related to architecture, surveying, engineering, and drafting are included in this category. Some of the job titles in this category include electrical and electronic engineers, surveyors, architects, drafters, mechanical engineers, materials engineers, mapping technicians, and civil engineers.

OFFICE AND ADMINISTRATIVE SUPPORT: All clerical-type work is included in this category. These jobs involve the preparing, transcribing, and preserving of written communications and records; collecting accounts; gathering and distributing information; operating office machines and electronic data processing equipment; and distributing mail. Job titles listed in this category include telephone operators, bill and account collectors, customer service representatives, dispatchers, secretaries and administrative assistants, computer operators and clerks (such as payroll, shipping, stock, mail and file).

BUILDING AND GROUNDS CLEANING AND MAINTENANCE: This category includes occupations involving landscaping, housekeeping, and janitorial services. Job titles found in this category include supervisors of landscaping or housekeeping, janitors, maids, grounds maintenance workers, and pest control workers.

CONSTRUCTION AND EXTRACTION: This category includes construction trades and related occupations. Job titles found in this category include boilermakers, masons (all types), carpenters, construction laborers, electricians, plumbers (and related trades), roofers, sheet metal workers, elevator installers, hazardous materials removal workers, paperhangers, and painters. Paving, surfacing, and tamping equipment operators; drywall and ceiling tile installers; and carpet, floor and tile installers and finishers are also included in this category. First line supervisors, foremen, and helpers in these trades are also grouped in this category.

INSTALLATION, MAINTENANCE AND REPAIR: Occupations involving the installation, maintenance, and repair of equipment are included in this group. Examples of job titles found here are heating, ac, and refrigeration mechanics and installers; telecommunication line installers and repairers; heavy vehicle and mobile equipment service technicians and mechanics; small engine mechanics; security and fire alarm systems installers; electric/electronic repair, industrial, utility and transportation equipment; millwrights; riggers; and manufactured building and mobile home installers. First line supervisors, foremen, and helpers for these jobs are also included in the category.

MATERIAL MOVING WORKERS: The job titles included in this group are Crane and tower operators; dredge, excavating, and lading machine operators; hoist and winch operators; industrial truck and tractor operators; cleaners of vehicles and equipment; laborers and freight, stock, and material movers, hand; machine feeders and offbearers; packers and packagers, hand; pumping station operators; refuse and recyclable material collectors; and miscellaneous material moving workers.

PRODUCTION WORKERS: The job titles included in this category are chemical production machine setters, operators and tenders; crushing/grinding workers; cutting workers; inspectors, testers sorters, samplers, weighers; precious stone/metal workers; painting workers; cementing/gluing machine operators and tenders; etchers/engravers; molders, shapers and casters except for metal and plastic; and production workers.

3) Definition of Racial and Ethnic Terms (as used in Part IV Bidder Employment Information) (Page 3)

<p><u>White</u> (not of Hispanic Origin)-All persons having origins in any of the original peoples of Europe, North Africa, or the Middle East.</p> <p><u>Black</u> (not of Hispanic Origin)-All persons having origins in any of the Black racial groups of Africa.</p> <p><u>Hispanic</u>- All persons of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race.</p>	<p><u>Asian or Pacific Islander</u>- All persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands. This area includes China, India, Japan, Korea, the Philippine Islands, and Samoa.</p> <p><u>American Indian or Alaskan Native</u>- All persons having origins in any of the original peoples of North America, and who maintain cultural identification through tribal affiliation or community recognition.</p>
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BIDDER CONTRACT COMPLIANCE MONITORING REPORT

PART 1 – Bidder Information

<p>Company Name: Street Address: City & State: Chief Executive:</p>	<p>Bidder Federal Employer Identification Number: Or Social Security Number:</p>
<p>Major Business Activity: (brief description)</p>	<p>Bidder Identification (response optional/definitions on page 1)</p> <p>-Bidder is a small contractor? Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>-Bidder is a minority business enterprise? Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>(If yes, check ownership category)</p> <p>Black <input type="checkbox"/> Hispanic <input type="checkbox"/> Asian American <input type="checkbox"/></p> <p>American Indian/Alaskan Native <input type="checkbox"/> Iberian Peninsula <input type="checkbox"/></p> <p>Individual(s) with a Physical Disability <input type="checkbox"/> Female <input type="checkbox"/></p> <p>-Bidder is certified as above by State of CT? Yes <input type="checkbox"/> No <input type="checkbox"/></p>
<p>Bidder Parent Company: (If any)</p>	
<p>Other Locations in CT: (If any)</p>	

PART II - Bidder Nondiscrimination Policies and Procedures

<p>1. Does your company have a written Affirmative Action/Equal Employment Opportunity statement posted on company bulletin boards? Yes <input type="checkbox"/> No <input type="checkbox"/></p>	<p>7. Do all of your company contracts and purchase orders contain non-discrimination statements as required by Sections 4a-60 & 4a-60a Conn. Gen. Stat.? Yes <input type="checkbox"/> No <input type="checkbox"/></p>
<p>2. Does your company have the state-mandated sexual harassment prevention in the workplace policy posted on company bulletin boards? Yes <input type="checkbox"/> No <input type="checkbox"/></p>	<p>8. Do you, upon request, provide reasonable accommodation to employees, or applicants for employment, who have physical or mental disability? Yes <input type="checkbox"/> No <input type="checkbox"/></p>
<p>3. Do you notify all recruitment sources in writing of your company's Affirmative Action/Equal Employment Opportunity employment policy? Yes <input type="checkbox"/> No <input type="checkbox"/></p>	<p>9. Does your company have a mandatory retirement age for all employees? Yes <input type="checkbox"/> No <input type="checkbox"/></p>
<p>4. Do your company advertisements contain a written statement that you are an Affirmative Action/Equal Opportunity Employer? Yes <input type="checkbox"/> No <input type="checkbox"/></p>	<p>10. If your company has 50 or more employees, have you provided at least two (2) hours of sexual harassment training to all of your supervisors? Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/></p>
<p>5. Do you notify the Ct. State Employment Service of all employment openings with your company? Yes <input type="checkbox"/> No <input type="checkbox"/></p>	<p>11. If your company has apprenticeship programs, do they meet the Affirmative Action/Equal Employment Opportunity requirements of the apprenticeship standards of the Ct. Dept. of Labor? Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/></p>
<p>6. Does your company have a collective bargaining agreement with workers? Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>6a. If yes, do the collective bargaining agreements contain non-discrimination clauses covering all workers? Yes <input type="checkbox"/> No <input type="checkbox"/></p>	<p>12. Does your company have a written affirmative action Plan? Yes <input type="checkbox"/> No <input type="checkbox"/> If no, please explain.</p>
<p>6b. Have you notified each union in writing of your commitments under the nondiscrimination requirements of contracts with the state of CT? Yes <input type="checkbox"/> No <input type="checkbox"/></p>	<p>13. Is there a person in your company who is responsible for equal employment opportunity? Yes <input type="checkbox"/> No <input type="checkbox"/> If yes, give name and phone number:</p>

1. Will the work of this contract include subcontractors or suppliers? Yes No

1a. If yes, please list all subcontractors and suppliers and report if they are a small contractor and/or a minority business enterprise. (defined on page 1 / use additional sheet if necessary)

1b. Will the work of this contract require additional subcontractors or suppliers other than those identified in 1a. above? Yes No

PART IV - Bidder Employment Information

Date:

JOB CATEGORY*	OVERALL TOTALS	WHITE (not of Hispanic origin)		BLACK (not of Hispanic origin)		HISPANIC		ASIAN or PACIFIC ISLANDER		AMERICAN INDIAN or ALASKAN NATIVE	
		Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Management											
Business & Financial Ops											
Marketing & Sales											
Legal Occupations											
Computer Specialists											
Architecture/Engineering											
Office & Admin Support											
Bldg/ Grounds Cleaning/Maintenance											
Construction & Extraction											
Installation , Maintenance & Repair											
Material Moving Workers											
Production Occupations											
TOTALS ABOVE											
Total One Year Ago											
FORMAL ON THE JOB TRAINEES (ENTER FIGURES FOR THE SAME CATEGORIES AS ARE SHOWN ABOVE)											
Apprentices											
Trainees											

*NOTE: JOB CATEGORIES CAN BE CHANGED OR ADDED TO (EX. SALES CAN BE ADDED OR REPLACE A CATEGORY NOT USED IN YOUR COMPANY)

PART V - Bidder Hiring and Recruitment Practices

1. Which of the following recruitment sources are used by you? (Check yes or no, and report percent used)				2. Check (X) any of the below listed requirements that you use as a hiring qualification (X)	3. Describe below any other practices or actions that you take which show that you hire, train, and promote employees without discrimination
SOURCE	YES	NO	% of applicants provided by source		
State Employment Service	<input type="checkbox"/>	<input type="checkbox"/>			Work Experience
Private Employment Agencies	<input type="checkbox"/>	<input type="checkbox"/>			Ability to Speak or Write English
Schools and Colleges	<input type="checkbox"/>	<input type="checkbox"/>			Written Tests
Newspaper Advertisement	<input type="checkbox"/>	<input type="checkbox"/>			High School Diploma
Walk Ins	<input type="checkbox"/>	<input type="checkbox"/>			College Degree
Present Employees	<input type="checkbox"/>	<input type="checkbox"/>			Union Membership
Labor Organizations	<input type="checkbox"/>	<input type="checkbox"/>			Personal Recommendation
Minority/Community Organizations	<input type="checkbox"/>	<input type="checkbox"/>			Height or Weight
Others (please identify)	<input type="checkbox"/>	<input type="checkbox"/>			Car Ownership
	<input type="checkbox"/>	<input type="checkbox"/>			Arrest Record
	<input type="checkbox"/>	<input type="checkbox"/>			Wage Garnishments

Certification (Read this form and check your statements on it CAREFULLY before signing). I certify that the statements made by me on this BIDDER CONTRACT COMPLIANCE MONITORING REPORT are complete and true to the best of my knowledge and belief, and are made in good faith. I understand that if I knowingly make any misstatements of facts, I am subject to be declared in non-compliance with Section 4a-60, 4a-60a, and related sections of the CONN. GEN. STAT.

(Signature)	(Title)	(Date Signed)	(Telephone)
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TAB I

Plans

REPLACEMENT

OF

HUNT ROAD BRIDGE NO. 030004

COLUMBIA, CT

PREPARED FOR

TOWN OF COLUMBIA
STEVEN M. EVERETT, FIRST SELECTMAN
 323 ROUTE 87
 COLUMBIA, CT 06237



LOCATION MAP
 SCALE: 1" = 1'

LIST OF SHEETS

DATE: 06/12/23
 REVISED:

ROAD PLAN & PROFILE	1
TYPICAL SECTION & DETAILS	2
GENERAL BRIDGE PLAN	3
BRIDGE LAYOUT	4
STRUCTURE DETAILS	5-7
ROADWAY CROSS SECTIONS	8
WATER HANDLING & DETOUR PLAN	9

LIST OF CTDOT STANDARD SHEETS

TEMPORARY PRECAST CONCRETE BARRIER CURB	HW-822_01
R-B TERMINAL SECTION	HW-910_17
MASH METAL BEAM HARDWARE	HW-910_20
METAL BEAM RAIL (R-B MASH) GUIDERAIL	HW-910_21
METAL BEAM RAIL (R-B MASH) HALF AND QUARTER POST SPACING GUIDERAIL	HW-910_23
SIGNS FOR CONSTRUCTION AND PERMIT OPERATIONS	HW-911_01
CONSTRUCTION SIGN SUPPORTS AND CHANNELIZING DEVICES	TR-1220_01

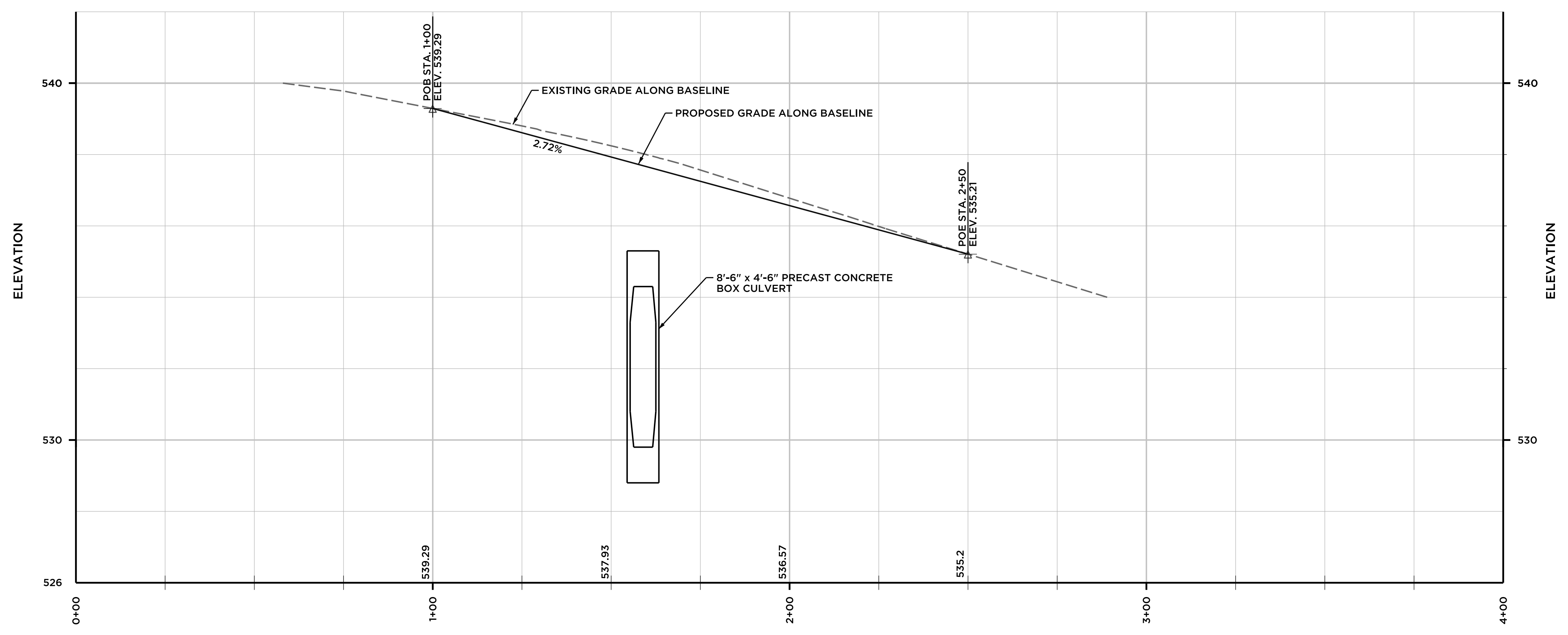
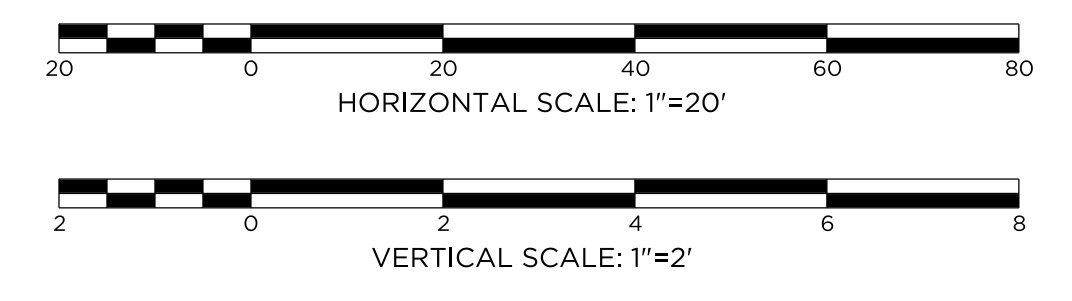
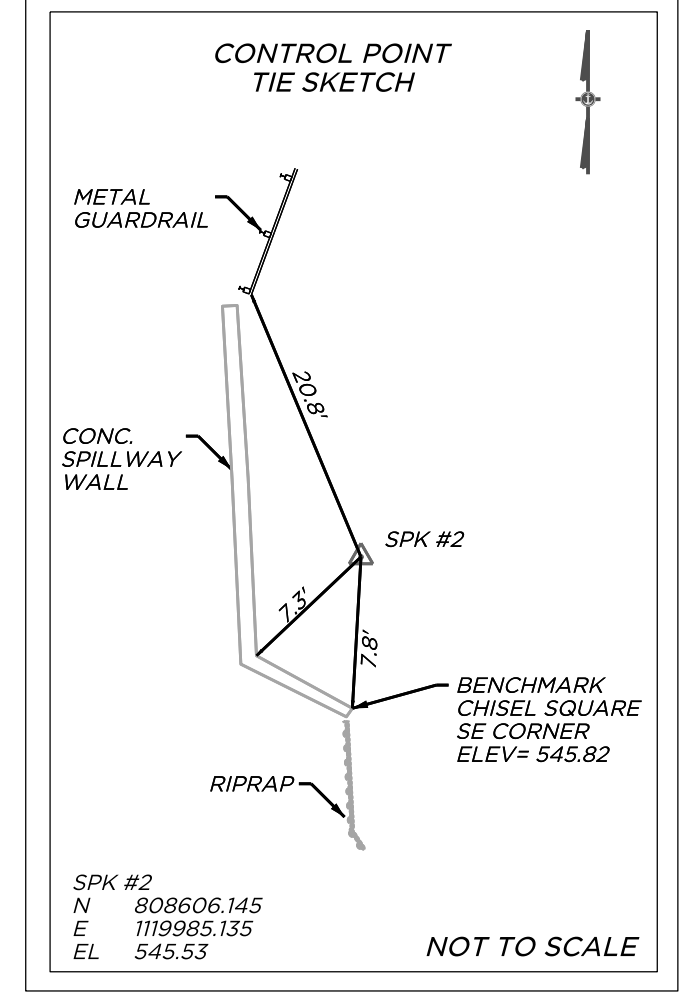
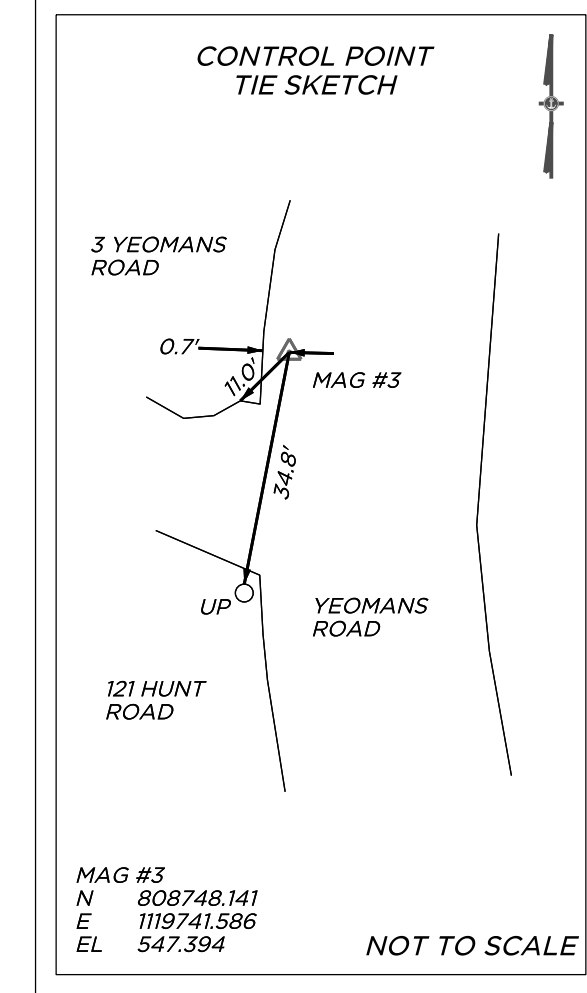
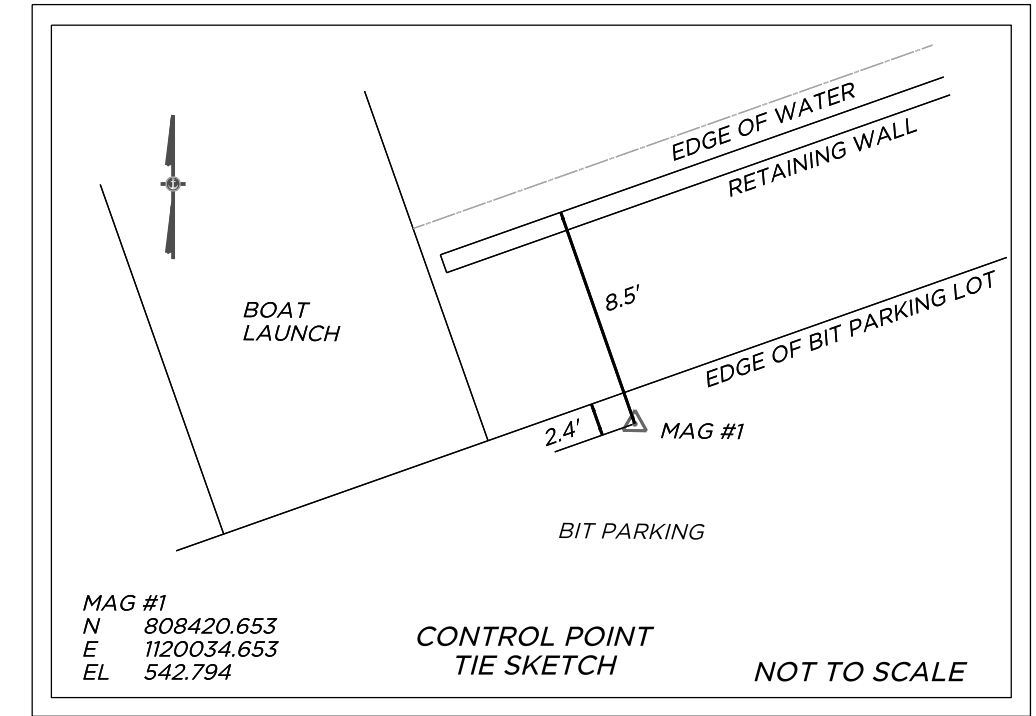
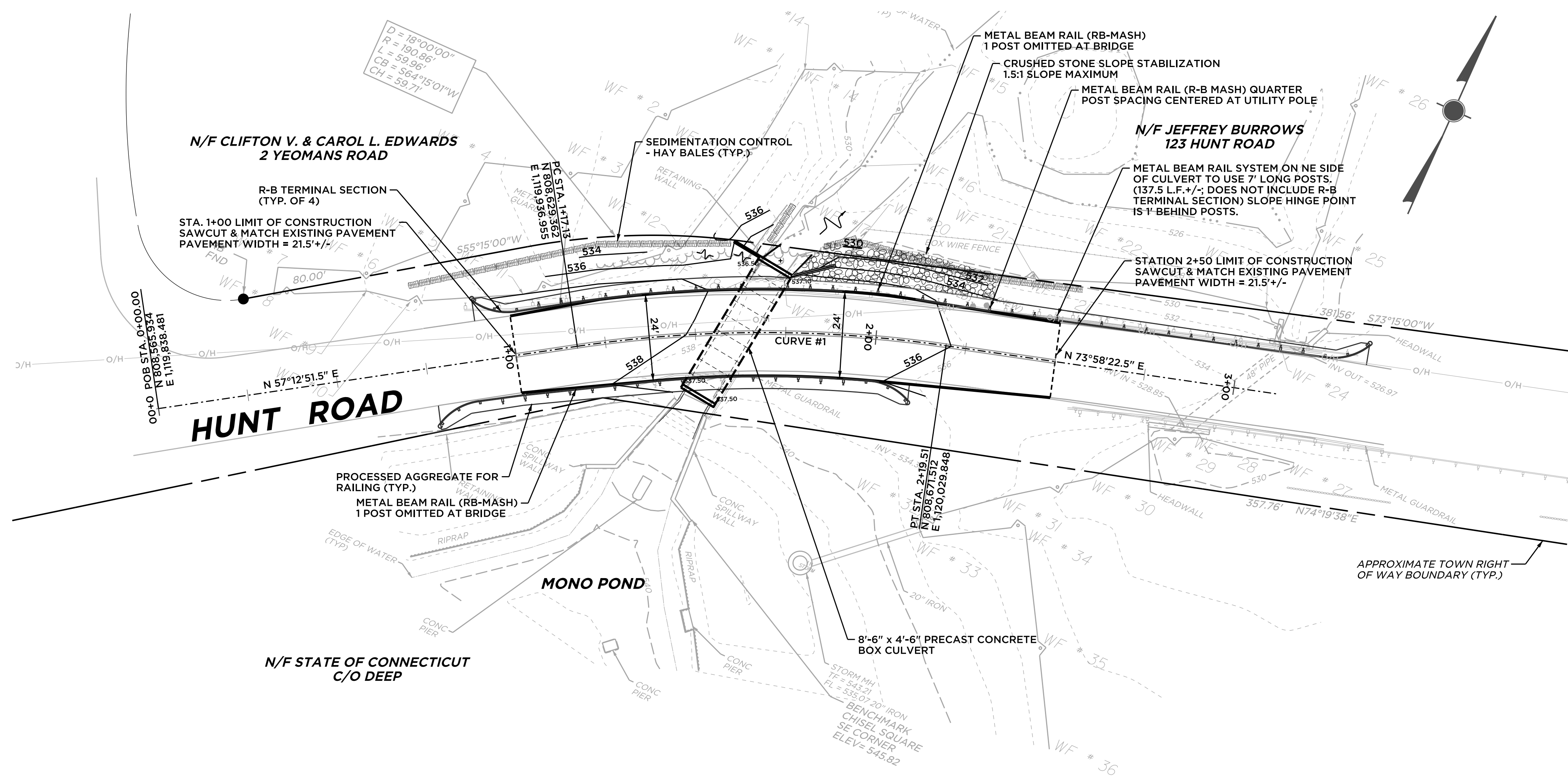
PREPARED BY:

Barton & Loguidice

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 Glastonbury, CT 06033
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 Fax: (860) 633-5971
 www.bandlct.com

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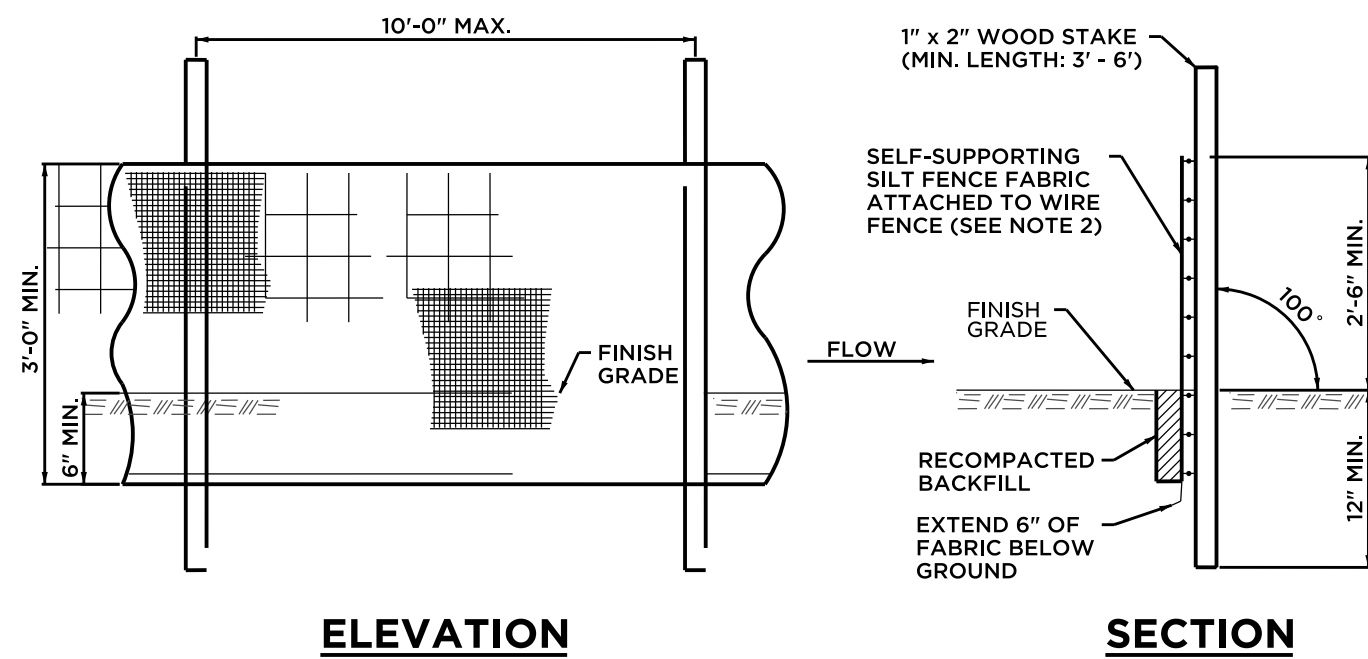
PROJ. ENGINEER: DPL
 PROJ. MANAGER: MNB
 OFFICE REVIEW: MNB

REPLACEMENT OF HUNT ROAD BRIDGE
 PREPARED FOR
 TOWN OF COLUMBIA
ROADWAY PLAN & PROFILE

HUNT ROAD COLUMBIA, CT

PROJECT	DATE	SHEET NO.	OF
3169-014	06/12/23	1	9

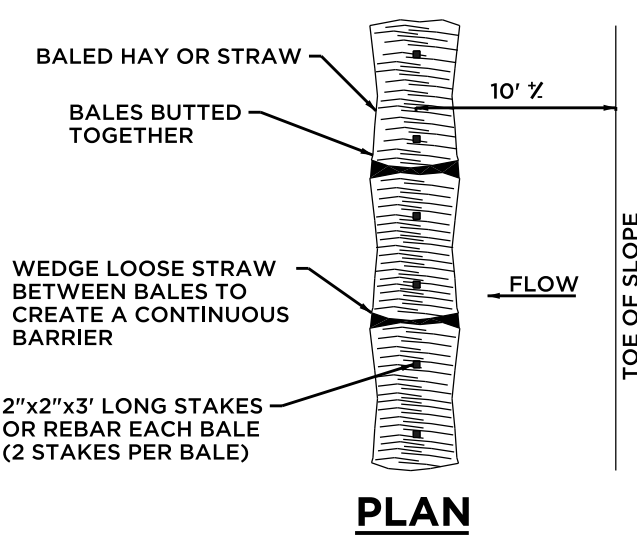
SCALE: AS NOTED



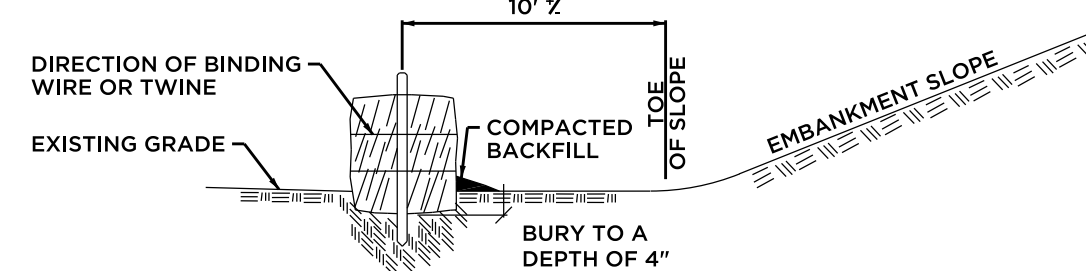
- NOTES:**
1. INSTALL SILT FENCE & WOOD STAKES AS RECOMMENDED BY MANUFACTURER.
 2. SILT FENCE SUBJECT TO HEAVY LOADS SHALL BE REINFORCED WITH FARM FENCING & STEEL POSTS (0.5 # STEEL/L.F.). THE MINIMUM POST LENGTH SHALL BE 5'-0\"/>
 - 3. SILT FENCE FABRIC SHALL BE A PERVIOUS SHEET OF WOVEN PROPYLENE, NYLON, POLYESTER OR POLYETHYLENE FILAMENTS AND SHALL BE CERTIFIED BY THE MANUFACTURER OR SUPPLIER.

SILT FENCE

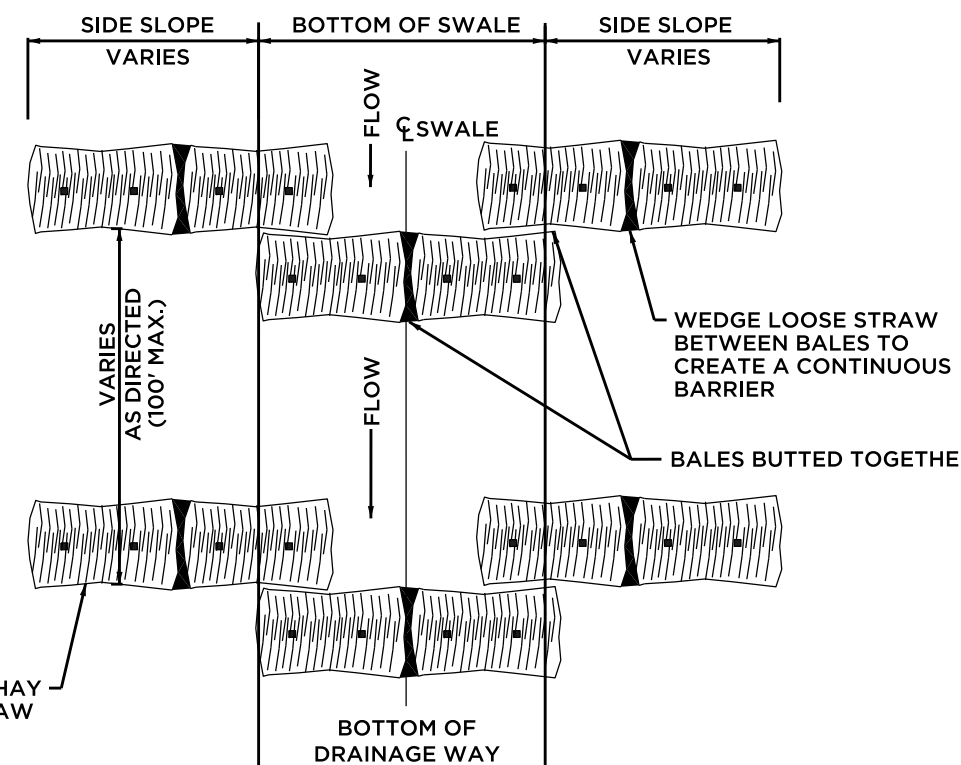
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PLAN



SECTION AT TOE OF SLOPE

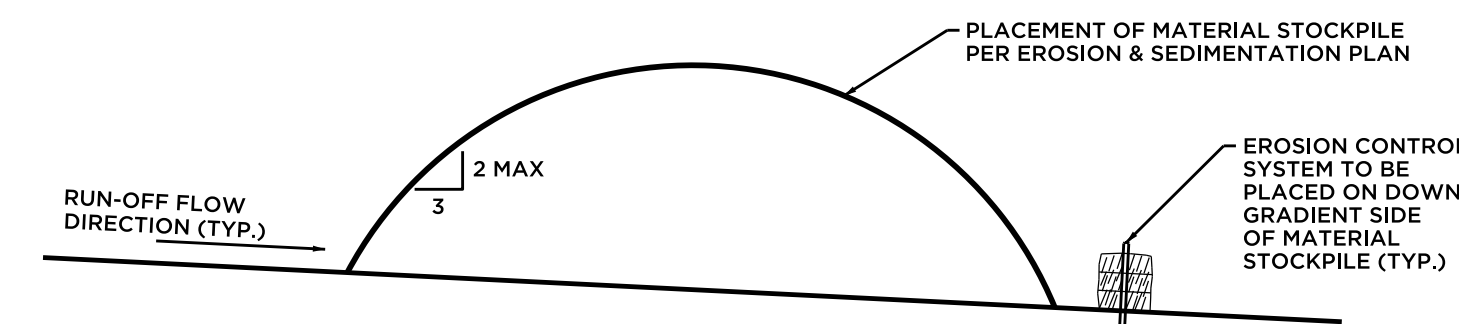


PLAN

SECTION AT SWALE

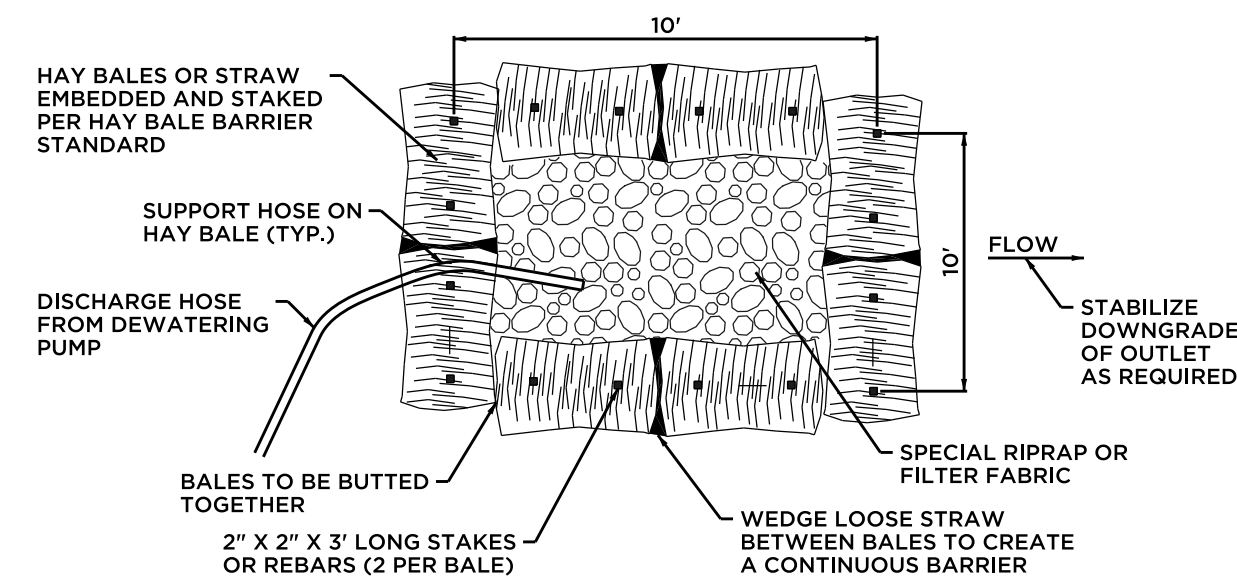
HAY BALES

NOT TO SCALE



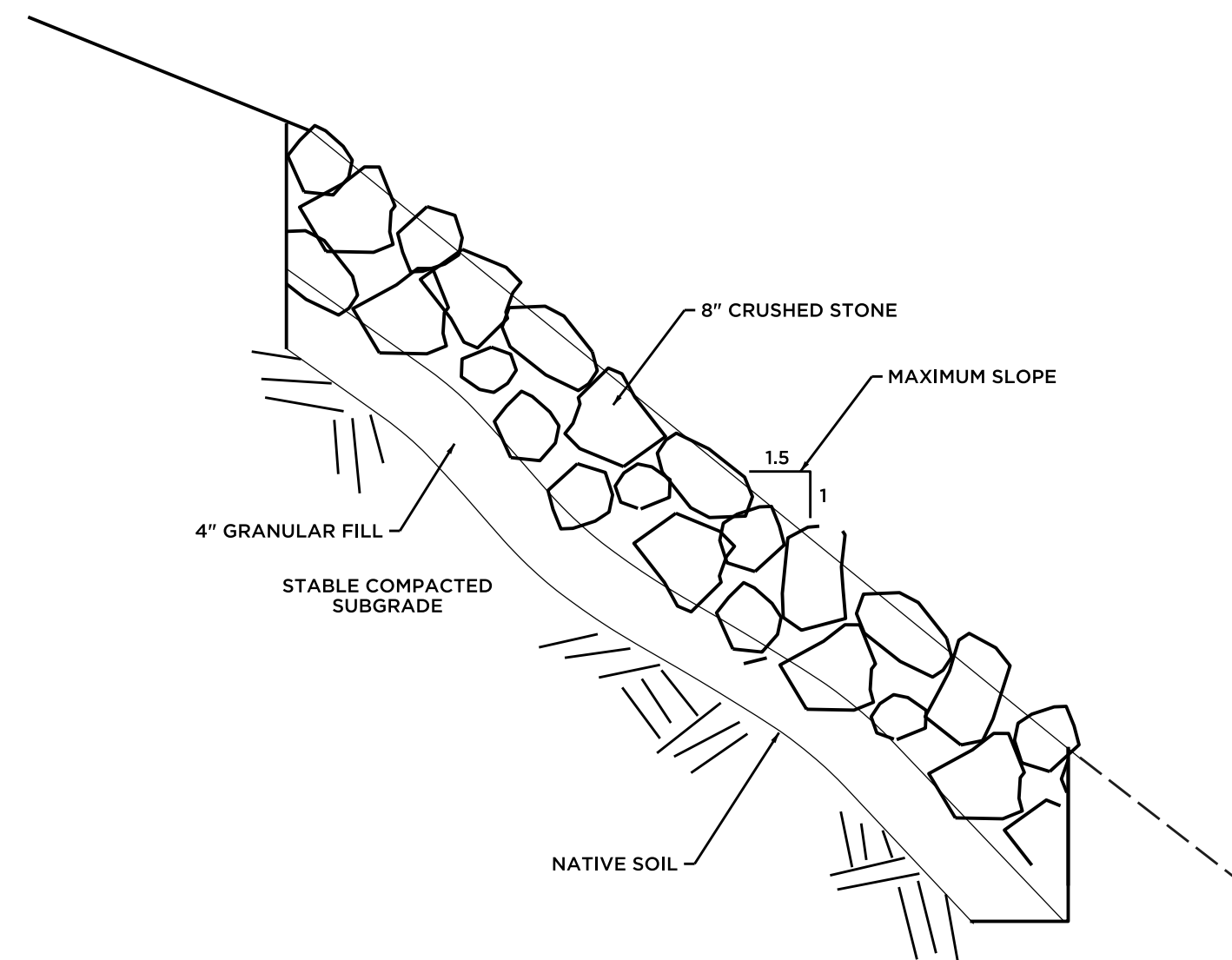
SOIL STOCKPILE DETAIL

NOT TO SCALE



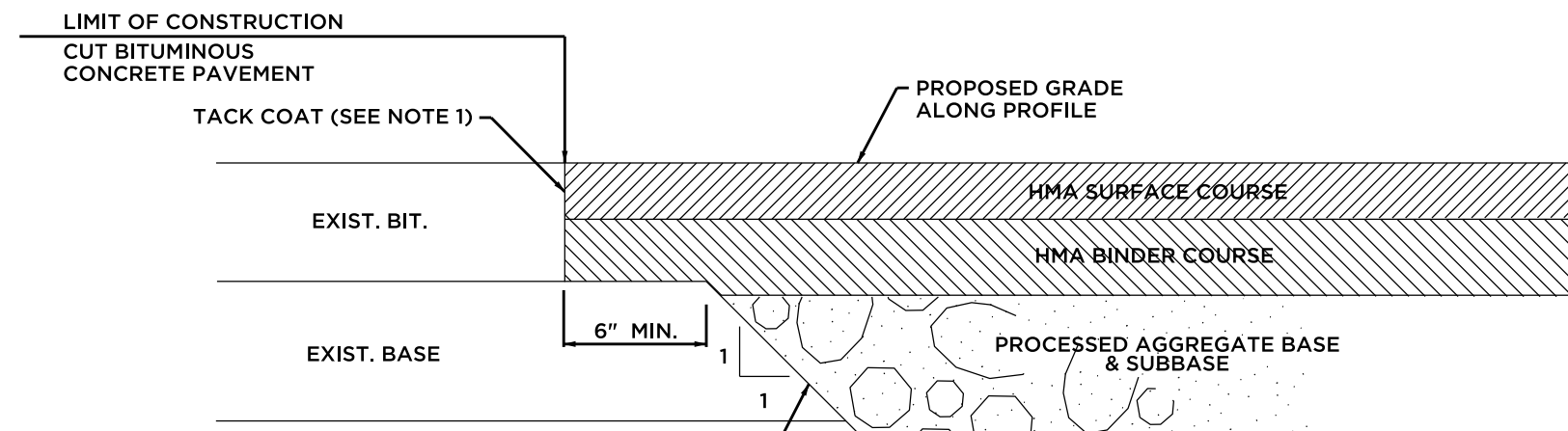
TEMPORARY DEWATERING BASIN

NOT TO SCALE



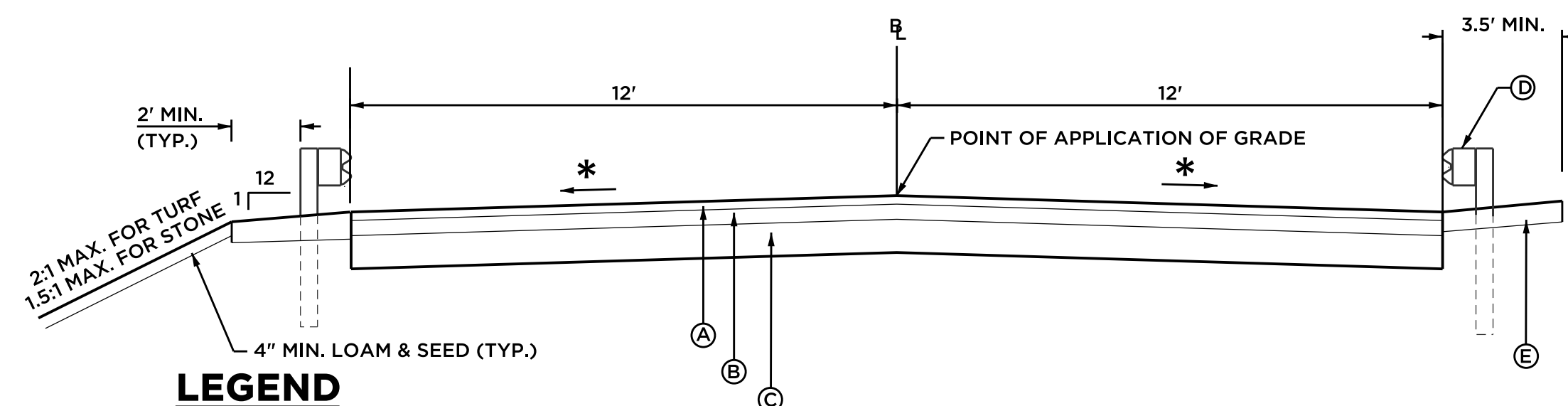
CRUSHED STONE SLOPE PROTECTION

NOT TO SCALE



PAVEMENT TRANSITION

NOT TO SCALE



LEGEND

- (A) 1 1/2" HMA SO.375
- (B) 2 1/2" HMA SO.5
- (C) 8" PROCESSED AGGREGATE BASE
- (D) METAL BEAM RAIL (R-B MASH) (WHERE REQUIRED)
- (E) 6" MIN. PROCESSED AGGREGATE GUIDE RAIL SHELF

* SEE ROADWAY CROSS SECTIONS FOR GRADES - CROSS SLOPE VARIES FROM NORMAL CROWN TO SUPERELEVATED

TYPICAL ROADWAY SECTION

NOT TO SCALE

EROSION & SEDIMENTATION CONTROL PLAN:

1. ALL EROSION AND CONTROL MEASURES WILL BE INSTALLED AT THE PROJECT SITE PRIOR TO CONSTRUCTION WHERE EVER POSSIBLE. THE LIMIT OF CLEARING AND EROSION CONTROL LINE SHALL BE STAKED IN THE FIELD AND INSPECTED BY THE TOWN OR THE TOWN'S DESIGNATED AGENT PRIOR TO ANY SITE DISTURBANCE.
2. THE SURROUNDING ROAD SURFACES SHALL BE SWEEP AS REQUIRED TO REMOVE ANY SEDIMENT TRACKED ONTO THE PAVEMENT FROM CONSTRUCTION ACTIVITIES.
3. ALL CATCH BASINS WITHIN THE PROJECT AREA WILL BE PROTECTED AS SHOWN ON THE DETAILS THROUGHOUT THE CONSTRUCTION PERIOD UNTIL JUST PRIOR TO PAVING. THE CONTROL SYSTEM SHALL REMAIN IN PLACE UNTIL THE AREAS DISTURBED DURING THE CONSTRUCTION PHASES ARE STABILIZED.
4. AN EROSION CONTROL SYSTEM SHALL BE INSTALLED AROUND ALL ON-SITE STOCKPILES OF SOIL.
5. DUST CONTROL MEASURES WILL BE APPLIED DURING THE CONSTRUCTION PERIOD UNTIL ALL DISTURBED AREAS HAVE BEEN STABILIZED, AS REQUIRED BY FIELD CONDITIONS.
6. TEMPORARY SEDIMENT TRAPS WILL BE INSTALLED AS NECESSARY DURING CONSTRUCTION ACTIVITIES. ALL TEMPORARY STORMWATER DISCHARGE WILL BE DIRECTED TO THESE TRAPS.

EROSION & SEDIMENTATION CONTROL NOTES:

1. CONSTRUCTION WILL COMMENCE IN THE SPRING OF 2023 AND WILL BE TENTATIVELY COMPLETED IN THE FALL OF 2023, WEATHER PERMITTING.
2. EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSTALLED AS SHOWN ON THE PLANS, OR AS DIRECTED BY THE TOWN PRIOR TO CONSTRUCTION.
3. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE "CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL", DATED 2002, AS AMENDED AND THE TOWN OF COLUMBIA REGULATIONS.
4. ALL EROSION CONTROL DEVICES SHALL BE MAINTAINED OR REPLACED BY THE CONTRACTOR DURING THE CONSTRUCTION PERIOD AS NECESSARY OR AS REQUIRED BY THE ENGINEER OR TOWN OF COLUMBIA.
5. ALL ON-SITE EROSION AND SEDIMENT CONTROLS ARE REQUIRED TO BE INSPECTED WITHIN 24-HOURS AFTER A RAIN EVENT OF AT LEAST A HALF-INCH, AND MAINTAINED, REPLACED OR INCREASED AS REQUIRED BY SPECIFIC FIELD CONDITIONS.
6. SEDIMENT REMOVED FROM ANY CONTROL STRUCTURES SHALL BE DISPOSED OF IN A MANNER WHICH IS CONSISTENT WITH THE INTENT OF THE PLAN.
7. ADDITIONAL EROSION CONTROL MEASURES WILL BE INSTALLED DURING THE CONSTRUCTION PERIOD IF DEEMED NECESSARY OR REQUIRED BY THE ENGINEER OR TOWN OF COLUMBIA.
8. THE CONTRACTOR WILL BE RESPONSIBLE FOR IMPLEMENTING ALL EROSION AND SEDIMENTATION CONTROL DEVICES AS SHOWN ON THESE PLANS OR AS ORDERED BY THE ENGINEER.
9. ALL DISTURBED AREAS ARE TO BE BAKED, SEEDING AND FERTILIZED PER "TURF ESTABLISHMENT" SPECIFICATION IN CT007 818, AT THE COMPLETION OF PROJECT.
10. AREAS OUTSIDE OF PAVED AREAS, WALKS, AND BUILDINGS ARE TO RECEIVE A MINIMUM 4" OF TOPSOIL.
11. THE FOLLOWING DATES FOR SEEDING SHALL BE USED:
 SPRING: APRIL 15 TO JUNE 15
 FALL: AUGUST 15 TO SEPTEMBER 15
12. THE FOLLOWING GRASS SEED MIXTURES SHALL BE APPLIED AT A RATE NO LESS THAN 100 LBS. PER ACRE:

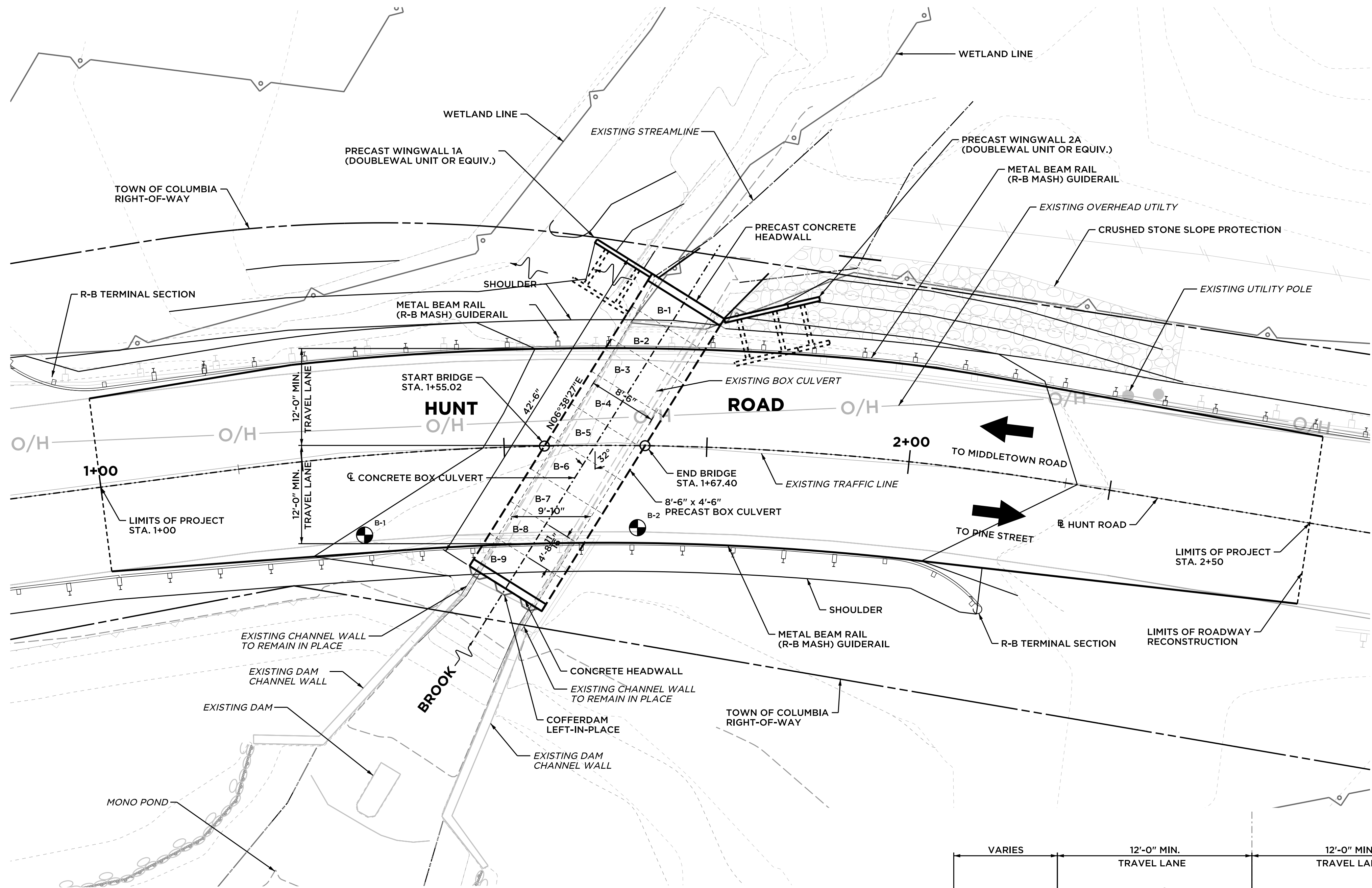
SPECIES	PROPORTION BY WEIGHT (POUNDS)	MINIMUM PURITY (PERCENT)	MINIMUM GERMINATION (PERCENT)
CREeping RED FESCUE (FESTUCA REBRA)	50	98	85
K-31 TALL FESCUE (FESTUCA ARUNDINACEA VAR. KENTUCKY 31)	20	98	85
PERENNIAL RYE GRASS (LOLIUM PERENNE)	25	98	90
ALSIKE CLOVER (TRIFOLIUM HYBRIDUM)	5	96	85
13. TEMPORARY GRASS SEEDING, IF NECESSARY, SHALL BE PERENNIAL RYE GRASS (LOLIUM PERENNE) APPLIED AT A RATE OF 100 LBS. PER ACRE.

Barton & Loguidice

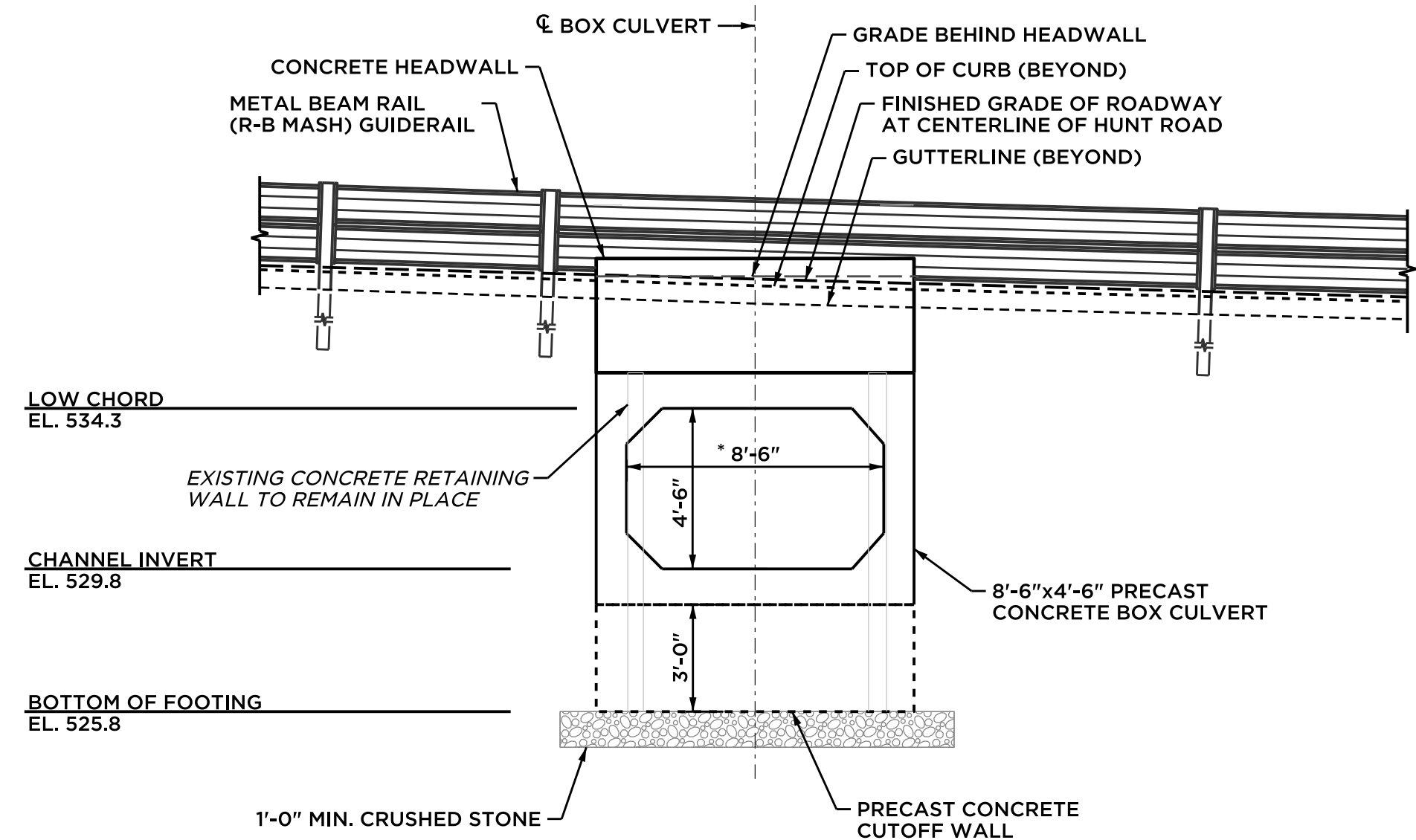
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PROJ. ENGINEER	DPL	REPLACEMENT OF HUNT ROAD BRIDGE	PREPARED FOR TOWN OF COLUMBIA ROADWAY DETAILS
PROJ. MANAGER	MNB		
OFFICE REVIEW	MNB	HUNT ROAD COLUMBIA, CT	
REVISIONS		PROJECT	DATE
		3169-014	06/12/23
		SCALE: NOT TO SCALE	SHEET NO. 2 OF 9

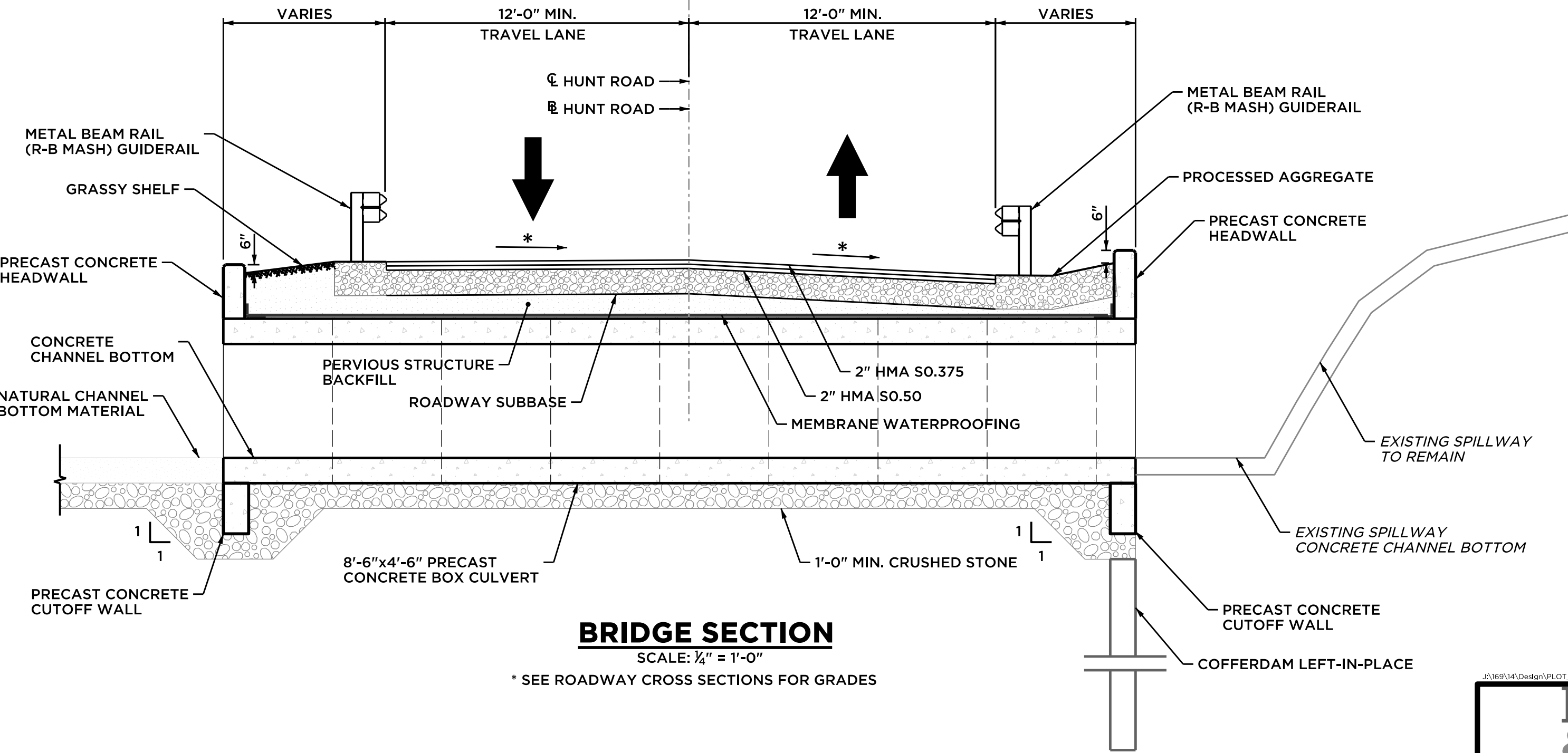


BRIDGE LAYOUT
SCALE: 1/8" = 1'-0"



BRIDGE ELEVATION
SCALE: 1/4" = 1'-0"

*MEASURED PERPENDICULAR TO THE CENTERLINE OF CULVERT



BRIDGE SECTION
SCALE: 1/4" = 1'-0"

* SEE ROADWAY CROSS SECTIONS FOR GRADES

SHIPPING DATA				
MEMBER	SHIPPING LENGTH	SHIPPING HEIGHT	SHIPPING WIDTH	SHIPPING WEIGHT
B1-B9	10.5'	6.5'	-4'-9"	25 KIPS
CUTOFF WALL	10.5'	3'	5'	10.13 KIPS

- CONSTRUCTION SPECIFICATIONS:**
- DESIGN SPECIFICATIONS:**
- MATERIAL STRENGTHS:**
- LIVE LOAD:**
- FUTURE PAVING ALLOWANCE:**
- CLASS PPC 03340 CONCRETE:**
- CLASS PPC 04460 CONCRETE:**
- EXISTING DIMENSIONS:**
- DIMENSIONS:**
- UTILITIES:**
- MASH TEST LEVEL:**
- JOINT SEAL:**
- EXPOSED EDGES:**
- CONCRETE COVER:**
- REINFORCEMENT:**
- PREFORMED EXPANSION JOINT FILLER:**
- CLOSED CELL ELASTOMER:**
- CONSTRUCTION JOINTS:**

CONNECTICUT DEPARTMENT OF TRANSPORTATION FORM 818 (2020), WITH SUPPLEMENTAL SPECIFICATIONS DATED JANUARY 2021 AND SPECIAL PROVISIONS.

AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS EIGHTH EDITION (AASHTO 2017) WITH 2015 INTERIMS, AS SUPPLEMENTED BY THE CONNECTICUT DEPARTMENT OF TRANSPORTATION BRIDGE DESIGN MANUAL (2003), WITH LATEST REVISIONS.

CONCRETE:
CLASS PPC 03340
CLASS PPC 04460
PRECAST CONCRETE

BASED ON $f'_c = 3,000$ PSI
BASED ON $f'_c = 4,000$ PSI
 $f'_c = 5,000$ PSI (MIN.)

THE SPECIFIED CONCRETE STRENGTH USED IN DESIGN, f'_c , OF THE CONCRETE COMPONENTS IS NOTED ABOVE. THE MINIMUM COMPRESSIVE STRENGTH OF THE CONCRETE IN THE CONSTRUCTED COMPONENTS SHALL CONFORM TO THE REQUIREMENTS OF "SECTION 6.01 CONCRETE FOR STRUCTURES."

REINFORCEMENT:
(ASTM A615 GRADE 60)

$f_y = 60,000$ PSI

HL-93, LEGAL AND PERMIT VEHICLES

NONE

CLASS PPC 03340 CONCRETE SHALL BE USED FOR THE ENTIRE SUBSTRUCTURE.

CLASS PPC 04460 CONCRETE SHALL BE USED FOR CURBS.

DIMENSIONS OF THE EXISTING STRUCTURE SHOWN ON THESE PLANS ARE FOR GENERAL REFERENCE ONLY. THEY ARE NOT GUARANTEED. 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.

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

THE FOLLOWING UTILITIES ARE LOCATED WITHIN THE PROJECT LIMITS AND SHALL BE PROTECTED DURING CONSTRUCTION: EVERSOURCE ENERGY. THE CONTRACTOR SHALL COORDINATE ALL WORK RELATED TO UTILITY RELOCATION WITH THE RESPECTIVE UTILITY COMPANIES.

THE METAL BEAM RAIL (R-B MASH) GUIDERAIL WAS DESIGNED AND CRASH TESTED TO MEET THE TL-3 CRITERIA FOR MASH 2016. THE R-B TERMINAL SECTION WAS DESIGNED TO MEET THE TL-2 CRITERIA FOR NCHRP 350.

CONCRETE NOTES

SEE SPECIAL PROVISIONS.

EXPOSED EDGES OF CONCRETE SHALL BE BEVELED 1"X1" UNLESS DIMENSIONED OTHERWISE.

ALL REINFORCEMENT SHALL HAVE 2" COVER UNLESS DIMENSIONED OTHERWISE.

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 INSTALLING PREFORMED EXPANSION JOINT FILLER IS PAID AS A PART OF THE LUMP SUM PRICE OF WORK.

FURNISHING AND INSTALLING CLOSED CELL ELASTOMER SHALL BE INCLUDED IN THE ITEM AS A PART OF THE LUMP SUM PRICE OF WORK.

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

PAY ITEM	BRIDGE COMPONENT	PCC CLASS
FOOTING CONCRETE	RETURN WALLS & CUTOFF WALLS	PCC03340
BARRIER WALL CONCRETE	CONCRETE CURBS	PCC04460

CONCRETE DISTRIBUTION

CONCRETE DISTRIBUTION	C.Y.
SUPERSTRUCTURE	C.Y.
SUBSTRUCTURE	C.Y.
FOOTINGS	C.Y.
TOTAL	C.Y.

HYDRAULIC DATA

DRAINAGE AREA	1.21 SQ. MI.
DESIGN FREQUENCY	100-YR
DESIGN DISCHARGE	129 CFS
AVERAGE DAILY FLOW ELEVATION	
UPSTREAM DESIGN WATER SURFACE ELEVATION	
DOWNSTREAM DESIGN WATER SURFACE ELEVATION	
MAXIMUM SCOUR ELEVATION FREQUENCY DISCHARGE	
WORST CASE SCOUR SUBSTRUCTURE UNIT	
2-YEAR FLOW	17.4 CFS

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PROJ. ENGINEER: KBF
PROJ. MANAGER: MNB
OFFICE REVIEW: SMM

REVISIONS:

REPLACEMENT OF HUNT ROAD BRIDGE
PREPARED FOR
TOWN OF COLUMBIA
GENERAL PLAN

HUNT ROAD COLUMBIA, CT

PROJECT: 3169-14 DATE: 06/12/23 SHEET NO. 3 OF 9

SCALE: AS NOTED

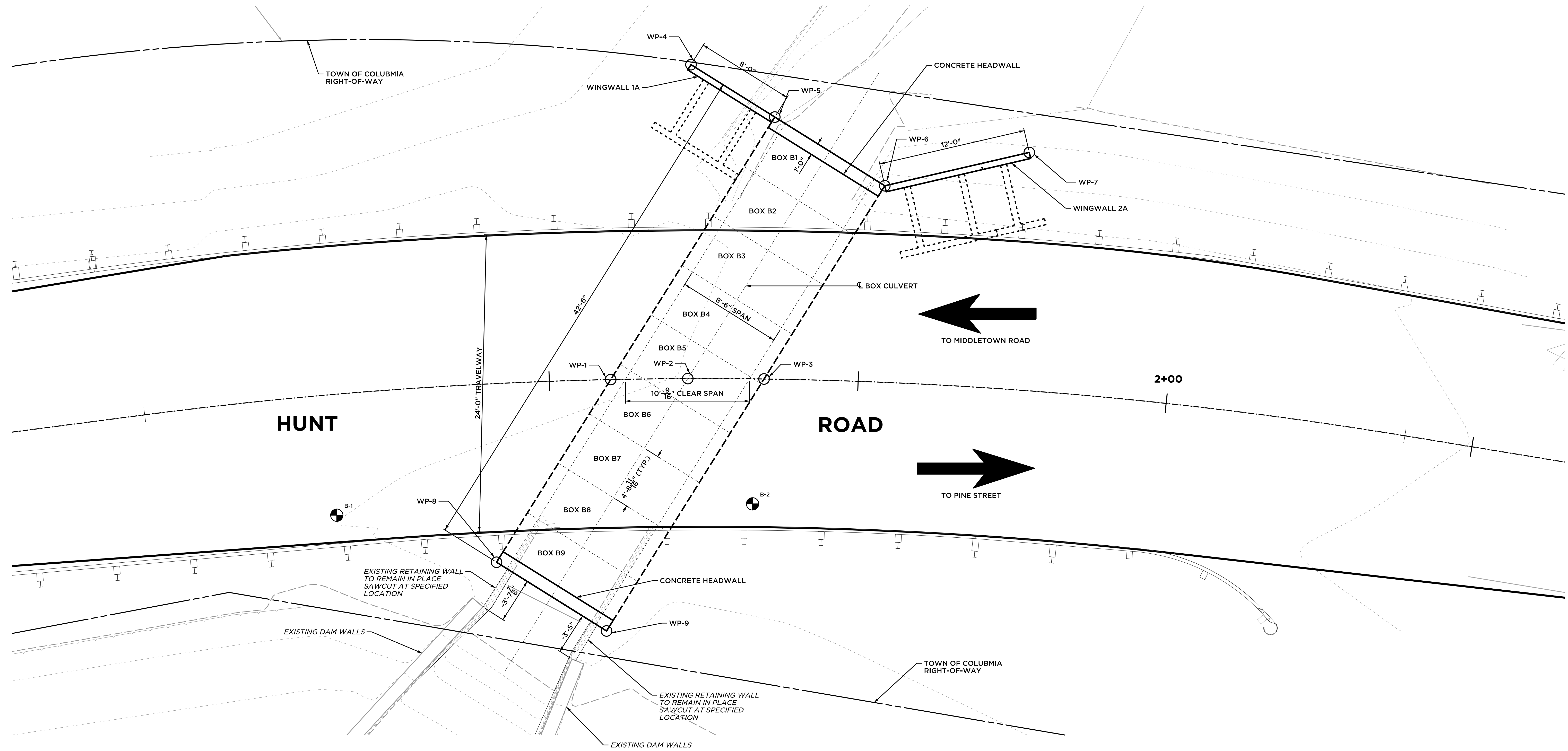
(603) 437-1610		New England Boring Contractors P.O. Box 165 Derry, NH 03038 E-Mail: nebc@neboring.com		Fax: (603) 437-0034			
Boring # B-1 pg 1of2		Project: Hunt Road		Project # C13301			
Project Address: Hunt Rd.		City: Columbia		State: CT Zip: 06237			
Date Start: 01/04/2021		Date End: 01/04/2021		Location: See Plan			
Casing Type: HW Hammer: 300lb.		Sampler: S/S 140lbs		Casing: 4"ID Size: 1-3/8 in. Fall: 30in.			
G R O U N D W A T E R O B S E R V A T I O N							
Date: 1/4/21	Depth: 3'6"	Casing:		Stabilization Period			
DP	S#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-	-	-	-	-	-	-	5' Asphalt 4" Gravel base
-	S-1	1' - 3'	-	16"	3-3-4-3	-	Brown, fine sand, some silt, little fine to coarse gravel, trace cobbles.
-	S-2	5' - 7'	-	14"	6-12-23-20	-	
5'0"	-	-	-	-	-	-	
-	S-3	10' - 12'	-	12"	7-10-11-14	-	
-	-	-	-	-	-	-	11' Gray, fine to medium sand, some fine to coarse gravel, few cobbles, some silt. (TILL)
10'0"	-	-	-	-	-	-	
-	S-4	15' - 17'	-	15"	24-17-15-20	-	
-	-	-	-	-	-	-	
15'0"	-	-	-	-	-	-	
-	S-5	20' - 21'5"	-	8"	50-48-50/5'	-	
-	-	-	-	-	-	-	
20'0"	-	-	-	-	-	-	
-	S-6	25' - 25'10"	-	10"	23-50/4'	-	
-	-	-	-	-	-	-	
25'0"	-	-	-	-	-	-	
-	-	-	-	-	-	-	
-	-	-	-	-	-	-	
30'0"	-	-	-	-	-	-	Top of bedrock @30'
-	-	-	-	-	-	-	ROCK
Driller: Mike St. John		Helpers: John Knapp		Inspector:			
Remarks:							
S/#: Sample		PEN: Penetration		REC: Recovery		S/C: Strata Change	

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Boring # B-1 pg 2of2		Project: Hunt Road		Project # C13301			
Project Address: Hunt Rd.		City: Columbia		State: CT Zip: 06237			
Date Start: 01/04/2021		Date End: 01/04/2021		Location: See Plan			
Casing Type: HW Hammer: 300lb.		Sampler: S/S 140lbs		Casing: 4"ID Size: 1-3/8 in. Fall: 30in.			
G R O U N D W A T E R O B S E R V A T I O N							
Date: 1/4/21	Depth: 3'6"	Casing:		Stabilization Period			
DP	S#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-	-	-	-	-	-	-	Gray Gneiss
-	C-1	32' - 37'	-	60"	-	-	
35'0"	-	-	-	-	-	-	
-	-	-	-	-	-	-	
-	-	-	-	-	-	-	EOB @ 37'
40'0"	-	-	-	-	-	-	
-	-	-	-	-	-	-	
45'0"	-	-	-	-	-	-	
-	-	-	-	-	-	-	
50'0"	-	-	-	-	-	-	
-	-	-	-	-	-	-	
55'0"	-	-	-	-	-	-	
-	-	-	-	-	-	-	
60'0"	-	-	-	-	-	-	
-	-	-	-	-	-	-	
Driller: Mike St. John		Helpers: John Knapp		Inspector:			
Remarks:							
S/#: Sample		PEN: Penetration		REC: Recovery		S/C: Strata Change	

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Boring # B-2 pg 1of2		Project: Hunt Road		Project # C13301			
Project Address: Hunt Rd.		City: Columbia		State: CT Zip: 06237			
Date Start: 01/05/2021		Date End: 01/05/2021		Location: See Plan			
Casing Type: HW Hammer: 300lb.		Sampler: S/S 140lbs		Casing: 4"ID Size: 1-3/8 in. Fall: 30in.			
G R O U N D W A T E R O B S E R V A T I O N							
Date: 1/5/21	Depth: 3'6"	Casing:		Stabilization Period			
DP	S#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-	-	-	-	-	-	-	5' Asphalt 6" Gravel base
-	S-1	1' - 3'	-	14"	16-29-47-13	-	Brown fine sand, some fine to coarse gravel, some cobbles, boulders, little silt.
5'0"	S-2	5' - 7'	-	10"	8-17-27-50/3"	-	
-	-	-	-	-	-	-	
10'0"	S-3	10' - 12'	-	15"	12-15-18-17	-	
-	-	-	-	-	-	-	12' Gray, fine to medium sand, some fine to coarse gravel, some cobbles, some silt. (TILL)
15'0"	S-4	15' - 17'	-	16"	18-23-12-15	-	
-	-	-	-	-	-	-	
20'0"	S-5	20' - 21'1"	-	11"	38-35-50/1"	-	
-	-	-	-	-	-	-	
25'0"	S-6	25' - 26'	-	10"	48-100	-	
-	-	-	-	-	-	-	
-	-	-	-	-	-	-	
30'0"	-	-	-	-	-	-	
-	-	-	-	-	-	-	
Driller: Mike St. John		Helpers: John Knapp		Inspector:			
Remarks:							
S/#: Sample		PEN: Penetration		REC: Recovery		S/C: Strata Change	

(603) 437-1610		New England Boring Contractors P.O. Box 165 Derry, NH 03038 E-Mail: nebc@neboring.com		Fax: (603) 437-0034			
Boring # B-2 pg2of2		Project: Hunt Road		Project # C13301			
Project Address: Hunt Rd.		City: Columbia		State: CT Zip: 06237			
Date Start: 01/05/2021		Date End: 01/05/2021		Location: See Plan			
Casing Type: HW Hammer: 300lb.		Sampler: S/S 140lbs		Casing: 4"ID Size: 1-3/8 in. Fall: 30in.			
G R O U N D W A T E R O B S E R V A T I O N							
Date: 1/5/21	Depth: 3'6"	Casing:		Stabilization Period			
DP	S#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-	-	-	-	-	-	-	33'
-	C-1	33'-38'	-	58"	-	-	Cored Run 1 - Gneiss
35'0"	-	-	-	-	-	-	
-	-	-	-	-	-	-	
-	-	-	-	-	-	-	EOB @ 38'
40'0"	-	-	-	-	-	-	
-	-	-	-	-	-	-	
45'0"	-	-	-	-	-	-	
-	-	-	-	-	-	-	
50'0"	-	-	-	-	-	-	
-	-	-	-	-	-	-	
55'0"	-	-	-	-	-	-	
-	-	-	-	-	-	-	
60'0"	-	-	-	-	-	-	
-	-	-	-	-	-	-	
Driller: Mike St. John		Helpers: John Knapp		Inspector:			
Remarks:							
S/#: Sample		PEN: Penetration		REC: Recovery		S/C: Strata Change	

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Civil Engineering • Environmental Consulting • Land Surveying • Construction Management		REPLACEMENT OF HUNT ROAD BRIDGE	
PROJ. ENGINEER: KBF	PROJ. MANAGER: MNB	PREPARED FOR TOWN OF COLUMBIA	
OFFICE REVIEW: SMM		BORING LOGS	
REVISIONS		HUNT ROAD COLUMBIA, CT	
PROJECT: 3169-14	DATE: 06/12/23	SHEET NO. 4 OF 9	
SCALE: AS NOTED			



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

WORKING POINTS AND COORDINATES

WP NO.	DESCRIPTION	NORTHING	EASTING	STATION	OFFSET
WP-1	HUNT ROAD @ START OF CULVERT	808648.09	1119969.81	1+54.97	0.00'
WP-2	HUNT ROAD @ CL OF CULVERT	808650.84	1119975.41	1+61.21	0.00'
WP-3	HUNT ROAD @ END OF CULVERT	808653.45	1119981.00	1+67.38	0.00'
WP-4	CORNER OF WINGWALL 1A	808673.91	1119964.76	1+61.54	25.41'
WP-5	CORNER OF WINGWALL 1A & CORNER OF CULVERT	808672.99	1119972.71	1+67.92	21.22'
WP-6	CORNER OF WINGWALL 2A & CORNER OF CULVERT	808671.77	1119983.14	1+76.52	15.90'
WP-7	CORNER OF WINGWALL 2A	808679.22	1119992.55	1+87.50	19.25'
WP-8	CORNER OF BOX CULVERT	808630.77	1119967.79	1+45.00	14.45'
WP-9	CORNER OF BOX CULVERT	808629.56	1119978.22	1+54.15	20.34'

FINISHED ELEVATIONS (AT TOP OF WEARING SURFACE)

STATION	DESCRIPTION	LEFT GUTTER LINE		CL	RIGHT GUTTER LINE	
		ELEVATION	OFFSET		ELEVATION	OFFSET
1+46.77	RIGHT GUTTERLINE @ START OF CULVERT	N/A	N/A	538.02	537.33	12.00'
1+59.81	RIGHT GUTTERLINE @ END OF CULVERT	N/A	N/A	537.66	537.00	12.00'
1+62.52	LEFT GUTTERLINE @ START OF CULVERT	537.74	12.00'	537.59	N/A	N/A
1+74.37	LEFT GUTTERLINE @ END OF CULVERT	537.37	12.00'	537.27	N/A	N/A

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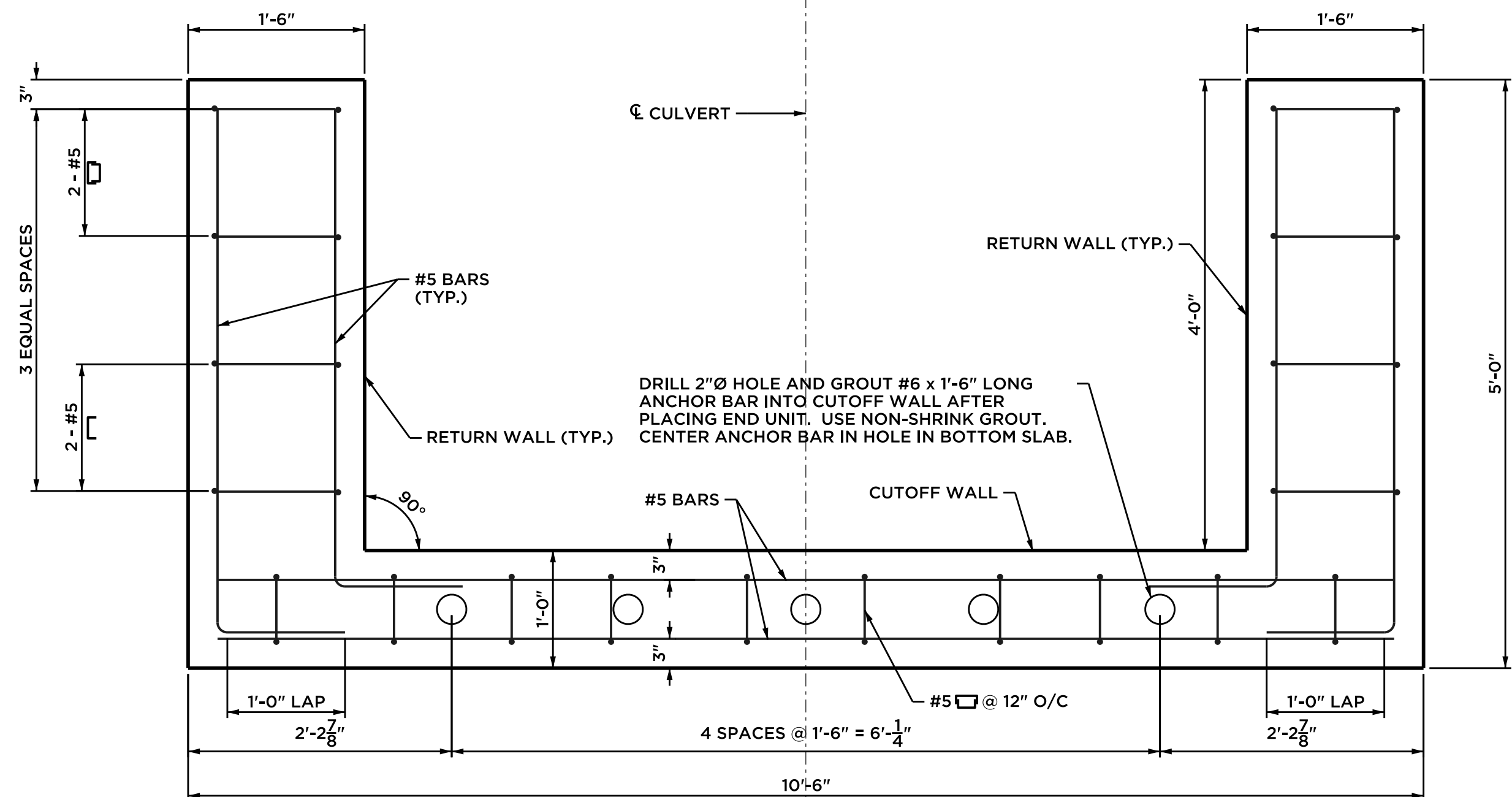
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REPLACEMENT OF HUNT ROAD BRIDGE
PREPARED FOR
TOWN OF COLUMBIA
LAYOUT PLAN

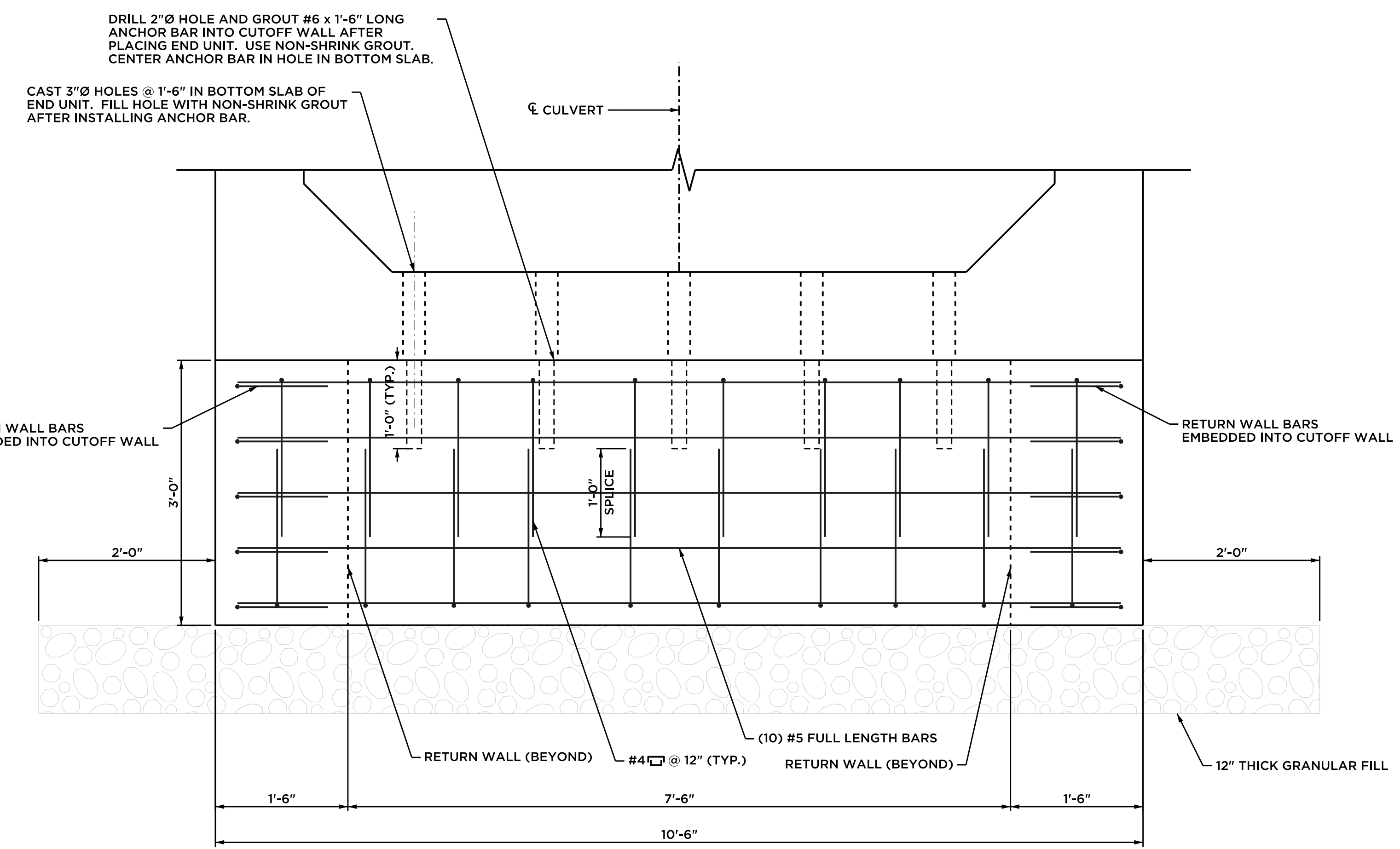
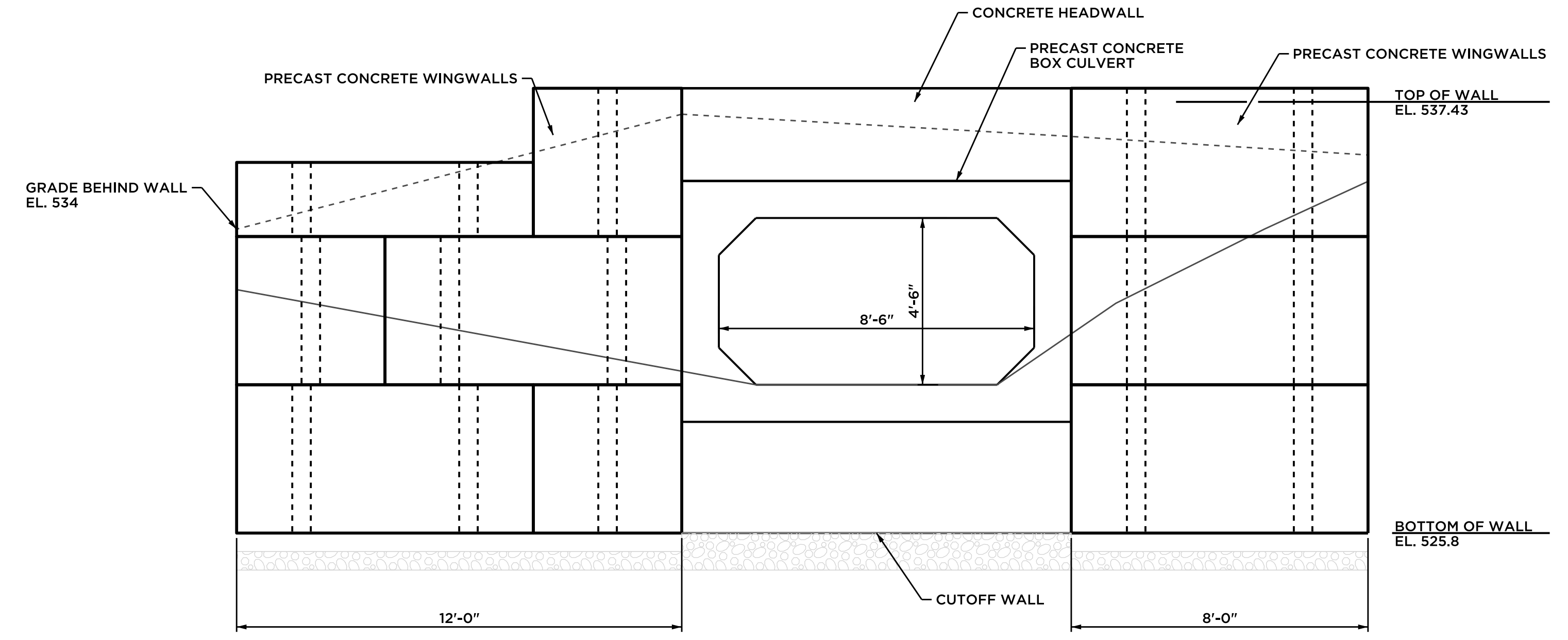
HUNT ROAD COLUMBIA, CT

PROJECT	DATE	SHEET NO.	OF
3169-14	06/12/23	5	9

SCALE: AS NOTED

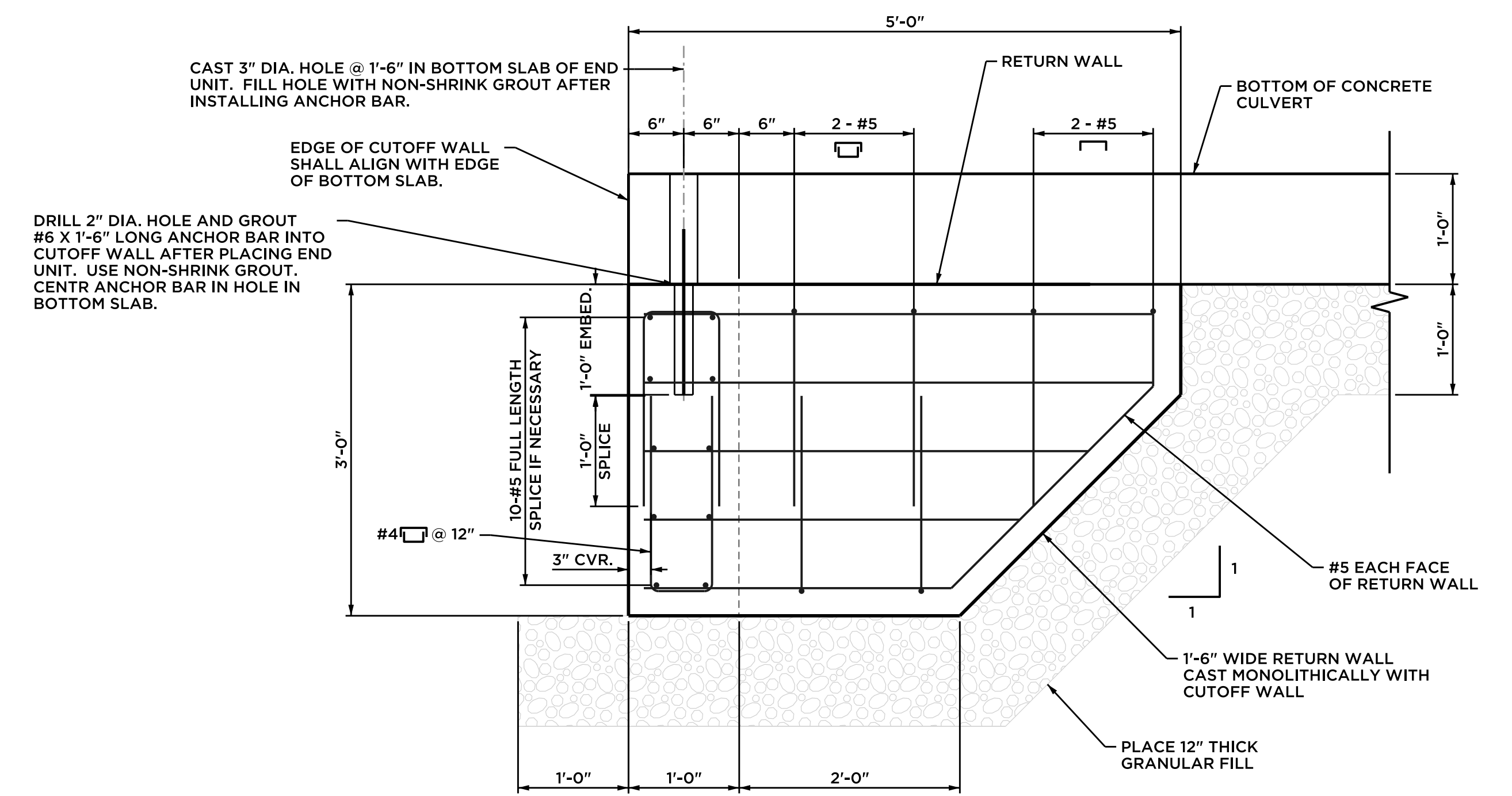


CUTOFF WALL PLAN
 SOUTH (INLET) CUTOFF WALL SHOWN
 NORTH (OUTLET) CUTOFF WALL SHOWN



CUTOFF WALL ELEVATION

CAST-IN-PLACE CUTOFF WALL DETAILS

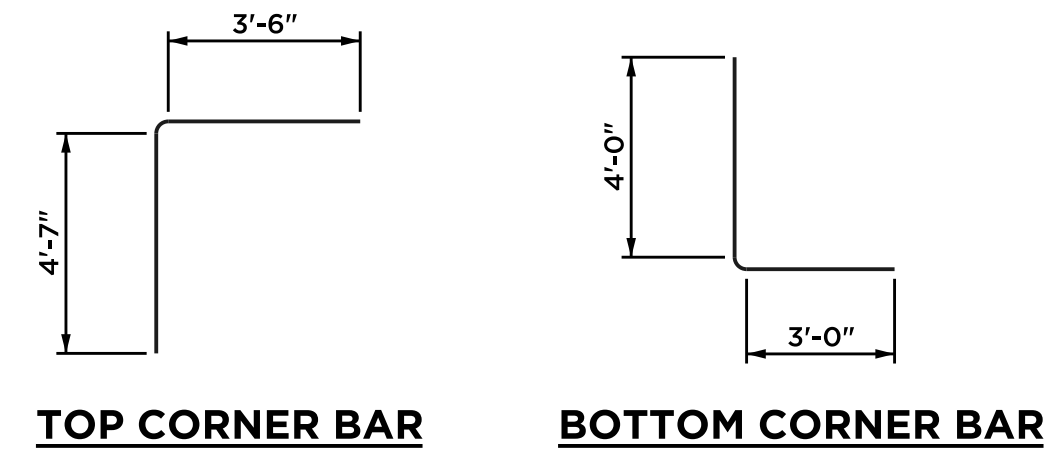
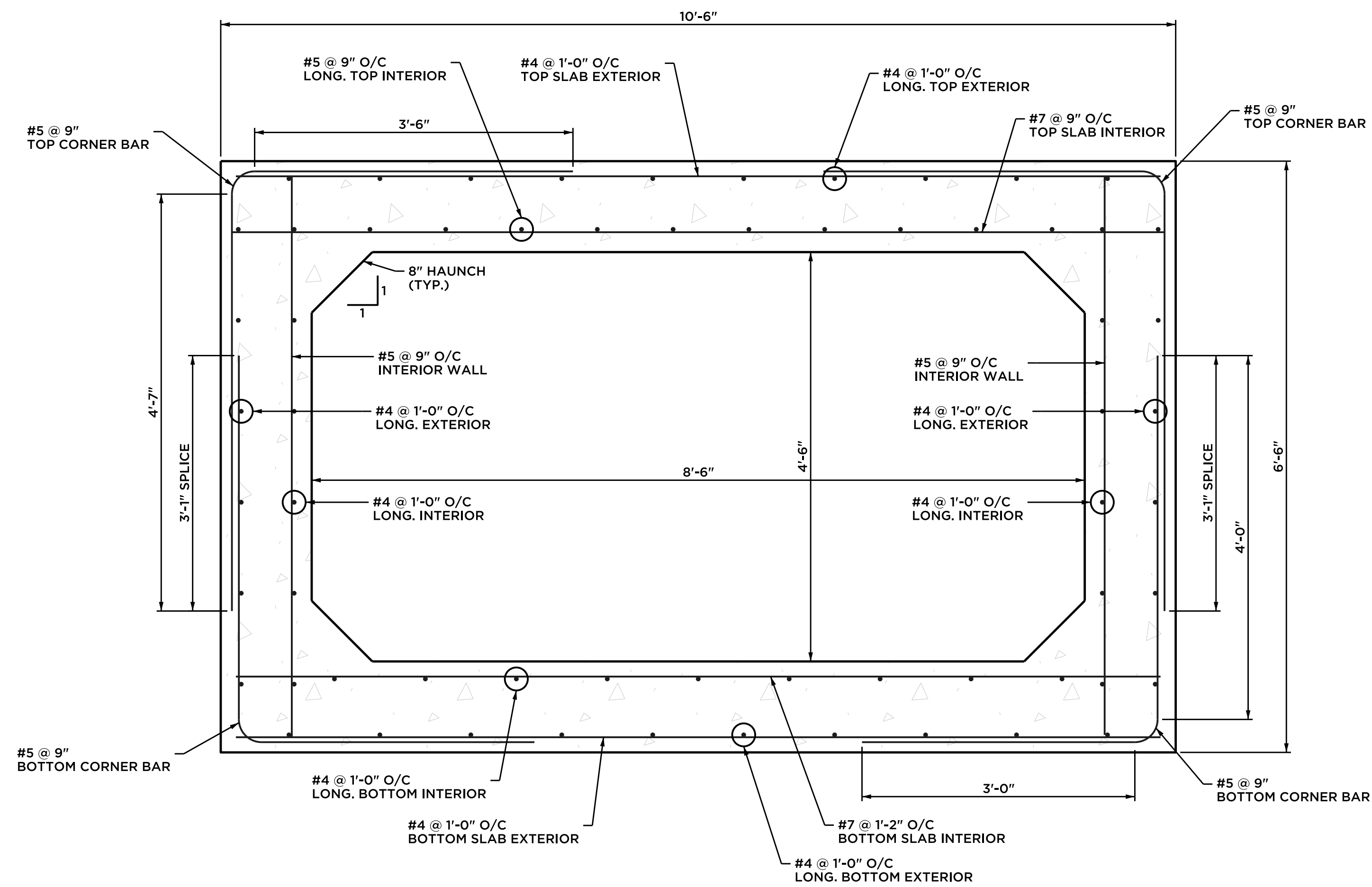


RETURN WALL

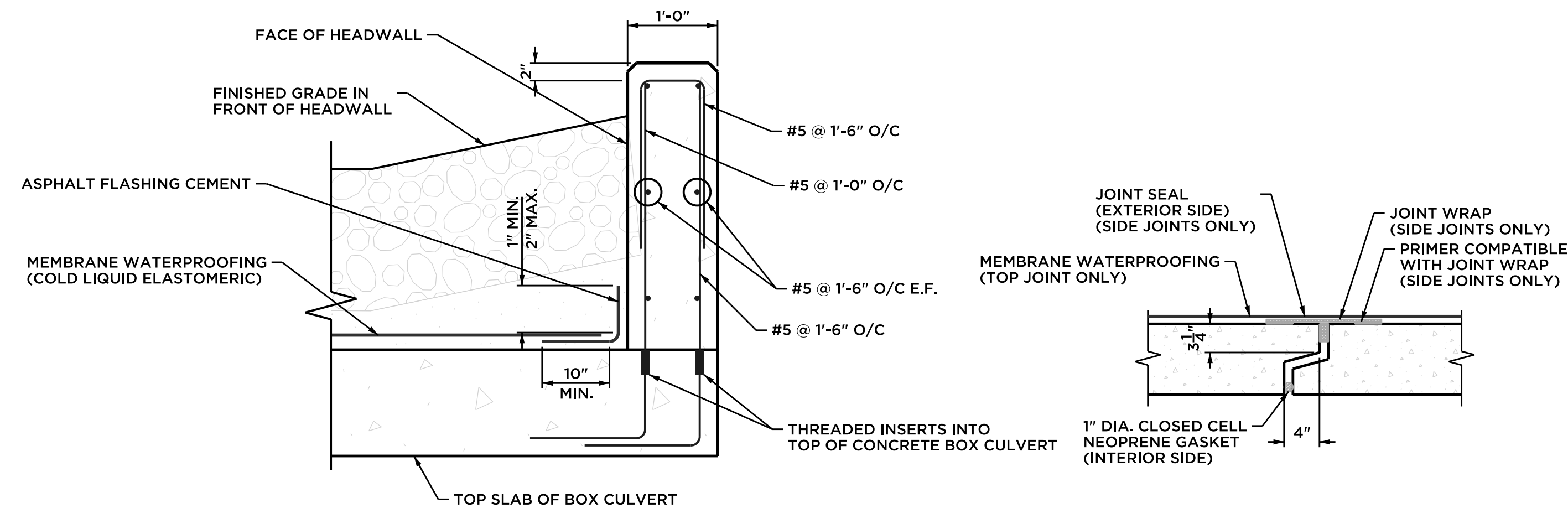
PRECAST CONCRETE BOX CULVERT NOTES

1. THE CONTRACTOR SHALL FURNISH AND INSTALL PRECAST BOX CULVERT IN ACCORDANCE WITH THE SPECIAL PROVISIONS FOR "PRECAST CONCRETE BOX CULVERT" AND THE INSIDE DIMENSIONS, LENGTH AND DETAILS SHOWN ON THESE PLANS.
 2. ALL INSERTS OR HOLES CAST INTO THE CULVERT SECTIONS FOR THE SOLE PURPOSE OF HANDLING AND SETTING THE UNITS SHALL BE GROUTED OVER TO A SMOOTH FINISH UPON COMPLETION OF THE WORK.
 3. NON-SHRINK GROUT SHALL BE USED TO GROUT THE REINFORCEMENT.
 4. THE COST OF FURNISHING AND INSTALLING INSERTS SHALL BE INCLUDED IN THE ITEM "8.5'x4.5' PRECAST CONCRETE BOX CULVERT" AND SHALL BE ONE OF THE FOLLOWING:
 1. STAR EXPANSION INDUSTRIES CORP. TYPE P-35-T
 2. RICHMOND SCREW ANCHOR CO. TYPE LF
 3. DAYTON SUPERIOR CORP. TYPE F-57
 5. ALL INSERTS SHALL HAVE A CORROSIVE RESISTANT COATING.
 6. THE #5 BARS WITH THREADED END SHALL BE COMPATIBLE WITH THE THREADED INSERTS (SEE NOTE 4). THREADED SHALL BE LONG ENOUGH TO FULLY ENGAGE THE INSERTS. THE THREADED BARS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A615, GRADE 60.
- ALL REINFORCEMENT TO HAVE 2" COVER UNLESS OTHERWISE NOTED.

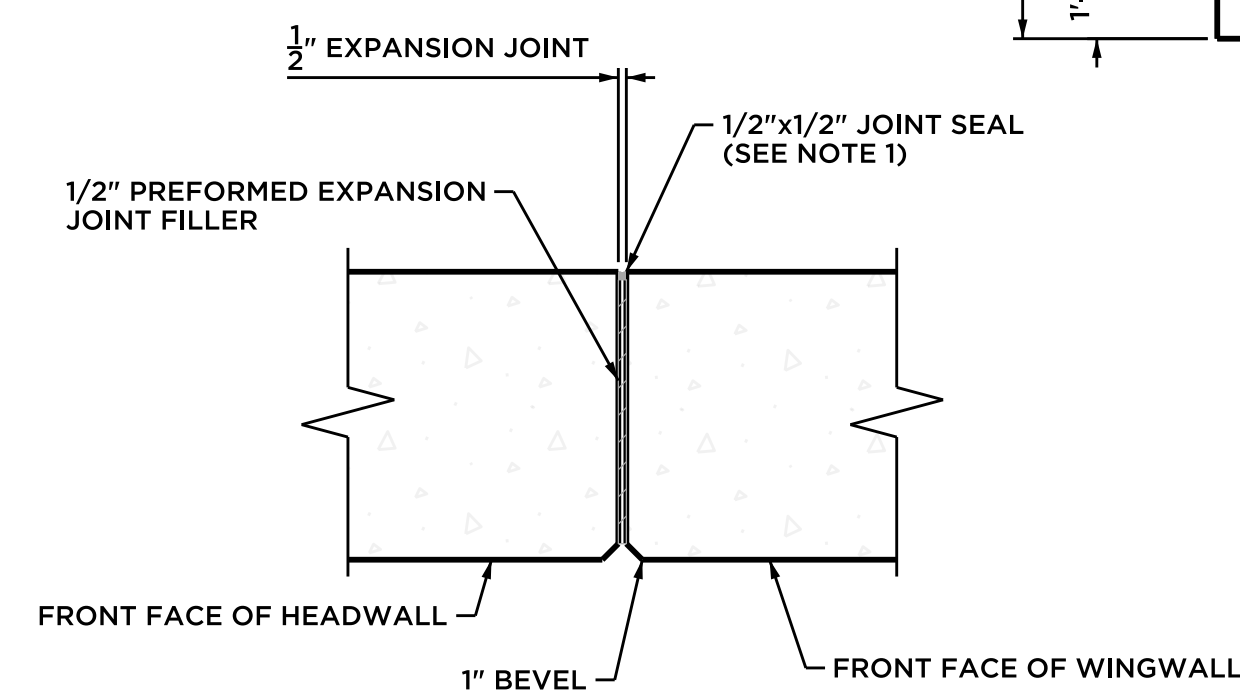
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PROJ. ENGINEER KBF PROJ. MANAGER MNB OFFICE REVIEW SMM	REPLACEMENT OF HUNT ROAD BRIDGE PREPARED FOR TOWN OF COLUMBIA TYPICAL DETAILS		
REVISIONS _____ _____ _____	HUNT ROAD PROJECT 3169-14	DATE 06/12/23	SHEET NO. 3 OF 9
SCALE: AS NOTED	HUNT ROAD COLUMBIA, CT		



BOX CULVERT REINFORCEMENT
SCALE: 1"=1'-0"

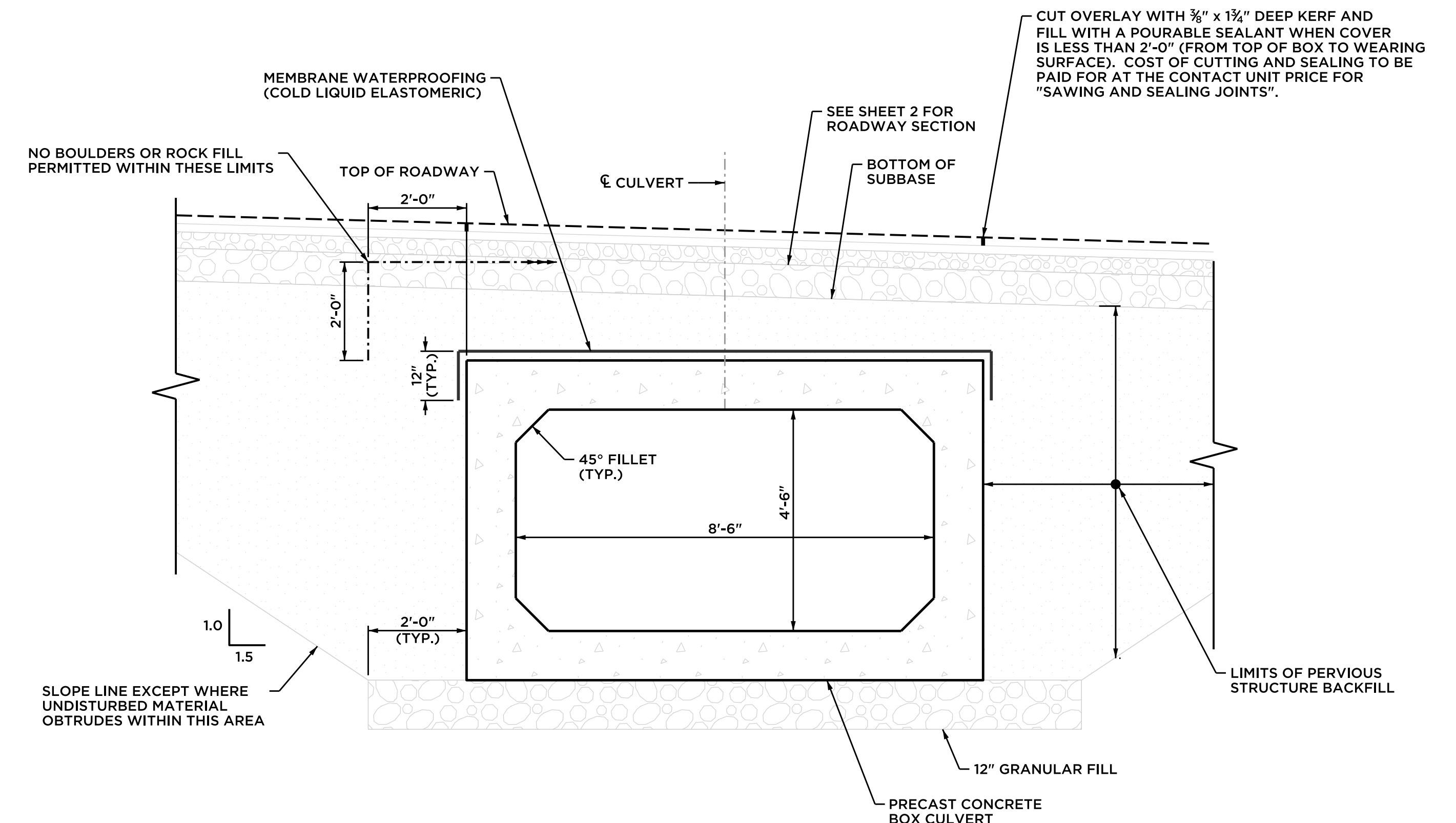


HEADWALL REINFORCEMENT DETAIL & MEMBRANE WATERPROOFING AT HEADWALL
SCALE: 1"=1'-0"

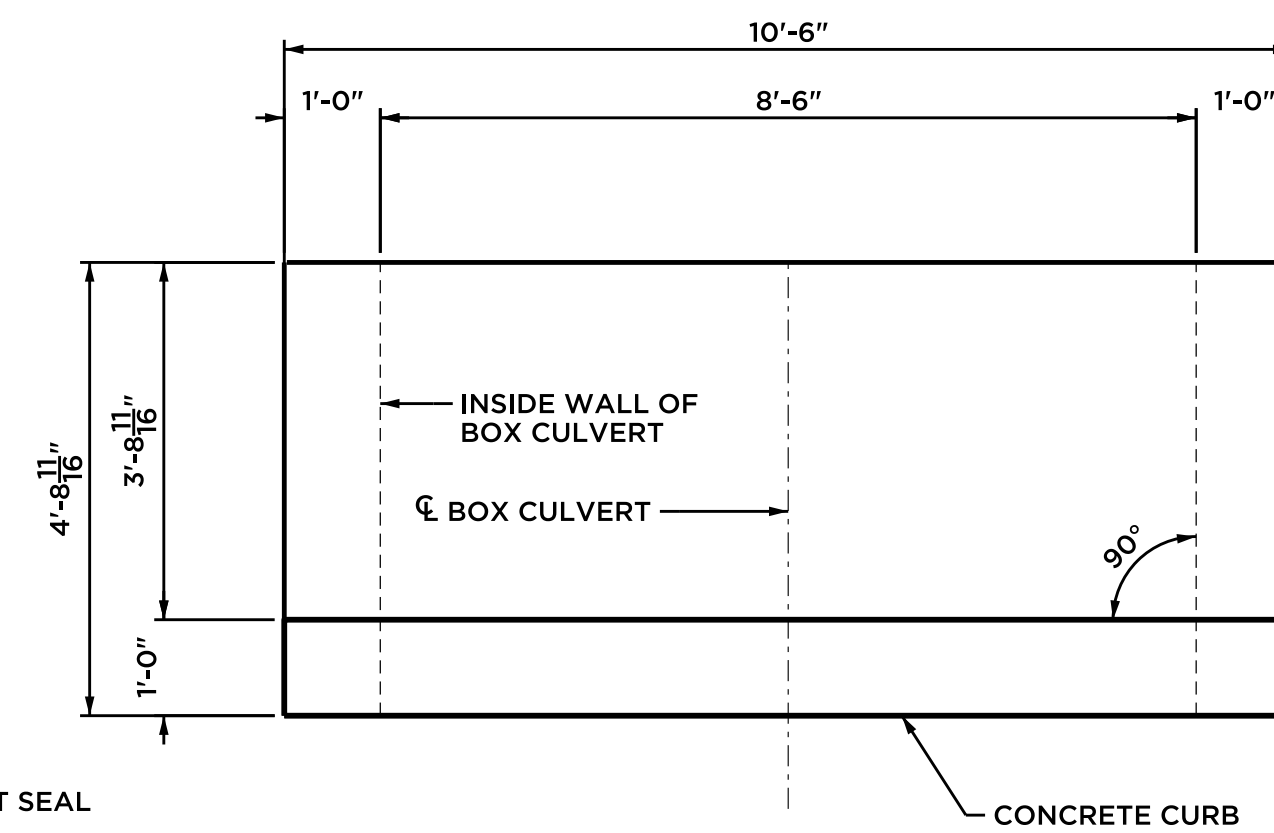


VERTICAL STEM JOINT DETAIL
NOT TO SCALE

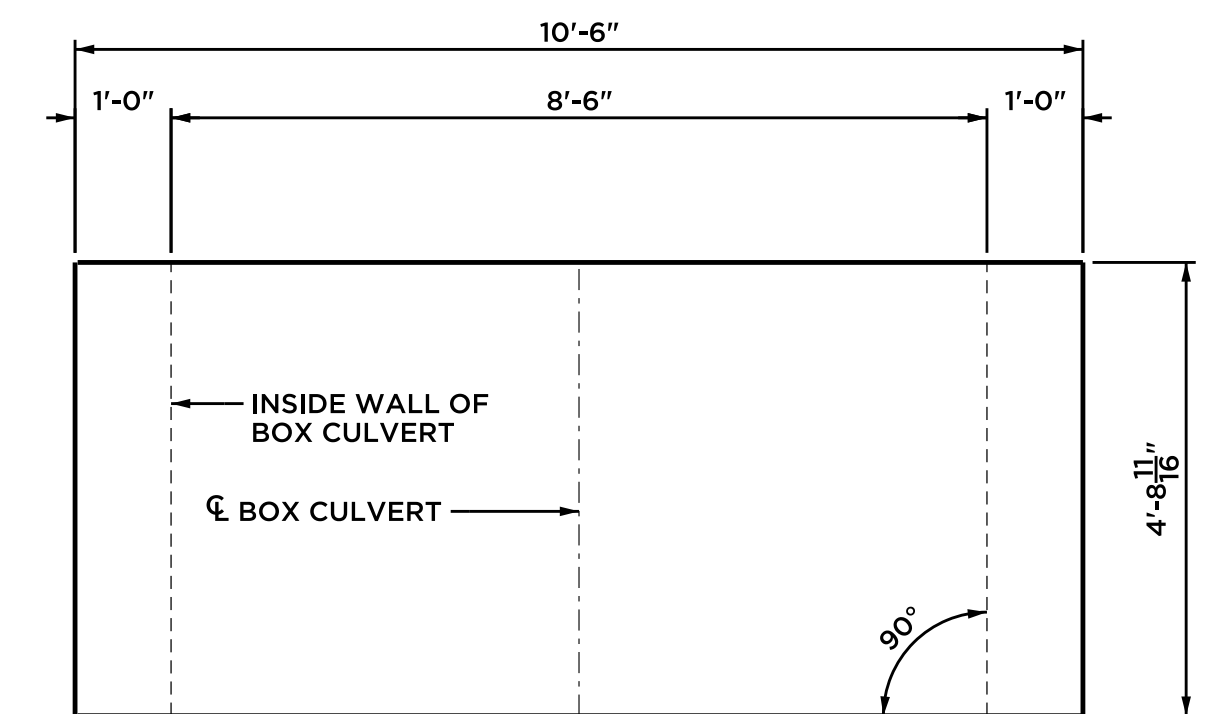
- NOTES:
1. JOINT SEAL TO EXTEND FROM TOP OF FOOTING TO TOP OF WALL.
 2. THE CLOSED CELL BACKER ROD SHALL BE PLACED A MINIMUM OF 2" FROM THE OUTSIDE FACE OF CURB.
 3. THE NON-SAGGING SILICONE SEALANT SHALL BE PLACED ON THE BACKER ROD 1/2" THICK. AT THE GUTTER, THE SEALANT SHALL BE PLACED FLUSH WITH THE OUTSIDE FACE OF CONCRETE.
 4. PRIOR TO INSTALLING THE SILICONE SEALANT, CLEAN JOINT SIDES BY SAND BLASTING, DUST SHALL BE REMOVED BY THE METHOD APPROVED BY THE ENGINEER. THIS WORK SHALL BE PAID FOR UNDER THE ITEM "ABUTMENT AND WALL CONCRETE".



PRECAST BOX CULVERT TYPICAL SECTION

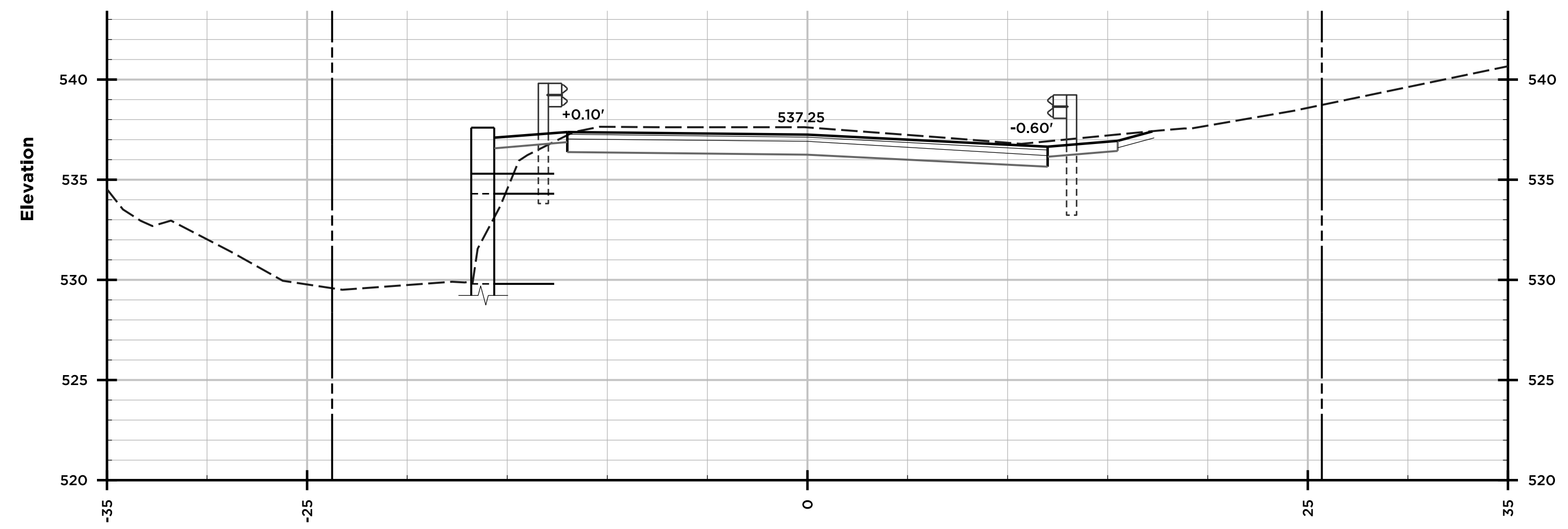


CULVERT PLAN BOX 1 & 9

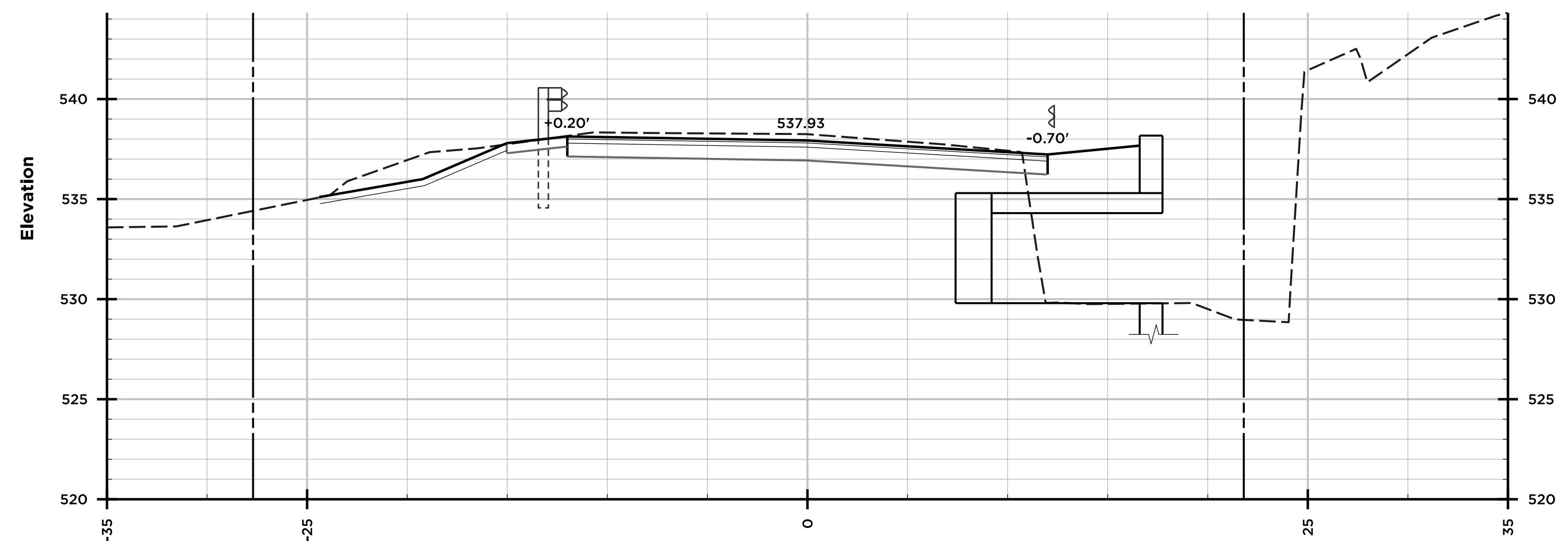


CULVERT PLAN BOX 2-8

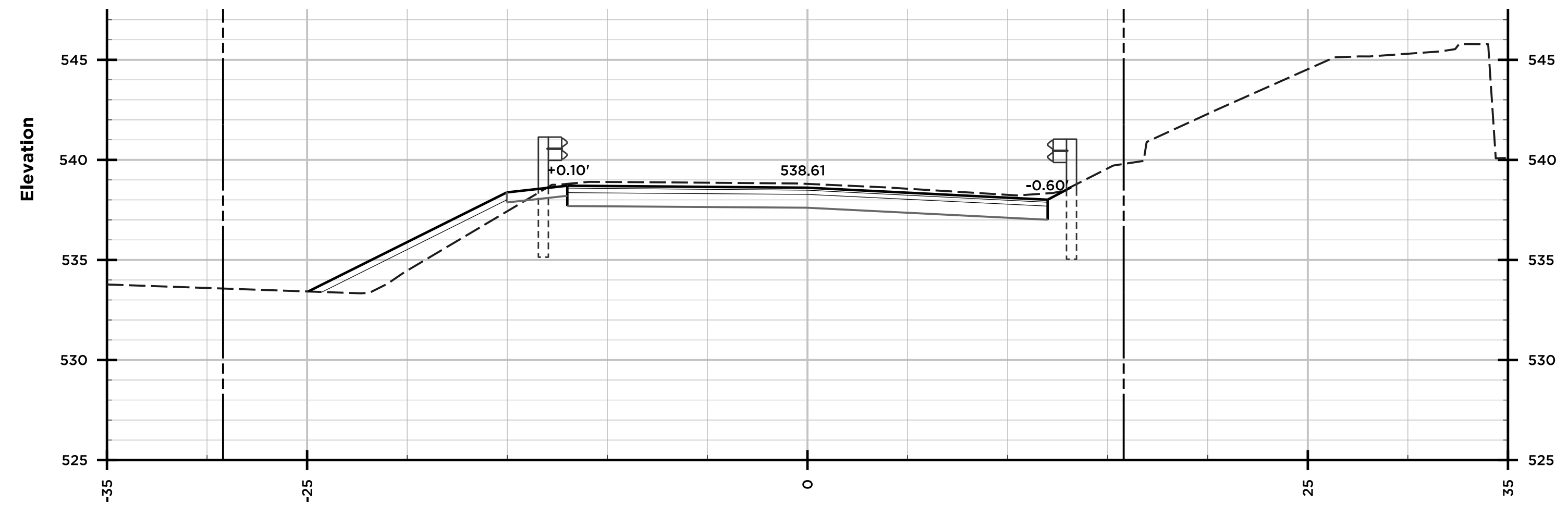
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		Civil Engineering • Environmental Consulting • Land Surveying • Construction Management	
PROJ. ENGINEER	KBF	HUNT ROAD BRIDGE OVER BROOK PREPARED FOR TOWN OF COLUMBIA CULVERT DETAILS	
PROJ. MANAGER	MNB		
OFFICE REVIEW	SMM		
REVISIONS		HUNT ROAD	COLUMBIA, CT
PROJECT	DATE	PROJECT	DATE
AS NOTED	3/16/14	06/12/23	
		SHEET NO.	7 OF 9



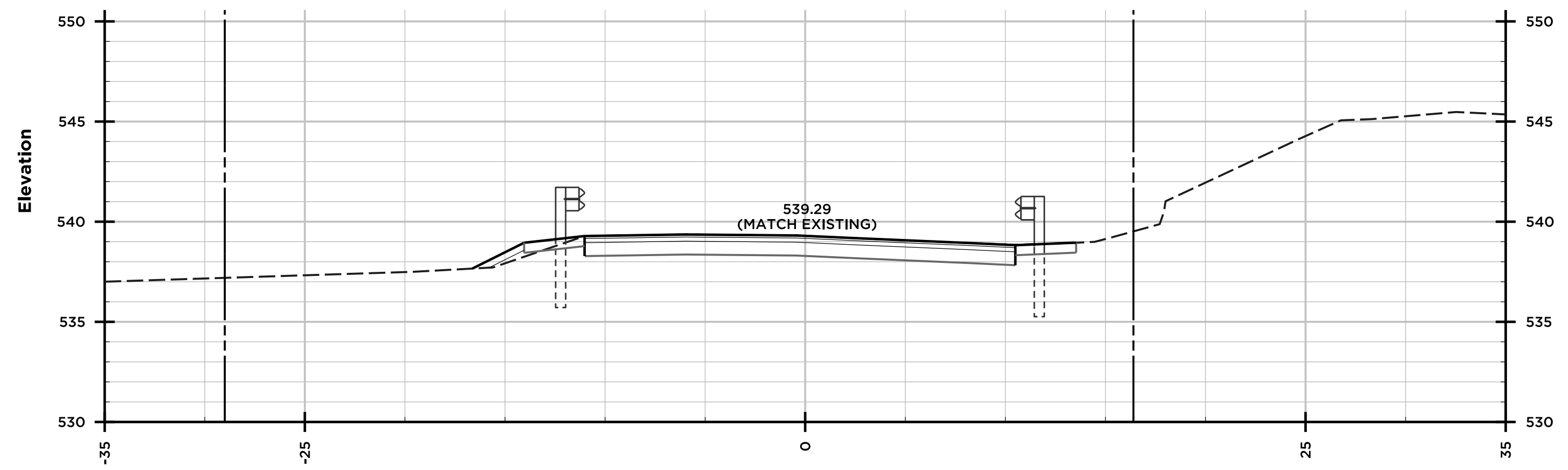
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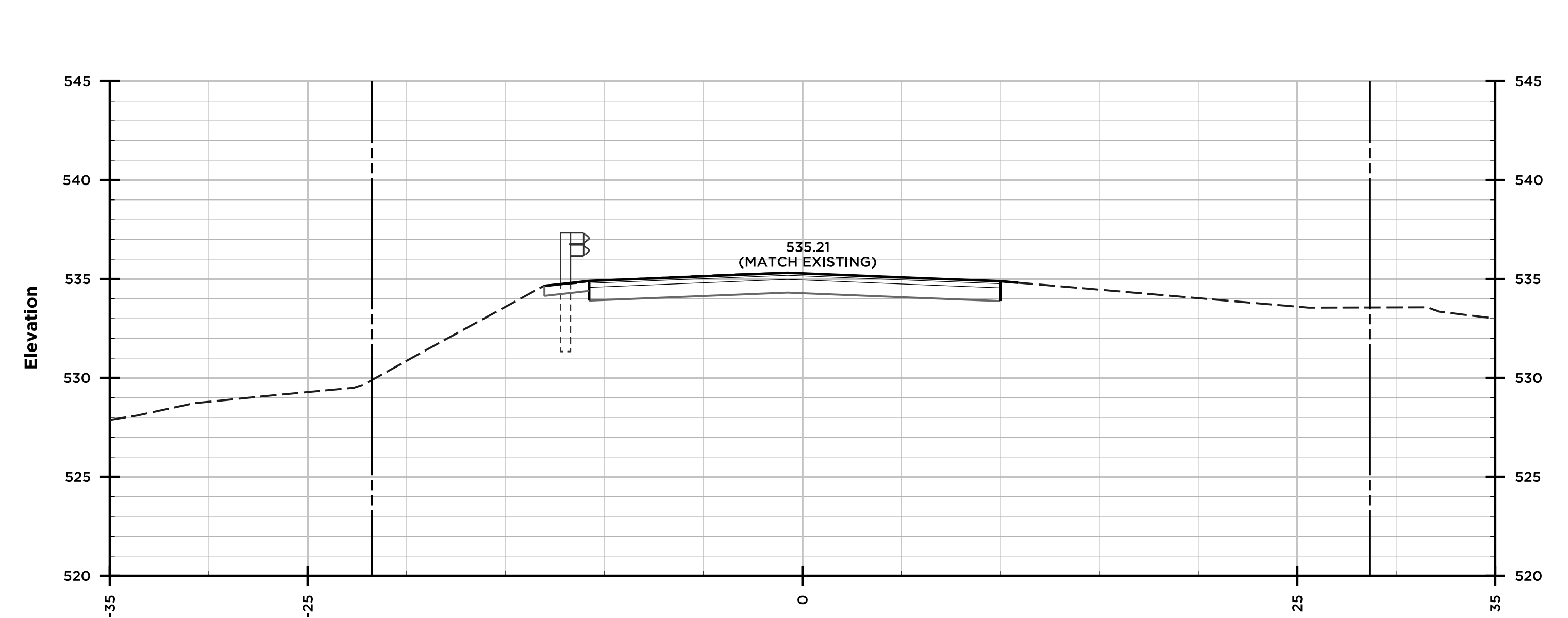
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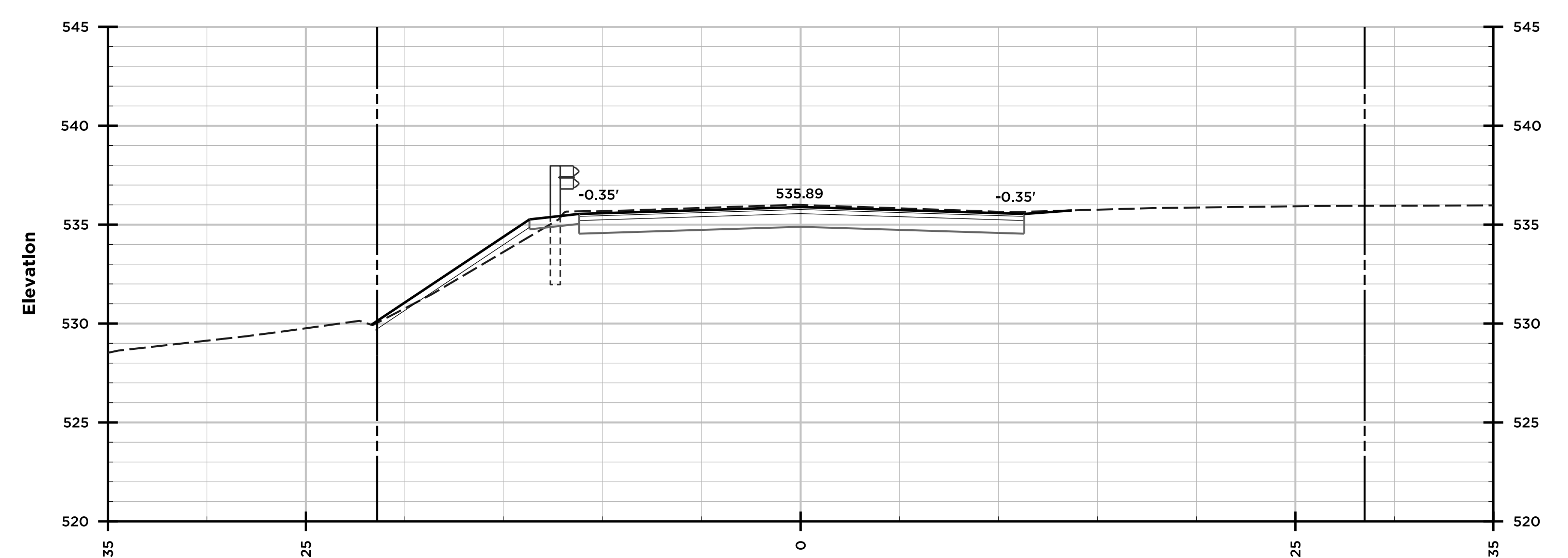
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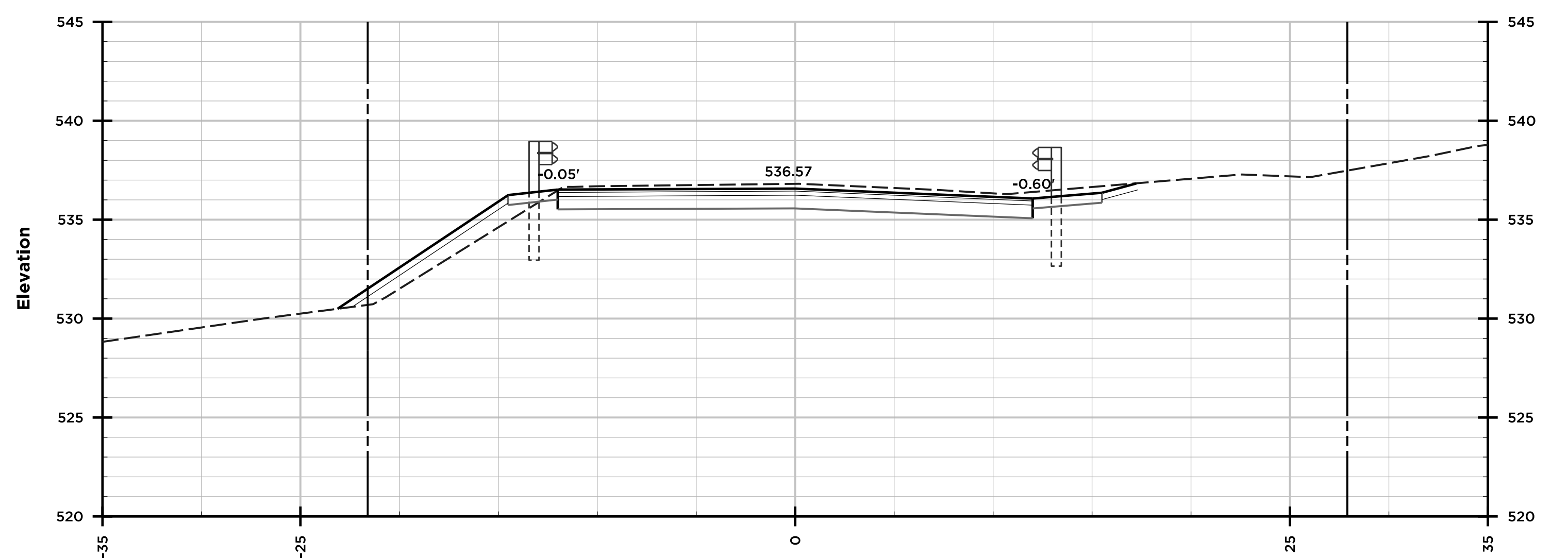
STA. 1+00



STA. 2+50



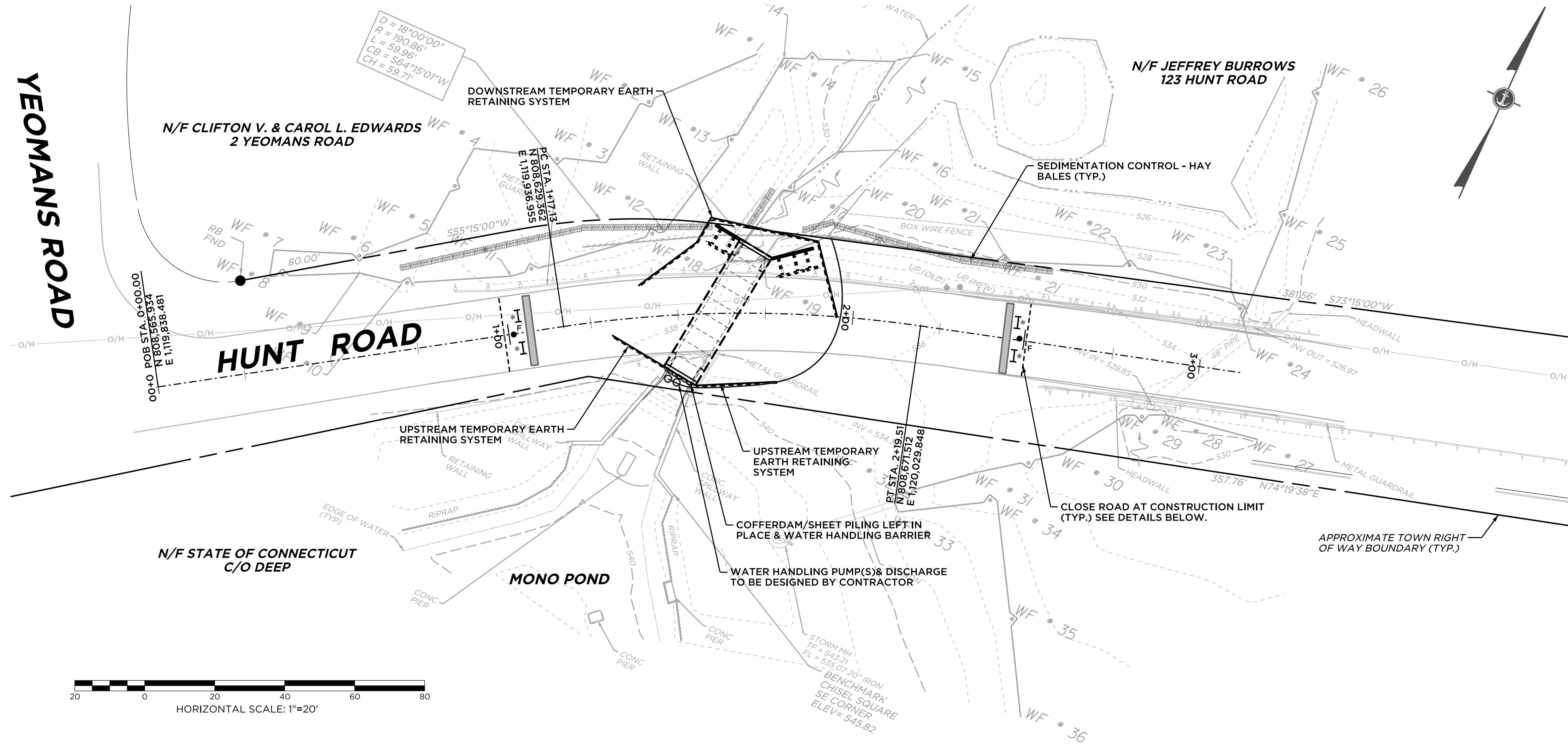
STA. 2+25



STA. 2+00

		41 Sequin Drive Glastonbury, CT 06033 Phone: (860) 633-5970 Fax: (860) 633-5971 www.bandct.com	
		Civil Engineering • Environmental Consulting • Land Surveying • Construction Management	
PROJ. ENGINEER DPL PROJ. MANAGER MNB OFFICE REVIEW MNB	REPLACEMENT OF HUNT ROAD BRIDGE PREPARED FOR TOWN OF COLUMBIA ROADWAY CROSS SECTIONS		
REVISIONS _____ _____ _____	HUNT ROAD PROJECT 3169-014	DATE 06/12/23	SHEET NO. 8 OF 9
SCALE: 1" = 5'			

YEOMANS ROAD

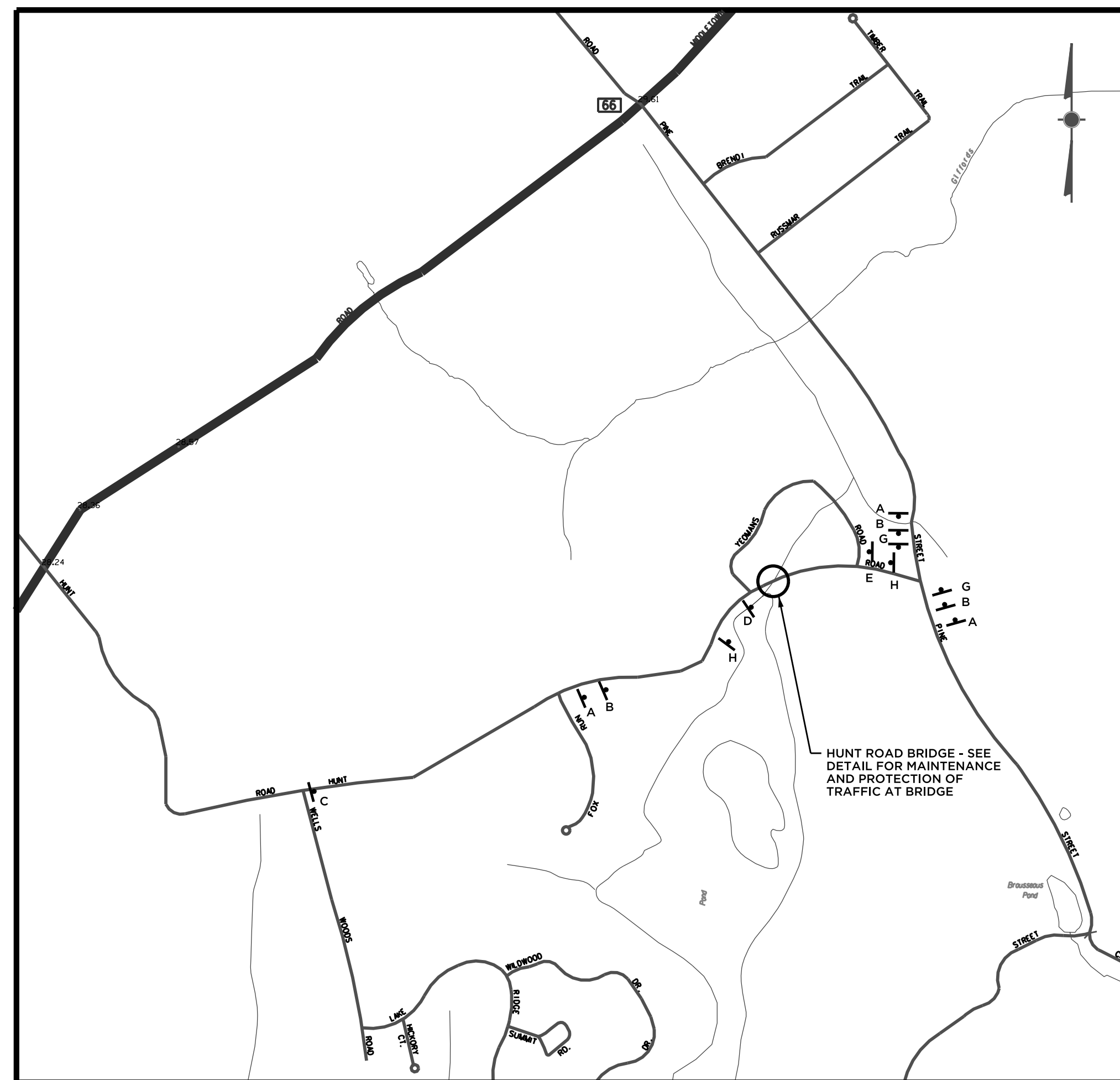


EARTH RETAINING/COFFERDAM AND DEWATERING & WATER HANDLING NOTES

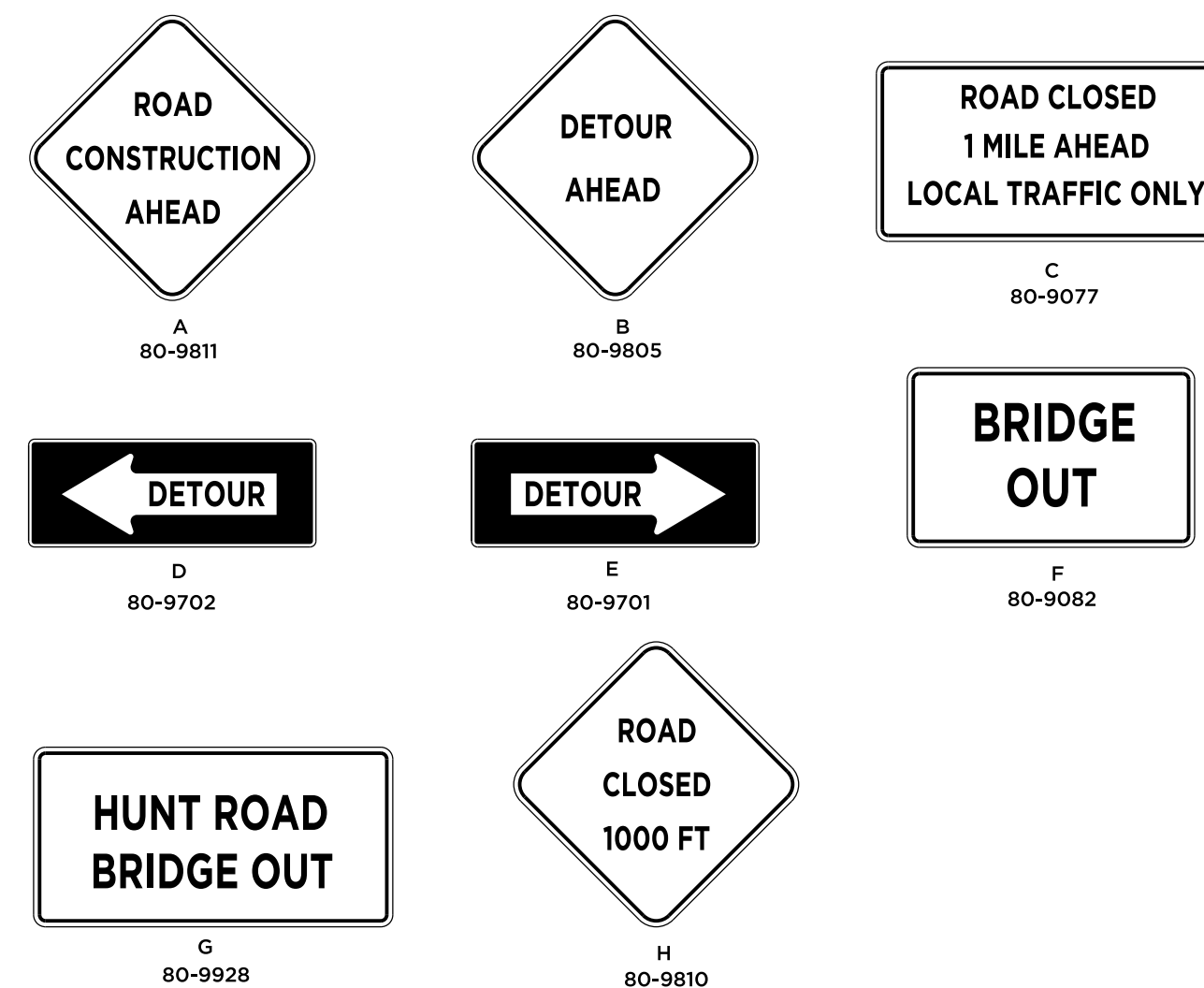
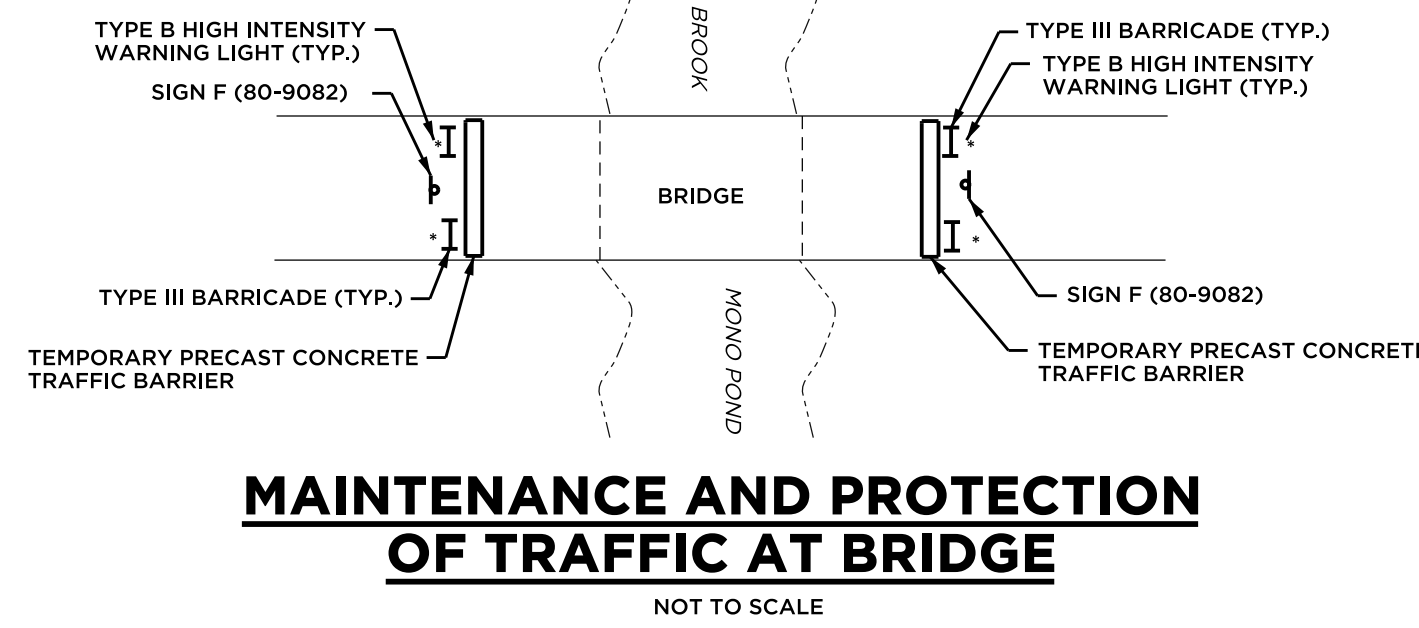
- TEMPORARY EARTH RETAINING SYSTEMS (TERS) AND COFFERDAM SHALL BE DESIGNED BY THE CONTRACTOR BASED ON THE SELECTED METHOD OF CONSTRUCTION.
- ALL WATER PUMPED FROM WITHIN THE STRUCTURE CONSTRUCTION TO BE HANDLED THROUGH TEMPORARY DEWATERING BASIN(S). THE TEMPORARY DEWATERING BASIN(S) AND PUMP(S) SHALL BE SIZED BY THE CONTRACTOR AND SUBMITTED TO THE ENGINEER FOR APPROVAL.
- WATER HANDLING FOR THE PROJECT INVOLVES COLLECTING FLOW FROM THE EXISTING POND SPILLWAY AT THE BOTTOM OF THE SPILLWAY AND BLOCKING FLOW FROM THE CONSTRUCTION AREA THROUGH THE USE OF COFFERDAM/WATER HANDLING BARRIERS INSTALLED AT THE SOUTH END OF THE PROPOSED CULVERT/BOTTOM OF EXISTING SPILLWAY.
PUMPS DESIGNED BY THE CONTRACTOR SHALL BE INSTALLED IN THIS AREA TO BYPASS THE FLOW PAST THE CONSTRUCTION AREA AND OUTLET TO THE STREAM NORTH OF THE WORK AREA TO MAINTAIN FLOW TO THE STREAM. CONTRACTOR TO SUBMIT WORK SCHEDULE INCLUDING LENGTH OF TIME REQUIRED FOR PUMPING BYPASS FLOW PRIOR TO THE START OF CONSTRUCTION.
- ANY UNCONFINED INSTREAM WORK IS RESTRICTED TO THE PERIOD FROM JUNE 1 TO SEPTEMBER 30, INCLUSIVE. THIS PROHIBITION DOES NOT INCLUDE THE INSTALLATION OR REMOVAL OF TEMPORARY WATER CONTROL STRUCTURES SUCH AS COFFERDAM/TERS.

ANTICIPATED SEQUENCE OF CONSTRUCTION

- COORDINATE AND COMPLETE A PRE- CONSTRUCTION MEETING WITH TOWN. RESPONSIBLE PARTIES TO BE IDENTIFIED AND EMERGENCY PHONE NUMBERS PROVIDED.
- CONTACT CALL BEFORE YOU DIG (1-800-922-4455) PRIOR TO ANY CONSTRUCTION ACTIVITIES.
- INSTALL EROSION CONTROL MEASURES AT LOCATIONS INDICATED ON PLANS OR AS ORDERED BY THE ENGINEER.
- MARK ANY TREES TO BE REMOVED FOR VERIFICATION BY THE TOWN. CLEAR AND GRUB SITE.
- INSTALL CONSTRUCTION SIGNS. CLOSE THE ROAD TO TRAFFIC AND IMPLEMENT HUNT ROAD DETOUR.
- SAWCUT & REMOVE EXISTING PAVEMENT.
- REMOVE EXISTING GUIDE RAILING.
- INSTALL UPSTREAM TEMPORARY EARTH RETAINING SYSTEMS.
- EXCAVATE TO EXPOSE EXISTING CULVERT.
- INSTALL TEMPORARY WATER HANDLING SYSTEM - PUMPS, BARRIERS, PIPING ETC. IMPLEMENT THE BYPASS WATER HANDLING.
- SAWCUT EXISTING CONCRETE FLOOR AND RETAINING WALLS AT PROPOSED JOINT WITH EXISTING STRUCTURE TO REMAIN.
- REMOVE PORTION OF EXISTING STRUCTURE TO ENABLE INSTALLATION OF SHEET PILING.
- INSTALL DOWNSTREAM EARTH RETAINING SYSTEMS AND SHEET PILING.
- REMOVE EXISTING STRUCTURE.
- COMPLETE STRUCTURE EXCAVATION AND INSTALL STONE BASE MATERIAL.
- INSTALL PRECAST CUTOFF WALLS. CUT OFF SHEET PILING.
- INSTALL PRECAST BOX CULVERT AND WINGWALLS.
- COMPLETE WATERPROOFING MEMBRANE & PAVING.
- BACKFILL STRUCTURE AND REMOVE TEMPORARY EARTH RETAINING SYSTEMS.
- REMOVE TEMPORARY WATER HANDLING DEVICES AND OPEN NEW BOX CULVERT TO FLOW.
- COMPLETE ROADWAY GRADING AND INSTALLATION OF PROCESSED AGGREGATE BASE.
- INSTALL GUIDE RAIL PROCESSED AGGREGATE.
- COMPLETE PAVING OF ROADWAY. INSTALL PAVEMENT MARKINGS.
- INSTALL ROADWAY GUIDE RAILING.
- FINISH GRADING, TOPSOIL & SEEDING.
- REMOVE EROSION & SEDIMENTATION CONTROLS ONCE VEGETATION IS ESTABLISHED.



DETOUR PLAN
SCALE: 1"=1000'



SIGN	M.U.T.C.D.	DIMENSION	DESCRIPTION
A	W20-1	36" X 36"	ROAD CONSTRUCTION AHEAD
B	W20-2	36" X 36"	DETOUR AHEAD
C	R11-3A	60" X 30"	ROAD CLOSED X MILES AHEAD LOCAL TRAFFIC ONLY
D	M4-10L	48" X 18"	← DETOUR
E	M4-10R	48" X 18"	→ DETOUR
F	R11-2	48" X 30"	BRIDGE OUT
G	R11-3	60" X 30"	HUNT ROAD BRIDGE OUT
H	W20-3	36" X 36"	ROAD CLOSED 1000 FT

NOTE: INSTALL BARRICADE WARNING LIGHTS - HIGH INTENSITY ON ALL POSTED-MOUNTED DIAMOND SIGNS IN THE ADVANCE WARNING AREA.

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Civil Engineering • Environmental Consulting • Land Surveying • Construction Management

PROJ. ENGINEER: DPL
PROJ. MANAGER: MNB
OFFICE REVIEW: MNB

REVISIONS:

PREPARED FOR
TOWN OF COLUMBIA

**REPLACEMENT OF HUNT ROAD BRIDGE
WATER HANDLING & DETOUR PLAN**

HUNT ROAD COLUMBIA, CT

PROJECT: 3169-014 DATE: 06/12/23 SHEET NO. 9 OF 9

SCALE: AS NOTED