

PROJECT MANUAL

**REPLACEMENT OF INDUSTRIAL AVENUE BRIDGE (NO. 025030)
OVER UNNAMED STREAM**

TOWN OF CHESHIRE, CONNECTICUT

January 30, 2024

**SLR Project No. 141.11047.00059
State Project No. 9025-0030
RFP #2324-17**

Prepared for:

Town of Cheshire
84 South Main Street
Cheshire, CT 06410

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TOWN OF CHESHIRE, CONNECTICUT

REPLACEMENT OF INDUSTRIAL AVENUE BRIDGE (NO. 025030) OVER UNNAMED STREAM

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TOWN OF CHESHIRE, CONNECTICUT
REQUEST FOR PROPOSALS

Replacement of Industrial Avenue Bridge (No. 025030) over Unnamed Stream
RFP #2324-17

January 30, 2024

The Town of Cheshire is seeking competitive proposals from qualified contractors for the Town's project know as ***REPLACEMENT OF INDUSTRIAL AVENUE BRIDGE OVER UNNAMED STREAM***. Sealed bids for the construction of the following project are due by 10:00 AM on February 29, 2024 at the office of Cheshire Public Works Room 213, Cheshire Town Hall, 84 South Main Street, Cheshire, Connecticut 06410. At that time, proposals will be opened in public and read aloud.

The documents comprising the Request for Proposals ("RFP") may be obtained on the Town's website: www.Cheshirect.org under "Businesses" / "Bids and RFP's – Doing business with the Town."

The Town of Cheshire reserves the rights to amend or terminate this Request for Proposals, accept all or any part of a proposal, reject all proposals, waive any informalities or non-material deficiencies in a proposal, and award the proposal to the proposer that, in the Town's sole discretion and judgment, will be in the Town's best interests.

"An Affirmative Action/Equal Opportunity Employer. Minority/Women's Business Enterprises are encouraged to apply. This contract is subject to state set-aside and contract compliance requirements.

TOWN OF CHESHIRE, CONNECTICUT

INVITATION TO BID & INSTRUCTIONS TO BIDDERS

Project Name: Replacement of Industrial Avenue Bridge (No. 025030) over Unnamed Stream
Bid Number: RFP #2324-17
Bid Opening Date: February 29, 2024
Bid Opening Time: 10:00 a.m.
Bid Opening Place: Cheshire Town Hall, Room #207/209

The Town of Cheshire is seeking bids for the Rehabilitation of Industrial Avenue Bridge (No. 025030) over Unnamed Stream.

One (1) original and two (2) copies of sealed bids. Sealed bids must be received by The Town of Cheshire at the Cheshire Town Hall, 84 South Main Street in Room #213, Cheshire, CT 06410 by the date and time noted above. The Town of Cheshire (the "Town") will not accept submissions by e-mail or fax. The Town will reject bids received after the date and time noted above.

The documents comprising this Invitation to Bid may be obtained from the Town's website, www.cheshirect.org, under "Bids and Requests for Proposals." **Each bidder is responsible for checking the Town's website to determine if the Town has issued any addenda and, if so, to complete its bid in accordance with the ITB as modified by the addenda.**

Bids must be held firm and cannot be withdrawn for sixty (60) calendar days after the opening date.

The Town reserves the rights to amend or terminate this Invitation to Bid, accept all or any part of a bid, reject all bids, waive any informalities or non-material deficiencies in a bid, and award the bid to the bidder that, in the Town's judgment, will be in the Town's best interests.

1. KEY DATES

OPTIONAL Pre-Bid Meeting: Tuesday, February 6, 2024 at 10:00 a.m., on site

Bid Opening: February 29, 2024 at 10:00 a.m.

2. QUESTIONS AND AMENDMENTS

Questions concerning the process and procedures applicable to this RFP are to be submitted **in writing** (including by e-mail or fax) and directed **only to:**

Name: Dan Bombero

Department: Town Manager's Office

E-mail: townmanager@cheshirect.org

Fax: 203 271-6639

Questions concerning this RFP's Specifications are to be submitted **in writing** (including by e-mail or fax) and directed **only to:**

Name: Marek L. Kement
Department: Public Works and Engineering
E-mail: mkement@cheshirect.org
Fax: 203 271-6659

Proposers are prohibited from contacting any other Town employee, officer or official concerning this RFP. A proposer's failure to comply with this requirement may result in disqualification.

The appropriate Town representative listed above must receive any questions from proposers no later than seven (7) days before the proposal opening date. That representative will confirm receipt of a proposer's questions by e-mail. The Town will answer all written questions by issuing one or more addenda, which shall be a part of this RFP and the resulting Contract, containing all questions received as provided for above and decisions regarding same.

At least three (3) calendar days prior to proposal opening, the Town will post any addenda on the Town's website, www.cheshirect.org, under "Bids & Requests for Proposals." **Each proposer is responsible for checking the website to determine if the Town has issued any addenda and, if so, to complete its proposal in accordance with the RFP as modified by the addenda.**

No oral statement of the Town, including oral statements by the Town representatives listed above, shall be effective to waive, change or otherwise modify any of the provisions of this RFP, and no proposer shall rely on any alleged oral statement.

3. ADDITIONAL INFORMATION

The Town reserves the right, either before or after the opening of proposals, to ask any proposer to clarify its proposal or to submit additional information that the Town in its sole discretion deems desirable.

4. COSTS FOR PREPARING PROPOSAL

Each proposer's costs incurred in developing its proposal are its sole responsibility, and the Town shall have no liability for such costs.

5. OWNERSHIP OF PROPOSALS

All proposals submitted become the Town's property and will not be returned to proposers.

6. FREEDOM OF INFORMATION ACT

All information submitted in a proposal or in response to a request for additional information is subject to disclosure under the Connecticut Freedom of Information Act as amended and judicially interpreted. A proposer's responses may contain financial, trade secret or other data that it claims should not be public (the "Confidential Information"). A proposer must identify specifically the pages and portions of its proposal or additional information that contain the claimed Confidential Information by visibly marking all such pages and portions. Provided that the proposer cooperates with the Town as described in this section, the Town shall, to the extent permitted by law, protect from unauthorized disclosure such Confidential Information.

If the Town receives a request for a proposer's Confidential Information, it will promptly notify the proposer in writing of such request and provide the proposer with a copy of any written disclosure request. The proposer may provide written consent to the disclosure or may object to the disclosure by notifying the Town in writing to withhold disclosure of the information, identifying in the notice the basis

for its objection, including the statutory exemption(s) from disclosure. The proposer shall be responsible for defending any complaint brought in connection with the nondisclosure, including but not only appearing before the Freedom of Information Commission, and providing witnesses and documents as appropriate.

7. REQUIRED DISCLOSURES

In its Proposal Form each proposer must disclose, if applicable:

- Its inability or unwillingness to meet any requirement of this RFP;
- If it is listed on the State of Connecticut's Debarment List;
- If it is ineligible, pursuant to Conn. Gen. Stat. § 31-57b, to be awarded the Contract because of occupational safety and health law violations;
- All resolved and pending arbitrations and litigation matters in which the proposer or any of its principals (regardless of place of employment) has been involved within the last ten (10) years;
- All criminal proceedings in which the proposer or any of its principals (regardless of place of employment) has ever been the subject; and
- Each instance in which it or any of its principals (regardless of place of employment) has ever been found to have violated any state or local ethics law, regulation, ordinance, code, policy or standard, or to have committed any other offense arising out of the submission of proposals or bids or the performance of work on public works projects or contracts.

A proposer's acceptability based on these disclosures lies solely in the Town's discretion.

8. LEGAL STATUS

If a proposer is a corporation, limited liability company, or other business entity that is required to register with the Connecticut Secretary of the State's Office, it must have a current registration on file with that office. The Town may, in its sole discretion, request acceptable evidence of any proposer's legal status.

9. PRESUMPTION OF PROPOSER'S FULL KNOWLEDGE

Each proposer is responsible for having read and understood each document in this RFP and any addenda issued by the Town. A proposer's failure to have reviewed all information that is part of or applicable to this RFP, including but not only any addenda posted on the Town's website, shall in no way relieve it from any aspect of its proposal or the obligations related thereto.

Each proposer is deemed to be familiar with and is required to comply with all federal, state, and local laws, regulations, ordinances, codes, and orders that in any manner relate to this RFP or the performance of the work described herein.

By submitting a proposal, each proposer represents that it has thoroughly examined and become familiar with the scope of work outlined in this RFP, and it is capable of performing the work to achieve the Town's objectives. If applicable, each proposer shall visit the site, examine the areas and thoroughly familiarize itself with all conditions of the property before preparing its proposal.

10. TAX EXEMPTIONS

The Town is exempt from the payment of federal excise taxes and Connecticut sales and use taxes. Federal Tax Exempt #066-001971. Exemption from State sales tax per Conn. Gen. Stat. Chapter 219, § 12-412(1). No exemption certificates are required, and none will be issued.

11. INSURANCE and BONDS

The successful bidder agrees to maintain in force at all times during the Contract the following coverages placed with company(ies) licensed by the State of Connecticut which have at least an “A-” VIII policyholders rating according to Best Publication’s latest edition Key Rating Guide.

(Minimum Limits)

General Liability*

Each Occurrence	\$2,000,000
General Aggregate	\$3,000,000

Products/Completed Operations

Aggregate	\$3,000,000
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Auto Liability*

Combined Single Limit, Each Accident	\$1,000,000
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Umbrella*

Each Occurrence	\$2,000,000
(Excess Liability) Aggregate	\$3,000,000

* The Town of Cheshire and State of Connecticut shall be named as “Additional Insured.” Coverage is to be provided on a primary, noncontributory basis. Waiver of subrogation must be provided. If any policy is written on a “Claims Made” basis, the policy must be continually renewed for a minimum of two (2) years from the completion date of the Contract. If the policy is replaced and/or the retroactive date is changed, then the expiring policy must be endorsed to extend the reporting period for claims for the policy in effect during the Contract for two (2) years from the completion date.

Workers’ Compensation and WC Statutory Limits:

Employers’ Liability (EL) Each Accident	\$500,000
EL Disease Each Employee	\$500,000
EL Disease Policy Limit	\$500,000

Original, completed Certificates of Insurance must be presented to the Town prior to Contract execution. The successful bidder agrees to provide replacement/renewal certificates at least 60 days prior to the expiration of the policy. Should any of the above described policies be cancelled before the expiration date, written notice must be given to the Town thirty (30) days prior to cancellation.

The successful bidder shall, at its own expense and cost, obtain and keep in force at least the insurance listed in the Insurance Requirements that are a part of this RFP. The Town reserves the right to request from the successful proposer a complete, certified copy of any required insurance policy.

The successful bidder shall furnish to the Town, at the time of contract execution, payment and performance bonds each for the full penal sum of the contract. The bonds shall be issued by a T-List surety authorized to issue bonds in Connecticut.

12. AWARD CRITERIA; SELECTION; CONTRACT EXECUTION

The Town reserves the right to correct, after proposer verification, any mistake in a proposal that is a clerical error, such as a price extension, decimal point error or FOB terms. If an error exists in an extension of prices, the unit price shall prevail. In the event of a discrepancy between the price quoted in words and in figures, the words shall control.

The Town reserves the rights to accept all or any part of a proposal, reject all proposals, and waive any informalities or non-material deficiencies in a proposal. The Town also reserves the right, if applicable, to award the purchase of individual items under this RFP to any combination of separate proposals or proposers.

The Town will accept the proposal that, all things considered, the Town determines is in its best interests. Although price will be an important factor in most RFPs, it will not be the only basis for award. Due consideration may also be given to a proposer's experience, references, service, ability to respond promptly to requests, past performance, and other criteria relevant to the Town's interests, including compliance with the procedural requirements stated in this RFP.

The Town will not award the proposal to any business that or person who is in arrears or in default to the Town with regard to any tax, debt, contract, security or any other obligation.

If the lowest priced bidder meets all specifications, its bid is responsive, and the bidder is qualified and responsible, but the bid is not acceptable to the Town Manager or, if applicable, the Public Building Commission or the Board of Education, the matter must be referred to the Town Council for its decision on whether to reject all proposals, to accept a higher proposal, or to take such other action as may be in the Town's best interests.

The Town will select the proposal that it deems to be in the Town's best interest and issue a Preliminary Notice of Award to the successful proposer. The award may be subject to further discussions with the proposer. **The making of a preliminary award to a proposer does not provide the proposer with any rights and does not impose upon the Town any obligations. The Town is free to withdraw a preliminary award at any time and for any reason. A proposer has rights, and the Town has obligations, only if and when a Contract is executed by the Town and the proposer.**

13. COMPLIANCE WITH IMMIGRATION LAWS

By submitting a proposal, each proposer confirms that it has complied, and during the term of the Contract will comply, with the Immigration Reform and Control Act ("IRCA") and that each person it provides under the Contract will at all times be authorized for employment in the United States of America. Each proposer confirms that it has a properly completed Employment Eligibility Verification, Form I-9, for each person who will be assigned under the Contract and that it will require each subcontractor, if any, to confirm that it has a properly completed Form I-9 for each person who will be assigned under the Contract.

The successful proposer shall defend, indemnify, and hold harmless the Town, its employees, officers, officials, agents, volunteers and independent contractors, including any of the foregoing

sued as individuals (collectively, the “Town Indemnified Parties”), against any and all proceedings, suits, actions, claims, damages, injuries, awards, judgments, losses or expenses, including fines, penalties, punitive damages, attorney’s fees and costs, brought or assessed against, or incurred by, the Town Indemnified Parties related to or arising from the obligations under IRCA imposed upon the successful proposer or its subcontractor. The successful proposer shall also be required to pay any and all attorney’s fees and costs incurred by the Town Indemnified Parties in enforcing any of the successful proposer’s obligations under this provision, whether or not a lawsuit or other proceeding is commenced, which obligations shall survive the termination or expiration of the Contract.

14. CONTRACT TERMS

The following provisions will be mandatory terms of the Town’s Contract (modified AIA A101 with modified AIA A201 General Conditions) with the successful proposer, a template for which is provided herewith and is a part hereof. If a proposer is unwilling or unable to meet any of these Contract Terms, the proposer must disclose that inability or unwillingness in its Proposal Form:

a. **DEFENSE, HOLD HARMLESS AND INDEMNIFICATION; WAIVER OF SUBROGATION RIGHTS**

The successful proposer agrees, to the fullest extent permitted by law, to defend, indemnify, and hold harmless the Town, its employees, officers, officials, agents, volunteers and independent contractors, including any of the foregoing sued as individuals (collectively, the “Town Indemnified Parties”), from and against all proceedings, suits, actions, claims, damages, injuries, awards, judgments, losses or expenses, including attorney’s fees, arising out of or relating, directly or indirectly, to the successful proposer’s malfeasance, misconduct, negligence or failure to meet its obligations under the RFP or the Contract.

The successful proposer’s obligations under this section shall not be limited in any way by any limitation on the amount or type of the successful proposer’s insurance. Nothing in this section shall obligate the successful proposer to indemnify the Town Indemnified Parties against liability for damage arising out of bodily injury to persons or damage to property caused by or resulting from the negligence of the Town Indemnified Parties.

In any and all claims against the Town Indemnified Parties made or brought by any employee of the successful proposer, or anyone directly or indirectly employed or contracted with by the successful proposer, or anyone for whose acts or omissions the successful proposer is or may be liable, the successful proposer’s obligations under this section shall not be limited by any limitation on the amount or type of damages, compensation or benefits payable by the successful proposer under workers’ compensation acts, disability benefit acts, or other employee benefits acts.

The successful proposer shall also be required to pay any and all attorney’s fees incurred by the Town Indemnified Parties in enforcing any of the successful proposer’s obligations under this section, which obligations shall survive the termination or expiration of this RFP and the Contract.

As a municipal agency of the State of Connecticut, the Town will NOT defend, indemnify, or hold harmless the successful proposer.

The successful proposer shall waive any and all subrogation rights against the Town.

b. ADVERTISING

The successful proposer shall not name the Town in its advertising, news releases, or promotional efforts without the Town's prior written approval.

If it chooses, the successful proposer may list the Town in a Statement of References or similar document required as part of its response to a public procurement. The Town's permission to the successful proposer to do so is not a statement about the quality of the successful proposer's work or the Town's endorsement of the successful proposer.

c. W-9 FORM

The successful proposer must provide the Town with a completed W-9 form before Contract execution.

d. PAYMENTS

Payments are to be made 30 days after the appropriate Town employee receives and approves the invoice, unless otherwise specified in the Specifications.

e. TOWN INSPECTION OF WORK

The Town may inspect the successful proposer's work at all reasonable times. This right of inspection is solely for the Town's benefit and does not transfer to the Town the responsibility for discovering patent or latent defects. The successful proposer has the sole and exclusive responsibility for performing in accordance with the Contract.

f. REJECTED WORK OR MATERIALS

The successful proposer, at its sole cost and expense, shall remove from the Town's property rejected items, commodities and/or work within 48 hours of the Town's notice of rejection. Immediate removal may be required when safety or health issues are present.

g. MAINTENANCE AND AVAILABILITY OF RECORDS

The successful proposer shall maintain all records related to the work described in the RFP for a period of five (5) years after final payment under the Contract or until all pending Town, state and federal audits are completed, whichever is later. Such records shall be available for examination and audit by Town, state, and federal representatives during that time.

h. SUBCONTRACTING

Prior to entering into any subcontract agreement(s) for the work described in the Contract, the successful proposer shall provide the Town with written notice of the identity (full legal name, street address, mailing address (if different from street address), and telephone number) of each proposed subcontractor. The Town shall have the right to object to any proposed subcontractor by providing the successful proposer with written notice thereof within seven (7) business days of receipt of all required information about the proposed subcontractor. If the Town objects to a proposed subcontractor, the successful proposer shall not use that subcontractor for any portion of the work described in the Contract.

All permitted subcontracting shall be subject to the same terms and conditions as are applicable to the successful proposer. The successful proposer shall remain fully and solely liable and responsible to the Town for performance of the work described in the Contract. The successful proposer also agrees to promptly pay each of its subcontractors within thirty (30) days of receipt of payment from the Town or otherwise in accordance with law. The successful proposer shall assure compliance with all requirements of the Contract. The successful proposer shall also be fully and solely responsible to the Town for the acts and omissions of its subcontractors and of persons employed, whether directly or indirectly, by its subcontractor(s).

i. PREVAILING WAGES

This item is applicable to this RFP. Applicable Wage Rates are attached as an appendix to the project manual.

j. PREFERENCES

This item is not applicable to this RFP.

k. WORKERS COMPENSATION

Prior to Contract execution, the Town will require the tentative successful proposer to provide a current statement from the State Treasurer that, to the best of her knowledge and belief, as of the date of the statement, the tentative successful proposer was not liable to the State for any workers' compensation payments made pursuant to Conn. Gen. Stat. § 31-355.

l. SAFETY

The successful proposer and each of its permitted subcontractors shall furnish proof that each employee performing the work of a mechanic, laborer or worker under the Contract has completed a course of at least ten (10) hours 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. Such proof shall be provided with the certified payroll submitted for the first week each such employee, mechanic, laborer, or worker begins work under the Contract.

m. COMPLIANCE WITH LAWS

The successful proposer shall comply with all applicable laws, regulations, ordinances, codes and orders of the United States, the State of Connecticut and the Town related to its proposal and the performance of the work described in the Contract.

n. LICENSES AND PERMITS

The successful proposer certifies that, throughout the Contract term, it shall have and provide proof of all approvals, permits and licenses required by the Town and/or any state or federal authority. The successful proposer shall immediately and in writing notify the Town of the loss or suspension of any such approval, permit or license.

o. AMENDMENTS

The Contract may not be altered or amended except by the written agreement of both parties.

p. ENTIRE AGREEMENT

It is expressly understood and agreed that the Contract contains the entire agreement between the parties, and that the parties are not, and shall not be, bound by any stipulations, representations, agreements or promises, oral or otherwise, not printed or inserted in the Contract or its attached exhibits.

q. VALIDITY

The invalidity of one or more of the phrases, sentences or clauses contained in the Contract shall not affect the remaining portions so long as the material purposes of the Contract can be determined and effectuated.

r. CONNECTICUT LAW AND COURTS

The Contract shall be governed by and construed in accordance with the internal laws (as opposed to the conflicts of law provisions) of the State of Connecticut, and the parties irrevocably submit in any suit, action or proceeding arising out of the Contract to the jurisdiction of the United States District Court for the District of Connecticut or of any court of the State of Connecticut, as applicable.

s. NON-EMPLOYMENT RELATIONSHIP

The Town and the successful proposer are independent parties. Nothing contained in the Contract shall create, or be construed or deemed as creating, the relationships of principal and agent, partnership, joint venture, employer and employee, and/or any relationship other than that of independent parties contracting with each other solely for the purpose of carrying out the terms and conditions of the Contract. The successful proposer understands and agrees that it is not entitled to employee benefits, including but not limited to workers compensation and employment insurance coverage, and disability. The successful proposer shall be solely responsible for any applicable taxes.

15. CHRO CONTRACT COMPLIANCE REGULATIONS

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 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 work with DAS certified Small and Minority owned businesses and 25% of that work with DAS certified Minority, Women and/or Disabled owned businesses.) The Contractor must demonstrate good faith effort to meet the 25% set-aside goals.

The Contractor must file a written or electronic non-discrimination certification with the Commission on Human Rights and Opportunities (CHRO) within thirty (30) calendar days of the Contract Award. Forms can be found at: <https://portal.ct.gov/CHRO/Contract-Compliance/Contract-Compliance/Contract-Compliance-Forms-and-Reports>

Contractor shall also file an Affirmative Action Plan or Set Aside Plan, in accordance with CHRO requirements, with the Commission within thirty (30) calendar days of Contract Award.

END OF STANDARD INSTRUCTIONS TO PROPOSE.

TOWN OF CHESHIRE, CONNECTICUT

**PROPOSAL FORM
REPLACEMENT OF INDUSTRIAL AVENUE BRIDGE (No. 025030) OVER UNNAMED STREAM**

PROPOSAL # 2324-17

PROPOSER'S FULL LEGAL NAME: _____

Pursuant to and in full compliance with the RFP, the undersigned proposer, having visited the site or property if applicable, and having thoroughly examined each and every document comprising the RFP, including any addenda, hereby offers and agrees as follows:

To provide the products and/or services specified in, and upon the terms and conditions of, the RFP for the following:

Summary of Item Descriptions

1. MOBILIZATION AND DEMOBILIZATION

The work under this item shall include all personnel, materials, equipment, and labor for the movement of all the contractor's field offices, buildings, facilities, and equipment to and from the project site as necessary for the performance of the work. This item shall also include permits, quality control, material testing and certification, as-built drawings, bonds, and insurance as may be required. This item shall also include all site clean-up and restoration.

This item shall be based on a lump sum value and paid based on the percentage of work completed and accepted as determined by the Engineer.

2. CONSTRUCTION STAKING

This item shall include all construction layout and reference staking necessary for the proper control and satisfactory completion of all the work per the Contract Documents. Also included shall be the protection of existing benchmarks, property, highway and control monuments.

This item shall be based on a lump sum value and paid based on the percentage of work completed and accepted as determined by the Engineer.

3. CONSTRUCTION FIELD OFFICE

This item shall include all materials, equipment, and labor to furnish, maintain, and remove a construction field office, for use by the Town of Cheshire, in accordance with the Contract Documents. The cost of providing the parking area, utility services, external illumination, trash removal, and snow and ice removal shall be included in this item.

Payment will be provided at the contract unit price per month based on the number of calendar months that the office is in place and in operation.

4. CLEARING AND GRUBBING

This item shall include all work associated with clearing and grubbing to the limits designated in the contract documents or as directed by the Engineer. This item shall also include protection of existing site features scheduled to remain.

This item shall be based on a lump sum value and paid based on the percentage of work completed and accepted as determined by the Engineer.

5. SEDIMENT AND EROSION CONTROL

This item shall include all materials, equipment, and labor to establish, maintain, replace if necessary and remove at the completion of construction, sediment and erosion controls as indicated on the Contract Documents and as directed by the Engineer. This shall include but is not limited to construction entrance anti-tracking pads, all sedimentation filter fence systems, sedimentation control at catch basins, erosion control blankets, and hay bales. Also included shall be sweeping, dust control, and construction, maintenance, and erosion control of temporary stockpile areas.

This item shall be based on a lump sum value and paid based on the percentage of work completed and accepted as determined by the Engineer.

6. REMOVAL AND SITE PREPARATION

This item shall include all work associated with the removal of all existing bridge features; including but not limited to the deck, beams, removal of existing masonry, parapet, and railing.

This item shall also include all coordination with utility companies, protection and temporary support of all existing utilities.

This item shall be based on a lump sum value and paid based on the percentage of work completed and accepted as determined by the Engineer.

7. ROADWAY RECONSTRUCTION

This item shall include all roadway work per the Contract Documents. This work includes all materials, equipment, and labor to cut and remove existing pavement and to remove existing curbing. Also included shall be all earth excavation, disposal of materials, and formation of subgrade.

This work includes all materials, equipment, and labor to furnish, place and compact subbase, processed aggregate base, and bituminous concrete pavement, including tack coat.

This work includes all materials, equipment, and labor to construct bituminous concrete curbing in accordance with the Contract Documents.

This work includes all materials, equipment, labor, and incidentals to furnish and install retroreflective epoxy resin pavement markings of the width and color specified in the Contract Documents, at the locations indicated, and in accordance with the Contract Documents.

This work includes furnishing roadway luminaire and coordination with the Town, in accordance with the Contract Documents.

This item shall be based on a lump sum value and paid based on the percentage of work completed and accepted as determined by the Engineer.

8. DRAINAGE

This item shall include all materials, equipment, labor, and incidentals to construct drainage systems and structures in accordance with the Contract Documents; including but not limited to catch basins, reinforced concrete pipe, and culvert ends. This item also shall include all excavation, bedding, backfilling, all temporary shoring, bracing, and excavation support that may be required, and removal of existing catch basins and culvert pipes.

This item shall include all materials, equipment, labor, and incidentals to remove and reset manhole frames and covers in accordance with the Contract Documents. This also shall include all excavation, backfilling, and setting of mortar and masonry work as necessary to adjust structures to finished grade.

This item shall be based on a lump sum value and paid based on the percentage of work completed and accepted as determined by the Engineer.

9. BRIDGE STRUCTURE

This item shall all include all materials, equipment, and labor to complete in place the precast concrete three sided rigid frame, abutments, wingwalls, and concrete headwall, per the Contract Documents.

This shall include but is not limited to temporary earth retaining systems, simulated stone masonry, water handling, structure excavation, pervious structure backfill, crushed stone, underdrain, concrete, deformed steel bars (galvanized), joint filler, dampproofing, and membrane waterproofing.

This item shall be based on a lump sum value and paid based on the percentage of work completed and accepted as determined by the Engineer.

10. MAINTENANCE & PROTECTION OF TRAFFIC

This item shall include all work associated with the roadway and bridge closure, temporary traffic control and protection, and safety of civilians and workers with the vicinity of the project. This shall include but is not limited to all materials, equipment, services, and labor to furnish, erect, maintain, move, adjust, clean, relocated, store, and remove sufficient construction signs, construction barricades, warning lights, traffic cones, traffic drums, temporary precast concrete barrier curb, delineators, temporary pavement markings, construction fences, and any incidentals. This item shall also include any traffic control personnel that may be needed.

This item shall be based on a lump sum value and paid based on the percentage of work completed and accepted as determined by the Engineer.

11. METAL BEAM RAIL SYSTEM (TYPE R-B MASH)

This item shall include all materials, equipment, labor, and incidents to furnish and install Metal Beam Rail System (Type R-B MASH) in accordance with the Contract Documents.

This item shall include all materials, equipment, labor, and incidentals to furnish and install guiderail attachments in accordance with the Contract Documents, including drilling and grouting anchor bolts and other incidental work.

These items shall include all materials, equipment, labor, and incidentals to furnish and install guiderail end anchorages of the type specified in the Contract Documents, at the locations indicated, and in accordance with the Contract Documents; including excavation, concrete, reinforcing steel, drilling and grouting, backfilling and other incidental work. This item shall also include all materials, equipment, labor, and incidentals to remove existing railings to the limits shown on the Plans.

This item shall be based on a lump sum value and paid based on the percentage of work completed and accepted as determined by the Engineer.

12. LOAM AND SEED

This item shall all materials, equipment, labor, and incidents to furnish and place fertilizer, seed, conservation seeding for slopes, and mulch on all areas indicated in the Contract Documents or where designated by the Engineer. This item shall include stripping and stockpiling existing topsoil.

This item shall be based on a lump sum value and paid based on the percentage of work completed and accepted as determined by the Engineer.

13. SIGN FACE – SHEET ALUMINUM (TYPE IX RETROREFLECTIVE SHEETING)

This item shall include all materials, equipment, labor, and incidentals to furnish and install all permanent signs in accordance with the Contract Documents, including metal signposts and hardware.

The item shall be based on a lump sum value and paid based on the percentage of work completed and accepted as determined by the engineer.

14. WATER MAIN SUPPORT BRACKETS

This item shall include all materials, equipment, labor, and incidentals to furnish and install all brackets and hangers in accordance with the contract Documents.

This item shall be based on a lump sum value and paid based on the percentage of work completed and accepted as determined by the Engineer.

The above Summary of Item Descriptions provides a general description of the work shown on the Contract Drawings and described in the Specifications and is intended to include all equipment, materials and labor necessary for the completion of the work. Although the above descriptions may be limited, the Summary of Item Descriptions, as defined, shall include all costs associated with performing the work.

SCHEDULE OF ITEMS

ITEM	ITEM DESCRIPTION	UNIT	QTY	UNIT PRICE (Figures)	EXT TOTAL (Figures)
1	Mobilization and Demobilization	LS	1		
2	Construction Staking	LS	1		
3	Construction Field Office	MO.	3		
4	Clearing and Grubbing	LS	1		
5	Sediment and Erosion Control	LS	1		
6	Removal and Site Preparation	LS	1		
7	Roadway Reconstruction	LS	1		
8	Drainage	LS	1		
9	Bridge Structure	LS	1		
10	Maintenance & Protection of Traffic	LS	1		
11	Metal Beam Rail System (Type R-B Mash)	LS	1		
12	Loam and Seed	LS	1		
13	Sign Face – Sheet Aluminum (Type IX Retroreflective Sheeting)	LS	1		
14	Water Main Support Brackets	LS	1		
	TOTAL BASE BID (in Figures)				

The **TOTAL BASE BID** (written in words), based upon the Schedule of Items listed above, to complete all work required by the Contract Documents is:

Dollars and _____ Cents.

All work for this project shall be performed under the above Bid Items. These Bid Items shall become the basis of payment of work performed. The value of each Bid Item when added together shall equal the Total Base Bid amount. Should the Bidder have any questions regarding the specific elements of work to be included within each Item, said question shall be directed in writing sufficiently in advance of the bid date in order to allow for a proper response. The cost for other items of work included in the Contract Documents and/or on the Contract Documents and not listed in the Bid Items shall be included in the cost of the various Items bid. All Items shall include all costs necessary to perform the work and the costs for all materials, equipment, tools, labor and work incidental thereto, including overhead and profit.

ACKNOWLEDGEMENT

In submitting this Proposal Form, the undersigned proposer acknowledges that the price(s) include all labor, materials, transportation, hauling, overhead, fees and insurances, bonds or letters of credit, profit, security, permits and licenses, and all other costs to cover the completed work called for in the RFP. Except as otherwise expressly stated in the RFP, no additional payment of any kind will be made for work accomplished under the price(s) as proposed.

REQUIRED DISCLOSURES

1. Exceptions to the RFP

_____ This proposal does not take exception to any requirement of the RFP, including but not only any of the Contract Terms set forth in Section 14 of the Standard Instructions to Proposers.

OR

_____ This proposal takes exception(s) to certain of the RFP requirements, including but not only the following Contract Terms set forth in Section 14 of the Standard Instructions to Proposers. **Attached is a sheet fully describing each such exception.**

2. State Debarment List

Is the proposer on the State of Connecticut's Debarment List?

_____ Yes
_____ No

3. Occupational Safety and Health Law Violations

Has the proposer or any firm, corporation, partnership or association in which it has an interest (1) been cited for three (3) or more willful or serious violations of any occupational safety and health act or of any standard, order or regulation promulgated pursuant to such act, during the three-year period preceding the proposal (provided such violations were cited in accordance with the provisions of any state occupational safety and health act or the Occupational Safety and Health Act of 1970, and not abated within the time fixed by the citation and such citation has not been set aside following appeal to the appropriate agency or court having jurisdiction) or (2) received one or more criminal convictions related to the injury or death of any employee in the three-year period preceding the proposal?

_____ Yes
_____ No

If “yes,” attach a sheet fully describing each such matter.

4. Arbitration/Litigation

Has either the proposer or any of its principals (regardless of place of employment) been involved for the most recent ten (10) years in any resolved or pending arbitration or litigation?

_____ Yes
_____ No

If “yes,” attach a sheet fully describing each such matter.

5. Criminal Proceedings

Has the proposer or any of its principals (regardless of place of employment) ever been the subject of any criminal proceedings?

_____ Yes
_____ No

If “yes,” attach a sheet fully describing each such matter.

6. Ethics and Offenses in Public Projects or Contracts

Has either the proposer or any of its principals (regardless of place of employment) ever been found to have violated any state or local ethics law, regulation, ordinance, code, policy or standard, or to have committed any other offense arising out of the submission of proposals or bids or the performance of work on public works projects or contracts?

_____ Yes
_____ No

If “yes,” attach a sheet fully describing each such matter.

PROPOSAL (BID) SECURITY

I/we have included herein the required proposal (bid) bond in the amount of 10% of the proposal amount.

NOTE: THIS DOCUMENT, IN ORDER TO BE CONSIDERED A VALID PROPOSAL, MUST BE SIGNED BY A PRINCIPAL OFFICER OR OWNER OF THE BUSINESS ENTITY THAT IS SUBMITTING THE PROPOSAL. SUCH SIGNATURE CONSTITUTES THE PROPOSER’S REPRESENTATIONS THAT IT HAS READ, UNDERSTOOD AND FULLY ACCEPTED EACH AND EVERY PROVISION OF EACH DOCUMENT COMPROMISING THE RFP, UNLESS AN EXCEPTION IS DESCRIBED ABOVE.

BY _____
(PRINT NAME)

TITLE: _____

(SIGNATURE)

DATE: _____

END OF PROPOSAL FORM

TOWN OF CHESHIRE, CONNECTICUT

PROPOSER'S LEGAL STATUS DISCLOSURE

Please fully complete the applicable section below, attaching a separate sheet if you need additional space.

For purposes of this disclosure, "permanent place of business" means an office continuously maintained, occupied and used by the proposer's regular employees regularly in attendance to carry on the proposer's business in the proposer's own name. An office maintained, occupied and used by a proposer only for the duration of a contract will not be considered a permanent place of business. An office maintained, occupied and used by a person affiliated with a proposer will not be considered a permanent place of business of the proposer.

IF A SOLELY OWNED BUSINESS:

Proposer's Full Legal Name _____

Street Address _____

Mailing Address (if different from Street Address) _____

Owner's Full Legal Name _____

Number of years engaged in business under sole proprietor or trade name _____

Does the proposer have a "permanent place of business" in Connecticut, as defined above?

_____ Yes _____ No

If yes, please state the full street address (not a post office box) of that "permanent place of business."

IF A CORPORATION:

Proposer's Full Legal Name _____

Street Address _____

Mailing Address (if different from Street Address) _____

Owner's Full Legal Name _____

Number of years engaged in business _____

Names of Current Officers

President

Secretary

Chief Financial Officer

Does the proposer have a "permanent place of business" in Connecticut, as defined above?

IF A PARTNERSHIP:

Proposer's Full Legal Name _____

Street Address _____

Mailing Address (if different from Street Address) _____

Owner's Full Legal Name _____

Number of years engaged in business _____

Names of Current Partners

Name & Title (if any)

Residential Address (street only)

Name & Title (if any)

Residential Address (street only)

Name & Title (if any)

Residential Address (street only)

Name & Title (if any)

Residential Address (street only)

Does the proposer have a "permanent place of business" in Connecticut, as defined above?

_____ Yes _____ No

If yes, please state the full street address (not a post office box) of that "permanent place of business."

Sign on the next page

Proposer's Full Legal Name

(print)

Name and Title of Proposer's Authorized Representative

(signature)

Proposer's Representative, Duly Authorized

Date

END OF LEGAL STATUS DISCLOSURE FORM

TOWN OF CHESHIRE, CONNECTICUT

PROPOSAL # 2324-17

REPLACEMENT OF INDUSTRIAL AVENUE BRIDGE (NO. 025030) OVER UNNAMED STREAM

PROPOSER'S CERTIFICATION

**Concerning Equal Employment Opportunities
And Affirmative Action Policy**

I/we, the proposer, certify that:

- 1) I/we are in compliance with the equal opportunity clause as set forth in Connecticut state law (Executive Order No. Three, <http://www.cslib.org/xeorder3.htm>).
- 2) I/we do not maintain segregated facilities.
- 3) I/we have filed all required employer's information reports.
- 4) I/we have developed and maintain written affirmative action programs.
- 5) I/we list job openings with federal and state employment services.
- 6) I/we attempt to employ and advance in employment qualified handicapped individuals.
- 7) I/we are in compliance with the Americans with Disabilities Act.
- 8) I/we (check one):
_____ have an Affirmative Action Program, or
_____ employ 10 people or fewer.

Legal Name of Proposer

(signature)
Proposer's Representative, Duly Authorized

Name of Proposer's Authorized Representative

Title of Proposer's Authorized Representative

Date

TOWN OF CHESHIRE, CONNECTICUT

PROPOSER'S NON-COLLUSION AFFIDAVIT

PROPOSAL FOR: REPLACEMENT OF INDUSTRIAL AVENUE BRIDGE (NO. 025030) OVER UNNAMED STREAM

PROPOSAL NUMBER: 2324-17

The undersigned proposer, having fully informed himself/herself/itself regarding the accuracy of the statements made herein, certifies that:

- (1) the proposal is genuine; it is not a collusive or sham proposal;
- (2) the proposer developed the proposal independently and submitted it without collusion with, and without any agreement, understanding, communication or planned common course of action with, any other person or entity designed to limit independent competition;
- (3) the proposer, its employees and agents have not communicated the contents of the proposal to any person not an employee or agent of the proposer and will not communicate the proposal to any such person prior to the official opening of the proposal; and
- (4) no elected or appointed official or other officer or employee of the Town of Cheshire is directly or indirectly interested in the proposer's proposal, or in the supplies, materials, equipment, work or labor to which it relates, or in any of the profits thereof.

The undersigned proposer further certifies that this affidavit is executed for the purpose of inducing the Town of Cheshire to consider its proposal and make an award in accordance therewith.

Legal Name of Proposer

(signature)
Proposer's Representative, Duly Authorized

Name of Proposer's Authorized Representative

Title of Proposer's Authorized Representative

Date

Subscribed and sworn to before me this _____ day of _____, 20__.

Notary Public
My Commission Expires:

TOWN OF CHESHIRE, CONNECTICUT

PROPOSAL # 2324-17

REPLACEMENT OF INDUSTRIAL AVENUE BRIDGE (NO. 025030) OVER UNNAMED STREAM

PROPOSER'S STATEMENT OF REFERENCES

Provide at least three (3) references:

1. BUSINESS NAME _____
ADDRESS _____ CITY,
STATE _____
TELEPHONE: _____
INDIVIDUAL CONTACT NAME AND POSITION _____

2. BUSINESS NAME _____
ADDRESS _____ CITY,
STATE _____
TELEPHONE: _____
INDIVIDUAL CONTACT NAME AND POSITION _____

3. BUSINESS NAME _____
ADDRESS _____ CITY,
STATE _____
TELEPHONE: _____
INDIVIDUAL CONTACT NAME AND POSITION _____

END OF STATEMENT OF REFERENCES

CONTRACT FOR REPLACEMENT OF INDUSTRIAL AVENUE BRIDGE (NO. 025030) OVER UNNAMED STREAM

This Contract is made as of the ____ day of _____, 20__ (the “Effective Date”), by and between the Town of Cheshire, 84 South Main Street, Cheshire, Connecticut, a municipal corporation organized and existing under the laws of the State of Connecticut (the “Town”), and [name and address of successful proposer] (the “Contracting Party”).

RECITALS:

WHEREAS, the Town has issued a Request for Proposals for *Replacement of Industrial Avenue Bridge (No. 0250309) Over Unnamed stream* (the “RFP”), a copy of which, along with any addenda, is attached as Exhibit A;

WHEREAS, the Contracting Party submitted a proposal to the Town dated _____ (the “Proposal”), a copy of which is attached as Exhibit B;

WHEREAS, the Town has selected the Contracting Party to perform the Work (as defined in Section 1 below); and

WHEREAS, the Town and the Contracting Party desire to enter into a formal contract for the performance of the Work.

NOW THEREFORE, in consideration of the recitals set forth above and the parties’ mutual promises and obligations contained below, the parties agree as follows:

1. Work: The Contracting Party agrees to perform the Work described more fully in the attached Exhibits A and B (collectively, the “Work”).

The Contracting Party also agrees to comply with all of the terms and conditions set forth herein and in the RFP, including but not only **all of the terms set forth in Section 14 (the “Contract Terms”) of the Standard Instructions to Bidders**.

2. Term: ninety (90) calendar days

3. Contract Includes Exhibits; Order of Construction: The Contract includes the RFP (Exhibit A) and the Proposal (Exhibit B), which are made a part hereof. In the event of a conflict or inconsistency between or among this document, the RFP, and the Proposal, this document shall have the highest priority, the RFP the second priority, and the Proposal the third priority.

4. Price and Payment: *[price and payment]*

5. Right to Terminate – If the Contracting Party’s fails to comply with any of the terms, provisions or conditions of the Contract, including the exhibits, the Town shall have the right, in addition to all other available remedies, to declare the Contract in default and, therefore, to terminate it and to resubmit the subject matter of the Contract to further public procurement. In that event, the Contracting Party shall pay the Town, as liquidated damages, the amount of any excess of the price of the new contract over the Contract price provided for _____ herein, _____ plus _____ any _____ legal

or other costs or expenses incurred by the Town in terminating this Contract and securing a new contracting party.

6. No Waiver or Estoppel – Either party’s failure to insist upon the strict performance by the other of any of the terms, provisions and conditions of the Contract shall not be a waiver or create an estoppel. Notwithstanding any such failure, each party shall have the right thereafter to insist upon the other party’s strict performance, and neither party shall be relieved of such obligation because of the other party’s failure to comply with or otherwise to enforce or to seek to enforce any of the terms, provisions and conditions hereof.

7. Notice – Any notices provided for hereunder shall be given to the parties in writing (which may be hardcopy, facsimile, or e-mail) at their respective addresses set forth below:

If to the Town:

[name, address, fax and e-mail]

If to the Contracting Party:

[name, address, fax and e-mail]

8. Execution - This Contract may be executed in one or more counterparts, each of which shall be considered an original instrument, but all of which shall be considered one and the same agreement, and shall become binding when one or more counterparts have been signed by each of the parties hereto and delivered (including delivery by facsimile) to each of the parties.

IN WITNESS THEREOF, the parties have executed this contract as of the last date signed below.

TOWN OF CHESHIRE

By _____
Sean M. Kimball
Its Town Manager, Duly Authorized
Date: _____

[CONTRACTING PARTY LEGAL NAME]

By _____
Its _____, Duly Authorized
Date: _____

**SPECIFICATIONS FOR REPLACEMENT OF INDUSTRIAL AVENUE
BRIDGE (NO. 025030) OVER UNNAMED STREAM**

INDEX TO SPECIFICATIONS

INTRODUCTION TO THE SPECIAL PROVISIONS AND STANDARD SPECIFICATIONS

NOTICE TO CONTRACTOR – CONTRACT TIME AND LIQUIDATED DAMAGES

NOTICE TO CONTRACTOR – BI-WEEKLY PROGRESS MEETINGS

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NOTICE TO CONTRACTOR – WORK ON ADJACENT PROJECTS

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MATERIALS

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INDEX TO SPECIFICATIONS – Continued

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ITEM #0707009A – MEMBRANE WATERPROOFING (COLD LIQUID ELASTOMERIC)

ITEM #0728014A – 3/4" CRUSHED STONE

ITEM #0819002A – PENETRATING SEALER PROTECTIVE COMPOUND

ITEM #0910031A – THRIE BEAM ATTACHMENT

ITEM #0910300A – METAL BEAM RAIL (R-B MASH)

ITEM #0911923A – R-B END ANCHORAGE

ITEM #0950040A – CONSERVATION SEEDING FOR SLOPES

ITEM #0969060A – CONSTRUCTION FIELD OFFICE, SMALL

ITEM #0971001A – MAINTENANCE AND PROTECTION OF TRAFFIC

ITEM #0975004A – MOBILIZATION AND PROJECT CLOSEOUT

ITEM #0979003A – CONSTRUCTION BARRICADE TYPE III

ITEM #0980001A – CONSTRUCTION STAKING

ITEM #1220027A – CONSTRUCTION SIGNS

ITEM #1401257A – WATER MAIN SUPPORT BRACKETS

INTRODUCTION TO SPECIAL PROVISIONS AND STANDARD SPECIFICATIONS

The State of Connecticut, Department of Transportation, Standard Specifications for Roads, Bridges, Facilities and Incidental Construction, Form 817, and latest supplements is hereby made part of this contract. The Standard Specifications as defined below shall apply to the various items of work which constitute the construction contemplated under this Contract except as amended, supplemented or replaced by the Special Provisions of this Contract and as described herein.

Within the Standard Specifications and Special Provisions of this Contract, the following definitions shall apply:

1. Standard Specifications: Shall mean the State of Connecticut Department of Transportation, Bureau of Highways, "Standard Specifications for Roads, Bridges, Facilities and Incidental Construction, Form 817, dated 2016, and latest supplements.

CTDOT, District, State, Department, Commissioner

Town of Cheshire or its Engineer, Project Manager, Inspector or other authorized representative or agent of the Owner.

Inspector/Engineer

Engineer, Project Manager, Inspector or other authorized representative or agent of the Owner.

Laboratory

Contractor responsible for conducting and paying for all testing required. Laboratory shall be CTDOT approved.

2. Applicable Safety Code: Shall mean the latest edition including any and all amendments, revisions, and additions thereto of the Federal Department of Labor, Occupational Safety and Health Administration's "Occupational Safety and Health Standards" and "Safety and Health Regulations for Construction", the State of Connecticut Labor Department, "Construction Safety Code", or State of Connecticut "Building Code", whichever is the more stringent for the applicable requirement.
3. Items: Reference within the text of these Specifications to Items without a number but a title only, are Technical Specification Items within this Contract. Sections or Articles referred to with a number refer to the Standard Specifications defined above.
4. Local Regulatory Agency(ies): is defined as the governing body or authority having jurisdiction over or responsibility for a particular activity within the Scope of this Contract. They may be as specifically defined within the Special Conditions or Special Provisions, otherwise, the Contractor shall be responsible to determine same in the local area of the Contract and should be cognizant of the limit of jurisdiction within the project area.
5. These Specifications, where used in the text shall be inclusive of all Standard

Specifications and Special Provisions of this Contract.

Payment will only be made for items in the Bid Proposal. Other items may be included in the Standard Specifications or Special Provisions but payment for those items not listed in the Bid Proposal will be included in the cost of other items of work. Bid Proposal Items may have alphanumeric designations consistent with applicable sections or articles in the Standard Specifications or Special Provisions.

In the case of any conflicts between the Agreement, Special Provisions, Drawings, and Standard Specifications, the order of governance in order of descending authority shall be as follows:

1. Agreement, 2. Special Provisions, 3. Drawings, 4. Standard Specifications.

NOTICE TO CONTRACTOR – CONTRACT TIME AND LIQUIDATED DAMAGES

Ninety (90) calendar days will be allowed for the completion of the contract work, including fully opening the roadway. Accordingly, the liquidated damages charge to apply will be One Thousand Dollars (\$1,000.00) per calendar day.

NOTICE TO CONTRACTOR – BI-WEEKLY PROGRESS MEETINGS

The Contractor will be responsible for coordinating bi-weekly progress meetings with the Town Engineer, Public Works Department and Emergency Services, as appropriate. These meetings will be held to discuss the Contractors immediate schedule and coordinate traffic operations with emergency personnel. Frequency of meetings shall be as directed by the Town.

NOTICE TO CONTRACTOR – CONTRACTOR TRAINING REQUIREMENT FOR 10-HOUR OSHA CONSTRUCTION SAFETY AND HEALTH COURSE

In accordance with Connecticut General Statute 31-53b and Public Act No. 08-83, the Contractor is required to furnish proof that any person performing the work of a mechanic, laborer or worker pursuant to the classifications of labor under section 31-53, 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.

Proof of compliance with the provisions of the statute shall consist of a student course completion card issued by the federal Occupational Safety and Health Administration, or other such proof as deemed appropriate by the Commissioner of the Connecticut Department of Labor, dated no earlier than five years prior to the commencement of the project. Each employer shall affix a copy of the construction safety course completion card for each applicable employee to the first certified payroll submitted to the Department of Transportation on which the employee's name first appears.

Any employee required to complete a construction safety and health course as required that has not completed the course, shall have a maximum of fourteen (14) days to complete the course. If the employee has not been brought into compliance, they shall be removed from the project until such time as they have completed the required training.

This section does not apply to employees of public service companies, as defined in section 16-1 of the 2008 supplement to the General Statutes, 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.

The internet website for the federal Occupational Safety and Health Training Institute is <http://www.osha.gov/fso/ote/training/edcenters>.

Additional information regarding this statute can be found at the Connecticut Department of Labor website, <http://www.ctdol.state.ct.us/wgwkstnd/wgemenu.htm>.

Any costs associated with this notice shall be included in the general cost of the contract. In addition, there shall be no time granted to the contractor for compliance with this notice. The contractor's compliance with this notice and any associated regulations shall not be grounds for claims as outlined in Section 1.11 – "Claims."

NOTICE TO CONTRACTOR – WORK ON ADJACENT PROJECTS

The Contractor is responsible for coordinating with the Town of Cheshire for any projects being constructed concurrently within the area of this project. The Contractor is responsible for coordinating with the Town to minimize disruption to traffic operations within the area. Detour operations on projects will require approval by the Town.

NOTICE TO CONTRACTOR – PROCUREMENT OF MATERIALS

Upon award, the Contractor shall proceed with shop drawings, working drawings, procurement of materials, and all other submittals required to complete the work in accordance with the contract documents.

NOTICE TO CONTRACTOR – PROTECTION OF EXISTING UTILITIES

Existing utilities shall be maintained during construction except as specifically stated herein and/or noted on the plans and as coordinated with the utilities. The Contractor shall verify the location of underground, structure mounted and overhead utilities. Construction work within the vicinity of utilities shall be performed in accordance with current safety regulations.

The Contractor shall notify "Call Before You Dig", dial 811 or go to www.cbyd.com, for the location of public utility, in accordance with Section 16-345 of the Regulations of the Department of Utility Control, at least two full working days prior to the start of construction.

Representatives of the various utility companies shall be provided access to the work, by the Contractor. The Contractor shall notify the various utility companies a minimum of two weeks before construction activities begin.

Contractors are cautioned that it is their responsibility to verify locations, conditions, and field dimensions of all existing features, as actual conditions may differ from the information shown on the plans or contained elsewhere in the specifications.

The Contractor shall notify the Engineer prior to the start of work and shall be responsible for all coordination with the Town. The Contractor shall allow the Engineer complete access to the work.

The Contractor shall be liable for all damages or claims received or sustained by any persons, corporations or property in consequence of damage to the existing utilities, their appurtenances, or other facilities caused directly or indirectly by the operations of the Contractor.

Any damage to any existing private and public utility, as a result of the Contractors operations, shall be repaired to the utilities and Engineer's satisfaction at no cost to the State or the Utilities, including all materials, labor, etc., required to complete the repairs.

The Contractor's attention is directed to the requirements of the State of Connecticut Department of Transportation Standard Specifications for Roads, Bridges, Facilities and Incidental Construction Section 1.07.13 – "Contractor's Responsibilities for Adjacent Property and Services".

Prior to opening an excavation, effort shall be made to determine whether underground installations, i.e., water, sanitary, gas, electric ducts, communication ducts, etc., will be encountered and, if so, where such underground installations are located. When the excavation approaches the estimated location of such an installation, the exact location shall be determined by careful probing or hand digging, and when it is uncovered, proper supports shall be provided for the existing installation. Utility companies shall be contacted and advised of proposed work prior to the start of actual excavation, as noted above.

Should the Contractor encounter any existing utility services owned by property owners that conflict with proposed construction, the Contractor shall refer to the Special Provision for Item No. 1700001A –Service Connections (Estimated Cost).

The following utility operators have facilities within and/or in the vicinity of the project limits. This list is not intended to be exhaustive, and the contractor shall maintain existing utilities subject to this Notice to Contractor.

The Contractor shall notify the utility representatives a minimum of thirty (30) days prior to the start of the road construction work.

NOTICE TO CONTRACTOR – VERIFICATION OF PLAN DIMENSIONS AND FIELD MEASUREMENTS

The Contractor is responsible for verifying all dimensions before any work is begun. Dimensions of the existing structures shown on the 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 and/or working drawings based on field measurements are submitted for approval and/or review, the field measurements shall also be submitted for reference by the reviewer.

In the field, the Contractor shall examine and verify all existing and given conditions and dimensions with those shown on the plans. If field conditions and dimensions differ from those shown on the plans, the Contractor shall use the field conditions and dimensions and make the appropriate changes to those shown on the plans as approved by the Engineer. All field conditions and dimensions shall be so noted on the drawings submitted for approval.

There shall be no claim made against the Town by the Contractor for work pertaining to modifications required by any difference between actual field conditions and those shown by the details and dimensions on the contract plans. The Contractor will be paid at the unit price bid for the actual quantities of materials used or for the work performed, as indicated by the various items in the contract.

NOTICE TO CONTRACTOR – AS-BUILT PLANS

The Contractor shall be responsible for furnishing as-built drawings upon completion of the project. The Contractor has an option to submit as-builts electronically or by hand and shall be maintained as the work progresses. The as-builts should clearly define any deviations from the original plans either geometrically (horizontal or vertical) or changes in materials used. **Final payment will not be released until the final as-built drawings have been furnished to the Town.**

This work shall be performed on a continuing basis and shall be included in the general cost of the work. No separate payment will be made for As-Built Drawings. This information will be used by the Municipality and may serve as public information.

NOTICE TO CONTRACTOR – SUBMITTALS FOR IMPORTED AGGREGATES

In accordance with the requirements in these special provisions and the CT DOT Form 817, specifically the Materials Section, the contractor is hereby notified of the requirement to provide submittals which include tests on the gradation, abrasion, soundness and any other parameters specified for the various aggregate materials proposed for use on this project. The tests must be current and based on a specific source location/pile. No material shall be imported until the Engineer issues a written approval. The Contractor shall also provide testing and documentation of the imported and stockpiled material to confirm consistency with the approved submittals and compliance with these specifications.

SECTION 1.07 - LEGAL RELATIONS AND RESPONSIBILITIES

Article 1.07.13 - Contractor's Responsibility for Adjacent Property and Services is supplemented as follows:

The following company and representative shall be contacted by the Contractor to coordinate the protection of their utilities on this project 30 days prior to the start of any work on this project involving their utilities:

CoxCom, LLC

Mr. Shwan Murphy
ROW Agent
9 JP Murphey, Highway (3rd Floor)
West Warwick, RI 02893
PHONE: (401) 615 1323
E-MAIL: Shawn.Murphy@cox.com

Town of Cheshire Public Works Department

Mr. George Noewatne
Director of Public Works and Engineering
84 South Main Street-Town Hall
Cheshire, CT 06410
PHONE: 203-271-6650
E-MAIL: gnoewatne@cheshirect.org

The Southern New England Telephone Company dba Frontier Communications of Connecticut

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SECTION 1.08 – PROSECUTION AND PROGRESS

1.08.03 – Prosecution of Work: is supplemented as follows:

The Contractor shall not be permitted to interrupt traffic for any continuous period of time until both of the following conditions are satisfied:

1. The Contractor has secured all of the required approvals from the Engineer, and,
2. The Contractor has, as much as practical, all of the required materials needed on the site or readily available for that construction which requires the interruption of traffic.

1.08.04 – Limitation of Operations: is supplemented by the following:

The Contractor shall schedule his construction operations so that construction at the site in this contract begins July 08, 2024, and ends on November 08, 2024, except as approved by the Engineer.

COORDINATION WITH OTHER PROJECTS

The Contractor shall be aware of work on adjacent projects that may be ongoing simultaneously with this project. The Contractor shall be aware of those projects so that coordination is maintained for proper traffic flow at all times on all project roadways and this coordination is acceptable to the Engineer.

OTHER LIMITATIONS

Longitudinal dropdowns greater than 3 inches will not be allowed during those periods when the maximum number of lanes of through traffic are required. The Contractor shall provide a temporary 1V:4H traversable slope of suitable material in those areas where a longitudinal dropdown exists. The cost of furnishing, installing, and removing this material shall be included in the contract lump sum for "Maintenance and Protection of Traffic".

All transverse height differentials on all roadway surfaces shall be tapered to negate any 'bump' to traffic as approved by the Engineer. Material for this taper shall be as approved by the Engineer.

The field installation of a signing pattern shall constitute an interference with existing traffic control operations and shall not be allowed except during the allowable periods.

No roadway, with the exception of transition areas, shall be open to traffic unless the appropriate pavement markings have been installed. The transition areas shall have pavement markings applied before opening to traffic.

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.

SECTION 1.09 - MEASUREMENT AND PAYMENT

Article 1.09.04 – Extra and Cost-Plus Work:

Section 1.09.04 (f) - Add the following after the first sentence:

Increases in bonding costs shall not be compensated within any extra work payment. Payment for such costs, if substantiated as outlined in Article 1.04.05, shall be based on a lump sum for actual costs with no additional mark-ups.

Replace 1.09.06 – “Partial Payments” with the following:

1.09.06—Partial Payments:

A. Monthly and Semi-monthly Estimates.

(1) Once each month, the Engineer will make, in writing, current estimates of the value of work performed in accordance with the Contract, calculated at Contract unit prices, including but not limited to the value of materials complete in place and materials not yet incorporated into the Project, but approved by the Engineer for payment (as provided for elsewhere in this article). Retainage will not be held.

Exceptions may be made as follows:

(a) When not in conflict with the interests of the State, the Contractor may request, and the Engineer may make, semi-monthly estimates for payment.

(b) No estimates for payments will be made when, in the judgment of the Engineer, the Project is not proceeding in accordance with the Contract.

(2) The Engineer may also make payment at Contract unit prices for the number of units that represent the value of the Project work performed to date, if said units are essentially, though not totally, complete.

(3) As soon as possible after the final inspection, the apparent final quantities will be sent to the Contractor. The Contractor shall respond in writing within 21 days of receipt by either signing and thus accepting the final quantities or by disagreeing in writing, citing the pay items involved with documentation and justification of such agreement. Failure to respond within the 21 days will be considered as acceptance of the final quantities and the Department may proceed with final payment,

B. Payment for Stored Materials: Non-perishable materials that meet Contract requirements, that have been produced or purchased specifically for incorporation into the Project, and that have been delivered to the Project site or to such location as the Engineer may have approved, but which have not yet been incorporated into the Project, may be included in current estimates

at such fraction of the applicable Contract unit price or lump sum price as the Engineer may

deem to represent a fair value for the material, if such materials have been paid for by the Contractor as shown by receipted bills or, in lieu of such receipted bill(s), a duly-executed Certification of Title executed by the Contractor and the Vendor in the form approved by the Department. When partial payment is made for stored materials, such materials shall become the property of the State; but such payment shall in no way release the Contractor from its responsibility for the condition, protection and, in case of loss, replacement of such materials, or from any liability resulting in any manner from the presence of such materials wherever they may be stored or kept. All materials shall be stored in accordance with Article 1.06.03 and in accordance with the manufacturer's recommendations. Material test approval by the Department shall be required prior to payment for such materials.

Offsite storage may be approved by the Engineer provided that the materials proposed for payment are segregated from other materials, clearly labeled as being owned by the Department for use on the identified Project, otherwise handled in compliance with Article 1.06.03, and stored in accordance with the manufacturer's recommendations. All such materials must be readily-available for inventory and inspection by the Engineer. Storage outside of the State of Connecticut may be considered only when a representative of the Department is able to verify that the above requirements have been satisfied.

For items requiring extended fabrication, manufacturing or assembly time, the Contractor may propose to the Engineer a schedule of values for the related material costs. If the Engineer approves such a schedule of values, it shall become the Basis of Payment for the stored materials, so long as all other pertinent Contract requirements have been satisfied.

Generic materials having a use on many projects will be considered for payment prior to their incorporation into the Project only if stored in unopened packaging or in large lots. Stock and raw materials will not be considered for such advance payment without the Engineer's prior written consent thereto.

In no case shall material payments exceed the Contract unit price or lump sum price less the actual value of delivery and installation of the materials; if they do exceed such a price, the Engineer reserves the right to reduce any related payment accordingly. Such reductions in payment shall in no way affect the Department's ownership interest in the stored materials.

Replace 1.09.07 – "Final Payment" with the following:

1.09.07—Final Payment: When the Town has accepted the Project, the Engineer will prepare a final payment estimate and a list of final item quantities. The list will include the entire amount of each item of Project work performed, the value thereof, and the amount of all payments made on prior estimates, all such estimated payments being merely partial payments and subject to correction in the calculation of the final payment.

SECTION 4.06 – BITUMINOUS CONCRETE

Section 4.06 is being deleted in its entirety and replaced with the following:

4.06.01—Description

4.06.02—Materials

4.06.03—Construction Methods

- 1. Material Documentation**
- 2. Transportation of Mixture**
- 3. Paving Equipment**
- 4. Test Section**
- 5. Transitions for Roadway Surface**
- 6. Spreading and Finishing of Mixture**
- 7. Longitudinal Joint Construction Methods**
- 8. Contractor Quality Control (QC) Requirements**
- 9. Temperature and Seasonal Requirements**
- 10. Field Density**
- 11. Acceptance Sampling and Testing**
- 12. Density Dispute Resolution Process**
- 13. Corrective Work Procedure**
- 14. Protection of the Work**
- 15. Cut Bituminous Concrete Pavement**

4.06.04—Method of Measurement

4.06.05—Basis of Payment

4.06.01—Description: Work under this Section shall include the production, delivery, placement and compaction of a uniform textured, non-segregated, smooth bituminous concrete pavement to the grade and cross section shown on the plans.

The following terms as used in this specification are defined as:

Bituminous Concrete: A composite material consisting of prescribed amounts of asphalt binder and aggregates. Asphalt binder may also contain additives engineered to modify specific properties and/or behavior of the composite material. References to bituminous concrete apply to all of its forms, such as those identified as hot-mix asphalt (HMA) or polymer-modified asphalt (PMA).

Bituminous Concrete Plant (Plant): A structure where aggregates and asphalt binder are combined in a controlled fashion into a bituminous concrete mixture suitable for forming pavements and other paved surfaces.

Course: A continuous layer (a lift or multiple lifts) of the same bituminous concrete mixture placed as part of the pavement structure.

Density Lot: The total tonnage of all bituminous concrete placed in a single lift which are:

PWL density lots = When the project total estimated quantity per mixture is larger than 3,500 tons

Simple Average density lots = When the project total estimated quantity per mixture is 3,500 tons or less

Disintegration: Erosion or fragmentation of the pavement surface which can be described as polishing, weathering-oxidizing, scaling, spalling, raveling, or formation of potholes.

Dispute Resolution: A procedure used to resolve conflicts between the Engineer and the Contractor's results that may affect payment.

Hot Mix Asphalt (HMA): A bituminous concrete mixture typically produced at 325°F.

Job Mix Formula (JMF): A recommended aggregate gradation and asphalt binder content to achieve the required mixture properties.

Lift: An application of a bituminous concrete mixture placed and compacted to a specified thickness in a single paver pass.

Percent Within Limits (PWL): The percentage of the lot falling between the Upper Specification Limit (USL) and the Lower Specification Limit (LSL).

Polymer Modified Asphalt (PMA): A bituminous concrete mixture containing a polymer-modified asphalt binder and using a qualified warm mix technology.

Production Lot: The total tonnage of a bituminous concrete mixture from a single source that may receive an adjustment.

Production Sub Lot: Portion of the production lot typically represented by a single sample.

Quality Assurance (QA): All those planned and systematic actions necessary to provide CTDOT the confidence that a Contractor will perform the work as specified in the Contract.

Quality Control (QC): The sum total of activities performed by the vendor (Producer, Manufacturer, and Contractor) to ensure that a product meets contract specification requirements.

Superpave: A bituminous concrete mix design used in mixtures designated as "S*" Where "S" indicates Superpave and * indicates the sieve related to the nominal maximum aggregate size of the mix.

Segregation: A non-uniform distribution of a bituminous concrete mixture in terms of gradation, temperature, or volumetric properties.

Warm Mix Asphalt (WMA) Technology: A qualified additive or technology that may be used to produce a bituminous concrete at reduced temperatures and/or increase workability of the mixture.

4.06.02—Materials: All materials shall meet the requirements of Section M.04.

1. Materials Supply: The bituminous concrete mixture must be from one source of supply and originate from one Plant unless authorized by the Engineer.

2. Recycled Materials: Reclaimed Asphalt Pavement (RAP), Crushed Recycled Container Glass (CRCG), Recycled Asphalt Shingles (RAS), or crumb rubber (CR) from recycled tires may be incorporated in bituminous concrete mixtures in accordance with Project Specifications.

4.06.03—Construction Methods

1. Material Documentation: All vendors producing bituminous concrete must have Plants with automated vehicle-weighing scales, storage scales, and material feeds capable of producing a delivery ticket containing the information below.

- a. State of Connecticut printed on ticket.
- b. Name of Producer, identification of Plant, and specific storage silo if used.
- c. Date and time.
- d. Mixture Designation, mix type and level. Curb mixtures for machine-placed curbing must state "curb mix only."
- e. If WMA Technology is used, "-W" must be listed following the mixture designation.
- f. Net weight of mixture loaded into the vehicle. (When RAP and/or RAS is used, the moisture content shall be excluded from mixture net weight.)
- g. Gross weight (equal to the net weight plus the tare weight or the loaded scale weight).
- h. Tare weight of vehicle (daily scale weight of the empty vehicle).
- i. Project number, purchase order number, name of Contractor (if Contractor other than Producer).
- j. Vehicle number - unique means of identification of vehicle.
- k. For Batch Plants: individual aggregate, recycled materials, and virgin asphalt max/target/min weights when silos are not used.
- l. For every mixture designation: the running daily and project total delivered and sequential load number.

The net weight of mixture loaded into the vehicle must be equal to the cumulative measured weights of its components.

The Contractor must notify the Engineer immediately if, during production, there is a malfunction of the weight recording system in the automated Plant. Manually written tickets containing all required information will be allowed for no more than 1 hour.

The State reserves the right to have an Inspector present to monitor batching and/or weighing operations.

2. Transportation of Mixture: The mixture shall be transported in vehicles that are clean of all foreign material, excessive coating or cleaning agents, and that have no gaps through which material might spill. Any material spilled during the loading or transportation process shall be quantified by re-weighing the vehicle. The Contractor shall load vehicles uniformly so that segregation is minimized. Loaded vehicles shall be tightly covered with waterproof covers acceptable to the Engineer. Mesh covers are prohibited. The cover must minimize air infiltration. Vehicles found not to be in conformance shall not be loaded

Vehicles with loads of bituminous concrete being delivered to State projects must not exceed the statutory or permitted load limits referred to as gross vehicle weight (GVW). The Contractor shall furnish a list and allowable weights of all vehicles transporting mixture. The State reserves the right to check the gross and tare weight of any vehicle. If the gross or tare weight varies from that shown on the delivery ticket by more than 0.4%, the Engineer will recalculate the net weight. The Contractor shall correct the discrepancy to the satisfaction of the Engineer.

If a vehicle delivers mixture to the Project and the delivery ticket indicates that the vehicle is overweight, the load may not be rejected but a "Measured Weight Adjustment" will be taken in accordance with Article 4.06.04.

Vehicle body coating and cleaning agents must not have a deleterious effect on the mixture. The use of solvents or fuel oil, in any concentration, is prohibited for the coating of vehicle bodies.

For each delivery, the Engineer shall be provided a clear, legible copy of the delivery ticket.

3. Paving Equipment: The Contractor shall have the necessary paving and compaction equipment at the Project Site to perform the work. All equipment shall be in good working order and any equipment that is worn, defective, or inadequate for performance of the work shall be repaired or replaced by the Contractor to the satisfaction of the Engineer. During the paving operation, the use of solvents or fuel oil, in any concentration, is strictly prohibited as a release agent or cleaner on any paving equipment (i.e., rollers, pavers, transfer devices, etc.).

Refueling or cleaning of equipment is prohibited in any location on the Project where fuel or solvents might come in contact with paved areas or areas to be paved. Solvents used in cleaning mechanical equipment or hand tools shall be stored clear of areas paved or to be paved. Before any such equipment and tools are cleaned, they shall be moved off of areas paved or to be paved.

Pavers: Each paver shall have a receiving hopper with sufficient capacity to provide for a uniform spreading operation and a distribution system that places the mix uniformly, without segregation. The paver shall be equipped with and use a vibratory screed system with heaters or burners. The screed system shall be capable of producing a finished surface of the required evenness and texture without tearing, shoving, or gouging the mixture. Pavers with extendible screed units as part of the system shall have auger extensions and tunnel extenders as necessary. Automatic screed controls for grade and slope shall be used at all times unless otherwise authorized by the Engineer. The controls shall automatically adjust the screed to compensate for irregularities in the preceding course or existing base. The controls shall maintain the proper

transverse slope and be readily adjustable, and shall operate from a fixed or moving reference such as a grade wire or floating beam (minimum length 20 feet).

Rollers: All rollers shall be self-propelled and designed for compaction of bituminous concrete. Roller types shall include steel wheeled, pneumatic, or a combination thereof. Rollers that operate in a dynamic mode shall have drums that use a vibratory or oscillatory system or combination. Vibratory rollers shall be equipped with indicators for amplitude, frequency, and speed settings/readouts to measure the impacts per foot during the compaction process. Oscillatory rollers shall be equipped with frequency indicators. Rollers can operate in the dynamic mode using the oscillatory system on concrete structures such as bridges and catch basins if at the lowest frequency setting.

Pneumatic tire rollers shall be equipped with wide-tread compaction tires capable of exerting an average contact pressure from 60 to 90 psi uniformly over the surface. The Contractor shall furnish documentation to the Engineer regarding tire size, pressure and loading to confirm that the proper contact pressure is being developed and that the loading and contact pressure are uniform for all wheels.

Lighting: For paving operations which will be performed during hours of darkness the paving equipment shall be equipped with lighting fixtures as described below or with an approved equal. Lighting shall minimize glare to passing traffic. The lighting options and minimum number of fixtures are listed in Tables 4.06-1 and 4.06-2.

TABLE 4.06-1: Minimum Paver lighting

Option	Fixture Configuration	Fixture Quantity	Requirement
1	Type A	3	Mount over screed area
	Type B (narrow) or Type C (spot)	2	Aim to auger and guideline
	Type B (wide) or Type C (flood)	2	Aim 25 feet behind paving machine
2	Type D Balloon	2	Mount over screed area

TABLE 4.06-2: Minimum Roller Lighting

Option	Fixture Configuration	Fixture Quantity	Requirement
1	Type B (wide)	2	Aim 50 feet in front of and behind roller
	Type B (narrow)	2	Aim 100 feet in front of and behind roller
2	Type C (flood)	2	Aim 50 feet in front of and behind roller
	Type C (spot)	2	Aim 100 feet in front of and behind roller
3	Type D Balloon	1	Mount above the roller

*All fixtures shall be mounted above the roller.

Type A: Fluorescent fixture shall be heavy duty industrial type. Each fixture shall have a minimum output of 8,000 lumens. The fixtures shall be mounted horizontally and be designed for continuous row installation.

Type B: Each floodlight fixture shall have a minimum output of 18,000 lumens.

Type C: Each fixture shall have a minimum output of 19,000 lumens.

Type D: Balloon light – each balloon light fixture shall have minimum output of 50,000 lumens and emit light equally in all directions.

Material Transfer Vehicle (MTV): A MTV shall be used when placing bituminous concrete surface course (a lift or multiple lifts) as indicated in the Contract except as noted on the plans or as directed by the Engineer. In addition, continuous paving lengths of less than 500 feet may not require the use of a MTV as determined by the Engineer.

The MTV must be a vehicle specifically designed for the purpose of delivering the bituminous concrete mixture from the delivery vehicle to the paver. The MTV must continuously remix the bituminous concrete mixture throughout the placement process.

The use of a MTV will be subject to the requirements stated in Article 1.07.05 Load Restrictions. The Engineer may limit the use of the vehicle if it is determined that the use of the MTV may damage highway components, utilities, or bridges. The Contractor shall submit to the Engineer at time of pre-construction the following information:

1. The make and model of the MTV.
2. The individual axle weights and axle spacing for each piece of paving equipment (haul vehicle, MTV and paver).
3. A working drawing showing the axle spacing in combination with all pieces of equipment that will comprise the paving echelon.

4. Test Section: The Engineer may require the Contractor to place a test section whenever the requirements of this specification or Section M.04 are not met.

The Contractor shall submit the quantity of mixture to be placed and the location of the test section for review and approval by the Engineer. The same equipment used in the construction of a passing test section shall be used throughout production.

If a test section fails to meet specifications, the Contractor shall stop production, make necessary adjustments to the job mix formula, Plant operations, or procedures for placement and compaction. The Contractor shall construct test sections, as allowed by the Engineer, until all the required specifications are met. All test sections shall also be subject to removal as set forth in Article 1.06.04.

5. Transitions for Roadway Surface: Transitions shall be formed at any point on the roadway where the pavement surface deviates, vertically, from the uniform longitudinal profile as specified on the plans. Whether formed by milling or by bituminous concrete mixture, all transition lengths shall meet the criteria below unless otherwise specified.

Permanent Transitions: Defined as any gradual change in pavement elevation that remains as a permanent part of the work.

A transition shall be constructed no closer than 75 feet from either side of a bridge expansion joint or parapet. All permanent transitions, leading and trailing ends shall meet the following length requirements:

Posted Speed Limit	Permanent Transition Length Required
> 35 mph	30 feet per inch of elevation change
35 mph or less	15 feet per inch of elevation change

In areas where it is impractical to use the above-described permanent transition lengths, the use of a shorter permanent transition length may be permitted when approved by the Engineer.

Temporary Transitions: Defined as a transition that does not remain a permanent part of the work.

All temporary transitions shall meet the following length requirements:

Posted Speed Limit	Temporary Transition Length Required
> 50 mph	Leading Transition: 15 feet per inch of vertical change (thickness) Trailing Transition: 6 feet per inch of vertical change (thickness)
40, 45 or 50 mph	Leading and Trailing: 4 feet per inch of vertical change (thickness)
35 mph or less	Leading and Trailing: 3 feet per inch of vertical change (thickness)

Note: Any temporary transition to be in place over the winter shutdown period or during extended periods of inactivity (more than 14 calendar days) shall meet the greater than 50 mph requirements shown above.

6. Spreading and Finishing of Mixture: Prior to the placement of the mixture, the underlying base course shall be brought to the plan grade and cross section within the allowable tolerance.

Immediately before placing a bituminous concrete lift, a uniform coating of tack coat shall be applied to all existing underlying pavement surfaces and on the exposed surface of a wedge joint. Such surfaces shall be clean and dry. Sweeping or other means acceptable to the Engineer shall be used.

The mixture shall not be placed whenever the surface is wet or frozen.

Tack Coat Application: The tack coat shall be applied by a pressurized spray system that results in uniform overlapping coverage at an application rate of 0.03 to 0.05 gal./s.y. for a non-milled surface and an application rate of 0.05 to 0.07 gal./s.y. for a milled surface. For areas where both milled and un-milled surfaces occur, the tack coat shall be an application rate of 0.03 to 0.05 gal

/s.y. The Engineer must approve the equipment and the method of measurement prior to use. The material for tack coat shall be heated to $160^{\circ}\text{F} \pm 10^{\circ}\text{F}$ and shall not be further diluted.

Tack coat shall be allowed sufficient time to break prior to any paving equipment or haul vehicles driving on it.

The Contractor may request to omit the tack coat application between bituminous concrete layers that have not been exposed to traffic and are placed during the same work shift. Requests to omit tack coat application on the upper and lower surfaces of a wedge joint will not be considered.

Placement: The mixture shall be placed and compacted to provide a smooth, dense surface with a uniform texture and no segregation at the specified thickness and dimensions indicated in the plans and specifications.

When unforeseen weather conditions prevent further placement of the mixture, the Engineer is not obligated to accept or place the bituminous concrete mixture that is in transit from the Plant.

In advance of paving, traffic control requirements shall be set up, maintained throughout placement, and shall not be removed until all associated work including density testing is completed.

The mixture temperature will be verified by means of a probe or infrared type of thermometer. The placement temperature range shall be listed in the quality control plan (QCP) for placement and meet the requirements of Table M.04.03-4. Any HMA material that falls outside the specified temperature range as measured by a probe thermometer may be rejected.

The Contractor shall inspect the newly placed pavement for defects in mixture or placement before rolling is started. Any deviation from standard crown or section shall be immediately remedied by placing additional mixture or removing surplus mixture. Such defects shall be corrected to the satisfaction of the Engineer.

Where it is impracticable due to physical limitations to operate the paving equipment, the Engineer may permit the use of other methods or equipment. Where hand spreading is permitted, the mixture shall be placed by means of suitable shovels and other tools, and in a uniformly loose layer at a thickness that will result in a completed pavement meeting the designed grade and elevation.

Placement Tolerances: Each lift of bituminous concrete placed at a specified thickness shall meet the following requirements for thickness and area. Any pavement exceeding these limits shall be subject to an adjustment or removal. Lift tolerances will not relieve the Contractor from meeting the final designed grade. Lifts of specified non-uniform thickness, i.e. wedge or shim course, shall not be subject to thickness and area adjustments.

- a) Thickness: Where the average thickness of the lift exceeds that shown on the plans beyond the tolerances shown in Table 4.06-3, the Engineer will calculate the thickness adjustment

in accordance with Article 4.06.04.

b)

TABLE 4.06-3: Thickness Tolerances

Mixture Designation	Lift Tolerance
S1	+/- 3/8 inch
S0.25, S0.375, S0.5	+/- 1/4 inch

Where the thickness of the lift of mixture is less than that shown on the plans beyond the tolerances shown in Table 4.06-3, the Contractor, with the approval of the Engineer, shall take corrective action in accordance with this Section.

- c) Area: Where the width of the lift exceeds that shown on the plans by more than the specified thickness, the Engineer will calculate the area adjustment in Article 4.06.04.
- d) Delivered Weight of Mixture: When the delivery ticket shows that the truck exceeds the allowable gross weight for the vehicle type, the Engineer will calculate the weight adjustment in accordance with Article 4.06.04.

Transverse Joints: All transverse joints shall be formed by saw-cutting to expose the full thickness of the lift. Tack coat shall be applied to the sawn face immediately prior to additional mixture being placed.

Compaction: The Contractor shall compact the mixture to meet the density requirements as stated in Article 4.06.04 and eliminate all roller marks without displacement, shoving cracking, or aggregate breakage.

When placing a lift with a specified thickness less than 1 1/2 inches, or a wedge course, the Contractor shall provide a minimum rolling pattern as determined by the development of a compaction curve. The procedure to be used shall be documented in the Contractor's QCP for placement and demonstrated on the first day of placement.

The use of the vibratory system on concrete structures is prohibited. When approved by the Engineer, the Contractor may operate a roller using an oscillatory system at the lowest frequency setting.

If the Engineer determines that the use of compaction equipment in the dynamic mode may damage highway components, utilities or adjacent property, the Contractor shall provide alternate compaction equipment.

Rollers operating in the dynamic mode shall be shut off when changing directions.

These allowances will not relieve the Contractor from meeting pavement compaction requirements.

Surface Requirements:

Each lift of the surface course shall not vary more than 1/4 inch from a Contractor-supplied 10 foot straightedge. For all other lifts of bituminous concrete, the tolerance shall be 3/8 inch. Such tolerance will apply to all paved areas.

Any surface that exceeds these tolerances shall be corrected by the Contractor at its own expense.

7. Longitudinal Joint Construction Methods: The Contractor shall use Method I - Notched Wedge Joint (see Figure 4.06-1) when constructing longitudinal joints where lift thicknesses are

1 ½ inches to 3 inches. S1.0 mixtures shall be excluded from using Method I. Method II - Butt Joint (see Figure 4.06-2) shall be used for lifts less than 1 ½ inches or greater than 3 inches. Each longitudinal joint shall maintain a consistent offset from the centerline of the roadway along its entire length. The difference in elevation between the two faces of any completed longitudinal joint shall not exceed 1/4 inch at any location.

Method I - Notched Wedge Joint:

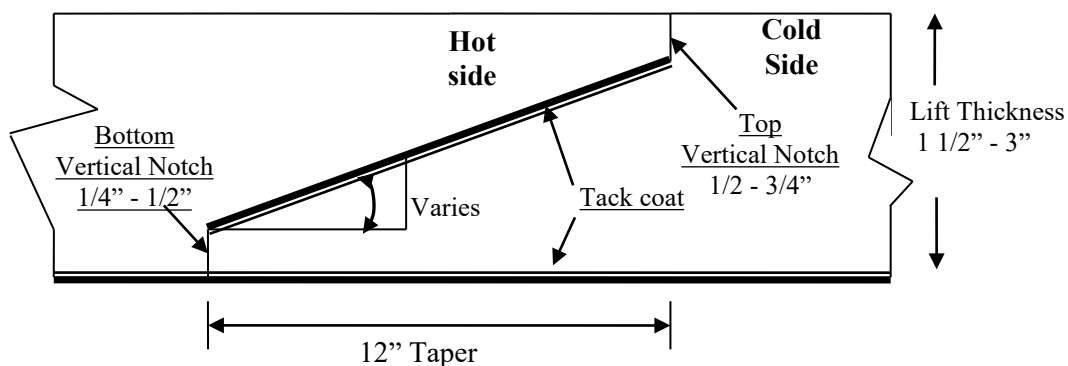
A notched wedge joint shall be constructed as shown in Figure 4.06-1 using a device that is attached to the paver screed and is capable of independently adjusting the top and bottom vertical notches. The device shall have an integrated vibratory system. The top vertical notch must be located at the centerline or lane line in the final lift. The requirement for paving full width “curb to curb” as described in Method II may be waived if addressed in the QC plan and approved by the Engineer.

The taper portion of the wedge joint shall be evenly compacted using equipment other than the paver or notch wedge joint device. The compaction device shall be the same width as the taper and not reduce the angle of the wedge or ravel the top notch of the joint during compaction.

When placed on paved surfaces, the area below the sloped section of the joint shall be treated with tack coat. The top surface of the sloped section of the joint shall be treated with tack coat prior to placing the completing pass.

The taper portion of the wedge joint shall not be exposed to traffic for more than 5 calendar days.

Figure 4.06-1: Notched Wedge Joint (Not to Scale)



Any exposed wedge joint must be located to allow for the free draining of water from the road surface.

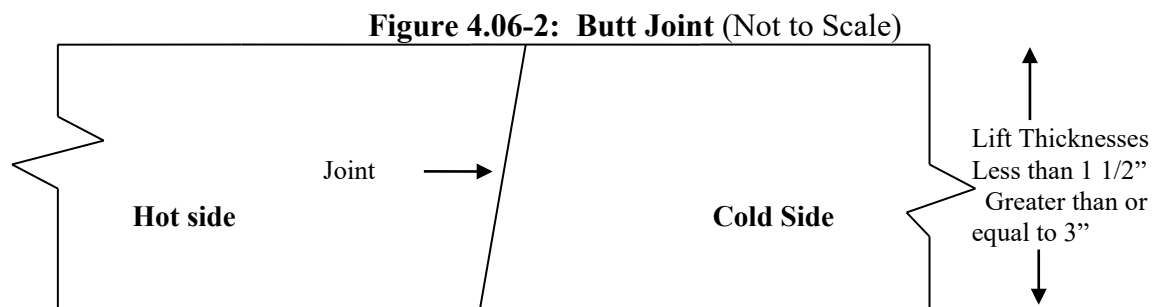
The Engineer reserves the right to define the paving limits when using a wedge joint that will be exposed to traffic.

If Method I cannot be used on those lifts which are 1 ½ inches to 3 inches, Method III may be substituted according to the requirements below for “Method III - Butt Joint with Hot Poured Rubberized Asphalt Treatment.”

Method II - Butt Joint:

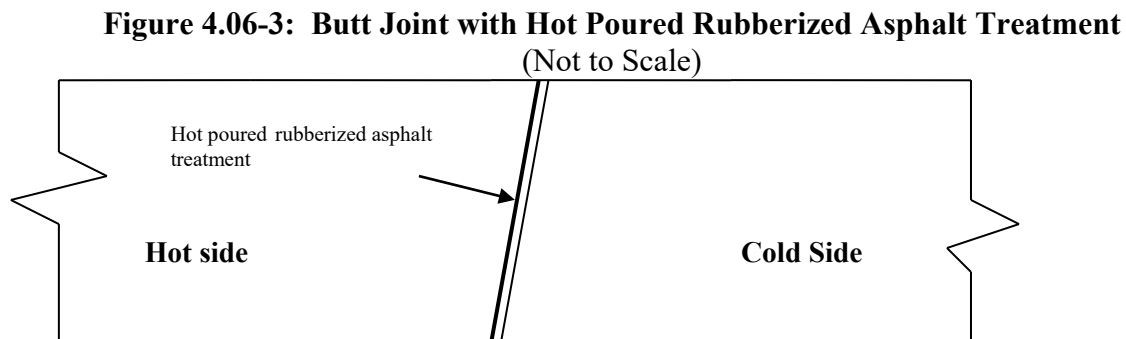
When adjoining passes are placed, the Contractor shall use the end gate to create a near vertical edge (refer to Figure 4.06-2). The completing pass (hot side) shall have sufficient mixture so that the compacted thickness is not less than the previous pass (cold side). During placement of multiple lifts, the longitudinal joint shall be constructed in such a manner that it is located at least 6 inch from the joint in the lift immediately below. The joint in the final lift shall be at the centerline or at lane lines. The end gate on the paver should be set so there is an overlap onto the cold side of the joint.

The Contractor shall not allow any butt joint to be incomplete at the end of a work shift unless otherwise allowed by the Engineer. When using this method, the Contractor is not allowed to leave a vertical edge exposed at the end of a work shift and must complete paving of the roadway full width “curb to curb.”



Method III - Butt Joint with Hot Poured Rubberized Asphalt Treatment:

If Method I cannot be used due to physical constraints in certain limited locations, the Contractor may submit a request in writing for approval by the Engineer to use Method III as a substitution in those locations. There shall be no additional measurement or payment made when Method III is substituted for Method I. When required by the Contract or approved by the Engineer, Method III (see Figure 4.06-3) shall be used.



All of the requirements of Method II must be met with Method III. In addition, the longitudinal vertical edge must be treated with a rubberized joint seal material meeting the requirements of ASTM D6690, Type 2. The joint sealant shall be placed on the face of the “cold side” of the butt joint as shown above prior to placing the “hot side” of the butt joint. The joint seal material shall

be applied in accordance with the manufacturer's recommendation so as to provide a uniform coverage and avoid excess bleeding onto the newly placed pavement.

8. Contractor Quality Control (QC) Requirements: The Contractor shall be responsible for maintaining adequate quality control procedures throughout the production and placement operations. Therefore, the Contractor must ensure that the materials, mixture, and work provided by Subcontractors, Suppliers, and Producers also meet Contract specification requirements.

This effort must be documented in Quality Control Plans (QCP) and must address the actions, inspection, or sampling and testing necessary to keep the production and placement operations in control, to determine when an operation has gone out of control and to respond to correct the situation in a timely fashion.

The Standard QCP for production shall consist of the quality control program specific to the production facility.

There are 3 components to the QCP for placement: a Standard QCP, a Project Summary Sheet that details Project-specific information, and, if applicable, a separate Extended Season Paving Plan as required in 4.06.03-9 "Temperature and Seasonal Requirements."

The Standard QCP for both production and placement shall be submitted to the Department for approval each calendar year and at a minimum of 30 days prior to production or placement.

Production or placement shall not occur until all QCP components have been approved by the Engineer.

Each QCP shall include the name and qualifications of a Quality Control Manager (QCM). The QCM shall be responsible for the administration of the QCP, and any modifications that may become necessary.

The QCM shall have the ability to direct all Contractor personnel on the Project during paving operations.

The QCPs shall also include the name and qualifications of any outside testing laboratory performing any QC functions on behalf of the Contractor. The QC Technician performing in-place density testing shall be NETTCP certified as a paving inspector.

Approval of the QCP does not relieve the Contractor of its responsibility to comply with the Project specifications. The Contractor may modify the QCPs as work progresses and must document the changes in writing prior to resuming operations. These changes include but are not limited to changes in quality control procedures or personnel. The Department reserves the right to deny significant changes to the QCPs.

QCP for Production: Refer to M.04.03-1.

QCP for Placement: The Standard QCP, Project Summary Sheet, and Extended Season Paving Plan shall conform to the format provided by the Engineer. The format is available at http://www.ct.gov/dot/lib/dot/documents/dconstruction/pat/qcp_outline_hma_placement.pdf

The Contractor shall perform all quality control sampling and testing, provide inspection, and exercise management control to ensure that bituminous concrete placement conforms to the requirements as outlined in its QCP during all phases of the work. The Contractor shall document these activities for each day of placement.

The Contractor shall submit complete field density testing and inspection records to the Engineer within 48 hours in a manner acceptable to the Engineer.

The Contractor may obtain 1 mat core and 1 joint core per day for process control, provided this process is detailed in the QCP. The results of these process control cores shall not be used to dispute the Department's determinations from the acceptance cores. The Contractor shall submit the location of each process control core to the Engineer for approval prior to taking the core. The core holes shall be filled to the same requirements described in Subarticle 4.06.03-10.

9. Temperature and Seasonal Requirements: Paving, including placement of temporary pavements, shall be divided into 2 seasons, "In-Season" and "Extended-Season." In-Season paving occurs from May 1 to October 14, and Extended Season paving occurs from October 15 to April 30. The following requirements shall apply unless otherwise authorized or directed by the Engineer:

- Mixtures shall not be placed when the air or subbase temperature is less than 40°F regardless of the season.
- Should paving operations be scheduled during the Extended Season, the Contractor must submit an Extended Season Paving Plan for the Project that addresses minimum delivered mix temperature considering WMA, PMA, or other additives; maximum paver speed; enhanced rolling patterns; and the method to balance mixture delivery and placement operations. Paving during Extended Season shall not commence until the Engineer has approved the plan.

10. Field Density The Contractor shall obtain cores for the determination of mat and longitudinal joint density of bituminous concrete pavements. Within five calendar days of placement, mat and joint cores shall be extracted on each lift with a specified thickness of 1 1/2 inches or more. Joint cores shall not be extracted on HMA S1.0 lifts.

The Contractor shall extract cores from random locations determined by the Engineer in accordance with ASTM D3665. Four (4) or six (6) inch diameter cores shall be extracted for S0.25, S0.375 and S0.5 mixtures; 6 inch diameter cores shall be required for S1.0 mixtures. The Contractor shall coordinate with the Engineer to witness the extraction, labeling of cores, and filling of the core holes.

Each lift will be separated into lots as follows:

a. Simple Average Density Lots: For total estimated quantities below 2,000 tons, the lift

will be evaluated in one lot which will include the total paved tonnage of the lift and all longitudinal joints between the curb lines.

For total estimated quantities between 2,000 and 3,500 tons, the lift will be evaluated in two lots in which each lot will include approximately half of the total tonnage placed for the full paving width of a lift including all longitudinal joints between the curb lines.

- b. PWL Density Lots: Mat density lots will include each 3,500 tons of mixture placed within 30 calendar days. Joint density lots will include 14,000 linear feet of constructed joints. Bridge density lots will always be analyzed using simple average lot methodology.
- c. Partial Density Lot (For PWL only): A mat density lot with less than 3,500 tons or a joint density lot with less than 14,000 linear feet due to:
 - completion of the course; or
 - a lot spanning 30 calendar days.

Prior to paving, the type and number of lot(s) will be determined by the Engineer.

Noncontiguous areas such as highway ramps may be combined to create one lot.

After the lift has been compacted and cooled, the Contractor shall cut cores to a depth equal to or greater than the lift thickness and shall remove them without damaging the lift(s) to be tested. Any core that is damaged or obviously defective while being obtained will be replaced with a new core from a location within 2 feet measured in a longitudinal direction.

A mat core shall not be located any closer than 1 foot from the edge of a paver pass. If a random number locates a core less than 1 foot from any edge, the location will be adjusted by the Engineer so that the outer edge of the core is 1 foot from the edge of the paver pass.

Method I, Notched Wedge Joint cores shall be taken so that the center of the core is 5 inches from the visible joint on the hot mat side (Figure 4.06-4).

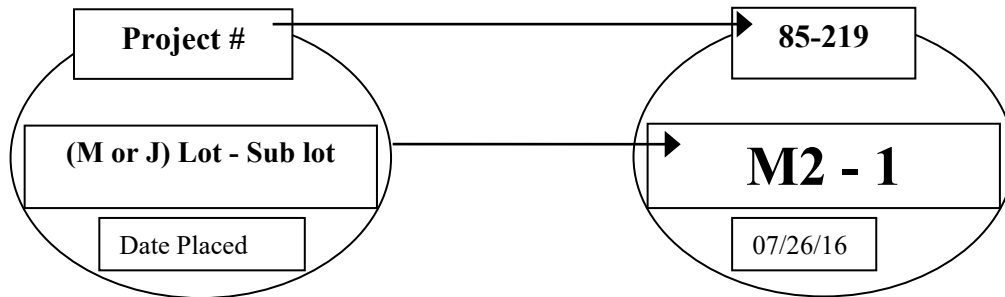
Figure 4.06-4: Notched Wedge Joint Cores (Not to Scale)



When Method II or Method III Butt Joint is used, cores shall be taken from the hot side so the edge of the core is within 1 inch of the longitudinal joint.

The cores shall be labeled by the Contractor with the Project number, date placed, lot number, and sub-lot number. The core's label shall include "M" for a mat core and "J" for a joint core. For example, a mat core from the first lot and the first sub-lot shall be labeled with "M1 - 1." A mat core from the second lot and first sub-lot shall be labeled "M2-1" (see Figure 4.06-5). The Engineer shall fill out a MAT-109 to accompany the cores. The Contractor shall deliver the cores and MAT-109 to the Department's Central Lab. The Contractor shall use a container approved by the Engineer. The container shall have a lid capable of being locked shut and tamper proof. The Contractor shall use foam, bubble wrap, or another suitable material to prevent the cores from being damaged during handling and transportation. Once the cores and MAT-109 are in the container the Engineer will secure the lid using security seals at the removable hinges(s) and at the lid opening(s). The security seals' identification number must be documented on the MAT-109. All sealed containers shall be delivered to the Department's Central Lab within two working days from time of extraction. Central Lab personnel will break the security seal and take possession of the cores.

Figure 4.06-5: Labeling of Cores



Each core hole shall be filled within 4 hours upon core extraction. Prior to being filled, the hole shall be prepared by removing any free water and applying tack coat using a brush or other means to uniformly cover the cut surface. The core hole shall be filled using a bituminous concrete mixture at a minimum temperature of 240°F containing the same or smaller nominal maximum aggregate size and compacted with a hand compactor or other mechanical means to the maximum compaction possible. The bituminous concrete shall be compacted to 1/8 inch above the finished pavement.

Simple Average Density Lots:

A standard simple average density lot is the quantity of material placed within the defined area excluding any bridge decks.

A combo simple average density lot is the quantity of material placed within the defined area including bridge decks less than or equal to 500 feet long.

A bridge simple average density lot is the quantity of material placed on a bridge deck longer than 500 feet.

The number of cores per lot shall be determined in accordance with Table 4.06-4. If a randomly selected mat or joint core location is on a bridge deck, the core is to be obtained on the bridge deck in addition to the core(s) required on the bridge deck.

The number of cores per lot shall be determined in accordance with Table 4.06-5. Multiple bridge decks can be combined into one lot if the paving and underlying conditions are comparable. If multiple bridge decks are combined into a single bridge lot, at least one mat and joint core shall be obtained on each bridge.

The longitudinal locations of mat cores within a standard, combo, or bridge lot containing multiple paving passes will be determined using the combined length of the paving passes within the lot.

TABLE 4.06-4: Number of Cores per Lot (Simple Average)

Lot Type	No. of Mat Cores		No. of Joint Cores	
Standard Lot < 500 Tons	3		3	
Standard Lot ≥ 500 Tons	4		4	
Combo Lot < 500 Tons	2 plus	1 per bridge (≤ 300')	2 plus	1 per bridge (≤ 300')
Combo Lot ≥ 500 Tons ⁽¹⁾	4 plus	2 per bridge (301' – 500')	4 plus	2 per bridge (301' – 500')

TABLE 4.06-5: Number of Core per Bridge Density Lot (Simple Average)

Length of Bridge(s) (Feet)	Minimum No. of Mat Cores	Minimum No. of Joint Cores
< 500	2	2
501 – 1,500	3	3
1,501 – 2,500	4	4
2,501 and greater	5	5

PWL Density Lots:

A PWL mat density lot is 3,500 tons of material placed within the defined area excluding any bridges. One mat core will be obtained per every 500 tons placed.

A PWL joint density lot is 14,000 linear feet of longitudinal joint excluding any joints on bridge decks. One joint core will be obtained per every 2,000 linear feet of joint.

Bridge density lots will always be analyzed as using the simple average lot methodology. The number of cores per lot shall be determined in accordance with Table 4.06-5. Multiple bridge decks can be combined into one lot if the paving and underlying conditions are comparable. If multiple bridge decks are combined into a single bridge lot, at least one mat and joint core shall be obtained on each bridge.

11. Acceptance Sampling and Testing: Sampling shall be performed in accordance with ASTM D3665 or a statistically-based procedure of stratified random sampling approved by the Engineer.

Plant Material Acceptance: The Contractor shall provide the required sampling and testing during all phases of the work in accordance with M.04. The Department will verify the Contractor's acceptance test results. Should any test results exceed the specified tolerances in the Department's current QA Program for Materials, the Contractor's test results for a subject lot or sub lot may be replaced with the Department's results for the purpose of calculating adjustments. The verification procedure is included in the Department's current QA Program for Materials.

Density Acceptance: The Engineer will perform all acceptance testing in accordance with AASHTO T 331. The density of each core will be determined using the daily production's average maximum theoretical specific gravity (Gmm) established during the testing of the parent material at the Plant. When there was no testing of the parent material or any Gmm exceeds the specified tolerances in the Department's current QA Program for Materials, the Engineer will determine the maximum theoretical density value to be used for density calculations.

12. Density Dispute Resolution Process: The Contractor and Engineer will work in partnership to avoid potential conflicts and to resolve any differences that may arise during quality control or acceptance testing for density. Both parties will review their sampling and testing procedures and results and share their findings. If the Contractor disputes the Engineer's test results, the Contractor must submit in writing a request to initiate the Dispute Resolution Process within five calendar days of the notification of the test results. No request for dispute resolution will be allowed unless the Contractor provides quality control results from samples taken prior to and after finish rolling, and within the timeframe described in 4.06.03-8 supporting its position. No request for dispute resolution will be allowed for a density lot in which any core was not taken within the required 5 calendar days of placement. Should the dispute not be resolved through evaluation of existing testing data or procedures, the Engineer may authorize the Contractor to obtain a new core or set of core samples per disputed lot. The core samples must be extracted no later than seven calendar days from the date of the Engineer's authorization. All such core samples shall be extracted and the core hole filled using the procedure outlined in 4.06.03-10.

a) Simple Average Lots: The Contractor may only dispute any simple average lot that is adjusted at or below 95 percent payment. The number and location (mat, joint, or structure) of the cores taken for dispute resolution must reflect the number and location of the original cores. The location of each core shall be randomly located within the respective original sub lot. The dispute resolution results shall be combined with the original results and averaged for determining the final in-place density value.

b) PWL Lots: The Contractor may dispute any PWL subplot when the PWL falls below 50% calculated in accordance with section 4.06.04.2.b. An additional random core in the subplot may be taken to validate the accuracy of the core in question. The Department will verify the

additional core test result and may average the original test result with the additional core result for purpose of calculating adjustments.

13. Corrective Work Procedure:

If pavement placed by the Contractor does not meet the specifications, and the Engineer requires its replacement or correction, the Contractor shall:

- a) Propose a corrective procedure to the Engineer for review and approval prior to any corrective work commencing. The proposal shall include:
 - Limits of pavement to be replaced or corrected, indicating stationing or other landmarks that are readily distinguishable.
 - Proposed work schedule.
 - Construction method and sequence of operations.
 - Methods of maintenance and protection of traffic.
 - Material sources.
 - Names and telephone numbers of supervising personnel.
- b) Any corrective courses placed as the final wearing surface shall match the specified lift thickness after completion.

14. Protection of the Work: The Contractor shall protect all sections of the newly finished pavement from damage that may occur as a result of the Contractor's operations for the duration of the Project.

15. Cut Bituminous Concrete Pavement: Work under this item shall consist of making a straight-line cut in the bituminous concrete pavement to the lines delineated on the plans or as directed by the Engineer. The cut shall provide a straight, clean, vertical face with no cracking, tearing or breakage along the cut edge.

4.06.04—Method of Measurement:

1. HMA S* or PMA S*: Bituminous concrete will be measured for payment as the amount of material in tons placed as determined by the net weight on the delivered tickets and adjusted by area, thickness and weight as follows:

Quantity Adjustments: Adjustments may be applied to the placed bituminous concrete quantities that will be measured for payment using the following formulas:

Yield Factor for Adjustment Calculation = 0.0575 tons/SY/inch

Actual Area (SY) = [(Measured Length (ft)) x (Avg. of width measurements (ft))] ÷ 9 s.f./SY

Actual Thickness (t) = Total tons delivered / [Actual Area (SY) x 0.0575 tons/SY/inch]

- a) Area: If the average width exceeds the allowable tolerance, an adjustment will be made using the following formula. The tolerance for width is equal to the specified thickness

(inch) of the lift being placed.

$$\text{Quantity Adjusted for Area (T}_A\text{)} = [(L \times W_{\text{adj}})/9] \times (t) \times 0.0575 \text{ Tons/SY/inch} = (-) \text{ tons}$$

Where: L = Length (ft)

(t) = Actual thickness (inches)

$W_{\text{adj}} = (\text{Designed width (ft)} + \text{tolerance} / 12) - \text{Measured Width}$

- b) Thickness: If the actual average thickness is less than the allowable tolerance, the Contractor shall submit a repair procedure to the Engineer for approval. If the actual thickness exceeds the allowable tolerance, an adjustment will be made using the following formula:

$$\text{Quantity Adjusted for Thickness (T}_T\text{)} = A \times t_{\text{adj}} \times 0.0575 = (-) \text{ tons}$$

Where: A = Area = $\{[L \times (\text{Design width} + \text{tolerance (lift thickness)/12}]\} / 9\}$

$t_{\text{adj}} = \text{Adjusted thickness} = [(\text{Dt} + \text{tolerance}) - \text{Actual thickness}]$

Dt = Designed thickness (inches)

- c) Weight: If the quantity of bituminous concrete representing the mixture delivered to the Project is in excess of the allowable gross vehicle weight (GVW) for each vehicle, an adjustment will be made using the following formula:

$$\text{Quantity Adjusted for Weight (T}_W\text{)} = \text{GVW} - \text{DGW} = (-) \text{ tons}$$

Where: DGW = Delivered gross weight as shown on the delivery ticket or measured on a certified scale

2. Bituminous Concrete Adjustment Cost:

- a) Production Lot Adjustment: An adjustment may be applied to each production lot as follows:
- i. Non-PWL Production Lot (less than 3,500 tons):
The adjustment values in Tables 4.06-6 and 4.06-7 will be calculated for each sub lot based on the Air Void (AV) and Asphalt Binder Content (PB) test results for that sub lot. The total adjustment for each day's production (lot) will be computed as follows:

$$\text{Tons Adjusted for Superpave Design (T}_{SD}\text{)} = [(\text{AdjAV}_t + \text{AdjPB}_t) / 100] \times \text{Tons}$$

Where: AdjAV_t: Percent adjustment for air voids

AdjPB_t: Percent adjustment for asphalt binder

Tons: Weight of material (tons) in the lot adjusted by 4.06.4-1

$$\text{Percent Adjustment for Air Voids} = \text{AdjAV}_t = [\text{AdjAV}_1 + \text{AdjAV}_2 + \text{AdjAV}_i + \dots + \text{AdjAV}_n] / n$$

Where: $AdjAV_t$ = Total percent air void adjustment value for the lot

$AdjAV_i$ = Adjustment value from Table 4.06-6 resulting from each sub lot or the average of the adjustment values resulting from multiple tests within a sub lot, as approved by the Engineer.

n = number of sub lots based on Table M.04.03-2

TABLE 4.06-6: Adjustment Values for Air Voids

Adjustment Value ($AdjAV_i$) (%)	S0.25, S0.375, S0.5, S1 Air Voids (AV)
+2.5	3.8 - 4.2
+3.125*(AV-3)	3.0 - 3.7
-3.125*(AV-5)	4.3 - 5.0
20*(AV-3)	2.3 - 2.9
-20*(AV-5)	5.1 - 5.7
-20.0	≤ 2.2 or ≥ 5.8

Percent Adjustment for Asphalt Binder = $AdjPB_t = [(AdjPB_1 + AdjPB_2 + AdjPB_i + \dots + AdjPB_n)] / n$

Where: $AdjPB_t$ = Total percent liquid binder adjustment value for the lot

$AdjPB_i$ = Adjustment value from Table 4.06-7 resulting from each sub lot

n = number of binder tests in a production lot

TABLE 4.06-7: Adjustment Values for Binder Content

Adjustment Value ($AdjAV_i$) (%)	<u>S0.25, S0.375, S0.5, S1</u> Pb
0.0	JMF Pb \pm 0.3
- 10.0	\leq JMF Pb - 0.4 or \geq JMF Pb + 0.4

ii. PWL Production Lot (3500 tons or more):

For each lot, the adjustment values will be calculated using PWL methodology based on AV, VMA, and PB test results. The results will be considered as being normally distributed and all applicable equations in AASHTO R 9 and AASHTO R 42 Appendix X4 will apply.

Only one test result will be considered for each sub lot. The specification limits are listed in M.04.

For AV, PB, and voids in mineral aggregate (VMA), the individual material quantity characteristic adjustment (Adj) will be calculated as follows:

For PWL between 50 and 90%: $Adj(AV_t \text{ or } PB_t \text{ or } VMA_t) = (55 + 0.5 \text{ PWL}) - 100$

For PWL at and above 90%: $Adj(AV_t \text{ or } PB_t \text{ or } VMA_t) = (77.5 + 0.25 \text{ PWL}) - 100$

Where: $AdjAV_t$ = Total percent AV adjustment value for the lot

$AdjPB_t$ = Total percent PB adjustment value for the lot

AdjVMA_t= Total percent VMA adjustment value for the lot

A lot with PWL less than 50% in any of the 3 individual material quality characteristics will be evaluated under 1.06.04.

The total adjustment for each production lot will be computed using the following formula:

$$\text{Tons Adjusted for Superpave Design (T}_{SD}) = [(0.5\text{AdjAV}_t + 0.25\text{AdjPB}_t + 0.25 \text{AdjVMA}_t) / 100] \times \text{Tons}$$

Where Tons: Weight of material (tons) in the lot adjusted by 4.06.4-1

iii. Partial Lots:

Lots with less than 4 sub lots will be combined with the prior lot. If there is no prior lot with equivalent material or if the last test result of the prior lot is over 30 calendar days old, the adjustment will be calculated as indicated in 4.06.04-2.a)i.

Lots with 4 or more sub lots will be calculated as indicated in 4.06.04-2.a)ii.

Production Lot Adjustment: T_{SD} x Unit Price = Est. (Pi)

Where: Unit Price = Contract unit price per ton per type of mixture

Est. (Pi)= Pay Unit in dollars representing incentive or disincentive per lot

b) Density Lot Adjustment: An adjustment may be applied to each density lot as follows:

i. Simple Average Density Lot (less than 3500 tons) and Bridge Lots:

The final lot quantity shall be the difference between the total payable tons for the Project and the sum of the previous lots. If either the Mat or Joint adjustment value is “remove and replace,” the density lot shall be removed and replaced (curb to curb).

No positive adjustment will be applied to a density lot in which any core was not taken within the required 5 calendar days of placement.

$$\text{Tons Adjusted for Density (T}_{D}) = [\{(PA_M \times 0.50) + (PA_J \times 0.50)\} / 100] \times \text{Tons}$$

Where: T_D = Total tons adjusted for density for each lot

PA_M = Mat density percent adjustment from Table 4.06-8

PA_J = Joint density percent adjustment from Table 4.06-9

Tons: Weight of material (tons) in the lot adjusted by 4.06.4-1

TABLE 4.06-8: Adjustment Values for Pavement Mat density

Average Core Result Percent Mat Density	Percent Adjustment (Bridge and Non-Bridge) ⁽¹⁾⁽²⁾
97.1 - 100	-1.667*(ACRPD-98.5)
94.5 – 97.0	+2.5
93.5 – 94.4	+2.5*(ACRPD-93.5)
92.0 – 93.4	0
90.0 – 91.9	-5*(92-ACRPD)
88.0 – 89.9	-10*(91-ACRPD)

87.0 – 87.9	-30
86.9 or less	Remove and Replace (curb to curb)

Notes:

(1) ACRPD = Average Core Result Percent Density

(2) All Percent Adjustments to be rounded to the second decimal place; for example round 1.667 to 1.67.

TABLE 4.06-9: Adjustment Values for Pavement Joint Density

Average Core Result Percent Joint Density	Percent Adjustment (Bridge and Non-Bridge) ⁽¹⁾⁽²⁾
97.1 – 100	-1.667*(ACRPD-98.5)
93.5 – 97.0	+2.5
92.0 – 93.4	+1.667*(ACRPD-92)
91.0 – 91.9	0
89.0 – 90.9	-7.5*(91-ACRPD)
88.0 – 88.9	-15*(90-ACRPD)
87.0 – 87.9	-30
86.9 or less	Remove and Replace (curb to curb)

Notes:

(1) ACRPD = Average Core Result Percent Density

(2) All Percent Adjustments to be rounded to the second decimal place; for example round 1.667 to 1.67

Additionally, any subplot with a density result below 87% will be evaluated under 1.06.04.

ii. PWL Density Lot (3,500 tons or more):

For each lot, the adjustment values will be calculated using PWL methodology based on mat and joint density test results. Only one result will be included for each subplot. The results will be considered as being normally distributed and all applicable equations in AASHTO R 9 and AASHTO R 42 Appendix X4 will apply.

The specification limits for the PWL determination are as follows:

Mat Density: 91.5-98%

Joint Density: 90-98%

For mat and joint density, the individual percent adjustment (PA) will be calculated as follows:

For PWL between 50 and 90%: $PA_{(M \text{ or } J)} = 0.25 * PWL - 22.50$

For PWL at and above 90%: $PA_{(M \text{ or } J)} = 0.125 * PWL - 11.25$

Where: PA_M = Total percent mat density adjustment value for the PWL mat density lot

PA_J = Total percent joint density adjustment value for the PWL joint density lot

No positive adjustment will be applied to a density lot in which any core was not taken within the required 5 calendar days of placement.

A lot with PWL less than 50% will be evaluated under 1.06.04.

The total adjustment for each PWL mat density lot will be computed as follows:

$$\text{Tons Adjusted for Mat Density (T}_{MD}) = (PA_M / 100) \times \text{Tons}$$

Where: Tons= Weight of material (tons) in the lot adjusted by 4.06.4-1.

The total adjustment for each PWL joint density lot will be computed as follows:

$$\text{Tons Adjusted for Joint Density (T}_{JD}) = (PA_J / 100) \times J_Tons$$

Tons Adjusted for Joint Density will be calculated at the end of each project or project phase.

Where:

All bridge density lot adjustments will be evaluated in accordance with 4.06.04-2.b)i.

Additionally, any subplot with a density result below 87% will be evaluated under 1.06.04.

iii. Partial Lots:

Lots with less than 4 sub lots will be combined with the prior lot. If there is no prior lot with equivalent material and placement conditions or if the last test result of the prior lot is over 30 calendar days old, the mat and joint individual adjustments will be calculated in accordance to Tables 4.06-8 and 4.06-9. T_{MD} and T_{JD} will be calculated as indicated in 4.06.04-2.b)i.

Lots with 4 or more sub lots will be calculated as indicated in 4.06.04-2.b)ii.

Density Lot Adjustment (Simple Average Lots): $T_D \times \text{Unit Price} = \text{Est. (Di)}$

Density Lot Adjustment (PWL Lots): $(T_{MD} \text{ or } T_{JD}) \times \text{Unit Price} = \text{Est. (DMi or DJi)}$

Where: Unit Price = Contract unit price per ton per type of mixture

Est. (Di)= Pay Unit in dollars representing incentive or disincentive per simple average density lot

Est. (DMi)= Pay Unit in dollars representing incentive or disincentive per PWL mat lot

Est. (DJi)= Pay Unit in dollars representing incentive or disincentive per PWL joint lot

Additionally, any subplot with a density result below 87% will be evaluated under 1.06.04.

3. Transitions for Roadway Surface: The installation of permanent transitions will be measured under the appropriate item used in the formation of the transition.

The quantity of material used for the installation of temporary transitions will be measured for payment under the appropriate item used in the formation of the transition. The installation and removal of a bond breaker and the removal and disposal of any temporary transition formed by milling or with bituminous concrete pavement is not measured for payment.

4. Cut Bituminous Concrete Pavement: The quantity of bituminous concrete pavement cut will be measured in accordance with 2.02.04.

5. Material for Tack Coat: The quantity of tack coat will be measured for payment by the number of gallons furnished and applied on the Project and approved by the Engineer. No tack coat material shall be included that is placed in excess of the tolerance described in 4.06.03.

- a. Container Method – Material furnished in a container will be measured to the nearest 1/2 gallon. The volume will be determined by either measuring the volume in the original container by a method approved by the Engineer or using a separate graduated container capable of measuring the volume to the nearest 1/2 gallon. The container in which the material is furnished must include the description of material, including lot number or batch number and manufacturer or product source.
- b. Vehicle Method
 - i. Measured by Weight: The number of gallons furnished will be determined by weighing the material on calibrated scales furnished by the Contractor. To convert weight to gallons, one of the following formulas will be used:
Tack Coat (gallons at 60°F) = Measured Weight (pounds) / Weight per gallon at 60°F
Tack Coat (gallons at 60°F) = 0.996 x Measured Weight (pounds) / Weight per gallon at 77°F
 - ii. Measured by automated metering system on the delivery vehicle:
Tack Coat (gallons at 60°F) = 0.976 x Measured Volume (gallons).

4.06.05—Basis of Payment:

1. HMA S* or PMA S*: The furnishing and placing of bituminous concrete will be paid for at the Contract unit price per ton for " HMA S*" or " PMA S*."

All costs associated with providing illumination of the work area are included in the general cost of the work.

All costs associated with cleaning the surface to be paved, including mechanical sweeping, are included in the general cost of the work. All costs associated with constructing longitudinal joints are included in the general cost of the work.

All costs associated with obtaining cores for acceptance testing and dispute resolution are included in the general cost of the work.

2. Bituminous Concrete Adjustment Costs: This adjustment will be calculated using the formulas shown below if all of the measured adjustments in 4.06.04-2 are not equal to zero. A positive or negative adjustment will be applied to monies due the Contractor.

Production Lot: $\Sigma \text{ Est (Pi)} = \text{Est. (P)}$
Density Lot (Simple Average Lots): $\Sigma \text{ Est (Di)} = \text{Est. (D)}$
Density Lot (PWL): $\Sigma \text{ Est (DMi)} + \Sigma \text{ (DJi)} = \text{Est. (D)}$
Bituminous Concrete Adjustment Cost= Est. (P) + Est. (D)

Where: Est. ()= Pay Unit in dollars representing incentive or disincentive in each production or density lot calculated in 4.06.04-2

The Bituminous Concrete Adjustment Cost item, if included in the bid proposal or estimate, is not to be altered in any manner by the Bidder. If the Bidder should alter the amount shown, the altered figure will be disregarded and the original estimated cost will be used for the Contract.

3. Transitions for Roadway Surface: The installation of permanent transitions will be paid under the appropriate item used in the formation of the transition. The quantity of material used for the installation of temporary transitions will be paid under the appropriate pay item used in the formation of the transition. The installation and removal of a bond breaker, and the removal and disposal of any temporary transition formed by milling or with bituminous concrete pavement is included in the general cost of the work.

4. The cutting of bituminous concrete pavement will be paid in accordance with 2.02.05.

5. Material for tack coat will be paid for at the Contract unit price per gallon at 60°F for "Material for Tack Coat."

<u>Pay Item</u>	<u>Pay Unit</u>
HMA S*	ton
PMA S*	ton
Bituminous Concrete Adjustment Cost	est.
Material for Tack Coat	gal.

SECTION M.04 – BITUMINOUS CONCRETE MATERIALS

Section M.04 is being deleted in its entirety and replaced with the following:

M.04.01—Bituminous Concrete Materials and Facilities

M.04.02—Mix Design and Job Mix Formula (JMF)

M.04.03—Production Requirements

M.04.01—Bituminous Concrete Materials and Facilities: Each source of material, Plant, and laboratory used to produce and test bituminous concrete must be qualified on an annual basis by the Engineer. AASHTO or ASTM Standards noted with an (M) have been modified and are detailed in Table M.04.03-5.

Aggregates from multiple sources of supply must not be blended or stored in the same stockpile.

- 1. Coarse Aggregate:** All coarse aggregate shall meet the requirements listed in M.01.
- 2. Fine Aggregate:** All fine aggregate shall meet the requirements listed in M.01.
- 3. Mineral Filler:** Mineral filler shall conform to the requirements of AASHTO M 17.
- 4. Performance Graded (PG) Asphalt Binder:**

(a) General:

- i. PG asphalt binder shall be uniformly mixed and blended and be free of contaminants such as fuel oils and other solvents. Binder shall be properly heated and stored to prevent damage or separation.
- ii. The binder shall meet the requirements of AASHTO M 332 and shall be graded or verified in accordance with AASHTO R 29. The Contractor shall submit a Certified Test Report and bill of lading representing each delivery in accordance with AASHTO R 26(M). The Certified Test Report must also indicate the binder specific gravity at 77°F; rotational viscosity at 275°F and 329°F; and the mixing and compaction viscosity-temperature chart for each shipment.
- iii. The Contractor shall submit the name(s) of personnel responsible for receipt, inspection, and record keeping of PG binder. Contractor Plant personnel shall document specific storage tank(s) where binder will be transferred and stored until used and provide binder samples to the Engineer upon request. The person(s) shall assure that each shipment is accompanied by a statement certifying that the transport vehicle was inspected before loading was found acceptable for the material shipped and that the binder is free of contamination from any residual material, along with 2 copies of the bill of lading.
- iv. The blending or combining of PG binders in 1 storage tank at the Plant from different suppliers, grades, or additive percentages is prohibited.

(b) Basis of Approval: The request for approval of the source of supply shall list the location where the material will be manufactured, and the handling and storage methods, along with necessary certification in accordance with AASHTO R 26(M). Only suppliers/refineries that have an approved “Quality Control Plan for Performance Graded Binders” formatted in accordance with AASHTO R 26(M) may supply PG binders to Department projects.

(c) Standard Performance Grade (PG) Binder:

- i. Standard PG binder shall be defined as “Neat.” Neat PG binders shall be free from modification with: fillers, extenders, reinforcing agents, adhesion promoters, thermoplastic polymers, acid modification and other additives such as re-refined motor oil, and shall indicate such information on each bill of lading and Certified Test Report.
- ii. The standard asphalt binder shall be PG 64S-22.

(d) Modified Performance Grade (PG) Binder: The modified asphalt binder shall be Performance Grade PG 64E-22 asphalt modified solely with a Styrene-Butadiene-Styrene (SBS) polymer. The polymer modifier shall be added at either the refinery or terminal and delivered to the bituminous concrete production facility as homogenous blend. The stability of the modified binder shall be verified in accordance with ASTM D7173 using the Dynamic Shear Rheometer (DSR). The DSR $G^*/\sin(\delta)$ results from the top and bottom sections of the ASTM D7173 test shall not differ by more than 10%. The results of ASTM D7173 shall be included on the Certified Test Report. The binder shall meet the requirements of AASHTO M 332 (including Appendix X1) and AASHTO R 29.

(e) Warm Mix Additive or Technology:

- i. The warm mix additive or technology must be listed on the North East Asphalt User Producer Group (NEAUPG) Qualified Warm Mix Asphalt (WMA) Technologies List at the time of bid, which may be accessed online at <http://www.neaupg.uconn.edu>.
- ii. The warm mix additive shall be blended with the asphalt binder in accordance with the manufacturer’s recommendations.
- iii. The blended binder shall meet the requirements of AASHTO M 332 and shall be graded or verified in accordance with AASHTO R 29 for the specified binder grade. The Contractor shall submit a Certified Test Report showing the results of the testing demonstrating the binder grade. In addition, it must include the grade of the virgin binder, the brand name of the warm mix additive, the manufacturer’s suggested rate for the WMA additive, the water injection rate (when applicable), and the WMA Technology manufacturer’s recommended mixing and compaction temperature ranges.

5. Emulsified Asphalts:

(a) General:

- i. The emulsified asphalt shall meet the requirements of AASHTO M 140(M) or AASHTO M 208 as applicable.
- ii. The emulsified asphalts shall be free of contaminants such as fuel oils and other solvents.
- iii. The blending at mixing Plants of emulsified asphalts from different suppliers is prohibited.

(b) Basis of Approval:

- i. The request for approval of the source of supply shall list the location where the material is manufactured, the handling and storage methods, and certifications in accordance with AASHTO R 77. Only suppliers that have an approved “Quality Control Plan for Emulsified Asphalt” formatted in accordance with AASHTO R 77 and that submit monthly split samples per grade to the Engineer may supply emulsified

asphalt to Department projects.

- ii. Each shipment of emulsified asphalt delivered to the Project site shall be accompanied with the corresponding Certified Test Report listing Saybolt viscosity, residue by evaporation, penetration of residue, and weight per gallon at 77°F and Material Certificate.
- iii. Anionic emulsified asphalts shall meet the requirements of AASHTO M-140. Materials used for tack coat shall not be diluted and meet grade RS-1 or RS-1h. When ambient temperatures are 80°F and rising, grade SS-1 or SS-1h may be substituted if permitted by the Engineer.
- iv. Cationic emulsified asphalt shall meet the requirements of AASHTO M-208. Materials used for tack coat shall not be diluted and meet grade CRS-1. The settlement and demulsibility test will not be performed unless deemed necessary by the Engineer. When ambient temperatures are 80°F and rising, grade CSS-1 or CSS-1h may be substituted if permitted by the Engineer.

6. Reclaimed Asphalt Pavement (RAP):

(a) General: RAP is a material obtained from the cold milling or removal and processing of bituminous concrete pavement. RAP material shall be crushed to 100% passing the 1/2 inch sieve and free from contaminants such as joint compound, wood, plastic, and metals.

(b) Basis of Approval: The RAP material will be accepted on the basis of one of the following criteria:

- i. When the source of all RAP material is from pavements previously constructed on Department projects, the Contractor shall provide a Materials Certificate listing the detailed locations and lengths of those pavements and that the RAP is only from those locations listed.
- ii. When the RAP material source or quality is not known, the Contractor shall request approval from the Engineer at least 30 calendar days prior to the start of the paving operation. The request shall include a Material Certificate and applicable test results stating that the RAP consists of aggregates that meet the specification requirements of M.04.01-1 through M.04.01-3 and that the binder in the RAP is substantially free of solvents, tars and other contaminants. The Contractor is prohibited from using unapproved material on Department projects and shall take necessary action to prevent contamination of approved RAP stockpiles. Stockpiles of unapproved material shall remain separate from all other RAP materials at all times. The request for approval shall include the following:
 1. A 50-lb. sample of the RAP to be incorporated into the recycled mixture.
 2. A 25-lb. sample of the extracted aggregate from the RAP.

7. Crushed Recycled Container Glass (CRCG):

(a) Requirements: The Contractor may propose to use clean and environmentally-acceptable CRCG in an amount not greater than 5% by weight of total aggregate.

(b) Basis of Approval: The Contractor shall submit to the Engineer a request to use CRCG.

The request shall state that the CRCG contains no more than 1% by weight of contaminants such as paper, plastic, and metal and conforms to the following gradation:

CRCG Grading Requirements	
<u>Sieve Size</u>	<u>Percent Passing</u>
3/8 inch	100
No. 4	35-100
No. 200	0.0-10.0

The Contractor shall submit a Material Certificate to the Engineer stating that the CRCG complies with all the applicable requirements in this Section.

8. Joint Seal Material: Joint seal material must meet the requirements of ASTM D6690 - Type 2. The Contractor shall submit a Material Certificate in accordance with 1.06.07 certifying that the joint seal material meets the requirements of this Section.

9. Recycled Asphalt Shingles (RAS): RAS shall consist of processed asphalt roofing shingles from post-consumer asphalt shingles or from manufactured shingle waste. The RAS material under consideration for use in bituminous concrete mixtures must be certified as being asbestos-free and shall be entirely free of whole, intact nails. The RAS material shall meet the requirements of AASHTO MP 23.

The Producer shall test the RAS material to determine the asphalt content and the gradation of the RAS material. The Producer shall take necessary action to prevent contamination of RAS stockpiles.

The Contractor shall submit a Material Certificate to the Engineer stating that the RAS complies with all the applicable requirements in this Section.

10. Plant Requirements:

(a) General: The Plant producing bituminous concrete shall comply with AASHTO M 156.

(b) Storage Silos: The Contractor may use silos for short-term storage with the approval of the Engineer. A storage silo must have heated cones and an unheated silo cylinder if it does not contain a separate internal heating system. When multiple silos are filled, the Contractor shall discharge 1 silo at a time. Simultaneous discharge of multiple silos for the same Project is not permitted.

Type of silo cylinder	Maximum storage time for all classes (hr)	
	<u>HMA</u>	<u>WMA/PMA</u>
Open Surge	4	Mfg Recommendations*
Unheated - Non-insulated	8	Mfg Recommendations*
Unheated - Insulated	18	Mfg Recommendations*
Heated - No inert gas	TBD by the Engineer	TBD by the Engineer

*Not to exceed HMA limits

(c) Documentation System: The mixing Plant documentation system shall include equipment for accurately proportioning the components of the mixture by weight and in the proper order, controlling the cycle sequence, and timing the mixing operations. Recording equipment shall monitor the batching sequence of each component of the mixture and produce a printed record of these operations on each Plant ticket, as specified herein.

If recycled materials are used, the Plant tickets shall include their dry weight, percentage, and daily moisture content.

If a WMA Technology is added at the Plant, the Plant tickets shall include the actual dosage rate.

For drum Plants, the Plant ticket shall be produced at 5 minute intervals and maintained by the vendor for a period of 3 years after the completion of the Project.

For batch Plants, the Plant ticket shall be produced for each bath and maintained by the vendor for a period of 3 years after the completion of the Project. In addition, an asterisk (*) shall be automatically printed next to any individual batch weight(s) exceeding the following tolerances:

Each Aggregate Component	±1.5% of individual or cumulative target weight for each bin
Mineral Filler	±0.5% of the total batch
Bituminous Material	±0.1% of the total batch
Zero Return (Aggregate)	±0.5% of the total batch
Zero Return (Bituminous Material)	±0.1% of the total batch

The entire batching and mixing interlock cut-off circuits shall interrupt and stop the automatic batching operations when an error exceeding the acceptable tolerance occurs in proportioning.

The scales shall not be manually adjusted during the printing process. In addition, the system shall be interlocked to allow printing only when the scale has come to a complete rest. A unique printed character (m) shall automatically be printed on the truck and batch plant printout when the automatic batching sequence is interrupted or switched to auto-manual or full manual during proportioning.

(d) Aggregates: Aggregate stockpiles shall be managed to prevent segregation and cross contamination. For drum Plants only, the percent moisture content, at a minimum prior to production and half way through production, shall be determined.

(e) Mixture: The dry and wet mix times shall be sufficient to provide a uniform mixture and a minimum particle coating of 95% as determined by AASTO T 195(M).

Bituminous concrete mixtures shall contain no more than 0.5% moisture when tested in accordance with AASHTO T 329.

(f) RAP: RAP moisture content shall be determined a minimum of twice daily (prior to production and halfway through production).

(g) Asphalt Binder: A binder log shall be submitted to the Department's Central Lab on a monthly basis.

(h) Warm mix additive: For mechanically foamed WMA, the water injection rate shall be monitored during production and not exceed 2.0% by total weight of binder. For additive added at the Plant, the dosage rate shall be monitored during production.

(i) Testing Laboratory: The Contractor shall maintain a laboratory to test bituminous concrete mixtures during production. The laboratory shall have a minimum of 300 s.f., have a potable water source and drainage in accordance with the CT Department of Public Health Drinking Water Division, and be equipped with all necessary testing equipment as well as with a PC, printer, and telephone with a dedicated hard-wired phone line. In addition, the PC shall have a high speed internet connection and a functioning web browser with unrestricted access to <https://ctmail.ct.gov> . This equipment shall be maintained in working order at all times and be made available for use by the Engineer.

The laboratory shall be equipped with a heating system capable of maintaining a minimum temperature of 65°F. It shall be clean and free of all materials and equipment not associated with the laboratory. Sufficient light and ventilation must be provided. During summer months adequate cooling or ventilation must be provided so the indoor air temperature shall not exceed the ambient outdoor temperature.

The laboratory testing apparatus, supplies, and safety equipment shall be capable of performing all the applicable tests in their entirety that are referenced in AASHTO R 35 and AASHTO M 323. The Contractor shall ensure that the Laboratory is adequately supplied at all times during the course of the Project with all necessary testing materials and equipment.

The Contractor shall maintain a list of laboratory equipment used in the acceptance testing processes including, but not limited to, balances, scales, manometer/vacuum gauge, thermometers, and gyratory compactor, clearly showing calibration and/or inspection dates, in accordance with AASHTO R 18. The Contractor shall notify the Engineer if any modifications are made to the equipment within the laboratory. The Contractor shall take immediate action to replace, repair, or recalibrate any piece of equipment that is out of calibration, malfunctioning, or not in operation.

M.04.02—Mix design and Job Mix Formula (JMF)

1. Curb Mix:

(a) Requirements: The Contractor shall use bituminous concrete that meets the requirements of Table M.04.02-1. RAP may be used in 5% increments by weight up to 30%.

(b) Basis of Approval: Annually, an approved JMF based on a mix design for curb mix must be on file with the Engineer prior to use.

The Contractor shall test the mixture for compliance with the submitted JMF and Table M.04.02-1. The maximum theoretical density (Gmm) will be determined by AASHTO T 209. If the mixture does not meet the requirements, the JMF shall be adjusted within the ranges shown in Table M.04.02-1 until an acceptable mixture is produced.

An accepted JMF from the previous operating season may be acceptable to the Engineer provided that there are no changes in the sources of supply for the coarse aggregate, fine aggregate, recycled material (if applicable) and the Plant operation had been consistently producing acceptable mixture.

Any change in component source of supply or consensus properties must be approved by the Engineer. A revised JMF shall be submitted prior to use.

**TABLE M.04.02-1:
Control Points for Curb Mix Mixtures**

Mix	Curb Mix	Production Tolerances from JMF Target
Grade of PG Binder content %	PG 64S-22 6.5 - 9.0	0.4
Sieve Size		
No. 200	3.0 - 8.0 (b)	2.0
No. 50	10 - 30	4
No. 30	20 - 40	5
No. 8	40 - 70	6
No. 4	65 - 87	7
1/4 inch		
3/8 inch	95 - 100	8
1/2 inch	100	8
3/4 inch		8
1 inch		
2 inch		
Additionally, the fraction of material retained between any 2 consecutive sieves shall not be less than 4%.		
Mixture Temperature		
Binder	325°F maximum	
Aggregate	280-350°F	
Mixtures	265-325°F	
Mixture Properties		
Air Voids (VA) %	0 – 4.0 (a)	
Notes: (a) Compaction Parameter 50 gyrations (N_{des}) (b) The percent passing the No. 200 sieve shall not exceed the percentage of bituminous asphalt binder.		

2. Superpave Design Method – S0.25, S0.375, S0.5, and S1:

(a) Requirements: All designated mixes shall be designed using the Superpave mix design method in accordance with AASHTO R 35. A JMF based on the mix design shall meet the requirements of Tables M.04.02-2 to M.04.02-5. Each JMF and component samples must be submitted no less than 7 days prior to production and must be approved by the Engineer prior to use. All JMFs expire at the end of the calendar year.

All aggregate component consensus properties and tensile strength ratio (TSR) specimens shall be tested at an AASHTO Materials Reference Laboratory (AMRL) by NETTCP Certified Technicians.

All bituminous concrete mixes shall be tested for stripping susceptibility by performing the

TSR test procedure in accordance with AASHTO T 283(M) at a minimum every 36 months. The compacted specimens may be fabricated at the Plant and then tested at an AMRL accredited facility. A minimum of 45000 grams of laboratory or plant blended mixture and the corresponding complete Form MAT-412s shall be submitted to the Division of Material Testing (DMT) for design TSR testing verification. The mixture submitted shall be representative of the corresponding mix design as determined by the Engineer.

- i. Superpave Mixtures with RAP: RAP may be used with the following conditions:
 - RAP amounts up to 15% may be used with no binder grade modification.
 - RAP amounts up to 20% may be used provided a new JMF is approved by the Engineer. The JMF submittal shall include the grade of virgin binder added. The JMF shall be accompanied by a blending chart and supporting test results in accordance with AASHTO M 323 Appendix X1, or by testing that shows the combined binder (recovered binder from the RAP, virgin binder at the mix design proportions, warm mix asphalt additive and any other modifier if used) meets the requirements of the specified binder grade.
 - Two (2) representative samples of RAP shall be obtained. Each sample shall be split, and 1 split sample shall be tested for binder content in accordance with AASHTO T 164 and the other in accordance with AASHTO T 308.
 - RAP material shall not be used with any other recycling option.
 - ii. Superpave Mixtures with RAS: RAS may be used solely in HMA S1 mixtures with the following conditions:
 - RAS amounts up to 3% may be used.
 - RAS total binder replacement up to 15% may be used with no binder grade modification.
 - RAS total binder replacement up to 20% may be used provided a new JMF is approved by the Engineer. The JMF submittal shall include the grade of virgin binder added. The JMF shall be accompanied by a blending chart and supporting test results in accordance with AASHTO M 323 Appendix X1, or by testing that shows the combined binder (recovered binder from the RAP, virgin binder at the mix design proportions, warm mix asphalt additive and any other modifier if used) meets the requirements of the specified binder grade.
 - Superpave Mixtures with RAS shall meet AASHTO PP 78 design considerations.
 - iii. Superpave Mixtures with CRCG: CRCG may be used solely in HMA S1 mixtures. One percent (1%) of hydrated lime, or other accepted non-stripping agent, shall be added to all mixtures containing CRCG. CRCG material shall not be used with any other recycling option.
- (b) Basis of Approval**: The following information must be included in the JMF submittal:
- i. Gradation, consensus properties and specific gravities of the aggregate, RAP or RAS.
 - ii. Average asphalt content of the RAP or RAS by AASHTO T 164.
 - iii. Source of RAP or RAS and percentage to be used.
 - iv. Warm mix Technology, manufacturer's recommended additive rate and tolerances, and manufacturer recommended mixing and compaction temperatures.
 - v. TSR test report and anti-strip manufacturer and recommended dosage rate if applicable.

- vi. Mixing and compaction temperature ranges for the mix with and without the warm-mix

technology incorporated.

- vii. JMF ignition oven correction factor by AASHTO T 308.

With each JMF submittal, the following samples shall be submitted to the Division of Materials Testing:

- 4 - one (1) quart cans of PG binder, with corresponding Safety Data Sheet (SDS)
- 1 - 50 lbs. bag of RAP
- 2 - 50 lbs. bags of Plant-blended virgin aggregate

A JMF may not be approved if any of the properties of the aggregate components or mix do not meet the verification tolerances as described in the Department's current QA Program for Materials, Acceptance and Assurance Testing Policies and Procedures.

Any material based on a JMF, once approved, shall only be acceptable for use when it is produced by the designated Plant, it utilizes the same components, and the production of material continues to meet all criteria as specified in Tables M.04.02-2, M.04.02-3 and M.04.02-4. A new JMF must be submitted to the Engineer for approval whenever a new component source is proposed.

Only 1 mix with 1 JMF will be approved for production at a time. Switching between approved JMF mixes with different component percentages or sources of supply is prohibited.

TABLE M.04.02-2: Superpave Master Range for Bituminous Concrete Mixture Design Criteria

	S0.25		S0.375		S0.5		S1	
Sieve	Control Points		Control Points		Control Points		Control Points	
inches	Min (%)	Max (%)	Min (%)	Max (%)	Min (%)	Max (%)	Min (%)	Max (%)
2.0	-	-	-	-	-	-	-	-
1.5	-	-	-	-	-	-	100	-
1.0	-	-	-	-	-	-	90	100
3/4	-	-	-	-	100	-	-	90
1/2	100	-	100	-	90	100	-	-
3/8	97	100	90	100	-	90	-	-
No. 4	72	90	-	72	-	-	-	-
No. 8	32	67	32	67	28	58	19	45
No. 16	-	-	-	-	-	-	-	-
No. 30	-	-	-	-	-	-	-	-
No. 50	-	-	-	-	-	-	-	-
No. 100	-	-	-	-	-	-	-	-
No. 200	2.0	10.0	2.0	10.0	2.0	10.0	1.0	7.0
VMA (%)	16.5 ± 1		16.0 ± 1		15.0 ± 1		13.0 ± 1	
VA (%)	4.0 ± 1		4.0 ± 1		4.0 ± 1		4.0 ± 1	
Gse	JMF value		JMF value		JMF value		JMF value	
Gmm	JMF ± 0.030		JMF ± 0.030		JMF ± 0.030		JMF ± 0.030	
Dust / effective binder	0.6 - 1.2		0.6 - 1.2		0.6 - 1.2		0.6 - 1.2	
TSR	≥ 80%		≥ 80%		≥ 80%		≥ 80%	
T-283 Stripping	Minimal as determined by the Engineer							

(c) Mix Status: Each facility will have each type of bituminous concrete mixture rated based on the results of the previous year of production. Mix status will be provided to each bituminous concrete Producer prior to the beginning of the paving season.

The rating criteria are based on compliance with Air Voids and Voids in Mineral Aggregate (VMA) as indicated in Table M.04.03-4 and are calculated as follows:

- Criteria A: Percentage of acceptance test results with compliant air voids.
- Criteria B: The average of the percentage of acceptance results with compliant VMA and the percentage of acceptance results with compliant air voids.

The final rating assigned will be the lower of the rating obtained with Criteria A or Criteria B.

Mix status is defined as:

“A” – Approved: Assigned to each mixture type from a production facility with a current rating of 70% or greater, or to each mixture type completing a successful PPT.

“PPT” – Pre-Production Trial: Temporarily assigned to each mixture type from a production facility when:

1. there are no compliant acceptance production test results submitted to the Department from the previous year;
2. there is a source change in one or more aggregate components;
3. there is a component percentage change of more than 5% by weight;
4. there is a change in RAP percentage;
5. the mixture has a rating of less than 70% from the previous season;
6. it is a new JMF not previously submitted; or
7. the average of 10 consecutive acceptance results for VFA, Density to N_{ini} or dust to effective binder ratio does not meet the criteria in tables M.04.02-2 and M.04.02-4.

Bituminous concrete mixtures rated with a “PPT” status cannot be used on Department projects. Testing shall be performed by the Producer with NETTCP certified personnel on material under this status. Test results must confirm that specification requirements in Tables M.04.02-2 through M.04.02-4 are met and the binder content (Pb) meets the requirements in Table M.04.03-2 before material can be used. One of the following methods must be used to verify the test results:

Option A: Schedule a day when a Department Inspector can be at the facility to witness testing

Option B: When the Contractor or their representative performs testing without being witnessed by an Inspector, the Contractor shall submit the test results and a split sample including 2 gyratory molds, 5,000 grams of boxed bituminous concrete, and 5,000 grams of cooled loose bituminous concrete for verification testing and approval

Option C: When the Contractor or their representative performs testing without being witnessed by a Department Inspector, the Engineer may verify the mix in the Contractor’s laboratory

Witnessing or verifying by the Department of compliant test results will change the mix’s status to “A”

The differences between the Department’s test results and the Contractor’s must be within the “C” tolerances included in the [Department’s QA Program for Materials, Acceptance and Assurance Testing Policies and Procedures](#) in order to be verified.

“U” – Not Approved: Status assigned to a type of mixture that does not have an approved JMF. Bituminous concrete mixtures with a “U” status cannot be used on Department projects.

**TABLE M.04.02-3:
Superpave Consensus Properties Requirements for Combined Aggregate**

Traffic Level	Design ESALs (80kN) Millions	Coarse Aggregate Angularity ⁽¹⁾	Fine Aggregate Angularity AASHTO T 304, Method A Minimum %	Flat and Elongated Particles ⁽²⁾ ASTM D4791, Maximum %	Sand Equivalent AASHTO T 176, Minimum %
		ASTM D5821, Minimum %			
1	< 0.3	55/- -	40	10	40
2	0.3 to < 3.0	75/- -	40	10	40
3	≥ 3.0	95/90	45	10	45

Notes:
⁽¹⁾ 95/90 denotes that a minimum of 95% of the coarse aggregate, by mass, shall have one fractured face and that a minimum of 90% shall have two fractured faces.
⁽²⁾ Criteria presented as maximum Percent by mass of flat and elongated particles of materials retained on the No. 4 sieve, determined at 5:1 ratio.

TABLE M.04.02-4: Superpave Traffic Levels and Design Volumetric Properties

Traffic Level	Design ESALs (million)	Number of Gyration by Superpave Gyratory Compactor			Percent Density of Gmm from HMA/ WMA Specimen			Voids Filled with Asphalt (VFA) Based on Nominal Mix Size - Inch			
		N _{ini}	N _{des}	N _{max}	N _{ini}	N _{des}	N _{max}	0.25	0.375	0.5	1
1	<0.3	6	50	75	≤91.5	96.0	≤98.0	70-80	70-80	70-80	67-80
2	0.3 to <3.0	7	75	115	≤90.5	96.0	≤98.0	65-78	65-78	65-78	65-78
3	≥3.0	7	75	115	≤90.0	96.0	≤98.0	65-77	65-76	65-75	65-75

**TABLE M.04.02-5:
Superpave Minimum Binder Content by Mix Type and Level**

Mix Type	Level	Binder Content Minimum
S0.25	1	5.80
S0.25	2	5.70
S0.25	3	5.70
S0.375	1	5.70
S0.375	2	5.60
S0.375	3	5.60
S0.5	1	5.10
S0.5	2	5.00
S0.5	3	5.00
S1	1	4.60
S1	2	4.50
S1	3	4.50

M.04.03—Production Requirements:

1. Standard Quality Control Plan (QCP) for Production: The QCP for production shall describe the organization and procedures, which the Contractor shall use to administer quality control. The QCP shall include the procedures used to control the production process, to determine when immediate changes to the processes are needed, and to implement the required changes. The QCP must detail the inspection, sampling and testing protocols to be used, and the frequency for each.

Control Chart(s) shall be developed and maintained for critical aspect(s) of the production process as determined by the Contractor. The control chart(s) shall identify the material property, applicable upper and lower control limits, and be updated with current test data. As a minimum, the following quality characteristics shall be included in the control charts:

- percent passing No. 4 sieve
- percent passing No. 200 sieve
- binder content
- air voids
- Gmm
- Gse

- VMA

The control chart(s) shall be used as part of the quality control system to document variability of the bituminous concrete production process. The control chart(s) shall be submitted to the Engineer the first day of each month.

The QCP shall also include the name and qualifications of a Quality Control Manager. The Quality Control Manager shall be responsible for the administration of the QCP, including compliance with the plan and any plan modifications.

The Contractor shall submit complete production testing records to the Engineer within 24 hours in a manner acceptable to the Engineer.

The QCP shall also include the name and qualifications of any outside testing laboratory performing any QC functions on behalf of the Contractor. The QCP must also include a list of sampling and testing methods and frequencies used during production, and the names of all Quality Control personnel and their duties.

Approval of the QCP does not imply any warranty by the Engineer that adherence to the plan will result in production of bituminous concrete that complies with these specifications. The Contractor shall submit any changes to the QCP as work progresses.

2. Acceptance Requirements:

(a) General:

For those mixes with a total estimated project tonnage over 500 tons, a NETTCP HMA Paving Inspector certified Contractor representative shall obtain a field sample of the material placed at the project site in accordance with AASHTO T 168 using the procedure indicated in Section 5.2.3 or an alternate procedure approved by the Engineer. Sampling from the truck at the Plant in accordance with AASHTO T 168 using the procedure indicated in Section 5.2.2 will be allowed for those mixes with a total estimated project tonnage equal to or less than 500 tons. Regardless of sampling location, the sample shall be quartered by the Contractor in accordance with AASHTO R 47 and placed in an approved container. The container shall be sealed with a security tape provided by the Department and labelled to include the project number, date of paving, mix type, lot and subplot numbers and daily tonnage. The minimum weight of each quartered sample shall be 14000 grams. The Contractor shall transport one of the containers to the Departments Central Laboratory in Rocky Hill, retain one of the sealed containers for potential use in dispute resolution and test the remaining samples for acceptance in accordance with past practice.

The Contractor shall submit all acceptance tests results to the Engineer within 24 hours or prior to the next day's production. All acceptance test specimens and supporting documentation must be retained by the Contractor and may be disposed of with the approval of the Engineer. All quality control specimens shall be clearly labeled and separated from the acceptance specimens.

Contractor personnel performing QC and acceptance testing must be present at the facility prior to, during, and until completion of production, and be certified as a NETTCP HMA Plant Technician or Interim HMA Plant Technician and be in good standing. Production of material

for use on State projects must be suspended by the Contractor if such personnel are not present. Technicians found by the Engineer to be non-compliant with NETTCP policies and procedures or Department policies may be removed by the Engineer from participating in the acceptance testing process for Department projects until their actions can be reviewed.

Verification and dispute resolution testing will be performed by the Engineer in accordance with the Department’s QA Program for Materials.

Should the Department be unable to validate the Contractor’s acceptance test result(s) for a lot of material, the Engineer will use results from verification testing and re-calculate the pay adjustment for that lot. The Contractor may request to initiate the dispute resolution process in writing within 24 hours of receiving the adjustment and must include supporting documentation or test results to justify the request.

(b) Curb Mix Acceptance Sampling and Testing Procedures: Curb Mixes shall be tested by the Contractor at a frequency of 1 test per every 250 tons of cumulative production, regardless of the day of production.

When these mix designs are specified, the following acceptance procedures and AASHTO test methods shall be used:

TABLE M.04.03-1: Curb Mix Acceptance Test Procedures

Protocol	Reference	Description
1	AASHTO T 30(M)	Mechanical Analysis of Extracted Aggregate
2	AASHTO T 168	Sampling of Bituminous Concrete
3	AASHTO T 308	Binder Content by Ignition Oven Method (adjusted for aggregate correction factor)
4	AASHTO T 209(M)⁽²⁾	Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures
5	AASHTO T 312⁽²⁾	⁽¹⁾ Superpave Gyrotory Molds Compacted to N _{des}
6	AASHTO T 329	Moisture Content of Hot-Mix Asphalt (HMA) by Oven Method

Notes: ⁽¹⁾ One (1) set equals 2 each of 6-inch molds. Molds to be compacted to 50 gyrations.
⁽²⁾ Once per year or when requested by the Engineer.

i. Determination of Off-Test Status:

1. Curb Mix is considered “off test” when the test results indicate that any single value for bitumen content or gradation are not within the tolerances shown in Table M.04.02-1 for that mixture. If the mix is “off test,” the Contractor must take immediate actions to correct the deficiency and a new acceptance sample shall be tested on the same day or the following day of production.
2. When multiple silos are located at 1 site, mixture supplied to 1 project is considered as coming from 1 source for the purpose of applying the “off test” status.
3. The Engineer may cease supply from the Plant when test results from 3 consecutive

samples are not within the JMF tolerances or the test results from 2 consecutive

samples not within the control points indicated in Table M.04.02-1 regardless of production date.

ii. JMF Revisions

1. If a test indicates that the bitumen content or gradation are outside the tolerances, the Contractor may make a single JMF revision as allowed by the Engineer prior to any additional testing. Consecutive test results outside the requirements of Table M.04.02-1 JMF tolerances may result in rejection of the mixture.
2. Any modification to the JMF shall not exceed 50% of the JMF tolerances indicated in Table M.04.02-1 for any given component of the mixture without approval of the Engineer. When such an adjustment is made to the bitumen, the corresponding production percentage of bitumen shall be revised accordingly.

(c) Superpave Mix Acceptance:

i. Sampling and Testing Procedures

Production Lot: The lot will be defined as one of the following types:

- Non-PWL Production Lot for total estimated Project quantities per mixture less than 3500 tons: All mixture placed during a single continuous paving operation.
- PWL Production Lot for total estimated Project quantities per mixture of 3500 tons or more: Each 3500 tons of mixture produced within 30 calendar days.

Production Sub Lot:

- For Non-PWL: As defined in Table M.04.03-2
- For PWL: 500 tons (The last sub lot may be less than 500 tons.)

Partial Production Lots (For PWL only): A Lot with less than 3500 tons due to:

- completion of the course;
- a Job Mix Formula revision due to changes in:
 - o cold feed percentages over 5%,
 - o target combined gradation over 5%,
 - o target binder over 0.15%,
 - o any component specific gravity; or
- a lot spanning 30 calendar days.

The acceptance sample(s) location(s) shall be selected using stratified - random sampling in accordance with ASTM D3665 based on:

- the total daily estimated tons of production for non-PWL lots, or
- the total size for PWL lots.

One (1) acceptance sample shall be obtained and tested per sub lot with quantities over 125 tons. The Engineer may direct that additional acceptance samples be obtained. For non-PWL lots, one (1) acceptance test shall always be performed in the last sub lot based on actual tons of material produced.

For non-PWL lots, quantities of the same mixture per Plant may be combined daily for multiple State projects to determine the number of sub lots.

The payment adjustment will be calculated as described in 4.06.

**TABLE M.04.03-2:
Superpave Acceptance Testing Frequency per Type/Level/Plant for Non-PWL Lots**

Daily Quantity Produced in Tons (Lot)	Number of Sub Lots/Tests
0 to 125	0, Unless requested by the Engineer
126 to 500	1
501 to 1,000	2
1,001 to 1,500	3
1,500 or greater	1 per 500 tons or portions thereof

The following test procedures shall be used for acceptance:

TABLE M.04.03-3: Superpave Acceptance Testing Procedures

Protocol	Procedure	Description
1	AASHTO T 168	Sampling of bituminous concrete
2	AASHTO R 47	Reducing samples to testing size
3	AASHTO T 308	Binder content by ignition oven method (adjusted for aggregate correction factor)
4	AASHTO T 30(M)	Gradation of extracted aggregate for bituminous concrete mixture
5	AASHTO T 312	⁽¹⁾ Superpave gyratory molds compacted to N_{des}
6	AASHTO T 166	⁽²⁾ Bulk specific gravity of bituminous concrete
7	AASHTO R 35	⁽²⁾ Air voids, VMA
8	AASHTO T 209(M)	Maximum specific gravity of bituminous concrete (average of 2 tests)
9	AASHTO T 329	Moisture content of bituminous concrete

- Notes:** ⁽¹⁾ One (1) set equals 2 each of 6-inch molds. Molds to be compacted to N_{max} for PPTs and to N_{des} for production testing. The first sub lot of the year shall be compacted to N_{max} .
⁽²⁾ Average value of 1 set of 6-inch molds.

If the average ignition oven corrected binder content differs by 0.3% or more from the average of the Plant ticket binder content in 5 consecutive tests regardless of the production date (moving average), the Contractor shall immediately investigate, determine an assignable cause, and correct the issue. When 2 consecutive moving average differences are 0.3% or more and no assignable cause has been established, the Engineer may require a new ignition oven aggregate correction factor to be performed or to adjust the current factor by the average of the differences between the corrected binder content and production Plant ticket for the last 5 acceptance results.

The Contractor shall perform TSR testing within 30 days after the start of production for all design levels of HMA- and PMA- S0.5 Plant-produced mixtures, in accordance with AASHTO T 283(M). The TSR test shall be performed at an AMRL certified laboratory by NETTCP certified technicians. The compacted specimens may be fabricated at the Plant and then tested at an AMRL accredited facility. A minimum of 45000 grams of plant blended mixture and the

corresponding complete Form MAT-412s shall be submitted to the DMT for production TSR testing verification. The mixture submitted shall be representative of the corresponding mix design as determined by the Engineer. Additionally, the TSR test report and tested specimens shall be submitted to the Engineer for review. Superpave mixtures that require anti-strip additives (either liquid or mineral) shall continue to meet all requirements specified herein for binder and bituminous concrete. The Contractor shall submit the name, manufacturer, percent used, technical datasheet and SDS for the anti-strip additive (if applicable) to the Engineer.

i. Determination of Off-Test Status:

1. Superpave mixes shall be considered “*off test*” when any control point sieve, binder content, VA, VMA, and Gmm value is outside of the limits specified in Table M.04.03-4 or the target binder content at the Plant is below the minimum binder content stated in Table M.04.02-5. Note that further testing of samples or portions of samples not initially tested for this purpose cannot be used to change the status.
2. Any time the bituminous concrete mixture is considered off-test:
 - A. The Contractor shall notify the Engineer when the Plant is “*off test*” for any mix design that is delivered to the Project in any production day. When multiple silos are located at 1 site, mixture supplied to 1 project is considered as coming from 1 source for the purpose of applying the “*off test*” determination.
 - B. The Contractor must take immediate actions to correct the deficiency, minimize “*off test*” production to the Project, and obtain an additional Process Control (PC) test after any corrective action to verify production is in conformance with the specifications. A PC test will not be used for acceptance and is solely for the use of the Contractor in its quality control process.

ii. Cessation of Supply for Superpave Mixtures in Non-PWL Lots:

A mixture **shall not be used** on Department projects when it is “off test” for:

1. four (4) consecutive tests in any combination of VA, VMA or Gmm, regardless of date of production, or
2. two (2) consecutive tests in the control point sieves in 1 production shift.

As a result of cessation of supply, the mix status will be changed to PPT

iii. JMF revisions:

JMF revisions are only permitted prior to or after a production shift. A JMF revision is effective from the time it was submitted and is not retroactive to the previous test(s).

JMF revisions shall be justified by a documented trend of test results.

Revisions to aggregate or RAP specific gravities are only permitted when testing is performed at an AMRL certified laboratory by NETTCP certified technicians.

A JMF revision is required when the Plant target RAP or bin percentage deviates by more than 5% or the Plant target binder content deviates by more than 0.15% from the active JMF.

TABLE M.04.03-4: Superpave Mixture Production Requirements

	S0.25		S0.375		S0.5		S1		Tolerances
Sieve	Control Points		Control Points		Control Points		Control Points		From JMF Targets ⁽²⁾
inches	Min (%)	Max (%)	Min (%)	Max (%)	Min (%)	Max (%)	Min (%)	Max (%)	+/- Tolerance
1.5	-	-	-	-	-	-	100	-	
1.0	-	-	-	-	-	-	90	100	
3/4	-	-	-	-	100	-	-	90	
1/2	100	-	100	-	90	100	-	-	
3/8	97	100	90	100	-	90	-	-	
No. 4	72	90	-	72	-	-	-	-	
No. 8	32	67	32	67	28	58	19	45	
No. 16	-	-	-	-	-	-	-	-	
No. 200	2.0	10.0	2.0	10.0	2.0	10.0	1.0	7.0	
Pb	JMF value		JMF value		JMF value		JMF value		0.3 ⁽³⁾
VMA (%)	16.5		16.0		15.0		13.0		1.0 ⁽⁴⁾
VA (%)	4.0		4.0		4.0		4.0		1.0 ⁽⁵⁾
Gmm	JMF value		JMF value		JMF value		JMF value		0.030
Mix Temp. – HMA ⁽⁶⁾	265-325°F ⁽¹⁾		265-325°F ⁽¹⁾		265-325°F ⁽¹⁾		265-325°F ⁽¹⁾		
Mix Temp. – PMA ⁽⁶⁾	285-335°F ⁽¹⁾		285-335°F ⁽¹⁾		285-335°F ⁽¹⁾		285-335°F ⁽¹⁾		
Prod. TSR	N/A		N/A		≥80%		N/A		
T-283 Stripping	N/A		N/A		Minimal TBD by the Engineer		N/A		

Notes: ⁽¹⁾ 300°F minimum after October 15.

⁽²⁾ JMF tolerances shall be defined as the limits for production compliance.

⁽³⁾ 0.4 for PWL lots

⁽⁴⁾ 1.3 for all PWL lots except S/P 0.25 mixes. 1.1 for S/P 0.25 Non-PWL lots. 1.4 for S/P 0.25 PWL lots

⁽⁵⁾ 1.2 for PWL lots

⁽⁶⁾ Also applies to placement

**Table M.04.03-5:
Modifications to Standard AASHTO and ASTM Test Specifications and Procedures**

AASHTO Standard Method of Test	
Reference	Modification
T 30	Section 7.2 through 7.4 Samples are not routinely washed for production testing
T 209	Section 7.2 The average of 2 bowls is used proportionally in order to satisfy minimum mass requirements. 8.3 Omit Pycnometer method.
T 283	When foaming technology is used, the material used for the fabrication of the specimens shall be cooled to room temperature, and then reheated to the manufacturer's recommended compaction temperature prior to fabrication of the specimens.
AASHTO Standard Recommended Practices	
Reference	Modification
R 26	<p>All laboratory technician(s) responsible for testing PG binders shall be certified or Interim Qualified by NETTCP as a PG Asphalt Binder Lab Technician. All laboratories testing binders for the Department are required to be accredited by the AMRL. Sources interested in being approved to supply PG binders to the Department by use of an "in-line blending system" must record properties of blended material and additives used. Each source of supply of PG binder must indicate that the binders contain no additives used to modify or enhance their performance properties. Binders that are manufactured using additives, modifiers, extenders, etc., shall disclose the type of additive, percentage and any handling specifications or limitations required. All AASHTO M 320 references shall be replaced with AASHTO M 332. Once a month, 1 split sample and test results for each asphalt binder grade and each lot shall be submitted by the PG binder supplier to the Department's Central Lab. Material remaining in a certified lot shall be re-certified no later than 30 days after initial certification. Each April and September, the PG binder supplier shall submit test results for 2 BBR tests at 2 different temperatures in accordance with AASHTO R 29.</p>

**TOWN OF CHESHIRE, CONNECTICUT
REPLACEMENT OF INDUSTRIAL AVENUE BRIDGE (No. 025030) OVER UNNAMED
STREAM
PROPOSAL # 2324-17**

INDEX TO SPECIAL PROVISIONS

Items numbers and Sections listed in this index correspond to the applicable Standard Specification sections. Items with an “A” designation have supplemental information prescribed in these Special Provisions. Items without this designation shall be referenced to the appropriate Section in the Standard Specifications. This list may not be inclusive of all references to the Standard Specification. It is intended that the Standard Specification shall apply to all work defined in the Contract Documents.

1. MOBILIZATION AND DEMOBILIZATION

Section 9.75 Mobilization
0975004A Mobilization and Project Closeout

2. CONSTRUCTION STAKING

0980001A Construction Staking

3. CONSTRUCTION FIELD OFFICE

0969060A Construction Field Office, Small

4. CLEARING AND GRUBBING

Section 2.01 Clearing and Grubbing

5. SEDIMENT & EROSION CONTROL

Section 2.19 Sedimentation Control System
0219011A Sediment Control Systems at Catch Basin
Section 9.39 Sweeping for Dust Control
Section 9.43 Water for Dust Control

6. REMOVAL AND SITE PREPARATION

Section 5.03 Removal and Alterations to Existing Bridges
0503866A Removal of Existing Culvert

7. ROADWAY RECONSTRUCTION

Section 2.02 Earth Excavation
Section 2.09 Formation of Subgrade
Section 2.12 Subbase
0202216A Excavation & Reuse of Existing Channel Bottom Materials
0202217A Supplemental Streambed Channel Material
Section 3.04 Processed Aggregate Base
Section 4.06 Bituminous Concrete
0406303A Sawing and Sealing Joints
Section 8.15 Bituminous Concrete Lip Curbing
Section 12.09 Painted Pavement Markings

8. DRAINAGE

- 0101322A Catch Basin Trap Hood
- Section 5.07 Catch Basin, Manhole and Drop Inlets
- 0507001A Type 'C' Catch Basin
- Section 6.51 Culverts
- Section 6.52 Culvert Ends
- 0703029A Rounded Stone Riprap

9. BRIDGE STRUCTURE

- Section 2.03 Structure Excavation
- 0204151A Handling Water
- Section 5.06 Retaining Walls, Endwalls, and Steps
- Section 5.21 Elastomeric Bearing Pads
- Section 6.01 Concrete for Structures
- 0601091A Simulated Stone Masonry
- 0601091A Precast Concrete Three sided Rigid Frame
- Section 6.02 Reinforcing Steel
- 0707009A Membrane Waterproofing (Cold Liquid Elastomeric)
- 0728014A 3/4" Crushed Stone
- Section 7.08 Dampproofing
- 0819002A Penetrating Sealer Protective Compound

10. MAINTENANCE & PROTECTION OF TRAFFIC

- Section 8.22 Temporary Precast Concrete Barrier Curb
- Section 9.70 Trafficperson
- 0971001A Maintenance & Protection of Traffic
- Section 9.76 Barricade Warning Lights
- 0979003A Construction Barricade Type III
- Section 12.09 Painted Pavement Markings
- Section 12.20 Construction Signs

11. METAL BEAM RAIL (TYPE R-B MASH)

- 09100300A Metal Beam Rail (R-B MASH)
- 0910031A Thrie Beam Attachment
- 0911923A R-B End Anchorage

12. LOAM AND SEED

- Section 9.44 Topsoil
- Section 9.50 Turf Establishment
- 0950040A Conservation Seeding for Slopes

13. SIGNS

- Section 12.08 Sign Face Sheet Aluminum (Type IX Retroreflective Sheeting)
- 1220027A Construction Signs

14. WATER MAIN SUPPORT BRACKETS

- 1401257A Water Main Support Brackets

**TOWN OF CHESHIRE, CONNECTICUT
REPLACEMENT OF INDUSTRIAL AVENUE BRIDGE (No. 025030) OVER UNNAMED
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- Section 9.50 Turf Establishment
- 0950040A Conservation Seeding for Slopes

13. SIGN FACE – SHEET ALUMINUM (TYPE IX RETROREFLECTIVE SHEETING)

- Section 12.08 Sign Face Sheet Aluminum (Type IX Retroreflective Sheeting)

14. WATER MAIN SUPPORT BRACKETS

- 1401257A Water Main Support Brackets

ITEM #0101322A - 15" CATCH BASIN TRAP HOOD

DESCRIPTION

Work under this item shall include furnishing and installing catch basin trap hoods of the sizes specified and as directed by the Engineer at the locations and elevations shown on the plans and in conformity with the details and these specifications.

MATERIALS

The construction materials shall be as specified in "Specifications for the Construction of Sewer and Drain and Similar Structures" of the Metropolitan District (Bureau of Public Works) and as shown on the details.

CONSTRUCTION METHODS

The construction methods shall be as specified in "Specifications for the Construction of Sewer and Drain and Similar Structures" of the Metropolitan District (Bureau of Public Works).

METHOD OF MEASUREMENT

This work will be measured for payment by the actual number of catch basin trap hoods furnished, installed and accepted.

BASIS OF PAYMENT

Payment for this work will be made at the contract unit price bid per each for the size catch basin trap hood completed and accepted in place including all materials, equipment, labor and work incidental thereto.

**PAY ITEM
UNIT**

DESCRIPTION

PAY

0101322A

15" CATCH BASIN TRAP HOOD

EA

END OF SECTION

ITEM #0202216A – EXCAVATION AND REUSE OF EXISTING CHANNEL BOTTOM MATERIAL

Description: This work shall consist of excavating existing channel bottom material in areas where the channel bottom is to be disturbed and regraded to create a work area for a bridge, culvert, articulated concrete block placement or cofferdam installation. This item shall also include the stockpiling and protecting of the excavated material on the Site, subsequent placement of the stockpiled material in the channel, and the removal and proper disposal of all unused and unacceptable material.

Materials: The material for this item shall consist of the existing naturally-formed rocks, cobbles, gravel, soils and clean natural sediments from within the channel.

Any material excavated from ledge (bedrock) formations or broken from larger boulders will not be accepted. Broken concrete will not be accepted.

Construction Methods: The Contractor shall submit for the Engineer's approval a proposed location for stockpiling material. The proposed location shall be upland where disruption to the stream channel or impact to wetland areas caused by moving the excavated channel bottom material to and from the stockpile are minimized during the placement of material. The Contractor shall prepare the area approved by the Engineer, suitable in size and location for stockpiling the existing channel bottom material.

The stockpile shall be located where it can remain undisturbed for the duration of the stream channel construction and shall be protected using sedimentation control measures. The stockpile area shall be cleared and cleaned adequately to prevent mixing with underlying soil or other materials, including the use of a separation barrier such as: structural fabric, polyethylene sheeting, or similar. The stockpile area shall be adequately covered to protect the excavated channel bottom material from erosion by rain or other forces.

After clearing and grubbing, the Engineer will identify the limits of the exposed channel bottom material to be excavated under this item. The Engineer will identify the bottom limit of excavation, an amount up to but not exceeding 24 inches in depth, based upon visual inspection of the channel bottom material, unless otherwise specified in the Contract. After the limits of excavation have been determined, the Contractor shall excavate the channel bottom material, separate from any other roadway, structure, channel or unsuitable material excavation in the area. After the channel bottom material, and approved supplemental streambed channel material if needed, has been placed in the stockpile area, no other excavated or off-Site material shall be placed in the stockpile.

The stockpiled channel bottom material shall be placed at the designated location(s) to the required thickness as shown on the plans, denoted on the permit application, or as directed by the Engineer. Equipment and placement techniques shall prevent integration with the surrounding material and shall keep the channel bottom material relatively homogenous. Channel material shall be placed in a manner that replicates the original condition of the channel prior to excavation.

The Contractor shall perform all containment, diversion, or other separation of the channel flow when placing the channel bottom material to minimize sediment transport downstream.

The disposal of any surplus or unsuitable material shall be in accordance with Section 2.02. Restore the stockpile area as directed by the Engineer.

If it is agreed by the Engineer that there is an insufficient quantity of excavated channel bottom material within the Project limits, the Contractor shall obtain Supplemental Streambed Channel Material as specified under that item.

Method of Measurement: This work will be measured for payment by the number of cubic yards of channel bottom material excavated, stockpiled, maintained, and accepted, including disposal of unacceptable and surplus materials.

The Engineer will delineate the horizontal pay limit prior to the start of excavation. The vertical pay limit will be measured from the top of the existing channel bottom to the bottom of excavation required specifically for the stockpiling of channel bottom material.

Any material excavated beyond the approved horizontal pay limits or deeper than the depth of channel bottom material identified and approved by the Engineer will not be measured for payment under this item. Should such additional excavation be required to complete the Contract work, it will be measured for payment separately under the applicable pay items.

Basis of Payment: Payment for this work will be made at the Contract unit price per cubic yard for "Excavation and Reuse of Existing Channel Bottom Material." The price shall include all materials, equipment, tools and labor incidental to the preparation of the stockpile area, excavation of channel bottom, hauling of the material to the stockpile, and separation of any rock ledge or concrete debris, storing, and protecting (including but not limited to sedimentation controls and covering of excavated material).

Payment for clearing and grubbing of the approved stockpile area will be included in the item "Clearing and Grubbing."

Payment for the removal and proper disposal of all unused and unacceptable material will be in accordance with Article 1.09.04 – Extra and Cost-Plus Work.

Payment for supplemental streambed channel material will be included in the item "Supplemental Streambed Channel Material." If no item appears in the proposal, the work will be in accordance with Article 1.09.04 – Extra and Cost-Plus Work.

Payment for all containment, diversion or other separation of stream flow from the excavation of channel bottom material will be included in the item "Cofferdam and Dewatering" or special provision for "Handling Water."

Excavation of material not identified by the Engineer for stockpiling and reuse in accordance with this specification will be paid in accordance with Section 2.02.

Pay Item
Excavation and Reuse of Existing Channel Bottom Material

Pay Unit
c.y.

ITEM #0202217A – SUPPLEMENTAL STREAMBED CHANNEL MATERIAL

Description: This work shall consist of procuring, transporting and placing supplemental streambed channel material meeting the visual inspection requirements herein, along stream bank/channel improvement locations as shown on the plans or denoted on the Project's permit applications. This work shall also include any necessary temporary protection and stockpiling of the supplemental streambed channel material on the Site and removal and proper disposal of all unused material.

Materials: 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: At the start of construction, the Contractor shall prepare an area, approved by the Engineer, suitable in size and location for stockpiling the supplemental streambed channel bottom material. The Contractor shall select an upland location where disruption to the stream channel or impact to wetland areas caused by moving the supplemental streambed channel bottom material to and from the stockpile are minimized during the placement of material. The stockpile shall be located where it can remain undisturbed for the duration of the stream channel construction and shall be protected using sedimentation control measures.

The stockpile area shall be cleared and cleaned adequately to prevent mixing with underlying soil or other materials, including the use of structural fabric if required. The stockpile area shall be adequately covered to protect the supplemental streambed channel material from erosion by rain or other forces. After the supplemental streambed channel material and the excavated channel bottom material to be reused have been placed in the stockpile areas, no other excavated or off-Site material shall be placed in the stockpiles.

The reused and supplemental streambed channel material shall be placed at the designated location(s) to the required thickness as shown on the plans or denoted on the permit application, or as directed by the Engineer. Equipment and placement techniques shall prevent integration with the surrounding material and shall keep the channel bottom material relatively homogenous. Reused and supplemental streambed channel material shall be placed in a manner that replicates the original condition of the channel prior to excavation.

The Contractor shall perform all containment, diversion, or other separation of the channel flow when placing the reused and supplemental streambed channel material to minimize sediment transport downstream.

The disposal of any surplus or unsuitable material shall be in accordance with Section 2.02. Restore the stockpile area as directed by the Engineer.

Method of Measurement: Work under this item shall be measured for payment as provided under Article 1.09.04 – Extra and Cost-Plus Work.

The sum of money shown on the estimate and in the itemized proposal as “Estimated Cost” for this work will be considered the price bid even though payment will be made only for actual work performed. The estimated cost figure is not to be altered in any manner by the bidder. Should the bidder alter the amount shown, the altered figures will be disregarded and the original price will be used to determine the total amount bid for the Contract.

Basis of Payment: This work will be paid for under Article 1.09.04 – Extra and Cost Plus Work.

Payment for clearing and grubbing of the approved stockpile area will be included in the item “Clearing and Grubbing.”

Payment for excavation and reuse of existing channel bottom material will be included in the item “Excavation and Reuse of Existing Channel Bottom Material.”

Payment for all containment, diversion or other separation of stream flow from the excavation of channel bottom material will be included in the item “Cofferdam and Dewatering” or special provision for "Handling Water."

Pay Item	Pay Unit
Supplemental Streambed Channel Material	est.

ITEM #0204151A - HANDLING WATER

Description: Work under this item shall consist of designing, furnishing, installing, maintaining, removing and disposing of a temporary water handling system. This may include water-handling-cofferdams (temporary barriers), bypass pipes, bypass pumps/hoses, temporary energy dissipation, sumps, drainage channels, and equipment and work necessary for dewatering.

A temporary water handling system redirects surface water beyond, through, or around the limits of construction to allow work to be done in the dry.

Materials: The materials required for this work shall be as shown on the plans, on the accepted working drawings, or as ordered by the Engineer.

Construction Methods: The Contractor shall prepare and submit written procedures for handling water. Working drawings, in accordance with Article 1.05.02, shall also be prepared and submitted.

The Contractor shall consider stream conditions and water elevations associated with the Site to determine the type of temporary water handling system required to redirect water away from work being performed. The system shall be designed to be compatible with the stage construction and Maintenance and Protection of Traffic, as indicated in the Contract, and shall conform to Section 1.10.

The Contractor shall be responsible for maintenance of the water handling system. If the system becomes damaged or displaced during construction, the system shall be corrected as required.

Unless otherwise provided or directed, all temporary water handling system components shall be removed and disposed of in an acceptable manner when no longer required.

Method of Measurement: The work under this item, being paid on a lump sum basis, will not be measured for payment.

Basis of Payment: This work will be paid for at the Contract lump sum price for "Handling Water" complete and accepted, which price shall include designing (including submittals and working drawings), furnishing, installing, maintaining, removing, and disposing of all temporary water handling system components as are necessary for completion of the work. This price shall include all materials, equipment, tools, labor and work incidental thereto.

A schedule of values for payment shall be submitted to the Engineer for review and comment.

Pay Item	Pay Unit
Handling Water	l.s.

ITEM #0219011A – SEDIMENT CONTROL SYSTEM AT CATCH BASIN

Description: This work shall consist of furnishing, installing, cleaning, maintaining, replacing, and removing sedimentation control at catch basins, at the locations shown on the plans and as directed by the engineer.

Materials: Sack shall be manufactured from a specially designed woven polypropylene geotextile sewn by a double needle machine, using a high strength nylon thread. Sack shall be manufactured by one of the following or an approved equal:

Siltsack®

SI Geosolutions:
www.sigeosolutions.com
(800)621-0444

Dandy Sack™

Dandy Products Inc.
P.O. Box 1980
Westerville, Ohio 43086
Phone: 800-591-2284
Fax: 740-881-2791
Email: dlc@dandyproducts.com
Website: www.dandyproducts.com

FLeXstorm Inlet Filters

Inlet & Pipe Protection
24137 W. 111th St - Unit A
Naperville, IL 60564
Telephone: (866) 287-8655
Fax: (630) 355-3477

The sack will be manufactured to fit the opening of the catch basin or drop inlet. Sack will have the following features: two dump straps attached at the bottom to facilitate the emptying of sack and lifting loops as an integral part of the system to be used to lift sack from the basin. The sack shall have a restraint cord approximately halfway up the sack to keep the sides away from the catch basin walls, this cord is also a visual means of indicating when the sack should be emptied. Once the strap is covered with sediment, the sack should be emptied, cleaned and placed back into the basin.

Construction Methods: Installation, removal, and maintenance shall be per manufacturer instructions and recommendations.

Method of Measurement: Sediment Control at Catch Basin will be measured as each installed, maintained, accepted, and removed. There will be no separate measurement for maintenance or replacement associated with this item.

Basis of Payment: Sediment Control at Catch Basin will be paid for at the contract unit price each complete in place and accepted, which price shall include all maintenance throughout construction, materials, equipment, tools, and labor incidental thereto.

Description

Sediment Control at Catch Basin

Pay Unit

EA

ITEM #0406303A – SAWING AND SEALING JOINTS

Work under this item shall meet the requirements of Section 4.06, amended as follows:

4.06.01–Description:

Work under this item shall include sawing and sealing of joints.

4.06.03–Construction Methods:

Sawing and Sealing Joints in Bituminous Concrete Pavement: Work under this item shall consist of making a straight-line saw cut transversely across the final course of bituminous concrete pavement at the locations shown on the plans. The saw cut shall be immediately sealed with a joint seal material. The sawing and sealing shall commence within one week of the completion of any final course of pavement and be a continuous operation until all joints have been completed.

The saw cut will be made by using diamond saw blades with a gang blade arrangement in order to achieve the joint detail as shown on the plans. The saw cut will be in a straight line across the pavement directly over the joint. The sawed joints shall be cleaned with compressed air to the satisfaction of the Engineer.

Immediately following the cleaning, the joint seal material shall be installed. When cooled, the top of the sealant material shall be recessed a minimum of 1/16 inch (1.6 millimeters) but not greater than 1/8 inch (3.2 millimeters) below the adjacent pavement surface. The roadway shall not be opened to traffic until the material has become tack free. Any depression in the sealer greater than 1/8 inch (3.2 millimeters) shall be brought up to the specified limit by further addition of joint seal material. Care shall be taken during the sealing operation to ensure that overfilling and spilling of material is avoided.

Any reflective cracking attributable to improper joint referencing or construction shall be repaired at the expense of the Contractor, in a manner approved by the Engineer for a period of one year from the date of completion of any sawed and sealed portion of final pavement.

4.06.04–Method of Measurement:

Sawing and Sealing Joints: The quantity of sawed and sealed joints measured for payment will be the actual number of linear feet of joints sawed and sealed in the bituminous concrete pavement surface accepted by the Engineer.

4.06.05–Basis of Payment:

The sawing and sealing of joints will be paid for at the Contract unit price per linear foot for “Sawing and Sealing Joints.”

ITEM #0503866A – REMOVAL OF EXISTING CULVERT

Description:

This item shall consist of excavating and removing the existing corrugated steel arch pipes, overburden material including existing riprap and boulders, the material between, and 18-inches below the existing corrugated steel arch pipes to the limits shown on the plans. The work shall also include removal of concrete cutoff wall remains encountered below the existing corrugated steel arch pipes.

Construction Methods:

- 1. Submittals:** The Contractor shall prepare and submit written procedures and working drawings, if applicable, in accordance with 1.05.02. The submittals shall address the following:
 - Proposed equipment and removal method(s)
 - Operating and storage location(s) of equipment and materials
 - Containment and disposal of debris
- 2. Excavation:** Excavation shall be made in conformity with the requirements of the plans and as ordered by the Engineer. Where rock or concrete is encountered, it shall be excavated to the limits and depths shown on the plans. Excavation shall be performed in accordance with 2.02.03 of Form 818.
- 3. Disposal of Debris:** The contractor shall properly dispose of all construction debris off-site in accordance with 2.02.03-5.

Method of Measurement:

This work is being paid on a lump sum basis and shall not be measured.

Basis of Payment:

This work will be paid for at the Contract lump sum price for “Removal of Existing Culvert (Site No. 1)” as shown on the plans which price shall include all equipment, tools, and labor incidental to the complete removal of the existing pipes (including excavation), overburden material, riprap, and boulders from existing grade to 18-inches below the existing corrugated steel arch pipes including remains of concrete cutoff walls where encountered and proper disposal thereof.

Pay Item	Pay Unit
Removal of Existing Culvert (Site No. 1)	l.s.

ITEM#0507001A - TYPE "C" CATCH BASIN (COMPLETE)

All of the provisions of Section 5.07 of the Standard Specifications shall apply, except as amended and/or supplemented herein:

Article 5.07.01 – Description: Add the following:

This item shall also include earth excavation, bedding and backfill for the catch basin.

Article 5.07.02 – Materials: Add the following:

Bedding material shall conform to Section M.08.21.

Article 5.07.04 – Method of Measurement: Replace with the following:

This work shall be measured for payment per each catch basin furnished and installed complete.

Article 5.07.05 – Basis of Payment: Replace with the following:

The cost for this work shall be included in the contract unit price bid per each "Type "C" Catch Basin (Complete)." Included in the cost of this work shall be all materials, labor and equipment necessary for the complete installation of the storm drain catch basin as shown on the plans and described herein.

ITEM #0601091A – SIMULATED STONE MASONRY

Description:

This item shall consist of furnishing and installing textured and colored formed concrete surfaces using simulated stone molds (form liners) and a color staining system designed to duplicate closely the appearance of natural stone as described herein of the type and size called for on the plans, including accessories and hardware and in accordance with these specifications. The architectural form liner simulated stone masonry shall be monolithically formed with the concrete.

Materials:

1. Quality of Work: The process of form lining, texturing and color staining of the hardened concrete shall be performed in strict accordance with the manufacturer's written recommendations and as approved by the Engineer.
2. The design and pattern of form lined concrete surfaces shall follow the layout shown on the contract plans and the manufacturer's standard drawing. Final coloration of cast stone concrete surfaces shall accurately simulate the appearance of real stone. It shall also demonstrate the colors that may be apparent from aging, such as staining from oxidation, rusting and/or organic staining from soil and/or vegetation.
3. Quality Assurance:
 - a. Manufacturer of Simulated Stone Molds and Custom Coloring Systems shall have five years of experience making custom simulated stone molds and color stains to create formed concrete surfaces to match natural stone shapes, surface textures and colors.
 - b. Contractor/Subcontractor (installer) shall have five years of experience pouring vertically formed architectural concrete. The installer shall be trained in the manufacturer's special techniques in order to achieve realistic surfaces.
 - c. Color Stain System Application shall be performed by the manufacturer or manufacturer's authorized representative. The stain shall be applied by an applicator having, and able to demonstrate, experience with similar projects.
 - d. A Pre-installation Meeting shall be scheduled with the manufacturer's representative, installer, designer, and the Municipality's inspection personnel (if applicable) to assure understanding of simulated stone masonry use, patterning, color staining application, and to coordinate the work. Failure to request and conduct a pre-installation meeting may result in the work being rejected.
4. Protection: The contractor is solely responsible for construction methods, means, techniques, and for construction site safety precautions. The contractor shall conduct all construction operations in conformance with all applicable local, state and federal safety laws, rules,

regulations and codes. All Material Safety Data Sheets (MSDS) shall be available for inspection.

5. Manufacturer: Subject to compliance with the design and specification requirements, the contractor shall provide simulated stone masonry and color staining system as manufactured by:
 - Concrete Rock Surfaces, LLC, Bethel, Connecticut (Pattern: Northeast Drystack)
 - Custom Rock Formliner, St. Paul, Minnesota (Pattern: New England Drystack)
 - Or approved equivalent

6. Materials:
 - a. Simulated Stone Molds (form liners) shall be made of reusable elastomeric form liners, made of high-strength urethane and cutable form liners, and easily attachable to forms. Form liners shall leave crisp, sharp definition of the architectural surface. Recurring textural configurations exhibited by repeating, recognizable shadow patterns shall be prevented by proper casting of form liner patterns. Form liners shall not compress more than 1/4 inch when concrete is poured at a rate of 10 vertical feet per hour. Form liners shall be removable without causing deterioration of surface or underlying concrete. No substitutions will be permitted.
 - b. The form liner shall conform to the pattern and vertical wall joint spacing shown on the plans. The form liner shall have a 2” relief and resemble random dry stack field stone. The color staining system shall be selected to resemble a locally sourced New England dry stack stone wall.
 - c. The form liner shall be designed to permit 180-degree rotation and interconnection with itself or another pattern liner of differing horizontal dimension. Maximum relief of pattern and the average relief shall be as shown on the contract plans. The simulated stone pattern shall vary in a random manner in the coursing parameters to prevent noticeable multiple duplicate pattern repetition and avoid stacked joints. The pattern shall be made continuous at all corners and angle points.
 - d. In addition to orthogonal surfaces, the form liner shall be capable of forming curved and/or battered surfaces, if shown on the plans, while maintaining the dimensioned coursing and plumb vertical joints without distortion.

7. Release Agent: The release agent shall be compatible with simulated stone masonry and with color staining system to be applied to surface, as recommended by the manufacturer.

8. Form Ties: Form ties shall be designed to separate at least one inch back from finished surface, leaving only a neat hole that can be plugged with compatible patching material.

9. Color Stain: The color stain shall be a penetrating stain mix as provided by the manufacturer, shall achieve color variations present in the natural stone being simulated for the project, as

approved by the Engineer and in accordance Items 1 and 2 above. The stain shall create a surface finish that is breathable (allowing water vapor transmission), and that resists deterioration from water, acid, alkali, fungi, sunlight or weathering. The stain mix shall be a water borne, low V.O.C. material, less than 180 grams/liter, and shall meet requirements for weathering resistance of 2000 hours accelerated exposure measured by weather-o-meter in accordance with ASTM G23 with 3-bulb. Scrub test 1000 revolutions. Abrasive resistance (Tabor-CF-10) 500 cycles. Adhesion ASTM D3359 1.00 MM cross cuts on glass pass 3 or higher on a scale of 1 to 5. The contractor shall supply information pertaining to chemical resistance in accordance with ASTM D1308.

Construction Methods:

1. Shop Drawings and Submittals: Before fabricating any materials, the contractor shall submit shop drawings, product data sheets and samples to the Engineer for approval in accordance with Article 1.05.02 for the materials listed in Item 3 below. These drawings and submittals shall include, but not be limited to, the following information: manufacturer's name, listing of product compliance with referenced specification standards, complete details of the assemblies, material designations, nominal hardness of appropriate materials, design loads, quantities and locations.
2. Field Measurements: Prior to ordering or fabricating any materials, the contractor shall take complete and accurate field measurements.
3. Submittals:
 - a. Catalog cuts, manufacturer's literature, and technical data for the materials specified herein, including but not limited to simulated stone mold pattern, form liner, release agent, concrete patching material and color charts for staining of hardened concrete.
 - b. Photographs: Color photographs of three (3) similar past projects of the manufacturer. Include project names, locations and a telephone number of the previous projects Owner's representatives.
 - c. Samples: Form ties, sample and description, showing method of separation when forms are removed.
 - d. Plan, elevation and details to show overall pattern, joint locations, form tie locations, and end, edge and other special conditions.
4. Scheduling: Schedule color stain application after adjacent earthwork is completed, to avoid contaminating or damaging the surface. Place topsoil and establish turf after staining application is completed. Coordinate the work to prevent interference with other trades.
5. Test Panels: At least 30 days prior to construction of the first textured and colored concrete surfaces, the Contractor shall prepare a test panel with a full-scale field mock-up of the formed concrete surface (4' x 4') showing the proposed color, pattern, joint treatment and layout as

shown on the plans or in the Manufacturer's catalog. If the resulting appearance is not acceptable to the Engineer, adjustments shall be made to the color, pattern, finished texture and/or joint treatment and another test panel shall be prepared for inspection. The accepted mock-up shall provide the standard for the work. Failure to provide a test panel and obtain engineers' approval prior to performing the work may result in rejection of the work.

6. Installation:

a. Contractor's responsibilities:

1. Install liners. Form liners (pattern) shall match front-to-side and side-to-back.
2. Apply manufacturer release agent.
3. Install concrete as specified elsewhere in the Specifications.
4. Remove form liner.
5. Patching, grinding and bush hammering of form liner seams as required.
6. Provide scaffolding and heat as required, and clean water for power washing of the hardened concrete prior to the staining process.
7. Power washing and patching of form liners.
8. Return of form liners to manufacturer.

b. Manufacturer's responsibilities:

1. Ship and supply form liners and release agent.
2. Technical information.
3. Power wash wall.
4. Apply the color staining process.

7. Liner to Form Attachment System: Securely attach form liners to forms with wood or sheet metal screws; threaded inserts added to the back of the form liner for bolts to fasten the form liner through the forms, or; bolted through the face of the form liner with flat head bolts inserted in a pattern joint and through the form liner and forming system. Construction adhesives may be used, but not on reusable forms. Place adjacent form liners with less than 1/4-inch separation between form liners.

8. Release of Form Liners From Hardened Concrete: Only manufacturer recommended form release agents (Lark V or Orna Con) shall be utilized and shall be applied to the form liners before the concrete is poured. Release agents shall be applied in strict accordance with release agent manufacturer recommendations. Hand-charged sprayers will only be allowed if a thin uniform coating of release agent is obtained on the form liner.

Remove the form liner from the wall within 24 hours of pouring the concrete. The form liners may be detached from the forms and then removed from the concrete, or they may remain attached to the forms and the entire forming system removed from the concrete. Remove the form liners from the top, down. Curing of concrete may be accomplished with form liners and forms placed back against the wall after the initial detachment. Other

means of curing can also be used including curing blankets and/or plastic. Curing compounds shall not be used.

9. Care and Cleaning of Form Liner: Form liners shall be cleaned the same day they are removed from the wall with a power wash and mild detergent. Synthetic brushes with stiff bristles may be used on stubborn areas. Mild acid washes may also be used. Solvents shall not be used. If necessary, patching of holes shall be performed with 100% clear silicone caulk. Form liners shall be stored inside or under a protective, non-transparent cover, in a vertical, upside-down position.

11. Wall Patching and Preparation: After form liners are removed from the hardened concrete, the textured uncolored surface shall be prepared for color staining. All holes larger than 3/4" in greatest principal dimension shall be filled with concrete patching material with latex or acrylic bonder, as approved by the Engineer. All honeycombed areas shall be filled and textured to match surrounding areas. Seam lines and other unnatural protrusions shall be ground down to match adjacent areas with a hand-held power grinder using discs made for concrete. Grinding of seams shall be performed immediately after removal of the form liners. Perform final bush hammering to blend defects and ground areas into the final rock texture. In particular, the process of wall patching and preparation shall be subject to approval of the manufacturer and Engineer. Failure to patch and prepare the wall prior to staining may result in the work being rejected.

12. Color Staining: The hardened concrete shall be a minimum of 30 days old before color staining is applied. Power wash the wall to free it from laitance, dirt, oil and other objectionable materials. After the wall has dried, the color staining process is applied using colors approved by the Engineer. Color staining shall be applied in such a way that the stones shall have individual colorations from one to the other. Water-based stains shall be used in air temperatures between 50 degrees F and 100 degrees F. Solvent-based stains shall be used in air temperatures of 50 degrees F and below, but in no case when the temperature of the hardened concrete is 40 degrees and falling. During color staining operations the Contractor shall protect property, pedestrians, vehicular and other traffic upon, underneath or in the vicinity of the walls against damage or disfigurement from errant stain materials. Comply with all environmental regulations regarding surface cleaning, stain application, ground and watercourse protection and disposal protection of waste materials. Refer to Section 1.10 of the Specifications.

Color: Color shall include a minimum of five color shades including earth tones to simulate a typical New England dry stack stone wall. Coloring shall be applied to simulated stones individually and the colors and/or tones shall be varied randomly so as to emulate the variations found in natural field stone. The test panel shall exhibit the Contractor's proposed color scheme and staining pattern.

Any areas lacking a uniform appearance (consistent with the approved sample) shall be recoated to the satisfaction of the Engineer at no additional cost to the Municipality.

13. Simulated Stone Molds Preparation: Clean and make free of buildup prior to each pour. Inspect for blemishes and tears. Repair if needed following manufacturer's recommendations.

Method of Measurement:

This work shall be measured for payment by the actual number of square yards of the face area of accepted simulated stone masonry, poured in place, completed within the neat lines as shown on the plans, or as ordered by the Engineer.

Basis of Payment:

This work will be paid for at the contract unit price per square yard for "Simulated Stone Masonry", complete in place, which price shall include all equipment, formwork molds, test panels, and all other tools and labor incidental thereto.

This work shall also include the cost of furnishing and application of the color stain system to the simulated stone masonry surface.

Concrete shall be paid for under the item that it is being formed, headwalls, wingwalls, etc.

<u>Pay Item</u>	<u>Pay Unit</u>
Simulated Stone Masonry	SY

ITEM #0601971A – PRECAST CONCRETE THREE SIDED RIGID FRAME

Description: Work under this item consists of furnishing and installing a precast concrete three-sided rigid frame 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, provide a compressive strength of 8,000 psi, and shall be submitted to the Engineer. The concrete shall achieve a minimum compressive strength of 5,000 psi prior to stripping. The concrete shall achieve full compressive strength prior to shipping.
- 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 concrete three sided rigid frame 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 three sided rigid frame 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 frame 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) **Precast Concrete Three Sided Rigid Frame Thicknesses:** The precast concrete three sided rigid frame thicknesses 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 frame 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 frame section.
- 4. Pre-assembly of Frame Sections:** Frame 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 frame sections and components shall be in accordance with the plans and the following:
- (a) The installation of the precast concrete three sided rigid frame 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) All frame 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 precast concrete three sided rigid frame 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.
 - (c) After its installation, any frame 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.
 - (d) 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 precast concrete three sided rigid frame 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.

- (e) Geotextile shall be placed on the exterior surface of the roof and walls of the precast concrete three sided rigid frame over the lap joints between the precast concrete three sided rigid frame sections. The geotextile shall extend 12 inches to each side of the joint and shall be attached to the precast concrete three sided rigid frame with silicone caulk.

6. Erection Tolerances: The Contractor shall be responsible for ensuring the overall length of the precast concrete three sided rigid frame meets the layout requirements on the plans within all acceptable tolerances as specified in the contract.

Method of Measurement: The work for the precast concrete three sided rigid frame will not be measured for payment but will be paid for by the linear foot of precast concrete three sided rigid frame as dimensioned on the plans along each cell, completed and accepted.

Basis of Payment: The work for the precast concrete three sided rigid frame will be paid for at the Contract unit price per linear foot for “Precast Concrete Three Sided Rigid Frame,” completed in place and accepted, which price shall include the formation of weep holes through the walls and the pipe necessary for their installation and all equipment, materials, tools and labor incidental to the manufacture, shipping, repair and installation of the precast concrete three sided rigid frame of the specified size(s) at the locations shown on the plans.

Pay Item	Pay Unit
Precast Concrete Three Sided Rigid Frame	l.f.

ITEM #0703029A – ROUNDED STONE RIPRAP

Description: This work shall consist of the placement of native rounded stone material for the stabilization/protection of the drainage channels discharging to the Still River.

Materials:

1 – General: The materials for this item shall consist of the existing and/or naturally-formed boulders, cobbles and gravel from within the Mountain Brook channel and adjacent floodplain areas. The material shall be sound, tough, and durable.

This material should be from areas where the action of the stream has already washed the soil and fine material from the deposits of aggregate. The total content, by weight, of particles smaller than 0.08" (sand, silt, clay and soil) and organic material shall not exceed 10%.

Rock excavated from ledge (bedrock) formations, or broken from larger boulders, will not be accepted. Broken concrete will not be accepted.

If an insufficient quantity of material is available from "Unclassified Excavation" at the Still River site, the Contractor shall furnish additional material meeting the requirements of this specification from other sources within the project limits, or from another approved source. Material the Contractor proposes to bring to the site from another source must be inspected and approved by the Engineer at the source prior to the excavation or hauling of the material.

Bank run gravel shall be uncrushed, conforming to the requirements of M.02.01—2.

2—Riprap: The material shall conform to the following gradation requirements:

Stone Size	% of the Weight (Mass)
Over 10"	0
6" to 10"	20-50
4" to 6"	30-60
2" to 4"	30-40
1" to 2"	10-20
Less than 1"	0-10

Additional material as allowed in Subarticle 1, including uncrushed bank run gravel, may be mixed with the available on-site material to produce the required gradation.

Construction Methods:

1—General:

The Contractor shall not place any Rounded Stone Riprap, unless the Engineer, Environmental Inspector, and/or a representative of the City is present. Coordinate all plans, material selections, and work efforts with those personnel prior to beginning any of this work. The Contractor must cooperate with City personnel to produce the desired effects. Channel lines and grades,

materials, and construction methods may be subject to revision based on the recommendations of environmental personnel and field conditions.

Mix materials from the site and additional material, as required, to product the required gradation. Shape the channel bottom to be protected along its entire length prior to placing any geotextile or riprap material.

2—Riprap: Place riprap to its full course thickness in one operation in such a manner as to produce a reasonably well-graded mass of rock without causing displacement of or damage to the underlying material. The finished surface shall be free from pockets of small stones and clusters of larger stones. Do not place this material by methods likely to cause segregation of the various sizes of stone. Rearrange individual stones by mechanical or hand methods to the extent necessary to obtain a reasonably well-graded distribution of the specified stone sizes. Complete the course to the specified thickness and to the lines and grades as shown on the plans or as ordered by the Engineer or City representative.

Method of Measurement: The quantity of Rounded Stone Riprap measured for payment shall be the number of cubic yards of native material placed and accepted and the thickness as shown on the plans.

Basis of Payment: This work will be paid for at the contract unit price per cubic yard for "Rounded Stone Riprap", complete in place, including all incidental materials, equipment, tools and labor. The price shall also include the following: furnishing all additional materials required to produce the necessary quantity and gradation, including bank run gravel and cobbles; all required mixing of on-site and additional materials; hauling of additional materials to the site; and placing and shaping the materials as directed.

Excavation and stockpiling of native stream bottom material will be paid as "Unclassified Excavation".

All work required for handling water as described in the special provision for Item #0204151A – "Handling Water" will be included in the lump sum price for that item.

ITEM #0707009A - 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 followed by the membrane coating which is applied in one or two layers for a minimum total thickness of 80 mil, an additional 40 mil membrane layer with aggregate broadcast into the material while still wet, and a bond coat of bitumen-based adhesive material.

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.

Materials Certificate: The Contractor shall submit to the Engineer a Materials Certificate for the primer and membrane and bond coat material in accordance with the requirements of Article 1.06.07.

Construction Methods: At least ten days prior to installation of the membrane system, the Contractor shall submit to the Engineer, 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, and placing of aggregated coat. 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 in the plans strictly in accordance with the Manufacturer's recommendations.

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 representative shall perform all required quality-control testing and remain on the Project site until the membrane has fully cured.

All quality-control testing, including verbal direction or observations on the day of the installation, shall be recorded and submitted to the Engineer for inclusion in the Project's records. A submittal of the quality-control testing data shall be received by 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 start of construction. 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 providing the substrate is above the dew point. Outside of this range, the Manufacturer shall be consulted.

The Applicator shall be provided with adequate disposal facilities for non hazardous 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 job 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 products 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. The surface profile of the prepared substrate is not to exceed 1/4 inch (peak to valley) and areas of minor surface deterioration of 1/2 inch and greater in depth shall also be repaired. The extent and location of the 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 in the same manner.

All steel components to receive membrane waterproofing shall be blast cleaned in accordance with SSPC SP6 and 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 Applicator at the job 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 day per bridge. Additional tests may be required if atmospheric conditions change and retest of the substrate moisture content is warranted.

The membrane system shall not be installed on substrate with a moisture content greater than that recommended by the system's manufacturer, but shall not be greater than 6%, whichever is less.

- (b) Random tests for adequate tensile bond strength shall be conducted 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 bridge.

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 a new primer applied at the Contractor's expense, as directed by Engineer.

- (c) Cracks and grouted joints shall be treated in accordance with the Manufacturer's recommendations, as approved or directed by the Engineer.

6. Application:

- (a) The System shall be applied in four distinct steps as follows:
 - 1) Substrate preparation and gap/joint bridging preparation
 - 2) Priming
 - 3) Membrane application
 - 4) Membrane with aggregate
- (b) Immediately prior to the application of any components of the System, the surface shall be dry (see Section 5a 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 may be continued up the vertical, as shown on the plans or as 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 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: The waterproofing membrane shall consist of one or two coats for a total dry film thickness of 80 mils. If applied in two coats, the second coat shall be of a contrasting color to aid in quality assurance and inspection.

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 typically 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.

Spark Testing: Following application of the membrane, test for pin holes in the cured membrane system over the entire application area in accordance with ASTM D4787- "Continuity Verification of Liquid or Sheet Linings Applied to Concrete Substrates." Conduct the test at voltages recommended by the manufacturer to prevent damage to the membrane.

Repair the membrane system following destructive testing and correct any deficiencies in the membrane system or substrate noted during quality-control 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. A continuous layer shall be obtained over the substrate with a four inches 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 exposed area. 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) Remove 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.
 - (j) Bond Coat:

Prior to application of a bituminous concrete overlay, the aggregated finish shall be coated with a bonding material. The bonding material shall be per the membrane waterproofing manufacturer's recommendations.
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 items that do not meet the requirements of the Engineer shall be addressed at this time.

Method of Measurement: The quantity to be paid for under this item shall be the number of square yards of waterproofed surface completed and accepted.

Basis of Payment: This item will be paid for at the contract unit price per square yard of "Membrane Waterproofing (Cold Liquid Elastomeric)," complete in place, which price shall include all surface preparation, furnishing, storing and applying the system, technical representative and quality control tests, and any necessary repairs and remediation work as well as all materials, equipment, tools, labor incidental to this work.

<u>Pay Item</u>	<u>Pay Unit</u>
Membrane Waterproofing (Cold Liquid Elastomeric)	s.y.

ITEM #0728014A – 3/4" CRUSHED STONE

Description:

Work under this item shall consist of furnishing and placing 3/4" Crushed Stone where shown on the plans or directed by the Engineer.

Materials:

Gravel or reclaimed miscellaneous aggregate shall meet the requirements of M.01.02 for 3/4" crushed stone.

Construction Methods:

Where 3/4" Crushed Stone is used, it shall be deposited in layers not over 6 inches deep, with each layer thoroughly compacted before the addition of other layers.

Method of Measurement:

3/4" Crushed Stone will be measured in place after compaction within the payment lines shown or specified by the Engineer.

Basis of Payment:

This work will be paid for at the Contract unit price per cubic yard for "3/4" Crushed Stone," complete in place, which price shall include all materials, tools, equipment and labor incidental thereto.

<u>Pay Item</u>	<u>Pay Unit</u>
3/4" Crushed Stone	c.y.

ITEM #0819002A - 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 where shown on the plans, to provide a hydrophobic barrier against the intrusion of moisture. 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 from overspray. Penetrating sealer shall not be applied to concrete surfaces that have been previously treated with coatings or curing compounds that would hinder penetration of the sealer into the concrete.

Materials: The penetrating sealer shall be a single component, 100% silane or silane siloxane from the list of materials below. The material shall be selected in anticipation of the expected ambient and surface temperature at the time of installation.

The following products may be used when ambient and surface temperatures are 40°F and above:

SIL-ACT ATS-100 (Silane)
Advanced Chemical Technologies, Inc.
9608 North Robinson Ave.
Oklahoma City, OK 73114
405-843-2585
www.advchemtech.com

Armor SX 5000 EXT-100 or SX 5000 WB (Silane Siloxane)
Foundation Armor, LLC.
472 Amherst St. STE 14
Nashua, NH 03063
866-306-0246
www.foundationarmor.com

Aquinil Plus 100 (Silane)
ChemMasters
300 Edwards Street
Madison, OH 44057
440-428-2105, 800-486-7866
www.chemmasters.net/Aquanil100.php

The following product may be used when ambient and surface temperatures are 20°F and above:

Certi-Vex Penseal 244 100% (Silane)
Vexcon Chemicals
7240 State Road
Philadelphia, PA 19135
888-839-2661
www.Vexcon.com

Construction Methods:

Submittals: The Contractor shall submit to the Engineer Safety Data Sheets (SDS) and product literature for the selected product. The literature shall include written instructions how to apply the product to vertical and horizontal surfaces, and where required, overhead surfaces.

The Contractor shall submit to the Engineer, in accordance with Article 1.05.02, written procedures for cleaning the concrete surfaces. 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 protecting the deck and curb to which membrane waterproofing will be applied. Should the membrane already be present, the submittal shall address protecting the membrane. It shall also indicate how vegetation 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 conditions that need repair or surfaces that may require special attention or cleaning procedures. Such observations shall be addressed in the written procedures.

Surface Preparation: Concrete surfaces to which penetrating sealer will be applied shall be dry, clean and free of grease, oil and other surface contaminants. New concrete and newly placed repair concrete shall be allowed to cure for at least 28 days before applying sealer. After rain or water cleaning, allow existing concrete surfaces to dry for at least 8 hours before applying sealer. 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.

Application: Application of the sealer can only begin after the Engineer evaluates the concrete surfaces for cleanliness and moisture, and determines that conditions are appropriate for application.

The sealer shall saturate the concrete surface with a rate of application of 200 square feet per gallon of sealer. The dispersion shall run six to eight inches down a vertical surface from the spray pattern. The maximum run-down is 12 inches. The Contractor shall monitor and record the number of square feet per gallon of sealer used to verify that the required application rate is being met. Additional sealer may be needed if surfaces are porous, rough or textured.

The Engineer will inspect the concrete surface during application and after the sealer has had adequate time to penetrate. As a test, water sprayed from a bottle on the sealed surface shall bead up and not be absorbed. Should water be absorbed into the concrete at a test area, additional areas shall be tested to determine which areas should receive additional application of sealer. The

Contractor shall apply additional sealer to the identified areas until absorption of water is prevented.

Method of Measurement: This work will be measured for payment by the actual number of square yards of concrete, coated completely and accepted, within the designated limits. The area will be measured once, regardless of the number of applications required.

Basis of Payment: This work will be paid for at the Contract unit price per square yard for “Penetrating Sealer Protective Compound,” complete, which price shall include all equipment tools, labor and materials, incidental thereto, including the preparation of the concrete surfaces and proper disposal of debris.

Pay Item	Pay Unit
Penetrating Sealer Protective Compound	s.y.

ITEM #0910031A – THRIE BEAM ATTACHMENT

ITEM #09100300A – METAL BEAM RAIL (R-B MASH)

Work under this item shall meet the requirements of Section 9.10, amended as follows:

9.10.02–Materials: *Add the following:*

Primer: Provide factory-applied polyamide thermosetting epoxy prime coat over hot-dipped galvanized steel.

1. Primer shall be a polyamide epoxy powder primer with 0 VOC.
2. Apply primer within 12 hours after galvanizing or blasting at the same galvanizer’s plant in a controlled environment meeting applicable environmental conditions and as recommended by the primer coating manufacturer. Cure schedule shall be as recommended by the manufacturer.
3. Polyamide epoxy powder primer shall be applied at 1.8-3 mils DFT and certified OTC/VOC compliant and conform to EPA and local requirements.
4. Polyamide epoxy powder primer shall meet or exceed the following performance criteria as stipulated by the coatings manufacturer:
 - a. Cure Schedule: 10 min. at 400°F
 - b. Specific Gravity: 1.60 +/- .05
 - c. Coverage at 1.0 Mil 120.4 sq. ft./ lb.
 - d. 60° Gloss: 53-67 (ASTM D-523)
 - e. Adhesion: 5B (ASTM D-3359)
 - f. Flexibility: Pass 1/8 “ Mandrel Bend (ASTM D-522)
 - g. Pencil Hardness: 2H-3H (ASTM D-3363)
 - h. Impact Resistance: 80 in-lbs direct (ASTM D-2794) 80 in-lb reverse
 - i. Typical Environmental Properties on 20 gauge Bonderite 1000 Panels
 - Salt Spray 1000 hours (ASTM B-117) max 1/8” creepage
 - Humidity 1000 hours (ASTM D-4585) Slight gloss and color change

Topcoat: Provide factory applied Super Durable Urethane powder topcoat in specified color and gloss range per approved samples. The final color, to be agreed upon by the Town, shall resemble the color of weathering steel.

1. Super Durable Urethane Powder Topcoat shall be applied over primer per the manufacturer’s recoat schedule at the same galvanizer’s plant in a controlled environment meeting applicable environmental conditions as recommended by the coating manufacturer. Cure schedule shall be as recommended by the manufacturer.
2. Super Durable Urethane Powder Topcoat shall be applied at 1.8-3 mils DFT and certified OTC/VOC compliant and conform to EPA and local requirements.
3. Super Durable Urethane Powder Topcoat shall meet or exceed the following performance criteria as stipulated by the coatings manufacturer:
 - a. Specific Gravity: 1.58 +/- .05
 - b. Coverage at 1.0 Mil 121.7 sq. ft./ lb.
 - c. 60° Gloss: 55-65 (ASTM D-523)
 - d. Adhesion: 5B (ASTM D-3359)
 - e. Flexibility: Pass 1/8 “ Mandrel Bend (ASTM D-522)

- f. Pencil Hardness: 2H-3H (ASTM D-3363)
- g. Impact Resistance: 80 in-lbs direct (ASTM D-2794) 80 in-lb reverse
- h. Typical Environmental Properties: On Bonderite 1000 Panels
 - Salt Fog 1000 hours (ASTM B-117)
 - Salt Fog (top-coated)* 5000+ hours (ASTM B-117)
 - Humidity 1000 hours PASSED

Warranty: Provide galvanizer's standard warranty that materials will be free from 10 percent or more visible rust for 20 years.

9.10.03–Construction Methods: *Add the following:*

Submittals:

- A. Submit galvanizer's coatings datasheets for coatings specified including physical performance test data.
- B. Submit three 3 inch by 6 inch samples of factory-applied coatings and color proposed for use for approval prior to coating application. The sample colors provided shall approximate the color of weathering steel.

Quality Assurance

- A. Galvanizer's Qualifications: Engage the services of a qualified galvanizer who has demonstrated a minimum of ten years of experience in the successful application of galvanized coatings specified in this specification in the facility where the work is to be performed and who will apply the coatings within the same facility. For surface preparation and shop painting, current SSPC QP-3 certification is required.
- B. Coating Applicator's Qualifications: Galvanizing and factory-applied coatings shall be performed by a company with a minimum of ten years of experience in the successful application of hot-dip galvanizing utilizing the dry kettle process.
- C. Coordination between Fabricator and Galvanizer: Prior to fabrication and final submittal of shop drawings to the Engineer, direct fabricators to submit shop drawings to the galvanizer for all metal fabrications to receive factory-applied metal coatings. Direct galvanizer to review fabricator's shop drawings for suitability of materials for galvanizing and coatings and coordinate any required modifications to fabrications required to be performed by the fabricator.
- D. Environmental Compliance: Coatings shall be certified OTC/VOC compliant and conform to EPA standards and local regulations.

Application of Factory-Applied Metal Coatings:

Finish coatings shall be applied under the following conditions.

- 1. Minimum air temperature shall be 50 degrees F. Surface temperature of steel shall be 50 degrees to 120 degrees F and, in any event, be 5 degrees F higher than the dew point. Humidity shall be 85 percent maximum.
- 2. The use of iron, steel shot, and aluminum oxide grit as a blast medium, and power wire brushes are not permitted.

3. Surface of substrate shall be dry and free from dust, dirt, oil, grease or other contaminants. Coating and cure facility shall be maintained free of airborne dust and dirt until coatings are completely cured.

Installation:

- A. Touch-Up and Repair: For damaged and field-welded metal coated surfaces, clean welds, bolted connections and abraded areas.
 1. For factory-applied finish coatings, field-touch-up shall be performed by factory approved personnel for warranties to apply. Touch-up shall be such that repair is not visible from a distance of 6 feet.
 2. A touch-up repair kit and touchup instructions shall be provided to the Owner for each type of factory-applied finish.

Method of Measurement: This work will be measured for payment by total length of Metal Beam Rail and per each for Thrie Attachment.

Basis of Payment: This work will be paid for at the Contract unit price per linear foot for “Metal Beam Rail (R-B Mash)”, and unit price per each for “Thrie Beam Attachment”, which price shall include all materials, maintenance, equipment, tools, labor, and work incidental thereto. Partial payment of up to 50% may be made for work completed, but not accepted. Full payment shall not be made until the area has been accepted by the Engineer.

Pay Item	Pay Unit
Metal Beam Rail (R-B Mash)	L.F.
Thrie Beam Attachment	EA.

ITEM #0911923A – R-B END ANCHORAGE

Work under this item shall meet the requirements of Section 9.11, amended as follows:

9.10.02–Materials: *Add the following:*

Primer: Provide factory-applied polyamide thermosetting epoxy prime coat over hot-dipped galvanized steel.

1. Primer shall be a polyamide epoxy powder primer with 0 VOC.
2. Apply primer within 12 hours after galvanizing or blasting at the same galvanizer’s plant in a controlled environment meeting applicable environmental conditions and as recommended by the primer coating manufacturer. Cure schedule shall be as recommended by the manufacturer.
3. Polyamide epoxy powder primer shall be applied at 1.8-3 mils DFT and certified OTC/VOC compliant and conform to EPA and local requirements.
4. Polyamide epoxy powder primer shall meet or exceed the following performance criteria as stipulated by the coatings manufacturer:
 - a. Cure Schedule: 10 min. at 400°F
 - b. Specific Gravity: 1.60 +/- .05
 - c. Coverage at 1.0 Mil 120.4 sq. ft./ lb.
 - d. 60° Gloss: 53-67 (ASTM D-523)
 - e. Adhesion: 5B (ASTM D-3359)
 - f. Flexibility: Pass 1/8 “ Mandrel Bend (ASTM D-522)
 - g. Pencil Hardness: 2H-3H (ASTM D-3363)
 - h. Impact Resistance: 80 in-lbs direct (ASTM D-2794) 80 in-lb reverse
 - i. Typical Environmental Properties on 20 gauge Bonderite 1000 Panels
 - Salt Spray 1000 hours (ASTM B-117) max 1/8” creepage
 - Humidity 1000 hours (ASTM D-4585) Slight gloss and color change

Topcoat: Provide factory applied Super Durable Urethane powder topcoat in specified color and gloss range per approved samples. The final color, to be agreed upon by the Town, shall resemble the color of weathering steel.

1. Super Durable Urethane Powder Topcoat shall be applied over primer per the manufacturer’s recoat schedule at the same galvanizer’s plant in a controlled environment meeting applicable environmental conditions as recommended by the coating manufacturer. Cure schedule shall be as recommended by the manufacturer.
2. Super Durable Urethane Powder Topcoat shall be applied at 1.8-3 mils DFT and certified OTC/VOC compliant and conform to EPA and local requirements.
3. Super Durable Urethane Powder Topcoat shall meet or exceed the following performance criteria as stipulated by the coatings manufacturer:
 - a. Specific Gravity: 1.58 +/- .05
 - b. Coverage at 1.0 Mil 121.7 sq. ft./ lb.
 - c. 60° Gloss: 55-65 (ASTM D-523)
 - d. Adhesion: 5B (ASTM D-3359)
 - e. Flexibility: Pass 1/8 “ Mandrel Bend (ASTM D-522)
 - f. Pencil Hardness: 2H-3H (ASTM D-3363)

- g. Impact Resistance: 80 in-lbs direct (ASTM D-2794) 80 in-lb reverse
- h. Typical Environmental Properties: On Bonderite 1000 Panels
 - Salt Fog 1000 hours (ASTM B-117)
 - Salt Fog (top-coated)* 5000+ hours (ASTM B-117)
 - Humidity 1000 hours PASSED

Warranty: Provide galvanizer's standard warranty that materials will be free from 10 percent or more visible rust for 20 years.

9.10.03–Construction Methods: *Add the following:*

Submittals:

- A. Submit galvanizer's coatings datasheets for coatings specified including physical performance test data.
- B. Submit three 3 inch by 6 inch samples of factory-applied coatings and color proposed for use for approval prior to coating application. The sample colors provided shall approximate the color of weathering steel.

Quality Assurance

- A. Galvanizer's Qualifications: Engage the services of a qualified galvanizer who has demonstrated a minimum of ten years of experience in the successful application of galvanized coatings specified in this specification in the facility where the work is to be performed and who will apply the coatings within the same facility. For surface preparation and shop painting, current SSPC QP-3 certification is required.
- B. Coating Applicator's Qualifications: Galvanizing and factory-applied coatings shall be performed by a company with a minimum of ten years of experience in the successful application of hot-dip galvanizing utilizing the dry kettle process.
- C. Coordination between Fabricator and Galvanizer: Prior to fabrication and final submittal of shop drawings to the Engineer, direct fabricators to submit shop drawings to the galvanizer for all metal fabrications to receive factory-applied metal coatings. Direct galvanizer to review fabricator's shop drawings for suitability of materials for galvanizing and coatings and coordinate any required modifications to fabrications required to be performed by the fabricator.
- D. Environmental Compliance: Coatings shall be certified OTC/VOC compliant and conform to EPA standards and local regulations.

Application of Factory-Applied Metal Coatings:

Finish coatings shall be applied under the following conditions.

- 1. Minimum air temperature shall be 50 degrees F. Surface temperature of steel shall be 50 degrees to 120 degrees F and, in any event, be 5 degrees F higher than the dew point. Humidity shall be 85 percent maximum.
- 2. The use of iron, steel shot, and aluminum oxide grit as a blast medium, and power wire brushes are not permitted.
- 3. Surface of substrate shall be dry and free from dust, dirt, oil, grease or other contaminants. Coating and cure facility shall be maintained free of airborne dust and dirt until coatings are completely cured.

Installation:

- A. Touch-Up and Repair: For damaged and field-welded metal coated surfaces, clean welds, bolted connections and abraded areas.
 - 1. For factory-applied finish coatings, field-touch-up shall be performed by factory approved personnel for warranties to apply. Touch-up shall be such that repair is not visible from a distance of 6 feet.
 - 2. A touch-up repair kit and touchup instructions shall be provided to the Owner for each type of factory-applied finish.

Method of Measurement: This work will be measured for payment by the number items each of accepted end anchorage as specified.

Basis of Payment: This work will be paid for at the Contract unit price per each for “R-B End Anchorage Type I and Type II,” which price shall include all materials, maintenance, equipment, tools, labor, and work incidental thereto. Partial payment of up to 50% may be made for work completed, but not accepted. Full payment shall not be made until the area has been accepted by the Engineer.

Pay Item	Pay Unit
R-B End Anchorage – Type I	EA
R-B End Anchorage – Type II	EA

ITEM #0950040A - CONSERVATION SEEDING FOR SLOPES

Description: The work included in this item shall consist of providing an accepted stand of established conservation grasses by furnishing and placing seed as shown on the plans, permits, or as directed by the Engineer within the wetland mitigation Sites(s) or other areas when required.

Materials: All conservation grass mixture sources shall be locally obtained within the Northeast USA (New England, New York, Pennsylvania, New Jersey, Delaware, or Maryland) in order to preserve and enhance the diversity of native conservation grass species.

Three qualified conservation seed mixtures are detailed below:

- 1. New England Conservation/Wildlife Mix**, New England Wetland Plants, Inc. 820 West Street Amherst, MA 01002, or equal. Rate shall be 1 pound PLS per 1,750 sq. ft.
- 2. Mesic to Dry Native Pollinator Mix**, Ernst Conservation Seeds, Inc. 8884 Mercer Pike, Meadville, PA 16335, or equal. Rate shall be 1 pound PLS per 2,178 sq. ft.
- 3. Vermont Conservation and Wildlife**, Vermont Wetland Plant Supply, LLC, P.O. Box 153, Orwell, VT 05760, or equal. Rate shall be 1 pound PLS per 2,180 sq. ft.

Fertilizer, if required, shall meet the requirements of Article M.13.03.

Mulch shall meet the requirements of Article M.13.05.

Erosion control matting shall be bio-degradable and meet the requirements of Article M.13.09.

All conservation seed mixture sources shall be reviewed and approved by the Engineer in advance of purchase and prior to application.

The Materials Certificate for all seed mixtures shall have a statement that certifies that the seed mixture does not include any invasive species pursuant to Connecticut General Statutes Sec. 22a-381d or any State Threatened or State Endangered species pursuant to Connecticut General Statutes Sec. 26-303. The seed tags from the bags are to be removed by the Engineer upon delivery and attached to the Materials Certificate. Seeding shall not occur if these requirements are not met.

All approved seed mixtures shall be obtained in sufficient quantities to meet the pure live seed (PLS) application rates as determined by the seed analysis of the mixture.

Construction Methods: Construction methods shall be those established as agronomically acceptable and feasible and shall be approved by the Engineer. The methods described in Article 9.50.03 shall be amended as follows:

Conservation seeding for slopes for wetland mitigation Site(s): Seeding shall occur during the fall season immediately following construction of the wetland mitigation Site(s). Seeding for wetland mitigation Site(s) must occur from August 15th to October 31st.

For non-wetland mitigation Site(s), seeding shall occur during the dates specified in Article 9.50.03-2.

If seed is purchased in bulk rather than by PLS, the rate of application must be adjusted to meet the required PLS seeding rate. This seeding rate shall be increased by the appropriate percentage as determined by the following formula based off of the information provided on the seed tags at delivery.

$$(\text{Germination Percentage} \times \text{Purity Percentage}) / 100 = \text{Percentage PLS}$$

The Engineer will verify that the seed is applied at a rate that will allow for 100 percent PLS. Mowing will not be allowed within areas that are seeded with conservation seed mix, unless authorized by the Engineer.

Method of Measurement: This work will be measured for payment by the number of square yards of surface area of accepted established conservation grasses as specified.

Basis of Payment: This work will be paid for at the Contract unit price per square yard for “Conservation Seeding for Slopes,” which price shall include all materials, maintenance, equipment, tools, labor, and work incidental thereto. Partial payment of up to 50% may be made for work completed, but not accepted. Full payment shall not be made until the area has been accepted by the Engineer.

Pay Item	Pay Unit
Conservation Seeding for Slopes	s.y.

ITEM #0969060A - CONSTRUCTION FIELD OFFICE, SMALL

Description: Under the item included in the bid document, adequate weatherproof office quarters with related furnishings, materials, equipment and other services, shall be provided by the Contractor for the duration of the work, and if necessary, for a close-out period determined by the Engineer. The office, furnishings, materials, equipment, and services are for the exclusive use of CTDOT forces and others who may be engaged to augment CTDOT forces with relation to the Contract. The office quarters shall be located convenient to the work site and installed in accordance with Article 1.08.02. This office shall be separated from any office occupied by the Contractor. Ownership and liability of the office quarters shall remain with the Contractor.

Furnishings/Materials/Supplies/Equipment: All furnishings, materials, equipment and supplies shall be in like new condition for the purpose intended and require approval of the Engineer.

Office Requirements: The Contractor shall furnish the office quarters and equipment as described below:

Description \ Office Size	Small	Med.	Large	Extra Large
Minimum Sq. Ft. of floor space with a minimum ceiling height of 7 ft.	400	400	1000	2000
Minimum number of exterior entrances.	2	2	2	2
Minimum number of parking spaces.	7	7	10	15

Office Layout: The office shall have a minimum square footage as indicated in the table above, and shall be partitioned as shown on the building floor plan as provided by the Engineer.

Tie-downs and Skirting: Modular offices shall be tied-down and fully skirted to ground level.

Lavatory Facilities: For field offices sizes Small and Medium the Contractor shall furnish a toilet facility at a location convenient to the field office for use by CTDOT personnel and such assistants as they may engage; and for field offices sizes Large and Extra Large the Contractor shall furnish two (2) separate lavatories with toilet (men and women), in separately enclosed rooms that are properly ventilated and comply with applicable sanitary codes. Each lavatory shall have hot and cold running water and flush-type toilets. For all facilities the Contractor shall supply lavatory and sanitary supplies as required.

Windows and Entrances: The windows shall be of a type that will open and close conveniently, shall be sufficient in number and size to provide adequate light and ventilation, and shall be fitted with locking devices, blinds and screens. The entrances shall be secure, screened, and fitted with a lock for which four keys shall be furnished. All keys to the construction field office shall be furnished to the CTDOT and will be kept in their possession while State personnel are using the office. Any access to the entrance ways shall meet applicable building codes, with appropriate handrails. Stairways shall be ADA/ABA compliant and have non-skid tread surfaces. An ADA/ABA compliant ramp with non-skid surface shall be provided with the Extra-Large field office.

Lighting: The Contractor shall equip the office interior with electric lighting that provides a minimum illumination level of 100 foot-candles at desk level height, and electric outlets for each desk and drafting table. The Contractor shall also provide exterior lighting that provides a minimum illumination level of 2 foot-candles throughout the parking area and for a minimum distance of 10 ft. on each side of the field office.

Parking Facility: The Contractor shall provide a parking area, adjacent to the field office, of sufficient size to accommodate the number of vehicles indicated in the table above. If a paved parking area is not readily available, the Contractor shall construct a parking area and driveway consisting of a minimum of 6 inches of processed aggregate base graded to drain. The base material will be extended to the office entrance.

Field Office Security: Physical Barrier Devices - This shall consist of physical means to prevent entry, such as: 1) All windows shall be barred or security screens installed; 2) All field office doors shall be equipped with dead bolt locks and regular day operated door locks; and 3) Other devices as directed by the Engineer to suit existing conditions.

Electric Service: The field office shall be equipped with an electric service panel, wiring, outlets, etc., to serve the electrical requirements of the field office, including: lighting, general outlets, computer outlets, calculators etc., and meet the following minimum specifications:

- A. 120/240 volt, 1 phase, 3 wire
- B. Ampacity necessary to serve all equipment. Service shall be a minimum 100 amp dedicated to the construction field office.
- C. The electrical panel shall include a main circuit breaker and branch circuit breakers of the size and quantity required.
- D. Additional 120 volt, single phase, 20 amp, isolated ground dedicated power circuit with dual NEMA 5-20 receptacles will be installed at each desk and personal computer table (workstation) location.
- E. Additional 120 volt, single phase, 20 amp, isolated ground dedicated power circuit with dual NEMA 5-20 receptacles will be installed, for use by the Telephone Company.
- F. Additional 120-volt circuits and duplex outlets as required meeting National Electric Code requirements.
- G. One exterior (outside) wall mounted GFI receptacle, duplex, isolated ground, 120 volt, straight blade.
- H. After work is complete and prior to energizing, the State's CTDOT electrical inspector, must be contacted at 860-594-2240. (Do Not Call Local Town Officials)
- I. Prior to field office removal, the CTDOT Office of Information Systems (CTDOT OIS) must be notified to deactivate the communications equipment.

Heating, Ventilation and Air Conditioning (HVAC): The field office shall be equipped with sufficient heating, air conditioning and ventilation equipment to maintain a temperature range of 68°-80° Fahrenheit within the field office.

Telephone Service: The Contractor shall provide telephone service with unlimited nation-wide calling plan. For a Small, Medium and Large field office this shall consist of the installation of two (2) telephone lines: one (1) line for phone/voice service and one (1) line dedicated for the facsimile machine. For an Extra-Large field office this shall consist of four (4) telephone lines: three (3) lines for phone/voice service and one (1) line dedicated for facsimile machine. The Contractor shall pay all charges.

Data Communications Facility Wiring: Contractor shall install a Category 6 568B patch panel in a central wiring location and Cat 6 cable from the patch panel to each PC station, Smart Board location, Multifunction Laser Printer/Copier/Scanner/Fax, terminating in a (Category 6 568B) wall or surface mount data jack. The central wiring location shall also house either the data circuit with appropriate power requirements or a category 5 cable run to the location of the installed data circuit. The central wiring location will be determined by the CTDOT OIS staff in coordination with the designated field office personnel as soon as the facility is in place.

For Small, Medium and Large field offices the Contractor shall run a CAT 6 LAN cable a minimum length of 25 feet for each CTDOT networked device (including but not limited to: smartboards and Multi-Function Laser Printer/Copier/Scanner/Fax) to LAN switch area leaving an additional 10 feet of cable length on each side with terminated RJ45 connectors. For an Extra-Large field office the Contractor shall run CAT 6 LAN cables from workstations, install patch panel in data circuit demark area and terminate runs with RJ45 jacks at each device location. Terminate runs to patch panel in LAN switch area. Each run / jack shall be clearly labeled with an identifying Jack Number.

The Contractor shall supply cables to connect the Wi-Fi printer to the Contractor supplied internet router and to workstations/devices as needed. These cables shall be separate from the LAN cables and data Jacks detailed above for the CTDOT network.

The number of networked devices anticipated shall be at least equal to the number of personal computer tables, Multi-Function Laser Printer/Copier/Scanner/Fax, and smartboards listed below.

The installation of a data communication circuit between the field office and the CTDOT OIS in Newtonton will be coordinated between the CTDOT District staff, CTDOT OIS staff and the local utility company once the Contractor supplies the field office phone numbers and anticipated installation date. The Contractor shall provide the field office telephone number(s) to the CTDOT Project Engineer within 10 calendar days after the signing of the Contract as required by Article 1.08.02. This is required to facilitate data line and computer installations.

Additional Equipment, Facilities and Services: The Contractor shall provide at the field Office at least the following to the satisfaction of the Engineer:

Furnishing Description	Office Size
------------------------	-------------

	Small	Med.	Large	Extra Large
	Quantity			
Office desk (2.5 ft. x 5 ft.) with drawers, locks, and matching desk chair that have pneumatic seat height adjustment and dual wheel casters on the base.	1	3	5	8
Standard secretarial type desk and matching desk chair that has pneumatic seat height adjustment and dual wheel casters on the base.	-	-	-	1
Personal computer tables (4 ft. x 2.5 ft.).	2	3	5	8
Drafting type tables (3 ft. x 6 ft.) and supported by wall brackets and legs; and matching drafters stool that have pneumatic seat height adjustment, seat back and dual wheel casters on the base.	1	1	1	2
Conference table, 3 ft. x 12 ft.	-	-	-	1
Table – 3 ft. x 6 ft.	-	-	-	1
Office Chairs.	2	4	8	20
Mail slot bin – legal size.	-	-	1	1
Non-fire resistant cabinet.	-	-	2	4
Fire resistant cabinet (legal size/4 drawer), locking.	1	1	2	3
Storage racks to hold 3 ft. x 5 ft. display charts.	-	-	1	2
Vertical plan racks for 2 sets of 2 ft. x 3 ft. plans for each rack.	1	1	2	2
Double door supply cabinet with 4 shelves and a lock – 6 ft. x 4 ft.	-	-	1	2
Case of cardboard banker boxes (Min 10 boxes/case)	1	1	2	3
Open bookcase – 3 shelves – 3 ft. long.	-	-	2	2
White Dry-Erase Board, 36" x 48" min. with markers and eraser.	1	1	1	1
Interior partitions – 6 ft. x 6 ft., soundproof type, portable and freestanding.	-	-	6	6
Coat rack with 20 coat capacity.	-	-	-	1
Wastebaskets - 30 gal., including plastic waste bags.	1	1	1	2
Wastebaskets - 5 gal., including plastic waste bags.	1	3	6	10
Electric wall clock.	-	-	-	2
Telephone.	1	1	1	-
Full size stapler 20 (sheet capacity, with staples)	1	2	5	8
Desktop tape dispensers (with Tape)	1	2	5	8
8 Outlet Power Strip with Surge Protection	3	4	6	9
Rain Gauge	1	1	1	1
Business telephone system for three lines with ten handsets, intercom capability, and one speaker phone for conference table.	-	-	-	1
Mini refrigerator - 3.2 c.f. min.	1	1	1	1

Hot and cold water dispensing unit. Disposable cups and bottled water shall be supplied by the Contractor for the duration of the project.	1	1	1	1
Microwave, 1.2 c.f. , 1000W min.	1	1	1	1
Fire extinguishers - provide and install type and *number to meet applicable State and local codes for size of office indicated, including a fire extinguisher suitable for use on a computer terminal fire.	*	*	*	*
Electric pencil sharpeners.	1	2	2	2
Electronic office type printing calculators capable of addition, subtraction, multiplication and division with memory and a supply of printing paper.	1	1	2	4
Small Multi-Function Laser Printer/Copier/Scanner/Fax combination unit, network capable, as specified below under <u>Computer Related Hardware and Software</u> .	1	1		
Large Multi-Function Laser Printer/Copier/Scanner/Fax combination unit, network capable, as specified below under <u>Computer Related Hardware and Software</u> .			1	1
Field Office Wi-Fi Connection as specified below under <u>Computer Related Hardware and Software</u>	1	1	1	1
Wi-Fi Printer as specified below under <u>Computer Related Hardware and Software</u> .	1	1	1	1
Digital Camera as specified below under <u>Computer Related Hardware and Software</u> .	1	1	3	3
Video Projector as specified below under <u>Computer Related Hardware and Software</u> .	-	-	-	1
Smart Board as specified below under <u>Computer Related Hardware and Software</u> .	-	-	-	1
Infrared Thermometer, including annual third party certified calibration, case, and cleaning wipes.	1	1	1	2
Concrete Curing Box as specified below under Concrete Testing Equipment.	1	1	1	1
Concrete Air Meter and accessories as specified below under Concrete Testing Equipment as specified below. Contractor shall provide third party calibration on a quarterly basis.	1	1	1	1
Concrete Slump Cone and accessories as specified below under Concrete Testing Equipment.	1	1	1	1
First Aid Kit	1	1	1	1
Flip Phones as specified under <u>Computer Related Hardware and Software</u> .	-	-	-	-
Smart Phones as specified under <u>Computer Related Hardware and Software</u> .	-	-	-	-

The furnishings and equipment required herein shall remain the property of the Contractor. Any supplies required to maintain or operate the above listed equipment or furnishings shall be provided by the Contractor for the duration of the project.

Computer Related Hardware and Software: The CTDOT will supply by its own means the actual Personal Computers for the CTDOT representatives. The Contractor shall supply the Field Office Wi-Fi Connection, Wi-Fi Printer, Digital Camera(s), Flip Phones, Smart Phones, Multifunction Laser Printer/Copier/Scanner/Fax, Video Projectors, and Smart Board(s) as well as associated hardware and software, must meet the requirements of this specification as well as the latest minimum specifications posted, as of the project advertising date, at CTDOTs web site <http://www.ct.gov/dot/cwp/view.asp?a=1410&q=563904>

Within 10 calendar days after the signing of the Contract but before ordering/purchasing the Wi-Fi Printer (separate from the Multifunction Laser Printer/Copier/Scanner/Fax), Field Office Wi-Fi, Digital Camera(s), Flip Phones, Smart Phones, Multifunction Laser Printer/Copier/Scanner/Fax, Video Projector(s) and Smart Board(s) as well as associated hardware, the Contractor must submit a copy of their proposed order(s) with catalog cuts and specifications to the Administering CTDOT District for review and approval. The Wi-Fi Printer, Wi-Fi Router, Flip Phones, Smart Phones, digital cameras, Projector(s) and Smart Board(s) will be reviewed by CTDOT District personnel. The Multifunction Laser Printer/Copier/Scanner/Fax will be reviewed by the CTDOT OIS. The Contractor shall not purchase the hardware, software, or services until the Administering CTDOT District informs them that the proposed equipment, software, and services are approved. The Contractor will be solely responsible for the costs of any hardware, software, or services purchased without approval.

The Contractor and/or their internet service provider shall be responsible for the installation and setup of the field office Wi-Fi, Wi-Fi printer, and the configuration of the wireless router as directed by the CTDOT. Installation will be coordinated with CTDOT District and Project personnel.

After the approval of the hardware and software, the Contractor shall contact the designated representatives of the CTDOT administering District, a minimum of 2 working days in advance of the proposed delivery or installation of the Field Office Wi-Fi Connection, Wi-Fi Printer, Digital Camera(s), Flip Phones, Smart Phones, Multifunction Laser Printer/Copier/Scanner/Fax, Video Projectors and Smart Board(s), as well as associated hardware, software, supplies, and support documentation.

The Contractor shall provide all supplies, paper, maintenance, service and repairs (including labor and parts) for the Wi-Fi printers, copiers, field office Wi-Fi, fax machines and other equipment and facilities required by this specification for the duration of the Contract. All repairs must be performed with-in 48 hours. If the repairs require more than a 48 hours then an equal or better replacement must be provided.

Once the Contract has been completed, the hardware and software will remain the property of the Contractor.

First Aid Kit: The Contractor shall supply a first aid kit adequate for the number of personnel expected based on the size of the field office specified and shall keep the first aid kit stocked for the duration that the field office is in service.

Rain Gauge: The Contractor shall supply install and maintain a rain gauge for the duration of the project, meeting these minimum requirements. The rain gauge shall be installed on the top of a post such that the opening of the rain gauge is above the top of the post an adequate distance to avoid splashing of rain water from the top of the post into the rain gauge. The Location of the rain gauge and post shall be approved by the Engineer. The rain gauge shall be made of a durable material and have graduations of 0.1 inches or less with a minimum total column height of 5 inches. If the rain gauge is damaged the Contractor shall replace it prior to the next forecasted storm event at no additional cost.

Concrete Testing Equipment: If the Contract includes items that require compressive strength cylinders for concrete, in accordance with the Schedule of Minimum Testing Requirements for Sampling Materials for Test, the Contractor shall provide the following equipment.

- A) Concrete Cylinder Curing Box – meeting the requirements of Section 6.12 of the Standard Specifications.
- B) Air Meter – The air meter provided shall be in good working order and meet the requirements of AASHTO T 152.
- C) Slump Cone Mold – Slump cone, base plate, and tamping rod shall be provided in like-new condition and meet the requirements of AASHTO T119, Standard Test Method for Slump of Hydraulic-Cement Concrete.

All testing equipment will remain the property of the Contractor at the completion of the project.

Insurance Policy: The Contractor shall provide a separate insurance policy, with no deductible, in the minimum amount of five thousand dollars (\$5,000) in order to insure all State-owned data equipment and supplies used in the office against all losses. The Contractor shall be named insured on that policy, and the CTDOT shall be an additional named insured on the policy. These losses shall include, but not be limited to: theft, fire, and physical damage. The CTDOT will be responsible for all maintenance costs of CTDOT owned computer hardware. In the event of loss, the Contractor shall provide replacement equipment in accordance with current CTDOT equipment specifications, within seven days of notice of the loss. If the Contractor is unable to provide the required replacement equipment within seven days, the CTDOT may provide replacement equipment and deduct the cost of the equipment from monies due or which may become due the Contractor under the Contract or under any other contract. The Contractor's financial liability under this paragraph shall be limited to the amount of the insurance coverage required by this paragraph. If the cost of equipment replacement required by this paragraph should exceed the required amount of the insurance coverage, the CTDOT will reimburse the Contractor for replacement costs exceeding the amount of the required coverage.

Maintenance: During the occupancy by the CTDOT, the Contractor shall maintain all facilities and furnishings provided under the above requirements, and shall maintain and keep the office

quarters clean through the use of weekly professional cleaning to include, but not limited to, washing & waxing floors, cleaning restrooms, removal of trash, etc. Exterior areas shall be mowed and clean of debris. A trash receptacle (dumpster) with weekly pickup (trash removal) shall be provided. Snow removal, sanding and salting of all parking, walkway, and entrance ways areas shall be accomplished during a storm if on a workday during work hours, immediately after a storm and prior to the start of a workday. If snow removal, salting and sanding are not completed by the specified time, the State will provide the service and all costs incurred will be deducted from the next payment estimate.

Method of Measurement: The furnishing and maintenance of the construction field office will be measured for payment by the number of calendar months that the office is in place and in operation, rounded up to the nearest month.

There will not be any price adjustment due to any change in the minimum computer related hardware and software requirements.

Basis of Payment: The furnishing and maintenance of the Construction Field Office will be paid for at the Contract unit price per month for “Construction Field Office, (Type),” which price shall include all material, equipment, labor, service contracts, licenses, software, repair or replacement of hardware and software, related supplies, utility services, parking area, external illumination, trash removal, snow and ice removal, and work incidental thereto, as well as any other costs to provide requirements of this specified this specification.

<u>Pay Item</u>	<u>Pay Unit</u>
Construction Field Office, (Type)	Month

ITEM NO. 0971001A – MAINTENANCE AND PROTECTION OF TRAFFIC

Article 9.71.01 – Description

The Contractor shall maintain and protect traffic as described by the following and as limited in the special provision for Section 1.08 - Prosecution and Progress:

Heatherwood Drive

The Contractor shall maintain and protect a minimum of one lane of traffic in each direction, with each lane on a paved travel path not less than 10 feet in width, with the following exceptions:

1. During the allowable periods and when the Contractor is actively working, the Contractor will be permitted to maintain and protect at least an alternating one-way traffic operation on a paved travel path not less than 11 feet in width and no more than 300 feet in length, unless specified elsewhere in the Contract. There shall be no more than one alternating one-way traffic operation within the Project limits without prior approval of the Engineer.
2. The Contractor will be permitted to close Heatherwood Drive to through traffic and detour traffic as shown on the Detour Plans. The contractor shall notify the Town of Madison, the Engineer, and all Emergency Services at least 14 days in advance of implementing the detour.

All Other Roadways

The Contractor shall maintain and protect a minimum of one lane of traffic in each direction with each lane on a paved travel path not less than 10 feet in width, with the following exceptions:

1. During the allowable periods and when the Contractor is actively working, the Contractor will be permitted to maintain and protect at least an alternating one-way traffic operation on a paved travel path not less than 11 feet in width and no more than 300 feet in length, unless specified elsewhere in the Contract. There shall be no more than one alternating one-way traffic operation within the Project limits without prior approval of the Engineer.

Commercial and Residential Driveways

The Contractor shall maintain access to and egress from all commercial and residential driveways throughout the Project limits. The Contractor will be permitted to temporarily close affected driveways while actively working with coordination and permission from the owner or proprietor.

Article 9.71.03 - Construction Methods *is supplemented as follows:*

General

Unpaved travel paths will only be permitted for areas requiring full depth and full width reconstruction. The unpaved section shall be the full width of the road and shall be perpendicular to the travel lanes. The Contractor will be allowed to maintain traffic on processed aggregate for a

duration not to exceed 10 calendar days and opposing traffic lane dividers shall be used as a centerline.

The Contractor is required to delineate any raised structures within the travel lanes, so that the structures are visible day and night, unless there are specific Contract plans and provisions to temporarily lower these structures prior to the completion of work.

The Contractor shall schedule operations so that pavement removal and roadway resurfacing shall be completed full width across a roadway or bridge section by the end of a work shift, or as directed by the Engineer.

When the installation of all intermediate courses of bituminous concrete pavement is completed for the entire roadway, the Contractor shall then install the final course of bituminous concrete pavement.

When the Contractor is excavating adjacent to the roadway, the Contractor shall provide a 3 foot shoulder between the work area and travel lanes, with traffic drums spaced every 50 feet. At the end of the work shift if the vertical drop-off exceeds 3 inches, the Contractor shall provide a temporary bituminous concrete traversable slope of 4:1 or flatter that is acceptable to the Engineer.

The Contractor, during the course of any active overhead construction work, shall close the lanes directly below the work area for the entire length of time overhead work is being undertaken.

At no time shall an overhead sign be left partially removed or installed.

When an existing sign is to be relocated or replaced, the work shall be completed during the same work shift.

The field installation of a signing pattern shall constitute interference with existing traffic operations and shall not be allowed, except during the allowable periods.

On limited-access highways, construction vehicles entering travel lanes shall not be allowed without a lane closure. The lane closure shall be of sufficient length to allow vehicles to enter or exit the work area at the posted speed limit, in order to merge with existing traffic.

Existing Signing

The Contractor shall maintain all existing overhead and side-mounted signs within the Project limits throughout the duration of the Project. The Contractor shall temporarily relocate signs and sign supports as many times as deemed necessary, and shall install temporary sign supports if necessary and as directed by the Engineer.

Requirements for Winter

The Contractor shall schedule a meeting with representatives of the Department, including the offices of Maintenance and Traffic, and the Town/City to determine any interim traffic control measures the Contractor shall accomplish prior to winter to provide safety to motorists and permit adequate snow removal procedures. This meeting shall be held prior to October 31 of each year and will include, but not be limited to, discussion of the status and schedule of the following items: lane and shoulder widths, pavement restoration, traffic signal work, pavement markings, and signing.

Signing Patterns

The Contractor shall erect and maintain all signing patterns in accordance with the traffic control plans contained herein. Proper distances between advance warning signs and proper taper lengths are mandatory.

Pavement Markings - Non-Limited Access Roadways

During construction, the Contractor shall maintain all pavement markings on paved surfaces on all roadways throughout the limits of the Project.

Temporary pavement markings shall be installed on each intermediate course of bituminous concrete pavement and on any milled surface by the end of the work shift.

Permanent Epoxy Resin Pavement Markings shall be installed on the final course of bituminous concrete pavement within 10 calendar days of the final pavement installation if no Pavement Marking Grooves are proposed.

Temporary Pavement Markings

Temporary pavement markings that will be in place for less than 72 continuous hours may consist of temporary plastic pavement marking tape at the Contractor's expense. Additionally;

1. These temporary pavement markings shall include centerlines, lane lines (solid and broken), and stop bars.
2. Centerlines shall consist of two 4 inch wide yellow markings, 2 feet in length, side by side, 4 inches apart, at 40 foot intervals.
3. Lane lines shall consist of 4 inch wide white markings, 2 feet in length, at 40 foot intervals.
4. No passing zones shall be posted with signs in those areas where the final centerlines have not been established on two-way roadways.
5. Stop bars may consist of two 6 inch wide white markings or three 4 inch wide white markings placed side by side.
6. The temporary plastic pavement marking tape shall be installed in accordance with Section 12.12.
7. The Contractor shall remove and dispose of the temporary plastic pavement marking tape prior to another course of bituminous concrete pavement being installed.

Temporary pavement markings that will be in place for 72 continuous hours or more should consist of temporary painted pavement markings and shall be installed in accordance with Section 12.09. The markings shall include centerlines, edge lines, lane lines (solid and broken), lane-use arrows, and stop bars on each intermediate course of bituminous concrete pavement and on any milled surface by the end of the work shift. Edge lines and lane-use arrows are not required if the next course of bituminous concrete pavement will be placed within 10 calendar days.

All temporary pavement markings exposed throughout the winter shall be Epoxy Resin Pavement Markings, unless directed otherwise by the Engineer.

Temporary pavement markings, as described above, shall be maintained until the permanent pavement markings are installed.

Final Pavement Markings

Refer to Pavement Marking Groove special provisions for pavement marking requirements. Permanent epoxy resin pavement markings shall be installed in accordance with Section 12.10 and the applicable Traffic Engineering Standard Drawings.

If Temporary Plastic Pavement Marking Tape is installed, then the Contractor shall remove and dispose of these markings during the same work shift that the permanent epoxy resin pavement markings are to be installed. The cost of furnishing, installing and removing the Temporary Plastic Pavement Marking Tape shall be at the Contractor's expense.

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 a safer and more 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 or is within the clear zone. 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 in order to command respect from the motorist.

Lane reduction tapers should be placed so that the entire length of the taper is installed on a tangent section of roadway and the entire taper area can be seen by the motorist.

All existing conflicting signs shall be removed, covered with an opaque material, or turned so that they are not legible to oncoming traffic prior to implementing a traffic control pattern. The existing signs shall be uncovered or reinstalled once the pattern is removed.

A buffer area should be provided during installation of a traffic control pattern and maintained for the duration of the work. The buffer area shall be free of any equipment, workers, materials, and parked vehicles.

Construction Traffic Control Plans 19 through 25 should be used for moving operations such as line striping, rumble strips, pothole patching, mowing, or sweeping when it is necessary for equipment to occupy a travel lane.

Traffic control patterns are not required for vehicles on an emergency patrol type activity or for a short duration stop of up to one hour, as long as the equipment is contained within the shoulder. Flashing lights, arrow boards, truck-mounted or trailer-mounted impact attenuators, and appropriate Trafficperson(s) shall be used when required.

In a situation not adequately covered by the Construction Traffic Control Plans, the Contractor shall contact the Engineer for assistance prior to setting up a traffic control pattern.

Placement of Signs

Signs shall be placed in a position that allows 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 Construction Traffic Control Plans

The Construction 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.

The proper application of the Construction Traffic Control Plans and installation of traffic control devices is dependent upon actual field conditions.

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.

Adjustments to the Construction Traffic Control Plans shall only be made at the direction of the Engineer.

Table 1 indicates the minimum taper lengths required for a lane closure based on the posted speed limit and lane width of the roadway. These taper lengths shall only be used when the recommended taper lengths shown on the Construction Traffic Control Plans cannot be achieved.

Table 1 – Minimum Taper Length

POSTED SPEED LIMIT (MPH)	MINIMUM TAPER LENGTH FOR A SINGLE LANE CLOSURE (FEET)	
	FREEWAYS	SECONDARY ROADS
30 OR LESS	180	165
35	245	225
40	320	295
45	540	495
50	600	550
55	660	605
65	780	715

1. Work Zone Safety Meetings

- 1.a) Prior to the commencement of work, a Work Zone Safety Meeting shall be conducted with representatives from DOT Construction, Connecticut State Police (Local Barracks), Municipal Police, the Contractor (Project Superintendent) and the Traffic Control Subcontractor (if different than the prime Contractor) to review the traffic operations, lines of responsibility, and operating guidelines which will be used on the Project. DOT Traffic Engineering shall be invited to the Work Zone Safety Meeting. Other Work Zone Safety Meetings during the course of the Project should be scheduled as needed.
- 1.b) A Work Zone Safety Meeting Agenda shall be developed and used at the Meeting to outline the anticipated traffic control issues during the construction of this Project. Any

issues that can't be resolved at these Meetings will be brought to the attention of the District Engineer and the Office of Construction. The agenda shall include:

- i. Review Project scope of work and time;
- ii. Review Section 1.08, Prosecution and Progress;
- iii. Review Section 9.70, Trafficpersons;
- iv. Review Section 9.71, Maintenance and Protection of Traffic;
- v. Review Contractor's schedule and method of operations;
- vi. Review special concern areas: ramps, turning roadways, medians, lane drops, etc.;
- vii. Open discussion of work zone questions and issues;
- viii. Discussion of review and approval process for changes in Contract requirements as they relate to work zone areas.

2. General

- 2.a) Traffic control patterns shall only be installed if the required minimum number of signs, traffic cones, traffic drums, and other equipment (i.e. one Arrow Board for each lane closed, two Truck-Mounted or Trailer-Mounted Attenuators (TMAs), Changeable Message Sign, etc.) are on Site.
- 2.b) The Contractor shall have spare maintenance and protection of traffic equipment (TMAs, Arrow Board, Changeable Message Sign(s), construction signs, traffic cones, traffic drums, etc.) available at all times in case of mechanical failures, etc. Spare maintenance and protection of traffic equipment installed as a result of a sudden equipment breakdown shall be replaced by the Contractor within 24 hours.
- 2.c) Failure of the Contractor to have the required minimum number of signs, personnel, and equipment, which results in the pattern not being installed, shall not be a reason for a time extension or claim for lost time.
- 2.d) In cases of differences of opinion between the Contractor and the Inspection staff, the Contractor shall follow the directions of the Engineer. The matter shall be brought to the District Office for resolution immediately or, in the case of work after regular business hours, on the next business day.

3. Installing and Removing Traffic Control Patterns

- 3.a) Lane closures shall be installed beginning with the advance warning signs and proceeding forward toward the work area.
- 3.b) Lane closures shall be removed in the reverse order, beginning at the end of the work area, or traffic control pattern, and proceeding back toward the advance warning signs.
- 3.c) Stopping traffic may be allowed within the allowable hours stated in Section 1.08.04:
 - i. For those activities stated within the Contract.

- ii. During paving, milling operations, or similar activities 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 so traffic does not travel across the longitudinal joint or difference in roadway elevation.
 - iii. To move slow moving equipment across live traffic lanes into the work area.
- 3.d) The Contractor shall adhere to using the proper signs, placing the signs correctly, and ensuring the proper spacing of signs.
- 3.e) 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 with or exiting from the mainline traffic. This shall be completed before installing the mainline pattern past the ramp or intersecting roadway.
- 3.f) Workers are prohibited from crossing the travel lanes on limited access roadways 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.

4. Implementation of Rolling Road Block (RRB)

- 4.a) Temporary road closures using a RRB may be allowed on limited access highways for operations associated with the installation and removal of temporary lane closures. RRB may be allowed for the installation and removal of lead signs and lane tapers only and shall meet the following requirements:
 - i. Refer to the Limitation of Operations Chart provided in Section 1.08.04 for the hours allowed for implementing a RRB operation. The Contractor shall only implement a RRB operation within the hours shown in the Chart.
 - ii. In areas with good sight lines and full shoulders, signs on the side of the road opposite the traffic pattern should be installed in a separate operation.
 - iii. TMAs equipped with Arrow Boards shall be used to slow traffic to implement the RRB. State Police Officers in marked vehicles may be used to support the implementation of the RRB. The RRB shall start by having all vehicles, including TMAs and police vehicles, leave the shoulder or on-ramp and accelerate to normal roadway speeds in each lane. The vehicles will then position themselves side by side and decelerate to the RRB speed on the highway.
 - iv. A Pre-Warning Vehicle, as specified elsewhere in the Contract, shall be used to advise the motorists that sign pattern installation or removal is underway.
 - v. The RRB duration shall not exceed 15 minutes from the start of the traffic block until all lanes are opened as designated in the Limitation of Operations chart. If the RRB duration exceeds 15 minutes on 2 successive shifts, no further RRB will be allowed until the Contractor obtains approval for a revised installation procedure from the District.
 - vi. RRB shall not be used to expand a lane closure pattern to an additional lane during the shift. The workers and equipment required to implement the additional lane closure should be staged from within the closed lane. TMAs (and State

Police if available) shall be used to protect the workers installing the taper in the additional lane.

- vii. Exceptions to these work procedures may be submitted to the District Office for consideration. A minimum of 2 business days shall be allowed for review and comment by the District.
- viii. The Engineer and the Contractor will review and discuss the RRB procedures (including any revisions) in advance of the work. The implementation of the agreed upon plan will be reviewed with the State Police during the Work Zone Safety Meeting held before each shift involving temporary lane closures. If the State Police determine that alternative procedures should be implemented for traffic control during the work shift, the Department and Contractor will attempt to resolve any discrepancies with the duty sergeant at the Troop. If the discrepancies are unable to be resolved prior to the start of the shift, then the work will proceed as recommended by the Department. Any unresolved issues shall be addressed the following day.

5. Use of Arrow Boards

- 5.a) On limited access roadways, one Arrow Board shall be used for each lane that is closed. The Arrow Board shall be installed concurrently with the installation of the traffic control pattern and its placement shall be as shown on the Construction Traffic Control Plans. Additional Arrow Boards shall be deployed if sight distances are limited.
- 5.b) On non-limited access roadways, the use of an Arrow Board for lane closures is optional. The roadway geometry, sight distance, and traffic volume shall be considered in the decision to use the Arrow Board.
- 5.c) A vehicle displaying an arrow board shall be equipped with high-intensity rotating, flashing, oscillating, or strobe lights.
- 5.d) The flashing arrow mode shall be used for lane closure (merge) tapers.
- 5.e) The flashing arrow mode shall not be used for temporary alternating one-way traffic operations or to laterally shift lanes of traffic.
- 5.f) The flashing double arrow mode shall only be used for closing a center lane on a multilane roadway where adjacent left and right lanes remain open.
- 5.g) For shoulder work or roadside work near the shoulder, the Arrow Board shall be positioned in the shoulder and the flashing alternating diamond mode should be used.
- 5.h) The flashing alternating diamond caution mode should also be used when supplemental Arrow Boards are positioned in an already closed lane.

6. Use of Truck-Mounted or Trailer-Mounted Impact Attenuators (TMAs)

- 6.a) On limited access roadways, lane closures shall use a minimum of two TMAs to install and remove traffic control patterns. If two TMAs are not available, then the pattern shall not be installed.
- 6.b) On non-limited access roadways, the use of TMAs to install and remove patterns closing a lane(s) is optional. The roadway geometry, sight line distance, and traffic volume shall be considered in the decision to utilize the TMAs.
- 6.c) On limited access roadways, one TMA shall be placed on the shoulder and the second TMA shall be approximately 1,000 feet ahead blocking the lane to establish the advance and transition signing. The Arrow Board mounted on the TMA shall be in the arrow mode when taking the lane. The sign truck and workers shall be at sufficient distance ahead of the second TMA. In no case shall the TMA be used as the sign truck or a work truck. Once the transition is in place, the TMAs shall travel in the closed lane until all Portable Changeable Message Signs, signs, Arrow Boards, and cones/drums are installed. The Arrow Board mounted on the TMA should be in the flashing alternating diamond caution mode when traveling in the closed lane.
- 6.d) A TMA shall be placed prior to the first work area in the pattern. If there are multiple work areas within the same pattern, then additional TMAs shall be positioned at each additional work area as needed. The Arrow Board mounted on the TMA should be in the flashing alternating diamond caution mode when in the closed lane.
- 6.e) TMAs shall be positioned a sufficient distance prior to the workers or equipment being protected to allow for appropriate vehicle roll-ahead in the event that the TMA is hit, but not so far that an errant vehicle could travel around the TMA and into the work area. For additional placement and use details, refer to Section 18.06. Some operations, such as paving and concrete repairs, do not allow for placement of the TMA(s) within the specified distances. In these situations, the TMA(s) shall be placed at the beginning of the work area and shall be advanced as the paving or concrete operations proceed.
- 6.f) TMAs will be paid for in accordance with how the unit is used. If it is used as a TMA and is in the proper location as specified, then it will be paid for at the specified hourly rate for Truck-Mounted or Trailer-Mounted Impact. When the TMA is used as an Arrow Board, it will be paid for at the daily rate for Arrow Board. If a TMA is used to install and remove a pattern and is also used as an Arrow Board in the same day, then the unit will be paid for as a Truck-Mounted or Trailer-Mounted Impact Attenuator for the hours used to install and remove the pattern, typically 2 hours (1 hour to install and 1 hour to remove). If the TMA is also used as an Arrow Board during the same day, then the unit will only be paid for at the daily rate as an Arrow Board.

7. Use of Traffic Drums and Traffic Cones

- 7.a) On limited-access highways, ramps, and turning roadways:

- i. Traffic drums shall be used for taper channelization.
 - ii. Traffic drums shall be used to delineate raised catch basins and other hazards.
 - iii. Traffic cones with a minimum height of 42 inches may be used in place of drums in the tangent section of a closed lane or shoulder.
 - iv. Traffic cones less than 42 inches in height shall not be used.
- 7.b) On all roadways:
 - i. 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.
 - ii. Traffic cones shall not be left unattended.
 - iii. Traffic cones with a minimum height of 42 inches shall be used when the posted speed limit is 45 MPH or above.
- 7.c) Typical spacing of traffic drums and/or cones shown on the Construction Traffic Control Plans in the Contract are maximum spacings and may be reduced to meet actual field conditions as required.

8. Use of Barricade Warning Lights

- 8.a) Barricade Warning Lights may be installed on channelizing devices when used in a merge taper. The Barricade Warning Lights shall flash in a sequential pattern when used in a merge taper. The successive flashing shall occur from the upstream end (beginning) of the merge taper to the downstream end (end) of the merge taper.
- 8.b) Type C Barricade Warning Lights may be used at night to delineate the edge of the travel way.
- 8.c) Type B Barricade Warning Lights shall be used on post-mounted advanced warning signs.

9. Use of Portable Changeable Message Signs (PCMS)

- 9.a) On limited access roadways, one PCMS shall be used in advance of the traffic control pattern for all lane closures. Prior to installing the pattern, the PCMS shall be installed and in operation, displaying the appropriate lane closure information. The PCMS shall be positioned ½ to 1 mile ahead of the start of the lane closure taper. If the distance to the nearest exit ramp is greater than the specified ½ to 1 mile distance, then an additional PCMS shall be positioned a sufficient distance ahead of the exit ramp (and before the previous on-ramp where practical) to alert motorists to the work and therefore offer them an opportunity to take the exit.
- 9.b) On non-limited access roadways, the use of PCMS for lane closures is optional. The roadway geometry, sight line distance, and traffic volume shall be considered in the decision to use the PCMS.

- 9.c) PCMS should be placed off the shoulder of the roadway and behind a traffic barrier, if practical. Where a traffic barrier is not available to shield the PCMS, it should be placed off the shoulder and outside of the clear zone. If a PCMS has to be placed on the shoulder of the roadway or within the clear zone, it should be placed on the paved shoulder with a minimum of five traffic drums placed in a taper in front of it to delineate its position. The taper shall meet minimum distance requirements for a shoulder closure. The PCMS shall be protected if it is used for a continuous duration of 36 hours or more.
- 9.d) The PCMS shall be removed from the clear zone and have the display screen cleared and turned 90 degrees away from the roadway when the PCMS is no longer required.
- 9.e) The PCMS should not be used within 1,000 feet of an existing PCMS or Variable Message Sign (VMS).
- 9.f) A PCMS message shall:
 - i. consist of no more than two phases;
 - ii. contain no more than three lines of text per phase;
 - iii. have no more than eight characters per line, including spaces.
- 9.g) The PCMS should be used for specific situations that need to command the motorist's attention which cannot be conveyed with standard construction signs. The PCMS should not be used for generic messages (ex.: Road Work Ahead, Bump Ahead, Gravel Road, etc.) or for messages that need to be displayed for long periods of time, such as during stage construction. These types of messages should be displayed with construction signs. Special signs shall be coordinated with the Office of Construction and the Division of Traffic Engineering for the proper layout/dimensions required.
- 9.h) Typical messages that are allowed on the PCMS are shown below. Approval must be received from the Office of Construction for any message(s) different than the typical messages shown in Figure 1.
- 9.i) All messages shall comply with the information provided in Tables 2 and 3.

	<u>Phase 1</u>	<u>Phase 2</u>	<u>Message No.</u>	<u>Phase 1</u>	<u>Phase 2</u>
1	LEFT LANE CLOSED	MERGE RIGHT	9	LANES CLOSED AHEAD	REDUCE SPEED
2	2 LEFT LANES CLOSED	MERGE RIGHT	10	LANES CLOSED AHEAD	USE CAUTION
3	LEFT LANE CLOSED	REDUCE SPEED	11	EXIT XX CLOSED	USE EXIT YY
4	2 LEFT LANES CLOSED	REDUCE SPEED	12	EXIT XX CLOSED USE YY	FOLLOW DETOUR
5	RIGHT LANE CLOSED	MERGE LEFT	13	2 LANES SHIFT AHEAD	USE CAUTION
6	2 RIGHT LANES CLOSED	MERGE LEFT	14	3 LANES SHIFT AHEAD	USE CAUTION
7	RIGHT LANE CLOSED	REDUCE SPEED			
8	2 RIGHT LANES CLOSED	REDUCE SPEED			

Figure 1: Typical PCMS Messages

Table 2: Acceptable Abbreviations

Word Message	Standard Abbreviation	Word Message	Standard Abbreviation
Access	ACCS	Minimum	MIN
Afternoon / Evening	PM	Minor	MNR
Ahead	AHD	Minute(s)	MIN
Alternate	ALT	Monday	MON
Avenue	AVE, AV	Morning / Late Night	AM
Bicycle	BIKE	Mount	MT
Blocked	BLKD	Mountain	MTN
Boulevard	BLVD	National	NATL
Bridge	BR	Normal	NORM
CB Radio	CB	North	N
Center	CTR	Northbound	NBND
Center	CNTR	Oversized	OVRSZ
Chemical	CHEM	Parking	PKING
Circle	CIR	Parkway	PKWY
Compressed Natural Gas	CNG	Pavement	PVMT
Condition	COND	Pedestrian	PED
Congested	CONG	Place	PL
Construction	CONST	Pounds	LBS
Court	CT	Prepare	PREP
Crossing	XING	Quality	QLTY
Crossing (other than highway-rail)	XING	Right	RT
Downtown	DWNTN	Road	RD
Drive	DR	Roadwork	RDWK
East	E	Route	RT, RTE
Eastbound	EBND	Saint	ST
Electric Vehicle	EV	Saturday	SAT
Emergency	EMER	Service	SERV
Entrance, Enter	ENT	Shoulder	SHLDR
Exit	EX	Slippery	SLIP
Express	EXP	South	S
Expressway	EXPWY	Southbound	SBND
Feet	FT	Speed	SPD
Freeway	FRWY, FWY	State, county, or other non-US or non-Interstate numbered route	[Route Abbreviation determined by highway agency]**
Friday	FRI	Street	ST
Frontage	FRNTG	Sunday	SUN
Hazardous	HAZ	Telephone	PHONE
Hazardous Material	HAZMAT	Temporary	TEMP
High Occupancy Vehicle	HOV	Terrace	TER
Highway	HWY	Thruway	THWY
Highway-Rail Grade Crossing	RR XING	Thursday	THURS

Hospital	HOSP	Tons of Weight	T
Hour(s)	HR, HRS	Traffic	TRAF
Information	INFO	Trail	TR
International	INTL	Travelers	TRVLRS
Interstate	I-	Tuesday	TUES
Junction / Intersection	JCT	Turnpike	TPK
Lane	LN	Two-Way Intersection	2-WAY
Left	LFT	Two-Wheeled Vehicles	CYCLES
Liquid Propane Gas	LP-GAS	Upper	UPR
Local	LOC	US Numbered Route	US
Lower	LWR	Vehicle(s)	VEH, VEHS
Maintenance	MAINT	Warning	WARN
Major	MAJ	Wednesday	WED
Maximum	MAX	West	W
Mile(s)	MI	Westbound	WBND
Miles Per Hour	MPH		

** A space and no dash shall be placed between the abbreviation and the number of the route.

Table 3: Unacceptable Abbreviations

Unacceptable Abbreviation	Intended Word	Common Misinterpretation
ACC	Accident	Access (Road)
CLRS	Clears	Colors
DLY	Delay	Daily
FDR	Feeder	Federal
L	Left	Lane (Merge)
LT	Light (Traffic)	Left
PARK	Parking	Park
POLL	Pollution (Index)	Poll
RED	Reduce	Red
STAD	Stadium	Standard
WRNG	Warning	Wrong

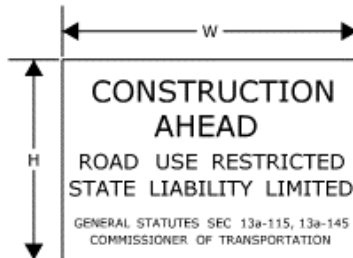
10. Use of State Police Officers

- 10.a) State Police may be used only on limited access highways and secondary roadways that are under their primary jurisdiction. A minimum of one Officer may be used per critical sign pattern; however, a State Police presence is not required. Shoulder closures and right lane closures can generally be implemented without the presence of a State Police Officer. Left lane closures may also be implemented without State Police presence in areas with only moderate traffic and wide, unobstructed medians. It may be desirable to have a State Police presence, when available, under specific situations, such as nighttime lane closures; left lane closures with minimal width for setting up advance signs and staging; lane and shoulder closures on turning roadways/ramps or mainline where sight

distance is minimal; and closures where extensive turning movements or traffic congestion regularly occur; however, they are not required.

- 10.b) If a State Police presence is provided, once the pattern is in place, the State Police Officer should be positioned in a non- hazardous location in advance of the pattern to provide advance warning to the motorist. If traffic backs up beyond the beginning of the pattern, then the State Police Officer shall reposition so that they are located prior to the backup. The State Police Officer should not be located immediately behind or within the roll ahead area of any TMA or within the work zone buffer area. The State Police Officer shall not be positioned in such a way that the State Police Officer obstructs any construction warning signs or PCMS from view of the motorist.
- 10.c) Other functions of the State Police Officer(s) may include:
 - i. Assisting construction vehicles entering and exiting the work area.
 - ii. Enforcement of motor vehicle laws within the work area, if specifically requested by the Engineer.
- 10.d) State Police Officers assigned to a work site shall take direction from the Engineer.

SERIES 16 SIGNS



		W	H
16-E	80-1605	84" x 60"	
16-H	80-1608	60" x 42"	
16-M	80-1613	30" x 24"	

		W	H
16-S	80-1619	48" x 30"	

SIGN 16-S 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. SERIES 16 SIGNS SHOULD BE LOCATED TO ALLOW MOTORISTS THE OPPORTUNITY TO AVOID A WORK ZONE. SERIES 16 SIGNS SHOULD BE INSTALLED ON MAJOR INTERSECTING ROADWAYS THAT APPROACH THE WORK ZONE. ON LIMITED-ACCESS HIGHWAYS, THESE SIGNS SHOULD BE LOCATED IN ADVANCE OF THE NEAREST UPSTREAM EXIT RAMP AND ON ANY ENTRANCE RAMPS PRIOR TO OR WITHIN THE WORK ZONE LIMITS.

SIGNS 16-E AND 16-H SHALL BE POST-MOUNTED.

SIGN 16-E SHALL BE USED ON ALL FREEWAYS AND 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.

CONSTRUCTION TRAFFIC CONTROL PLAN
SERIES 16 SIGNS

SCALE: NONE

CONNECTICUT DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING & CONSTRUCTION

APPROVED

Tracy L. Fogarty
PRINCIPAL ENGINEER

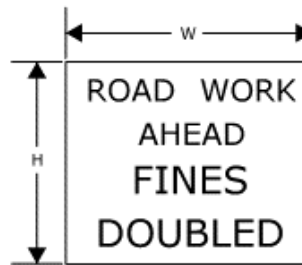
Tracy L. Fogarty, P.E.
2013.10.09 16:30:32-0402

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 AND MUNICIPAL ROAD IN CONNECTICUT WHERE THERE ARE WORKERS PRESENT ON THE HIGHWAY.

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.

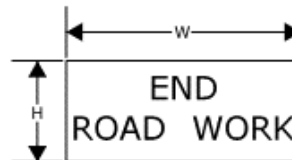
	W	H
31-1906	48"	42"
31-1907	60"	54"



"END ROAD WORK" SIGN

THE LAST SIGN IN THE PATTERN SHALL BE THE "END ROAD WORK" SIGN.

	W	H
80-9606	36"	18"
80-9612	48"	24"



CONSTRUCTION TRAFFIC CONTROL PLAN
**ROAD WORK AHEAD
 SIGNS**

SCALE: NONE

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 IN ADVANCE 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. TRAFFIC CONES AND PORTABLE CONSTRUCTION SIGNS SHALL NOT BE LEFT UNATTENDED.
5. ALL CONFLICTING 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 48 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 \leq 40 MPH).
8. IF THIS PLAN IS TO REMAIN IN OPERATION FROM SUNSET TO SUNRISE, INSTALL BARRICADE WARNING LIGHTS - HIGH INTENSITY ON ALL POST-MOUNTED DIAMOND SIGNS IN THE ADVANCE WARNING AREA.
9. A PORTABLE CHANGEABLE MESSAGE SIGN SHALL BE INSTALLED ONE HALF MILE 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'
35	245'
40	320'
45	540'
50	600'
55	660'
65	780'

CONSTRUCTION TRAFFIC CONTROL PLAN

NOTES

SCALE: NONE

CONNECTICUT DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING & CONSTRUCTION

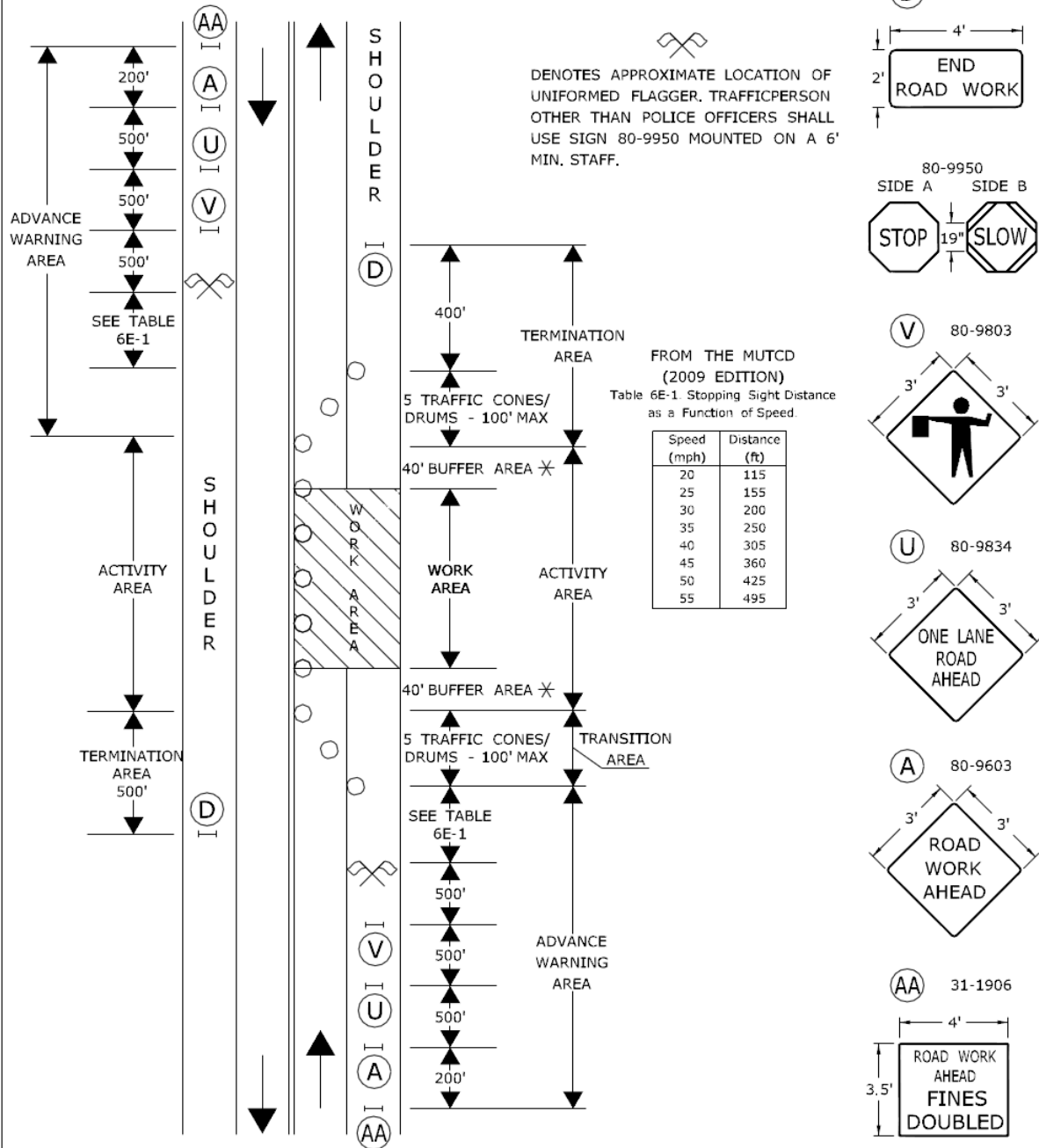
APPROVED

Tracy L. Fogarty
PRINCIPAL ENGINEER

Tracy L. Fogarty, P.E.
2019.08.13 08:47:47-0400

WORK IN TRAVEL LANE AND SHOULDER TWO LANE HIGHWAY ALTERNATING ONE-WAY TRAFFIC OPERATIONS

SIGN FACE
108 SQ. FT (MIN.)



- 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

CONNECTICUT DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING & CONSTRUCTION

APPROVED *Charles S. Harlow*
PRINCIPAL ENGINEER

Charles S. Harlow
2012.06.05 15:55:23-04'00"

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

CONNECTICUT DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING & CONSTRUCTION

APPROVED Charles S. Harlow
2012.06.05 15:55:45-04'00'
PRINCIPAL ENGINEER

Article 9.71.05 – Basis of Payment

The temporary relocation of signs and supports, and the furnishing, installation and removal of any temporary supports shall be paid for under the item “Maintenance and Protection of Traffic”. Temporary overhead sign supports and foundations shall be paid for under the appropriate item(s).

The cost of furnishing, installing, and removing the material for the 4H:1V traversable slope shall be paid for under the item “Maintenance and Protection of Traffic”.

ITEM #0975004A - MOBILIZATION AND PROJECT CLOSEOUT**9.75.01 – Description:**

This item shall consist of all work necessary for the movement of personnel and furnishing equipment to the project site, and for the establishment of all Contractors' field offices, buildings and other facilities necessary to the performance of the work. In addition, this item shall include the preparation of work plans and submittals necessary to facilitate the commencement of physical construction. These initial submittals are identified elsewhere in the contract and may include project schedules, project management plans, safety plans, quality plans, erosion and sedimentation control plans and similar submittals addressing the general sequencing and management of the project. This item shall also include demobilization of plant and equipment, completion of all punchlist work, and administrative closeout items necessary to satisfy all contract requirements.

This item may not be subcontracted, in whole or part.

9.75.04 – Method of Measurement:

This work will be measured for payment in the manner described hereinafter; however, the determination of the total contract price earned shall not include the amount of mobilization earned during the period covered by the current monthly estimate - but shall include amounts previously earned and certified for payment.

1. When the first payment estimate is made, 25 percent of the lump sum bid price for this item or 2.5 percent of the total original contract price, whichever is less, shall be certified for payment.
2. When the initial project submittals necessary to begin construction are accepted by the Engineer, 50 percent of the lump sum bid price for this item or 5.0 percent of the total original contract price, whichever is less, minus any previous payments, shall be certified for payment.
3. When the initial project submittals are accepted by the Engineer, and 15 percent of the total original contract price is earned, 70 percent of the lump sum price of this item or 7.0 percent of the total original contract price, whichever is less, minus any previous payments, will be certified for payment.
4. When 30 percent of the total original contract price is earned 85 percent of the lump sum price of this item or 8.5 percent of the total original contract price, whichever is less, minus any previous payments, will be certified for payment.
5. When the requirements of Article 1.08.13 have been satisfied 95 percent of the lump sum price of this item, minus any previous payments, will be certified for payment.

6. When the requirements of Article 1.08.14 have been satisfied 100 percent of the lump sum price of this item, minus any previous payments, will be certified for payment.

Nothing herein shall be construed to limit or preclude partial payments otherwise provided for by the contract.

9.75.05 – Basis of Payment:

This work will be paid for at the contract lump sum price for “Mobilization and Project Closeout” which price shall include materials, equipment, tools, transportation, labor and all work incidental thereto.

This item shall not be paid more than one time. If the Contractor is required to mobilize equipment or facilities more than one time, due to reasons solely the responsibility of the Department, any additional efforts will be paid as Extra Work under Section 1.04.05.

Pay Item	Pay Unit
Mobilization and Project Closeout	l.s. (l.s.)

ITEM #0979003A - CONSTRUCTION BARRICADE TYPE III

Article 9.79.01 – Description: The Contractor shall furnish construction barricades to conform to the requirements in National Cooperative Highway Research Program (NCHRP) Report 350 or the AASHTO Manual for Assessing Safety Hardware (MASH) and to the requirements stated in Article 9.71 “Maintenance and Protection of Traffic,” as shown on the plans and/or as directed by the Engineer.

Article 9.79.02 – Materials: Prior to using the construction barricades, the Contractor shall submit to the Engineer a copy of the Letter of Acceptance issued by the FHWA to the manufacturer documenting that the devices have been crash tested and have approval in writing from FHWA conforming to the requirements in National Cooperative Highway Research Program (NCHRP) Report 350 or the AASHTO Manual for Assessing Safety Hardware (MASH), as appropriate.

Alternate stripes of white and orange Type III or Type VI reflective sheeting shall be applied to the horizontal members as shown on the plans. Application of the reflective sheeting shall conform to the requirements specified by the reflective sheeting manufacturer. Only one type of sheeting shall be used on a barricade and all barricades furnished shall have the same type of reflective sheeting. Reflective sheeting shall conform to the requirements of Article M.18.09.01.

Construction barricades shall be designed and fabricated so as to prevent them from being blown over or displaced by the wind from passing vehicles. Construction barricades shall be approved by the Engineer before they are used.

Article 9.79.03 – Construction Methods: Ineffective barricades, as determined by the Engineer and in accordance with the ATSSA guidelines contained in “Quality Standards for Work Zone Traffic Control Devices”, shall be replaced by the Contractor at no cost to the State.

Barricades that are no longer required shall be removed from the project and shall remain the property of the Contractor.

Article 9.79.04 – Method of Measurement: Construction Barricade Type III will be measured for payment by the number of construction barricades required and used.

Article 9.79.05 – Basis of Payment: “Construction Barricade Type III” required and used will be paid for at the Contract unit price per each. Each barricade will be paid for once, regardless of the number of times it is used.

Pay Item	Pay Unit
Construction Barricade Type III	EA.

ITEM NO. 0980001A – CONSTRUCTION STAKING

9.80.01—Description: The work under this item shall consist of construction layout and reference staking necessary for the proper control and satisfactory completion of all work on the project, except property lines, highway lines, or non-access lines.

9.80.02—Materials: All stakes used for control staking shall be of the same quality as used by the Department for this purpose. For slope limits, pavement edges, gutter lines, etc., where so-called "green" or "working" stakes are commonly used, lesser quality stakes will be acceptable, provided the stakes are suitable for the intended purpose.

9.80.03—Construction Methods: The Department will furnish the Contractor such control points, bench marks, and other data as may be necessary for the construction staking and layout by qualified engineering or surveying personnel as noted elsewhere herein.

The Contractor shall be responsible for the placement and preservation of adequate ties to all control points, necessary for the accurate re-establishment of all base lines, center lines, and all critical grades as shown on the plans.

All stakes, references, and batter boards which may be required for construction operations, signing and traffic control shall be furnished, set and properly referenced by the Contractor. The Contractor shall be solely and completely responsible for the accuracy of the line and grade of all features of the work. Any errors or apparent discrepancies found in previous surveys, plans, specifications or special provisions shall be called to the Engineer's attention immediately for correction or interpretation prior to proceeding with the work.

During roadway construction (or site work), the Contractor shall provide and maintain for the periods needed, as determined by the Engineer, reference stakes at 100 foot intervals outside the slope limits. Further, the Contractor shall provide and maintain reference stakes at 50 foot intervals immediately prior to and during the formation of subgrade and the construction of all subsequent pavement layers. These stakes shall be properly marked as to station, offset and shall be referenced to the proposed grade, even if laser or GPS machine controls are used.

The Contractor shall provide and maintain reference stakes at drainage structures, including reference stakes for the determination of the structure alignments as may be needed for the proper construction of the drainage structure. The reference stakes shall be placed immediately prior to and maintained during the installation of the drainage structure. These stakes shall be properly marked as to station, offset and shall be referenced to the proposed grade.

The Contractor shall furnish copies of data used in setting and referencing stakes and other layout markings used by the Contractor after completion of each operation.

The Contractor shall provide safe facilities for convenient access by Department forces to control points, batter boards, and references.

All staking shall be performed by qualified engineering or surveying personnel who are trained, experienced and skilled in construction layout and staking of the type required under the contract. Prior to start of work, the Contractor shall submit for review and comment the qualifications of personnel responsible for construction staking on the project. On all projects with an original contract value greater than \$25 million and bridge rehabilitation and reconstruction projects greater than \$10 million, surveying shall be performed under the direct supervision of a Professional Surveyor licensed in the State of Connecticut. The submission shall

include a description of the experience and training which the proposed staff possesses and a list of state projects the personnel have worked on previously. All field layout and staking required for the project shall be performed under the direct supervision of a person, or persons, of engineering background experienced in the direction of such work and acceptable to the Engineer. If the personnel responsible for construction staking change during the course of the project, then a revised submittal will be required.

The Department may check the control of the work, as established by the Contractor, at any time as the work progresses. The Contractor will be informed of the results of these checks, but the Department by so doing in no way relieves the Contractor of responsibility for the accuracy of the layout work. The Contractor shall correct or replace, at the Contractor's own expense, any deficient layout and construction work which may be the result of the inaccuracies in the Contractor's staking operations or the failure to report such inaccuracies, or the Contractor's failure to report inaccuracies found in work done by the Department or by others. If, as a result of these inaccuracies, the Department is required to make further studies, redesign, or both, all expenses incurred by the Department due to such inaccuracies will be deducted from any monies due the Contractor.

The Contractor shall furnish all necessary personnel, engineering equipment and supplies, materials, transportation, and work incidental to the accurate and satisfactory completion of this work.

For roadways where the existing pavement markings need to be reestablished:

Prior to any resurfacing or obliteration of existing pavement markings, the Contractor and a representative of the Engineer must establish and document pavement marking control points from the existing markings. These control points shall be used to reestablish the positions of the lanes, the beginnings and endings of tapers, channelization lines for on and off ramps, lane use arrows, stop bars, and any lane transitions in the project area. The Contractor shall use these control points to provide appropriate premarking prior to the installation of the final markings.

The Contractor shall provide and maintain reference stakes and/or markings at 100 foot intervals immediately off the edge of pavement to be used to reestablish the existing pavement markings. The Contractor shall also provide and maintain reference stakes and/or markings at any point where there is a change in pavement markings to reestablish the existing pavement markings.

For non-limited access roadways

On non-limited access roadways it may be necessary to adjust the final locations of the pavement markings to accommodate pedestrians and bicyclists where feasible. Prior to any resurfacing or obliteration of existing pavement markings, the Contractor, a representative of the Engineer, and a representative of the Division of Traffic Engineering must establish and document pavement marking control points from the existing markings as described above. The control points at that time may be adjusted to provide minimum shoulder widths of 4 to 5 feet wherever possible while maintaining travel lane widths of no less than 11 feet and no more than 12 feet.

9.80.04—Method of Measurement: Construction staking will be at the Contract lump sum for construction staking.

When no price for "Construction Staking" is asked for on the proposal form, the cost of the work described above shall be included in the general cost of the work and no direct payment for "Construction Staking" will be made.

9.80.05—Basis of Payment: Construction staking will be paid for at the Contract lump sum price for "Construction Staking," which price shall include all materials, tools, equipment, labor and work incidental thereto. A schedule of values for payment shall be submitted to the Department for review and comment prior to payment.

Pay Item	Pay Unit
Construction Staking	l.s.

ITEM 1220027A – CONSTRUCTION SIGNS

12.20.01—Description: Under this item the Contractor shall furnish, install and remove construction signs with retroreflective sheeting and their required portable supports or metal sign posts that meet the requirements of NCHRP Report 350 (TL-3) or MASH for Category 2 Devices. The construction signs and their required portable supports or metal sign posts shall comply with the signing requirements stated in the item "Maintenance and Protection of Traffic," as shown on the plans and/or as directed by the Engineer.

The Contractor shall furnish a sufficient number of signs to provide the signing patterns for all operations which are being undertaken concurrently.

12.20.02—Materials: Prior to using the construction signs and their portable supports, the Contractor shall submit to the Engineer a copy of the Letter of Acceptance issued by the FHWA to the manufacturer documenting that the devices (both sign and portable support tested together) comply with the requirements of NCHRP Report 350 (TL-3) or MASH for Category 2 Devices.

All sign faces shall be rigid and reflectorized and shall meet the requirements of M.18.09. If used as rigid substrate, sheet aluminum sign blanks shall comply with the requirements of M.18.13. Metal sign posts shall comply with the requirements of M.18.14. Application of retroreflective sheeting, legends, symbols, and borders shall comply with the requirements specified by the retroreflective sheeting manufacturer. Attachments shall be provided so that the signs can be firmly attached to the portable sign supports or metal posts without causing damage to the signs.

12.20.03—Construction Methods: The signs and their portable supports or metal posts shall comply with the requirements as shown on the plans and the latest edition of the "Manual on Uniformed Traffic Control Devices." Drawings of the signs, showing placement and dimensions of legend and border, are available for inspection at the Division of Traffic, Connecticut Department of Transportation. Various types of portable sign supports may be used. These portable supports shall be fabricated in such a manner as to minimize the possibility of the signs being blown over or displaced by the wind from passing vehicles and are to be of a yielding type to withstand impact with minimal damage to the signs, supports, or vehicles. Portable sign supports shall be approved by the Engineer before they are utilized on the Project. Mounting height of signs on portable sign supports shall be a minimum of 1 foot and a maximum of 2 feet, measured from the pavement to the bottom of the sign. Signs in other than good condition shall be replaced with acceptable signs as determined by the Engineer. Suitable attachments shall be provided so that the signs can be firmly attached to the portable sign supports or metal posts without causing damage to the signs. The following types of construction signs shall not be used: mesh, non-rigid, roll-up, corrugated or waffle board types substrates, foam core and composite aluminum sign substrates. Field Performance: Retroreflective sheeting processed and applied to sign blank materials in accordance with the sheeting manufacturer's recommendations, shall perform effectively for a minimum of 3 years. The retroreflective sheeting will be considered unsatisfactory if it has deteriorated due to natural causes to the extent that:

- 1) the sign is ineffective for its intended purpose when viewed from a moving vehicle under normal day and night driving conditions; or
- 2) the coefficient of retroreflection is less than 100 when measured at 0.2 degree observation angle and -4 degree entrance angle.

All measurements shall be made after sign cleaning according to the sheeting manufacturer's recommendations. Ineffective signs, as determined by the Engineer and in accordance with the ATSSA guidelines contained in "Quality Standards for Work Zone Traffic Control Devices," shall be replaced by the Contractor at no cost to the State. Signs and their portable sign supports or metal posts that are no longer required shall be removed from the Project and shall remain the property of the Contractor.

12.20.04—Method of Measurement: The work to furnish, install and remove construction signs will be measured for payment by the number of square feet of sign face delivered and used on the Project. Sign supports will not be measured for payment.

12.20.05—Basis of Payment: This item will be paid for at the Contract unit price per square foot for "Construction Signs," delivered and used on the Project, which price shall include the signs, portable sign supports, metal sign posts and all hardware required to attach the sign to the support or posts. Each sign and support or posts furnished will be paid for once, regardless of the number of times used on the Project.

Pay Item	Pay Unit
Construction Signs	s.f.

ITEM #1401257A – WATER MAIN SUPPORT BRACKETS

Description: This item shall consist of furnishing and installing future water main support brackets as shown on the contract documents. This item also includes the Contractor’s coordination with the owner(s) of the utility facility requiring support.

Materials:

The materials for this work shall conform to the following requirements:

- Structural Steel shall conform to AASHTO M270 T2 Grade 50
- Bolts shall conform to ASTM A325M
- Threaded rods shall conform to ASTM A307
- Portland Cement Concrete shall be Class “A”

Adjustable Roll Guides: Each Adjustable Roll Guides shall include four adjustable sockets and two roll axles with non-conducting rollers; each assembly mounted on two vertical threaded rods and fastened to the temporary structure with hex nuts. Contractor shall furnish product submittal detailing dimensions, weight and maximum loading for roller assembly.

Construction Methods:

The Contractor shall prepare shop drawings for the temporary utility support system shown on the plans. The support systems shall safely carry all utility dead loads as well as any imposed loadings under all possible construction conditions. Said supports shall be constructed in a manner that will not interfere with the proposed superstructure replacement or vehicular traffic.

Method of Measurement: The work and materials under this item, being paid on a lump sum basis, will not be measured for payment

Basis of Payment: This work will be paid for at the Contract lump sum price for “Water Main Support Bracket” complete and accepted, which price shall include designing (including submittals and working drawings), furnishing, and installing the brackets. This price shall include all materials, equipment, tools, labor and work incidental thereto including coordination with the owner(s) of the utility facilities requiring support.

<u>Pay Item</u>	<u>Unit</u>
Water Main Support Brackets	l.s.

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Connecticut Department of

**ENERGY &
ENVIRONMENTAL
PROTECTION**

November 29, 2021

Brian Anisimov
SLR International Corporation
99 Realty Dr
Cheshire, CT 06410
BANISIMOV@SLRCONSULTING.COM

NDDB DETERMINATION NUMBER: 202111950

Project: Replace existing twin pipe culverts with precast concrete box culvert with open natural bottom;
INDUSTRIAL AVENUE BRIDGE (NO.025030) OVER UNNMANED STREAM, INDUSTRIAL AVE.,CHESHIRE

Expiration: November 29, 2023

I have reviewed Natural Diversity Database (NDDB) maps and files regarding this project. I do not anticipate negative impacts to State-listed species (RCSA Sec. 26-306) resulting from your proposed activity at the site. **This determination is good for 2 years.**

Natural Diversity Database information includes all information regarding critical biological resources available to us at the time of the request. This information is a compilation of data collected over the years by the Department of Energy and Environmental Protection's Natural History Survey and cooperating units of DEEP, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultations with the Database should not be substitutes for on-site surveys required for environmental assessments. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as, enhance existing data. Such new information is incorporated into the Database as it becomes available. The result of this review does not preclude the possibility that listed species may be encountered on site and that additional action may be necessary to remain in compliance with certain state permits.

Please contact me if you have further questions at shannon.kearney@ct.gov . Thank you for consulting the Natural Diversity Database.

Sincerely,

/s/ Shannon B. Kearney
Wildlife Biologist

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REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS
696 VIRGINIA ROAD
CONCORD, MASSACHUSETTS 01742-2751

19 July 2022

Regulatory Division
File Number: NAE-2022-01745

George Noewatne
Town of Cheshire
84 South Main Street
Cheshire, CT 06410

Dear Mr. Noewatne:

PROPOSED WORK/LOCATION: Culvert replacement, Cheshire, CT.

We have reviewed your proposal to perform work within Corps of Engineers jurisdiction. We have assigned this file number **NAE-2022-01745**. Please reference this number in any future correspondence with us.

Since your project may have only minimal individual and cumulative impacts on waters and wetlands of the United States, it is authorized by the Corps of Engineers under the Connecticut General Permits (GPs). This authorization does not obviate the need to obtain other federal, state, or local approvals. You are responsible for ensuring that the work meets the terms and conditions of the CT GPs. We have recorded this project as permittee self-verification of the CT GPs in our database.

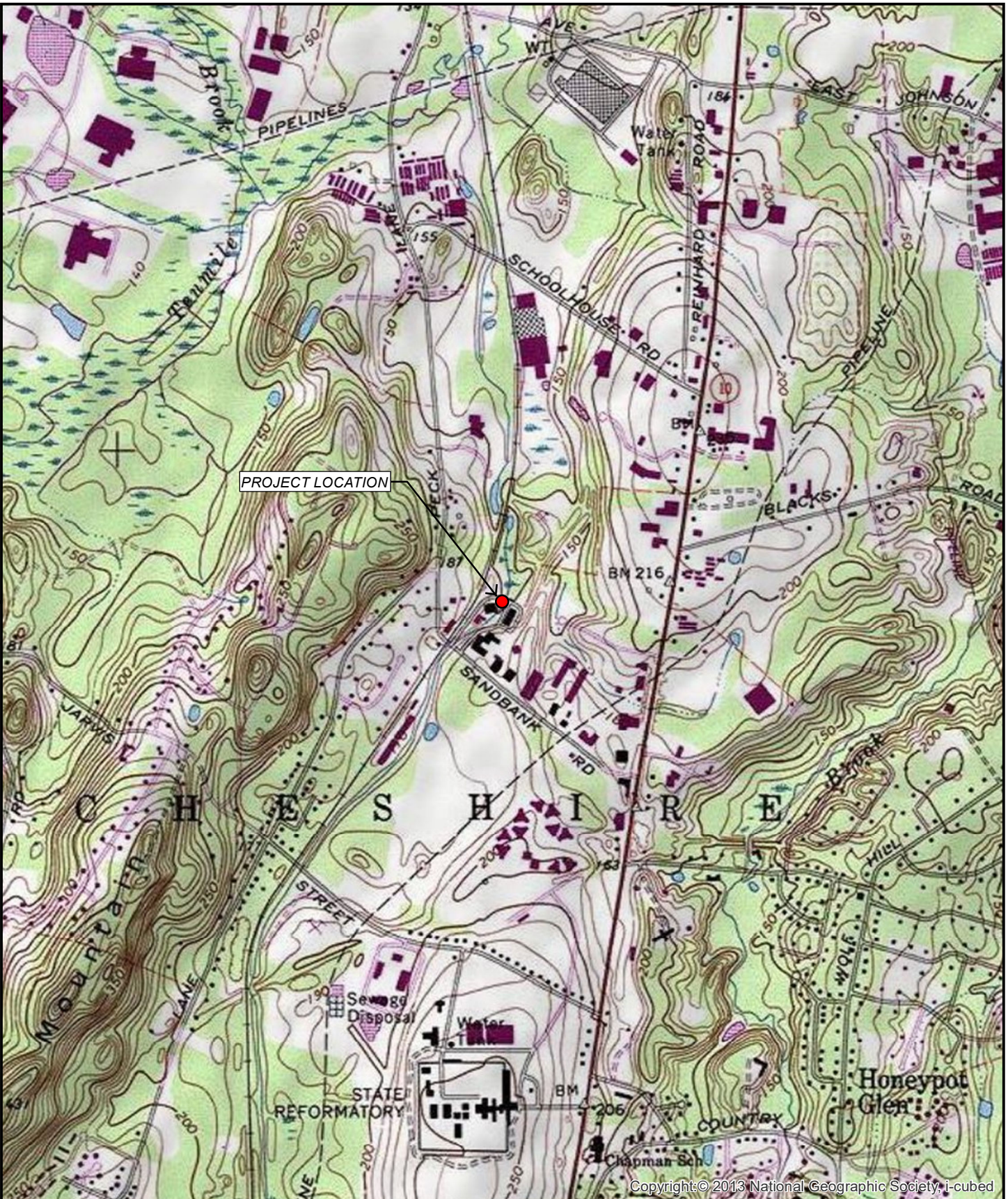
Please contact me at (978) 318-8703 if you have any questions.

Sincerely,

A handwritten signature in black ink that reads "Kevin R. Kotelly". The signature is written in a cursive style with a large, looping "K" and "y".

Kevin R. Kotelly, P.E.
Chief, Permits & Enforcement Branch
Regulatory Division

Enclosure (plans)



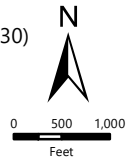
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99 REALTY DRIVE
CHESHIRE, CT 06410
203.271.1773

USGS LOCATION MAP

INDUSTRIAL AVENUE BRIDGE OVER UNNAMED STREAM (BRIDGE NO. 025030)
TOWN OF CHESHIRE
INDUSTRIAL AVENUE
CHESHIRE, CONNECTICUT



SCALE 1" = 2,000'

DATE 5/6/2021

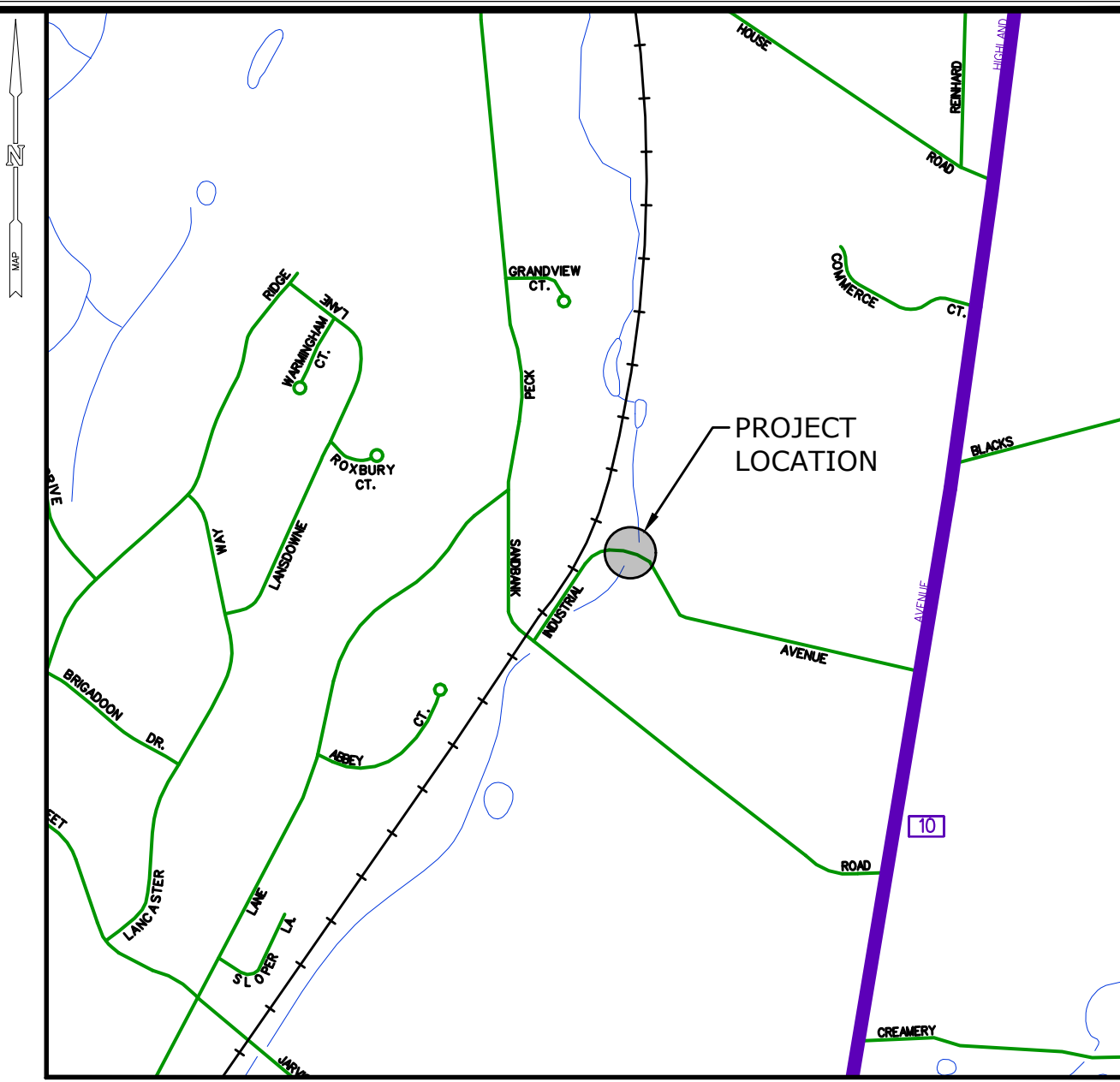
141.11047.00059
PROJ. NO.

FIG. 1

REPLACEMENT OF INDUSTRIAL AVENUE BRIDGE (NO. 025030) OVER UNNAMED STREAM

INDUSTRIAL AVENUE CHESHIRE, CONNECTICUT

CTDOT PROJECT NO. 9025-0030
SLR PROJECT NO. 141.11047.00059
JANUARY 27, 2022



LOCATION MAP:

LIST OF DRAWINGS

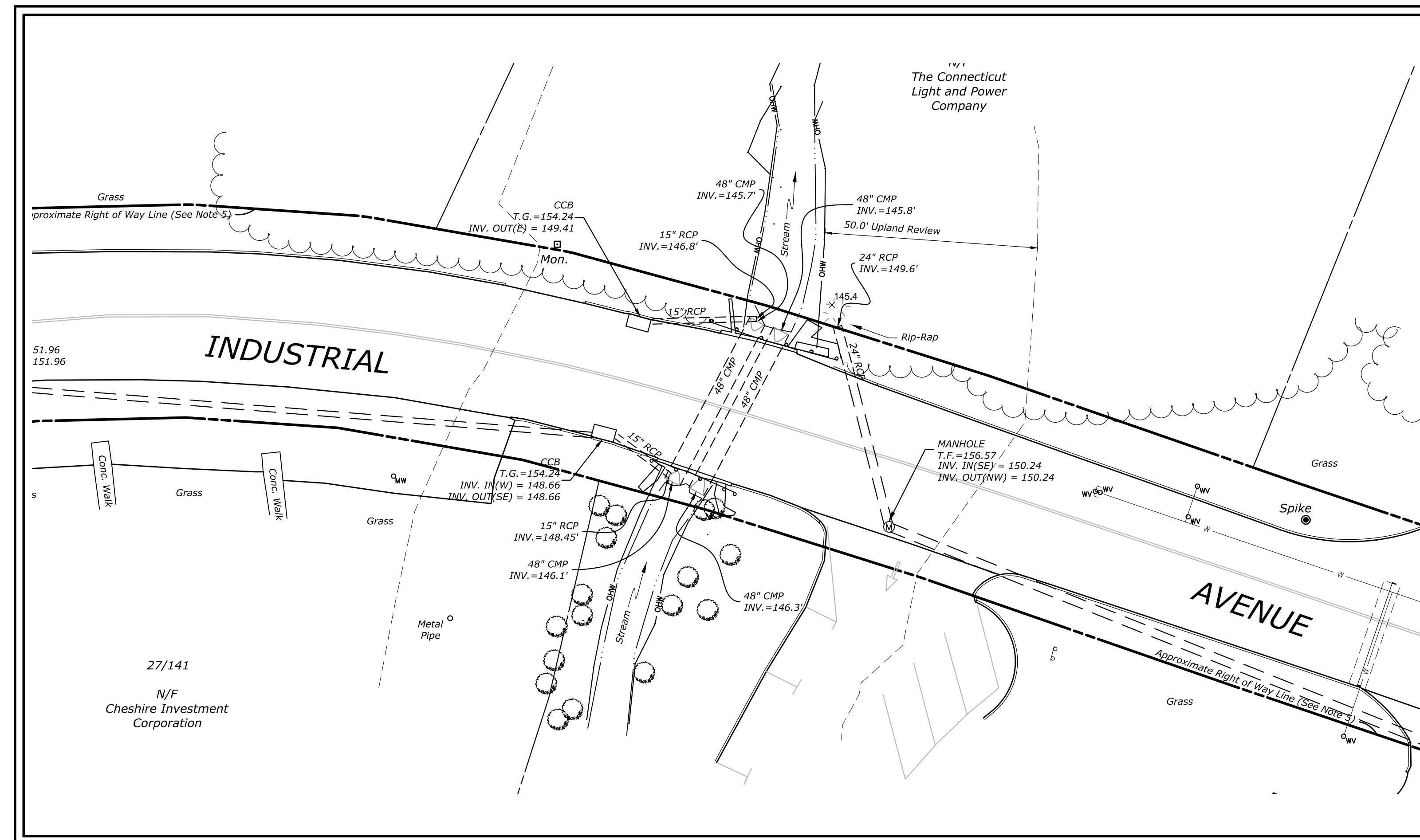
NO.	NAME	TITLE
01	--	TITLE SHEET
02	N-01	TYPICAL SECTION, GENERAL NOTES & LEGEND
03	EX-01	EXISTING CONDITIONS & BASELINE INFORMATION
04	RWY-01	ROADWAY PLAN
05	PRO-01	ROADWAY AND CHANNEL PROFILE
06	ROW-01	RIGHTS-OF-WAY PLAN
07	SE-01	SEDIMENT & EROSION CONTROL PLAN
08	STR-01	BRIDGE PLAN, PROFILE & TYPICAL SECTION
09	STR-02	BORING LOGS
10	MPT-01	DETOUR PLAN
11-13	MPT-02 TO MPT-04	STAGED CONSTRUCTION PLANS

CTDOT STANDARD HIGHWAY SHEETS

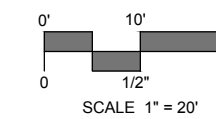
HW-INX_1	HIGHWAY STANDARD SHEET INDEX
HW-INX_2	HIGHWAY STANDARD SHEET INDEX
HW-0506_01	ENDWALLS, SLOPE PAVED INLETS AND OUTLETS
HW-05-07_01	TYPE "C" & "C-L" & DROP INLET CATCH BASIN
HW-05-07_07	TYPE "C" & "C-L" CATCH BASIN TOPS AND CURBS
HW-05-07_08	CATCH BASIN FRAMES AND GRATES
HW-910_20	MASH W-BEAM HARDWARE
HW-910_21	METAL BEAM RAIL (R-B MASH) GUIDERAIL
HW-910_26	THRIE-BEAM ATTACHMENT HARDWARE
HW-910_27	THRIE-BEAM ATTACHMENT
HW-911_01	R-B END ANCHORAGE TYPE I AND II
HW-921_01	DRIVEWAY RAMPS AND SIDEWALKS

CTDOT STANDARD TRAFFIC SHEETS

TR-STD_INDEX	TRAFFIC STANDARD SHEET INDEX
TR_1208_02	METAL SIGN POSTS AND SIGN MOUNTING DETAILS
TR_1220_01	SIGNS FOR CONSTRUCTION AND PERMIT OPERATIONS
TR_1220_02	CONSTRUCTION SIGN SUPPORTS AND CHANNELIZING DEVICES
TR-1208_01	SIGN PLACEMENT AND RETROREFLECTIVE STRIP DETAILS
TR-1210_04	PAVEMENT MARKING LINES AND SYMBOLS
TR-1220_01	SIGNS FOR CONSTRUCTION AND PERMIT OPERATIONS



PROJECT SITE VICINITY MAP:



PREPARED BY:

SLR

99 REALTY DRIVE
CHESHIRE, CT 06410
203.271.1773
SLRCONSULTING.COM

PREPARED FOR:

TOWN OF CHESHIRE
84 SOUTH MAIN STREET
CHESHIRE, CONNECTICUT 06410



Know what's below.
Call before you dig.
www.cbyd.com

Kishor Patel

P.E. CT# 23980

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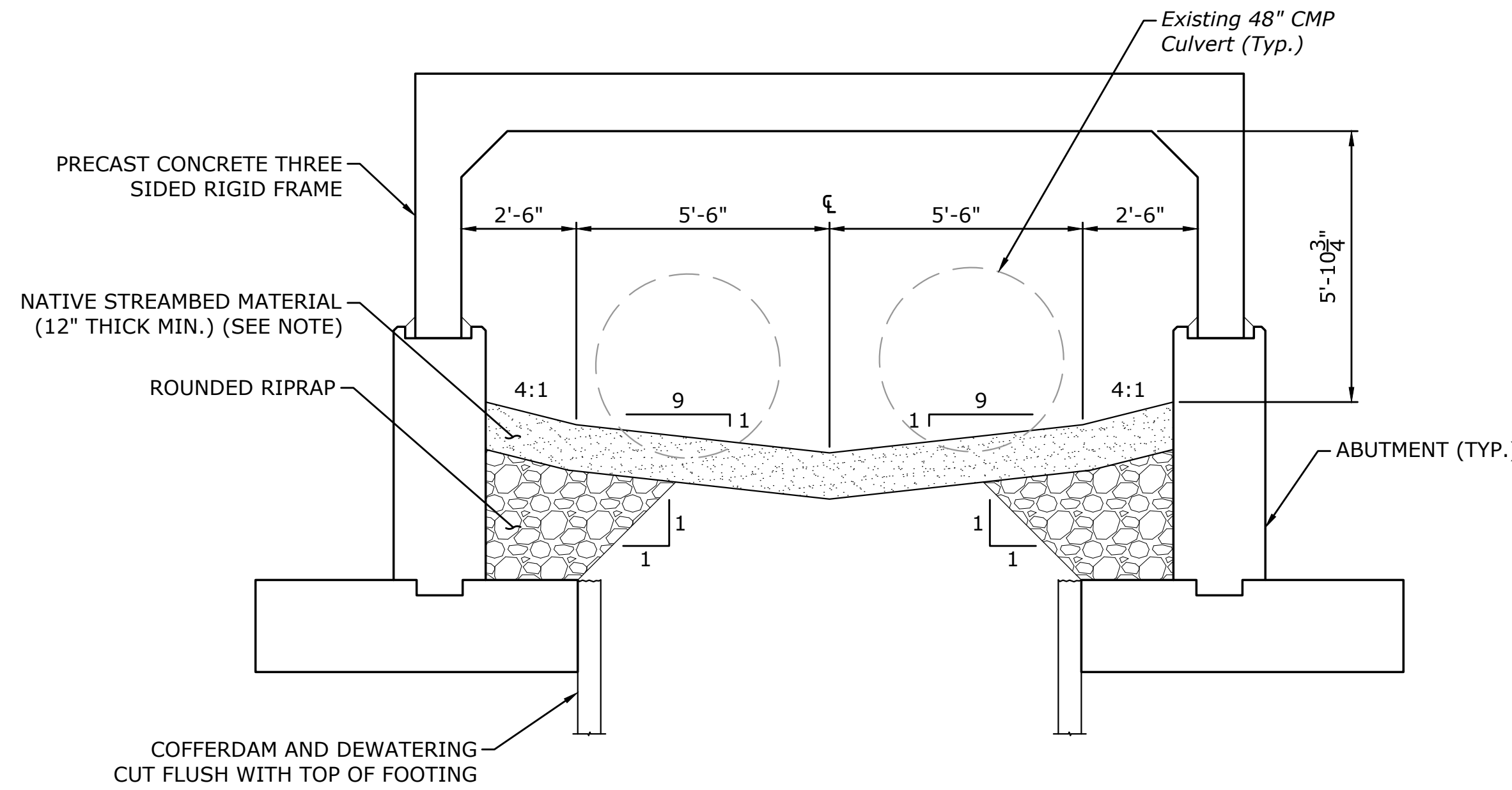
GENERAL NOTES

1. SLR CONSULTING ACCEPTS NO RESPONSIBILITY FOR THE ACCURACY OF MAPS AND DATA WHICH HAVE BEEN SUPPLIED BY OTHERS.
2. WETLAND LIMITS SHOWN HAVE BEEN DELINEATED BY SLR CONSULTING. THE CONTRACTOR SHALL PERFORM ALL WORK IN ACCORDANCE WITH THE "BEST MANAGEMENT PRACTICES FOR THE PROTECTION OF THE ENVIRONMENT" AS OUTLINED IN THE STANDARD SPECIFICATIONS.
3. THE PROPERTY LINES DEPICTED HAVE BEEN COMPILED FROM VARIOUS SOURCES INCLUDING TOWN OF CHESHIRE LAND RECORDS AND ARE NOT TO BE CONSTRUED AS BEING OBTAINED AS THE RESULT OF A FIELD SURVEY, NOR DO THEY REPRESENT A PROPERTY/BOUNDARY OPINION.
4. ALL CONSTRUCTION MATERIALS AND METHODS SHALL CONFORM TO THE APPLICABLE SECTIONS OF THE STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADS, BRIDGES, FACILITIES AND INCIDENTAL CONSTRUCTION, FORM 818 (2020), SUPPLEMENTAL SPECIFICATIONS DATED JANUARY 2021, AND SPECIAL PROVISIONS.
5. THE CONTRACTOR SHALL BE AWARE OF THE WORK WHICH IS TO BE PERFORMED WITHIN AND ADJACENT TO PRIVATE PROPERTY RIGHT-OF-WAYS.
6. SEDIMENT AND EROSION CONTROL MEASURES AS DEPICTED ON THESE PLANS AND DESCRIBED WITHIN THE SEDIMENT AND EROSION CONTROL NARRATIVE SHALL BE IMPLEMENTED AND MAINTAINED UNTIL PERMANENT COVER AND STABILIZATION IS ESTABLISHED. ALL SEDIMENT AND EROSION CONTROL MEASURES SHALL CONFORM TO THE "GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL, CONNECTICUT - REVISED 2002", AND IN ALL CASES BEST MANAGEMENT PRACTICES SHALL PREVAIL.
7. THE PLANS REQUIRE A CONTRACTOR'S WORKING KNOWLEDGE OF LOCAL, MUNICIPAL, WATER AUTHORITY, AND STATE CODES FOR UTILITY SYSTEMS. ANY CONFLICTS BETWEEN MATERIALS AND LOCATIONS SHOWN, AND LOCAL REQUIREMENTS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE EXECUTION OF WORK. THE MUNICIPALITY WILL NOT BE HELD LIABLE FOR COSTS INCURRED TO IMPLEMENT OR CORRECT WORK WHICH DOES NOT CONFORM TO LOCAL CODE.
8. ALL FUEL, OIL, PAINT, OR OTHER HAZARDOUS MATERIALS SHOULD BE STORED IN A SECONDARY CONTAINER AND REMOVED TO A LOCKED INDOOR AREA WITH AN IMPERVIOUS FLOOR DURING NON-WORK HOURS.
9. ALL CONSTRUCTION EQUIPMENT AND VEHICLES SHALL BE RE-FUELED A MINIMUM OF 100-FT AWAY FROM WETLANDS AND WATERCOURSES.
10. CONSTRUCTION EQUIPMENT SHALL BE STORED OUTSIDE OF AREAS SUBJECT TO FLOODING.
11. CONTRACTOR TO STAKE OUT WORK LIMITS AND COORDINATE SELECTIVE CLEARING WITH THE TOWN. NO SEPARATE PAYMENT.
12. A PRE-CONSTRUCTION MEETING SHALL BE HELD BETWEEN ALL PARTIES INCLUDING THE TOWN ENVIRONMENTAL PLANNER PRIOR TO MOBILIZATION BY THE CONTRACTOR.
13. THE CONTRACTOR SHALL REVIEW AND CLEAR THE SITE DAILY FOR TRASH AND/OR DEBRIS.
14. THE CONTRACTOR SHALL PROVIDE ON-SITE LAVATORY FACILITIES TO BE MAINTAINED THROUGHOUT CONSTRUCTION. TO BE PAID UNDER ITEM "MOBILIZATION AND PROTECTION CLOSEOUT."

UTILITIES

1. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION WITH APPROPRIATE UTILITY COMPANIES REGARDING RELOCATION AND PROTECTION OF THEIR FACILITIES AND SCHEDULING OF SUCH WORK.

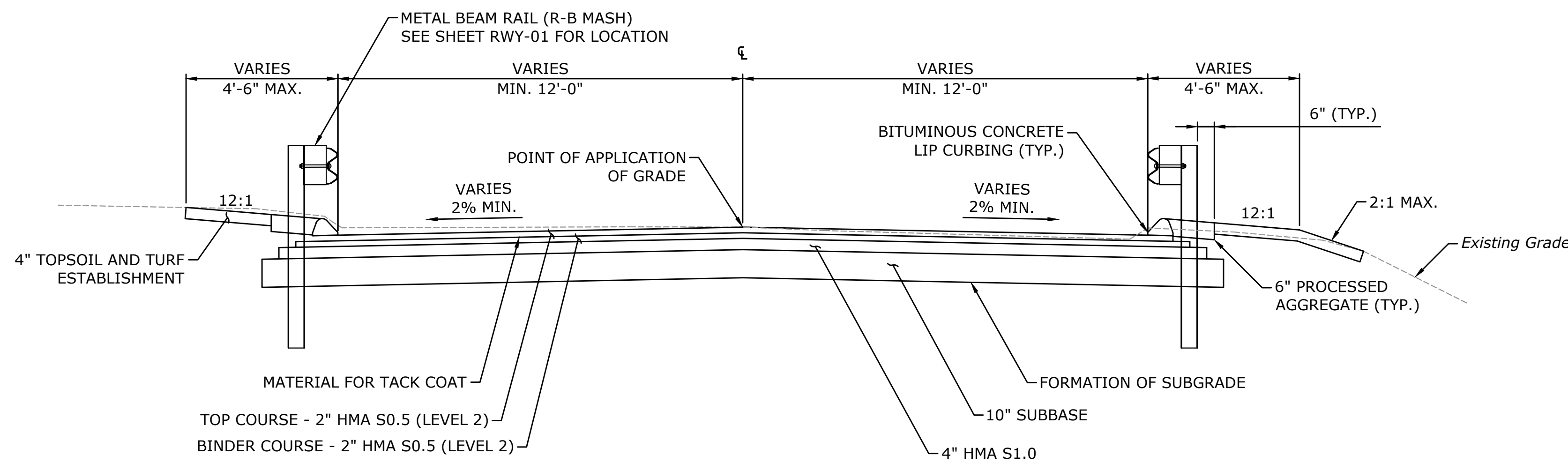
EXISTING	LEGEND	PROPOSED
---	STREET LINE	---
---	PROPERTY LINE	---
---155---	CONTOUR	---(155)---
x70	SPOT GRADE	+70.5
~~~~~	STATE WETLAND BOUNDARY	~~~~~
---FED WL---	FEDERAL WETLAND BOUNDARY	---
---	WATERCOURSE LINE	---
---	ORDINARY HIGH WATER	---
~~~~~	TREE LINE	~~~~~
⊙	TREE	⊙
⊙	SHRUB	⊙
---	FENCE LINE	---
---	GUIDERAIL	---
---	STORM DRAIN W/ CATCH BASIN	---
---	UNDERGROUND ELECTRIC	---
---	UNDERGROUND COMMUNICATION	---
⊙	LIGHT POST	⊙
⊙	ELECTRIC MANHOLE	⊙
⊙	ELECTRIC BOX	⊙
⊙	TRANSFORMER	⊙
⊙	SIGN	⊙
⊙	MAILBOX	⊙
⊙	WELL	⊙
⊙	MONUMENT	⊙
⊙	CONTROL POINT	⊙
---	CURB	---
---	CONSTRUCTION EASEMENT LINE	---
---	DRAINAGE EASEMENT LINE	---
---	SEDIMENT EROSION CONTROL SYSTEM	---
---	CUT LIMIT	---
---	FILL LIMIT	---
⊙	BORING	⊙ B-1



TYPICAL CHANNEL SECTION AT CULVERT

SCALE: 3/8" = 1'-0"

NOTE:
THE TOP COURSE OF MATERIAL PLACED BELOW THE ORDINARY HIGH WATER LINE, HEREIN REFERRED TO AS "NATIVE STREAMBED MATERIAL" SHALL CONSIST OF THE ITEMS "EXCAVATION AND REUSE OF EXISTING CHANNEL BOTTOM MATERIAL" AND "SUPPLEMENTAL STREAMBED CHANNEL MATERIAL" AS NEEDED TO GRADE THE PROPOSED CHANNEL FOLLOWING REMOVAL OF THE EXISTING CORRUGATED STEEL ARCH PIPE CULVERTS.



TYPICAL ROADWAY SECTION

SCALE: 3/8" = 1'-0"



DESCRIPTION	DATE	BY

TYPICAL SECTION, GENERAL NOTES & LEGEND
REPLACEMENT OF INDUSTRIAL AVENUE BRIDGE (NO. 025030) OVER UNNAMED STREAM
INDUSTRIAL AVENUE
CHESHIRE, CONNECTICUT

KP	WRS	KP
DESIGNED	DRAWN	CHECKED
AS SHOWN		
JANUARY 27, 2022		
DATE		
141.11047.00059		
PROJECT NO.		
N-01		
DRAWING NO.		

02

NOTES:

1. THIS SURVEY HAS BEEN PREPARED PURSUANT TO THE REGULATIONS OF CONNECTICUT STATE AGENCIES SECTIONS 20-300b-1 THROUGH 20-300b-20 AND THE "STANDARDS AND SUGGESTED METHODS AND PROCEDURES FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. ON AUGUST 29, 2019.

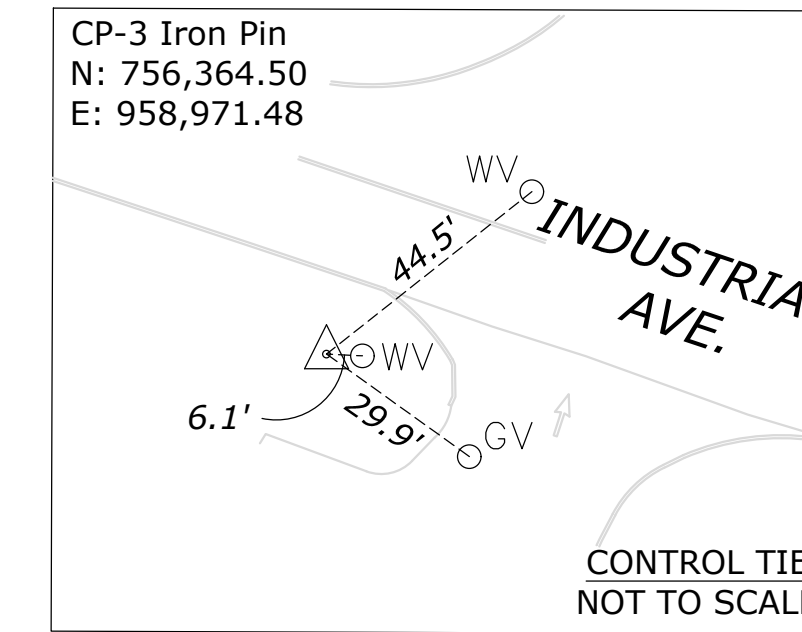
TYPE OF SURVEY: TOPOGRAPHIC SURVEY
 BOUNDARY DETERMINATION: N.A.
 ACCURACY CLASS: A-2 HORIZONTAL & T-2 TOPOGRAPHIC

2. NORTH BASED UPON THE CONNECTICUT COORDINATE SYSTEM (NAD 1983) ESTABLISHED BY GPS.

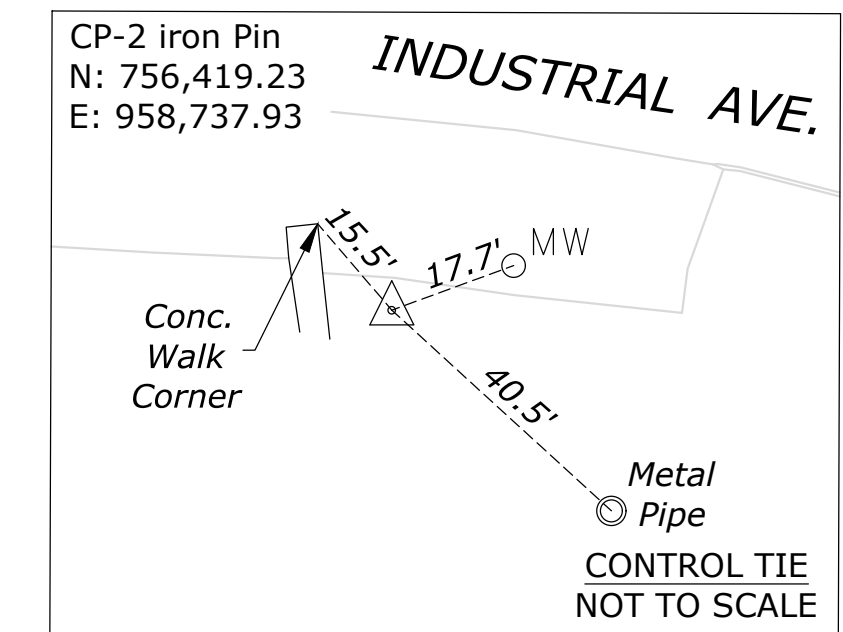
3. VERTICAL DATUM BASED UPON NAVD 1988 ESTABLISHED BY GPS.

4. PROPERTY AND EASEMENT LINES ARE DEPICTED PER RECORD MAPPING AND ARE APPROXIMATE IN NATURE. THEY ARE FOR INFORMATIONAL PURPOSES ONLY AND DO NOT REPRESENT A BOUNDARY OPINION.

5. ALL UNDERGROUND UTILITIES MAY NOT BE SHOWN. UNDERGROUND UTILITY, STRUCTURE AND FACILITY LOCATIONS DEPICTED HEREON HAVE BEEN COMPILED, IN PART, FROM RECORD MAPPING AND OTHER DATA SUPPLIED BY RESPECTIVE UTILITY COMPANIES, GOVERNMENTAL AGENCIES AND/OR OTHER SOURCES. THESE LOCATIONS MUST BE CONSIDERED APPROXIMATE IN NATURE. ADDITIONALLY, OTHER SUCH FEATURES MAY EXIST ON THE SITE, THE EXISTENCE OF WHICH ARE UNKNOWN TO SLR INTERNATIONAL CORPORATION. THE EXISTENCE, SIZE AND LOCATION OF ALL SUCH FEATURES MUST BE DETERMINED AND VERIFIED IN THE FIELD BY THE APPROPRIATE AUTHORITIES PRIOR TO BEGINNING CONSTRUCTION. "CALL BEFORE YOU DIG" DIAL 811 OR 1-800-922-4455.



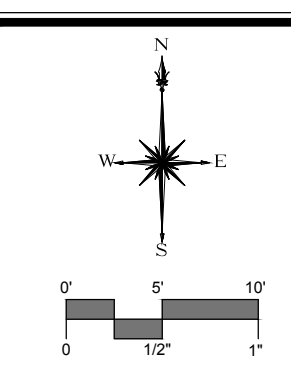
27/147
 N/F
 The Connecticut
 Light and Power
 Company



27/141
 N/F
 Cheshire Investment
 Corporation

I HEREBY CERTIFY THAT THE INLAND WETLAND BOUNDARY AND WATERCOURSE LINE(S) AS SHOWN ON THIS MAP ARE SUBSTANTIALLY CORRECT.

MATTHEW SANFORD - CERTIFIED SOIL SCIENTIST



DESCRIPTION	DATE	BY

EXISTING CONDITIONS & BASELINE INFORMATION
 REPLACEMENT OF INDUSTRIAL AVENUE
 BRIDGE (NO. 025030) OVER UNNAMED STREAM
 INDUSTRIAL AVENUE
 CHESHIRE, CONNECTICUT

DESIGNED	WRS	KP
DRAWN		CHECKED
SCALE		
1"=10'		
DATE		
JANUARY 27, 2022		
PROJECT NO.		
141.11047.00059		
DRAWING NO.		
EX-01		

03

STATE PROJECT NO. 9025-0030

SCHEDULE OF SIGNS

CTDOT SIGN NO.	SIZE	LEGEND	LOCATION	ALUMINUM THICKNESS	POSTS	BACKGROUND COLOR	LEGEND COLOR
N/A	12"x4"	025030	STA. 10+94.2±, 14.9'± R	N/A	N/A	GREEN	WHITE
N/A	12"x4"	025030	STA. 11+52.7±, 15.8'± L	N/A	N/A	GREEN	WHITE

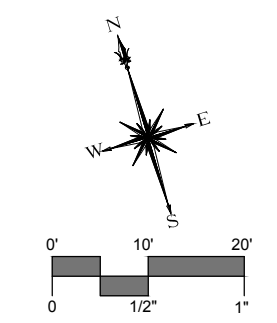
025030 4"
12"

BRIDGE IDENTIFICATION PLACARD

NOT TO SCALE

NOTES:

- REMOVAL OF EXISTING R.C. DRAINAGE STRUCTURE AND PIPE WITHIN LIMITS OF DRAINAGE TRENCH EXCAVATION TO BE PAID FOR UNDER "ROCK IN DRAINAGE TRENCH EXCAVATION - 0'-10' DEEP".
- REMOVAL OF EXISTING R.C. PIPE OUTSIDE THE LIMITS OF DRAINAGE TRENCH EXCAVATION TO BE PAID FOR UNDER "REMOVE EXISTING PIPE - 0'-10' DEEP".



DESCRIPTION	DATE	BY

ROADWAY PLAN
REPLACEMENT OF INDUSTRIAL AVENUE
BRIDGE (NO. 025030) OVER UNNAMED STREAM
INDUSTRIAL AVENUE
CHESHIRE, CONNECTICUT

SIGN NOTES:

- SIGNS SHALL BE FABRICATED FROM ONE CONTINUOUS PIECE OF SHEET ALUMINUM. SPLICING OF SHEET ALUMINUM WILL NOT BE ACCEPTED.
- SIGNS SHALL BE PAID FOR UNDER ITEM "SIGN FACE - SHEET ALUMINUM (TYPE IX RETROREFLECTIVE SHEETING)".

BRIDGE IDENTIFICATION PLACARDS:

THE CONTRACTOR SHALL PROVIDE AND INSTALL NEW BRIDGE IDENTIFICATION PLACARDS ON THE SIGN POST BELOW SIGN 51-2009 ON THE LEADING ENDS OF THE BRIDGE AS INDICATED ON THE PLANS. THE SIGNS SHALL BE FABRICATED WITH 40 GAUGE ALUMINUM SHEET METAL. THE SIGNS SHALL BE 4"x12" WITH 3" WHITE REFLECTIVE BLOCK LETTERS ON GREEN REFLECTIVE SHEETING. EACH SIGN SHALL READ: 025030. THE FINAL LOCATION AND ATTACHMENT METHOD FOR THE SIGN SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION. ALL COSTS ASSOCIATED WITH PROVIDING AND INSTALLING THE BRIDGE IDENTIFICATION PLACARDS SHALL BE PAID UNDER THE ITEM #1208931 - SIGN FACE - SHEET ALUMINUM (TYPE IX RETROREFLECTIVE SHEETING).

NOTES:

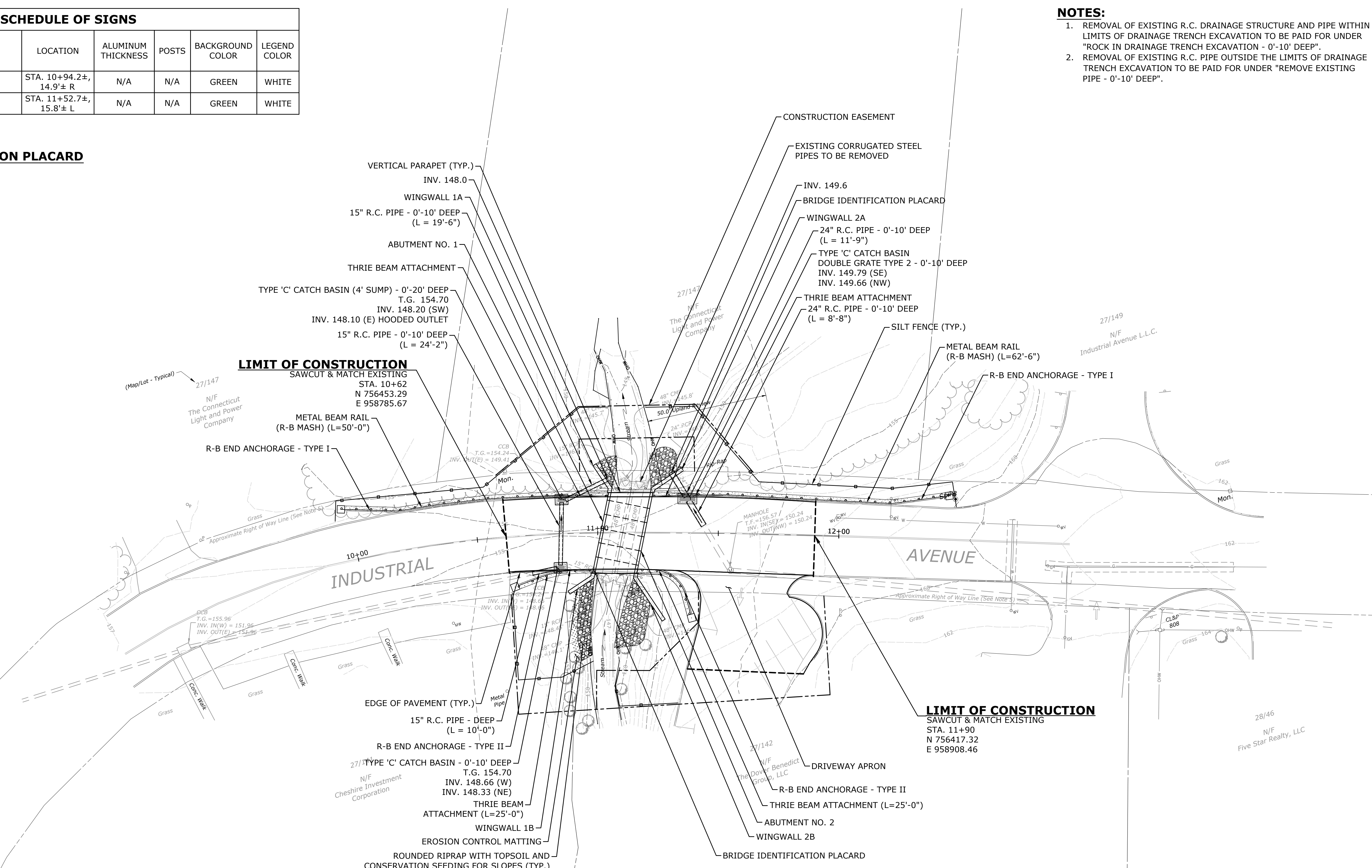
- REGRAVING OF THE EXISTING CHANNEL SHALL BE PAID UNDER THE ITEM "EXCAVATION AND REUSE OF EXISTING CHANNEL BOTTOM MATERIAL".
- CONSTRUCTION OF THE NEW CHANNEL BOTTOM SHALL BE PAID UNDER THE ITEMS "EXCAVATION AND REUSE OF EXISTING CHANNEL BOTTOM MATERIAL" AND "SUPPLEMENTAL STREAMBED CHANNEL MATERIAL" AS NEEDED.

REGULATED ACTIVITIES IMPACT TABLE

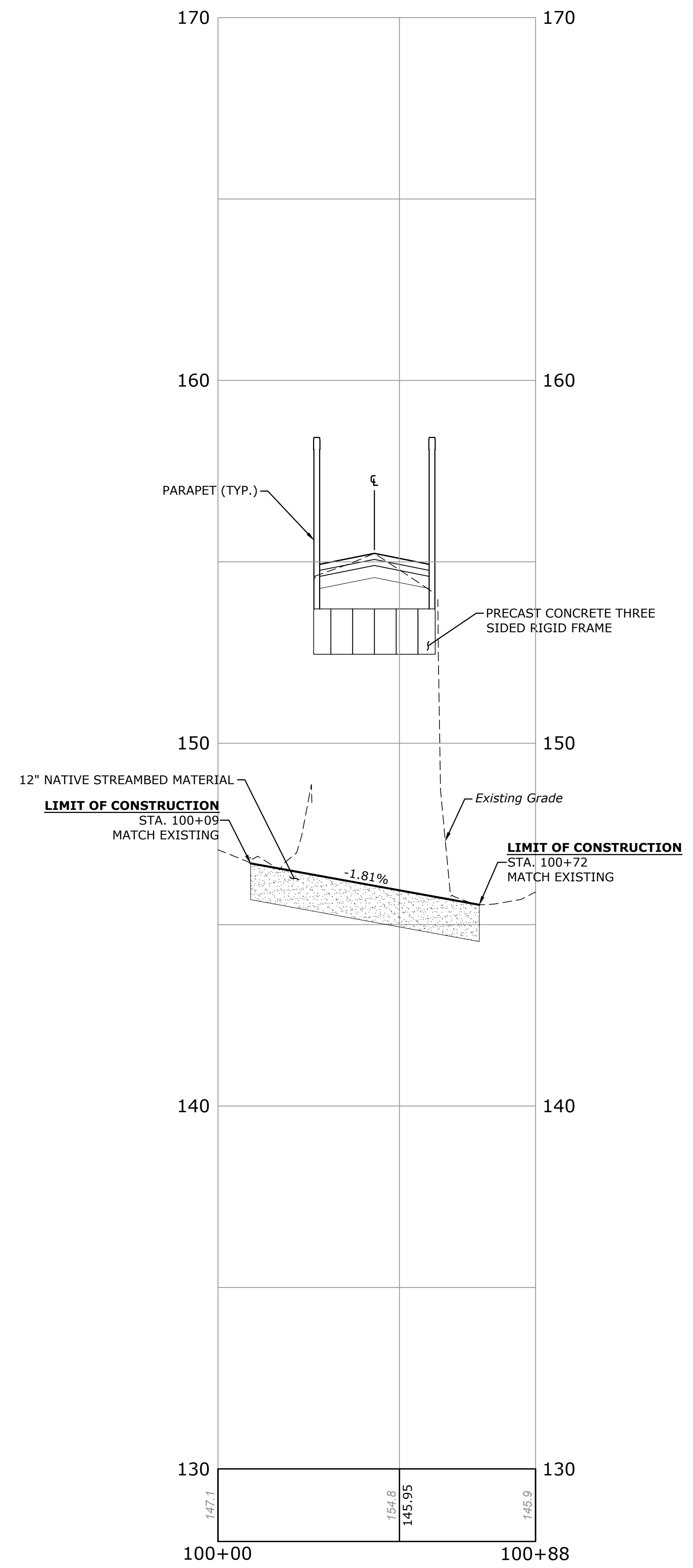
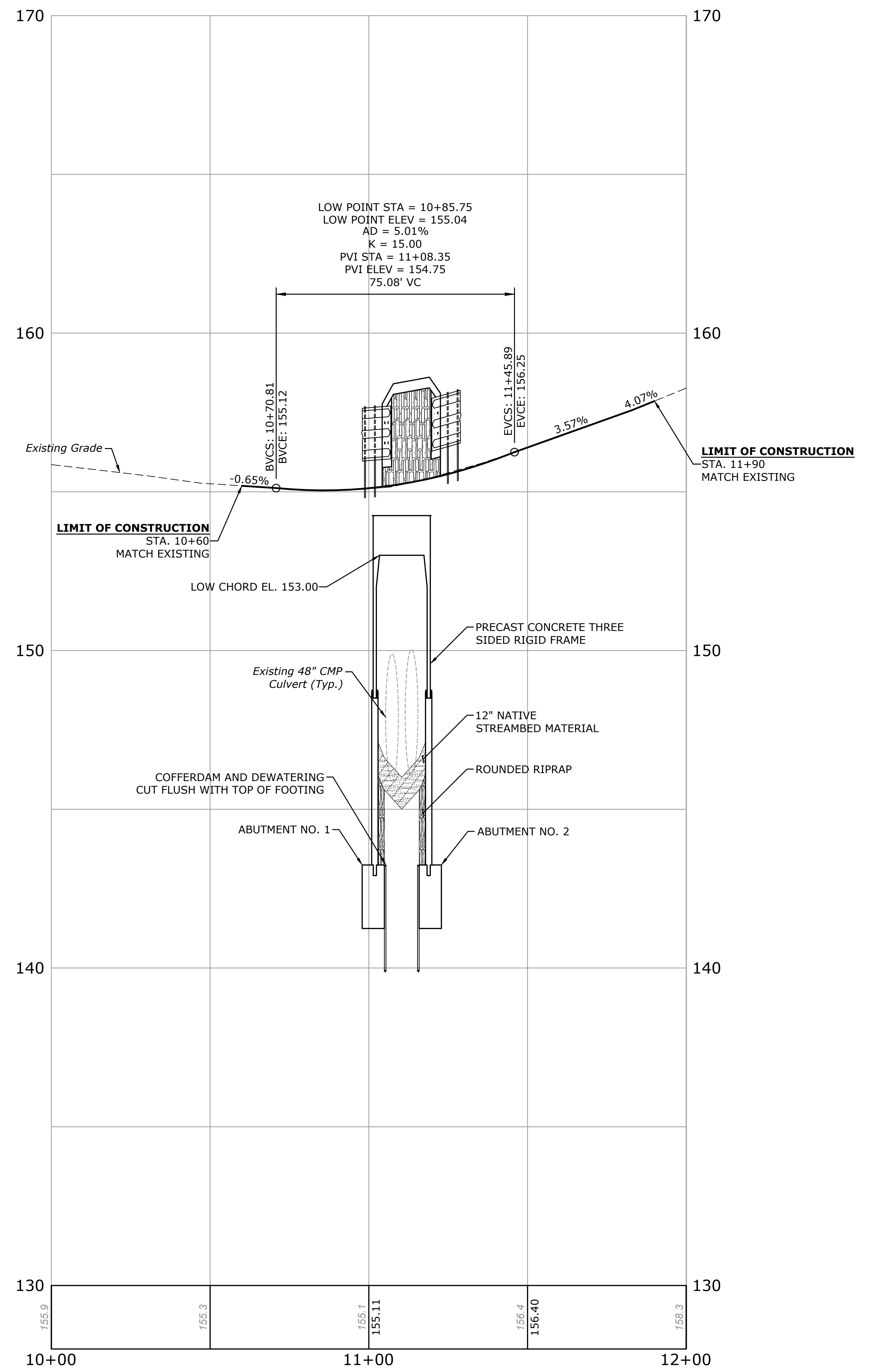
	WETLAND IMPACTS	WATERCOURSE IMPACTS	TOTAL
PERMANENT IMPACTS	0.00 SF (0.00 ACRES)	925 SF (0.003 ACRES)	925 SF (0.003 ACRES)
TEMPORARY IMPACTS	0.00 SF (0.00 ACRES)	121 SF (0.003 ACRES)	121 SF (0.003 ACRES)
TOTAL IMPACTS	0.00 SF (0.00 ACRES)	946 SF (0.024 ACRES)	946 SF (0.024 ACRES)

TOWN OF CHESHIRE REGULATORY AREAS

50-FT UPLAND REVIEW AREA IMPACTED	LENGTH OF STREAM IMPACTED
10,893 SF	102 LF



DATE PLOTTED: 1/27/22 10:40 AM



DESCRIPTION	DATE	BY

ROADWAY AND CHANNEL PROFILE
REPLACEMENT OF INDUSTRIAL AVENUE
BRIDGE (NO. 025030) OVER UNNAMED STREAM
 INDUSTRIAL AVENUE
 CHESHIRE, CONNECTICUT

DESIGNED	WRS	DESIGNED
DRAWN	WRS	DRAWN
CHECKED	KP	CHECKED
SCALE: 1"=20'		
DATE: JANUARY 27, 2022		
PROJECT NO.: 141.11047.00059		
DRAWING NO.: PRO-01		

27/147

N/F
The Connecticut
Light and Power
Company

27/147

N/F
The Connecticut
Light and Power
Company

THE CONNECTICUT LIGHT AND POWER COMPANY

CONSTRUCTION EASEMENT FOR THE PURPOSE OF PROVIDING A WORK AREA FOR THE REPLACEMENT OF BRIDGE NO. 025030. TO INCLUDE TEMPORARY DRAINAGE AND WATER HANDLING COFFERDAM. CONSTRUCTION EASEMENT TAKEN UNDER THIS PARAGRAPH WILL BE RESTORED BY REMOVING ALL TEMPORARY CONSTRUCTION EQUIPMENT AND BY GRADING AND SEEDING ANY DISTURBED AREAS. SAID EASEMENT WILL BE EXTINGUISHED UPON COMPLETION OF THE PROJECT, UNLESS SOONER EXTINGUISHED BY THE STATE.
AREA = 2104 ± SQ.FT.

DEFINED EASEMENT TO CONSTRUCT AND MAINTAIN WINGWALLS.
AREA = 652 ± SQ.FT.



DESCRIPTION	DATE	BY

RIGHTS-OF-WAY PLAN
REPLACEMENT OF INDUSTRIAL AVENUE
BRIDGE (NO. 025030) OVER UNNAMED STREAM
INDUSTRIAL AVENUE
CHESHIRE, CONNECTICUT

DESIGNED	WRS	DESIGNED
DRAWN	WRS	DRAWN
CHECKED	KP	CHECKED
SCALE		
1"=10'		
DATE		
JANUARY 27, 2022		
PROJECT NO.		
141.11047.00059		
DRAWING NO.		
ROW-01		

06

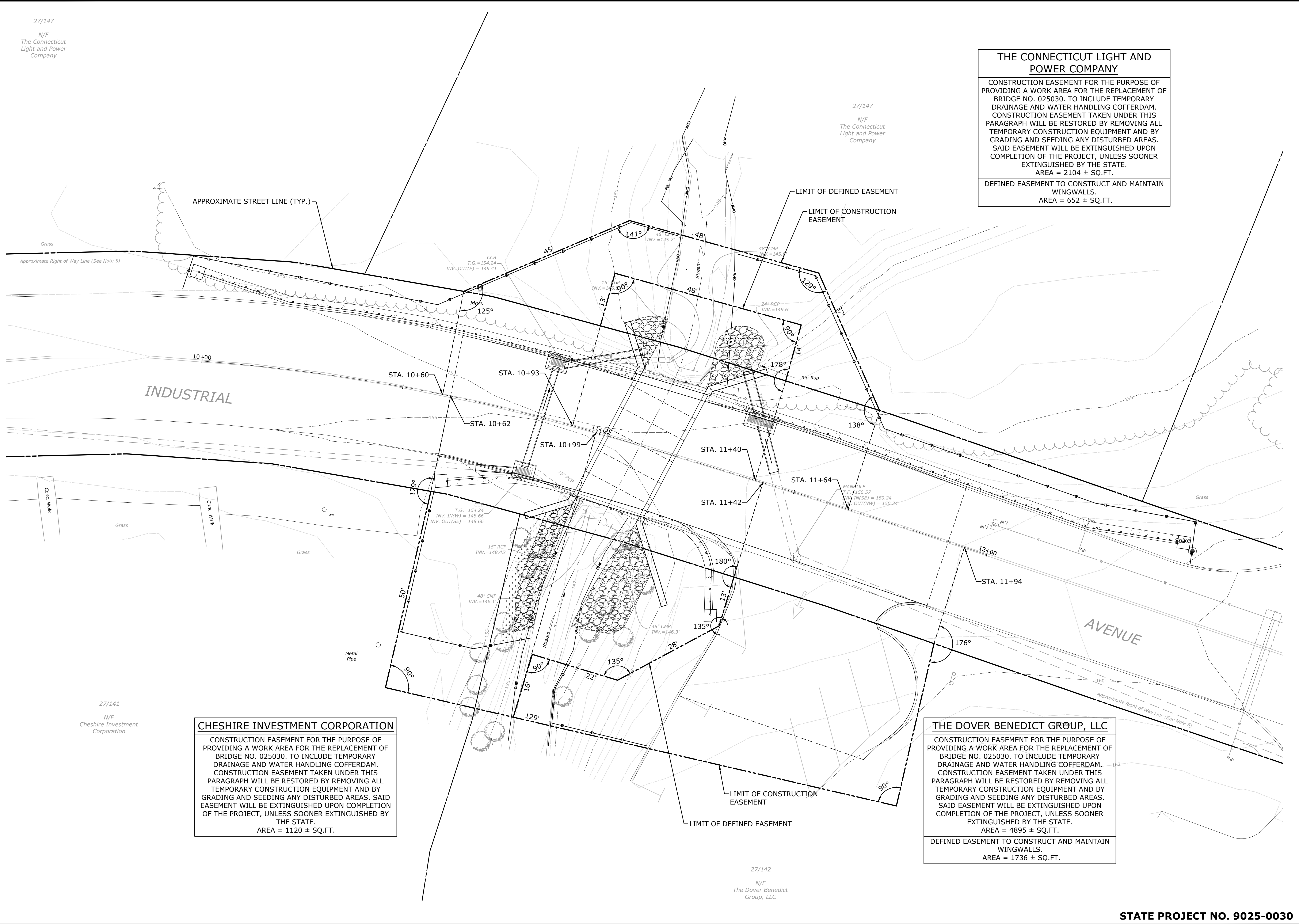
CHESHIRE INVESTMENT CORPORATION

CONSTRUCTION EASEMENT FOR THE PURPOSE OF PROVIDING A WORK AREA FOR THE REPLACEMENT OF BRIDGE NO. 025030. TO INCLUDE TEMPORARY DRAINAGE AND WATER HANDLING COFFERDAM. CONSTRUCTION EASEMENT TAKEN UNDER THIS PARAGRAPH WILL BE RESTORED BY REMOVING ALL TEMPORARY CONSTRUCTION EQUIPMENT AND BY GRADING AND SEEDING ANY DISTURBED AREAS. SAID EASEMENT WILL BE EXTINGUISHED UPON COMPLETION OF THE PROJECT, UNLESS SOONER EXTINGUISHED BY THE STATE.
AREA = 1120 ± SQ.FT.

THE DOVER BENEDICT GROUP, LLC

CONSTRUCTION EASEMENT FOR THE PURPOSE OF PROVIDING A WORK AREA FOR THE REPLACEMENT OF BRIDGE NO. 025030. TO INCLUDE TEMPORARY DRAINAGE AND WATER HANDLING COFFERDAM. CONSTRUCTION EASEMENT TAKEN UNDER THIS PARAGRAPH WILL BE RESTORED BY REMOVING ALL TEMPORARY CONSTRUCTION EQUIPMENT AND BY GRADING AND SEEDING ANY DISTURBED AREAS. SAID EASEMENT WILL BE EXTINGUISHED UPON COMPLETION OF THE PROJECT, UNLESS SOONER EXTINGUISHED BY THE STATE.
AREA = 4895 ± SQ.FT.

DEFINED EASEMENT TO CONSTRUCT AND MAINTAIN WINGWALLS.
AREA = 1736 ± SQ.FT.



27/141

N/F
Cheshire Investment
Corporation

27/142

N/F
The Dover Benedict
Group, LLC

STATE PROJECT NO. 9025-0030

DATE PLOTTED: 1/27/2022 10:40:10 AM
PLOTTER: HP DesignJet T1100e
PLOTTER MODEL: HP DesignJet T1100e
PLOTTER DRIVER: HP DesignJet T1100e
PLOTTER LANGUAGE: HP DesignJet T1100e
PLOTTER STATUS: OK
PLOTTER TYPE: HP DesignJet T1100e
PLOTTER VERSION: HP DesignJet T1100e
PLOTTER MODEL: HP DesignJet T1100e
PLOTTER DRIVER: HP DesignJet T1100e
PLOTTER LANGUAGE: HP DesignJet T1100e
PLOTTER STATUS: OK
PLOTTER TYPE: HP DesignJet T1100e
PLOTTER VERSION: HP DesignJet T1100e

SEDIMENT & EROSION CONTROL SPECIFICATIONS

GENERAL
 THESE GUIDELINES SHALL APPLY TO ALL WORK CONSISTING OF ANY AND ALL TEMPORARY AND/OR PERMANENT MEASURES TO CONTROL WATER POLLUTION AND SOIL EROSION, AS MAY BE REQUIRED, DURING THE CONSTRUCTION OF THE PROJECT.

IN GENERAL, ALL CONSTRUCTION ACTIVITIES SHALL PROCEED IN SUCH A MANNER SO AS NOT TO POLLUTE ANY WETLANDS, WATERCOURSE, WATERBODY, AND CONDUIT CARRYING WATER, ETC. THE CONTRACTOR SHALL LIMIT, INSOFAR AS POSSIBLE, THE SURFACE AREA OF EARTH MATERIALS EXPOSED BY CONSTRUCTION METHODS AND IMMEDIATELY PROVIDE PERMANENT AND TEMPORARY POLLUTION CONTROL MEASURES TO PREVENT CONTAMINATION OF ADJACENT WETLANDS, WATERCOURSES, AND WATERBODIES, AND TO PREVENT, INSOFAR AS POSSIBLE, EROSION ON THE SITE.

THE CONTRACTOR SHALL BE THE RESPONSIBLE PARTY FOR THE IMPLEMENTATION AND MAINTENANCE OF THE SEDIMENT AND EROSION CONTROL MEASURES ON SITE.

THE ENGINEER OF RECORD SHALL SUBMIT SEDIMENT AND EROSION CONTROL REPORTS TO THE INLAND WETLANDS AND WATERCOURSES AGENCY ON A WEEKLY BASIS AND AFTER RAINFALL EVENTS GREATER THAN ONE HALF INCH (0.5"), WHICHEVER IS SOONER.

THE CONTRACTOR SHALL MONITOR WEATHER REPORTS AND BE PREPARED TO STABILIZE THE SITE IF MORE THAN ONE HALF INCH (0.5") OF RAINFALL IS PREDICTED BY THE NATIONAL WEATHER SERVICE (70% CHANCE OR HIGHER).

THE CONTRACTOR SHALL MAINTAIN A STOCKPILE OF SEDIMENT AND EROSION CONTROL MATERIALS FOR THE PURPOSE OF MAINTAINING AND/OR REPAIRING PROPOSED SEDIMENT AND EROSION CONTROL MEASURES.

NO BYPASS PUMPING OF THE WATERCOURSE IS PROPOSED AS A PART OF THIS PROJECT.

LAND GRADING

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

TOP SOILING

- GENERAL**
- TOPSOIL SHALL BE SPREAD OVER ALL EXPOSED AREAS IN ORDER TO PROVIDE A SOIL MEDIUM HAVING FAVORABLE CHARACTERISTICS FOR THE ESTABLISHMENT, GROWTH, AND MAINTENANCE OF VEGETATION.
 - UPON ATTAINING FINAL SUBGRADES, SCARIFY SURFACE TO PROVIDE A GOOD BOND WITH TOPSOIL.
 - REMOVE ALL LARGE STONES, TREE LIMBS, ROOTS AND CONSTRUCTION DEBRIS.
 - APPLY LIME ACCORDING TO SOIL TEST OR AT THE RATE OF TWO (2) TONS PER ACRE.

- MATERIAL**
- TOPSOIL SHOULD HAVE PHYSICAL, CHEMICAL, AND BIOLOGICAL CHARACTERISTICS FAVORABLE TO THE GROWTH OF PLANTS.
 - TOPSOIL SHOULD HAVE A SANDY OR LOAMY TEXTURE.
 - TOPSOIL SHOULD BE RELATIVELY FREE OF SUBSOIL MATERIAL AND MUST BE FREE OF LARGE STONES, LUMPS OF SOIL, ROOTS, TREE LIMBS, TRASH, OR CONSTRUCTION DEBRIS. IT SHOULD BE FREE OF ROOTS OR RHIZOMES SUCH AS THISTLE, NUTGRASS, AND QUACKGRASS.
 - AN ORGANIC MATTER CONTENT OF SIX PERCENT (6%) IS REQUIRED. AVOID LIGHT COLORED SUBSOIL MATERIAL.
 - SOLUBLE SALT CONTENT OF OVER 500 PARTS PER MILLION (PPM) IS LESS SUITABLE. AVOID TIDAL MARSH SOILS BECAUSE OF HIGH SALT CONTENT AND SULFUR ACIDITY.
 - THE pH SHOULD BE MORE THAN 6.0. IF LESS, ADD LIME TO INCREASE pH TO AN ACCEPTABLE LEVEL.

- APPLICATION**
- AVOID SPREADING WHEN TOPSOIL IS WET OR FROZEN.
 - SPREAD TOPSOIL UNIFORMLY TO A DEPTH OF AT LEAST FOUR INCHES (4"), OR TO THE DEPTH SHOWN ON THE PLANS.

PERMANENT VEGETATIVE COVER

- GENERAL**
- PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED AS VARIOUS SECTIONS OF THE PROJECT ARE COMPLETED IN ORDER TO STABILIZE THE SOIL, REDUCE DOWNSTREAM DAMAGE FROM SEDIMENT AND RUNOFF, AND TO ENHANCE THE AESTHETIC NATURE OF THE SITE. IT WILL BE APPLIED TO ALL CONSTRUCTION AREAS SUBJECT TO EROSION WHERE FINAL GRADING HAS BEEN COMPLETED AND A PERMANENT COVER IS NEEDED.

- SITE PREPARATION**
- INSTALL REQUIRED SURFACE WATER CONTROL MEASURES.
 - REMOVE LOOSE ROCK, STONE, AND CONSTRUCTION DEBRIS FROM AREA.
 - PERFORM ALL PLANTING OPERATIONS PARALLEL TO THE CONTOURS OF THE SLOPE.
 - APPLY TOPSOIL AS INDICATED ELSEWHERE HEREIN.
 - APPLY FERTILIZER ACCORDING TO SOIL TEST OR:

*SPREAD SEEDING: WORK DEEPLY IN SOIL, BEFORE SEEDING, 300 LBS. OF 10-10-10 FERTILIZER PER ACRE (7 LBS. PER 1,000 SQ. FT.); THEN SIX (6) TO EIGHT (8) WEEKS LATER, APPLY ON THE SURFACE AN ADDITIONAL 300 LBS. OF 10-10-10 FERTILIZER PER ACRE. AFTER SEPTEMBER 1, TEMPORARY VEGETATIVE COVER SHALL BE APPLIED.

*FALL SEEDING: WORK DEEPLY IN SOIL, BEFORE SEEDING, 600 LBS. OF 10-10-10 FERTILIZER PER ACRE (14 LBS. PER 1,000 SQ. FT.)

PLANTING NOTES

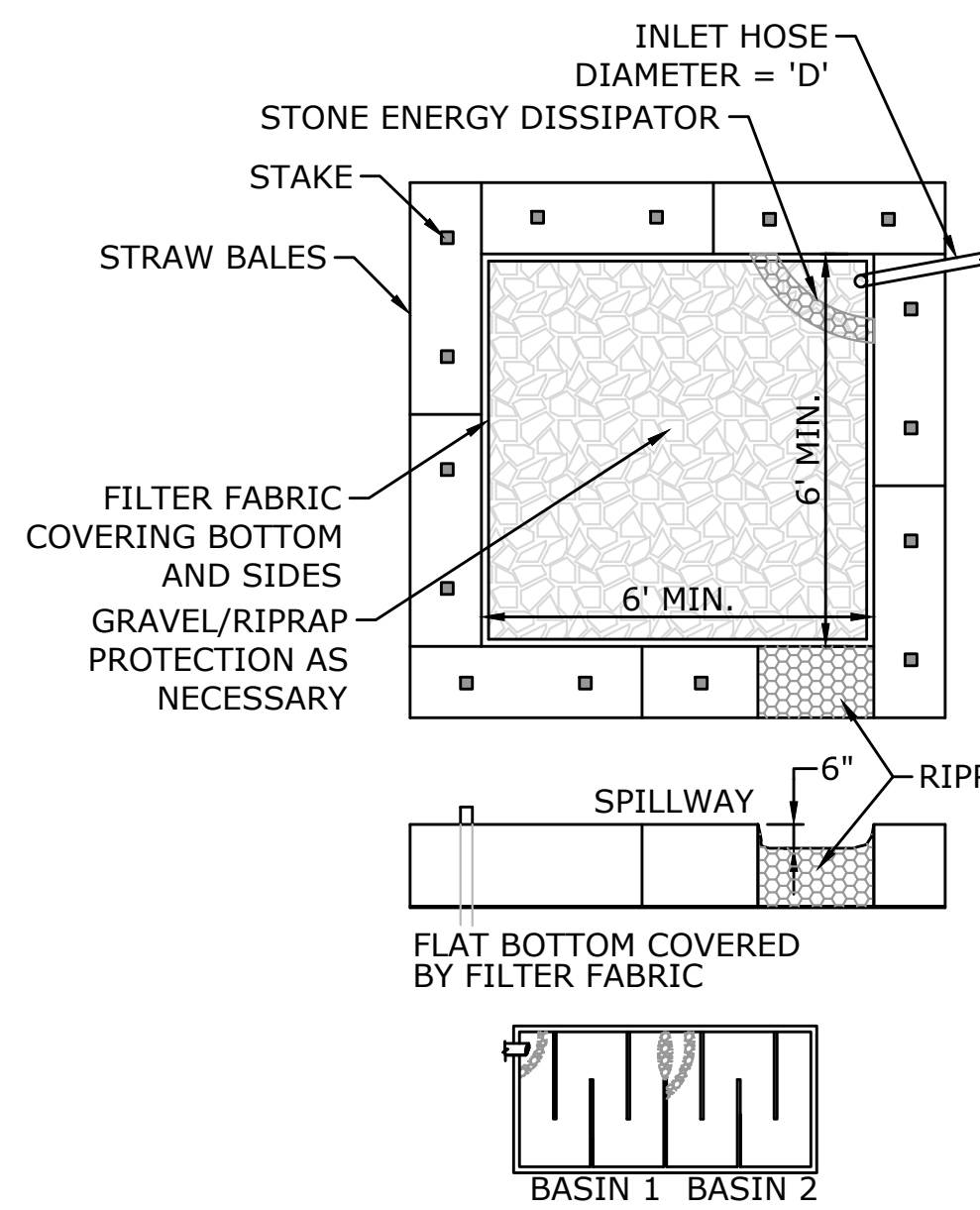
- THE LANDSCAPE CONTRACTOR SHALL PROVIDE A 6" MINIMUM DEPTH OF TOPSOIL FOR ALL LAWN AREAS. WATER AS NECESSARY TO ESTABLISH TURF.
- ALL PLANT MATERIAL IS SUBJECT TO INSPECTION AND APPROVAL BY THE LANDSCAPE ARCHITECT PRIOR TO AND AFTER PLANTING.
- IN AREAS OF SEEDING - TOPSOIL TO CONTAIN 6-12% ORGANIC CONTENT (BY WEIGHT), AMEND SOIL WITH ORGANIC MATTER (LEAF COMPOST).

EROSION CHECKS

- GENERAL**
- TEMPORARY PERVIOUS BARRIERS USING BALES OF HAY OR STRAW, HELD IN PLACE WITH STAKES DRIVEN THROUGH THE BALES AND INTO THE GROUND OR GEOTEXTILE FABRIC FASTENED TO A FENCE POST AND BURIED INTO THE GROUND, SHALL BE INSTALLED AND MAINTAINED AS REQUIRED TO CHECK EROSION AND REDUCE SEDIMENTATION.

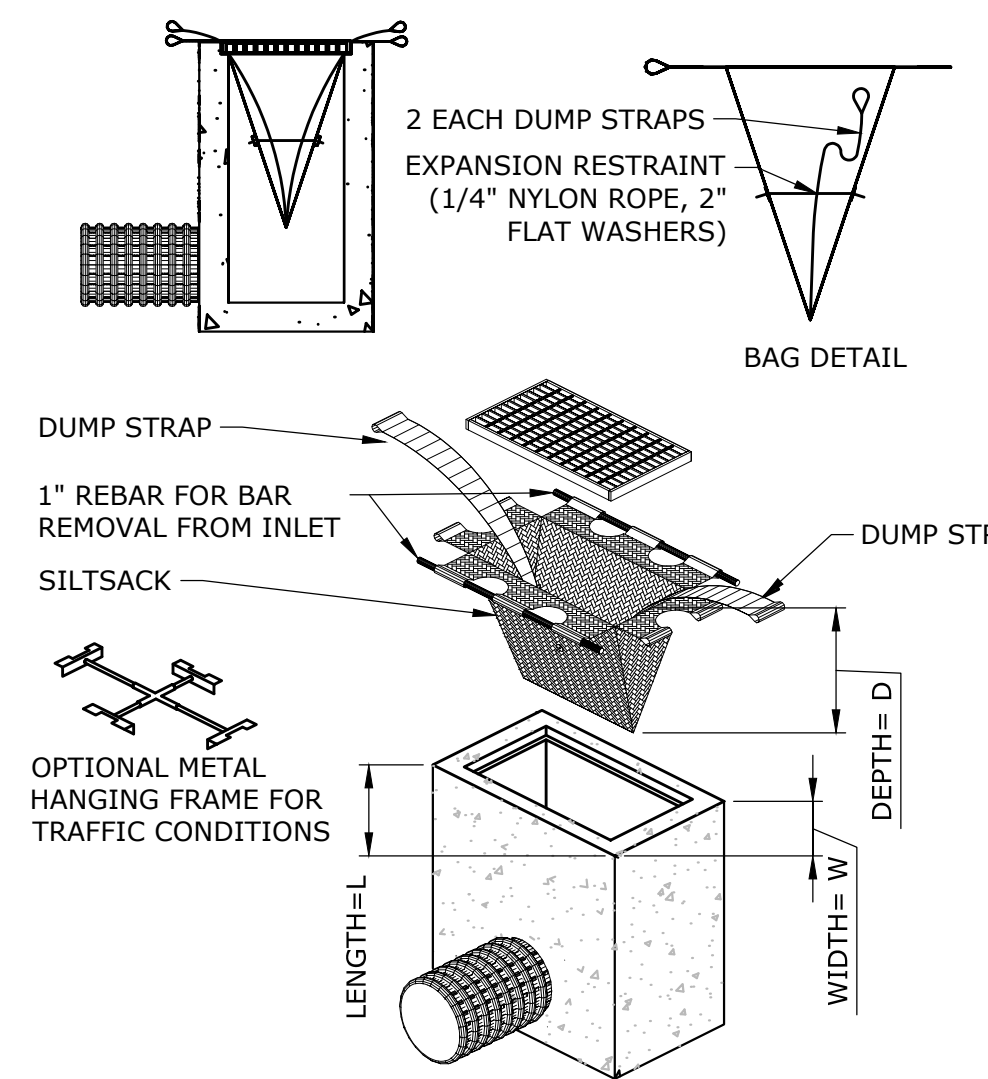
- CONSTRUCTION**
- BALES SHOULD BE PLACED IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES.
 - EACH BALE SHALL BE EMBEDDED INTO THE SOIL A MINIMUM OF FOUR INCHES (4").
 - BALES SHALL BE SECURELY ANCHORED IN PLACE BY WOOD STAKES OR REINFORCEMENT BARS DRIVEN THROUGH THE BALES AND INTO THE GROUND. THE FIRST STAKE IN EACH BALE SHALL BE ANGLED TOWARD THE PREVIOUSLY LAID BALE TO FORCE BALES TOGETHER.
 - GEOTEXTILE FABRIC SHALL BE SECURELY ANCHORED AT THE TOP OF A THREE FOOT (3') HIGH FENCE AND BURIED A MINIMUM OF FOUR INCHES (4") TO THE SOIL. SEAMS BETWEEN SECTIONS OF FILTER FABRIC SHALL OVERLAP A MINIMUM OF TWO FEET (2').

- INSTALLATION AND MAINTENANCE**
- BALED HAY EROSION BARRIERS SHALL BE INSTALLED AT ALL STORM SEWER INLETS.
 - BALED HAY EROSION BARRIERS AND GEOTEXTILE FENCE SHALL BE INSTALLED AT THE LOCATION INDICATED ON THE PLAN AND IN ADDITIONAL AREAS AS MAY BE DEEMED APPROPRIATE DURING CONSTRUCTION.
 - ALL EROSION CHECKS SHALL BE MAINTAINED UNTIL ADJACENT AREAS ARE STABILIZED.
 - INSPECTION SHALL BE FREQUENT (AT MINIMUM MONTHLY AND BEFORE AND AFTER HEAVY RAIN) AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
 - EROSION CHECKS SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORMWATER FLOW OR DRAINAGE.



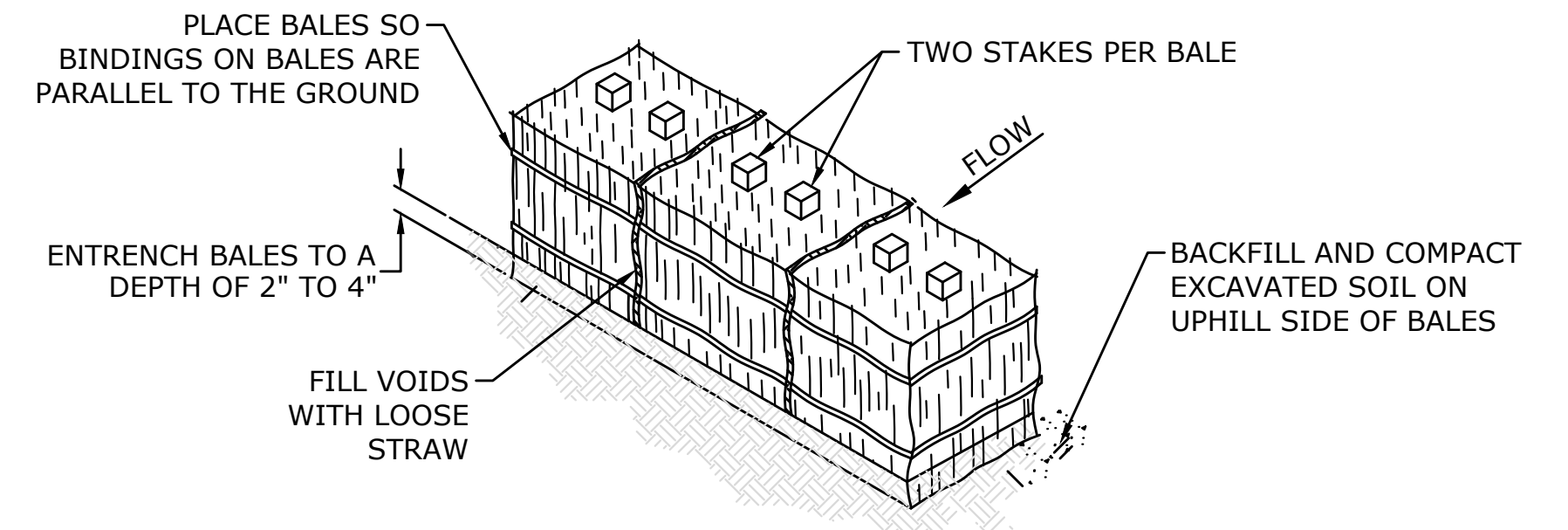
TEMPORARY DEWATERING BASIN

- NOTE**
- IF PUMPING VOLUME EXCEEDS BASIN CAPACITY, BASIN MAY BE USED IN TANDEM OR TIERS.
 - INCREASE RIPRAP SIZE ON BASIN BOTTOM AS NECESSARY TO MAINTAIN SEDIMENT-FREE DISCHARGE WATERS.
 - TEMPORARY DEWATERING BASIN SHALL BE PAID FOR UNDER "HANDLING WATER".



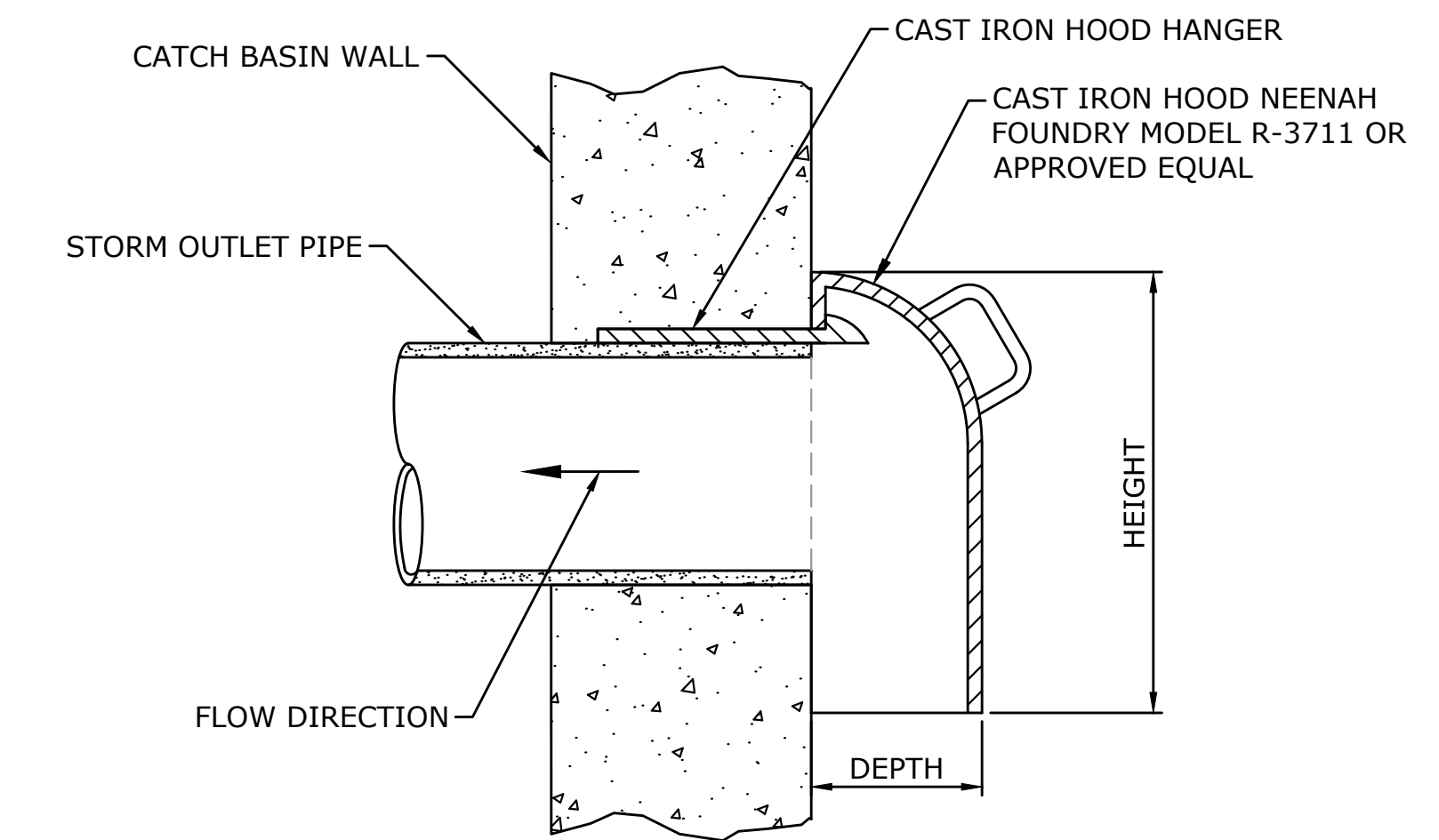
SEDIMENT CONTROL SYSTEM AT CATCH BASIN

EROSION CONTROL MAINTENANCE INTERVALS				
EROSION CONTROL MEASURE	CONTROL OBJECTIVE	INSPECTION/MAINTENANCE	FAILURE INDICATORS	REMOVAL
SILT FENCE (SF) (RELATED: IP, STK)	- INTERCEPT, AND REDIRECT/DETAIN SMALL AMOUNTS OF SEDIMENT FROM SMALL DISTURBED AREAS. - DECREASE VELOCITY OF SHEET FLOW. - PROTECT SENSITIVE SLOPES OR SOILS FROM EXCESSIVE WATER FLOW.	INSPECT AT LEAST ONCE A WEEK AND WITHIN 24 HOURS OF THE END OF A STORM WITH A RAINFALL OF 0.5 INCHES OR MORE. ACCUMULATED SEDIMENT MUST BE REMOVED ONCE ITS DEPTH IS EQUAL TO 1/2 THE TRENCH HEIGHT. INSPECT FREQUENTLY DURING PUMPING OPERATIONS IF USED FOR DEWATERING OPERATIONS.	- PHYSICAL DAMAGE OR DECOMPOSITION - EVIDENCE OF OVERTOPPED OR UNDERCUT FENCE - EVIDENCE OF SIGNIFICANT FLOWS EVADING CAPTURE - REPETITIVE FAILURE	SILT FENCE MAY BE REMOVED AFTER UPHILL AND SENSITIVE AREAS HAVE BEEN PERMANENTLY STABILIZED.
HAY BALES (HB)	- INTERCEPT, AND REDIRECT/DETAIN SMALL AMOUNTS OF SEDIMENT FROM SMALL DISTURBED AREAS. - DECREASE VELOCITY OF SHEET FLOW. - PROTECT SENSITIVE SLOPES OR SOILS FROM EXCESSIVE WATER FLOW.	INSPECT AT LEAST ONCE A WEEK AND WITHIN 24 HOURS OF THE END OF A STORM WITH A RAINFALL OF 0.5 INCHES OR MORE. ACCUMULATED SEDIMENT MUST BE REMOVED ONCE THE DEPTH OF SEDIMENT IS EQUAL TO 1/2 THE HEIGHT OF THE BARRIER. INSPECT FREQUENTLY DURING PUMPING OPERATIONS IF USED FOR DEWATERING OPERATIONS.	- PHYSICAL DAMAGE OR DECOMPOSITION - EVIDENCE OF OVERTOPPED OR UNDERCUT FENCE - EVIDENCE OF SIGNIFICANT FLOWS EVADING CAPTURE - REPETITIVE FAILURE	HAY BALES MAY BE REMOVED AFTER UPHILL AREAS HAVE BEEN PERMANENTLY STABILIZED.
STOCKPILE PROTECTION (STK)	- RETAIN SOIL STOCKPILE IN LOCATIONS SPECIFIED, AND REDUCE WATER-TRANSPORT.	INSPECT SILT FENCE AT THE END OF EACH WORK DAY AND IMMEDIATELY REPAIR DAMAGES. PERIODIC REINFORCEMENT OF SILT FENCE, OR ADDITION OF HAY BALES MAY BE NECESSARY.	- EVIDENCE OF STOCK PILE DIMINISHING DUE TO RAIN EVENTS - FAILURE OF SILT FENCE	STOCKPILE PROTECTION MAY BE REMOVED ONCE THE STOCKPILE IS USED OR REMOVED.

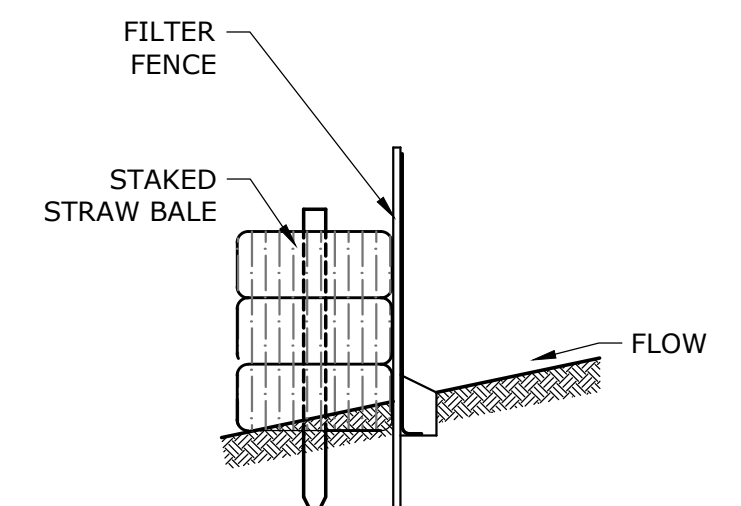


- IDEALLY, BALES SHOULD BE ENTRENCHED 2 TO 4 INCHES AND TIGHTLY BUTTED TOGETHER. BALES CAN BE SUCCESSFULLY PLACED WITHOUT A TRENCH IF GOOD GROUND CONTACT IS MADE. REMOVE HEAVY BRUSH AND FILL ALL VOIDS WITH LOOSE STRAW.
- BALES SHALL BE ONLY USED AS A TEMPORARY BARRIER AND FOR NO LONGER THAN 60 DAYS.
- WHEN SEDIMENTATION DEPOSITS REACH WITHIN 3" OF THE TOP OF BALES, REMOVE SEDIMENTATION OR ADD ADDITIONAL BALES ON SEDIMENTATION DIRECTION BEHIND FIRST ROW OF BALES AS DIRECTED BY THE ENGINEER.
- UPON ESTABLISHMENT OF GROUND COVER ON DISTURBED AREAS AND WHEN DIRECTED BY THE ENGINEER, HAY BALES WILL BE REMOVED AND USED AS MULCH. ANY SEDIMENTATION WILL BE THINLY SPREAD UPON ESTABLISHED GROUND COVER.

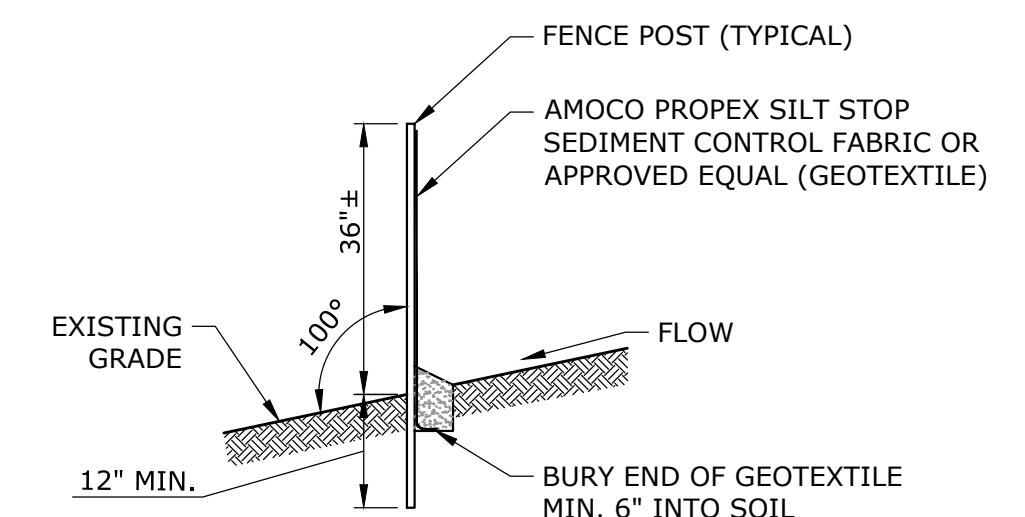
HAYBALE BARRIER PROTECTION



CATCH BASIN HOOD DETAIL



SEDIMENT FILTER FENCE AND HAY BALE



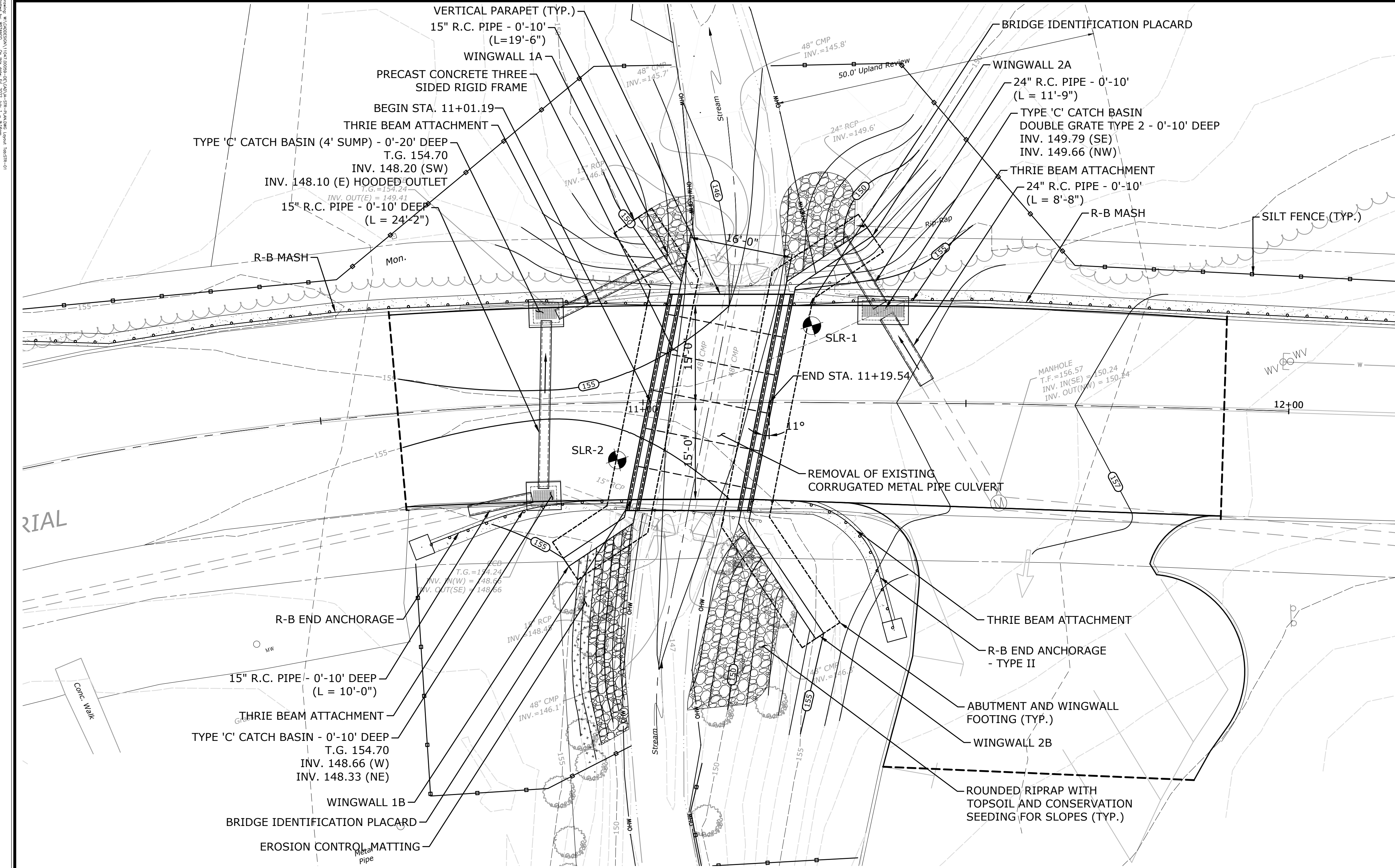
SEDIMENT FILTER FENCE



DESCRIPTION	DATE	BY

SEDIMENT & EROSION CONTROL PLAN
 REPLACEMENT OF INDUSTRIAL AVENUE BRIDGE (NO. 025030) OVER UNNAMED STREAM
 INDUSTRIAL AVENUE
 CHESHIRE, CONNECTICUT

KP DESIGNED	WRS DRAWN	KP CHECKED
SCALE AS SHOWN		
DATE JANUARY 27, 2022		
PROJECT NO. 141.11047.00059		
DRAWING NO. SE-01		SHEET NO. 07



GENERAL NOTES

- SPECIFICATIONS:** CONNECTICUT DEPARTMENT OF TRANSPORTATION FORM 818 (2020), SUPPLEMENTAL SPECIFICATIONS DATED JULY 2021 AND SPECIAL PROVISIONS.
- DESIGN SPECIFICATIONS:** AASHTO LRFD DESIGN SPECIFICATIONS, 8TH EDITION, 2017, AS SUPPLEMENTED BY THE CONNECTICUT DEPARTMENT OF TRANSPORTATION BRIDGE DESIGN MANUAL (2003) WITH INTERIM REVISIONS UP TO AND INCLUDING 2019.
- MATERIAL STRENGTHS:**

CONCRETE:

CLASS PCC03340	f'c = 3,000 PSI
CLASS PCC04460	f'c = 4,000 PSI
CLASS PCC04462	f'c = 4,000 PSI
PRECAST CONCRETE PCC08061	f'c = 8,000 PSI

THE CONCRETE STRENGTH USED IN DESIGN (f'c) OF THE CONCRETE COMPONENTS IS NOTED ABOVE. THE COMPRESSIVE STRENGTH OF THE CONCRETE IN THE CONSTRUCTED COMPONENTS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 6.01 - CONCRETE FOR STRUCTURES AND M.03 - PORTLAND CEMENT CONCRETE.

REINFORCEMENT:

ASTM A615 GRADE 60	fy = 60,000 PSI
--------------------	-----------------
- LIVE LOAD:** HL-93, LEGAL AND PERMIT VEHICLES
- FUTURE PAVING ALLOWANCE:** NONE
- EXISTING DIMENSIONS:** DIMENSIONS AND ELEVATIONS OF THE EXISTING STRUCTURE SHOWN ON THESE PLANS ARE FOR GENERAL REFERENCE ONLY AND ARE NOT GUARANTEED. THE CONTRACTOR SHALL TAKE ALL FIELD MEASUREMENTS NECESSARY TO ASSURE PROPER FIT OF THE FINISH 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.

CONCRETE NOTES

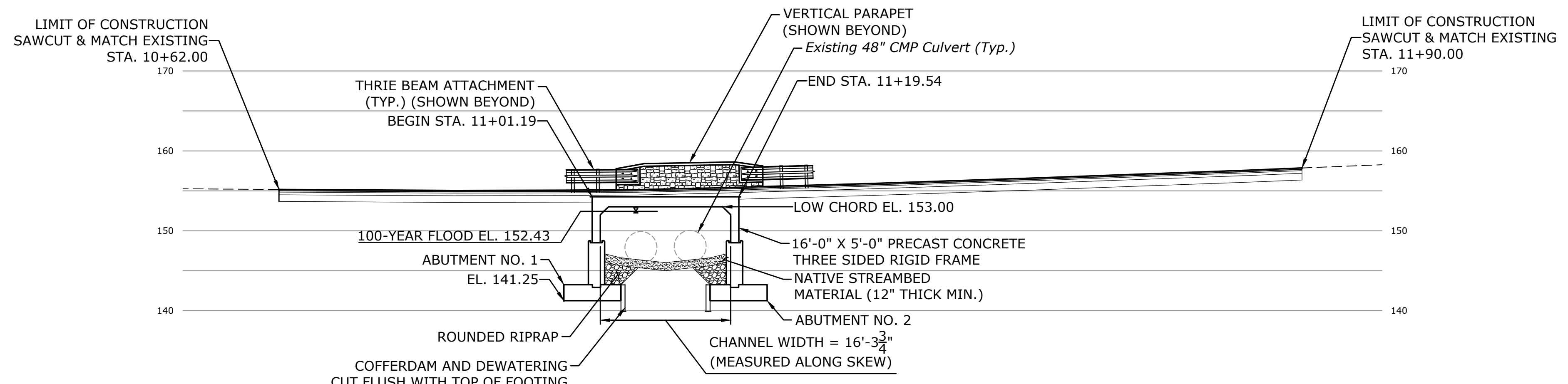
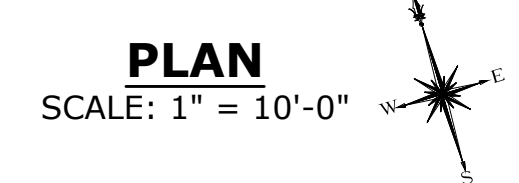
- REMAIN-IN-PLACE FORMS:** THE USE OF REMAIN-IN-PLACE FORMS ON THIS STRUCTURE IS NOT ALLOWED.
- THE FOLLOWING PAY ITEMS AND CONCRETE CLASSES ARE REQUIRED FOR CAST-IN-PLACE BRIDGE COMPONENTS:

ITEM	BRIDGE COMPONENTS	PCC CLASS
FOOTING CONCRETE	ABUTMENT & WINGWALL FOOTINGS	PCC04460
ABUTMENT AND WALL CONCRETE	ABUTMENT AND WINGWALL STEMS	PCC04460
PARAPET CONCRETE	HEADWALLS	PCC04462

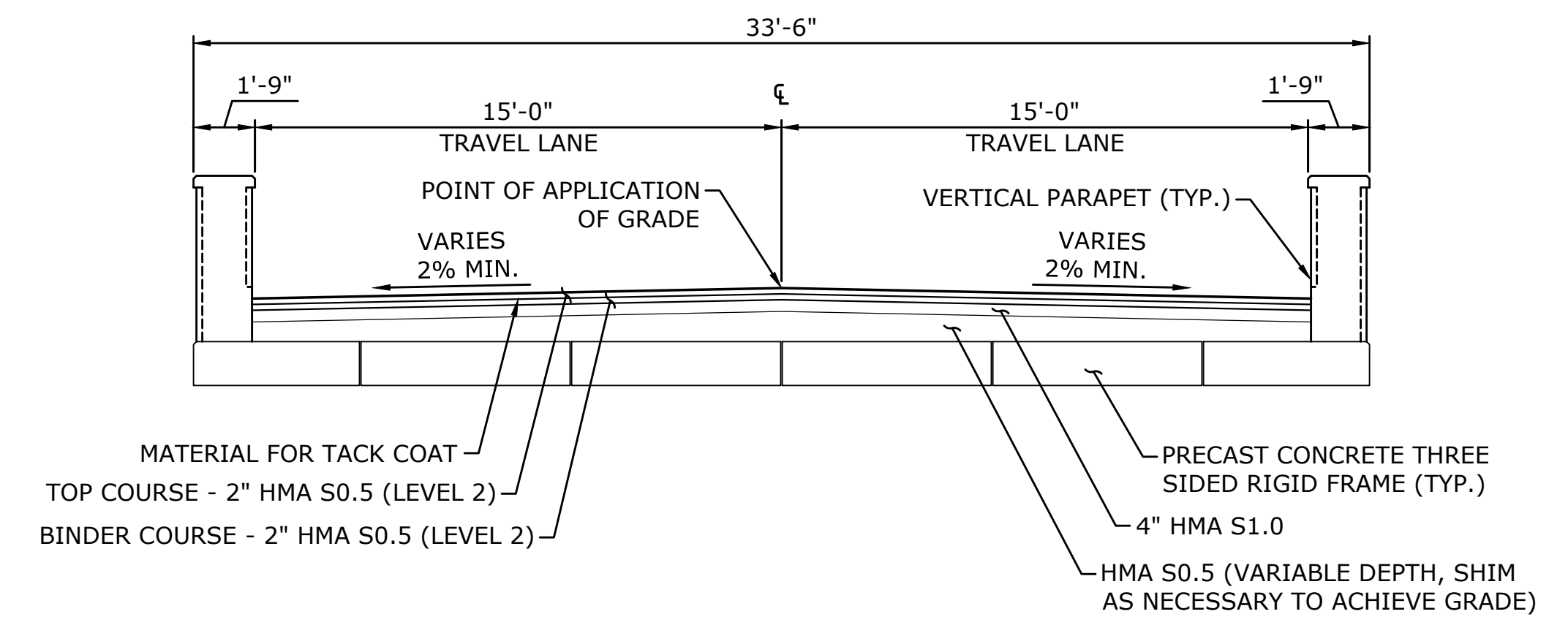
- EXPOSED EDGES:** EXPOSED EDGES OF CONCRETE SHALL BE BEVELED 1"x1" UNLESS DIMENSIONED OTHERWISE.
- CONCRETE COVER:** ALL REINFORCEMENT SHALL HAVE TWO INCHES COVER UNLESS DIMENSIONED OTHERWISE.
- REINFORCEMENT:** ALL REINFORCEMENT SHALL BE GALVANIZED AFTER FABRICATION UNLESS NOTED OTHERWISE. ALL REINFORCEMENT SHALL CONFORM TO THE REQUIREMENTS OF ASTM A767, CLASS 1, INCLUDING SUPPLEMENTAL REQUIREMENTS. THE COST OF FURNISHING AND PLACING THIS REINFORCEMENT SHALL BE INCLUDED IN THE ITEM "DEFORMED STEEL BARS - GALVANIZED." DRILLED SHAFT REINFORCING SHALL ALSO BE GALVANIZED AND PAID FOR UNDER ITEM "DRILLED SHAFT (2.5FT)".
- PREFORMED EXPANSION JOINT FILLER:** THE COST OF FURNISHING AND INSTALLING PREFORMED EXPANSION JOINT FILLER IS PAID FOR AS "1" PREFORMED EXPANSION JOINT FILLER FOR BRIDGES."
- CONSTRUCTION JOINTS:** CONSTRUCTION JOINTS, OTHER THAN THOSE SHOWN ON THE PLANS, WILL NOT BE PERMITTED WITHOUT THE PRIOR APPROVAL OF THE ENGINEER.
- PRECAST CONCRETE THREE SIDED RIGID FRAME:** SEE SPECIAL PROVISIONS.

HYDRAULIC DATA

DRAINAGE AREA	1.56 SQ. MI.
DESIGN FREQUENCY	100-YR
DESIGN DISCHARGE	752 CFS
UPSTREAM DESIGN WATER SURFACE EL.	152.43 FT
DOWNSTREAM DESIGN WATER SURFACE EL.	150.13 FT
OVERTOPPING FREQUENCY	500-YR
OVERTOPPING DISCHARGE	1000 CFS
WORST CASE SCOUR SUB-STRUCTURE	WEST ABUTMENT
MAXIMUM SCOUR ELEVATION	143.0 FT
AVERAGE DAILY FLOW	6 CFS
AVERAGE SPRING FLOW	3 CFS



BASELINE ELEVATION
SCALE: 1" = 10'-0"



TYPICAL PRECAST CONCRETE THREE SIDED RIGID FRAME SECTION
SCALE: 1/4" = 1'-0"



DESCRIPTION	DATE	BY

BRIDGE PLAN, PROFILE & TYPICAL SECTION
REPLACEMENT OF INDUSTRIAL AVENUE BRIDGE (NO. 025030) OVER UNNAMED STREAM
INDUSTRIAL AVENUE
CHESHIRE, CONNECTICUT

DESIGNED	WRS	DESIGNED
DRAWN	WRS	DRAWN
CHECKED	WRS	CHECKED
AS SHOWN		
DATE: JANUARY 27, 2022		
PROJECT NO.: 141.11047.00059		
DRAWING NO.: STR-01		

BORING LOG											
SLR SLR International Corporation, Inc. 99 Realty Drive, Cheshire, CT 06410 203.271.1777 www.slrconsulting.com		PROJECT: INDUSTRIAL AVENUE BRIDGE (NO. 025030)			BORING NO.: SLR-1		SHEET: 1 of 2			CONTRACTOR: GENERAL BORINGS, INC.	
PROJ. NO: 141.11047.00059		LOCATION: INDUSTRIAL AVENUE, CHESHIRE, CONNECTICUT			FOREMAN: T. MCGOVERN		INSPECTOR: R. HENDERSON			GROUND SURFACE ELEVATION: ±155.0'	
CLIENT: TOWN OF CHESHIRE		DATE: JUNE 7, 2021			EQUIPMENT: AUGER		CASING		SAMPLER		COREBL.
TYPE: HSA		DATE: 2021-06-07		TIME: 9:00 AM		WATER DEPTH: ±7.0'		TYPE OF RIG: TRUCK W/ SAFETY HAMMER			
SIZE ID (IN.)		3 1/4		1 3/8		-		RIG MODEL: DIEHRICH D-50			
HMR. WT (LB.)		-		140		-		DIEDRICH D-50			
HMR. FALL (IN.)		-		30		-		-			
Depth (FT)	Sample Number	Recovery (IN)	Blows Per 6"	SOIL AND ROCK CLASSIFICATION-DESCRIPTION				Stratum Description	Elev. (FT)	Remarks	
1				Top 4" ASPHALT. Bottom 8": Gray, fine to coarse GRAVEL and fine to coarse SAND, trace SILT.				0.3'	ASPHALT	154.7	
2	S-1	9	8	S-1: Medium dense, reddish-brown, fine to coarse SAND, some fine to coarse Gravel, little SILT.				FILL	7.0' G.W.T. 148.0'		
3			10								
4	S-2	8	8	S-2: Dense, reddish-brown, fine to coarse SAND, little fine to coarse Gravel, little SILT.				FILL	7.0' G.W.T. 148.0'		
5			4								
6	S-3	2	8	S-3: Medium dense, reddish-brown, fine to coarse SAND, some SILT, some fine to coarse Gravel.							
7			11								
10				S-4: Medium dense, reddish-brown, fine to coarse SAND, little SILT, trace fine to coarse Gravel.				SILTY SAND	8.5' 146.5'		
11	S-4	16	3								
12			6								
13			15								
14											
15			6	S-5: Medium dense, reddish-brown, fine SAND, little SILT.							
16	S-5	24	9					SILTY SAND	8.5' 146.5'		
17			10								
18			13								
20			4	S-6: Medium dense, reddish-brown, fine SAND and SILT.				SILTY SAND	8.5' 146.5'		
21	S-6	24	6								
22			8								
			8								

BORING LOG											
SLR SLR International Corporation, Inc. 99 Realty Drive, Cheshire, CT 06410 203.271.1777 www.slrconsulting.com		PROJECT: INDUSTRIAL AVENUE BRIDGE (NO. 025030)			BORING NO.: SLR-1		SHEET: 2 of 2			CONTRACTOR: GENERAL BORINGS, INC.	
PROJ. NO: 141.11047.00059		LOCATION: INDUSTRIAL AVENUE, CHESHIRE, CONNECTICUT			FOREMAN: T. MCGOVERN		INSPECTOR: R. HENDERSON			GROUND SURFACE ELEVATION: ±155.0'	
CLIENT: TOWN OF CHESHIRE		DATE: JUNE 7, 2021			EQUIPMENT: AUGER		CASING		SAMPLER		COREBL.
TYPE: HSA		DATE: 2021-06-07		TIME: 9:00 AM		WATER DEPTH: ±7.0'		TYPE OF RIG: TRUCK W/ SAFETY HAMMER			
SIZE ID (IN.)		3 1/4		1 3/8		-		RIG MODEL: DIEHRICH D-50			
HMR. WT (LB.)		-		140		-		DIEDRICH D-50			
HMR. FALL (IN.)		-		30		-		-			
Depth (FT)	Sample Number	Recovery (IN)	Blows Per 6"	SOIL AND ROCK CLASSIFICATION-DESCRIPTION				Stratum Description	Elev. (FT)	Remarks	
24				S-7: Dense, Top 10": Reddish-brown, fine to medium SAND, some SILT.				SILTY SAND	26.0' 129.0'		
25			9								
26	S-7	18	11	Bottom 8": Reddish-brown, fine to coarse SAND and Clayey SILT, trace fine Gravel.							
27			25								
28			38					GLACIAL TILL	32.0' 123.0'		
29											
30											
31	S-8	8	6	S-8: Medium dense, reddish-brown, fine to coarse SAND and Clayey SILT, little fine to coarse Gravel.							
32			14	Bottom of Exploration ±122.0'							
33								GLACIAL TILL	32.0' 123.0'		
34											
35											
36											
37											
38											
39											
40											
41											
42											
43											
44											
45											

BORING LOG											
SLR SLR International Corporation, Inc. 99 Realty Drive, Cheshire, CT 06410 203.271.1777 www.slrconsulting.com		PROJECT: INDUSTRIAL AVENUE BRIDGE (NO. 025030)			BORING NO.: SLR-2		SHEET: 1 of 2			CONTRACTOR: GENERAL BORINGS, INC.	
PROJ. NO: 141.11047.00059		LOCATION: INDUSTRIAL AVENUE, CHESHIRE, CONNECTICUT			FOREMAN: T. MCGOVERN		INSPECTOR: R. HENDERSON			GROUND SURFACE ELEVATION: ±155.0'	
CLIENT: TOWN OF CHESHIRE		DATE: JUNE 7, 2021			EQUIPMENT: AUGER		CASING		SAMPLER		COREBL.
TYPE: HSA		DATE: 2021-06-07		TIME: 11:00 AM		WATER DEPTH: ±7.0'		TYPE OF RIG: TRUCK W/ SAFETY HAMMER			
SIZE ID (IN.)		3 1/4		1 3/8		-		RIG MODEL: DIEHRICH D-50			
HMR. WT (LB.)		-		140		-		DIEDRICH D-50			
HMR. FALL (IN.)		-		30		-		-			
Depth (FT)	Sample Number	Recovery (IN)	Blows Per 6"	SOIL AND ROCK CLASSIFICATION-DESCRIPTION				Stratum Description	Elev. (FT)	Remarks	
1				Top 4" ASPHALT. Bottom 8": Reddish-brown, fine to coarse SAND, some fine to coarse Gravel, little SILT.				0.3'	ASPHALT	154.7	
2	S-1	12	17	S-1: Very dense, reddish-brown, fine to coarse SAND, some fine to coarse Gravel, little SILT.				FILL	7.0' G.W.T. 148.0'		
3			27								
4			40					FILL	7.0' G.W.T. 148.0'		
5			45								
6	S-2	16	24	S-2: Medium dense, reddish-brown, fine to coarse SAND, little SILT, trace fine to coarse Gravel.							
7			13								
10			5	S-3: Medium dense, dark brown, SILT, some fine to coarse Sand, little Organics.				SANDY SILT W/ ORGANICS	11.0' 144.0'		
11	S-3	11	3								
12			18								
15			3	S-4: Medium dense, reddish-brown, fine SAND, some SILT.				SILTY SAND	8.5' 146.5'		
16	S-4	24	5								
17			8								
18			9								
19											
20			3	S-5: Medium dense, reddish-brown, fine SAND, little SILT.				SILTY SAND	8.5' 146.5'		
21	S-5	24	5								
22			6								
			7								

BORING LOG											
SLR SLR International Corporation, Inc. 99 Realty Drive, Cheshire, CT 06410 203.271.1777 www.slrconsulting.com		PROJECT: INDUSTRIAL AVENUE BRIDGE (NO. 025030)			BORING NO.: SLR-2		SHEET: 2 of 2			CONTRACTOR: GENERAL BORINGS, INC.	
PROJ. NO: 141.11047.00059		LOCATION: INDUSTRIAL AVENUE, CHESHIRE, CONNECTICUT			FOREMAN: T. MCGOVERN		INSPECTOR: R. HENDERSON			GROUND SURFACE ELEVATION: ±155.0'	
CLIENT: TOWN OF CHESHIRE		DATE: JUNE 7, 2021			EQUIPMENT: AUGER		CASING		SAMPLER		COREBL.
TYPE: HSA		DATE: 2021-06-07		TIME: 11:00 AM		WATER DEPTH: ±7.0'		TYPE OF RIG: TRUCK W/ SAFETY HAMMER			
SIZE ID (IN.)		3 1/4		1 3/8		-		RIG MODEL: DIEHRICH D-50			
HMR. WT (LB.)		-		140		-		DIEDRICH D-50			
HMR. FALL (IN.)		-		30		-		-			
Depth (FT)	Sample Number	Recovery (IN)	Blows Per 6"	SOIL AND ROCK CLASSIFICATION-DESCRIPTION				Stratum Description	Elev. (FT)	Remarks	
24				S-6: Medium dense, reddish-brown, fine to coarse SAND, little SILT, trace fine to coarse Gravel.				SILTY SAND	28.5' 126.5'		
25			13								
26	S-6	18	11								
27			8								
28			5								
29								GLACIAL TILL	30.3' 124.7'		
30	S-7	4	50/4"	S-7: Very dense, Top 3": Reddish-brown, fine to coarse SAND, some fine to coarse Gravel, some Clayey SILT. Bottom 1": Reddish-brown, fine to coarse GRAVEL.							
31											
32								WEATHERED BEDROCK	33.2' 121.8'		
33	S-8	0	60/2"	S-8: No recovery.							
34				Bottom of Exploration ±122.0'							
35											
36											
37											
38											
39											
40											
41											
42											
43											
44											
45											

SLR 99 REALTY DRIVE CHESHIRE, CT 06410 203.271.1777 SLRCONSULTING.COM		
DESCRIPTION	DATE	BY

BORING LOGS		
REPLACEMENT OF INDUSTRIAL AVENUE BRIDGE (NO. 025030) OVER UNNAMED STREAM		
INDUSTRIAL AVENUE CHESHIRE, CONNECTICUT		
DESIGNED	DRAWN	CHECKED
NOT TO SCALE		
DATE: JANUARY 27, 2022		
PROJECT NO. 141.11047.00059		
DRAWING NO. STR-02		
SHEET NO. 09		

STATE PROJECT NO. 9025-0030

10/20/2021 1:10:22 PM 10/20/2021 1:10:22 PM 10/20/2021 1:10:22 PM 10/20/2021 1:10:22 PM 10/20/2021 1:10:22 PM

DETOUR SIGN LEGEND			
PLAN DESIGNATION	MESSAGE	SIZE	MUTCD/CONNDOT DESIGNATION
(A)	INDUSTRIAL AVE CLOSED 1/2 MILE EAST <small>LOCAL TRAFFIC ONLY</small>	60"x30" 60"x10"	80-9928 80-9913
(B)	INDUSTRIAL AVE DETOUR 	60"x10" 24"x12" 21"x15"	80-9913 80-9707 51-2625
(C)	INDUSTRIAL AVE DETOUR 	60"x10" 48"x18"	80-9913 80-9707
(D)	INDUSTRIAL AVE CLOSED 1/2 MILES AHEAD FOLLOW DETOUR	60"x10" 60"x30"	80-9913 80-9928
(E)	INDUSTRIAL AVE CLOSED AHEAD LOCAL TRAFFIC ONLY 	60"x30" 48"x18"	80-9928 80-9701
(F)	INDUSTRIAL AVE DETOUR 	60"x10" 48"x18"	80-9913 80-9702
(G)	BEGINNING (DATE) ROAD CLOSED USE DETOUR	60"x30"	80-9928
(H)	ROAD CLOSED	48"x30"	80-9080*
(I)	STOP	48"	31-0557*
(J)	BRIDGE CLOSED	60"x30"	80-9082

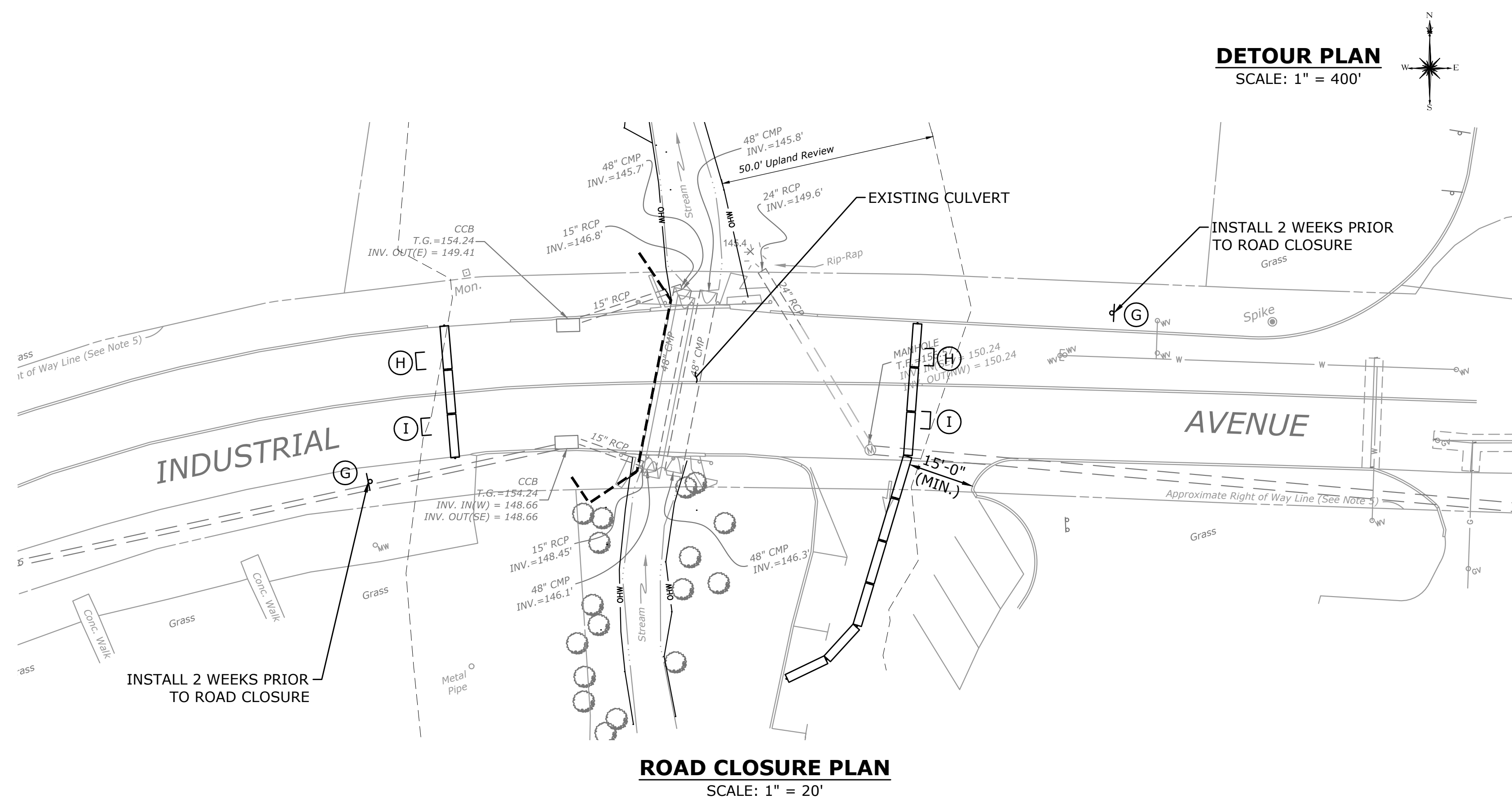
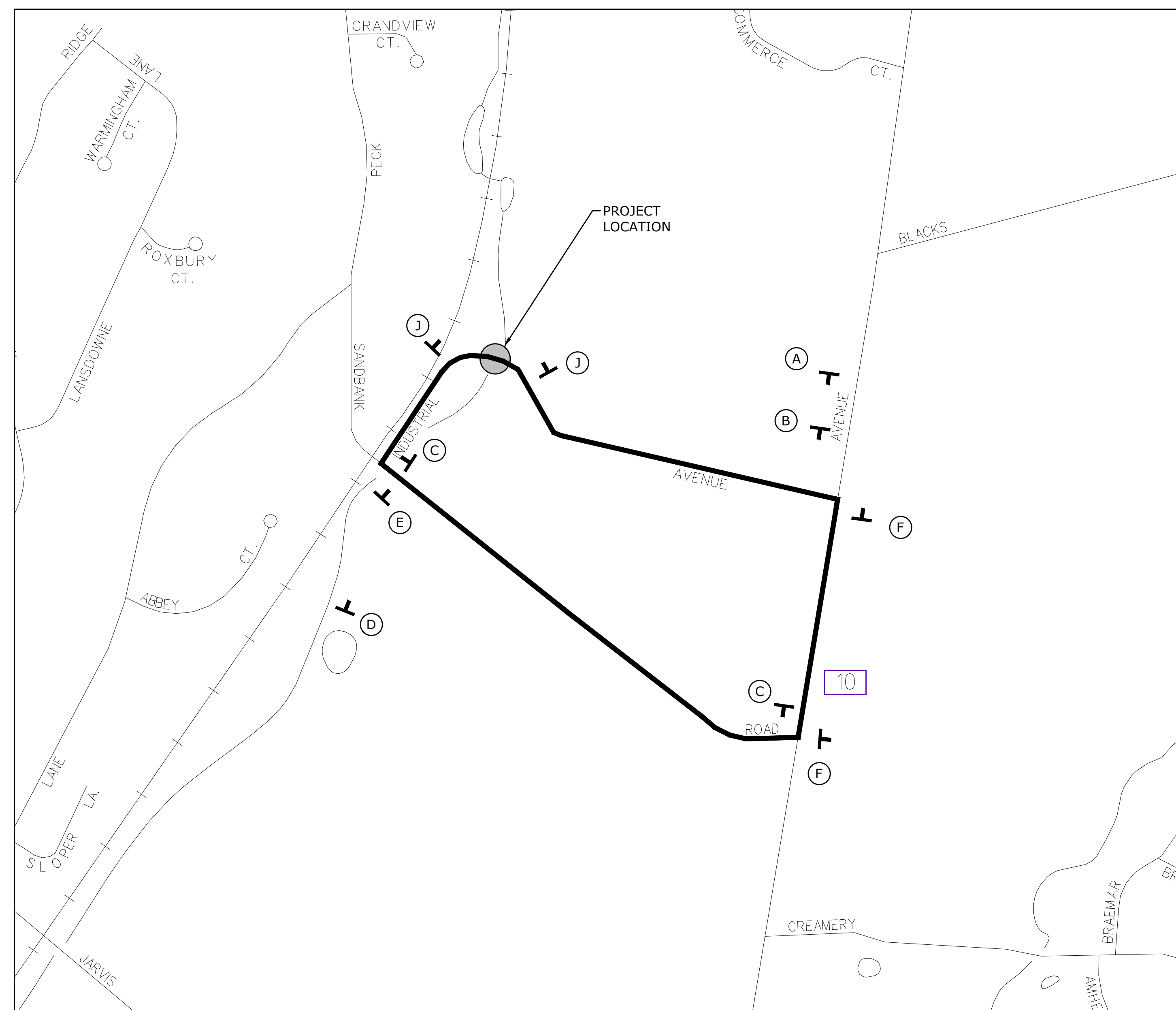
* USE BARRICADE WARNING LIGHT - HIGH INTENSITY

DETOUR NOTES:

- DETOUR SIGNS SHALL BE COVERED WHEN THE DETOUR IS NOT IN OPERATION.
- DETOUR SIGNS SHALL BE REMOVED WHEN THE DETOUR IS NO LONGER REQUIRED.
- THE COST OF THE DETOUR SIGNS SHALL BE PAID FOR UNDER ITEM NO. 1220027 CONSTRUCTION SIGNS. STOP SIGNS SHALL BE PAID FOR UNDER ITEM NO. 1208931 SIGN FACE - SHEET ALUMINUM (TYPE IX RETROREFLECTIVE SHEETING).
- CONTRACTOR SHALL NOTIFY STATE, TOWN AND EMERGENCY SERVICES AT LEAST 14 DAYS IN ADVANCE OF ROAD CLOSURE/DETOUR.
- MOVING TEMPORARY TRAFFIC BARRIERS AND CONSTRUCTION BARRICADES FOR DAILY ACCESS TO THE WORK AREA WILL NOT BE MEASURED FOR PAYMENT.
- WHERE POST MOUNTED, CONSTRUCTION SIGNS SHALL BE MOUNTED ON BREAKAWAY POSTS.
- EXISTING SIGNS THAT CONFLICT WITH CONSTRUCTION SIGNS SHALL BE REMOVED OR COVERED AS DIRECTED BY THE ENGINEER.
- ACTUAL LOCATION OF DETOUR SIGNS SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.

LEGEND

- TEMPORARY CONSTRUCTION SIGN
- CONSTRUCTION BARRICADE TYPE III
- TEMPORARY TRAFFIC BARRIER



DETOUR PLAN
SCALE: 1" = 400'

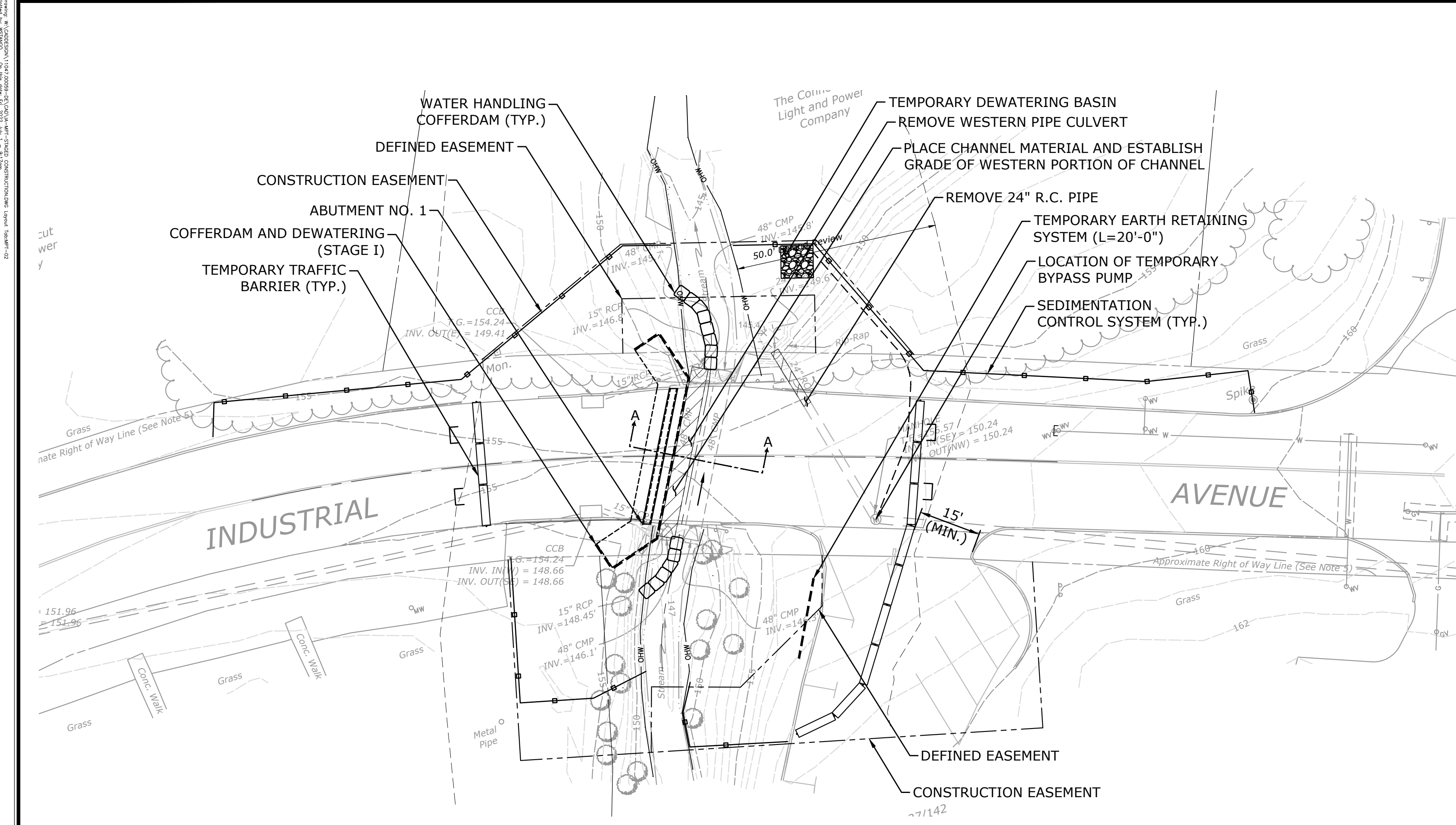
ROAD CLOSURE PLAN
SCALE: 1" = 20'

SLR 99 REALTY DRIVE SUITE 100 20321177 SLRCONSULTING.COM	
DESCRIPTION	DATE

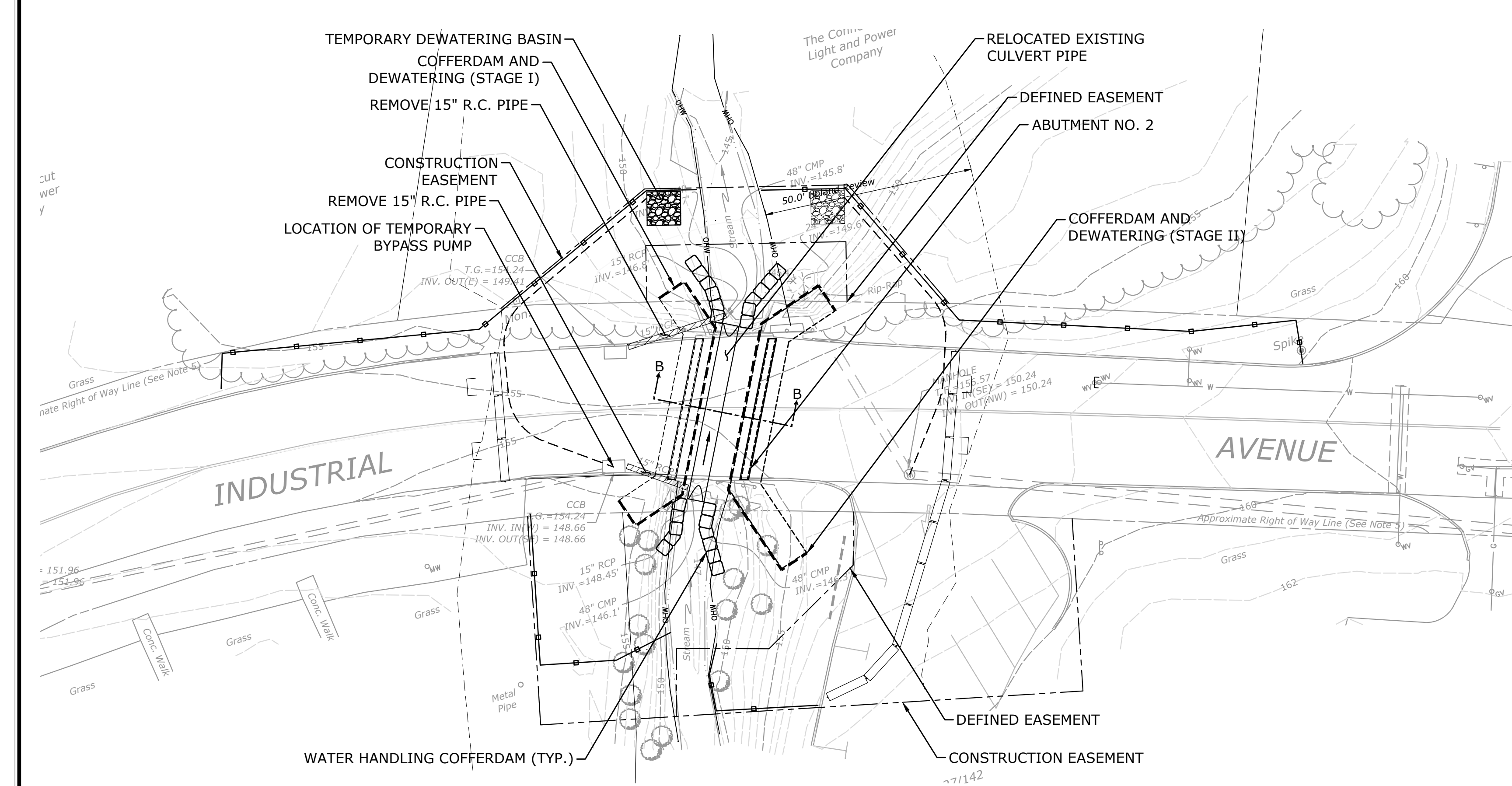
DETOUR PLAN
 REPLACEMENT OF INDUSTRIAL AVENUE
 BRIDGE (NO. 025030) OVER UNNAMED STREAM
 INDUSTRIAL AVENUE
 CHESHIRE, CONNECTICUT

DESIGNED	WRS	DESIGNED	WRS	CHECKED	WRS
AS SHOWN					
DATE JANUARY 27, 2022					
PROJECT NO. 141.11047.00059					
DRAWING NO. MPT-01					

10



STAGE I
SCALE: 1" = 20'-0"



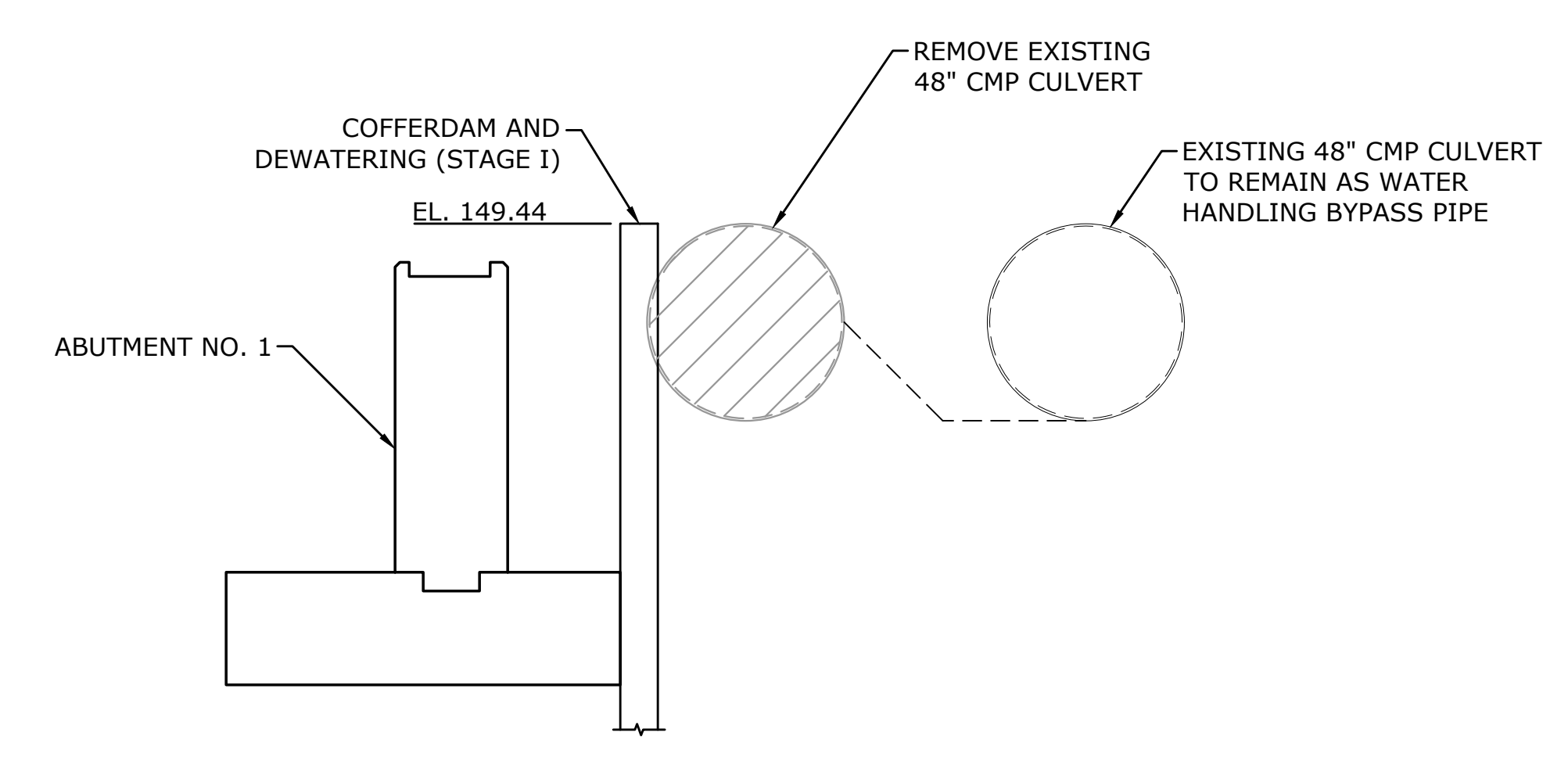
STAGE IA
SCALE: 1" = 20'-0"

SUGGESTED CONSTRUCTION SEQUENCE

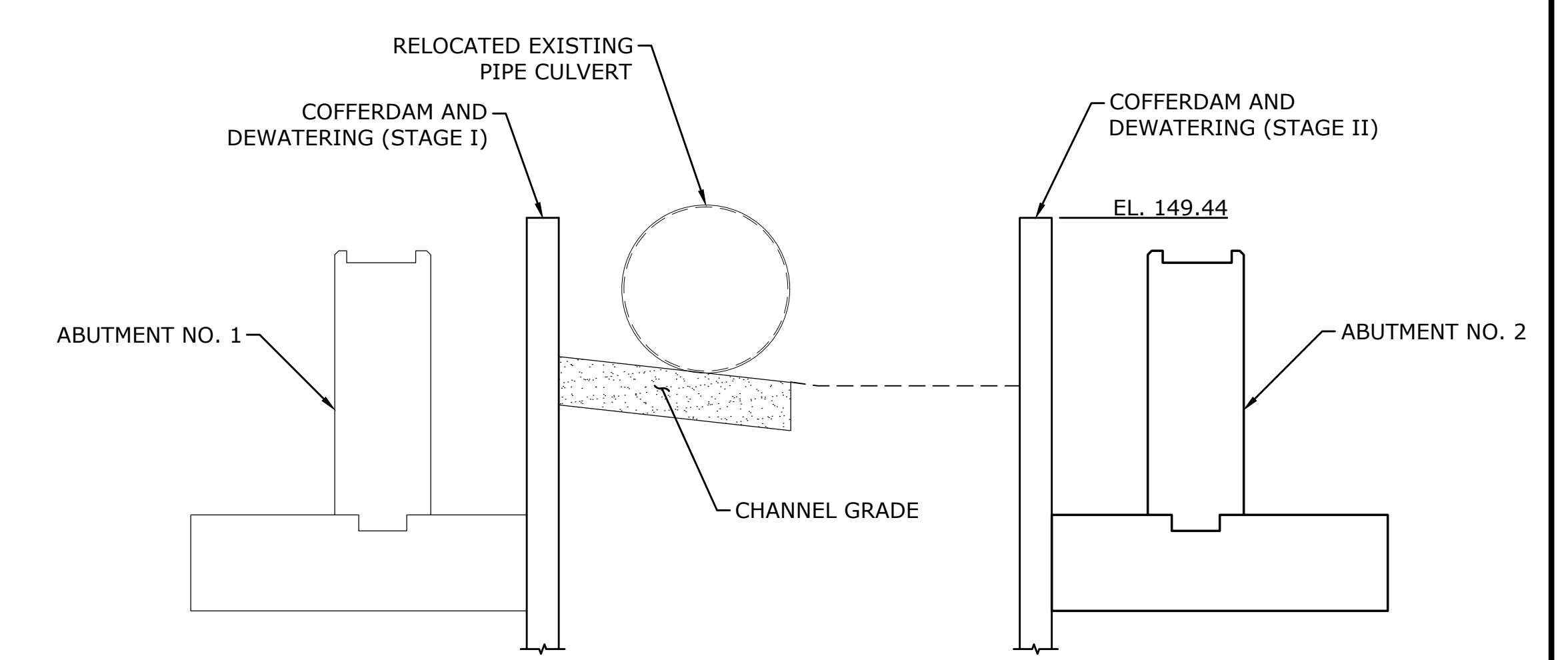
- STAGE I**
1. INSTALL DETOUR SIGNAGE AND CLOSE THE ROAD TO TRAFFIC.
 2. INSTALL SEDIMENT & EROSION CONTROLS.
 3. INSTALL WATER HANDLING COFFERDAM AS SHOWN.
 4. REMOVE WESTERN PIPE CULVERT AND EXISTING 24" R.C. PIPE TO THE LIMITS SHOWN (SEE NOTE 2).
 5. INSTALL COFFERDAM AND DEWATERING AS SHOWN.
 6. EXCAVATE FOR ABUTMENT NO. 1 AND WINGWALLS 1A & 1B FOUNDATIONS AS SHOWN.
 7. INSTALL TEMPORARY EARTH RETAINING SYSTEM.
 8. CONSTRUCT ABUTMENT AND WINGWALL FOOTINGS.
 9. CONSTRUCT ABUTMENT STEM.
 10. PLACE CHANNEL MATERIAL AND ESTABLISH FINISHED GRADE IN WESTERN PORTION OF CHANNEL TO THE FACE OF THE STAGE I COFFERDAM AND DEWATERING.

- STAGE II**
1. ADJUST THE LOCATION OF THE EXISTING PIPE CULVERT AND WATER HANDLING COFFERDAMS AS SHOWN.
 2. REMOVE THE EXISTING 15" R.C. PIPE AS SHOWN (SEE NOTE 2).
 3. INSTALL COFFERDAM AND DEWATERING AS SHOWN.
 4. EXCAVATE FOR ABUTMENT NO. 2 AND WINGWALL 2A & 2B FOUNDATIONS.
 5. CONSTRUCT ABUTMENT AND WINGWALL FOOTINGS.
 6. CONSTRUCT ABUTMENT STEM.

- NOTES:**
1. THE CONTRACTOR MAY PROPOSE AN ALTERNATE CONSTRUCTION SEQUENCE FOR APPROVAL BY THE ENGINEER.
 2. THE COST OF ANY NECESSARY BYPASS OF STORM WATER IS THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE PAID UNDER THE COST OF THE DRAINAGE ITEMS COMPRISING THE WORK.



SECTION A-A
SCALE: 3/8" = 1'-0"



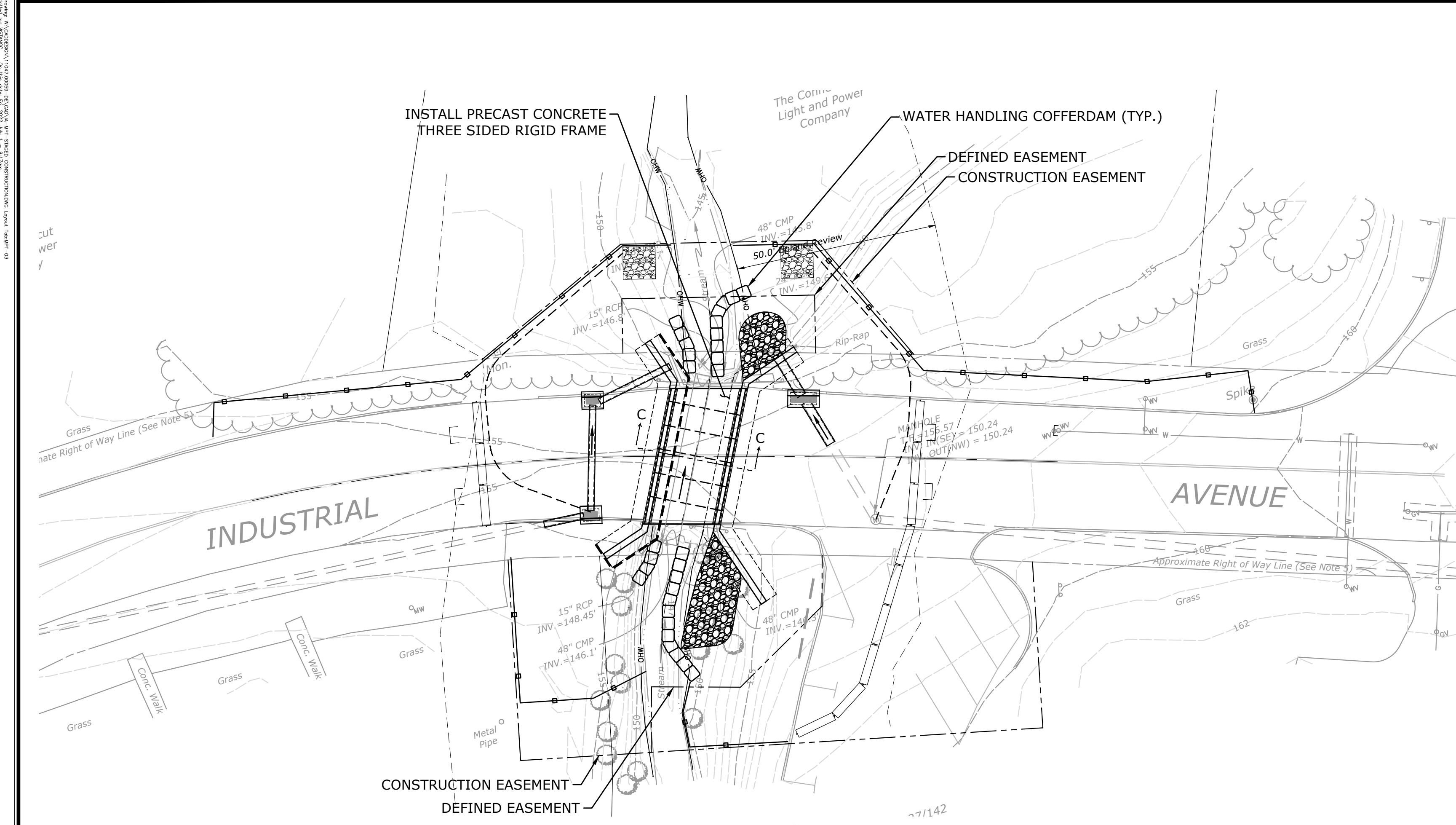
SECTION B-B
SCALE: 3/8" = 1'-0"



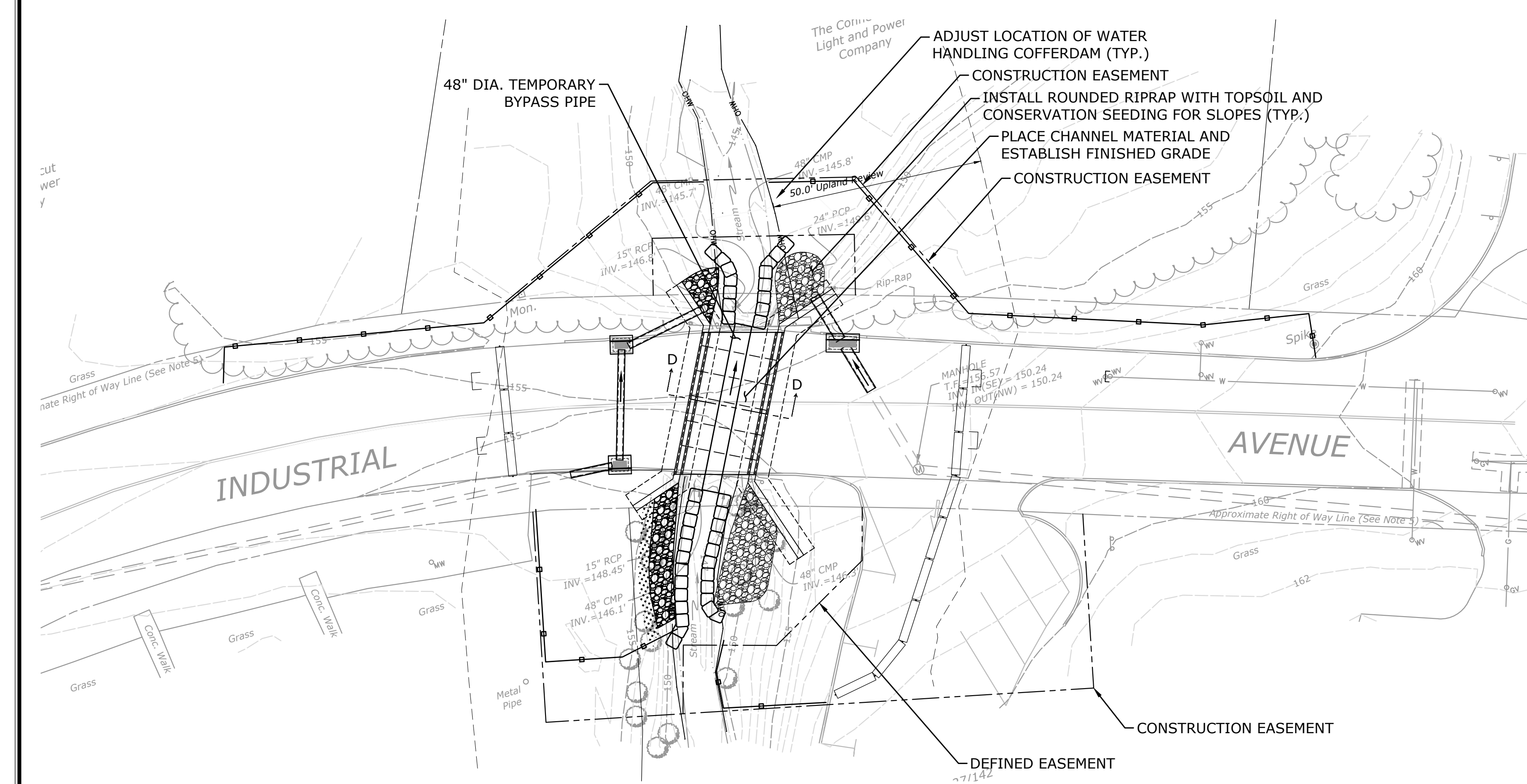
DESCRIPTION	DATE	BY

STAGED CONSTRUCTION PLANS
REPLACEMENT OF INDUSTRIAL AVENUE
BRIDGE (NO. 025030) OVER UNNAMED STREAM
 INDUSTRIAL AVENUE
 CHESHIRE, CONNECTICUT

KP	WRS	KP
DESIGNED	DRAWN	CHECKED
AS SHOWN		
JANUARY 27, 2022		
DATE		
141.11047.00059		
PROJECT NO.		
MPT-02		
DRAWING NO.		



STAGE III
SCALE: 1" = 20'-0"



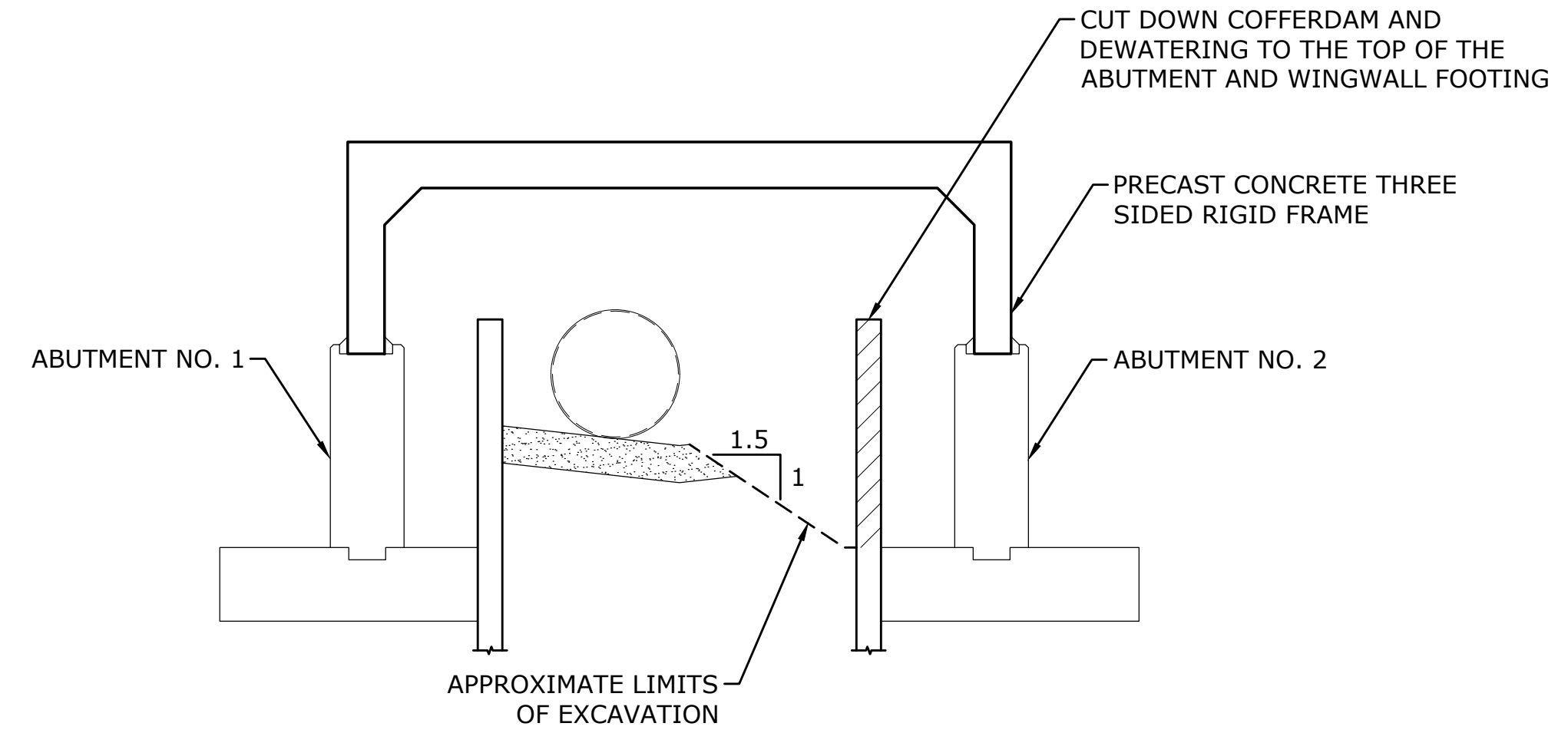
STAGE IV
SCALE: 1" = 20'-0"

SUGGESTED CONSTRUCTION SEQUENCE

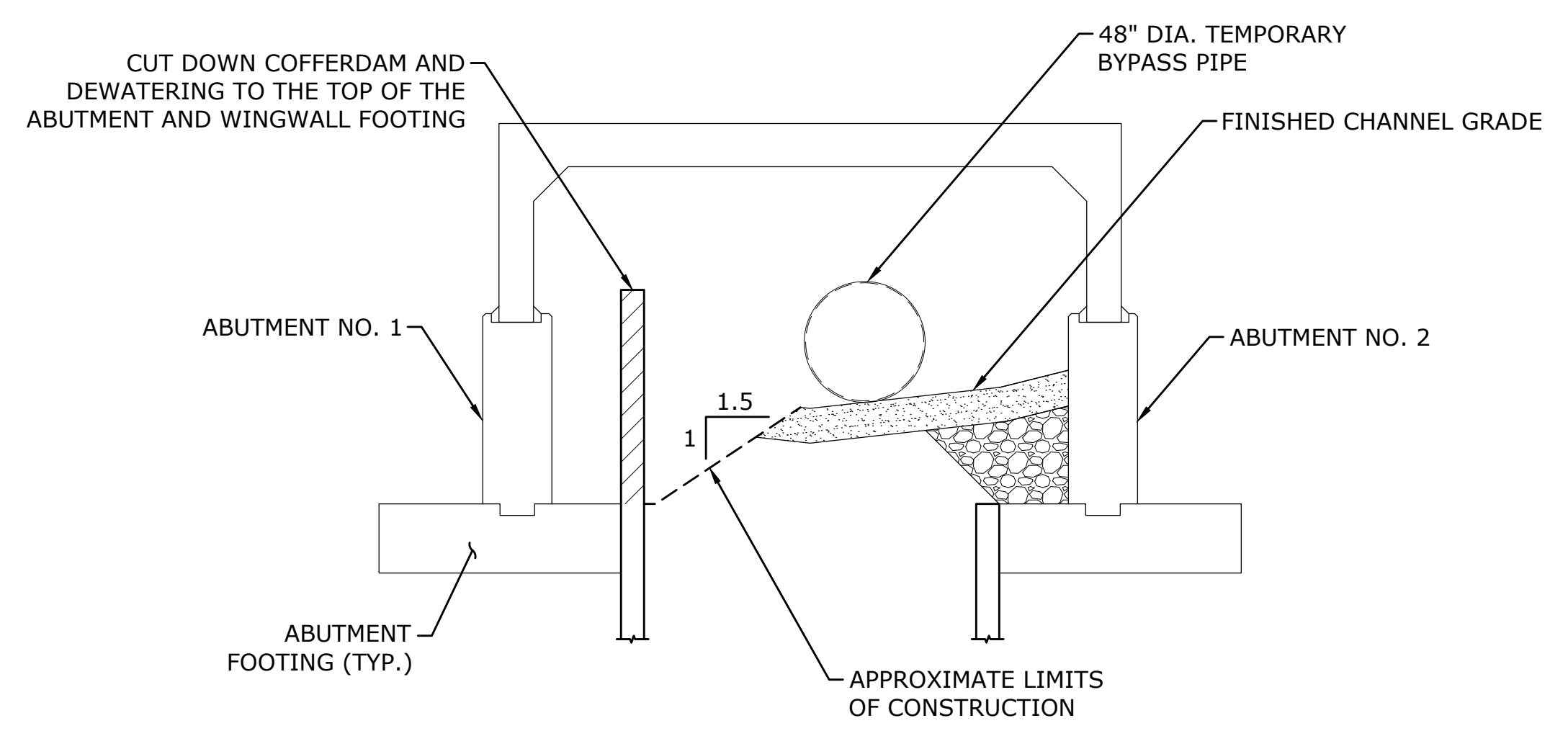
- STAGE III**
1. INSTALL PRECAST CONCRETE THREE SIDED RIGID FRAME.
 2. CONSTRUCT WINGWALL STEMS.
 3. INSTALL CATCH BASINS AND DRAINAGE PIPES AS SHOWN.
 4. BACKFILL CULVERT AND WINGWALLS (SEE NOTE 1).
 5. REMOVE TEMPORARY EARTH RETAINING SYSTEM.
 6. CUT DOWN COFFERDAM AND DEWATERING TO THE TOP OF THE ABUTMENT AND WINGWALL FOOTING.
 7. BACKFILL THE REMAINING CHANNEL MATERIAL.
 8. INSTALL ROUNDED RIPRAP WITH TOPSOIL AND CONSERVATION SEEDING FOR SLOPES AND ESTABLISH FINISHED GRADE ALONG EASTERN CHANNEL BANKS.

- STAGE IV**
1. ADJUST BYPASS PIPE AND WATER HANDLING COFFERDAM AS SHOWN.
 2. CUT DOWN COFFERDAM AND DEWATERING TO THE TOP OF THE ABUTMENT AND WINGWALL FOOTING.
 3. BACKFILL THE REMAINING CHANNEL MATERIAL.
 4. INSTALL ROUNDED RIPRAP WITH TOPSOIL AND CONSERVATION SEEDING FOR SLOPES AND ESTABLISH FINISHED GRADE ALONG WESTERN CHANNEL BANKS.

- NOTE:**
1. THE CONTRACTOR SHALL BACKFILL BOTH SIDES OF THE FRAME IN EQUAL LIFTS AT THE SAME TIME.



SECTION C-C
SCALE: 1/4" = 1'-0"



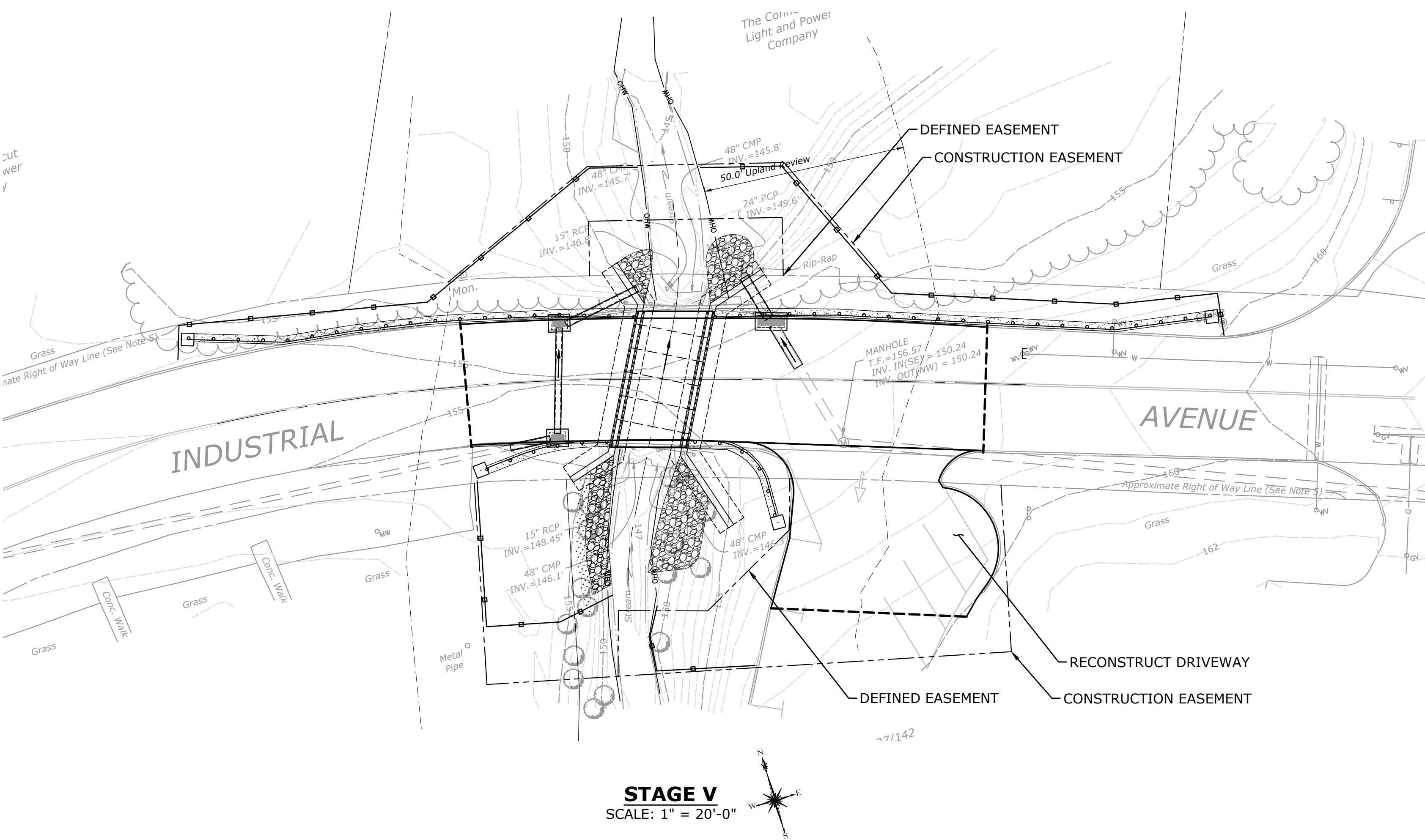
SECTION D-D
SCALE: 1/4" = 1'-0"



DESCRIPTION	DATE	BY

STAGED CONSTRUCTION PLANS
REPLACEMENT OF INDUSTRIAL AVENUE BRIDGE (NO. 025030) OVER UNNAMED STREAM
INDUSTRIAL AVENUE
CHESHIRE, CONNECTICUT

DESIGNED	WRS	DESIGNED	WRS	DESIGNED	WRS
DRAWN		DRAWN		DRAWN	
CHECKED		CHECKED		CHECKED	
AS SHOWN					
DATE: JANUARY 27, 2022					
PROJECT NO.: 141.11047.00059					
DRAWING NO.: MPT-03					



STAGE V
SCALE: 1" = 20'-0"

SUGGESTED CONSTRUCTION SEQUENCE

- STAGE V**
1. REMOVE TEMPORARY BYPASS PIPE AND WATER HANDLING COFFERDAMS
 2. CONSTRUCT CONCRETE PARAPETS.
 3. PREPARE ROADWAY SUBGRADE, PLACE SUBBASE, PROCESSED AGGREGATE AND PAVE.
 4. RECONSTRUCT DRIVEWAY AS SHOWN.
 5. INSTALL CURBING.
 6. INSTALL APPROACH GUIDE RAIL.
 7. ESTABLISH FINISHED GRADE. PLACE TOPSOIL AND TURF ESTABLISHMENT.
 8. REMOVE SEDIMENTATION AND EROSION CONTROLS AND REOPEN ROADWAY.



DESCRIPTION	DATE	BY

STAGED CONSTRUCTION PLANS
REPLACEMENT OF INDUSTRIAL AVENUE
BRIDGE (NO. 025030) OVER UNNAMED STREAM
INDUSTRIAL AVENUE
CHESHIRE, CONNECTICUT

DESIGNED	WRS	DESIGNED
DRAWN	WRS	DRAWN
CHECKED	WRS	CHECKED
AS SHOWN		
DATE		
JANUARY 27, 2022		
PROJECT NO.		
141.11047.00059		
DRAWING NO.		
MPT-04		

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maths

TOWN OF CHESHIRE

Inland Wetlands and Watercourses Commission
84 South Main Street
Cheshire, Connecticut 06410
203-271-6670 • Fax 203-271-6688



February 9, 2022

George Noewatne
Town of Cheshire
84 South Main Street
Cheshire, CT 06410

RE: PERMIT APPLICATION #2022-002

Dear Mr. Noewatne::

At the February 1, 2022 Inland Wetlands and Watercourses Commission regular meeting, the commission approved with stipulations, the permit application of the Town of Cheshire for bridge replacement on Industrial Avenue, Cheshire, CT 06410.

It is the responsibility of all parties involved with this application to review the enclosed approval and adhere to the stipulations. All work must be completed in the sequence, manner and timeframe detailed in the approval. Any changes or modifications made to the approved plans without the prior notification to staff and/or authorization from the Cheshire Inland Wetlands and Watercourses Commission may result in the issuance of a notice of violation, cease and desist order or permit revocation. This permit is issued to the applicant and the applicant of record is ultimately responsible for the execution of this permit. Transfer of this permit from the applicant to another individual is permissible, through application to and action by the Cheshire Inland Wetlands and Watercourses Commission.

Very truly yours,

Kerrie Dunne, Secretary
CHESHIRE INLAND WETLANDS AND
WATERCOURSES COMMISSION

cc: IWWC file

✓ Matthew Sanford
SLR International Corp.



Motion:

That the Cheshire Inland Wetlands and Watercourses Commission, having considered the factors pursuant to Section 10 of the Inland Wetlands and Watercourses Regulations of the Town of Cheshire, Commissioners' knowledge of the area, site visitations, and after review of written information provided by the applicant on this application finds the following:

1. That the applicant is seeking a permit to reconstruct the Industrial Avenue Bridge over an unnamed stream which is thirteen feet (13') wide and approximately one foot (1') deep.
2. That the proposed culvert is a 14' wide by 8' tall by 36' long precast, open bottomed three-sided box sized culvert and will be replacing the existing twin pipe culvert.
3. That the CT DEEP Bureau of Natural Resources Wildlife Division has not identified any species of concern.
4. The upland review area will be affected by the placement of rip rap to stabilize the banks of the stream.
5. That the activities will not have a significant adverse effect on adjacent wetlands or watercourses.

Based upon the foregoing findings, the Cheshire Inland Wetland and Watercourses Commission conditionally grants CIWWC Permit Application #2022-002, the permit application of Town of Cheshire Department of Public Works for site plan approval as presented and shown on the plans entitled:

"Town of Cheshire, Connecticut
Plan for Replacement of the Industrial Ave. Bridge over
unnamed stream
Roadway Construction
Dated: December 7, 2021
Scale Varies on 12 Sheets
Prepared By: SLR Consulting 99 Realty Dr. Cheshire, Ct 06410

The permit is granted on the following terms, conditions, stipulations and limitations (collectively referred to as the "Conditions") each of which the Commission finds to be necessary to protect the wetlands and watercourses of the State and the Town of Cheshire:

1. Any lack of compliance with any condition or stipulation of this permit shall constitute a violation of the Cheshire Inland Wetlands and

Watercourses Regulations, and an enforcement order shall be both issued and recorded on the Town of Cheshire Land Records.

2. No changes or modifications may be made to the plans within the regulated area without subsequent review and approval the Cheshire Inland Wetlands and Watercourses Commission.
3. Prior to any clearing, earthmoving and/or construction activities, the applicant shall accurately stake and flag clearing limits and properly install erosion controls.
4. All recommendations from the Connecticut Department of Energy and Environmental Protection regarding protective measure for Natural Diversity Database species shall be stringently adhered to.
5. That the outline of the erosion control plan listed on the site plan shall be strictly adhered to.
6. Throughout the course of conducting construction activities, and per Section 11.2K of the Cheshire Inland Wetlands and Watercourses Regulations, the applicant shall be responsible for ensuring the following:
 - a) That all maintenance and refueling of equipment and vehicles is performed as far as practical from all wetlands and watercourses, at least 100' if possible. All oil, gasoline, and chemicals needed at the site shall be stored in secondary containment to prevent contamination of any wetlands or watercourses from possible leaks.
 - b) That all disturbed areas on the site not directly required for construction activities are temporarily hayed and seeded until the site is permanently stabilized.

7. This permit grant shall expire on February 1, 2027

Moved by Dr. Dimmick Seconded by Ms. Dunne. Motion approved unanimously by Commission members present.

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March 3, 2022

Matthew Sanford
SLR International Corporation
99 Realty Drive
Cheshire, CT 06410
(sent via email only to msanford@slrconsulting.com)

Subject: Bridge Replacement
Industrial Avenue over an Unnamed Stream
Cheshire, Connecticut

Dear Mr. Sanford,

The State Historic Preservation Office (SHPO) has reviewed the referenced project in response to your request for our comments regarding potential effects to historic properties. The referenced bridge is town-owned and located approximately 1,125 feet north of where Industrial Avenue meets Sandbank Road. The existing bridge is described as twin concrete culverts lined with corrugated metal pipe. SHPO understands that the existing culverts are in poor condition and that they will be replaced with a three-sided concrete box culvert. The proposed project is subject to permitting by the United States Army Corps of Engineers. As a result, the proposed undertaking is subject to Section 106, the implementing regulations of the National Historic Preservation Act.

There are no archeological sites or properties listed on the National Register of Historic Places recorded within or immediately adjacent to the Area of Potential Effect (APE) for this project. The existing structure is a common design with no known associations; it is SHPO's opinion that the existing culverts are not eligible for listing on the National Register of Historic Places. The area surrounding the APE is considered archeologically sensitive, but project plans indicate that all work will be confined to existing disturbed contexts. Therefore, it is unlikely that significant archeological resources would be affected by the proposed culvert replacement. Based on the information provided to our office, it is SHPO's opinion that no historic properties will be affected by this undertaking.

This office appreciates the opportunity to review and comment upon this project. Do not hesitate to contact Catherine Labadia, Staff Archaeologist and Environmental Reviewer, for additional information at (860) 500-2329 or catherine.labadia@ct.gov.

Sincerely,

A handwritten signature in blue ink that reads "Jonathan Kinney". The signature is fluid and cursive.

Jonathan Kinney
State Historic Preservation Officer

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Minimum Rates and Classifications for Heavy/Highway Construction

**Connecticut Department of Labor
Wage and Workplace Standards**

ID#: 24-57155

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: Cheshire

State#:

FAP#:

Project: Replacement of Industrial Avenue Bridge (No. 025030) over Unnamed Stream

CLASSIFICATION	Hourly Rate	Benefits
1) Boilermaker	46.21	29.35
1a) Bricklayer, Cement Masons, Cement Finishers, Plasterers, Stone Masons	41.63	34.50
2) Carpenters, Piledrivermen	37.61	27.61
2a) Diver Tenders	37.61	27.61
3) Divers	46.07	27.61
03a) Millwrights	40.56	28.87
4) Painters: (Bridge Construction) Brush, Roller, Blasting (Sand, Water, etc.), Spray	56.25	25.15
4a) Painters: Brush and Roller	37.62	24.55
4b) Painters: Spray Only	40.62	24.55

As of: January 17, 2024

4c) Painters: Steel Only	39.62	24.55
4d) Painters: Blast and Spray	40.62	24.55
4e) Painters: Tanks, Tower and Swing	39.62	24.55
4f) Elevated Tanks (60 feet and above)	46.62	24.55
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)	42.6	33.21+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: January 17, 2024

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: January 17, 2024

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: January 17, 2024

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: January 17, 2024

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: January 17, 2024

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	48.36	16.92
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: January 17, 2024

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

As of: January 17, 2024

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.

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DRAFT AIA® Document A101™ – 2017

Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum

AGREEMENT made as of the « _____ » day of « _____ » in the year «2024»
(In words, indicate day, month and year.)

BETWEEN the Owner:
(Name, legal status, address and other information)

Town of Cheshire
84 South Main Street
Cheshire, Connecticut 06410

and the Contractor:
(Name, legal status, address and other information)

for the following Project:
Replacement of Industrial Avenue Bridge (No. 025030) Over Unnamed Stream
State Project No. 9025-0030
Cheshire, CT 06410

The Engineer:
SLR Consulting, Inc.
99 Realty Drive
Cheshire, CT 06410
(203) 271-1773

« The Owner and Contractor agree as follows.

ADDITIONS AND DELETIONS:
The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

The parties should complete A101™-2017, Exhibit A, Insurance and Bonds, contemporaneously with this Agreement. AIA Document A201™-2017, General Conditions of the Contract for Construction, is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

ELECTRONIC COPYING of any portion of this AIA® Document to another electronic file is prohibited and constitutes a violation of copyright laws as set forth in the footer of this document.

TABLE OF ARTICLES

- 1 THE CONTRACT DOCUMENTS
- 2 THE WORK OF THIS CONTRACT
- 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION
- 4 CONTRACT SUM
- 5 PAYMENTS
- 6 DISPUTE RESOLUTION
- 7 TERMINATION OR SUSPENSION
- 8 MISCELLANEOUS PROVISIONS
- 9 ENUMERATION OF CONTRACT DOCUMENTS

EXHIBIT A INSURANCE AND BONDS

ARTICLE 1 THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings dated _____, Specifications, Addenda issued prior to execution of this Agreement, the Bidding Documents (including Owner's Project Manual dated January 25, 2024, all contents thereof including but in no way limited to the General Specifications, Special Provisions, CHRO Requirements, and Prevailing Wage information, and all Bidding Documents issued in conjunction therewith, including Addenda thereto), Contractor's Bid dated _____, other documents listed in this Agreement, and Modifications issued after execution of this Agreement, all of which form the Contract, and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. An enumeration of the Contract Documents, other than a Modification, appears in Article 9.

ARTICLE 2 THE WORK OF THIS CONTRACT

The Contractor shall fully execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others.

ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 3.1 The date of commencement of the Work shall be:

(Check one of the following boxes.)

The date of this Agreement.

A date set forth in a notice to proceed issued by the Owner or Architect. Contractor shall coordinate the scheduling and performance of the Work with the Owner.

Established as follows:

(Insert a date or a means to determine the date of commencement of the Work.)

« _____ »

If a date of commencement of the Work is not selected, then the date of commencement shall be the date of this Agreement.

§ 3.2 The Contract Time shall be measured from the date of commencement of the Work.

§ 3.3 Substantial Completion

§ 3.3.1 Subject to adjustments of the Contract Time as provided in the Contract Documents, the Contractor shall achieve Substantial Completion of the entire Work:

(Check one of the following boxes and complete the necessary information.)

[] Not later than _____ days from the date of commencement of the Work.

[] By the following date: «»

TIME IS OF THE ESSENCE WITH REGARD TO THE TIMELY PERFORMANCE OF THE AGREEMENT, ACHIEVEMENT OF ALL MILESTONES, SUBSTANTIAL COMPLETION AND FINAL COMPLETION OF THE PROJECT BY THE CONTRACTOR. If, in the sole opinion of the Owner, the Contractor is not adhering to the Project schedule and/or is not supplying sufficient labor and/or equipment to complete the Work by the Substantial Completion date contained herein, upon forty-eight (48) hours written notice, the Town shall have the right to direct the Contractor to increase its labor and/or equipment to meet established project schedules without additional compensation provided the Town is not responsible or in any way liable for the Contractor not adhering to the Project schedule. Any and all such additional labor or supervision shall be at Contractor's sole cost and expense and may include, but shall not be limited to, Town directing the Contractor to increase the workers on its crews, supply additional equipment, work overtime, work a second shift during a single day, work weekends, or any combination thereof, without any additional compensation being due to Contractor for such additional personnel. Any costs incurred or arising due to the Contractor's failure to achieve timely Substantial Completion shall be borne solely by the Contractor.

§ 3.3.1.1 Contractor expressly agrees, notwithstanding any provision in this Agreement to the contrary, that: (i) a COVID-19 pandemic exists worldwide as of the execution date of this Agreement; (ii) the existence of such pandemic, and its effects, now, and for the duration of Contractor's performance under the Agreement, shall not in and of itself be cause for Contractor to rely upon, invoke, or avail itself to, any rights or remedies under this Agreement, at law, or in equity, for a claim, or an adjustment to the price, schedule, quantities, specifications, or other material terms of this Agreement; (iii) the material terms of this Agreement, particularly terms relating to price, schedule, quantities, availability and specifications, take into consideration, and fully account for, the existence of such pandemic and its effects, as of the date of this Agreement; and (iv) such pandemic shall not render Contractor unable to fulfill any of its obligations under the Agreement, and Contractor shall not have any claim, action, or cause of action against the Owner in connection with such pandemic, including any claim for frustration of purpose change in circumstances, economic balance, or impossibility. This provision shall survive the completion or earlier termination of this Agreement.

§ 3.3.2 Subject to adjustments of the Contract Time as provided in the Contract Documents, if portions of the Work are to be completed prior to Substantial Completion of the entire Work, the Contractor shall achieve Substantial Completion of such portions by the following dates:

Portion of Work	Substantial Completion Date
« <input type="text"/> »	<input type="text"/>

§ 3.3.3 If the Contractor fails to achieve Substantial Completion as provided in this Section 3.3, liquidated damages, if any, shall be assessed as set forth in Section 4.5.

ARTICLE 4 CONTRACT SUM

§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be « Dollars » (\$), subject to additions and deductions as provided in the Contract Documents.

§ 4.2 Alternates

§ 4.2.1 Alternates, if any, included in the Contract Sum:

Item	Price
« <input type="text"/> »	<input type="text"/>

§ 4.2.2 Subject to the conditions noted below, the following alternates may be accepted by the Owner following execution of this Agreement. Upon acceptance, the Owner shall issue a Modification to this Agreement. *(Insert below each alternate and the conditions that must be met for the Owner to accept the alternate.)*

Item	Price	Conditions for Acceptance
«N/A »		

§ 4.3 Allowances, if any, included in the Contract Sum: *(Identify each allowance.)*

Item	Price
«»	

§ 4.4 Unit prices, if any: *(Identify the item and state the unit price and quantity limitations, if any, to which the unit price will be applicable.)*

Item	Units and Limitations	Price per Unit (\$0.00)
« »		

§ 4.5 Liquidated damages, if any: *(Insert terms and conditions for liquidated damages, if any.)*

«See A201 as modified. »

§ 4.6 Other: *(Insert provisions for bonus or other incentives, if any, that might result in a change to the Contract Sum.)*

« »

ARTICLE 5 PAYMENTS

§ 5.1 Progress Payments

§ 5.1.1 Based upon Applications for Payment submitted to the Architect by the Contractor and Certificates for Payment issued by the Architect, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents.

§ 5.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month, or as follows:

« »

§ 5.1.3 Provided that an Application for Payment is received by the Architect not later than the «25th » day of a month, the Owner shall make payment of the amount certified to the Contractor not later than thirty (30) days after the Owner approves the Application for Payment. If an Application for Payment is received by the Architect after the application date fixed above, payment of the amount certified shall be made by the Owner not later than «thirty » («30 ») days after the approves the Application for Payment certified by the Architect. *(Federal, state or local laws may require payment within a certain period of time.)*

§ 5.1.4 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be prepared in such form, and supported by such data to substantiate its accuracy, as the Architect may require. This schedule of values shall be used as a basis for reviewing the Contractor’s Applications for Payment.

§ 5.1.5 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.

§ 5.1.6 In accordance with AIA Document A201™–2017, General Conditions of the Contract for Construction, and subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

§ 5.1.6.1 The amount of each progress payment shall first include:

- .1 That portion of the Contract Sum properly allocable to completed Work;
- .2 That portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction, or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing; and
- .3 That portion of Construction Change Directives that the Architect determines, in the Architect's professional judgment, to be reasonably justified.

§ 5.1.6.2 The amount of each progress payment shall then be reduced by:

- .1 The aggregate of any amounts previously paid by the Owner;
- .2 The amount, if any, for Work that remains uncorrected and for which the Architect has previously withheld a Certificate for Payment as provided in Article 9 of AIA Document A201–2017;
- .3 Any amount for which the Contractor does not intend to pay a Subcontractor or material supplier, unless the Work has been performed by others the Contractor intends to pay;
- .4 For Work performed or defects discovered since the last payment application, any amount for which the Architect may withhold payment, or nullify a Certificate of Payment in whole or in part, as provided in Article 9 of AIA Document A201–2017; and
- .5 Retainage withheld pursuant to Section 5.1.7.

§ 5.1.7 Retainage

§ 5.1.7.1 For each progress payment made prior to Substantial Completion of the Work, the Owner may withhold the following amount, as retainage, from the payment otherwise due:

(Insert a percentage or amount to be withheld as retainage from each Application for Payment. The amount of retainage may be limited by governing law.)

« Five percent (5%) »

§ 5.1.7.1.1 The following items are not subject to retainage:

(Insert any items not subject to the withholding of retainage, such as general conditions, insurance, etc.)

«N/A »

§ 5.1.7.2 Reduction or limitation of retainage, if any, shall be as follows:

(If the retainage established in Section 5.1.7.1 is to be modified prior to Substantial Completion of the entire Work, including modifications for Substantial Completion of portions of the Work as provided in Section 3.3.2, insert provisions for such modifications.)

«At the Owner's sole discretion. »

§ 5.1.7.3 Except as set forth in this Section 5.1.7.3, upon Substantial Completion of the Work, the Contractor may submit an Application for Payment that includes the retainage withheld from prior Applications for Payment pursuant to this Section 5.1.7. The Application for Payment submitted at Substantial Completion shall not include retainage as follows:

(Insert any other conditions for release of retainage upon Substantial Completion.)

Owner shall be entitled to retain two hundred percent (200%) of the estimated cost to complete punchlist items to reach Final Completion.

« »

§ 5.1.8 If final completion of the Work is materially delayed through no fault of the Contractor, the Owner shall pay the Contractor any additional amounts in accordance with Article 9 of AIA Document A201–2017.

§ 5.1.9 Except with the Owner's prior approval, the Contractor shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the site.

§ 5.2 Final Payment

§ 5.2.1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when

- .1 the Contractor has fully performed the Contract except for the Contractor’s responsibility to correct Work as provided in Article 12 of AIA Document A201–2017, and to satisfy other requirements, if any, which extend beyond final payment; and
- .2 a final Certificate for Payment has been issued by the Architect and all conditions precedent to final payment have been satisfied.

§ 5.2.2 The Owner’s final payment to the Contractor shall be made no later than 30 days after the issuance of the Architect’s final Certificate for Payment, or as follows:

« »

§ 5.3 Intentionally Deleted.

ARTICLE 6 DISPUTE RESOLUTION

§ 6.1 Initial Decision Maker

The Owner will serve as the Initial Decision Maker pursuant to Article 15 of AIA Document A201–2017, unless the parties appoint below another individual, not a party to this Agreement, to serve as the Initial Decision Maker.

(If the parties mutually agree, insert the name, address and other contact information of the Initial Decision Maker, if other than the Architect.)

« »
« »
« »
« »

§ 6.2 Binding Dispute Resolution

For any Claim subject to, but not resolved by, mediation pursuant to Article 15 of AIA Document A201–2017, the method of binding dispute resolution shall be as follows:

(Check the appropriate box.)

[] Arbitration pursuant to Section 15.4 of AIA Document A201–2017

[] Litigation in a court of competent jurisdiction

[] Other *(Specify)*

«Litigation in Connecticut Superior Court in and for the Judicial District of New Haven unless the Owner, in its sole discretion, elects to arbitrate a dispute.

If the Owner and Contractor do not select a method of binding dispute resolution, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, Claims will be resolved by litigation in a court of competent jurisdiction.

ARTICLE 7 TERMINATION OR SUSPENSION

§ 7.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A201–2017.

§ 7.1.1 Intentionally Deleted.

§ 7.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A201–2017.

ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A201–2017 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

§ 8.2 The Owner’s representative:
(Name, address, email address, and other information)

«To be named by the Owner in writing within ten (10) days of the execution of this Agreement. »
« »
« »
« »
« »
« »

§ 8.3 The Contractor’s representative:
(Name, address, email address, and other information)

« »
« »
« »
« »
« »
« »

§ 8.4 Neither the Owner’s nor the Contractor’s representative shall be changed without ten days’ prior notice to the other party.

§ 8.5 Insurance and Bonds

§ 8.5.1 The Owner and the Contractor shall purchase and maintain insurance as set forth in AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum, Exhibit A, Insurance and Bonds, and elsewhere in the Contract Documents.

§ 8.5.2 The Contractor shall provide bonds as set forth in AIA Document A101™–2017 Exhibit A, and elsewhere in the Contract Documents.

§ 8.6 Notice in electronic format, pursuant to Article 1 of AIA Document A201–2017, may be given in accordance with AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, if completed, or as otherwise set forth below:
(If other than in accordance with AIA Document E203–2013, insert requirements for delivering notice in electronic format such as name, title, and email address of the recipient and whether and how the system will be required to generate a read receipt for the transmission.)

« »

§ 8.7 Other provisions:

«§8.7.1. The Project is being funded, in part, with funds granted by the State of Connecticut. Thus, it is a municipal public works project, Contractor shall pay prevailing wages in accordance with Connecticut law and the Contract Compliance Regulations of the Connecticut Commission on Human Rights and Opportunities apply and are expressly made a part hereof.

§8.7.2. The Contractor agrees and warrants (1) that in the performance of this contract, it 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 the 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 Connecticut 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 C.G.S. 4a-60 and sections 46a-68e and 46a-68f and with each regulation or relevant order issued by the CHRO pursuant to sections 46a-56, 46a-68c, 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.

§ 8.7.3 The Owner is required by the Connecticut Commission on Human Rights and Opportunities (CHRO), pursuant to C.G.S. § 46a-68c and 46a-68d, to withhold 2% of the total state-funded portion of the contract per month until such time as the CHRO has approved the CONTRACTOR's affirmative action plan.

§ 8.7.4 CONTRACTOR shall comply with the Procedures for Nonresident Contractors, if applicable, as set forth in C.G.S. §12-430.

§8.7.5 As required by statute, regulation or other applicable law, Contractor shall monitor and track MBE and WBE, local workforce and overall labor participation, including Set Aside documentation. This Project is funded in whole or in part by funds from the State of Connecticut. Therefore, Public Act 15-5 (§§58-71 and 88) requires that, effective with all contracts executed after October 1, 2015, all solicitations for municipal public works contracts funded in whole or in part with State funds state in the notice of solicitation that the contract must comply with the set asides mandated by Public Act 15-5. The set aside requirements include a requirement that 25% of the total value of contracts in excess of \$50,000.00 be set aside for exclusive bidding for “small contractors,” as defined by Section 58 (a) (1), and 25% of such amount (that is, 6.25% of the total value), be set aside for “minority business enterprises,” as defined by Section 58(a) (4). For contracts in excess of \$50,000.00, Contractor must have obtained Commission approval of their Affirmative Action Plan prior to contract execution. Contractor is expressly directed to review public act 15-5, sections 58-71 and 88, to familiarize themselves with the requirements of such laws. Contractor shall be directly and solely responsible for compliance with the requirements of P.A. 15-5, sections 58 through 71 and 88. The Town also directs contractor's attention to sections 63 and 64 (non-discrimination requirements) and 66-68 (affirmative action requirements).

Any Contractor who is a party to a municipal public works contract or quasi-public agency project, where any such contract is valued at less than \$50,000 for each year of the contract, shall provide the Commission on Human Rights and Opportunities with a written or electronic representation that complies with the nondiscrimination agreement and warranty under subsection (A)(1) above, provided if there is any change in such representation, the Contractor shall provide the updated representation to the Commission not later than 30 days after such change. Any Contractor who is a party to a municipal public works contract or a quasi-public agency project, where any such contract is valued at \$50,000 or more for any year of the contract, shall provide the Commission with any one of the following: (1) Documentation in the form of a company or corporate policy adopted by resolution of the board of directors, shareholder, managers, members or other governing body of such Contractor that complies with the nondiscrimination agreement and warranty under subsection (A)(1) of this section; (2) Documentation in the form of a company or corporate policy adopted by a prior resolution of the board of directors, shareholders, managers, members or other governing body of such contractor if (a) the prior resolution is certified by a duly authorized corporate officer of such contractor to be in effect on the date the documentation is submitted, and the executive director of the Commission on Human Rights and Opportunities or designee certifies that the prior resolution complies with the nondiscrimination agreement and warranty under subdivision

(A)(1) of this section; or (3) Documentation in the form of an affidavit signed under penalty of false statement by a chief executive officer, president, chairperson or other corporate officer duly authorized to adopt company or corporate policy that certifies that the company or corporate policy of the contractor complies with the nondiscrimination agreement and warranty under subdivision (A)(1) of this section and is in effect on the date the affidavit is signed..

If the Contract is a municipal public works contract or a quasi-public agency project, the Contractor agrees and warrants that s/he will make good faith efforts to employ minority business enterprises as subcontractors and suppliers of materials on such public works project. The Contractor shall include the provisions of subdivision (A)(1) of this section in every subcontract or purchase order entered into 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.

"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; 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. Determination of the Contractor's good faith efforts shall include, but shall not be eliminated to, the following factors: The contractor's employment and subcontracting policies, patterns and practices; affirmative advertising recruitment and training; technical assistance activities and such other reasonable activities or efforts as the Commission on Human Rights and Opportunities may prescribe that are designed to ensure the participation of minority business enterprises in municipal public works contracts or quasi-public agency projects. "Municipal public works project" means that portion of an agreement entered into on or after October 1, 2015, between any individual, firm or corporation and a municipality for the construction, rehabilitation, conversion, extension, demolition or repair of a public building, highway or other changes or improvements in real property, which is financed in whole or in part by the state, including, but not limited to, matching expenditures, grants, loans, insurance or guarantees but excluding any project of an alliance district, as defined in section 10-262u, finance by the state funding in an amount equal to fifty thousand dollars or less. "Quasi-public agency project" means the construction, rehabilitation, conversion, extension, demolition or repair of a building or other changes or improvements in real property pursuant to a contract entered into on or after October 1, 2015, which is financed in whole or in part by a quasi-public agency using state funds, including, but not limited to, matching expenditures, grants, loans, insurance or guarantees.

»

ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 This Agreement is comprised of the following documents:

- .1 AIA Document A101™-2017, Standard Form of Agreement Between Owner and Contractor
- .2 AIA Document A101™-2017, Exhibit A, Insurance and Bonds
- .3 AIA Document A201™-2017, General Conditions of the Contract for Construction, as modified
- .4 AIA Document E203™-2013, Building Information Modeling and Digital Data Exhibit, dated as indicated below:
(Insert the date of the E203-2013 incorporated into this Agreement.)

«»

- .5 Drawings Dated _____.

Number	Title	Date
See List of Drawings		

.6 Specifications

Section	Title	Date	Pages
See Table of Contents			

.7 Addenda, if any:

Number	Date	Pages
<< >>		

Portions of Addenda relating to bidding or proposal requirements are not part of the Contract Documents unless the bidding or proposal requirements are also enumerated in this Article 9.

.8 Other Exhibits:

(Check all boxes that apply and include appropriate information identifying the exhibit where required.)

[>>] Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages
<<See Project Manual >>			

.9 Other documents, if any, listed below:

(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A201™-2017 provides that the advertisement or invitation to bid, Instructions to Bidders, sample forms, the Contractor's bid or proposal, portions of Addenda relating to bidding or proposal requirements, and other information furnished by the Owner in anticipation of receiving bids or proposals, are not part of the Contract Documents unless enumerated in this Agreement. Any such documents should be listed here only if intended to be part of the Contract Documents.)

- .Town of Cheshire, Project Manual, dated 01/25/2024, including all Addenda
- .Instructions to Bidders, AIA A701, and Supplemental Instructions to Bidders
- .State of CT, Prevailing Wage Rates
- .Contractor's Bid Proposal
- . Drawings and Specifications dated _____

This Agreement entered into as of the day and year first written above.

<< >>

OWNER (Signature)
 <<Sean M. Kimball >><Town Manager >>

(Printed name and title)

<< >>

CONTRACTOR (Signature)
 << >>

(Printed name and title)

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DRAFT AIA® Document A201™ – 2017

General Conditions of the Contract for Construction

for the following PROJECT:

(Name and location or address)

Replacement of Industrial Avenue Bridge (No. 025030) Over Unnamed Stream

State Project No. 9025-0030

Cheshire, CT 06410

THE OWNER:

(Name, legal status and address)

«Town of Cheshire

84 South Main Street

Cheshire, Connecticut 06410

THE ENGINEER:

SLR Consulting, Inc.

99 Realty Drive

Cheshire, CT 06410

(203) 271-1773

ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

For guidance in modifying this document to include supplementary conditions, see AIA Document A503™, Guide for Supplementary Conditions.

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- 2 OWNER
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- 9 PAYMENTS AND COMPLETION
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- 11 INSURANCE AND BONDS
- 12 UNCOVERING AND CORRECTION OF WORK

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- 13 MISCELLANEOUS PROVISIONS
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ARTICLE 1 GENERAL PROVISIONS

§ 1.1 Basic Definitions

§ 1.1.1 The Contract Documents

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings dated _____, Specifications, Addenda issued prior to execution of the Contract, the Bidding Documents (including the Owner's Project Manual for Invitation to Bid # _____, including the General Specifications, Special Provisions, Prevailing Wage Information, Connecticut Commission on Human Rights and Opportunities Contract Compliance Regulations Notice to Bidders, Project Drawings and Specifications and accompanying documents), Contractor's Bid Proposal dated _____, other documents listed in the Agreement, requirements of the State of Connecticut with regard to the grant to Owner, and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive, or (4) a written order for a minor change in the Work issued by the Architect. Unless specifically enumerated in the Agreement, the Contract Documents do not include sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, or portions of Addenda relating to bidding or proposal requirements.

§ 1.1.2 The Contract

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Architect or the Architect's consultants, or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect's duties. Subcontractors are not intended thirty-party beneficiaries to the Contract and shall have no direct cause of action against the Owner.

In the event of conflicts or discrepancies among the Contract Documents, interpretations will be based on the following priorities:

1. Modifications, with those of later date having precedence over those of earlier date.
2. The Agreement, including any amendment to the Agreement included in the bid package.
3. Addenda to the Specifications and Drawings, with those of later date having precedence over those of earlier date.
4. The General Conditions of the Contract for Construction.
5. Specifications and Drawings.

Further, stated dimensions shall take precedence over scaled dimensions; large-scale detail drawings shall take precedence over small-scale drawings; schedules shall take precedence over other data on the drawings.

In the case of an inconsistency between Drawings and Specifications or within either Document in describing the Work, the better quality, greater quantity, or more costly work shall be provided in accordance with the Architect's interpretation.

§ 1.1.3 The Work

The term "Work" means the construction and services required by the Contract Documents, whether performed on or off the site of the Project and whether completed or partially completed, and includes all other labor, materials, equipment, and services provided or to be provided by the Contractor, its Subcontractors, Sub-Subcontractors, material suppliers or any other entity for whom the Contractor is responsible to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

§ 1.1.4 The Project

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by Separate Contractors.

§ 1.1.5 The Drawings

The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules, and diagrams.

§ 1.1.6 The Specifications

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

§ 1.1.7 Instruments of Service

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

§ 1.1.8 Contractor's Standard of Care

The Contractor shall be responsible for the performance of the Work as an independent contractor and in a good and workmanlike manner (i) consistent with the Contract Documents; (ii) consistent with the instructions, guidance and direction of the Owner and Architect; (iii) consistent with the highest prevailing applicable professional or industry standards; (iv) consistent with sound practices; (v) as expeditiously as is consistent with such professional skill and care and the orderly progress of the Work and with the Contract Documents and the instructions, guidance and direction of the Owner and Architect; (vi) in a manner that will not exceed the Contract Sum as set forth in the Agreement, and (vii) in strict compliance with applicable laws (the standards of this Section 1.1.8 shall be referred to herein as the "Contractor's Standard of Care"). The Contractor shall exercise the Contractor's Standard of Care in performing all aspects of the Work. All references in the Contract Documents to the knowledge, inference, reliance, awareness, determination, belief, observation, recognition or discovery of the Contractor or reference to any similar term shall include the constructive knowledge, inference, reliance, awareness, determination, belief, observation and recognition attributed to the Contractor ("constructive knowledge"). Such constructive knowledge shall include the knowledge, inference, reliance, awareness, determination, belief, observation and recognition the Contractor would have obtained upon the exercise of the Contractor's Standard of Care.

§ 1.1.9 Initial Decision Maker

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2. The Initial Decision Maker shall not show partiality to the Owner or Contractor and shall not be liable for results of interpretations or decisions rendered in good faith.

§ 1.2 Correlation and Intent of the Contract Documents

§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

.1 Before ordering materials or doing any Work, the Contractor and each Subcontractor shall verify measurements at the Project site and shall be responsible for the correctness of such measurements. No extra charge or compensation will be allowed on account of minor differences between actual dimensions and the dimensions indicated on the Drawings. Any difference which may be found shall be submitted to the Architect for resolution before proceeding with the Work.

.2 If a minor change in the Work is found necessary due to actual field conditions, the Contractor shall submit detailed drawings of such departure for the approval by the Architect before making the change.

§ 1.2.1.2 The Architect may, as he deems desirable, issue additional drawings or instructions indicating in greater detail the construction or design of the various parts of the Work reasonably inferable from the Contract Documents; such drawings or instructions may be effected by notice to the Contractor without modification of the contract Time or contract Sum. If the Contractor claims additional cost or delay on account of such additional drawings or instructions, he shall give notice as provided in Subparagraph 15.1.

§ 1.2.1.1 The invalidity of any provision of the Contract Documents shall not invalidate the Contract or its remaining provisions. If it is determined that any provision of the Contract Documents violates any law, or is otherwise invalid or unenforceable, then that provision shall be revised to the extent necessary to make that provision legal and enforceable. In such case the Contract Documents shall be construed, to the fullest extent permitted by law, to give effect to the parties' intentions and purposes in executing the Contract.

§ 1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

§ 1.2.3 Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

§ 1.2.4 The Contractor and all Subcontractors shall refer to all of the Drawings, including those showing primarily the Work of the mechanical, electrical and other specialized trades, and to all of the sections of the Specifications, and shall perform all Work reasonably inferable there from as being necessary to produce the indicated results.

§ 1.3 Capitalization

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles, or (3) the titles of other documents published by the American Institute of Architects.

§ 1.4 Interpretation

In the interest of brevity, the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

§ 1.5 Ownership and Use of Drawings, Specifications, and Other Instruments of Service

§ 1.5.1 The Instruments of Service, including the Drawings and Specifications, are and shall be the property of the Owner. The Contractor, Subcontractors, Sub-subcontractors, and suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with the Project is not to be construed as publication in derogation of the reserved rights of the Owner.

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors, and suppliers are authorized to use and reproduce the Instruments of Service provided to them, subject to any protocols established pursuant to Sections 1.7 and 1.8, solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and suppliers may not use the Instruments of Service for any purpose outside the scope of the Work without the specific written consent of the Owner.

§ 1.5.3 Prior to execution of the Agreement, the Contractor evaluated and satisfied itself as to the condition and limitations under which the Work is to be performed, including, without limitation, (i) the location, condition, layout, and nature of the Project site and surrounding areas, (ii) generally prevailing climatic conditions, (iii) anticipated labor supply and costs, (iv) availability and cost of materials, tools, and equipment, and (v) other similar issues. The Owner assumes no responsibility or liability for the physical condition or safety of the Project site or any improvements located on the Project site. The Contractor shall be solely responsible for providing a safe place for the performance of the Work. The Owner shall not be required to make any adjustment in either the Contract Sum or the Contract Time in connection with any failure by the Contractor or any Subcontractor to have complied with the requirements of this Subparagraph 1.5.3.

§ 1.6 Notice

§ 1.6.1 Except as otherwise provided in Section 1.6.2, where the Contract Documents require one party to notify or give notice to the other party, such notice shall be provided in writing to the designated representative of the party to whom the notice is addressed and shall be deemed to have been duly served if delivered in person, by mail, by courier, or by electronic transmission if a method for electronic transmission is set forth in the Agreement.

§ 1.6.2 Notice of Claims as provided in Section 15.1.3 shall be provided in writing and shall be deemed to have been duly served only if delivered to the designated representative of the party to whom the notice is addressed by certified or registered mail, or by courier providing proof of delivery.

§ 1.7 Digital Data Use and Transmission

The parties shall agree upon protocols governing the transmission and use of Instruments of Service or any other information or documentation in digital form. The parties will use AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, to establish the protocols for the development, use, transmission, and exchange of digital data.

§ 1.8 Building Information Models Use and Reliance

Any use of, or reliance on, all or a portion of a building information model without agreement to protocols governing the use of, and reliance on, the information contained in the model and without having those protocols set forth in AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, and the requisite AIA Document G202™–2013, Project Building Information Modeling Protocol Form, shall be at the using or relying party's sole risk and without liability to the other party and its contractors or consultants, the authors of, or contributors to, the building information model, and each of their agents and employees.

§ 1.9 Any information obtained by the Contractor from the Owner or Architect may not be used, published, distributed, sold or divulged by the Contractor or its Subcontractor or Sub-subcontractors for such party's own purposes or for the benefit of any person, firm, corporation or other entity other than the Owner, without the prior written consent of the Owner. Any information obtained by the Contractor of its Subcontractors or Sub-Subcontractors that is designated by the Owner in accordance with applicable law as confidential shall not be disclosed to any other parties without the prior written consent of the Owner.

ARTICLE 2 OWNER

§ 2.1 General

§ 2.1.1 INTENTIONALLY OMITTED

§ 2.1.2 INTENTIONALLY OMITTED

§ 2.2 Evidence of the Owner's Financial Arrangements

§ 2.2.1

INTENTIONALLY OMITTED

§ 2.3 Information and Services Required of the Owner

§ 2.3.1 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities. The Owner has agreed to waive the fees of all required building permits related to the completion of this project with the exception of the State's Education Fee.

§ 2.3.2 The Owner shall retain an architect lawfully licensed to practice architecture, or an entity lawfully practicing architecture, in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

§ 2.3.3 If the employment of the Architect terminates, the Owner shall employ a successor to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect.

§ 2.3.4 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site.

§ 2.3.5 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

§ 2.3.6 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.

§ 2.4 Owner's Right to Stop the Work

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3.

§ 2.5 Owner's Right to Carry Out the Work

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a seven-day period after receipt of notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such default or neglect. The Architect may, pursuant to Section 9.5.1, withhold or nullify a Certificate for Payment in whole or in part, to the extent reasonably necessary to reimburse the Owner for the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect, or failure. If current and future payments are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner. If the Contractor disagrees with the actions of the Owner or the Architect, or the amounts claimed as costs to the Owner, the Contractor may file a Claim pursuant to Article 15. The Owner's right to stop the Work is in addition to and not in restriction or derogation of any and all remedies available to the Owner. The Owner shall have full access to and the right to inspect all portions of the Work for quality, progress, and conformance of the Contract Documents. Any testing or inspections (including commissioning) performed by or on behalf of the Owner shall in no way relieve or replace the obligations of the Contractor in its fulfillment of its obligations hereunder. Any commissioning activities are at the sole discretion of the Owner and shall not be a requirement of the Agreement.

§ 2.6 In no event shall the Owner have control over, charge or any responsibility for construction means, methods, techniques, sequences, or procedures or for safety precautions and programs in connection with the Work, notwithstanding any of the rights and authority granted the Owner in the Contract Documents.

ARTICLE 3 CONTRACTOR

§ 3.1 General

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

§ 3.1.2 The Contractor shall perform the Work in accordance with the Contract Documents.

§ 3.1.3 The Contractor shall not be relieved of its obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect in the Architect's administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

§ 3.1.4 The Contractor shall comply with the Conditions and all local, state, and federal laws, rules and regulations applicable to the Contractor, including without limitation those relating to equal opportunity, labor, wage (including prevailing wage laws) and employment. Contractor certifies that it is eligible to perform work funded by the United States government and is not currently debarred or suspended from performing federal contract. Contractor, in performing the Work, shall comply with the Federal Uniform Guidance Procurement Standards, 2 CFR Part 200 et seq., as applicable. Contractor shall comply with section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act. The equal opportunity clause provided under 41 CFR 60-1.4(b), in accordance with Executive Order 11246, "Equal Employment Opportunity" (30 FR 12319, 12935, 3 CFR Part, 1964-1965 Comp., p. 339), as amended by Executive Order 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," and implementing regulations at 41 CFR part 60, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor" are incorporated herein and made a part hereof.

§ 3.2 Review of Contract Documents and Field Conditions by Contractor

§ 3.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed, conducted its own due diligence, and correlated personal observations with requirements of the Contract Documents.

§ 3.2.2 Because the Contract Documents are complementary and extensive, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.3.4, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents. The exactness of grades, elevations, dimensions, or locations given on any Drawings issued by the Architect, or surveys furnished by the Owner, is not guaranteed by the Architect or the Owner. The Contractor shall, therefore, satisfy itself as to the accuracy of all grades, elevations, dimensions, and locations. Any errors due to the Contractor's failure to so verify all such grades, elevations, dimensions, or locations shall be promptly rectified by the Contractor without any additional cost to the Owner.

§ 3.2.3 Owner assumes no contractual liability or responsibility for the physical condition or safety of the Project site or of any improvement thereon. Except as set forth in Section 10.3, the Contractor shall be solely responsible for providing a safe place for the performance of the Work.

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall submit Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner, subject to Section 15.1.7, as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies, or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities. . If the Contractor or a Subcontractor fails to submit a Claim in accordance with the requirements of Article 15, the Contractor or Subcontractor knowingly and irrevocably waives any Claim for additional compensation or time.

§ 3.2.5 The Contractor shall give the Architect timely notice of any additional Drawings, Specifications, or instructions required to define the Work in greater detail, or to permit the proper progress of the Work.

§ 3.2.6 The Contractor shall not proceed with any Work not clearly and consistently defined in detail in the Contract Documents, but shall request additional drawings or instructions from the Architect as provided in subparagraph 3.2.5. If the Contractor proceeds with such Work without obtaining further Drawings, Specifications or instructions, the Contractor shall correct Work incorrectly done at the Contractor's own expense.

§ 3.2.7 Except as to any reported errors, inconsistencies or omissions, and as to any concealed or unknown conditions as defined in Paragraph 3.7.4. by executing the Agreement, the Contractor represents the following:

1. The Contract Documents are sufficiently complete and detailed for the Contractor to (1) perform the Work required to produce the results intended by the Contract Documents and (2) comply with all the requirements of the Contract Documents.
2. The Work required by the Contract Documents, including, without limitation, all construction details, construction means, methods, procedures and techniques necessary to perform the Work, use of materials, selection of equipment and requirements of product manufacturers are consistent with: (1) good and sound practices within the construction industry; (2) generally prevailing and accepted industry standards applicable to the Work; and (3) requirements of any warranties applicable to the Work.

§ 3.3 Supervision and Construction Procedures

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences, and procedures, and for coordinating all portions of the Work under the Contract. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences, or procedures, the Contractor shall evaluate the jobsite safety thereof and shall be solely responsible for the jobsite safety of such means, methods, techniques, sequences, or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely notice to the Owner and Architect, and shall propose alternative means, methods, techniques, sequences, or procedures. The Architect shall evaluate the proposed alternative solely for conformance with the design intent for the completed construction. Unless the Architect objects to the Contractor's proposed alternative, the Contractor shall perform the Work using its alternative means, methods, techniques, sequences, or procedures.

§ 3.3.2 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.

§ 3.3.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 3.3.4 The Contractor shall schedule and perform the Work so as not to unreasonably interfere with any other related or unrelated work being performed by the Owner in or about the Project premises or with the Owner's continued use and operation of the Project premises as a fully operational athletics complex. The Contractor shall protect and prevent damage to all unfinished phases of the Work.

§ 3.4 Labor and Materials

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

§ 3.4.2 Except in the case of minor changes in the Work approved by the Architect in accordance with Section 3.12.8 or ordered by the Architect in accordance with Section 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive.

§ 3.4.2.1 Approval by the Owner or Architect of any such substitution shall not relieve the Contractor requesting the substitution of responsibility for any additional costs incurred by other trades for changes made necessary to accommodate the substituted item.

§ 3.4.2.2 By making requests for substitutions based on subparagraph 3.4.2 above, the Contractor:

- .1 represents that the Contractor has personally investigated the proposed substitute product and determined that it is equal or superior in all respects to that specified;
- .2 represents that the Contractor will provide the same warranty for the substitution that the Contractor would for that specified;
- .3 certifies that the cost data presented is complete and includes all related costs under this Contract except the Architect's redesign costs, and waives all claims for additional costs related to substitution which subsequently become apparent; and
- .4 shall coordinate the installation of the accepted substitution, making such changes as may be required for the Work to be complete in all respects.

§ 3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.

§ 3.4.4 The Contractor shall be responsible for determining that all materials furnished for the Work meet all requirements of the Contract Documents. The Architect may require the Contractor to produce reasonable evidence

that a material meets such requirements, such as certified reports of past tests by qualified testing laboratories, reports of studies by qualified experts, or other evidence which, in the opinion of the Architect, would lead to a reasonable certainty that any material used, or proposed to be used, in the Work meets the requirements of the Contract Documents. All such data shall be furnished at the Contractor's expense.

§ 3.4.5 In all cases in which a manufacturer's name, trade name or other proprietary designation is used in connection with materials or articles to be furnished under this Contract, the Contractor shall furnish the product of the named manufacturer(s) without substitution.

§ 3.4.6 The Contractor shall only employ or use labor in connection with the Work capable of working harmoniously with all trades, crafts, and any other individuals associated with the Project. The Contractor shall also use best efforts to minimize the likelihood of any strike, work stoppage, or other labor disturbance.

§ 3.5 Warranty

§ 3.5.1 The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

§ 3.5.2 All material, equipment, or other special warranties required by the Contract Documents shall be issued in the name of the Owner, or shall be transferable to the Owner, and shall commence in accordance with Section 9.8.4.

§ 3.5.2 Contractor agrees to assign to the Owner as a condition precedent to Substantial Completion of the Work any and all manufacturer's warranties relating to materials and equipment installed in the Work and further agrees to perform the Work in such manner so as to preserve any and all such manufacturer's warranties.

§ 3.5.3 The warranty provided in this Paragraph 3.5 shall be in addition to and not in limitation of any other warranty or guaranty required by the Contract Documents or otherwise prescribed by law.

§ 3.5.4 The Contractor shall procure and deliver to the Architect, no later than thirty (30) calendar days after the Date of Substantial Completion, all warranties required by the Contract Documents.

§ 3.5.5 The Warranty shall include the repair and/or replacement of all damaged materials resulting from the defective materials and/or workmanship. This shall include but not be limited to furniture, fixtures, equipment, finishes or any other affected materials or property.

§ 3.6 Taxes

The Owner is a tax-exempt municipality. The Contractor shall be familiar with the current regulations of the Connecticut Department of Revenue Services and the sales or use tax on materials or supplies exempted by such regulations shall not be included as part of the bid or the Contract Sum. A sales tax certificate is available upon written request.

§ 3.7 Permits, Fees, Notices and Compliance with Laws

§ 3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure the building permit as well as for other permits, licenses, and inspections by government agencies necessary for proper execution and completion of the Work, including, without limitation, all building permits, subsidiary trade permits, and occupancy permits. All inspection fees as may be imposed by any municipal agency are waived by the Owner with the exception of the State's Education Fee.

§ 3.7.1.1 The "Agencies" are the Department of Public Works for the Town of Cheshire (the "Department"), and all other governmental authorities having regulatory or administrative jurisdiction over the Work and/or Project and all

representatives or designees of the Department or such other governmental authorities. The term "Agencies" shall also include individuals or entities designated by the Owner to monitor or oversee compliance of the Project's design with the requirements of governmental authorities having jurisdiction over the Project.

§ 3.7.1.2 The term "Agencies" shall also include an individual or entity not described in Section 3.7.1.1 from whom the Owner intends to request certification of the Project's design, to the extent included in the Contract Documents.

§3.7.1.3 Non-Discrimination and Affirmative Action Provisions

The Contractor agrees and warrants that in the performance of the Contract the 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, sexual orientation, 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. 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 of race, color, religious creed, age, marital status, national origin, ancestry, sex, gender identity or expression, 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; (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 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; (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.

Any Contractor who is a party to a municipal public works contract or quasi-public agency project, where any such contract is valued at less than \$50,000 for each year of the contract, shall provide the Commission on Human Rights and Opportunities with a written or electronic representation that complies with the nondiscrimination agreement and warranty under subsection (A)(1) above, provided if there is any change in such representation, the Contractor shall provide the updated representation to the Commission not later than 30 days after such change. Any Contractor who is a party to a municipal public works contract or a quasi-public agency project, where any such contract is valued at \$50,000 or more for any year of the contract, shall provide the Commission with any one of the following: (1) Documentation in the form of a company or corporate policy adopted by resolution of the board of directors, shareholder, managers, members or other governing body of such Contractor that complies with the nondiscrimination agreement and warranty under subsection (A)(1) of this section; (2) Documentation in the form of a company or corporate policy adopted by a prior resolution of the board of directors, shareholders, managers, members or other governing body of such Contractor if (a) the prior resolution is certified by a duly authorized corporate officer of such contractor to be in effect on the date the documentation is submitted, and the executive director of the Commission on Human Rights and Opportunities or designee certifies that the prior resolution complies with the nondiscrimination agreement and warranty under subdivision (A)(1) of this section; or (3) Documentation in the form of an affidavit signed under penalty of false statement by a chief executive officer, president, chairperson or other corporate officer duly authorized to adopt company or corporate policy that certifies that the company or corporate policy of the contractor complies with the nondiscrimination agreement and warranty under subdivision (A)(1) of this section and is in effect on the date the affidavit is signed.. The Contractor shall include the provisions hereof in every subcontract or purchase order entered into 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 Contractor, 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 Contractor 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.

"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; 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. Determination of the Contractor's good faith efforts shall include, but shall not be eliminated to, the following factors: The Contractor's employment and subcontracting policies, patterns and practices; affirmative advertising recruitment and training; technical assistance activities and such other reasonable activities or efforts as the Commission on Human Rights and Opportunities may prescribe that are designed to ensure the participation of minority business enterprises in municipal public works contracts or quasi-public agency projects. "Municipal public works project" means that portion of an agreement entered into on or after October 1, 2015, between any individual, firm or corporation and a municipality for the construction, rehabilitation, conversion, extension, demolition or repair of a public building, highway or other changes or improvements in real property, which is financed in whole or in part by the state, including, but not limited to, matching expenditures, grants, loans, insurance or guarantees but excluding any project of an alliance district, as defined in section 10-262u, finance by the state funding in an amount equal to fifty thousand dollars or less. "Quasi-public agency project" means the construction, rehabilitation, conversion, extension, demolition or repair of a building or other changes or improvements in real property pursuant to a contract entered into on or after October 1, 2015, which is financed in whole or in part by a quasi-public agency using state funds, including, but not limited to, matching expenditures, grants, loans, insurance or guarantees.

§ 3.7.1.4 This Project is being funded in whole or in part with State of Connecticut funds: the Contractor 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 e Commission on Human Rights he commencement of construction. State law requires a minimum of twenty-five (25%) percent of the state-funded portion of the contract for award to Contractors holding current certification from the Connecticut Department of Administrative Services ("DAS") under the provisions of CONN. GEN. STAT. § 4a-60g, as amended. (25% of the work with DAS certified Small and Minority owned businesses and 25% of that work with DAS certified Minority, Women and/or Disabled owned businesses.) The contractor must demonstrate good faith effort to meet the 25% set-aside goals. For municipal public works contracts and quasi-public agency projects, the contractor must file a written or electronic non-discrimination certification with the Commission on Human Rights and Opportunities. Forms can be found at:http://www.ct.gov/opm/cwp/view.asp?a=2982&q=390928&opmNav_GID=1806.

§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work. The Contractor shall procure and obtain all bonds required of the Owner or the Contractor by the municipality in which the Project is located or any public or private body with jurisdiction over the Project. In connection with such bonds, the Contractor shall prepare all applications, supply all necessary backup material, and furnish the surety with any required personal undertakings. The Owner will pay the price of all such bond premiums.

§ 3.7.3

If the Contractor performs Work which it knows or should know is contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall bear responsibility for such Work and shall bear the costs attributable to correction.

§ 3.7.4 Concealed or Unknown Conditions

If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide written notice to the Owner and the Architect before conditions are disturbed and in no event later than 14 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time

required for, performance of any part of the Work, will recommend that an equitable adjustment be made in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may submit a Claim as provided in Article 15.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

§ 3.7.6 If any governmental body having jurisdiction over the Work requires licenses or registrations for the performance of the Work or any part thereof, the Contractor shall hold such valid licenses or registrations as may be required by law to prosecute the Work to completion. If any part of the Work for which such a license or registration is required is to be performed by Subcontractors of any tier, the Contractor shall ensure that such Subcontractors hold such valid licenses or registrations as may be required by law to prosecute said Work to completion.

§ 3.8 Allowances

§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents,

- .1** allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- .2** Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit, and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and
- .3** whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

§ 3.9 Superintendent

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the name and qualifications of a proposed superintendent. Within 14 days of receipt of the information, the Architect may notify the Contractor, stating whether the Owner or the Architect (1) has reasonable objection to the proposed superintendent or (2) requires additional time for review. Failure of the Owner or Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

§ 3.9.4 The Contractor shall coordinate and supervise the Work performed by Subcontractors to the end that the Work is carried out without conflict between trades and so that no trade, at any time, causes delay to the general progress of the Work. The Contractor and all Subcontractors shall at all times afford each trade, any separate contractor, or the Owner, every reasonable opportunity for the installation of Work and the storage of materials.

§ 3.9.5 Contractor shall at all times enforce strict discipline and good order among its employees (and those of its Subcontractors) and shall not employ on the Work any unfit person or anyone not skilled in the task assigned to them. All labor shall be performed by workmen skilled in their respective trades and workmanship shall be of good quality in accordance with the standards of construction set forth in the Contract Documents.

§ 3.10 Contractor's Construction and Submittal Schedules

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall submit for the Owner's and Architect's information and approval a Contractor's construction schedule for the Work. The schedule shall contain detail appropriate for the Project, including (1) the date of commencement of the Work, interim schedule milestone dates, and the date of Substantial Completion; (2) an apportionment of the Work by construction activity; and (3) the time required for completion of each portion of the Work. The schedule shall provide for the orderly progression of the Work to completion and shall not exceed time limits current under the Contract Documents. The schedule shall be revised at appropriate intervals as required by the conditions of the Work and Project. The schedule shall set forth milestone dates agreed to by the parties and the failure of the Contractor to achieve a milestone shall constitute a material default hereunder. Failure to meet a milestone date shall entitle but not require the Owner to supplement the Contractor's forces, at the sole cost and expense of the Contractor, and the Contractor shall be solely responsible for coordinating its efforts with and supervising the work of any supplemental manpower.

§ 3.10.2 The Contractor, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, shall submit a submittal schedule for the Architect's approval. The Architect's approval shall not be unreasonably delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, or fails to provide submittals in accordance with the approved submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

§ 3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect.

§ 3.10.4 The construction schedule shall be in a detailed precedence-style critical path management ("CPM") format satisfactory to the Owner and the Architect that shall also (i) provide a graphic representation of all activities and events that will occur during performance of the Work; (ii) identify each phase of construction and occupancy; and (iii) set forth dates that are critical in ensuring the timely and orderly completion of the Work in accordance with the requirements of the Contract Documents (hereinafter referred to as "Milestone Dates"). Upon review and acceptance by the Owner and the Architect of the Milestone Dates, the construction schedule shall be deemed part of the Contract Documents. If not accepted, the construction schedule shall be promptly revised by the Contractor in accordance with the recommendations of the Owner and the Architect and resubmitted for acceptance. The Contractor shall monitor the progress of the Work for conformance with the requirements of the construction schedule and shall promptly advise the Owner of any delays or potential delays. The accepted construction schedule shall be updated to reflect actual conditions, as set forth in Subparagraph 3.10.1 or if requested by either the Owner or the Architect. In the event any progress report indicates any delays, the Contractor shall propose an affirmative plan to correct the delay, including overtime and/or additional labor, if necessary. In no event shall any progress report constitute an adjustment in the Contract Time, any Milestone Date, or the Contract Sum unless any such adjustment is agreed to by the Owner and authorized pursuant to Change Order.

§ 3.10.5 In the event the Owner determines that the performance of the Work, as of a Milestone Date, has not progressed or reached the level of completion required by the Contract Documents, the Owner shall have the right to order the Contractor to take corrective measures necessary to expedite the progress of construction, including, without limitation, (i) working additional shifts or overtime, (ii) supplying additional manpower, equipment, and facilities, and (iii) other similar measures (hereinafter referred to collectively as "Extraordinary Measures"). Such Extraordinary Measures shall continue until the progress of the Work complies with the stage of completion

required by the Contract Documents. The Owner's right to require Extraordinary Measures is solely for the purpose of ensuring the Contractor's compliance with the construction schedule.

1. The Contractor shall not be entitled to an adjustment in the Contract Sum in connection with Extraordinary Measures required by the Owner under or pursuant to this Subparagraph 3.10.5.
2. The Owner may exercise the rights furnished the Owner under or pursuant to this Subparagraph 3.10.5 as frequently as the Owner deems necessary to ensure that the Contractor's performance of the Work will comply with the completion date set forth in the Contract Documents.

§ 3.10.6 The Owner shall have the right to direct a postponement or rescheduling of any date or time for the performance of any part of the Work that may interfere with the operation of the Owner's premises or any invitees thereof. The Contractor shall, upon the Owner's request, reschedule any portion of the Work affecting operation of the premises during hours when the premises are in operation. Any postponement or rescheduling under Subparagraph 3.10.5. may be grounds for an extension of the Contract Time if permitted under Subparagraph 8.3.1.

§ 3.10.7 The Contractor shall schedule and conduct construction and progress meetings, on a frequency required to effect coordination, to discuss such matters as procedures, progress, problems, and scheduling. The Contractor shall prepare and distribute minutes within three working days of such meetings.

§ 3.10.8 The Contractor shall record the progress of the Project, including information on each Subcontractor and each Subcontractor's Work, as well as the entire Project, showing percentages of completion and the number and amounts of Change Orders. The Contractor will keep a daily log containing a record of weather, Subcontractors' Work on the site, number of workers, Work accomplished, problems encountered and other similar relevant data as the Owner may require. Upon request, Contractor shall make the logs available to the Owner and the Architect.

§ 3.11 Documents and Samples at the Site

The Contractor shall make available, at the Project site, the Contract Documents, including Change Orders, Construction Change Directives, and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and the approved Shop Drawings, Product Data, Samples, and similar required submittals. These shall be in electronic form or paper copy, available to the Architect and Owner, and delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 3.12 Shop Drawings, Product Data and Samples

§ 3.12.1 Shop Drawings are drawings, diagrams, schedules, and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier, or distributor to illustrate some portion of the Work.

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

§ 3.12.3 Samples are physical examples that illustrate materials, equipment, or workmanship, and establish standards by which the Work will be judged.

§ 3.12.4 Shop Drawings, Product Data, Samples, and similar submittals are not Contract Documents. Their purpose is to demonstrate how the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect is subject to the limitations of Section 4.2.7. Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Architect without action. The Contractor's approval shall be noted on the submitted item or in its transmittal letter, together with written notice of any deviation in the submitted item from the requirements of the Work and of the Contract Documents. In collaboration with the Architect, Contractor shall establish and implement procedures for expediting the processing and approval of Shop Drawings, Product Data, Samples, and other submittals.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve, and submit to the Architect, Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents, in

accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of Separate Contractors. Each Shop Drawing, Product Data, Sample, and similar submittals shall have a cover sheet identifying the project name and address, contractor information, drawing and/or specification reference, submission date and contents of the submittal. Ample space shall be provided on this cover sheet to allow for the Contractor's and Architect's review stamps. The Contractor's approval shall be noted on the submitted items or in its transmittal letter, together with written notice of any deviation in the submitted item from the requirements of the Work and of the Contract Documents.

§ 3.12.6 By submitting and approving Shop Drawings, Product Data, Samples, and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents. The Contractor shall indicate approval on the submittals as evidence of such review and coordinate submittals made to the Architect without such indications of approval may be returned to the Contractor for resubmission. The accuracy of all such information is the responsibility of the Contractor. In approving Shop Drawings, Product Data, Samples, and similar submittals, the Architect shall be entitled to rely upon the Contractor's representation that such information is accurate and in compliance with the Contract.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples, or similar submittals, until the respective submittal has been approved by the Architect. If the Contractor procures, performs, or installs portions of the Work without required approvals, the Contractor does so at its own risk and such Work may be removed or replaced with approved Work at no cost to the Owner.

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from the requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples, or similar submittals, unless the Contractor has specifically notified the Architect of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. Any submittals forwarded to the Architect for review that include a deviation from the requirements of the Contract Documents or is not the specific make, model or manufacturer that was listed in the Contract Documents shall have a completed Substitution Request Form attached to the submittal. This Substitution Request Form shall be provided by the Owner. Unless such deviation is identified by utilizing the Substitution Request Form, the Contractor shall not be relieved of the responsibility for the specific requirements of the Contract Documents even though the subject submittal was approved by the Architect. The Contractor shall not be relieved of responsibility for the Contractor's subcontractor's or vendor's errors or omissions in Shop Drawings, Product Data, Samples, or similar submittals, by the Architect's approval thereof.

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples, or similar submittals, to revisions other than those requested by the Architect on previous submittals. In the absence of such notice, the Architect's approval of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures. The Contractor shall not be required to provide professional services in violation of applicable law.

§ 3.12.10.1 If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall cause such services or certifications to be provided by a properly licensed design professional who shall have and maintain reasonable limits of insurance, 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 the Architect. The Owner shall be entitled to rely upon the adequacy and accuracy of the services, certifications, and approvals performed or provided by such design professionals. Pursuant to this

Section 3.12.10, the Architect will review and approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.

§ 3.12.10.2 If the Contract Documents require the Contractor's design professional to certify that the Work has been performed in accordance with the design criteria, the Contractor shall furnish such certifications to the Architect at the time and in the form specified by the Architect.

§ 3.12.10.3 Services provided by the Architect to evaluate Contractor product substitution requests or to review shop drawings or other project submittals which are required to be submitted more than three (3) times shall be paid for by the Contractor to the Owner.

§ 3.13 Use of Site

§ 3.13.1 The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, lawful orders of public authorities, and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

§ 3.13.2 Only materials and equipment that are to be used directly in the Work shall be brought to and stored on the Project site by the Contractor. After equipment is no longer required for the Work, it shall be promptly removed from the Project site. Protection of construction materials and equipment stored at the Project site from weather, theft, damage, and all other adversity is solely the responsibility of the Contractor. The Contractor shall ensure that the Work, at all times, is performed in a manner that affords reasonable access, both vehicular and pedestrian, to the site of the Work and all adjacent areas. The Work shall be performed, to the fullest extent reasonably possible, in such a manner that occupied areas adjacent to the site of the Work shall at all time remain free from all debris and building materials.

§ 3.13.3 Other than those reasonably required for safety purposes, the Contractor and any entity for whom the Contractor is responsible shall not erect any sign on the Project site without the prior written consent of the Owner, which may be withheld in the sole discretion of the Owner.

§ 3.13.4 Without limitation of any other provision of the Contract Documents, the Contractor shall use best efforts to minimize any interference with the occupancy or beneficial use of any areas and buildings adjacent to the site of the Work. Without prior written approval of the Owner, the Contractor shall not permit any workers to use any existing facilities at the Project site, including, without limitation, lavatories, toilets, entrances, and parking areas other than those designated by the Owner.

§ 3.14 Cutting and Patching

§ 3.14.1 The Contractor shall be responsible for cutting, fitting, or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting, or patching shall be restored to the condition existing prior to the cutting, fitting, or patching, unless otherwise required by the Contract Documents.

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or Separate Contractors by cutting, patching, or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter construction by the Owner or a Separate Contractor except with written consent of the Owner and of the Separate Contractor. Consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold, from the Owner or a Separate Contractor, its consent to cutting or otherwise altering the Work.

§ 3.15 Cleaning Up

§ 3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials and rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery, and surplus materials from and about the Project and shall clean and/or remove all stains, spots, work, blemishes, foreign matter and dirt from other surfaces not part of the Work but where such conditions resulted from the Contractor's operations.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and the Owner shall be entitled to reimbursement from the Contractor for the full cost of such cleanup.

§ 3.16 Access to Work

The Contractor shall provide the Owner and Architect with access to the Work in preparation and progress wherever located.

§ 3.17 Royalties, Patents and Copyrights

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for defense or loss when a particular design, process, or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications, or other documents prepared by the Owner or Architect. However, if an infringement of a copyright or patent is discovered by, or made known to, the Contractor, the Contractor shall be responsible for the loss unless the information is promptly furnished to the Architect.

§ 3.18 Indemnification

§ 3.18.1 To the fullest extent permitted by law, the Contractor shall indemnify, defend and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss, or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity that would otherwise exist as to a party or person described in this Section 3.18.

§ 3.18.2 The Contractor's indemnity obligations under this Paragraph 3.18 shall also specifically include, without limitation, all fines, penalties, damages, liability, costs, expenses (including, without limitation, reasonable attorneys' fees), and punitive damages (if any) arising out of, or in connection with, any (i) violation of or failure to comply with any law, statute, ordinance, rule, regulation, code, or requirement of a public authority that bears upon the performance of the Work by the Contractor, a Subcontractor, or any person or entity for whom either is responsible, (ii) means, methods, procedures, techniques, or sequences of execution or performance of the Work, and (iii) failure to secure and pay for permits, fees, approvals, licenses, and inspections as required under the Contract Documents, or any violation of any permit or other approval of a public authority applicable to the Work, by the Contractor, a Subcontractor, or any person or entity for whom either is responsible.

§ 3.18.3 The Contractor acknowledges that the subject property upon which the Project is being performed is not lienable because it is municipal government property used for governmental purposes. The Contractor shall indemnify, defend and hold harmless the Owner and the Architect against any and all mechanic's liens placed on the premises or on Owner's interest in the premises by any Subcontractor of any tier or material supplier. In the event that a Subcontractor of any tier or material supplier places a mechanic's lien on the premises, the Contractor shall, with thirty (30) days of the filing of any mechanic's lien, substitute a bond for such lien or cause the lien to be discharged. If the Contractor shall fail to do so, the Owner may, at its option and at the expense of the Contractor, bond such lien or cause the lien to be discharged, and the Contractor will reimburse the Owner for all costs and expenses incurred, including but not limited to attorneys' fees and court costs.

§ 3.18.4 The Contractor shall indemnify, defend, and hold harmless the Owner and the Architect from and against any additional costs or expenses incurred by Owner, including attorneys' fees and court costs, as a result of any claim or cause of action by any Subcontractor or supplier of any tier asserted directly against the Owner to recover payment for labor or materials supplied to the Project, unless such claim or cause of action arises from the failure of the Owner to make payments in accordance with the applicable provisions of the Contract Documents.

§ 3.18.5 The Contractor shall indemnify and hold harmless the Owner, its agents and employees from and against any costs and expenses, including attorneys' fees and court costs, incurred in enforcing any of the Contractor's defense, indemnity, and hold harmless obligations under this Contract.

§ 3.18.6 The Contractor, for itself, its insurers and all subcontractors and their insurers, shall waive governmental immunity as a defense and shall not use the defense of governmental immunity in the adjustment of claims or in the defense of any suit, action or claim brought against the Owner. Nothing herein shall limit the Owner from utilizing the defense of governmental immunity.

§ 3.19 MEETINGS

The Contractor shall send a qualified representative to periodic progress meetings held at such time and at such place as the Architect or the Owner shall designate in accordance with the Contract Documents and to such other meetings as are necessary to comply with the Contract Documents.

ARTICLE 4 ARCHITECT

§ 4.1 General

§ 4.1.1 The Architect is the person or entity retained by the Owner pursuant to Section 2.3.2 and identified as such in the Agreement.

§ 4.1.2 Duties, responsibilities, and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified, or extended without written consent of the Owner, Contractor, and Architect. Consent shall not be unreasonably withheld.

§ 4.2 Administration of the Contract

§ 4.2.1 The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction, (i) until the final payment is due, (ii) from time to time during the one-year period for Correction of Work described in Section 12.2, and (iii) while review or certification of the Project from any of the Agencies is pending. The Architect will have authority to act on behalf of the Owner only to the extent specified in the Contract Documents.

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents.

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and promptly report to the Owner (1) known deviations from the Contract Documents, (2) known deviations from the most recent construction schedule submitted by the Contractor, and (3) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of, and will not be responsible for acts or omissions of, the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 4.2.4 Communications

The Owner and Contractor shall include the Architect in all communications that relate to or affect the Architect's services or professional responsibilities. The Owner shall promptly notify the Architect of the substance of any direct communications between the Owner and the Contractor otherwise relating to the Project. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and suppliers shall be through the Contractor. Communications by and with Separate Contractors shall be through the Owner. The Contract Documents may specify other communication protocols.

§ 4.2.5 Based on the Architect's evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the

Work in accordance with Sections 13.4.2 through 13.4.4, whether or not the Work is fabricated, installed or completed.

§ 4.2.7 The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data, and Samples, but only for the limited purpose of assuring conformity with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5, and 3.12. The Architect's review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences, or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.8 The Architect will prepare Change Orders and Construction Change Directives, and may order minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract Documents and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

§ 4.2.10 The Architect will provide one or more Project representatives to assist in carrying out the Architect's responsibilities at the site. The Owner shall notify the Contractor of any change in the duties, responsibilities and limitations of authority of the Project representatives.

§ 4.2.11 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either, and will not be liable for results of these interpretations or decisions rendered in good faith which were necessitated by a reason other than an act or omission of the Architect.

§ 4.2.13 The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. Requests for information shall include, at a minimum, a detailed written statement that indicates the specific element of the Contract Documents in need of clarification and the nature of the clarification requested. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

§ 4.2.15 Each Subcontract executed by the Contractor shall include language that instructs the Subcontractor that the Subcontractor is to submit written information requests regarding Contract Document interpretation only to the Contractor and not the Architect. The Contractor shall timely review each such information request and only as necessary, submit to the Architect any information request that in the Contractor's professional judgment is not clearly and unambiguously answered in the Contract Documents.

ARTICLE 5 SUBCONTRACTORS

§ 5.1 Definitions

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term “Subcontractor” is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term “Subcontractor” does not include a Separate Contractor or the subcontractors of a Separate Contractor.

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term “Sub-subcontractor” is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

§ 5.2 Award of Subcontracts and Other Contracts for Portions of the Work

§ 5.2.1 Unless otherwise stated in the Contract Documents, the Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the persons or entities proposed for each principal portion of the Work, including those who are to furnish materials or equipment fabricated to a special design. Within 14 days of receipt of the information, the Owner or Architect may notify the Contractor whether the Owner or the Architect (1) has reasonable objection to any such proposed person or entity or (2) either requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 5.2.1.1 To facilitate and expedite the investigations of such proposed persons or entities, the Contractor shall submit a statement in writing in sufficient detail to establish that each has the capacity to carry out the portion of the Work such person or entity is proposing to provide. All such submittals shall include a list of principal personnel of any such entity, and an analysis of the financial condition, construction plant, equipment and facilities of any such person or entity. The Contractor shall terminate, at no cost to Owner, any contract with a person or entity to whom the Owner has a reasonable objection if such proposed and rejected subcontractor or such terminated.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor’s Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

§ 5.2.4 If the Contractor proposes to substitute a Subcontractor, person, or entity for one previously selected, the parties shall follow the procedures outlined in Section 5.2.1.

§ 5.3 Subcontractual Relations

§ 5.3.1 Any part of the Work performed for the Contractor by a Subcontractor shall be pursuant to a written Subcontract between the Contractor and Subcontractor, which shall be prepared on a form of Subcontract reasonably satisfactory to the Owner in all respects. The Owner shall be a third-party beneficiary of all contracts between the Contractor and Subcontractor and all such contracts shall require that the Owner be a third-party beneficiary of all contracts between Subcontractors and Sub-Subcontractors. Copies of all Subcontractor bids or proposals shall, upon request of Owner, be submitted to the Owner and Architect.

§ 5.3.2 By appropriate agreement, written where legally required for validity, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work, which the Contractor, by these Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor, so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract

agreement, the benefit of all rights, remedies and remedies against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

§ 5.3.3 The Contractor shall be fully responsible for coordinating and expediting the work of all Subcontractors, and shall employ the necessary and qualified personnel to produce the required quality of labor and materials and to prevent delays in the progress of the Project. The Contractor shall afford each trade with all reasonable opportunities for the installation of its work and for the storage and handling of its materials. The Contractors shall include in the Contractor's bid, any work, in connection with the mechanical trades, to be done by other trades under the Contractor's direct control.

§ 5.3.4 Within thirty (30) calendar days after payment to Contractor by the Owner, the Contractor shall pay any amounts due any Subcontractor, whether for labor performed or materials furnished when such labor or material has been included in requisition submitted by such Contractor and paid by Owner. The Contractor shall promptly give notice to the Owner of any claim or demand by a Subcontractor claiming that any amount is due to such Subcontractor or claiming any default by the Contractor in any of the Contractor's obligations to such Subcontractor.

§ 5.3.5 The Contractor shall include in each of the subcontracts a provision requiring each Subcontractor to pay amounts due to any Sub-Subcontractors, whether for labor performed or materials furnished, within thirty (30) days after such Subcontractor receives a payment from the Contractor which encompasses labor or materials furnished by such Sub-subcontractor and a provision requiring each Subcontractor to promptly any claim or demand by a Sub-subcontractor claiming that any amount is due to such Sub-Subcontractor or claiming any default by such Subcontractor in any of its obligations to such Sub-subcontractor which notice the Contractor shall promptly relay to the Owner.

§ 5.4 Contingent Assignment of Subcontracts

§ 5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that

- .1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor; and
- .2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract but does not accept and shall not be liable for Contractor's obligations prior to the effective date of the assignment. The Contractor agrees to execute any and all other documents required to affect this assignment.

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted for increases in direct costs resulting from the suspension, provided, however, that no such adjustment will be made to the compensation of a Subcontractor who is compensated as a proportion of the total project cost or a Subcontractor who is in default of its subcontract at the time of assignment.

§ 5.4.3 Upon assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity.

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 6.1 Owner's Right to Perform Construction and to Award Separate Contracts

§ 6.1.1 The term "Separate Contractor(s)" shall mean other contractors retained by the Owner under separate agreements. The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, to supplement the Contractor's forces and to award separate contracts in connection with other portions of the Project or other construction or operations on the site. If the Contractor claims that delay or is

involved because of such action by the Owner, the Contractor shall make such Claim as is permitted in Articles 8 and 15.

§ 6.1.2 When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term “Contractor” in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

§ 6.1.3 The Owner shall provide for coordination of the activities of the Owner’s own forces and of each Separate Contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with any Separate Contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to its construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, Separate Contractors, and the Owner until subsequently revised.

§ 6.1.4 INTENTIONALLY OMITTED

§ 6.2 Mutual Responsibility

§ 6.2.1 The Contractor shall afford the Owner and Separate Contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor’s construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor’s Work depends for proper execution or results upon construction or operations by the Owner or a Separate Contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly notify the Architect of apparent discrepancies or defects in the construction or operations by the Owner or Separate Contractor that would render it unsuitable for proper execution and results of the Contractor’s Work. Failure of the Contractor to notify the Architect of apparent discrepancies or defects prior to proceeding with the Work shall constitute an acknowledgment that the Owner’s or Separate Contractor’s completed or partially completed construction is fit and proper to receive the Contractor’s Work. The Contractor shall not be responsible for discrepancies or defects in the construction or operations by the Owner or Separate Contractor that are not apparent.

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a Separate Contractor because of the Contractor’s delays, improperly timed activities or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a Separate Contractor’s delays, improperly timed activities, damage to the Work or defective construction.

§ 6.2.4 The Contractor shall promptly remedy damage that the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or Separate Contractor as provided in Section 10.2.5. If such separate contractor sues or initiates an arbitration proceeding against the Owner on account of any damage alleged to have been caused by the Contractor, the Owner shall notify the Contractor, who shall defend such proceedings at the Contractor’s expense, and if any judgment or award against the Owner arises therefrom, the Contractor shall pay or satisfy it and shall reimburse the Owner for all attorneys’ fees and court or arbitration costs which the Owner has incurred.

§ 6.2.5 The Owner and each Separate Contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

§ 6.3 Owner’s Right to Clean Up

If a dispute arises among the Contractor, Separate Contractors, and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Architect will allocate the cost among those responsible.

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 General

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the

limitations stated in this Article 7 and elsewhere in the Contract Documents. The decision as to whether the Change Work is executed via a Change Order, Construction Change Directive, or a minor change in the Work is the decision of the Owner.

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Contractor, and Architect. A Construction Change Directive requires agreement by the Owner and Architect and may or may not be agreed to by the Contractor. An order for a minor change in the Work may be issued by the Architect alone.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents. The Contractor shall proceed promptly with changes in the Work, unless otherwise provided in the Change Order, Construction Change Directive, or order for a minor change in the Work.

§ 7.1.4 Except as permitted in Paragraph 7.3, a change in the Contract Sum or the Contract Time shall be accomplished only by a written Change Order executed before the Work is performed. Accordingly, no course of conduct or dealings between the parties, nor express or implied acceptance of alterations or additions to the Work, and no claim that Owner has been unjustly enriched by any alteration of or addition to the Work, whether or not there is, in fact, any unjust enrichment to the Work, shall be the basis of any claim to an increase in any amounts due under the Contract Documents or a change in any time period provided for in the Contract Documents.

§ 7.2 Change Orders

§ 7.2.1 A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor, and Architect stating their agreement upon all of the following:

- .1 The change in the Work;
- .2 The amount of the adjustment, if any, in the Contract Sum; and
- .3 The extent of the adjustment, if any, in the Contract Time.

§ 7.2.2 Agreement on any Change Order shall constitute a final settlement of all matters relating to the change in the Work that is the subject of the Change Order, including, but not limited to, all direct and indirect costs associated with such change and any and all adjustments to the Contract Sum and the Contract Time.

§ 7.2.3 Proposed changes in the Work requested during the construction phase shall be priced by the Contractor and submitted to the Architect and Owner for review, in such form as the Architect and Owner may require, within ten (10) calendar days following the Contractor's receipt of the request. The Contractor shall promptly revise and resubmit such proposal if the Architect and Owner determine that it is not in compliance with the requirements of this Article, or that contains errors of fact or mathematical errors. If required by the Architect or Owner, in order to establish the exact cost of new Work added or previously required Work omitted, the Contractor shall obtain and furnish to the Architect and Owner bona fide proposals from recognized suppliers for furnishing and material included in such Work. Such proposals shall be furnished at the Contractor's expense.

§ 7.2.4 The Contractor's proposal for a change in the Work (Change Order Proposal) shall be itemized completely and shall include: Specific number of calendar days for additional time (if applicable); all material costs and quantities accompanied by the original manufacturer invoices; labor wages; unit prices; subcontractor costs; mark ups; equipment costs, profit, overhead, general conditions, fees, bond costs and approved daily time sheet tickets for work performed under the utilization of labor rates. The Architect's and Owner's refusal to approve a Change Order or Change Order Proposal due to the Contractor's lack of itemized backup information shall not be used to substantiate a claim for additional time.

§ 7.2.5 If the method utilized to execute the Change in the Work is based on labor rates, unit prices and material costs, then actual daily time sheets / tickets, approved by the Superintendent and the Owner, must accompany the Change Order, Construction Change Directive, or minor change in the Work. Not including the actual daily time sheets / tickets, approved by the Superintendent and the Owner, with the Change Order, Construction Change Directive, or minor change in the Work may be cause for their rejection.

§ 7.2.6 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change which results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Architect. When both addition and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.3 Construction Change Directives

§ 7.3.1 A Construction Change Directive is a written order prepared by the Architect and signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions, or other revisions, the Contract Sum and Contract Time being adjusted accordingly. The Owner may also by Construction Change Directive order work to be performed that has been interpreted by the Owner and Architect to be part of the Work but is disputed by the Contractor through submission of a Claim.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order or work interpreted by the Owner or Architect to be part of the Contract.

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

- .1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- .2 Unit prices and rates stated in the Contract Documents or subsequently agreed upon;
- .3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
- .4 As provided in Section 7.3.4.

§ 7.3.4 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.4 shall be limited to the following:

- .1 Costs of labor, including applicable payroll taxes, fringe benefits required by agreement or custom, workers' compensation insurance, and other employee costs approved by the Architect;
- .2 Costs of materials, supplies, and equipment, including cost of transportation, whether incorporated or consumed;
- .3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
- .4 Costs of premiums for all bonds and insurance, permit fees, and sales, use, or similar taxes, directly related to the change; and
- .5 Costs of supervision and field office personnel directly attributable to the change.

§ 7.3.5 If the Contractor disagrees with the adjustment in the Contract Time, the Contractor may make a Claim in accordance with applicable provisions of Article 15.

§ 7.3.6 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect, in writing, of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

§ 7.3.7 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment.

The Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be necessary for the Contractor to proceed with the Work. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

§ 7.3.10 When the Owner and Contractor agree with a determination made by the Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Architect will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

§ 7.4 Minor Changes in the Work

The Architect may order minor changes in the Work that are consistent with the intent of the Contract Documents and do not involve an adjustment in the Contract Sum or an extension of the Contract Time. The Architect's order for minor changes shall be in writing. If the Contractor believes that the proposed minor change in the Work will affect the Contract Sum or Contract Time, the Contractor shall notify the Architect and shall not proceed to implement the change in the Work. If the Contractor performs the Work set forth in the Architect's order for a minor change without prior notice to the Architect that such change will affect the Contract Sum or Contract Time, the Contractor waives any adjustment to the Contract Sum or extension of the Contract Time.

ARTICLE 8 TIME

§ 8.1 Definitions

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work. The Contract Specifications state the Contractor shall substantially complete all Work under the Contract in five hundred forty (540) days from the Notice of Proceed.

§ 8.1.2 The date of commencement of the Work is the date established in the Agreement. **TIME IS OF THE ESSENCE** of all Milestone Dates, the Substantial Completion date and the Final Completion date in the accepted Construction Schedule, as such Schedule may be revised and approved by the Owner.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 8.2 Progress and Completion

§ 8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement, the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

§ 8.2.2 The Contractor shall not commence the Work prior to receiving written notice to commence from the Owner or prior to the effective date of insurance required to be furnished by the Contractor and Owner.

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

§ 8.2.4 The Contractor shall proceed expeditiously in accordance with the construction schedule with adequate forces and shall achieve Substantial Completion within the Contract Time. The Contractor shall at all times ensure that each Subcontractor is providing and maintaining sufficient skilled workmen, materials and equipment to achieve Substantial Completion within the Contract Time. Absent Change Orders signed by the Owner or a delay for which the Contractor is entitled to an extension of time by § 8.3.1, the Contractor shall not make any claims for additional payment of straight time, overtime or premium time in undertaking to achieve Substantial Completion of the Work in accordance with the construction schedule. The burden of lost time and costs related to any Subcontractor's nonperformance shall not be charged to Owner.

§ 8.3 Delays and Extensions of Time

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by (1) an act or neglect of the Owner or Architect, of an employee of either, or of a Separate Contractor; (2) by changes ordered in the Work; (3) by labor disputes, fire, unusual delay in deliveries, unavoidable casualties, adverse weather conditions documented in accordance with Section 15.1.6.2, or other causes beyond the Contractor's control; (4) by delay authorized by the Owner pending mediation and binding dispute resolution; or (5) by other causes that the Contractor asserts, and the Architect determines, justify delay, then the Contract Time shall be extended for such reasonable time as the Architect may determine. Nothing in this Section 8.3.1 shall absolve the Architect of liability for delays due to the negligence of the Architect or its employees or consultants, or failure to comply with the agreement between the Owner and the Architect or the Contract Documents by the Architect or by the Architect's employees or consultants. Under no circumstances shall Owner be responsible or liable for any delay damages, including any *Eichleay* or other type of extended overhead or lost profit claims or damages, idle equipment costs, lost productivity or labor inefficiency costs, acceleration damages, suspension damages, consequential damages, incidental damages, or lost opportunity costs. Contractor acknowledges that it is aware of and considered this provision when submitting and pricing its Proposal and Contractor accepts the risk of delays.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15. Extensions of time shall be Contractor's sole remedy in the event of delays.

§ 8.3.3 Notwithstanding anything to the contrary in the Contract Documents, an extension of the Contract Time, to the extent permitted under Subparagraph 8.3.1, shall be the sole and exclusive remedy of the Contractor for any delay, hindrance, disruption, interference or obstruction to the Work (collectively referred to in this Subparagraph 8.3.3 as "Delays"). Except as provided in Section 6.2.6 of the Contract, in no event shall the Contractor be entitled to any compensation or recovery of any damages in connection with any Delay, including, without limitation, consequential damages, loss of efficiency or productivity costs, acceleration costs, lost opportunity costs, impact damages, extended overhead costs, or other similar remuneration.

§ 8.3.4 **TIME IS OF THE ESSENCE** in the completion of the Work by the Contractor.

§ 8.3.5 No extension of time, or increase in the Contract Sum, shall be granted because of seasonal variations in temperature, humidity or precipitation, which conditions, excepting force majeure, shall be wholly at the risk of the Contractor.

§ 8.3.6 The Contractor shall not be entitled to an adjustment of the Contract Time on account of delays: (i) that it could have avoided or mitigated using its best professional efforts; (ii) that do not impact the critical path; (iii) for which there is available float in the chain of activities affected by the delay; (iv) that were caused by or could have been reasonably anticipated by the Contractor or those for whom it is responsible; or (v) that could have been mitigated or avoided by the Contractor's timely notice to the Owner as required hereunder.

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 Contract Sum

§ 9.1.1 The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

§ 9.1.2 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed so that application of such unit prices to the actual quantities causes substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 9.2 Schedule of Values

The Contractor shall submit a schedule of values to the Architect within thirty (30) days of the first of the Contract Award or Preconstruction Meeting, allocating the entire Contract Sum to the various portions of the Work. The schedule of values shall be prepared in the form, and supported by the data to substantiate its accuracy, required by the Architect. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment. The description of the Work shall be sufficiently broken down to indicate labor and material costs associated with each area of Work. Any breakdown that fails to include sufficient detail, is unbalanced, or exhibits "front-loading" of the value of the Work, will be rejected. The Schedule of Values shall be revised if later determined by the Owner or Architect to be inaccurate. Any changes to the schedule of values shall be submitted to the Architect and supported by such data to substantiate its accuracy as the Architect may require,

and unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's subsequent Applications for Payment.

§ 9.3 Applications for Payment

§ 9.3.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2, for completed portions of the Work. The application shall be notarized and supported by all data substantiating the Contractor's right to payment that the Owner or Architect require, such as copies of requisitions, and releases and waivers of liens from Subcontractors and suppliers, and shall reflect retainage if provided for in the Contract Documents.

§ 9.3.1.1 As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Architect, but not yet included in Change Orders.

§ 9.3.1.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or supplier, unless such Work has been performed by others whom the Contractor intends to pay.

§ 9.3.1.3 Each application for payment shall be accompanied by the following, all in form and substance satisfactory to the Owner: (i) a duly executed Contractor's partial lien waiver; (ii) duly executed partial lien waivers from all Subcontractors and, when reasonably required, from material suppliers and lower tier Subcontractors establishing payment or satisfaction of payment of all amounts requested by the Contractor on behalf of such entities or persons in any previous Application for Payment; and (iii) all information and materials required to comply with the requirements of the Contract Documents or reasonably requested by the Owner or the Architect.

§ 9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage, and transportation to the site, for such materials and equipment stored off the site.

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall be free and clear of liens, claims, security interests, or encumbrances, in favor of the Contractor, Subcontractors, suppliers, or other persons or entities that provided labor, materials, and equipment relating to the Work.

§ 9.4 Certificates for Payment

§ 9.4.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, either (1) issue to the Owner a Certificate for Payment in the full amount of the Application for Payment, with a copy to the Contractor; or (2) issue to the Owner a Certificate for Payment for such amount as the Architect determines is properly due, and notify the Contractor and Owner of the Architect's reasons for withholding certification in part as provided in Section 9.5.1; or (3) withhold certification of the entire Application for Payment, and notify the Contractor and Owner of the Architect's reason for withholding certification in whole as provided in Section 9.5.1.

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect solely to the Owner, based on the Architect's evaluation of the Work as provided in the Contract Documents and/or the data in the Application for Payment, that, to the best of the Architect's knowledge, information, and belief, the Work has progressed to the point indicated, the quality of the Work is in accordance with the Contract Documents, and that the Contractor is entitled to payment in the amount certified. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion, and to specific qualifications expressed by the Architect. However, the issuance of a Certificate for Payment will not be a

representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work; (2) reviewed construction means, methods, techniques, sequences, or procedures; or (3) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum. Notwithstanding anything herein to the contrary, issuance of a Certificate for Payment by the Architect is a recommendation only; payment to the Contractor of amounts certified in a Certificate for Payment is subject to the Owner's approval.

§ 9.5 Decisions to Withhold Certification

§ 9.5.1 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of:

- .1 Defective Work not remedied;
- .2 Third party claims filed or reasonable evidence indicating probable filing of such claims, unless security acceptable to the Owner is provided by the Contractor;
- .3 Failure of the Contractor to make payments properly to Subcontractors or suppliers for labor, materials or equipment;
- .4 Reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 Damage to the Owner or a Separate Contractor;
- .6 Reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay;
- .7 Repeated failure to carry out the Work in accordance with the Contract Documents; or
- .8 Failure to comply with or adhere to the requirements of the Contract Documents.

§ 9.5.2 When either party disputes the Architect's decision regarding a Certificate for Payment under Section 9.5.1, in whole or in part, that party may submit a Claim in accordance with Article 15. The Owner shall not be deemed to be in default by reason of withholding payment while any of the above grounds remain uncured, nor shall any interest accrue or be payable with respect to any payments so withheld.

§ 9.5.3 When the reasons for withholding certification are removed, certification will be made for amounts previously withheld.

§ 9.5.4 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or supplier to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Contractor shall reflect such payment on its next Application for Payment.

§ 9.6 Progress Payments

§ 9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Architect.

§ 9.6.2 The Contractor shall pay each Subcontractor, no later than five (5) days after receipt of payment from the Owner, the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner. Notwithstanding anything in this Subparagraph 9.6.2 to the contrary, the Owner may elect, in the Owner's **reasonable** discretion, to make any payment requested by the Contractor on behalf of a Subcontractor or material supplier of any tier jointly payable to the Contractor and such Subcontractor or material supplier, or directly payable to such Subcontractor or material supplier. The Contractor and such Subcontractor or material supplier shall be responsible for the allocation and disbursement of funds included as part of any such joint payment. In no event

shall any joint payment be construed to create any (i) contract between the Owner and a subcontractor or material supplier of any tier, (ii) obligations from the Owner to such subcontractor or material supplier, or (iii) rights in such subcontractor or material supplier against the Owner. All such payments by the Owner shall be a pro tanto discharge of sums due the Contractor.

§ 9.6.3 The Architect will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect and Owner on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and suppliers amounts paid by the Owner to the Contractor for subcontracted Work. The Owner may contact Subcontractors and suppliers to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay, or to see to the payment of money to, a Subcontractor or supplier, except as may otherwise be required by law.

§ 9.6.5 The Contractor's payments to suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors or provided by suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, create any fiduciary liability or tort liability on the part of the Contractor for breach of trust, or entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

§ 9.6.8 Provided the Owner has fulfilled its payment obligations under the Contract Documents, the Contractor shall defend and indemnify the Owner from all loss, liability, damage or expense, including reasonable attorney's fees and litigation expenses, arising out of any lien claim or other claim for payment by any Subcontractor or supplier of any tier. Upon receipt of notice of a lien claim or other claim for payment, the Owner shall notify the Contractor. If approved by the applicable court, when required, the Contractor may substitute a surety bond for the property against which the lien or other claim for payment has been asserted.

§ 9.7 Failure of Payment

If the Architect does not issue a Certificate for Payment or provide the Contractor with a written explanation for the reason for withholding such Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the properly submitted Application for Payment, or if the Owner does not pay the Contractor or provide the Contractor with a written explanation of the reason for withholding payment within seven days after the date established in the Contract Documents, the amount certified by the Architect or if the Owner does not so pay an amount awarded by binding dispute resolution, then the Contractor may, upon seven additional days' notice to the Owner and Architect, stop the Work until payment of the amount owing or an explanation of the reason for withholding such payments has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided for in the Contract Documents.

§ 9.8 Substantial Completion

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use. As a condition precedent to Substantial Completion, the Contractor shall assemble and deliver to the Owner (1) all maintenance and operating manuals; (2) marked sets of field record drawings and specifications reflecting as-built conditions; (3) drawings reflecting the location of any concealed utilities, mechanical or electrical systems and components; (4) any special guaranties or warranties required by the Contract Documents; (5) all guaranties and warranties from Subcontractors, vendors, suppliers or manufacturers; (6) a list of the names, addresses and telephone numbers of all subcontractors and any other persons providing guaranties or warranties; (7) a permanent Certificate of Occupancy; (8) Operating permits for any mechanical equipment; and (9)

any other permits, approvals, licenses, and other documents from any governmental authority having jurisdiction thereof necessary for the beneficial use and occupancy of the Project.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall notify the Architect and the Owner in writing and shall prepare and submit to the Architect (1) a comprehensive list of items to be completed or corrected prior to final payment and (2) all Certificates of Occupancy and applicable permits required by the Contract Documents, endorsed by the Contractor and in a form reasonably acceptable to the Architect and Owner. Promptly after receiving such notice, the Architect will conduct a preliminary review to determine whether or not the Documents are generally complete and correct. If the Architect finds on the basis of this review that the Contractor's notice and supporting documents are not generally complete or correct, the Architect will return them to the Contractor for revision and resubmittal, describing in general the additions or corrections required. If the Architect finds on one preliminary review of the Contractor's resubmittal that the resubmitted notice and supporting documents are still not generally complete and correct, the Contractor shall again correct and resubmit them, and shall, in addition, reimburse the Owner for the cost of any change in the Architect's services resulting from such a second and any subsequent preliminary reviews. When the Architect finds on the basis of a preliminary review that the Contractor's notice and supporting documents are substantially complete, the Architect will proceed as stated in Section 9.8.3 below. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 9.8.3 Upon receipt of the Contractor's list, the Architect will inspect to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

§ 9.8.4 When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion; establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance; and fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in the Certificate. Upon such acceptance, and consent of surety if any, the Owner shall make payment of retainage applying to the Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents. Owner shall be entitled to retain two hundred percent (200%) of the estimated cost of incomplete or unsatisfactory Work to reach Final Completion.

§ 9.9 Partial Occupancy or Use

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Contractor, and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

§ 9.9.3 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

§ 9.10 Final Completion and Final Payment

§ 9.10.1 Upon receipt of the Contractor's notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection. When the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner, (3) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment and (5), statements in a form satisfactory to the Owner that in consideration of all prior payments and of final payment, the Contractor and its Subcontractors release and forever discharge the Owner from all mechanic's liens, claims, demands, obligations and liabilities of every kind arising out of or relating to the Contract or the Project other than those Claims specifically enumerated in the statement. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, including all costs and attorneys' fees.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed, corrected, and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of the surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

§ 9.10.4 INTENTIONALLY OMITTED

§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor, or a supplier, shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 Safety Precautions and Programs

The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract.

§ 10.2 Safety of Persons and Property

§ 10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury, or loss to:

- .1 Employees on the Work and other persons who may be affected thereby;
- .2 The Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody, or control of the Contractor, a Subcontractor, or a Sub-subcontractor; and
- .3 Other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.

§ 10.2.2 The Contractor shall comply with, and give notices required by the Conditions and applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities, bearing on safety of persons or property or their protection from damage, injury, or loss. Contractor acknowledges that public health, safety, and security are of the utmost importance in connection with its performance of the Work. Contractor shall, at all times, implement and maintain commercially reasonable safety, health, and security protocol with respect to its personnel on site, including implementing best practices as defined by the United States Centers for Disease Control and state and local public health agencies to avoid exposure to and protection against severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) aka COVID-19. Contractor shall also take such actions as are necessary to protect the health, safety and security of the occupants and users of the subject property in connection with the Work and the Project, including adherence to guidelines promulgated by the State of Connecticut.

§ 10.2.3 The Contractor shall implement, erect, and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards; promulgating safety regulations; and notifying the owners and users of adjacent sites and utilities of the safeguards. The Contractor shall also be responsible, at the Contractor's sole cost and expense, for all measures necessary to protect any property adjacent to the Project and improvements thereon. Any damage to such property or improvements shall be promptly repaired by the Contractor at its sole cost and expense.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment, or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

§ 10.2.4.1 When there are indications that the use of explosives or other hazardous material, equipment or unusual methods is necessary for execution of the Work, the Contractor shall give the Owner and Architect reasonable advance notice of the conditions.

§ 10.2.4.2 The Contractor shall be solely responsible for the handling, storage and use of explosive or other hazardous materials when their use is permitted.

§ 10.2.4.3 The Contractor shall not bring explosives onto the site or use such in the Work without the prior written permission of the Architect and the Owner. For such use, the Contractor shall obtain necessary permits with copies to the Architect and the Owner. The Contractor shall furnish the Owner and Architect with certificates indicating proper and adequate insurance.

§ 10.2.5 The Contractor shall promptly remedy damage and loss to property referred to in subparagraphs 10.2.1.2, 10.2.1.3 and 10.2.1.4. If the damage or loss is due in whole or in part to the Contractor's failure to take the precautions required by this paragraph 10.2, the Contractor shall bear the cost. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

§ 10.2.8 The Contractor shall at all times provide protection against weather (snow, rain, wind, storms or heat) so as to maintain all Work, materials, apparatus and fixtures free from damage. At the end of the day's work, all new Work likely to be damaged shall be reasonably protected against such weather.

§ 10.2.9 The Contractor shall provide adequate fire protection for all operations associated with the Work, and such protection must meet all applicable federal (including OSHA), State and municipal regulations.

§ 10.2.10 The Contractor shall remove and replace with new work at the Contractor's own expense, any Work damaged by failure to provide protection.

§ 10.2.11 The Contractor shall be responsible, to the extent not covered by insurance, for damage, loss, or liability due to theft or vandalism to the Work and stored materials when work is not in progress at night, on weekends or holidays.

§ 10.2.12 No visitors shall be allowed on the work site without prior written permission from the Owner.

§ 10.2.13 Cutting and welding to be performed in or immediately adjacent to existing spaces shall not be performed without written approval of the Owner for each instance.

§ 10.2.14 All employees at the worksite shall have successfully completed a course in construction safety and health approved by the United States Occupational Safety and Health Administration that is at least 10 hours in duration at the time the employee begins work. The Contractor and all Subcontractors shall furnish documentation of successful completion of said course with the first certified payroll report for each employee. The Contractor shall indemnify and hold harmless the Owner from any and all fines, costs and expenses, including but not limited to reasonable attorney's fees, incurred by Owner due to the Contractor's violation of such Acts, standards and/or regulations. Such indemnity shall not be construed to limit the indemnity required under Subparagraph 3.18.1.

§ 10.2.15 The Contractor shall comply with the requirements of the Occupational Safety and Health Act and the Construction Safety Act of 1969, including all standards and regulations which have been promulgated by the governmental authorities which administer such Acts and said requirements, standards and regulations are incorporated herein by reference. The Contractor shall be directly responsible for compliance therewith on the part of its agents, employees, subcontractors, and material suppliers and shall directly receive and be responsible for all citations, assessments, fines, or penalties which may be incurred by reason of its agents, employees, material suppliers or subcontractors, to so comply.

§ 10.2.16 The Contractor shall at all times protect excavations, trenches, buildings, and materials from rainwater, ground water, ice, snow, back-up or leakage of sewers, drains, or other piping, and from water of any other origin and shall remove promptly any accumulation of water. The Contractor shall provide and operate all pumps, piping, and other equipment necessary to this end.

§ 10.2.17 MOLD GROWTH. The Contractor shall establish and maintain a program and safeguards to prevent growth of mold.

§ 10.2.18 Contractor and its Subcontractors shall not make news releases or publicize or issue advertising pertaining to the Work of this Agreement without first obtaining the written approval of the Owner.

§ 10.2.19 If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, notice of the injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 10.2.20 The Contractor shall promptly report in writing to the Owner and Architect all accidents arising out of or in connection with the Work that cause death, personal injury, or property damage, giving full details and statements of any witnesses. In addition, if death, serious personal injuries, or serious damages are caused, the accident shall be reported immediately by telephone or messenger to the Owner and the Architect.

§ 10.2.21 The Contractor shall provide and maintain in good operating condition suitable and adequate fire protection equipment and services and shall comply with all reasonable recommendations regarding fire protection made by the representatives of the fire insurance company carrying insurance on the Work or by the local fire chief or fire marshal. The area within the site limits shall be kept orderly and clean, and all combustible rubbish shall be promptly removed from the site.

§ 10.2.22 When all or a portion of the Work is suspended for any reason, the Contractor shall securely fasten down all coverings and protect the Work, as necessary, from injury by any cause.

§ 10.2.23 The Contractor shall at all times protect excavations, trenches, buildings and materials, from rainwater, ground water, backup or leakage of sewers, drains and other piping, and shall remove promptly any accumulation of water. The Contractor shall provide and operate all pumps, piping and other equipment necessary to this end.

§ 10.2.24 The Contractor shall remove snow and ice which might result in damage or delay to the Work.

§ 10.2.25 During the progress of the Work and at all times prior to the date of Substantial Completion or occupancy of the Work by the Owner, whichever is earlier, the Contractor shall provide temporary heat, ventilation, and enclosure, adequate to permit the Work to proceed in a timely fashion, and to prevent damage to completed Work or Work in progress, or to materials stored on the premises. The permanent heating and ventilation systems may be used for these purposes when available and appropriate, but the fuel cost shall be paid by the Owner.

§ 10.3 Hazardous Materials and Substances

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials or substances. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents the Contractor shall immediately report the condition to the Owner and the Architect in writing and take reasonable precautions to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB). If such reasonable precautions will be inadequate to prevent foreseeable bodily injury and death, the Contractor shall immediately stop Work in the affected area and notify the Owner and Architect of the condition.

§ 10.3.2 Upon receipt of the Contractor's notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. When the material or substance has been rendered harmless, any Work that has been stopped in the affected area shall resume. By Change Order, the Contract Time shall be extended appropriately. Termination of the Contract by the Owner due to the discovery of Hazardous Materials on the Project site shall be Termination for Cause. The term "rendered harmless" shall be interpreted to mean that levels of hazardous materials including, but not limited to asbestos and polychlorinated biphenyl, are less than any applicable exposure standards set forth in OSHA regulations. In no event, however, shall the Owner have any responsibility for any substance or material that is brought to the Project site by the Contractor, any Subcontractor or any materialman or supplier or any entity for whom any of them is responsible. The Contractor agrees not to use any fill or other materials to be incorporated into the Work which are hazardous, toxic or comprised of any items that are hazardous or toxic except to the extent provided in Section 10.3.7.

§ 10.3.3 The Contractor shall not be liable for pre-existing, environmental matters on, under or about the premises which constitute the Project, including without limitation, those relating to fines, orders, injunctions, penalties, damages, contribution, cost recovery compensation, losses or injuries resulting from the release or threatened release of hazardous materials, special wastes or other contaminants into the environment, the development or growth of mold within or on any structures, air quality levels, and to the generation, use, storage, transportation or illegal disposal of solid wastes, hazardous materials, special wastes or other contaminants. This disclaimer of liability shall apply to all such claims against the Contractor, whether direct or indirect, including without limitation, third party claims for which the Owner is seeking indemnification from the Contractor, excluding, however, any such claims that are caused by the negligence of the Contractor or subcontractor for which the Contractor is responsible.

§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for hazardous materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for hazardous materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

§ 10.3.5 The Contractor shall reimburse the Owner for the cost and expense the Owner incurs (1) for remediation of hazardous materials or substances the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

§ 10.3.6 If, without negligence or intentional acts on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of properly performing Work as required by the Contract Documents, the Owner shall reimburse the Contractor for all cost and expense thereby incurred.

§ 10.3.7 The Contractor will be solely responsible for compliance with laws and regulations governing the handling, storage, use or disposal of hazardous materials or wastes used, stored, generated, or disposed of in connection with construction of the Work, and shall obtain all permits and approvals, give all required notices, and observe all applicable procedures prescribed by the U.S. Environmental Protection Agency, the State of Connecticut and other governmental authorities having jurisdiction with respect to such activities. At Owner's request, Contractor shall furnish the Owner promptly with evidence satisfactory to Owner demonstrating the Contractor's compliance with such procedures, the giving of such notices, and the issuance of such permits and approvals, and shall indemnify Owner and hold Owner harmless with respect to any loss, damage or liability resulting from Contractor's failure to observe such procedures, give such notices, or obtain such permits and approvals. Contractor will be responsible for removal and disposal only of such "hazardous material" as is required to be removed by the Contract Documents or any such materials placed on the site by the Contractor or any party for which the Contractor is responsible.

§ 10.3.8 All material and equipment furnished under the Contract shall be free of asbestos and polychlorinated biphenyl (PCB). Any material or equipment containing these hazardous materials shall be considered defective and shall be removed by the Contractor at the Contractor's sole expense.

§ 10.4 Emergencies

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury, or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7. The Contractor shall promptly notify insurers as applicable, the Architect and the Owner of the nature of the emergency. Immediately thereafter, the Contractor shall submit to the Architect and the Owner a written report including a description of circumstances of the emergency and details of action taken.

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 Contractor's Insurance and Bonds

§ 11.1.1 The Contractor shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Contractor shall purchase and maintain the required insurance from an insurance company or insurance companies that are acceptable to the Owner and that are lawfully authorized to issue insurance in Connecticut. The Owner, Architect, and Architect's consultants shall be named as additional insureds under the Contractor's commercial general liability policy or as otherwise described in the Contract Documents.

The insurance required shall be maintained without interruption from the date of commencement of the Work until the date of final payment and termination of any coverage required to be maintained after final payment, and with respect to Contractor's completed operations coverages, as specified in the Contract Documents.

§ 11.1.2 The Contractor shall provide surety bonds of the types, for such penal sums, and subject to such terms and conditions as required by the Contract Documents. The Contractor shall purchase and maintain the required bonds from a company or companies that are acceptable to the Owner and that are lawfully authorized to issue surety bonds in Connecticut.

§ 11.1.3 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

§ 11.1.4 Notice of Cancellation or Expiration of Contractor's Required Insurance. Within three (3) business days of the date the Contractor becomes aware of an impending or actual cancellation or expiration of any insurance required by the Contract Documents; the Contractor shall provide notice to the Owner of such impending or actual cancellation or expiration. Upon receipt of notice from the Contractor, the Owner shall, unless the lapse in coverage arises from an act or omission of the Owner, have the right to stop the Work until the lapse in coverage has been cured by the

procurement of replacement coverage by the Contractor. The furnishing of notice by the Contractor shall not relieve the Contractor of any contractual obligation to provide any required coverage.

§ 11.1.5 The limits specified in the Contract Documents are minimum requirements and shall not be construed in any way as limits of liability or as constituting acceptance by the Owner of responsibility for losses in excess of such limits. The Contractor shall be responsible for all deductibles applicable to any insurance. No acceptance and/or approval of any insurance by Owner shall be construed as relieving or excusing Contractor from any liability or obligation imposed by the provisions of the Contract Documents.

§ 11.1.6 The Contractor shall not commence the Work under the Contract nor permit any Subcontractor to commence work on a subcontract until all the insurance required is obtained. The Contractor may carry, at its own expense, such additional coverage as it may deem necessary. The Contractor shall not be deemed to be relieved of any responsibility by the fact it carries insurance. Should the Contractor at any time neglect or refuse to provide the insurance required herein or should such insurance be cancelled or should the full annual aggregate or any policy not be available to satisfy the requirements of the Contract, the Owner shall have the right to procure such insurance and the cost thereof shall be deducted from monies then due or thereafter to become due the Contractor.

§ 11.2 Owner's Insurance

§ 11.2.1 The Owner shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Owner shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in Connecticut.

§ 11.2.2 Failure to Purchase Required Property Insurance. If the Owner does not intend to purchase and maintain the required property insurance, with all of the coverages and in the amounts described in the Agreement or elsewhere in the Contract Documents, the Owner shall inform the Contractor in writing prior to commencement of the Work. Upon receipt of notice from the Owner, the Contractor may delay commencement of the Work and may obtain insurance that will protect the interests of the Contractor, Subcontractors, and Sub-Subcontractors in the Work. When the failure to provide coverage has been cured or resolved, the Contract Sum and Contract Time shall be equitably adjusted. In the event the Owner fails to procure coverage, the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent the loss to the Owner would have been covered by the insurance to have been procured by the Owner. The cost of the insurance shall be charged to the Owner by a Change Order. If the Owner does not provide written notice, and the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain the required insurance, the Owner shall reimburse the Contractor for all reasonable costs and damages attributable thereto.

§ 11.2.3 Notice of Cancellation or Expiration of Owner's Required Property Insurance. Within three (3) business days of the date the Owner becomes aware of an impending or actual cancellation or expiration of any property insurance required by the Contract Documents; the Owner shall provide notice to the Contractor of such impending or actual cancellation or expiration. Unless the lapse in coverage arises from an act or omission of the Contractor: (1) the Contractor, upon receipt of notice from the Owner, shall have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by either the Owner or the Contractor; (2) the Contract Time and Contract Sum shall be equitably adjusted; and (3) the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent any loss to the Owner would have been covered by the insurance had it not expired or been cancelled. If the Contractor purchases replacement coverage, the cost of the insurance shall be charged to the Owner by an appropriate Change Order. The furnishing of notice by the Owner shall not relieve the Owner of any contractual obligation to provide required insurance.

§ 11.3 Waivers of Subrogation

§ 11.3.1 The Contractor waives all rights against the Owner for damages caused by fire, or other causes of loss, to the extent those losses are covered by property insurance required by the Agreement or other property insurance applicable to the Project, except such rights as they have to proceeds of such insurance. The Contractor shall require similar written waivers in favor of the Owner from subcontractors, and sub-subcontractors. The policies of insurance purchased and maintained by each person or entity agreeing to waive claims pursuant to this section 11.3.1 shall not prohibit this waiver of subrogation. This waiver of subrogation shall be effective as to a person or entity (1) even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, (2) even

though that person or entity did not pay the insurance premium directly or indirectly, or (3) whether or not the person or entity had an insurable interest in the damaged property.

§ 11.3.2 DELETED.

§ 11.4 DELETED.

§11.5 DELETED.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 Uncovering of Work

§ 12.1.1 If a portion of the Work is covered contrary to the Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect's examination and be replaced at the Contractor's expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, the Contractor shall be entitled to an equitable adjustment to the Contract Sum and Contract Time as may be appropriate. If such Work is not in accordance with the Contract Documents, the costs of uncovering the Work, and the cost of correction, shall be at the Contractor's expense.

§ 12.2 Correction of Work

§ 12.2.1 Before Substantial Completion

The Contractor shall promptly and at its own expense correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, discovered before Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense. This obligation shall survive termination of the Contract under Paragraph 14 of the General Conditions. Nothing in this Section 12.2.1 shall absolve the Architect of its liability for failure to fulfill its obligations under the agreement between the Owner and the Architect.

§ 12.2.2 After Substantial Completion

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of notice from the Owner to do so, unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.5.

§ 12.2.2.2 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 12.2.2.3 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2. Upon completion of any work under or pursuant to this Section 12.2, the one-year correction period in connection with the Work requiring correction shall be renewed and recommence.

§ 12.2.3 The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction of the Owner or Separate Contractors, whether completed or partially completed, caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

§ 12.2.6 AUDITS

Upon request of the Owner or the Architect, the Contractor will cooperate, and secure the cooperation of all Subcontractors and Sub-subcontractors and assist the Owner and Architect during any audit of the Project conducted by the Owner at any time after Substantial Completion.

§ 12.3 Acceptance of Nonconforming Work

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be affected whether or not final payment has been made.

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 Governing Law

The Contract shall be governed by the law of the State of Connecticut.

§ 13.2 Successors and Assigns

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns, and legal representatives to covenants, agreements, and obligations contained in the Contract Documents. The Contractor may not assign the Contract without the Owner's prior written consent, which consent the Owner may withhold in its absolute discretion. If the Contractor attempts to make an assignment without such consent, the Contractor shall nevertheless remain legally responsible for all of the Contractor's obligations under the Contract.

§ 13.2.2 Contractor shall execute all consents reasonably required to facilitate an assignment by the Owner.

§ 13.3 Rights and Remedies

§ 13.3.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights, and remedies otherwise imposed or available by law or in equity.

§ 13.3.2 No action or failure to act by the Owner, Architect, or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed upon in writing.

§ 13.3.3 No provision contained in the Contract Documents shall create or give to third parties any claim or right of action against the Owner or the Contractor except as specifically provided herein.

§ 13.4 Tests and Inspections

§ 13.4.1 Tests, inspections, certifications and approvals of portions of the Work shall be made as required by the Contract Documents and by the Conditions, applicable laws, statutes, ordinances, codes, rules, and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections, and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections, and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of tests, inspections, or approvals that do not become requirements until after bids are received or negotiations concluded. The Owner shall directly arrange and pay for tests, inspections, or approvals where building codes or applicable laws or regulations so require.

§ 13.4.2 If the Architect, Owner, or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection, or approval not included under Section 13.4.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection, or approval, by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.4.3 and 13.4.4, shall be at the Owner's expense.

§ 13.4.3 If inspections and tests conducted under this Section 13.4 reveal failure in a portion of the Work, the Owner may order the inspection and testing, at the Contractor's expense, of any and all portions of the Work that are identical or similar to the failing portion.

§ 13.4.4 Required certificates of testing, certification, inspection or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect.

§ 13.4.5 If the Architect is to observe tests, inspections, or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.4.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

§ 13.4.7 If any of the Work is required to be inspected or approved by any public authority, the Contractor shall cause such inspection or approval to be performed. No inspection performed or failed to be performed by the Owner hereunder shall be a waiver of any of the Contractor's obligations hereunder or be construed as an approval or acceptance of the work or any parts thereof.

§ 13.5 Interest

INTENTIONALLY OMITTED

§ 13.6 Wherever possible, each provision of this Agreement shall be interpreted in a manner as to be effective and valid under applicable law. If, however, any provision of this Agreement, or portion thereof, is prohibited by law or found invalid under any law, only such provision or portion thereof shall be ineffective, without in any manner invalidating or affecting the remaining provisions of this Agreement or valid portion of such provision, which are hereby deemed severable.

§ 13.7 The parties expressly understand and agree that any provision in this Contract related to job site safety, supervision, inspections or compliance with ordinances, laws, statutes, rules, regulations and/or protocols are solely for the benefit of the Contractor and Owner and do not create any rights, claims, or causes of action in third parties, separate contractors, Subcontractors or Sub-subcontractors, or any of their employees performing work on or at the Project. Nothing in this Agreement is intended to confer any rights in any other contractor, Subcontractor of any tier material supplier, or their employees, as there are no intended third-party beneficiaries of this Agreement.

§ 13.8 Each and every provision of law and clause required by law 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.

§ 13.9 If the Contractor is a "nonresident contractor" as defined in Section 12-430(7)(A) of the Connecticut General Statutes, as revised, the Contractor shall comply fully with the provisions of Section 12-430(7) and, prior to commencing the Work, shall furnish the Owner with a copy of the requisite certificate of compliance set forth in subparagraph (E) of Section 12-430(7). Contractor agrees to indemnify Owner as to any and all taxes, interest and penalties that the State of Connecticut asserts are due with respect to the Contractor's activities.

§ 13.10 Contractor shall comply with the requirements of Connecticut General Statutes Section 31-52. Specifically, Contractor agrees that in the employment of labor to perform the work specified herein, preference shall be given to citizens of the United States, who are, and continuously for at least three months prior to the date hereof have been, residents of the labor market area, as established by the Labor Commissioner, in which such work is to be done, and if no such qualified person is available, then to citizens who have continuously resided in the county in which the work is to be performed for at least three months prior to the date hereof, and then to citizens of the state who have continuously resided in the state at least three months prior to the date hereof.

§ 13.11 The wages paid on an hourly basis to any person performing the work of any mechanic, laborer or worker on the work herein contracted to be done and the amount of payment or contribution paid or payable on behalf of each such person to any employee welfare fund, as defined in Section 31-53 of the Connecticut General Statutes, shall be at a rate equal to the rate customary or prevailing for the same work in the same trade or occupation in the town in which such public works project is being constructed. Any contractor who is not obligated by agreement to make payment or contribution on behalf of such persons to any such employee welfare fund shall pay to each mechanic, laborer or worker as part of such person's wages the amount of payment or contribution for such person's classification on each pay day.

§ 13.12 Contractor and each of its Subcontractors shall furnish proof that each employee performing the work of a mechanic, laborer or worker on the Project has completed a course of at least ten (10) hours in construction safety and health approved by the federal Occupational Safety and Health Administration (OSHA) or has completed a new miner training program approved by the Federal Mine Safety and Health Administration. Such proof shall be provided with the certified payroll submitted for the first week each such employee, mechanic, laborer, or worker, begins work on the Project.

§ 13.13 Contractor hereby confirms that it has complied with the obligations under the Immigration Reform and Control Act (IRCA) and that the workers provided under this Agreement are authorized for employment in the United States. Contractor further confirms that it has properly completed I-9's for all of its workers assigned to the Project and that it will require each of its Subcontractors to confirm that they have properly completed I-9's for all of their workers assigned to the Project. Contractor agrees to indemnify, defend, and hold harmless the Owner in the event that any of the workers assigned to the Project are found not to be authorized to work under the law or in the event that there is a determination that the obligations set forth under IRCA, including the obligation to correctly prepare and maintain I-9s, have not been complied with, including but not limited to all damages, fines and penalties, punitive damages, attorneys' fees and costs.

§ 13.14 Since the Contractor was required to be prequalified by the Connecticut Department of Administrative Services in the bidding for this Project, in the event the surety assumes the contract or obtains a bid or bids for completion of the contract, the surety shall ensure that the contractor chosen to complete the contract is prequalified pursuant to section 4a-100 of the Connecticut General Statutes in the requisite classification and has the aggregate work capacity rating and single project limit necessary to complete the contract.

§ 13.15 Each payment application shall be accompanied by a statement showing the status of all pending Change Orders, pending Change Directives and approved changes to the Contract. Such statement shall identify the pending Change Orders and pending Change Directives, and shall include the date such Change Orders and Change Directives were initiated, additional cost and/or time associated with their performance and a description of any work completed. The Contractor shall require each of its Subcontractors and suppliers to include a similar statement with each of their payment applications or invoices.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 Termination by the Contractor

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, for any of the following reasons:

- .1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
- .2 An act of government, such as a declaration of national emergency, that requires all Work to be stopped; or
- .3 Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents and has not notified the Contractor of the reason for withholding payment.

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work,

repeated suspensions, delays, or interruptions of the entire Work by the Owner as described in Section 14.3, constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon thirty (30) additional days' notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed. The notice of termination must state with specificity the means by which the Owner may cure its nonperformance, and the Contractor shall not terminate this Agreement if, within thirty (30) days of the notice, the Owner substantially undertakes such curative measures.

§ 14.1.4 INTENTIONALLY OMITTED

§ 14.2 Termination by the Owner for Cause

§ 14.2.1 The Owner may, without prejudice to any right or remedy available to the Owner under the Contract Documents or at law or in equity terminate the Contract if the Contractor:

- .1 Institutes proceedings or consents to proceedings requesting relief or arrangement under the Federal Bankruptcy Act or any similar or applicable Federal or state law, or if a petition under any Federal or state bankruptcy or insolvency law is filed against the Contractor and such petition is not dismissed within sixty (60) days from the date of said filing, or if the Contractor admits in writing its inability to pay its debts generally as they become due, or if it makes a general assignment for the benefit of its creditors, or if a receiver, liquidator, trustee or assignee is appointed on account of bankruptcy or insolvency; or if a receiver of all or any substantial portion of the Contractor's properties is appointed;
- .2 Abandons the Work; or if it fails, except in cases for which extension of time prosecute promptly and diligently the Work;
- .3 Fails to supply enough properly skilled workers or proper materials for the Work;
- .4 Submits an Application for Payment, sworn statement, waiver of lien, affidavit or document of any nature whatsoever which is intentionally falsified;
- .5 Fails to make payment to Subcontractors for materials or labor in accordance with the Contract Documents and the respective agreements between the Contractor and the Subcontractors;
- .6 Disregards the Conditions, applicable laws, statutes, ordinances, codes; rules and regulations, or lawful orders of a public and appropriate authority;
- .7 Otherwise commits a substantial breach of a provision of the Contract Documents or
- .8 If a mechanic's or materialmen's lien or notice of lien is filed against any part of the Work or the site of the Project and not promptly bonded or insured over by the Contractor after the receipt of notice thereof in a manner reasonably satisfactory to the Owner.

§ 14.2.2 When any of the reasons described in Section 14.2.1 exist, may, without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- .1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- .2 Accept assignment of subcontracts pursuant to Section 5.4; and
- .3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance,

the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

§ 14.2.5 If the Owner terminates the Contractor for cause and it is thereafter determined that the Owner did not have the right to terminate the Contractor for cause, such termination for cause shall automatically be converted into a termination for convenience under Article 14.4 hereto.

§ 14.3 Suspension by the Owner for Convenience

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work, in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Sum and Contract Time shall be adjusted for increases in the direct costs and time caused by suspension, delay, or interruption under Section 14.3.1. No adjustment shall be made to the extent:

- .1 That performance is, was, or would have been, so suspended, delayed, or interrupted, by another cause for which the Contractor is responsible; or
- .2 That an equitable adjustment is made or denied under another provision of the Contract.

§ 14.4 Termination by the Owner for Convenience

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 14.4.2 Upon receipt of 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; and
- .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.

§ 14.4.3 Upon such termination, the Contractor shall recover as its sole remedy payment for Work properly performed in connection with the terminated portion of the Work prior to the effective date of termination and for items properly and timely fabricated off the Project site, delivered and stored in accordance with the Owner's instructions. The Contractor hereby waives and forfeits all other claims for payment and damages, including, without limitation, anticipated profits and consequential damages. In no event shall Contractor claim or be entitled to payment of overhead or profit on Work not performed. The Owner shall be credited for (i) payments previously made to the Contractor for the terminated portion of the Work, (ii) claims that the Owner has against the Contractor under the Contract, and (iii) the value of the materials, supplies, equipment, or other items that are to be disposed of by the Contractor that are part of the Contract Sum

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 Claims

§ 15.1.1 Definition

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, a change in the Contract Time, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim. This Section 15.1.1 does not require the Owner to file a Claim in order to impose liquidated damages in accordance with the Contract Documents. Failure to give such timely written notice will bar any claims by the Contractor. The Owner's prior written consent to proceed with any Work for which the Contractor will claim it is entitled to additional compensation is a condition precedent to recovery for such work. Any notice of Claim must clearly identify the alleged cause and the nature of the Claim and include date and information then available to the claimant that will facilitate prompt verification and evaluation of the Claim.

§ 15.1.2 Time Limits on Claims

The Owner and Contractor shall commence all Claims and causes of action against the other and arising out of or related to the Contract, whether in contract, tort, breach of warranty or otherwise, in accordance with the requirements of the binding dispute resolution method selected in the Agreement and within the period specified by applicable law, but in any case, not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all Claims and causes of action not commenced in accordance with this Section 15.1.2.

§ 15.1.3 Notice of Claims

§ 15.1.3.1 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered prior to expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party under this Section 15.1.3.1 shall be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later. Failure by the Contractor to give such notice within the time specified shall greatly prejudice the Owner, and the failure to submit proper and timely notice shall constitute a waiver and abandonment of such Claim.

§ 15.1.3.2 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party. In such event, no decision by the Initial Decision Maker is required.

§ 15.1.4 Continuing Contract Performance

§ 15.1.4.1 Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents. The Owner shall have no obligation to make payments to the Contractor on or against such claims, disputes, or other matters in question during the pendency of any mediation, arbitration, or other proceedings to resolve such matters. Owner shall continue to make payments of undisputed amounts.

§ 15.1.4.2 The Contract Sum and Contract Time shall be adjusted in accordance with the Initial Decision Maker's decision, subject to the right of either party to proceed in accordance with this Article 15. The Architect will issue Certificates for Payment in accordance with the decision of the Initial Decision Maker.

§ 15.1.5 Claims for Additional Cost

If the Contractor wishes to make a Claim for an increase in the Contract Sum, notice as provided in Section 15.1.3 shall be given before proceeding to execute the portion of the Work that is the subject of the Claim. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

§ 15.1.6 Claims for Additional Time

§ 15.1.6.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, written notice as provided herein shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. The Contractor shall have the burden of demonstrating the effect of the claimed delay on the Contract Time, and shall furnish the Owner and the Architect with such documentation relating thereto as the Owner and the Architect may reasonably require. In the case of a continuing delay, only one Claim is necessary. Any request seeking an extension of time contain:

- .1 A detailed description of the nature of each cause of delay, the date or dates upon which each cause of delay began and ended (as known or as projected), the number of days of delay attributable to each such cause, and the impact of such delay upon the construction schedule;
- .2 The construction schedule in effect at the start of the delay, showing that the portion of the Work that was, or will be, delayed is on the critical path and that no float remains or will be available for the delayed activities at the start of the delay;
- .3 A schedule analysis of the impact of the delay on the critical path in the construction schedule at the time of the delay, including any proposed adjustment to the Contract Time; and
- .4 Such other supporting data that the Owner may request.

§ 15.1.6.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated, and had an adverse effect on the scheduled construction.

§ 15.1.7 Waiver of Claims for Consequential Damages

INTENTIONALLY OMITTED

§ 15.1.6 LIQUIDATED DAMAGES

It is mutually agreed that if the Contractor fails to reach Substantial Completion of the Work WITHIN ONE HUNDRED TWENTY(120) from the Owner's Notice to Proceed, the Owner will be damaged; and because the amount of the Owner's damages is difficult if not impossible to definitely ascertain and prove, it is hereby agreed that the amount of such damages shall be liquidated at the rate of One Thousand Five Hundred Dollars (\$1,500) for each Day, or part thereof, of delay in substantially completing the Work. The Contractor agrees that said sum shall be deducted from monies due the Contractor under the Contract, or, if no money is due the Contractor, the Contractor hereby agrees to pay the Owner as liquidated damages, and not by way of penalty, such total sum as shall be due for such delay.

§ 15.2 Initial Decision

§ 15.2.1 Claims, excluding those where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2 or arising under Sections 10.3, 10.4, and 11.5, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim. If an initial decision has not been rendered within 30 days after the Claim has been referred to the Initial Decision Maker, the party asserting the Claim may demand mediation and binding dispute resolution without a decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of the request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished, or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution.

§ 15.2.6 Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.

§ 15.2.6.1 Either party may demand or file for mediation of a Claim.

§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.3 Mediation

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract, except those waived as provided for in Sections 9.10.4 shall be subject to mediation as a condition precedent to binding dispute resolution.

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

§ 15.3.3 Either party may, within 30 days from the date that mediation has been concluded without resolution of the dispute or 60 days after mediation has been demanded without resolution of the dispute, demand in writing that the other party file for binding dispute resolution. If such a demand is made and the party receiving the demand fails to file for binding dispute resolution within 60 days after receipt thereof, then both parties waive their rights to binding dispute resolution proceedings with respect to the initial decision.

§ 15.3.4 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

§ 15.4 Arbitration

§ 15.4.1 All claims, disputes and other matters in question between the Owner and the Contractor arising out of or related to the Contract or the breach thereof, except for claims which have been waived by the making and acceptance of final payments, shall be decided, at the sole option of the Owner, by one of the following dispute resolution procedures: (1) arbitration in accordance with rules agreed to by the Owner and the Contractor, (2) arbitration in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association then obtaining, or (3) litigation.

§ 15.4.1.1 INTENTIONALLY OMITTED

§ 15.4.2 If a demand for arbitration is filed by the Contractor, the Owner will advise the Contractor within thirty days after the receipt of such a demand for arbitration if the Owner elects to arbitrate or rejects arbitration; such election, once made, shall be binding. The filing of a demand for arbitration by the Owner shall be deemed an election to arbitrate and shall constitute the exercise of the option of the Owner to proceed with arbitration. The Owner, but not the Contractor, may join or consolidate with any arbitration with the Contractor any disputes with the Architect, any Subcontractor, or any other party having an interest in the proceeding. This agreement to arbitrate shall be specifically enforceable under applicable law in any court having jurisdiction thereof. The award rendered by the arbitrator or arbitrators shall be final and judgment may be entered upon it in accordance with the applicable law in any court having jurisdiction thereof.

§ 15.4.3 The Contractor agrees to continue performance of the Contract Work and shall proceed in accordance with the directives of the Owner, under protest, in the event of a dispute or controversy. Failure to so proceed shall constitute a material breach of the Contract, regardless of the ultimate decision on the dispute, it being understood and agreed that any controversy between the parties shall not be deemed a basis to delay or suspend the Contract Work, unless directed otherwise by the Owner.

§ 15.4.4 Consolidation or Joinder

§ 15.4.4.1 INTENTIONALLY OMITTED

§ 15.4.4.2 INTENTIONALLY OMITTED

§ 15.4.4.3. INTENTIONALLY OMITTED

