

# Town of Millbury, Massachusetts



## PROJECT MANUAL

### For Construction of: **WEST MAIN STREET ROUND POND WALL**

**April 22, 2020**

Owner:  
**Town of Millbury**  
**Department of Public Works**

Engineer:  
**Weston & Sampson Engineers, Inc.**  
427 Main Street, Suite 400, Worcester, MA  
1 (508) 698-3034 1 (800) 726-7766  
[www.westonandsampson.com](http://www.westonandsampson.com)



**TOWN OF MILLBURY  
WEST MAIN STREET ROUND POND WALL  
MILLBURY, MA**

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SECTION 00100

ADVERTISEMENT FOR BIDS

Town of Millbury, Massachusetts

Sealed bids for construction of **Round Pond Retaining Wall Partial Reconstruction** for the Town of Millbury, Massachusetts, will be received at the Town Hall until 12:00 pm prevailing time, on Thursday, May 14, 2020 at which time and place said bids will be publicly opened and read aloud.

The scope of work includes construction of

Cemented stone masonry gravity wall to replace 169 ft. portion of deteriorated existing retaining wall along West Main Street. The existing 60-inch RCP culvert carrying Singletary Brook beneath West Main Street will be temporarily plugged to allow wall construction and bypass pumping shall be used to maintain the pond elevation. A 10 ft. long section of 60-inch RCP will replace existing outfall at its current location.

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Bid Security in the form of a bid bond, cash, certified check, treasurer's or cashier's check payable to the Owner, is required in the amount of five percent of the bid, in accordance with Section 00200, INSTRUCTIONS TO BIDDERS.

The Instructions to Bidders, Form of General Bid, Agreement, Plans, Specifications, Performance and Payment Bond, and other Contract Documents may be examined at the following

Accent Printing, Inc., 99 Chelmsford Road, North Billerica, Massachusetts

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Contract Documents may be viewed and downloaded as a Portable Document Format (PDF) file free of charge at [www.accentblueprints.com](http://www.accentblueprints.com) starting on **Wednesday, April 22, 2020 at 12:00pm**. Copies may be obtained for a fee by completing an order online or by calling 978-362-8038 for each set. Completed orders may be picked up at the office of Accent Printing located at 99 Chelmsford Road, North Billerica, MA 01862 (978-362-8038), from 9 a.m. to 4 p.m. Copies may also be shipped to prospective bidders for an additional charge to cover handling and mailing fees. All payments for printing and shipping are nonrefundable. For addition to the project plan holder's list to guarantee receipt of addenda, it is recommended interested bidders obtain the Contract Documents directly from Accent. Interested bidders will be prompted to register an email address with Accent to access the documents.

The selected contractor shall furnish a performance bond and a payment bond in amount at least equal to one hundred percent (100%) of the contract price as stipulated in Section 00700 GENERAL CONDITIONS of these specifications.

All bids for this project are subject to applicable bidding laws of Massachusetts, including General Laws Chapter 30, Section 39M as amended.

Prevailing Wage Rates as determined by the Director of the Executive Office of Labor and Workforce Development under the provisions of the Massachusetts General Laws Chapter 149, Section 26 to 27H, as amended, apply to this project. It is the responsibility of the Bidder, before bid opening, to request if necessary, any additional information on Prevailing Wage Rates for those trades people who may be employed for the proposed work under this contract.

By submission of a bid, the Bidder agrees that this bid shall be good and may not be withdrawn for a period of 30 days, Saturdays, Sundays and legal holidays excluded after the opening of bids. The Owner reserves the right to waive any informalities in bids and to reject any or all bids.

TOWN OF MILLBURY, MASSACHUSETTS

BY ITS

Acting DPW Supervisor

Keith Caruso

127 Elm St, Millbury, MA 01527

Weston & Sampson Engineers, Inc.  
Worcester, Massachusetts

## SECTION 00200

### INSTRUCTIONS TO BIDDERS

1. Receipt and Opening of Bids
2. Location and Work to be Done
3. Deleted
4. Preparation of Bid
5. Modification of Bids
6. Obligation of Bidder
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20. Liquidated Damages for Failure to Enter into Contract
21. Indeterminate Items and Estimated Quantities
22. CONTRACTOR Records
23. Bidder Certification – OSHA Training
24. Deleted
25. Deleted
26. Prevailing Wage Rates
27. Guarantee
28. Safety and Health Regulations
29. Efficiency Guarantee Bond
30. Price Adjustments
31. Deleted

1. Receipt and Opening of Bids

The Town of Millbury herein called the OWNER, acting by and through its Department of Public Works will receive sealed Bids for the construction West Main Street Round Pond Wall Reconstruction.

Such bids addressed to the Town of Millbury and endorsed Bid will be received at the Town Hall, 127 Elm Street, Millbury, MA 01527 until 12:00 pm on Thursday, May 14, 2020 at which time and place said bids will be publicly opened and read aloud.

If the building at which bids are to be received is closed for any reason on the date and time that bids are due, receipt of bids by the Owner will be postponed until the next business day at the time originally stated for receipt of bids.

Any bid may be withdrawn prior to the above scheduled time for the opening of bids or authorized postponement thereof. Any bid received after the time and date specified will not be considered. By submission of a bid, the bidder agrees that this bid shall be good and may not be withdrawn for the number of days, after the opening of bids, as stipulated in the FORM OF GENERAL BID.

2. Location and Work to be Done

The location, general characteristics, and principal details of the Work are indicated on a set of 12 drawings titled "West Main Street Round Pond Wall," and numbered 1 to 12, inclusive.

Additional drawings showing details in accordance with which the Work is to be done may be furnished by addendum from time to time during the bidding period by the ENGINEER, and shall then become a part of the Contract Documents.

The CONTRACTOR shall furnish all superintendence, labor, services, materials, equipment, plant, machinery, apparatus, appliances, tools, supplies, bailing, shoring, removal, and all other things necessary to do all work required for the completion of each item of the Work and as herein specified.

The Work to be done and paid for under any item shall not be limited to the exact extent mentioned or described but shall include all incidental work necessary or customarily done for the completion of that item.

3. Deleted

4. Preparation of Bid

Each bid must be submitted on the prescribed form in Section 00410. All blank spaces for bid prices must be filled in, in ink or typewritten, in both words and figures.

Each bid must be submitted in a sealed envelope bearing on the outside the name of the bidder, its address, and endorsed with the name of the project as specified in Receipt and Opening of Bids, above.

If forwarded by mail, the sealed envelope containing the bid must be enclosed in another envelope addressed as specified in Receipt and Opening of Bids, above.

5. Modification of Bids

Any bidder may modify its bid by written communication at any time prior to the scheduled closing time for receipt of bids. Any telegraphic communication must be received by the OWNER prior to the closing time, and, provided further, for any telegraphic communication that modifies a bid the OWNER is satisfied that a written confirmation of the modification over the signature of the bidder was mailed prior to the closing time.

The modification communication shall not reveal the bid price but shall provide the addition or subtraction or other modification so that the final prices or terms will not be known by the OWNER until the sealed bid is opened. If written confirmation is not received within two days from the closing time, no consideration will be given to the facsimile transmission.

6. Obligation of Bidder

At the time of the opening of bids each bidder will be presumed to have inspected the site and to have read and to be thoroughly familiar with the Contract Documents (including all addenda). The failure or omission of any bidder to examine any form, instrument, or document shall in no way relieve any bidder from any obligation in respect of its bid.

7. Information not Guaranteed

All information given in the Contract Documents relating to subsurface and other conditions, natural phenomena, existing pipes, and other structures is from the best sources at present available to the OWNER. All such information is furnished only for the information and convenience of bidders and is not guaranteed.

It is agreed and understood that the OWNER does not warrant or guarantee that the subsurface or other conditions, natural phenomena, existing pipes, or other structures encountered during construction will be the same as those indicated in the Contract Documents.

It is further agreed and understood that no bidder or CONTRACTOR shall use or be entitled to use any of the information made available to it or obtained in any examination made by it in any manner as a basis of or grounds for any claim or demand against the OWNER or the ENGINEER, arising from or by reason of any variance which may exist between the

information made available and the actual subsurface or other conditions, natural phenomena, existing pipes or other structures actually encountered during the construction work, except as may otherwise be expressly provided for in the Contract Documents.

8. Bid Security

Each bid must be accompanied by a certified check, a bid bond, cash, a treasurer's or cashier's check, payable to the OWNER, in the amount stated in Section 00100, ADVERTISEMENT FOR BIDS. Such deposits will be returned to all except the three lowest responsible and eligible bidders within five days, Saturdays, Sundays, and legal holidays excluded, after the opening of bids, and the remaining deposits will be returned promptly after the OWNER and the accepted bidder have executed the Contract, or if no notice of intent to award has been presented to any bidder within 30 days, Saturdays, Sundays and legal holidays excluded, after the date of the opening of bids, upon demand of the bidder at any time thereafter.

9. Time for Completion

The successful general bidder must agree to commence work on or before a date to be specified in the written "Notice to Proceed" from the OWNER and to fully complete the project within the time limit stated in Section 00410, FORM OF GENERAL BID.

10. Addenda and Interpretations

No interpretation of the meaning of the plans, specifications or other prebid documents will be made to any bidder orally, and if provided orally, shall not be relied upon by bidders unless confirmed in a written addendum. All information given to bidders other than by means of the plans, specifications, or by addenda, as described below, is given informally and shall not be used as the basis of a claim against the OWNER or the ENGINEER.

Every request for such interpretation should be in writing (typed, not handwritten) addressed to Weston & Sampson Engineers, Inc., 55 Walkers Brook Drive, Reading, Massachusetts 01867 Attention: CSD, or sent via email to **davida@wseinc.com** and to be given consideration must be received at least five working days prior to the date fixed for the opening of bids.

Any and all such interpretations and any supplemental instructions will be in the form of written addenda to the specifications which, when issued, may be viewed and downloaded as a Portable Document File (PDF) at [www.accentblueprints.com](http://www.accentblueprints.com). A notification of addenda will be emailed to all prospective bidders to email addresses furnished by them for such purposes. Bidders picking up sets of bid documents will be given all addenda issued to date and will be required to sign for all documents, acknowledging receipt. Failure of any bidder to receive any such addendum or interpretation shall not relieve such bidder from any obligation under its bid as submitted, and each bidder must confirm for itself that it has received all addenda. All addenda so issued shall become part of the Contract Documents.

11. Bid Opening Procedure

The following list of requirements shall be met by each filed bid.

Bids shall be filed at the place and before the time specified in Receipt and Opening of Bids, above.

The bid and all accompanying documents so required shall be signed by the Bidder or its authorized representative before submission.

All bidders shall include with their bids written acknowledgment of receipt of all addenda. Refer to acknowledgment form provided in Section 00410, FORM OF GENERAL BID.

The total dollar amount of each bid will be read, and the three apparent lowest bids will be selected for further consideration. These three apparent low bids will be read aloud for the benefit of the other bidders and the bid opening procedure will be closed. All those present at the bid opening may examine all bids after the bid opening and after the reading of the three apparent low bids except for the DCAMM Update Statements if contained therein, which are not public records.

12. Comparison of Bids

Bids will be compared on the basis of the quantities and unit and lump sum prices stated in the bid forms.

In the event that there is a discrepancy in Section 00410, FORM OF GENERAL BID between the lump sum or unit prices written in words and figures, the prices written in words will govern.

The OWNER agrees to examine and consider each FORM OF GENERAL BID submitted in accordance with the terms and conditions set forth herein and as set forth in Section 00410, FORM OF GENERAL BID.

13. Statutes Regulating Competitive Bidding

Any bid, which does not comply with the provisions of Massachusetts General Laws Chapter 30, Section 39M as amended, need not be accepted and the OWNER may reject every such bid.

14. Right to Reject Bid

The OWNER may consider informal any bid not prepared and submitted in accordance with the provisions hereof and may waive any informalities or reject any and all bids, should the OWNER deem it to be in the public interest to do so.

The OWNER may also reject bids which in its sole judgment are either incomplete, conditional, obscure or not responsive or which contain additions not called for, erasures not

properly initialed, alterations, or similar irregularities, and may reject bids for any other reason permitted by law, or the OWNER may waive such omissions, conditions or irregularities.

15. Ability and Experience of Bidder

No award will be made to any bidder who cannot satisfy the OWNER that it has sufficient ability and experience in this class of work and sufficient capital and plant to enable it to prosecute and complete the work successfully within the time named. The OWNER's decision or judgment on these matters will be final, conclusive, and binding to the fullest extent permitted by law.

The OWNER may make such investigations as it deems necessary, and the bidder shall furnish to the OWNER, under oath if so required, all such information and data for this purpose as the OWNER may request.

16. Conditions of Work

Each bidder must inform itself fully of the conditions relating to the construction of the project and the employment of labor thereon. Failure to do so will not relieve a successful bidder of its obligation to furnish all material and labor necessary to carry out the provisions of its contract. Insofar as possible the CONTRACTOR, in carrying out its work, must employ such methods or means as will not cause any interruption of or interference with the work of any other contractor.

17. Security for Faithful Performance

Simultaneously with its delivery of the executed Contract, the CONTRACTOR shall furnish a surety bond or bonds as security for faithful performance of this Contract and for the payment of all persons performing labor and materials under this Contract as specified in Section 00700, GENERAL CONDITIONS included herein, each in the amount of 100 percent of its bid. The surety on such bond or bonds shall be a surety company qualified to do business under the laws of the Commonwealth and satisfactory to the OWNER. The bonds shall remain in force for one year after final acceptance of the work by the OWNER, unless the OWNER, in writing, releases the CONTRACTOR from the obligation sooner.

18. Power of Attorney

Attorneys-in-fact who sign Contract bonds must file with each bond a certified and effectively dated copy of their power of attorney.

19. Laws and Regulations

Applicable provisions of Massachusetts General Laws and Regulations and/or the United States Code and Code of Federal Regulations govern this Contract and any provision in violation of the foregoing shall be deemed null, void and of no effect. Where a conflict

between Federal and State Laws and Regulations exists, the more stringent requirement shall apply.

The bidder's attention is directed to the fact that all applicable State laws, municipal ordinances or bylaws, and the rules and regulations of all authorities having jurisdiction over construction of the project shall apply to the Contract throughout, and they will be deemed to be included in the Contract the same as though herein written out in full.

Attention is directed to Section 00830 STATE REGULATIONS and to other applicable sections of this specification. In the event of any conflict between provisions of law or regulation quoted or paraphrased in the Contract Documents, the actual provisions of law or regulation shall control.

20. Liquidated Damages for Failure to Enter into Contract

The successful bidder, upon its failure or refusal to execute and deliver the Contract, Bonds and Certificates of Insurance required within 10 days after receipt of notice of the acceptance of the bid, shall, except as otherwise provided by applicable law, forfeit to the OWNER, as liquidated damages for such failure or refusal, the security deposited with its bid, provided that the amount forfeited shall not exceed the difference between its bid price and the bid price of the next lowest responsible and eligible bidder. In case of death, disability, bonafide clerical or mechanical error of a substantial nature, or other similar unforeseen circumstances affecting the bidder, its bid deposit will be returned.

21. Indeterminate Items and Estimated Quantities

The work to be done under this Contract has been divided into parts or items, if applicable, to enable each bidder to bid on different portions of the work in accordance with its estimate of their cost and so that the actual quantity of work executed under each item may be paid for at the price bid for that particular item, even though each bidder may have judged that such quantity may be greater or less than the estimated quantity stated in Section 00410, FORM OF GENERAL BID.

22. CONTRACTOR Records

The CONTRACTOR shall comply with the provisions of Massachusetts General Laws, Chapter 30, Section 39R, concerning CONTRACTOR records. This section has been reprinted in Section 00830, STATE REGULATIONS.

23. Bidder Certification – OSHA Training

All employees who work on Massachusetts public works construction sites, on projects estimated to cost more than \$10,000, must have no less than ten (10) hours of OSHA-approved safety and health training.

The Massachusetts Attorney General is authorized to restrain award of construction contracts to any contractor who is in violation of this requirement and to restrain the performance of these contracts by non-complying contractors.

Noncompliance with this law will disqualify contractors from bidding on public contracts.

24. Deleted

25. Deleted

26. Prevailing Wage Rates

Prevailing Wage Rates as determined by the Director of the Executive Office of Labor and Workforce Development under the provision of the Massachusetts General Laws, Chapter 149, Sections 26 to 27H, as amended, apply to this project. It is the responsibility of the bidder, before bid opening, to request if necessary, any additional information on Prevailing Wage Rates for those trades people who may be employed for the proposed work under this contract.

The Contractor is responsible for requesting up to date wage rates from the Owner prior to the one-year anniversary of the notice to proceed of this contract. The Owner shall obtain updated wage rates from the Director and provide them to the Contractor upon said request.

27. Guarantee

The Contractor shall guarantee that the Work and Services to be performed under the Contract, and all workmanship, materials and equipment performed, furnished, used or installed in the construction of the same shall be free from defects and flaws, and shall be performed and furnished in strict accordance with the Drawings, Specifications, and other contract documents, that the strength of all parts of all manufactured equipment shall be adequate and as specified and that the performance test requirements of the contract shall be fulfilled. This guarantee shall be for a period of one year from and after the date of completion and acceptance of the Work as stated in the final estimate. If part of the Work is accepted in accordance with that subsection of this AGREEMENT titled "Partial Acceptance", the guarantee for that part of the Work shall be for a period of one year from the date fixed for such acceptance.

If at any time within the said period of guarantee any part of the Work requires repairing, correction or replacement, the Owner may notify the Contractor in writing to make the required repairs, correction or replacements. If the Contractor neglects to commence making such repairs, corrections or replacements to the satisfaction of the Owner within seven (7) days from the date of receipt of such notice, or having commenced fails to prosecute such Work with diligence, the Owner may employ other persons to make said repairs, correction or replacements, and charge the costs, including compensation for additional professional services, to the Contractor.

28. Safety and Health Regulations

This Project is subject to the Safety and Health Regulations of the U.S. Department of Labor set forth in Title 29 CFR, Part 1926 and to all subsequent amendments, and to the Massachusetts Department of Labor and Industries, Division of Industrial Safety 'Rules and Regulations for the Prevention of Accidents in Construction Operations' (Chapter 454 CMR 10.00 et seq.). Contractors shall be familiar with the requirements of these regulations.

29. Efficiency Guarantee Bond

Whenever it is written that an equipment manufacturer must have a specified period of experience with its product, equipment which does not meet the specified experience period can be considered if the equipment supplier or manufacturer is willing to provide an "Efficiency Guarantee Bond" or cash deposit for the duration of the specified time period which will guarantee replacement of that equipment in the event of failure.

30. Price Adjustments

This Contract is subject to the provisions for material price adjustments in accordance with Chapter 30, Section 38A of the Massachusetts General Laws.

31. Deleted

END OF SECTION

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## SECTION 00320

### SUBSURFACE DATA

#### PART I - GENERAL

##### 1.01 SCOPE:

- A. A subsurface exploration program consisting of soil borings and sediment cores has been performed at the site, proximate to the proposed work area, with reasonable care. The geotechnical engineering report and results of the soil borings are appended hereto. Soil boring logs are also included on the Contract Drawings. Results of the environmental sampling of sediment and soil are provided in the attached Table 1 and Table 2, respectively. All of the above listed documents, appended hereto, are considered part of the Contract Documents. Laboratory analytical reports summarized in the attached Tables are available upon request.

Samples of the materials encountered in the soil borings may be seen upon request during the bidding period only at the office of Weston & Sampson Engineers, Inc., [55 Walkers Brook Drive, Reading, MA 01867]. If Contractors deem the subsurface information insufficient, they may, after obtaining Owner's permission, carry out additional subsurface explorations, at no expense to the Owner.

- B. The attached subsurface data is provided for informational purposes only. The Contractor shall not rely on the interpretations, opinions, conclusions or recommendations included in the attached documents, only the factual data relative to the specific times, locations, and depths/elevations. Specific project requirements are referenced only in the drawings and specifications.
- C. Subsurface information provided in the Contract Documents is limited by the methods used for obtaining and expressing such data, and is subject to various interpretations. The terms used to describe soils, groundwater and such other conditions are subject to local usage and individual interpretation.
- D. Borings have been drilled substantially at the locations indicated on the drawings and advanced to the depths shown on the logs. Soil information presented in the boring logs, as to classification, gradation, properties, density and consistency, is based on visual observation of recovered samples. Groundwater levels reported on the boring logs are those measured in the field at the particular location and at the time measurements were made, and do not necessarily represent permanent or seasonal groundwater elevations. Groundwater elevations may be affected by temperature, rainfall, and other factors that may not have been present at the time the measurements were made. The Contractors should be aware that groundwater level fluctuations may affect methods of construction.
- E. Subsurface exploration and soil data are for the general information of the Contractors. The Contractors are obligated to examine the site, review boring logs, all available information and records of explorations, investigations and other pertinent data for the site,

and then based upon their own interpretations and investigations decide the character of material to be encountered and excavated, the suitability of the materials to be used for backfilling and such other purposes, the groundwater conditions, difficulties or obstacles likely to be encountered, and other conditions affecting the work. The subsurface data is accurate only at the particular locations and times the subsurface explorations were made. No other warranty either expressed or implied by the Owner, Engineer or their agents is made as to the accuracy of the subsurface information and data shown on the drawings or presented in the Contract Documents.

## PART 2 – PRODUCTS

Not used.

## PART 3 – EXECUTION

Not used.

END OF SECTION

\\Wse03.local\WSE\Projects\MA\Millbury MA\2180463 - Round Pond\Specs\Division 00\00320 Subsurface Data\00320 - Subsurface Data.docx

**TABLE 1**  
**SUMMARY OF SEDIMENT ANALYTICAL RESULTS**  
**ROUND POND**  
**MILLBURY, MASSACHUSETTS**

Parameter	Units	COMM-97 Contaminant Levels for Soil Reuse		SAMPLE ID	
		Lined Landfill	Unlined Landfill	Comp-Sed-East	Comp-Sed-West
				3/29/2019	3/29/2019
EPH and PAHs					
C9-C18 ALIPHATICS	mg/kg	~	~	32	71
C19-C36 ALIPHATICS	mg/kg	~	~	85	330
C11-C22 AROMATICS	mg/kg	~	~	270	600
ACENAPHTHYLENE	mg/kg	~	~	0.77	1.6
ANTHRACENE	mg/kg	~	~	0.99	2.1
BENZO(A)ANTHRACENE	mg/kg	~	~	3.2	8.0
BENZO(A)PYRENE	mg/kg	~	~	5.3	12
BENZO(B)FLUORANTHENE	mg/kg	~	~	6.3	15
BENZO(G,H,I)PERYLENE	mg/kg	~	~	3.3	6.3
BENZO(K)FLUORANTHENE	mg/kg	~	~	2.2	5.2
CHRYSENE	mg/kg	~	~	3.7	8.9
DIBENZ(A,H)ANTHRACENE	mg/kg	~	~	0.94	2.0
FLUORANTHENE	mg/kg	~	~	6.0	16
FLUORENE	mg/kg	~	~	0.39	0.98
INDENO(1,2,3-CD)PYRENE	mg/kg	~	~	3.8	7.4
PHENANTHRENE	mg/kg	~	~	2.4	6.0
PYRENE	mg/kg	~	~	5.8	14
Metals					
ANTIMONY	mg/kg	~	~	< 2.2	< 2.1
ARSENIC	mg/kg	40	40	9.0	6.1
BARIUM	mg/kg	~	~	41	50
BERYLLIUM	mg/kg	~	~	< 0.22	< 0.21
CADMIUM	mg/kg	80	30	0.24	< 0.21
CHROMIUM	mg/kg	1000	1000	20	17
COPPER	mg/kg	~	~	27	16
LEAD	mg/kg	2000	1000	33	26
MERCURY	mg/kg	10	10	< 0.034	< 0.029
NICKEL	mg/kg	~	~	13	13
SELENIUM	mg/kg	~	~	< 4.4	< 4.1
SILVER	mg/kg	~	~	0.57	0.60
THALLIUM	mg/kg	~	~	< 2.2	< 2.1
VANADIUM	mg/kg	~	~	20	28
ZINC	mg/kg	~	~	31	45
Polychlorinated Biphenyls (PCBs)					
TOTAL PCB Aroclors	mg/kg	2	2	ND	ND
TOTAL PCB Congener	mg/kg	2	2	0.0048	0.012
Total Petroleum Hydrocarbons (TPH)					
TPH	mg/kg	5000	2500	1000	3800
Volatile Organic Compounds (VOCs)					
TOTAL VOCs	mg/kg	10	4	ND	ND
Semi-Volatile Organic Compounds (SVOCs)					
ACENAPHTHENE	mg/kg	~	~	< 0.44	2.3
ACENAPHTHYLENE	mg/kg	~	~	0.60	5.8
ANTHRACENE	mg/kg	~	~	< 0.44	13
BENZO(A)ANTHRACENE	mg/kg	~	~	2.1	44
BENZO(A)PYRENE	mg/kg	~	~	2.8	42
BENZO(B)FLUORANTHENE	mg/kg	~	~	3.3	48
BENZO(G,H,I)PERYLENE	mg/kg	~	~	1.7	12
BENZO(K)FLUORANTHENE	mg/kg	~	~	1.2	13
CHRYSENE	mg/kg	~	~	2.1	38
DIBENZ(A,H)ANTHRACENE	mg/kg	~	~	0.47	3.7
DIBENZOFURAN	mg/kg	~	~	< 0.88	2.6
FLUORANTHENE	mg/kg	~	~	2.8	90
FLUORENE	mg/kg	~	~	< 0.44	7.5
INDENO(1,2,3-CD)PYRENE	mg/kg	~	~	1.9	16
2-METHYLNAPHTHALENE	mg/kg	~	~	< 0.44	0.86
PHENANTHRENE	mg/kg	~	~	1.0	57
PYRENE	mg/kg	~	~	2.9	69
TOTAL SVOCs	mg/kg	100	100	22.9	465
General Chemistry Parameters					
TOTAL ORGANIC CARBON	mg/kg	~	~	16000	18000
% Solids	% Wt	~	~	75.6	82.4
SPECIFIC CONDUCTANCE	µmhos/cm	8000	4000	7.0	7.0
IGNITABILITY	present/absent	~	~	Absent	Absent
FLASHPOINT	°F	~	~	> 212 °F	> 212 °F
REACTIVE CYANIDE	mg/kg	~	~	< 3.9	< 3.9
REACTIVE SULFIDE	mg/kg	~	~	< 20	< 20
pH	pH Units	~	~	6.6	6.7

**NOTES:**

Sampled material is sediment and COMM-97 standards are provided for comparison purposes.

< = parameter is not detected above the laboratory reporting limit, shown.

~ = No standard available.

**BOLD**

Parameter is greater than or equal to the laboratory detection limit.

**BOLD**

Parameter is greater than or equal to comparison standard.

**ABBREVIATIONS:**

mg/kg = milligram per kilogram

% Wt = percent weight

µmhos/cm = micromhos per centimeter

ND = Not detected above the lab reporting limits

NT = Not tested

Table 2  
Soil Analytical Results  
Round Pond  
Millbury, MA

Parameter	Units	RCS-1	MCP - Method 1 Cleanup Standards	Comm 97 Contaminant Levels for Soil Reuse		TCLP Limits	SAMPLE ID (Depth)					SAMPLE ID (Depth)			
			S-1/GW-1	Lined Landfill	Unlined Landfill	TCLP	COMP-North	COMP-South	COMP-East	SB-01 (5-7')	SB-01 (9-10')	SB-02 (3-5')	SB-03 (8-9')	SB-04 (5-6')	SB-05 (5-6')
							1/9/2019	1/9/2019	1/9/2019	1/9/2019	1/9/2019	1/9/2019	1/9/2019	1/9/2019	1/9/2019
MCP 14 Metals															
ARSENIC	mg/kg	20	20	40	40	~	4	3.8	<2.3	NT	NT	NT	NT	NT	NT
BARIUM	mg/kg	1000	1000	~	~	~	89	76	82	NT	NT	NT	NT	NT	NT
BERYLLIUM	mg/kg	90	90	~	~	~	0.39	0.35	0.35	NT	NT	NT	NT	NT	NT
CADMIUM	mg/kg	70	70	80	30	~	0.42	0.3	<0.23	NT	NT	NT	NT	NT	NT
CHROMIUM	mg/kg	100	100	1000	1000	~	30	50	31	NT	NT	NT	NT	NT	NT
LEAD	mg/kg	200	200	2000	1000	~	110	20	6.8	NT	NT	NT	NT	NT	NT
MERCURY	mg/kg	20	20	10	10	~	0.061	<0.030	<0.032	NT	NT	NT	NT	NT	NT
NICKEL	mg/kg	600	600	~	~	~	22	26	19	NT	NT	NT	NT	NT	NT
VANADIUM	mg/kg	400	400	~	~	~	39	38	43	NT	NT	NT	NT	NT	NT
ZINC	mg/kg	1000	1000	~	~	~	54	85	33	NT	NT	NT	NT	NT	NT
TCLP															
LEAD	mg/kg	~	~	~	~	5	0.10	NT	NT	NT	NT	NT	NT	NT	NT
Polychlorinated Biphenyls (PCBs)															
TOTAL PCBs	mg/kg	1	1	2	2	~	<0.900	<0.837	<0.990	NT	NT	NT	NT	NT	NT
Total Petroleum Hydrocarbons (TPH)															
TPH	mg/kg	1000	1000	5000	2500	~	540	710	390	NT	NT	NT	NT	NT	NT
Volatile Organic Compounds (VOCs)															
ACETONE	mg/kg	6	6	~	~	~	7.9	1.8	0.77	<0.087	<0.11	NT	NT	<3.8	NT
TOTAL VOCs	mg/kg	~	~	10	4	~	7.9	1.8	0.77	<0.42323	<0.5474	NT	NT	<17.916	NT
Semi-volatile Organic Compounds (SVOCs)															
BENZO(A)ANTHRACENE	mg/kg	7	7	~	~	~	0.34	<0.19	<0.23	NT	NT	NT	NT	NT	NT
BENZO(A)PYRENE	mg/kg	2	2	~	~	~	0.36	0.2	<0.23	NT	NT	NT	NT	NT	NT
BENZO(B)FLUORANTHENE	mg/kg	7	7	~	~	~	0.45	0.25	<0.23	NT	NT	NT	NT	NT	NT
BENZO(G,H,I)PERYLENE	mg/kg	1000	1000	~	~	~	0.27	<0.19	<0.23	NT	NT	NT	NT	NT	NT
CHRYSENE	mg/kg	70	70	~	~	~	0.36	0.2	<0.23	NT	NT	NT	NT	NT	NT
FLUORANTHENE	mg/kg	1000	1000	~	~	~	0.57	0.28	<0.23	NT	NT	NT	NT	NT	NT
INDENO(1,2,3-CD)PYRENE	mg/kg	7	7	~	~	~	0.28	<0.19	<0.23	NT	NT	NT	NT	NT	NT
PHENANTHRENE	mg/kg	10	10	~	~	~	0.26	<0.19	<0.23	NT	NT	NT	NT	NT	NT
PYRENE	mg/kg	1000	1000	~	~	~	0.58	0.3	<0.23	NT	NT	NT	NT	NT	NT
TOTAL SVOCs	mg/kg	~	~	100	100	~	3.47	1.23	<23.34	NT	NT	NT	NT	NT	NT
Volatile Petroleum Hydrocarbons (VPH)															
UNADJUSTED C9-C12 ALIPHATICS	mg/kg	~	~	~	~		NT	NT	NT	52	<15	43	<12	96	<19
C9-C12 ALIPHATICS	mg/kg	1000	1,000	~	~		NT	NT	NT	17	<15	15	<12	49	<19
C9-C10 AROMATICS	mg/kg	100	100	~	~		NT	NT	NT	35	<15	28	<12	47	<19
TOTAL VOCs	mg/kg	~	~	10	4		NT	NT	NT	<0.82	<0.91	<0.685	<0.72	<0.89	<1.155
TOTAL SVOCs	mg/kg	~	~	100	100		NT	NT	NT	<0.34	<0.38	<0.29	<0.3	<0.37	<0.48
TOTAL XYLENES	mg/kg	100	400	~	~		NT	NT	NT	<0.208	<0.226	<0.167	<0.18	<0.224	<0.287
General Chemistry Parameters															
REACTIVE CYANIDE	mg/kg	~	~	~	~	~	<3.9	<4.0	<3.9	NT	NT	NT	NT	NT	NT
REACTIVE SULFIDE	mg/kg	~	~	~	~	~	<20	<20	<20	NT	NT	NT	NT	NT	NT
PH	pH Units	~	~	~	~	~	7.4	7.6	7	NT	NT	NT	NT	NT	NT
% Solids	% Wt	~	~			~	76	85.5	73.9	84.1	76	87.7	87.8	77.5	66.4
SPECIFIC CONDUCTANCE	µmhos/cm	~	~	8000	4000	~	17	15	14	NT	NT	NT	NT	NT	NT
IGNITABILITY	present/absent	~	~	~	~	~	Absent	Absent	Absent	NT	NT	NT	NT	NT	NT

NOTES:

<b>BOLD</b>	Parameters are equal to or exceed the laboratory reporting limit.
<b>BOLD</b>	Parameters are equal to or exceed the Method 1 Cleanup Standards.
<b>BOLD</b>	Parameters are equal to or exceed the MCP Reportable Concentrations (RCs).
<b>BOLD</b>	Parameter equal to or exceeds the Comm 97 Contaminant Levels for Soil Reuse.

ND = Not detected above the lab reporting limits shown.

~ = No Method 1 Standard available.

ABBREVIATIONS:

% Wt = percent weight

µmhos/cm = micromhos per centimeter

mg/kg = milligram per kilogram

NT = Not tested

TCLP = Toxicity characteristic leaching procedure

**Round Pond Retaining Wall Reconstruction  
Millbury, Massachusetts  
Weston & Sampson Project No. 2180463**

December 28, 2018

Town of Millbury  
c/o Mr. Carl Myers, PE  
Weston & Sampson Engineers, Inc.  
427 Main Street, Suite 400  
Worcester, MA 01608

**RE: Geotechnical Engineering Report  
Round Pond Retaining Wall Reconstruction  
Millbury, Massachusetts**

## **INTRODUCTION**

Weston & Sampson Engineers, Inc. (Weston & Sampson) is pleased to present this geotechnical engineering report for the proposed reconstruction of the Round Pond retaining wall along West Main Street in Millbury, Massachusetts. This geotechnical report describes the results of the subsurface explorations and provides geotechnical recommendations for design and construction of the proposed retaining wall reconstruction. In addition to wall reconstruction, an existing 60-inch Reinforced Concrete Pipe (RCP) penetrating the retaining wall will be replaced in kind. Recommendations for design and construction of the 60-inch RCP were not included in our scope of work.

We have prepared this report for use by the Town of Millbury and the design and construction teams for this project and this site only. For important information on the use of this report, please refer to the **Limitations** section of this report.

## **EXISTING CONDITIONS**

The Round Pond retaining wall is located along the south shoreline of Round Pond in Millbury, Massachusetts, as shown in *Figure 1 – Site Locus*. The retaining wall reconstruction project consists of an approximately 115 ft. long section of wall that retains grades along the north side of West Main Street and along a gravel access drive located to the south of Round Pond, as shown in *Figure 2 – Site Plan*. The existing retaining wall is constructed of dry-stacked (i.e., unmortared) stone masonry with concrete coping and a steel handrail along the full length of the wall. A 60-inch diameter RCP carrying Singletary Brook under West Main Street penetrates the wall approximately 40 ft. east of the gravel access drive. Existing exposed wall heights range from approximately 4 to 6 ft. as measured from the pond mudline to the top of wall. The dimensions and type of foundations supporting the existing retaining wall are unknown.

The existing retaining wall is in disrepair and the majority of the wall is no longer in a serviceable condition. The east end of the wall is in the worst condition with most of the upper portion of the wall (including the concrete coping and handrail) collapsed. Much of the remaining portion of the wall is rotated and/or displaced towards Round Pond with localized voids that have developed behind the wall and areas of stone masonry that have collapsed into the pond. Retained soil between the roadway and wall is heavily eroded due to runoff from West Main Street and modular concrete “jersey barriers” and plastic traffic barrels have been placed along the north side of Main Street to maintain traffic behind the wall. Existing underground utilities located behind the retaining wall along West Main Street include a gas line, storm sewer and sanitary sewer.

The existing 60-inch RCP carrying Singletary Brook has displaced and joints of the pipe have separated resulting in a gap of several inches between adjoining sections of pipe. The surface of the RCP is spalling with sections of exposed rebar.

Surface grades behind the retaining wall range from approximately El. 545 ft. to El. 547 ft. and generally increase gently from east to west along West Main Street, and to the south of the wall. At the time of our explorations, grades along Main Street behind the retaining wall were approximately 4 to 5 ft. above the water level in Round Pond. Elevations described herein reference the North American Vertical Datum of 1988 (NAVD88).

## PROPOSED CONDITIONS

We understand that an approximately 115 ft. portion of existing retaining wall along West Main Street will be removed and replaced. The limits of the retaining wall reconstruction are shown in *Figure 2 – Site Plan*. Portions of wall on each side of the new wall are not part of the current project.

The proposed retaining wall will consist of a cemented stone masonry gravity wall in accordance with the MassDOT Construction Standard Drawing E 302.2.0, included as **Attachment A**. The proposed wall will include a 4 percent batter along its front face and is planned to be supported on a conventional shallow spread footing foundation. The proposed height of the retaining wall will be 9 ft. from the bottom of footing at El. 537.5 ft. to the top of wall at El. 546.5 ft. Concrete or granite coping will be placed along the top of wall.

In addition to the retaining wall reconstruction, the existing 60-inch RCP culvert carrying Singletary Brook beneath West Main Street will be replaced with a new 60-inch RCP at the same location. Due to the preliminary nature of the design at the time of this report, design drawings and structural loads were not available.

## SUBSURFACE CONDITIONS

### Geologic Setting

Based on information available from the Massachusetts Bureau of Geographic Information (MassGIS), mapped surficial geology conditions at the site include artificial fill along the south side of Round Pond overlying a thin layer of glacial till. Bedrock at the site is mapped by the United

States Geological Survey (USGS) as schist and gneiss of the Nashoba Formation. The nearest mapped bedrock outcrop is approximately 150 ft. north of the site.

### **Subsurface Explorations**

Weston & Sampson completed a subsurface exploration program consisting of three test borings on September 25, 2018. Approximate exploration locations are shown in *Figure 2 – Site Plan*.

Three borings (B-1 through B-3) were advanced to depths ranging from 13 to 16.5 ft. by Technical Drilling Services, Inc. of Sterling, MA using a truck-mounted drill rig and hollow stem auger drilling methods. Standard penetration tests (SPTs) were conducted in each boring by driving a 24-inch long by 1-3/8-inch inside diameter (2-inch outside diameter) split spoon sampler with blows from a 140 lb. automatic hammer falling 30 inches per blow. Sampling intervals ranged from continuous (every 2 ft.) to standard (every 5 ft.). The blow counts for the middle 12 inches of sampler penetration are combined and designated as the SPT blow count, which is correlated to soil consistencies and engineering soil properties. Sampler refusal (or SPT refusal) is defined as greater than 100 hammer blows for less than 6 inches of sampler penetration. Auger or drilling refusal is defined as no discernable auger advancement over a period of approximately 5 minutes.

Weston & Sampson geotechnical engineering staff observed the borings and prepared logs for each exploration. Subsurface conditions encountered in the explorations are described in the following sections and in the boring logs included in *Attachment B*.

### **Subsurface Conditions**

Subsurface conditions encountered in the explorations were generally consistent with the mapped surficial geology and consisted of a surficial layer of asphalt concrete (AC) pavement overlying fill over a layer of organic silt and glacial till. The major strata encountered in the borings are described below. Variations may occur and should be expected outside of the exploration locations.

**Fill** - Loose to very dense undocumented FILL was encountered in all borings to depths between approximately 8 to 10.5 ft. The fill typically consisted of gray, fine to coarse SAND with varying amounts of gravel (some to gravelly) and silt (trace to little) or fine to coarse GRAVEL with varying amounts of sand (some to sandy) and silt (trace to silty). Within the fill layer, auger grinding was observed in B-1 and split spoon refusal was encountered in B-3, possibly indicating the presence of cobbles and/or boulders.

*A petroleum-like odor and an oily sheen were noted in soil samples obtained at depths ranging from approximately 3 to 7 ft. in B-3.*

**Organic Silt** - A layer of ORGANIC SILT up to approximately 1 ft. thick was encountered beneath the fill to a depth of approximately 9.5 ft. in B-2 and B-3. This layer typically consisted of brown to dark brown, ORGANIC SILT with varying amounts of sand (little to sandy), and trace gravel. Wood fragments were observed in samples from the organic silt layer in B-2.

**Glacial Till** – Medium dense to very dense glacial till was encountered beneath the organic silt and fill in all borings. The glacial till was encountered at depths between 9.5 and 10.5 ft. in the borings and extended to the depths explored. The glacial till consisted of brown, fine to coarse GRAVEL with varying amounts of sand (little to sandy) and silt (trace to some) or fine to coarse SAND with some gravel and little silt. SPT refusal was encountered within the glacial till in B-1 and B-3.

**Refusal and Boulders** – Auger refusal was encountered at a depth of 16.5 ft. in B-1, 13.0 ft. in B-2, and 13.5 ft. in B-3. Auger grinding was also observed at depths of 2.5 ft. and 4.0 ft. in B-1 and at 13.0 ft. in B-3. SPT refusal was encountered in B-1 at 13.3 ft. and 15.0 ft. and in B-3 at 7.8 ft. and 12.3 ft. The observed auger grinding and split spoon and auger refusals may indicate the presence of cobbles, boulders, and/or bedrock.

**Groundwater** – Groundwater was observed at depths of approximately 3.5 ft. in B-1 and B-2 and 4 ft. in B-3 based on wet soil samples and measurements in the borehole after drilling. Observed groundwater elevations in the borings were similar to the water level in Round Pond at the time of drilling.

Groundwater levels should be expected to fluctuate with season, variations in precipitation, construction in the area, water levels in Round Pond, and other factors. Perched groundwater conditions could exist close to the ground surface, especially during and after extended periods of wet weather.

## GEOTECHNICAL CONSIDERATIONS

### General

Geotechnical considerations for the proposed retaining wall reconstruction and culvert replacement include the presence of existing undocumented (non-engineered) fill and organic silt, possible environmental contamination of existing retaining wall backfill, temporary excavation support, cofferdams, and dewatering. Discussion of these considerations as well as geotechnical recommendations for design and construction of the proposed retaining wall are provided in the following sections.

Existing fill was observed in all borings to depths up to 10.5 ft. Organic silt was encountered underlying the fill in B-2 and B-3 to a depth of 9.5 ft. Non-engineered fill and organic silt are not suitable for support of foundations due to the risk of differential settlement and should be completely removed to expose the underlying glacial till. Existing fill and other unsuitable soils (such as soft, loose, or organic soils) should be completely removed and replaced with structural fill within the entire zone-of-influence (ZOI) beneath wall footings and the new culvert.

Petroleum-like odors and an oily sheen were noted during drilling of B-3 at depths ranging from approximately 3 to 7 ft. Weston & Sampson has not been retained to provide environmental consultation services for the project. The Town should engage an environmental consultant to evaluate site conditions prior to construction.

Excavations up to 10.5 ft. will be required for the new retaining wall and culvert replacement which will extend below the water level in Round Pond and the adjacent groundwater table. Temporary excavation support, cofferdams, and dewatering will be required for construction of the retaining wall.

Stormwater runoff from West Main Street should be collected and diverted away from the retaining wall areas during construction to prevent erosion of temporary slopes and to minimize flow of water into excavations. Additional construction considerations and recommendations for earthwork and utility construction are provided in the **Construction Recommendations** section below.

## GEOTECHNICAL DESIGN RECOMMENDATIONS

**Foundations** - Based on the subsurface conditions encountered in the explorations, the proposed retaining wall can be supported using conventional shallow foundations bearing on native, inorganic, undisturbed, medium dense (or denser) glacial till or compacted structural fill overlying glacial till. Temporary excavation support, cofferdams, and groundwater control will be required to remove fill and organics and prepare subgrades for shallow foundations. Support of the existing walls to remain will be required for over-excavation that extends into the ZOI beneath existing footings.

Footings should be designed in accordance with the provisions of the current edition of the American Association of State Highway and Transportation Officials (AASHTO) LRFD Bridge Design Specifications and should be embedded at least 4 feet below the nearest proposed adjacent ground surface exposed to freezing. New footings adjacent to existing footings should be designed to match the bottom-of-footing elevation of the existing footing. Recommendations for footing subgrade preparation, evaluation, and protection are provided in the **Construction Recommendations** section in this report.

Following over-excavation to remove the unsuitable fill and organic silt from within the ZOI of new footings, the resulting excavations should be backfilled with compacted Structural Fill to proposed subgrade elevation. The zone-of-influence extends horizontally away from the bottom outside edges of footings and other rigid site improvements a horizontal distance of 2 ft., then down and away at a 1H:1V (Horizontal:Vertical) slope to the intersection with undisturbed native soil.

Based on preliminary information provided by the Structural Engineer, the retaining wall design footing width is 5.75 ft. Footings with a width of 5.75 ft. bearing on subgrades described above and prepared as recommended herein can be designed using a factored bearing resistance of 6,000 pounds per square foot (psf) for the Strength Limit State loading condition based on an applied resistance factor of 0.45. For the Extreme Limit State we recommend using a factored bearing resistance of 13.4 kips per square foot (ksf) based on an applied resistance factor of 1.0. Total and differential settlements of less than 1-inch and ½-inch, respectively, are anticipated at the Service Limit State for retaining wall footings with a width of 5.75 ft. provided they are constructed as recommended herein.

## Retaining Walls

The following recommendations are based on the assumptions that retaining walls will consist of stone masonry gravity walls, the natural site soils consist of medium dense (or denser) native glacial till and the wall heights are 10 ft. or less. Retaining walls should be designed in accordance with Section 11.6 of the AASHTO LRFD Bridge Design Specifications. Sliding stability and overturning should be evaluated at the Strength Limit State using a resistance factor of 0.80 per AASHTO Table 10.5.5.2.2-1.

Lateral Earth Pressures - The lateral earth pressures used for wall design should be in accordance with the latest edition of AASHTO Section 3.11.5.1 using active earth pressure coefficients based on a soil internal friction angle of 34 degrees, a total unit weight of soil of 125 pounds per cubic foot (pcf) for Structural Fill backfill compacted as described herein. An interface friction angle of 25 degrees can be used for soil against formed concrete. Groundwater should be assumed to be equal to the water level of Round Pond. A buoyant unit weight of soil of 62.6 pcf can be assumed for soils below the water table. Additional lateral pressures due to vehicular traffic surcharge loads should be applied as required by AASHTO Table 3.11.6.4.2. Wall rotation associated with development of active pressures is expected to be approximately 1 percent of the expected wall height.

We recommend that passive pressures acting on the base of the wall be ignored due to the possibility of future removal of toe material through scour, dredging activities, or other means. Driving forces acting on the wall can be resisted by friction along the base of the wall footing using a friction coefficient of 0.45 for footings bearing on native glacial till or crushed stone.

Drainage – All retaining walls should include drainage behind the wall unless designed to resist hydrostatic pressures. A retaining wall drain should consist of a minimum 18-inch wide (horizontal measure) zone of crushed, free-drainage gravel with less than five-percent fines (such as washed crushed stone) with the stone fully encased with a non-woven filter fabric. Weep holes are recommended to assist with drainage of water from behind the wall. We recommend that weep holes be spaced approximately 10 ft. on center and be placed below the water level in Round Pond to provide hydraulic connectivity between Round Pond and water behind the wall.

Backfill – Behind the drainage zone described above, retaining walls should be backfilled with clean, imported, granular soil with less than 10 percent fines. This material should also be compacted to a minimum of 92 percent relative to ASTM D1557 (modified proctor). Within 3 ft. of the wall, backfill should be compacted to not more than 90 percent relative to ASTM D1557 using hand-operated equipment.

Retaining structures typically rotate and displace up to 1 percent of the wall height during development of active pressures behind the wall. We therefore recommend that construction of improvements adjacent to the top of walls be delayed until approximately two weeks after wall construction and backfill.

## Seismic Design

Seismic design for the proposed retaining wall should be in accordance with Section 11.6.5 of the AASHTO LRFD Bridge Design Specifications. Based on the data from the borings conducted at the site, the subsurface profile is representative of Site Class D. We recommend the following seismic design parameters for the site:

Parameter	Value
Peak ground acceleration, PGA	0.065g
Short-period spectral acceleration, $S_s$	0.135g
Long-period spectral acceleration, $S_1$	0.037g
Spectral acceleration coefficient, $A_s$	0.104g
Short period acceleration coefficient, $S_{DS}$	0.216g
1-sec period acceleration coefficient, $S_{D1}$	0.089g
Seismic Design Category	A
Seismic Active Pressure Coefficient, $K_{AE}$	0.563

Based on the soil and groundwater conditions encountered at and below foundation bearing elevations, we anticipate the existing subsurface soils are not susceptible to liquefaction.

## CONSTRUCTION RECOMMENDATIONS

The following sections present recommendations and considerations for the proposed construction.

### Earthwork Considerations

Based on our understanding of proposed conditions, excavation will be required for foundation construction, removal of existing features, subgrade preparation, and utility relocations, and backfilling will be required for fill placement where unsuitable foundation soils are removed and as retaining wall and culvert backfill. Excavations may encounter AC pavement, fill and native soils consisting of organics and glacial till. Cobbles and boulders should be anticipated to be encountered in the existing fill.

Cofferdams and dewatering are anticipated to be required for demolition of existing structures and construction of the proposed retaining wall and culvert. Dewatering will be required in these excavation areas as described below.

Excavation support systems are anticipated to be required and should be the responsibility of the Contractor and designed by a Professional Engineer licensed in the Commonwealth of Massachusetts. All excavations should be made in accordance with applicable OSHA and local safety regulations.

### **Site Preparation**

Prior to earthwork construction, all AC pavement, vegetation, existing structures and utilities scheduled for removal or replacement should be removed from the proposed construction areas. Utilities to remain in place should be adequately supported during construction and care should be taken not to cause damage. Existing utilities within and adjacent to the site should be monitored by the Contractor for horizontal and vertical movement throughout construction using survey methods as required by the contract documents.

Site preparation for earthwork will require removal of existing pavement and unsuitable (e.g. soft, disturbed, or surficial organic) soils from all proposed foundation, pavement, and fill areas, and a 5 ft. perimeter around those areas. Undocumented fill and other unsuitable soils (as determined by the geotechnical engineer based on visual observations) should be removed from within the ZOI beneath new footings, and other structural site improvements that would be adversely affected by differential settlement.

Excavations required for site preparation should be brought back to grade with Structural Fill as recommended below. In general, the sides of these excavations should be sloped back flatter than 1.5H:1V to allow proper compaction of the interface between existing soil and new fill. If decommissioned, existing utilities should be removed or properly abandoned using Structural Fill, controlled density fill (CDF), or grouting in such a manner to eliminate voids.

### **Temporary Excavation Support**

Due to the proximity of West Main Street, excavations greater than about 4 ft. are expected to require temporary excavation support. All excavations should comply with applicable local, state, and federal safety regulations. The responsibility for excavation safety and stability of temporary construction slopes lies solely with the contractor, who is in the best position to choose a system that fits the overall plan of operation.

Stockpiled (excavated) materials should be placed no closer than a distance equal to the depth of the excavation or 4 ft. from the edge of an excavation, whichever is greater.

Bottom stability for dewatered conditions will need to be evaluated in the temporary support of excavation design. Temporary support of excavation design should accommodate over-excavation of fill and organic material. Once the final excavation and shoring plans are complete, the plans and design submittals should be reviewed by Weston & Sampson for conformance with the design intent and our geotechnical recommendations.

### **Dewatering**

Temporary cofferdams and dewatering will be required during construction of the retaining wall foundations. The Contractor should be prepared to manage and control infiltrating groundwater and surface water from Round Pond during foundation excavation as well as control surface water from entering excavations to provide a dry and stable subgrade.

Cofferdams and dewatering methods will depend on several factors, including depth of excavation, localized soil conditions encountered, time of year performed, size of the open excavation and the length of time the excavation is left open. We recommend use of a temporary

gravity dam over an embedded cofferdam system (such as sheet piles) due to anticipated subsurface conditions.

The dewatering system should be capable of lowering the groundwater table at least 2 ft. below the anticipated excavation depths and be kept operational until fill placement and compaction have been completed to a level of at least 2 ft. above the groundwater table elevation.

The Contractor should be responsible for selecting dewatering methods based on their proposed methods and equipment used for excavation to achieve the desired objectives (that is, maintaining a dry condition at the bottom of the excavation during installation of structures, preparation of stable subgrades, etc.). We anticipate that multiple sump pumps, or a well point system will be required to control groundwater during foundation construction. Local sump pumps should be surrounded by  $\frac{3}{4}$ -inch crushed stone wrapped in non-woven filter fabric to reduce migration of fines.

Dewatering efforts must satisfy requirements of local, state and federal environmental and conservation authorities.

### **Trenches**

Utility trench excavations should be completed as recommended above. Pipe bedding should be installed in accordance with the pipe manufacturers' recommendations. If groundwater seepage or standing water is present in the base of utility trench excavations, we recommend over-excavating the trench by 12 to 18 inches and placing trench stabilization material over the base. Trench stabilization material should consist of well-graded, crushed stone or crushed gravel with a maximum particle size of 4 inches and be free of deleterious materials. The percent passing the #200 sieve should be less than 5 percent by weight when tested in accordance with ASTM C117. It may be necessary to include a filter fabric separation layer between the stabilization material and the bottom and sides of excavations.

Trench backfill above the pipe zone should consist of well-graded, angular crushed stone or sand fill with less than 10 percent passing a #200 sieve. Trench backfill should be compacted to 92 percent relative to ASTM D1557 and to 95 percent of maximum dry density as determined by ASTM D1557 within 3 ft. of finished grades. Construction of hard surfaces, such as slabs, sidewalks, or pavement, should not occur within two weeks of trench backfilling.

### **Subgrade Preparation and Protection**

Based on the subgrade conditions described above, we recommend that the project budget and schedule include contingencies for over-excavation and replacement of existing non-engineered fill and organic silt. Soft and/or disturbed areas will require over-excavation and backfilling with compacted angular crushed stone or compacted structural fill. A geosynthetic separation layer between the excavation subgrade and crushed stone backfill may also be required. We recommend that a geosynthetic used for stabilization consist of a woven geosynthetic with an AOS of #70 to #100 sieve, and a minimum puncture resistance of at least 120 pounds (such as Mirafi FW700 or equivalent).

Fill should not be constructed over frozen subgrades. All frozen and frost penetrated materials should be removed prior to placement and compaction of overlying materials. If foundation

construction occurs during freezing conditions, insulating blankets, heaters, or other suitable measures should be employed to prevent foundation subgrades from freezing until the foundations are backfilled sufficiently to prevent frost from reaching the footing subgrades.

Soils containing more than trace amounts of silt are highly susceptible to softening and disturbance by construction activity during wet or freezing weather. Construction traffic should not operate directly on subgrades if prone to loosening, disturbance, and softening.

Subgrade protection is the responsibility of the Contractor and precautions and protective measures appropriate for the weather and traffic conditions during construction should be used during earthwork and foundation construction to preserve the integrity and condition of subgrades. Earthwork during wet periods will require extra effort and caution by the Contractor. Pondered water should be pumped out of excavations and subgrade areas immediately. To reduce disturbance and loosening of sandy soils due to foot traffic during construction, a few inches of crushed stone can be placed and compacted at the base of foundation excavations. Weston & Sampson should be contacted to evaluate subgrades during earthwork activities.

### **Fill**

Imported, well-graded sand and gravel fill with less than approximately 10 percent fines (such as MassDOT M1.03.0-type B Gravel Borrow or M2.01.7 Dense Graded Crushed Stone) or crushed stone (such as MassDOT M2.01.0) is recommended for use as Structural Fill within the ZOI beneath proposed foundations and the culvert pipe. On-site materials meeting the gradation requirements for the aforementioned MassDOT materials and free of organics, contamination (including metals, VOCs, SVOCs, etc.), and other deleterious materials may be acceptable for use as Structural Fill if approved by the geotechnical engineer.

Fill should be placed in maximum 10-inch thick lifts (measured prior to compaction) with each lift compacted to at least 95 percent of maximum dry density as determined by ASTM D1557 (modified proctor) for the specific fill material. In confined areas, and where only hand-guided compaction equipment can be used, the lift thickness should be reduced to not more than 6 inches.

Crushed stone should be used for drainage behind the retaining wall. Crushed stone may also be used as Structural Fill in wet areas below foundations if fully wrapped in a non-woven filter fabric (such as Mirafi 160N or equivalent). Crushed stone shall consist of uniformly blended, durable crushed rock or durable crushed gravel stone, free from ice and snow, sand, clay, loam, or other deleterious or organic material and meet the specification of MassDOT M2.01.1. Crushed stone should be placed and compacted until dense and well-keyed. Areas contaminated with fines or debris should be removed and replaced with clean stone.

### **LIMITATIONS**

We have prepared this report for use by the Town of Millbury and the design and construction teams for this project and site only. The information herein can be used for bidding or estimating purposes but should not be construed as a warranty of subsurface conditions. We have made observations only at the aforementioned locations and only to the stated depths. These observations do not reflect soil types,

strata thicknesses, water levels or seepage that may exist between observations. For important information on the use of this report, please refer to **Attachment C** for the document titled “*Important Information about This Geotechnical-Engineering Report.*”

We should be retained to observe site preparation, subgrade preparation, and fill placement and compaction. Earthwork observation and quality control testing of fill and backfill densities is critical throughout construction. We should also be retained to review final design and specifications to see that our recommendations are suitably followed. If any changes are made to the anticipated locations, loads, grading, configurations, or construction timing, our recommendations may not be applicable, and we should be consulted. We should also review Contractor prepared submittals for temporary excavation support and dewatering.


The preceding recommendations should be considered preliminary, as actual soil conditions may vary. For our recommendations to be final, we should be retained to observe actual subsurface conditions encountered. Our observations will allow us to interpret actual conditions and adapt our recommendations if needed.

Within the limitations of scope, schedule and budget, this geotechnical report has been completed in accordance with the generally accepted practices in this area at the time this report was prepared. No warranty, expressed or implied, is given.

It has been a pleasure assisting you with this project and we look forward to our continued involvement. Please call if you have any questions.

Sincerely,

WESTON & SAMPSON ENGINEERS, INC.



Matthew J. Zanchi, EIT  
Engineer II



Stephen T. Spink, PE  
Geotechnical Project Manager



Christopher Palmer, PE  
Senior Technical Leader - Geotechnical Engineering

**Attachments:**

Figure 1 – Site Locus

Figure 2 – Site Plan

Attachment A – Cemented Stone Masonry Wall Section (MassDOT Standard D 302.2.0)

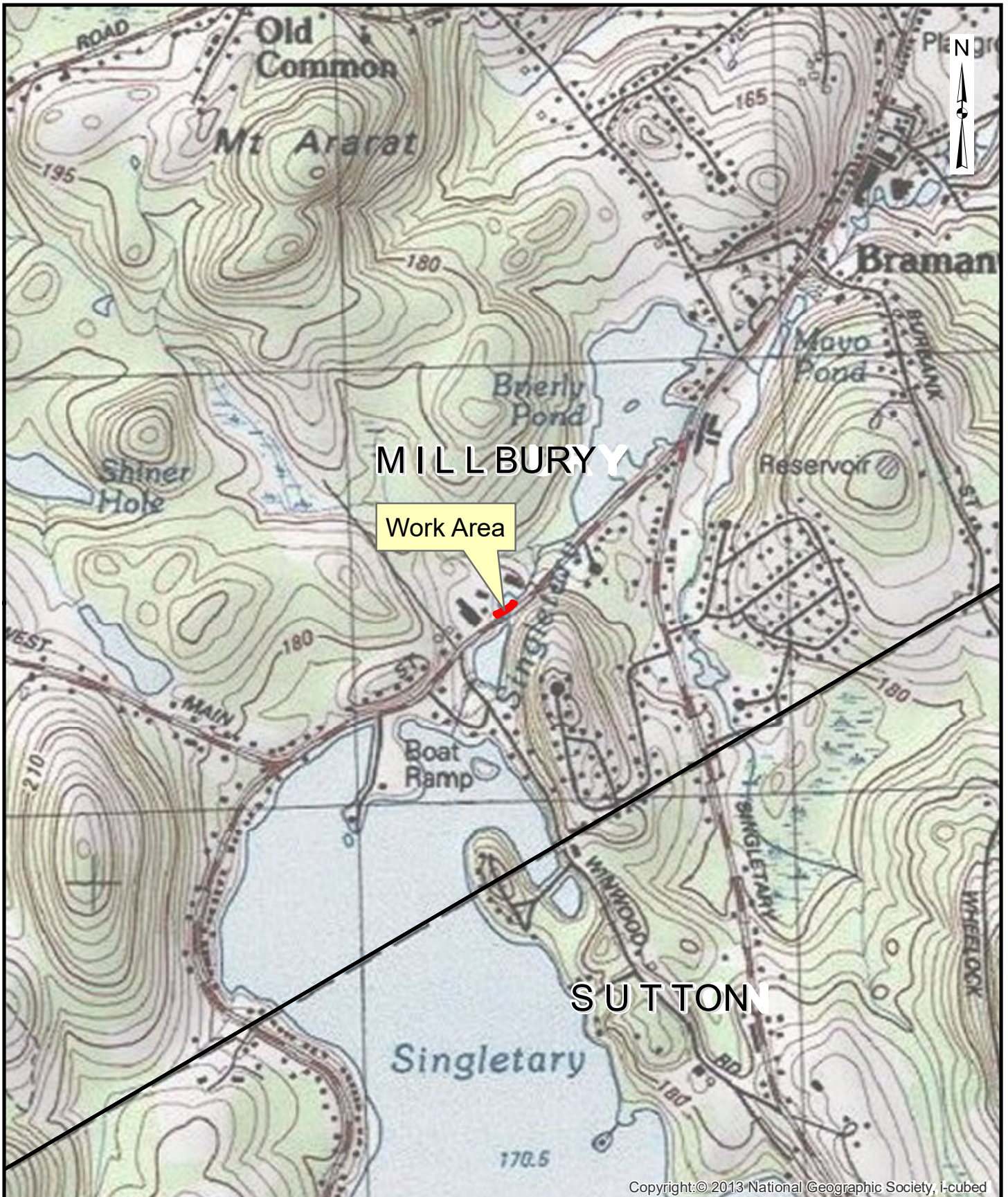
Attachment B – Boring Logs (3 pages)

Attachment C – Important Information about This Geotechnical-Engineering Report (2 pages)

MJZ:STS:CJP

P:\MA\Millbury MA\2180463 - Round Pond\Geotechnical\Report\DRAFT Geotech Letter Report - Round Pond Retaining Wall  
2018.12.28.doc

## FIGURES




Copyright:© 2013 National Geographic Society, i-cubed

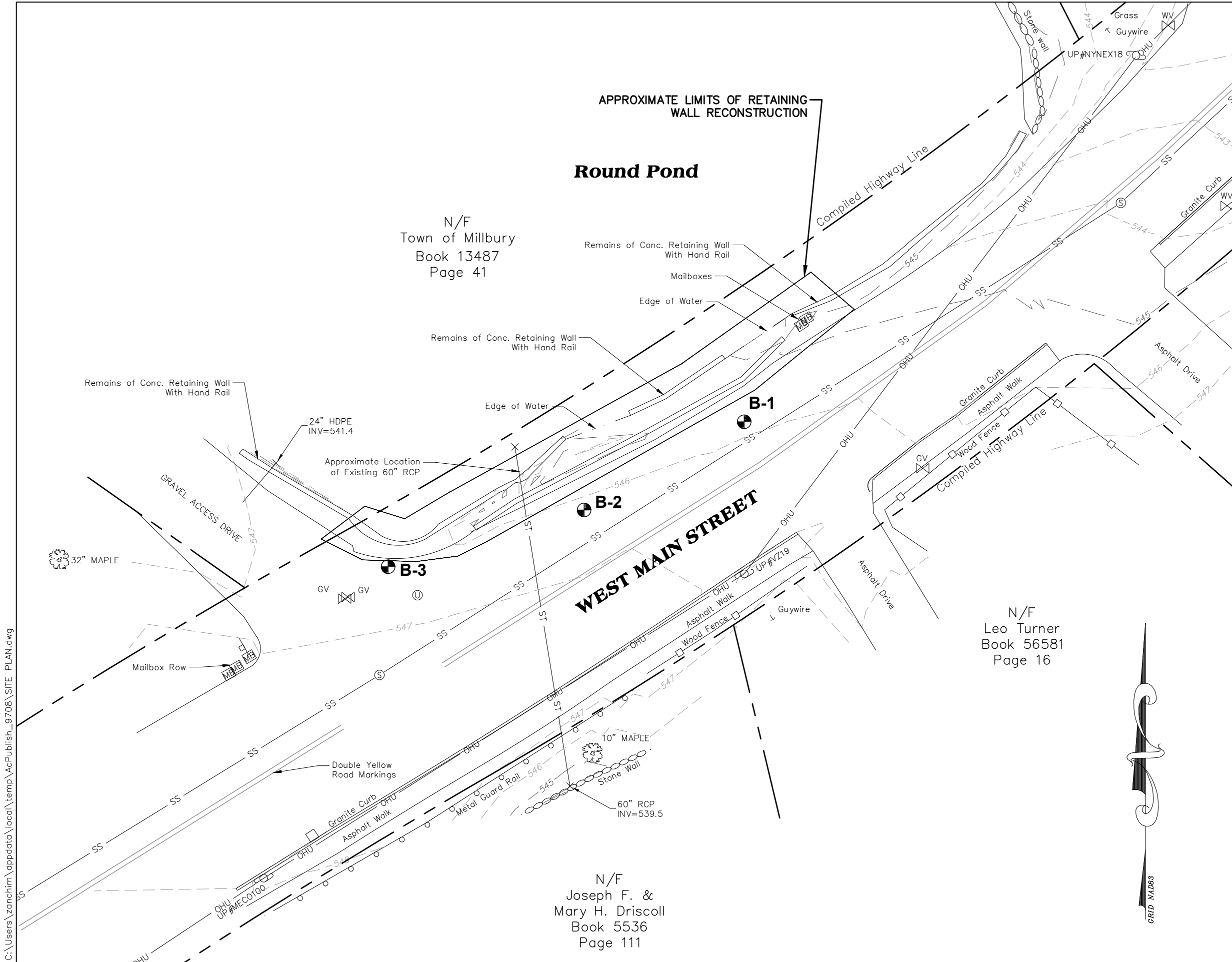
**FIGURE 1**  
**Round Pond**  
**Millbury, Massachusetts**

**Locus Map**

 Work Area


600 0 600  
  
 Scale In Feet

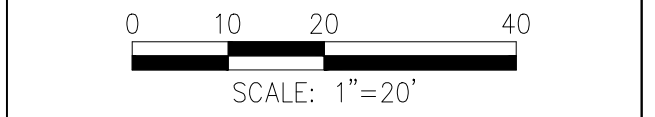
Weston & Sampson<sup>SM</sup>



- NOTES:**
1. THIS FIGURE IS BASED ON AN EXISTING CONDITIONS SURVEY PLAN PREPARED BY WESTON & SAMPSON ENGINEERS, INC. DATED SEPTEMBER 2018.
  2. ELEVATIONS REFERENCE THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
  3. BORINGS B-1, B-2, AND B-3 COMPLETED BY TECHNICAL DRILLING SERVICES OF STERLING, MA AND OBSERVED BY WESTON & SAMPSON ENGINEERS, INC. ON SEPTEMBER 25, 2018.
  4. EXPLORATION LOCATIONS SHOWN ARE BASED ON FIELD MEASUREMENTS RELATIVE TO EXISTING SITE FEATURES.
  5. UNDERGROUND UTILITY LOCATIONS SHOWN ARE BASED ON UTILITY EVIDENCE VISIBLE AT GROUND SURFACE AND RECORD DRAWINGS.

**LEGEND:**

 **B-1** BORING DESIGNATION AND APPROXIMATE LOCATION.



**FIGURE 2  
SITE PLAN**

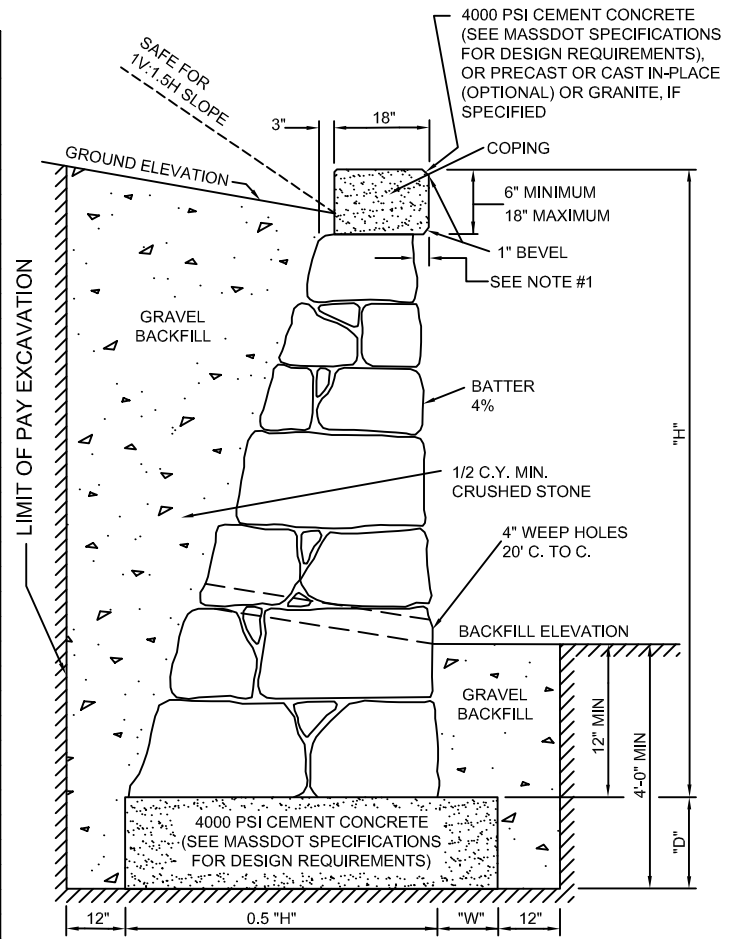
ROUND POND RETAINING WALL  
RECONSTRUCTION  
MILLBURY, MA

DESIGNED BY: MJZ	CHECKED BY: CJP	DECEMBER 2018
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**Weston & Sampson** SM

**ATTACHMENT A**  
Cemented Stone Masonry Wall Section  
(MassDOT Standard D 302.2.)

H (FT)	W (FT)	D (FT)	CONCRETE MASONRY FOOTING		STONE MASONRY EXCLUDING COPING	
			SECTION AREA (SQ. FT.)	VOLUME PER UNIT LENGTH (CU.YD./LIN.FT)	SECTION AREA (SQ. FT.)	VOLUME PER UNIT LENGTH (CU.YD./LIN.FT)
5.0	0.75	1.25	4.06	0.150	9.00	0.333
5.5			4.38	0.162	10.63	0.394
6.0			4.69	0.174	12.38	0.458
6.5			5.00	0.185	14.16	0.524
7.0			5.31	0.197	16.05	0.594
7.5			5.63	0.208	18.06	0.669
8.0	1.0	1.5	7.50	0.278	20.16	0.747
8.5			7.88	0.292	22.40	0.829
9.0			8.25	0.306	24.75	0.917
9.5			8.63	0.319	27.22	1.008
10.0	1.2	2.0	12.40	0.459	29.80	1.104
10.5			12.90	0.478	32.50	1.204
11.0			13.40	0.496	35.28	1.307
11.5			13.90	0.515	38.21	1.415
12.0			14.40	0.533	41.25	1.528
12.5			14.90	0.552	44.41	1.645
13.0	1.5	2.5	20.00	0.741	47.68	1.766
13.5			20.63	0.764	51.07	1.891
14.0			21.25	0.787	54.53	2.020
14.5			21.88	0.810	58.14	2.153
15.0			22.50	0.833	61.88	2.292
15.5			23.13	0.856	65.72	2.434
16.0			23.75	0.880	69.68	2.581
16.5	1.8	3.0	30.15	1.117	73.76	2.732
17.0			30.90	1.144	77.90	2.885
17.5			31.65	1.172	82.21	3.045
18.0			32.40	1.200	86.63	3.208
18.5			33.15	1.228	91.38	3.384
19.0			33.90	1.256	96.25	3.565
19.5			34.65	1.283	101.25	3.750
20.0			35.40	1.311	106.38	3.940
20.5			36.15	1.339	111.63	4.134
21.0			36.90	1.367	117.00	4.333
21.5			37.65	1.394	122.50	4.537
22.0			38.40	1.422	128.13	4.745
22.5			39.15	1.450	133.88	4.958
23.0			39.90	1.478	139.75	5.176
23.5			40.65	1.506	145.75	5.398
24.0			41.40	1.533	151.88	5.625
24.5			42.15	1.561	158.13	5.856
25.0			42.90	1.589	164.50	6.093
25.5			43.65	1.617	171.00	6.333
26.0			44.40	1.644	177.63	6.579
26.5			45.15	1.672	184.38	6.829



COPING TO BE PRECAST CONCRETE OR GRANITE OF UNIFORM DEPTH FOR THE ENTIRE LENGTH. DEPTH OF CONCRETE TO BE 1/12 THE AVERAGE "H" WITHIN THE LIMITS SHOWN. DEPTH OF GRANITE TO BE AS SHOWN ON THE PLANS, 6" OR 9".

FOR CHAIN LINK FENCE ON TOP OF WALL, THE COPING SHALL BE CONCRETE CAST-IN-PLACE WITH A MINIMUM DEPTH OF 12". THE LENGTH OF GALVANIZED PIPE SLEEVES FOR FENCE POSTS SHALL BE EQUAL TO THE DEPTH OF COPING.

#### NOTES:

1. COPING OVERHANG TO BE APPROXIMATELY 3" FOR WALLS 10' OR MORE IN HEIGHT AND APPROXIMATELY 2" FOR WALLS LESS THAN 10' IN HEIGHT; IN A CONTINUOUS WALL OF VARYING HEIGHT THE OVERHANG WILL BE APPROXIMATELY 2" TO 3" FOR THE ENTIRE LENGTH.
2. ALL DIMENSIONS SHOWN ARE MINIMUM.
3. PAYMENT WILL BE BASED ON THE ACCOMPANYING TABLE.
4. TO BE FOUNDED ON SUITABLE SOIL.

**ATTACHMENT B**  
Boring Logs

**CLIENT:** Town of Millbury  
**PROJECT NUMBER:** 2180463

**PROJECT NAME:** Round Pond Retaining Wall Reconstruction  
**PROJECT LOCATION:** Millbury, Massachusetts

**DRILLER:** Darwin Newton - Technical Drilling Services  
**LOGGED / CHECKED BY:** M. Zanchi / C. Palmer, PE  
**RIG TYPE / DRILLING METHODS:** Truck / hollow-stem auger (HSA)  
**CASING DIAMETER:** 4.25 in. ID  
**SAMPLING METHODS:** Standard penetration test (SPT)  
**SAMPLER TYPE:** Standard 24" long x 2" OD (1-3/8" ID) split-spoon  
**SAMPLER HAMMER:** 140-lb. automatic hammer  
**OTHER:**
**BORING LOCATION:** See attached plan.  
**GROUND ELEVATION:** 546 ft. +/- **DATUM:** NAVD88  
**DRILLING START DATE:** 9/25/2018 **END DATE:** 9/25/2018

**GROUNDWATER OBSERVATIONS**

DATE	DEPTH	COMMENTS
9/25/2018	3.5 ft. +/-	Measured in borehole.

DEPTH (ft.) Elevation	SAMPLE INFORMATION						GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION <small>(see guide below for soil classification based on constituent percentage)</small>	COMMENTS
	TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE				
0									<div>Mineral Soil</div> <div>GRAVEL, SAND, SILT, CLAY: &gt;50%</div> <div>gravelly, sandy, silty, clayey: 35-50%</div> <div>some: 20-35%</div> <div>little: 10-20%</div> <div>trace: 0-10%</div> <div>Organic Soil</div> <div>PEAT: 50-100%</div> <div>organic (soil): 15-50%</div> <div>with some organics: 5-15%</div>	
546									4" Asphalt Concrete Pavement	
	S-1	0.5	16/24	22 25 28 19	53				Very dense, gray, sandy fine to coarse GRAVEL, trace silt; moist. [FILL]	
	S-2	2.5	2/24	16 12 12 8	24				Medium dense, gray, sandy fine to coarse GRAVEL, trace silt; moist. [FILL]	- Auger grinding at 2.5 ft.
5	S-3	4.5	2/24	16 14 10 10	24				Medium dense, gray, gravelly fine to coarse SAND, trace silt; wet. [FILL]	- Auger grinding at 4 ft.
541	S-4	6.5	7/24	3 2 10 10	12				Medium dense, gray, sandy fine to coarse GRAVEL, little silt; wet. [FILL] - coarse gravel fragment in tip of spoon	
	S-5	8.5	11/18	11 11 5	16				Medium dense, gray, fine to coarse SAND, some fine to coarse gravel, some silt; wet. [FILL]	
10	S-6	10.0	15/24	6 21 27	42				Top 6" - Dense, gray, fine to coarse GRAVEL, some fine to coarse sand, trace silt; wet. [FILL] Bottom 9" - Dense, tan, fine to coarse GRAVEL, little fine to coarse sand, trace silt; wet.	
	S-7	12.0	11/16	22 54 100/4"					Very dense, brown, fine to coarse SAND, some fine to coarse gravel, little silt; wet.	
15										
531	S-8	15.0	0/0	100/0"					No Recovery	- Auger grinding on possible bedrock from approximately 15 ft. to 16.5 ft.

Auger refusal at 16.5 ft. End of boring.

W&amp;S BORING LOG - DATA TEMPLATE - W&amp;S STANDARD LOGS.GDT - 12/12/18 18:18 - P:\MILLBURY MA\2180463 - ROUND POND\GEO\TECHNICAL\FIELD\ROUND POND RETAINING WALL GINT LOGS.GPJ

SAMPLE		GRANULAR SOILS		COHESIVE SOILS		GENERAL NOTES:
SYMBOL	TYPE	N-Value	Density	N-VALUE	CONSISTENCY	
S	Split spoon	0-4	Very Loose	< 2	Very Soft	1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.
ST	Shelby tube	4-10	Loose	2-4	Soft	
AG	Auger grab	10-30	Med. Dense	4-8	Med. Stiff	2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.
NX	Rock core	30-50	Dense	8-15	Stiff	
GP	Direct push	> 50	Very Dense	15-30	Very Stiff	
				> 30	Hard	

**CLIENT:** Town of Millbury  
**PROJECT NUMBER:** 2180463

**PROJECT NAME:** Round Pond Retaining Wall Reconstruction  
**PROJECT LOCATION:** Millbury, Massachusetts

**DRILLER:** Darwin Newton - Technical Drilling Services  
**LOGGED / CHECKED BY:** M. Zanchi / C. Palmer, PE  
**RIG TYPE / DRILLING METHODS:** Truck / hollow-stem auger (HSA)  
**CASING DIAMETER:** 4.25 in. ID  
**SAMPLING METHODS:** Standard penetration test (SPT)  
**SAMPLER TYPE:** Standard 24" long x 2" OD (1-3/8" ID) split-spoon  
**SAMPLER HAMMER:** 140-lb. automatic hammer  
**OTHER:**
**BORING LOCATION:** See attached plan.  
**GROUND ELEVATION:** 546 ft. +/- **DATUM:** NAVD88  
**DRILLING START DATE:** 9/25/2018 **END DATE:** 9/25/2018

**GROUNDWATER OBSERVATIONS**

DATE	DEPTH	COMMENTS
9/25/2018	3.5 ft. +/-	Measured in borehole.

DEPTH (ft.) Elevation	SAMPLE INFORMATION						GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION <small>(see guide below for soil classification based on constituent percentage)</small>	COMMENTS
	TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE				
0									Mineral Soil GRAVEL, SAND, SILT, CLAY: >50% gravelly, sandy, silty, clayey: 35-50% some: 20-35% little: 10-20% trace: 0-10%	
546									5" Asphalt Concrete Pavement	
	S-1	1.0	15/24	14 37 17 13	54				Very dense, gray, sandy fine to coarse GRAVEL, trace silt; moist. [FILL]	
	S-2	3.0	16/24	11 9 10 7	19				Medium dense, gray-brown, gravelly fine to coarse SAND, little silt; wet. [FILL]	▼
5										
541	S-3	5.0	7/24	5 7 10 23	17				Medium dense, gray, gravelly fine to coarse SAND, little silt; wet. [FILL]	
	S-4	7.0	12/24	38 20 16 4	36				Dense, gray, sandy fine to coarse GRAVEL, little silt; wet. [FILL]	
10	S-5	9.0	13/24	46 76 17 15	93			ORG SILT	Top 4" - Brown, sandy ORGANIC SILT, trace gravel; wet. - wood fragments in sample	
536									Bottom 9" - Very dense, gray, sandy fine to coarse GRAVEL, little silt; wet.	
	S-6	11.0	9/24	6 9 20 27	29			GLACIAL TILL	Top 8" - Medium dense, brown, sandy fine to coarse GRAVEL, little silt; wet. Bottom 1" - Gravel-sized rock fragments	
Auger refusal at 13 ft. End of boring.										- Auger grinding on possible bedrock at 13 ft.

SAMPLE		GRANULAR SOILS		COHESIVE SOILS		GENERAL NOTES:
SYMBOL	TYPE	N-Value	Density	N-VALUE	CONSISTENCY	
S	Split spoon	0-4	Very Loose	< 2	Very Soft	1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.
ST	Shelby tube	4-10	Loose	2-4	Soft	
AG	Auger grab	10-30	Med. Dense	4-8	Med. Stiff	2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.
NX	Rock core	30-50	Dense	8-15	Stiff	
GP	Direct push	> 50	Very Dense	15-30	Very Stiff	
				> 30	Hard	

**PROJECT NAME:** Round Pond Retaining Wall Reconstruction  
**PROJECT LOCATION:** Millbury, Massachusetts

**BORING LOCATION:** See attached plan.  
**GROUND ELEVATION:** 546 ft. +/- **DATUM:** NAVD88  
**DRILLING START DATE:** 9/25/2018 **END DATE:** 9/25/2018

GROUNDWATER OBSERVATIONS		
DATE	DEPTH	COMMENTS
9/25/2018	4 ft. +/-	Measured in borehole.

W&S BORING LOG - DATA TEMPLATE - WISE STANDARD LOGS.GDT - 12/12/18 18:18 - P:\WAMILLBURY MA\2180463 - ROUND POND\GEO\TECHNICAL\FIELD\ROUND POND RETAINING WALL GINT LOGS.GPJ

BORING NUMBER: **B-3**

## **ATTACHMENT C**

Important Information about This Geotechnical-Engineering Report

# Important Information about This Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

**The Geoprofessional Business Association (GBA) has prepared this advisory to help you – assumedly a client representative – interpret and apply this geotechnical-engineering report as effectively as possible. In that way, clients can benefit from a lowered exposure to the subsurface problems that, for decades, have been a principal cause of construction delays, cost overruns, claims, and disputes. If you have questions or want more information about any of the issues discussed below, contact your GBA-member geotechnical engineer. Active involvement in the Geoprofessional Business Association exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project.**

## **Geotechnical-Engineering Services Are Performed for Specific Purposes, Persons, and Projects**

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical-engineering study conducted for a given civil engineer will not likely meet the needs of a civil-works constructor or even a different civil engineer. Because each geotechnical-engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client. *Those who rely on a geotechnical-engineering report prepared for a different client can be seriously misled.* No one except authorized client representatives should rely on this geotechnical-engineering report without first conferring with the geotechnical engineer who prepared it. *And no one – not even you – should apply this report for any purpose or project except the one originally contemplated.*

## **Read this Report in Full**

Costly problems have occurred because those relying on a geotechnical-engineering report did not read it *in its entirety*. Do not rely on an executive summary. Do not read selected elements only. *Read this report in full.*

## **You Need to Inform Your Geotechnical Engineer about Change**

Your geotechnical engineer considered unique, project-specific factors when designing the study behind this report and developing the confirmation-dependent recommendations the report conveys. A few typical factors include:

- the client's goals, objectives, budget, schedule, and risk-management preferences;
- the general nature of the structure involved, its size, configuration, and performance criteria;
- the structure's location and orientation on the site; and
- other planned or existing site improvements, such as retaining walls, access roads, parking lots, and underground utilities.

Typical changes that could erode the reliability of this report include those that affect:

- the site's size or shape;
- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light-industrial plant to a refrigerated warehouse;
- the elevation, configuration, location, orientation, or weight of the proposed structure;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes – even minor ones – and request an assessment of their impact. *The geotechnical engineer who prepared this report cannot accept responsibility or liability for problems that arise because the geotechnical engineer was not informed about developments the engineer otherwise would have considered.*

## **This Report May Not Be Reliable**

*Do not rely on this report* if your geotechnical engineer prepared it:

- for a different client;
- for a different project;
- for a different site (that may or may not include all or a portion of the original site); or
- before important events occurred at the site or adjacent to it; e.g., man-made events like construction or environmental remediation, or natural events like floods, droughts, earthquakes, or groundwater fluctuations.

Note, too, that it could be unwise to rely on a geotechnical-engineering report whose reliability may have been affected by the passage of time, because of factors like changed subsurface conditions; new or modified codes, standards, or regulations; or new techniques or tools. *If your geotechnical engineer has not indicated an "apply-by" date on the report, ask what it should be, and, in general, if you are the least bit uncertain about the continued reliability of this report, contact your geotechnical engineer before applying it.* A minor amount of additional testing or analysis – if any is required at all – could prevent major problems.

## **Most of the "Findings" Related in This Report Are Professional Opinions**

Before construction begins, geotechnical engineers explore a site's subsurface through various sampling and testing procedures. *Geotechnical engineers can observe actual subsurface conditions only at those specific locations where sampling and testing were performed.* The data derived from that sampling and testing were reviewed by your geotechnical engineer, who then applied professional judgment to form opinions about subsurface conditions throughout the site. Actual sitewide-subsurface conditions may differ – maybe significantly – from those indicated in this report. Confront that risk by retaining your geotechnical engineer to serve on the design team from project start to project finish, so the individual can provide informed guidance quickly, whenever needed.

## This Report's Recommendations Are Confirmation-Dependent

The recommendations included in this report – including any options or alternatives – are confirmation-dependent. In other words, *they are not final*, because the geotechnical engineer who developed them relied heavily on judgment and opinion to do so. Your geotechnical engineer can finalize the recommendations *only after observing actual subsurface conditions* revealed during construction. If through observation your geotechnical engineer confirms that the conditions assumed to exist actually do exist, the recommendations can be relied upon, assuming no other changes have occurred. *The geotechnical engineer who prepared this report cannot assume responsibility or liability for confirmation-dependent recommendations if you fail to retain that engineer to perform construction observation.*

## This Report Could Be Misinterpreted

Other design professionals' misinterpretation of geotechnical-engineering reports has resulted in costly problems. Confront that risk by having your geotechnical engineer serve as a full-time member of the design team, to:

- confer with other design-team members,
- help develop specifications,
- review pertinent elements of other design professionals' plans and specifications, and
- be on hand quickly whenever geotechnical-engineering guidance is needed.

You should also confront the risk of constructors misinterpreting this report. Do so by retaining your geotechnical engineer to participate in prebid and preconstruction conferences and to perform construction observation.

## Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can shift unanticipated-subsurface-conditions liability to constructors by limiting the information they provide for bid preparation. To help prevent the costly, contentious problems this practice has caused, include the complete geotechnical-engineering report, along with any attachments or appendices, with your contract documents, *but be certain to note conspicuously that you've included the material for informational purposes only*. To avoid misunderstanding, you may also want to note that "informational purposes" means constructors have no right to rely on the interpretations, opinions, conclusions, or recommendations in the report, but they may rely on the factual data relative to the specific times, locations, and depths/elevations referenced. Be certain that constructors know they may learn about specific project requirements, including options selected from the report, *only* from the design drawings and specifications. Remind constructors that they may

perform their own studies if they want to, and *be sure to allow enough time* to permit them to do so. Only then might you be in a position to give constructors the information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions. Conducting prebid and preconstruction conferences can also be valuable in this respect.

## Read Responsibility Provisions Closely

Some client representatives, design professionals, and constructors do not realize that geotechnical engineering is far less exact than other engineering disciplines. That lack of understanding has nurtured unrealistic expectations that have resulted in disappointments, delays, cost overruns, claims, and disputes. To confront that risk, geotechnical engineers commonly include explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely*. Ask questions. Your geotechnical engineer should respond fully and frankly.

## Geoenvironmental Concerns Are Not Covered

The personnel, equipment, and techniques used to perform an environmental study – e.g., a "phase-one" or "phase-two" environmental site assessment – differ significantly from those used to perform a geotechnical-engineering study. For that reason, a geotechnical-engineering report does not usually relate any environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated subsurface environmental problems have led to project failures*. If you have not yet obtained your own environmental information, ask your geotechnical consultant for risk-management guidance. As a general rule, *do not rely on an environmental report prepared for a different client, site, or project, or that is more than six months old*.

## Obtain Professional Assistance to Deal with Moisture Infiltration and Mold

While your geotechnical engineer may have addressed groundwater, water infiltration, or similar issues in this report, none of the engineer's services were designed, conducted, or intended to prevent uncontrolled migration of moisture – including water vapor – from the soil through building slabs and walls and into the building interior, where it can cause mold growth and material-performance deficiencies. Accordingly, *proper implementation of the geotechnical engineer's recommendations will not of itself be sufficient to prevent moisture infiltration*. Confront the risk of moisture infiltration by including building-envelope or mold specialists on the design team. *Geotechnical engineers are not building-envelope or mold specialists*.



GEOPROFESSIONAL  
BUSINESS  
ASSOCIATION

Telephone: 301/565-2733

e-mail: [info@geoprofessional.org](mailto:info@geoprofessional.org) [www.geoprofessional.org](http://www.geoprofessional.org)

SECTION 00410

FORM OF GENERAL BID  
(Unit Price)

Proposal of \_\_\_\_\_ (hereinafter called "Bidder")\*

☐ a corporation, organized and existing under the laws of the State of \_\_\_\_\_

☐ a partnership

☐ a joint venture

☐ a limited liability company

☐ an individual doing business as \_\_\_\_\_

\*Insert corporation, partnership, joint venture, limited liability company or individual as applicable.

To the \_\_\_\_\_ (hereinafter called "Owner").

Gentlemen:

The undersigned Bidder, in compliance with your invitation for bids for construction of the **West Main Street Round Pond Wall**, having examined the plans and specifications with related documents and the site of the proposed work, and being familiar with all of the conditions surrounding the construction of the proposed project including the availability of materials and labor, hereby proposes to furnish all superintendence, labor, services, materials, equipment, plant, machinery, apparatus, appliances, tools, supplies, bailing, shoring, removal, and all other things necessary to construct the project in accordance with the contract documents, as prepared by Weston & Sampson Engineers, Inc., within the time set forth below, and at the prices stated below. These prices are to cover all expenses incurred in performing the work required under the contract documents, of which this bid is a part.

The Bidder hereby agrees that if selected as the Contractor it will commence work under this contract on or before a date to be fixed in the written "Notice to Proceed" given by the Owner to the Contractor and to fully complete the project within **160** consecutive days of the start date fixed in the "Notice to Proceed." The Bidder further agrees to pay as liquidated damages the sum of **\$500.00** \_\_\_\_\_ for each consecutive calendar day thereafter during which the work has not been fully

completed, as provided in the “Liquidated Damages” provisions of Section 00800  
SUPPLEMENTARY CONDITIONS.

Bidder acknowledges receipt of the following addenda:

No.	Dated:
<hr/>	
No.	Dated:
<hr/>	
No.	Dated:
<hr/>	
No.	Dated:
<hr/>	

The Bidder agrees to perform the work described in the specifications and shown on the plans for the following lump sum or unit prices:

Town of Millbury, MA  
West Main Street Round Pond Wall Reconstruction  
**Form of General Bid**  
April, 2020

The Bidder agrees to perform the work described on the plans and described in the specifications for the following unit prices:

**BASE BID UNIT PRICES**

ITEM NUMBER	QUANTITY	ITEM WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE DOLLARS CENTS		AMOUNT DOLLARS CENTS	
<b>120.1</b>	<b>350 CY</b>	<b>Unclassified Excavation</b>  Dollars ( _____ ) per CY				
<b>151.</b>	<b>100 CY</b>	<b>Gravel Borrow</b>  Dollars ( _____ ) per CY				
<b>151.2</b>	<b>35 CY</b>	<b>Gravel Borrow for Backfilling Structures and Pipes</b>  Dollars ( _____ ) per CY				
<b>170.</b>	<b>190 SY</b>	<b>Fine Grading And Compacting</b>  Dollars ( _____ ) per SY				
<b>220.</b>	<b>2 EA</b>	<b>Drainage Structure Adjusted</b>  Dollars ( _____ ) per EA				
<b>220.7</b>	<b>2 EA</b>	<b>Sanitary Structure Adjusted</b>  Dollars ( _____ ) per EA				

ITEM NUMBER	QUANTITY	ITEM WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE DOLLARS CENTS		AMOUNT DOLLARS CENTS	
241.6	12 FT	<b>60 Inch Reinforced Concrete Pipe</b> <hr/> Dollars (                      ) per FT				
402.	200 CY	<b>Dense Graded Crushed Stone for Sub-base</b> <hr/> Dollars (                      ) per CY				
403.	1000 SY	<b>Reclaimed Pavement for Base Course and/or Sub-base</b> <hr/> Dollars (                      ) per SY				
403.1	100 TON	<b>Crushed Stone for Blending</b> <hr/> Dollars (                      ) per TON				
415.	180 SY	<b>Pavement Micro Milling</b> <hr/> Dollars (                      ) per SY				
440.	1000 LB	<b>Calcium Chloride for Roadway Dust Control</b> <hr/> Dollars (                      ) per LB				
443.	10 MGL	<b>Water for Roadway Dust Control</b> <hr/> Dollars (                      ) per MGL				

ITEM NUMBER	QUANTITY	ITEM WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE DOLLARS CENTS		AMOUNT DOLLARS CENTS	
452.	500 GAL	<b>Asphalt Emulsion for Tack Coat</b> <hr/> Dollars (                      ) per GAL				
453.	80 FT	<b>HMA Joint Sealant</b> <hr/> Dollars (                      ) per FT				
460.23	100 TON	<b>Superpave Surface Course-12.5 (SSC-12.5)</b> <hr/> Dollars (                      ) per TON				
460.31	130 TON	<b>Superpave Intermediate Course-12.5 (SIC-12.5)</b> <hr/> Dollars (                      ) per TON				
472	3 TON	<b>HMA Miscellaneous Work</b> <hr/> Dollars (                      ) per TON				
482.3	80 FT	<b>Sawcutting Asphalt Pavement</b> <hr/> Dollars (                      ) per FT				
504.	190 FT	<b>Granite Curb Type VA1 - Straight</b> <hr/> Dollars (                      ) per FT				

ITEM NUMBER	QUANTITY	ITEM WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE DOLLARS CENTS		AMOUNT DOLLARS CENTS	
504.1	30 FT	<b>Granite Curb Type VA1 - Curved</b>  Dollars (                      ) per FT				
509.	30 FT	<b>Granite Transition Curb for Wheelchair Ramps - Straight</b>  Dollars (                      ) per FT				
580.	268 FT	<b>Curb Removed and Reset</b>  Dollars (                      ) per FT				
590.	30 FT	<b>Curb Removed and Stacked</b>  Dollars (                      ) per FT				
620.12	272 FT	<b>Guardrail, TL-2 (Single Faced)</b>  Dollars (                      ) per FT				
627.1	3 EA	<b>Trailing Anchorage</b>  Dollars (                      ) per EA				
627.82	1 EA	<b>Guardrail Tangent End Treatment, TL-2</b>  Dollars (                      ) per EA				

ITEM NUMBER	QUANTITY	ITEM WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE DOLLARS CENTS		AMOUNT DOLLARS CENTS	
657.	80 FT	<b>Temporary Fence</b> <hr/> Dollars (                      ) per FT				
660.	190 FT	<b>Metal Pipe Rail</b> <hr/> Dollars (                      ) per FT				
685.	135 CY	<b>Stone Masonry Wall in Cement Mortar</b> <hr/> Dollars (                      ) per CY				
697.2	180 FT	<b>Floating Silt Fence</b> <hr/> Dollars (                      ) per FT				
702.	30 TON	<b>Hot Mix Asphalt Sidewalk or Driveway</b> <hr/> Dollars (                      ) per TON				
715.	9 EA	<b>Rural Mailbox Removed and Reset</b> <hr/> Dollars (                      ) per EA				
748	1 LS	<b>Mobilization</b> <hr/> Dollars (                      ) per LS				

ITEM NUMBER	QUANTITY	ITEM WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE DOLLARS CENTS		AMOUNT DOLLARS CENTS	
751.	50 CY	<p><b>Loam Borrow</b></p> <p>_____</p> <p>Dollars ( ) per CY</p>				
765.	300 SY	<p><b>Seeding</b></p> <p>_____</p> <p>Dollars ( ) per SY</p>				
767.12	150 FT	<p><b>Compost Filter Tubes</b></p> <p>_____</p> <p>Dollars ( ) per FT</p>				
816.82	2 EA	<p><b>Temporary Traffic Control Signal System</b></p> <p>_____</p> <p>Dollars ( ) per EA</p>				
901.	2450 CY	<p><b>4,000 psi 1.5-inch, 565 Cement Concrete</b></p> <p>_____</p> <p>Dollars ( ) per CY</p>				
910.1	2450 LB	<p><b>Steel Reinforcement For Structures – Epoxy Coated</b></p> <p>_____</p> <p>Dollars ( ) per LB</p>				
991.1	1 LS	<p><b>Water Control</b></p> <p>_____</p> <p>Dollars ( ) per LS</p>				
999.1	120 HR	<p><b>Police Detail</b></p> <p><u>Four Thousand</u></p> <p>Dollars ( \$9,000 ) Allowance</p>	9,000	00	9,000	00

ITEM NUMBER	QUANTITY	ITEM WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE DOLLARS CENTS		AMOUNT DOLLARS CENTS	
999.2	1 ALLOWANCE	Testing <u>Six Thousand</u> Dollars (\$ 6,000 ) Allowance	6,000	00	6,000	00
BASE BID TOTAL =			\$			

---

**Total Estimated Price for Base Bid (In WORDS)**

All entries shall be made clearly in ink or typewritten. Amounts are to be shown in both words and figures. In case of discrepancy between the prices written in words and those written in figures, the amount shown in words shall govern. In the event there is a discrepancy between the unit prices and the total sum of all of the items (the proposed contract price), the unit prices shall govern.

The above unit prices shall include all labor, materials, bailing, shoring, removal, overhead, profit, insurance, bond premiums, etc., to cover the finished work of the several kinds called for.

The Bidder understands that all bids for this project are subject to the applicable bidding laws of the Commonwealth of Massachusetts, including General Laws Chapter 30, Section 39M, as amended.

The contract will be awarded to the lowest eligible and responsible bidder.

The Bidder understands that the Owner reserves the right to reject any or all bids and to waive any informalities in the bidding.

The Bidder agrees that this bid shall be good and may not be withdrawn for a period of 30 days, Saturdays, Sundays and legal holidays excluded, after the opening of bids.

Within 10 days of receipt of the written notice of acceptance of this bid, the Bidder will execute the formal agreement attached in Section 00520 AGREEMENT and provide the requisite payment and performance bonds and certificates of insurance.

Bid security is attached in the sum of five percent (5%) of the total bid in accordance with the conditions of Section 00200 INSTRUCTIONS TO BIDDERS. The bid security may become the property of the Owner in the event the contract and bond are not executed within the time set forth above.

The selected Contractor shall furnish a performance bond and a payment bond in an amount at least equal to one hundred percent (100%) of the contract prices in accordance with Section 00610 PERFORMANCE BOND, Section 00615 PAYMENT BOND, and as stipulated in Section 00700 GENERAL CONDITIONS of these specifications.

The undersigned offers the following information as evidence of its qualifications to perform the work as bid upon according to all the requirements of the plans and specifications.

1. Have been in business under present name for \_\_\_\_\_ years.
2. The names and addresses of all persons interested in the bid (if made by a partnership or corporation) as Principals, are as follows:

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(Attach supplementary list if necessary)

3. The Bidder shall state below what work of a similar character to that included in the proposed contract it has done, and give references that will enable the Owner to judge its experience, skill and business standing (add supplementary page if necessary).

Completion Date	Project Name	Contract Amount	Design Engineer	Reference Name	Telephone No.
a.					
b.					
c.					
d.					
e.					
f.					

Pursuant to M.G.L. CH. 62C, Sec 49A, I certify under the penalties of perjury that I, to my best knowledge and belief, I am in compliance with all laws of the Commonwealth relating to taxes, reporting of employees and contractors, and withholding and remitting child support.

The undersigned Bidder hereby certifies that (1) it is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed in the work; (2) that all employees to be employed at the worksite will 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 and who shall furnish documentation of successful completion of said course with the first certified payroll report for each employee; and 3) that all employees to be employed in the work subject to this bid 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.

The undersigned certifies under penalties of perjury that this bid is in all respects bona fide, fair and made without collusion or fraud with any other person. As used in this paragraph the word "person" shall mean any natural person, joint venture, partnership, corporation or other business or legal entity.

The undersigned Bidder hereby certifies, under pains and penalties of perjury, that the foregoing bid is based upon the payment to laborers to be employed on the project of wages in an amount no less than the applicable prevailing wage rates established for the project by the Massachusetts Department of Labor and Workforce Development. The undersigned bidder agrees to indemnify the awarding authority for, from and against any loss, expense, damages, actions or claims, including any expense incurred in connection with any delay or stoppage of the project work arising out of or as a result of (1) the failure of the said bid to be based upon the payment of the said applicable prevailing wage rates or (2) the failure of the bidder, if selected as the Contractor, to pay laborers employed on the project the said applicable prevailing wage rates.

The undersigned further certifies under penalty of perjury that the said undersigned is not presently debarred from doing public construction work in the Commonwealth of Massachusetts under the provisions of Section Twenty-Nine F of Chapter Twenty-Nine, Section 25C (10) of Chapter 152 (workers' compensation) or any other applicable debarment provisions of any other Chapter of the General Laws or any rule or regulations promulgated thereunder.

Respectfully submitted:

Date \_\_\_\_\_

By \_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Name - Typed or Printed)

\_\_\_\_\_  
(Title)

(SEAL - if bid is by a corporation)

\_\_\_\_\_  
(Business Name)

\_\_\_\_\_  
(Federal ID Number)

\_\_\_\_\_  
(Business Address)

\_\_\_\_\_  
(City and State)

\_\_\_\_\_  
(Telephone Number)

\_\_\_\_\_  
(Fax Number)

Document37

Document37

**ATTACHMENT A-1**

**TOWN OF MILLBURY  
CERTIFICATE OF NON-COLLUSION**

The undersigned certifies under penalty of perjury that this bid or proposal has been made and submitted in good faith and without collusion or fraud with any other person. As used in this certification, the word “person” shall mean any natural person, business, partnership, corporation, union, committee, club or other organization, entity, or group of individuals.

**Failure to complete and submit this form with the bid will result in rejection of the bid.**

---

Signature of person signing bid or proposal

---

Printed Name of person and title

---

Company name

---

Date

**ATTACHMENT A-2**

**TOWN OF MILLBURY  
REVENUE ENFORCEMENT AND PROTECTION CERTIFICATION (REAP)**

Pursuant to Mass. G.L. Ch62C, Section 49A, I certify under the Penalties of Perjury That I Have Filed All Mass. State Tax Returns and Paid ALL Mass. State and Town taxes Required under Law.

Company Name \_\_\_\_\_

Street and No. \_\_\_\_\_

City or Town \_\_\_\_\_

State \_\_\_\_\_ Zip Code \_\_\_\_\_

Tel. No. \_\_\_\_\_

Social Security No. or Federal Identification No. \_\_\_\_\_

Certified by State Office of Minority and  
Women Business Assistance (SOMWBA) \_\_\_\_\_

Date of Certification \_\_\_\_\_

**Failure to complete this form with the bid will result in rejection of the bid.**

\_\_\_\_\_  
Authorized Signature                      Date

\_\_\_\_\_  
Printed Name

**ATTACHMENT A-3**

**TOWN OF MILLBURY  
CERTIFICATION REGARDING DEBARMENT**

The undersigned certifies, under penalty of perjury, that the said undersigned is not presently debarred from doing public construction work in the Commonwealth under the provisions of section twenty-nine F of chapter twenty-nine, or any other applicable debarment provisions of any other chapter of the General Laws or any rule or regulation promulgated thereunder.

---

Signature

---

Name of person signing qualifications

---

Date

---

Name of Business

**ATTACHMENT A-4**

**TOWN OF MILLBURY  
CERTIFICATE OF AUTHORITY**

At a duly authorized meeting of the Board of Directors of the (name of corporation) \_\_\_\_\_, held on (date) \_\_\_\_\_ at which all the Directors were present or waived notice, it was voted that (officer and title) \_\_\_\_\_, of the company be and is hereby authorized to execute contracts and bonds in the name and on behalf of said company, and affix its Corporate Seal thereto, and such execution of any contract of obligation in this company's name on its behalf of such (officer) \_\_\_\_\_ under seal of the company, shall be valid and binding upon this company.

A TRUE COPY,

Attest: \_\_\_\_\_

Place of Business: \_\_\_\_\_

I hereby certify that I am the (title) \_\_\_\_\_ of the (name of corporation) \_\_\_\_\_ and that (name of officer) \_\_\_\_\_ is the duly elected (title) \_\_\_\_\_ of said company, and the above vote has not been amended or rescinded and remains in full force and effect as of the date of this contract.

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Name/Title: \_\_\_\_\_

(Corporate Seal)

COMMONWEALTH OF MASSACHUSETTS

Worcester County, S. S.

On this \_\_\_\_\_ day of \_\_\_\_\_, of the year \_\_\_\_\_, then personally appeared the above-named \_\_\_\_\_, and acknowledged the foregoing instrument to be his/her free act and deed before me.

\_\_\_\_\_  
Notary Public

My commission expires: \_\_\_\_\_

**ATTACHMENT A-5**

**TOWN OF MILLBURY**

**CERTIFICATION OF COMPLIANCE WITH FEDERAL IMMIGRATION LAW**

The undersigned hereby certifies under the penalties of perjury that the contractor named below is in compliance with the Immigration Reform and Control Act of 1986, as amended, and with all regulations adopted thereunder, with respect to all of its employees who will be performing work under this contract, and further certifies that said contractor does not knowingly employ any person in violation of the United States immigration laws.

The undersigned further certifies that said contractor will require this same form of certification to be executed by any subcontractor who will perform work under this contract and will maintain subcontractor certifications for inspection by the Town if such inspection is requested.

\_\_\_\_\_, Duly Authorized

Signatory Name:

Title:

\_\_\_\_\_  
Contractor Company Name

\_\_\_\_\_  
Date

**NOTE: All certificates must be signed by the individual submitting the bid or proposal.**

BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned,

\_\_\_\_\_  
(Name of Contractor)

\_\_\_\_\_  
(Address of Contractor)

a \_\_\_\_\_, hereinafter called PRINCIPAL and (Corporation, Partnership, or Individual)

\_\_\_\_\_  
(Name of Surety)

\_\_\_\_\_  
(Address of Surety)

hereinafter called Surety, are held and firmly bound unto

Town of Millbury, Massachusetts

\_\_\_\_\_  
(Name of Owner)

127 Elm St, Millbury, MA 01527

\_\_\_\_\_  
(Address of Owner)

as OWNER in the total aggregate penal sum of

\_\_\_\_\_ Dollars (\$\_\_\_\_\_)

in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

The Condition of the above obligation is such that, whereas the Principal has submitted to the Town of Millbury, Massachusetts a certain Bid, attached hereto and hereby made a part hereof and hereby incorporated by reference herein, to enter into a Contract in writing, for **West Main Street Round Pond Wall**.

NOW, THEREFORE,

(a) If said Bid shall be rejected, or

- (b) If said Bid shall be accepted and the Principal shall execute and deliver a Contract in the Form of Contract attached hereto (properly completed in accordance with said Bid) and shall furnish a Bond for his faithful performance of said Contract, and for the payment of all persons performing labor or furnishing materials in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said Bid, then this obligation shall be void, otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its Bond shall be in no way impaired or affected by any extension of the time within which the OWNER may accept such Bid; and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hand and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

ATTEST:

\_\_\_\_\_  
Principal

\_\_\_\_\_  
(Principal Secretary)

(SEAL)(s)

By \_\_\_\_\_  
Signature

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Printed Title

\_\_\_\_\_  
(Address)

\_\_\_\_\_  
(Address)

\_\_\_\_\_  
(Surety)

ATTEST:

\_\_\_\_\_  
(Witness as to Surety)

By \_\_\_\_\_  
Attorney-in-Fact Signature

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Printed Title

\_\_\_\_\_  
(Address)

\_\_\_\_\_  
(Address)

If Contractor is partnership, all partners should execute Bond.

IMPORTANT - Surety companies executing Bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state of Massachusetts.

SECTION 00520

AGREEMENT

THIS AGREEMENT, made this \_\_\_\_\_ day of \_\_\_\_\_, 2020, by and between the Town of Millbury, hereinafter called "OWNER," acting herein through its \_\_\_\_\_, and \_\_\_\_\_ doing business as (a corporation) (a limited liability company) (a partnership) (a joint venture) (an individual)\* located in the (City) (Town)\* of \_\_\_\_\_, County of \_\_\_\_\_, and State of \_\_\_\_\_, hereinafter called "CONTRACTOR."

WITNESSETH: That for and in consideration of the payments and agreements hereinafter mentioned, to be made and performed by the OWNER, the CONTRACTOR hereby agrees with the OWNER to commence and complete the project described as follows:

**West Main Street Round Pond Wall**

hereinafter called the project, for the estimated sum of \_\_\_\_\_ Dollars and \_\_\_\_\_ Cents (\$ \_\_\_\_\_) and all extra work in connection therewith, under the terms as stated in the Contract Documents; and at its own proper cost and expense to furnish superintendence, labor, services, materials, equipment, plant, machinery, apparatus, appliances, tools, supplies, bailing, shoring, removal, and all other things necessary to complete the said project in accordance with the conditions and prices stated in Section 00410, FORM OF GENERAL BID, Section 00700, GENERAL CONDITIONS, Section 00800, SUPPLEMENTARY CONDITIONS, Section 00830, STATE REGULATIONS, the plans, which include all maps, plates, drawings, blue prints, and the specifications and all other contract documents therefor as prepared by Weston & Sampson Engineers, Inc., including all bid documents.

The CONTRACTOR hereby agrees to commence work under this contract on or before a date to be fixed in the written Notice to Proceed given by the OWNER to the CONTRACTOR and to fully complete the project within 160 consecutive days of the start date fixed in the Notice to Proceed. The CONTRACTOR further agrees to pay as liquidated damages the sum of \$ 500.00 for each consecutive calendar day thereafter during which the work has not been fully completed, as provided in the Liquidated Damages provisions of Section 00800 SUPPLEMENTARY CONDITIONS.

\*Strike out inapplicable terms.

The CONTRACTOR shall not discriminate against or exclude any person from participation herein on grounds of race, color, religious creed, national origin, sex, sexual orientation, ancestry, or age; and that it shall take affirmative actions to insure that applicants are employed, and that employees are treated during their employment, without regard to race, color, religious creed, national origin, sex, sexual orientation, ancestry, age, or handicapped status.

The CONTRACTOR shall not participate in or cooperate with an international boycott, as defined in Section 999 (b)(3) and (4) of the Internal Revenue Code of 1986, as amended, or engage in conduct declared to be unlawful by Section 2 of Chapter 151E of the Massachusetts General Laws.

Applicable provisions of Massachusetts General Laws and Regulations and/or the United States Code and Code of Federal Regulations govern this Agreement and any provision in violation of the foregoing shall be deemed null, void and of no effect. Where conflict between Federal and State Laws and Regulations exists, the more stringent requirement shall apply.

Subject to G.L. c.30, sec. 39K and/or sec. 39G and G.L. c.30, sec. 39F, as applicable, the OWNER agrees to pay the CONTRACTOR in current funds for the performance of the Agreement, subject to additions and deductions, as provided in Section 00700, GENERAL CONDITIONS, and to make payments on account thereof as provided in Section 00700, GENERAL CONDITIONS and Section 00800, SUPPLEMENTARY CONDITIONS

In accordance with the requirements of G.L. c.149, §27B, the Contractor shall submit, and shall require all of its subcontractors required to keep a record of hours and wages paid to laborers employed on the project to submit, to the awarding authority on a weekly basis, copies of such records. All such weekly submissions shall be accompanied by the following certification:

The undersigned contractor hereby certifies, under the pains and penalties of perjury, that the foregoing payroll records are true and accurate records of the wages paid to laborers employed on the project for the period stated and said wages are in an amount no less than the prevailing wage rates established for the project by the Massachusetts Department of Labor and Workforce Development. The undersigned contractor agrees, in addition to any other remedies available to the awarding authority, to indemnify the awarding authority for, from and against any loss, expense, damages, actions or claims, including any expense incurred in connection with any delay or stoppage of the project work, arising out of or as a result of (1) the contractor's failure to pay laborers employed on the project the said applicable prevailing wage rates; (2) the failure of the foregoing payroll records to accurately state the said applicable prevailing wage rates; or (3) the failure of the foregoing payroll records to accurately represent the wages actually paid to laborers employed on the project.

The Agreed upon DIRECT LABOR MARKUP (percentage) for Change Orders on this project shall be \_\_\_\_\_ percent.

IN WITNESS WHEREOF, the parties to these presents have executed this Agreement in six (6) counterparts, each of which shall be deemed an original, in the year and day first above mentioned.

AGREED:

\_\_\_\_\_, Massachusetts  
(Owner)

By \_\_\_\_\_

\_\_\_\_\_  
(Name)

\_\_\_\_\_  
(Title)

\_\_\_\_\_  
(Contractor)

By \_\_\_\_\_

\_\_\_\_\_  
(Name)

\_\_\_\_\_  
(Title)

\_\_\_\_\_  
(Address)

\_\_\_\_\_  
(City and State)

Approved as to Form:

By \_\_\_\_\_  
(Owner's Counsel)

\_\_\_\_\_  
(Name)

In accordance with M.G.L. C.44, Section 31C, this is to certify that an appropriation in the amount of this Contract is available therefor and that the \_\_\_\_\_ has been authorized to execute the Contract and approve all requisitions and change orders.

By \_\_\_\_\_  
(Owner's Accountant)

\_\_\_\_\_  
(Name)

CERTIFICATE OF VOTE  
(to be filed if Contractor is a Corporation)

I, \_\_\_\_\_, hereby certify that I am the duly qualified and acting Secretary of  
(Secretary of Corporation)  
\_\_\_\_\_ and I further certify that a meeting of the Directors of said company,  
(Name of Corporation)  
duly called and held on \_\_\_\_\_, at which all members were present and voting, the  
(Date of Meeting)  
following vote was unanimously passed:

VOTED: To authorize and empower

---

---

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---

---

Anyone acting singly, to execute Forms of General Bid, Contracts or Bonds on behalf of the Corporation.

I further certify that the above vote is still in effect and has not been changed or modified in any respect.

By: \_\_\_\_\_  
(Secretary of Corporation)

A True Copy:

Attest: \_\_\_\_\_  
(Notary Public)

My Commission Expires: \_\_\_\_\_  
(Date)

Contractor's Certification

A Contractor will not be eligible for award of a contract unless such Contractor has submitted the following certification, which is deemed a part of the resulting contract:

CONTRACTOR'S CERTIFICATION

---

Name of the General Contractor

certifies that it:

1. Will not discriminate in their employment practices;
2. Intends to use the following listed construction trades in the work under the contract:

---

and

3. Will make good faith efforts to comply with the minority employee and women employee workforce participation ratio goals and specific affirmative action steps contained herein; and
4. Is in compliance with all applicable federal and state laws, rules, and regulations governing fair labor and employment practices; and
5. Will provide the provisions of the "Supplemental Equal Employment Opportunity, Non-Discrimination and Affirmative Action Program" to each and every subcontractor employed on the Project and will incorporate the terms of this Section into all subcontracts and work orders entered into on the Project.
6. Agrees to comply with all provisions contained herein.

---

Signature of authorized representative of Contractor

Date

---

Printed name of authorized representative of Contractor

Contractor's Certification (Continued)

**CERTIFICATE OF NON-COLLUSION**

The undersigned certifies under penalties of perjury that this bid or proposal has been made and submitted in good faith and without collusion or fraud with any other person. As used in this certification, the word "person" shall mean natural person, business, partnership, corporation, committee, union, club or other organization, entity, or group of individuals.

Signature\_\_\_\_\_

Date\_\_\_\_\_

\_\_\_\_\_  
Print Name & Title

\_\_\_\_\_  
Company Name

**CERTIFICATE OF TAX COMPLIANCE**

Pursuant to Chapter 62C of the Massachusetts General Laws, Section 49A (b), I

\_\_\_\_\_, authorized signatory for \_\_\_\_\_

*Name of individual*

*Name of contractor*

do hereby certify under the pains and penalties of perjury that said contractor has complied with all laws of the Commonwealth of Massachusetts relating to taxes, reporting of employees and contractors, and withholding and remitting child support.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

**LABOR HARMONY AND OSHA TRAINING REQUIREMENTS**

The undersigned certifies under penalties of perjury that he is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed at the work and that all employees to be employed at the worksite and in the work will have completed an OSHA-approved construction safety and health course lasting at least ten (10) hours.

Signature\_\_\_\_\_

Date\_\_\_\_\_

\_\_\_\_\_  
Print Name & Title

\_\_\_\_\_  
Company Name

Subcontractor's Certification

Prior to the award of any subcontract, regardless of tier, the prospective subcontractor must execute and submit to the General Contractor the following certification, which will be deemed a part of the resulting subcontract:

SUBCONTRACTOR'S CERTIFICATION

---

Name of the Subcontractor

certifies that it:

7. Will not discriminate in their employment practices;
8. Intends to use the following listed construction trades in the work under the contract:

and

9. Will make good faith efforts to comply with the minority employee and women employee workforce participation ratio goals and specific affirmative action steps contained herein; and
10. Is in compliance with all applicable federal and state laws, rules, and regulations governing fair labor and employment practices; and
11. Will provide the provisions of the "Supplemental Equal Employment Opportunity, Non-Discrimination and Affirmative Action Program" to each and every subcontractor employed on the Project and will incorporate the terms of this Section into all subcontracts and work orders entered into on the Project.
12. Agrees to comply with all provisions contained herein.

---

Signature of authorized representative of Subcontractor

Date

---

Printed name of authorized representative of Subcontractor

END OF SECTION

Document 5

SECTION 00610

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: That we \_\_\_\_\_  
(Name of Contractor)  
a \_\_\_\_\_ hereinafter called "Principal" and  
(Corporation, Partnership, Joint Venture, LLC or Individual)  
\_\_\_\_\_ of \_\_\_\_\_, State of \_\_\_\_\_  
(Surety) (City)  
hereinafter called the "Surety" and licensed by the State Division of Insurance to do business  
under the laws of the Commonwealth of Massachusetts, are held and firmly bound to the **Town**  
of Millbury, Massachusetts, hereinafter called "Owner", in the penal sum of  
\_\_\_\_\_ Dollars and  
\_\_\_\_\_ Cents(\$ \_\_\_\_\_) in lawful money of the  
United States, for the payment of which sum well and truly to be made, we bind ourselves, our  
heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas the Principal has  
entered into a certain contract with the Owner (the "Contract"), dated the \_\_\_\_\_ day of  
\_\_\_\_\_, 20\_\_\_\_, which Contract is by reference made a part hereof, for the  
construction described as follows:

**West Main Street Round Pond Wall**

NOW, THEREFORE, if the Principal shall well, truly and faithfully perform its duties,  
all the undertakings, covenants, terms, conditions, and agreements of the Contract during the  
original term thereof, and any extensions thereof which may be granted by the Owner, with or  
without notice to the Surety, and if he shall satisfy all claims and demands incurred under the  
Contract, and shall fully indemnify and save harmless the Owner from all costs and damages  
which it may suffer by reason of failure to do so, and shall reimburse and repay the Owner all  
outlay and expense which the Owner may incur in making good any default, then this obligation  
shall be void; otherwise, this obligation shall remain in full force and effect.

PROVIDED, FURTHER, that the Surety's obligation under this Bond shall arise after  
(1) the Owner has declared the Principal in default of the Contract or any provision thereof, or  
(2) has declared that the Principal has failed, or is otherwise unable or unwilling, to execute the  
work consistent with, and in conformance to, the Contract (collectively referred to as a  
"Contractor Default"). The determination of a Contractor Default shall be made solely by the  
Owner. The Owner need not terminate the Contract to declare a Contractor Default or to invoke  
its rights under this Bond, and Contractor hereby agrees not to assert any claims against Surety  
under any indemnity or similar agreements on the grounds that Surety has interfered with the  
Contract by fulfilling its obligations hereunder in the absence of a termination of said Contract.

When the Surety's obligation under this Bond arises, the Surety, at its sole expense and at  
the consent and election of the Owner, shall promptly take one of following steps: (1) arrange for  
the Principal to perform and complete the work of the Contract; (2) arrange for a contractor other  
than the Principal to perform and complete the work of the Contract; (3) reimburse the Owner, in

a manner and at such time as the Owner shall reasonably decide, for all costs and expenses incurred by the Owner in performing and completing the work of the Contract. Surety will keep Owner reasonably informed of the progress, status and results of any investigation of any claim of the Owner.

If the Surety does not proceed as provided in this Bond with due diligence and all deliberate speed, the Surety shall be deemed to be in default of this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner.

After the Surety's obligation under this Bond arises, the Surety is obligated, to the limit of the amounts of this Bond, for (1) the correction of defective work and completion of the Contract; (2) additional design, professional services, and legal costs, including attorney's fees, resulting from the Contractor Default or from the default of the Surety under this Bond; (3) any additional work beyond the Contract made necessary by the Contractor Default or default of the Surety under this Bond; (4) indemnification obligations of the Principal, if any, as provided in the Contract; and (5) liquidated damages as provided in the Contract, or if no such damages are specified, actual damages and consequential damages resulting from the Contractor Default or any default of the Surety under this Bond.

Any proceeding, legal or equitable, under this Bond shall be instituted in any court of competent jurisdiction in the Commonwealth of Massachusetts.

The Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or to the work to be performed thereunder or the specifications accompanying the same shall in any way affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the work or to the specifications.

The Surety providing the Bond shall have a rating of A or better within Best's Key Rating Guide.

IN WITNESS WHEREOF, this instrument is executed in \_\_\_\_ ( ) counterparts, each one of which shall be deemed an original, this the \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_.

ATTEST:

_____ Principal	_____ Witness as to Principal Signature
By _____ Signature	_____ Name and Title
_____ Name and Title	_____ Address
_____ Address	_____ City and State
_____ City and State	(SEAL)

ATTEST:

_____ Surety	_____ Witness as to Surety Signature
By _____ Attorney-in-Fact Signature	_____ Name and Title
_____ Name and Title	_____ Address
_____ Address	_____ City and State
_____ City and State	(SEAL)

NOTE:      Date of Bond must not be prior to date of Contract.    If Contractor is a Partnership, all partners should execute Bond.

END OF SECTION

SECTION 00615

PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: That we \_\_\_\_\_  
(Name of Contractor)  
a \_\_\_\_\_ hereinafter called "Principal" and  
(Corporation, Partnership, Joint Venture, Limited Liability Company, or Individual)  
\_\_\_\_\_ of \_\_\_\_\_, State of \_\_\_\_\_  
(Surety) (City) (State)  
hereinafter called "Surety" and licensed by the State Division of Insurance to do business under  
the laws of the Commonwealth of Massachusetts are held and firmly bound to the **Town** of  
**Millbury**, Massachusetts, hereinafter called "Owner," in the penal sum of \_\_\_\_\_  
Dollars and \_\_\_\_\_  
Cents (\$ \_\_\_\_\_) in lawful money of the United  
States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs,  
executors, administrators and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal has  
entered into a certain contract with the Owner (the "Contract"), dated the \_\_\_\_\_ day of \_\_\_\_\_  
\_\_\_\_\_, 20\_\_\_\_, which Contract is by reference made a part hereof, for the construction  
described as follows:

**West Main Street Round Pond Wall**

NOW, THEREFORE, if the Principal shall promptly make payment to all persons, firms,  
subcontractors, and corporations furnishing materials for or performing labor in the prosecution  
of the work provided for in such contract, and any authorized extension or modification thereof,  
including all amounts due for materials, lubricants, oil, gasoline, repairs on machinery,  
equipment and tools, consumed or used in connection with the construction of such work, and all  
insurance premiums on said work, and for all labor, performed in such work whether by  
subcontractor or otherwise, then this obligation shall be void; otherwise to remain in full force  
and effect.

PROVIDED, FURTHER, that the said Surety, for value received hereby stipulates and  
agrees that no change, extension of time, alteration or addition to the terms of the Contract or to  
the work to be performed thereunder or the specifications accompanying the same shall in any  
way affect its obligation on this bond, and it does hereby waive notice of any such change,  
extension of time, alteration or addition to the terms of this Contract or to the work or to the  
specifications. The Surety Company providing the bond shall have a rating of A or better within  
the Best Key Rating Guide.

PROVIDED, FURTHER, that no final settlement between the Owner and the Contractor  
shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in \_\_\_\_ ( ) counterparts, each one of which shall be deemed an original, this the \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_.

ATTEST:

_____	_____
Principal	Witness as to Principal Signature
By _____	_____
Signature	Name and Title
_____	_____
Name and Title	Address
_____	_____
Address	City and State
_____	
City and State	(SEAL)

ATTEST:

_____	_____
Surety	Witness as to Surety Signature
By _____	_____
Attorney-in-Fact Signature	Name and Title
_____	_____
Name and Title	Address
_____	_____
Address	City and State
_____	
City and State	(SEAL)

NOTE: Date of Bond must not be prior to date of Contract. If Contractor is a Partnership, all partners should execute Bond.

END OF SECTION

SECTION 00700

GENERAL CONDITIONS



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

## STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by



Issued and Published Jointly by



These General Conditions have been prepared for use with the Agreement Between Owner and Contractor for Construction Contract (EJCDC® C-520, Stipulated Sum, or C-525, Cost-Plus, 2013 Editions). Their provisions are interrelated and a change in one may necessitate a change in the other.

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## ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

### 1.01 *Defined Terms*

- A. Wherever used in the Bidding Requirements or Contract Documents, a term printed with initial capital letters, including the term's singular and plural forms, will have the meaning indicated in the definitions below. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.
1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.
  2. *Agreement*—The written instrument, executed by Owner and Contractor, that sets forth the Contract Price and Contract Times, identifies the parties and the Engineer, and designates the specific items that are Contract Documents.
  3. *Application for Payment*—The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
  4. *Bid*—The offer of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
  5. *Bidder*—An individual or entity that submits a Bid to Owner.
  6. *Bidding Documents*—The Bidding Requirements, the proposed Contract Documents, and all Addenda.
  7. *Bidding Requirements*—The advertisement or invitation to bid, Instructions to Bidders, Bid Bond or other Bid security, if any, the Bid Form, and the Bid with any attachments.
  8. *Change Order*—A document which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, or other revision to the Contract, issued on or after the Effective Date of the Contract.
  9. *Change Proposal*—A written request by Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment in Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Contract.
  10. *Claim*—(a) A demand or assertion by Owner directly to Contractor, duly submitted in compliance with the procedural requirements set forth herein: seeking an adjustment of Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; contesting Engineer's decision regarding a Change Proposal; seeking resolution of a contractual issue that Engineer has declined to address; or seeking other relief with respect to the terms of the Contract; or (b) a demand or assertion by Contractor directly to Owner, duly submitted in compliance with the procedural requirements set forth herein, contesting Engineer's decision regarding a Change Proposal; or seeking resolution of a contractual issue that Engineer

has declined to address. A demand for money or services by a third party is not a Claim.

11. *Constituent of Concern*—Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to (a) the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. §§9601 et seq. (“CERCLA”); (b) the Hazardous Materials Transportation Act, 49 U.S.C. §§5501 et seq.; (c) the Resource Conservation and Recovery Act, 42 U.S.C. §§6901 et seq. (“RCRA”); (d) the Toxic Substances Control Act, 15 U.S.C. §§2601 et seq.; (e) the Clean Water Act, 33 U.S.C. §§1251 et seq.; (f) the Clean Air Act, 42 U.S.C. §§7401 et seq.; or (g) any other federal, state, or local statute, law, rule, regulation, ordinance, resolution, code, order, or decree regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.
12. *Contract*—The entire and integrated written contract between the Owner and Contractor concerning the Work.
13. *Contract Documents*—Those items so designated in the Agreement, and which together comprise the Contract.
14. *Contract Price*—The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Contract Documents. .
15. *Contract Times*—The number of days or the dates by which Contractor shall: (a) achieve Milestones, if any; (b) achieve Substantial Completion; and (c) complete the Work.
16. *Contractor*—The individual or entity with which Owner has contracted for performance of the Work.
17. *Cost of the Work*—See Paragraph 13.01 for definition.
18. *Drawings*—The part of the Contract that graphically shows the scope, extent, and character of the Work to be performed by Contractor.
19. *Effective Date of the Contract*—The date, indicated in the Agreement, on which the Contract becomes effective.
20. *Engineer*—The individual or entity named as such in the Agreement.
21. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but does not change the Contract Price or the Contract Times.
22. *Hazardous Environmental Condition*—The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated in the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, does not establish a Hazardous Environmental Condition.
23. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

24. *Liens*—Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.
25. *Milestone*—A principal event in the performance of the Work that the Contract requires Contractor to achieve by an intermediate completion date or by a time prior to Substantial Completion of all the Work.
26. *Notice of Award*—The written notice by Owner to a Bidder of Owner's acceptance of the Bid.
27. *Notice to Proceed*—A written notice by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work.
28. *Owner*—The individual or entity with which Contractor has contracted regarding the Work, and which has agreed to pay Contractor for the performance of the Work, pursuant to the terms of the Contract.
29. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor's plan to accomplish the Work within the Contract Times.
30. *Project*—The total undertaking to be accomplished for Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Work to be performed under the Contract Documents is a part.
31. *Project Manual*—The written documents prepared for, or made available for, procuring and constructing the Work, including but not limited to the Bidding Documents or other construction procurement documents, geotechnical and existing conditions information, the Agreement, bond forms, General Conditions, Supplementary Conditions, and Specifications. The contents of the Project Manual may be bound in one or more volumes.
32. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative or "RPR" includes any assistants or field staff of Resident Project Representative.
33. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and that establish the standards by which such portion of the Work will be judged.
34. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer's review of the submittals and the performance of related construction activities.
35. *Schedule of Values*—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.
36. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work. Shop Drawings, whether approved or not, are not Drawings and are not Contract Documents.

37. *Site*—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements, and such other lands furnished by Owner which are designated for the use of Contractor.
38. *Specifications*—The part of the Contract that consists of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable to the Work.
39. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work.
40. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms “substantially complete” and “substantially completed” as applied to all or part of the Work refer to Substantial Completion thereof.
41. *Successful Bidder*—The Bidder whose Bid the Owner accepts, and to which the Owner makes an award of contract, subject to stated conditions.
42. *Supplementary Conditions*—The part of the Contract that amends or supplements these General Conditions.
43. *Supplier*—A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or a Subcontractor.
44. *Technical Data*—Those items expressly identified as Technical Data in the Supplementary Conditions, with respect to either (a) subsurface conditions at the Site, or physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities) or (b) Hazardous Environmental Conditions at the Site. If no such express identifications of Technical Data have been made with respect to conditions at the Site, then the data contained in boring logs, recorded measurements of subsurface water levels, laboratory test results, and other factual, objective information regarding conditions at the Site that are set forth in any geotechnical or environmental report prepared for the Project and made available to Contractor are hereby defined as Technical Data with respect to conditions at the Site under Paragraphs 5.03, 5.04, and 5.06.
45. *Underground Facilities*—All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including but not limited to those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, fiber optic transmissions, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.
46. *Unit Price Work*—Work to be paid for on the basis of unit prices.
47. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction; furnishing, installing, and incorporating all materials and equipment into such construction; and may include related services such as testing, start-up, and commissioning, all as required by the Contract Documents.

48. *Work Change Directive*—A written directive to Contractor issued on or after the Effective Date of the Contract, signed by Owner and recommended by Engineer, ordering an addition, deletion, or revision in the Work.

## 1.02 Terminology

- A. The words and terms discussed in the following paragraphs are not defined but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.
- B. *Intent of Certain Terms or Adjectives:*
1. The Contract Documents include the terms “as allowed,” “as approved,” “as ordered,” “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Article 10 or any other provision of the Contract Documents.
- C. *Day:*
1. The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.
- D. *Defective:*
1. The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
    - a. does not conform to the Contract Documents; or
    - b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
    - c. has been damaged prior to Engineer’s recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 15.03 or 15.04).
- E. *Furnish, Install, Perform, Provide:*
1. The word “furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.
  2. The word “install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.

3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.
  4. If the Contract Documents establish an obligation of Contractor with respect to specific services, materials, or equipment, but do not expressly use any of the four words “furnish,” “install,” “perform,” or “provide,” then Contractor shall furnish and install said services, materials, or equipment complete and ready for intended use.
- F. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

## **ARTICLE 2 – PRELIMINARY MATTERS**

### **2.01 *Delivery of Bonds and Evidence of Insurance***

- A. *Bonds*: When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.
- B. *Evidence of Contractor’s Insurance*: When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract), the certificates and other evidence of insurance required to be provided by Contractor in accordance with Article 6.
- C. *Evidence of Owner’s Insurance*: After receipt of the executed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or otherwise), the certificates and other evidence of insurance required to be provided by Owner under Article 6.

### **2.02 *Copies of Documents***

- A. Owner shall furnish to Contractor four printed copies of the Contract (including one fully executed counterpart of the Agreement), and one copy in electronic portable document format (PDF). Additional printed copies will be furnished upon request at the cost of reproduction.
- B. Owner shall maintain and safeguard at least one original printed record version of the Contract, including Drawings and Specifications signed and sealed by Engineer and other design professionals. Owner shall make such original printed record version of the Contract available to Contractor for review. Owner may delegate the responsibilities under this provision to Engineer.

### **2.03 *Before Starting Construction***

- A. *Preliminary Schedules*: Within 10 days after the Effective Date of the Contract (or as otherwise specifically required by the Contract Documents), Contractor shall submit to Engineer for timely review:
  1. a preliminary Progress Schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract;
  2. a preliminary Schedule of Submittals; and

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

#### 2.04 *Preconstruction Conference; Designation of Authorized Representatives*

- A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.03.A, procedures for handling Shop Drawings, Samples, and other submittals, processing Applications for Payment, electronic or digital transmittals, and maintaining required records.
- B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit and receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

#### 2.05 *Initial Acceptance of Schedules*

- A. At least 10 days before submission of the first Application for Payment a conference, attended by Contractor, Engineer, and others as appropriate, will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.03.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.
  1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work, nor interfere with or relieve Contractor from Contractor's full responsibility therefor.
  2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.
  3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to the component parts of the Work.

#### 2.06 *Electronic Transmittals*

- A. Except as otherwise stated elsewhere in the Contract, the Owner, Engineer, and Contractor may transmit, and shall accept, Project-related correspondence, text, data, documents, drawings, information, and graphics, including but not limited to Shop Drawings and other submittals, in electronic media or digital format, either directly, or through access to a secure Project website.
- B. If the Contract does not establish protocols for electronic or digital transmittals, then Owner, Engineer, and Contractor shall jointly develop such protocols.
- C. When transmitting items in electronic media or digital format, the transmitting party makes no representations as to long term compatibility, usability, or readability of the items resulting from the recipient's use of software application packages, operating systems, or

computer hardware differing from those used in the drafting or transmittal of the items, or from those established in applicable transmittal protocols.

### **ARTICLE 3 – DOCUMENTS: INTENT, REQUIREMENTS, REUSE**

#### **3.01 *Intent***

- A. The Contract Documents are complementary; what is required by one is as binding as if required by all.
- B. It is the intent of the Contract Documents to describe a functionally complete project (or part thereof) to be constructed in accordance with the Contract Documents.
- C. Unless otherwise stated in the Contract Documents, if there is a discrepancy between the electronic or digital versions of the Contract Documents (including any printed copies derived from such electronic or digital versions) and the printed record version, the printed record version shall govern.
- D. The Contract supersedes prior negotiations, representations, and agreements, whether written or oral.
- E. Engineer will issue clarifications and interpretations of the Contract Documents as provided herein.

#### **3.02 *Reference Standards***

- A. Standards Specifications, Codes, Laws and Regulations
  - 1. Reference in the Contract Documents to standard specifications, manuals, reference standards, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard specification, manual, reference standard, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Contract if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.
  - 2. No provision of any such standard specification, manual, reference standard, or code, or any instruction of a Supplier, shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees, from those set forth in the part of the Contract Documents prepared by or for Engineer. No such provision or instruction shall be effective to assign to Owner, Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the part of the Contract Documents prepared by or for Engineer.

#### **3.03 *Reporting and Resolving Discrepancies***

- A. *Reporting Discrepancies:*
  - 1. *Contractor's Verification of Figures and Field Measurements:* Before undertaking each part of the Work, Contractor shall carefully study the Contract Documents, and check and verify pertinent figures and dimensions therein, particularly with respect to applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy that Contractor discovers, or has actual knowledge of, and shall not proceed with any Work affected thereby until the conflict,

error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract Documents issued pursuant to Paragraph 11.01.

2. *Contractor's Review of Contract Documents:* If, before or during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) actual field conditions, (c) any standard specification, manual, reference standard, or code, or (d) any instruction of any Supplier, then Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 7.15) until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract Documents issued pursuant to Paragraph 11.01.
3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.

B. *Resolving Discrepancies:*

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the part of the Contract Documents prepared by or for Engineer shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between such provisions of the Contract Documents and:
  - a. the provisions of any standard specification, manual, reference standard, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference as a Contract Document); or
  - b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 *Requirements of the Contract Documents*

- A. During the performance of the Work and until final payment, Contractor and Owner shall submit to the Engineer all matters in question concerning the requirements of the Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Contract Documents, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the Work thereunder.
- B. Engineer will, with reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Contract Documents. Engineer's written clarification, interpretation, or decision will be final and binding on Contractor, unless it appeals by submitting a Change Proposal, and on Owner, unless it appeals by filing a Claim.
- C. If a submitted matter in question concerns terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work under the Contract Documents, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly give written notice to Owner and Contractor that Engineer is unable to provide a decision or interpretation. If Owner and Contractor are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in Article 12.

### 3.05 *Reuse of Documents*

- A. Contractor and its Subcontractors and Suppliers shall not:
  - 1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media editions, or reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer; or
  - 2. have or acquire any title or ownership rights in any other Contract Documents, reuse any such Contract Documents for any purpose without Owner's express written consent, or violate any copyrights pertaining to such Contract Documents.
- B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

## **ARTICLE 4 – COMMENCEMENT AND PROGRESS OF THE WORK**

### 4.01 *Commencement of Contract Times; Notice to Proceed*

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

### 4.02 *Starting the Work*

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

### 4.03 *Reference Points*

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

### 4.04 *Progress Schedule*

- A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.05 as it may be adjusted from time to time as provided below.
  - 1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.05) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times.

2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 11.
- B. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, or during any appeal process, except as permitted by Paragraph 16.04, or as Owner and Contractor may otherwise agree in writing.

#### 4.05 *Delays in Contractor's Progress*

- A. If Owner, Engineer, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Times and Contract Price. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
- B. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference caused by or within the control of Contractor. Delay, disruption, and interference attributable to and within the control of a Subcontractor or Supplier shall be deemed to be within the control of Contractor.
- C. If Contractor's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Owner, Contractor, and those for which they are responsible, then Contractor shall be entitled to an equitable adjustment in Contract Times. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Contract Times under this paragraph include but are not limited to the following:
  1. severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;
  2. abnormal weather conditions;
  3. acts or failures to act of utility owners (other than those performing other work at or adjacent to the Site by arrangement with the Owner, as contemplated in Article 8); and
  4. acts of war or terrorism.
- D. Delays, disruption, and interference to the performance or progress of the Work resulting from the existence of a differing subsurface or physical condition, an Underground Facility that was not shown or indicated by the Contract Documents, or not shown or indicated with reasonable accuracy, and those resulting from Hazardous Environmental Conditions, are governed by Article 5.
- E. Paragraph 8.03 governs delays, disruption, and interference to the performance or progress of the Work resulting from the performance of certain other work at or adjacent to the Site.
- F. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Contractor.

- G. Contractor must submit any Change Proposal seeking an adjustment in Contract Price or Contract Times under this paragraph within 30 days of the commencement of the delaying, disrupting, or interfering event.

## **ARTICLE 5 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS**

### **5.01 *Availability of Lands***

- A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work.
- B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which permanent improvements are to be made and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.
- C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

### **5.02 *Use of Site and Other Areas***

#### **A. *Limitation on Use of Site and Other Areas:***

- 1. Contractor shall confine construction equipment, temporary construction facilities, the storage of materials and equipment, and the operations of workers to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and such other adjacent areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for (a) damage to the Site; (b) damage to any such other adjacent areas used for Contractor's operations; (c) damage to any other adjacent land or areas; and (d) for injuries and losses sustained by the owners or occupants of any such land or areas; provided that such damage or injuries result from the performance of the Work or from other actions or conduct of the Contractor or those for which Contractor is responsible.
- 2. If a damage or injury claim is made by the owner or occupant of any such land or area because of the performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible, Contractor shall (a) take immediate corrective or remedial action as required by Paragraph 7.12, or otherwise; (b) promptly attempt to settle the claim as to all parties through negotiations with such owner or occupant, or otherwise resolve the claim by arbitration or other dispute resolution proceeding, or at law; and (c) to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claim, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused directly or indirectly, in whole or in part

by, or based upon, Contractor's performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible.

- B. *Removal of Debris During Performance of the Work:* During the progress of the Work the Contractor shall keep the Site and other adjacent areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.
- C. *Cleaning:* Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site and adjacent areas all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.
- D. *Loading of Structures:* Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent structures or land to stresses or pressures that will endanger them.

### 5.03 *Subsurface and Physical Conditions*

- A. *Reports and Drawings:* The Supplementary Conditions identify:
  - 1. those reports known to Owner of explorations and tests of subsurface conditions at or adjacent to the Site;
  - 2. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities); and
  - 3. Technical Data contained in such reports and drawings.
- B. *Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely upon the accuracy of the Technical Data (as defined in Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:
  - 1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or
  - 2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
  - 3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions, or information.

#### 5.04 *Differing Subsurface or Physical Conditions*

- A. *Notice by Contractor:* If Contractor believes that any subsurface or physical condition that is uncovered or revealed at the Site either:
1. is of such a nature as to establish that any Technical Data on which Contractor is entitled to rely as provided in Paragraph 5.03 is materially inaccurate; or
  2. is of such a nature as to require a change in the Drawings or Specifications; or
  3. differs materially from that shown or indicated in the Contract Documents; or
  4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except with respect to an emergency) until receipt of a written statement permitting Contractor to do so.

- B. *Engineer's Review:* After receipt of written notice as required by the preceding paragraph, Engineer will promptly review the subsurface or physical condition in question; determine the necessity of Owner's obtaining additional exploration or tests with respect to the condition; conclude whether the condition falls within any one or more of the differing site condition categories in Paragraph 5.04.A above; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and advise Owner in writing of Engineer's findings, conclusions, and recommendations.
- C. *Owner's Statement to Contractor Regarding Site Condition:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the subsurface or physical condition in question, addressing the resumption of Work in connection with such condition, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations, in whole or in part.
- D. *Possible Price and Times Adjustments:*
1. Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, or both, to the extent that the existence of a differing subsurface or physical condition, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:
    - a. such condition must fall within any one or more of the categories described in Paragraph 5.04.A;
    - b. with respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03; and,

- c. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
- 2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times with respect to a subsurface or physical condition if:
  - a. Contractor knew of the existence of such condition at the time Contractor made a commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract, or otherwise; or
  - b. the existence of such condition reasonably could have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas expressly required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such commitment; or
  - c. Contractor failed to give the written notice as required by Paragraph 5.04.A.
- 3. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.
- 4. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the subsurface or physical condition in question.

#### 5.05 *Underground Facilities*

- A. *Contractor's Responsibilities:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or adjacent to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:
  - 1. Owner and Engineer do not warrant or guarantee the accuracy or completeness of any such information or data provided by others; and
  - 2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:
    - a. reviewing and checking all information and data regarding existing Underground Facilities at the Site;
    - b. locating all Underground Facilities shown or indicated in the Contract Documents as being at the Site;
    - c. coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and
    - d. the safety and protection of all existing Underground Facilities at the Site, and repairing any damage thereto resulting from the Work.
- B. *Notice by Contractor:* If Contractor believes that an Underground Facility that is uncovered or revealed at the Site was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, then Contractor shall, promptly after

becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer.

- C. *Engineer's Review:* Engineer will promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the Underground Facility in question; determine the extent, if any, to which a change is required in the Drawings or Specifications to reflect and document the consequences of the existence or location of the Underground Facility; and advise Owner in writing of Engineer's findings, conclusions, and recommendations. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.
- D. *Owner's Statement to Contractor Regarding Underground Facility:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the Underground Facility in question, addressing the resumption of Work in connection with such Underground Facility, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations in whole or in part.
- E. *Possible Price and Times Adjustments:*
  - 1. Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, or both, to the extent that any existing Underground Facility at the Site that was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:
    - a. Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated the existence or actual location of the Underground Facility in question;
    - b. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03;
    - c. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times; and
    - d. Contractor gave the notice required in Paragraph 5.05.B.
  - 2. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.
  - 3. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the Underground Facility in question.

5.06 *Hazardous Environmental Conditions at Site*

- A. *Reports and Drawings:* The Supplementary Conditions identify:
1. those reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; and
  2. Technical Data contained in such reports and drawings.
- B. *Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely on the accuracy of the Technical Data (as defined in Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:
1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto; or
  2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or
  3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions or information.
- C. Contractor shall not be responsible for removing or remediating any Hazardous Environmental Condition encountered, uncovered, or revealed at the Site unless such removal or remediation is expressly identified in the Contract Documents to be within the scope of the Work.
- D. Contractor shall be responsible for controlling, containing, and duly removing all Constituents of Concern brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible, and for any associated costs; and for the costs of removing and remediating any Hazardous Environmental Condition created by the presence of any such Constituents of Concern.
- E. If Contractor encounters, uncovers, or reveals a Hazardous Environmental Condition whose removal or remediation is not expressly identified in the Contract Documents as being within the scope of the Work, or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, then Contractor shall immediately: (1) secure or otherwise isolate such condition; (2) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 7.15); and (3) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 5.06.F. If Contractor or anyone for whom Contractor is responsible created the Hazardous Environmental Condition in question, then Owner may remove and remediate the Hazardous Environmental Condition, and impose a set-off against payments to account for the associated costs.

- F. Contractor shall not resume Work in connection with such Hazardous Environmental Condition or in any affected area until after Owner has obtained any required permits related thereto, and delivered written notice to Contractor either (1) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (2) specifying any special conditions under which such Work may be resumed safely.
- G. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, then within 30 days of Owner's written notice regarding the resumption of Work, Contractor may submit a Change Proposal, or Owner may impose a set-off.
- H. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work, following the contractual change procedures in Article 11. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 8.
- I. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition (1) was not shown or indicated in the Drawings, Specifications, or other Contract Documents, identified as Technical Data entitled to limited reliance pursuant to Paragraph 5.06.B, or identified in the Contract Documents to be included within the scope of the Work, and (2) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.H shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- J. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the failure to control, contain, or remove a Constituent of Concern brought to the Site by Contractor or by anyone for whom Contractor is responsible, or to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.J shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- K. The provisions of Paragraphs 5.03, 5.04, and 5.05 do not apply to the presence of Constituents of Concern or to a Hazardous Environmental Condition uncovered or revealed at the Site.

## ARTICLE 6 – BONDS AND INSURANCE

### 6.01 *Performance, Payment, and Other Bonds*

- A. Contractor shall furnish a performance bond and a payment bond, each in an amount at least equal to the Contract Price, as security for the faithful performance and payment of all of Contractor's obligations under the Contract. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 15.08, whichever is later, except as provided otherwise by Laws or Regulations, the Supplementary Conditions, or other specific provisions of the Contract. Contractor shall also furnish such other bonds as are required by the Supplementary Conditions or other specific provisions of the Contract.
- B. All bonds shall be in the form prescribed by the Contract except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (as amended and supplemented) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. A bond signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual's authority to bind the surety. The evidence of authority shall show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.
- C. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds in the required amounts.
- D. If the surety on a bond furnished by Contractor is declared bankrupt or becomes insolvent, or its right to do business is terminated in any state or jurisdiction where any part of the Project is located, or the surety ceases to meet the requirements above, then Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the bond and surety requirements above.
- E. If Contractor has failed to obtain a required bond, Owner may exclude the Contractor from the Site and exercise Owner's termination rights under Article 16.
- F. Upon request, Owner shall provide a copy of the payment bond to any Subcontractor, Supplier, or other person or entity claiming to have furnished labor or materials used in the performance of the Work.

### 6.02 *Insurance—General Provisions*

- A. Owner and Contractor shall obtain and maintain insurance as required in this Article and in the Supplementary Conditions.
- B. All insurance required by the Contract to be purchased and maintained by Owner or Contractor shall be obtained from insurance companies that are duly licensed or authorized, in the state or jurisdiction in which the Project is located, to issue insurance policies for the required limits and coverages. Unless a different standard is indicated in the Supplementary Conditions, all companies that provide insurance policies required under this Contract shall have an A.M. Best rating of A-VII or better.
- C. Contractor shall deliver to Owner, with copies to each named insured and additional insured (as identified in this Article, in the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Contractor has obtained and is

maintaining the policies, coverages, and endorsements required by the Contract. Upon request by Owner or any other insured, Contractor shall also furnish other evidence of such required insurance, including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Contractor may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.

- D. Owner shall deliver to Contractor, with copies to each named insured and additional insured (as identified in this Article, the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Owner has obtained and is maintaining the policies, coverages, and endorsements required of Owner by the Contract (if any). Upon request by Contractor or any other insured, Owner shall also provide other evidence of such required insurance (if any), including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Owner may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.
- E. Failure of Owner or Contractor to demand such certificates or other evidence of the other party's full compliance with these insurance requirements, or failure of Owner or Contractor to identify a deficiency in compliance from the evidence provided, shall not be construed as a waiver of the other party's obligation to obtain and maintain such insurance.
- F. If either party does not purchase or maintain all of the insurance required of such party by the Contract, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage.
- G. If Contractor has failed to obtain and maintain required insurance, Owner may exclude the Contractor from the Site, impose an appropriate set-off against payment, and exercise Owner's termination rights under Article 16.
- H. Without prejudice to any other right or remedy, if a party has failed to obtain required insurance, the other party may elect to obtain equivalent insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and the Contract Price shall be adjusted accordingly.
- I. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor's interests.
- J. The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor's liability under the indemnities granted to Owner and other individuals and entities in the Contract.

#### 6.03 *Contractor's Insurance*

- A. *Workers' Compensation:* Contractor shall purchase and maintain workers' compensation and employer's liability insurance for:
  - 1. claims under workers' compensation, disability benefits, and other similar employee benefit acts.
  - 2. United States Longshoreman and Harbor Workers' Compensation Act and Jones Act coverage (if applicable).
  - 3. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees (by stop-gap endorsement in monopolist worker's compensation states).

4. Foreign voluntary worker compensation (if applicable).
- B. *Commercial General Liability—Claims Covered:* Contractor shall purchase and maintain commercial general liability insurance, covering all operations by or on behalf of Contractor, on an occurrence basis, against:
1. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees.
  2. claims for damages insured by reasonably available personal injury liability coverage.
  3. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom.
- C. *Commercial General Liability—Form and Content:* Contractor's commercial liability policy shall be written on a 1996 (or later) ISO commercial general liability form (occurrence form) and include the following coverages and endorsements:
1. Products and completed operations coverage:
    - a. Such insurance shall be maintained for three years after final payment.
    - b. Contractor shall furnish Owner and each other additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract) evidence of continuation of such insurance at final payment and three years thereafter.
  2. Blanket contractual liability coverage, to the extent permitted by law, including but not limited to coverage of Contractor's contractual indemnity obligations in Paragraph 7.18.
  3. Broad form property damage coverage.
  4. Severability of interest.
  5. Underground, explosion, and collapse coverage.
  6. Personal injury coverage.
  7. Additional insured endorsements that include both ongoing operations and products and completed operations coverage through ISO Endorsements CG 20 10 10 01 and CG 20 37 10 01 (together); or CG 20 10 07 04 and CG 20 37 07 04 (together); or their equivalent.
  8. For design professional additional insureds, ISO Endorsement CG 20 32 07 04, "Additional Insured—Engineers, Architects or Surveyors Not Engaged by the Named Insured" or its equivalent.
- D. *Automobile liability:* Contractor shall purchase and maintain automobile liability insurance against claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance, or use of any motor vehicle. The automobile liability policy shall be written on an occurrence basis.
- E. *Umbrella or excess liability:* Contractor shall purchase and maintain umbrella or excess liability insurance written over the underlying employer's liability, commercial general liability, and automobile liability insurance described in the paragraphs above. Subject to industry-standard exclusions, the coverage afforded shall follow form as to each and every one of the underlying policies.
- F. *Contractor's pollution liability insurance:* Contractor shall purchase and maintain a policy covering third-party injury and property damage claims, including clean-up costs, as a result

of pollution conditions arising from Contractor's operations and completed operations. This insurance shall be maintained for no less than three years after final completion.

- G. *Additional insureds*: The Contractor's commercial general liability, automobile liability, umbrella or excess, and pollution liability policies shall include and list as additional insureds Owner and Engineer, and any individuals or entities identified in the Supplementary Conditions; include coverage for the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of all such additional insureds; and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby (including as applicable those arising from both ongoing and completed operations) on a non-contributory basis. Contractor shall obtain all necessary endorsements to support these requirements.
- H. *Contractor's professional liability insurance*: If Contractor will provide or furnish professional services under this Contract, through a delegation of professional design services or otherwise, then Contractor shall be responsible for purchasing and maintaining applicable professional liability insurance. This insurance shall provide protection against claims arising out of performance of professional design or related services, and caused by a negligent error, omission, or act for which the insured party is legally liable. It shall be maintained throughout the duration of the Contract and for a minimum of two years after Substantial Completion. If such professional design services are performed by a Subcontractor, and not by Contractor itself, then the requirements of this paragraph may be satisfied through the purchasing and maintenance of such insurance by such Subcontractor.
- I. *General provisions*: The policies of insurance required by this Paragraph 6.03 shall:
  - 1. include at least the specific coverages provided in this Article.
  - 2. be written for not less than the limits of liability provided in this Article and in the Supplementary Conditions, or required by Laws or Regulations, whichever is greater.
  - 3. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed, or renewal refused until at least 10 days prior written notice has been given to Contractor. Within three days of receipt of any such written notice, Contractor shall provide a copy of the notice to Owner, Engineer, and each other insured under the policy.
  - 4. remain in effect at least until final payment (and longer if expressly required in this Article) and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work as a warranty or correction obligation, or otherwise, or returning to the Site to conduct other tasks arising from the Contract Documents.
  - 5. be appropriate for the Work being performed and provide protection from claims that may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable.
- J. The coverage requirements for specific policies of insurance must be met by such policies, and not by reference to excess or umbrella insurance provided in other policies.

#### 6.04 *Owner's Liability Insurance*

- A. In addition to the insurance required to be provided by Contractor under Paragraph 6.03, Owner, at Owner's option, may purchase and maintain at Owner's expense Owner's own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.
- B. Owner's liability policies, if any, operate separately and independently from policies required to be provided by Contractor, and Contractor cannot rely upon Owner's liability policies for any of Contractor's obligations to the Owner, Engineer, or third parties.

#### 6.05 *Property Insurance*

- A. *Builder's Risk:* Unless otherwise provided in the Supplementary Conditions, Contractor shall purchase and maintain builder's risk insurance upon the Work on a completed value basis, in the amount of the full insurable replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:
  - 1. include the Owner and Contractor as named insureds, and all Subcontractors, and any individuals or entities required by the Supplementary Conditions to be insured under such builder's risk policy, as insureds or named insureds. For purposes of the remainder of this Paragraph 6.05, Paragraphs 6.06 and 6.07, and any corresponding Supplementary Conditions, the parties required to be insured shall collectively be referred to as "insureds."
  - 2. be written on a builder's risk "all risk" policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire; lightning; windstorm; riot; civil commotion; terrorism; vehicle impact; aircraft; smoke; theft; vandalism and malicious mischief; mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; flood; collapse; explosion; debris removal; demolition occasioned by enforcement of Laws and Regulations; water damage (other than that caused by flood); and such other perils or causes of loss as may be specifically required by the Supplementary Conditions. If insurance against mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; or flood, are not commercially available under builder's risk policies, by endorsement or otherwise, such insurance may be provided through other insurance policies acceptable to Owner and Contractor.
  - 3. cover, as insured property, at least the following: (a) the Work and all materials, supplies, machinery, apparatus, equipment, fixtures, and other property of a similar nature that are to be incorporated into or used in the preparation, fabrication, construction, erection, or completion of the Work, including Owner-furnished or assigned property; (b) spare parts inventory required within the scope of the Contract; and (c) temporary works which are not intended to form part of the permanent constructed Work but which are intended to provide working access to the Site, or to the Work under construction, or which are intended to provide temporary support for the Work under construction, including scaffolding, form work, fences, shoring, falsework, and temporary structures.
  - 4. cover expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects).

5. extend to cover damage or loss to insured property while in temporary storage at the Site or in a storage location outside the Site (but not including property stored at the premises of a manufacturer or Supplier).
  6. extend to cover damage or loss to insured property while in transit.
  7. allow for partial occupation or use of the Work by Owner, such that those portions of the Work that are not yet occupied or used by Owner shall remain covered by the builder's risk insurance.
  8. allow for the waiver of the insurer's subrogation rights, as set forth below.
  9. provide primary coverage for all losses and damages caused by the perils or causes of loss covered.
  10. not include a co-insurance clause.
  11. include an exception for ensuing losses from physical damage or loss with respect to any defective workmanship, design, or materials exclusions.
  12. include performance/hot testing and start-up.
  13. be maintained in effect, subject to the provisions herein regarding Substantial Completion and partial occupancy or use of the Work by Owner, until the Work is complete.
- B. *Notice of Cancellation or Change:* All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with this Paragraph 6.05 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 10 days prior written notice has been given to the purchasing policyholder. Within three days of receipt of any such written notice, the purchasing policyholder shall provide a copy of the notice to each other insured.
- C. *Deductibles:* The purchaser of any required builder's risk or property insurance shall pay for costs not covered because of the application of a policy deductible.
- D. *Partial Occupancy or Use by Owner:* If Owner will occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 15.04, then Owner (directly, if it is the purchaser of the builder's risk policy, or through Contractor) will provide notice of such occupancy or use to the builder's risk insurer. The builder's risk insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy; rather, those portions of the Work that are occupied or used by Owner may come off the builder's risk policy, while those portions of the Work not yet occupied or used by Owner shall remain covered by the builder's risk insurance.
- E. *Additional Insurance:* If Contractor elects to obtain other special insurance to be included in or supplement the builder's risk or property insurance policies provided under this Paragraph 6.05, it may do so at Contractor's expense.
- F. *Insurance of Other Property:* If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, such as tools, construction equipment, or other personal property owned by Contractor, a Subcontractor, or an employee of Contractor or a Subcontractor, then the entity or individual owning such property item will be responsible for deciding whether to insure it, and if so in what amount.

## 6.06 *Waiver of Rights*

- A. All policies purchased in accordance with Paragraph 6.05, expressly including the builder's risk policy, shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any insureds thereunder, or against Engineer or its consultants, or their officers, directors, members, partners, employees, agents, consultants, or subcontractors. Owner and Contractor waive all rights against each other and the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Engineer, its consultants, all Subcontractors, all individuals or entities identified in the Supplementary Conditions as insureds, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by Owner or Contractor as trustee or fiduciary, or otherwise payable under any policy so issued.
- B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, for:
  - 1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other perils whether or not insured by Owner; and
  - 2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial occupancy or use pursuant to Paragraph 15.04, after Substantial Completion pursuant to Paragraph 15.03, or after final payment pursuant to Paragraph 15.06.
- C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 6.06.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, or the officers, directors, members, partners, employees, agents, consultants, or subcontractors of each and any of them.
- D. Contractor shall be responsible for assuring that the agreement under which a Subcontractor performs a portion of the Work contains provisions whereby the Subcontractor waives all rights against Owner, Contractor, all individuals or entities identified in the Supplementary Conditions as insureds, the Engineer and its consultants, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by builder's risk insurance and any other property insurance applicable to the Work.

## 6.07 *Receipt and Application of Property Insurance Proceeds*

- A. Any insured loss under the builder's risk and other policies of insurance required by Paragraph 6.05 will be adjusted and settled with the named insured that purchased the

policy. Such named insured shall act as fiduciary for the other insureds, and give notice to such other insureds that adjustment and settlement of a claim is in progress. Any other insured may state its position regarding a claim for insured loss in writing within 15 days after notice of such claim.

- B. Proceeds for such insured losses may be made payable by the insurer either jointly to multiple insureds, or to the named insured that purchased the policy in its own right and as fiduciary for other insureds, subject to the requirements of any applicable mortgage clause. A named insured receiving insurance proceeds under the builder's risk and other policies of insurance required by Paragraph 6.05 shall distribute such proceeds in accordance with such agreement as the parties in interest may reach, or as otherwise required under the dispute resolution provisions of this Contract or applicable Laws and Regulations.
- C. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the money so received applied on account thereof, and the Work and the cost thereof covered by Change Order, if needed.

## **ARTICLE 7 – CONTRACTOR'S RESPONSIBILITIES**

### **7.01   *Supervision and Superintendence***

- A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction.
- B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

### **7.02   *Labor; Working Hours***

- A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.
- B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours, Monday through Friday. Contractor will not perform Work on a Saturday, Sunday, or any legal holiday. Contractor may perform Work outside regular working hours or on Saturdays, Sundays, or legal holidays only with Owner's written consent, which will not be unreasonably withheld.

### **7.03   *Services, Materials, and Equipment***

- A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start up, and completion of the Work, whether or not such items are specifically called for in the Contract Documents.
- B. All materials and equipment incorporated into the Work shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and

guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.

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

#### 7.04 "Or Equals"

- A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the Contract Price has been based upon Contractor furnishing such item as specified. The specification or description of such an item is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or equal" item is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment, or items from other proposed suppliers under the circumstances described below.
  - 1. If Engineer in its sole discretion determines that an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, Engineer shall deem it an "or equal" item. For the purposes of this paragraph, a proposed item of material or equipment will be considered functionally equal to an item so named if:
    - a. in the exercise of reasonable judgment Engineer determines that:
      - 1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;
      - 2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole;
      - 3) it has a proven record of performance and availability of responsive service; and
      - 4) it is not objectionable to Owner.
    - b. Contractor certifies that, if approved and incorporated into the Work:
      - 1) there will be no increase in cost to the Owner or increase in Contract Times; and
      - 2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.
- B. *Contractor's Expense:* Contractor shall provide all data in support of any proposed "or equal" item at Contractor's expense.
- C. *Engineer's Evaluation and Determination:* Engineer will be allowed a reasonable time to evaluate each "or-equal" request. Engineer may require Contractor to furnish additional data about the proposed "or-equal" item. Engineer will be the sole judge of acceptability. No "or-equal" item will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an "or-equal", which will be evidenced by an approved Shop Drawing or other written communication. Engineer will advise Contractor in writing of any negative determination.

- D. *Effect of Engineer's Determination:* Neither approval nor denial of an "or-equal" request shall result in any change in Contract Price. The Engineer's denial of an "or-equal" request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents.
- E. *Treatment as a Substitution Request:* If Engineer determines that an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item, Contractor may request that Engineer consider the proposed item as a substitute pursuant to Paragraph 7.05.

#### 7.05 Substitutes

- A. Unless the specification or description of an item of material or equipment required to be furnished under the Contract Documents contains or is followed by words reading that no substitution is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment under the circumstances described below. To the extent possible such requests shall be made before commencement of related construction at the Site.
  - 1. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is functionally equivalent to that named and an acceptable substitute therefor. Engineer will not accept requests for review of proposed substitute items of material or equipment from anyone other than Contractor.
  - 2. The requirements for review by Engineer will be as set forth in Paragraph 7.05.B, as supplemented by the Specifications, and as Engineer may decide is appropriate under the circumstances.
  - 3. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:
    - a. shall certify that the proposed substitute item will:
      - 1) perform adequately the functions and achieve the results called for by the general design,
      - 2) be similar in substance to that specified, and
      - 3) be suited to the same use as that specified.
    - b. will state:
      - 1) the extent, if any, to which the use of the proposed substitute item will necessitate a change in Contract Times,
      - 2) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item, and
      - 3) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty.
    - c. will identify:
      - 1) all variations of the proposed substitute item from that specified, and

- 2) available engineering, sales, maintenance, repair, and replacement services.
- d. shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including but not limited to changes in Contract Price, shared savings, costs of redesign, and claims of other contractors affected by any resulting change.
- B. *Engineer's Evaluation and Determination:* Engineer will be allowed a reasonable time to evaluate each substitute request, and to obtain comments and direction from Owner. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No substitute will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an acceptable substitute. Engineer's determination will be evidenced by a Field Order or a proposed Change Order accounting for the substitution itself and all related impacts, including changes in Contract Price or Contract Times. Engineer will advise Contractor in writing of any negative determination.
- C. *Special Guarantee:* Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.
- D. *Reimbursement of Engineer's Cost:* Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.
- E. *Contractor's Expense:* Contractor shall provide all data in support of any proposed substitute at Contractor's expense.
- F. *Effect of Engineer's Determination:* If Engineer approves the substitution request, Contractor shall execute the proposed Change Order and proceed with the substitution. The Engineer's denial of a substitution request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents. Contractor may challenge the scope of reimbursement costs imposed under Paragraph 7.05.D, by timely submittal of a Change Proposal.

7.06 *Concerning Subcontractors, Suppliers, and Others*

- A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work. Such Subcontractors and Suppliers must be acceptable to Owner.
- B. Contractor shall retain specific Subcontractors, Suppliers, or other individuals or entities for the performance of designated parts of the Work if required by the Contract to do so.
- C. Subsequent to the submittal of Contractor's Bid or final negotiation of the terms of the Contract, Owner may not require Contractor to retain any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against which Contractor has reasonable objection.
- D. Prior to entry into any binding subcontract or purchase order, Contractor shall submit to Owner the identity of the proposed Subcontractor or Supplier (unless Owner has already deemed such proposed Subcontractor or Supplier acceptable, during the bidding process or otherwise). Such proposed Subcontractor or Supplier shall be deemed acceptable to Owner unless Owner raises a substantive, reasonable objection within five days.

- E. Owner may require the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work. Owner also may require Contractor to retain specific replacements; provided, however, that Owner may not require a replacement to which Contractor has a reasonable objection. If Contractor has submitted the identity of certain Subcontractors, Suppliers, or other individuals or entities for acceptance by Owner, and Owner has accepted it (either in writing or by failing to make written objection thereto), then Owner may subsequently revoke the acceptance of any such Subcontractor, Supplier, or other individual or entity so identified solely on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity.
- F. If Owner requires the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work, then Contractor shall be entitled to an adjustment in Contract Price or Contract Times, or both, with respect to the replacement; and Contractor shall initiate a Change Proposal for such adjustment within 30 days of Owner's requirement of replacement.
- G. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of the right of Owner to the completion of the Work in accordance with the Contract Documents.
- H. On a monthly basis Contractor shall submit to Engineer a complete list of all Subcontractors and Suppliers having a direct contract with Contractor, and of all other Subcontractors and Suppliers known to Contractor at the time of submittal.
- I. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions.
- J. Contractor shall be solely responsible for scheduling and coordinating the work of Subcontractors, Suppliers, and all other individuals or entities performing or furnishing any of the Work.
- K. Contractor shall restrict all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work from communicating with Engineer or Owner, except through Contractor or in case of an emergency, or as otherwise expressly allowed herein.
- L. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.
- M. All Work performed for Contractor by a Subcontractor or Supplier shall be pursuant to an appropriate contractual agreement that specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer.
- N. Owner may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor on account of Work performed for Contractor by the particular Subcontractor or Supplier.

O. Nothing in the Contract Documents:

1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier, or other individual or entity; nor
2. shall create any obligation on the part of Owner or Engineer to pay or to see to the payment of any money due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

7.07 *Patent Fees and Royalties*

- A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if, to the actual knowledge of Owner or Engineer, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by Owner in the Contract Documents.
- B. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.
- C. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

7.08 *Permits*

- A. Unless otherwise provided in the Contract Documents, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of the submission of Contractor's Bid (or when Contractor became bound under a negotiated contract). Owner shall pay all charges of utility owners for connections for providing permanent service to the Work

#### 7.09 *Taxes*

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

#### 7.10 *Laws and Regulations*

- A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.
- B. If Contractor performs any Work or takes any other action knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all resulting costs and losses, and shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work or other action. It shall not be Contractor's responsibility to make certain that the Work described in the Contract Documents is in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.
- C. Owner or Contractor may give notice to the other party of any changes after the submission of Contractor's Bid (or after the date when Contractor became bound under a negotiated contract) in Laws or Regulations having an effect on the cost or time of performance of the Work, including but not limited to changes in Laws or Regulations having an effect on procuring permits and on sales, use, value-added, consumption, and other similar taxes. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times resulting from such changes, then within 30 days of such notice Contractor may submit a Change Proposal, or Owner may initiate a Claim.

#### 7.11 *Record Documents*

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

#### 7.12 *Safety and Protection*

- A. Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury, or loss to:
  - 1. all persons on the Site or who may be affected by the Work;

2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
  3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, other work in progress, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.
- B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify Owner; the owners of adjacent property, Underground Facilities, and other utilities; and other contractors and utility owners performing work at or adjacent to the Site, when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property or work in progress.
  - C. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. The Supplementary Conditions identify any Owner's safety programs that are applicable to the Work.
  - D. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.
  - E. All damage, injury, or loss to any property referred to in Paragraph 7.12.A.2 or 7.12.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor at its expense (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).
  - F. Contractor's duties and responsibilities for safety and protection shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 15.06.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).
  - G. Contractor's duties and responsibilities for safety and protection shall resume whenever Contractor or any Subcontractor or Supplier returns to the Site to fulfill warranty or correction obligations, or to conduct other tasks arising from the Contract Documents.

#### 7.13 *Safety Representative*

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

#### 7.14 *Hazard Communication Programs*

- A. Contractor shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or

exchanged between or among employers at the Site in accordance with Laws or Regulations.

#### 7.15 *Emergencies*

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

#### 7.16 *Shop Drawings, Samples, and Other Submittals*

##### A. *Shop Drawing and Sample Submittal Requirements:*

- 1. Before submitting a Shop Drawing or Sample, Contractor shall have:
  - a. reviewed and coordinated the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;
  - b. determined and verified all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;
  - c. determined and verified the suitability of all materials and equipment offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and
  - d. determined and verified all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto.
- 2. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review of that submittal, and that Contractor approves the submittal.
- 3. With each submittal, Contractor shall give Engineer specific written notice of any variations that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be set forth in a written communication separate from the Shop Drawings or Sample submittal; and, in addition, in the case of Shop Drawings by a specific notation made on each Shop Drawing submitted to Engineer for review and approval of each such variation.

- B. *Submittal Procedures for Shop Drawings and Samples:* Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals. Each submittal will be identified as Engineer may require.

##### 1. *Shop Drawings:*

- a. Contractor shall submit the number of copies required in the Specifications.
- b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to

provide and to enable Engineer to review the information for the limited purposes required by Paragraph 7.16.D.

2. *Samples:*

- a. Contractor shall submit the number of Samples required in the Specifications.
- b. Contractor shall clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the submittal for the limited purposes required by Paragraph 7.16.D.

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

C. *Other Submittals:* Contractor shall submit other submittals to Engineer in accordance with the accepted Schedule of Submittals, and pursuant to the applicable terms of the Specifications.

D. *Engineer's Review:*

1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.
2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction or to safety precautions or programs incident thereto.
3. Engineer's review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
4. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 7.16.A.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer will document any such approved variation from the requirements of the Contract Documents in a Field Order.
5. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 7.16.A and B.
6. Engineer's review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Contract Documents, shall not, under any circumstances, change the Contract Times or Contract Price, unless such changes are included in a Change Order.
7. Neither Engineer's receipt, review, acceptance or approval of a Shop Drawing, Sample, or other submittal shall result in such item becoming a Contract Document.

8. Contractor shall perform the Work in compliance with the requirements and commitments set forth in approved Shop Drawings and Samples, subject to the provisions of Paragraph 7.16.D.4.

E. *Resubmittal Procedures:*

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.
2. Contractor shall furnish required submittals with sufficient information and accuracy to obtain required approval of an item with no more than three submittals. Engineer will record Engineer's time for reviewing a fourth or subsequent submittal of a Shop Drawings, sample, or other item requiring approval, and Contractor shall be responsible for Engineer's charges to Owner for such time. Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges.
3. If Contractor requests a change of a previously approved submittal item, Contractor shall be responsible for Engineer's charges to Owner for its review time, and Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges, unless the need for such change is beyond the control of Contractor.

7.17 *Contractor's General Warranty and Guarantee*

- A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its officers, directors, members, partners, employees, agents, consultants, and subcontractors shall be entitled to rely on Contractor's warranty and guarantee.
- B. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:
  1. abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or
  2. normal wear and tear under normal usage.
- C. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:
  1. observations by Engineer;
  2. recommendation by Engineer or payment by Owner of any progress or final payment;
  3. the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;
  4. use or occupancy of the Work or any part thereof by Owner;
  5. any review and approval of a Shop Drawing or Sample submittal;
  6. the issuance of a notice of acceptability by Engineer;
  7. any inspection, test, or approval by others; or
  8. any correction of defective Work by Owner.

- D. If the Contract requires the Contractor to accept the assignment of a contract entered into by Owner, then the specific warranties, guarantees, and correction obligations contained in the assigned contract shall govern with respect to Contractor's performance obligations to Owner for the Work described in the assigned contract.

#### 7.18 *Indemnification*

- A. To the fullest extent permitted by Laws and Regulations, and in addition to any other obligations of Contractor under the Contract or otherwise, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable.
- B. In any and all claims against Owner or Engineer or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 7.18.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.
- C. The indemnification obligations of Contractor under Paragraph 7.18.A shall not extend to the liability of Engineer and Engineer's officers, directors, members, partners, employees, agents, consultants and subcontractors arising out of:
  - 1. the preparation or approval of, or the failure to prepare or approve maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or
  - 2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

#### 7.19 *Delegation of Professional Design Services*

- A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable Laws and Regulations.
- B. If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, and other submittals prepared by such professional. Shop

Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Engineer.

- C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications, or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.
- D. Pursuant to this paragraph, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 7.16.D.1.
- E. Contractor shall not be responsible for the adequacy of the performance or design criteria specified by Owner or Engineer.

## **ARTICLE 8 – OTHER WORK AT THE SITE**

### **8.01 *Other Work***

- A. In addition to and apart from the Work under the Contract Documents, the Owner may perform other work at or adjacent to the Site. Such other work may be performed by Owner's employees, or through contracts between the Owner and third parties. Owner may also arrange to have third-party utility owners perform work on their utilities and facilities at or adjacent to the Site.
- B. If Owner performs other work at or adjacent to the Site with Owner's employees, or through contracts for such other work, then Owner shall give Contractor written notice thereof prior to starting any such other work. If Owner has advance information regarding the start of any utility work at or adjacent to the Site, Owner shall provide such information to Contractor.
- C. Contractor shall afford each other contractor that performs such other work, each utility owner performing other work, and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, and provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected.
- D. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 8, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

## 8.02 *Coordination*

- A. If Owner intends to contract with others for the performance of other work at or adjacent to the Site, to perform other work at or adjacent to the Site with Owner's employees, or to arrange to have utility owners perform work at or adjacent to the Site, the following will be set forth in the Supplementary Conditions or provided to Contractor prior to the start of any such other work:
  - 1. the identity of the individual or entity that will have authority and responsibility for coordination of the activities among the various contractors;
  - 2. an itemization of the specific matters to be covered by such authority and responsibility; and
  - 3. the extent of such authority and responsibilities.
- B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

## 8.03 *Legal Relationships*

- A. If, in the course of performing other work at or adjacent to the Site for Owner, the Owner's employees, any other contractor working for Owner, or any utility owner causes damage to the Work or to the property of Contractor or its Subcontractors, or delays, disrupts, interferes with, or increases the scope or cost of the performance of the Work, through actions or inaction, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor must submit any Change Proposal seeking an equitable adjustment in the Contract Price or the Contract Times under this paragraph within 30 days of the damaging, delaying, disrupting, or interfering event. The entitlement to, and extent of, any such equitable adjustment shall take into account information (if any) regarding such other work that was provided to Contractor in the Contract Documents prior to the submittal of the Bid or the final negotiation of the terms of the Contract. When applicable, any such equitable adjustment in Contract Price shall be conditioned on Contractor assigning to Owner all Contractor's rights against such other contractor or utility owner with respect to the damage, delay, disruption, or interference that is the subject of the adjustment. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
- B. Contractor shall take reasonable and customary measures to avoid damaging, delaying, disrupting, or interfering with the work of Owner, any other contractor, or any utility owner performing other work at or adjacent to the Site. If Contractor fails to take such measures and as a result damages, delays, disrupts, or interferes with the work of any such other contractor or utility owner, then Owner may impose a set-off against payments due to Contractor, and assign to such other contractor or utility owner the Owner's contractual rights against Contractor with respect to the breach of the obligations set forth in this paragraph.
- C. When Owner is performing other work at or adjacent to the Site with Owner's employees, Contractor shall be liable to Owner for damage to such other work, and for the reasonable direct delay, disruption, and interference costs incurred by Owner as a result of Contractor's failure to take reasonable and customary measures with respect to Owner's other work. In response to such damage, delay, disruption, or interference, Owner may impose a set-off against payments due to Contractor.

- D. If Contractor damages, delays, disrupts, or interferes with the work of any other contractor, or any utility owner performing other work at or adjacent to the Site, through Contractor's failure to take reasonable and customary measures to avoid such impacts, or if any claim arising out of Contractor's actions, inactions, or negligence in performance of the Work at or adjacent to the Site is made by any such other contractor or utility owner against Contractor, Owner, or Engineer, then Contractor shall (1) promptly attempt to settle the claim as to all parties through negotiations with such other contractor or utility owner, or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law, and (2) indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claims, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such damage, delay, disruption, or interference.

## **ARTICLE 9 – OWNER'S RESPONSIBILITIES**

### **9.01    *Communications to Contractor***

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

### **9.02    *Replacement of Engineer***

- A. Owner may at its discretion appoint an engineer to replace Engineer, provided Contractor makes no reasonable objection to the replacement engineer. The replacement engineer's status under the Contract Documents shall be that of the former Engineer.

### **9.03    *Furnish Data***

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

### **9.04    *Pay When Due***

- A. Owner shall make payments to Contractor when they are due as provided in the Agreement.

### **9.05    *Lands and Easements; Reports, Tests, and Drawings***

- A. Owner's duties with respect to providing lands and easements are set forth in Paragraph 5.01.
- B. Owner's duties with respect to providing engineering surveys to establish reference points are set forth in Paragraph 4.03.
- C. Article 5 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of conditions at the Site, and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

### **9.06    *Insurance***

- A. Owner's responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 6.

### **9.07    *Change Orders***

- A. Owner's responsibilities with respect to Change Orders are set forth in Article 11.

9.08 *Inspections, Tests, and Approvals*

- A. Owner's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 14.02.B.

9.09 *Limitations on Owner's Responsibilities*

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

9.10 *Undisclosed Hazardous Environmental Condition*

- A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 5.06.

9.11 *Evidence of Financial Arrangements*

- A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract Documents (including obligations under proposed changes in the Work).

9.12 *Safety Programs*

- A. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed.
- B. Owner shall furnish copies of any applicable Owner safety programs to Contractor.

**ARTICLE 10 – ENGINEER'S STATUS DURING CONSTRUCTION**

10.01 *Owner's Representative*

- A. Engineer will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract.

10.02 *Visits to Site*

- A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.
- B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 10.08. Particularly, but without limitation, during

or as a result of Engineer's visits or observations of Contractor's Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

10.03 *Project Representative*

- A. If Owner and Engineer have agreed that Engineer will furnish a Resident Project Representative to represent Engineer at the Site and assist Engineer in observing the progress and quality of the Work, then the authority and responsibilities of any such Resident Project Representative will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 10.08. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer's consultant, agent, or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

10.04 *Rejecting Defective Work*

- A. Engineer has the authority to reject Work in accordance with Article 14.

10.05 *Shop Drawings, Change Orders and Payments*

- A. Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, are set forth in Paragraph 7.16.
- B. Engineer's authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, are set forth in Paragraph 7.19.
- C. Engineer's authority as to Change Orders is set forth in Article 11.
- D. Engineer's authority as to Applications for Payment is set forth in Article 15.

10.06 *Determinations for Unit Price Work*

- A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor as set forth in Paragraph 13.03.

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

- A. Engineer will render decisions regarding the requirements of the Contract Documents, and judge the acceptability of the Work, pursuant to the specific procedures set forth herein for initial interpretations, Change Proposals, and acceptance of the Work. In rendering such decisions and judgments, Engineer will not show partiality to Owner or Contractor, and will not be liable to Owner, Contractor, or others in connection with any proceedings, interpretations, decisions, or judgments conducted or rendered in good faith.

10.08 *Limitations on Engineer's Authority and Responsibilities*

- A. Neither Engineer's authority or responsibility under this Article 10 or under any other provision of the Contract, nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer, shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

- B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.
- C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.
- D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 15.06.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals, that the results certified indicate compliance with the Contract Documents.
- E. The limitations upon authority and responsibility set forth in this Paragraph 10.08 shall also apply to the Resident Project Representative, if any.

#### 10.09 *Compliance with Safety Program*

- A. While at the Site, Engineer's employees and representatives will comply with the specific applicable requirements of Owner's and Contractor's safety programs (if any) of which Engineer has been informed.

### **ARTICLE 11 – AMENDING THE CONTRACT DOCUMENTS; CHANGES IN THE WORK**

#### 11.01 *Amending and Supplementing Contract Documents*

- A. The Contract Documents may be amended or supplemented by a Change Order, a Work Change Directive, or a Field Order.
  - 1. *Change Orders:*
    - a. If an amendment or supplement to the Contract Documents includes a change in the Contract Price or the Contract Times, such amendment or supplement must be set forth in a Change Order. A Change Order also may be used to establish amendments and supplements of the Contract Documents that do not affect the Contract Price or Contract Times.
    - b. Owner and Contractor may amend those terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, without the recommendation of the Engineer. Such an amendment shall be set forth in a Change Order.
  - 2. *Work Change Directives:* A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the modification ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Work Change Directive's effect, if any, on the Contract Price and Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Contract Documents governing adjustments, expressly including Paragraph 11.04 regarding change of Contract Price. Contractor must submit any Change Proposal seeking an

adjustment of the Contract Price or the Contract Times, or both, no later than 30 days after the completion of the Work set out in the Work Change Directive. Owner must submit any Claim seeking an adjustment of the Contract Price or the Contract Times, or both, no later than 60 days after issuance of the Work Change Directive.

3. *Field Orders*: Engineer may authorize minor changes in the Work if the changes do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Such changes will be accomplished by a Field Order and will be binding on Owner and also on Contractor, which shall perform the Work involved promptly. If Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, then before proceeding with the Work at issue, Contractor shall submit a Change Proposal as provided herein.

#### 11.02 *Owner-Authorized Changes in the Work*

- A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work. Such changes shall be supported by Engineer's recommendation, to the extent the change involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters. Such changes may be accomplished by a Change Order, if Owner and Contractor have agreed as to the effect, if any, of the changes on Contract Times or Contract Price; or by a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved; or, in the case of a deletion in the Work, promptly cease construction activities with respect to such deleted Work. Added or revised Work shall be performed under the applicable conditions of the Contract Documents. Nothing in this paragraph shall obligate Contractor to undertake work that Contractor reasonably concludes cannot be performed in a manner consistent with Contractor's safety obligations under the Contract Documents or Laws and Regulations.

#### 11.03 *Unauthorized Changes in the Work*

- A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents, as amended, modified, or supplemented, except in the case of an emergency as provided in Paragraph 7.15 or in the case of uncovering Work as provided in Paragraph 14.05.

#### 11.04 *Change of Contract Price*

- A. The Contract Price may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Price shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment of Contract Price shall comply with the provisions of Article 12.
- B. An adjustment in the Contract Price will be determined as follows:
  1. where the Work involved is covered by unit prices contained in the Contract Documents, then by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 13.03); or
  2. where the Work involved is not covered by unit prices contained in the Contract Documents, then by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.04.C.2); or
  3. where the Work involved is not covered by unit prices contained in the Contract Documents and the parties do not reach mutual agreement to a lump sum, then on

the basis of the Cost of the Work (determined as provided in Paragraph 13.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 11.04.C).

- C. *Contractor's Fee*: When applicable, the Contractor's fee for overhead and profit shall be determined as follows:
1. a mutually acceptable fixed fee; or
  2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
    - a. for costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2, the Contractor's fee shall be 15 percent;
    - b. for costs incurred under Paragraph 13.01.B.3, the Contractor's fee shall be five percent;
    - c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 11.01.C.2.a and 11.01.C.2.b is that the Contractor's fee shall be based on: (1) a fee of 15 percent of the costs incurred under Paragraphs 13.01.A.1 and 13.01.A.2 by the Subcontractor that actually performs the Work, at whatever tier, and (2) with respect to Contractor itself and to any Subcontractors of a tier higher than that of the Subcontractor that actually performs the Work, a fee of five percent of the amount (fee plus underlying costs incurred) attributable to the next lower tier Subcontractor; provided, however, that for any such subcontracted work the maximum total fee to be paid by Owner shall be no greater than 27 percent of the costs incurred by the Subcontractor that actually performs the work;
    - d. no fee shall be payable on the basis of costs itemized under Paragraphs 13.01.B.4, 13.01.B.5, and 13.01.C;
    - e. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in Contractor's fee by an amount equal to five percent of such net decrease; and
    - f. when both additions and credits are involved in any one change, the adjustment in Contractor's fee shall be computed on the basis of the net change in accordance with Paragraphs 11.04.C.2.a through 11.04.C.2.e, inclusive.

#### 11.05 *Change of Contract Times*

- A. The Contract Times may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Times shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment in the Contract Times shall comply with the provisions of Article 12.
- B. An adjustment of the Contract Times shall be subject to the limitations set forth in Paragraph 4.05, concerning delays in Contractor's progress.

#### 11.06 *Change Proposals*

- A. Contractor shall submit a Change Proposal to Engineer to request an adjustment in the Contract Times or Contract Price; appeal an initial decision by Engineer concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; contest a set-off against payment due; or seek other relief under

the Contract. The Change Proposal shall specify any proposed change in Contract Times or Contract Price, or both, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents.

1. *Procedures:* Contractor shall submit each Change Proposal to Engineer promptly (but in no event later than 30 days) after the start of the event giving rise thereto, or after such initial decision. The Contractor shall submit supporting data, including the proposed change in Contract Price or Contract Time (if any), to the Engineer and Owner within 15 days after the submittal of the Change Proposal. The supporting data shall be accompanied by a written statement that the supporting data are accurate and complete, and that any requested time or price adjustment is the entire adjustment to which Contractor believes it is entitled as a result of said event. Engineer will advise Owner regarding the Change Proposal, and consider any comments or response from Owner regarding the Change Proposal.
  2. *Engineer's Action:* Engineer will review each Change Proposal and, within 30 days after receipt of the Contractor's supporting data, either deny the Change Proposal in whole, approve it in whole, or deny it in part and approve it in part. Such actions shall be in writing, with a copy provided to Owner and Contractor. If Engineer does not take action on the Change Proposal within 30 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of Engineer's inaction the Change Proposal is deemed denied, thereby commencing the time for appeal of the denial under Article 12.
  3. *Binding Decision:* Engineer's decision will be final and binding upon Owner and Contractor, unless Owner or Contractor appeals the decision by filing a Claim under Article 12.
- B. *Resolution of Certain Change Proposals:* If the Change Proposal does not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters, then Engineer will notify the parties that the Engineer is unable to resolve the Change Proposal. For purposes of further resolution of such a Change Proposal, such notice shall be deemed a denial, and Contractor may choose to seek resolution under the terms of Article 12.

#### 11.07 *Execution of Change Orders*

- A. Owner and Contractor shall execute appropriate Change Orders covering:
1. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive;
  2. changes in Contract Price resulting from an Owner set-off, unless Contractor has duly contested such set-off;
  3. changes in the Work which are: (a) ordered by Owner pursuant to Paragraph 11.02, (b) required because of Owner's acceptance of defective Work under Paragraph 14.04 or Owner's correction of defective Work under Paragraph 14.07, or (c) agreed to by the parties, subject to the need for Engineer's recommendation if the change in the Work involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters; and
  4. changes in the Contract Price or Contract Times, or other changes, which embody the substance of any final and binding results under Paragraph 11.06, or Article 12.

- B. If Owner or Contractor refuses to execute a Change Order that is required to be executed under the terms of this Paragraph 11.07, it shall be deemed to be of full force and effect, as if fully executed.

#### 11.08 *Notification to Surety*

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

### ARTICLE 12 – CLAIMS

#### 12.01 *Claims*

- A. *Claims Process:* The following disputes between Owner and Contractor shall be submitted to the Claims process set forth in this Article:
  - 1. Appeals by Owner or Contractor of Engineer's decisions regarding Change Proposals;
  - 2. Owner demands for adjustments in the Contract Price or Contract Times, or other relief under the Contract Documents; and
  - 3. Disputes that Engineer has been unable to address because they do not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters.
- B. *Submittal of Claim:* The party submitting a Claim shall deliver it directly to the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto; in the case of appeals regarding Change Proposals within 30 days of the decision under appeal. The party submitting the Claim shall also furnish a copy to the Engineer, for its information only. The responsibility to substantiate a Claim shall rest with the party making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Times or Contract Price, or both, Contractor shall certify that the Claim is made in good faith, that the supporting data are accurate and complete, and that to the best of Contractor's knowledge and belief the amount of time or money requested accurately reflects the full amount to which Contractor is entitled.
- C. *Review and Resolution:* The party receiving a Claim shall review it thoroughly, giving full consideration to its merits. The two parties shall seek to resolve the Claim through the exchange of information and direct negotiations. The parties may extend the time for resolving the Claim by mutual agreement. All actions taken on a Claim shall be stated in writing and submitted to the other party, with a copy to Engineer.
- D. *Mediation:*
  - 1. At any time after initiation of a Claim, Owner and Contractor may mutually agree to mediation of the underlying dispute. The agreement to mediate shall stay the Claim submittal and response process.
  - 2. If Owner and Contractor agree to mediation, then after 60 days from such agreement, either Owner or Contractor may unilaterally terminate the mediation process, and the Claim submittal and decision process shall resume as of the date of the termination. If the mediation proceeds but is unsuccessful in resolving the dispute, the Claim

submittal and decision process shall resume as of the date of the conclusion of the mediation, as determined by the mediator.

3. Owner and Contractor shall each pay one-half of the mediator's fees and costs.
- E. *Partial Approval*: If the party receiving a Claim approves the Claim in part and denies it in part, such action shall be final and binding unless within 30 days of such action the other party invokes the procedure set forth in Article 17 for final resolution of disputes.
- F. *Denial of Claim*: If efforts to resolve a Claim are not successful, the party receiving the Claim may deny it by giving written notice of denial to the other party. If the receiving party does not take action on the Claim within 90 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of the inaction, the Claim is deemed denied, thereby commencing the time for appeal of the denial. A denial of the Claim shall be final and binding unless within 30 days of the denial the other party invokes the procedure set forth in Article 17 for the final resolution of disputes.
- G. *Final and Binding Results*: If the parties reach a mutual agreement regarding a Claim, whether through approval of the Claim, direct negotiations, mediation, or otherwise; or if a Claim is approved in part and denied in part, or denied in full, and such actions become final and binding; then the results of the agreement or action on the Claim shall be incorporated in a Change Order to the extent they affect the Contract, including the Work, the Contract Times, or the Contract Price.

## **ARTICLE 13 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK**

### **13.01 Cost of the Work**

- A. *Purposes for Determination of Cost of the Work*: The term Cost of the Work means the sum of all costs necessary for the proper performance of the Work at issue, as further defined below. The provisions of this Paragraph 13.01 are used for two distinct purposes:
  1. To determine Cost of the Work when Cost of the Work is a component of the Contract Price, under cost-plus-fee, time-and-materials, or other cost-based terms; or
  2. To determine the value of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price. When the value of any such adjustment is determined on the basis of Cost of the Work, Contractor is entitled only to those additional or incremental costs required because of the change in the Work or because of the event giving rise to the adjustment.
- B. *Costs Included*: Except as otherwise may be agreed to in writing by Owner, costs included in the Cost of the Work shall be in amounts no higher than those prevailing in the locality of the Project, shall not include any of the costs itemized in Paragraph 13.01.C, and shall include only the following items:
  1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, and vacation and holiday pay applicable

thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.

2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates, and refunds and returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.
3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 13.01.
4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.
5. Supplemental costs including the following:
  - a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.
  - b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.
  - c. Rentals of all construction equipment and machinery, and the parts thereof, whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.
  - d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.
  - e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.
  - f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 6.05), provided such losses and damages have resulted from causes

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

- g. The cost of utilities, fuel, and sanitary facilities at the Site.
- h. Minor expenses such as communication service at the Site, express and courier services, and similar petty cash items in connection with the Work.
- i. The costs of premiums for all bonds and insurance that Contractor is required by the Contract Documents to purchase and maintain.

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

- 1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 13.01.B.1 or specifically covered by Paragraph 13.01.B.4. The payroll costs and other compensation excluded here are to be considered administrative costs covered by the Contractor's fee.
- 2. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.
- 3. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.
- 4. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.
- 5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraph 13.01.B.

D. *Contractor's Fee:* When the Work as a whole is performed on the basis of cost-plus, Contractor's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 11.04.C.

E. *Documentation:* Whenever the Cost of the Work for any purpose is to be determined pursuant to this Article 13, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

## 13.02 Allowances

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

- B. *Cash Allowances*: Contractor agrees that:
  - 1. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and
  - 2. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.
- C. *Contingency Allowance*: Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.
- D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

### 13.03 *Unit Price Work*

- A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.
- B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Payments to Contractor for Unit Price Work will be based on actual quantities.
- C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.
- D. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, subject to the provisions of the following paragraph.
- E. Within 30 days of Engineer's written decision under the preceding paragraph, Contractor may submit a Change Proposal, or Owner may file a Claim, seeking an adjustment in the Contract Price if:
  - 1. the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement;
  - 2. there is no corresponding adjustment with respect to any other item of Work; and
  - 3. Contractor believes that it is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price, and the parties are unable to agree as to the amount of any such increase or decrease.

## ARTICLE 14 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

### 14.01 *Access to Work*

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

### 14.02 *Tests, Inspections, and Approvals*

- A. Contractor shall give Engineer timely notice of readiness of the Work (or specific parts thereof) for all required inspections and tests, and shall cooperate with inspection and testing personnel to facilitate required inspections and tests.
- B. Owner shall retain and pay for the services of an independent inspector, testing laboratory, or other qualified individual or entity to perform all inspections and tests expressly required by the Contract Documents to be furnished and paid for by Owner, except that costs incurred in connection with tests or inspections of covered Work shall be governed by the provisions of Paragraph 14.05.
- C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.
- D. Contractor shall be responsible for arranging, obtaining, and paying for all inspections and tests required:
  - 1. by the Contract Documents, unless the Contract Documents expressly allocate responsibility for a specific inspection or test to Owner;
  - 2. to attain Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work;
  - 3. by manufacturers of equipment furnished under the Contract Documents;
  - 4. for testing, adjusting, and balancing of mechanical, electrical, and other equipment to be incorporated into the Work; and
  - 5. for acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work.

Such inspections and tests shall be performed by independent inspectors, testing laboratories, or other qualified individuals or entities acceptable to Owner and Engineer.

- E. If the Contract Documents require the Work (or part thereof) to be approved by Owner, Engineer, or another designated individual or entity, then Contractor shall assume full responsibility for arranging and obtaining such approvals.
- F. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation. Such uncovering shall be at Contractor's expense unless Contractor had given Engineer timely notice of Contractor's intention to

cover the same and Engineer had not acted with reasonable promptness in response to such notice.

#### 14.03 *Defective Work*

- A. *Contractor's Obligation:* It is Contractor's obligation to assure that the Work is not defective.
- B. *Engineer's Authority:* Engineer has the authority to determine whether Work is defective, and to reject defective Work.
- C. *Notice of Defects:* Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor.
- D. *Correction, or Removal and Replacement:* Promptly after receipt of written notice of defective Work, Contractor shall correct all such defective Work, whether or not fabricated, installed, or completed, or, if Engineer has rejected the defective Work, remove it from the Project and replace it with Work that is not defective.
- E. *Preservation of Warranties:* When correcting defective Work, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.
- F. *Costs and Damages:* In addition to its correction, removal, and replacement obligations with respect to defective Work, Contractor shall pay all claims, costs, losses, and damages arising out of or relating to defective Work, including but not limited to the cost of the inspection, testing, correction, removal, replacement, or reconstruction of such defective Work, fines levied against Owner by governmental authorities because the Work is defective, and the costs of repair or replacement of work of others resulting from defective Work. Prior to final payment, if Owner and Contractor are unable to agree as to the measure of such claims, costs, losses, and damages resulting from defective Work, then Owner may impose a reasonable set-off against payments due under Article 15.

#### 14.04 *Acceptance of Defective Work*

- A. If, instead of requiring correction or removal and replacement of defective Work, Owner prefers to accept it, Owner may do so (subject, if such acceptance occurs prior to final payment, to Engineer's confirmation that such acceptance is in general accord with the design intent and applicable engineering principles, and will not endanger public safety). Contractor shall pay all claims, costs, losses, and damages attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness), and for the diminished value of the Work to the extent not otherwise paid by Contractor. If any such acceptance occurs prior to final payment, the necessary revisions in the Contract Documents with respect to the Work shall be incorporated in a Change Order. If the parties are unable to agree as to the decrease in the Contract Price, reflecting the diminished value of Work so accepted, then Owner may impose a reasonable set-off against payments due under Article 15. If the acceptance of defective Work occurs after final payment, Contractor shall pay an appropriate amount to Owner.

#### 14.05 *Uncovering Work*

- A. Engineer has the authority to require special inspection or testing of the Work, whether or not the Work is fabricated, installed, or completed.

- B. If any Work is covered contrary to the written request of Engineer, then Contractor shall, if requested by Engineer, uncover such Work for Engineer's observation, and then replace the covering, all at Contractor's expense.
- C. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, then Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, and provide all necessary labor, material, and equipment.
  - 1. If it is found that the uncovered Work is defective, Contractor shall be responsible for all claims, costs, losses, and damages arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and pending Contractor's full discharge of this responsibility the Owner shall be entitled to impose a reasonable set-off against payments due under Article 15.
  - 2. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, then Contractor may submit a Change Proposal within 30 days of the determination that the Work is not defective.

#### 14.06 *Owner May Stop the Work*

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

#### 14.07 *Owner May Correct Defective Work*

- A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace rejected Work as required by Engineer, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, then Owner may, after seven days written notice to Contractor, correct or remedy any such deficiency.
- B. In exercising the rights and remedies under this Paragraph 14.07, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this paragraph.
- C. All claims, costs, losses, and damages incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 14.07 will be charged against Contractor as set-offs against payments due under Article 15. Such claims, costs, losses and damages will

include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.

- D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 14.07.

## **ARTICLE 15 – PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD**

### **15.01 Progress Payments**

- A. *Basis for Progress Payments:* The Schedule of Values established as provided in Article 2 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed during the pay period, as determined under the provisions of Paragraph 13.03. Progress payments for cost-based Work will be based on Cost of the Work completed by Contractor during the pay period.
- B. *Applications for Payments:*
  - 1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens, and evidence that the materials and equipment are covered by appropriate property insurance, a warehouse bond, or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.
  - 2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.
  - 3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.
- C. *Review of Applications:*
  - 1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, either indicate in writing a recommendation of payment and present the Application to Owner, or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.
  - 2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations of the executed Work as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:

- a. the Work has progressed to the point indicated;
  - b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 13.03, and any other qualifications stated in the recommendation); and
  - c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.
3. By recommending any such payment Engineer will not thereby be deemed to have represented that:
    - a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract; or
    - b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.
  4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:
    - a. to supervise, direct, or control the Work, or
    - b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or
    - c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or
    - d. to make any examination to ascertain how or for what purposes Contractor has used the money paid on account of the Contract Price, or
    - e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.
  5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 15.01.C.2.
  6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer's opinion to protect Owner from loss because:
    - a. the Work is defective, requiring correction or replacement;
    - b. the Contract Price has been reduced by Change Orders;
    - c. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
    - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible; or

- e. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Contractor and therefore justify termination for cause under the Contract Documents.

D. *Payment Becomes Due:*

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

E. *Reductions in Payment by Owner:*

- 1. In addition to any reductions in payment (set-offs) recommended by Engineer, Owner is entitled to impose a set-off against payment based on any of the following:
  - a. claims have been made against Owner on account of Contractor's conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages on account of Contractor's conduct in the performance or furnishing of the Work, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;
  - b. Contractor has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Site;
  - c. Contractor has failed to provide and maintain required bonds or insurance;
  - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible;
  - e. Owner has incurred extra charges or engineering costs related to submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;
  - f. the Work is defective, requiring correction or replacement;
  - g. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
  - h. the Contract Price has been reduced by Change Orders;
  - i. an event that would constitute a default by Contractor and therefore justify a termination for cause has occurred;
  - j. liquidated damages have accrued as a result of Contractor's failure to achieve Milestones, Substantial Completion, or final completion of the Work;
  - k. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;
  - l. there are other items entitling Owner to a set off against the amount recommended.
- 2. If Owner imposes any set-off against payment, whether based on its own knowledge or on the written recommendations of Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and the specific amount of the reduction, and promptly pay Contractor any amount

remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, if Contractor remedies the reasons for such action. The reduction imposed shall be binding on Contractor unless it duly submits a Change Proposal contesting the reduction.

3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 15.01.C.1 and subject to interest as provided in the Agreement.

#### 15.02 *Contractor's Warranty of Title*

- A. Contractor warrants and guarantees that title to all Work, materials, and equipment furnished under the Contract will pass to Owner free and clear of (1) all Liens and other title defects, and (2) all patent, licensing, copyright, or royalty obligations, no later than seven days after the time of payment by Owner.

#### 15.03 *Substantial Completion*

- A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete and request that Engineer issue a certificate of Substantial Completion. Contractor shall at the same time submit to Owner and Engineer an initial draft of punch list items to be completed or corrected before final payment.
- B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.
- C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a preliminary certificate of Substantial Completion which shall fix the date of Substantial Completion. Engineer shall attach to the certificate a punch list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the preliminary certificate during which to make written objection to Engineer as to any provisions of the certificate or attached punch list. If, after considering the objections to the provisions of the preliminary certificate, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the preliminary certificate to Owner, notify Contractor in writing that the Work is not substantially complete, stating the reasons therefor. If Owner does not object to the provisions of the certificate, or if despite consideration of Owner's objections Engineer concludes that the Work is substantially complete, then Engineer will, within said 14 days, execute and deliver to Owner and Contractor a final certificate of Substantial Completion (with a revised punch list of items to be completed or corrected) reflecting such changes from the preliminary certificate as Engineer believes justified after consideration of any objections from Owner.
- D. At the time of receipt of the preliminary certificate of Substantial Completion, Owner and Contractor will confer regarding Owner's use or occupancy of the Work following Substantial Completion, review the builder's risk insurance policy with respect to the end of the builder's risk coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by Owner. Unless Owner and Contractor agree otherwise in writing, Owner shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon Owner's use or occupancy of the Work.

- E. After Substantial Completion the Contractor shall promptly begin work on the punch list of items to be completed or corrected prior to final payment. In appropriate cases Contractor may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.
- F. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the punch list.

#### 15.04 *Partial Use or Occupancy*

- A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:
  - 1. At any time Owner may request in writing that Contractor permit Owner to use or occupy any such part of the Work that Owner believes to be substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 15.03.A through E for that part of the Work.
  - 2. At any time Contractor may notify Owner and Engineer in writing that Contractor considers any such part of the Work substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.
  - 3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 15.03 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.
  - 4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 6.05 regarding builder's risk or other property insurance.

#### 15.05 *Final Inspection*

- A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work, or agreed portion thereof, is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

#### 15.06 *Final Payment*

- A. *Application for Payment:*
  - 1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of

inspection, annotated record documents (as provided in Paragraph 7.11), and other documents, Contractor may make application for final payment.

2. The final Application for Payment shall be accompanied (except as previously delivered) by:
  - a. all documentation called for in the Contract Documents;
  - b. consent of the surety, if any, to final payment;
  - c. satisfactory evidence that all title issues have been resolved such that title to all Work, materials, and equipment has passed to Owner free and clear of any Liens or other title defects, or will so pass upon final payment.
  - d. a list of all disputes that Contractor believes are unsettled; and
  - e. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of the Work, and of Liens filed in connection with the Work.
3. In lieu of the releases or waivers of Liens specified in Paragraph 15.06.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (a) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (b) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien, or Owner at its option may issue joint checks payable to Contractor and specified Subcontractors and Suppliers.

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

1. If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment and present the Application for Payment to Owner for payment. Such recommendation shall account for any set-offs against payment that are necessary in Engineer's opinion to protect Owner from loss for the reasons stated above with respect to progress payments. At the same time Engineer will also give written notice to Owner and Contractor that the Work is acceptable, subject to the provisions of Paragraph 15.07. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

- C. *Completion of Work:* The Work is complete (subject to surviving obligations) when it is ready for final payment as established by the Engineer's written recommendation of final payment.
- D. *Payment Becomes Due:* Thirty days after the presentation to Owner of the final Application for Payment and accompanying documentation, the amount recommended by Engineer (less any further sum Owner is entitled to set off against Engineer's recommendation,

including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions above with respect to progress payments) will become due and shall be paid by Owner to Contractor.

#### 15.07 *Waiver of Claims*

- A. The making of final payment will not constitute a waiver by Owner of claims or rights against Contractor. Owner expressly reserves claims and rights arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 15.05, from Contractor's failure to comply with the Contract Documents or the terms of any special guarantees specified therein, from outstanding Claims by Owner, or from Contractor's continuing obligations under the Contract Documents.
- B. The acceptance of final payment by Contractor will constitute a waiver by Contractor of all claims and rights against Owner other than those pending matters that have been duly submitted or appealed under the provisions of Article 17.

#### 15.08 *Correction Period*

- A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents, or by any specific provision of the Contract Documents), any Work is found to be defective, or if the repair of any damages to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas used by Contractor as permitted by Laws and Regulations, is found to be defective, then Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:
  - 1. correct the defective repairs to the Site or such other adjacent areas;
  - 2. correct such defective Work;
  - 3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and
  - 4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others, or to other land or areas resulting therefrom.
- B. If Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others).
- C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.
- D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

- E. Contractor's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph shall not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

## **ARTICLE 16 – SUSPENSION OF WORK AND TERMINATION**

### **16.01 *Owner May Suspend Work***

- A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by written notice to Contractor and Engineer. Such notice will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be entitled to an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension. Any Change Proposal seeking such adjustments shall be submitted no later than 30 days after the date fixed for resumption of Work.

### **16.02 *Owner May Terminate for Cause***

- A. The occurrence of any one or more of the following events will constitute a default by Contractor and justify termination for cause:
  - 1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule);
  - 2. Failure of Contractor to perform or otherwise to comply with a material term of the Contract Documents;
  - 3. Contractor's disregard of Laws or Regulations of any public body having jurisdiction; or
  - 4. Contractor's repeated disregard of the authority of Owner or Engineer.
- B. If one or more of the events identified in Paragraph 16.02.A occurs, then after giving Contractor (and any surety) ten days written notice that Owner is considering a declaration that Contractor is in default and termination of the contract, Owner may proceed to:
  - 1. declare Contractor to be in default, and give Contractor (and any surety) notice that the Contract is terminated; and
  - 2. enforce the rights available to Owner under any applicable performance bond.
- C. Subject to the terms and operation of any applicable performance bond, if Owner has terminated the Contract for cause, Owner may exclude Contractor from the Site, take possession of the Work, incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and complete the Work as Owner may deem expedient.
- D. Owner may not proceed with termination of the Contract under Paragraph 16.02.B if Contractor within seven days of receipt of notice of intent to terminate begins to correct its failure to perform and proceeds diligently to cure such failure.
- E. If Owner proceeds as provided in Paragraph 16.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds the cost to complete the Work, including all related claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals) sustained by Owner, such excess will be paid to Contractor. If the cost to complete the Work including such related claims, costs, losses,

and damages exceeds such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this paragraph, Owner shall not be required to obtain the lowest price for the Work performed.

- F. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue, or any rights or remedies of Owner against Contractor or any surety under any payment bond or performance bond. Any retention or payment of money due Contractor by Owner will not release Contractor from liability.
- G. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 6.01.A, the provisions of that bond shall govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

#### 16.03 *Owner May Terminate For Convenience*

- A. Upon seven days written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):
  - 1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;
  - 2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses; and
  - 3. other reasonable expenses directly attributable to termination, including costs incurred to prepare a termination for convenience cost proposal.
- B. Contractor shall not be paid on account of loss of anticipated overhead, profits, or revenue, or other economic loss arising out of or resulting from such termination.

#### 16.04 *Contractor May Stop Work or Terminate*

- A. If, through no act or fault of Contractor, (1) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (2) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (3) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the contract and recover from Owner payment on the same terms as provided in Paragraph 16.03.
- B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this paragraph are not intended to preclude Contractor from submitting a Change Proposal for an adjustment in Contract Price or Contract Times or otherwise for

expenses or damage directly attributable to Contractor's stopping the Work as permitted by this paragraph.

## **ARTICLE 17 – FINAL RESOLUTION OF DISPUTES**

### **17.01 *Methods and Procedures***

- A. *Disputes Subject to Final Resolution:* The following disputed matters are subject to final resolution under the provisions of this Article:
  - 1. A timely appeal of an approval in part and denial in part of a Claim, or of a denial in full; and
  - 2. Disputes between Owner and Contractor concerning the Work or obligations under the Contract Documents, and arising after final payment has been made.
- B. *Final Resolution of Disputes:* For any dispute subject to resolution under this Article, Owner or Contractor may:
  - 1. elect in writing to invoke the dispute resolution process provided for in the Supplementary Conditions; or
  - 2. agree with the other party to submit the dispute to another dispute resolution process; or
  - 3. if no dispute resolution process is provided for in the Supplementary Conditions or mutually agreed to, give written notice to the other party of the intent to submit the dispute to a court of competent jurisdiction.

## **ARTICLE 18 – MISCELLANEOUS**

### **18.01 *Giving Notice***

- A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:
  - 1. delivered in person, by a commercial courier service or otherwise, to the individual or to a member of the firm or to an officer of the corporation for which it is intended; or
  - 2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the sender of the notice.

### **18.02 *Computation of Times***

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

### **18.03 *Cumulative Remedies***

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

18.04 *Limitation of Damages*

- A. With respect to any and all Change Proposals, Claims, disputes subject to final resolution, and other matters at issue, neither Owner nor Engineer, nor any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, shall be liable to Contractor for any claims, costs, losses, or damages sustained by Contractor on or in connection with any other project or anticipated project.

18.05 *No Waiver*

- A. A party's non-enforcement of any provision shall not constitute a waiver of that provision, nor shall it affect the enforceability of that provision or of the remainder of this Contract.

18.06 *Survival of Obligations*

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

18.07 *Controlling Law*

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

18.08 *Headings*

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

SECTION 00800

SUPPLEMENTARY CONDITIONS

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## SUPPLEMENTARY CONDITIONS

### AMENDMENTS TO GENERAL CONDITIONS

These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract (EJCDC C-700, 2013 edition) and other provisions of the Contract Documents as indicated below. All provisions which are not so amended or supplemented remain in full force and effect.

#### ARTICLE 1. DEFINITIONS AND TERMINOLOGY

Delete the words "The individual or entity named as such in the Agreement" in 1.01.A.20 of the General Conditions, "Engineer", and insert the following in their place:

"The individual or entity duly appointed by the Owner to undertake the duties and powers herein assigned to the Engineer, acting either directly or through duly appointed representatives."

#### ARTICLE 2. PRELIMINARY MATTERS

SC-2.03

**NOTE TO SPECIFIER: Add the following for unit price bids that do not contain lump sum items:**

**"Delete paragraph 2.03 A.3 of the General Conditions."**

SC-2.05

**"Delete paragraph 2.05 A.3 of the General Conditions."**

#### ARTICLE 3. DOCUMENTS: INTENT, REQUIREMENTS, REUSE

SC-3.01

Add the following sentence at the end of Paragraph 3.01A of the General Conditions:

"...by all. Each and every provision of law and clause required by law to be inserted in these Contract Documents shall be deemed to be inserted herein, and they shall be read and enforced as though it were included herein, and if through mistake or otherwise, any such provision is not inserted, or if not correctly inserted, then upon the application of either party, the Contract Documents shall forthwith be physically amended to make such insertion."

SC-3.03

Delete the last phrase of paragraph 3.03 A.3 of the General Conditions starting with “had”, and substitute the following:

“knew or reasonably should have known thereof.”

#### ARTICLE 4. COMMENCEMENT AND PROGRESS OF THE WORK

##### SC-4.01

Add a new paragraph immediately after paragraph 4.01A of the General Conditions which is to read as follows:

- “B. Notwithstanding the time limitations provided in paragraph 4.01A, the OWNER may desire to commence the Contract Times later than the sixtieth day after the bid opening. The OWNER and CONTRACTOR, upon mutual agreement, may extend the commencement of the Contract Times to any date that they elect. OWNER must obtain CONTRACTOR’s approval for extending the time beyond the dates/times stated in the Contract Documents.”

##### SC-4.03

Add a new paragraph immediately after paragraph 4.03A of the General Conditions which is to read as follows:

- "B. Engineer may check the lines, elevations and reference marks set by Contractor, and Contractor shall correct any errors disclosed by such check. Such a check shall not be considered as approval of Contractor's work and shall not relieve Contractor of the responsibility for construction of the entire Work in accordance with the Contract Documents. Contractor shall furnish personnel to assist Engineer in checking lines and grades."

##### SC-4.04

Add the following paragraph after paragraph 4.04B of the General Conditions:

- "C. The Contractor's resident superintendent shall attend weekly progress meetings at the site of the work with the Engineer and others as appropriate to review schedule status and such other pertinent subjects as may be listed on the agenda by the Engineer."

##### SC-4.05

Delete Article 4.05A in its entirety and replace with the following:

- “A. The Contractor hereby agrees that the Contractor shall have no claim for damages of any kind against the Owner or the Designer on account of any delay in the commencement or performance of any of the work or any delay or suspension of any portion of the work, whether such delay is caused by the Owner, the Designer, or otherwise except as

provided for within the prevailing statutes. The Contractor acknowledges that the Contractor's sole remedy for any such delay and/or suspension will be an extension of time as provided in the Contract Documents. The Contractor will under no circumstances be eligible for additional compensation on account of any delay even if an extension of time is granted by the Owner.

Delete Article 4.05G in its entirety and replace it with the following:

- "G. Change Order requests for an extension of time under this paragraph must be submitted no later than 14 calendar days from the commencement of the event giving rise to the claimed delay, and must be accompanied by a detailed analysis identifying each action(s) or additional work item(s) which caused the delay and identifying exactly which items along the critical path were impacted or delayed. Accumulating the amount of time required to complete a series of additional work items or delays and adding this time to the original Contract Time will not be considered justification for an extension of time. To justify an extension of Contract Time, the Contractor must prove clearly and convincingly that the critical path for construction has been impacted by circumstances beyond the control of the Contractor and that the CPM schedule cannot be revised to eliminate the need for the requested time extension."

Add the following new paragraphs after paragraph 4.05G of the General Conditions:

"4.06 Liquidated Damages:

- A. If the Contractor shall neglect, fail or refuse to complete the work within the time herein specified, or any proper extension thereof granted by the Owner, then the Contractor does hereby agree, as a part consideration for the awarding of this Contract, to pay to the Owner the amount specified in the Contract, not as a penalty but as liquidated damages for such breach of contract as hereinafter set forth, for each and every calendar day that the Contract shall be in default after the time stipulated in the Contract for completing the work. Such damages may be retained from time to time by the Owner from progress payments or any amounts owing to the Contractor, or otherwise collected.
- B. The said amount is fixed and agreed upon by and between the Contractor and the Owner because of the impracticability and extreme difficulty of fixing and ascertaining the actual damages the Owner would in such event sustain, and said amount is agreed to be the amount of damages which the Owner would sustain and said amount shall be retained from time to time by the Owner from current periodical estimates.
- C. It is further agreed that time is of the essence of each and every portion of this Contract and of the specifications wherein as definite and certain length of times is fixed for the performance of any act whatsoever; and where under the Contract an additional time is allowed for the completion of any work, the new time limit fixed by such extension shall be of the essence of this Contract. Provided that the Contractor shall not be charged with liquidated damages of any excess cost when the Owner determines that the Contractor is without fault and the Contractor's reasons for the time extension are acceptable to the

Owner; Provided, further, that the Contractor shall not be charged with liquidated damages or any excess cost when the delay in completion of the work is due:

- 1) to any preference, priority or allocation order duly issued by the Government;
  - 2) to unforeseeable cause beyond the control and without the fault or negligence of the Contractor, including, but not restricted to, acts of God, or of the public enemy, acts of the Owner, acts of another Contractor in the performance of a contract with the Owner, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and severe weather; and
  - 3) to any delays of subcontractors or suppliers occasioned by any of the causes specified in subsections C (1) and C (2) above;
- D. Provided, further, that the Contractor shall, within thirty (30) days from the beginning of such delay, unless the Owner shall grant a further period of time prior to the date of final settlement of the Contract, notify the Owner, in writing, of the causes of the delay, who shall ascertain the facts and extent of the delay and notify the Contractor within a reasonable time of its decision in the matter."

#### ARTICLE 5. AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS

##### SC-5.03

Delete the term "Supplementary Conditions" of paragraph 5.03A of the General Conditions and replace it with "Contract Documents".

Delete the term "Supplementary Conditions" of paragraph 5.03B line 2 of the General Conditions and replace it with "Contract Documents".

##### SC-5.05

Delete the following words from lines 3 and 4 of paragraph 5.05 E.1 of the General Conditions:

"...or was not shown or indicated with reasonable accuracy"

##### SC-5.06

Delete the term Supplementary Conditions in paragraph 5.06A of the General Conditions and replace it with "Contract Documents".

Add the following sentences at the end of paragraph 5.06A of the General Conditions:

"Responsibilities of the Contractor with regard to removal and disposal of hazardous materials and substances on the project are described in detail in these Contract Documents.  
The Contractor, who may act as Owner's agent, and all Subcontractors are responsible to

transport all hazardous materials and to handle and dispose of all such material in accordance with local, state and federal regulations and will ensure proper material disposal at a facility licensed to receive such material."

Add the following to the first sentence of paragraph 5.06C:

"or unless Contractor caused or contributed to such Hazardous Environmental Condition."

## ARTICLE 6. BONDS AND INSURANCE

### NOTICE TO CONTRACTOR:

1. Proof of Insurance coverage shall be furnished to the Owner in accordance with the schedule for submittal of Bonds and Agreements.
2. Additionally, refer to Article 2. PRELIMINARY MATTERS, Paragraph SC-2.01 B of the General Conditions.

#### SC-6.01

Insert these sentences following SC-6.01.A of the General Conditions: The Surety Company providing the bonds shall have a rating of A or better within the Best Key Rating Guide and be licensed by the **Massachusetts Division of Insurance**. The CONTRACTOR shall pay the premiums for such Bonds.

#### SC-6.02

Delete paragraph 6.02D of the General Conditions in its entirety if Owner is not providing insurance policies, coverages or endorsements for the Work.

#### SC-6.03

Add the following to paragraph 6.03C:

"9. Independent Contractors Coverage."

The limits of liability for the insurance required by paragraph 6.03 of the General Conditions shall provide coverage for not less than the following amounts or greater where required by law:

#### 6.03A Workers' Compensation.

(1)	Worker's Compensation per	Statutory Requirements
(2)	Coverage B - Employer's Liability	\$100,000/\$500,000/\$100,000

6.03B and 6.03C Commercial General Liability Limits shall include coverage for Independent Contractors, explosion, collapse and underground hazard coverage (XCU), broad form property damage, blanket contractual liability and products/completed operations. The general aggregate limits shall be endorsed so that they respond on a per project and per location basis.

Limits:

\$1,000,000 each occurrence

\$2,000,000 general aggregate

\$2,000,000 products/completed operations aggregate

6.03D Automobile Liability for owned, hired and non-owned vehicles:

\$1,000,000 Bodily Injury and Property Damage combined single limit

6.03E Umbrella or Excess Liability

Combined single limit of not less than \$5,000,000 per occurrence and in the aggregate

6.03F Contractor's Pollution Liability

\$2,000,000 each occurrence and \$2,000,000 in the aggregate

6.03H Contractor's Professional Liability

\$1,000,000 per claim and \$1,000,000 in the aggregate

Delete paragraph 6.03.I.3 of the General Conditions in its entirety and insert the following in its place:

- “3. contain a provision that notice of cancellation of insurance be delivered in accordance with policy provisions. In addition, the Contractor and/or its insurance broker/agent shall immediately notify the Owner and Engineer should any insurance coverage be cancelled. The Contractor shall immediately stop work on the Project and shall not resume work until the Contractor provides evidence, to the Owner and Engineer, in the form of an acceptable insurance certificate, of new insurance coverage that replaces all cancelled coverage that is required for the Project.”

Add the following paragraphs to SC-6.03I of the General Conditions:

- “6. If the aggregate limits of liability indicated in Contractor's insurance provided in accordance with paragraph 6.03 are not sufficient to cover all claims for damages arising from its operations under this Contract and from any other work performed by it or if the commercial general liability insurance policy of insurance does not provide that the general aggregate limits apply on a per project and per location basis, Contractor shall have the policy amended so that the aggregate limits of liability required by this Contract will be available to cover all claims for damages due to operations under this Contract.
7. Include by endorsement that the insurer shall waive all rights of subrogation in favor of the Owner, Engineer and any other party named in the written contract against whom the insurer must agree to waive rights of subrogation.”

#### SC-6.04

Delete paragraph 6.04 of the General Conditions in its entirety.

#### SC-6.05

Delete Article 6.05 of the General Conditions in its entirety.

Delete Paragraph 6.05.A of the General Conditions and substitute the following in its place:

“SC-6.05.A. Contractor shall provide and maintain installation floater insurance for property under the care, custody, or control of Contractor. The installation floater insurance shall be a broad form or “all risk” policy providing coverage for all materials, supplies, machinery, fixtures, and equipment that will be incorporated into the Work. Coverage under the Contractor’s installation floater will include:

1. any loss to property while in transit,
2. any loss at the Site, and
3. any loss while in storage, both on-site and off-site.

Coverage cannot be contingent on an external cause or risk, or limited to property for which the Contractor is legally liable. The Contractor will be solely responsible for any deductible carried under this coverage and claims on materials, supplies, machinery, fixture, and equipment that will be incorporated into the Work while in transit or in storage. This policy will include a waiver of subrogation applicable to Owner, Contractor, Engineer, all Subcontractors, and the officers, directors, partners, employees, agents and other consultants and subcontractors of any of them.

Installation floater limit shall be the total value of the Work.”

SC-6.06

Amend the last sentence of paragraph 6.06A of the General Conditions by striking out the words "held by Owner or Contractor as trustee or fiduciary, or." As so amended, paragraph 6.06A remains in effect.

SC-6.08

Add the following paragraph 6.08 after paragraph 6.07 of the General Conditions:

"A. If Owner has any objection to the coverage afforded by or other provisions of the insurance required to be purchased and maintained by Contractor in accordance with this Article 6 on the basis of its not complying with the Contract Documents, Owner will notify Contractor in writing thereof within thirty days of the date of delivery of such certificates to Owner in accordance with paragraph 6.02C. Contractor will provide such additional information in respect of insurance provided by him as Owner may reasonably request."

ARTICLE 7. CONTRACTOR'S RESPONSIBILITIES

SC-7.01

Delete paragraph 7.01B of the General Conditions in its entirety and replace with the following:

"B. At the site of the Work the Contractor shall employ a full-time construction superintendent or foreman who shall have full authority to act for the Contractor. It is understood that such representative shall be acceptable to the Engineer and shall be one who will be continued in the capacity for the particular job involved unless the representative ceases to be on the Contractor's payroll. If at any time during the Work the representative is deemed by the Engineer to be no longer acceptable, the representative shall be promptly replaced by the Contractor. All communications to the superintendent or foreman shall be as binding as if given to the Contractor."

SC-7.07

Delete the second sentence in paragraph 7.07A of the General Conditions.

SC-7.12

In line 2 of paragraph 7.12C of the General Conditions change "Supplementary Conditions" to "Contract Documents".

SC-7.13

Delete the text in parentheses at the end of the third sentence of paragraph 7.13B of the General Conditions.

SC-7.16

In paragraph 7.16D.1 of the General Conditions, delete the word “timely” from the first line.

SC-7.18

Change the phrase “negligent act or omission” to “negligent or wrongful act or omission” in line 11 of paragraph 7.18A of the General Conditions.

Add the following to the end of paragraph 7.18A of the General Conditions:

“The Contractor hereby acknowledges its obligation under the foregoing paragraph to indemnify the Engineer and Owner against judgments suffered because of the contractor's work and to assume the cost of defending the Engineer and Owner against claims as described in the foregoing paragraph.”

Delete paragraph 7.18C of the General Conditions in its entirety.

ARTICLE 9. OWNER'S RESPONSIBILITIES

SC-9.02

Delete the phrase “provided Contractor makes no reasonable objection to the replacement engineer” in paragraph 9.02A of the General Conditions.

SC-9.06

Delete paragraph 9.06A of the General Conditions in its entirety.

SC-9.09

Insert the following after the first sentence of paragraph 9.09A of the General Conditions:

“However, the Owner shall have the right to direct the Contractor to perform the Work according to any sequence schedule set forth in the Contract Documents or established pursuant thereto.”

ARTICLE 10. ENGINEER'S STATUS DURING CONSTRUCTION

SC-10.01

Add a new paragraph 10.01B after paragraph 10.01A of the General Conditions, which is to read as follows:

"B. Nothing contained in the Contract Documents shall be construed to create a contractual relationship of any kind (1) between the Engineer and Contractor, (2) between the Owner and a Subcontractor or Subcontractors, or (3) between any person or entities other than the Owner and Contractor. The Engineer shall, however, be entitled to performance and

enforcement of obligations under the Contract Documents intended to facilitate performance of the Engineer's duties."

#### SC-10.02

Insert the following at the end of paragraph 10.02B of the General Conditions:

"However, the Engineer shall have the right to direct the Contractor to perform the Work according to any sequence schedule set forth in the Contract Documents or established pursuant thereto."

#### SC-10.03

Delete the last sentence of paragraph 10.03A.

#### SC-10.08

Insert the following after the first sentence of paragraph 10.08B of the General Conditions:

"However, the Engineer shall have the right to direct the Contractor to perform the Work according to any sequence schedule set forth in the Contract Documents or established pursuant thereto."

### ARTICLE 13. COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

Delete Article 13 of the General Conditions in its entirety and replace with the following:

- "A. The unit price of an item of Unit Price work shall be subject to reevaluation and adjustment under the following conditions:
- (1) If the total extended bid price [Estimated Quantity times the Bid Unit Price] of a particular item of Unit Price Work amounts to 5 percent or more of the Original Contract Price and the variation in the quantity of the particular item of Unit Price Work performed by Contractor differs by more than 15 percent from the estimated quantity of such item indicated in the Agreement; and
  - (2) If there is no corresponding adjustment with respect to any other item of work; and
  - (3) If Contractor believes that Contractor has incurred additional expense as a result thereof, Contractor may make a claim for an adjustment in the Contract Price in accordance with Article 12 if the parties are unable to agree as to the effect of any such variations in the quantity of Unit Price Work performed. If Owner believes that the quantity variation entitles Owner to an adjustment in the unit price, Owner shall be entitled to an adjustment in the unit price in an amount determined by the Engineer. Engineer shall not be liable in connection with any determination relating to adjustments which is rendered in good faith."

ARTICLE 14. TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

SC-14.03

Delete the word "Prompt" at the beginning of paragraph 14.03C of the General Conditions.

SC-14.07

Revise paragraph 14.07A of the General Conditions as follows:

- A. Delete the word "seven" and replace it with the word "ten" so that it reads "after ten days' written notice to Contractor."

ARTICLE 15. PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD

SC-15.01

Delete paragraph 15.01B.3 of the General Conditions and insert the following in its place:

- "3. Retainage with respect to progress payments will be five percent or, if stipulated, the maximum allowed by law."

Delete the word "immediate" from subparagraph 15.01E.2 of the General Conditions.

Delete subparagraph 15.01E.3 of the General Conditions in its entirety.

SC-15.02

Delete paragraph 15.02A in its entirety and insert the following in its place:

- "A. Contractor warrants and guarantees that title to all work, material and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to Owner no later than at the time of Application for Payment free and clear of all liens. Contractor shall provide written transfer of title and a certified paid invoice provided by the supplier."

SC-15.03

Delete the third sentence of paragraph 15.03C of the General conditions and replace it with the following:

"Owner shall review the preliminary certificate and make written objection to Engineer as to any provisions of the certificate or attached punch list."

In the same paragraph, delete the phrase “within 14 days after submission of the preliminary certificate to Owner” in the fourth sentence; delete the phrase “within said 14 days” in the fifth sentence.

#### SC-15.06

Delete from paragraph 15.06B.1 of the General Conditions the phrase “within 10 days after receipt of the final Application for Payment,” in the first sentence.

#### SC-15.08

Delete paragraph 15.08A of the General Conditions and insert the following in its place:

“A. If within one year after the date of Substantial Completion or such longer period of time as may be prescribed by Laws or Regulations or by the terms of any applicable special guarantee required by the Contract Documents or by any specific provision of the Contract Documents, any work is found to be defective, Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions: (i) correct such defective work, or, if it has been rejected by Owner, remove it from the site and replace it with work that is not defective, and (ii) satisfactorily correct or remove and replace any damage to other work or the work of others therefrom. If Contractor does not begin the repairs within ten (10) days of receipt of written notification and promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk, loss or damage, Owner may have the defective work corrected or the rejected work removed and replaced, and all claims, costs, losses and damages caused by or resulting from such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by Contractor.”

### ARTICLE 16. SUSPENSION OF WORK AND TERMINATION

#### SC-16.02

Add a new paragraph immediately after paragraph 16.02 A.4 of the General Conditions which is to read as follows:

"5. If the Work to be done under this Contract shall be abandoned, or if this Contract or any part thereof shall be sublet, without the previous written consent of Owner, or if the contract or any claim thereunder shall be assigned by Contractor otherwise than as herein specified."

### ARTICLE 18. MISCELLANEOUS

#### SC-18.09, 18.10, 18.11, 18.12, 18.13

Add the following new paragraphs after paragraph 18.08 of the General Conditions:

"18.09 Assignment:

- A. The Contractor shall not assign the whole or any part of this Contract or any moneys due or to become due hereunder until thirty (30) days prior notice in writing has been given to the Owner of the intention to assign, which notice shall state the identity and address of the prospective assignee. No assignment shall be made without the Owner's prior written consent. Such consent shall not be unreasonably withheld. In case the Contractor assigns all or any part of the moneys due or to become due under this Contract, the instrument of assignment shall contain a clause substantially to the effect that it is agreed that the right of the assignee in and to any moneys due or to become due to the Contractor shall be subject to prior claims of all persons, firms and corporations of services rendered or materials supplied for the performance of the work called for in this Contract.

#### 18.10 Liability

It is understood and agreed that members of the Owner or any agent or employees of the Owner signing this Agreement shall not be personally liable hereunder for any action incurred in connection with this Agreement.

#### 18.11 State Statutes and Regulations

See Section 00830 of these Specifications for further modifications of the General Conditions due to state statutes and regulations.

#### 18.12 Severability

If any provision of this Agreement shall be invalid or unenforceable to any extent or in any application, then the remainder of this Agreement and of such terms and conditions, except to such extent or in such application, shall not be affected thereby, and each and every term and condition of this Agreement shall be valid and enforced to the fullest extent and in the broadest application permitted by law."

END OF SECTION

## SECTION 00830

### STATE STATUTES AND REGULATIONS COMMONWEALTH OF MASSACHUSETTS

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6. Deleted
7. Deleted
8. Deleted

9. Deleted
10. Deleted
11. Deleted
12. Deleted
13. Deleted
14. Deleted
15. Deleted

#### ATTACHMENT A – Prevailing Wage Rates

#### ATTACHMENT B

Excerpts from Chapter 149, Chapter 30 and Chapter 82 of the Massachusetts General Law

#### ATTACHMENT C1

The Commonwealth of Massachusetts Supplemental Equal Employment Opportunity Anti-Discrimination and Affirmative Action Program.

#### ATTACHMENT D

Change Orders

#### A. REVISIONS TO GENERAL CONDITIONS:

##### 1. Definitions

The term "Awarding Authority," as used herein, shall be considered to be synonymous with the term "Owner," described in definition 1.01 A.28.

Delete definition 1.01 A.40 entitled "Substantial Completion" in the General Conditions in its entirety and insert the following in its place:

"Substantial Completion shall be interpreted in accordance with Massachusetts General Law (MGL) c. 30, §39G or 39K as appropriate."

## 2.Subsurface Conditions Found Different

Add the following sentence to the end of paragraph 5.04A of the General Conditions:

"...to do so. Adjustments resulting from subsurface or latent physical conditions will be in accordance with MGL c. 30, §39N."

## 3. Proprietary Specifications

Revise the third sentence of Paragraph 7.04A of the General Conditions to read as follows:

"Unless the specification indicates that a proprietary item is called for, other items of material or equipment or material or equipment of other suppliers may be submitted to Engineer for review under the circumstances described below, and in accordance with MGL c. 30, §39M."

## 4. Substitutions and "Or Equals" – Contractor's Expense

Insert the following at the beginning of Paragraphs 7.04B and 7.05E of the General Conditions:

"Except as required by and indicated in the specifications and contract documents pursuant to MGL. c. 149, §44F,".

## 5. Subcontracting

Add the following language at the end of paragraph 7.06L of the General Conditions:

"Except as required otherwise by MGL c. 149, §44F, for Work governed by MGL c. 149, §44A through 44H."

## 6. Permits

Delete paragraph 7.08A of the General Conditions in its entirety and insert the following in its place:

"A. Unless otherwise provided for in Section 00890 PERMITS, the Awarding Authority shall be responsible for identifying and obtaining all federal, state, and local permits required by the nature and location of construction, including but not limited to railroad permits, building construction permits, and permits for street and highway cuts and openings. Contractor shall be responsible for obtaining all permits required of its equipment, work force, or particular operations (such as blasting) in the performance of the Work and not otherwise specified to be obtained by the Awarding Authority. These permit fees shall be paid by Contractor. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work, which are

applicable at the time of opening of bids, or, if there are no Bids, on the Effective Date of the Agreement."

7. Massachusetts Sales and Use Tax

Add the following paragraph after paragraph 7.09A of the General Conditions:

"B. The materials and supplies to be used by the Contractor in the Work of this Contract are exempt from the Sales and Use Tax of the Commonwealth of Massachusetts. The Awarding Authority tax exemption certificate number will be furnished to the Contractor."

8. Contractor Records

Add a new paragraph immediately after paragraph 7.10C of the General Conditions, which is to read as follows:

"D. The Contractor shall comply with all applicable provisions Chapter 30, Section 39R of the Massachusetts General Laws regarding, Contractor's records."

9. Engineer's Decisions on Requirements of Contract Documents and Acceptability of Work

Add the following language at the end of paragraph 10.07A of the General Conditions:

"The Engineer's interpretation will be made in accordance with the requirements of MGL c. 30, §39P."

10. Change of Contract Price

Delete paragraphs 11.04, 13.01, 13.02 and 13.03 of the General Conditions, having to do with Change of Contract Price. Changes in contract price will be governed by the section called "Change Orders," in Attachment D, Section 00830 and Article 13 in the Supplementary Conditions.

11. Payments

Add the following paragraph after Paragraph 15.01B.3 of the General Conditions:

"4. The Contractor shall submit Weekly Payroll Records Report and Statement of Compliance verifying compliance with the Minimum Prevailing Wage Law, MGL c. 149, §26-27H. These

Statements of Compliance shall be submitted as a condition of payment for work performed during the period the reports apply.”

Delete paragraph 15.01C.1 of the General Conditions in its entirety and insert the following in its place:

“1. Progress Payments will be made in accordance with MGLc. 30, Section §39G, or 39K, as applicable.”

Delete paragraph 15.01D.1 of the General Conditions in its entirety and replace it with the following:

“1. Payment shall be made in accordance with MGL c. 30, §39G.”

Add the following new paragraph following paragraph 15.01D.1 of the General Conditions:

“2. The Contractor shall make payments to Subcontractors in accordance with the requirements of MGL c. 30, §39F.”

Delete paragraph 15.06B.1 of the General Conditions in its entirety and insert the following in its place:

"1. If, on the basis of the Engineer's observation of the Work during construction and final inspection and, upon the Engineer's review of the final Application for Payment and accompanying documentation, the Engineer is satisfied that the Work has been completed and that the Contractor's other obligations under the Contract Documents have been fulfilled, the Engineer will indicate in writing its recommendation of payment and present the Application to the Awarding Authority for payment. Thereupon the Engineer will give written notice to the Awarding Authority and the Contractor that the Work is acceptable subject to the provisions of paragraph 15.07. Otherwise, the Engineer will return the Application to Contractor, indicating in writing the reasons for refusing to recommend final payment. In such case the Contractor shall make the necessary corrections and resubmit the Application. If the Application and accompanying documentation are appropriate as to form and substance, the Awarding Authority

shall in accordance with the applicable provisions of the Massachusetts General Laws, make payment to the Contractor."

Delete paragraph 15.06D of the General Conditions in its entirety and replace it with the following:

"1. Payment shall be made in accordance with MGL c. 30, §39G."

12. Suspension of Work and Termination

Delete paragraph 16.01A of the General Conditions in its entirety and insert the following in its place:

"A. The Awarding Authority may order, at any time and without cause, the Contractor to suspend or delay the Work in accordance with MGL c. 30, §39O."

13. Special Requirements for Hazardous Wastes Contracts

Add the following at the end of the first sentence of Paragraph 18.13 of the General Conditions:

“, and to the “Rules and Regulations for the Prevention of Accidents in Construction Operations Chapter 454 CMR (Code of Massachusetts Regulations) 10.00 et seq.”

14. Labor Classifications and Prevailing Wage Rates

Add the following paragraphs under the heading "Prevailing Wage Rates" after paragraph 18.13 of the Supplementary Conditions:

"18.14 Prevailing Wage Rates

- A. Prevailing Wage Rates as determined by the Director of the Executive Office of Labor and Workforce Development under the provisions of MGL c. 149, §26-27H apply to this project. A copy of the wage schedule is included in Attachment A of Section 00830. If, after the Notice of Award, it becomes necessary to employ any person in a trade or occupation not classified in the wage determinations, such person shall be paid at not less than such rates as shall be determined by the Director. Such approved minimum rate shall be retroactive to the time of the initial employment of such person in such trade or occupation. The Contractor shall notify the Awarding Authority of its intention to employ persons in trades or occupations not classified in the wage determinations as soon as possible in order to allow sufficient time for the Awarding Authority to obtain approved rates for such trades or occupations.
- B. The schedule of wages referred to above are minimum rates only, and the Awarding Authority will not consider any claims for additional compensation made by Contractor

because of payment by the Contractor of any wage rate in excess of the applicable rate contained in the Contract.

- C. The said schedule of wages shall continue to be the minimum rates to be paid during the life of this Agreement, except in the case of the duration of this Agreement exceeding one year, when the Contractor will be responsible for requesting and obtaining updated prevailing wage rates from the Owner before the one-year anniversary of the project's start date, and a legible copy of said schedule shall be kept posted in a conspicuous place at the site of the Work.
- D. Contractor and subcontractors shall submit a copy of weekly payroll records to the Awarding Authority and the Awarding Authority shall retain the records for a minimum of three years."

15. Contractor's Surety

Add the following sentences at the end of paragraph 6.01A:

"The Surety Company providing the bonds shall have a rating of A or better within the Best Key Rating Guide and be licensed by the Massachusetts Division of Insurance. The Contractor shall pay the premiums for such Bonds."

B. OTHER REGULATORY REQUIREMENTS:

1. Working Hours

No laborer, workman, mechanic, foreman, or inspector, working within the Commonwealth, in the employ of the Contractor, subcontractor, or other person doing or contracting to do the whole or a part of the work contemplated by this contract, shall be required or permitted to work more than eight hours in any one day or more than forty-eight hours in any one week, or more than six days in any one week, except in cases of emergency.

2. Deleted

3. Commonwealth of Massachusetts Supplemental Equal Employment Opportunity, Non-Discrimination and Affirmative Action Program.

The Contractor shall abide by the Commonwealth of Massachusetts Supplemental Equal Employment Opportunity, Non-Discrimination and Affirmative Action Program, which is attached in its entirety on pages 00830 – ATT. C1.

4. DEP Community Sound Level Criteria

The Community Sound Level Criteria as established by the Commonwealth of Massachusetts' Department of Environmental Protection (DEP) must be conformed to prior to the Awarding

Authority's acceptance of the structure. The following sound level criteria must be met at the construction site:

- A. The increase in the broadband noise level shall not be in excess of ten (10) dB(A) above ambient at the station boundary. The ambient level is defined as the A-weighted noise level that is exceeded ninety (90) percent of the time measured during the period in question.
- B. The primary noise source(s) shall not produce a puretone condition. Puretone is any given octave band center frequency that exceeds the two adjacent center frequencies by three (3) or more decibels.

5. OSHA 10 Hour Certification Requirements

All employees of the Contractor who work at the jobsite must have received OSHA 10 Hour safety training, and have proof, at the jobsite, of being certified by OSHA as having received the training. The Contractor must provide written proof (copy of OSHA card each employee is required to carry is preferred) of this certification for every employee with submission of the first certified payroll report for each employee.

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END OF SECTION

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SECTION 00830

ATTACHMENT A

PREVAILING WAGE RATES

## ATTACHMENT B

### Excerpts from Chapters 30, 82 and 149 of the Massachusetts General Laws

**NOTICE** - These are **NOT** the official versions of the Massachusetts General Laws (MGL). While reasonable efforts have been made to assure the accuracy of the excerpts provided, do not rely on this information without first checking an official edition of the MGL. If you are in need of legal advice or counsel, consult a lawyer. These excerpts include amendments to the General Laws passed through February 28, 2017. For laws enacted since that time, see the 2017 and 2018 Session Laws.

**Certain excerpts from the Massachusetts General Laws are applicable to Construction contracts. Attention is directed to the following Sections of Chapter 149 as amended.**

#### **Section 25. Lodging, board and trade of public employees; statute part of employment contract.**

"Every employee in public work shall lodge, board, and trade where and with whom he elects; and no person or his agents or employees under contract with the commonwealth, a county, city or town, or with a department, board, commission or officer acting therefor, for the doing of public work shall directly or indirectly require, as a condition of employment therein, that the employee shall lodge, board or trade at a particular place or with a particular person. This section shall be made a part of the contract for such employment."

#### **Section 26. Public works; preference to veterans and citizens; wages.**

"In the employment of mechanics and apprentices, teamsters, chauffeurs and laborers in the construction of public works by the commonwealth, or by a county, town, authority or district, or by persons contracting or subcontracting for such works, preference shall first be given to citizens of the commonwealth who have been residents of the commonwealth for at least six months at the commencement of their employment who are veterans as defined in clause Forty-third of section 7 of chapter 4 and who are qualified to perform the work to which the employment relates and, within such preference, preference shall be given to service-disabled veterans; and secondly, to citizens of the commonwealth generally who have been residents of the commonwealth for at least six months at the commencement of their employment, and if they cannot be obtained in sufficient numbers, then to citizens of the United States, and every contract for such work shall contain a provision to this effect..."

#### **Section 34. Public contracts; stipulation as to hours and days of work; void contracts.**

"Every contract, except for the purchase of material or supplies, involving the employment of laborers, workmen, mechanics, foremen or inspectors, to which the commonwealth or any county or any town, subject to section thirty, is a party, shall contain a stipulation that no laborer, workman, mechanic, foreman or inspector working within the commonwealth, in the employ of the contractor, subcontractor or other person doing or contracting to do the whole or a part of the work contemplated by the contract, shall be required or permitted to work more than eight hours in any one-day or more than forty-eight hours in any one week, or more than six days in any one week, except in cases of emergency, or, in case any town subject to section thirty-one is a party to such a contract, more than eight hours in any one-day, except as aforesaid..."

**Section 34A. Contracts for public works; workers' compensation insurance; breach of contract; enforcement and violation of statute.**

"Every contract for the construction, alteration, maintenance, repair or demolition of, or addition to, any public building or other public works for the commonwealth or any political subdivision thereof shall contain stipulations requiring that the contractor shall, before commencing performance of such contract, provide by insurance for the payment of compensation and the furnishing of other benefits under chapter one hundred and fifty-two to all persons to be employed under the contract, and that the contractor shall continue such insurance in full force and effect during the term of the contract. No officer or agent contracting in behalf of the commonwealth or any political subdivision thereof shall award such a contract until he has been furnished with sufficient proof of compliance with the aforesaid stipulations. Failure to provide and continue in force such insurance as aforesaid shall be deemed a material breach of the contract and shall operate as an immediate termination thereof. No cancellation of such insurance, whether by the insurer or by the insured, shall be valid unless written notice thereof is given by the party proposing cancellation to the other party and to the officer or agent who awarded the contract at least fifteen days prior to the intended effective date thereof, which date shall be expressed in said notice. Notice of cancellation sent by the party proposing cancellation by registered mail, postage prepaid, with a return receipt of the addressee requested, shall be a sufficient notice..."

**Section 34B. Contracts for public works; wages for reserve police officer.**

"Every contract for the construction, alteration, maintenance, repair or demolition of, or addition to, any public works for the commonwealth or any political subdivision thereof shall contain stipulations requiring that the contractor shall pay to any reserve police officer employed by him in any city or town the prevailing rate of wage paid to regular police officers in such city or town."

***Whenever general bids are invited for a contract subject to Section 44A, the following provision applies:***

**Section 44E. Filing of bids; forms; modular buildings.** Second paragraph of subdivision (2), clause E.

"The undersigned hereby certifies that he is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed on the work; that all employees to be employed at the worksite will 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 and who shall furnish documentation of successful completion of said course with the first certified payroll report for each employee; and that he will comply fully with all laws and regulations applicable to awards made subject to section 44A."

***For projects estimated to cost more than \$25,000, the following provision applies to sub-bidders:***

**Section 44F. Plans and specifications; sub-bids; form; contents.** First paragraph of clause I of subdivision (2) of section 44F.

“The undersigned hereby certifies that he is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed on the work; that all employees to be employed at the worksite will 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 and who shall furnish documentation of successful completion of said course with the first certified payroll report for each employee; and that he will comply fully with all laws and regulations applicable to awards of subcontracts subject to section 44F.”

**Section 44G. Allowances; alternates; weather protection devices.**

“(A) “Allowance” as used herein means a sum of money covering one or more items of labor or labor and materials which is designated in bid documents and which general bidders are required to use in computing their bids. The use of such allowances shall be prohibited in the award of any contract subject to the provisions of section forty-four A. Whenever the designer is unable to supply specifications for any item prior to the solicitation of bids, such item shall not be included in any contract subject to the provisions of section forty-four A. The awarding authority shall solicit bids for every such item separately pursuant to the provisions of section forty-four A after specifications for that item are prepared.

(B) Every alternate contained in the form for general bids shall be listed in a numerical sequence in order of priority. When the awarding authority decides to consider alternates in determining the lowest eligible and responsible bidder, the awarding authority shall consider the alternates in descending numerical sequence, such that no single alternate shall be considered unless every alternate preceding it on the list has been added to or subtracted from the base bid price.

(C) The use of options other than alternates in bid documents or bid forms subject to section forty-four A shall be prohibited under all circumstances.

(D) Every contract subject to section forty-four A shall include specifications for the installation of weather protection and shall require that the contractor shall install the same and that he shall furnish adequate heat in the area so protected during the months of November through March. Standards for such specifications shall be established by the commissioner or his designee.”

**Section 44J. Invitations to bid; notice; contents; violations; penalty.**

"(1) No public agency or authority of the commonwealth or any political subdivision thereof shall award any contract for which competitive bids are required pursuant to section forty-four A of this chapter or section thirty-nine M of chapter thirty, or for which competitive proposals are required pursuant to subsection (4) of section forty-four E of this chapter or section eleven C of chapter

twenty-five A, unless a notice inviting bids or proposals therefor shall have been posted no less than one week prior to the time specified in such notice for the receipt of said bids or proposals in a conspicuous place in or near the offices of the awarding authority, and shall have remained posted until the time so specified, and unless such notice shall also have been published at least once not less than two weeks prior to the time so specified in the central register published by the secretary of state pursuant to section twenty A of chapter nine and in a newspaper of general circulation in the locality of the proposed project, and on the COMMBUYS system administered by the operational services division. Said notice shall also be published at such other times and in such other newspapers or trade periodicals as the commissioner of capital asset management and maintenance may require, having regard to the locality of the work involved.

(2) Said notice shall specify the time and place where plans and specification of the proposed work may be had; the time and place of submission of general bids; and the time and place for opening of the general bids. For contracts subject to the provisions of section forty-four A to H, inclusive, of this chapter, said notice shall also specify the time and place for submission of filed sub-bids, where required pursuant to section forty-four F; and the time and place for opening of said filed sub-bids.

Said notice shall also provide sufficient facts concerning the nature and scope of such project, the type and elements of construction, and such other information as will assist applicants in deciding to bid on such contract.

(3) No contract or preliminary plans and specifications shall be split or divided for the purpose of evading the provisions of this section.

(4) General bids and filed sub-bids for any contract subject to this section shall be in writing and shall be opened in public at the time and place specified in the posted or published notice, and after being so opened shall be open to public inspection.

(5) The provisions of this section shall not apply to any transaction between the commonwealth and any public service corporation.

(6) The provisions of this section may be waived in cases of extreme emergency involving the health and safety of the people and their property, upon the written approval of said commissioner. The written approval shall contain a description of the circumstances and the reasons for the commissioner's determination.

(7) Whoever violates any provision of this section shall be punished by a fine of not more than ten thousand dollars or by imprisonment in the state prison for not more than three years or in a jail or house of correction for not more than two and one-half years, or by both said fine and imprisonment; and in the event of final conviction, said person shall be incapable of holding any office of honor, trust or profit under the commonwealth or under any county, district or municipal agency.

Each and every person who shall cause or conspire to cause any contract or preliminary plans and specifications to be split or divided for the purpose of evading the provisions of this section shall forfeit and pay to the commonwealth, a political subdivision thereof or other awarding authority subject to this section, the sum of not more than five thousand dollars and, in addition, such person

or persons shall pay, apportioned among them, double the amount of damages which the commonwealth or political subdivision thereof or other awarding authority may have sustained by reason of the doing of such act, together with the costs of the action.

(8) If an awarding authority rejects all general bids or does not receive any general bids, and advertises for a second opening of general bids with the original filed sub-bids as set forth in subsection (1) of section forty-four E the notice for receipt of such general bids may be published in the central register and elsewhere as required not less than one week prior to the time specified for such second opening of general bids.

(9) No request for proposals or invitation for bids issued under sections 38A ½ to 38O, inclusive, of chapter 7, section 11C of chapter 25A, section 39M of chapter 30, this section and sections 44A to 44H, inclusive, shall be advertised if the awarding authority's cost estimate is greater than 1 year old."

**Attention is directed to the following sections of Chapter 30 of the General Laws of Massachusetts as amended to date.**

**Section 38A. Price adjustment clause in contracts for road, bridge, water and sewer projects awarded under Sec. 39M**

"Contracts for road and bridge projects awarded as a result of a proposal or invitation for bids under section 39M shall include a price adjustment clause for each of the following materials: fuel, both diesel and gasoline; asphalt; concrete; and steel. Contracts for water and sewer projects awarded as a result of a proposal or invitation for bids under said section 39M shall include a price adjustment clause for fuel, both diesel and gasoline; liquid asphalt; and portland cement contained in cast-in-place concrete. A base price for each material shall be set by the awarding authority or agency and shall be included in the bid documents at the time the project is advertised. The awarding authority or agency shall also identify in the bid documents the price index to be used for each material. The price adjustment clause shall provide for a contract adjustment to be made on a monthly basis when the monthly cost change exceeds plus or minus 5 per cent."

**Section 39F. Construction contracts; assignment and subrogation; subcontractor defined; enforcement of claim for direct payment; deposit; reduction of disputed amounts.**

"(1) Every contract awarded pursuant to sections forty-four A to L inclusive, of chapter one hundred and forty-nine shall contain the following subparagraphs (a) through (i) and every contract awarded pursuant to section thirty-nine M of chapter thirty shall contain the following subparagraphs (a) through (h) and in each case those subparagraphs shall be binding between the general contractor and each subcontractor.

(a) Forthwith after the general contractor receives payment on account of a periodic estimate, the general contractor shall pay to each subcontractor the amount paid for the labor performed and the materials furnished by that subcontractor, less any amount specified in any court proceedings barring such payment and also less any amount claimed due from the subcontractor by the general contractor.

(b) Not later than the sixty-fifth-day after each subcontractor substantially completes his work in accordance with the plans and specifications, the entire balance due under the subcontract less amounts retained by the awarding authority as the estimated cost of completing the incomplete and unsatisfactory items of work, shall be due the subcontractor; and the awarding authority shall pay that amount to the general contractor. The general contractor shall forthwith pay to the subcontractor the full amount received from the awarding authority less any amount specified in any court proceedings barring such payment and also less any amount claimed due from the subcontractor by the general contractor.

(c) Each payment made by the awarding authority to the general contractor pursuant to subparagraphs (a) and (b) of this paragraph for the labor performed and the materials furnished by a subcontractor shall be made to the general contractor for the account of that subcontractor; and the awarding authority shall take reasonable steps to compel the general contractor to make each such payment to each such subcontractor. If the awarding authority has received a demand for direct payment from a subcontractor for any amount which has already been included in a payment to the general contractor or which is to be included in a payment to the general contractor for payment to the subcontractor as provided in subparagraphs (a) and (b), the awarding authority shall act upon the demand as provided in this section.

(d) If, within seventy days after the subcontractor has substantially completed the subcontract work, the subcontractor has not received from the general contractor the balance due under the subcontract including any amount due for extra labor and materials furnished to the general contractor, less any amount retained by the awarding authority as the estimated cost of completing the incomplete and unsatisfactory items of work, the subcontractor may demand direct payment of that balance from the awarding authority. The demand shall be by a sworn statement delivered to or sent by certified mail to the awarding authority, and a copy shall be delivered to or sent by certified mail to the general contractor at the same time. The demand shall contain a detailed breakdown of the balance due under the subcontract and also a statement of the status of completion of the subcontract work. Any demand made after substantial completion of the subcontract work shall be valid even if delivered or mailed prior to the seventieth day after the subcontractor has substantially completed the subcontract work. Within ten days after the subcontractor has delivered or so mailed the demand to the awarding authority and delivered or so mailed a copy to the general contractor, the general contractor may reply to the demand. The reply shall be by a sworn statement delivered to or sent by certified mail to the awarding authority and a copy shall be delivered to or sent by certified mail to the subcontractor at the same time. The reply shall contain a detailed breakdown of the balance due under the subcontract including any amount due for extra labor and materials furnished to the general contractor and of the amount due for each claim made by the general contractor against the subcontractor.

(e) Within fifteen days after receipt of the demand by the awarding authority, but in no event prior to the seventieth day after substantial completion of the subcontract work, the awarding authority shall make direct payment to the subcontractor of the balance due under the subcontract including any amount due for extra labor and materials furnished to the general contractor, less any amount (i) retained by the awarding authority as the estimated cost of completing the incomplete or unsatisfactory items of work, (ii) specified in any court proceedings barring such payment, or (iii)

disputed by the general contractor in the sworn reply; provided, that the awarding authority shall not deduct from a direct payment any amount as provided in part (iii) if the reply is not sworn to, or for which the sworn reply does not contain the detailed breakdown required by subparagraph (d). The awarding authority shall make further direct payments to the subcontractor forthwith after the removal of the basis for deductions from direct payments made as provided in parts (i) and (ii) of this subparagraph.

(f) The awarding authority shall forthwith deposit the amount deducted from a direct payment as provided in part (iii) of subparagraph (e) in an interest-bearing joint account in the names of the general contractor and the subcontractor in a bank in Massachusetts selected by the awarding authority or agreed upon by the general contractor and the subcontractor and shall notify the general contractor and the subcontractor of the date of the deposit and the bank receiving the deposit. The bank shall pay the amount in the account, including accrued interest, as provided in an agreement between the general contractor and the subcontractor or as determined by decree of a court of competent jurisdiction.

(g) All direct payments and all deductions from demands for direct payments deposited in an interest-bearing account or accounts in a bank pursuant to subparagraph (f) shall be made out of amounts payable to the general contractor at the time of receipt of a demand for direct payment from a subcontractor and out of amounts which later become payable to the general contractor and in the order of receipt of such demands from subcontractors. All direct payments shall discharge the obligation of the awarding authority to the general contractor to the extent of such payment.

(h) The awarding authority shall deduct from payments to a general contractor amounts which, together with the deposits in interest-bearing accounts pursuant to subparagraph (f), are sufficient to satisfy all unpaid balances of demands for direct payment received from subcontractors. All such amounts shall be earmarked for such direct payments, and the subcontractors shall have a right in such deductions prior to any claims against such amounts by creditors of the general contractor.

(i) If the subcontractor does not receive payment as provided in subparagraph (a) or if the general contractor does not submit a periodic estimate for the value of the labor or materials performed or furnished by the subcontractor and the subcontractor does not receive payment for same when due less the deductions provided for in subparagraph (a), the subcontractor may demand direct payment by following the procedure in subparagraph (d) and the general contractor may file a sworn reply as provided in that same subparagraph. A demand made after the first day of the month following that for which the subcontractor performed or furnished the labor and materials for which the subcontractor seeks payment shall be valid even if delivered or mailed prior to the time payment was due on a periodic estimate from the general contractor. Thereafter the awarding authority shall proceed as provided in subparagraph (e), (f), (g), and (h).

(2) Any assignment by a subcontractor of the rights under this section to a surety company furnishing a bond under the provisions of section twenty-nine of chapter one hundred forty-nine shall be invalid. The assignment and subrogation rights of the surety to amounts included in a demand for direct payment which are in the possession of the awarding authority or which are on deposit pursuant to subparagraph (f) of paragraph (1) shall be subordinate to the rights of all subcontractors who are entitled to be paid under this section and who have not been paid in full.

(3) "Subcontractor" as used in this section (i) for contracts awarded as provided in sections forty-four A to forty-four H, inclusive, of chapter one hundred forty-nine shall mean a person who files a sub-bid and receives a subcontract as a result of that filed sub-bid or who is approved by the awarding authority in writing as a person performing labor or both performing labor and furnishing materials pursuant to a contract with the general contractor, (ii) for contracts awarded as provided in paragraph (a) of section thirty-nine M of chapter thirty shall mean a person approved by the awarding authority in writing as a person performing labor or both performing labor and furnishing materials pursuant to a contract with the general contractor, and (iii) for contracts with the commonwealth not awarded as provided in forty-four A to forty-four H, inclusive, of chapter one hundred forty-nine shall also mean a person contracting with the general contractor to supply materials used or employed in a public works project for a price in excess of five thousand dollars.

(4) A general contractor or a subcontractor shall enforce a claim to any portion of the amount of a demand for direct payment deposited as provided in subparagraph (f) of paragraph 1 by a petition in equity in the superior court against the other and the bank shall not be a necessary party. A subcontractor shall enforce a claim for direct payment or a right to require a deposit as provided in subparagraph (f) of paragraph 1 by a petition in equity in the superior court against the awarding authority and the general contractor shall not be a necessary party. Upon motion of any party the court shall advance for speedy trial any petition filed as provided in this paragraph. Sections fifty-nine and fifty-nine B of chapter two hundred thirty-one shall apply to such petitions. The court shall enter an interlocutory decree upon which execution shall issue for any part of a claim found due pursuant to sections fifty-nine and fifty-nine B and, upon motion of any party, shall advance for speedy trial the petition to collect the remainder of the claim. Any party aggrieved by such interlocutory decree shall have the right to appeal therefrom as from a final decree. The court shall not consolidate for trial the petition of any subcontractor with the petition of one or more subcontractors or the same general contract unless the court finds that a substantial portion of the evidence of the same events during the course of construction (other than the fact that the claims sought to be consolidated arise under the same general contract) is applicable to the petitions sought to be consolidated and that such consolidation will prevent unnecessary duplication of evidence. A decree in any such proceeding shall not include interest on the disputed amount deposited in excess of the interest earned for the period of any such deposit. No person except a subcontractor filing a demand for direct payment for which no funds due the general contractor are available for direct payment shall have a right to file a petition in court of equity against the awarding authority claiming a demand for direct payment is premature and such subcontractor must file the petition before the awarding authority has made a direct payment to the subcontractor and has made a deposit of the disputed portion as provided in part (iii) of subparagraph (e) and in subparagraph (f) of paragraph (1).

(5) In any petition to collect any claim for which a subcontractor has filed a demand for direct payment the court shall, upon motion of the general contractor, reduce by the amount of any deposit of a disputed amount by the awarding authority as provided in part (iii) of subparagraph (e) and in subparagraph (f) of paragraph (1) any amount held under a trustee writ or pursuant to a restraining order or injunction."

**Section 39G. Completion of public works; semi-final and final estimates; payments; extra work; disputed items.**

"Upon substantial completion of the work required by a contract with the commonwealth, or any agency or political subdivision thereof, for the construction, reconstruction, alteration, remodeling, repair or improvement of public ways, including bridges and other highway structures, sewers and water mains, airports and other public works, the contractor shall present in writing to the awarding authority its certification that the work has been substantially completed. Within twenty-one days thereafter, the awarding authority shall present to the contractor either a written declaration that the work has been substantially completed or an itemized list of incomplete or unsatisfactory work items required by the contract sufficient to demonstrate that the work has not been substantially completed.

The awarding authority may include with such list a notice setting forth a reasonable time, which shall not in any event be prior to the contract completion date, within which the contractor must achieve substantial completion of the work. In the event that the awarding authority fails to respond, by presentation of a written declaration or itemized list as aforesaid, to the contractor's certification within the twenty-one-day period, the contractor's certification shall take effect as the awarding authority's declaration that the work has been substantially completed.

Within sixty-five days after the effective date of a declaration of substantial completion, the awarding authority shall prepare and forthwith send to the contractor for acceptance a substantial completion estimate for the quantity and price of the work done and all but one percent retainage, if held by the awarding authority, on that work, including the quantity, price and all but one percent retainage, if held by the awarding authority, for the undisputed part of each work item and extra work item in dispute but excluding the disputed part thereof, less the estimated cost of completing all incomplete and unsatisfactory work items and less the total periodic payments made to date for the work. The awarding authority also shall deduct from the substantial completion estimate an amount equal to the sum of all demands for direct payment filed by subcontractors and not yet paid to subcontractors or deposited in joint accounts pursuant to section thirty-nine F, but no contract subject to said section thirty-nine F shall contain any other provision authorizing the awarding authority to deduct any amount by virtue of claims asserted against the contract by subcontractors, material suppliers or others.

If the awarding authority fails to prepare and send to the contractor any substantial completion estimate required by this section on or before the date herein above set forth, the awarding authority shall pay to the contractor interest on the amount which would have been due to the contractor pursuant to such substantial completion estimate at the rate of three percentage points above the rediscount rate then charged by the Federal Reserve Bank of Boston from such date to the date on which the awarding authority sends that substantial completion estimate to the contractor for acceptance or to the date of payment therefor, whichever occurs first. The awarding authority shall include the amount of such interest in the substantial completion estimate.

Within fifteen days after the effective date of the declaration of substantial completion, the awarding authority shall send to the contractor by certified mail, return receipt requested, a complete list of all incomplete or unsatisfactory work items, and, unless delayed by causes beyond his control, the contractor shall complete all such work items within forty-five-days after the receipt of such list or before the then contract completion date, whichever is later. If the contractor fails to complete such

work within such time, the awarding authority may, subsequent to seven-days' written notice to the contractor by certified mail, return receipt requested, terminate the contract and complete the incomplete or unsatisfactory work items and charge the cost of same to the contractor.

Within thirty days after receipt by the awarding authority of a notice from the contractor stating that all of the work required by the contract has been completed, the awarding authority shall prepare and forthwith send to the contractor for acceptance a final estimate for the quantity and price of the work done and all retainage, if held by the awarding authority, on that work less all payments made to date, unless the awarding authority's inspection shows that work items required by the contract remain incomplete or unsatisfactory, or that documentation required by the contract has not been completed. If the awarding authority fails to prepare and send to the contractor the final estimate within thirty days after receipt of notice of completion, the awarding authority shall pay to the contractor interest on the amount which would have been due to the contractor pursuant to such final estimate at the rate hereinabove provided from the thirtieth day after such completion until the date on which the awarding authority sends the final estimate to the contractor for acceptance or the date of payment therefor, whichever occurs first, provided that the awarding authority's inspection shows that no work items required by the contract remain incomplete or unsatisfactory. Interest shall not be paid hereunder on amounts for which interest is required to be paid in connection with the substantial completion estimate as hereinabove provided. The awarding authority shall include the amount of the interest required to be paid hereunder in the final estimate.

The awarding authority shall pay the amount due pursuant to any substantial completion or final estimate within thirty-five days after receipt of written acceptance for such estimate from the contractor and shall pay interest on the amount due pursuant to such estimate at the rate hereinabove provided from that thirty-fifth day to the date of payment. Within 15 days, 30 days in the case of the commonwealth, after receipt from the contractor, at the place designated by the awarding authority, if such place is so designated, of a periodic estimate requesting payment of the amount due for the preceding periodic estimate period, the awarding authority shall make a periodic payment to the contractor for the work performed during the preceding periodic estimate period and for the materials not incorporated in the work but delivered and suitably stored at the site, or at some location agreed upon in writing, to which the contractor has title or to which a subcontractor has title and has authorized the contractor to transfer title to the awarding authority, upon certification by the contractor that he is the lawful owner and that the materials are free from all encumbrances. The awarding authority shall include with each such payment interest on the amount due pursuant to such periodic estimate at the rate herein above provided from the due date. In the case of periodic payments, the contracting authority may deduct from its payment a retention based on its estimate of the fair value of its claims against the contractor, a retention for direct payments to subcontractors based on demands for same in accordance with the provisions of section thirty-nine F, and a retention to secure satisfactory performance of the contractual work not exceeding five per cent of the approved amount of any periodic payment, and the same right to retention shall apply to bonded subcontractors entitled to direct payment under section thirty-nine F of chapter thirty; provided, that a five per cent value of all items that are planted in the ground shall be deducted from the periodic payments until final acceptance.

No periodic, substantial completion or final estimate or acceptance or payment thereof shall bar a contractor from reserving all rights to dispute the quantity and amount of, or the failure of the

awarding authority to approve a quantity and amount of, all or part of any work item or extra work item.

Substantial completion, for the purposes of this section, shall mean either that the work required by the contract has been completed except for work having a contract price of less than one percent of the then adjusted total contract price, or substantially all of the work has been completed and opened to public use except for minor incomplete or unsatisfactory work items that do not materially impair the usefulness of the work required by the contract."

### **Section 39I. Deviations from plans and specifications.**

"Every contractor having a contract for the construction, alteration, maintenance, repair or demolition of, or addition to, any public building or public works for the commonwealth, or of any political subdivision thereof, shall perform all the work required by such contract in conformity with the plans and specifications contained therein. No wilful and substantial deviation from said plans and specifications shall be made unless authorized in writing by the awarding authority or by the engineer or architect in charge of the work who is duly authorized by the awarding authority to approve such deviations. In order to avoid delays in the prosecution of the work required by such contract such deviation from the plans or specifications may be authorized by a written order of the awarding authority or such engineer or architect so authorized to approve such deviation. Within thirty days thereafter, such written order shall be confirmed by a certificate of the awarding authority stating: (1) if such deviation involves any substitution or elimination of materials, fixtures or equipment, the reasons why such materials, fixtures or equipment were included in the first instance and the reasons for substitution or elimination, and, if the deviation is of any other nature, the reasons for such deviation, giving justification therefor; (2) that the specified deviation does not materially injure the project as a whole; (3) that either the work substituted for the work specified is of the same cost and quality, or that an equitable adjustment has been agreed upon between the contracting agency and the contractor and the amount in dollars of said adjustment; and (4) that the deviation is in the best interest of the contracting authority.

Such certificate shall be signed under the penalties of perjury and shall be a permanent part of the file record of the work contracted for.

Whoever violates any provision of this section wilfully and with intent to defraud shall be punished by a fine of not more than five thousand dollars or by imprisonment for not more than six months, or both."

### **Section 39J. Public construction contracts; effect of decisions of contracting body or administrative board.**

"Notwithstanding any contrary provision of any contract for the construction, reconstruction, alteration, remodeling, repair or demolition of any public building or public works by the commonwealth, or by any county, city, town, district, board, commission or other public body, when the amount of the contract is more than five thousand dollars in the case of the commonwealth and more than two thousand dollars in the case of any county, city, town, district, board, commission or other public body, a decision, by the contracting body or by any administrative board, official or

agency, or by any architect or engineer, on a dispute, whether of fact or of law, arising under said contract shall not be final or conclusive if such decision is made in bad faith, fraudulently, capriciously, or arbitrarily is unsupported by substantial evidence, or is based upon error of law.”

#### **Section 39K. Public building construction contracts; payments.**

"Every contract for the construction, reconstruction, alteration, remodeling, repair or demolition of any public building by the commonwealth, or by any county, city, town, district, board, commission or other public body, when the amount is more than five thousand dollars in the case of the commonwealth and more than two thousand dollars in the case of any county, city, town, district, board, commission or other public body, shall contain the following paragraph: Within fifteen days (30 days in the case of the commonwealth, including local housing authorities) after receipt from the contractor, at the place designated by the awarding authority if such a place is so designated, of a periodic estimate requesting payment of the amount due for the preceding month, the awarding authority will make a periodic payment to the contractor for the work performed during the preceding month and for the materials not incorporated in the work but delivered and suitably stored at the site (or at some location agreed upon in writing) to which the contractor has title or to which a subcontractor has title and has authorized the contractor to transfer title to the awarding authority, upon certification by the contractor that he is the lawful owner and that the materials are free from all encumbrances, but less (1) a retention based on its estimate of the fair value of its claims against the contractor and less (2) a retention for direct payments to subcontractors based on demands for same in accordance with the provisions of section thirty-nine F, and less (3) a retention not exceeding five percent of the approved amount of the periodic payment. After the receipt of a periodic estimate requesting final payment and within sixty-five-days after (a) the contractor fully completes the work or substantially completes the work so that the value of the work remaining to be done is, in the estimate of the awarding authority, less than one percent of the original contract price, or (b) the contractor substantially completes the work and the awarding authority takes possession for occupancy, whichever occurs first, the awarding authority shall pay the contractor the entire balance due on the contract less (1) a retention based on its estimate of the fair value of its claims against the contractor and of the cost of completing the incomplete and unsatisfactory items of work and less (2) a retention for direct payments to subcontractors based on demands for same in accordance with the provisions of section thirty-nine F, or based on the record of payments by the contractor to the subcontractors under this contract if such record of payment indicates that the contractor has not paid subcontractors as provided in section thirty-nine F. If the awarding authority fails to make payment as herein provided, there shall be added to each such payment daily interest at the rate of three percentage points above the rediscount rate then charged by the Federal Reserve Bank of Boston commencing on the first day after said payment is due and continuing until the payment is delivered or mailed to the contractor; provided, that no interest shall be due, in any event, on the amount due on a periodic estimate for final payment until fifteen days (twenty-four days in the case of the commonwealth) after receipt of such a periodic estimate from the contractor, at the place designated by the awarding authority if such a place is so designated. The contractor agrees to pay to each subcontractor a portion of any such interest paid in accordance with the amount due each subcontractor.

The awarding authority may make changes in any periodic estimate submitted by the contractor and the payment due on said periodic estimate shall be computed in accordance with the changes so

made, but such changes or any requirement for a corrected periodic estimate shall not affect the due date for the periodic payment or the date for the commencement of interest charges on the amount of the periodic payment computed in accordance with the changes made, as provided herein; provided, that the awarding authority may, within seven days after receipt, return to the contractor for correction, any periodic estimate which is not in the required form or which contains computations not arithmetically correct and, in that event, the date of receipt of such periodic estimate shall be the date of receipt of the corrected periodic estimate in proper form and with arithmetically correct computations. The date of receipt of a periodic estimate received on a Saturday shall be the first working day thereafter. The provisions of section thirty-nine G shall not apply to any contract for the construction, reconstruction, alteration, remodeling, repair or demolition of any public building to which this section applies.

All periodic estimates shall be submitted to the awarding authority, or to its designee as set forth in writing to the contractor, and the date of receipt by the awarding authority or its designee shall be marked on the estimate. All periodic estimates shall contain a separate item for each filed subtrade and each sub-subtrade listed in sub-bid form as required by specifications and a column listing the amount paid to each subcontractor and sub-subcontractor as of the date the periodic estimate is filed. The person making payment for the awarding authority shall add the daily interest provided for herein to each payment for each day beyond the due date based on the date of receipt marked on the estimate.

A certificate of the architect to the effect that the contractor has fully or substantially completed the work shall, subject to the provisions of section thirty-nine J, be conclusive for the purposes of this section.

Notwithstanding the provisions of this section, at any time after the value of the work remaining to be done is, in the estimation of the awarding authority, less than 1 per cent of the adjusted contract price, or the awarding authority has determined that the contractor has substantially completed the work and the awarding authority has taken possession for occupancy, the awarding authority may send to the general contractor by certified mail, return receipt requested, a complete and final list of all incomplete and unsatisfactory work items, including, for each item on the list, a good faith estimate of the fair and reasonable cost of completing such item. The general contractor shall then complete all such work items within 30 days of receipt of such list or before the contract completion date, whichever is later. If the general contractor fails to complete all incomplete and unsatisfactory work items within 45 days after receipt of such items furnished by the awarding authority or before the contract completion date, whichever is later, subsequent to an additional 14 days' written notice to the general contractor by certified mail, return receipt requested, the awarding authority may terminate the contract and complete the incomplete and unsatisfactory work items and charge the cost of same to the general contractor and such termination shall be without prejudice to any other rights or remedies the awarding authority may have under the contract. The awarding authority shall note any such termination in the evaluation form to be filed by the awarding authority pursuant to the provisions of section 44D of chapter 149."

#### **Section 39L. Public construction work by foreign corporations; restrictions and reports.**

“The commonwealth and every county, city, town, district, board, commission or other public body which, as the awarding authority, request proposals, bids or sub-bids for any work in the construction, reconstruction, alteration, remodeling, repair or demolition of any public building or other public works (1) shall not enter into a contract for such work with, and shall not approve as a subcontractor furnishing labor and materials for a part of the work, a foreign corporation which has not filed with such awarding authority a certificate of the state secretary stating that the corporation has complied with requirements of section 15.03 of subdivision A of Part 15 of chapter 156D and the date of compliance, and further has filed all annual reports required by section 16.22 of subdivision B of Part 16 of said chapter 156D, and (2) shall report to the state secretary and to the department of corporations and taxation any foreign corporation performing work under such contract or subcontract, and any person, other than a corporation, performing work under such contract or subcontract, and residing or having a principal place of business outside the commonwealth.”

**Section 39M. Contracts for construction and materials; manner of awarding.**

"(b) Specifications for such contracts, and specifications for contracts awarded pursuant to the provisions of said sections forty-four A to forty-four L of said chapter one hundred and forty-nine, shall be written to provide for full competition for each item of material to be furnished under the contract; except, however, that said specifications may be otherwise written for sound reasons in the public interest stated in writing in the public records of the awarding authority or promptly given in writing by the awarding authority to anyone making a written request therefor, in either instance such writing to be prepared after reasonable investigation. Every such contract shall provide that an item equal to that named or described in the said specifications may be furnished; and an item shall be considered equal to the item so named or described if, in the opinion of the awarding authority: (1) it is at least equal in quality, durability, appearance, strength and design, (2) it will perform at least equally the function imposed by the general design for the public work being contracted for or the material being purchased, and (3) it conforms substantially, even with deviations, to the detailed requirements for the item in the said specifications.

For each item of material the specifications shall provide for either a minimum of three named brands of material or a description of material which can be met by a minimum of three manufacturers or producers, and for the equal of any one of said named or described materials."

***For projects estimated to cost more than \$10,000, the following provision, section 39M subsection c, applies:***

“(c) The term "lowest responsible and eligible bidder" shall mean the bidder: (1) whose bid is the lowest of those bidders possessing the skill, ability and integrity necessary for the faithful performance of the work; (2) who shall certify, that he is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed in the work; (3) who shall certify that all employees to be employed at the worksite will 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 and who shall furnish documentation of successful completion of said course with the first certified payroll report for each employee; (4) who, where the provisions of section 8B of chapter 29 apply, shall have been determined to be qualified thereunder; and (5) who obtains within 10 days of the

notification of contract award the security by bond required under section 29 of chapter 149; provided that for the purposes of this section the term "security by bond" shall mean the bond of a surety company qualified to do business under the laws of the commonwealth and satisfactory to the awarding authority; provided further, that if there is more than 1 surety company, the surety companies shall be jointly and severally liable."

**Section 39N. Construction contracts; equitable adjustment in contract price for differing subsurface or latent physical conditions.**

"Every contract subject to section forty-four A of chapter one hundred and forty-nine or subject to section thirty-nine M of chapter thirty shall contain the following paragraph in its entirety and an awarding authority may adopt reasonable rules or regulations in conformity with that paragraph concerning the filing, investigation and settlement of such claims:

If, during the progress of the work, the contractor or the awarding authority discovers that the actual subsurface or latent physical conditions encountered at the site differ substantially or materially from those shown on the plans or indicated in the contract documents either the contractor or the contracting authority may request an equitable adjustment in the contract price of the contract applying to work affected by the differing site conditions. A request for such an adjustment shall be in writing and shall be delivered by the party making such claim to the other party as soon as possible after such conditions are discovered. Upon receipt of such a claim from a contractor, or upon its own initiative, the contracting authority shall make an investigation of such physical conditions, and, if they differ substantially or materially from those shown on the plans or indicated in the contract documents or from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the plans and contract documents and are of such a nature as to cause an increase or decrease in the cost of performance of the work or a change in the construction methods required for the performance of the work which results in an increase or decrease in the cost of the work, the contracting authority shall make an equitable adjustment in the contract price and the contract shall be modified in writing accordingly."

**Section 39O. Contracts for construction and materials; suspension, delay or interruption due to order of awarding authority; adjustment in contract price; written claim.**

"Every contract subject to the provisions of section thirty-nine M of this chapter or subject to section forty-four A of chapter one hundred forty-nine shall contain the following provisions (a) and (b) in their entirety and, in the event a suspension, delay, interruption or failure to act of the awarding authority increases the cost of performance to any subcontractor, that subcontractor shall have the same rights against the general contractor for payment for an increase in the cost of his performance as provisions (a) and (b) give the general contractor against the awarding authority, but nothing in provisions (a) and (b) shall in any way change, modify or alter any other rights which the general contractor or the subcontractor may have against each other.

(a) The awarding authority may order the general contractor in writing to suspend, delay, or interrupt all or any part of the work for such period of time as it may determine to be appropriate for the convenience of the awarding authority; provided however, that if there is a suspension, delay or interruption for fifteen days or more or due to a failure of the awarding authority to act within the time specified in this contract, the awarding authority shall make an adjustment in the contract price

for any increase in the cost of performance of this contract but shall not include any profit to the general contractor on such increase; and provided further, that the awarding authority shall not make any adjustment in the contract price under this provision for any suspension, delay, interruption or failure to act to the extent that such is due to any cause for which this contract provides for an equitable adjustment of the contract price under any other contract provisions.

(b) The general contractor must submit the amount of a claim under provision (a) to the awarding authority in writing as soon as practicable after the end of the suspension, delay, interruption or failure to act and, in any event, not later than the date of final payment under this contract and, except for costs due to a suspension order, the awarding authority shall not approve any costs in the claim incurred more than twenty days before the general contractor notified the awarding authority in writing of the act or failure to act involved in the claim.”

**Section 39P. Contracts for construction and materials; awarding authority’s decisions on interpretation of specifications, etc.; time limit; notice.**

"Every contract subject to section thirty-nine M of this chapter or section forty-four A of chapter one hundred forty-nine which requires the awarding authority, any official, its architect or engineer to make a decision on interpretation of the specifications, approval of equipment, material or any other approval, or progress of the work, shall require that the decision be made promptly and, in any event, no later than thirty days after the written submission for decision; but if such decision requires extended investigation and study, the awarding authority, the official, architect or engineer shall, within thirty days after the receipt of the submission, give the party making the submission written notice of the reasons why the decision cannot be made within the thirty day period and the date by which the decision will be made."

**Section 39Q. Contracts for capital facility construction; contents; annual claims report.**

“(1) Every contract awarded by any state agency as defined by section thirty-nine A of chapter seven for the construction, reconstruction, alteration, remodeling, repair or demolition of any capital facility as defined by the aforesaid section thirty-nine A shall contain the following subparagraphs (a) through (d) in their entirety:

(a) Disputes regarding changes in and interpretations of the terms or scope of the contract and denials of or failures to act upon claims for payment for extra work or materials shall be resolved according to the following procedures, which shall constitute the exclusive method for resolving such disputes. Written notice of the matter in dispute shall be submitted promptly by the claimant to the chief executive official of the state agency which awarded the contract or his designee. No person or business entity having a contract with a state agency shall delay, suspend, or curtail performance under that contract as a result of any dispute subject to this section. Any disputed order, decision or action by the agency or its authorized representative shall be fully performed or complied with pending resolution of the dispute.

(b) Within thirty days of submission of the dispute to the chief executive official of the state agency or his designee, he shall issue a written decision stating the reasons therefor, and shall notify the parties of their right of appeal under this section. If the official or his designee is unable to issue a

decision within thirty days, he shall notify the parties to the dispute in writing of the reasons why a decision cannot be issued within thirty days and of the date by which the decision shall issue. Failure to issue a decision within the thirty-day period or within the additional time period specified in such written notice shall be deemed to constitute a denial of the claim and shall authorize resort to the appeal procedure described below. The decision of the chief executive official or his designee shall be final and conclusive unless an appeal is taken as provided below.

(c) Within twenty-one calendar days of the receipt of a written decision or of the failure to issue a decision as stated in the preceding subparagraph, any aggrieved party may file a notice of claim for an adjudicatory hearing with the division of hearing officers or the aggrieved party may file an action directly in a court of competent jurisdiction and shall serve copies thereof upon all other parties in the form and manner prescribed by the rules governing the conduct of adjudicatory proceedings of the division of hearing officers. In the event an aggrieved party exercises his option to file an action directly in court as provided in the previous sentence, the twenty-one day period shall not apply to such filing and the period of filing such action shall be the same period otherwise applicable for filing a civil action in superior court. The appeal shall be referred to a hearing officer experienced in construction law and shall be prosecuted in accordance with the formal rules of procedure for the conduct of adjudicatory hearings of the division of hearing officers, except as provided below. The hearing officer shall issue a final decision as expeditiously as possible, but in no event more than one hundred and twenty calendar days after conclusion of the adjudicatory hearing, unless the decision is delayed by a request for extension of time for filing post-hearing briefs or other submissions assented to by all parties. Whenever, because an extension of time has been granted, the hearing officer is unable to issue a decision within one hundred and twenty days, he shall notify all parties of the reasons for the delay and the date when the decision will issue. Failure to issue a decision within the one hundred and twenty-day period or within the additional period specified in such written notice shall give the petitioner the right to pursue any legal remedies available to him without further delay.

(d) When the amount in dispute is less than ten thousand dollars, a contractor who is party to the dispute may elect to submit the appeal to a hearing officer experienced in construction law for expedited hearing in accordance with the informal rules of practice and procedure of the division of hearing officers. An expedited hearing under this subparagraph shall be available at the sole option of the contractor. The hearing officer shall issue a decision no later than sixty days following the conclusion of any hearing conducted pursuant to this subparagraph. The hearing officer's decision shall be final and conclusive, and shall not be set aside except in cases of fraud.

(2) The commissioner of administration shall require the division of hearings officers to prepare annually a report concerning the construction contract claims submitted to the division during the preceding twelve months, in such form as the commissioner shall prescribe. The report shall contain, at a minimum, the following information: the number of claims submitted; the names of all parties to each such claim; a brief description of the claim; the date of submission and of disposition of the claim; its disposition, whether by settlement, withdrawal, default or written decision; and the number of claims currently pending. The original of the report shall be submitted to the commissioner of administration by January fifteenth, and a copy shall be filed with the state librarian and shall be a public document.”

**Section 39R. Keeping and maintaining of books, records and accounts; statement of management on internal accounting control; financial statements; enforcement.**

“(a) The words defined herein shall have the meaning stated below whenever they appear in this section:

(1) "Contractor" means any person, corporation, partnership, joint venture, sole proprietorship, or other entity awarded a contract pursuant to sections thirty-eight A 1/2 to thirty-eight O, inclusive, of chapter seven and any contract awarded or executed pursuant to section eleven C of chapter twenty-five A, section thirty-nine M of chapter thirty, or sections forty-four A to forty-four H, inclusive, of chapter one hundred and forty-nine, which is for an amount or estimated amount greater than one hundred thousand dollars.

(2) "Contract" means any contract awarded or executed pursuant to sections thirty-eight A 1/2 to thirty-eight O, inclusive, of chapter seven and any contract awarded or executed pursuant to section eleven C of chapter twenty-five A, section thirty-nine M of chapter thirty, or sections forty-four A through forty-four H, inclusive, of chapter one hundred and forty-nine, which is for amount or estimated amount greater than one hundred thousand dollars.

(3) "Records" means books of original entry, accounts, checks, bank statements and all other banking documents, correspondence, memoranda, invoices, computer printouts, tapes, discs, papers and other documents or transcribed information of any type, whether expressed in ordinary or machine language.

(4) "Independent Certified Public Accountant" means a person duly registered in good standing and entitled to practice as a certified public accountant under the laws of the place of his residence or principal office and who is in fact independent. In determining whether an accountant is independent with respect to a particular person, appropriate consideration should be given to all relationships between the accountant and that person or any affiliate thereof. Determination of an accountant's independence shall not be confined to the relationships existing in connection with the filing of reports with the awarding authority.

(5) "Audit," when used in regard to financial statements, means an examination of records by an independent certified public accountant in accordance with generally accepted accounting principles and auditing standards for the purpose of expressing a *certified* opinion thereon, or, in the alternative, a qualified opinion or a declination to express an opinion for stated reasons.

(6) "Accountant's Report," when used in regard to financial statements, means a document in which an independent certified public accountant indicates the scope of the audit which he has made and sets forth his opinion regarding the financial statements taken as a whole with a listing of noted exceptions and qualifications, or an assertion to the effect that an overall opinion cannot be expressed. When an overall opinion cannot be expressed the reason therefor shall be stated. An accountant's report shall include as a part thereof a signed statement by the responsible corporate officer attesting that management has fully disclosed all material facts to the independent certified public accountant, and that the audited financial statement is a true and complete statement of the financial condition of the contractor.

(7) "Management," when used herein, means the chief executive officers, partners, principals or other person or persons primarily responsible for the financial and operational policies and practices of the contractor.

(8) Accounting terms, unless otherwise defined herein, shall have a meaning in accordance with generally accepted accounting principles and auditing standards.

(b) Subsection (a)(2) hereof notwithstanding, every agreement or contract awarded or executed pursuant to sections thirty-eight A 1/2 to thirty-eight O, inclusive, of chapter seven, or eleven C of chapter twenty-five A, and pursuant to section thirty-nine M of chapter thirty or to section forty-four A through H, inclusive, of chapter one hundred and forty-nine, shall provide that:

(1) The contractor shall make, and keep for at least six years after final payment, books, records, and accounts which in reasonable detail accurately and fairly reflect the transactions and dispositions of the contractor, and

(2) until the expiration of six years after final payment, the office of inspector general, and the commissioner of capital asset management and maintenance shall have the right to examine any books, documents, papers or records of the contractor or of his subcontractors that directly pertain to, and involve transactions relating to, the contractor or his subcontractors, and

(3) if the agreement is a contract as defined herein, the contractor shall describe any change in the method of maintaining records or recording transactions which materially affect any statements filed with the awarding authority, including in his description the date of the change and reasons therefor, and shall accompany said description with a letter from the contractor's independent certified public accountant approving or otherwise commenting on the changes, and

(4) if the agreement is a contract as defined herein, the contractor has filed a statement of management on internal accounting controls as set forth in paragraph (c) below prior to the execution of the contract, and

(5) if the agreement is a contract as defined herein, the contractor has filed prior to the execution of the contracts and will continue to file annually, an audited financial statement for the most recent completed fiscal year as set forth in paragraph (d) below.

(c) Every contractor awarded a contract shall file with the awarding authority a statement of management as to whether the system of internal accounting controls of the contractor and subsidiaries reasonably assures that:

(1) transactions are executed in accordance with management's general and specific authorization;

(2) transactions are recorded as necessary:

i. to permit preparation of financial statements in conformity with generally accepted accounting principles, and

ii. to maintain accountability for assets;

(3) access to assets is permitted only in accordance with management's general or specific authorization; and

(4) the recorded accountability for assets is compared with the existing assets at reasonable intervals and appropriate action was taken with respect to any difference.

Every contractor awarded a contract shall also file with the awarding authority a statement prepared and signed by an independent certified public accountant, stating that he has examined the statement of management on internal accounting controls, and expressing an opinion as to:

(1) whether the representations of management in response to this paragraph, and paragraph (b) above are consistent with the result of management's evaluation of the system of internal accounting controls; and

(2) whether such representations of management are, in addition, reasonable with respect to transactions and assets in amounts which would be material when measured in relation to the applicant's financial statements.

(d) Every contractor awarded a contract by the commonwealth or by any political subdivision thereof shall annually file with the commissioner of capital asset management and maintenance during the term of the contract a financial statement prepared by an independent certified public accountant on the basis of an audit by such accountant. The final statement filed shall include the date of final payment. All statements shall be accompanied by an accountant's report. Such statements shall be made available to the awarding authority upon request.

(e) The office of inspector general, the commissioner for capital asset management and maintenance and any other awarding authority shall enforce the provisions of this section. The commissioner of capital asset management and maintenance may after providing an opportunity for the inspector general and other interested parties to comment, promulgate pursuant to the provisions of chapter thirty A such rules, regulations and guidelines as are necessary to effectuate the purposes of this section. Such rules, regulations and guidelines may be applicable to all awarding authorities. A contractor's failure to satisfy any of the requirements of this section may be grounds for debarment pursuant to section forty-four C of chapter one hundred and forty-nine.

(f) Records and statements required to be made, kept or filed under the provisions of this section shall not be public records as defined in section seven of chapter four and shall not be open to public inspection; provided, however, that such records and statements shall be made available pursuant to the provisions of clause (2) of paragraph (b)."

### **Section 39S. Contracts for construction; requirements.**

"(a) As used in this section the word "person" shall mean any natural person, joint venture, partnership corporation or other business or legal entity. Any person submitting a bid for, or

signing a contract to work on, the construction, reconstruction, alteration, remodeling or repair of any public work by the commonwealth, or political subdivision thereof, or by any county, city, town, district, or housing authority, and estimated by the awarding authority to cost more than \$10,000, and any person submitting a bid for, or signing a contract to work on, the construction, reconstruction, installation, demolition, maintenance or repair of any building by a public agency, estimated to cost more than \$10,000, shall certify on the bid, or contract, under penalties of perjury, as follows:

(1) That he is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed in the work; (2) that all employees to be employed at the worksite will 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 and who shall furnish documentation of successful completion of said course with the first certified payroll report for each employee; and (3) that all employees to be employed in the work subject to this bid 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.

(b) Any employee found on a worksite subject to this section without documentation of successful completion of 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 shall be subject to immediate removal.

(c) The attorney general, or his designee, shall have the power to enforce this section including the power to institute and prosecute proceedings in the superior court to restrain the award of contracts and the performance of contracts in all cases where, after investigation of the facts, he has made a finding that the award or performance has resulted in violation, directly or indirectly, of subsection (b), and he shall not be required to pay to the clerk of the court an entry fee in connection with the institution of the proceeding.”

#### **Section 40. Discharge or release of bonds.**

"Bonds given to the commonwealth, any county, city, town or political subdivision to secure the performance of contracts for the construction or repair of public buildings or other public works may be discharged or released by the awarding authority, upon such terms as it deems expedient, after the expiration of one year from the time of completion, subject to section thirty-nine K, of the work contracted to be done; provided that no claim filed under said bond is pending, and provided further, that no such bonds shall be discharged or released prior to the expiration of all special guarantees provided for in the contract unless new bonds in substitution therefor specifically relating to the unexpired guarantees shall be taken."

**Attention is directed to the following sections of Chapter 82 (the Laying Out, Alteration, Relocation and Discontinuance of Public Ways, and Specific Repairs Thereon) of the General Laws of Massachusetts as amended to date.**

#### **Section 40. Definitions.**

"The following words, as used in this section and sections 40A to 40E, inclusive, shall have the following meanings:

**"Company"**, natural gas pipeline company, petroleum or petroleum products pipeline company, public utility company, cable television company, and municipal utility company or department that supply gas, electricity, telephone, communication or cable television services or private water companies within the city or town where such excavation is to be made.

**"Description of excavation location"**, such description shall include the name of the city or town, street, way, or route number where appropriate, the name of the streets at the nearest intersection to the excavation, the number of the buildings closest to the excavation or any other description, including landmarks, utility pole numbers or other information which will accurately define the location of the excavation.

**"Emergency"**, a condition in which the safety of the public is in imminent danger, such as a threat to life or health or where immediate correction is required to maintain or restore essential public utility service.

**"Excavation"**, an operation for the purpose of movement or removal of earth, rock or the materials in the ground including, but not limited to, digging, blasting, augering, backfilling, test boring, drilling, pile driving, grading, plowing in, hammering, pulling in, jacking in, trenching, tunneling and demolition of structures, excluding excavation by tools manipulated only by human power for gardening purposes and use of blasting for quarrying purposes.

**"Excavator"**, any entity including, but not limited to, a person, partnership, joint venture, trust, corporation, association, public utility, company or state or local government body which performs excavation operations.

**"Premark"**, to delineate the general scope of the excavation or boring on the paved surface of the ground using white paint, or stakes or other suitable white markings on nonpaved surfaces. No premarking shall be acceptable if such marks can reasonably interfere with traffic or pedestrian control or are misleading to the general public. Premarking shall not be required of any continuous excavation that is over 500 feet in length.

**"Safety zone"**, a zone designated on the surface by the use of standard color-coded markings which contains the width of the facilities plus not more than 18 inches on each side.

**"Standard color-coded markings"**, red - electric power lines, cables, conduit or light cables; yellow - gas, oil, street petroleum, or other gaseous materials; orange - communications cables or conduit, alarm or signal lines; blue - water, irrigation and slurry lines; green - sewer and drain lines; white - premark of proposed excavation.

**"System"**, the underground plant damage prevention system as defined in section 76D of chapter 164."

#### **Section 40A. Excavations; notice.**

"No excavator installing a new facility or an addition to an existing facility or the relay or repair of an existing facility shall, except in an emergency, make an excavation, in any public or private way, any company right-of-way or easement or any public or privately owned land or way, unless at least 72 hours, exclusive of Saturdays, Sundays and legal holidays but not more than 30 days before the proposed excavation is to be made, such excavator has premarked not more than 500 feet of the proposed excavation and given an initial notice to the system. Such initial notice shall set forth a description of the excavation location in the manner as herein defined. In addition, such initial notice shall indicate whether any such excavation will involve blasting and, if so, the date and the location at which such blasting is to occur.

The notice requirements shall be waived in an emergency as defined herein; provided, however, that before such excavation begins or during a life-threatening emergency, notification shall be given to the system and the initial point of boring or excavation shall be premarked. The excavator shall ensure that the underground facilities of the utilities in the area of such excavation shall not be damaged or jeopardized.

In no event shall any excavation by blasting take place unless notice thereof, either in the initial notice or a subsequent notice accurately specifying the date and location of such blasting shall have been given and received at least 72 hours in advance, except in the case of an unanticipated obstruction requiring blasting when such notice shall be not less than four hours prior to such blasting. If any such notice cannot be given as aforesaid because of an emergency requiring blasting, it shall be given as soon as may be practicable but before any explosives are discharged."

#### **Section 40B. Designation of location of underground facilities.**

"Within 72 hours, exclusive of Saturdays, Sundays and legal holidays, from the time the initial notice is received by the system or at such time as the company and the excavator agree, such

company shall respond to the initial notice or subsequent notice by designating the location of the underground facilities within 15 feet in any direction of the premarking so that the existing facilities are to be found within a safety zone. Such safety zone shall be so designated by the use of standard color-coded markings. The providing of such designation by the company shall constitute prima facie evidence of an exercise of reasonable precaution by the company as required by this section; provided, however, that in the event that the excavator has given notice as aforesaid at a location at which because of the length of excavation the company cannot reasonably designate the entire location of its facilities within such 72 hour period, then such excavator shall identify for the company that portion of the excavation which is to be first made and the company shall designate the location of its facilities in such portion within 72 hours and shall designate the location of its facilities in the remaining portion of the location within a reasonable time thereafter. When an emergency notification has been given to the system, the company shall make every attempt to designate its facilities as promptly as possible.”

**Section 40C. Excavator’s responsibility to maintain designation markings; damage caused by excavator.**

“After a company has designated the location of its facilities at the location in accordance with section 40B, the excavator shall be responsible for maintaining the designation markings at such locations, unless such excavator requests remarking at the location due to the obliteration, destruction or other removal of such markings. The company shall then remark such location within 24 hours following receipt of such request.

When excavating in close proximity to the underground facilities of any company when such facilities are to be exposed, non-mechanical means shall be employed, as necessary, to avoid damage in locating such facility and any further excavation shall be performed employing reasonable precautions to avoid damage to any underground facilities including, but not limited to, any substantial weakening of structural or lateral support of such facilities, penetration or destruction of any pipe, main, wire or conduit or the protective coating thereof, or damage to any pipe, main, wire or conduit.

If any damage to such pipe, main, wire or conduit or its protective coating occurs, the company shall be notified immediately by the excavator responsible for causing such damage.

The making of an excavation without providing the notice required by section 40A with respect to any proposed excavation which results in any damage to a pipe, main, wire or conduit, or its protective coating, shall be prima facie evidence in any legal or administrative proceeding that such damage was caused by the negligence of such person.”

**Section 40D. Local laws requiring excavation permits; public ways.**

“Nothing in this section shall affect or impair local ordinances or by-laws requiring a permit to be obtained before excavation in a public way or on private property; but notwithstanding any general or special law, ordinance or by-law to the contrary, to the extent that any permit issued under the provisions of the state building code or state fire code requires excavation by an excavator on a public way or on private property, the permit shall not be valid unless the excavator notifies the

system as required pursuant to sections 40 and 40A, before the commencement of the excavation, and has complied with the permitting requirements of chapter 82A.”

**Section 40E. Violations of Secs. 40A to 40E; punishment.**

“Any person or company found by the department of telecommunications and energy, after a hearing, to have violated any provision of sections 40A to 40E, inclusive, shall be fined \$1000 for the first offense and not less than \$5,000 nor more than \$10,000 for any subsequent offense within 12 consecutive months as set forth by the rules of said department; provided, however, that nothing herein shall be construed to require forfeiture of any penal sum by a state or local government body for violation of section 40A or 40C; and provided, further, that nothing herein shall be construed to require the forfeiture of any penal sum by a residential property owner for the failure to premark for an excavation on such person's residential property.”

**Attention is directed to the following sections of Chapter 30 (An Act Mobilizing Economic Recovery in the Commonwealth) of the Acts of 2009.**

**Section 33.**

“(a) Notwithstanding any general or special law to the contrary, the following requirements shall apply to any public works project funded by the American Recovery and Reinvestment Act of 2009 where the amount of construction costs under any contract awarded is likely to exceed \$1,000,000. For the purposes of this section, "public works" shall mean building or work the construction of which is carried on by authority of the commonwealth, or by a county, town, authority or district, or with funds of a federal agency or the commonwealth or a county, city, town, authority or district to serve the interest of the general public, regardless of whether title thereof is in the commonwealth or in a county, city, town, authority or district; provided, however, that for the purposes of this definition, "construction" shall have the meaning provided in section 27D of chapter 149 of the General Laws.

(b) For any public works project subject to subsection (a), the specifications set forth in any request for responses shall include a requirement that, on a per project basis, not less than 20 per cent of the total hours of employees receiving an hourly wage who are directly employed on the site of the project, employed by the contractor or a subcontractor and subject to the prevailing wage, shall be performed by apprentices in bona fide apprentice training programs as provided in sections 11H and 11I of chapter 23 of the General Laws which are approved by the division of apprentice training in the executive office of labor and workforce development.

(c) During the performance of a public works project subject to subsections (a) and (b), the contractor shall submit periodic reports to the awarding authority with records indicating the total hours worked by all journeymen and apprentices in positions subject to the apprentice requirement. In any instance in which the apprentice hours do not constitute 5 per cent of the total hours of employees subject to the apprentice requirement, the contractor shall submit a plan to the awarding authority describing how the contractor shall comply with the apprentice requirement.

(d) The attorney general shall have all the necessary powers to require compliance with the

requirements of subsections (a), (b) and (c) therewith, including the power to institute and prosecute proceedings in the superior court to restrain the award of contracts and the performance of contracts. Prior to award of the contract, an awarding authority may petition the attorney general for approval to adjust the requirements set forth in said subsections (a), (b) and (c). The attorney general may adjust these requirements only if he determines that compliance with these requirements is not feasible or if application of the requirements would be preempted by federal law.

(e) An awarding authority serving a low-income population may require additional specifications that address the needs of its clients including, but not limited to, preferential hiring for residents of public housing authorities for available apprenticeship positions.

(f) Subject to appropriation, the division of apprentice training shall enhance its outreach efforts to underserved populations in order to increase and diversify the number of apprentices in the commonwealth.”

### **Section 39.**

“Any entity located in the commonwealth that receives federal funds through the American Recovery and Reinvestment Act of 2009 shall provide information as directed by the secretary of administration and finance regarding the use of the funds. The required information shall include, but not be limited to, the reporting information required by the federal government and any other information deemed necessary by the secretary to administer the American Recovery and Reinvestment Act of 2009 responsibly, efficiently and transparently. To the extent possible, the secretary shall work to streamline the reporting of this information, minimize duplication of data entry by recipients and ensure data consistency. The secretary may issue regulations to effectuate this reporting requirement.”

### **Section 40.**

“Employers and hiring agents on all projects funded in whole or in part by the American Recovery and Reinvestment Act of 2009 shall post notices of available employment opportunities to the commonwealth’s job bank or the one-stop career centers closest to where the projects shall be located. The postings shall contain such information as directed by the secretary of labor and workforce development. The secretary may issue regulations to effectuate this job posting requirement.”

END OF SECTION

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## SECTION 00830-ATT. C1

### THE COMMONWEALTH OF MASSACHUSETTS

#### SUPPLEMENTAL EQUAL EMPLOYMENT OPPORTUNITY, NON-DISCRIMINATION AND AFFIRMATIVE ACTION PROGRAM

##### I. Definitions

For purposes of this contract,

“Minority” means a person who meets one or more of the following definitions:

- (a) American Indian or Native American means: all persons having origins in any of the original peoples of North America and who are recognized as an Indian by a tribe or tribal organization.
- (b) Asian means: All persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian sub-continent, or the Pacific Islands, including, but not limited to China, Japan, Korea, Samoa, India, and the Philippine Islands.
- (c) Black means: All persons having origins in any of the Black racial groups of Africa, including, but not limited to, African-Americans, and all persons having origins in any of the original peoples of the Cape Verdean Islands.
- (d) Eskimo or Aleut means: All persons having origins in any of the peoples of Northern Canada, Greenland, Alaska, and Eastern Siberia.
- (e) Hispanic means: All persons having their origins in any of the Spanish-speaking peoples of Mexico, Puerto Rico, Cuba, Central or South America, or the Caribbean Islands.

“State construction contract” means a contract for the construction, reconstruction, installation, demolition, maintenance or repair of a building or capital facility, or a contract for the construction, reconstruction, alteration, remodeling or repair of a public work undertaken by a department, agency, board, or commission of the commonwealth.

“State assisted construction contract” means a contract for the construction, reconstruction, installation, demolition, maintenance or repair of a building or capital facility undertaken by a political subdivision of the commonwealth, or two or more political subdivisions thereof, an authority, or other instrumentality and whose costs of the contract are paid for, reimbursed, grant funded, or otherwise supported, in whole or in part, by the commonwealth.

##### II. Equal Opportunity, Non-Discrimination and Affirmative Action

During the performance of this Contract, the Contractor and all subcontractors (hereinafter collectively referred to as “the Contractor”) for a state construction contract or a state assisted construction contract, for him/herself, his/her assignees and successors in interest, agree to comply with all applicable equal employment opportunity, non-discrimination and affirmative

action requirements, including but not limited to the following:

In connection with the performance of work under this contract, the Contractor shall not discriminate against any employee or applicant for employment because of race, color, religious creed, national origin, sex, sexual orientation, genetic information, military service, age, ancestry or disability, shall not discriminate in the selection or retention of subcontractors, and shall not discriminate in the procurement of materials and rentals of equipment.

The aforesaid provision shall include, but not be limited to, the following: employment upgrading, demotion, or transfer; recruitment advertising, layoff or termination; rates of pay or other forms of compensation; conditions or privileges of employment; and selection for apprenticeship or on-the-job training opportunity. The Contractor shall comply with the provisions of chapter 151B of the Massachusetts General Laws, as amended, and all other applicable anti-discrimination and equal opportunity laws, all of which are herein incorporated by reference and made a part of this Contract.

The Contractor shall post hereafter in conspicuous places, available for employees and applicants for employment, notices to be provided by the Massachusetts Commission Against Discrimination setting forth the provisions of the Fair Employment Practices Law of the Commonwealth (Massachusetts General Laws Chapter 151B).

In connection with the performance of work under this contract, the Contractor shall undertake, in good faith, affirmative action measures to eliminate any discriminatory barriers in the terms and conditions of employment on the grounds of race, color, religious creed, national origin, sex, sexual orientation, genetic information, military service, age, ancestry or disability. Such affirmative action measures shall entail positive and aggressive measures to ensure non-discrimination and to promote equal opportunity in the areas of hiring, upgrading, demotion or transfer, recruitment, layoff or termination, rate of compensation, apprenticeship and on-the-job training programs. A list of positive and aggressive measures shall include, but not be limited to, advertising employment opportunities in minority and other community news media; notifying minority, women and other community-based organizations of employment opportunities; validating all job specifications, selection requirements, and tests; maintaining a file of names and addresses of each worker referred to the Contractor and what action was taken concerning such worker; and notifying the administering agency in writing when a union with whom the Contractor has a collective bargaining agreement has failed to refer a minority or woman worker. These and other affirmative action measures shall include all actions required to guarantee equal employment opportunity for all persons, regardless of race, color, religious creed, national origin, sex, sexual orientation, genetic information, military service, age, ancestry or disability. One purpose of this provision is to ensure to the fullest extent possible an adequate supply of skilled tradesmen for this and future Commonwealth public construction projects.

### III. Minority and Women Workforce Participation

Pursuant to his/her obligations under the preceding section, the Contractor shall strive to achieve on this project the labor participation goals contained herein. Said participation goals shall apply in each job category on this project including but not limited to bricklayers, carpenters, cement masons, electricians, ironworkers, operating engineers and those classes of work enumerated in Section 44F of Chapter 149 of the Massachusetts General Laws. The participation goals for this project shall be 15.3% for minorities and 6.9% for women. The participation goals, as set forth herein, shall not be construed as quotas or set-asides; rather, such participation goals will be used to measure the progress of the Commonwealth's equal opportunity, non-discrimination and affirmative action program. Additionally, the participation goals contained herein should not be seen or treated as a floor or as a ceiling for the employment of particular individuals or group of individuals.

### IV. Liaison Committee

At the discretion of the agency that administers the contract for the construction project there may be established for the life of the contract a body to be known as the Liaison Committee. The Liaison Committee shall be composed of one representative each from the agency or agencies administering the contract for the construction project, hereinafter called the administering agency, a representative from the Office of Affirmative action, and such other representatives as may be designated by the administering agency.

The Contractor (or his/her agent, if any, designated by him/her as the on-site equal employment opportunity officer) shall recognize the Liaison Committee as an affirmative action body, and shall establish a continuing working relationship with the Liaison Committee, consulting with the Liaison Committee on all matters related to minority recruitment, referral, employment and training.

### V. Reports and Records

The Contractor shall prepare projected workforce tables on a quarterly basis when required by the administering agency. These shall be broken down into projections, by week, of workers required in each trade. Copies shall be furnished one week in advance of the commencement of the period covered, and also, when updated, to the administering agency and the Liaison Committee when required.

The Contractor shall prepare weekly reports in a form approved by the administering agency, unless information required is required to be reported electronically by the administering agency, the number of hours worked in each trade by each employee, identified as woman, minority, or non-minority. Copies of these shall be provided at the end of each such week to the administering agency and the Liaison Committee.

Records of employment referral orders, prepared by the Contractor, shall be made available to the administering agency on request.

The Contractor will provide all information and reports required by the administering agency on instructions issued by the administering agency and will permit access to its facilities and any books, records, accounts and other sources of information which may be determined by the administering agency to effect the employment of personnel. This provision shall apply only to information pertinent to the Commonwealth's supplementary non-discrimination, equal opportunity and access and opportunity contract requirements. Where information required is in the exclusive possession of another who fails or refuses to furnish this information, the Contractor shall so certify to the administering agency and shall set forth what efforts he has made to obtain the information.

#### VI. Access to Work Site

A designee of the administering agency and a designee of the Liaison Committee shall each have a right to access the work site.

#### VII. Solicitations for Subcontracts, and for the Procurement of Materials and Equipment

In all solicitations either by competitive bidding or negotiation made by the Contractor either for work to be performed under a subcontract or for the procurement of materials or equipment, each potential subcontractor or supplier shall be notified in writing by the Contractor of the Contractor's obligations under this contract relative to non-discrimination and equal opportunity.

#### VIII. Sanctions

Whenever the administering agency believes the General or Prime Contractor or any subcontractor may not be operating in compliance with the provisions of the Fair Employment Practices Law of the Commonwealth (Massachusetts General Laws Chapter 151B), the administering agency may refer the matter to the Massachusetts Commission Against Discrimination ("Commission") for investigation.

Following the referral of a matter by the administering agency to the Massachusetts Commission Against Discrimination, and while the matter is pending before the MCAD, the administering agency may withhold payments from contractors and subcontractors when it has documentation that the contractor or subcontractor has violated the Fair Employment Practices Law with respect to its activities on the Project, or if the administering agency determines that the contractor has materially failed to comply with its obligations and the requirements of this Section. The amount withheld shall not exceed a withhold of payment to the General or Prime Contractor of 1/100 or 1% of the contract award price or \$5,000, whichever sum is greater, or, if a subcontractor is in non-compliance, a withhold by the administering agency from the General Contractor, to be assessed by the General Contractor as a charge against the subcontractor, of 1/100 or 1% of the subcontractor price, or \$1,000 whichever sum is greater, for each violation of the applicable law or contract requirements. The total withheld from any one General or Prime Contractor or subcontractor on a Project shall not exceed \$20,000 overall. No withhold of payments or investigation by the Commission or its agent shall be initiated without the administering agency providing prior notice to the Contractor.

If, after investigation, the Massachusetts Commission Against Discrimination finds that a General or Prime Contractor or subcontractor, in commission of a state construction contract or state-assisted construction contract, violated the provisions of the Fair Employment Practices Law, the administering agency may convert the amount withheld as set forth above into a permanent sanction, as a permanent deduct from payments to the General or Prime Contractor or subcontractor, which sanction will be in addition to any such sanctions, fines or penalties imposed by the Massachusetts Commission Against Discrimination:

No sanction enumerated under this Section shall be imposed by the administering agency except after notice to the General or Prime Contractor or subcontractor and an adjudicatory proceeding, as that term is used, under Massachusetts General Laws Chapter 30A, has been conducted.

#### IX. Severability

The provisions of this section are severable, and if any of these provisions shall be held unconstitutional by any court of competent jurisdiction, the decision of such court shall not affect or impair any of the remaining provisions.

## X. Contractor's Certification

A bidder for a state construction contract or state assisted construction contract will not be eligible for award of the contract unless such bidder has submitted to the administering agency the following certification, which will be incorporated into the resulting contract:

### CONTRACTOR'S CERTIFICATION

\_\_\_\_\_ certifies that they:  
(Contractor Name)

1. Will not discriminate in their employment practices;
2. Intend to use the following listed construction trades in the work under the contract

\_\_\_\_\_  
\_\_\_\_\_ ; and

3. Will make good faith efforts to comply with the minority employee and women employee workforce participation ratio goals and specific affirmative action steps contained herein; and
4. Are in compliance with all applicable federal and state laws, rules, and regulations governing fair labor and employment practices; and
5. Will provide the provisions of the "Supplemental Equal Employment Opportunity, Non-Discrimination and Affirmative Action Program" to each and every subcontractor employed on the Project and will incorporate the terms of this Section into all subcontracts and work orders entered into on the Project.
6. Agree to comply with all provisions contained herein.

\_\_\_\_\_  
(Signature of authorized representative of Contractor)

\_\_\_\_\_  
Date

\_\_\_\_\_  
(Printed name of authorized representative of Contractor)

## XI. Subcontractor Requirements

Prior to the award of any subcontract for a state construction contract or a state assisted construction contract, regardless of tier, the Prime or General Contractor shall provide all prospective subcontractors with a complete copy of this Section entitled "Supplemental Equal Employment Opportunity, Non-Discrimination and Affirmative Action Program" and will incorporate the provisions of this Section by reference into any and all contracts or work orders for all subcontractors providing work on the Project. In order to ensure that the said subcontractor's certification becomes a part of all subcontracts under the prime contract, the Prime or General Contractor shall certify in writing to the administering agency that it has complied with the requirements as set forth in the proceeding paragraph.

## ATTACHMENT D

### CHANGE ORDERS

#### Policy:

This section supplements Article 11, Amending the Contract Documents; Changes in the Work, in the General Conditions and Supplementary Conditions.

All executed change orders submitted to the Engineer for review and processing must be prepared in accordance with the attached change order format (Appendix A) with the appropriate number of copies, calculation sheet(s) (Appendix B) and all other supporting documentation necessary for evaluation. Failure to comply with these instructions will result in delays in processing the change order.

In order to avoid possible delays with approval of change orders, at the beginning of the project and as circumstances warrant, the Contractor shall submit a list of construction equipment, identifying major pieces of equipment to be utilized on the project. The list shall include the Contractor's designation, if any, the manufacturer, model, year of manufacture, serial number, size and horsepower of equipment. The Contractor shall also provide for approval a proposed bluebook equipment rental rate development that separately lists for each piece of equipment the monthly rental rate, area adjustment factor, depreciation factor, estimated operating cost per hour and total hourly rate. In the event the Contractor fails or is unable to provide appropriate rate information the Engineer may develop equipment rental rates for use on change orders.

#### Payment of Change Orders:

Payment of all change orders shall be in accordance with the relevant provisions of Massachusetts General Laws, Chapter 30, Section 39G for non-building construction and Section 39K for building construction as amended from time to time.

Payment of change orders shall be made in accordance with one of the following three methods:

- A. Existing unit prices as set forth in the contract; or
  - B. Agreed upon lump sum or unit prices; or
  - C. Time and materials
- A. Payment for work for which there is a unit price in the contract:

Where the contract contains a unit price for work and the Engineer orders a change for work of the same kind as other work contained in the contract and is performed under similar physical conditions, the Contractor shall accept full and final payment at the contract unit price(s) for the acceptable quantities. Under certain circumstances, the unit prices may be subject to revaluation and adjustment. See Article 13 in the Supplementary Conditions.

B. Payment for work or materials for which no price is contained in the contract:

If the Engineer directs, the Contractor shall submit promptly in writing to the Engineer an offer to do the required work on a lump sum or unit price basis, as specified by the Engineer. The stated price, either lump sum or unit price, shall be divided so as to show that it is the sum of:

1. The estimated cost of Labor, plus
2. Direct Labor Cost, plus
3. Material and Freight Costs, plus
4. Equipment Costs, plus
5. An amount not to exceed 15% of the sum of items 1 through 4 for overhead and profit, plus (if applicable),
6. In the case of work done by a subcontractor an amount not to exceed 5%, for the general contractor of the sum of the cost (not including subcontractor's overhead and profit) of items 1 through 4 for his overhead and profit (less, if applicable),
7. Credits for work deleted from the contract, including actual costs of the deleted work plus the percentage of overhead, profit, bonds and insurance attributable to such credit amount.

C. Payment for work on a time and materials basis:

Unless an agreed lump sum and/or unit price is obtained as noted above and is so stated in the change price, the Contractor shall accept as full payment for which no agreement is contained in contract, an amount equal to:

1. The estimated cost of Labor, plus
2. The Direct Labor Costs, plus
3. Equipment Costs, plus
4. Material and Freight Costs, plus
5. An amount not to exceed 15% of the sum of items 1 through 4 for overhead and profit, plus, if applicable,
6. In the case of work done by a subcontractor an amount not to exceed 5%, for the general contractor of the sum of the cost (not including subcontractor's overhead and profit) of items 1 through 4 for his overhead and profit (less, if applicable),
7. Credit for work deleted from the Contract, including actual costs of the deleted work plus the percentage of overhead, profit, bonds and insurance attributable to such credit amount.

Explanation of items 1 through 7 as outlined in "B" and "C" above:

1. Labor - Only those workers employed on the project who are doing the extra work, including the foreman in charge, are allowable. General foremen, superintendents, or other

supervisory personnel are considered to be included in the overhead markup as provided in items 5 and/or 6. Hourly labor rates in excess of those as listed in the contract wage rates require documentation. As a minimum, an explanation and the appropriate copy of the certified payroll are required.

2. Direct Labor Costs - These costs are limited to those which are required in the contract document. Coverage in excess of the contract provisions, secured by the contractor/subcontractor(s) at his option, are ineligible. The following list of typical direct labor charges is provided for your assistance and is in no way intended to be complete or all encompassing:

Workman's Compensation

Federal/State: Social Security Tax and Unemployment Tax;

Health, Welfare and Pension Benefits; (this cost is included in the wage rates appearing in the Attachment A Massachusetts Wage Rates.

Liability insurance:	Bodily injury; excess umbrella; property damage; public liability
----------------------	---

Blasters insurance:	If applied to any required direct labor costs
---------------------	---

Builders risk insurance:	If applied to any required direct labor costs
--------------------------	---

Experience modification insurance:	If applied to any required direct labor costs
------------------------------------	---

Surcharges:	If applied to any required direct labor costs
-------------	---

Following award and prior to execution of a construction contract, the Contractor and filed subbidders (where applicable) shall submit for review by the Owner, documentation to establish the markup percentage(s).

The documented direct labor markup for this contract may be adjusted on an annual basis as measured from the date the contract is executed. The contract agreement will provide for the establishment of the Direct Labor Cost percentage.

3. Material and Freight - Only those materials required as a result of the change order and reasonable freight charges for delivery of same are allowable.
4. Equipment - Only the equipment required as a result of the change order is allowable. Equipment rental rates shall be governed by the current EquipmentWatch, division of Intertec Publishing [Formerly Nielson/Dataquest] Rental Rate Bluebook for Construction Equipment (the "Bluebook"). In determining the rental rate the following shall apply:
  - a. For equipment already on the project - the monthly prorated rental rate by the hourly use shall be applicable;

- b. For equipment not on the project the daily rate, the weekly rate, or monthly rate will prevail, whichever will prove to be most cost effective. Small tools and manual equipment are examples of costs not allowable under this item. These costs are considered to be included in the overhead markup as provided in items 5 and/or 6.

(1 Month (Normal Use) = 176 hours)

- 5.& 6. Overhead and Profit - All other costs not previously mentioned are considered to be included in this item, be it for the general contractor or subcontractor(s).
- 7. Credits - Work deleted, material and equipment removed from the contract, stored and/or returned shall be credited to the cost of the change order, less documented costs.

This change order will be prepared in such manner as to clearly separate Eligible and Ineligible Costs (as applicable to state-funded projects).

The Contractor shall furnish itemized statements of the cost of the work ordered and shall give the Engineer access to all accounts, bills and vouchers relating thereto; and unless the Contractor shall furnish such itemized statements, and access to all accounts, bills and vouchers, he shall not be entitled to payment for any items of extra work for which such information is sought by the Engineer.

APPENDIX A

CHANGE ORDER  
(Enter Project Name)  
(Enter Location)

Sheet \_\_ of

Date \_\_\_\_\_

Project No. \_\_\_\_\_

Contract No. \_\_\_\_\_

Change Order No. \_\_\_\_\_

Owner's Name: \_\_\_\_\_

Owner's Address: \_\_\_\_\_

Contractor's Name: \_\_\_\_\_

Contractor's Address: \_\_\_\_\_

Item 1:

Description of Change: \_\_\_\_\_

Reason for Change: \_\_\_\_\_

Backup Information: \_\_\_\_\_

Cost: \$ \_\_\_\_\_

Item 2

Description of Change: \_\_\_\_\_

Reason for Change: \_\_\_\_\_

Backup Information: \_\_\_\_\_

Cost: \$ \_\_\_\_\_

Change Order (Continued)  
(Enter Project Name)  
(Enter Location)

Sheet \_\_\_ of

Date \_\_\_\_\_

Project No. \_\_\_\_\_

Contract No. \_\_\_\_\_

Change Order No. \_\_\_\_\_

Contract Amount (As Bid) \$ \_\_\_\_\_

Amount of Previous Change Orders \$ \_\_\_\_\_

Net Change in Contract Price (this Change Order) \$ \_\_\_\_\_

Total Adjusted Contract Price (including this Change Order) \$ \_\_\_\_\_

This Change Order extends the time to complete the work by \_\_\_\_ calendar days.

The extended completion date is \_\_\_\_\_.

This Change Order checked by: \_\_\_\_\_  
Resident Representative Date

This Change Order is requested by: \_\_\_\_\_

This Change Order is recommended by:

\_\_\_\_\_  
Consultant Engineer P.E. # Date

The undersigned agree to the terms of the Change Order.

\_\_\_\_\_  
Contractor Date

\_\_\_\_\_  
Owner Date

Certification of Appropriation under M.G.L. c.44, s.31C: Adequate funding in an amount sufficient to cover the total cost of this change order is available.

By: \_\_\_\_\_  
Certification Officer (Auditor, Accountant, Treasurer) Date

Do not write below this space: this space reserved for STATE AGENCY APPROVAL

Appendix B  
Example Calculation Sheet

1. Labor

Foreman	10 hours @	\$10.00/hour	\$100.00
Engineer	10 hours @	8.80/hour	85.00
Operator	10 hours @	9.50/hour	95.00
Laborers	24 hours @	7.00/hour	<u>168.00</u>
			\$448.00

2. Direct Labor Cost (use the agreed upon Direct Labor Cost)

\*(30)% of \$448.

\*(used for example purposes only) \$ 134.00

3. Materials & Freight

150 l.f. of 12" pipe @ \$2.00/l.f.	\$ 300.00
15 v.f. precast SMH	1,700.00
Freight (slip# ___ enclosed)	<u>25.00</u>
	\$2,025.00

4. Equipment

**EXAMPLE**

1 Backhoe	10 hours @	\$ 80.00/hour	\$ 800.00
1 Truck-crane	10 hours @	100.00/hour	<u>1000.00</u>
			\$1800.00

**TOTAL (items 1 through 4): \$4,407.00**

5. (20%) markup for Overhead, Profit

(20%) of \$4,407 \$ 881.00

6. (7½ %) markup on subcontractor's cost for general contractor (if subcontractor is involved)

(7½ %) of \$4,407 \$ 331.00

7. Credits (deductibles) -\$323.00

**TOTAL COST: \$5,296.00**

**Reminder:** Provide support documentation as necessary i.e. vouchers, correspondence, calculation, photographs, reports.

END OF SECTION

## SECTION 00890

### PERMITS

#### PART 1 – GENERAL

##### 1.01 DESCRIPTION:

This Section provides specific information and defines specific requirements of the Contractor regarding the preparation and acquisition of permits required to perform the work of this project.

##### 1.02 RELATED WORK:

- A. Section 01110, CONTROL OF WORK AND MATERIALS
- B. Section 01550, SIGNAGE (TRAFFIC CONTROL)
- C. Section 01562, DUST CONTROL
- D. Section 01570, ENVIRONMENTAL PROTECTION
- E. Section 02113, EXCAVATION AND STOCKPILING OF IMPACTED MATERIAL
- F. Section 02130, TRANSPORTATION AND DISPOSAL OF EXCAVATED MATERIAL
- G. Section 02240, DEWATERING
- H. Section 02300, EARTHWORK

##### 1.03 GENERAL REQUIREMENTS:

- A. The Owner has obtained or will obtain and pay for the permits listed below, which are required for this project. The Contractor shall assist in obtaining certain permits, as indicated. The Contractor shall obtain and pay for all other permits required, as defined under the Permits subsection of Section 00700, GENERAL CONDITIONS.

<u>Permits by Owner</u>	<u>Status</u>
Conservation Commission Order of Conditions (Ch. 131, s. 40)	(Attached)
U.S. Corps of Engineers General Permit	(Attached)
MassDEP Water Quality Certificate	(Attached)
*Contractor shall prepare permit application and obtain the permit after contract is awarded, bearing all expenses. Owner will pay for and/or waive the permit application fee, if applicable.	

#### 1.04 CONSERVATION COMMISSION ORDERS:

The Town of Millbury Conservation Commission has under the authority of Massachusetts General Laws Chapter 131, Section 40, issued an Order of Conditions on the work under this contract. This Order is to become a part of the Contract Documents and the Contractor shall perform all work in strict conformance with said Order. A copy of this Order is attached to this section.

#### PART 2 - PRODUCTS

Not Used.

#### PART 3 – EXECUTION

##### 3.01 PERFORM WORK IN ACCORDANCE WITH REQUIREMENTS:

- A. The Contractor shall perform the work in accordance with the Contract Documents, including the attached permits/order of conditions, and any applicable municipal requirements.
- B. Prior to commencing any construction activities, the Contractor shall demonstrate to the Owner and the Engineer, through on-site inspection and submitting copies of permits or approvals, that it is in full compliance with the terms and conditions of all permits specified herein. The Contractor shall maintain full compliance with all permits throughout the performance of the work, and upon request, grant access to permitting authorities to inspect the site for the purpose of verifying such compliance.

END OF SECTION

Document1

SECTION 00890

ATTACHMENT A

TOWN OF MILLBURY CONSERVATION COMMISSION ORDER OF  
CONDITIONS

COPY



Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands

**WPA Form 5 – Order of Conditions**

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

224-0793

MassDEP File #

eDEP Transaction #

Millbury

City/Town

**A. General Information**

Please note:  
this form has  
been modified  
with added  
space to  
accommodate  
the Registry  
of Deeds  
Requirements

**Important:**  
When filling  
out forms on  
the  
computer,  
use only the  
tab key to  
move your  
cursor - do  
not use the  
return key.



1. From: Millbury Conservation Commission  
Conservation Commission

2. This issuance is for  
(check one): a. ☒ Order of Conditions b. ☐ Amended Order of Conditions

3. To: Applicant:

Keith

a. First Name

Caruso

b. Last Name

Town of Millbury DPW

c. Organization

127 Elm Street

d. Mailing Address

Millbury

e. City/Town

MA

f. State

01527

g. Zip Code

4. Property Owner (if different from applicant):

a. First Name

b. Last Name

c. Organization

d. Mailing Address

e. City/Town

f. State

g. Zip Code

5. Project Location:

West Main Street

a. Street Address

Millbury

b. City/Town

78

8

c. Assessors Map/Plat Number

d. Parcel/Lot Number

Latitude and Longitude, if known:

42.1725d

d. Latitude

m

s

71.7798d

e. Longitude

m

s



Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands  
**WPA Form 5 – Order of Conditions**  
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:  
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**A. General Information (cont.)**

6. Property recorded at the Registry of Deeds for (attach additional information if more than one parcel):  
Worcester  
a. County  
13487  
c. Book  
b. Certificate Number (if registered land)  
41  
d. Page
7. Dates: 6/17/2019  
a. Date Notice of Intent Filed  
b. Date Public Hearing Closed  
c. Date of Issuance
8. Final Approved Plans and Other Documents (attach additional plan or document references as needed):  
Town of Millbury, Massachusetts Millbury Highway Department West Main Street Round Pond Wall  
Weston & Sampson  
b. Prepared By  
5/22/2019  
d. Final Revision Date  
Carl Myers Structural  
c. Signed and Stamped by  
1"=50"  
e. Scale  
f. Additional Plan or Document Title  
g. Date

**B. Findings**

1. Findings pursuant to the Massachusetts Wetlands Protection Act:  
Following the review of the above-referenced Notice of Intent and based on the information provided in this application and presented at the public hearing, this Commission finds that the areas in which work is proposed is significant to the following interests of the Wetlands Protection Act (the Act). Check all that apply:
- a. ☐ Public Water Supply  
b. ☐ Land Containing Shellfish  
c. ☒ Prevention of Pollution  
d. ☐ Private Water Supply  
e. ☐ Fisheries  
f. ☒ Protection of Wildlife Habitat  
g. ☐ Groundwater Supply  
h. ☒ Storm Damage Prevention  
i. ☒ Flood Control
2. This Commission hereby finds the project, as proposed, is: (check one of the following boxes)

**Approved subject to:**

- a. ☒ the following conditions which are necessary in accordance with the performance standards set forth in the wetlands regulations. This Commission orders that all work shall be performed in accordance with the Notice of Intent referenced above, the following General Conditions, and any other special conditions attached to this Order. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, these conditions shall control.



Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands  
**WPA Form 5 – Order of Conditions**  
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

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## B. Findings (cont.)

Denied because:

- b. ☐ the proposed work cannot be conditioned to meet the performance standards set forth in the wetland regulations. Therefore, work on this project may not go forward unless and until a new Notice of Intent is submitted which provides measures which are adequate to protect the interests of the Act, and a final Order of Conditions is issued. **A description of the performance standards which the proposed work cannot meet is attached to this Order.**
- c. ☐ the information submitted by the applicant is not sufficient to describe the site, the work, or the effect of the work on the interests identified in the Wetlands Protection Act. Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides sufficient information and includes measures which are adequate to protect the Act's interests, and a final Order of Conditions is issued. **A description of the specific information which is lacking and why it is necessary is attached to this Order as per 310 CMR 10.05(6)(c).**
3. ☒ Buffer Zone Impacts: Shortest distance between limit of project disturbance and the wetland resource area specified in 310 CMR 10.02(1)(a) 0  
a. linear feet

**Inland Resource Area Impacts:** Check all that apply below. (For Approvals Only)

Resource Area	Proposed Alteration	Permitted Alteration	Proposed Replacement	Permitted Replacement
4. <input checked="" type="checkbox"/> Bank	<u>169</u> a. linear feet	<u>169</u> b. linear feet	<u>169</u> c. linear feet	<u>169</u> d. linear feet
5. <input type="checkbox"/> Bordering Vegetated Wetland	<u>          </u> a. square feet	<u>          </u> b. square feet	<u>          </u> c. square feet	<u>          </u> d. square feet
6. <input checked="" type="checkbox"/> Land Under Waterbodies and Waterways	<u>2150</u> a. square feet	<u>2150</u> b. square feet	<u>2150</u> c. square feet	<u>2150</u> d. square feet
	<u>270</u> e. c/y dredged	<u>270</u> f. c/y dredged		
7. <input type="checkbox"/> Bordering Land Subject to Flooding	<u>          </u> a. square feet	<u>          </u> b. square feet	<u>          </u> c. square feet	<u>          </u> d. square feet
Cubic Feet Flood Storage	<u>          </u> e. cubic feet	<u>          </u> f. cubic feet	<u>          </u> g. cubic feet	<u>          </u> h. cubic feet
8. <input type="checkbox"/> Isolated Land Subject to Flooding	<u>          </u> a. square feet	<u>          </u> b. square feet		
Cubic Feet Flood Storage	<u>          </u> c. cubic feet	<u>          </u> d. cubic feet	<u>          </u> e. cubic feet	<u>          </u> f. cubic feet
9. <input type="checkbox"/> Riverfront Area	<u>          </u> a. total sq. feet	<u>          </u> b. total sq. feet		
Sq ft within 100 ft	<u>          </u> c. square feet	<u>          </u> d. square feet	<u>          </u> e. square feet	<u>          </u> f. square feet
Sq ft between 100-200 ft	<u>          </u> g. square feet	<u>          </u> h. square feet	<u>          </u> i. square feet	<u>          </u> j. square feet



Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands

**WPA Form 5 – Order of Conditions**

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

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**B. Findings (cont.)**

**Coastal Resource Area Impacts:** Check all that apply below. (For Approvals Only)

	Proposed Alteration	Permitted Alteration	Proposed Replacement	Permitted Replacement
10. <input type="checkbox"/> Designated Port Areas	Indicate size under Land Under the Ocean, below			
11. <input type="checkbox"/> Land Under the Ocean	a. square feet	b. square feet		
	c. c/y dredged	d. c/y dredged		
12. <input type="checkbox"/> Barrier Beaches	Indicate size under Coastal Beaches and/or Coastal Dunes below			
13. <input type="checkbox"/> Coastal Beaches	a. square feet	b. square feet	c. <sup>cu yd</sup> nourishment	d. <sup>cu yd</sup> nourishment
14. <input type="checkbox"/> Coastal Dunes	a. square feet	b. square feet	c. <sup>cu yd</sup> nourishment	d. <sup>cu yd</sup> nourishment
15. <input type="checkbox"/> Coastal Banks	a. linear feet	b. linear feet		
16. <input type="checkbox"/> Rocky Intertidal Shores	a. square feet	b. square feet		
17. <input type="checkbox"/> Salt Marshes	a. square feet	b. square feet	c. square feet	d. square feet
18. <input type="checkbox"/> Land Under Salt Ponds	a. square feet	b. square feet		
	c. c/y dredged	d. c/y dredged		
19. <input type="checkbox"/> Land Containing Shellfish	a. square feet	b. square feet	c. square feet	d. square feet
20. <input type="checkbox"/> Fish Runs	Indicate size under Coastal Banks, Inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above			
	a. c/y dredged	b. c/y dredged		
21. <input type="checkbox"/> Land Subject to Coastal Storm Flowage	a. square feet	b. square feet		



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**B. Findings (cont.)**

\* #22. If the project is for the purpose of restoring or enhancing a wetland resource area in addition to the square footage that has been entered in Section B.5.c (BVW) or B.17.c (Salt Marsh) above, please enter the additional amount here.

22. ☐ Restoration/Enhancement \*:

a. square feet of BVW

b. square feet of salt marsh

23. ☐ Stream Crossing(s):

a. number of new stream crossings

b. number of replacement stream crossings

**C. General Conditions Under Massachusetts Wetlands Protection Act**

The following conditions are only applicable to Approved projects.

1. Failure to comply with all conditions stated herein, and with all related statutes and other regulatory measures, shall be deemed cause to revoke or modify this Order.
2. The Order does not grant any property rights or any exclusive privileges; it does not authorize any injury to private property or invasion of private rights.
3. This Order does not relieve the permittee or any other person of the necessity of complying with all other applicable federal, state, or local statutes, ordinances, bylaws, or regulations.
4. The work authorized hereunder shall be completed within three years from the date of this Order unless either of the following apply:
  - a. The work is a maintenance dredging project as provided for in the Act; or
  - b. The time for completion has been extended to a specified date more than three years, but less than five years, from the date of issuance. If this Order is intended to be valid for more than three years, the extension date and the special circumstances warranting the extended time period are set forth as a special condition in this Order.
  - c. If the work is for a Test Project, this Order of Conditions shall be valid for no more than one year.
5. This Order may be extended by the issuing authority for one or more periods of up to three years each upon application to the issuing authority at least 30 days prior to the expiration date of the Order. An Order of Conditions for a Test Project may be extended for one additional year only upon written application by the applicant, subject to the provisions of 310 CMR 10.05(11)(f).
6. If this Order constitutes an Amended Order of Conditions, this Amended Order of Conditions does not extend the issuance date of the original Final Order of Conditions and the Order will expire on \_\_\_\_\_ unless extended in writing by the Department.
7. Any fill used in connection with this project shall be clean fill. Any fill shall contain no trash, refuse, rubbish, or debris, including but not limited to lumber, bricks, plaster, wire, lath, paper, cardboard, pipe, tires, ashes, refrigerators, motor vehicles, or parts of any of the foregoing.



**Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands**

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**C. General Conditions Under Massachusetts Wetlands Protection Act**

8. This Order is not final until all administrative appeal periods from this Order have elapsed, or if such an appeal has been taken, until all proceedings before the Department have been completed.
9. No work shall be undertaken until the Order has become final and then has been recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land upon which the proposed work is to be done. In the case of the registered land, the Final Order shall also be noted on the Land Court Certificate of Title of the owner of the land upon which the proposed work is done. The recording information shall be submitted to the Conservation Commission on the form at the end of this Order, which form must be stamped by the Registry of Deeds, prior to the commencement of work.
10. A sign shall be displayed at the site not less than two square feet or more than three square feet in size bearing the words,  
"Massachusetts Department of Environmental Protection" [or, "MassDEP"]  
"File Number            224-0793            "
11. Where the Department of Environmental Protection is requested to issue a Superseding Order, the Conservation Commission shall be a party to all agency proceedings and hearings before MassDEP.
12. Upon completion of the work described herein, the applicant shall submit a Request for Certificate of Compliance (WPA Form 8A) to the Conservation Commission.
13. The work shall conform to the plans and special conditions referenced in this order.
14. Any change to the plans identified in Condition #13 above shall require the applicant to inquire of the Conservation Commission in writing whether the change is significant enough to require the filing of a new Notice of Intent.
15. The Agent or members of the Conservation Commission and the Department of Environmental Protection shall have the right to enter and inspect the area subject to this Order at reasonable hours to evaluate compliance with the conditions stated in this Order, and may require the submittal of any data deemed necessary by the Conservation Commission or Department for that evaluation.
16. This Order of Conditions shall apply to any successor in interest or successor in control of the property subject to this Order and to any contractor or other person performing work conditioned by this Order.



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**C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)**

17. Prior to the start of work, and if the project involves work adjacent to a Bordering Vegetated Wetland, the boundary of the wetland in the vicinity of the proposed work area shall be marked by wooden stakes or flagging. Once in place, the wetland boundary markers shall be maintained until a Certificate of Compliance has been issued by the Conservation Commission.
18. All sedimentation barriers shall be maintained in good repair until all disturbed areas have been fully stabilized with vegetation or other means. At no time shall sediments be deposited in a wetland or water body. During construction, the applicant or his/her designee shall inspect the erosion controls on a daily basis and shall remove accumulated sediments as needed. The applicant shall immediately control any erosion problems that occur at the site and shall also immediately notify the Conservation Commission, which reserves the right to require additional erosion and/or damage prevention controls it may deem necessary. Sedimentation barriers shall serve as the limit of work unless another limit of work line has been approved by this Order.
19. The work associated with this Order (the "Project")
- (1) ☐ is subject to the Massachusetts Stormwater Standards
- (2) ☒ is NOT subject to the Massachusetts Stormwater Standards

**If the work is subject to the Stormwater Standards, then the project is subject to the following conditions:**

- a) All work, including site preparation, land disturbance, construction and redevelopment, shall be implemented in accordance with the construction period pollution prevention and erosion and sedimentation control plan and, if applicable, the Stormwater Pollution Prevention Plan required by the National Pollution Discharge Elimination System Construction General Permit as required by Stormwater Condition 8. Construction period erosion, sedimentation and pollution control measures and best management practices (BMPs) shall remain in place until the site is fully stabilized.
- b) No stormwater runoff may be discharged to the post-construction stormwater BMPs unless and until a Registered Professional Engineer provides a Certification that:
- i. all construction period BMPs have been removed or will be removed by a date certain specified in the Certification. For any construction period BMPs intended to be converted to post construction operation for stormwater attenuation, recharge, and/or treatment, the conversion is allowed by the MassDEP Stormwater Handbook BMP specifications and that the BMP has been properly cleaned or prepared for post construction operation, including removal of all construction period sediment trapped in inlet and outlet control structures;
  - ii. as-built final construction BMP plans are included, signed and stamped by a Registered Professional Engineer, certifying the site is fully stabilized;
  - iii. any illicit discharges to the stormwater management system have been removed, as per the requirements of Stormwater Standard 10;



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**C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)**

iv. all post-construction stormwater BMPs are installed in accordance with the plans (including all planting plans) approved by the issuing authority, and have been inspected to ensure that they are not damaged and that they are in proper working condition;

v. any vegetation associated with post-construction BMPs is suitably established to withstand erosion.

c) The landowner is responsible for BMP maintenance until the issuing authority is notified that another party has legally assumed responsibility for BMP maintenance. Prior to requesting a Certificate of Compliance, or Partial Certificate of Compliance, the responsible party (defined in General Condition 18(e)) shall execute and submit to the issuing authority an Operation and Maintenance Compliance Statement ("O&M Statement") for the Stormwater BMPs identifying the party responsible for implementing the stormwater BMP Operation and Maintenance Plan ("O&M Plan") and certifying the following:

i.) the O&M Plan is complete and will be implemented upon receipt of the Certificate of Compliance, and

ii.) the future responsible parties shall be notified in writing of their ongoing legal responsibility to operate and maintain the stormwater management BMPs and implement the Stormwater Pollution Prevention Plan.

d) Post-construction pollution prevention and source control shall be implemented in accordance with the long-term pollution prevention plan section of the approved Stormwater Report and, if applicable, the Stormwater Pollution Prevention Plan required by the National Pollution Discharge Elimination System Multi-Sector General Permit.

e) Unless and until another party accepts responsibility, the landowner, or owner of any drainage easement, assumes responsibility for maintaining each BMP. To overcome this presumption, the landowner of the property must submit to the issuing authority a legally binding agreement of record, acceptable to the issuing authority, evidencing that another entity has accepted responsibility for maintaining the BMP, and that the proposed responsible party shall be treated as a permittee for purposes of implementing the requirements of Conditions 18(f) through 18(k) with respect to that BMP. Any failure of the proposed responsible party to implement the requirements of Conditions 18(f) through 18(k) with respect to that BMP shall be a violation of the Order of Conditions or Certificate of Compliance. In the case of stormwater BMPs that are serving more than one lot, the legally binding agreement shall also identify the lots that will be serviced by the stormwater BMPs. A plan and easement deed that grants the responsible party access to perform the required operation and maintenance must be submitted along with the legally binding agreement.

f) The responsible party shall operate and maintain all stormwater BMPs in accordance with the design plans, the O&M Plan, and the requirements of the Massachusetts Stormwater Handbook.



Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands  
**WPA Form 5 – Order of Conditions**  
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:  
224-0793  
MassDEP File #  
eDEP Transaction #  
Millbury  
City/Town

**C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)**

- g) The responsible party shall:
1. Maintain an operation and maintenance log for the last three (3) consecutive calendar years of inspections, repairs, maintenance and/or replacement of the stormwater management system or any part thereof, and disposal (for disposal the log shall indicate the type of material and the disposal location);
  2. Make the maintenance log available to MassDEP and the Conservation Commission ("Commission") upon request; and
  3. Allow members and agents of the MassDEP and the Commission to enter and inspect the site to evaluate and ensure that the responsible party is in compliance with the requirements for each BMP established in the O&M Plan approved by the issuing authority.
- h) All sediment or other contaminants removed from stormwater BMPs shall be disposed of in accordance with all applicable federal, state, and local laws and regulations.
- i) Illicit discharges to the stormwater management system as defined in 310 CMR 10.04 are prohibited.
- j) The stormwater management system approved in the Order of Conditions shall not be changed without the prior written approval of the issuing authority.
- k) Areas designated as qualifying pervious areas for the purpose of the Low Impact Site Design Credit (as defined in the MassDEP Stormwater Handbook, Volume 3, Chapter 1, Low Impact Development Site Design Credits) shall not be altered without the prior written approval of the issuing authority.
- l) Access for maintenance, repair, and/or replacement of BMPs shall not be withheld. Any fencing constructed around stormwater BMPs shall include access gates and shall be at least six inches above grade to allow for wildlife passage.

Special Conditions (if you need more space for additional conditions, please attach a text document):

**PLEASE SEE SPECIAL CONDITIONS #21 - #23.**

20. For Test Projects subject to 310 CMR 10.05(11), the applicant shall also implement the monitoring plan and the restoration plan submitted with the Notice of Intent. If the conservation commission or Department determines that the Test Project threatens the public health, safety or the environment, the applicant shall implement the removal plan submitted with the Notice of Intent or modify the project as directed by the conservation commission or the Department.



## TOWN OF MILLBURY

## CONSERVATION COMMISSION

MUNICIPAL OFFICE BUILDING • 127 ELM STREET • MILLBURY, MA 01527-2632 • TEL. 508-865-5411 • FAX. 508-865-0857

### *Conservation Commission*

*Donald Flynn, Chairman  
Ronald Stead, Vice-Chairman  
Anthony Cameron  
Paul DiCicco  
Sarah Hoecker*

KEITH CARUSO, DPW  
ROUND POND, WEST MAIN STREET

SPECIAL CONDITIONS  
ORDER OF CONDITIONS #224-793

21. Cement trucks shall not be washed on the site. Any deposit of cement or concrete products into the wetland areas shall be removed by hand.
22. The Commission reserves the right and opportunity to modify this Order, or to require a new Notice of Intent to reflect concerns or issues raised, or project changes or mitigation measures proposed or required by other agencies and departments reviewing this project.
23. Additional Alteration Prohibited: There shall be no additional alterations of areas under Conservation Commission jurisdiction without the required review and permit(s). This condition shall survive the expiration of this Order, and shall be included as a continuing condition in perpetuity on the Certificate of Compliance.



Massachusetts Department of Environmental Protection  
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## D. Findings Under Municipal Wetlands Bylaw or Ordinance

1. Is a municipal wetlands bylaw or ordinance applicable? ☐ Yes ☒ No
2. The \_\_\_\_\_ hereby finds (check one that applies):

Conservation Commission

- a. ☐ that the proposed work cannot be conditioned to meet the standards set forth in a municipal ordinance or bylaw, specifically:

1. Municipal Ordinance or Bylaw

2. Citation

Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides measures which are adequate to meet these standards, and a final Order of Conditions is issued.

- b. ☐ that the following additional conditions are necessary to comply with a municipal ordinance or bylaw:

1. Municipal Ordinance or Bylaw

2. Citation

3. The Commission orders that all work shall be performed in accordance with the following conditions and with the Notice of Intent referenced above. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, the conditions shall control.
- The special conditions relating to municipal ordinance or bylaw are as follows (if you need more space for additional conditions, attach a text document):
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_



Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands

**WPA Form 5 – Order of Conditions**

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

224-0793

MassDEP File #

eDEP Transaction #

Millbury

City/Town

**E. Signatures**

This Order is valid for three years, unless otherwise specified as a special condition pursuant to General Conditions #4, from the date of issuance.

Please indicate the number of members who will sign this form.

This Order must be signed by a majority of the Conservation Commission.

The Order must be mailed by certified mail (return receipt requested) or hand delivered to the applicant. A copy also must be mailed or hand delivered at the same time to the appropriate Department of Environmental Protection Regional Office, if not filing electronically, and the property owner, if different from applicant.

8/22/19  
1. Date of Issuance

4  
2. Number of Signers

Signatures:

*[Signature]*  
*[Signature]*

*[Signature]*

*Ronald Stead*

☒ by hand delivery on

8/22/19

Date

☐ by certified mail, return receipt requested, on

Date

**F. Appeals**

The applicant, the owner, any person aggrieved by this Order, any owner of land abutting the land subject to this Order, or any ten residents of the city or town in which such land is located, are hereby notified of their right to request the appropriate MassDEP Regional Office to issue a Superseding Order of Conditions. The request must be made by certified mail or hand delivery to the Department, with the appropriate filing fee and a completed Request of Departmental Action Fee Transmittal Form, as provided in 310 CMR 10.03(7) within ten business days from the date of issuance of this Order. A copy of the request shall at the same time be sent by certified mail or hand delivery to the Conservation Commission and to the applicant, if he/she is not the appellant.

Any appellants seeking to appeal the Department's Superseding Order associated with this appeal will be required to demonstrate prior participation in the review of this project. Previous participation in the permit proceeding means the submission of written information to the Conservation Commission prior to the close of the public hearing, requesting a Superseding Order, or providing written information to the Department prior to issuance of a Superseding Order.

The request shall state clearly and concisely the objections to the Order which is being appealed and how the Order does not contribute to the protection of the interests identified in the Massachusetts Wetlands Protection Act (M.G.L. c. 131, § 40), and is inconsistent with the wetlands regulations (310 CMR 10.00). To the extent that the Order is based on a municipal ordinance or bylaw, and not on the Massachusetts Wetlands Protection Act or regulations, the Department has no appellate jurisdiction.



Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands

**WPA Form 5 – Order of Conditions**

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

224-0793

MassDEP File #

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City/Town

**G. Recording Information**

Prior to commencement of work, this Order of Conditions must be recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land subject to the Order. In the case of registered land, this Order shall also be noted on the Land Court Certificate of Title of the owner of the land subject to the Order of Conditions. The recording information on this page shall be submitted to the Conservation Commission listed below.

Millbury Conservation Commission

Conservation Commission

Detach on dotted line, have stamped by the Registry of Deeds and submit to the Conservation Commission.

To:

Conservation Commission

Please be advised that the Order of Conditions for the Project at:

Project Location

MassDEP File Number

Has been recorded at the Registry of Deeds of:

County

Book

Page

for:

Property Owner

and has been noted in the chain of title of the affected property in:

Book

Page

In accordance with the Order of Conditions issued on:

Date

If recorded land, the instrument number identifying this transaction is:

Instrument Number

If registered land, the document number identifying this transaction is:

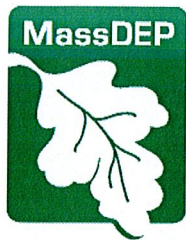
Document Number

Signature of Applicant

SECTION 00890

ATTACHMENT B

MASSDEP 401 WATER QUALITY CERTIFICATION



Commonwealth of Massachusetts  
Executive Office of Energy & Environmental Affairs

## Department of Environmental Protection

One Winter Street Boston, MA 02108 • 617-292-5500

Charles D. Baker  
Governor

Karyn E. Polito  
Lieutenant Governor

Kathleen A. Theoharides  
Secretary

Martin Suuberg  
Commissioner

January 7, 2019

Keith Caruso  
Town of Millbury  
7 Elm Street  
Millbury, MA 01527

Re: **401 WATER QUALITY CERTIFICATION**  
Application for BRP WW 08, Minor project dredging

At: Round Pond, Millbury  
Blackstone Watershed

401 WQC Transmittal No: X282605  
Wetlands File No: 224-0793

Dear Mr. Caruso:

The Department has reviewed your application for Water Quality Certification (WQC) referenced above. In accordance with the provisions of Section 401 of the Federal Clean Water Act as amended (33 U.S.C. §1251 et seq.), MGL c.21, §§ 26-53, and 314 CMR 9.00, the Department has determined there is reasonable assurance the project or activity will be conducted in a manner which will not violate applicable water quality standards (314 CMR 4.00) and other applicable requirements of state law.

The waters of Round Pond are designated in the Massachusetts Surface Water Quality Standards as Class B. Such waters are intended "as habitat for fish, other aquatic life and wildlife and for primary and secondary contact recreation." Anti-degradation provisions of these Standards require that "existing uses and the level of water quality necessary to protect the existing uses shall be maintained and protected."

**Proposed Project Description:** The Round Pond retaining wall is approximately 169 ft long, located along the south shoreline of Round Pond at Millbury, Massachusetts (Figure 1). Portions of the fieldstone retaining wall have collapsed and the remaining sections show visible signs of continuing deterioration which may result in sinkholes or collapse of the adjacent roadway and/or culvert. This would interrupt emergency

services and public access to the main route to the west side of the Town. Therefore, the Town of Millbury proposed to replace the retaining wall (Figure 1) to improve the public safety. The proposed project scope entails dredging of 270 cubic yards of sediment along the base of the wall within Round Pond. In addition, the existing 60-inch reinforced concrete pipe culvert carrying Singletary Brook under West Main Street will be temporarily plugged to allow wall construction. Bypass pumping will be used to maintain the pond elevation and a 10 ft long section of 60-inch reinforced concrete pipe will replace the existing outfall at its current location.

The deteriorated wall is part of the river bank. To remove and install the new retaining wall, an estimated 2,150 square feet of land under water along the base of the wall will be impacted. Massachusetts Division of Fisheries and Wildlife did not recommend any Time of Year Restriction on this project.<sup>1</sup> In addition, Round Pond is part of Singletary Brook and this brook is currently being impaired in the Massachusetts Integrated List of Waters due to non-native species and *Escherichia coli*.<sup>2</sup>

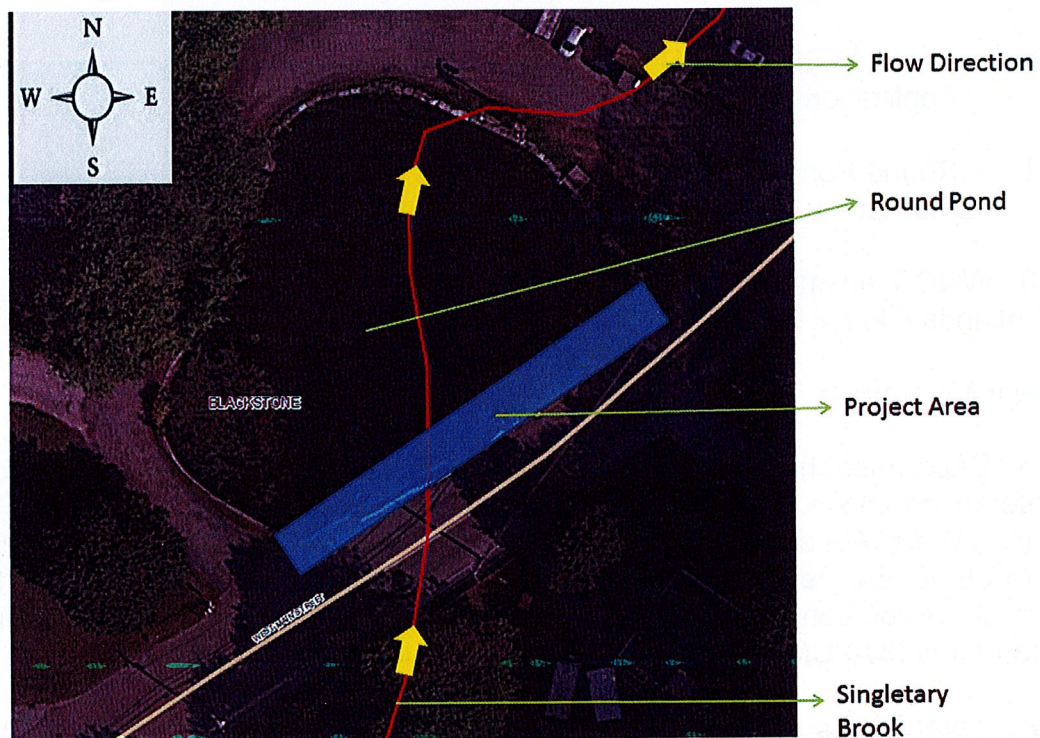


Figure 1. Proposed project area along the West Main Street, Millbury, MA (Modified from Weston & Sampson 2019)<sup>3</sup>.

<sup>1</sup> According to an email from Caleb Slater, Massachusetts Division of Fisheries and Wildlife, to Mel Higgins, Weston & Sampson, dated November 25, 2019.

<sup>2</sup> Massachusetts Year 2016 Integrated List of Waters, Proposed Listing of the Condition of Massachusetts' Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act. Prepared by Massachusetts Division of Watershed Management Watershed Planning Program. CN 470.0. Dated June 2017.

<sup>3</sup> Weston & Sampson, Water Quality Certification, Round Pond, Millbury, MA. Prepared for Town of Millbury. Submitted to Massachusetts Department of Environmental Protection, Dated June 17, 2019.

**Public Notice:** The public notice of the 401 WQC application was published in *the Millbury-Sutton Chronicle* on December 5, 2019. The Department did not receive any comments during the 21-day public comment period, which ended on December 26, 2019.

**Section 61 Findings:** Pursuant to M.G.L. Chapter 30, Sections 61 to 62H inclusive [the Massachusetts Environmental Policy Act ("MEPA")], the project, as referenced in the Water Quality Certification Application, DEP Transmittal # X282605, did not meet or exceed a related MEPA review thresholds pursuant to 301 CMR 11.03. Therefore, MEPA review is not required.

**Therefore, based on information currently in the record, the Department grants a 401 Water Quality Certification for this project subject to the following conditions to maintain water quality, to minimize impact on waters and wetlands, and to ensure compliance with appropriate state law. The Department further certifies in accordance with 314 CMR 9.00 that there is reasonable assurance the project or activity will be conducted in a manner which will not violate applicable water quality standards (314 CMR 4.00) and other applicable requirements of state law. Finally, the Department has determined that upon satisfying the conditions and mitigation requirements of this approval, the project provides a level of water quality necessary to protect existing uses and accordingly finds that the project to be implemented satisfies the Surface Water Quality Standards at 314 CMR 4.00.**

#### Conditions

1. The Contractor shall take all steps necessary to assure that the proposed activities will be conducted in a manner that will avoid violations of the anti-degradation provisions of the Massachusetts Surface Water Quality Standards that protect all waters, including wetlands.
2. Prior to the start of work or any portion of the work thereafter, the Department shall be notified of any change(s) in the proposed project or plans that may affect waters or wetlands. The Department will determine whether the change(s) require a revision to this Certification.
3. Dredging in accordance with this Certification may begin following the 21-day appeal period and once all other permits have been received.
4. All work shall be performed in accordance with the following documents and plans:
  - Application for the 401 WQC, Transmittal Form # X282605, dated June 14, 2019.
  - Plan entitled "WEST MAIN STREET ROUND POND WALL, Town of Millbury, Massachusetts, Millbury Highway Department," consisting of ten (10) sheets, various scales, dated May 22, 2019, signed and stamped by Carl Myers, PE, prepared by Weston & Sampson, received by MassDEP on June 18, 2019. MassDEP shall be

notified if there are modifications and or deletions of work as specified in the plans. Depending on the nature and the scope of any change, approval by the Department may be required.

- Order of Condition issued pursuant to the Massachusetts Wetlands Protection Act (M.G.L. Chapter 131, § 40) by Millbury Conservation Commission for MassDEP File Number 224-0793, dated August 22, 2019.
5. The Department shall be notified, attention David Wong 617-292-5893, one week prior to the start of in-water work so that Department staff may inspect the work for compliance with the terms and conditions of this Certification.
  6. The applicant and its contractor shall allow agents of the Department to enter the project sites to verify compliance with the conditions of this Certification.
  7. The Certification remains in effect for the same duration as the federal permit that requires it or five years from the date of issuance of this Certification whichever comes first.
  8. Best Management Practices (BMPs) such as a silt curtain shall be deployed surrounding the dredge area to minimize turbidity. At a minimum, the silt curtain shall be bottom-weighted to minimize the degree of lifting/flailing or billowing and shall be of suitable material/grade appropriate based on the velocity of the current at the site. Intermediate vertical floats or other means shall be placed on the silt curtain to lift the bottom of the silt curtain so that the bottom edges of the curtain remain close to the mudline at low tide but do not rake the sediment. Dredging shall be carried out using a closed, environmental bucket if the sediment does not consist solely of gravel/stone/sand or densely compacted silt/clay.
  9. The applicant shall submit a turbidity and total suspended solid monitoring plan immediately downstream of the project area to the Department for review and approval within eight weeks of the effective date of this Certification or four weeks prior to the commencement of the dredging operation whichever comes first.
  10. Best Management Practices (BMPs) shall be deployed to minimize turbidity during temporary cofferdam construction for sediment dewatering. At a minimum, silt curtain shall be used to control turbidity at the surrounding areas. Water quality nearby the construction areas such as turbidity (NTU) should be monitored before, during, and after cofferdam construction to ensure that water quality standards are met. Turbidity monitoring data should be kept on site and available for MassDEP review upon request.
  11. No later than 21 days prior to commencement of dredging activity, a dredged material dewatering plan shall be submitted to the Department for review and approval. At a minimum, the dewatering plan shall include but not be limited to the

type of containment, method of dewatering (i.e. mechanical or by gravity), method of collecting the dewatered effluent and method of disposal.

12. No later than 21 days prior to commencement of dredging activity, a plan on maintaining the Round Pond at its elevation shall be submitted to MassDEP for review and approval. Best Management Practices (BMPs) shall be deployed to minimize turbidity inside/outside Round Pond. The bypass pumping shall not exceed by 50% of the normal Singletary Brook flow rate. The pumping shall cease at 6 inch above the mudline unless filtering devices such as geo-tube, geo-soxx or similar filtering material is used to minimize the potential of sediment being discharged. At a minimum, silt curtain and appropriate energy dissipaters shall be used at the discharge location.
13. The Department shall be notified in writing of the name and location of the upland licensed facility accepting the dredged material for disposal or reuse as daily cover material. If the licensed facility is located out of state, documentation shall be provided to the Department that the dredged material disposal/reuse has been approved and will be accepted by the receiving State in accordance with 314 CMR 9.07(13)(b). The dredged material shall not be transported to the facility without concurrence of the Department.
14. A Dredged Material Tracking Form (DMTF) or Material Shipping Record (MSR) shall be used to track the dredged material to the licensed upland facility. A fully executed copy of the DMTF or MSR shall be provided to the Department within 30 days of final shipment to the reused location or facility.
15. Best Management Practices (BMPs) shall be implemented during transportation of the dredged material to the licensed receiving facility. At a minimum, when transported upon public roadways, all dredged material shall have no free liquid as determined by the Paint Filter Test or other suitably analogous methodology acceptable to the Department, and a tarpaulin or other means shall be used to cover the dredged material during transport.
16. Within 21 days of the effective date of this Certification, the applicant shall submit to the Department for review and approval the following information regarding location of final placement and use of dredged material:
  - a. a United States Geological Survey Topographic Map showing the location of the property;
  - b. a site plan showing the reuse location of the dredged material at the [proposed reuse location];
  - c. a statement of certification signed by the applicant and the owner of the property in which the dredged material is proposed for reuse that the reuse material complies with the provisions of 314 CMR 9.07(9)(b)6.d.
  - d. documentation of written notification of the proposal to the Millbury Board of Health;

- e. When recording the Certificate of Compliance (WPA Form 8B of the Massachusetts Wetland Protection Act, M.G.L. c131, §40) in the Registry of Deeds or the Land Court, the location of the dredged material reuse area shall also be recorded at the same time. The applicant shall complete the information on Section D, page 3 of 3 of the Certificate of Compliance and submit a copy to the Wetlands and Waterways Program in the Boston Office within five (5) working days of the recording.
17. Within 30 days of completion of the construction of the new Round Pond Wall in Millbury, the applicant shall provide a set of construction photographs depicting trenching and filling activity to the Wetlands and Waterways Program in the Boston Office, attn: David Wong. The photographs shall be marked or labeled with the WQC transmittal number and wetlands file number of the project.
18. The Applicant shall utilize construction-related BMPs in accordance with the MassDEP's Stormwater Policy to minimize stormwater runoff and erosion from impacting wetland resources.
19. If invasive species are found in the project areas, they shall be removed and shall be replaced with native herbaceous and shrub vegetation. During replanting, precautions will be taken to minimize the introduction of invasive species within the proposed wetland area, including requiring the use of certified clean, weed-free soils, and equipment to reduce the risk of introducing non-native invasive species at site.
20. During dredging operations, measures should be made to avoid the potential spread of aquatic invasive species to other waterbodies. The dredged material shall be loaded directly into the sediment dewatering area. Appropriate invasive species decontamination protocols such as burning should be discussed with and agreed by the receiving facility owner/manager. All vehicles, equipment and tools that have direct contact with invasive species should be cleaned before leaving the project areas. Under no circumstances shall sediment with invasive species seeds or rhizomes be reused or transported.
21. The Applicant shall utilize stabilized construction entrances, vehicle wash down pads, perimeter erosion controls, and re-vegetation of disturbed areas with native plantings and seed mixes to minimize potential water quality impact resulting from construction activities.
22. Storing, servicing or cleaning of equipment, including but not limited to fueling, changing, adding or applying lubricants or hydraulic fluids, or washing/rinsing of trucks or equipment, shall be performed outside wetland resource areas.
23. During the project period, there shall be no discharge or spillage of fuel, oil or other pollutants, including sediments, onto any part of the site. The applicant shall take all

reasonable precautions to prevent the release of pollutants by ignorance, accident or vandalism.

24. No later than four weeks after issuance of this water quality certification, the applicant shall submit a notification procedure outlining the reporting process to MassDEP for incidents relating to dredging activities that impact surrounding resource areas and habitats including, but not limited to, observed dead or distressed fish or other aquatic organisms, observed oily sheen on the surface of the water, a sediment spill, a turbidity plume beyond the deployed BMPs, and a barge or equipment accident/spill. If at any time during implementation of the project such an incident occurs, the applicant shall immediately notify MassDEP and all site related activities impacting the water shall cease until the source of the problem is identified and adequate mitigating measures are deployed to the satisfaction of MassDEP.

---

This certification does not relieve the applicant of the obligation to comply with other applicable state or federal statutes or regulations. Any changes made to the project as described in the previously submitted Notice of Intent, 401 Water Quality Certification application, or supplemental documents will require further notification to the Department.

Certain persons shall have a right to request an adjudicatory hearing concerning certifications by the Department when an application is required:

- a. the applicant or property owner;
- b. any person aggrieved by the decision who has submitted written comments during the public comment period;
- c. any ten (10) persons of the Commonwealth pursuant to M.G.L. c.30A where a group member has submitted written comments during the public comment period; or
- d. any governmental body or private organization with a mandate to protect the environment, which has submitted written comments during the public comment period.

Any person aggrieved, any ten (10) persons of the Commonwealth, or a governmental body or private organization with a mandate to protect the environment may appeal without having submitted written comments during the public comment period only when the claim is based on new substantive issues arising from material changes to the scope or impact of the activity and not apparent at the time of public notice. To request an adjudicatory hearing pursuant to M.G.L. c.30A, § 10, a Notice of Claim must be made in writing, provided that the request is made by certified mail or hand delivery to the Department, with the appropriate filing fee specified within 310 CMR 4.10 along with a DEP Fee Transmittal Form within twenty-one (21) days from the date of issuance of this Certificate, and addressed to:

Case Administrator  
Department of Environmental Protection  
One Winter Street, 2<sup>nd</sup> Floor  
Boston, MA 02108.

A copy of the request shall at the same time be sent by certified mail or hand delivery to the issuing office of the Wetlands and Waterways Program at:

Department of Environmental Protection  
One Winter Street, 5<sup>th</sup> Floor  
Boston, MA 02108.

A Notice of Claim for Adjudicatory Hearing shall comply with the Department's Rules for Adjudicatory Proceedings, 310 CMR 1.01(6), and shall contain the following information pursuant to 314 CMR 9.10(3):

- a. the 401 Certification Transmittal Number and DEP Wetlands Protection Act File Number;
- b. the complete name of the applicant and address of the project;
- c. the complete name, address, and fax and telephone numbers of the party filing the request, and, if represented by counsel or other representative, the name, fax and telephone numbers, and address of the attorney;
- d. if claiming to be a party aggrieved, the specific facts that demonstrate that the party satisfies the definition of "aggrieved person" found at 314 CMR 9.02;
- e. a clear and concise statement that an adjudicatory hearing is being requested;
- f. a clear and concise statement of (1) the facts which are grounds for the proceedings, (2) the objections to this Certificate, including specifically the manner in which it is alleged to be inconsistent with the Department's Water Quality Regulations, 314 CMR 9.00, and (3) the relief sought through the adjudicatory hearing, including specifically the changes desired in the final written Certification; and
- g. a statement that a copy of the request has been sent by certified mail or hand delivery to the applicant, the owner (if different from the applicant), the conservation commission of the city or town where the activity will occur, the Department of Environmental Management (when the certificate concerns projects in Areas of Critical Environmental Concern), the public or private water supplier where the project is located (when the certificate concerns projects in Outstanding Resource Waters), and any other entity with responsibility for the resource where the project is located.

The hearing request along with a DEP Fee Transmittal Form and a valid check or money order payable to the Commonwealth of Massachusetts in the amount of one hundred dollars (\$100) must be mailed to:

Commonwealth of Massachusetts  
Department of Environmental Protection

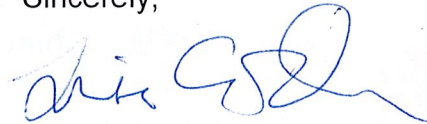
Commonwealth Master Lockbox  
P.O. Box 4062  
Boston, MA 02211

The request will be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver. The filing fee is not required if the appellant is a city or town (or municipal agency), county, or district of the Commonwealth of Massachusetts, or a municipal housing authority. The Department may waive the adjudicatory-hearing filing fee pursuant to 310 CMR 4.06(2) for a person who shows that paying the fee will create an undue financial hardship. A person seeking a waiver must file an affidavit setting forth the facts believed to support the claim of undue financial hardship together with the hearing request as provided above.

Failure to comply with this certification is grounds for enforcement, including civil and criminal penalties, under MGL c.21 §42, 314 CMR 9.00, MGL c. 21A §16, 310 CMR 5.00, or other possible actions/penalties as authorized by the General Laws of the Commonwealth.

If you have questions about this decision, please contact David Wong at 617-292-5893.

Sincerely,



Lisa Rhodes  
Wetlands Program Chief

enclosure: Communication For Non-English Speaking Parties - 310 CMR 1.03(5)(a)  
Material Shipment Record (MSR)  
Project Plan Set

ecc:

Mel Higgins, Weston & Sampson, 5 Centennial Drive, Peabody, MA 01960  
Barbara Newman, Regulatory/Enforcement Division, U.S. Army Corps of  
Engineers, 696 Virginia Road, Concord, MA 01742-2751  
Edward Reiner, US EPA, 5 Post Office Square, Suite 100, Boston, MA 02109  
Robert Boeri, MA CZM, 251 Causeway Street, Suite 800, Boston, MA 02114  
Judith Schmitz, Denise Child, and Marielle Stone, MassDEP CERO, 8 New Bond  
Street, Worcester, MA 01606  
Caleb Slater, Massachusetts Division of Fisheries & Wildlife, 1 Rabbit Hill Road,  
Westborough, MA 01581  
Amy Hoenig, Natural Heritage & Endangered Species Program, Massachusetts  
Division of Fisheries & Wildlife, 1 Rabbit Hill Road, Westborough, MA 01581  
Ann Swanson, Millbury Conservation Commission, 127 Elm Street, Millbury, MA  
01527



**Massachusetts Department of Environmental Protection**  
**One Winter Street, Boston MA 02108 • Phone: 617-292-5751**  
**Communication For Non-English Speaking Parties -**  
310 CMR 1.03(5)(a)



**1 English:**

This document is important and should be translated immediately. If you need this document translated, please contact MassDEP's Diversity Director at the telephone numbers listed below.



**2 Español (Spanish):**

Este documento es importante y debe ser traducido inmediatamente. Si necesita este documento traducido, por favor póngase en contacto con el Director de Diversidad MassDEP a los números de teléfono que aparecen más abajo.



**3 Português (Portuguese):**

Este documento é importante e deve ser traduzida imediatamente. Se você precisa deste documento traduzido, por favor, entre em contato com Diretor de Diversidade da MassDEP para os números de telefone listados abaixo.



**4(a) 中國（傳統）(Chinese (Traditional)):**

本文件非常重要，應立即翻譯。如果您需要翻譯這份文件，請用下面列出的電話號碼與MassDEP的多樣性總監聯繫。



**4(b) 中国（简体中文）(Chinese (Simplified)):**

本文件非常重要，應立即翻譯。如果您需要翻譯這份文件，請用下面列出的電話號碼與MassDEP的多样性总监联系。



**5 Ayisyen (franse kreyòl) (Haitian) (French Creole):**

Dokiman sa-a se yon bagay enpòtan epi yo ta dwe tradui imedyatman. Si ou bezwen dokiman sa a tradui, tanpri kontakte Divèsite Direktè MassDEP a nan nimewo telefòn ki nan lis pi ba a.



**6 Việt (Vietnamese):**

Tài liệu này là rất quan trọng và cần được dịch ngay lập tức. Nếu bạn cần dịch tài liệu này, xin vui lòng liên hệ với Giám đốc MassDEP đã dạng tại các số điện thoại được liệt kê dưới đây.



**7 ប្រទេសកម្ពុជា (Kmer (Cambodian)):**

ឯកសារនេះគឺមានសារៈសំខាន់និងគួរត្រូវបានបកប្រែភ្លាមៗ ប្រសិនបើអ្នកត្រូវបានបកប្រែឯកសារនេះសូមទំនាក់ទំនងឆ្នោតជាមួយក្រុម MassDEP នៅលេខទូរស័ព្ទដែលបានរាយខាងក្រោម។



**8 Kriolu Kabuverdianu (Cape Verdean):**

*Es documento é importante e deve ser traduzido imidiatamente. Se bo precisa des documento traduzido, por favor contacta Director de Diversidade na MassDEP's pa es numero indicode li d'boche.*



**9 Русский язык (Russian):**

Этот документ является важным и должно быть переведено сразу. Если вам нужен этот документ переведенный, пожалуйста, свяжитесь с директором разнообразия MassDEP по адресу телефонных номеров, указанных ниже.



**10 العربية (Arabic):**

هذه الوثيقة الهامة وينبغي أن تترجم على الفور. اذا كنت بحاجة الى هذه الوثيقة المترجمة، يرجى الاتصال مدير التنوع في DEMassP على أرقام الهواتف المدرجة أدناه.



**11 한국어 (Korean):**

이 문서는 중요하고 즉시 번역해야 합니다. 당신이 번역이 문서가 필요하다면 아래의 전화 번호로 MassDEP의 다양성 감독에 문의하시기 바랍니다



**12 հայերէն (Armenian):**

Այս փաստաթուղթը շատ կարևոր է եւ պետք է թարգմանել անմիջապես. Եթե Ձեզ անհրաժեշտ է այս փաստաթուղթը թարգմանվել դիմել MassDEP բազմազանությունը տնօրեն է հեռախոսահամարների թվարկված են ստորև.



**13 فارسی (Farsi (Persian):**

این سند مهم است و باید فوراً ترجمه شده است. اگر شما نیاز به این سند ترجمه شده، لطفاً با ما تماس تنوع مدیر MassDEP در شماره تلفن های ذکر شده در زیر.



**14 Français (French):**

Ce document est important et devrait être traduit immédiatement. Si vous avez besoin de ce document traduit, s'il vous plaît communiquer avec le directeur de la diversité MassDEP aux numéros de téléphone indiqués ci-dessous.



**15 Deutsch (German):**

Dieses Dokument ist wichtig und sollte sofort übersetzt werden. Wenn Sie dieses Dokument übersetzt benötigen, wenden Sie sich bitte Diversity Director MassDEP die in den unten aufgeführten Telefonnummern.



**16 Ελληνική (Greek):**

Το έγγραφο αυτό είναι σημαντικό και θα πρέπει να μεταφραστούν αμέσως. Αν χρειάζεστε αυτό το έγγραφο μεταφράζεται, παρακαλούμε επικοινωνήστε Diversity Director MassDEP κατά τους αριθμούς τηλεφώνου που αναγράφεται πιο κάτω.



**17 Italiano (Italian):**

Questo documento è importante e dovrebbe essere tradotto immediatamente. Se avete bisogno di questo documento tradotto, si prega di contattare la diversità Direttore di MassDEP ai numeri di telefono elencati di seguito.



**18 Język Polski (Polish):**

Dokument ten jest ważny i powinien być natychmiast przetłumaczony. Jeśli potrzebujesz tego dokumentu tłumaczonego, prosimy o kontakt z Dyrektorem MassDEP w różnorodności na numery telefonów wymienionych poniżej.



**19 हिन्दी (Hindi):**

यह दस्तावेज महत्वपूर्ण है और तुरंत अनुवाद किया जाना चाहिए. आप अनुवाद इस दस्तावेज़ की जरूरत है, नीचे सूचीबद्ध फोन नंबरों पर MassDEP की विविधता निदेशक से संपर्क करें.



**Massachusetts Department of Environmental Protection**  
**Bureau of Air & Waste**

## Material Shipping Record & Log

For the shipment of contaminated soil, urban fill, and dredge materials not subject to management under section 310 CMR 40.0035 nor manifesting under 310 CMR 30.000

Tracking Number \_\_\_\_\_

### A. Location Information

**Important:** When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



1. Provide the following information on the location where the waste was generated:

Release name (optional) \_\_\_\_\_

Street \_\_\_\_\_

Location aid \_\_\_\_\_

City/Town \_\_\_\_\_

State \_\_\_\_\_

Zip code \_\_\_\_\_

2. Date/Period of generation:

From \_\_\_\_\_

To \_\_\_\_\_

3. U.S. EPA ID number: \_\_\_\_\_

4. 21E release: \_\_\_\_\_

☐ Yes

☐ No

5. List additional tracking documents associated with this document:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Important:** This form is not to be used for the shipment of remediation wastes subject to management under section 310 CMR 40.0035 of the Massachusetts Contingency Plan nor is it to be used in lieu of a hazardous waste manifest for hazardous waste or recyclable materials subject to the Massachusetts Hazardous Waste Regulations 310 CMR 30.000.

### B. Generator Information

1. Provide the following generator information:

Name of organization \_\_\_\_\_

Contact name \_\_\_\_\_

Title \_\_\_\_\_

Street address \_\_\_\_\_

City/Town \_\_\_\_\_

State \_\_\_\_\_

Zip code \_\_\_\_\_

Telephone number(including extension) \_\_\_\_\_

### C. Owner and/or Operator Information

1. If the owner and/or operator is different from the generator as indicated in Section B, provide the following information:

Check applicable: ☐ owner ☐ operator

Name of organization \_\_\_\_\_

Contact name \_\_\_\_\_

Title \_\_\_\_\_

Street address \_\_\_\_\_

City/Town \_\_\_\_\_

State \_\_\_\_\_

Zip code \_\_\_\_\_

Telephone number \_\_\_\_\_

Ext. \_\_\_\_\_



**Massachusetts Department of Environmental Protection**  
Bureau of Air & Waste

## Material Shipping Record & Log

For the shipment of contaminated soil, urban fill, and dredge  
materials not subject to management under section 310 CMR 40.0035  
nor manifesting under 310 CMR 30.000

Tracking Number \_\_\_\_\_

### D. Transporter/Common Carrier Information

1. Provide the following information:

Transporter/Common carrier name \_\_\_\_\_

Hazardous waste license number (if applicable) \_\_\_\_\_

Licensing state (if applicable) \_\_\_\_\_

Contact person \_\_\_\_\_

Title \_\_\_\_\_

Street \_\_\_\_\_

City/Town \_\_\_\_\_

State \_\_\_\_\_

Zip code \_\_\_\_\_

Telephone number \_\_\_\_\_

Ext. \_\_\_\_\_

### E. Receiving Facility Information

1. Provide the following information on the receiving facility:

Operator/Facility name \_\_\_\_\_

Contact person \_\_\_\_\_

Title \_\_\_\_\_

Street \_\_\_\_\_

City/Town \_\_\_\_\_

State \_\_\_\_\_

Zip code \_\_\_\_\_

Telephone number \_\_\_\_\_

Ext. \_\_\_\_\_

2. Type of facility:

- ☐ asphalt batch/cold mix
- ☐ asphalt batch/hot mix
- ☐ landfill/disposal
- ☐ landfill/ daily cover
- ☐ thermal processing
- ☐ landfill/structural fill
- ☐ other(specify): \_\_\_\_\_

3. Permit number: \_\_\_\_\_



**Massachusetts Department of Environmental Protection**  
**Bureau of Air & Waste**

## **Material Shipping Record & Log**

**For the shipment of contaminated soil, urban fill, and dredge materials not subject to management under section 310 CMR 40.0035 nor manifesting under 310 CMR 30.000**

Tracking Number \_\_\_\_\_

### **F. Description of Material**

Check all that apply:

1. a. ☐ soil ☐ dredge material ☐ fill

b. Description: \_\_\_\_\_

c. Classification: ☐ MIT ☐ USDA ☐ USAEC ☐ ASEE

2. ☐ Other(describe): \_\_\_\_\_

3. Type of contamination:

a. ☐ gasoline ☐ diesel fuel ☐ #2 oil ☐ #4 oil  
☐ #6 oil ☐ waste oil ☐ kerosene ☐ jet fuel

b. ☐ Debris:

☐ demolition ☐ vegetative ☐ inorganic

c. ☐ Other(describe): \_\_\_\_\_

4. Constituents of concern (check all that apply):

<input type="checkbox"/> As	<input type="checkbox"/> HVOCs
<input type="checkbox"/> Cd	<input type="checkbox"/> PATH
<input type="checkbox"/> Cr	<input type="checkbox"/> VOCs
<input type="checkbox"/> Pb	<input type="checkbox"/> PAHs
<input type="checkbox"/> Hg	<input type="checkbox"/> BNAs
<input type="checkbox"/> Na	<input type="checkbox"/> TPH
<input type="checkbox"/> PCBs	<input type="checkbox"/> Other(describe): _____

5. Analyses performed (check all that apply):

<input type="checkbox"/> As	<input type="checkbox"/> PATH
<input type="checkbox"/> Cd	<input type="checkbox"/> VOCs
<input type="checkbox"/> Cr	<input type="checkbox"/> PAHs
<input type="checkbox"/> Pb	<input type="checkbox"/> BNAs
<input type="checkbox"/> Hg	<input type="checkbox"/> TPH
<input type="checkbox"/> Na	<input type="checkbox"/> TCLP (inorganic)
<input type="checkbox"/> PCBs	<input type="checkbox"/> TCLP (organic)
<input type="checkbox"/> HVOCs	<input type="checkbox"/> Other(describe): _____

6. Screening performed:

\_\_\_\_\_  
Type

\_\_\_\_\_  
Instrument used

\_\_\_\_\_  
Constituents



**Massachusetts Department of Environmental Protection**  
Bureau of Air & Waste

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For the shipment of contaminated soil, urban fill, and dredge materials not subject to management under section 310 CMR 40.0035 nor manifesting under 310 CMR 30.000

Tracking Number \_\_\_\_\_

### F. Description of Material (cont.)

7. Estimated volume of materials:

Cubic yards \_\_\_\_\_ Tons \_\_\_\_\_ Other(specify units) \_\_\_\_\_

8. Contaminant source (check one):

☐ transportation accident

☐ dust

☐ other(describe): \_\_\_\_\_

9. Indicate which waste characterization support documentation is attached:

☐ site history information

☐ sampling and analytical methods/procedure

☐ laboratory data

☐ field screening data

If supporting documentation is not appended, provide an attachment stating the date and in connection with what document such information was previously submitted to the facility.

### G. Qualified Environmental Professional Opinion

"I have personally examined and am familiar with the information contained on and submitted with this form. Based on this information, it is my opinion that the testing and assessment actions undertaken were adequate to characterize the waste, and that the facility or location can accept wastes with the characteristics described in this submittal. I am aware that significant penalties including, but not limited to, possible fines and imprisonment may result if I willfully submit information which I know to be false, inaccurate, or materially incomplete."

\_\_\_\_\_  
Name of Organization

\_\_\_\_\_  
Name of Professional

\_\_\_\_\_  
Title

\_\_\_\_\_  
Telephone number

\_\_\_\_\_  
Ext.

\_\_\_\_\_  
Signature

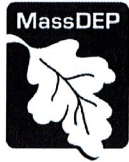
\_\_\_\_\_  
Date (MM/DD/YYYY)

\_\_\_\_\_  
License Number<sup>1</sup>

\_\_\_\_\_  
Seal<sup>2</sup>:

<sup>1</sup>A license number is required for all Qualified Environmental Professional completing this form. A Qualified Environmental Professional is licensed or certified in a discipline related to environmental assessment (i.e., engineering, geology, soil science, or environmental science) by a state or recognized professional organization.

<sup>2</sup>A seal is **not** required for a **Licensed Site Professional** as defined in M.G.L. 21A, s. 19, holding a valid license issued by the Board of Registration of Hazardous Waste Site Cleanup Professionals pursuant to M.G.L. c. 21A, § 19 through 19J. A seal is required for all other Qualified Environmental Professionals as defined in 1 above.



**Massachusetts Department of Environmental Protection**  
**Bureau of Air & Waste**

## **Material Shipping Record & Log**

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Tracking Number \_\_\_\_\_

### **H. Certification of Generator**

"I certify under penalties of law that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this certification, and that, based on my inquiry of those individuals immediately responsible for obtaining the information contained herein is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information."

Signature \_\_\_\_\_

Date (MM/DD/YYYY) \_\_\_\_\_

Name (Print) \_\_\_\_\_

### **I. Acknowledgment of Receipt by Receiving Facility**

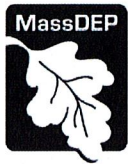
Receiving Facility \_\_\_\_\_

Representative (Print) \_\_\_\_\_

Title \_\_\_\_\_

Signature \_\_\_\_\_

Date (MM/DD/YYYY) \_\_\_\_\_



**Massachusetts Department of Environmental Protection**  
**Bureau of Air & Waste**

**Material Shipping Record & Log**

For the shipment of contaminated soil, urban fill, and dredge  
materials not subject to management under section 310 CMR 40.0035  
nor manifesting under 310 CMR 30.000

Tracking Number \_\_\_\_\_

**J. Load Information**

**Note:**  
Make additional  
copies of this page  
as necessary.

Load#: \_\_\_\_\_

Signature of transporter \_\_\_\_\_

Receiving facility \_\_\_\_\_

Date received \_\_\_\_\_

Time received \_\_\_\_\_

Date of shipment \_\_\_\_\_

Time of shipment \_\_\_\_\_

Truck/Tractor registration \_\_\_\_\_

Trailer registration \_\_\_\_\_

Load size (cubic yards/tons) \_\_\_\_\_

Load#: \_\_\_\_\_

Signature of transporter \_\_\_\_\_

Receiving facility \_\_\_\_\_

Date received \_\_\_\_\_

Time received \_\_\_\_\_

Date of shipment \_\_\_\_\_

Time of shipment \_\_\_\_\_

Truck/Tractor registration \_\_\_\_\_

Trailer registration \_\_\_\_\_

Load size (cubic yards/tons) \_\_\_\_\_

Load#: \_\_\_\_\_

Signature of transporter \_\_\_\_\_

Receiving facility \_\_\_\_\_

Date received \_\_\_\_\_

Time received \_\_\_\_\_

Date of shipment \_\_\_\_\_

Time of shipment \_\_\_\_\_

Truck/Tractor registration \_\_\_\_\_

Trailer registration \_\_\_\_\_

Load size (cubic yards/tons) \_\_\_\_\_

**K. Log Sheet Volume Information**

Total volume this page (cubic yards/tons) \_\_\_\_\_

Total carried forward (cubic yards/tons) \_\_\_\_\_

Total carried forward and this page (cubic yards/tons) \_\_\_\_\_

Page \_\_\_\_\_ of \_\_\_\_\_

SECTION 00890

ATTACHMENT C

U.S. ARMY CORPS OF ENGINEERS GENERAL PERMIT



DEPARTMENT OF THE ARMY  
US ARMY CORPS OF ENGINEERS  
NEW ENGLAND DISTRICT  
696 VIRGINIA ROAD  
CONCORD MA 01742-2751

October 3, 2019

Regulatory Division  
File Number: NAE-2019-01681

Keith Caruso  
Town of Millbury  
127 Elm Street  
Millbury, Massachusetts 01527

Dear Mr. Caruso:

We have reviewed your application to place approximately 2,150 square feet of fill below the ordinary high water mark in association with the removal and replacement of 169 linear feet of retaining wall and 10 linear feet of an existing 60-inch reinforced concrete pipe. The project will also involve the temporary placement of 845 square feet of fill below the ordinary high water mark associated with the use of cofferdams. This project is located in Round Pond off Singletary Brook on West Main Street in Millbury, Massachusetts. The work is shown on the enclosed plans entitled "TOWN OF MILLBURY, MASSACHUSETTS MILLBURY HIGHWAY DEPARTMENT WEST MAIN STREET ROUND POND WALL", on ten sheets, and dated "08-27-19".

Based on the information you have provided, we have determined that the proposed activity, which includes work and/or a discharge of dredged or fill material into waters of the United States, including wetlands, will have only minimal individual or cumulative environmental impacts. Therefore, this work is authorized under the enclosed April 2018 Massachusetts General Permits (MA GPs), specifically GP 1, under the pre-construction notification process. This work must be performed in accordance with the terms and conditions of the GPs and also in compliance with the following special conditions:

1. You shall complete and return the enclosed Work Start Notification Form to this office at least two weeks before the anticipated starting date.
2. You shall complete and return the enclosed Compliance Certification Form to this office within one month of the project completion date.

You are responsible for complying with all of the GPs' requirements. Please review the enclosed GPs carefully, in particular the general conditions beginning on Page 19, to be sure that you understand its requirements. You should ensure that whoever does the work fully understands the requirements and that a copy of the GPs and this authorization letter are at the project site throughout the time the work is underway.

This permit does not obviate the need to obtain other Federal, State, or local authorizations

required by law. Performing work not specifically authorized by this determination or failing to comply with any special condition(s) provided above or all the terms and conditions of the GPs may subject you to the enforcement provisions of our regulations.

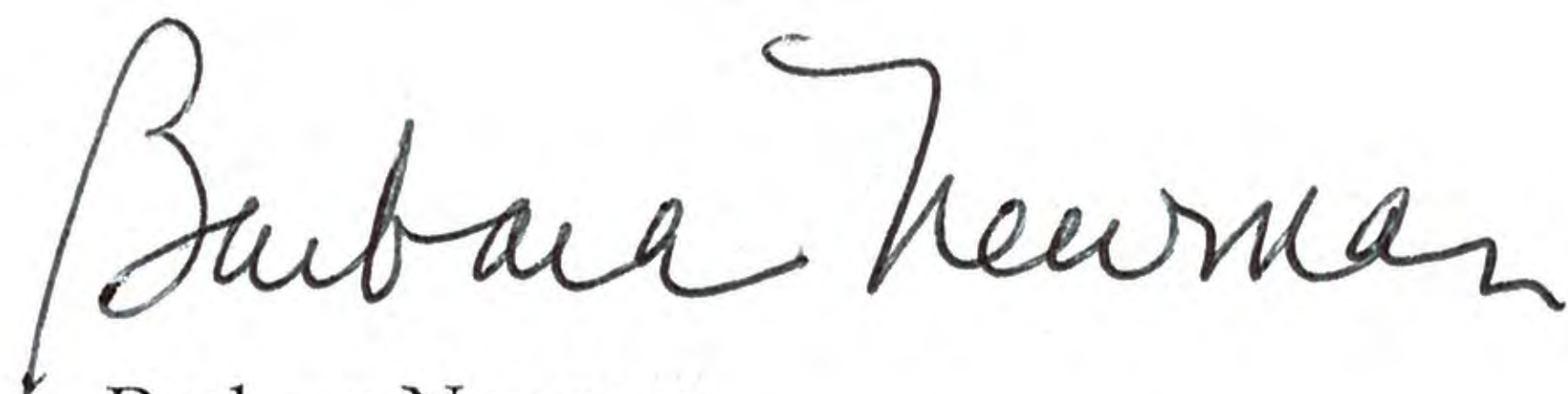
**This authorization becomes valid only after the Massachusetts Department of Environmental Protection (MassDEP) issues or waives Water Quality Certification (WQC) as required under Section 401 of the Clean Water Act. In the event the MassDEP denies the 401 WQC, this determination becomes null and void. The address of the MassDEP regional office for your area is provided on page 47 of the enclosed MA GPs.**

This authorization expires on April 5, 2023, unless it is modified, suspended, or revoked before then. You must commence or have under contract to commence the work authorized herein by April 5, 2023 and complete the work by April 5, 2024. If not, you must contact this office to determine the need for further authorization before beginning or continuing the activity. We recommend that you contact us *before* this authorization expires to discuss a time extension or permit reissuance. Please contact us immediately to discuss modification of this authorization if you change the plans or construction methods for work within our jurisdiction. This office must approve any changes before you undertake them.

We continually strive to improve our customer service. In order for us to better serve you, we would appreciate your completing our Customer Service Survey located at [http://corpsmapu.usace.army.mil/cm\\_apex/f?p=regulatory\\_survey](http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey).

Please contact Ruthann Brien of my staff at [ruthann.a.brien@usace.army.mil](mailto:ruthann.a.brien@usace.army.mil) or at 978) 318-8054 if you have any questions.

Sincerely,

A handwritten signature in black ink that reads "Barbara Newman". The signature is fluid and cursive, with the first name "Barbara" being more prominent than the last name "Newman".

Barbara Newman  
Chief, Permits & Enforcement Branch A  
Regulatory Division

Enclosures

cc:

Mel Higgins, Weston and Sampson; [higginsm@wseinc.com](mailto:higginsm@wseinc.com)

Ed Reiner, U.S. EPA, Region 1, Boston, Massachusetts; [reiner.ed@epa.gov](mailto:reiner.ed@epa.gov)

DEP CERO, Wetlands and Waterways, Worcester, Massachusetts; [cero\\_noi@state.ma.us](mailto:cero_noi@state.ma.us)

Millbury Conservation Commission, Town of Millbury, 127 Elm Street, Millbury, MA 01527



**US Army Corps  
of Engineers®**  
New England District

**WORK-START NOTIFICATION FORM**  
(Minimum Notice: Two weeks before work begins)

\*\*\*\*\*  
\* EMAIL TO: cenae-r@usace.army.mil; or \*  
\* \* \* \* \*  
\* MAIL TO: Bettina Chaisson \*  
\* U.S. Army Corps of Engineers, New England District \*  
\* Permits and Enforcement Branch A \*  
\* Regulatory Division \*  
\* 696 Virginia Road \*  
\* Concord, Massachusetts 01742-2751 \*  
\*\*\*\*\*

Corps of Engineers Permit NAE-2019-01681 was issued to the Town of Millbury. This work is located in Round Pond at West Main Street in Millbury, MA and authorized the repair of a retaining wall.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

The people (e.g., contractor) listed below will do the work, and they understand the permit's conditions and limitations.

**PLEASE PRINT OR TYPE**

**Name of Person/Firm:** \_\_\_\_\_

**Business Address:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Telephone Numbers:** (     ) \_\_\_\_\_ (     ) \_\_\_\_\_

**E-mail Address:** \_\_\_\_\_

**Proposed Work Dates:**     **Start:** \_\_\_\_\_     **Finish:** \_\_\_\_\_

**Permittee/Agent Signature:** \_\_\_\_\_     **Date:** \_\_\_\_\_

**Printed Name:** \_\_\_\_\_     **Title:** \_\_\_\_\_

**Date Permit Issued:** 10/3/2019     **Date Permit Expires:** 4/5/2023

\*\*\*\*\*  
**FOR USE BY THE CORPS OF ENGINEERS**

**PM:** Ruthann Brien     **Submittals Required:** \_\_\_\_\_

**Inspection Recommendation:** \_\_\_\_\_  
\_\_\_\_\_



**US Army Corps  
of Engineers®**  
New England District

**COMPLIANCE CERTIFICATION FORM**  
(Minimum Notice: Permittee must sign and return notification  
within one month of the completion of work.)

**Permit Number:** NAE-2019-01681

**Project Manager:** Ruthann Brien

**Name of Permittee:** Town of Millbury

**Permit Issuance Date:** October 3, 2019

Please sign this certification and return it to our office upon completion of the activity and any mitigation required by the permit. You must submit this after the mitigation is complete.

\*\*\*\*\*  
\* E-MAIL TO: cenae-r@usace.army.mil; or \*  
\* \*  
\* MAIL TO: Permits and Enforcement Branch A \*  
\* U.S. Army Corps of Engineers, New England District \*  
\* Regulatory Division \*  
\* 696 Virginia Road \*  
\* Concord, Massachusetts 01742-2751 \*  
\*\*\*\*\*

Please note that your permitted activity is subject to a compliance inspection by an U.S. Army Corps of Engineers representative. If you fail to comply with this permit you are subject to permit suspension, modification, or revocation.

**I hereby certify that the work authorized by the above referenced permit was completed in accordance with the terms and conditions of the above referenced permit, and any required mitigation was completed in accordance with the permit conditions.**

\_\_\_\_\_  
Signature of Permittee

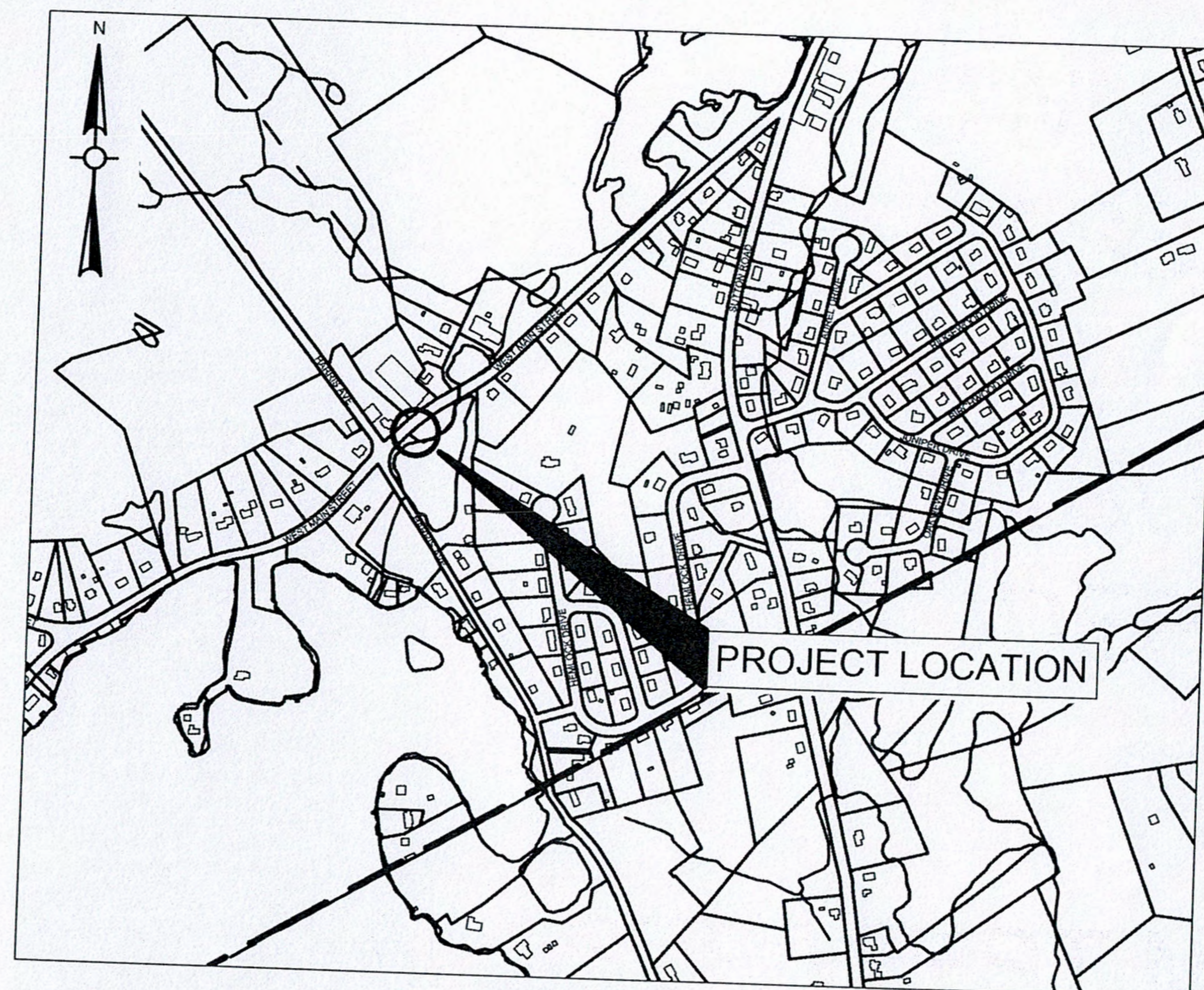
\_\_\_\_\_  
Date

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Date of Work Completion

( ) \_\_\_\_\_  
Telephone Number

\_\_\_\_\_  
E-mail Address



LOCATION PLAN  
SCALE: 1"=500'

<u>SHEET NO.</u>	<u>SHEET INDEX</u>	<u>DESCRIPTION</u>
1	.....	TITLE SHEET AND INDEX
2	.....	GENERAL NOTES & LEGEND (C-1)
3	.....	GENERAL ROADWAY PLAN (C-2)
4-5	.....	CONSTRUCTION DETAILS (C-3 & C-4)
6	.....	TEMPORARY TRAFFIC CONTROL PLAN (C-5)
7-10	.....	STRUCTURAL SHEETS (S-1 TO S-4)

# TOWN OF MILLBURY, MASSACHUSETTS

## MILLBURY HIGHWAY DEPARTMENT

### WEST MAIN STREET ROUND POND WALL

AUGUST 2019

**FOR PERMITTING  
NOT FOR CONSTRUCTION**  
08-27-19

Weston & Sampson<sup>SM</sup>

Weston & Sampson Engineers, Inc.  
100 Foxborough Boulevard,  
Suite 250, Foxborough, MA 02035  
508.698.3034 800 SAMPSON  
www.westonandsampson.com

GENERAL NOTES

1. TOPOGRAPHICAL INFORMATION BASED ON AN ON THE GROUND SURVEY PERFORMED BY WESTON & SAMPSON PE, LS LA, PC. IN JULY 2018.
2. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES. THE CONTRACTOR SHALL DIG TEST PITS WITH THE LOCATIONS BEING APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF WORK TO EXACTLY LOCATE EXISTING UTILITIES.
3. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR AND THE INFORMATION FURNISHED TO THE ENGINEER FOR RESOLUTION OF THE CONFLICT.
4. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS FOR THE ALTERATION AND ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE AND ANY OTHER PRIVATE UTILITIES BY THE UTILITY OWNER. ANY ALTERATIONS SHALL BE INCIDENTAL TO THE PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR THE TEMPORARY SUPPORT OF ALL UTILITIES TO REMAIN IN PLACE AND SHALL DESCRIBE IN WRITING, TO THE SATISFACTION OF THE ENGINEER, HIS METHOD OF TEMPORARY SUPPORT.
5. AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.
6. THE TERM "PROPOSED (PROP)" INDICATES WORK TO BE CONSTRUCTED USING NEW MATERIALS OR, WHERE APPLICABLE, RE-USING EXISTING MATERIALS IDENTIFIED AS "REMOVE AND RESET (R&R)".
7. ALL EXISTING STATE, COUNTY AND TOWN LOCATION LINES AND PRIVATE PROPERTY LINES HAVE BEEN ESTABLISHED FROM AVAILABLE INFORMATION AND THEIR EXACT LOCATION ARE NOT GUARANTEED.
8. ALL EXCESS MATERIAL FROM ROADWAY RECONSTRUCTION OR THE EXCAVATION PROCESS SHALL BE REUSED ON SITE OR REMOVED FROM THE SITE AND DISPOSED OF IN A LEGAL AND PROPER MANNER.
9. THE CONTRACTOR SHALL CALL DIGSAFE AT 1-888-344-7233 AT LEAST 72 HOURS, SATURDAYS, AND HOLIDAYS EXCLUDED, PRIOR TO EXCAVATING AT ANY LOCATION. A COPY OF THE DIGSAFE PROJECT REFERENCE NUMBER(S) SHALL BE GIVEN TO THE TOWN PRIOR TO EXCAVATION.
10. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO HIRE A PROFESSIONAL LAND SURVEYOR REGISTERED IN THE COMMONWEALTH OF MASSACHUSETTS FOR ALL LAYOUT WORK INCLUDING BASELINE LAYOUT. LAYOUT SHALL INCLUDE ALL PROPOSED WORK AS SHOWN IN THE CONTRACT DOCUMENTS, OR AS REQUIRED BY THE ENGINEER OR TOWN. ONCE LAID OUT, ALL PROPOSED WORK SHALL BE DEEMED ACCEPTABLE BY THE ENGINEER OR TOWN PRIOR TO ANY COMMENCEMENT OF WORK. ANY AND ALL WORK RELATED TO THE CONSTRUCTION LAYOUT SHALL BE INCIDENTAL TO THE PROJECT.
11. JOINTS BETWEEN HOT MIX ASPHALT TRENCH PAVEMENT AND SAWCUT EXISTING PAVEMENT SHALL BE SEALED WITH BITUMEN AND BACKSANDED.
12. IF DEEMED NECESSARY DUE TO THE WORK, THE CONTRACTOR SHALL COORDINATE WITH THE TOWN OF SOMERSET HIGHWAY DEPARTMENT, FIRE DEPARTMENTS, AND THE ENGINEERS FOR APPROVAL OF SHUTTING DOWN ANY EXISTING WATER MAINS AND SHALL ALSO OBTAIN APPROVAL FOR DISRUPTING ANY EXISTING SEWER FLOWS.
13. THE CONTRACTOR SHALL BE AWARE THAT ONLY TOWN PERSONNEL ARE ALLOWED TO OPERATE WATER GATES AND HYDRANTS. ANY REQUESTS TO OPERATE THE GATES SHALL BE COORDINATED THROUGH THE ENGINEER.
14. THE EXISTING GAS MAIN LOCATIONS ARE SHOWN IN AN APPROXIMATE LOCATION. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE GAS COMPANY PRIOR TO COMMENCEMENT OF ANY WORK AND CONFIRMING SIZES, TYPES OF GAS LINES, AND EXACT LOCATIONS OR CHANGE OF PIPE TYPE. ALL COORDINATION AND ARRANGEMENTS WITH THE UTILITY COMPANIES SHALL BE INCIDENTAL TO THE PROJECT. ANY DELAY IN WORK DUE TO CONFLICTS WITH THE PROPOSED WORK AND ACTUAL LOCATION OF EXISTING GAS MAIN SHALL BE INCIDENTAL TO THE PROJECT.
15. THE CONTRACTOR SHALL COORDINATE ANY WORK FOR THE PROJECT WITH ALL ADJACENT/CONCURRENT PROJECTS AND CONTRACTORS.
16. THE CONTRACTOR SHALL INSTALL PRIOR TO COMMENCEMENT OF WORK, MAINTAIN, AND REMOVE AT THE END OF THE PROJECT INLET SEDIMENT CONTROL BAGS IN ALL CATCH BASINS, WITHIN OR ADJACENT TO THE PROJECT LIMITS. THE CONTRACTOR SHALL ALSO MAINTAIN SILT FENCE AND COMPOST FILTER TUBES AS SHOWN ON THE PLANS THROUGHOUT THE DURATION OF THE PROJECT AND REMOVE AT THE END.
17. ANY GRASS AREAS DISTURBED BY THE WORK SHALL BE RESTORED WITH LOAM AND SEED.
18. ANY LANDSCAPED AREAS DISTURBED BY THE WORK SHALL BE RESTORED TO EXISTING CONDITIONS WITH EXISTING OR NEW GROUND COVER MATERIALS AS DIRECTED BY THE ENGINEER. ANY PLANTS, SHRUBS, OR FLOWERS DISTURBED BY THE WORK SHALL BE RESET TO EXISTING CONDITIONS OR REPLACED WITH NEW PLANTS, SHRUBS, OR FLOWERS AS DIRECTED BY THE ENGINEER. ALL WORK TO RESTORE LANDSCAPE AREAS, NEW GROUND COVER MATERIALS, NEW PLANTS, NEW SHRUBS, OR NEW FLOWERS REQUIRED BY THE ENGINEER SHALL BE INCIDENTAL TO THE PROJECT.
19. CONTRACTOR TO COORDINATE WITH UTILITY POLE OWNERS IN AREAS WHERE UNDERGROUND UTILITY WORK IS WITHIN CLOSE PROXIMITY AND POSSIBLE UTILITY POLE SHORING IS REQUIRED WHILE INSTALLING PROPOSED UTILITIES.
20. RAISE AND ADJUST FRAMES AND GRATES, FRAMES AND COVERS AND GATE BOXES PRIOR TO PAVEMENT OVERLAY.
21. HORIZONTAL DATUM IS NORTH AMERICAN DATUM (NAD) 1983 AND VERTICAL DATUM IS NORTH AMERICAN VERTICAL DATUM (NAVD) 1988.

FOR PERMITTING  
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08-27-19

ABBREVIATIONS

UTILITIES

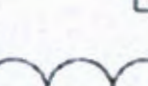
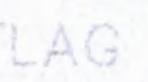
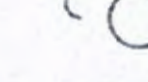
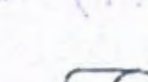
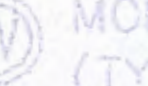
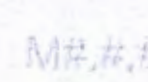
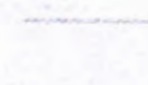
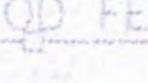
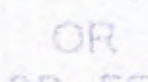
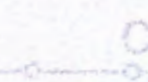
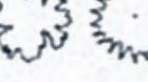
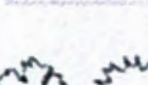
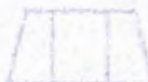
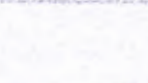
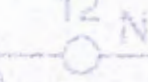
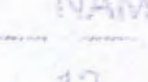
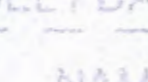
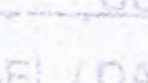
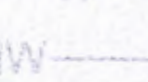
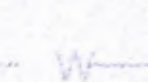
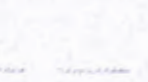
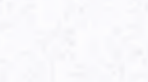
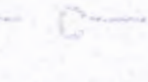
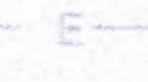
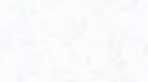
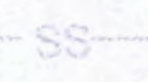
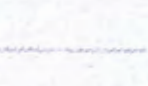
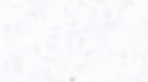
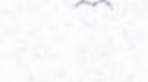
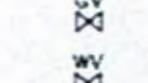
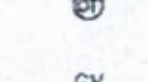
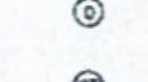
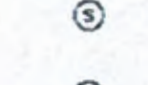
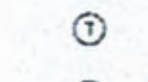
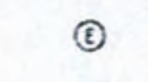
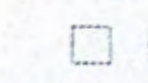
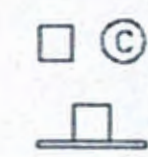
LP	LIGHT POLE
C.I.T.	CHANGE IN TYPE
F&G	FRAME AND GRATE
F&C	FRAME AND COVER
FE	FLARED END
CIP	CAST IRON PIPE
RCP	REINFORCED CONCRETE PIPE
CMP	CORRUGATED METAL PIPE
DI	DUCTILE IRON PIPE
ACCM	ASPHALT COATED CORRUGATED METAL PIPE
WG	WATER GATE
HYD	HYDRANT
DS	DOWN SPOUT
INV.	INVERT ELEVATION
PVC	POLYVINYL CHLORIDE
UP	UTILITY POLE
CB	CATCH BASIN
MH	MANHOLE
DMH	DRAIN MANHOLE
HDPE	HIGH DENSITY POLYETHYLENE
CBCI	CATCH BASIN CURB INLET
RIM	RIM ELEVATION
INV	INVERT
GI	GUTTER INLET
SMH	SEWER MANHOLE
S	SLOPE
STL	STEEL

GENERAL CONTINUED

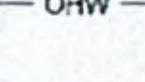
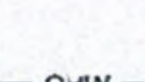
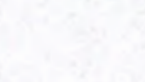
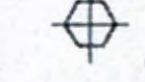
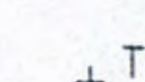
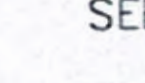
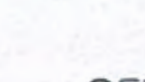
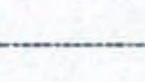
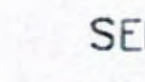
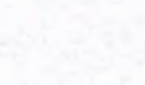
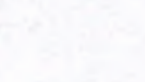
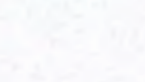
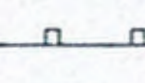
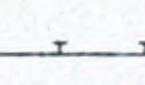
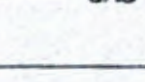
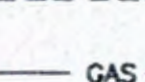
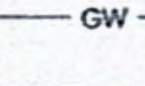
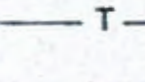
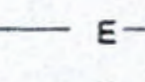
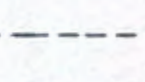
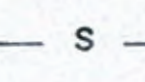
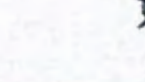
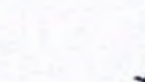
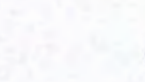
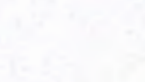
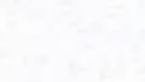
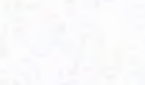
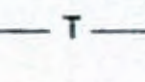
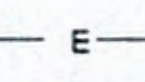
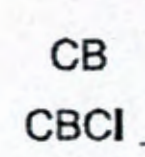
N.T.S.	NOT TO SCALE
B.M.	BENCH MARK
ABAN.	ABANDON
MB	MAIL BOX
GRAN. CURB (OR GC)	GRANITE CURB
EXIST. (OR EX.)	EXISTING
FDN.	FOUNDATION
FL (OR E)	FLOW LINE
P	PROPERTY LINE
PI	POINT OF INTERSECTION
PVMT	PAVEMENT
P.W.W.	PAVED WATERWAY
RC	REINFORCED CONCRETE
REM.	REMOVE
REMOD.	REMODEL
RET.	RETAIN
R.O.W.	RIGHT-OF-WAY
R.R.	RAILROAD
R&R	REMOVE AND RESET
R&S	REMOVE AND STACK
R&D	REMOVE AND DISCARD
SB	STONE BOUND
SCB	SPECIAL CATCH BASIN WITH
W/	POINT OF COMPOUND CURVATURE
PCC	PAVED
SW	SIDWALK
HMA	HOT MIX ASPHALT
SGC	SLOPED GRANITE CURB
BC	HOT MIX ASPHALT CURB
RET. WALL	RETAINING WALL
CC	CONCRETE CURB
CONT.	CONTINUED
MPH	MILES PER HOUR
TYP.	TYPICAL
OR (TYP.)	
ROE	RIGHT OF ENTRY
N/F	NOW OR FORMERLY
PROP.	PROPOSED
ADJ.	ADJUST
GEM. CONC.	CEMENT CONCRETE
E	BASELINE
CONST.	CONSTRUCTION
TEMP.	TEMPORARY
SPEC.	SPECIFICATIONS
REHAB.	REHABILITATION
P	PROPERTY LINE
WRF	WOOD RAIL FENCE
CTE	CONNECT TO EXISTING
SWTU	STORM WATER TREATMENT UNIT
C.J.	CONSTRUCTION JOINT
REINF.	REINFORCEMENT
PC	POINT OF CURVATURE
PT	POINT OF TANGENCY
PVC	POINT OF VERTICAL CURVATURE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENCY

GENERAL SYMBOLS

EXISTING

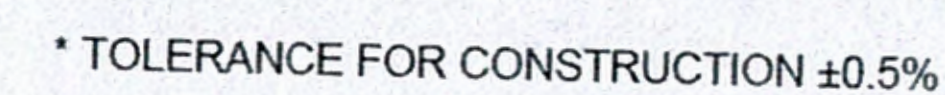
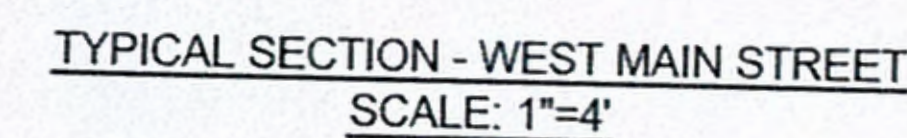
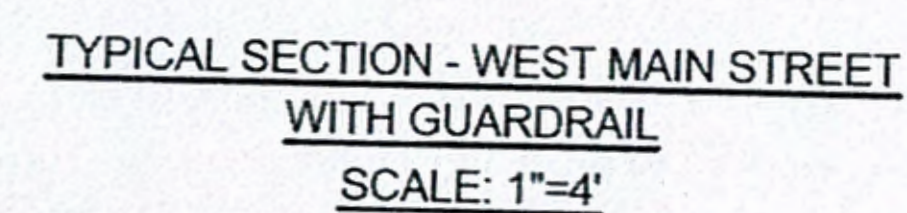


PROPOSED

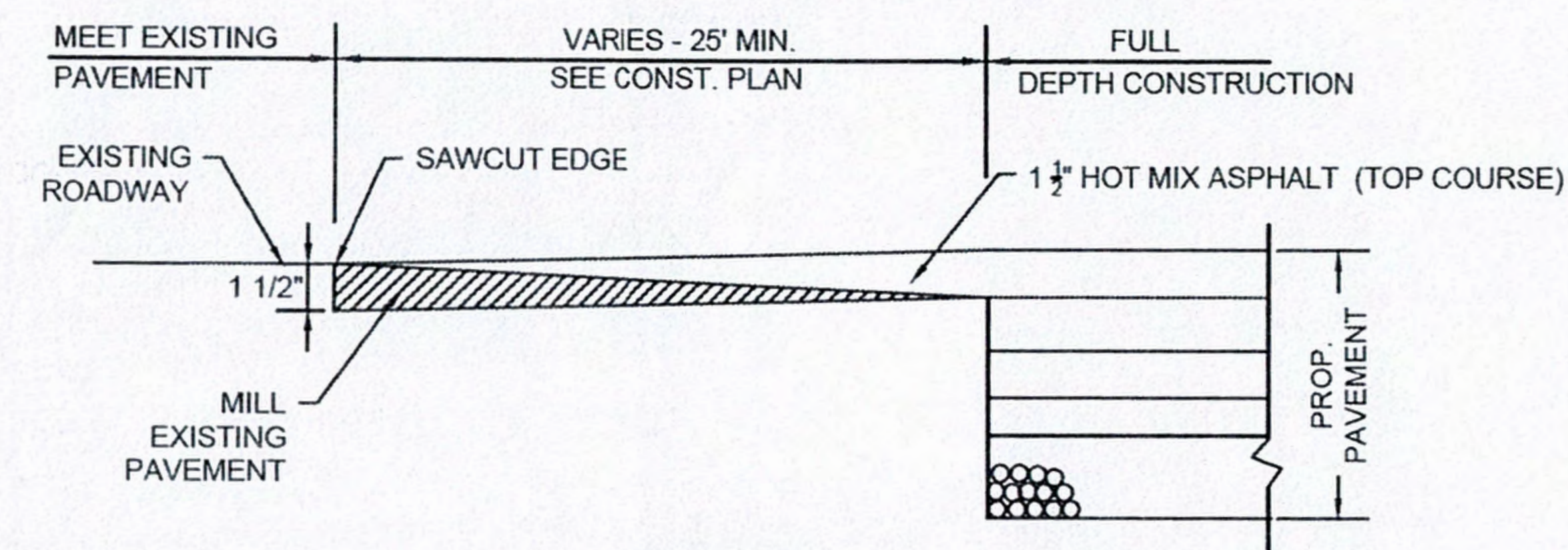


CATCH BASIN
CATCH BASIN CURB INLET
LEACHING GALLEY
CURB (OR BERM)-TYPE NOTED
EDGE OF ROAD
HANDHOLE (NUMBER AS NOTED)
ELECTRIC MANHOLE
TELEPHONE MANHOLE
SEWER MANHOLE
DRAINAGE MANHOLE
OTHER MANHOLE
GAS GATE
WATER GATE VALVE
HYDRANT
WELL
LIGHTPOLE
DRAIN PIPE
SEWER MAIN
SEWER MAIN BY P.C.
ELECTRIC DUCT
TELEPHONE/COMMUNICATIONS/FIRE ALARM
GARAGE WASTE LINE
GARAGE WASTE LINE BY P.C.
VENTS BY P.C.
GAS MAIN
WATER MAIN
OVERHEAD WIRES
GUARD RAIL (SIZE AND TYPE NOTED)
HIGHWAY / PROPERTY BOUND (TYPE NOTED)
CITY OR TOWN OR COUNTY LAYOUT LINE
CITY, TOWN OR COUNTY BOUNDARY
BASE OR SURVEY LINE
CENTERLINE OF CONSTRUCTION
PROPERTY LINE
WHEELCHAIR RAMP (WCR)
TREE (SIZE AND TYPE NOTED)
FENCE (SIZE AND TYPE NOTED)
EASEMENT LINE/ FUTURE CITY PROPERTY LINE
MASSDOT STANDARD SPECIFICATION REFERENCE NUMBER
TEST PIT
MONITORING WELL
UTILITY POLE/OVERHEAD WIRES
GUY POLE
FLAG POLE
SIGN
TREE LINE
BOLLARD
BIKE RACK
SAWCUT
EROSION CONTROL (SPECIFIED ON PLANS)
OBSERVATION WELL
LIMIT OF WORK
WETLAND BUFFER

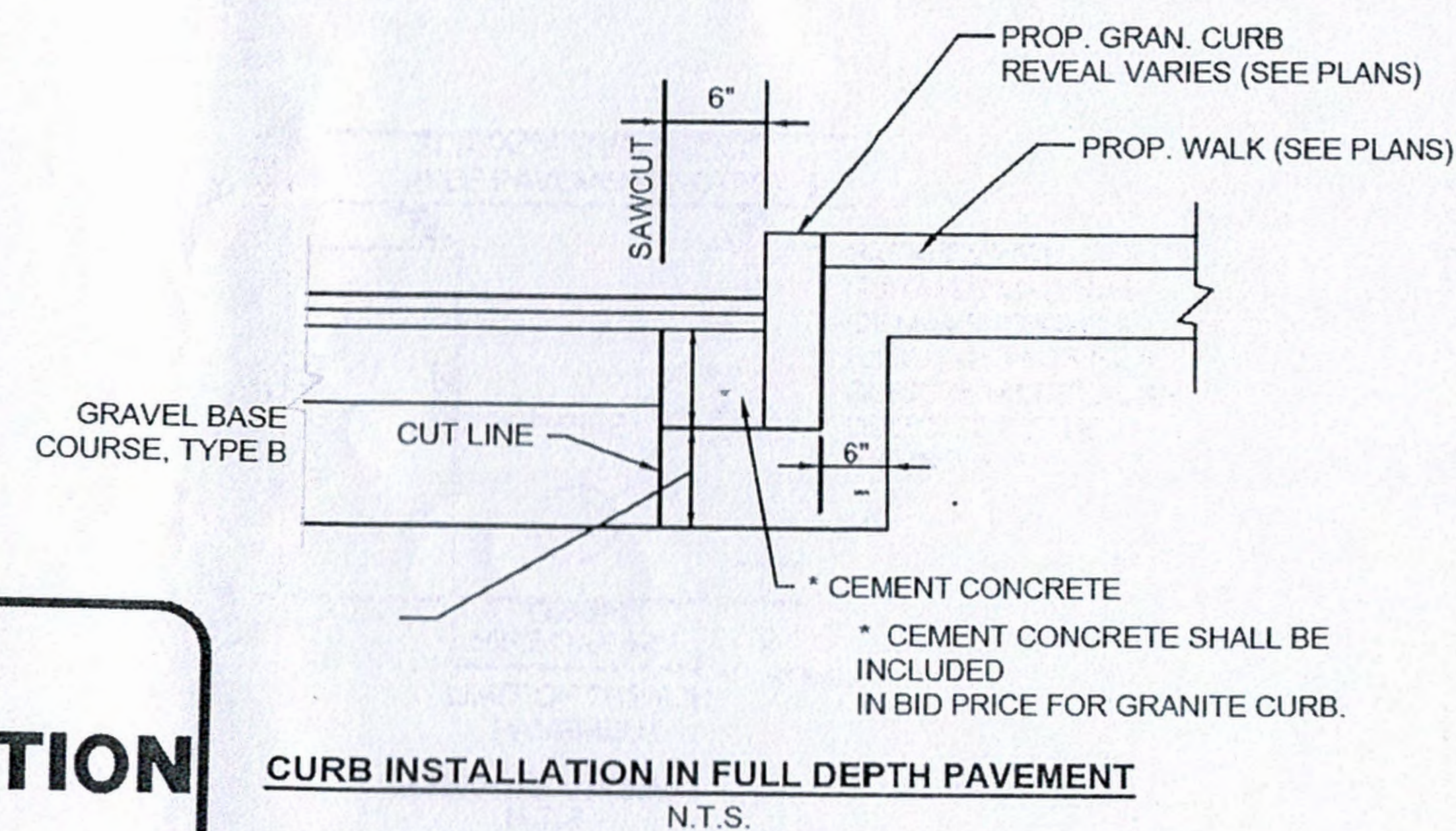




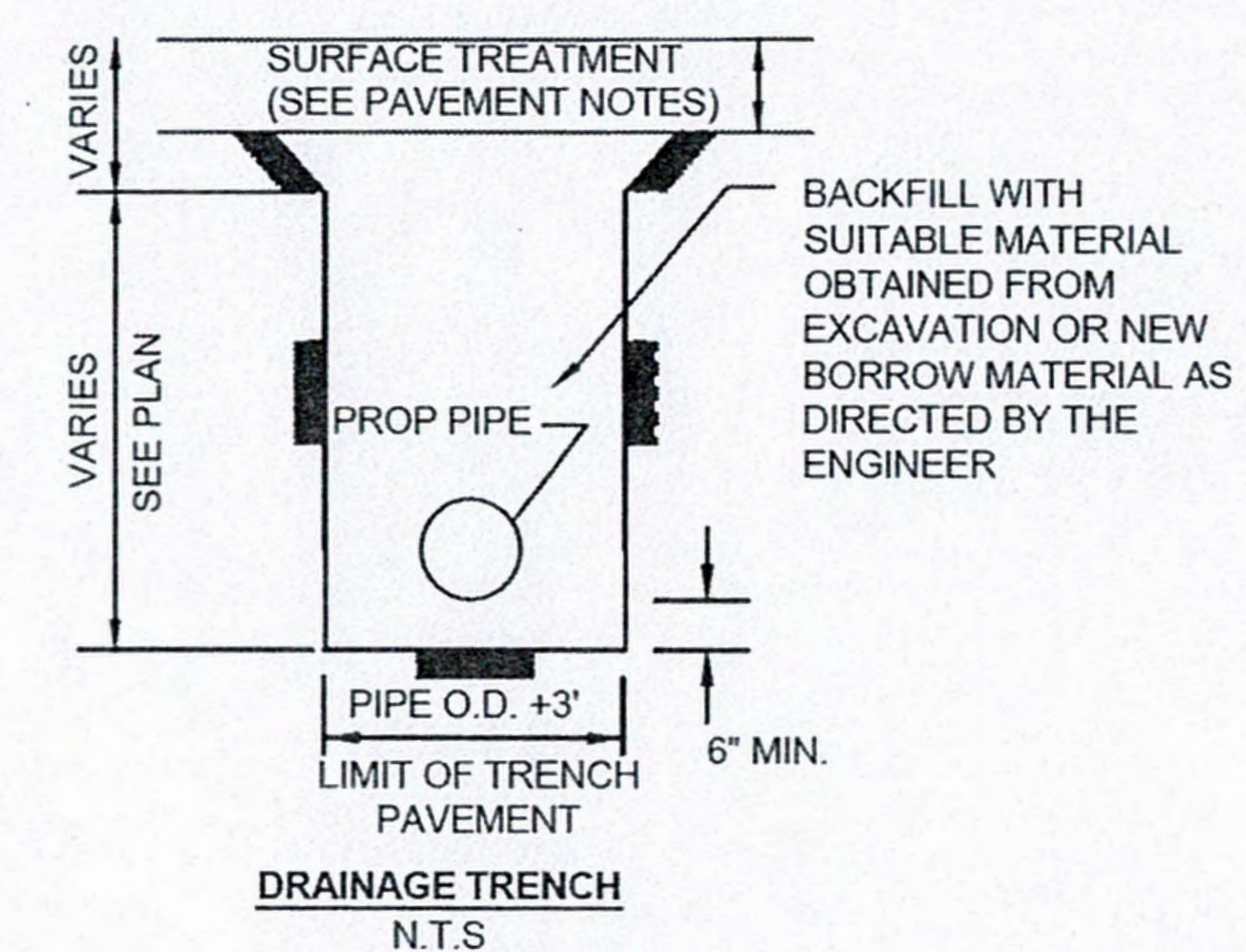
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**PROPOSED PAVEMENT TRANSITION**  
**(LONGITUDINAL SECTION)**  
**N.T.S.**



CURB INSTALLATION IN FULL DEPTH PAVEMENT  
N.T.S.



DRAINAGE TRENCH  
N.T.S

PAVEMENT NOTES

PROPOSED PAVEMENT MILLING AND OVERLAY:

1 1/2" HOT MIX ASPHALT (TOP COURSE MATERIAL)

PROPOSED FULL DEPTH RECONSTRUCTION:

1 1/2" HOT MIX ASPHALT TOP COURSE PAVEMENT OVER ASPHALT  
EMULSION FOR TACK COAT OVERLAY  
2 1/2" HOT MIX ASPHALT BINDER COURSE OVER  
4" DENSE GRADED CRUSHED STONE OVER  
8" RECLAIMED MATERIAL, BLEND WITH CRUSHED STONE AS NEEDED

HOT MIX ASPHALT DRIVEWAY & WALK:

1 1/2" HOT MIX ASPHALT TOP COURSE OVER  
2" HOT MIX ASPHALT BINDER COURSE OVER  
8" GRAVEL BORROW, TYPE B

TACK COAT SHALL BE APPLIED AT RATE OF 0.07 GALLON PER YARD OVER MILLED SURFACES AND 0.05 GALLON PER SQUARE YARD OVER SMOOTH PAVED SURFACES.

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TOWN OF MILLBURY, MASSACHUSETTS  
MILLBURY HIGHWAY DEPARTMENT  
WEST MAIN STREET ROUND POND WALL  
CONSTRUCTION DETAILS

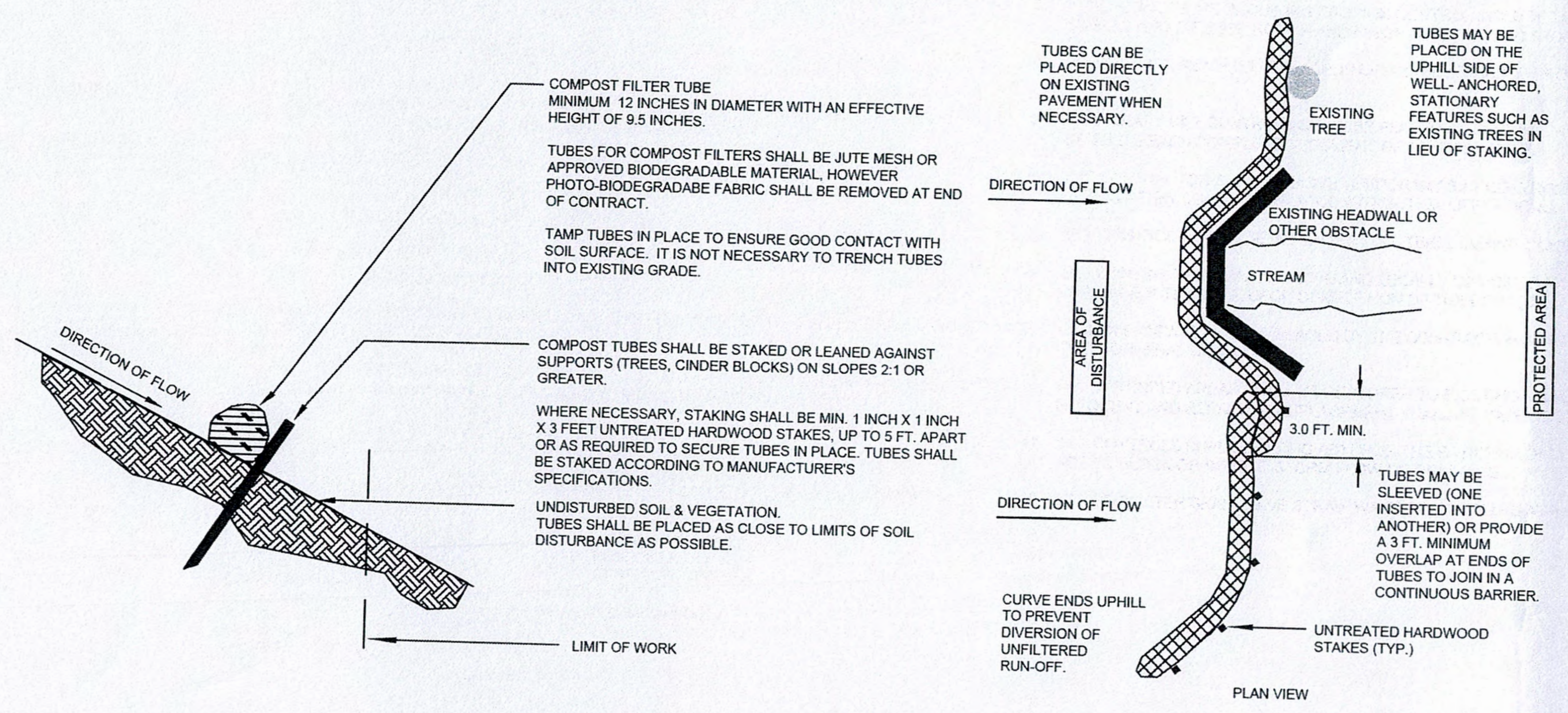
## CONSTRUCTION DETAILS

FILE NO.	CADD NO.	SCALE:	CONTRACT:	JOB NO.	DRBY	DSN.BY	CHK.BY	APP.BY
		AS NOTED		2150463	MD	BD	LEV	LEV

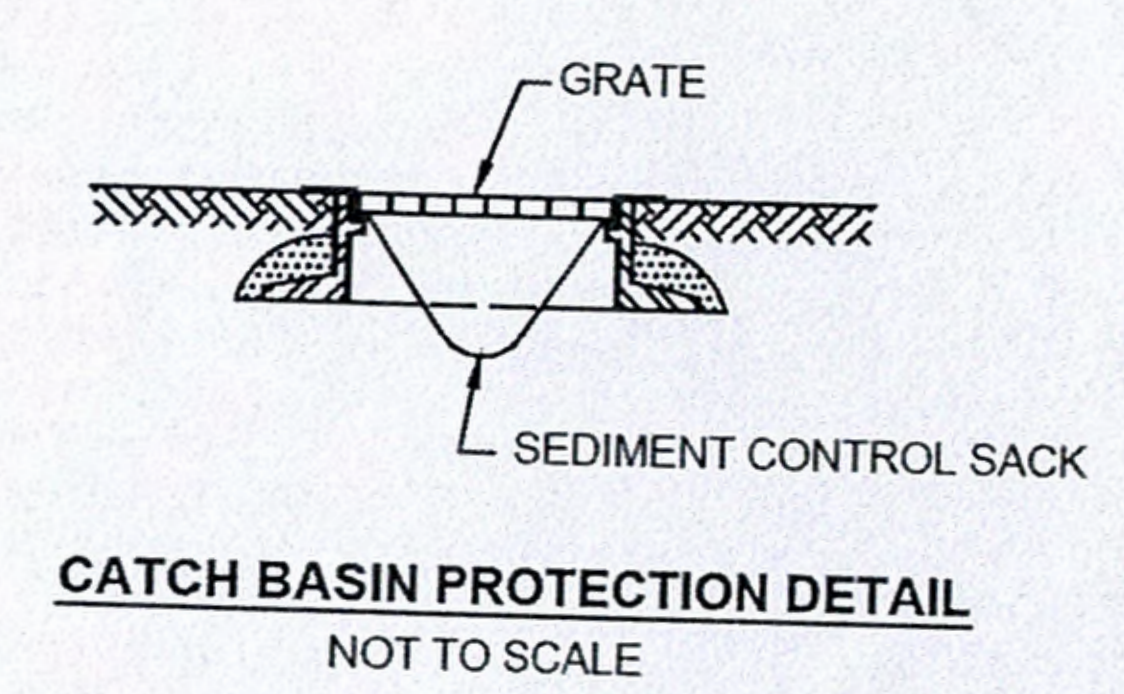
63

GENERAL NOTES:

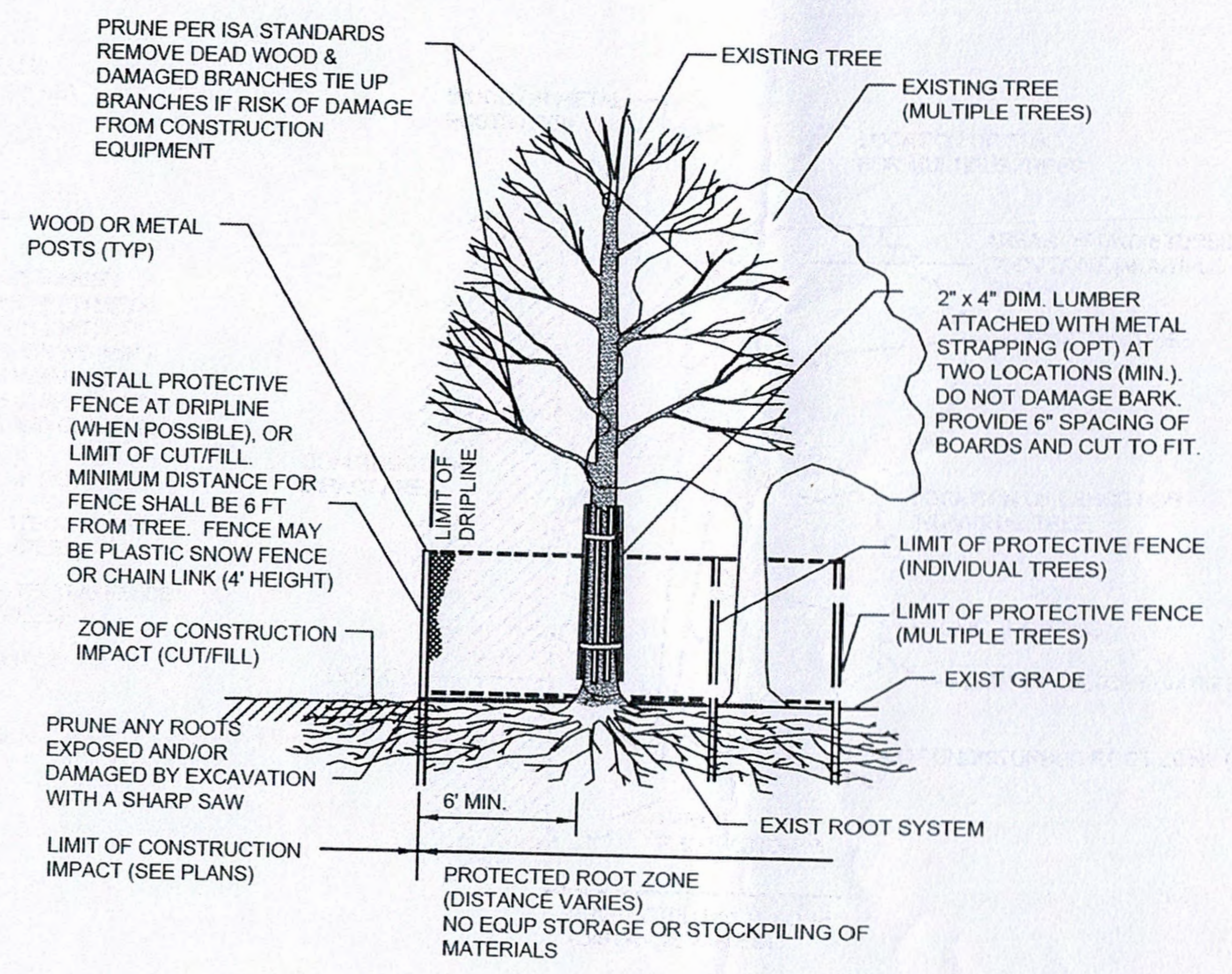
1. PROVIDE A MINIMUM TUBE DIAMETER OF 12 INCHES FOR SLOPES UP TO 50 FEET IN LENGTH WITH A SLOPE RATIO OF 3H:1V OR STEEPER. LONGER SLOPES OF 3H:1V MAY REQUIRE LARGER TUBE DIAMETER OR ADDITIONAL COURSING OF FILTER TUBES TO CREATE A FILTER BERM. REFER TO MANUFACTURER'S RECOMMENDATIONS FOR SITUATIONS WITH LONGER OR STEEPER SLOPES.
2. INSTALL TUBES ALONG CONTOURS AND PERPENDICULAR TO SHEET OR CONCENTRATED FLOW.
3. TUBE LOCATION MAY BE SHIFTED TO ADJUST TO LANDSCAPE FEATURES, BUT SHALL PROTECT UNDISTURBED AREA AND VEGETATION TO MAXIMUM EXTENT POSSIBLE.
4. DO NOT INSTALL IN PERENNIAL, EPHEMERAL OR INTERMITTENT STREAMS.
5. ADDITIONAL TUBES SHALL BE USED AT THE DIRECTION OF THE ENGINEER.
6. ADDITIONAL STAKING SHALL BE USED AT THE DIRECTION OF THE ENGINEER.



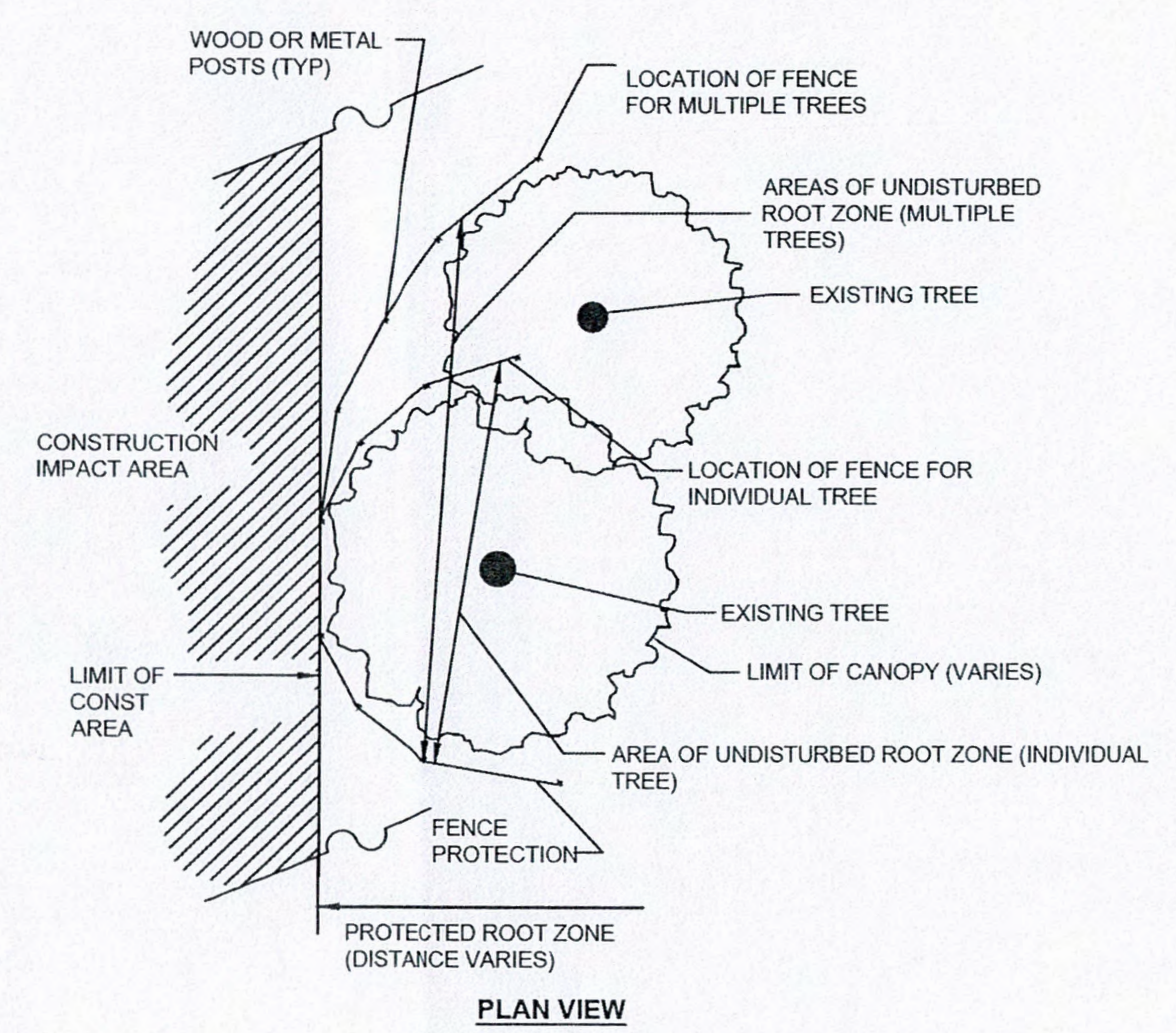
**SINGLE COMPOST FILTER TUBE DETAIL**  
N.T.S.



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08-27-19**



**EXISTING TREE PROTECTION**  
NOT TO SCALE



NOTES:

1. EROSION CONTROL MEASURES SHALL BE INCORPORATED IN THE SEQUENCE OF CONSTRUCTION TO PREVENT SEDIMENT LADEN WATER FROM LEAVING THE SITE.
2. AREAS SUBJECT TO EROSION SHALL BE MINIMIZED IN TERMS OF TIME AND AREA.
3. IN GENERAL, WORK REQUIRING EROSION CONTROL INCLUDES EXCAVATIONS, FILLS, DRAINAGE, SWALES AND DITCHES, ROUGH AND FINISH GRADING, AND STOCKPILING OF EARTH.
4. DO NOT DISTURB VEGETATION AND TOPSOIL BEYOND THE PROPOSED LIMIT OF SILT FENCE ACTIVITIES.
5. TEMPORARY SILT CONTROLS SHALL BE PLACED AS SHOWN ON THE PLAN. PERMANENTLY STABILIZE EACH COMPLETED SEGMENT OF CONSTRUCTION.
6. THE CONTRACTOR SHALL REMOVE TEMPORARY SILT CONTROLS AND ALL ACCUMULATED SILT AND DEBRIS AFTER COMPLETION OF CONSTRUCTION OPERATIONS.
7. SILT CONTROLS SHALL BE IN PLACE AT ALL TIMES DURING CONSTRUCTION.
8. THE CONTRACTOR SHALL REMOVE AND LEGALLY DISPOSE OF ALL SILT AND DEBRIS FROM EACH DRAINAGE STRUCTURE UPON COMPLETION OF THE PROJECT.
9. OBJECTS AND/OR AREAS DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION.
10. ALL DISTURBED AREAS SHALL BE RESTORED TO EXISTING GRADE. INSPECTION SHALL BE FREQUENT AND REPAIR OR REPLACEMENT SHALL BE MADE AS NEEDED.
11. SILT CONTROLS SHALL BE REMOVED UPON THE SATISFACTORY COMPLETION OF ALL WORK SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
12. SITE PERIMETER SHALL HAVE STRAW WATTLES INSTALLED AT THE LIMIT OF WORK.

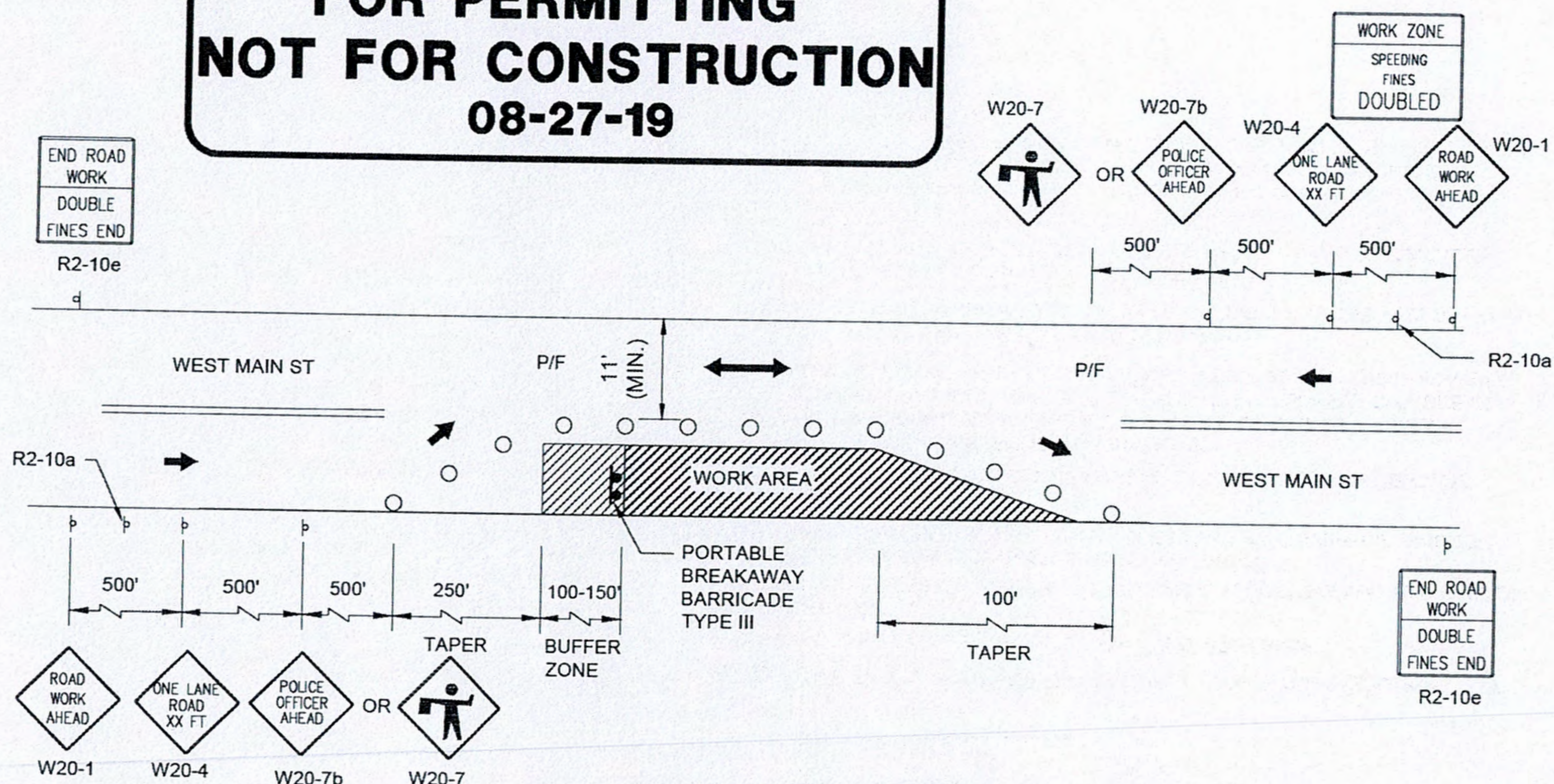
TOWN OF MILBURY, MASSACHUSETTS  
MILBURY HIGHWAY DEPARTMENT  
WEST MAIN STREET ROUND POND WALL

CONSTRUCTION DETAILS

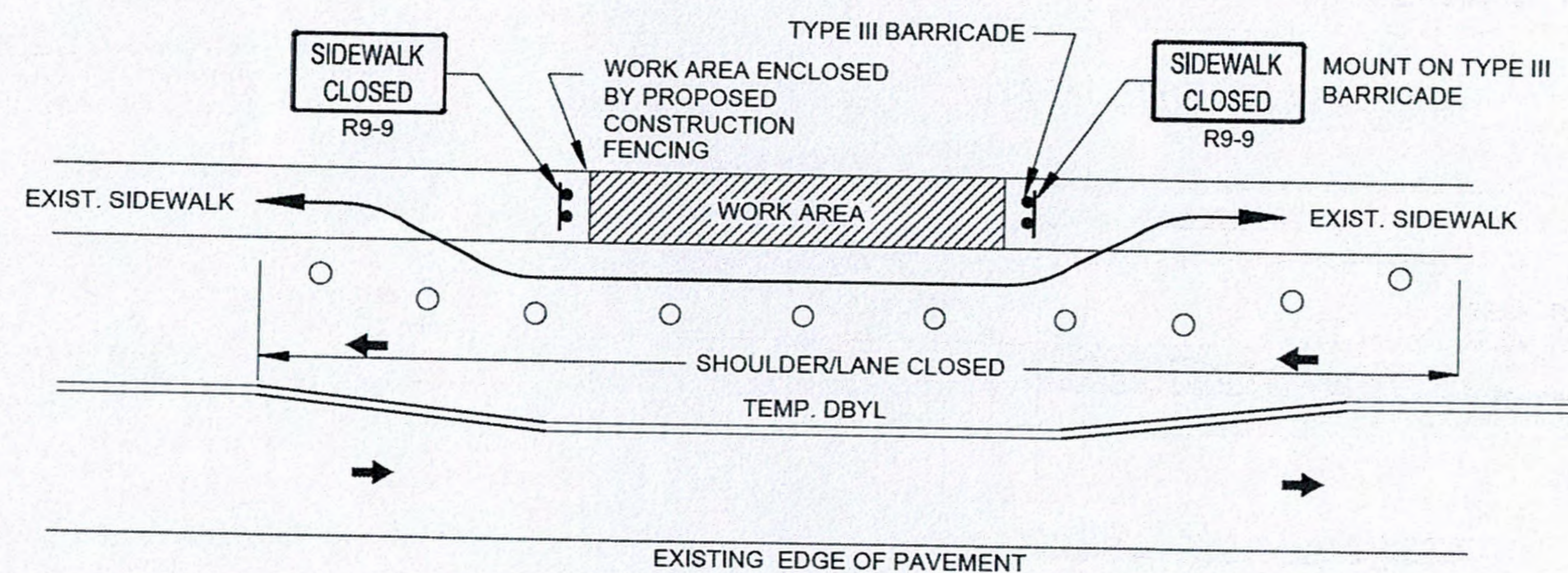
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			-			-									
	TOWN OF MILLBURY, MASSACHUSETTS MILLBURY HIGHWAY DEPARTMENT														
WEST MAIN STREET ROUND POND WALL															
CONSTRUCTION DETAILS															

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PARTIAL LANE CLOSURE  
N.T.S.



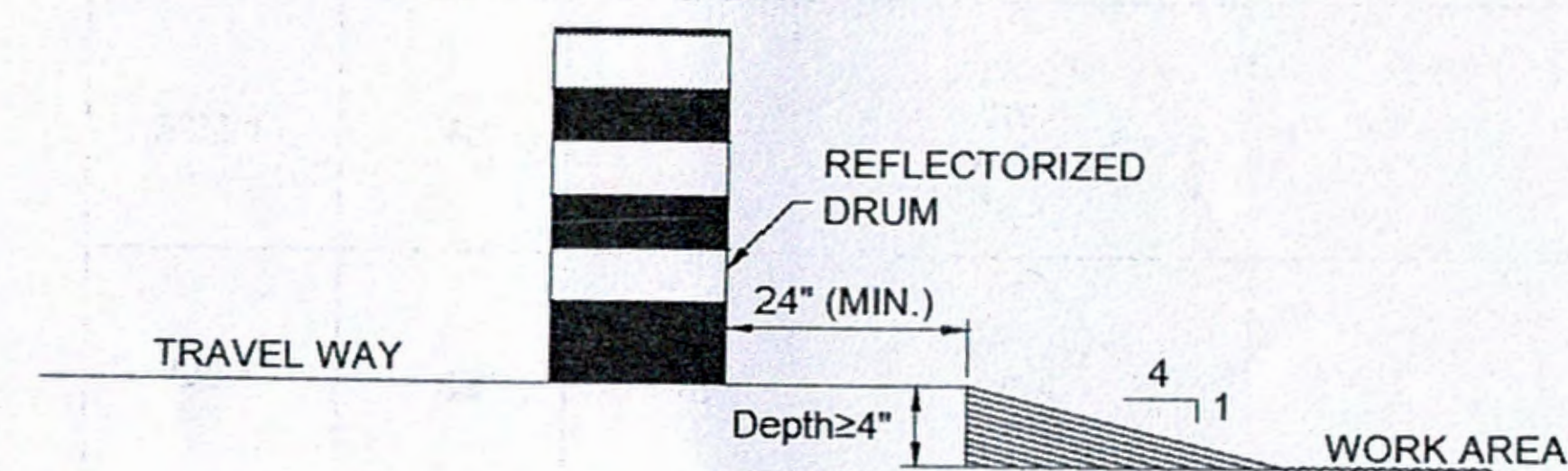
TYPE I

NOTES:

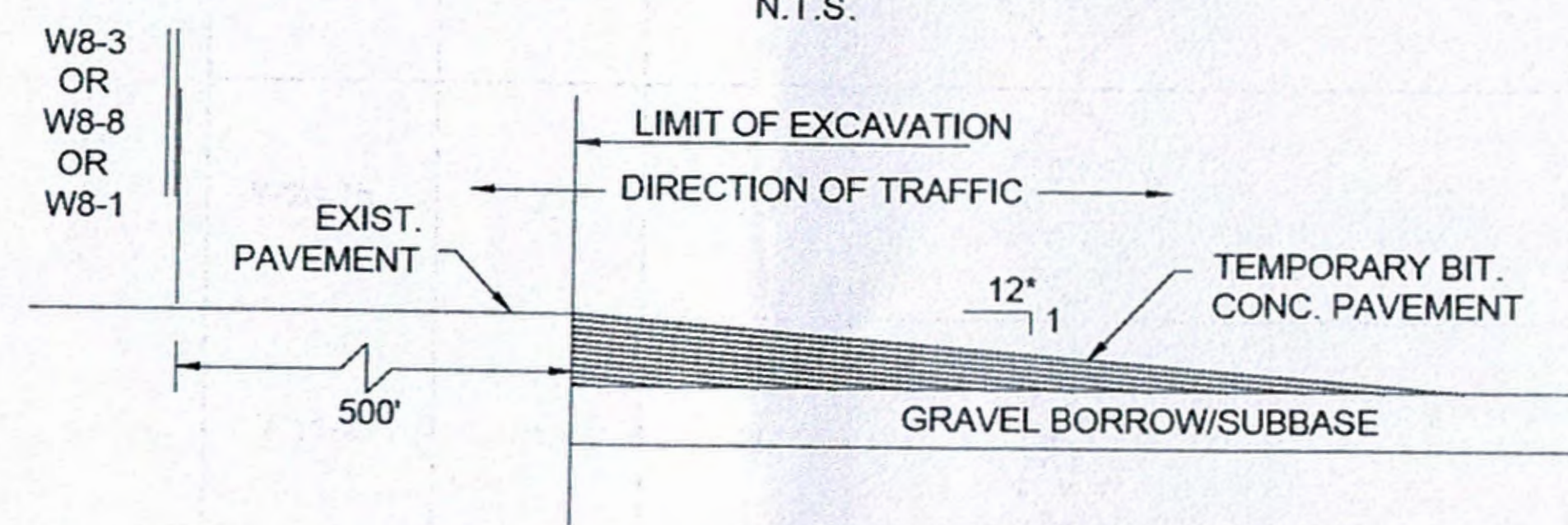
1. ADDITIONAL ADVANCE WARNING MAY BE NECESSARY.
2. CONTROLS ONLY FOR PEDESTRIAN TRAFFIC ARE SHOWN. VEHICULAR TRAFFIC SHOULD BE HANDLED AS SHOWN ELSEWHERE.
3. STREET LIGHTING SHOULD BE CONSIDERED WHEN LOCATING CONTROL DEVICES.
4. IF THE WORK ZONE DOES NOT PERMIT PEDESTRIANS TO TRAVEL ADJACENT TO IT AS SHOWN IN PEDESTRIAN BYPASS TYPE I, TEMPORARY CROSSWALKS WITH APPROPRIATE SIGNS SHOULD BE INSTALLED TO CROSS PEDESTRIANS TO THE OPPOSITE SIDE OF THE STREET AS SHOWN IN PEDESTRIAN BYPASS TYPE II, AND AS DIRECTED BY THE ENGINEER. TEMPORARY CURB RAMPS WILL BE REQUIRED AT ALL TEMPORARY CROSSWALK LOCATIONS.
5. BYPASS IS TO BE USED IN CONJUNCTION WITH THE PROPOSED LANE CLOSURE DETAILS AND DURING CONSTRUCTION STAGING, AS DIRECTED BY THE ENGINEER.

NOTES:

1. PLACEMENT OF ALL CONSTRUCTION SIGNS, DRUMS, BARRICADES, TRAFFIC DEVICES AND THE SHAPE, SIZE & COLOR OF ALL TEMPORARY TRAFFIC SIGNS SHALL CONFORM WITH THE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND AMENDMENTS.
2. ADVANCE WARNING SIGN PLACEMENT AND TAPER LENGTH SHALL BE ADJUSTED ACCORDING TO STREET CONDITIONS AND DRIVEWAY OPENINGS.
3. ALL DRUMS SHALL BE APPROXIMATELY PLACED AND RELOCATED AS NECESSARY TO MAINTAIN ADEQUATE ABUTTER ACCESS AT ALL TIMES.
4. THE CONTRACTOR SHALL NOTIFY EACH ABUTTER AT LEAST 24 HOURS IN ADVANCE OF THE START OF ANY WORK THAT WILL REQUIRE THE TEMPORARY CLOSURE OF ACCESS, SUCH AS EXISTING PAVEMENT EXCAVATION, TEMPORARY DRIVEWAY PAVEMENT PLACEMENT AND SIMILAR OPERATIONS.
5. NONESSENTIAL TRAFFIC CONTROL DEVICES SHALL BE COVERED OR REMOVED DURING NON-WORKING HOURS.
6. PEDESTRIANS SHALL BE PROVIDED WITH ACCESS AND SAFE PASSAGE THROUGH THE TEMPORARY TRAFFIC CONTROL ZONE AT ALL TIMES.
7. ADVISORY SPEED PLATES (W13-1) SHALL BE USED IF APPLICABLE AND AS DIRECTED BY THE ENGINEER.
8. R2-10a SIGN TO BE ERECTED BETWEEN W20-1 AND W20-4 SIGN.
9. MAINTAIN ONE LANE (MIN. 11' WIDTH) AT ALL TIMES DURING CONSTRUCTION.



LATERAL DROP-OFF DETAIL  
N.T.S.



LONGITUDINAL DROP-OFF DETAIL  
N.T.S.

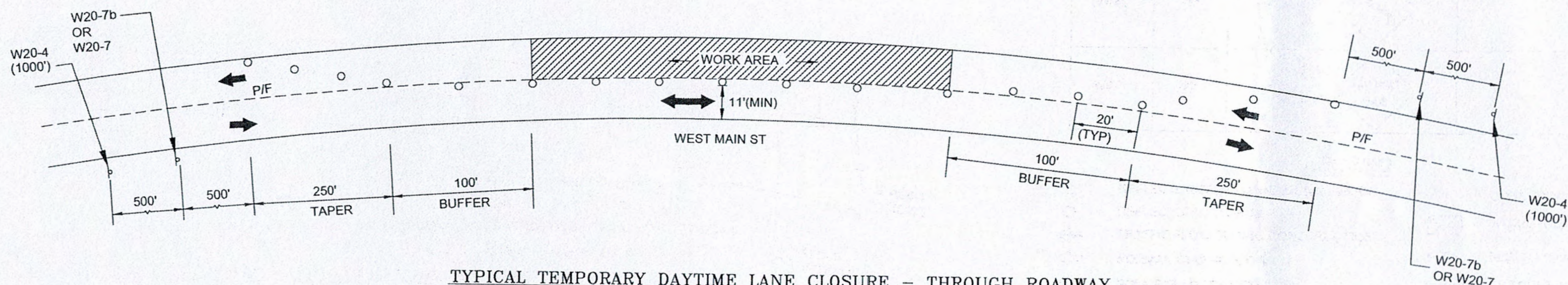
FORMULAS FOR DETERMINING TAPER LENGTHS

SPEED LIMIT (S)	TAPER LENGTH (L) FEET
40 MPH OR LESS	$L = \frac{WS^2}{60}$
45 MPH OR MORE	$L = WS$

WHERE: L = TAPER LENGTH IN FEET (METERS)

W = WIDTH OF OFFSET IN FEET (METERS)

S = POSTED SPEED LIMIT, OR OFF-PEAK 85TH-PERCENTILE SPEED PRIOR TO WORK STARTING, OR THE ANTICIPATED OPERATING SPEED IN MPH (KM/H)



TYPICAL TEMPORARY DAYTIME LANE CLOSURE - THROUGH ROADWAY  
(ONE LANE- BI-DIRECTIONAL)  
N.T.S.

TEMPORARY TRAFFIC SIGN SUMMARY

IDENTIFICATION NUMBER	SIZE OF SIGN		TEXT	NOTES
	WIDTH	HEIGHT		
R2-10e	36"	48"	END ROAD WORK DOUBLE FINES END	
R2-10a	48"	36"	WORK ZONE SPEEDING FINES DOUBLED	PLACE SIGN BETWEEN FIRST AND SECOND ADVANCED WARNING SIGN OR AS DIRECTED BY THE ENGINEER
W5-1	48"	48"	ROAD NARROWS	
W13-1p	18"	18"	XX M.P.H.	ADVISORY SPEED LIMIT AS DETERMINED BY THE ENGINEER
W20-1	48"	48"	ROAD WORK AHEAD	
W20-4	48"	48"	ONE LANE ROAD XX FT	
W20-7	48"	48"	PEDESTRIAN CROSSING	
W20-7b	48"	48"	POLICE OFFICER AHEAD	
W11-2	30"	30"	PEDESTRIAN CROSSING	
W16-7pL	24"	12"	RIGHT TURN YIELD	
R9-11a	48"	24"	SIDEWALK CLOSED CROSS HERE	
R9-9	30"	18"	SIDEWALK CLOSED	
W1-4R	48"	48"	RIGHT TURN YIELD	
W1-4L	48"	48"	LEFT TURN YIELD	
W8-7	48"	48"	PAVEMENT ENDS	

LEGEND

□	REFLECTORIZED CHANNELIZING DEVICE	+	CONSTRUCTION SIGN
○	REFLECTORIZED DRUM	▨	WORK AREA
→	TRAFFIC FLOW DURING CONSTRUCTION	N.T.S.	NOT TO SCALE
↔	NORMAL TRAFFIC FLOW	→	ARROW BOARD
P/F	POLICE/FLAGGER DETAIL	—	TEMPORARY PRECAST PORTABLE CONCRETE BARRIER W/WARNING LIGHTS
+	PORTABLE BREAKAWAY BARRICADE TYPE III		
+	TEMPORARY IMPACT ATTENUATOR		

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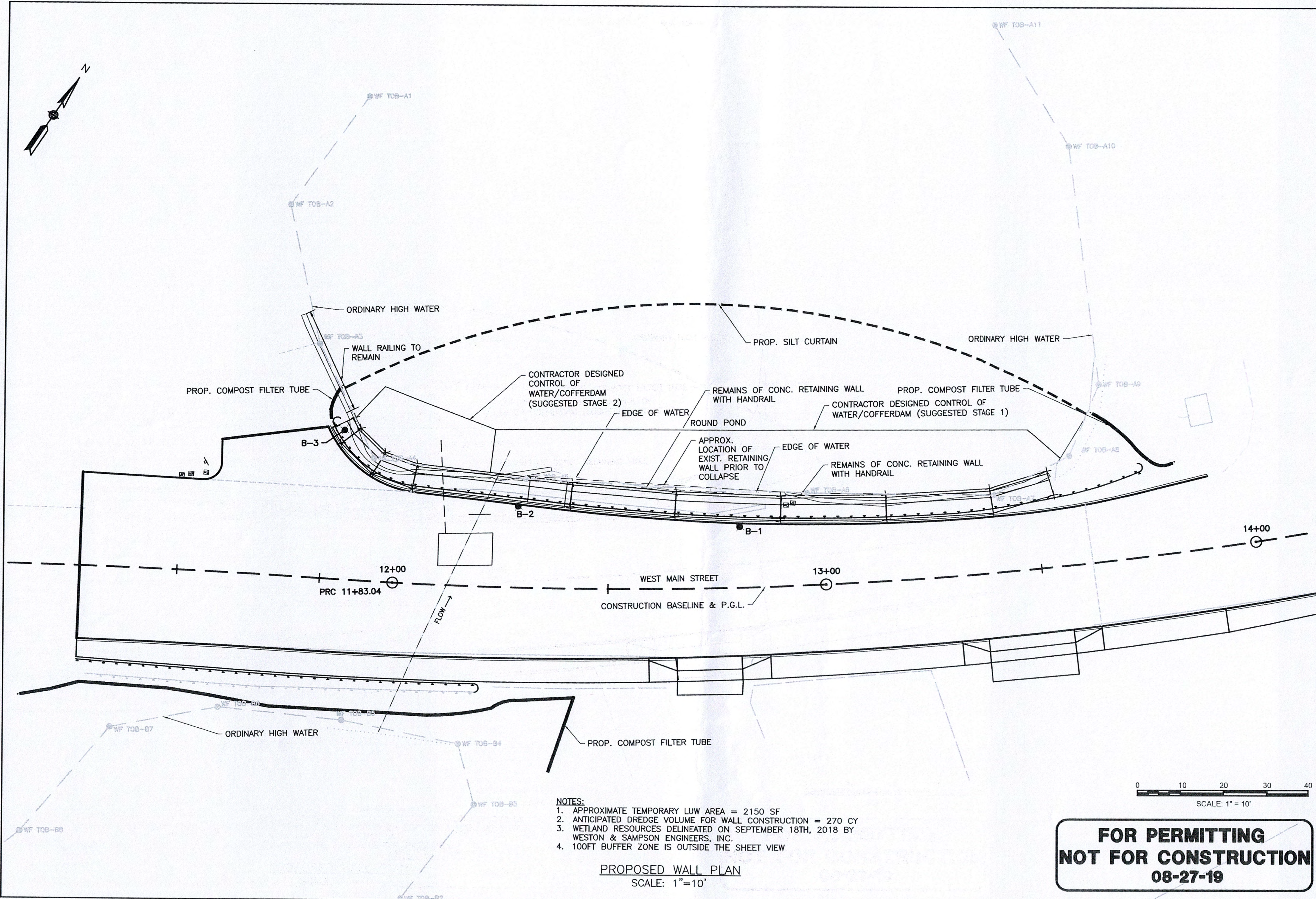
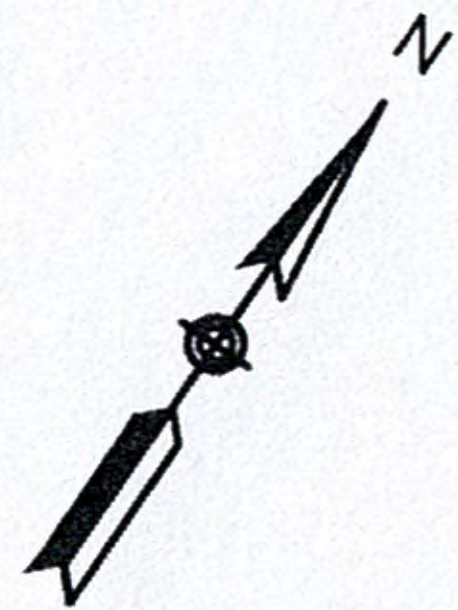
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MILLBURY HIGHWAY DEPARTMENT  
WEST MAIN STREET ROUND POND WALL

TEMPORARY TRAFFIC CONTROL DETAILS

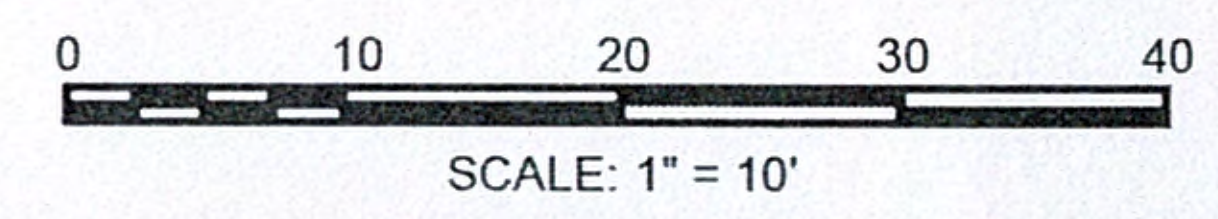
FILE NO.	SCALE:	CONTRACT:	JOB NO.	DR BY	DSN BY	CHK BY	APP BY
	AS NOTED		2180463	MD	RP	LFK	LFK

C-5



- NOTES:
1. APPROXIMATE TEMPORARY LUW AREA = 2150 SF
  2. ANTICIPATED DREDGE VOLUME FOR WALL CONSTRUCTION = 270 CY
  3. WETLAND RESOURCES DELINEATED ON SEPTEMBER 18TH, 2018 BY WESTON & SAMPSON ENGINEERS, INC.
  4. 100FT BUFFER ZONE IS OUTSIDE THE SHEET VIEW

PROPOSED WALL PLAN  
SCALE: 1"=10'



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08-27-19**

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No.	Date	Dr. By	Chk. By	App. By	Description

REGISTERED PROFESSIONAL ENGINEER

DATE

TOWN OF MILLBURY, MASSACHUSETTS  
MILLBURY HIGHWAY DEPARTMENT

WEST MAIN STREET ROUND POND WALL

KEY PLAN

FILE NO.	CADD NO.	SCALE	CONTRACT	JOB NO.	DR BY	DSN BY	CHK BY	APP BY	RAC
		AS NOTED		2180463					

**S-1**

SHEET 7 of 10

STATION: 12+80.60 ±  
OFFSET: 14.08' LEFT  
GROUND ELEVATION: 545.78

BORING NUMBER: **B-1**  
PAGE 1 OF 1

STATION: 12+28.56 ±  
OFFSET: 18.77' LEFT  
GROUND ELEVATION: 546.23

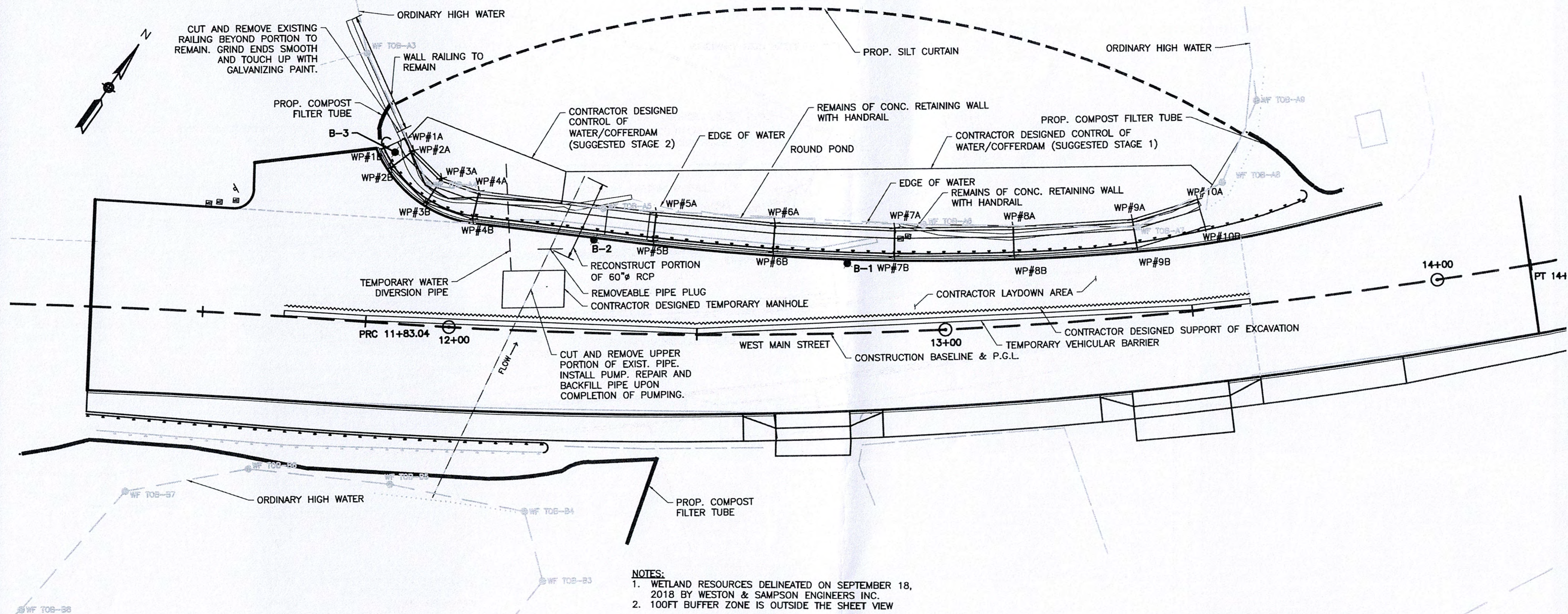
BORING NUMBER: **B-2**  
PAGE 1 OF 1

STATION: 11+86.52 ±  
OFFSET: 34.51' LEFT  
GROUND ELEVATION: 546.56

BORING NUMBER: B-3  
PAGE 1 OF 1

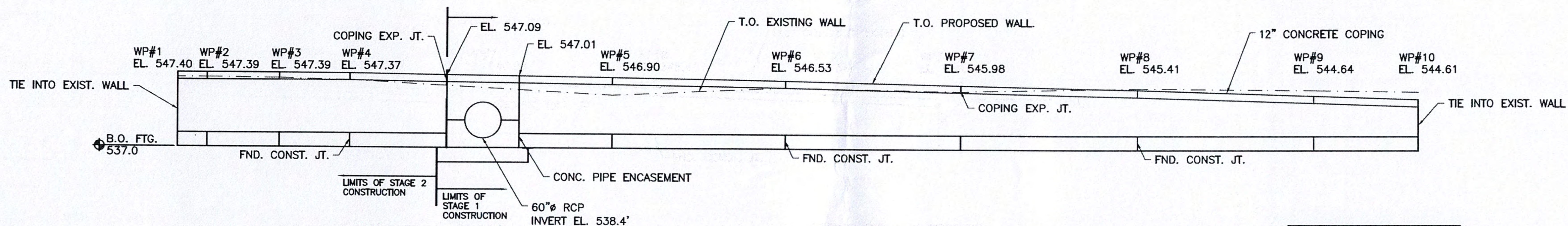
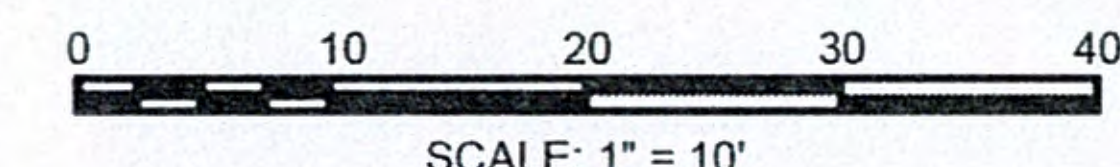
1. LOCATION OF BORING SHOWN ON PLAN THUS 
2. BORINGS ARE TAKEN FOR THE PURPOSE OF DESIGN AND SHOW CONDITIONS AT THE BORING POINTS ONLY, BUT NOT NECESSARILY SHOW THE NATURE OF THE MATERIALS TO BE ENCOUNTERED DURING CONSTRUCTION.
3. WATER LEVELS SHOWN ON THE BORING LOGS WERE OBSERVED AT THE TIME OF TAKING BORINGS AND DO NOT NECESSARILY SHOW THE TRUE GROUND WATER LEVEL.
4. FIGURES IN COLUMNS INDICATE NUMBER OF BLOWS REQUIRED TO DRIVE A 1-3/8" I.D. SPLIT SPOON SAMPLER 6" USING A 140 POUND WEIGHT FALLING 30".
5. ALL BORINGS WERE MADE SEPTEMBER 25, 2018.
6. BORINGS WERE MADE BY TECHNICAL DRILLING SERVICES.
7. THE NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988 IS USED THROUGHOUT.

S-2

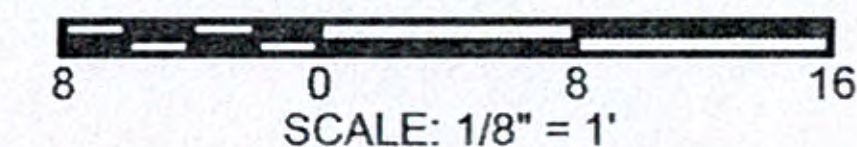


- NOTES:
1. WETLAND RESOURCES DELINEATED ON SEPTEMBER 18, 2018 BY WESTON & SAMPSON ENGINEERS INC.
  2. 100FT BUFFER ZONE IS OUTSIDE THE SHEET VIEW

PROPOSED WALL PLAN  
SCALE: 1"=10'



PROPOSED WALL PROJECTED ELEVATION  
SCALE: 1/8" = 1'-0"



WORKING POINT	STATION	OFFSET	WORKING POINT	STATION	OFFSET
WP#1A	11+88.85'	37.56' (LT)	WP#1B	11+83.56'	34.79' (LT)
WP#2A	11+90.44'	35.15' (LT)	WP#2B	11+85.90'	31.34' (LT)
WP#3A	11+96.69'	29.92' (LT)	WP#3B	11+93.81'	24.74' (LT)
WP#4A	12+04.60'	27.69' (LT)	WP#4B	12+03.56'	22.00' (LT)
WP#5A	12+41.43'	24.56' (LT)	WP#5B	12+40.90'	18.83' (LT)
WP#6A	12+65.91'	22.44' (LT)	WP#6B	12+65.47'	16.71' (LT)
WP#7A	12+90.40'	20.91' (LT)	WP#7B	12+90.09'	15.16' (LT)
WP#8A	13+14.86'	19.95' (LT)	WP#8B	13+14.71'	14.20' (LT)
WP#9A	13+39.36'	19.57' (LT)	WP#9B	13+39.87'	13.80' (LT)
WP#10A	13+53.36'	21.29' (LT)	WP#10B	13+54.45'	16.64' (LT)

PROPOSED WALL STATIONS AND OFFSETS

- DESIGN  
IN ACCORDANCE WITH THE 2018 AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS LRFD BRIDGE DESIGN SPECIFICATIONS.
- THE FACTORED BEARING PRESSURE = 3.29 KSF PER AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS STRENGTH I LOAD COMBINATION.
- THE FACTORED BEARING RESISTANCE = 6 KSF. FACTORED BEARING RESISTANCE IS THE PRODUCT OF THE NOMINAL BEARING RESISTANCE AND A RESISTANCE FACTOR OF 0.45.
- NOTES:
1. WALL FOOTING, COPING AND OUTLET STRUCTURE CONCRETE SHALL BE 4000 PSI, 1 1/2 IN. 565 CEMENT CONCRETE.
  2. ALL REINFORCING SHALL CONFORM TO AASHTO M 31 GRADE 60.
  3. LIVE LOAD CONSTRUCTION SURCHARGE SHALL BE LIMITED TO AN APPLIED SERVICE LOAD OF 240 PSF.
  4. CONTRACTOR MAY ELECT TO USE C.I.P. OR PRECAST CONCRETE COPING.
  5. THE 100-FOOT BUFFER ZONE FROM POND BANK IS OUTSIDE THE EXTENT OF THIS VIEW.
  6. WETLAND DELINEATION CONDUCTED BY WESTON & SAMPSON ON SEPTEMBER 18TH, 2018.

- SUGGESTED WALL/OUTLET CONSTRUCTION SEQUENCE
- A. INSTALL TEMPORARY MANHOLE. INSTALL TEMPORARY PIPE PLUG. PUMP WATER AS REQUIRED TO CONTINUALLY MAINTAIN POND ELEVATION OF 543.0.
  - B. INSTALL SILT CURTAIN AND EROSION CONTROLS.
  - C. INSTALL CONTRACTOR DESIGNED CONTROL OF WATER/COFFERDAM IN VICINITY OF STAGE 1 (AS SHOWN ON PLAN).
  - D. DEWATER COFFERDAM AS REQUIRED TO DEMOLISH AND REMOVE REMNANTS OF EXISTING DEFICIENT RETAINING WALL AND COMPONENTS WITHIN THE COFFERDAM CONFINES.
  - E. EXCAVATE AND DEWATER AS REQUIRED TO INSTALL FOUNDATION SUBGRADE AND FOOTINGS.
  - F. CONSTRUCT STAGE 1 WALL STEMS AND PROPOSED PIPE OUTLET.
  - G. CONSTRUCT OUTLET AT NORTH END AND PROPOSED PIPE ACROSS ROAD (A MINIMUM SINGLE ALTERNATING TRAFFIC LANE MUST BE MAINTAINED AT ALL TIMES).
  - H. PARTIALLY REMOVE CONTROL OF WATER, PIPE PLUG AND ALLOW FLOW THROUGH REBUILT PIPE AND OUTLET STRUCTURE.
  - I. REPEAT THE ABOVE SEQUENCE FOR STAGE 2 WITH THE EXCEPTION OF WATER PUMPING TO MAINTAIN POND WATER ELEVATION.

**FOR PERMITTING  
NOT FOR CONSTRUCTION  
02-25-19**

**Weston & Sampson**  
100 Foxborough Boulevard,  
Suite 250, Foxborough, MA 02035  
508.688.3034 800.SAMPSON  
www.westonandsampson.com

No.	Date	Dr. By	Chk. By	App. By	Description

REGISTERED PROFESSIONAL ENGINEER  
DATE

TOWN OF MILLBURY, MASSACHUSETTS  
MILLBURY HIGHWAY DEPARTMENT  
WEST MAIN STREET ROUND POND WALL

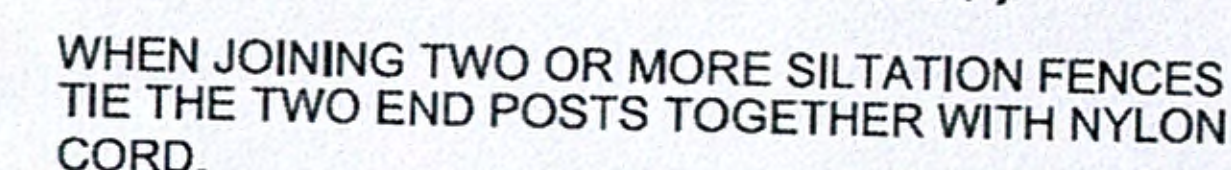
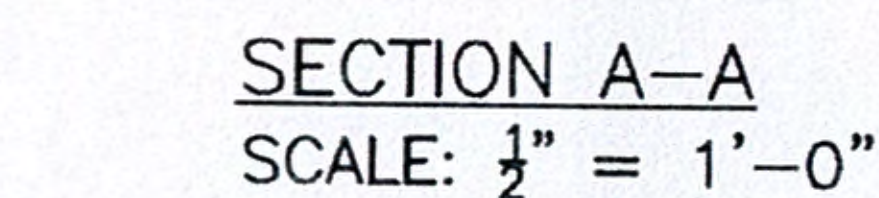
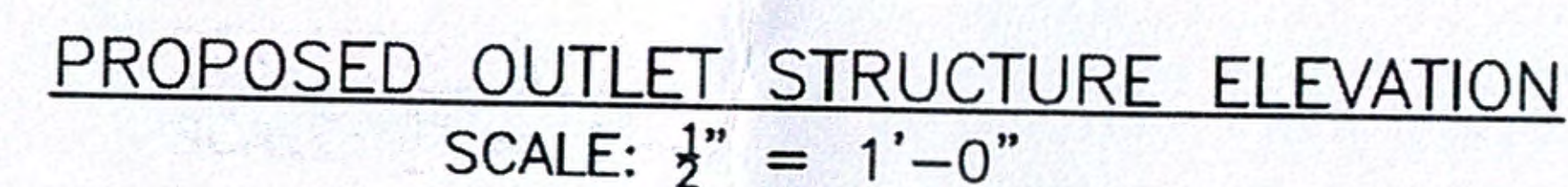
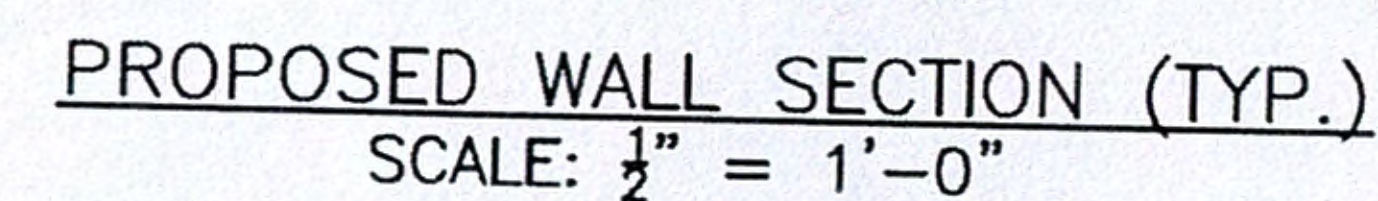
**GENERAL NOTES, PLAN, AND ELEVATION**

SCALE	AS NOTED	CONTRACT	JOB NO.	DR. BY	CHK. BY	APP. BY	RAC
			2180463	AAC	CM	CM	RAC

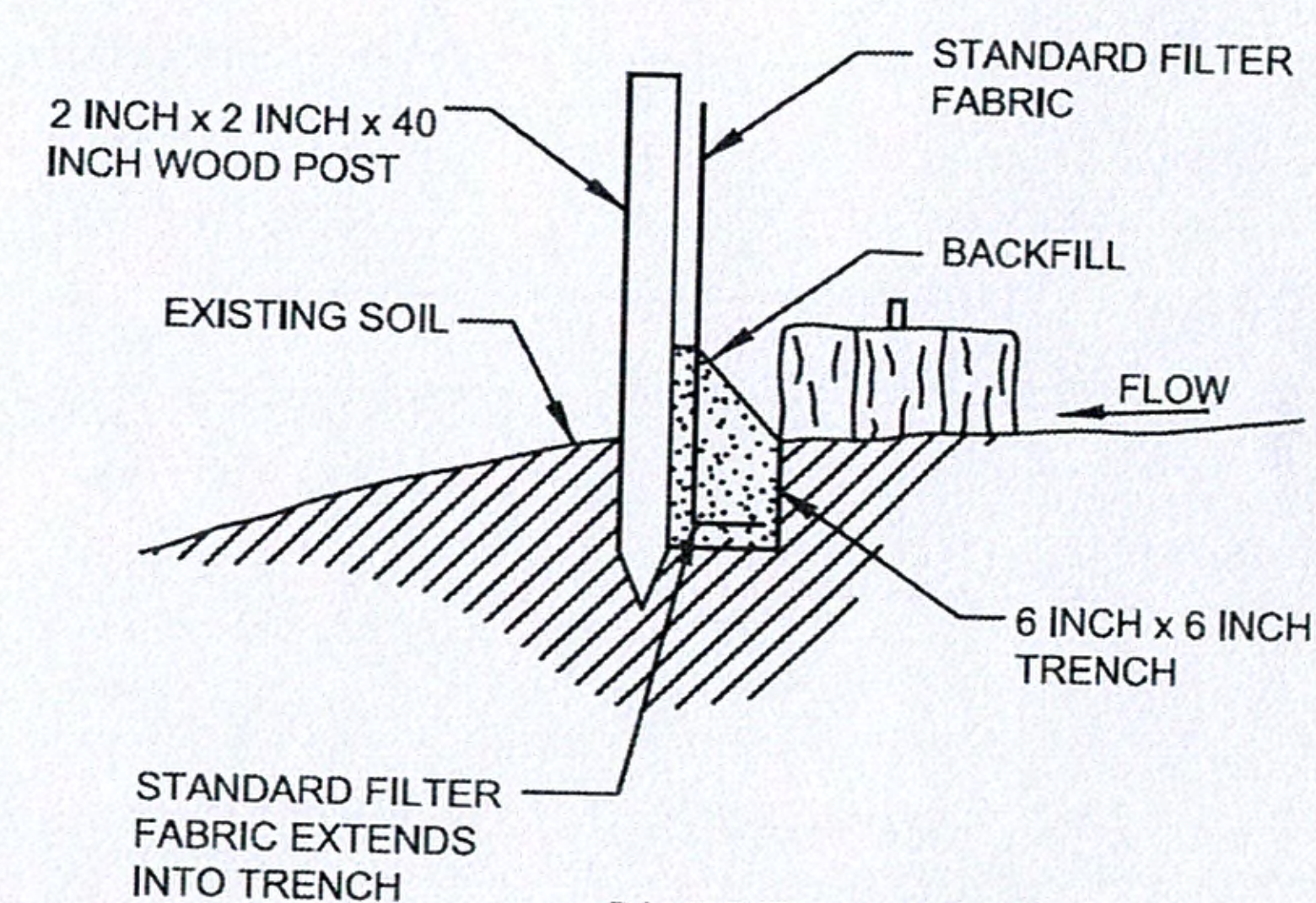
FILE NO.

**S-3**

SHEET 9 OF 10

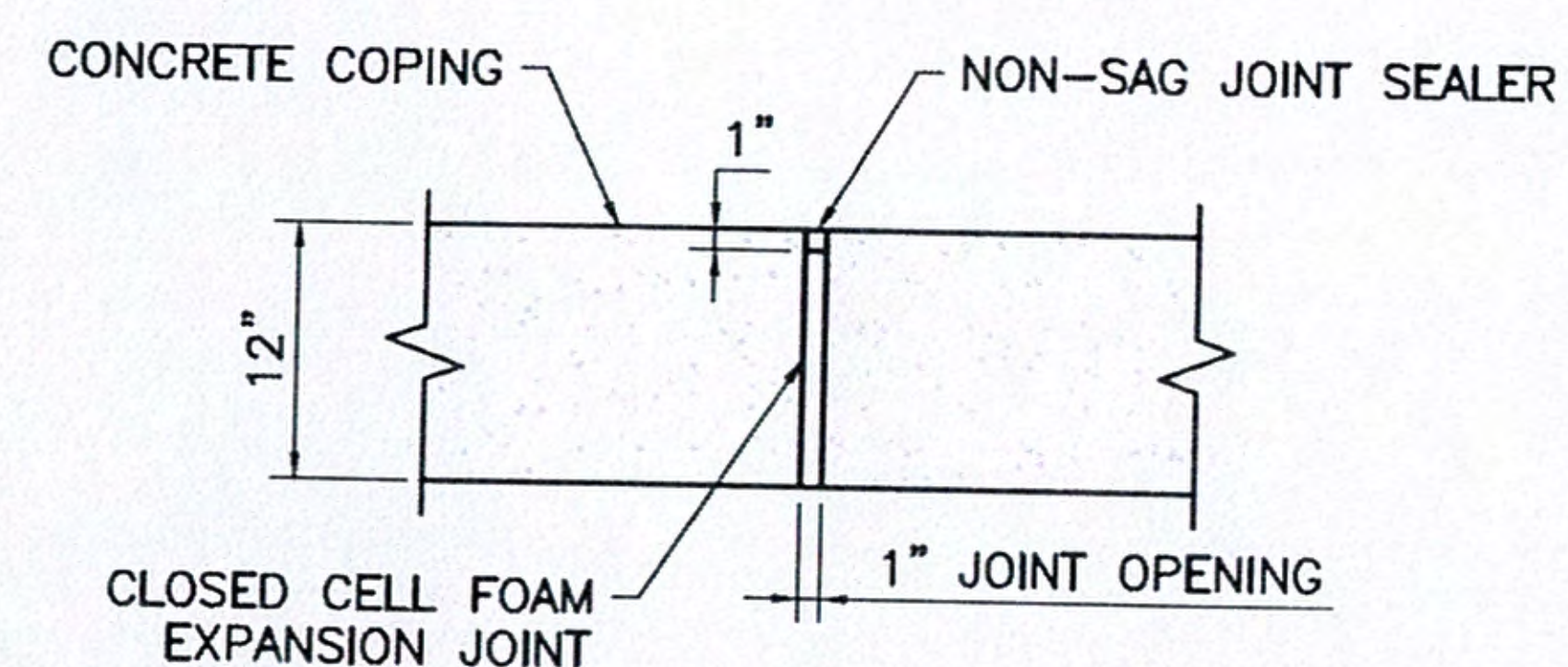


### DITCH CHECK

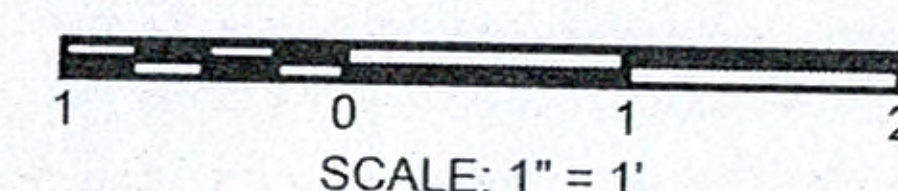


SLOPE CHECK

SILT CURTAIN — EROSION CONTROL  
SCALE: N.T.S.



COPING EXPANSION JOINT DETAIL  
SCALE: 1" = 1'-0"



**FOR PERMITTING  
NOT FOR CONSTRUCTION  
08-27-19**

## SECTION 01014

### SCOPE AND SEQUENCE OF WORK

#### PART 1 – GENERAL

##### 1.01 WORK INCLUDED:

- A. The scope of work for the West Main Street Round Pond Wall Reconstruction includes, but is not limited to, demolition and disposal of the existing remaining wall, installation of new cemented stone masonry retaining wall on concrete footings, installation of new concrete outlet structure, furnish and installation of contractor designed temporary manhole, removal existing 60-inch RCP pipe, installation of new 60" RCP pipe, installation of temporary cofferdam and water control structure, water diversion/bypass system, dewatering, excavation, temporary earth support system, installation of new metal handrail, removal and replacement of steel guardrail, full depth pavement reconstruction/reclamation, hot mix asphalt sidewalk and driveway aprons, remove and rest granite curbing, installation of ne granite curbing, installation and removal of erosion controls, tree protection, loam and seed. The work also includes coordinating and providing all traffic control necessary for completion of the work

##### 1.02 RELATED WORK:

- A. SECTION 01110 – CONTROL OF WORK AND MATERIALS

#### PART 2 - PRODUCTS (NOT APPLICABLE)

#### PART 3 - EXECUTION

##### 3.01 GENERAL:

- A. The Contractor shall be responsible for scheduling its activities and the activities of any subcontractors involved, to meet the completion date, or milestones, established for the contract. Scheduling of the work shall be coordinated with the Owner and Engineer.
- B. The Construction Sequence Requirements shall be used by the Contractor to form a complete schedule for the project, which shall be coordinated with the Owner and Engineer. Prior to performing any work at the site, the Contractor shall submit a detailed plan to the Engineer for review. The plan shall describe the proposed sequence, methods, and timing of the work.

### 3.02 CONSTRUCTION SEQUENCING REQUIREMENTS:

- A. Work is anticipated to be done in two stages for maintenance of water control to maintain a water elevation of 543.0 in the pond at all times.

END OF SECTION

Document11

## SECTION 01110

### CONTROL OF WORK AND MATERIALS

#### PART 1 – GENERAL

Not Used.

#### PART 2 – PRODUCTS

Not Used

#### PART 3 - EXECUTION

##### 3.01 HAULING, HANDLING AND STORAGE OF MATERIALS:

- A. The Contractor shall, at its own expense, handle and haul all materials furnished by it and shall remove any of its surplus materials at the completion of the work.
- B. The Contractor shall provide suitable and adequate storage for equipment and materials furnished by it that are liable to injury and shall be responsible for any loss of or damage to any equipment or materials by theft, breakage, or otherwise.
- C. All excavated materials and equipment to be incorporated in the Work shall be placed so as not to injure any part of the Work or existing facilities and so that free access can be had at all times to all parts of the Work and to all public utility installations in the vicinity of the work. Materials and equipment shall be kept neatly piled and compactly stored in such location as will cause a minimum of inconvenience to public travel and adjoining owners, tenants and occupants.
- D. The Contractor shall be responsible for all damages to the work under construction during its progress and until final completion and acceptance even though partial payments have been made under the Contract.

##### 3.02 EASEMENTS:

- A. As indicated on the drawings, the work is located in easements obtained by the Owner. The Contractor has no rights outside of the easements unless they are obtained from the property owner.
- B. Contractor shall schedule work so that it will cause minimum inconvenience and nuisance to abutting property owners, over the shortest possible time.
- C. Easements shall be kept clean; no rubbish or discarded construction materials shall be allowed to accumulate. Storage of excess construction materials, including soil, ledge, equipment, or machinery on easements will not be allowed.

- D. Restoration of fences, shrubs, trees and grass shall be completed promptly following completion of the work in an easement, to minimize disruption and inconvenience to property owners.
- E. Unless approved by the Engineer, the use of easements for ease of access to and egress from other areas of the project will not be permitted.

### 3.03 OPEN EXCAVATIONS:

- A. All open excavations shall be adequately safeguarded by providing temporary barricades, caution signs, lights and other means to prevent accidents to persons, and damage to property. The Contractor shall, at its own expense, provide suitable and safe means for completely covering all open excavations and for accommodating travel when work is not in progress.
- B. Bridges provided for access to private property during construction shall be removed when no longer required.
- C. The length of open trench will be controlled by the particular surrounding conditions but shall always be confined to the limits prescribed by the Engineer.
- D. If the excavation becomes a hazard, or if it excessively restricts traffic at any point, then special construction procedures shall be taken, such as limiting the length of trench and prohibiting stocking excavated material in the street.
- E. All street excavations shall be completely closed at the end of each work day. Backfilling or use of steel plates of adequate strength to carry traffic shall be used.

### 3.04 MAINTENANCE OF TRAFFIC:

- A. Unless permission to close the street is received in writing from the proper authority, all excavated materials and equipment shall be placed so that vehicular and pedestrian traffic may be safely maintained at all times.
- B. Should the Chief of Police deem it necessary, uniformed officers will be assigned to direct traffic. The Contractor shall make all arrangements in obtaining uniformed officers required.
- C. The Contractor shall at its own expense, as directed by the Police Traffic Control/Safety Officer, provide and erect acceptable barricades, barrier fences, traffic signs, and all other traffic devices not specifically covered in a bid item, to protect the work from traffic, pedestrians, and animals. The Contractor shall provide sufficient temporary lighting such as lanterns/flashers (electric battery operated) or other approved illuminated traffic signs and devices to afford adequate protection to the traveling public, at no additional cost to the Owner. See Section 01552 CONSTRUCTION ZONE SAFETY PLAN.

- D. The Contractor shall furnish all construction signs that are deemed necessary by and in accordance with Part VI of the Manual on Uniform Traffic Control Devices as published by the U.S. Department of Transportation. In addition, the Contractor may be required to furnish up to 128 square feet of additional special construction warning signs. Size and exact wording of signs shall be determined by the Engineer during construction.
- E. The intent of policing is to ensure public safety by direction of traffic. Police officers are not to serve as watchmen to protect the Contractor's equipment and materials.
- F. Nothing contained herein shall be construed as relieving the Contractor of any of its responsibilities for protection of persons and property under the terms of the Contract.

### 3.05 CARE AND PROTECTION OF PROPERTY:

The Contractor shall be responsible for the preservation of all public and private property, and shall use every precaution necessary to prevent damage thereto. If any direct or indirect damage is done to public or private property by or on account of any act, omission, neglect, or misconduct in the execution of the work on the part of the Contractor, such property shall be promptly restored by the Contractor, at its expense, to a condition similar or equal to that existing before the damage was done, to the satisfaction of the Engineer.

### 3.06 PROTECTION AND RELOCATION OF EXISTING STRUCTURES AND UTILITIES:

- A. All existing buildings, utilities, pipes, poles, wires fences, curbing, property line markers and other structures which the Engineer decides must be preserved in place without being temporarily or permanently relocated, shall be carefully supported and protected from damage by the contractor. Should such property be damaged, it shall be restored by the Contractor, at no additional cost to the Owner.
- B. The Contractor shall determine the location of all underground structures and utilities (including existing water services, drain lines, electrical lines, and sewers). Services to buildings shall be maintained, and all costs or charges resulting from damage thereto shall be paid by Contractor.
- C. When fences interfere with the Contractor's operations, it shall remove and (unless otherwise specified) promptly restore them in accordance with Section 01564 EXISTING FENCES.
- D. On paved surfaces the Contractor shall not use or operate tractors, bulldozers, or other power-operated equipment with treads or wheels which are shaped so as to cut or otherwise damage such surfaces.

- E. All property damaged by the Contractor's operations shall be restored to a condition at least equal to that in which it was found immediately before work was begun. Suitable materials and methods shall be used for such restoration.
- F. Restoration of existing property and structures shall be carried out as promptly as practicable and shall not be left until the end of the construction period.

### 3.07 MAINTENANCE OF FLOW:

- A. The Contractor shall at its own cost, provide for the flow of sewers and drains interrupted during the progress of the work, and shall immediately cart away and dispose of all offensive matter. The entire procedure of maintaining existing flow shall be fully discussed with the Engineer well in advance of the interruption of any flow.
- B. All existing drainage facilities including, but not limited to; brooks, streams, canals, channels, ditches, culverts, catch basins and drainage piping shall be adequately safeguarded so as not to impede drainage or to cause siltation of downstream areas in any manner whatsoever. If the Contractor damages or impairs any of the aforesaid drainage facilities, it shall repair the same within the same day.
- C. At the conclusion of the work, the Contractor shall remove all silt in drainage structures caused by its operations as described in Section 01740, CLEANING UP.

### 3.08 REJECTED MATERIALS AND DEFECTIVE WORK:

- A. Materials furnished by the Contractor and condemned by the Engineer as unsuitable or not in conformity with the specifications shall forthwith be removed from the work by the Contractor, and shall not be made use of elsewhere in the work.
- B. Any errors, defects or omissions in the execution of the work or in the materials furnished by the Contractor, even though they may have been passed or overlooked or have appeared after the completion of the work, discovered at any time before the final payment is made hereunder, shall be forthwith rectified and made good by and at the expense of the Contractor and in a manner satisfactory to the Engineer.
- C. The Contractor shall reimburse the Owner for any expense, losses or damages incurred in consequence of any defect, error, omission or act of the Contractor or its employees, as determined by the Engineer, occurring previous to the final payment.

### 3.09 SANITARY REGULATIONS:

Sanitary conveniences for the use of all persons employed on the work, properly screened from public observation, shall be provided in sufficient numbers in such manner and at such locations as may be approved. The contents shall be removed and disposed of in a satisfactory manner as the occasion requires. The Contractor shall rigorously prohibit the committing of nuisances within, on or about the work. Any employees found violating these provisions shall be discharged and not again employed

on the work without the written consent of the Engineer. The sanitary conveniences specified above shall be the obligation and responsibility of the Contractor.

3.10 SAFETY AND HEALTH REGULATIONS:

This project is subject to the Safety and Health regulations of the U.S. Department of Labor set forth in 29 CFR, Part 1926, and to the Massachusetts Department of Labor and Industries, Division of Industrial Safety "Rules and Regulations for the Prevention of Accidents in Construction Operations (454 CMR 10.0 et. seq.)." The Contractor shall be familiar with the requirements of these regulations.

3.11 SITE INVESTIGATION:

The Contractor acknowledges that it has satisfied itself as to the conditions existing at the site of the work, the type of equipment required to perform this work, the quality and quantity of the materials furnished insofar as this information is reasonably ascertainable from an inspection of the site, as well as from information presented by the drawings and specifications made a part of this contract. Any failure of the Contractor to acquaint itself with available information will not relieve it from the responsibility for estimating properly the difficulty or cost of successfully performing the work. The Owner assumes no responsibility for any conclusion or interpretation made by the Contractor on the basis of the information made available by the Owner.

END OF SECTION

## SECTION 01140

### SPECIAL PROVISIONS

#### PART 1 - GENERAL

Not used

#### PART 2 - PRODUCTS

Not used

#### PART 3 - EXECUTION

##### 3.01 WATER FOR CONSTRUCTION PURPOSES:

- A. In locations where water is in sufficient supply, the Contractor may be allowed to use water without charge for jetting backfill and other construction purposes. The express approval of the Owner shall be obtained before water is used. Waste of water by the Contractor shall be sufficient cause for withdrawing the privilege of unrestricted use.
- B. If no water is available, the Contractor shall supply water at no additional cost to the Owner.

##### 3.02 PIPE LOCATION:

Pipe shall be located substantially as indicated on drawings. The Owner reserves the right, acting through the Engineer, to make such modifications as may be deemed desirable to avoid interference with existing structures or for other reasons.

##### 3.03 DIMENSIONS OF EXISTING STRUCTURES:

Where the dimensions and locations of existing structures are of critical importance in the installation or connections of new work, the Contractor shall verify such dimensions and locations in the field before the fabrication of any material or equipment that is dependent on the correctness of such information.

##### 3.04 OCCUPYING PRIVATE PROPERTY:

The Contractor shall not enter upon nor occupy with men, equipment or materials any property outside of the public highways or Owner's easements, except with the written consent of the property owner or property owner's agent.

##### 3.05 EXISTING UTILITY LOCATIONS – CONTRACTOR'S RESPONSIBILITY:

- A. The location of existing underground services and utilities shown on the drawings is based on available records. It is not warranted that all existing utilities and services are shown, or that shown locations are correct. The Contractor shall be responsible for having the utility companies locate their respective utilities on the ground prior to excavating.
- B. To satisfy the requirements of **Massachusetts law, Chapter 82, Section 40**, the Contractor shall, at least 72 hours, exclusive of Saturdays, Sundays and holidays, prior to excavation in the proximity of telephone, gas, cable television and electric utilities, notify the utilities concerned by calling "DIG SAFE" at telephone number: 1-888-344-7233.
- C. The Contractor shall coordinate all work involving utilities and shall satisfy itself as to the existing conditions of the areas in which it is to perform his work. It shall conduct and arrange its work so as not to impede or interfere with the work of other contractors working in the same or adjacent areas.

3.06 COORDINATION OF WORK:

The General Contractor shall be responsible for coordinating its own work as well as that of any subcontractors. It shall be responsible for notification of the Engineer when each phase of work is expected to begin and the approximate completion date.

3.07 TIME FOR COMPLETION OF CONTRACT:

The time for completion of this contract is stipulated in the Form of/for General Bid. The Bidder shall base its bid on completing the proposed work by the completion date stipulated in Section 00410, FORM OF GENERAL BID/FORM FOR GENERAL BID.

3.08 MAINTENANCE OF TRENCH SURFACE:

After backfilling and compacting the trench, the Contractor shall be responsible for keeping the ground surface dry and passable at all times until the surface has been restored to original conditions.

3.09 WETLANDS PROTECTION SIGN:

A sign not less than two square feet in size shall be displayed at the site. The sign shall bear the words "Massachusetts Department of Environmental Protection, Wetland Division, File Number \_\_\_\_."

3.10 COMPLIANCE WITH PERMITS:

- A. The Contractor shall perform all work in conformance with requirements of the Permits, which appear in Section 00890 – PERMITS.

3.11 CUTTING, FITTING AND PATCHING:

- A. The Contractor shall do all cutting, fitting, or patching of its work that may be required to make its several parts come together properly and fit it to receive or be received by work of other Contractors, as shown upon or reasonably implied by the drawings and the specifications for the completed structure, including all existing work.
- B. The Contractor shall not endanger any work by cutting, digging, or otherwise and shall not cut or alter the work of any other Contractor, save with the consent of the Engineer.
- C. All holes or openings required to be made in new or existing work, particularly at pipe, conduit, or other penetrations not covered by escutcheons or plates shall be neatly patched. All such holes shall be made completely watertight as approved by the Engineer.
- D. Size and locations of holes required in steel, concrete, or other structural or finish materials for piping, wiring, ducts, etc., which have not been located and detailed on the drawings shall be approved by the Engineer prior to layout and cutting thereof. All holes shall be suitably reinforced as required by the Engineer.
- E. Workmanship and materials of patching and repair work shall match the adjacent similar work and shall conform to the applicable sections of the specification. Patches and joints with existing work shall provide, as applicable in each case, visual, structural, and waterproofing continuity.

### 3.12 CONNECTIONS TO EXISTING WATER SYSTEMS:

- A. The Owner will, upon **72-hour (note-make sure this agrees with the time given on the drawings – note 23 on G-1 says 72 hr.)** notice from the Contractor, assist the Contractor by locating and opening or closing any and all valves required for draining or admitting water to the various sections of the water main as required to perform the proposed work. No damages shall be claimed by the Contractor for delays in dewatering pipelines nor shall any damages be claimed because of water leaking through closed valves after dewatering is completed.
- B. Connections to the existing distribution system shall be made with the mains under pressure unless the lines can be temporarily taken out of service as approved by the Owner.
- C. The Contractor will be required to make test excavations to ascertain that the proposed position of the connections will be clear of joints, fittings, or other obstructions.
- D. If any failure occurs in connection to existing mains, service shall be restored in the shortest possible time, the Contractor working around the clock, if necessary. The Contractor shall cooperate with the Owner in notifying the consumers or supplying emergency water. If required by Owner, the Contractor shall make connections to water mains during night hours, on Sunday or at other times of off-peak demand for water.

### 3.13 PROTECTION OF AQUIFER:

The Contractor's attention is directed to the fact that the construction area is located within the watershed of the existing water supply. The Contractor shall take extra precautions to ensure that no pollutants enter the groundwater table from the construction area. The Contractor shall not store fuels or other hazardous materials or potential contaminants on the construction site. In the event of a spill, the Contractor shall immediately notify the Engineer.

3.14 CONTRACTOR'S REPRESENTATIVE:

The Contractor shall designate a representative who will be available to respond to emergency calls by the Owner at any time day and night and on weekends and holidays should such a situation arise.

3.15 VISUAL RECORDING:

Before beginning construction, the Contractor shall make a color DVD recording along the entire work length. One complete recording, for the entire project length, shall be furnished to the Engineer prior to the start of the work. The visual recording shall be identified by street name, as applicable, and station.

3.16 HOURS OF CONSTRUCTION ACTIVITY:

- A. The Contractor shall conduct all construction activity between 7:00 a.m. and 5:00 p.m., Monday through Friday. No construction work shall be allowed on Saturdays, Sundays or Holidays without written authorization from the Owner.
- B. The Owner will provide personnel for assistance in locating and operating valves at no cost to the Contractor during the Owner's normal working hours (**Monday through Friday 7:00 a.m. to 3:00 p.m.**). When this assistance is required by the Contractor outside of the Owner's normal working hours the cost will be incurred by the Contractor at the prevailing overtime rate of pay for the personnel providing the assistance. The Owner will bill the Contractor directly.

3.17 CONSTRUCTION CREWS:

The Contractor shall not increase the number of construction crews assigned to the work without providing one-week advance notice to the Engineer.

3.18 MASSACHUSETTS DATA SECURITY REGULATIONS:

The Contractor is required to comply with data security regulations contained in 201 CMR 17.00 that have been established to safeguard personal information of Massachusetts residents contained in paper or electronic records. The Contractor shall not submit to the Engineer or Owner documents in paper or electronic form that contain personal information (person's name combined with one or more of the following – Social Security Number, driver's license number or state-issued identification card number, financial

institution account number, or credit or debit card number). Any document submitted to the Engineer that violates this provision shall be returned to the Contractor and the Contractor shall remove personal information from the document prior to resubmitting it to the Engineer. The Contractor shall require each Subcontractor to also comply with the MA data security regulations insofar as they involve submittal of personal information to the Engineer and Owner.

END OF SECTION

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## SECTION 01330

### SUBMITTALS

#### PART 1 - GENERAL

##### 1.01 WORK INCLUDED:

- A. The Contractor shall provide the Engineer with submittals as required by the contract documents.

##### 1.02 RELATED WORK:

- A. Divisions 1 – 2 of these specifications that require submittals.

#### PART 2 - PRODUCTS

NOT USED

#### PART 3 - EXECUTION

##### 3.01 GENERAL:

- A. As required by the General Conditions, Contractor shall submit a schedule of shop and working drawing submittals.
- B. The Contractor shall submit the shop and working drawing submittals either electronically or hard copy.

##### 3.02 ELECTRONIC SUBMITTALS:

- A. In accordance with the accepted schedule, the Contractor shall submit promptly to the Engineer by email (davida@wseinc.com) or on Compact Disc (mail to Weston & Sampson Engineers, attention: CSD), one electronic copy in Portable Document Format (PDF) of shop or working drawings required as noted in the specifications, of equipment, structural details and materials fabricated especially for this Contract.
- B. Each electronic copy of the shop or working drawing shall be accompanied by the Engineer's standard shop drawing transmittal form, included as Exhibit 1 of this section (use only for electronic submittals), on which is a list of the drawings, descriptions and numbers and the names of the Owner, Project, Contractor and building, equipment or structure.
- C. The Contractor shall receive a shop drawing memorandum with the Engineer's approval or comments via email.

3.03 HARD COPY SUBMITTALS:

- A. In accordance with the accepted schedule, the Contractor shall submit promptly to the Engineer, by mail (to Weston & Sampson Engineers, attention: CSD), six (6) copies each of shop or working drawings required as noted in the specifications, of equipment, structural details and materials fabricated especially for this Contract.
- B. Each shipment of drawings shall be accompanied by the Engineer's (if applicable) standard shop drawing transmittal form on which is a list of the drawings, descriptions and numbers and the names of the Owner, Project, Contractor and building, equipment or structure.

3.04 SHOP AND WORKING DRAWINGS:

- A. Shop and working drawings shall show the principal dimensions, weight, structural and operating features, space required, clearances, type and/or brand of finish of shop coat, grease fittings, etc., depending on the subject of the drawings. When it is customary to do so, when the dimensions are of particular importance, or when so specified, the drawings shall be certified by the manufacturer or fabricator as correct for this Contract.
- B. All shop and working drawings shall be submitted to the Engineer by and/or through the Contractor, who shall be responsible for obtaining shop and working drawings from his subcontractors and returning reviewed drawings to them. All shop and working drawings shall be prepared on standard size, 24-inch by 36-inch sheets, except those, which are made by changing existing standard shop or working drawings. All drawings shall be clearly marked with the names of the Owner, Project, Contractor and building, equipment or structure to which the drawing applies, and shall be suitably numbered. Each shipment of drawings shall be accompanied by the Engineer's (if applicable) standard shop drawing transmittal form on which is a list of the drawings, descriptions and numbers and the names mentioned above.
- C. Only drawings that have been prepared, checked and corrected by the fabricator should be submitted to the Contractor by his subcontractors and vendors. Prior to submitting drawings to the Engineer, the Contractor shall check thoroughly all such drawings to satisfy himself that the subject matter thereof conforms to the Contract Documents in all respects. Shop drawings shall be reviewed and marked with the date, checker's name and indication of the Contractor's approval, and only then shall be submitted to the Engineer. Shop drawings unsatisfactory to the Contractor shall be returned directly to their source for correction, without submittal to the Engineer. Shop drawings submitted to the Engineer without the Contractor's approval stamp and signature will be rejected. Any deviation from the Contract Documents indicated on the shop drawings must be identified on the drawings and in a separate submittal to the Engineer, as required in this section of the specifications and General Conditions.
- D. The Contractor shall be responsible for the prompt submittal and resubmittal, as necessary, of all shop and working drawings so that there will be no delay in the work due to the absence of such drawings.

- E. The Engineer will review the shop and working drawings as to their general conformance with the design concept of the project and general compliance with the information given in the Contract Documents. Corrections of comments made on the drawings during the review do not relieve the Contractor from compliance with requirements of the Contract Documents. The Contractor is responsible for: confirming and correlating all quantities and dimensions; selecting fabrication processes and techniques of construction; coordinating his work with that of all other trades; and performing his work in a safe and satisfactory manner. The review of the shop drawings is general and shall not relieve the Contractor of the responsibility for details of design, dimensions, code compliance, etc., necessary for interfacing with other components, proper fitting and construction of the work required by the Contract and for achieving the specified performance. The Engineer will review submittals two times: once upon original submission and a second time if the Engineer requires a revision or corrections. The Contractor shall reimburse the Owner amounts charged to the Owner by the Engineer for performing any review of a submittal for the third time or greater.
- F. With few exceptions, shop drawings will be reviewed and returned to the Contractor within 30 days of submittal.
- G. No material or equipment shall be purchased or fabricated especially for this Contract nor shall the Contractor proceed with any portion of the work, the design and details of which are dependent upon the design and details of equipment or other features for which review is required, until the required shop and working drawings have been submitted and reviewed by the Engineer as to their general conformance and compliance with the project and its Contract Documents. All materials and work involved in the construction shall then be as represented by said drawings.
- H. Two copies of the shop and working drawings and/or catalog cuts will be returned to the Contractor. The Contractor shall furnish additional copies of such drawings or catalog cuts when he needs more than two copies or when so requested.

3.05 SAMPLES:

- A. Samples specified in individual Sections include, but are not necessarily limited to, physical examples of the work such as sections of manufactured or fabricated work, small cuts or containers of materials, complete units of repetitively-used products, color/texture/pattern swatches and range sets, specimens for coordination of visual effect, graphic symbols, and units of work to be used by the Engineer or Owner for independent inspection and testing, as applicable to the work.
- B. The number of samples submitted shall be as specified. Submittal and processing of samples shall follow the procedures outlined for shop and working drawings unless the specifications call for a field submittal or mock-up.
- C. Acceptance of samples will be acknowledged via a copy of the transmittal noting status. When samples are not acceptable, prompt resubmittal will be required.

END OF SECTION

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EXHIBIT 1 TO SECTION 01330 SUBMITTALS  
SHOP DRAWING TRANSMITTAL FORM

Shop Drawing Transmittal				Weston & Sampson <sup>SM</sup>			
<b>Instruction for Preparing Transmittal</b> No action will be taken on any item unless accompanied by this form. TRANSMITTAL NOS. to be consecutive (1, 2, 3, etc.). Each resubmittal of same item shall use same number with suffix letter (A, B, etc.). SPEC. SECT. NO: Only one spec. section no. to each transmittal. DESCRIPTION: Complete identification of document or group of documents. SOURCE: Originator of document(s) being submitted.				DRAWING NO: Identification of document(s). CONTRACT DRAWING REFERENCE: Contract drawing number(s) showing details of document(s). SPECIAL INSTRUCTIONS: Special cases and emergencies, changes in distribution and special handling requests, etc. should be entered here. SIGNATURE OF CONTRACTOR: Signature of individual who reviews and approves material prior to submittal to engineer.			
THIS SECTION TO BE COMPLETED BY CONTRACTOR							
TRANSM. NO.		SPEC. SECT. NO.		DATE		CONTRACTORS JOB NO. W&S JOB NO.	
PROJECT NAME & CONTRACT NO.				LOCATION			
Attention: CSD ( <a href="mailto:David@wseinc.com">David@wseinc.com</a> ) Weston & Sampson Engineers, Inc. 55 Walkers Brook Drive Reading, MA 01867				BY W&S			
T O				F R O M			
ITEM NO.	DESCRIPTION			SOURCE	DRAWING NO. CATALOG NO. BROUCHURE, ETC	NO. OF COPIES	CONTRACT DRAWING REF.
1							
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3							
4							
THIS CERTIFIES THAT ALL ITEMS SUBMITTED HEREWITH HAVE BEEN CHECKED BY THE CONTRACTOR, ARE IN CONFORMANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS, EXCEPT AS NOTED, AND ARE APPROVED BY THE CONTRACTOR FOR THIS PROJECT.							
THIS SECTION TO BE COMPLETED BY W&S							
ACTION CODE: 1. FURNISH AS SUBMITTED 2. FURNISH AS NOTED 3. REVISE AND RESUBMIT 4. REJECTED- SEE REMARKS 5. ACKNOWLEDGEMENT 6. SUBMITTAL NOT REQUIRED, RETURNED WITHOUT REVIEW				SIGNATURE & TITLE			
1. INSTALLATION SHALL PROCEED ONLY WHEN ACTION CODE IS 1 OR 2 2. ACTION CODED 3 SHALL BE RESUBMITTED WITHIN TIME LIMIT SET IN CONTRACT 3. REVIEW DOES NOT RELIEVE CONTRACTOR FROM RESPONSIBILITY OF COMPLIANCE WITH ALL REQUIREMENTS OF THE CONTRACT DOCUMENTS				Weston & Sampson			

## SECTION 01380

### HEALTH AND SAFETY PLAN

#### PART 1 - GENERAL

##### 1.01 WORK INCLUDED:

- A. Prior to the start of work on the site, Contractor shall prepare and submit a site-specific health and safety plan that includes consideration of all known and potential hazards at the site. Work may not proceed at the project site until the Contractor's health and safety plan has been received and reviewed by the Engineer.

##### 1.02 REFERENCES:

- A. OSHA 29 CFR 1910.120

#### PART 2 – PRODUCTS

##### 2.01 HEALTH AND SAFETY PLAN:

- A. The health and safety plan shall include, but not necessarily be limited to the following:
  - 1. Identification of Contractor's Site Safety Officer.
  - 2. Identification of Hazards and Risks Associated with Project.
  - 3. Contractor's Standard Operating Procedures, Including Personnel Training and Field Orientation.
  - 4. Respiratory Protection Training Requirements.
  - 5. Levels of Protection and Selection of Equipment Procedures.
  - 6. Type of Medical Surveillance Program.
  - 7. Personal Hygiene Requirements and Guidelines.
  - 8. Zone Delineation of the Project Site.
  - 9. Site Security and Entry Control Procedures.
  - 10. Field Monitoring of Site Contaminants.
  - 11. Contingency and Emergency Procedures.

12. Listing of Emergency Contacts.

PART 3 - EXECUTION

3.01 PERSONAL PROTECTIVE EQUIPMENT:

- A. The personal protective equipment required to provide the appropriate level of dermal and respiratory protection shall be determined based on the results of continuous air monitoring performed by the Contractor and the standards set forth in the Contractor's health and safety plan. The Engineer may conduct duplicate air monitoring for quality control purposes. Modified Level D protection shall be the minimum requirement for all on-site personnel.

END OF SECTION

Document24

SECTION 01550  
SIGNAGE (TRAFFIC CONTROL)

PART 1 - GENERAL

1.01 WORK INCLUDED:

This Section covers furnishing and installing traffic control signs and other devices.

1.02 SYSTEM DESCRIPTION:

The Contractor shall furnish and install all construction signs deemed necessary by and in accordance with the latest edition of Part VI of the Manual on Uniform Traffic Control Devices(MUTCD) as published by the U.S. Department of Transportation.

PART 2 - PRODUCTS

2.01 TRAFFIC WARNING AND REGULATING DEVICES:

Contractor shall provide warning signs, barricades and other devices in accordance with the specifications provided in the MUTCD. Size of signs, lettering, colors, method of support and other factors prescribed in the MUTCD shall be adhered to.

PART 3 - EXECUTION

3.01 INSTALLATION:

- A. Contractor shall erect barricades, barrier fences, traffic signs, and other traffic control devices as required by the MUTCD, or as required by the Engineer, to protect the work area from traffic, pedestrians, and animals.
- B. Contractor shall relocate barricades, signs and other devices as necessary as the work progresses.
- C. Unless extended protection is required for specific areas, when the work has been completed, all temporary warning and regulatory devices used by the Contractor shall be removed so that traffic can move unimpeded through the area.

END OF SECTION

## SECTION 01552

### CONSTRUCTION ZONE SAFETY PLAN

#### PART 1 - GENERAL

##### 1.01 WORK INCLUDED:

- A. This Section covers the provisions for complying with Commonwealth of Massachusetts requirements for construction zone safety plans on public works projects.

##### 1.02 DESCRIPTION:

- A. The Contractor shall implement traffic safety and control measures through the construction zone through road closures and detours and mitigate impacts on traffic outside of the construction zone in accordance with these contract documents.

##### 1.03 RELATED WORK:

- A. SECTION 01110, CONTROL OF WORK AND MATERIALS (MAINTENANCE OF TRAFFIC)
- B. SECTION 01550, SIGNAGE (TRAFFIC CONTROL)
- C. SECTION 01553, UNIFORMED OFFICERS FOR TEMPORARY TRAFFIC CONTROL

##### 1.04 REFERENCES:

701 CMR 7.00 Use of Road Flaggers and Police Details on Public Works Projects

Massachusetts Department of Transportation Standard Specifications for Highways and Bridges – latest edition

#### PART 2 - PRODUCTS

- 2.01 Traffic control devices utilized by the Contractor shall meet the requirements of these contract documents and the latest Massachusetts Department of Transportation (MassDOT) Standard Specifications and Manual On Uniform Traffic Control Devices (MUTCD).

#### PART 3 - EXECUTION

##### 3.01 OPERATION:

- A. Contractor shall be responsible for providing all temporary traffic control devices including barricades, barrier fences, signs, drums, cones, impact attenuators and other traffic control

devices in accordance with typical traffic management plans and details shown on the drawings or as required by the Engineer.

- B. The Contractor shall prepare temporary traffic management plans and details that deviates significantly from the typical plans shown on the drawings and submit to the Engineer for review and approval prior to start of the work.
- C. Contractor shall relocate barricades, signs and other devices as necessary as the work progresses as required by the Owner's Traffic Control Officer or the Engineer.
- D. Police details and/or road flaggers shall be utilized on this project at the limits of work.
- E. If police details and/or road flaggers fail to show up for work at the construction zone at the usual time for start of work, or otherwise leave the jobsite before work is completed for the day, the provisions of the Alternative Plan will be followed by the Contractor.

### 3.02 ALTERNATIVE PLAN:

- A. In accordance with 701 CMR 7.06(6), whenever required police details/road flaggers do not arrive on time or fail to show up for work, the Alternative Plan will be implemented by the Contractor.
- B. The Alternative Plan for this project is as follows:
  - 1. Contact MassDOT District Area Construction Engineer, local police department and municipality to inform them the scheduled police detail has failed to show up at the project site and that road flaggers are being utilized.
  - 2. If construction zone is within a high-speed area (> 40mph) the Contractor cannot use road flaggers and must stop work until police details arrive. If construction zone is within a low-speed area (< 40mph) the Contractor can use road flaggers who have been trained and certified in temporary roadway flagging.
  - 3. Redeploy crew to work in areas not requiring temporary traffic control (if available).

END OF SECTION

## SECTION 01553

### UNIFORMED OFFICERS FOR TEMPORARY TRAFFIC CONTROL

#### PART 1 - GENERAL

##### 1.01 WORK INCLUDED:

- A. This Section covers the provisions for furnishing Uniformed Officers for Traffic Control and Maintenance of Traffic as described in Section 01110 CONTROL OF WORK AND MATERIALS.

##### 1.02 DESCRIPTION:

- A. The Contractor shall coordinate with the local jurisdiction's Traffic Control Officer to determine the number of Officers deemed necessary to provide for public safety and to maintain a smooth flow of traffic through the construction area(s) affected.

##### 1.03 RELATED WORK:

- A. SECTION 01110, CONTROL OF WORK AND MATERIALS (MAINTENANCE OF TRAFFIC)
- B. SECTION 01550, SIGNAGE (TRAFFIC CONTROL)
- C. SECTION 01552, CONSTRUCTION ZONE SAFETY PLAN

#### PART 2 - PRODUCTS

##### 2.01 UNIFORMED OFFICERS:

- A. Contractor shall provide the Traffic Control Officer with a minimum of 24 hours notice indicating the time of day, street location and confirm number of officers required for traffic control.
- B. Contractor shall give the Traffic Control Officer a minimum of 2 hours prior cancellation notice should Contractor determine that due to weather or conditions beyond his control he would not need the scheduled officers.
- C. Contractor shall pay for officer(s) at the prevailing rate established by the local police department should officers not be needed and the Contractor fails to cancel the officers as noted in 2.01.B above.

- D. Where the Owner is paying directly for Traffic Officers and the Contractor cancels scheduled officers, the Contractor shall be responsible for payment of the wages for cancellations if not cancelled in accordance with 2.01.B and 2.01.C above.

### PART 3 - EXECUTION

#### 3.01 OPERATION:

- A. Contractor shall provide barricades, barrier fences, traffic signs, and other traffic control devices as required by the Owners Traffic Control Officer, or as required by the Engineer, to protect the work area from traffic, pedestrians, and animals.
- B. Contractor shall relocate barricades, signs and other devices as necessary as the work progresses as required by the Owners Traffic Control Officer or the Engineer.

END OF SECTION

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## SECTION 01562

### DUST CONTROL

#### PART 1 - GENERAL

##### 1.01 DESCRIPTION:

This section of the specification covers the control of dust.

#### PART 2 - PRODUCTS

##### 2.01 WATER:

A Water shall not be brackish and shall be free from oil, acid, and injurious alkali or vegetable matter.

#### PART 3 - EXECUTION

##### 3.01 APPLICATION:

A. Water may be sprinkler applied with equipment including a tank with gauge-equipped pressure pump and a nozzle-equipped spray bar.

B. Water shall be dispersed through the nozzle under a minimum pressure of 20 pounds per square inch, gauge pressure.

END OF SECTION

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## SECTION 01570

### ENVIRONMENTAL PROTECTION

#### PART 1 – GENERAL

##### 1.01 DESCRIPTION:

- A. The work covered by this section of the specifications consists of furnishing all labor, materials, tools and equipment and performing all work required for the prevention of environmental pollution during and as a result of construction operations under this contract.
- B. The requirements set forth in this section of the specifications apply to construction adjacent to wetlands, unless otherwise specifically stated.
- C. All work under this Contract shall be in accordance with the Conservation Commissions' Orders of Conditions as well as any conditional requirements applied.
- D. Prior to commencement of work, the Contractor shall meet with representatives of the Engineer to develop mutual understandings relative to compliance of the environmental protection program.

##### 1.02 SUBMITTALS:

- A. The Contractor shall submit for approval six sets of details and literature fully describing environmental protection methods to be employed in carrying out construction activities within 100 feet of wetlands or across areas designated as wetlands.

#### PART 2 - PRODUCTS

##### 2.01 STRAW BALES:

- A. Straw bales shall consist of certified seed free stems of agricultural grain and cereal crops and shall be free of grasses and legumes. Standard bales shall be 14-inches high, 18- inches wide and 36- to 40-inches long tied with polypropylene twine and weigh within 5 percent of 7 lbs. per cubic ft.

##### 2.02 CATCH BASIN PROTECTION:

- A. To trap sediment and to prevent sediment from clogging drainage systems, catch basin protection in the form of a siltation sack (Silsack as manufactured by ACF Environmental, Inc. or approved equal) shall be provided as approved by the Engineer.

##### 2.03 COMPOST FILTER TUBES:

- A. Silt socks shall be a tubular filter sock of mesh fabric. The fabric will have openings of between 1/8" to 1/4" diameter. The mesh material will either photo degrade within one year or be made of nylon with a life expectancy of 24 months. The sock shall be filled with a mix of composted leaf mulch, bark mulch and wood chips that have been composted for at least one year. The sock will have a minimum diameter of 12-inches.

#### 2.04 TURBIDITY CURTAIN:

- A. The turbidity curtain shall comply with all applicable permits and be a Type-1-Silt-Barrier consisting of 18-ounce vinyl fabric skirt with a 6-inch marine quality flotation device. The skirt shall be ballasted to hang vertical in the water column by a minimum 3/16-inch galvanized chain. The turbidity curtain shall extend into the water as shown on the drawings. If necessary, join adjacent ends of the turbidity curtain by connecting the reinforcing grommets and shackling ballast lines.
- B. Petroleum-absorbent booms shall be attached to the marine quality flotation device as shown on the Drawings.

### PART 3- EXECUTION

#### 3.01 NOTIFICATION AND STOPPAGE OF WORK:

- A. The Engineer will notify the Contractor in writing of any non-compliance with the provisions of the Order of Conditions. The Contractor shall, after receipt of such notice, immediately take corrective action. Such notice, when delivered to the Contractor or his authorized representative at the site of the work, shall be deemed sufficient for the purpose. If the Contractor fails to act promptly, the Owner may order stoppage of all or part of the work through the Engineer until satisfactory corrective action has been taken. No claim for an extension of time or for excess costs or damage incurred by the Contractor as a result of time lost due to any stop work orders shall be made unless it was later determined that the Contractor was in compliance.

#### 3.02 AREA OF CONSTRUCTION ACTIVITY:

- A. Insofar as possible, the Contractor shall confine his construction activities to those areas defined by the plans and specifications. All land resources within the project boundaries and outside the limits of permanent work performed under this contract shall be preserved in their present condition or be restored to a condition after completion of construction at least equal to that which existed prior to work under this contract.

#### 3.03 PROTECTION OF WATER RESOURCES:

- A. The Contractor shall not pollute streams, lakes or reservoirs with fuels, oils, bitumens, calcium chloride, acids or other harmful materials. It is the Contractor's responsibility to comply with all applicable Federal, State, County and Municipal laws regarding pollution of rivers and streams.
- B. Special measures should be taken to insure against spillage of any pollutants into public waters.

#### 3.04 CONSTRUCTION IN AREAS DESIGNATED AS BUFFER ZONE ON THE DRAWINGS:

- A. Insofar as possible, the Contractor shall make every effort to minimize disturbance within 100-feet of wetland resource areas.
- B. The Contractor shall perform his work in such a way that these areas are left in the condition existing prior to construction.

### 3.05 PROTECTING AND MINIMIZING EXPOSED AREAS:

- A. The Contractor shall limit the area of land which is exposed and free from vegetation during construction. In areas where the period of exposure will be greater than two (2) months, temporary vegetation, mulching or other protective measures shall be provided as specified.
- B. The Contractor shall take account of the conditions of the soil where temporary cover crop will be used to insure that materials used for temporary vegetation are adaptive to the sediment control. Materials to be used for temporary vegetation shall be approved by the Engineer.

### 3.06 LOCATION OF STORAGE AREAS:

- A. The location of the Contractor's storage areas for equipment and/or materials shall be upon cleared portions of the job site or areas to be cleared as a part of this project, and shall require written approval of the Engineer. Plans showing storage facilities for equipment and materials shall be submitted for approval of the Engineer.
- B. No excavated materials or materials used in backfill operations shall be deposited within a minimum distance of one hundred (100) feet of any watercourse or any drainage facility. Adequate measures for erosion and sediment control such as the placement of compost filter tubes around the downstream perimeter of stockpiles shall be employed to protect any downstream areas from siltation.
- C. There shall be no storage of equipment or materials in areas designated as wetlands.
- D. The Engineer may designate a particular area or areas where the Contractor may store materials used in his operations.

### 3.07 CLEARING AND GRUBBING:

- A. The Contractor shall clear and grub only on the Owner's land, and only the area required for construction operations, as approved by the Engineer.

### 3.08 DISCHARGE OF DEWATERING OPERATIONS:

- A. Any water that is pumped and discharged from excavation efforts as part of the Contractor's water handling shall be filtered by an approved method prior to its discharge into a receiving water or drainage system.
- B. Under no circumstances shall the Contractor discharge water to the areas designated as wetlands.
- C. The pumped water shall be filtered through filter fabric and baled straw, a vegetative filter strip or a vegetated channel to trap sediment occurring as a result of the construction operations. The vegetated channel shall be constructed such that the discharge flow rate shall not exceed a velocity of more than 1 foot per second. Accumulated sediment shall be cleared from the channel periodically.

### 3.09 TURBIDITY MONITORING:

- A. The Engineer will perform turbidity monitoring a minimum of six (6) times per day once cofferdam construction and sediment removal activities commence in accordance with the MassDEP approved Turbidity Monitoring Plan and Condition #10 of the 401 Water Quality Certification (refer to Attachment B of Section 08900 – PERMITS).
- B. An unacceptable increase in turbidity level is defined as two times the background levels. If unacceptable turbidity levels are noted or a sheen is observed downstream of the oil absorbent booms, the Contractor shall stop work, identify the reason for increased turbidity levels or sheen, and implement corrective measures.

### 3.10 DUST CONTROL:

- A. During the progress of the work, the Contractor shall conduct his operations and maintain the area of his activities, including sweeping and sprinkling of streets as necessary, to minimize creation and dispersion of dust. If the Engineer decides it is necessary to use calcium chloride for more effective dust control, the Contractor shall furnish and spread the material, as directed.
- B. Calcium Chloride shall not be used for dust control within a drainage basin or in the vicinity of any source of potable water.

### 3.11 CATCH BASIN PROTECTION:

- A. Catch basin protection shall be used for every catch basin, shown on the plans or as required by the Engineer, to trap sediment and prevent it from clogging drainage systems and entering wetlands. Siltation sacks shall be securely installed under the catch basin grate. Care shall be taken to keep the siltation sacks from breaking apart or clogging. All deposited sediment shall be removed periodically and at times prior to predicted precipitation to allow free drainage flow. Prior to working in areas where catch basins are to be protected, each catch basin sump shall be cleaned of all debris and protected. The contractor shall properly dispose of all debris at no additional cost to the Owner.

### 3.12 COMPOST FILTER TUBES:

- A. The silt socks will be staked in the ground using wooden stakes driven at 4-foot intervals. The wooden stakes will be placed at a minimum depth of 24-inches into the ground.

### 3.13 TURBIDITY CURTAIN:

- A. The turbidity curtain shall be a Type-1-Silt-Barrier consisting of 18-ounce vinyl fabric skirt with a 6-inch marine quality floatation device. The skirt shall be ballasted to hang vertical in the water column by a minimum 3/16-inch galvanized chain. The turbidity curtain shall extend into the water as shown on the drawings. If necessary, join adjacent ends of the turbidity curtain by connecting the reinforcing grommets and shackling ballast lines. The turbidity curtain and petroleum-absorbent booms shall be installed prior to the start of construction activities.
- B. The Contractor shall monitor and replace spent petroleum-absorbent booms periodically or under direction of the Engineer or Owner at not additional cost to the Owner.

## END OF SECTION

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## SECTION 01740

### CLEANING UP

#### PART 1 - GENERAL

##### 1.01 DESCRIPTION:

The Contractor must employ at all times during the progress of its work adequate cleanup measures and safety precautions to prevent injuries to persons or damage to property. The Contractor shall immediately, upon request by the Engineer provide adequate material, equipment and labor to cleanup and make safe any and all areas deemed necessary by the Engineer.

##### 1.02 RELATED WORK:

- A. Section 00700 GENERAL CONDITIONS
- B. Section 00890 PERMITS
- C. Section 01110 CONTROL OF WORK AND MATERIALS
- D. Section 01140 SPECIAL PROVISIONS
- E. Section 01570 ENVIRONMENTAL PROTECTION

#### PART 2 - PRODUCTS

Not applicable

#### PART 3 - EXECUTION

##### 3.01 DAILY CLEANUP:

- A. The Contractor shall clean up, at least daily, all refuse, rubbish, scrap and surplus material, debris and unneeded construction equipment resulting from the construction operations and sweep the area. The site of the work and the adjacent areas affected thereby shall at all times present a neat, orderly and workmanlike appearance.
- B. Upon written notification by the Engineer, the Contractor shall within 24 hours clean up those areas, which in the Engineer's opinion are in violation of this section and the above referenced sections of the specifications.

- C. If in the opinion of the Engineer, the referenced areas are not satisfactorily cleaned up, all other work on the project shall stop until the cleanup is satisfactory.
- D. All cleaning activities shall be performed in accordance with the permit requirements provided in Section 00890, PERMITS.

3.02 MATERIAL OR DEBRIS IN DRAINAGE FACILITIES:

- A. Where material or debris has washed or flowed into or has been placed in existing watercourses, ditches, gutters, drains, pipes, structures, such material or debris shall be entirely removed and satisfactorily disposed of during progress of the work, and the ditches, channels, drains, pipes, structures, and work shall, upon completion of the work, be left in a clean and neat condition.

3.03 REMOVAL OF TEMPORARY BUILDINGS, STRUCTURES AND EQUIPMENT:

- A. On or before completion of the work, the Contractor shall, unless otherwise specifically required or permitted in writing, tear down and remove all temporary buildings and structures it built; shall remove all temporary works, tools and machinery or other construction equipment it furnished; shall remove all rubbish from any grounds which it has occupied; shall remove erosion controls used for trapping sediment; and shall leave the roads and all parts of the property and adjacent property affected by its operations in a neat and satisfactory condition.

3.04 RESTORATION OF DAMAGED PROPERTY:

- A. The Contractor shall restore or replace, when and as required, any property damaged by its work, equipment or employees, to a condition at least equal to that existing immediately prior to the beginning of operations. To this end the Contractor shall do as required all necessary highway or driveway, walk and landscaping work. Materials, equipment, and methods for such restoration shall be as approved by the Engineer.

3.05 FINAL CLEANUP:

- A. Before acceptance by the Owner, the Contractor shall perform a final cleanup to bring the construction site to its original or specified condition. This cleanup shall include removing all trash and debris off of the premises. Before acceptance, the Engineer shall approve the condition of the site.

END OF SECTION

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## SECTION 01770

### PROJECT CLOSEOUT

#### PART 1 - GENERAL

##### 1.01 WORK INCLUDED:

- A. This Section covers administrative and procedural requirements for closing out the project, including, but not limited to:
  - 1. Project as-built documents
  - 2. Final Cleaning
  - 3. Substantial Completion
  - 4. Closeout Procedures
  - 5. Final Completion
  - 6. Correction/Warranty Period
- B. Closeout checklist to be completed by the Engineer.

##### 1.02 RELATED WORK:

- A. General Requirements in their entirety.
- B. Section 01740, CLEANING UP
- C. Division 2.

##### 1.03 AS-BUILT DOCUMENTS:

- A. Contractor shall maintain on site, separate from the documents used for construction, one set of the documents listed below, and as construction progresses, shall legibly record on these documents all changes made during construction.
  - 1. Contract Drawings.
  - 2. Specifications.
  - 3. Addenda.
  - 4. Change Orders and other Modifications to the Contract.

5. Reviewed shop drawings, product data, and samples.
  6. Written interpretations and clarifications.
  7. Field Orders.
  8. Field test reports properly verified.
- B. The completed set of as-built documents shall be submitted to the Engineer with the final Application for Payment.

1.04 FINAL CLEANING:

- A. Complete the following cleaning operations before requesting inspection for Certification of Substantial Completion.
1. Clean the site, including landscape development areas of rubbish, litter and other foreign substances. Sweep paved areas broom clean; remove stains, spills and other foreign deposits. Rake grounds that are neither paved nor planted, to smooth, even textured surfaces.
  2. Remove waste and surplus materials, rubbish, fencing equipment, temporary utilities and construction facilities from the site, unless otherwise required by the Engineer.
  3. Comply with requirements of Section 01740 CLEANING UP.

1.05 SUBSTANTIAL COMPLETION:

- A. Substantial Completion is officially defined in the General and Supplementary Conditions. The date of substantial completion will be certified by the Engineer. This date will not be certified until the following requirements have been satisfied by the Contractor:
1. All Contract requirements are coordinated into a fully operational system..
  2. All field tests have been satisfactorily completed and reports forwarded to the Engineer.

1.06 CLOSEOUT PROCEDURES:

- A. Submit written certification that Contract Documents have been reviewed, Work has been inspected, and is complete in accordance with Contract Documents and ready for Engineer's and Owner's inspection.
- B. Accompany Engineer and Owner on inspection to verify conformance with the Contract Documents. Prepare a punch list of work items that have been determined by inspection to

not conform to Contract Documents. Punch list items shall include work items that are missing, incomplete, damaged, incorrect items, or improperly installed or constructed. The Contractor shall correct the punch list deficiencies by re-work, modifications, or replacement, as appropriate, until the items conform to the Contract Documents. The initial punch list shall be produced by the Contractor, with copies to the Engineer and Owner. When the Contractor has reduced the number of deficient items to a reasonable level, the Engineer will develop a definitive punch list for the use of the Contractor.

- C. Provide submittals to Engineer that are required by governing or other authorities.
- D. Submit final Application for Payment identifying total adjusted Contract Sum, previous payments, and sum remaining due. The Contractor shall submit the following documents with or prior to Final Application for Payment: Set of as-built documents, Contract Completion and Acceptance Certificate, Consent of Surety to Final Payment, Release and Waiver of Liens and Claims (SECTION 01770 ATT. A), Affidavit of Payment of Debts and Claims, and remaining releases, waivers, warranties/guarantees, and all other data required by the Contract Documents.

1.07 FINAL COMPLETION:

- A. Prior to final completion, the following tasks shall be completed:
  - 1. All items in the punch list shall be completed.
  - 2. All Contract closeout documentation shall be submitted to and accepted by the Engineer.

1.08 CORRECTION/WARRANTY PERIOD:

- A. During the correction period, the Contractor shall correct all deficiencies in equipment and materials.
- B. During the warranty period, the Contractor shall perform all corrective work on warranty deficiencies.
- C. Corrective work will be identified by the Engineer or Owner, as appropriate. The Contractor will be notified of the item(s) requiring corrective work.
- D. The Contractor shall begin work on all corrective work within ten days of being notified of the deficiency by the Engineer and shall then work continuously until the deficiency is corrected. Upon completion of the corrective work, the Contractor shall submit a letter report to the Engineer describing the deficiency and the corrective action that was taken.
- E. The Contractor shall coordinate all corrective work with the Engineer and/or the Owner.

1.09 COMPLETION CHECKLIST:

- A. The Project Completion Checklist, which follows, and shall be completed as the project nears completion. When the project has been fully completed, Final Payment can be approved.

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## PROJECT COMPLETION CHECKLIST

Owner \_\_\_\_\_ Job No. \_\_\_\_\_

Project \_\_\_\_\_

As part of the project closeout, all items listed below must be checked off as being complete or otherwise accounted for. The person verifying completion of the item shall list the completion date and his/her initials.

Project Closeout Checklist		
	Date Completion Verified	Verified by
<b>AS-BUILT DOCUMENTS HANDED OVER</b>		
1. Contract Drawings		
2. Specifications		
3. Addenda		
4. Change Orders/Contract Modifications		
5. Reviewed Shop Drawings, Product Data and Samples		
6. Written Interpretations/Clarifications		
7. Field Orders		
8. Field Test Reports		

Project Closeout Checklist		
	Date Completion Verified	Verified By
<b>FINAL CLEANING</b>		
1. All Construction Facilities Removed		
2. All Construction Debris Removed		
3. All Areas Swept/Cleared		
<b>SUBSTANTIAL COMPLETION</b>		
1. All Items Coordinated Into a Fully Operational System		
2. All Field Tests Completed and Reports Submitted		
<b>CLOSEOUT PROCEDURES</b>		
1. Written Certification Submitted that Work is Ready for Owner & Engineer Inspector		
2. Inspection by Owner, Engineer, Contractor completed		
3. Punch List of Nonconforming Items Prepared		
4. Documents Required by Governing or Other Authorities Submitted (List Them)		
5. Final Application for Payment Received		
6. Contract Completion and Acceptance Certificate Submittal		
7. Consent of Surety to Final Payment Submittal		
8. Release and Waiver of Liens and Claims Submitted		
9. Affidavit of Payment of Debts and Claims Submitted		
10. Warranties/Guarantees Submitted		
11. Other Required Releases and Waivers Submitted (List Them)		
12. Permits Submitted (List Them)		
13. Weekly Payrolls Submitted as Required by Law		
<b>FINAL COMPLETION</b>		
1. All Items in Punch List Completed		

Project Closeout Checklist		
	Date Completion Verified	Verified By
2. All Other Required Documentation Submitted (List It)		
<b>CORRECTION/WARRANTY PERIOD</b>		
1. Correction Period Start Date: _____  End Date: _____		
2. Specific Warranties Provided		
<div> <div><u>Item</u></div> <div><u>Warranty Duration</u></div> </div>		

Full name of persons signing their initials on this checklist:

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END OF SECTION

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## SECTION 02000

### TECHNICAL SPECIAL PROVISIONS

#### **GENERAL**

The scope of work for the West Main Street Round Pond Wall Reconstruction includes, but is not limited to, demolition and disposal of the existing remaining wall, installation of new cemented stone masonry retaining wall on concrete footings, installation of new concrete outlet structure, furnish and installation of contractor designed temporary manhole, removal existing 60-inch RCP pipe, installation of new 60" RCP pipe, installation of temporary cofferdam and water control structure, water diversion/bypass system, dewatering, excavation, temporary earth support system, installation of new metal handrail, removal and replacement of steel guardrail, full depth pavement reconstruction/reclamation, hot mix asphalt sidewalk and driveway aprons, remove and rest granite curbing, installation of ne granite curbing, installation and removal of erosion controls, tree protection, loam and seed. The work also includes coordinating and providing all traffic control necessary for completion of the work. Work shall also include any items incidental but not explicitly called for on the plans or stated above.

**All work done under this Contract shall be in conformance with the latest English Edition of the *Massachusetts Department of Transportation Standard Specifications for Highways and Bridges*, all appropriate *Supplemental Specifications*, the latest *English construction and traffic standard details*, the *English/Metric Supplemental Drawings Dated April 2003*, the *2009 Manual on Uniform Traffic Control Devices*, the *1968 standard drawings for traffic signals and highway lighting*, the *rules and regulations of the architectural access board*, the *2009 MUTCD*, the *Plans*, and these *Special Provisions*.**

#### **ITEM 120.1      UNCLASSIFIED EXCAVATION**

**C.Y.**

Work under this Item shall conform to the relevant provisions of SECTION 02300 and the following:

This Item includes the removal and disposal of all materials indicated on the plans and those required to be removed, for which neither the Specifications nor the Proposal direct a separate payment, with no additional compensation.

Unclassified excavation shall include the removal and disposal of earth, cement concrete and bituminous pavements (whether reinforced or not), boulders, ledge (Class A Rock), sidewalks, grassed and graveled areas, walls, stumps, unacceptable curbing and all other materials where removal is required or directed and not described under other items of work; miscellaneous debris, junk or scrap; items to be removed that are unsuitable for reuse for this project and, no longer required (and not paid for under other items of work). The work under this Item shall also include all excavation to roadway sub-grade and the removal and disposal of traffic signs, guard

rails, fences, curbing, edgestone, utility pipe encountered in the course of excavation and other appurtenances.

<b><u>ITEM 151.</u></b>	<b><u>GRAVEL BORROW</u></b>	<b><u>C.Y.</u></b>
<b><u>ITEM 151.2</u></b>	<b><u>GRAVEL BORROW FOR BACKFILLING STRUCTURES</u></b>	<b><u>C.Y.</u></b>
	<b><u>AND PIPES</u></b>	

Work under this Item shall conform to the relevant provisions of Section 150 of the Massachusetts Highway Department Standard Specifications – Latest English Edition.

<b><u>ITEM 170.</u></b>	<b><u>FINE GRADING AND COMPACTING</u></b>	<b><u>S.Y.</u></b>
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Work under this Item shall conform to the relevant provisions of Section 170 of the Massachusetts Highway Department Standard Specifications – Latest English Edition.

<b><u>ITEM 220.</u></b>	<b><u>DRAINAGE STRUCTURE ADJUSTED</u></b>	<b><u>EACH</u></b>
<b><u>ITEM 220.7</u></b>	<b><u>SANITARY STRUCTURE ADJUSTED</u></b>	<b><u>EACH</u></b>

Work under this Item shall conform to the relevant provisions of Section 220 of the Massachusetts Highway Department Standard Specifications – Latest English Edition.

<b><u>ITEM 241.6</u></b>	<b><u>60 INCH REINFORCED CONCRETE PIPE</u></b>	<b><u>FOOT</u></b>
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Work under this Item shall conform to the relevant provisions of Section 230 of the Massachusetts Highway Department Standard Specifications – Latest English Edition.

<b><u>ITEM 402.</u></b>	<b><u>DENSE GRADED CRUSHED STONE FOR SUBBASE</u></b>	<b><u>C.Y.</u></b>
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Work under this Item shall conform to the relevant provisions of Section 402 of the Massachusetts Highway Department Standard Specifications – Latest English Edition.

<b><u>ITEM 403.</u></b>	<b><u>RECLAIMED PAVEMENT FOR BASE COURSE AND/OR</u></b>	<b><u>S.Y.</u></b>
	<b><u>SUB-BASE</u></b>	

<b><u>ITEM 403.1</u></b>	<b><u>CRUSHED STONE FOR BLENDING</u></b>	<b><u>TON</u></b>
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Work under this Item shall conform to the relevant provisions of Section 403 of the Massachusetts Highway Department Standard Specifications – Latest English Edition.

<b><u>ITEM 415.</u></b>	<b><u>PAVEMENT MICRO MILLING</u></b>	<b><u>S.Y.</u></b>
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Work under this Item shall conform to the relevant provisions of Section 415 of the Massachusetts Highway Department Standard Specifications – Latest English Edition.

<b><u>ITEM 440.</u></b>	<b><u>CALCIUM CHLORIDE FOR ROADWAY DUST CONTROL</u></b>	<b><u>LB</u></b>
<b><u>ITEM 443.</u></b>	<b><u>WATER FOR ROADWAY DUST CONTROL</u></b>	<b><u>MGL</u></b>

Work under this Item shall conform to the relevant provisions of Section 01562 – DUST CONTROL and Section 440 of the Massachusetts Highway Department Standard Specifications – Latest English Edition.

<b><u>ITEM 452.</u></b>	<b><u>ASPHALT EMULSION FOR TACK COAT</u></b>	<b><u>GAL</u></b>
<b><u>ITEM 453.</u></b>	<b><u>HMA JOINT SEALANT</u></b>	<b><u>FOOT</u></b>

Work under this Item shall conform to the relevant provisions of Section 450 of the Massachusetts Highway Department Standard Specifications – Latest English Edition.

<b><u>ITEM 460.23</u></b>	<b><u>SUPERPAVE SURFACE COURSE-12.5 (SSC-12.5)</u></b>	<b><u>TON</u></b>
<b><u>ITEM 460.31</u></b>	<b><u>SUPERPAVE INTERMEDIATE COURSE-12.5 (SIC-12.5)</u></b>	<b><u>TON</u></b>

Work under this Item shall conform to the relevant provisions of Section 460 of the Massachusetts Highway Department Standard Specifications – Latest English Edition.

<b><u>ITEM 482.3</u></b>	<b><u>SAWCUTTING ASPHALT PAVEMENT</u></b>	<b><u>FOOT</u></b>
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Work under this Item shall conform to the relevant provisions of Section 482 of the Massachusetts Highway Department Standard Specifications – Latest English Edition.

<b><u>ITEM 504.</u></b>	<b><u>GRANITE CURB TYPE VA4 - STRAIGHT</u></b>	<b><u>FOOT</u></b>
<b><u>ITEM 504.1</u></b>	<b><u>GRANITE CURB TYPE VA4 - CURVED</u></b>	<b><u>FOOT</u></b>
<b><u>ITEM 509.</u></b>	<b><u>GRANITE TRANSITION CURB FOR WHEELCHAIR RAMPS</u></b>	<b><u>FOOT</u></b>
	<b><u>STRAIGHT</u></b>	

Work under this Item shall conform to the relevant provisions of Section 501 of the Massachusetts Highway Department Standard Specifications – Latest English Edition.

<b><u>ITEM 580.</u></b>	<b><u>CURB REMOVED AND RESET</u></b>	<b><u>FOOT</u></b>
<b><u>ITEM 590.</u></b>	<b><u>CURB REMOVED AND STACKED</u></b>	<b><u>FOOT</u></b>

Work under this Item shall conform to the relevant provisions of Section 580 of the Massachusetts Highway Department Standard Specifications – Latest English Edition.

<b><u>ITEM 620.12</u></b>	<b><u>GUARDRAIL, TL-2 (SINGLE FACED)</u></b>	<b><u>FOOT</u></b>
<b><u>ITEM 627.1</u></b>	<b><u>TRAILING ANCHORAGE</u></b>	<b><u>EACH</u></b>
<b><u>ITEM 627.82</u></b>	<b><u>GUARDRAIL TANGENT END TREATMENT, TL-2</u></b>	<b><u>EACH</u></b>

Work under this Item shall conform to the relevant provisions of Section 601 of the Massachusetts Highway Department Standard Specifications – Latest English Edition.

<b><u>ITEM 657.</u></b>	<b><u>TEMPORARY FENCE</u></b>	<b><u>FOOT</u></b>
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The work under this item shall conform to the relevant provisions of Section 644 of the Standard Specifications and the following:

Work under this item will be to furnish, maintain, and remove all chain link fence used to enclose the work site. Temporary fence shall be at least 6 feet in height. All temporary fence shall remain in place until the end of the contract unless it is required to be removed and reset as shown on the plans and as directed by the Engineer. Any adjustment or relocation of the temporary fence required to facilitate the construction activities shall also be covered by this item. Any gates required for the project shall be incidental to the item. The fence shall be supported independently and not fixed to any existing facility.

The intent of this item is to prevent access to the work area of the new bridge by unauthorized individuals and to protect the safety of personnel and the general public.

#### MATERIALS

All materials shall conform to Section 644.40 of the Massachusetts Highway Department 1988 Standard Specifications for Highways and Bridges as supplemented and amended.

#### METHOD OF MEASUREMENT

The quantity of this Item will be the length completed in place measured approximately parallel to the ground by the foot of the temporary fence. Drive anchors, is used, will not be measured separately but will be considered incidental to the respective fence item. The contractor will not be compensated for any work necessary to maintain or re-align fencing or replace damaged fencing.

#### BASIS OF PAYMENT

This item will be paid for by the FOOT at the Contract Bid Price, which price shall include all drive anchors, line posts, fabric, top rail, cable or wire fasteners, clips and all materials and equipment necessary to complete the work in a satisfactory manner. This item includes any adjustment or relocation of the temporary fence required to facilitate the construction activities.

<b><u>ITEM 660.</u></b>	<b><u>METAL PIPE RAIL</u></b>	<b><u>FOOT</u></b>
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Work under this Item shall conform to the relevant provisions of Section 660 of the Massachusetts Highway Department Standard Specifications – Latest English Edition.

<b><u>ITEM 685.</u></b>	<b><u>STONE MASONRY WALL IN CEMENT MORTAR</u></b>	<b><u>C.Y.</u></b>
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Work under this Item shall conform to the relevant provisions of Section 685 of the Massachusetts Highway Department Standard Specifications – Latest English Edition.

<b><u>ITEM 697.2</u></b>	<b><u>FLOATING SILT FENCE</u></b>	<b><u>FOOT</u></b>
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## MATERIALS

## CONSTRUCTION METHODS

The Contractor shall maintain floating silt fences in good operating condition, repairing as needed the fence fabric, buoyancy equipment, tensile cable, anchorages and moorings. At the conclusion of riprap installation, the Contractor shall remove the floating silt fences, including all anchorage and mooring equipment.

## METHOD OF MEASUREMENT

## BASIS OF PAYMENT

**ITEM 702. HOT MIX ASPHALT SIDEWALK OR DRIVEWAY SQUARE YARD**

<b>ITEM 715.</b>	<b>RURAL MAILBOX REMOVED AND RESET</b>	<b>EACH</b>
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Work under this Item shall conform to the relevant provisions of Section 715 of the Massachusetts Highway Department Standard Specifications – Latest English Edition.

**ITEM 748.**                      **MOBILIZATION**    **LUMP SUM**

Work under this Item shall conform to the relevant provisions of Section 748 of the Massachusetts Highway Department Standard Specifications – Latest English Edition.

**ITEM 751.**    **LOAM BORROW**    **C.Y.**

Work under this Item shall conform to the relevant provisions of Section 751 of the Massachusetts Highway Department Standard Specifications – Latest English Edition.

**ITEM 765.**    **SEEDING**    **SQUARE YARD**

Work under this Item shall conform to the relevant provisions of Section 765 of the Massachusetts Highway Department Standard Specifications – Latest English Edition.

**ITEM 767.12**    **COMPOST FILTER TUBES**    **FOOT**

The purpose of this item is to provide a linear, compost-filled tube for filtering suspended sediments from storm water flow. This item shall conform to the requirements of Section 751 and 767 of the Standard Specifications and the following.

**MATERIALS**

Material for the filter tubes shall be compost meeting M1.06.0, except that no manure or bio-solids shall be used. In addition, no kiln-dried wood or construction debris shall be allowed. Particle size analysis: 98% shall pass through a 3-inch (75mm) sieve; 30-50% shall pass 3/8 inches (10mm) sieve.

Tubes for compost filters shall be a minimum of 12 inches (300 mm), a maximum of 18” (450mm) in diameter. Tube material shall be a knitted mesh with 1/8” - 3/8” (3-10 mm) openings, and made of biodegradable (cotton or jute) materials. **Photodegradable fabric may be used; however, photodegradable fabric must be removed and disposed of by the contractor, at his expense, at the end of the contract.** Additional tubes shall be used at the direction of the Engineer.

As shown in the detail, the 1 foot (0.2 meters) wide by 2 inch (50 mm) deep wedge of compost spread along the top of the filter tube shall be incidental to this item.

Stakes for anchors, if required, shall be nominal 2 x 2 stakes.

**METHODS**

Tubes of compost may be filled on site or shipped. Tubes shall be placed, filled and staked in place as required to ensure stability against water flows. All tubes shall be tamped to ensure good contact with soil.

The Contractor shall ensure that the filter tubes function as intended at all times. Tubes shall be inspected after each rainfall and at least daily during prolonged rainfall. The Contractor shall immediately correct all deficiencies, including, but not limited, to washout, overtopping, clogging due to sediment, and erosion. The contractor shall review location of tubes in areas where construction activity causes drainage runoff to ensure that the tubes are properly located for effectiveness. Where deficiencies exist, such as overtopping or wash-out, additional staking or compost material shall be installed as directed by the Engineer. Contractor shall remove sediment deposits as necessary to maintain the filters in working condition. The functional integrity of filter tubes shall be maintained in sound condition at all times. Filter tubes that are decomposing, cut, or otherwise compromised shall be repaired or replaced as directed by the Engineer and be incidental to this item.

Filter tube fabric and stakes shall be removed by the Contractor when site conditions are sufficiently stable to prevent surface erosion, and after receiving permission to do so from the Engineer. All biodegradable tube fabric shall be cut and laid flat in place to decompose on-site at the direction of the Engineer. Tube fabric that is not decomposing satisfactorily shall be removed and disposed off-site by the Contractor. At the direction of the Engineer, the Contractor may rake out and seed compost so that it is no greater than 2 inches (50 mm) in depth on soil substrate.

#### COMPENSATION

Measurement for this item shall be by the FOOT of Compost Filter Tube installed, approved, and maintained in place. Payment shall be the bid price and shall be compensation for all labor equipment and materials necessary to complete the work specified above, including, but not limited to, stakes and tube fabric, compost mulch wedge along top of tubes, removal and disposal of fabric and stakes, raking and seeding of compost.

<b><u>ITEM 901.</u></b>	<b><u>4000 PSI 1.5-INCH, 565 CEMENT CONCRETE</u></b>	<b><u>C.Y.</u></b>
<b><u>ITEM 910.1</u></b>	<b><u>STEEL REINFORCEMENT FOR STRUCTURES – EPOXY COATED</u></b>	<b><u>LB</u></b>

Work under this Item shall conform to the relevant provisions of Section 901 of the Massachusetts Highway Department Standard Specifications – Latest English Edition.

<b><u>ITEM 991.1</u></b>	<b><u>WATER CONTROL</u></b>	<b><u>LUMP SUM</u></b>
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Work under this Item shall conform to the relevant provisions of Section 02240.

<b><u>ITEM 999.1</u></b>	<b><u>POLICE DETAIL</u></b>	<b><u>ALLOWANCE</u></b>
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The work under this item shall conform to the relevant sections of the Standard Specifications and include police details for traffic control, where required.

The Contractor is responsible for coordinating all Police Details with the Town of Milford and Town of Upton Police Departments as necessary. The respective Town's Police Department shall be given notice a minimum of 24 hours in advance of the time the Police Details will be required. The Contractor shall give the respective Town's Police Department at least 24 hour advance notice if the ordered Police Detail is not required or the Contractor shall bear the costs for these details.

The Contractor shall notify the Engineer immediately upon ordering the Police Details and immediately upon canceling an ordered Police Detail.

**ITEM 999.2**

**TESTING**

**ALLOWANCE**

The OWNER shall approve of testing firm employed and paid for by the CONTRACTOR to perform material testing in connection with this project. Testing services shall include as a minimum: concrete slump tests (minimum 3 per truck in close conformance with MHD Std Spec Section M4.02.13), cylinder testing concurrent with slump testing (minimum 3 per truck) or as directed by the ENGINEER for approvals required by the Contract Documents except:"

END OF SECTION

## SECTION 02113

### EXCAVATION AND STOCKPILING OF IMPACTED MATERIAL

#### PART 1 – GENERAL

##### 1.01 DESCRIPTION:

- A. Furnish all labor, materials, equipment, and incidentals necessary to properly excavate, remove, and/or segregate impacted materials. The Contractor shall be responsible for all analytical testing of materials for disposal purposes, as required by the disposal/recycling facility and the Engineer.
- B. The Contractor shall excavate impacted materials within the limit of work, as required by the Engineer. All excavated material shall be stockpiled on and securely covered with 20 mil polyethylene while awaiting offsite disposal.
- C. Impacted materials may include soil, sediment, vegetation, sand, or debris removed from below grade.

##### 1.02 RELATED WORK:

- A. Section 00320 – SUBSURFACE DATA
- B. Section 00890 – PERMITS
- C. Section 01380 – HEALTH AND SAFETY PLAN
- D. Section 01562 – DUST CONTROL
- E. Section 01570 – ENVIRONMENTAL PROTECTION
- F. Section 02130 – TRANSPORTATION AND DISPOSAL OF IMPACTED MATERIAL
- G. Section 02240 – DEWATERING
- H. Section 02300 – EARTHWORK

##### 1.03 SUBMITTALS:

- A. Laboratory results for all samples collected and/or analyzed by the Contractor shall be submitted to the Engineer within 2 days of receipt. The results shall include all Chain-of-Custody forms and all documentation provided by the laboratory.
- B. Excavation Materials Management Plan (EMMP) for Construction in Contaminated Areas. The Contractor shall submit a EMMP to the Engineer for review as defined in Section 02130 – TRANSPORTATION AND DISPOSAL OF IMPACTED MATERIAL.

C. The Contractor shall submit an Excavated Sediment Dewatering Plan to the Engineer within 14 days of Notice to Proceed or no later than 30 days prior to the commencement of sediment excavation, whichever is earlier. The Contractor shall submit the final Engineer-reviewed plan to the MassDEP no later than 21 days prior to the commencement of sediment excavation activities in accordance with Condition #11 of the 401 Water Quality Certification (refer to Attachment B of Section 00890 – PERMITS). At a minimum, the Excavated Sediment Dewatering Plan shall include but not be limited to:

- the type of containment,
- method of dewatering (i.e. mechanical or by gravity),
- method of collecting the dewatered effluent, and
- method of disposal.

#### 1.04 REFERENCES:

A. Massachusetts Department of Environmental Protection (DEP) Policy Number:

1. WSC-13-500, Similar Soils Provision Guidance.
2. COMM-94-007, Interim Policy for Sampling, Analysis, Handling and Tracking Requirements for Dredged Sediment Reused or Disposed at Massachusetts Permitted Landfills
3. WSC-94-400, Interim Remediation Waste Management Policy for Petroleum Contaminated Soils.
3. COMM-97-001, Reuse and Disposal of Contaminated Soils at Massachusetts Landfills.

B. Massachusetts Contingency Plan (MCP), 310 CMR 40.0000.

C. Toxic Substances Control Act (TSCA), 40 CFR 761.00.

D. 310 CMR 30.0000 and the Resource Conservation and Recovery Act (RCRA), 40 CFR 148 and 268.

E. All other applicable federal, state, and local regulations.

#### 1.05 DEFINITIONS:

A. Refer to Section 02130 – TRANSPORTATION AND DISPOSAL OF IMPACTED MATERIAL, Item 1.03 for definitions.

#### 1.06 QUALITY CONTROL:

- A. The work shall conform to applicable local, state and federal regulatory agencies governing the handling of soils and hazardous materials.
- B. Best Management Practices shall take place while performing the work described in this Section.

### PART 2 – PRODUCTS

#### 2.01 GENERAL:

- A. At the expense of the Contractor, all personnel shall wear personal protective equipment and protective clothing consistent with the levels of protection required for this work as indicated in the site-specific Health and Safety Plan and in accordance with Section 01380 – HEALTH AND SAFETY PLAN.
- B. Containers used for hauling the impacted materials shall be constructed of steel, in good condition and designed for the intended purpose of safe, secure storage of hazardous material during loading and transport to an approved disposal facility. The containers must be containers approved by and labeled in accordance with the U.S. Department of Transportation (DOT).
- C. The containers shall be sift proof and water resistant in accordance with the U.S. DOT regulations.

#### 2.02 FILL MATERIALS:

- A. The backfill material shall meet the requirements specified in Section 02300 – EARTHWORK and be certified clean. Backfill from non-virgin or certified clean sources will be rejected and replaced at no additional cost to the Owner.
- B. Notify the Engineer as to the source of the backfill material. Provide samples as requested by the Engineer.

### PART 3 – EXECUTION

#### 3.01 GENERAL:

- A. The Contractor shall excavate and convey materials to perform site work described in this Contract.
- B. The Contractor shall segregate materials excavated during the course of the Work that are suspected to be impacted based on existing analytical data and/or visual and olfactory appearance or other physical indications of contamination as required by the Engineer.

### 3.02 EXCAVATION AND RELOCATION OF IMPACTED MATERIAL:

- A. Where soils are identified to be impacted, the Contractor shall excavate, segregate and place these materials on and under sheeting as prescribed in Section 3.05. The Contractor shall excavate and relocate these materials to temporary stockpile location(s), where available and with permission of the Owner. If temporary stockpiling location(s) is(are) not available, the Contractor shall live load excavated material.
- B. Contractor shall backfill excavated areas to match final grades per the Contract Drawings with specified backfill, in accordance with Section 02300 – EARTHWORK.

### 3.04 CHARACTERIZATION:

- A. The Contractor shall be responsible for characterizing the excavated material for the purpose of obtaining approvals from the disposal facility(ies).
  - 1. The Contractor shall review the existing disposal data provided under Section 00320 – SUBSURFACE DATA. Note that the receiving facilities may not accept 2019 disposal characterization and may require added analysis to be paid for by the Contractor.
  - 2. The Contractor shall submit to the DEP the name and location of the licensed facility accepting the excavated material for recycling/disposal in accordance with Condition #13 of the MassDEP 401 Water Quality Certification (refer to Attachment B of Section 00890 – PERMITS). The Contractor shall be aware that DEP review may extend the timing between characterization and disposal. Delays to the project schedule due to DEP review shall not be considered grounds for a change order. The Contractor may pre-characterize material in place to avoid delays to the project schedule.
  - 3. The Contractor shall perform all requested lab analyses of excavated material as required by the receiving facility. Characterization sampling may include but is not limited to the following:

Analytical Parameter	EPA Approved Test Method
Total Petroleum Hydrocarbons (TPH)	Method 8100
Volatile Organic Compounds (VOCs)	Method 8260B
Semi-volatile Organic Compounds (SVOCs)	Method 8270D
Polychlorinated Biphenyls (PCBs)	Method 8082A
Compendium of Analytical Methods (CAM) 14 Metals	Method 6010 & 7470
With Engineer Approval - Toxicity characteristic leaching procedure (TCLP)	Method 6010D 1311
Herbicides	Method 8081B
Pesticides	Method 8151A
Ignitability	Method 1030
Conductivity	Method 2510B
Reactive Cyanide	Method 9014

Reactive Sulfide	Method 9030A
pH	9045D

4. The Contractor will be permitted to collect additional samples to perform additional testing of the excavated material as required by the facility at no additional cost to the Owner.
5. The Contractor shall perform analyses on the excavated material as necessary to fulfill any disposal testing requirements of the approved Facility.
  - a) The Contractor shall notify the Engineer at least two (2) days prior to sampling and the Engineer must be present for all sampling activities by the Contractor. The Contractor shall bear all costs incurred in sampling and analyses for those tests required by the facility.
  - b) The Contractor shall submit a copy of all sampling analyses to the Engineer within two (2) days of receipt of the laboratory report. Analytical data shall be kept confidential, distributed to the Engineer and Owner only.

### 3.05 STORAGE OF EXCAVATED MATERIAL:

- A. The Contractor shall be allowed to stockpile potentially impacted material at a location approved by the Owner ending approval/manifests for transport and disposal or reuse if the following conditions are met:
  1. The stockpiled excavated material must be removed off-site as soon as possible and in all cases within 90 days from the day of its initial excavation for hazardous waste and 120 days for non-hazardous waste (hazardous waste as defined in 310 CMR 30.0000 and RCRA).
  2. The stockpiled excavated material shall be placed on 10-mil (minimum) polyethylene sheeting and covered with 10-mil (minimum) polyethylene sheeting.
  3. The polyethylene sheeting shall be bermed around the edges to prevent any infiltration of stormwater or exfiltration of leachate.
  4. The base of the temporary stockpile shall be sloped to create leachate collection points. Collect and dispose of all leachate generated from the stockpiles. Collect and appropriately dispose of all leachate generated from the stockpiles in accordance with Section 02240 – DEWATERING.
- B. The Contractor shall obtain Owner approval for the use of a lay-down area, if available. . The Contractor shall prepare lay-down area prior to the transport, placement and temporary stockpiling of excavated materials.
- C. If any one of these conditions cannot be met, then the Contractor shall store impacted material in water-tight containers at no additional cost to the Owner pending

transportation and disposal. The containers must be removed off site within 90 days from the first day of excavation/generation for hazardous waste and 120 days for non-hazardous waste.

#### END OF SECTION

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## SECTION 02130

### TRANSPORTATION AND DISPOSAL OF IMPACTED MATERIAL

#### PART 1 – GENERAL

##### 1.01 DESCRIPTION:

- A. The intended purpose of the Section is to address the transport and disposal of impacted material that will be encountered during the course of the Work as shown on the Contract Drawings.
- B. Furnish all labor, materials, equipment, and incidentals necessary to transport and dispose of impacted materials, if encountered. Work includes preparing Bills of Lading and Hazardous Waste Manifests as required, obtaining approval from disposal facilities for disposal, and loading and hauling of excavated materials.
- C. Excavated materials not approved by the Owner for backfilling because of physical or chemical characteristics shall be disposed of as specified herein.
- D. The Contractor will be responsible for the cost of analytical testing of all disposal characterization samples. The Contractor is responsible for the waste profiling requirements, collection and submittal of any disposal characterization samples, and provisions or any other information to obtain approval from the receiving facility.

##### 1.02 RELATED WORK:

- A. Section 00320 – SUBSURFACE DATA
- B. Section 00890 – PERMITS
- C. Section 01380 – HEALTH AND SAFETY PLAN
- C. Section 01570 – ENVIRONMENTAL PROTECTION
- D. Section 02113 – EXCAVATION AND STOCKPILING OF IMPACTED MATERIAL
- E. Section 02300 – EARTHWORK

##### 1.03 SUBMITTALS:

- A. Submit to the Engineer, for review, and in accordance with the requirements of the general specifications, the information required by Paragraph 1.03 B., no more than 14 days after issuance of the Notice to Proceed:
- B. The Contractor shall prepare an Excavation Materials Management Plan (EMMP) including the following information:

1. Procedures/sequence of activities related to soil excavation, transport and disposal.
2. All pertinent information relating to the transport of impacted material. The information, at a minimum, shall include:
  - a. Name and address of all transporters.
  - b. Transporter identification number (USEPA or Massachusetts Department of Transportation Transporter) and expiration date.
  - c. Proof of permit, license, or authorization to transport impacted material in all affected states.
  - d. Details of containers to be used for transporting impacted material. Refer to Paragraph 2.01 B. of this Section.
3. The Contractor shall identify each waste stream including non-impacted material and impacted material and propose an appropriate recycling/disposal facility that will accept the material. A minimum of three (3) receiving facilities shall be proposed.

The Contractor shall submit the name and location of the proposed licensed recycling/disposal facility accepting excavated material to DEP in accordance with Condition #13 of the 401 Water Quality Certification (refer to Attachment B of Section 08900 – PERMITS). If the proposed disposal facility is located out of state, the Contractor shall provide the MassDEP documentation that the material has been approved and will be accepted by the receiving State in accordance with 314 CMR 9.07(13)(b).

The Contractor shall submit to the Engineer, approvals or letters of intent and facility information for each facility proposed, within 14 days of issuance of the Notice to Proceed. For each facility, the Contractor shall submit the following information:

- a. General Information
  - i. Facility Name
  - ii. Facility Address
  - iii. Name of Contract Person
  - iv. Title of Contact Person
  - v. Telephone Number of Contact Person
  - vi. Permit Number
  - vii. Acceptance Criteria of receiving facility including any applicable regulatory standards and/or contaminant-specific limits.
- b. The facility shall specify the volume of material that can be accepted from the site on a weekly and a total basis.

- c. The facility shall provide written confirmation that they are permitted to accept and will accept the classified material of the general quality and quantity described by these Specifications.
  - d. The facility shall provide a listing of all current and valid permits, licenses, letters of approval, and other authorizations to operate that they hold, pertaining to the receipt and management of the soils or materials specified in this contract.
  - e. The Contractor shall submit a complete list of the recycling/disposal facility's permitted allowable contaminant levels and physical characteristic requirements for impacted material, and list any required regulatory approvals for individual waste streams.
- 4. Proof of emergency service agreement with certified emergency response contractor.
  - 5. Record keeping information as described in 3.08.
- C. Submit to the Engineer, for review, disposal documentation including Contract-prepared:
- 1. Proposed receiving facility waste profile;
  - 2. Tabulated disposal documentation compared to receiving facility acceptance criteria;
  - 3. LSP Opinion Letter; and
  - 4. Transportation Documentation as listed in Item 3.05 of this section.

#### 1.04 REFERENCES:

The Contractor shall comply with all federal, state, and local regulations, including at a minimum the following regulations:

- A. Massachusetts Department of Environmental Protection (DEP) Policy Number:
  - 1. WSC-13-500, Similar Soils Provision Guidance.
  - 2. COMM-94-007, Interim Policy for Sampling, Analysis, Handling and Tracking Requirements for Dredged Sediment Reused or Disposed at Massachusetts Permitted Landfills
  - 3. WSC-94-400, Interim Remediation Waste Management Policy for Petroleum Contaminated Soils.
  - 3. COMM-97-001, Reuse and Disposal of Contaminated Soils at Massachusetts Landfills.
- B. Massachusetts Contingency Plan (MCP), 310 CMR 40.0000.
- C. Toxic Substances Control Act (TSCA), 40 CFR 761.00.

- D. 310 CMR 30.0000 and the Resource Conservation Recovery Act (RCRA), 40 CFR 148 and 268.
- E. All other applicable federal, state, and local regulations.

#### 1.05 DEFINITIONS:

- A. Impacted Material: Soil, sediment, vegetation, or debris indicated by analytical results to contain any concentrations equal to or greater than 50% of the MCP reportable concentration S-1 (RCS-1) established by 310 CMR 40.0300 and 40.1600. Impacted material also includes soil, sediment, or debris assessed and designated by the Engineer based upon field screening, observation and/or olfactory evidence to be Impacted material.
- B. Non-impacted Material: Soil, sediment, vegetation, or debris having constituent concentrations as determined by off-Site laboratory analysis to be less than 50% of MCP RCS-1 standards.
- C. Excavated Material: All impacted and non-impacted material.

#### 1.06 PERMIT REQUIREMENTS:

- A. The Contractor shall obtain all Federal, State, and local permits required for the transport and disposal of impacted soil. The Contractor shall adhere to all permit requirements.
- B. The Contractor shall document that the disposal facilities proposed have all certifications and permits as required by Federal, State, and local regulatory agencies to receive and dispose of the impacted soil.

### PART 2 – PRODUCTS

#### 2.01 GENERAL:

- A. All Contractor personnel shall wear personal protective equipment and protective clothing consistent with the levels of protection for this Work as indicated in Section 01380 – HEALTH AND SAFETY PLAN.
- B. Containers used for hauling the impacted material shall be constructed of steel, in good condition and designed for the intended purpose of safe, secure storage of hazardous material during loading and transport to an approved facility. The containers shall have a secure cover which will prevent a release of material from truck during transportation. The container and covers shall be approved by the Engineer prior to mobilization of trucks/containers. The containers must be approved by and labeled in accordance with the U.S Department of Transportation (DOT). The containers shall be sift proof and water resistant in accordance with the DOT regulations.

## 2.02 EQUIPMENT AND VEHICLE DECONTAMINATION:

- A. The Contractor shall provide an equipment and vehicle decontamination station as required in Section 01380 – HEALTH AND SAFETY PLAN.

## PART 3 – EXECUTION

### 3.01 GENERAL:

- A. Prior to excavating any soil, erosion and sediment control measures shall be implemented per Section 01570 – ENVIRONMENTAL PROTECTION. Also, the excavation area planned for removal shall be moistened with water prior to excavating to control potential dust generation. Additional dust control measures may be required throughout the course of the project in accordance with Section 01562 – DUST CONTROL.
- B. The Owner will be the generator and will sign all manifests and DEP shipping documents. Except for hazardous waste materials that shall be transported under a Hazardous Waste Manifest, non-hazardous soils with concentrations greater than MCP reportable concentrations shall be transported under a Bill of Lading. The Contractor shall prepare all Bills of Lading and Hazardous Waste Manifests and shall submit all transportation paperwork, as required in the EMMP, to the Engineer for approval prior to shipment. The Owner and the Owner's LSP (the Engineer) shall sign all Bills of Lading upon final review and approval.
- C. Utilization of a Hazardous Waste Manifest shall require the use of a licensed hazardous material transporter in conformance with the Massachusetts Hazardous Material Regulations as required by 310 CMR 30.0000. An LSP Opinion is not required when using a Hazardous Waste Manifest for transporting impacted materials.
- D. Non-impacted material shall be shipped under a Dredged Material Tracking Form (DMTF) or Material Shipping Record (MSR) in accordance with Condition #14 of the 401 Water Quality Certification (refer to Attachment B of Section 08900 – PERMITS). A fully executed copy of the DMTF or MSR shall be provided to DEP within 30 days of the final shipment to the approved disposal facility.
- E. The Owner shall have final approval over all disposal options based on the analytical data.

### 3.02 NON-IMPACTED MATERIAL:

- A. Non-impacted material shall be recycled/disposed off-site in accordance with the requirements of this Section at no additional cost to the Owner.

### 3.03 IMPACTED MATERIAL:

- A. The Contractor shall transport impacted material for off-site recycling at a licensed asphalt recycling facility, disposal at a landfill, or at another appropriately licensed facility.

- B. Impacted material shall be handled using a Contractor-prepared Bill of Lading and Contractor-prepared Licensed Site Professional (LSP) opinion letter within five working days of Contractor submittal of disposal characterization data. The Contractor shall submit the proposed landfill or facility disposal documentation to the Engineer for review and approval and obtain facility approval prior to transportation of impacted material.
- C. Impacted material shipped to recycling/disposal facility must meet the selected facility's chemical and physical acceptance criteria. Selected facilities must be established, fully operational, appropriately insured, and be operating in compliance with all applicable local, state, and federal regulations.

#### 3.04 WEIGHT AND MEASUREMENT:

- A. The tare and gross weight for every vehicle, container, and trailer transporting soil and/or debris for off-Site reuse, recycling, treatment or disposal shall be measured to determine the net weight.
- B. The Contractor shall provide certified tare and gross weight slips for each load received at the accepted Facility which shall be attached to each returned manifest.

#### 3.05 WASTE PROFILES AND MANIFESTS:

- A. The Contractor shall prepare and submit to the Owner for review all waste profile applications and questionnaires, and coordinate with disposal facilities and all Federal and State Environmental Agencies. Refer to Paragraph 1.03 B.
- B. The Contractor shall prepare all Hazardous Waste Manifests, Bills of Lading, and material shipping records with all applicable analytical backup, notification, and control forms. The draft documents shall be provided as submittals for Engineer review. Final copies of Bills of Lading shall be signed by the Owner (or his/her designated representative) as generator following submission and approval by the Engineer of draft Bills of Lading.
- C. The Contractor shall also provide certified tare and gross weight slips for each load received at the designated facility which shall be attached to each returned manifest.
- D. The Owner (or his/her designated representative) will be designated as generator and will sign all manifests and waste profile application or questionnaires.
- E. The Contractor shall furnish all generator copies of the Hazardous Waste Manifest to the Owner for submittal to the appropriate regulatory agencies and to retain for the Owner's records.
- F. The Contractor shall submit to the Owner, prior to receiving progress payment, documentation certifying that all materials were transported to, accepted, and disposed of, at the selected disposal facility. The documentation shall include the following, as a minimum.

1. Documentation shall be provided for each load from the site to the disposal facility, including all manifests and any other transfer documentation as applicable.
2. All documentation for each load shall be tracked by the original manifest document number that was assigned by the Engineer at the site.
3. All ORIGINAL signatures (including signatures of Owner and disposal facility's representative) associated with shipment of any material from the site under a Bill of Lading.

### 3.06 TRANSPORT OF EXCAVATED MATERIAL:

- A. The Contractor shall not be permitted to transport excavated materials off-site until all disposal or recycling facility documentation has been received, reviewed, and approved by the Engineer.
- B. The Contractor shall take all precaution and any actions necessary, at no additional cost to the Owner, to prevent cross-contamination from transport vehicles to areas outside the "impacted area". The Contractor shall utilize an equipment and vehicle decontamination station to clean vehicles prior to leaving the site.
- C. The Contractor shall transport impacted materials from the site to the disposal, reuse or recycling facility in accordance with all United State Department of Transportation (DOT), USEPA, and MADEP regulations.
- D. The Hauler(s) shall be licensed in all states affected by transport.
- E. The Contractor shall be responsible for ensuring that free liquid is properly transported. "Wet soils" shall not be loaded for transport. The Contractor shall dewater "wet soils", and properly dispose of free liquid. The Contractor shall dispose of any free liquids that may result during transportation at no additional cost to the Owner.
- F. Temporary stockpiled soil must be removed from the site in accordance with applicable regulatory deadlines; however, no later than the completion date of this Contract as may be extended.

### 3.07 DISPOSAL:

- A. Dispose of excavated materials at an approved facility in accordance with all federal, state and local regulations.
- B. The Contractor shall provide to the Engineer copies of all weight slips, both tare and gross, for every load weighed and disposed of at the approved facility. The slips shall be tracked by the original manifest document number that was assigned by the Engineer at the site. The Engineer shall make progress payments after receipt of these weight slips.

### 3.08 LOGS, REPORTS, AND RECORDKEEPING:

- A. At a minimum, the Contractor shall maintain daily logs and reports covering the work to be performed for this Section of the Contract. The format shall be developed by the Contractor to include daily logs, weekly reports, and a phase out report. Contractor shall provide Engineer with copies of all logs and reports on a weekly basis.
- B. Daily Logs shall include, at a minimum, the following:
  - 1. Date
  - 2. Area (site specific) of work being performed
  - 3. Equipment being utilized by employees
  - 4. Type of work performed
  - 5. References to/copies of manifests, bills of lading, and waste profiles
  - 6. Sample locations and sample identifications
  - 7. Details and documentation of remediation waste management
  - 8. Protective clothing being worn by employees
  - 9. Project manager signature and date
- C. Weekly Reports shall include, at a minimum, the following:
  - 1. A summary of the work performed during the week
  - 2. Copies of the daily logs
- D. Close Out Report shall include, at a minimum, the following:
  - 1. Summary of work performed under this Section of the Contract
  - 2. Copies of all manifests, bills of lading, and waste profiles
  - 3. Laboratory reports and plans indicating sample locations
  - 4. Project managers signature and date

END OF SECTION

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## SECTION 02240

### DEWATERING AND FLOW BYPASS

#### PART 1 - GENERAL

##### 1.01 WORK INCLUDED:

- A. The work of this section includes designing, furnishing, installing, maintaining, operating and removing temporary dewatering and flow bypass systems, and other dewatering and water diversion systems as required to lower and control water levels and hydrostatic pressures during construction; disposing of pumped water; constructing, maintaining, observing and, removing equipment and instrumentation for control of the system; and managing flows through the work area.
- B. The water level in Round Pond and the upstream Singletary Brook will not be lowered before or during construction and shall remain within 6 inches ( $\pm$ ) of the pre-construction water surface elevation throughout construction. In the event of a fire emergency, fire trucks may need to pump water from Round Pond. A temporary cofferdam will be required to allow construction of the new retaining wall, headwall and 60-inch reinforced concrete pipe (RCP) culvert to be completed in-the-dry. A temporary manhole will be required at the existing 60-inch RCP culvert upstream of the proposed headwall. Maintenance of flow around the cofferdam and through the work area will be required, as necessary, to maintain existing water levels in Singletary Brook and Round Pond.

Dewatering will likely be necessary within the temporary cofferdam to maintain dry subgrades for construction of foundations and the new wall and headwall. Groundwater elevations should be lowered and maintained a distance of 2 ft. below the bottom of proposed excavations.

##### 1.02 RELATED WORK:

- A. Section 00320, SUBSURFACE DATA
- B. Section 00890, PERMITS
- C. Section 01570, ENVIRONMENTAL PROTECTION
- D. Section 02252, SUPPORT OF EXCAVATION
- E. Section 02300, EARTHWORK

##### 1.03 SYSTEM DESCRIPTION:

- A. Dewatering includes designing, furnishing, installing, maintaining, and removing a temporary flow bypass system to exclude ground and surface water from the work area while also maintaining the water level within 6 inches ( $\pm$ ) of the existing water level in

Round Pond; dewatering the work area by drawing down, intercepting, and removing surface water, groundwater, or seepage to allow the work area to remain in-the-dry; and disposing of diverted and pumped water. Groundwater levels within the work area shall be maintained to 2 ft. below bottom of proposed excavations.

- B. Normal dewatering is defined as using conventional pumps installed in open excavations, ditches, or sumps. Special dewatering is defined as using single or two stage wellpoints, deep wells, or eductor and ejector systems installed in drilled holes or jetted in place.
- C. The temporary flow bypass system shall consist of a closed-conduit gravity, pump, or siphon system routed through or around the work area to divert flow from Singletary Brook safely to Round Pond. The bypass system shall be capable of maintaining the water level in Round Pond and upstream Singletary Brook within the elevation range specified above as well as handle storms events, as indicated on the Contract Drawings, without resulting in flow over West Main Street or through the work area.
- D. The dewatering system(s) shall be capable of effectively reducing the hydrostatic pressure and lowering the water level in the work area to at least 2 feet below excavation bottom, unless otherwise required by the Engineer, so that all excavation bottoms are firm and dry.
- E. The dewatering system(s) shall be capable of maintaining a dry and stable subgrade until excavation and filling operations, structures, and appurtenances are built and have been completed to the extent that they will not be floated or otherwise damaged.
- F. The dewatering system(s) shall be designed to protect fine sand and silt from migrating to the pump. All sumps shall be constructed with crushed stone placed in the sump excavation with filter fabric separating the crushed stone from the subgrade soils.
- G. The dewatering system(s) and excavation support shall be designed so that lowering of the groundwater level outside the excavation does not adversely affect adjacent structures, utilities, or wells. If petroleum impacts are identified in dewatering fluids, the Contractor shall properly manage the dewatering fluids and is not permitted to discharge petroleum-impacted water to surface water bodies or stormwater systems.
- H. Where special dewatering is used, a minimum of two observation wells shall be installed to monitor groundwater levels. The monitoring wells shall be used to confirm the system effectiveness prior to excavation.

#### 1.04 QUALITY ASSURANCE:

- A. The Contractor is responsible for the adequacy of the dewatering and temporary flow bypass systems. Where special dewatering is required, the Contractor shall retain the services of a Professional Engineer registered in the Commonwealth of Massachusetts, experienced in dewatering systems, to design the required system(s).

- B. Following review and acceptance of required submittals, notify the Engineer at least 7 days in advance of the installation and removal of the temporary flow bypass system and any special dewatering system(s).
- C. The Manufacturer's representative or Contractor's Engineer shall provide technical assistance and guidance for installation and removal of the temporary flow bypass system and any special dewatering system(s).

1.05 SUBMITTALS: IN ACCORDANCE WITH REQUIREMENTS OF GENERAL SPECIFICATIONS, SUBMIT THE FOLLOWING:

- A. Manufacturer's literature on proposed systems, including description of installation procedures.
- B. Details, descriptions, and schedule showing the timing of installation and anticipated operation of the bypass system and dewatering system(s), as applicable.
- C. Description of measures to be used during normal conditions and storm events.
- D. Where special dewatering is used, a design package for the proposed dewatering system(s) prepared and sealed by Professional Engineer registered in the State of Massachusetts that is experienced in the design of such systems. The design package shall include a certification that the systems meet all requirements of this specification and related permit requirements. The design package shall also include the following:
  - 1. Plans and description of the dewatering system, including the number, location and depth of wells, wellpoints or sumps; designs of filters to prevent pumping of fine soil; method and location for filtering and disposal of pumped water; and flow capacity of proposed system.
  - 2. Locations of observation wells.
- E. The Contractor shall submit records of pump operation and groundwater elevations as required by the Owner's Engineer.
- F. For dewatering fluid the Contractor elects to recycle or dispose of off-site, written confirmation shall be submitted to the Engineer from each of the disposal or recycling facilities indicating that they will accept dewatering fluids, and any other materials to be removed as part of this Work. Contractor shall also submit to the Engineer all pertinent information relating to the transport of dewatering fluids for disposal specified herein. The information submitted shall include as a minimum:
  - a. Name and address of any hazardous waste transporters and disposal facilities, including: United States Environmental Protection Agency (EPA) Identification Number and expiration date.

- b. Proof of permit, license or authorization to transport and dispose of waste in all affected states.
  - c. Proof of Insurance.
- G. Contractor shall obtain and pay for the analysis of all dewatering fluid samples required by the receiving facility. The Dewatering Plan shall include the proposed dewatering fluid disposal characterization. The Contractor shall coordinate with the Engineer to observe the sampling of dewatering fluids and provide at least three days' notice of planned sampling activities. Samples shall only be collected as approved by the Engineer.
- H. Noise controls and ratings of planned equipment complying with Item 3.03 of this Section.
- I. The Contractor shall prepare and provide to the Engineer for review all disposal documentation required by the receiving facility(ies) including but not limited to waste profiles and manifests. All disposed liquids shall be documented. The Contractor shall coordinate with the Owner to obtain generator signature for dewatering fluid disposal of Engineer-approved disposal documentation.

PART 2 - PRODUCTS: NOT APPLICABLE

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Th temporary flow bypass and dewatering system (s) shall be installed in accordance with the Contractor's plan certified by a Massachusetts Professional Engineer, with minimum disruption to the surrounding area.

3.02 BYPASS AND DEWATERING OPERATIONS:

- A. All water pumped or drained from the work shall be disposed of in a manner which will not result in undue interference with other work or damage to adjacent properties, pavements and other surfaces, buildings, structures and utilities. Suitable temporary pipes, flumes or channels shall be provided for water that may flow along or across the site of the work. All disposal of pumped water shall conform to the provisions of Section 01570 ENVIRONMENTAL PROTECTION and Section 00890 PERMITS.
- B. Dewatering facilities and bypass measures shall be located where they will not interfere with utilities and construction work to be done by others.
- C. Dewatering procedures to be used shall be as described below:
  - 1. Crushed stone shall encapsulate the suction end of the pump to aid in minimizing the amount of silt discharged.

2. For dewatering operations with relatively minor flows, pump discharges shall be directed into haybale sedimentation traps lined with filter fabric. Water is to be filtered through the haybales and filter fabric prior to being allowed to seep out into its natural water-course.
  3. For dewatering operations with larger flows, pump discharges shall be into a steel dewatering basin. Steel baffle plates shall be used to slow water velocities to increase the contact time and allow adequate settlement of sediment prior to discharge into waterways.
  4. Where indicated on the contract drawings or in conditions of excess silt suspended in the discharge water, silt control bags are to be utilized in catchbasins.
- D. The Contractor shall be responsible for repair of any damage caused by his dewatering operations, at no cost to the Owner.

### 3.02 SPECIAL DEWATERING:

- A. If conventional dewatering methods are inadequate to ensure dry and stable conditions for structural foundations, the Contractor shall be required to use special dewatering as necessary.
- B. Special dewatering techniques may consist of one or two stage wellpoint systems, deep wells, or eductor and ejector type systems. The Contractor shall utilize a system which provides proper construction conditions and prevents settlement at time of installation and upon backfilling.
- C. In areas requiring special dewatering, the Contractor shall lower the groundwater level to a minimum of 2 feet below the bottom of the final excavation grade prior to any installation and maintain that groundwater level until the excavation has been backfilled. The groundwater levels shall be monitored by the Contractor's engineer to ensure conformance with the requirements of these specifications. Construction will not be allowed until the Owner's Engineer is satisfied that the above provisions are met.

### 3.03 NOISE LEVEL REQUIREMENTS:

- A. All construction equipment utilized by the Contractor shall conform to Town of Millbury and State of Massachusetts rules and regulations. Contractor shall construct sound enclosures or utilize other noise reduction techniques if the equipment does not meet the noise level requirements.

### 3.04 REMOVAL

- A. On completion of the project and following approval of the Engineer and permit agencies, the flow bypass system, dewatering system(s), and any temporary cofferdams shall be promptly removed, with minimal disruption to the surrounding area.

## END OF SECTION

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CERTIFICATE OF DESIGN

Re: Contract Between:

OWNER: \_\_\_\_\_  
(Name)

and

CONTRACTOR: \_\_\_\_\_  
(Name)

on

CONTRACT: \_\_\_\_\_  
(Number)

Date: \_\_\_\_\_

Title: \_\_\_\_\_

Contractor hereby certifies that \_\_\_\_\_:  
(Engineer)

1. Is licensed or registered to perform professional engineering work in the state of \_\_\_\_\_;  
(Location of Project)
2. Is qualified to design the \_\_\_\_\_  
(Item)  
specified in Section \_\_\_\_\_ of subject contract;
3. Has designed \_\_\_\_\_ before;  
(Item)
4. Has prepared the design in full compliance with the applications and requirements of  
Section \_\_\_\_\_ of subject contract including all applicable laws, regulations, rules,  
and codes; and
5. The work has been signed and sealed pursuant to applicable state law.

FOR: \_\_\_\_\_  
(Contractor)

BY: \_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Name and Title)

Dated: \_\_\_\_\_

Document 7

## SECTION 02252

### SUPPORT OF EXCAVATION

#### PART 1 - GENERAL

##### 1.01 WORK INCLUDED:

- A. This section covers sheeting and bracing for support of excavations. The requirements of this section shall also apply, as appropriate, to any methods of excavation support and underpinning which the Contractor elects to use to complete the work.
- B. The Contractor shall furnish and place sheeting of the kind and dimensions required, complying with these specifications, where required by regulation, indicated on the drawings or required by the Engineer.
- C. Vibration monitoring shall be provided during installation and extraction of sheeting whenever the braced excavation is adjacent to existing structures, in critical areas as noted in the contract documents, or as requested by the Engineer.
- D. Routine monitoring of the in-place excavation support system shall be provided by the Contractor and their Professional Engineer as described below.

##### 1.02 RELATED WORK:

- A. Section 02240, DEWATERING
- B. Section 02300, EARTHWORK

##### 1.03 QUALITY ASSURANCE:

- A. This project is subject to the Safety and Health regulations of the U.S. Department of Labor set forth in 29 CFR, Part 1926, and to the Massachusetts Department of Safety and Department of Labor, Division of Occupational Safety "Excavation & Trench Safety Regulation (520 CMR 14.00)" and "Rules and Regulations for the Prevention of Accidents in Construction Operations (454 CMR 10.0 et seq.)." Contractors shall be familiar with the requirements of these regulations.
- B. The Contractor is responsible for the adequacy of the excavation support system and shall retain the services of a Professional Engineer registered in the Commonwealth of Massachusetts to design the required excavation support systems. The Contractor's Professional Engineer shall practice in a discipline applicable to excavation work, shall have experience in the design of excavation support systems and shall design in conformance with OSHA requirements. The Contractor's Professional Engineer shall provide sufficient on-site inspection and supervision to assure that the excavation support system is installed and functions in accordance with their design. Criteria listed herein

defining the responsibilities of the Contractor's Professional Engineer are minimum requirements.

#### 1.04 REFERENCES:

The following standards form a part of this specification as referenced herein.

##### American Society for Testing and Materials (ASTM)

ASTM	A6	General Requirements for Rolled Steel Plates, Shapes, Sheet Piling, and Bars for Structural Use
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ASTM	A328	Steel Sheet Piling
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#### 1.05 SUBMITTALS:

- A. At least three weeks before starting installation of the excavation support system, the Contractor shall submit the attached Certificate of Design completed and signed by the Contractor and the Professional Engineer, identifying the Contractor's Professional Engineer who will be responsible for design of the excavation support system, and in accordance with Section 01330, including, for record purposes only:
  - 1. An overall time schedule for construction of the braced excavation system.
  - 2. A description of the anticipated sequence of construction.
  - 3.
    - a. Complete details of braced excavation methods, equipment and sizes and lengths of materials proposed to be used.
    - b. Details of vibration monitoring devices and reports.
    - c. Details of the means and methods that will be used in monitoring the integrity of the support system during its entire period of use to ensure the safety of the excavation.
    - d. Complete computations for the design of the braced excavation system bearing the seal of the responsible Professional Engineer duly registered licensed to practice within a discipline applicable to excavation work, in the Commonwealth of Massachusetts.
    - e. Any other pertinent data required for record purposes by the Engineer.
- B. Receipt of the information by the Engineer will not relieve the Contractor of the sole responsibility for the adequacy of the braced excavation system, and for assuring that there will be no resulting damage to adjacent pavement, utilities or structures, and for providing safe conditions within the sheeted areas.

- C. Further for the record, upon completion of the work of this section, the Contractor shall submit all records of survey, vibration monitoring and inspection of existing structures to the Owner's Engineer.

## PART 2 - PRODUCTS

### 2.01 MATERIALS:

- A. Timber sheeting shall be sound spruce, pine, or hemlock, and either tongue and grooved or splined. Timber sheeting shall not be less than nominal 2-inches thick.
- B. Steel for sheeting shall be mild steel with appropriate cross section and material properties for the intended use and free of rust, soil, contaminants, and debris of any kind.
- C. Timber and steel used for bracing shall be of such size and strength as required in the excavation support design prepared and submitted by the Contractor's Professional Engineer. Timber or steel used for bracing shall be new or undamaged used material, which does not contain splices, cutouts, patches, or other alterations, which would impair its integrity or strength.

## PART 3 - EXECUTION

### 3.01 INSTALLATION:

- A. Work shall not be started until all materials and equipment necessary for construction are either on the site of the work or satisfactorily available for immediate use as required.
- B. The sheeting shall be sufficiently tight to minimize any resulting lowering of the groundwater level outside the excavation, as required in Section 02240, DEWATERING AND FLOW BYPASS.
- C. The sheeting shall be driven by approved means to the design elevation. No ends or edges of sheeting shall be left exposed in a manner, which could create a possible hazard to safety of the public or a hindrance to traffic of any kind.
- D. If boulders or very dense soils are encountered, making it impractical to drive a sheeting section to the desired depth, the section shall, as required, be cut off.
- E. Within seven days of completing the initial installation of the earth support system, the Contractor shall submit a certification from his Professional Engineer, stating that the excavation support system as installed is in general compliance with the design or approved modifications thereto.
- F. The sheeting shall be left in place, as required by the Engineer in writing. At all other locations, the sheeting may be left in place or salvaged at the option of the Contractor. Wood or steel sheeting permanently left in place shall be cut off at a depth of not less than two feet below finish grade unless otherwise required.

- G. All cut-off material is the property of the Contractor and shall be promptly removed from the site.
- H. The satisfactory construction and maintenance of the excavation support system, complete in place, shall be the responsibility of the Contractor.
- I. The Contractor shall be responsible for promptly repairing all damage caused by the installation, performance, or removal of the excavation support system.

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## CERTIFICATE OF DESIGN

RE: Contract between  
OWNER: \_\_\_\_\_  
and (Name)  
CONTRACTOR: \_\_\_\_\_  
on (Name)  
CONTRACT: \_\_\_\_\_  
(Title)  
\_\_\_\_\_  
(Number) (Date)

The undersigned hereby certify that the engineer listed below:

1. Is licensed or registered to perform professional engineering work in the state of \_\_\_\_\_;  
(Location of Project)
2. Is qualified by education and training to design the \_\_\_\_\_  
specified in Section \_\_\_\_\_ of subject contract;
3. Has previously designed comparable excavation support systems;
4. Has prepared the design in full compliance with the requirements of subject contract, including all applicable laws, regulations, rules, and codes; and
5. Will inspect and supervise installation of the excavation support system and will monitor the in-place system to confirm that the system is installed and functions in accordance with the design.

CONTRACTOR

ENGINEER

By: \_\_\_\_\_  
(Signature)

By: \_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Name)

\_\_\_\_\_  
(Name)

\_\_\_\_\_  
(Title)

\_\_\_\_\_  
(Engineering Discipline)

\_\_\_\_\_  
(Date)

\_\_\_\_\_  
(Date)

END OF SECTION

## SECTION 02300

### EARTHWORK

#### PART 1 - GENERAL

##### 1.01 DESCRIPTION OF WORK:

- A. Work Included: Furnish all labor, supervision, equipment, supplies, and materials and perform all operations necessary to complete the work of this Section. The Contractor shall make excavations of normal depth in earth for trenches and structures, shall backfill and compact such excavations to the extent necessary, shall furnish the necessary material and construct embankments and fills, and shall make miscellaneous earth excavations and do miscellaneous grading.
- B. Site-Specific Considerations:
  - 1. Existing fill and organic silt were encountered in subsurface explorations at the site and should be expected within required excavation depths for foundations, utilities, and other site improvements. Existing fill, organics, and other unsuitable materials defined herein and as evaluated by the Engineer shall be removed and replaced with Structural Fill within the zone-of-influence beneath new footings and other structural improvements as defined herein and shown on the drawings. Obstructions should be anticipated during earthwork construction.
  - 2. Excavations for proposed improvements will encounter sandy soils below the groundwater table. Caving and “running” sands conditions should be expected. Requirements for construction dewatering are provided herein and in Sections 02240 DEWATERING AND FLOW BYPASS and 02252 SUPPORT OF EXCAVATION.
  - 3. Site preparation and earthwork will likely require demolition and removal and/or abandonment of existing underground utilities, foundations, and other below grade features. The depth, extent, alignment, and other attributes of existing features shown on the Drawings should be considered approximate. Actual conditions may vary and are unknown.
  - 4. Completed explorations indicate subsurface Conditions at specific locations only and only to the depths penetrated. They do not reflect subsurface conditions present between exploration locations. Variation of subsurface conditions should be anticipated.
  - 5. Silty soils are highly susceptible to softening and/or disturbance by construction activity during wet or freezing weather. Subgrade protection is the responsibility of the Contractor and special precautions and protective measures appropriate for the weather conditions during construction shall be used during earthwork and foundation construction to preserve the integrity of subgrades. Disturbed subgrades shall be repaired at the sole expense of the Contractor.

6. If boulders and/or cobbles are present in foundation subgrades they should be overexcavated to a minimum 1 foot below bottom of foundation and replaced with compacted structural fill.

1.02 RELATED WORK:

- A. Section 00890, PERMITS
- B. Section 01110, CONTROL OF WORK AND MATERIALS
- C. Section 01570, ENVIRONMENTAL PROTECTION
- D. Section 02113, EXCAVATION AND STOCKPILING OF IMPACTED MATERIAL
- E. Section 02130, TRANSPORTATION AND DISPOSAL OF IMPACTED MATERIAL
- F. Section 02230, CLEARING AND GRUBBING
- G. Section 02240, DEWATERING AND FLOW BYPASS
- H. Section 02252, SUPPORT OF EXCAVATION
- I. Section 02745, PAVING

1.03 REFERENCES:

American Society for Testing and Materials (ASTM)

ASTM	C131	Test Method for Resistance to Degradation of Small Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.
ASTM	C136	Method for Sieve Analysis of Fine and Coarse Aggregates.
ASTM	C330	Specification for Lightweight Aggregate for Structural Concrete.
ASTM	D1556	Test Method for Density of Soil in Place by the Sand Cone Method.
ASTM	D1557	Test Methods for Moisture-density Relations of Soils and Soil Aggregate Mixtures Using Ten-pound (10 Lb.) Hammer and Eighteen-inch (18") Drop.
ASTM	D2922	Test Methods for Density of Soil and Soil-aggregate in Place by Nuclear Methods (Shallow Depth).

Massachusetts Department of Transportation (MassDOT) Standard Specifications for Highways and Bridges.

Code of Massachusetts Regulations (CMR) 310.40.0032 Contaminated Media and Contaminated Debris

Code of Massachusetts Regulations (CMR) 520 CMR 14.00 Excavation & Trench Safety Regulation

#### 1.04 QUALITY CONTROL

- A. The Contractor shall retain the services of an independent Certified Testing and Inspection Agency to conduct field and laboratory soil testing of backfill in accordance with these specifications to verify conformance with the specifications. Coordinate locations and types of field tests to be performed with the Engineer and cooperate in every way with the Engineer and testing laboratory during field testing and with collection of soil samples for laboratory testing.
- B. Earthwork materials will not be accepted on the jobsite without written acceptance by the Engineer. The Contractor shall perform sufficient tests and inspections necessary to determine the acceptability of the source of supply. A Certified Testing and Inspection Agency may be used to perform such tests and inspections. The qualifications of the person or agency performing these tests and inspections shall be forwarded to the Engineer for approval. Subsequent to this approval, test results showing the acceptability of the source of supply, shall be forwarded to the Engineer for approval.
- C. The Engineer reserves the right to make observations and tests at any time during the execution of the work.
- D. The Contractor shall give the Engineer a minimum 2 days' notice in advance of quality control tests and inspections.

#### 1.05 SUBMITTALS: IN ACCORDANCE WITH REQUIREMENTS OF GENERAL SPECIFICATIONS, SUBMIT THE FOLLOWING:

- A. Material Test Reports: From a qualified testing agency indicating and interpreting test results for compliance of the following with requirements indicated:\
  - 1. Classification according to ASTM D2487 and moisture content according to ASTM D2216 of each on-site and borrow soil and/or fill material proposed for fill and backfill.
  - 2. Laboratory compaction curve according to ASTM D1557 for each onsite and borrow soil and/or fill material proposed for fill and backfill.
- B. Earthwork Operation Plan: Prior to commencing earthwork activities, submit a plan describing the earthwork operations including the frequency and locations of tests and

inspections, and locations and methods of excavating, handling, and stockpiling (if applicable) excavated material, including drainage, as specified in this Section. Describe methods to keep materials from various sources separated during stockpiling operations (if applicable). No work shall be performed until this plan has been approved by the Engineer.

- C. Supply and Quality Control Inspection Results: Submit the results of all sources of supply and quality control inspections and tests. Submittals reviewed beyond the second rejection (or required submittal) shall be provided at no cost to the Owner and shall be reviewed by the Engineer at the Contractor's expense. No work shall be performed until the Engineer has approved the source of supply.
- D. Backfill Materials: Submit laboratory grain size distribution and modified proctor analyses from each proposed source including on-site materials to be re-used on site.
- E. Site Visit and Compaction Reports: Submit site visit and compaction reports prepared by the certified independent testing and inspection laboratory representative within 5 days of the visit and testing. The reports shall include, at a minimum, elevation of each compaction test, a site plan or sketch showing the location of each compaction test, type(s) of material placed and compacted, any deviations from the requirements of the Contract Documents, personnel contacted on-site, weather conditions, equipment used, and a summary of each day's activities.
- F. Submit additional samples and geotechnical test data and certifications for every 1000 cubic yards (every 500 cubic yards for moisture density curves) of material imported or reused on-site or anytime consistency of material changes in the opinion of the Engineer. Submit associated chemical laboratory data on the imported materials throughout the course of the work, if requested by the Engineer, to evaluate the consistency of the source or process, at no additional cost to the Owner.
- G. Information identifying the name of the field and laboratory soil testing subcontractor proposed for documenting conformance of earthwork activities. Include examples of typical field and laboratory test result documentation from the subcontractor that are proposed for use the project. In addition to test results, the report documentation shall include the location and elevation of all tests, materials tested, a description of methods and equipment used, compaction requirements, and conformance or non-conformance.

#### 1.06 EXCAVATION CLASSIFICATIONS:

- A. Earth Excavation or "Excavation" consists of removing materials encountered to the subgrade elevations indicated and subsequent reuse or disposal of the materials removed. All excavation is classified as earth excavation unless it otherwise meets the classifications provided below for unauthorized excavation or additional excavation.
- B. Unauthorized Excavation consists of removal of materials beyond indicated subgrade elevations or dimensions without specific requirement of the Engineer. Unauthorized excavation, as well as remedial work required by the Engineer, shall be at the Contractor's expense.

1. Backfill and compact unauthorized excavations as specified for excavations of the same class, unless otherwise required.

C. Additional Excavation:

1. When excavation has reached required subgrade elevations, notify the Engineer, who will observe subgrade conditions prior to placing overlying materials including fill, crushed stone, forms, and rebar.
2. If unsuitable bearing materials are encountered at the required subgrade elevations, carry excavations deeper and to the lateral extent as required by the Engineer. Replace excavated material as required by the Engineer.
3. Removal of unsuitable material and its replacement as required will be paid on the basis of contract conditions relative to changes in work or as provided for under the unit rates for this classification.

D. Rock Excavation:

1. Rock excavation in trenches and wall and footing excavations includes removal and disposal of materials and obstructions encountered which cannot be excavated with a 1.0 cubic yard (heaped) capacity, 42-inch wide bucket on medium-size track-mounted hydraulic excavator equivalent to Caterpillar Model 215, rated at not less than 90HP flywheel power and 30,000 lb. drawbar pull. Trenches and wall and footing excavations in excess of 10-feet in width are classified as open excavation.
2. Rock excavation in open excavations includes removal and disposal of materials and obstructions encountered which cannot be dislodged and excavated with modern track-mounted heavy-duty hydraulic excavating equipment without drilling or ripping. Rock excavation equipment is defined as Caterpillar Model No. 973 or No. 977K, or equivalent track-mounted loader, rated at not less than 170 HP flywheel power and developing 40,000-lb. breakout force (measured in accordance with SAE J732C).
3. Determination of rock excavation classification will be made by the Engineer. Typical materials classified as rock are boulders 3.0 cubic yards or more in volume, solid rock, rock in ledges, and rock-hard cementitious aggregate deposits. Intermittent drilling or ripping performed to increase production and not necessary to permit excavation of material encountered will be classified as earth excavation. Do not perform rock excavation work until material to be excavated has been cross-sectioned and classified by the Engineer. Visual observation of the completed excavation may be made by the Engineer to modify the excavation classifications. Removal of rock excavation prior to classification by the Engineer shall be considered as earth excavation unless accepted by the Engineer in writing. Such excavation will be paid on the basis of contract unit rates for this classification.

4. Rock payment lines (if applicable) are limited to the following:

- a. Two feet outside of concrete work for which forms are required.
- b. In wall and footing excavations, one foot below bottom-of-footing or bottom-of-wall elevation.
- c. One foot outside of the vertical walls of utility structures.
- d. In pipe trenches, depth limits shall be 6 inches below the bottom of the pipe:

Depth from Ground Surface to Invert of Pipe	Pay Width (Pipe ID)	
	0 - 24"	Over 24"
0 to 12'	5'-0"	Pipe I.D. +3'-0"
12' to 20'	7'-0"	Pipe I.D. +7'-0"
Over 20'	9'-0"	Pipe I.D. +7'-0"

- e. Rock sloping across the width of trench shall have the top of rock established at the rock elevation over the centerline of the pipe.
- f. For all other site improvements not listed above, including but not limited to landscape plantings, and roadways, the payment line for rock removal shall be the subgrade for installation of the earthen components of the particular site improvement.

1.07 PROTECTION OF EXISTING PROPERTY:

- A. The work shall be executed in such manner as to prevent any damage to facilities at the site and adjacent property and existing improvements, such as but not limited to streets, curbs, paving, utility lines, structures, monuments, bench marks, observation wells, and other public or private property. Protect existing improvements from damage caused by settlement, lateral movements, undermining, washout and other hazards created by earthwork operations.
- B. In case of any damage or injury caused in the performance of the work, the Contractor shall, at its own expense, make good such damage or injury to the satisfaction of, and without cost to, the Owner. Existing roads, sidewalks, and curbs damaged during the project work shall be repaired or replaced to at least the condition that existed at the start of operations. The Contractor shall replace, at his own cost, existing benchmarks, observation wells, monuments, and other reference points, which are disturbed or destroyed.
- C. Buried drainage structures and pipes, observation wells and piezometers, including those which project less than eighteen inches (18") above grade, which are subject to damage from construction equipment shall be clearly marked to indicate the hazard. Markers shall indicate limits of danger areas, by means which will be clearly visible to operators of trucks

and other construction equipment, and shall be maintained at all times until completion of project.

1.08 DEFINITIONS:

- A. Backfill and Fill Materials: Soil and rock material used in construction as specified herein.
- B. Structures: Buildings, concrete slabs, foundations, equipment pads, manholes, below grade vaults and equipment capsules.
- C. Unsuitable Material: Includes topsoil, existing undocumented fill, material containing organics, vegetation, wood, or roots, stones or rock fragments over 6-inches in diameter, porous biodegradable matter, disturbed soils, debris, contaminated media, snow, ice, or refuse. Unsuitable material also includes any materials not suitable for reuse as backfill as defined by the requirements of this Specification.
- D. Subgrade: the bottom surface of a trench or excavation extending to the underside of site improvements, including bedding materials for retaining wall foundations, structures, pavement subbase, or other surfacing material.
- E. Pass: a single complete coverage with compaction equipment over the entire surface of an exposed lift or subgrade being compacted.
- F. Zone-of-Influence: Defined by a horizontal plane extending away from the outside bottom edge of footings, slabs, structures, and utilities a distance of two feet, then by a plan that slopes down and away from the foundation at a maximum 1H:1V slope to the natural inorganic soil subgrade.

1.09 DRAINAGE:

- A. The Contractor shall provide, at its own expense, adequate drainage facilities to complete all work items in an acceptable manner. Drainage shall be done in a manner so that runoff will not adversely affect construction procedures or cause excessive disturbance of underlying natural ground or abutting properties.

1.10 FROST PROTECTION AND SNOW REMOVAL:

- A. The Contractor shall, at its own expense, keep earthwork operations clear and free of accumulations of snow as required to carry out the work.
- B. The Contractor shall protect the subgrade beneath new structures and pipes from frost penetration when freezing temperatures are expected.

## PART 2 - PRODUCTS

### 2.01 BACKFILL MATERIALS:

#### A. COMMON BORROW:

Common Borrow shall be well-graded, natural inorganic soil containing no stone greater than 6 inches maximum dimension. The materials shall be free of trash, ice, snow, tree stumps, roots and other organic and deleterious materials. It shall be free of plastic clays, of all materials subject to decay or other materials that will corrode piping or metals. Common Borrow shall have a maximum dry density of not less than 110 pounds per cubic foot. It shall be of such a nature and character that it can be compacted to the specified densities. Topsoil shall not be considered Common Borrow

#### B. GRAVEL BORROW:

Gravel Borrow shall satisfy the requirements listed in MassDOT Specification Section M1.03.0, Type b. Gravel borrow should be used behind the retaining wall drainage zone and as backfill around the toe of new retaining walls and other structures, to backfill trenches above the pipe zone, and elsewhere as indicated on the Contract Drawings.

#### C. DENSE GRADED CRUSHED STONE:

Dense Graded Crushed Stone shall satisfy the requirements listed in MassDOT Specification Section M2.01.7. Dense Graded Crushed Stone shall be used as pavement base course for new pavement construction.

#### D. STRUCTURAL FILL:

Structural Fill shall satisfy the requirements of Gravel Borrow or Dense Graded Crushed Stone, above.

#### E. CRUSHED STONE:

Crushed Stone shall satisfy the requirements listed in MassDOT Specification Section M2.01.4 ( $\frac{3}{4}$ -inch crushed stone) or M2.01.1 (1½-in. crushed stone). Crushed stone should be used as trench stabilization material, as trench backfill within the pipe zone, as a drainage layer behind new walls, below wall and headwall footings, and elsewhere as indicated on the Contract Drawings.

#### F. GEOTEXTILE FILTER FABRIC

Geotextile filter fabric shall be composed of continuous-filament fibers bonded together to form a sheet. The fabric shall be an average of 90 mils thick and possess the following minimum characteristics:

<b>Property</b>	<b>Test Method</b>	<b>Unit</b>	<b>Minimum Average Roll Value</b>
Grab Tensile Strength	ASTM D4632	lbs	205
Trapezoid Tear Strength	ASTM D4632	lbs	80
CBR Puncture Strength	ASTM D4632	lbs	500
Apparent Opening Size	ASTM D4751	U.S. Sieve	80
Permittivity	ASTM D4491	sec <sup>-1</sup>	1.4
Weight	ASTM D5261	oz/yd <sup>2</sup>	8.2

### PART 3 - EXECUTION

#### 3.01 DISTURBANCE OF EXCAVATED AND FILLED AREAS DURING CONSTRUCTION:

- A. Contractor shall take the necessary steps to avoid disturbance of subgrade during excavation and filling operations, including restricting the use of certain types of construction equipment and their movement over sensitive or unstable materials, dewatering and other acceptable control measures.
- B. All excavated or filled areas disturbed during construction, all loose or saturated soil, and other areas that will not meet compaction requirements as specified herein shall be removed and replaced with a minimum 12-inch layer of compacted crushed stone wrapped all around in non-woven filter fabric. Costs of removal and replacement shall be borne by the Contractor.
- C. The Contractor shall place a minimum of 12-inch layer of crushed stone wrapped in filter fabric over the natural underlying soil to stabilize areas which may become disturbed as a result of rain, surface water runoff or groundwater seepage pressures, all at no additional cost to the Owner. The Contractor also has the option of drying materials in-place and compacting to specified densities.

#### 3.02 EXCAVATION:

- A. GENERAL:
  1. The Contractor shall perform all work of any nature and description required to accomplish the work as shown on the Drawings and as specified.
  2. Water jetting is not permitted.
  3. Excavations, unless otherwise required by the Engineer, shall be carried only to the depths and limits shown on the Drawings. If unauthorized excavation is carried out below required subgrade and/or beyond minimum lateral limits shown on Drawings, it shall be backfilled with gravel borrow and compacted at the Contractor's expense as specified below, except as otherwise indicated. Excavations shall be kept in dry

and good conditions at all times, and all voids shall be filled to the satisfaction of the Engineer.

4. In all excavation areas, the Contractor shall strip the surficial topsoil layer and underlying subsoil layer separate from underlying soils. In paved areas, the Contractor shall first cut pavement as specified in paragraph 3.02 B.1 of this specification, strip pavement and pavement subbase separately from underlying soils. All excavated materials shall be stockpiled separately from each other within the limits of work.
5. The Contractor shall follow a construction procedure, which permits visual identification of stable natural ground. Where groundwater is encountered, the size of the open excavation shall be limited to that which can be handled by the Contractor's chosen method of dewatering and which will allow visual observation of the bottom and backfill in the dry.
6. The Contractor shall excavate unsuitable materials to stable natural ground where encountered at proposed excavation subgrade, as required by the Engineer. Unsuitable material includes undocumented fill, loose or soft soils, topsoil, loam, peat, other organic materials, snow, ice, and trash. Unless specified elsewhere or otherwise required by the Engineer, areas where unsuitable materials have been excavated to stable ground shall be backfilled with compacted Gravel Borrow or Crushed Stone wrapped all around in non-woven filter fabric.
7. No excavation is permitted below a line drawn downwards at 2 horizontal to 1 vertical from the underside of the closest edge of any in-place footing, slab, or utility at a higher elevation without providing adequate sheeting and bracing (design by a Professional Engineer in Massachusetts and retained by the Contractor) to prevent movement of the in-place footing, slab, or utility.
8. In no case shall earth be excavated or disturbed by machinery so near to the finished subgrade for structures and pipelines as to result in the disturbance of the earth below the subgrade. The final excavation to subgrade should be accomplished with a smooth bladed bucket or by hand. When excavations have reached subgrade elevations, the condition of the bottom of the subgrade shall be observed by the Engineer prior to placement of overlying materials including fill, crushed stone, concrete forms, rebar, and pavements. After observation the Contractor will receive approval to proceed if conditions meet project requirements.
9. Subgrades and bottoms of trenches and excavations shall be protected from frost and shall be firm, dry and in an acceptable condition to receive the work. Work shall not be placed on frozen surfaces nor shall work be placed on wet or unstable surfaces.
10. The Contractor shall segregate and stockpile separately materials that are considered suitable for on-site re-use by the Engineer from unsuitable materials and materials requiring off-site disposal. Costs associated with off-site disposal of materials that

are considered suitable for re-use by the Engineer, whether mixed with unsuitable materials or not, shall be borne by the Contractor.

**B. TRENCHES:**

1. Prior to excavation, trenches in pavement shall have the traveled way surface cut in a straight line by a concrete saw or equivalent method, to the full depth of pavement. Excavation shall only be between these cuts. Excavation support shall be provided as required to avoid undermining of pavement. Cutting operations shall not be done by ripping equipment.
2. The Contractor shall satisfy all dewatering requirements specified in Section 02240 DEWATERING AND FLOW BYPASS, before performing trench excavations.
3. Trenches shall be excavated to such depths as will permit the pipe to be laid at the elevations, slopes, and depths of cover indicated on the Drawings. Trench widths shall be as shown on the Drawings or as specified.
4. Where pipe is to be laid in bedding material, the trench may be excavated by machinery to, or just below, the designated subgrade provided that the material remaining in the bottom of the trench is not disturbed.
5. Pipe trenches shall be made as narrow as practicable and shall not be widened by scraping or loosening materials from the sides. Every effort shall be made to keep the sides of the trenches firm and undisturbed until backfilling has been completed.
6. If, in the opinion of the Engineer, the subgrade, during trench excavation, has been disturbed as a result of rain, surface water runoff or groundwater seepage pressures, the Contractor shall remove such disturbed subgrade to a minimum of 12-inches and replace with crushed stone wrapped in filter fabric. Cost of removal and replacement shall be borne by the Contractor.
7. The Contractor shall obtain a trench permit from the municipality where the trench is located prior to making any excavations of trenches (any subsurface excavation greater than three (3) feet in depth and fifteen (15) feet or less between soil walls as measured from the bottom).
8. All trenches required to be permitted must be attended, covered, barricaded, or backfilled. Covers must be road plates at least ¾-inch thick or equivalent, barricades must be fences at least 6-feet high with no openings greater than 4-inches between vertical supports and all horizontal supports required to be located on the trench-side of the fencing.

**C. EXCAVATION NEAR EXISTING STRUCTURES:**

1. Attention is directed to the fact that there are pipes, manholes, drains, and other utilities in certain locations. An attempt has been made to locate all utilities on the

drawings, but the completeness or accuracy of the given information is not guaranteed.

2. As the excavation approaches pipes, conduits, or other underground structures, digging by machinery shall be discontinued and excavation shall be done by means of hand tools, as required. Such manual excavation, when incidental to normal excavation, shall be included in the work to be done under items involving normal excavation.
3. Where determination of the exact location of a pipe or other underground structure is necessary for properly performing the work, the Contractor shall excavate test pits to determine the locations.

### 3.03 FILL PLACEMENT:

#### A. GENERAL:

1. Prior to placement of fill materials, the Contractor shall expose undisturbed subgrades for observation by the Engineer. The Engineer may require additional measures such as dewatering to keep the excavation free of standing water, excavation of unsuitable soils (organics, soft unstable silt/mud, etc.) and subgrade compaction so that the subgrade is firm and stable prior to backfilling.
2. After approval of subgrade by the Engineer, the Contractor shall backfill areas to required contours and elevations with specified materials, as shown on the Contract Drawings.
3. The Contractor shall place and compact materials to the specified density in continuous horizontal layers, not to exceed ten (10) inches in uncompacted lifts as described in Section 3.04 below. Maximum lift thickness shall be 6 inches if hand operated compaction equipment is used.
4. Where horizontal layers meet a rising slope, the Contractor shall key each layer by benching into the slope.
5. If the material removed from the excavation is suitable for backfill with the exception that it contains stones larger than permitted, the Contractor has the option to remove the oversized stones and use the material for backfill or to provide replacement backfill at no additional cost to the Owner.
6. Unfavorable Conditions:
  - a. In no case shall fill be placed over material that is frozen. In no case shall frozen soil or soil material containing frost, snow or ice be placed as backfill. No fill material shall be placed, spread or rolled during unfavorable weather conditions. When work is interrupted by heavy rains, fill operations shall not be

resumed until the moisture content and the density of the previously placed fill are as specified.

- b. In freezing weather, a layer of fill shall not be left in an uncompacted state at the close of the day's operations. Prior to terminating work for the day, the final layer of compacted fill shall be rolled with a smooth wheeled roller to eliminate ridges of soil left by compaction equipment.

#### B. TRENCHES:

1. Bedding as detailed and specified shall be furnished and installed beneath the pipeline prior to placement of the pipeline. A minimum bedding thickness shall be maintained between the pipe and undisturbed material, as shown on the Drawings.
2. As soon as practicable after pipes have been laid, backfilling shall be started.
3. Unless otherwise indicated on the Drawings, gravel borrow shall be placed by hand shovel in 6-inch thick lifts up to a minimum level of 12-inches above the top of pipe. This area of backfill is considered the zone around the pipe and shall be thoroughly compacted before the remainder of the trench is backfilled. Compaction of each lift in the zone around the pipe shall be done by use of power-driven tampers weighing at least 20 pounds or by vibratory compactors. Care shall be taken that material close to the bank, as well as in all other portions of the trench, is thoroughly compacted to densities required.
4. Gravel borrow shall be placed from the top of the pipe to the specified material at grade of pavement subbase. Fill compaction shall meet the density requirements of this specification.
5. If the materials above the trench bottom are unsuitable for backfill, the Contractor shall furnish and place backfill materials meeting the requirements for trench backfill, as shown on the drawings or specified herein.
6. Should the Engineer order crushed stone for utility supports or for other purposes, the Contractor shall furnish and install the crushed stone as directed.

#### C. BACKFILLING UNDER FOUNDATIONS:

Material to be used as Structural Fill under structures shall be crushed stone wrapped in filter fabric or gravel borrow, as shown on the Drawings or as required by the Engineer. Where gravel borrow fill is required to support proposed footings, walls, and other structures, the material shall be placed in a manner accepted by the Engineer. Compaction of each lift shall meet the density requirements of this specification.

D. BACKFILLING ADJACENT TO STRUCTURES:

1. The Contractor shall not place backfill against or on structures until they have attained sufficient strength to support the loads to which they will be subjected. Excavated material approved by the Engineer may be used in backfilling around structures. Backfill material shall be thoroughly compacted to meet the requirements of this specification.
2. Contractor shall use extra care when compacting adjacent to pipes and drainage structures. Backfill and compaction shall proceed along sides of drainage structures so that the difference in top of fill level on any side of the structure shall not exceed two feet (2') at any stage of construction.
3. Where backfill is to be placed on only one side of a structural wall, only hand-operated roller or plate compactors shall be used within a lateral distance of five feet (5') of the wall for walls less than fifteen feet (15') high.

3.04 COMPACTION:

- A. Compaction Requirements: The degree of compaction is expressed as a percentage of the maximum dry density of the material at optimum moisture content as determined by ASTM D1557, Method C. The compaction requirements are as follows:

Area	ASTM Density Degree of Compaction
In the zone-of-influence below foundations and other structural features	95%
Pavement base course	95%
Retaining wall backfill	95%
Structural Fill below pavement subbase	95%
Trench backfill - below pavements	95%
- below landscaped areas	92%
- below structures	95%
All other areas	92%

Crushed Stone shall be compacted by multiple passes of a vibratory plate compactor or drum roller to a firm and unyielding condition as satisfactory to the Engineer.

B. Moisture Control:

1. Fill that is too wet for proper compaction shall be disced, harrowed, or otherwise mixed and dried to a proper moisture content to allow compaction to the required

density. If fill cannot be dried within 24 hours of placement, it shall be removed and replaced with drier fill.

2. Fill that is too dry for proper compaction shall receive water uniformly applied over the surface of the loose layer. Sufficient water shall be added to allow compaction to the required density.

C. Compaction Control:

1. In-place density tests shall be made by the Contractor's testing laboratory in accordance with ASTM D1556, D2922, or D2167 as the work progresses, to determine the degree of compaction being attained by the Contractor. Any corrective work required as a result of such tests, such as additional compaction, or a decrease in the thickness of layers, shall be performed by the Contractor at no additional expense to the Owner. Additional in-place density testing shall be made at the Contractor's expense by the testing laboratory. Testing locations shall be selected by the Engineer unless otherwise noted.
2. In-place density tests shall be performed at a minimum according to the following:
  - a. One test per lift for each 5,000 square feet of structure area fill.
  - b. A minimum of one test per lift for each 100 linear feet of trench.
  - c. One test per lift for each 10,000 square feet of pavement and sidewalk areas.
  - d. One test per lift for each 100 linear feet of roadway fills.
  - e. One test per lift for each 100 linear feet of embankments.

END OF SECTION

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